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17 -



SM No. CMP7000741881

PROPOSAL AND CONTRACT DOCUMENTS

FOR THE CONSTRUCTION OF

17

Level & Scrub Seal approximately 26 miles on various routes in District 7, known as State Project No. MP-7000-74(188) / 306062301 in Walthall County.

Project Completion: 09/01/2017

(STATE DELEGATED)

NOTICE

**BIDDERS MUST PURCHASE A BID PROPOSAL FROM
MDOT CONTRACT ADMINISTRATION DIVISION 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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(REVISIONS TO THE ABOVE WILL BE INDICATED ON THE SECOND SHEET
OF SECTION 905 AS ADDENDA)

03/29/2017 06:21 AM

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, April 25, 2017, from the Bid Express Service and shortly thereafter publicly read on the Sixth Floor for:

Level & Scrub Seal approximately 26 miles on various routes in District 7, known as State Project No. MP-7000-74(188) / 306062301 in Walthall County.

The attention of bidders is directed to the predetermined minimum wage rate set by the U. S. Department of Labor under the Fair Labor Standards Act.

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

Bid proposals must be purchased online at <https://shopmdot.ms.gov>. Specimen proposals may be viewed and downloaded online at no cost at <http://mdot.ms.gov> or purchased online. Proposals are available 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. 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_wgths/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. 12

CODE: (IS)

DATE: 03/01/2017

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	June 30, 2018
Cable barriers, cable barrier terminals, crash cushions	December 31, 2018
Bridge rails, transitions, all other longitudinal barriers including portable barriers installed permanently, 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. 16

CODE: (SP)

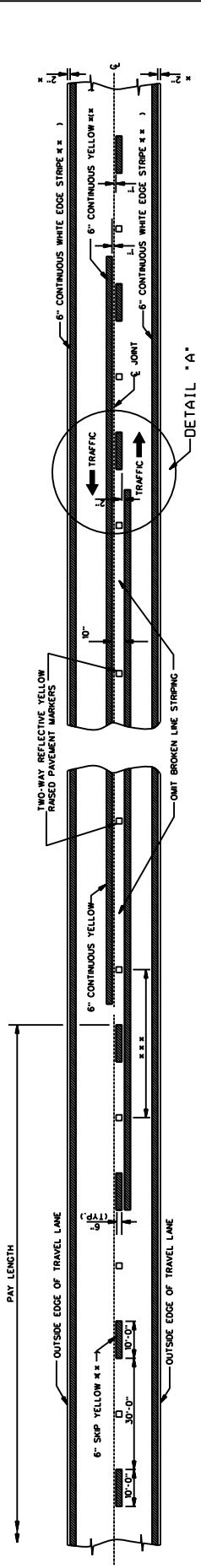
DATE: 03/01/2017

SUBJECT: Standard Drawings

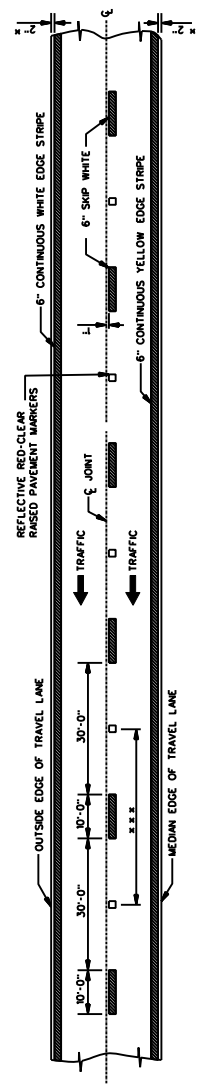
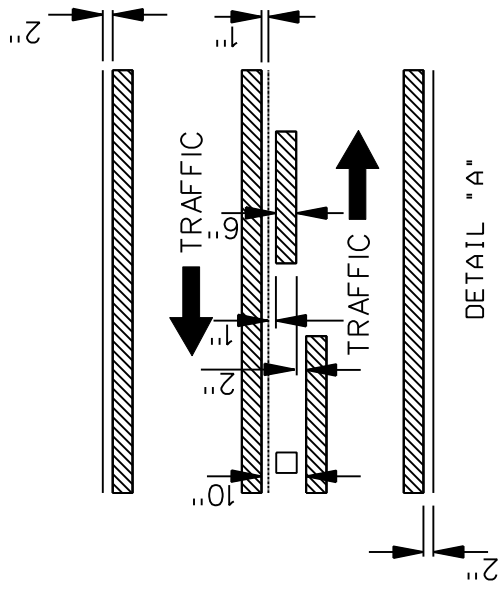
Standard Drawings attached hereto shall govern appropriate items of required work.

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



TWO-WAY TRAFFIC
(ASPHALT OR CONCRETE PAVEMENT)



4-LANE WITH ONE-WAY TRAFFIC



GENERAL NOTES:

- * 1. 2" UNLESS SHOWN ELSEWHERE ON THE PLANS.
- ** 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:

TANGENT SECTIONS	URBAN AREA (U/Lin)	RURAL AREA (U/Lin)
HORIZONTAL CURVES	40'-0"	80'-0"
INTERCHANGE LIMITS	40'-0"	40'-0"
	40'-0"	140'-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 DIRECTION OF TRAFFIC) OF THE EXIT RAMP AND ENDING 1000' FROM 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 MOOT "APPROVED SOURCES OF MATERIALS."

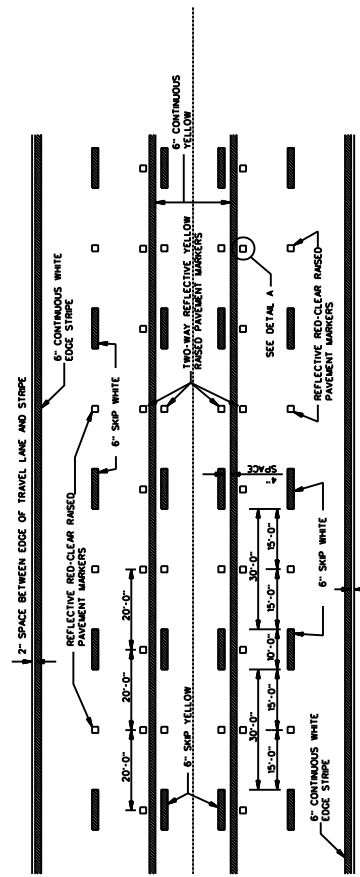
MISSISSIPPI DEPARTMENT OF TRANSPORTATION
ROADWAY DESIGN DIVISION
STANDARD PLAN

PAVEMENT MARKING
DETAILS FOR
2-LANE AND 4-LANE
DIVIDED HIGHWAYS

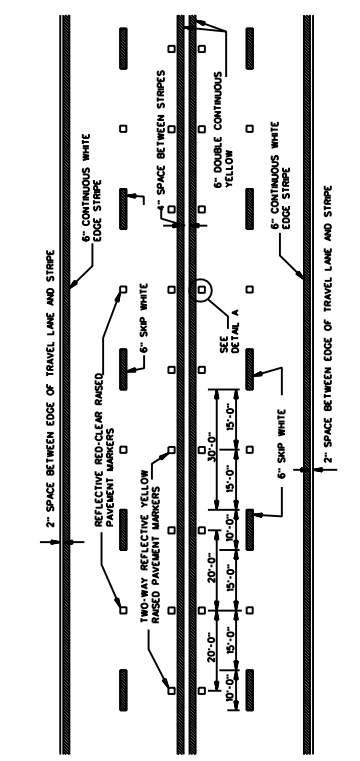
WORK NUMBER: PM-1
SHEET NUMBER: 100

ISSUE DATE: OCTOBER 1, 1998

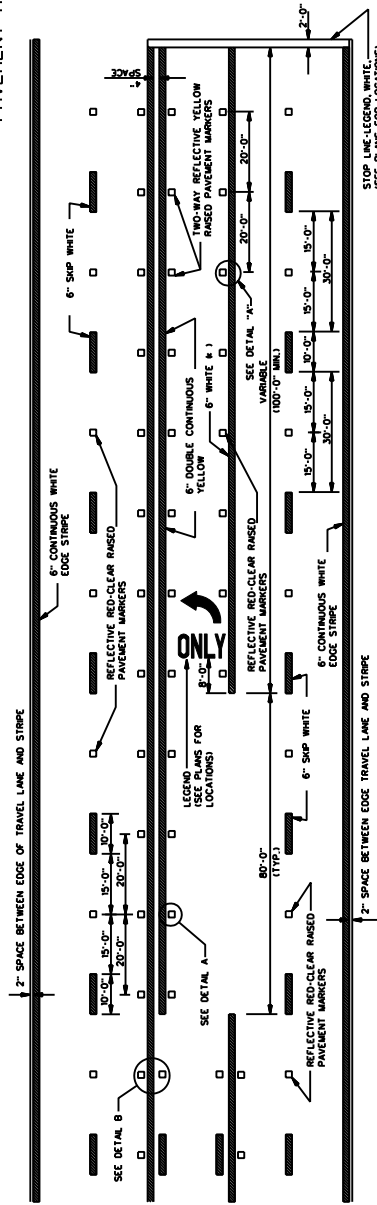
STATE	PROJECT NO.
MISS.	



TYPICAL STRIPING AND RAISED PAVEMENT MARKERS FOR 5-LANE SECTION

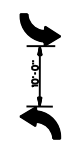


TYPICAL STRIPING AND RAISED PAVEMENT MARKERS FOR 4-LANE SECTION



TYPICAL STRIPING AND RAISED PAVEMENT MARKERS AT LEFT TURN LANES

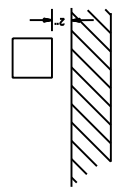
*NOTE: USE DETAIL STRIPING IF LENGTH < 150' AT THIS LOCATION, OTHERWISE USE CONTINUOUS STRIPING.



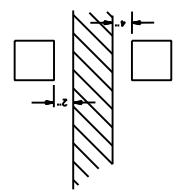
TYPICAL TWO-WAY ARROW INSTALLATION

- NOTES: 1. CONSIDER EACH SEGMENT OF CONTINUOUS TWO-WAY LEFT TURN LANE SEPARATELY.
- 2. IF SEGMENT IS LESS THAN 300', PLACE ONE SET OF ARROWS IN CENTER OF SEGMENT.
- 3. IF SEGMENT IS GREATER THAN 300', PLACE FIRST SET OF ARROWS 50' TO 100' FROM BEGINNING AND/OR END OF SEGMENT AND SPACE ADDITIONAL SETS OF ARROWS (250' O.C.).

GENERAL NOTE:
1. PAVEMENT MARKERS SHALL BE HIGH PERFORMANCE RAISED PAVEMENT MARKERS AS LISTED IN THE MOOT -APPROVED SOURCES OF MATERIALS.*



DETAIL A
LATERAL PLACEMENT OF PAVEMENT MARKERS

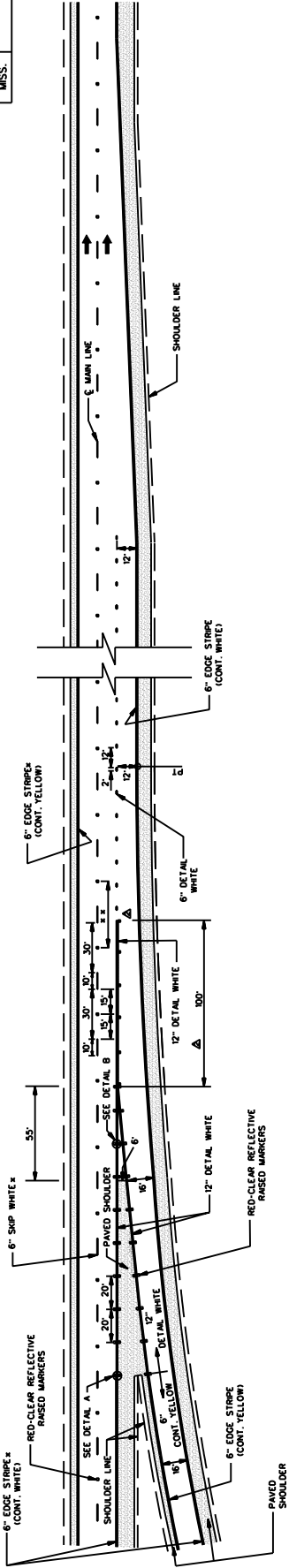


DETAIL B
LATERAL PLACEMENT OF PAVEMENT MARKERS

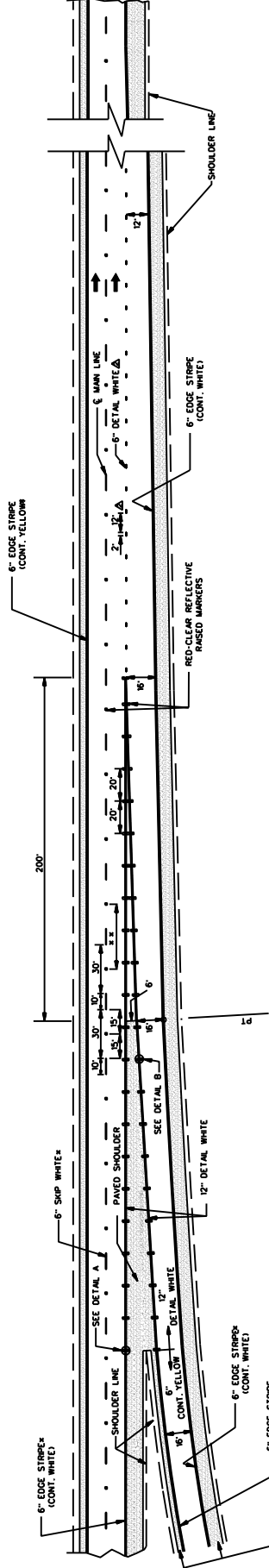
MISSISSIPPI DEPARTMENT OF TRANSPORTATION	
PAVEMENT MARKING	
DETAILS FOR	
4-LANE AND 5-LANE	
UNDIVIDED ROADWAYS	
DATE	03/20/12
FILE NAME	SDPM-2.DGN
DESIGNER	CH2M
CHECKER	
DATE	

NUMBER FOR SDPM-2 SHEET NUMBER

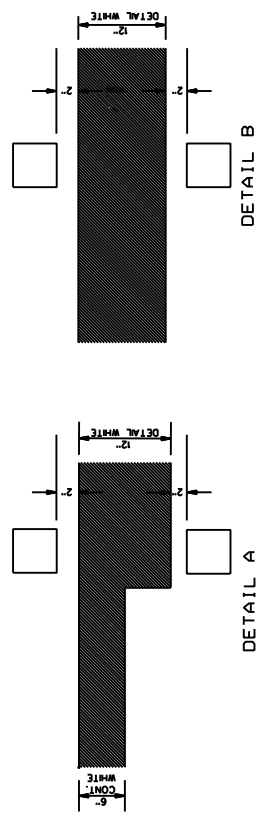
STATE	PROJECT NO.
MISS.	



PARALLEL ENTRANCE RAMP



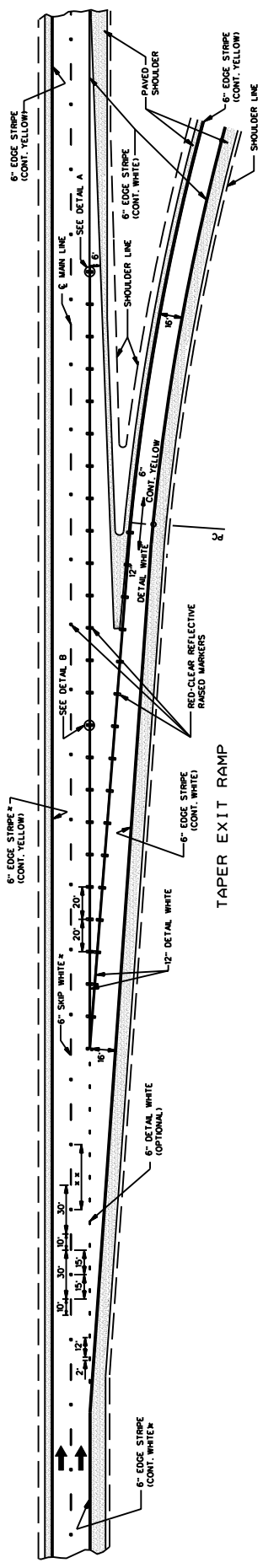
TAPER ENTRANCE RAMP



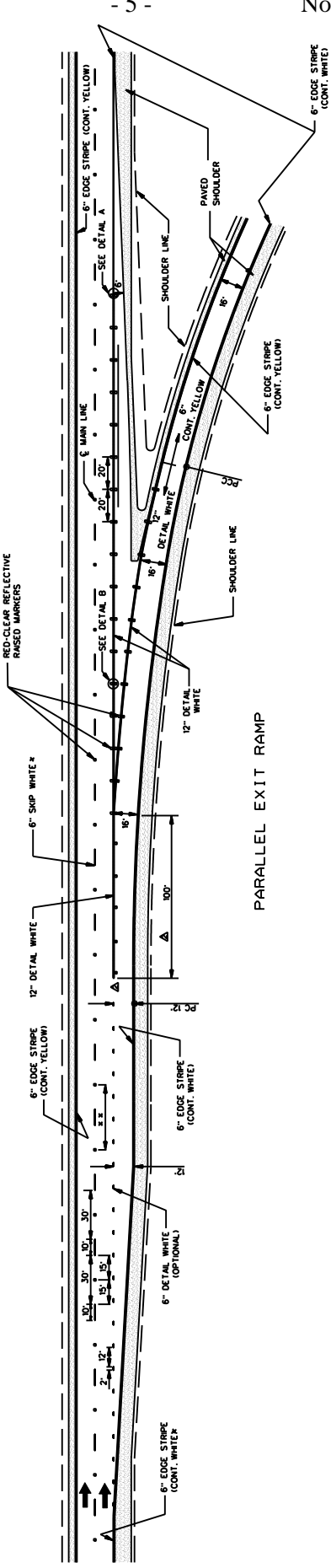
- GENERAL NOTES:
- * 1. SEE SHEET PM-1 FOR THE PLACEMENT OF LANE-LINE STRIPES AND RED-CLEAR REFLECTIVE RAISED MARKERS. THE PLACEMENT OF THE EDGE LINE WITH RESPECT TO THE OUTSIDE EDGE OF THE TRAVELED WAY.
 - * 2. ON THE MAIN FACILITY, PLACE REFLECTIVE RED-CLEAR RAISED PAVEMENT MARKERS AT A 40' SPACING ON ALL LANE-LINES THROUGHOUT THE INTERCHANGE AREA BEGINNING 300' IN THE MAIN FACILITY FROM THE END OF THE INTERCHANGE 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 MOOT "APPROVED SOURCES OF MATERIALS."

MISSISSIPPI DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN DIVISION			WORKING NUMBER SDPM-3 SHEET NUMBER
PAVEMENT MARKING DETAILS FOR INTERCHANGE RAMP (PARALLEL AND TAPER)			

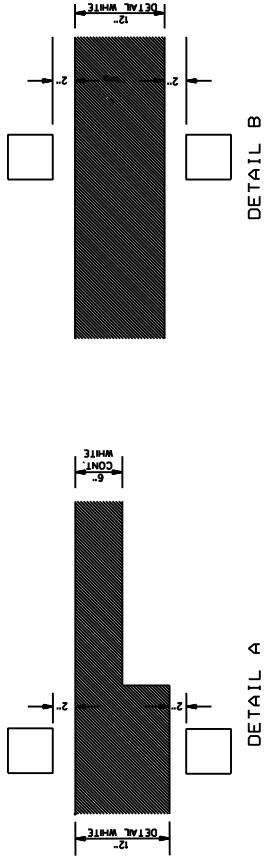
STATE	PROJECT NO.
MISS.	



TAPER EXIT RAMP



PARALLEL EXIT RAMP



- GENERAL NOTES:
- SEE SHEET PM-1 FOR THE PLACEMENT OF LINE-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.
 - ON THE MAINLINE, PLACE REFLECTIVE RED-CLEAR RAISED MARKERS AT THE INTERCHANGE AREA 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.
 - PAVEMENT MARKERS SHALL BE HIGH PERFORMANCE REFLECTIVE MARKERS AS SPECIFIED IN THE MDDI.
 - APPROVED SOURCES OF MATERIALS:

DATE	BY	REVISION
10/1/99	SM	REVISED STRIPE WIDTH
8/7/98	SM	UPDATE TO 2008 M/ICD
5/2/98	SM	
1/1/98	SM	

MISSISSIPPI DEPARTMENT OF TRANSPORTATION
ROADWAY DESIGN DIVISION

PAVEMENT MARKING
DETAILS FOR
INTERCHANGE
EXIT RAMP
(PARALLEL AND TAPER)

ISSUE DATE: OCTOBER 1, 1998

WORKING NUMBER: SDPM-41
SHEET NUMBER: 10

STATE MISS.	PROJECT NO.	
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PAVEMENT MARKING LEGEND DETAILS

STOP: 8'-4" x 6'-4" (height 4")

AHEAD: 8'-4" x 7'-9" (height 4")

SLOW: 8'-4" x 8'-9" (height 4")

RIGHT: 8'-4" x 7'-9" (height 4")

LEFT: 8'-4" x 7'-9" (height 4")

SCHOOL: 8'-4" x 9'-9" (height 4")

GENERAL NOTES:

1. UNLESS OTHERWISE SHOWN ON THE PLANS, ALL PAVEMENT MARKING LEGENDS SHALL BE APPLIED USING HIGH PERFORMANCE POLYURETHANE PAINT.
2. TWO HORIZONTAL GAPS (CAUSED BY TEMPLATE CONNECTORS OF 1/4" OR LESS) AND EXTENDING LETTERS SHALL BE USED TO MAINTAIN THE FULL WIDTH OF THE LEGEND.
3. FOR OTHER DETAILS SEE THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
4. PAY QUANTITIES FOR PAVEMENT MARKING LEGENDS ARE AS FOLLOWS:

LEGEND	AREA (FT ²)
STOP	24.6
RIGHT	35.8
LEFT	35.8
TURN	27.3
LANE	22.7
AHEAD	32.3
TRUCK	18.5
EXIT	18.5
SIGNAL	32.5
SCHOOL	35.5

MISSISSIPPI DEPARTMENT OF TRANSPORTATION
ROADWAY DESIGN DIVISION
STANDARD PLAN

PAVEMENT MARKING
LEGEND DETAILS

REVISION NUMBER: PW-3
SHEET NUMBER: 124

DATE	REVISION	ISSUE DATE: OCTOBER 1, 1998

STATE PROJECT NO.					
MISS.					

TURN ARROW

THRU ARROW

COMBINATION ARROW

1-WAY ARROW

GENERAL NOTES:

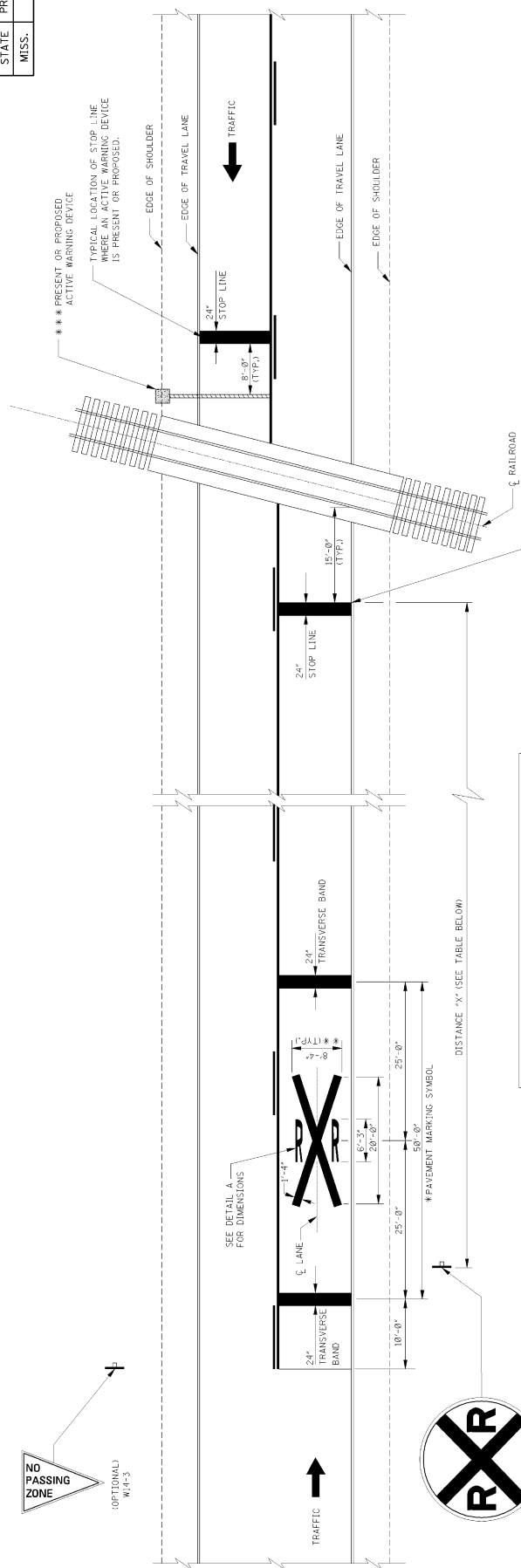
1. UNLESS OTHERWISE SHOWN ON THE PLANS, ALL PAVEMENT MARKING SHALL BE APPLIED USING HIGH PERFORMANCE MATERIALS.
2. TWO HORIZONTAL GAPS CAUSED BY TEMPLATE CONNECTORS OF 1/2" OR LESS AND EXTENDING THE FULL WIDTH ARE PERMITTED IN EACH LETTER.
3. FOR OTHER DETAILS, SEE THE MANUAL ON UNIFORM PAVEMENT MARKING LEGENDS.
4. PAY QUANTITIES FOR PAVEMENT MARKING LEGENDS ARE AS FOLLOWS:

PAY QUANTITIES	
LEGEND/SYMBOL	AREA (ft ²)
ONLY	22.0
TURN ARROW	18.4
THRU ARROW	21.2
COMBINATION ARROW	27.5
1-WAY ARROW	24.3

MISSISSIPPI DEPARTMENT OF TRANSPORTATION
ROADWAY DESIGN DIVISION
STANDARD PLAN

**PAVEMENT MARKING
LEGEND DETAILS**

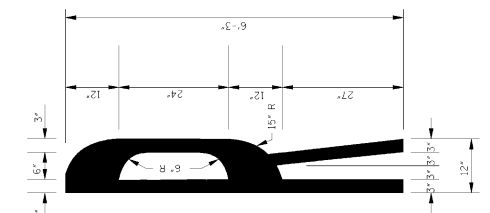
DATE	REVISION	BY	ISSUE DATE:	OCTOBER 1, 1998	SHEET NUMBER	125



ADVANCE WARNING SIGN PLACEMENT DISTANCE

POSTED SPEED (mph)	DISTANCE "X" (FT)	
	RURAL	URBAN
20	175	100
25	250	100
30	325	100
35	400	150
40	475	225
45	550	300
50	625	375
55	700	450
60	775	550

NOTES:
 ① DISTANCE "X" MAY BE ADJUSTED, IF PROHIBITIVE PHYSICAL CONDITIONS EXIST AT THE DESIGNATED DISTANCE.
 ② THESE DISTANCES MAY BE ADJUSTED TO A MINIMUM OF 100 IN. FOR BUSINESS OR BUSINESS DISTRICTS WHERE LOW SPEEDS ARE PREVALENT.



DETAIL A
STANDARD "R" PAVEMENT MARKING
FOR R X R SYMBOL

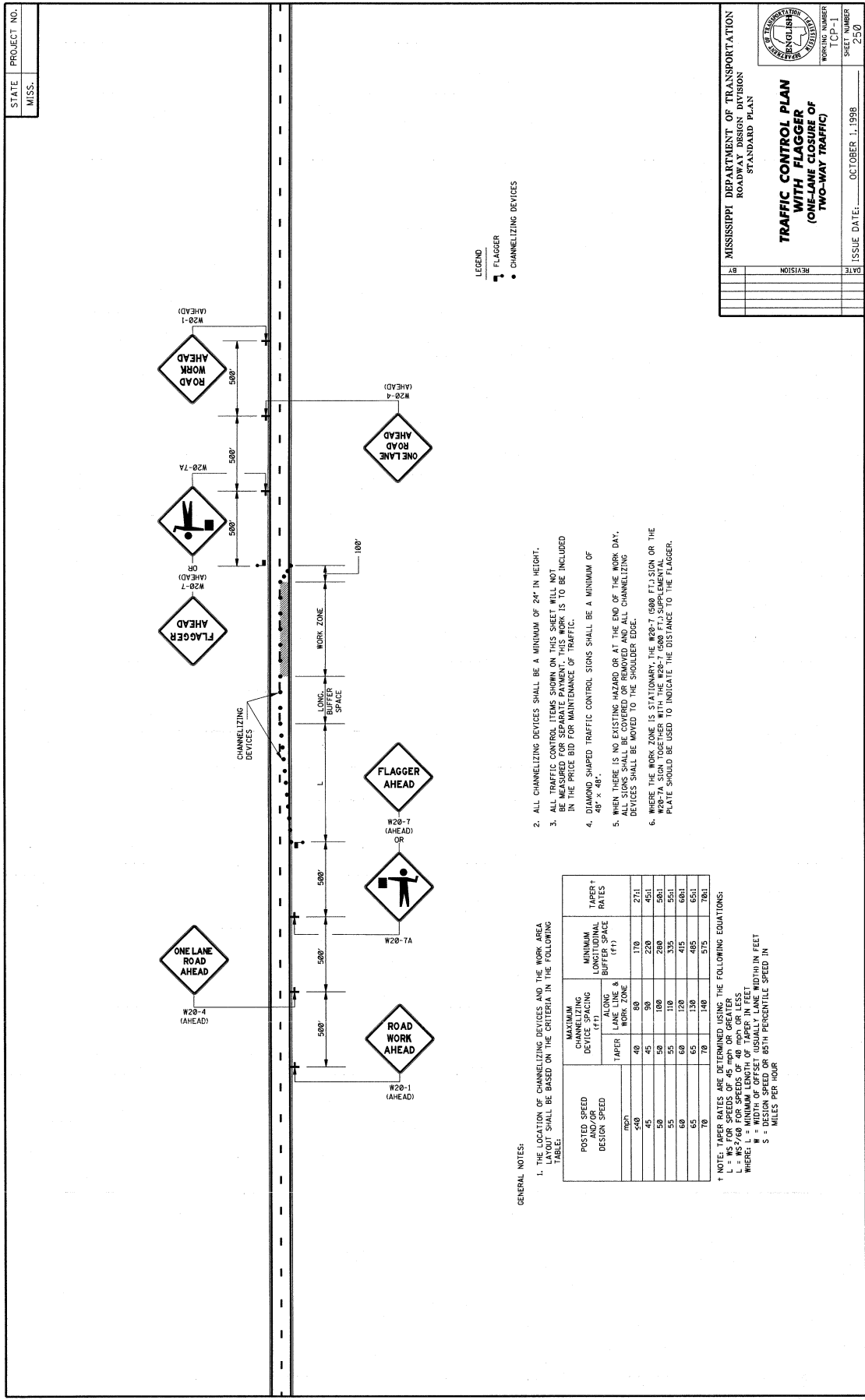
GENERAL NOTES:
 * 1. A PORTION OF THE PAVEMENT MARKING SYMBOL SHOULD BE DIRECTLY OPPOSITE THE ADVANCE WARNING SIGN (W10-1).
 * 2. WIDTH OF R X R SYMBOL MAY VARY ACCORDING TO LANE WIDTH. HOWEVER, ON MULTI-LANE ROADS, THE TRANSVERSE BANDS AND STOP LINE SHOULD EXTEND ACROSS ALL APPROACH LANES, AND INDIVIDUAL R X R SYMBOLS SHOULD BE USED IN EACH APPROACH LANE.
 * 3. R X R SYMBOL (63.0 #42), TRANSVERSE BANDS AND STOP LINE SHALL BE PAID FOR AS LEGEND, WHITE (PLASTIC), MATERIAL OPTIONAL FOR OTHER AGENCIES.
 * 4. REFER TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR LOCATION OF PROPOSED WARNING DEVICES AT RAILROAD-HIGHWAY GRADE CROSSINGS.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION
ROADWAY DESIGN DIVISION
STANDARD PLAN

TYPICAL PLACEMENT OF WARNING SIGNS AND PAVEMENT MARKINGS AT RAILROAD HIGHWAY CROSSINGS

WORKSHEET NO. 10
SHEET NUMBER 12 OF 18
ISSUE DATE: OCTOBER 11, 1998

DATE	REVISION
10-18-98	REVISE NOTE

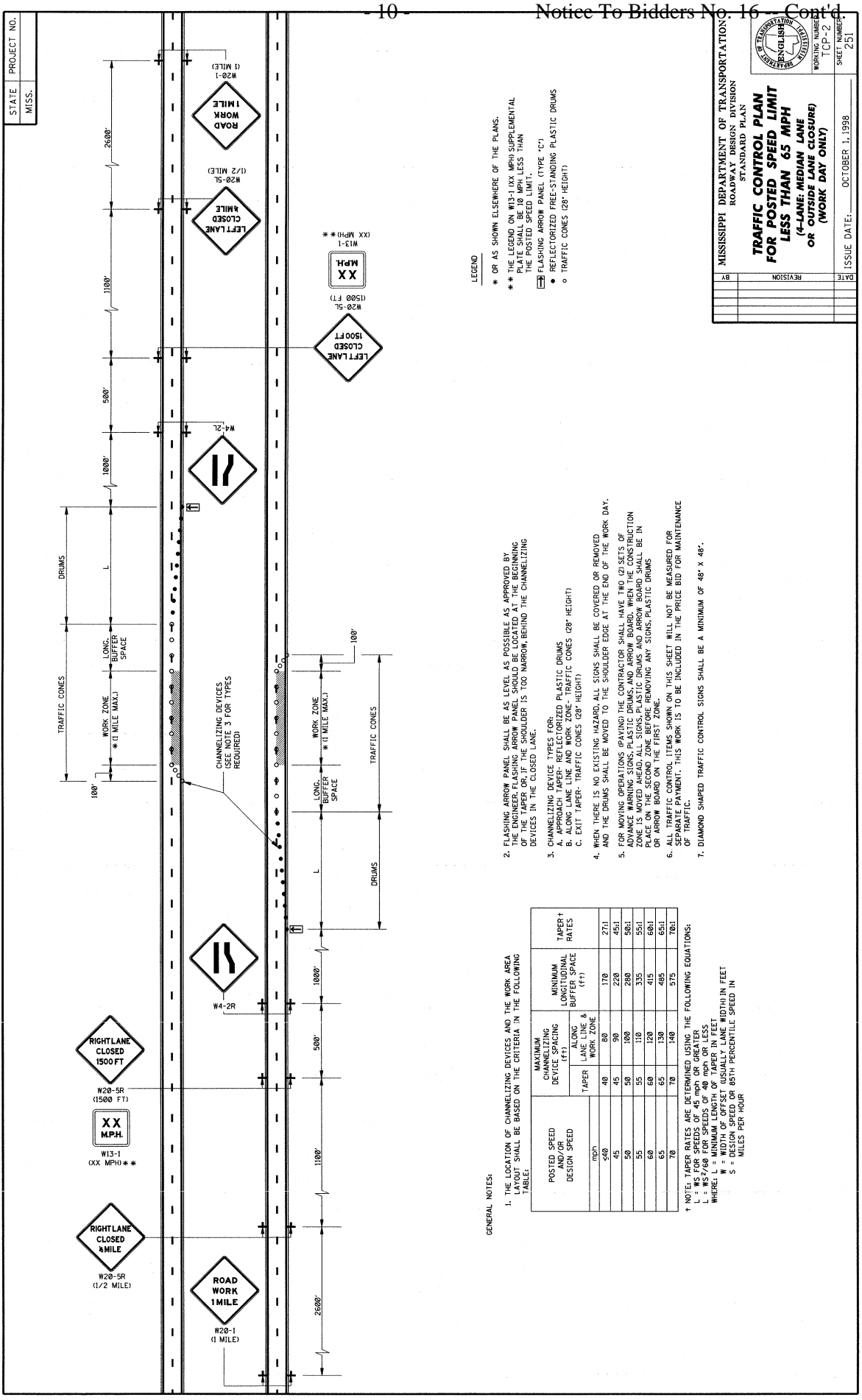


MISSISSIPPI DEPARTMENT OF TRANSPORTATION
 ROADWAY DESIGN DIVISION
 STANDARD PLAN

**TRAFFIC CONTROL PLAN
 WITH FLAGGER
 (ONE-LANE CLOSURE OF
 TWO-WAY TRAFFIC)**

WORKING NUMBER: TCP-1
 SHEET NUMBER: 250
 ISSUE DATE: OCTOBER 1, 1998

DATE	REVISION



STATE PROJECT NO.
MISS.

- LEGEND**
- * OR AS SHOWN ELSEWHERE OF THE PLANS.
 - ** THE LEGEND ON W13-1 (XX MPH) SUPPLEMENTAL PLATE SHALL BE 10 MPH LESS THAN THE POSTED SPEED LIMIT.
 - REFLECTORIZED PRE-STANDING PLASTIC DRUMS
 - TRAFFIC CONES (28" HEIGHT)

2. FLASHING ARROW PANEL SHALL 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- REFLECTORIZED PLASTIC DRUMS
 - B. ALONG LANE LINE AND WORK ZONE- TRAFFIC CONES (28" HEIGHT)
 - C. EXIT TAPER- TRAFFIC CONES (28" HEIGHT)
4. WHEN THERE IS NO EXISTING HAZARD, 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 BEFORE REMOVING ANY SIGNS, PLASTIC DRUMS OR ARROW BOARD ON THE PREVIOUS ZONE.
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.
7. DIAMOND SHAPED TRAFFIC CONTROL SIGNS SHALL BE A MINIMUM OF 48" X 48".

GENERAL NOTES:

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

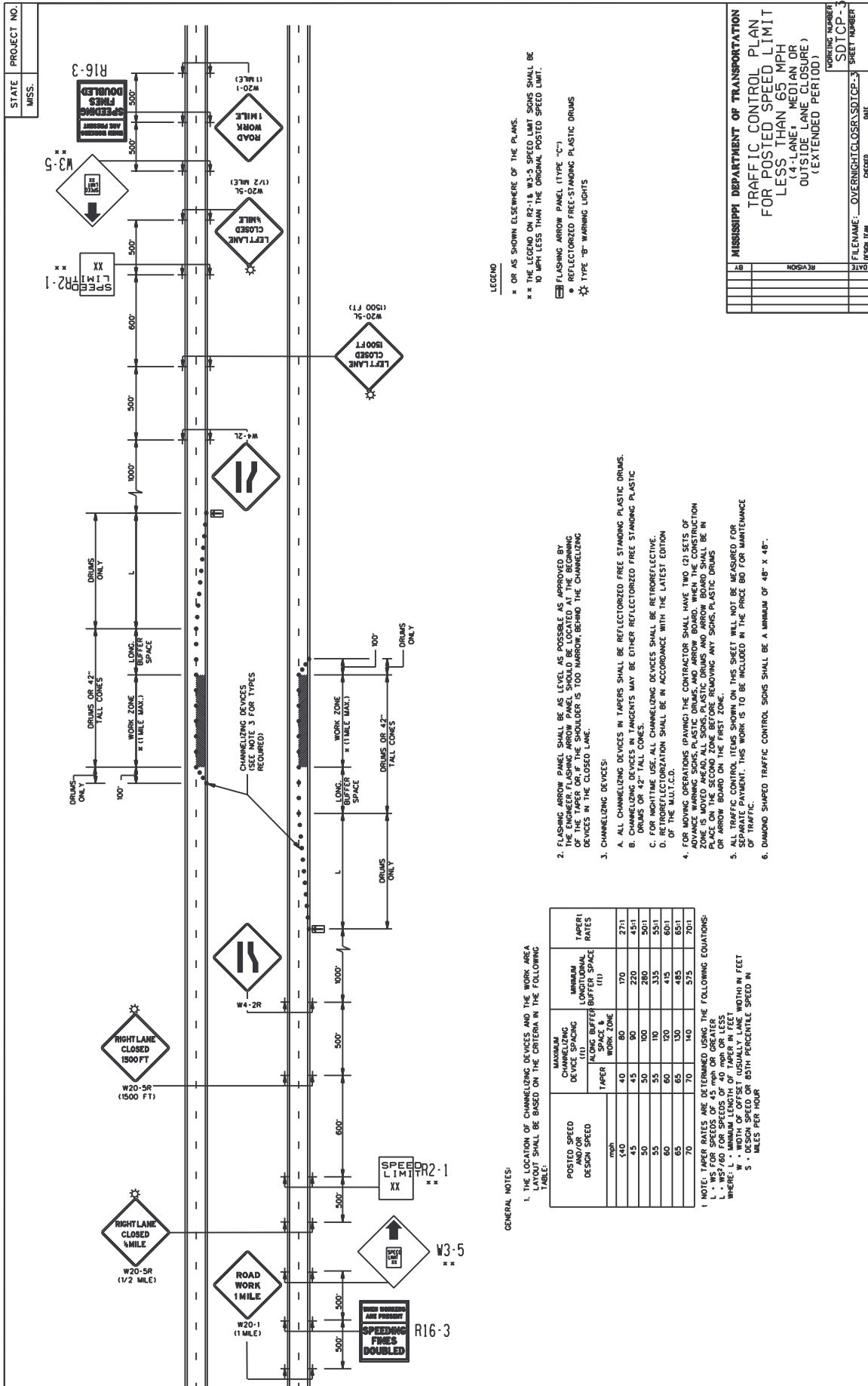
POSTED SPEED AND/OR DESIGN SPEED	MAXIMUM CHANNELIZING DEVICE SPACING (FT)		MINIMUM LONGITUDINAL BUFFER SPACE (ft)	TAPER + TAPER RATES
	ALONG LANE LINE	WORK ZONE		
40	40	80	170	27:1
45	45	90	220	45:1
50	50	100	280	50:1
55	55	110	335	55:1
60	60	120	415	60:1
65	65	130	485	65:1
70	70	140	575	70:1

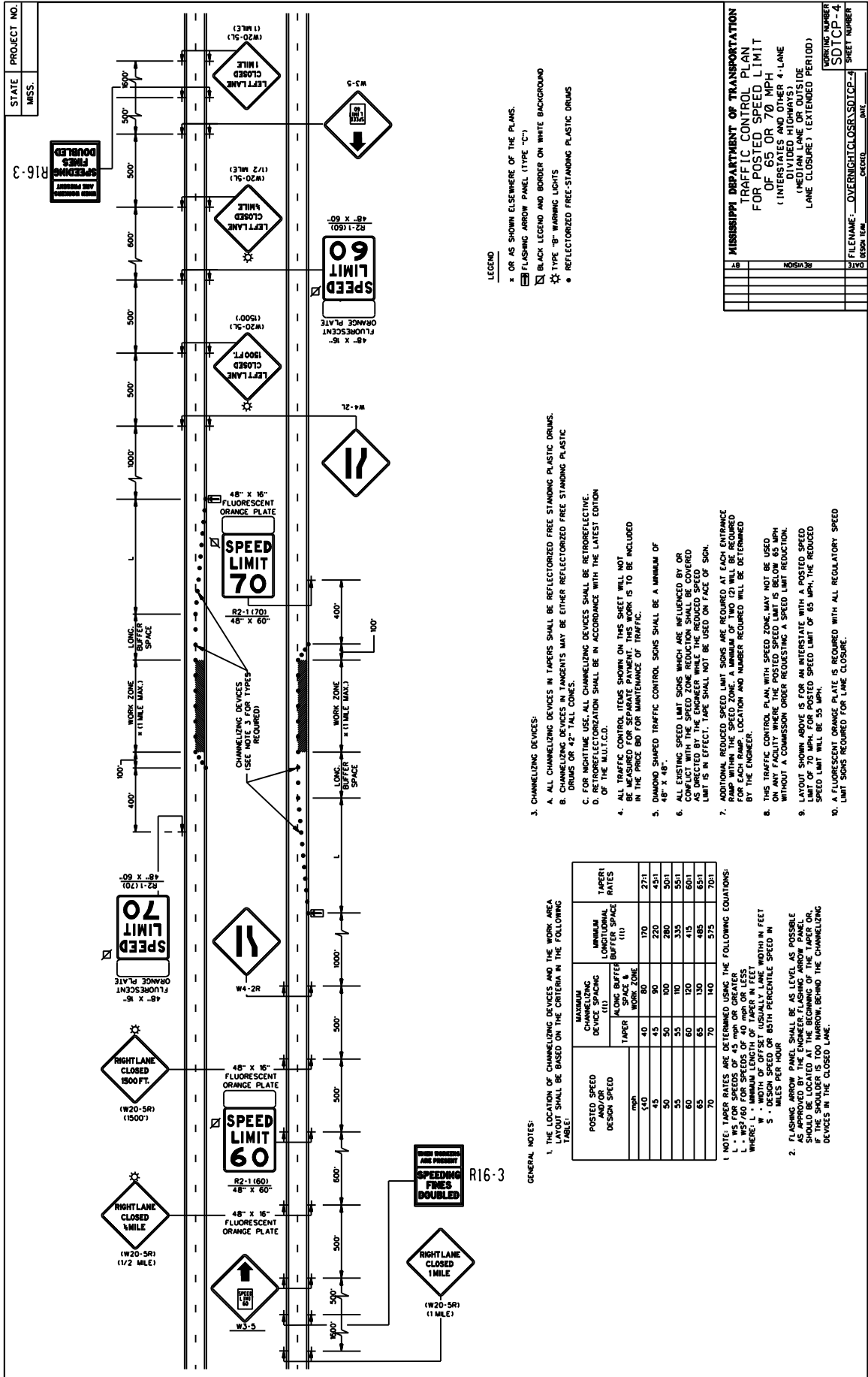
† NOTE: TAPER RATES ARE DETERMINED USING THE FOLLOWING EQUATIONS:
 $L = W \cdot S$ FOR SPEEDS OF 45 MPH OR GREATER
 $L = W \cdot S^2$ FOR SPEEDS OF 40 MPH OR LESS
 WHERE L = MINIMUM LENGTH OF TAPER IN FEET
 W = WIDTH OF OFFSET USUALLY LANE WIDTH IN FEET
 S = DESIGN SPEED OR 85TH PERCENTILE SPEED IN MILES PER HOUR

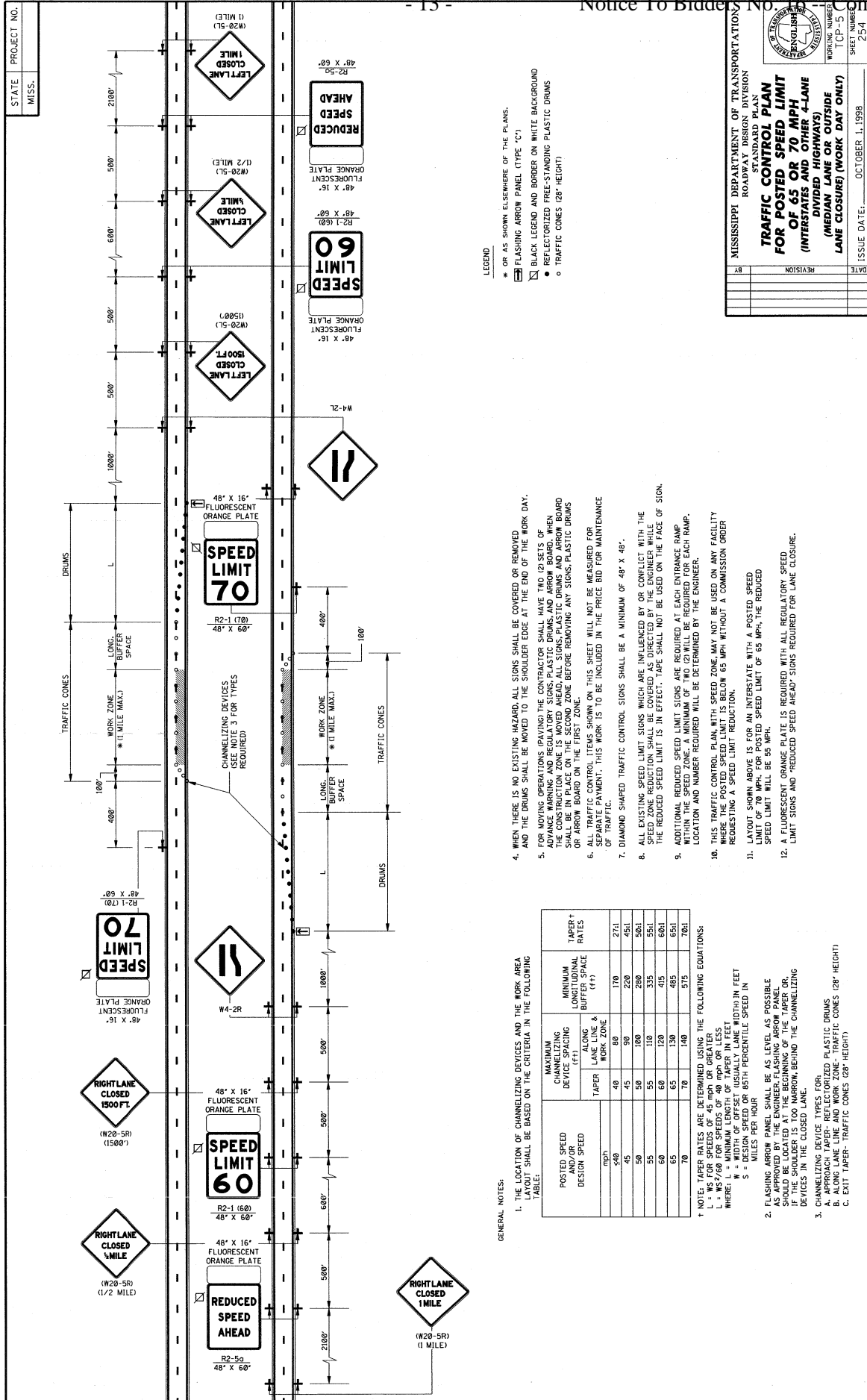
MISSISSIPPI DEPARTMENT OF TRANSPORTATION
 ROADWAY DESIGN DIVISION
 STANDARD PLAN

**TRAFFIC CONTROL PLAN
 FOR POSTED SPEED LIMIT
 LESS THAN 65 MPH
 (4-LANE MEDIAN LANE
 OR CLOSURE CLOSURE)
 (WORK DAY ONLY)**

WORKING NUMBER: TCP-2
 SHEET NUMBER: 251
 ISSUE DATE: OCTOBER 1, 1998







GENERAL NOTES:

1. THE LOCATION OF CHANNELIZING DEVICES AND THE WORK AREA LAYOUT SHALL BE BASED ON THE CRITERIA IN THE FOLLOWING TABLE:
2. FLASHING ARROW PANEL SHALL BE AS LEVEL AS POSSIBLE. APPROACH TAPER REFLECTORIZED PLASTIC DRUMS 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- REFLECTORIZED PLASTIC DRUMS
 - B. LEFT LANE LINE AND APPROACH TAPER- REFLECTORIZED PLASTIC CONES (28" HEIGHT)
 - C. EXIT TAPER- TRAFFIC CONES (28" HEIGHT)
4. WHEN THERE IS NO EXISTING HAZARD, 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 PAYING THE CONTRACTOR SHALL HAVE TWO (2) SETS OF CHANNELIZING DEVICES LOCATED AT THE BEGINNING AND END OF THE WORK ZONE. THE CONSTRUCTION ZONE IS MOVED AHEAD ALL SIGNS, PLASTIC DRUMS AND ARROW BOARD OR ARROW BOARD ON THE FIRST ZONE.
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.
7. DIAMOND SHAPED TRAFFIC CONTROL SIGNS SHALL BE A MINIMUM OF 48" X 48".
8. 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 THE FACE OF SIGN.
9. ADDITIONAL REDUCED SPEED LIMIT SIGNS ARE REQUIRED AT EACH ENTRANCE RAMP WITHIN THE SPEED ZONE. A MINIMUM OF TWO (2) WILL BE REQUIRED FOR EACH RAMP. LOCATION AND NUMBER REQUIRED WILL BE DETERMINED BY THE ENGINEER.
10. 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.
11. 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.
12. A FLUORESCENT ORANGE PLATE IS REQUIRED WITH ALL REGULATORY SPEED LIMIT SIGNS AND "REDUCED SPEED AHEAD" SIGNS REQUIRED FOR LANE CLOSURE.

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

POSTED SPEED DESIGN SPEED mph	CHANNELIZING DEVICE SPACING (FT)		MINIMUM LONGITUDINAL BUFFER SPACE (FT)	TAPER RATES
	LANE LINE & WORK ZONE	LANE LINE & WORK ZONE		
50	40	80	170	27:1
55	45	90	220	45:1
60	50	100	280	50:1
65	55	110	335	55:1
70	60	120	415	60:1
75	65	130	485	65:1
80	70	140	575	70:1

NOTE: TAPER RATES ARE DETERMINED USING THE FOLLOWING EQUATIONS:

$L = WS$ FOR SPEEDS OF 45 mph OR GREATER
 $L = WS^2/60$ FOR SPEEDS OF 40 mph OR LESS
 WHERE:
 L = LENGTH OF TAPER (USUALLY LANE WIDTH) IN FEET
 W = WIDTH OF OFFSET (USUALLY LANE WIDTH) IN FEET
 S = DESIGN SPEED OR 85TH PERCENTILE SPEED IN MILES PER HOUR

FLASHING ARROW PANEL SHALL BE AS LEVEL AS POSSIBLE. APPROACH TAPER REFLECTORIZED PLASTIC DRUMS SHOULD BE LOCATED AT THE BEGINNING OF THE TAPER OR, IF THE SHOULDER IS TOO NARROW, BEHIND THE CHANNELIZING DEVICES IN THE CLOSED LANE.


CHANNELIZING DEVICE TYPES FOR:
 A. APPROACH TAPER- REFLECTORIZED PLASTIC DRUMS
 B. LEFT LANE LINE AND APPROACH TAPER- REFLECTORIZED PLASTIC CONES (28" HEIGHT)
 C. EXIT TAPER- TRAFFIC CONES (28" HEIGHT)

LEGEND

- * OR AS SHOWN ELSEWHERE OF THE PLANS.
- FLASHING ARROW PANEL (TYPE "C")
- BLACK LEGEND AND BORDER ON WHITE BACKGROUND
- REFLECTORIZED FREE-STANDING PLASTIC DRUMS
- TRAFFIC CONES (28" HEIGHT)

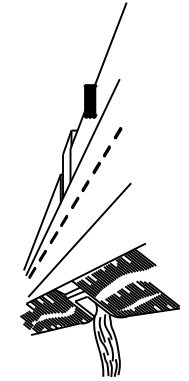
MISSISSIPPI DEPARTMENT OF TRANSPORTATION
 ROADWAY DESIGN PLAN
TRAFFIC CONTROL PLAN
FOR POSTED SPEED LIMIT
OF 65 OR 70 MPH
(INTERSTATES AND OTHER 4-LANE
DIVIDED HIGHWAYS)
(MEDIAN LANE OR OUTSIDE
LANE CLOSURE) (WORK DAY ONLY)

WORKING NUMBER: TCP-5
 SHEET NUMBER: 254
 ISSUE DATE: OCTOBER 1, 1988



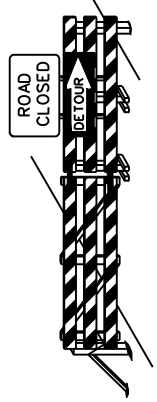
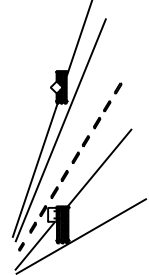
MISSISSIPPI DEPARTMENT OF TRANSPORTATION
HIGHWAY SIGN AND BARRICADE DETAIL FOR CONSTRUCTS

WORKING NUMBER: SDTCP-10
SHEET NUMBER: 10
DATE: 04/16/2012
FILE NAME: SDTCP-10_06012012.DGN
PERSON: [blank]
CROSSING: [blank]



WING BARRICADES

- WING BARRICADES ARE TYPE 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.
- WING BARRICADES SHOULD BE USED:
 - IN ADVANCE OF A CONSTRUCTION PROJECT EVEN WHEN NO PART OF THE ROADWAY IS ACTUALLY CLOSED.
 - IN ADVANCE OF ALL BRIDGE OR CULVERT MOVING OPERATIONS.

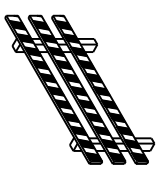


BARRICADE CLOSING A ROAD

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	35" MIN.	35" MIN.	60" MIN.
NUMBER OF REFLECTORIZED RAIL FACES	2 (ONE EACH DIRECTION)	4 (TWO EACH DIRECTION)	3 IF FACING TRAFFIC IN ONE DIRECTION 6 IF FACING TRAFFIC IN TWO DIRECTIONS
TYPE OF FRAME	LIGHT	LIGHT "X" FRAME	POST OR SHD

- * 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 FACINGS TRAFFIC SHALL HAVE A MINIMUM OF 270 IN OF REFLECTIVE AREA.



TYPE III



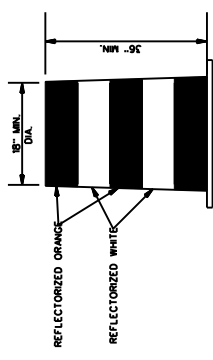
TYPE II



TYPE I

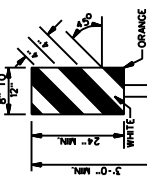
STANDARD BARRICADES

- A TYPE I BARRICADE CONSISTS OF ONE (1) HORIZONTAL RAIL SUPPORTED BY A DEMOUNTABLE POST OR UPRIGHT. BARRICADES NORMALLY WOULD BE USED ON CONVENTIONAL ROADS OR URBAN STREETS AND ARTERIALS.
- A TYPE II BARRICADE CONSISTS OF TWO (2) HORIZONTAL RAILS ON A LIGHT "X" FRAME. TYPE II BARRICADES ARE INTENDED FOR USE WHERE THE HAZARD IS LESS SEVERE THAN THAT OF TYPE I BARRICADES. TYPE II BARRICADES ARE USED FOR TEMPORARY DAYTIME USE, CONTINUOUS DELIMITING OF A RESTRICTED ROADWAY, OR FOR TEMPORARY DAYTIME USE.
- A TYPE III BARRICADE CONSISTS OF THREE (3) HORIZONTAL RAILS SUPPORTED BY FIXED POSTS, A ROAD SHD, A HEAVY DEMOUNTABLE FRAME OR A HEAVY WINGED "X" FRAME.
- TYPE I BARRICADES ARE INTENDED FOR USE ON CONSTRUCTION AND MAINTENANCE PROJECTS AS BARRICADES AND AT ROAD CLOSURES, WHERE THEY MUST REMAIN IN PLACE FOR EXTENDED PERIODS.
- THE MARKING FOR BARRICADE RAILS SHALL BE ORANGE AND WHITE (SLOPING DOWNWARD AT AN ANGLE OF 45° IN THE DIRECTION TRAFFIC IS TO PASS).
- DO NOT PLACE SANDBAGS OR OTHER DEVICES TO PROVIDE MASS ON THE BOTTOM RAIL THAT WILL BLOCK VIEW OR RAIL FACE.
- FOR ADDITIONAL INFORMATION OR DETAILS, SEE MUTCD, LATEST EDITION.



PLASTIC DRUM STRIPING DETAIL

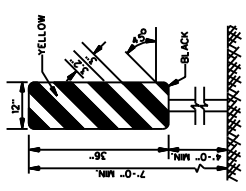
- PLASTIC DRUMS SHALL BE ON END AND USED AS AN EXPEDIT METHOD FOR TRAFFIC CHANNELIZATION. THE COLOR AND MARKING OF DRUMS SHALL BE CONSISTENT WITH MUTCD STANDARDS FOR BARRICADES. THE PREDOMINANT COLOR ON DRUMS SHALL BE ORANGE. STRIPES SHALL BE GREEN, HORIZONTAL, CIRCUMFERENTIAL STRIPES (2 ORANGE & 2 WHITE)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



VERTICAL PANEL

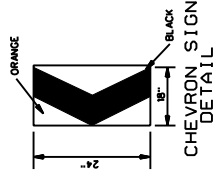
- VERTICAL PANELS CONSIST OF AT LEAST ONE PANEL 8" TO 12" IN WIDTH AND A MINIMUM OF 24" IN HEIGHT.
- THE DIAGONAL STRIPES SHALL SLOPE DOWNWARD IN THE DIRECTION THAT TRAFFIC IS TO PASS THE PANEL. THE MINIMUM OF 35" ABOVE THE ROADWAY ON A SINGLE LIGHTMASS POST.
- VERTICAL PANELS USED ON EXPRESSWAYS, FREEWAYS AND OTHER HIGH-SPEED ROADWAYS SHALL HAVE A MINIMUM OF 270 IN OF RETROREFLECTIVE AREA FACING TRAFFIC.
- FOR TWO-WAY TRAFFIC OPERATIONS, BACK-TO-BACK PANELS SHALL BE USED.

GENERAL NOTES:
1. MARKINGS ON ALL DEVICES SHOWN ON THIS SHEET SHALL BE HIGH INTENSITY REFLECTIVE SHEETING.
2. THE TRAFFIC CONTROL PLAN WILL LIST THE VARIOUS TRAFFIC CONTROL DEVICES REQUIRED FOR EACH PROJECT.



TYPE 3 OBJECT MARKER (OM-3R)

- TYPE 3 OBJECT MARKERS SHALL BE USED AT ALL EXPOSED BRIDGE ABUTMENTS AND AT OTHER LOCATIONS AS DEEMED NECESSARY BY THE ENGINEER.
- THE OM-3R IS SHOWN. THE OM-3R 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.
- THE INSIDE EDGE OF THE MARKER SHALL BE IN LINE WITH THE INNER EDGE OF THE OBSTRUCTION.



CHEVRON SIGN DETAIL

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

STATE MISS.	PROJECT NO.	
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MOBILE OPERATIONS ON MULTILANE ROAD

MOBILE OPERATIONS ON MULTILANE ROAD

NOTES:

- VEHICLES USED FOR THESE OPERATIONS SHOULD BE MADE HIGHLY VISIBLE WITH APPROPRIATE EQUIPMENT SUCH AS FLASHING LIGHTS, ROTATING BEACONS, FLAOS, SIGNS, OR ARROW PANELS.
- PROTECTION VEHICLE #1 SHOULD BE EQUIPPED WITH AN ARROW PANEL. AN APPROPRIATE LANE CLOSURE SIGN SHOULD BE PLACED ON PROTECTION VEHICLE #1 SO AS NOT TO OBSCURE THE ARROW PANEL.
- PROTECTION VEHICLE #2 SHOULD BE EQUIPPED WITH AN ARROW PANEL AND TRUCK-MOUNTED ATTENUATOR (TMA).
- PROTECTION VEHICLE #1 SHOULD TRAVEL AT A VARYING DISTANCE FROM THE WORK OPERATION SO AS TO PROVIDE ADEQUATE SIGHT DISTANCE FOR TRAFFIC APPROACHING FROM THE REAR.
- WHEN ADEQUATE SHOULDER WIDTH IS NOT AVAILABLE, PROTECTION VEHICLE #1 SHOULD BE ELIMINATED.
- ON HIGH-SPEED ROADWAYS, A THIRD PROTECTION VEHICLE SHOULD BE USED (I.E., VEHICLE #1 ON THE SHOULDER (IF PRACTICAL), VEHICLE #2 IN THE CLOSED LANE, AND VEHICLE #3 IN THE CLOSED LANE).
- ARROW PANELS SHALL BE AS A MINIMUM TYPE B 60" X 30" IN ACCORDANCE WITH THE CRITERIA PRESENTED IN THE MUTCD.
- WORK SHOULD NORMALLY BE DONE DURING OFF-PEAK HOURS.
- 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:

- WHERE PRACTICAL AND WHEN NEEDED, THE WORK AND PROTECTION VEHICLES SHOULD BE MADE HIGHLY VISIBLE WITH APPROPRIATE EQUIPMENT SUCH AS FLASHING LIGHTS, ROTATING BEACONS, FLAOS, SIGNS, OR ARROW PANELS. THIS EQUIPMENT SHOULD NOT BE DONE FREQUENTLY, AS AN ALTERNATIVE A "DO NOT PASS" SIGN MAY BE PLACED ON THE REAR OF THE VEHICLE BLOCKING THE LANE.
- THE DISTANCE BETWEEN THE WORK AND PROTECTION VEHICLES MAY VARY ACCORDING TO TERRAIN, PAINT DRYING TIME, AND OTHER FACTORS. PROTECTION VEHICLES ARE USED TO WARN TRAFFIC OF THE OPERATION AHEAD. WHENEVER ADEQUATE STOPPING SIGHT DISTANCE EXISTS TO THE WORK, PROTECTION VEHICLES SHOULD BE ELIMINATED. THE PROTECTION VEHICLE SHOULD SLOW DOWN IN ADVANCE OF VERTICAL OR HORIZONTAL CURVES THAT RESTRICT SIGHT DISTANCE.
- ADDITIONAL PROTECTION VEHICLES TO WARN AND REDUCE THE SPEED OF ONCOMING WORK OPERATION MAY BE USED. POLICE PATROL CARS MAY BE USED FOR THIS PURPOSE.
- A TRUCK-MOUNTED ATTENUATOR (TMA) SHOULD BE USED ON THE PROTECTION VEHICLE AND MAY BE USED ON THE WORK VEHICLE.
- THE WORK VEHICLE SHALL BE EQUIPPED WITH BEACONS, AND THE PROTECTION VEHICLE SHALL BE EQUIPPED WITH BEACONS AND FLASHING LIGHTS. PROTECTION AND WORK VEHICLES SHOULD DISPLAY FLASHING OR ROTATING BEACONS BOTH FORWARD AND TO THE REAR.
- VEHICLE CONTROL SIGNS SHALL BE MOUNTED WITH THE BOTTOM OF THE SIGN LOCATED AT A MINIMUM HEIGHT OF 48" ABOVE THE PAVEMENT. SIGN LEGENDS SHALL BE COVERED OR TURNED FROM VIEW WHEN WORK IS NOT IN PROGRESS.
- 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.	
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MOBILE OPERATIONS ON TWO-LANE ROAD

MOBILE OPERATIONS ON TWO-LANE ROAD

OPTIONAL SIGNS FOR SHORT DURATION OPERATION

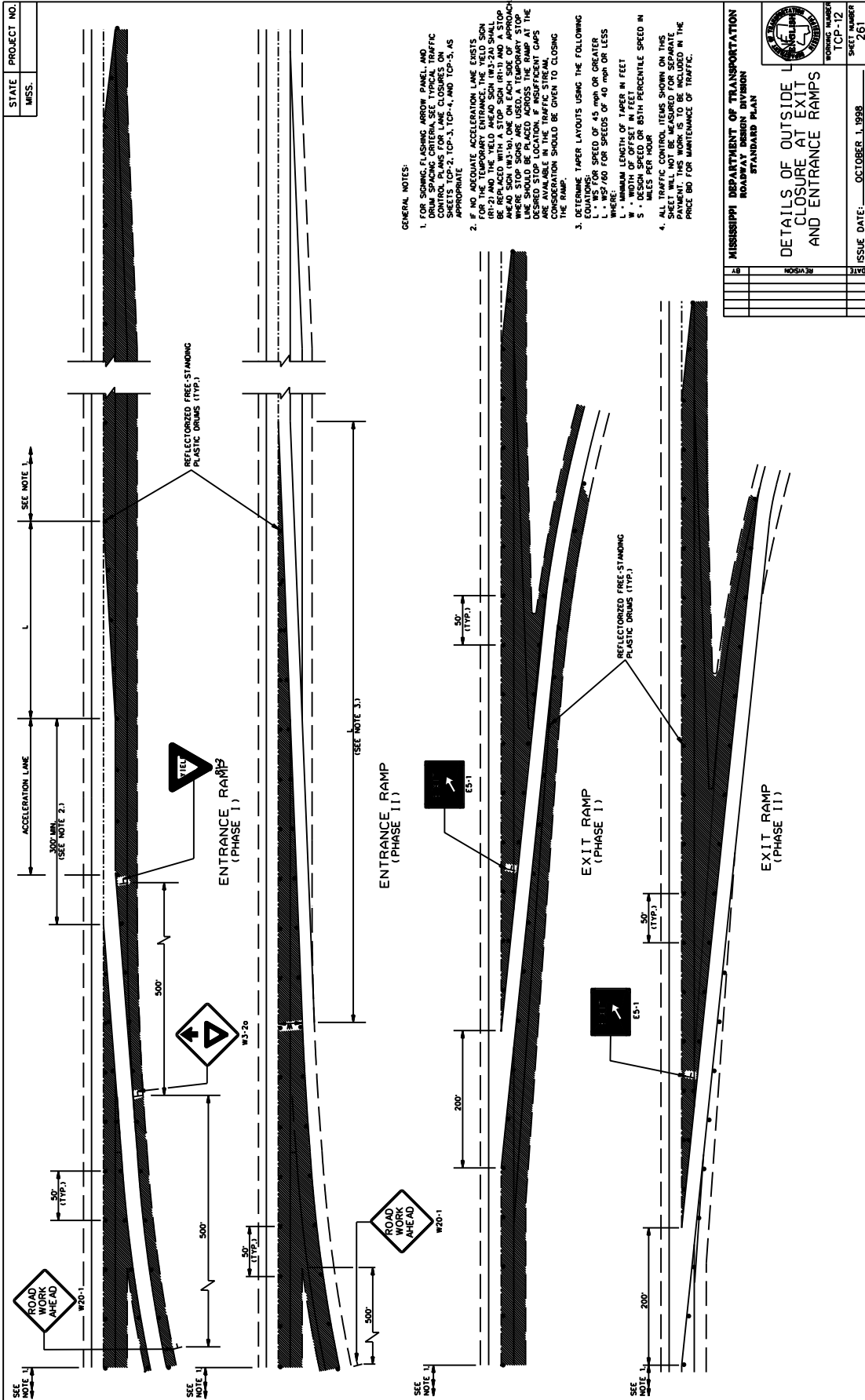
NOTES:

- WHERE PRACTICAL AND WHEN NEEDED, THE WORK AND PROTECTION VEHICLES SHOULD BE MADE HIGHLY VISIBLE WITH APPROPRIATE EQUIPMENT SUCH AS FLASHING LIGHTS, ROTATING BEACONS, FLAOS, SIGNS, OR ARROW PANELS. THIS EQUIPMENT SHOULD NOT BE DONE FREQUENTLY, AS AN ALTERNATIVE A "DO NOT PASS" SIGN MAY BE PLACED ON THE REAR OF THE VEHICLE BLOCKING THE LANE.
- THE DISTANCE BETWEEN THE WORK AND PROTECTION VEHICLES MAY VARY ACCORDING TO TERRAIN, PAINT DRYING TIME, AND OTHER FACTORS. PROTECTION VEHICLES ARE USED TO WARN TRAFFIC OF THE OPERATION AHEAD. WHENEVER ADEQUATE STOPPING SIGHT DISTANCE EXISTS TO THE WORK, PROTECTION VEHICLES SHOULD BE ELIMINATED. THE PROTECTION VEHICLE SHOULD SLOW DOWN IN ADVANCE OF VERTICAL OR HORIZONTAL CURVES THAT RESTRICT SIGHT DISTANCE.
- ADDITIONAL PROTECTION VEHICLES TO WARN AND REDUCE THE SPEED OF ONCOMING WORK OPERATION MAY BE USED. POLICE PATROL CARS MAY BE USED FOR THIS PURPOSE.
- A TRUCK-MOUNTED ATTENUATOR (TMA) SHOULD BE USED ON THE PROTECTION VEHICLE AND MAY BE USED ON THE WORK VEHICLE.
- THE WORK VEHICLE SHALL BE EQUIPPED WITH BEACONS, AND THE PROTECTION VEHICLE SHALL BE EQUIPPED WITH BEACONS AND FLASHING LIGHTS. PROTECTION AND WORK VEHICLES SHOULD DISPLAY FLASHING OR ROTATING BEACONS BOTH FORWARD AND TO THE REAR.
- VEHICLE CONTROL SIGNS SHALL BE MOUNTED WITH THE BOTTOM OF THE SIGN LOCATED AT A MINIMUM HEIGHT OF 48" ABOVE THE PAVEMENT. SIGN LEGENDS SHALL BE COVERED OR TURNED FROM VIEW WHEN WORK IS NOT IN PROGRESS.
- 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.	
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DATE	BY	
10-1-99	S.M.H.	
REVISION	REVISION	
REVISED	CAPTION	

MISSISSIPPI DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN DIVISION STANDARD PLAN	
TRAFFIC CONTROL PLAN MOBILE OPERATIONS MULTILANE ROADS AND TWO-LANE ROADS	
	WORKING NUMBER T-CP-11 SHEET NUMBER 260
	ISSUE DATE: OCTOBER 1, 1998

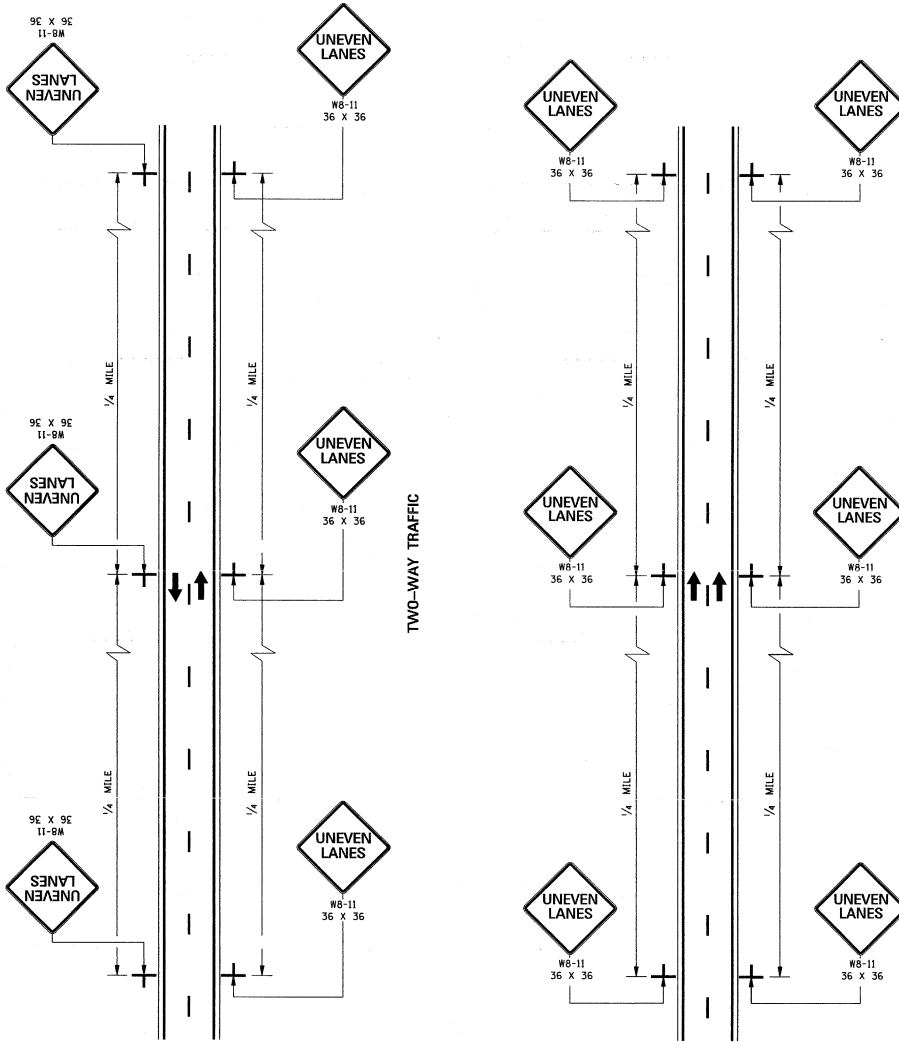


GENERAL NOTES:

- FOR SIGNING, FLASHING ARROW PANEL AND TRAFFIC CONTROL PLANS FOR LANE CLOSURES ON SHEETS TCP-2, TCP-3, TCP-4, AND TCP-5, AS APPROPRIATE.
- IF NO ADEQUATE ACCELERATION LANE EXISTS BEYOND THE STOP SIGN (R11) AND A STOP SIGN (W3-10), ONE ON EACH SIDE OF APPROACH TO THE STOP SIGN, THE STOP SIGN AND STOP LINE SHOULD BE PLACED ACROSS THE RAMP AT THE DESIRED STOP LOCATION. IF INSUFFICIENT GAPS EXIST, TRAFFIC SIGNALS SHOULD BE CONSIDERED. TRAFFIC SIGNAL CONSIDERATION SHOULD BE GIVEN TO CLOSING THE RAMP.
- DETERMINE TAPER LAYOUTS USING THE FOLLOWING EQUATIONS: $S = 4.5 \text{ mph OR GREATER}$
 $L = WS^2/100$ FOR SPEEDS OF 40 mph OR LESS
 WHERE:
 L = MINIMUM LENGTH OF TAPER IN FEET
 W = DESIGN SPEED OR 85TH PERCENTILE SPEED IN MILES PER HOUR
 S = DESIGN SPEED OR 85TH PERCENTILE SPEED IN MILES PER HOUR
- ALL TRAFFIC CONTROL ITEMS SHOWN ON THIS DRAWING ARE TO BE USED FOR MAINTENANCE OF TRAFFIC. TRAFFIC CONTROL ITEMS TO BE USED IN THE PRICE BID FOR MAINTENANCE OF TRAFFIC.


STATE		PROJECT NO.
MISS.		
MISSISSIPPI DEPARTMENT OF TRANSPORTATION ROADWAY MAINTENANCE DIVISION STANDARD PLAN		
DETAILS OF OUTSIDE LANE CLOSURE AT EXIT AND ENTRANCE RAMP		
WORKING NUMBER	TCP-12	SHEET NUMBER
261		261
ISSUE DATE:	OCTOBER 1, 1998	

STATE	PROJECT NO.
MISS.	

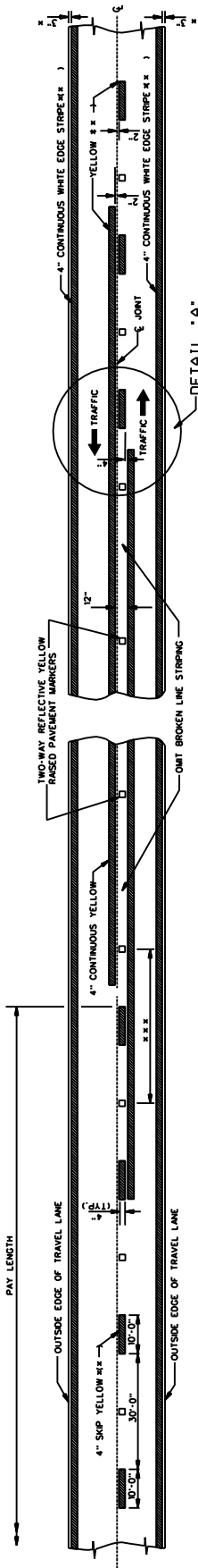


GENERAL NOTES:

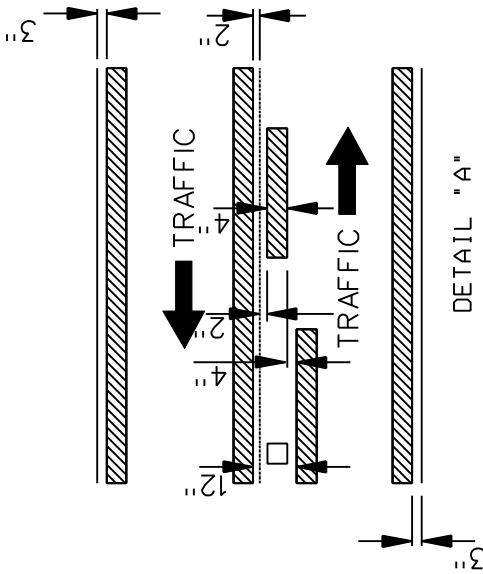
1. UNEVEN LANE LINE SPACING SHALL BE EQUAL TO 1/2' NO SIGNS REQUIRED.
2. IF SPACING IS GREATER THAN 1/2' AND LESS THAN OR EQUAL TO 2/4', PLACE SIGNS AS SHOWN ON THIS SHEET.
3. IF SPACING IS GREATER THAN 2/4', TRAFFIC SHOULD NOT BE ALLOWED TO CROSS UNEVEN LANE LINE.
4. ALL TRAFFIC CONTROL ITEMS SHOWN ON THIS SHEET SHALL BE PAID FOR UNDER MAINTENANCE OF TRAFFIC.
5. THE W8-11 SIGNS SHALL BE SPACED AT 1/4-MILE INTERVALS THROUGHOUT UNEVEN LANE LINE LIMITS.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN DIVISION STANDARD PLAN			WORKING NUMBER TCP-14	SHEET NUMBER 263
TRAFFIC CONTROL PLANS UNEVEN PAVEMENT DETAILS			ISSUE DATE: OCTOBER 1, 1998	
DATE	BY	REVISION		

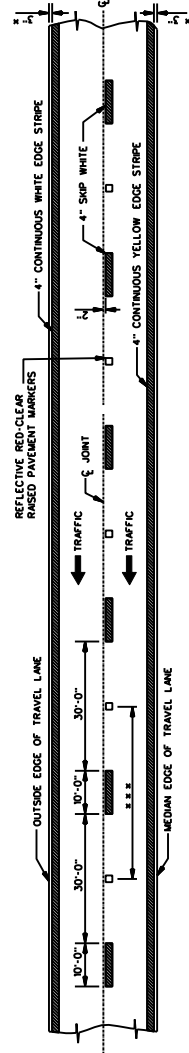
STATE	PROJECT NO.
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TWO-WAY TRAFFIC
(ASPHALT OR CONCRETE PAVEMENT)



DETAIL "A"



4-LANE WITH ONE-WAY TRAFFIC



GENERAL NOTES:

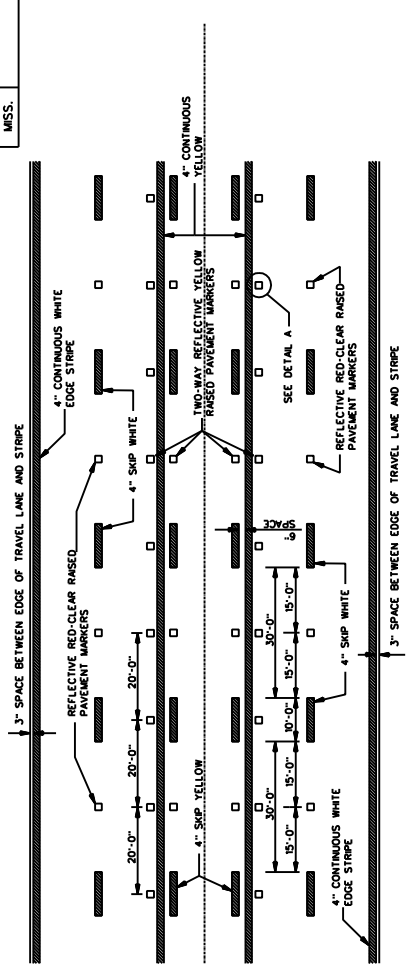
- * 1. 3" UNLESS SHOWN ELSEWHERE ON THE PLANS.
- ** 2. EDGE STRIPE SHALL BE SAME MATERIAL AS LANE-LINE STRIPE (PAINT OR TAPE AS INDICATED IN PAY ITEMS).
- *** 3. SPACING OF REFLECTIVE RAISED PAVEMENT MARKERS IS AS FOLLOWS:

TANGENT SECTIONS	URBAN AREA (U-L-N)	RURAL AREA (U-L-N)
LANE LINES	40'-0"	80'-0"
INTERCHANGE LIMITS	40'-0"	140'-0"

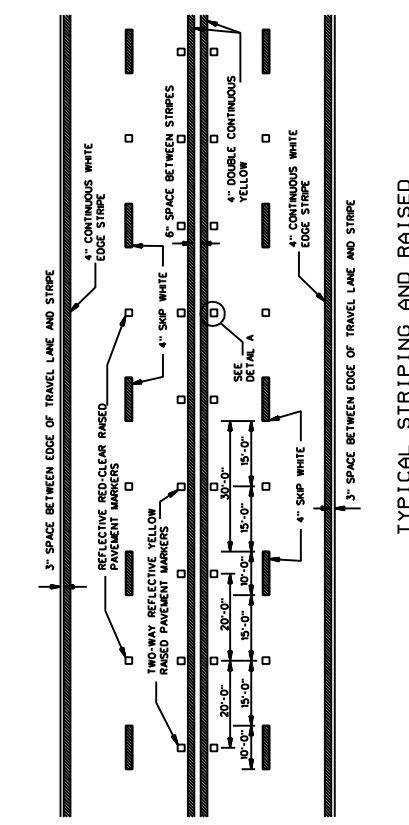
- 1. NOTE: ON THE MAIN FACILITY, REFLECTIVE RED-CLEAR RAISED PAVEMENT MARKERS SHALL BE USED THROUGH ALL INTERCHANGE AREAS BEGINNING 1000' IN ADVANCE (IN DIRECTION OF TRAFFIC) OF THE EXIT RAMP TAPER AND CONTINUING THROUGH THE INTERCHANGE TO THE END OF THE ENTRANCE RAMP TAPER.
- 2. PAVEMENT MARKERS SHALL BE HIGH PERFORMANCE REFLECTIVE MATERIALS AS SPECIFIED IN THE MOOT.
- 3. APPROVED SOURCES OF MATERIALS.
- 4. REFLECTIVE RAISED PAVEMENT MARKERS TO BE USED IF TEMPORARY MARKERS ARE TO REMAIN IN PLACE OVER 3 MONTHS.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN DIVISION STANDARD PLAN	
TEMPORARY STRIPING FOR TRAFFIC CONTROL 2-LANE AND 4-LANE DIVIDED HIGHWAYS	
WORKING NUMBER	TCP-15
SHEET NUMBER	264
ISSUE DATE:	DECEMBER 1, 1999

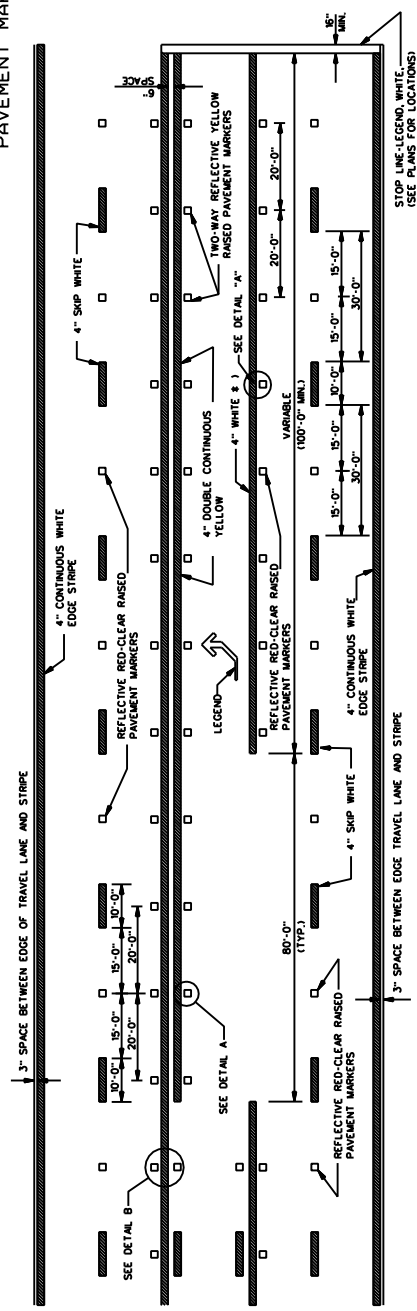
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TYPICAL STRIPING AND RAISED PAVEMENT MARKERS FOR 5-LANE SECTION



TYPICAL STRIPING AND RAISED PAVEMENT MARKERS FOR 4-LANE SECTION



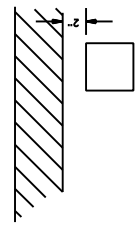
TYPICAL STRIPING AND RAISED PAVEMENT MARKERS AT LEFT TURN LANES

* NOTE: USE DETAIL STRIPING IF LENGTH $\leq 150'$ AT THIS LOCATION, OTHERWISE USE CONTINUOUS STRIPING.

TYPICAL TWO-WAY ARROW INSTALLATION

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.).

DETAIL A
LATERAL PLACEMENT OF PAVEMENT MARKERS

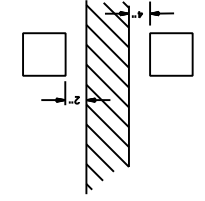


GENERAL NOTE:

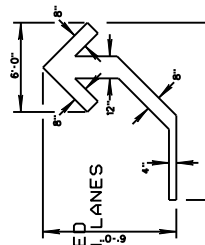
1. PAVEMENT MARKERS SHALL BE HIGH PERFORMANCE RAISED PAVEMENT MARKERS AS LISTED IN THE MOST APPROVED SOURCE OF MATERIALS.
2. REFLECTIVE RAISED PAVEMENT MARKERS TO BE USED IF TEMPORARY MARKERS ARE TO REMAIN IN PLACE OVER 3 MONTHS.
3. TEMPORARY TURN ARROW TO BE PAID FOR AS TEMPORARY TRAFFIC STRIPING LEGEND, ESTIMATED AT 10.9 SQ. FT. PER ARROW.

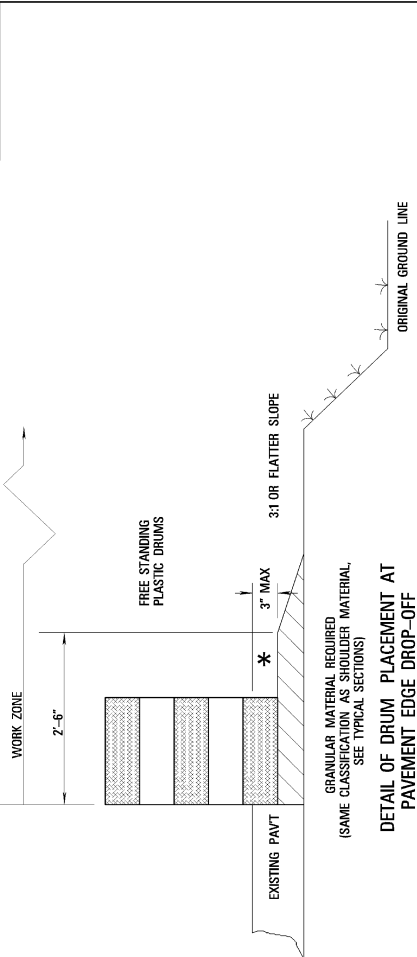
MISSISSIPPI DEPARTMENT OF TRANSPORTATION ROADWAY DESIGN DIVISION STANDARD PLAN	
TEMPORARY STRIPING FOR TRAFFIC CONTROL 4-LANE AND 5-LANE UNDIVIDED ROADWAYS	
WORKING NUMBER	TCP-16
SHEET NUMBER	265
ISSUE DATE:	DECEMBER 1, 1999

DETAIL B
LATERAL PLACEMENT OF PAVEMENT MARKERS



DETAIL OF TEMPORARY TURN ARROW





GRANULAR MATERIAL REQUIRED (SAME CLASSIFICATION AS SHOULDER MATERIAL, SEE TYPICAL SECTIONS)
DETAIL OF DRUM PLACEMENT AT PAVEMENT EDGE DROP-OFF

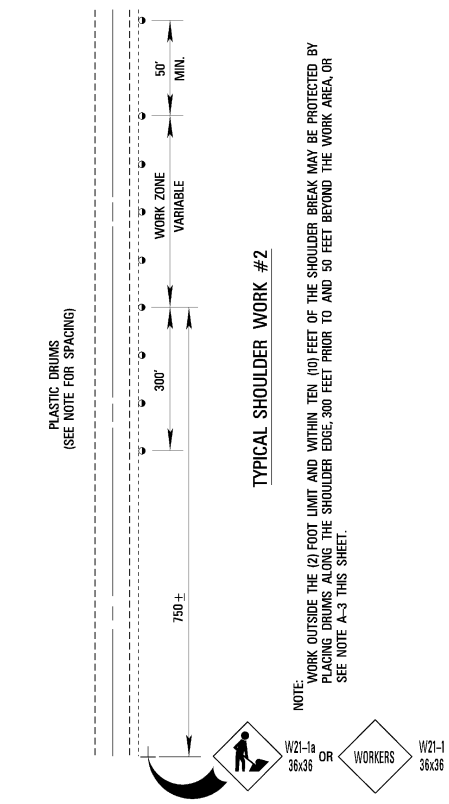
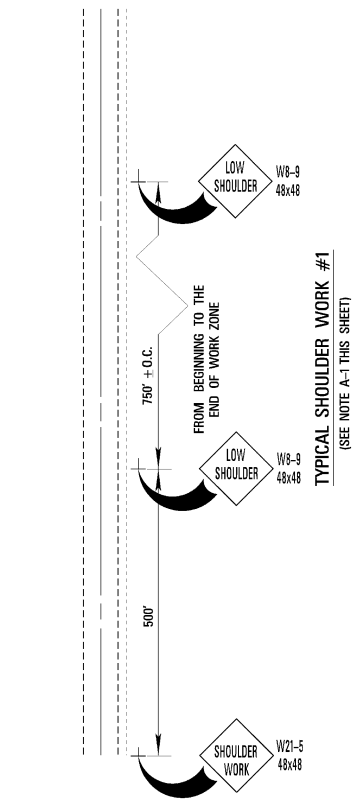
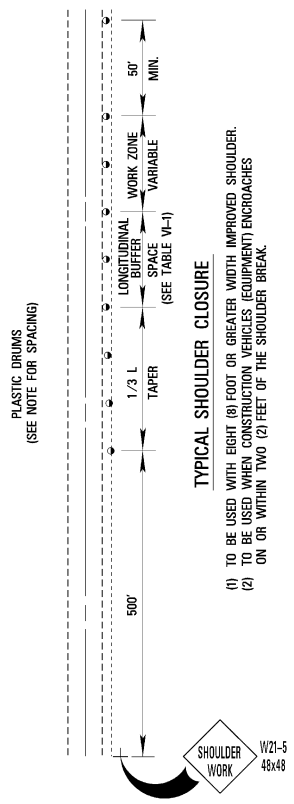
- NOTES**
- * A. PAVEMENT EDGE DROP-OFF
 1. IF LESS THAN TWO AND ONE QUARTER (2.25) INCHES-NO PROTECTION REQUIRED. PLACE A SHOULDER WORK SIGN (W21-5) 500 FEET IN ADVANCE OF WORK ZONE SHOULDER AND A LOW SHOULDER SIGN (W8-3) AT THE BEGINNING AND THROUGHOUT THE WORK ZONE @ (750 ± O.C.).
 2. TWO AND ONE 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. COMES 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 3:1 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. IF CONCRETE BARRIERS ARE USED, SPECIAL REFLECTIVE DEVICES OR STEADY BURN LIGHTS SHOULD BE USED FOR OVERNIGHT INSTALLATIONS.
 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 = $2 \times S$
 2. $APPROX = \frac{L}{S} \times W$
 WHERE 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 V-1 GUIDELINES FOR LENGTH OF LONGITUDINAL BUFFER SPACE

SPEED (MPH)	LENGTH (FEET)
20	35
25	45
30	55
35	65
40	75
45	85
50	95
55	105
60	115
65	125
70	135
75	145
80	155
85	165
90	175
95	185
100	195
110	215
120	235
130	255
140	275
150	295
160	315
170	335
180	355
190	375
200	395
210	415
220	435
230	455
240	475
250	495

* POSTED SPEED OR PEAK 85 PERCENTILE SPEED PRIOR TO WORK STARTING OR THE ANTICIPATED GROUNDING SPEED IN MPH



MISSISSIPPI DEPARTMENT OF TRANSPORTATION
TRAFFIC CONTROL DETAILS
DRUM PLACEMENT
AND
SHOULDER CLOSURE

PROJECT NO.: _____
 COUNTY: _____
 FILE NAME: _____
 PERSON: _____
 DATE: 12-28-93

WORKING TITLE: TCP-10
 SHEET NUMBER: _____

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904 - NOTICE TO BIDDERS NO. 64

CODE: (SP)

DATE: 3/20/2017

SUBJECT: Contract Time

PROJECT: MP-7000-74(188) / 306062301 – Walthall County

The calendar date for completion of work to be performed by the Contractor for this project shall be **September 1, 2017** which date or extended date as provided in Subsection 108.06 shall be the end of contract time. It is anticipated that the Notice of Award will be issued no later than **May 9, 2017** and the effective date of the Notice to Proceed / Beginning of Contract Time will be **June 8, 2017**.

Should the Contractor request a Notice to Proceed earlier than **June 8, 2017** and it is agreeable with the Department for an early Notice to Proceed, the requested date will become the new Notice to Proceed date.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SECTION 904-NOTICE TO BIDDERS NO. 65

CODE: (SP)

DATE: 02/14/2017

SUBJECT: Scope of Work

PROJECT: MP-7000-74(188) / 306062301 - Walthall 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.

The work to be accomplished using the pay items and corresponding specifications set forth in the contract is to place a single bituminous surface treatment scrub seal as described below on approximately 26 miles of roadway in Walthall County of District Seven, as described below:

The routes included are:

1. Approximately 8.2 miles of SR 27 in Walthall County beginning at the Louisiana State Line and proceed North for 8.2 miles to the JCT of High School Drive near Tylertown.
2. Approximately 6.4 miles of SR 48 in Walthall County beginning at the Pike County Line and proceed East 6.4 miles to the JCT SR 198 in Tylertown.
3. Approximately 8.2 miles of SR 27 in Walthall County beginning at the JCT US 98 in Tylertown and proceed North 8.2 miles to Kelly Ginn Road.
4. Approximately 2.5 miles of SR 583 in Walthall County beginning at the JCT of US 98 and proceed North 2.5 miles to Sims Thornhill Road.

In order to expedite the safe movement of traffic and to protect each phase of the work as it is performed, a firm sequence of operations is essential. The following appropriate items of work shall be begun and **continually prosecuted** in the order listed:

1. The existing asphalt patches will require a fog seal (CQS-1H) at a rate of 0.11 gallons per square yard prior to placing scrub seal. Temporary striping of these areas will be required.
2. The bituminous surface treatment scrub seal shall be 24 feet in width on roads with rumble strips and the width of the roadway on roads without rumble strips. Any patching required shall be performed by MDOT prior to the contract being let. The seal material and seal aggregate shall not be placed on the existing rumble strips. Seal Aggregate Gradation Size No. 89 will be required and shall be included in payment for 907-414-A001, Scrub Seal.
3. Brooming or other approved method of cleaning the existing asphalt pavement is required prior to placing seal material (asphalt emulsion).
4. The existing raised pavement markers and thermoplastic striping shall be removed before the seal is placed according to 907-414.03.1. Any damage occurring to the existing

pavement during the removal of these items shall be repaired before the seal is placed. There will be no direct payment for this work, but the cost of this work will be absorbed in other bid items.

5. The Contractor shall place all signs called for in Special Provision 907-414.
6. Payment for the bituminous surface treatment scrub seal will be made under Pay Item No. 907-414-A, Scrub Seal per square yard. The final course will be paid based on twelve (12) foot width or the roadway width and will be field measured to verify the width.
7. Existing bridges that have been overlaid with asphalt will be sealed. If necessary, bridge approaches will be repaired by MDOT forces and will not be the responsibility of the Contractor, unless damaged by the Contractor's operations. Coordination with MDOT Maintenance Forces may be required.
8. The Contractor shall provide all signs and traffic control devices necessary to safely maintain traffic around or through the work zone areas, with a **MAXIMUM** permissible construction zone length equal to a single asphalt emulsion distributor truck, but not to exceed five thousand (5,000) feet of a single lane width. The Project Engineer may reduce the length of the construction zone and require the use of a "pilot vehicle". Signing for lane closures, in accordance with the Standard Drawings, shall be the responsibility of the Contractor.
9. Advanced construction signs, NO PASSING, DO NOT PASS, AND PASS WITH CARE signs will be installed and maintained by the Contractor.
10. Final brooming of excess seal aggregate material shall be per Special Provision 907-414.
11. Before placing seal, the temperature shall meet the minimum requirements of Special Provision 907-414 and rising, and no threat of rain in the forecast for that day and night as directed by the Project Engineer.
12. Placement of Temporary Traffic Stripe will be according to section 618.03.3-Safe Movement of Traffic provided by Contractor. This temporary stripe shall not be placed until the roadway has been swept. Chip Seal markers shall be provided and placed on each roadway by the Contractor at a spacing of 40 feet along the centerline in curves and 80 feet along the centerline in tangents.
13. Place permanent pavement markings, (painted traffic stripe and reflective high performance raised pavement markers) as required.
14. County roads and aprons will not be sealed, but the county roads shall be swept, cleaned, and permanent pavement markings placed on this project.
15. The length of construction zone established by the Engineer will not be the basis for any claim against MDOT.
16. A fog seal (CQS-1H) shall be placed on all routes at a rate of 0.11 gal/sy, or as directed by the Project Engineer. The fog seal shall be placed within 72 hours after the completion of scrub seal placement on each route.

Other incidental work that is necessary to complete the work will not be measured for separate payment and the cost shall be included in the unit prices of other bid items.

DUE TO PUBLIC SAFETY CONCERNS:

1. The work zone may not be established prior to 8:30 AM, nor can any non-emergency work be accomplished in the travel way prior to 8:30 AM. Work zone quitting time is defined in the Standard Specification.
2. The Contractor shall coordinate with school officials to make certain the operations do not interfere with the school bus schedules and car pickup schedules.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-414-1

CODE: (SP)

DATE: 01/17/2017

SUBJECT: Polymer Modified Asphalt Rejuvenating Scrub Seal

Section 907-414, Scrub Seal, is hereby added to and made a part of the 2017 Edition of the Mississippi Standard Specifications for Road and Bridge Construction as follows.

SECTION 907-414 -- POLYMER MODIFIED ASPHALT REJUVENATING SCRUB SEAL

907-414.01--Description. This work shall consist of, but not be limited to, furnishing all labor, materials, equipment and transportation for the application of a polymer modified asphalt rejuvenating scrub seal. All ingredients shall be properly proportioned, mixed, and spread on the paved surface in accordance with this Specification and as directed by the Engineer.

907-414.02--Materials.

907-414.02.1--Aggregate. Unless otherwise noted, the aggregate material shall be one of the seal aggregate cover materials listed in and meeting the requirements of Subsection 703.14 of the Standard Specifications.

907-414.02.2--Asphalt Emulsion for Scrub Seal. The asphalt emulsion for scrub seal shall meet the requirements of the following table and shall be composed of a polymer modifier, a petroleum based rejuvenating agent, and asphalt.

Test on Emulsion	Method	Specification	
		(min)	(max)
Viscosity @77 (SFS)	AASHTO T 59	50	350
Residue, w% ⁽¹⁾	AASHTO T 59	60	-
Storage Stability, 24 h, %	AASHTO T 59	-	1.0
Sieve, w%	AASHTO T 59		0.1
Oil distillate, w%	AASHTO T 59		0.5
Test on Residue⁽¹⁾			
Viscosity @ 140°F, P	AASHTO T 202	-	3000
Penetration @ 4°C (39.2°F), 200 g, 60 sec	AASHTO T 59	30	-
Test on Polymer Modifier			
Swelling in rejuvenating agent, %; 48 hours exposure @ 104°F	ASTM D 471 ⁽²⁾ Modified	-	40% intact film
Test on Rejuvenating Agent			
Flash point, COC, °F	AASHTO T 48	380	-
Viscosity @ 140°F, CST	AASHTO T 201	50	175
Saturate, % by weight	ASTM D 2007	-	30
Asphaltenes	ASTM D 2007	-	1.0
Test on Residue			
Weight Change, %			6.5
Viscosity Ratio			3

- (1) Exception to AASHTO T59: Bring the temperature on the lower thermometer slowly to 350°F plus or minus 10°F. Maintain at this temperature for 20 minutes. Complete total distillation in 60 plus or minus 5 minutes from first application of heat.
- (2) Polymer Modifier Testing: Suitable substrate for film formation shall be polyethylene boards, silicone rubber sheeting, glass, or any substrate which produces a cured film of uniform cross-section. Polymer film shall be prepared from latex as follows:

Resistance to Swelling: Polymer films shall be formed by using a 50 mil drawdown bar and drawing down 50 mils of the latex on polyethylene boards. Films shall be cured for 14 days at 75°F and 50% humidity. Samples for resistance to swelling in rejuvenating agent shall be 1” by 2” rectangles cut from the cured film. Cut at least 3 specimens for each sample to be tested for swelling. Fill 3- 8 oz ointment tins with at least a ½” deep of rejuvenating agent. Swelling samples shall be weighed and then placed in the ointment tins on top of the rejuvenating agent. Then, add at least another ½” deep of rejuvenating agent over each of the latex samples. The ointment tins shall be covered and placed in an oven at 104°F for the specified 48 hours +/- 15 minutes. The ointment tins are allowed to cool to 75°F and then the latex films are removed from the tins. Unabsorbed rejuvenating agent is removed from the intact latex film by scraping with a rubber policeman and blotting with paper towels. If the latex film does not remain intact during removal from the tins or while removing the unabsorbed rejuvenating agent the sample shall be rejected. After the rejuvenating agent is removed from the samples they are then weighed. Percent swelling is reported as weight increase of the polymer film; report mass increase as a percent by weight of the original latex film mass upon exposure of films to the rejuvenating agent.

When a fog seal is required, the asphalt emulsion shall meet the requirements of Subsection 702.07.

907-414.02.2.1--Certification and Acceptance. The Emulsion supplier shall submit a certification that the polymer modified rejuvenating emulsion meets the requirements of the specification. The certification shall be submitted to the Engineer prior to starting the work. The Engineer will sample the polymer modified rejuvenating emulsion according to Department procedures. Final acceptance of the emulsion for scrub seal will be based on the Manufacturer's Certification and testing conducted by the Department.

907-414.03--Construction Requirements. The attached sign drawings shall be used during scrub seal operations. Prior to any sealing operation, the rectangular "Loose Rock" signs shall be installed and remain in place until all sealing operations are complete. Prior to any daily sealing operation, the portable "Loose Rock" signs shall be installed in accordance with the attached drawings. Portable signs shall be installed and remain in place on a daily basis in the active sealing area. Payment for signs shown on the sign detail drawings shall be made under pay item no. 618-A, Maintenance of Traffic.

907-414.03.1--Preparation. The work shall be done in the following order: Prepare the pavement surface; apply the asphalt emulsion for scrub seal and scrub the applied emulsion with a scrub broom as specified herein; apply the aggregate, roll the aggregate, broom the aggregate with a secondary broom when specified; and sweep up and dispose of excess aggregate. Excess aggregate shall be removed from the project unless otherwise approved by the Engineer.

Prior to the scrub seal operation, the Contractor shall remove any and all vegetation within the limits of the scrub seal installation. The use of herbicides will be allowed at the discretion of the Engineer.

If used, the herbicide shall be applied at least 10 days prior to the scrub seal operation, or as directed by the manufacturer of the approved herbicide. The application of the herbicide shall be performed in accordance with all applicable regulations. Any and all fines or clean-up costs for unlawful misuse or discarding of herbicides shall be the sole responsibility of the Contractor. Mixtures and spread rates for the herbicides shall be determined by the manufacturer's specifications. Wash down of equipment or discarding of herbicides shall not enter catch basins or positive drainage facilities.

Prior to the scrub seal operation, the Contractor shall remove all existing thermoplastic striping, thermoplastic legends and raised pavement markers within the scrub seal limits. Removal shall be performed to the satisfaction of the Engineer.

Prior to the scrub seal operation, all drain inlet covers, monument covers, and all other utility covers shall be protected from the Contractor's scrub seal operations by applying a sheet of plastic over the exposed facilities, or other methods approved by the Engineer. All traces of plastic, residual emulsion and aggregate shall be removed from covered objects after the application of the scrub seal and/or prior to final inspection of the project.

Immediately prior to the scrub sealing operations, the Contractor shall sweep the entire pavement surface.

907-414.03.2--Application. The scrub seal shall be applied from edge of pavement to edge of pavement. The edges of the scrub seal application shall be maintained in a neat and uniform line. Scrub seal shall not be applied on concrete gutters or pads unless directed by the Engineer.

The application of the asphalt emulsion for scrub seal shall be applied only when the ambient and pavement temperatures are above 70°F.

The asphalt emulsion for scrub seal shall be applied with a distributor truck at the following target rates. The actual emulsion application rate shall be determined from the surface demands and aggregate used. Any adjustments of the application rate shall be approved by the Engineer, and manufacturer’s representative if necessary.

The optimum application rate of bituminous material is dependent on the chosen seal aggregate gradation as well as the condition of the pavement in which the bituminous surface treatment is to be applied. The application rate of the bituminous material may be adjusted by the Engineer based on field conditions at the time of construction. Following are target application rates for bituminous material.

Seal Aggregate Gradation	Bituminous Material	Target Application Rate (gal/yd²)	Tolerance
Size No. 7	Emulsified Asphalt	0.33	+0.03
Size No. 8 or 89	Emulsified Asphalt	0.30	+0.03

Note: Emulsified Asphalt shall not be diluted. A sample of emulsified asphalt should be obtained from the Contractor’s distributor on the first day of production and thereafter at a frequency not to exceed 1 sample per 50,000 gallons. Because the time between sampling of the emulsified asphalt and the testing of the material can affect the test results, samples should be sent to the MDOT Central Lab for testing as soon as possible.

The asphalt emulsion for scrub seal temperature when applied shall be a minimum of 140° to 180°F. For smaller areas, the emulsion may be applied with a wand. The emulsion shall be immediately broomed to fill cracks and voids. The emulsion scrub broom shall be as described below.

Immediately following the application of the emulsion to the road surface, the material shall be scrubbed with a scrub broom for the purpose of forcing the emulsion into the existing surface and distributing the emulsion evenly over variable road surface contours.

The application of the asphalt emulsion for scrub seal and scrub broom operation shall cease 40 feet prior to the end of the application. The remaining asphalt emulsion for scrub seal shall be dragged out by the scrub broom, and the remaining emulsified material required to complete the pass shall be applied only by the distributor truck, at the specified rate.

Immediately following the scrubbing of emulsion, aggregate shall be applied at the following application rates.

Size 7 Slag, Stone, Gravel or Expanded Clay	= 0.30 ±0.02 ft ³ / yd ²
Size 8 Expanded Clay	= 0.25 ±0.02 ft ³ / yd ²
Size 89 Slag, Stone, or Gravel	= 0.25 ±0.02 ft ³ / yd ²

The actual aggregate application rate shall be as required by the surface demands and the emulsion used. The rate shall be adjusted, within the specified limit, up or down so that no “bleed through” occurs during rolling.

During the first day of production and at least once a week thereafter, the application rate of the aggregate shall be verified by the Department to assure that the appropriate application rate of the aggregate is applied. The rate can be verified by placing a tarp of at least 1.0 yd² area on the roadway surface. After allowing the aggregate spreader to pass over the tarp, the aggregate on the tarp should be collected and weighed to determine the weight of aggregate. The measured weight should then be compared to the target weight calculated using the following formula.

$$W = 0.85(G_{sb})(U_w)(R)(A)(e)$$

Where:

- W = target weight of aggregate in lbs.
- G_{sb} = bulk specific gravity of aggregate
- U_w = Unit weight of water at 70°F = 62.3 lbs./ft³
- R = target application rate in ft³/yd²
- A = area of tarp in yd²
- e = air voids in loose aggregate = 0.4

G_{sb} for gravel = 2.650

G_{sb} for limestone = 2.700

Note: Bulk specific gravities of expanded clay and steel slag should be obtained from the seal aggregate supplier.

Upon determining the target weight, it should be compared to the actual measured weight. If the difference in the target weight and the actual measured weight is over 2.5 pounds, the aggregate distributor should be adjusted such that the spread rate is within the above tolerance. The above procedure shall be repeated until the spread rate is within the allowable tolerance.

If at any point during production, excessive aggregate is noted, the aggregate application rate should be verified and the spread rate adjusted. The intent is to minimize the amount of excess aggregate. Excess aggregate removed from the roadway surface after brooming shall be removed from the job site and should not be reused in the aggregate operation.

The dry aggregate shall be spread uniformly to cover the bituminous material with the quantity of mineral aggregate specified by the Engineer. All deficient areas shall be covered by additional material. All excess cover material shall be removed from the surface and stockpiled or used as directed.

A minimum of two self-propelled pneumatic-tired rollers shall be used for the required rolling of the aggregate. The pneumatic-tired rollers shall be in good working condition and actively rolling at all times during the scrub seal operation. The pneumatic-tired rollers shall be minimum 5-ton rollers. The pneumatic-tired rollers shall be operated in such a manner to prevent the dislodging of newly applied aggregate.

907-414.03.3--Stockpile Sites. Sites for stockpiles of materials shall be grubbed and cleaned prior to storing the aggregates, and the ground shall be firm, smooth, and well drained.

907-414.03.4--Equipment. The following equipment shall be used for the scrub-seal operations.

- A. **Asphalt Distributor.** The asphalt distributor for application of the emulsion shall have a full circulation spray bar that is adjustable to at least sixteen feet (16') wide in two (2) feet increments and capable of heating and circulating the emulsion simultaneously. It must have computerized rate control for adjusting and controlling the application from the cab within 0.01 gallons per square yard increments. The distributor shall also be equipped with a volume measuring device and a thermometer for measuring the emulsion temperature in the tank.
- B. **Scrub Broom.** A scrub broom as described herein shall be used to scrub the emulsion after application. The scrub broom frame shall be constructed of metal. The scrub broom shall be attached to and pulled by the distributor truck. The scrub broom must be equipped with a means of raising and lowering the scrub broom at desired points. It shall be towable in the elevated position to the next area of construction. The weight of the broom assembly shall be such that it does not squeegee the emulsion off the roadway surface.

The main body of the scrub broom shall have a frame size as shown in the drawing at the end of this special provision. The nearest and furthest members, paralleling the back of the distributor truck, and diagonal members shall be equipped with street brooms. The leading member and the trailing member shall have broom heads angled at 10 to 15 degrees off the centerline of the supporting member. The diagonal members shall have broom heads attached in line with the centerline of the supporting member. Each individual street broom attached to the scrub broom assembly shall be 3.5 inches wide x 6.5 inches high x 16 inches long and have stiff nylon bristles. Bristle height is to be maintained at a minimum of five inches (5"). The scrub broom shall be equipped with hinged wing assemblies attached to the main body not to exceed 4.5 feet per side, with diagonals and equipped with street brooms. The purpose of the maximum rigid frame width and the hinged wing extensions is not only for maximum width of 16 feet but to maintain the scrubbing process evenly as contours and cross-sections change across the existing road surface.

- C. **Aggregate Spreader.** A self-propelled aggregate spreader with front discharge that can evenly distribute aggregate.
- D. **Roller.** A minimum of two (2) pneumatic rollers weighing at least five (5) tons each.
- E. **Power Broom.** Two (2) mechanically powered kick-brooms or vacuum type brooms.

907-414.03.5--Opening to Traffic. Unless otherwise advised, the Contractor’s operations shall be schedule such that all lanes of traffic are open to the traveling public at the end of each day. Considering time needed for curing and preparation prior to opening traffic, the Contractor should not apply bituminous material two (2) hours before dusk, or longer, to allow sufficient time for bonding of the aggregates.

After the scrub seal has been rolled and the bituminous material has cured a minimum of one (1) hour, or longer if necessary to sufficiently hold the aggregate in place, the Contractor shall perform an initial brooming operation consisting of lightly sweeping excess aggregate material from the surface. After the initial brooming has been completed, public traffic will be allowed on the roadway.

Immediately the next morning, a final brooming shall be performed to remove any remaining excess aggregate material from the previous day’s seal operation.

If specified, a fog seal will be placed at a rate of 0.11 gallons per square yard, or as directed by the Project Engineer. The fog seal shall not be placed until after final brooming.

907-414.04--Method of Measurement. Scrub seal shall be measured by the square yard.

Accepted quantities for asphalt for fog seal will be measured by the gallon as prescribed in Subsection 109.01. Unless otherwise specified, distributor tank measurement will be used. The volume of material over five percent (5%) above the quantity ordered for each shot will be deducted from measured quantities, except that 15 percent will be allowed for irregular areas where hand spraying is necessary.

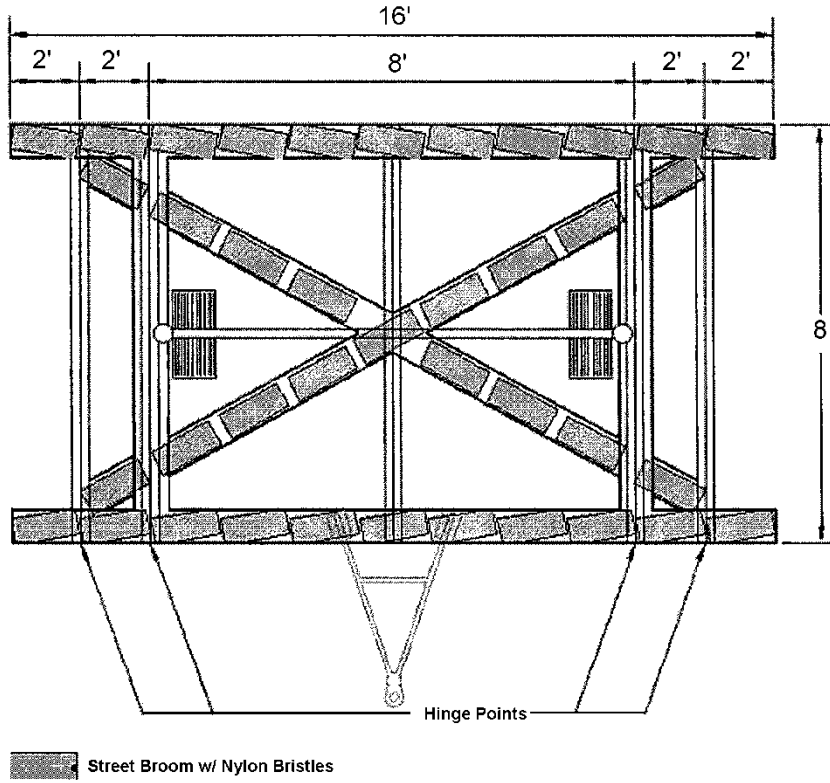
907-414.05--Basis of Payment. Scrub seal, measured as prescribed above, will be paid for at the contract bid price per square yard, which shall be full compensation for furnishing all labor, materials, equipment, temporary markers, vegetation removal, cleaning of the surface, pre-sweeping, post-sweeping, doing all the work involved in mixing, applying and protecting the polymer modified asphaltic rejuvenating scrub seal, and all incidentals necessary to complete the work.

Asphalt for fog seal will be paid for at the contract unit price per gallon, which shall be full compensation for furnishing all labor, materials, equipment, applying and protecting the fog seal, and all incidentals necessary to complete the work.

Payment will be made under:

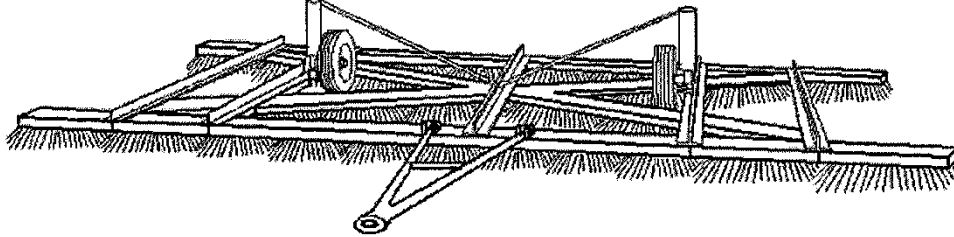
907-414-A: Scrub Seal - per square yard

907-414-B: Asphalt for Fog Seal - per gallon

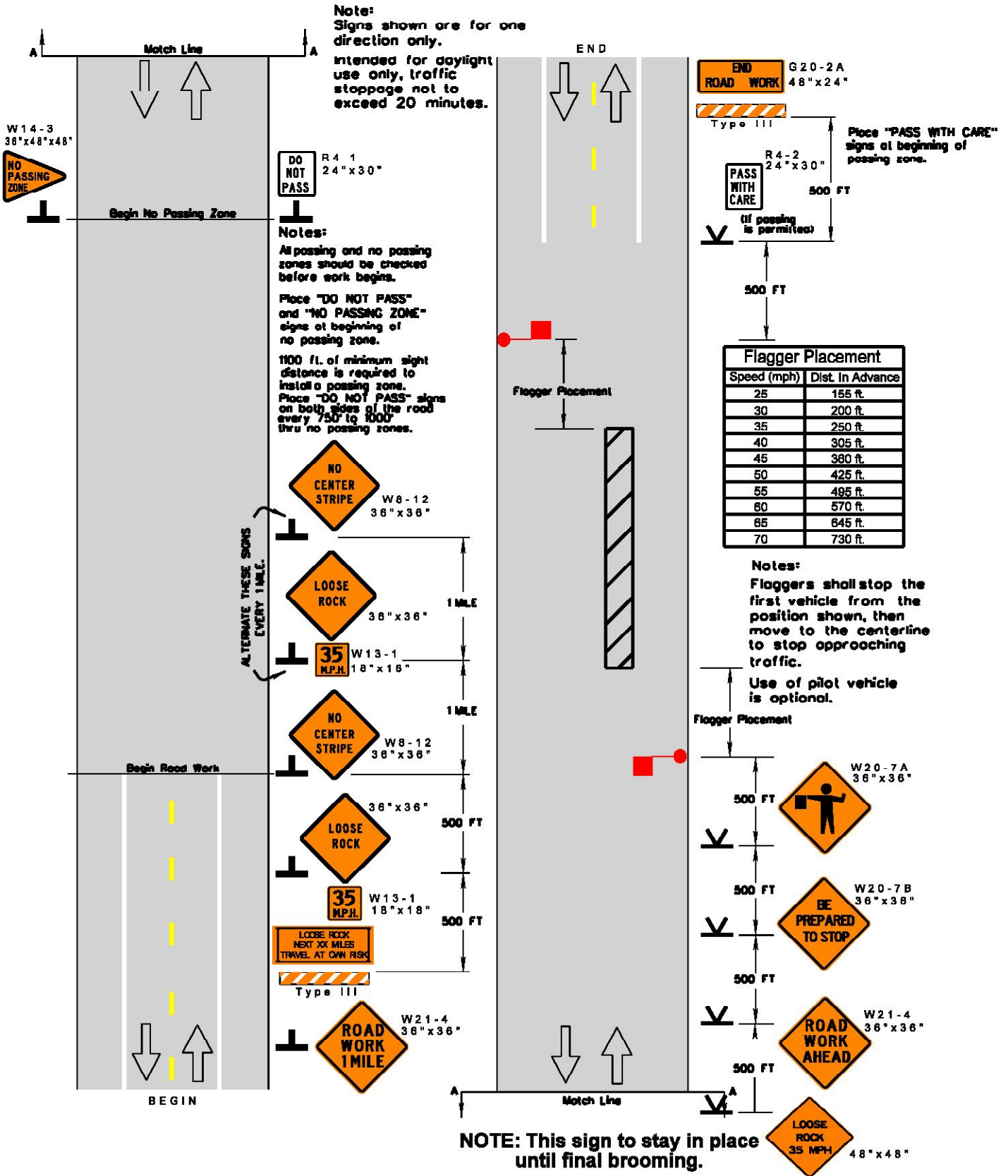


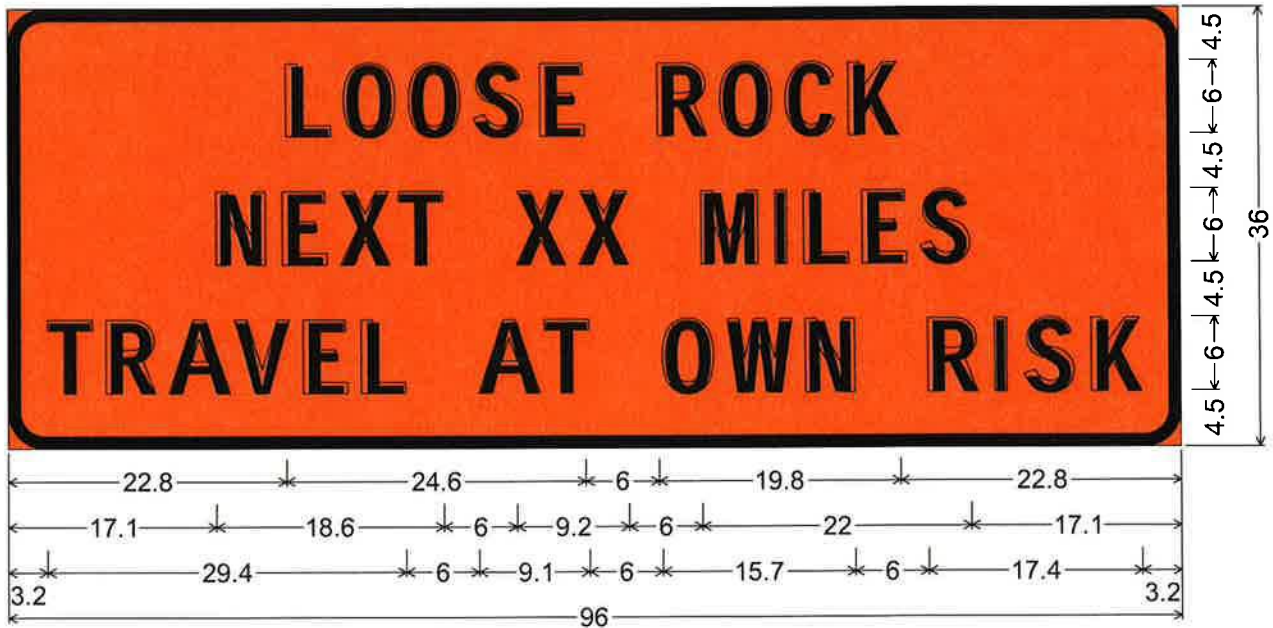
Lift For Wheels (Typical)

Note: Wheels are up and the broom is in the scrub position.



Scrub Broom



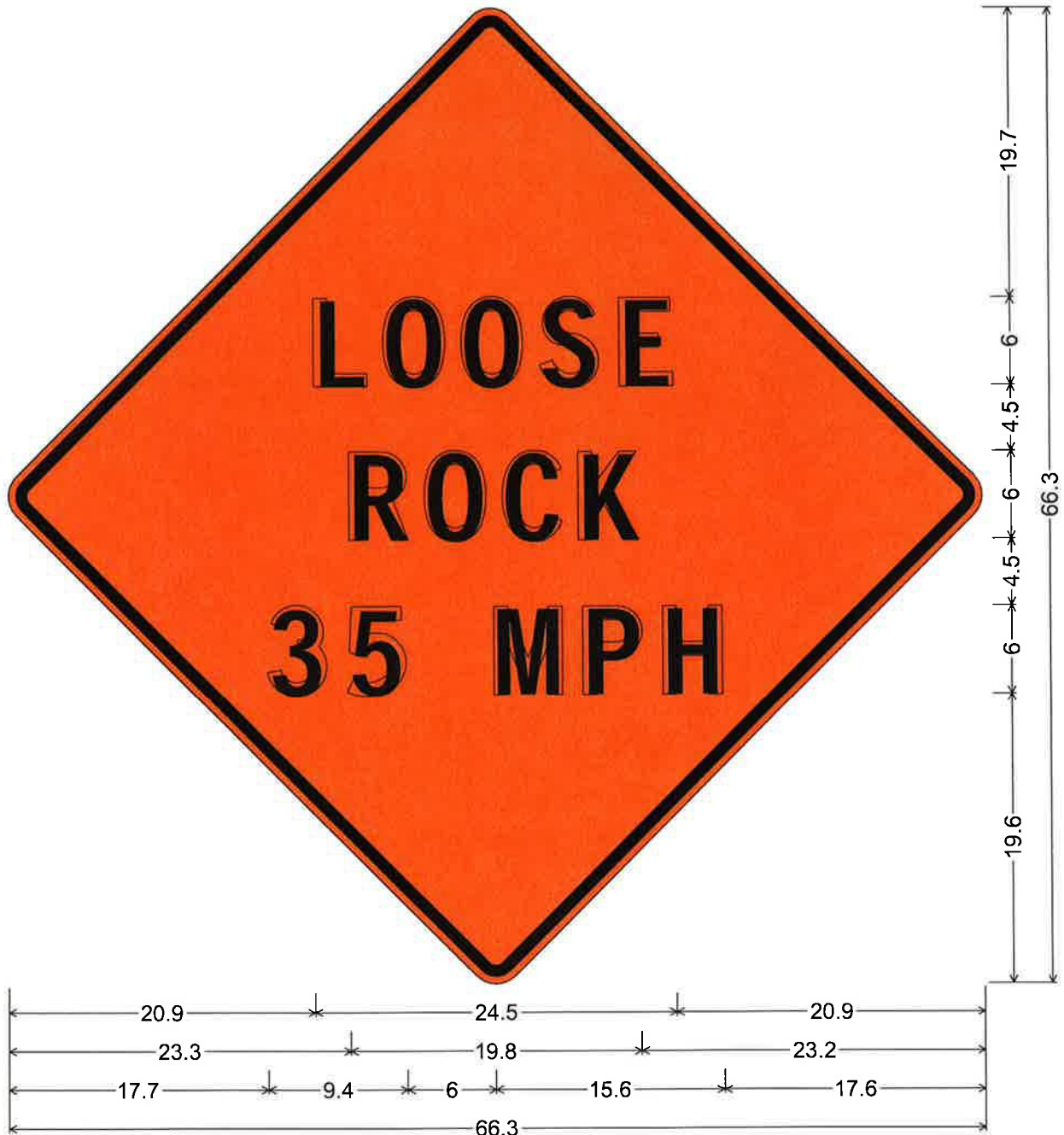


3.0" Radius, 1.0" Border, Black on Orange;

"LOOSE ROCK" D; "NEXT XX MILES" D; "TRAVEL AT OWN RISK" D;

Table of letter and object lefts.

L	O	O	S	E	R	O	C	K						
22.8	27.6	33.0	38.3	43.7	53.4	58.5	63.9	69.0						
N	E	X	T	X	X	M	I	L	E	S				
17.1	22.5	27.3	32.1	41.7	46.9	56.9	63.0	65.3	70.1	74.9				
T	R	A	V	E	L	A	T	O	W	N	R	I	S	K
3.2	8.0	13.2	18.6	24.2	29.0	38.6	44.0	53.7	59.0	65.4	75.4	80.9	83.2	88.6



48.0" across sides 1.9" Radius, 0.8" Border, 0.5" Indent, Black on Orange;

"LOOSE" D; "ROCK" D; "35 MPH" D;

Table of letter and object lefts.

L	O	O	S	E
20.9	25.7	31.0	36.4	41.8
R	O	C	K	
23.3	28.4	33.8	38.9	
3	5	M	P	H
17.7	23.1	33.1	39.2	44.6

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SUPPLEMENT TO SPECIAL PROVISION NO. 907-618-3

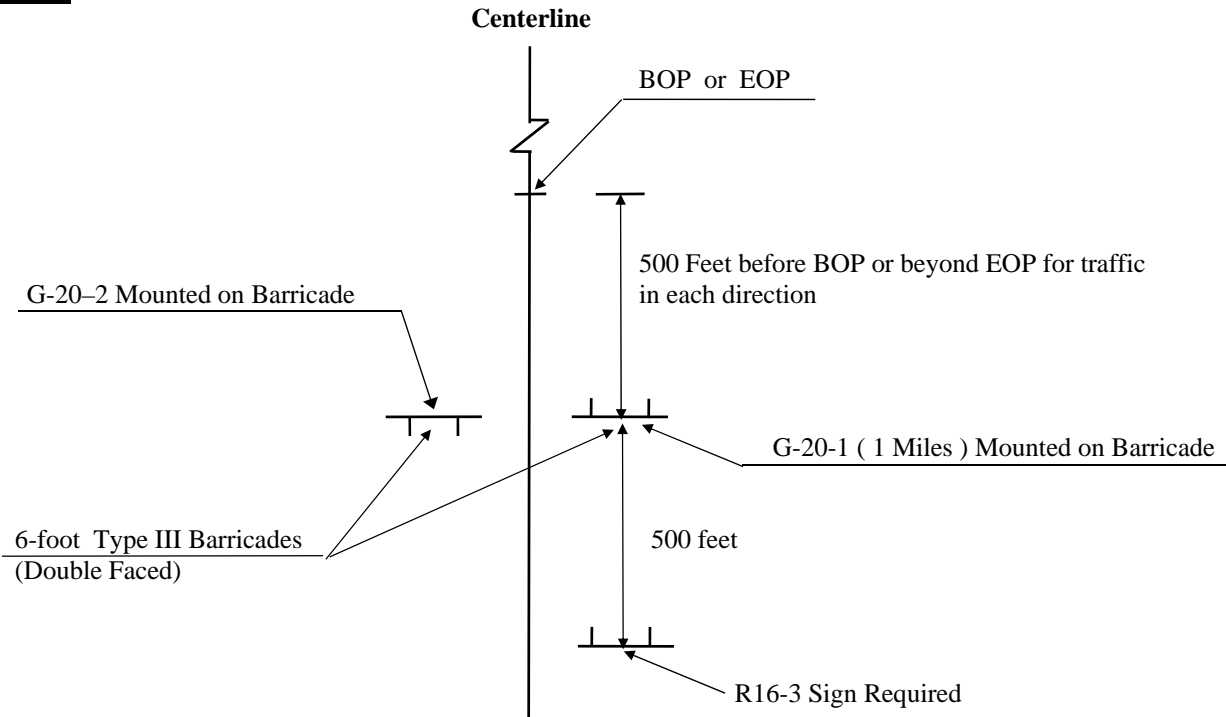
DATE: 02/14/2017

PROJECT: MP-7000-74(188) / 306062301 - Walthall County

After the first paragraph of Subsection 907-618.01.2 on page 1, add the following.

Additional signs will be required as follows.

SR 27N



ADDITIONAL TRAFFIC CONTROL SIGNS REQUIRED:

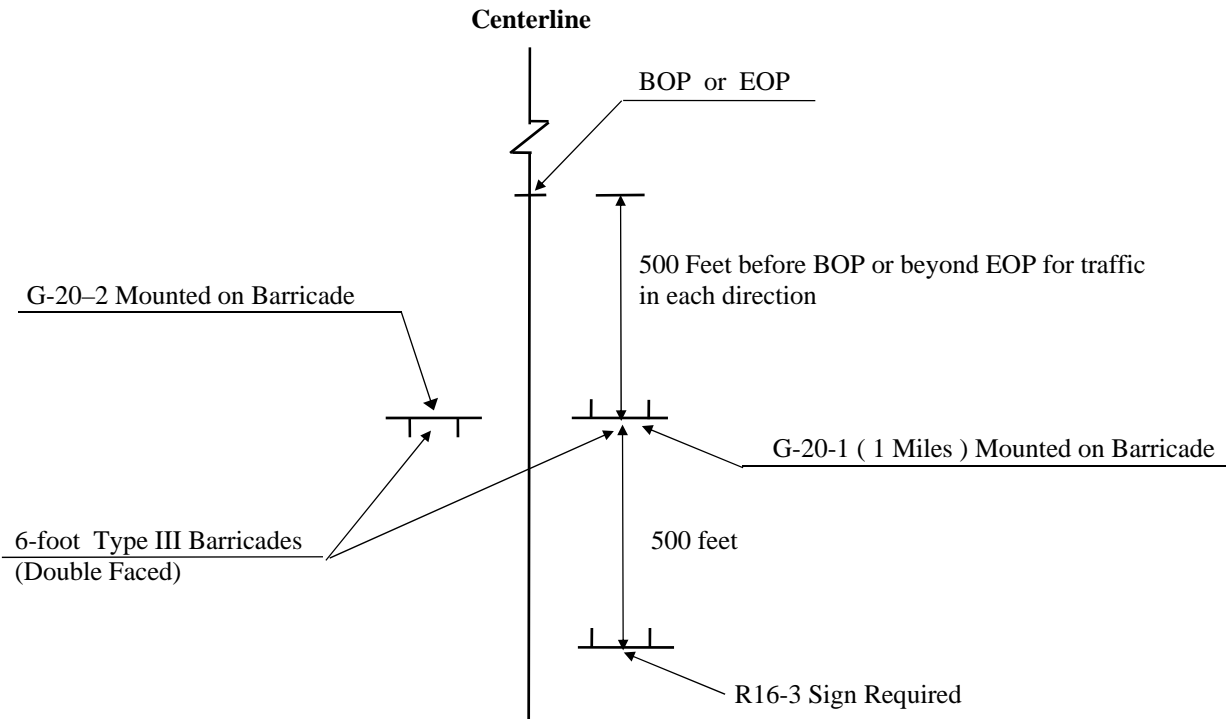
- 14 - W20-1 "AHEAD" signs required. One (1) W20-1 "AHEAD" sign is required at each local road or street entering the project.
- 93 - R4-1 "DO NOT PASS" signs required.
- 17 - R4-2 "PASS WITH CARE" signs required.
- 93 - W14-3 "NO PASSING ZONE" signs required.
- 10 - R16-3 "SPEEDING FINES DOUBLED" signs required.
- 6 - W21 -4 "ROAD WORK 1 MILE" signs required.
- 2 - "LOOSE ROCK NEXT XX MILES" signs with Type III Barricades required.
- 10 - W13 -1 "35 MPH" signs required.
- 10 - W8 -12 "NO CENTER STRIPE" signs required.
- 10 - "LOOSE ROCK" signs required.

R4-1 "DO NOT PASS", R4-2 "PASS WITH CARE", and W14-3 "NO PASSING ZONE" signs are required in accordance with Subsection 618.03.3, this drawing, and as specified in the Manual on Uniform Traffic Control Devices. If no passing zones are 1,000 feet or more, additional "DO NOT PASS" signs shall be installed.

R16-3 signs shall be spaced in accordance with sheet titled "Location of R16-3 Signs".

All Construction signing is included in the bid for Pay Item 618-A, Maintenance of Traffic. Fluorescent orange sheeting shall be used on all construction and traffic control signs except for R16-3, R4-1 and R4-2 signs which shall be black legend and border on white background.

SR 27S



ADDITIONAL TRAFFIC CONTROL SIGNS REQUIRED:

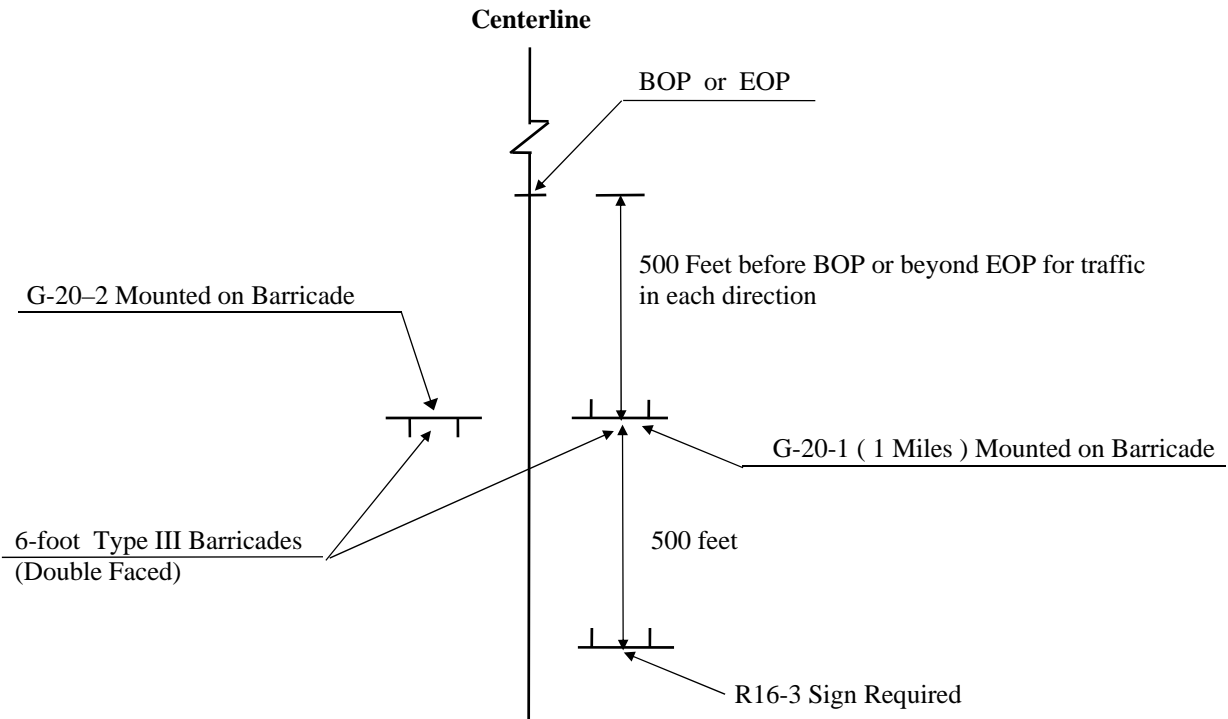
- 11 - W20-1 "AHEAD" signs required. One (1) W20-1 "AHEAD" sign is required at each local road or street entering the project.
- 53 - R4-1 "DO NOT PASS" signs required.
- 18 - R4-2 "PASS WITH CARE" signs required.
- 53 - W14-3 "NO PASSING ZONE" signs required.
- 12 - R16-3 "SPEEDING FINES DOUBLED" signs required.
- 2 - W21 -4 "ROAD WORK 1 MILE" signs required.
- 2 - "LOOSE ROCK NEXT XX MILES" signs with Type III Barricades required.
- 12 - W13 -1 "35 MPH" signs required.
- 12 - W8 -12 "NO CENTER STRIPE" signs required.
- 12 - "LOOSE ROCK" signs required.

R4-1 "DO NOT PASS", R4-2 "PASS WITH CARE", and W14-3 "NO PASSING ZONE" signs are required in accordance with Subsection 618.03.3, this drawing, and as specified in the Manual on Uniform Traffic Control Devices. If no passing zones are 1,000 feet or more, additional "DO NOT PASS" signs shall be installed.

R16-3 signs shall be spaced in accordance with sheet titled "Location of R16-3 Signs".

All Construction signing is included in the bid for Pay Item 618-A, Maintenance of Traffic. Fluorescent orange sheeting shall be used on all construction and traffic control signs except for R16-3, R4-1 and R4-2 signs which shall be black legend and border on white background.

SR 48



ADDITIONAL TRAFFIC CONTROL SIGNS REQUIRED:

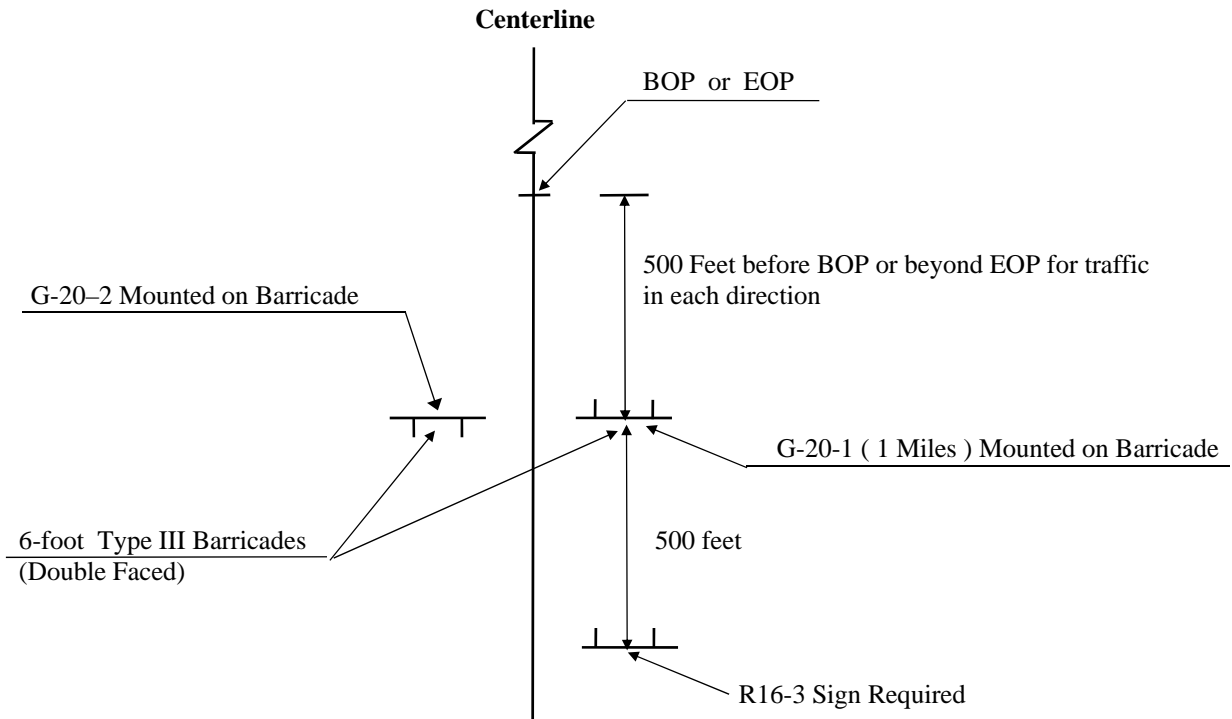
- 15 - W20-1 "AHEAD" signs required. One (1) W20-1 "AHEAD" sign is required at each local road or street entering the project.
- 66 - R4-1 "DO NOT PASS" signs required.
- 12 - R4-2 "PASS WITH CARE" signs required.
- 66 - W14-3 "NO PASSING ZONE" signs required.
- 10 - R16-3 "SPEEDING FINES DOUBLED" signs required.
- 3 - W21 -4 "ROAD WORK 1 MILE" signs required.
- 2 - "LOOSE ROCK NEXT XX MILES" signs with Type III Barricades required.
- 16 - W13 -1 "35 MPH" signs required.
- 16 - W8 -12 "NO CENTER STRIPE" signs required.
- 16 - "LOOSE ROCK" signs required.

R4-1 "DO NOT PASS", R4-2 "PASS WITH CARE", and W14-3 "NO PASSING ZONE" signs are required in accordance with Subsection 618.03.3, this drawing, and as specified in the Manual on Uniform Traffic Control Devices. If no passing zones are 1,000 feet or more, additional "DO NOT PASS" signs shall be installed.

R16-3 signs shall be spaced in accordance with sheet titled "Location of R16-3 Signs".

All Construction signing is included in the bid for Pay Item 618-A, Maintenance of Traffic. Fluorescent orange sheeting shall be used on all construction and traffic control signs except for R16-3, R4-1 and R4-2 signs which shall be black legend and border on white background.

SR 583



ADDITIONAL TRAFFIC CONTROL SIGNS REQUIRED:

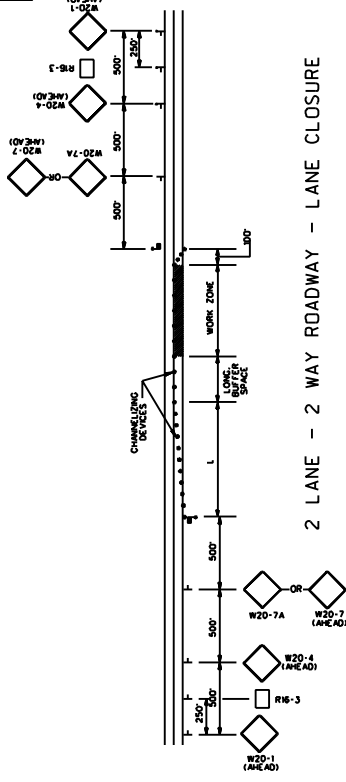
- 4 - W20-1 "AHEAD" signs required. One (1) W20-1 "AHEAD" sign is required at each local road or street entering the project.
- 22 - R4-1 "DO NOT PASS" signs required.
- 7 - R4-2 "PASS WITH CARE" signs required.
- 8 - W14-3 "NO PASSING ZONE" signs required.
- 4 - R16-3 "SPEEDING FINES DOUBLED" signs required.
- 6 - W21 -4 "ROAD WORK 1 MILE" signs required.
- 2 - "LOOSE ROCK NEXT XX MILES" signs with Type III Barricades required.
- 6 - W13 -1 "35 MPH" signs required.
- 6 - W8 -12 "NO CENTER STRIPE" signs required.
- 6 - "LOOSE ROCK" signs required.

R4-1 "DO NOT PASS", R4-2 "PASS WITH CARE", and W14-3 "NO PASSING ZONE" signs are required in accordance with Subsection 618.03.3, this drawing, and as specified in the Manual on Uniform Traffic Control Devices. If no passing zones are 1,000 feet or more, additional "DO NOT PASS" signs shall be installed.

R16-3 signs shall be spaced in accordance with sheet titled "Location of R16-3 Signs".

All Construction signing is included in the bid for Pay Item 618-A, Maintenance of Traffic. Fluorescent orange sheeting shall be used on all construction and traffic control signs except for R16-3, R4-1 and R4-2 signs which shall be black legend and border on white background.

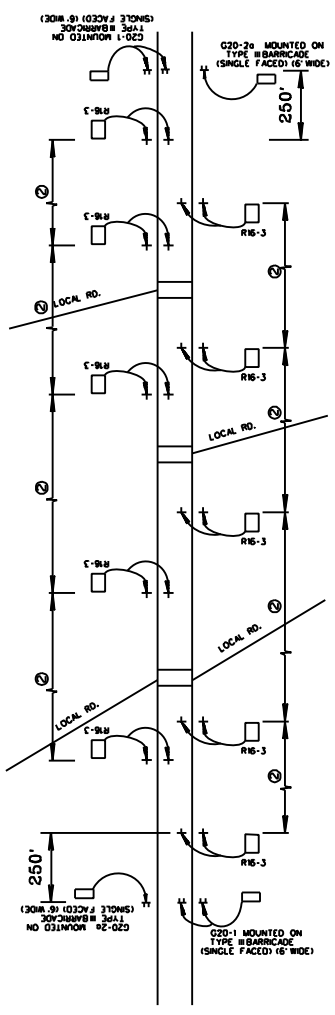
STATE PROJECT NO.
MISS.



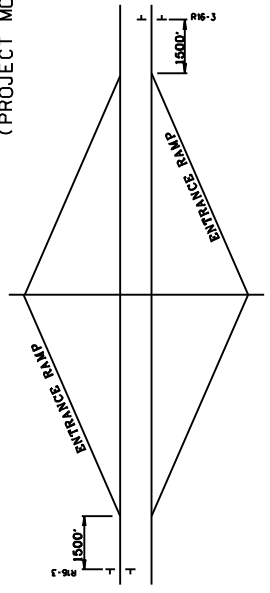
2 LANE - 2 WAY ROADWAY - LANE CLOSURE

DIVIDED HIGHWAY
(PROJECTS LESS THAN 1 MILE LENGTH)

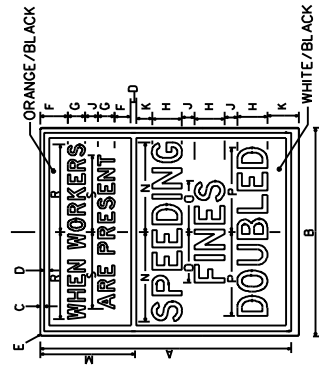
- NOTES
- 1. R16-3 SIGN TO BE PLACED AS SHOWN OR AS DIRECTED BY THE ENGINEER.
 - 2. R16-3 SIGN SHALL BE SPACED AT A MAXIMUM OF 2 MILES THROUGHOUT LENGTH OF PROJECT.



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



INTERSTATE DETAIL



SIGN	DIMENSIONS (INCHES)												
	A	B	C	D	E	F	G	H	I	J	K	L	M
STL	60	48	3/4	1/4	3/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4
STL	3	6 1/2	1 1/2	2 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2

SIGN	DIMENSIONS (INCHES)												
	A	B	C	D	E	F	G	H	I	J	K	L	M
STL	48	36	3/4	1/4	3/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4	1/4
STL	3	6 1/2	1 1/2	2 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2	1 1/2

R16-3

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

LOCATION OF R16-3 SIGNS

REVISION	BY	DATE

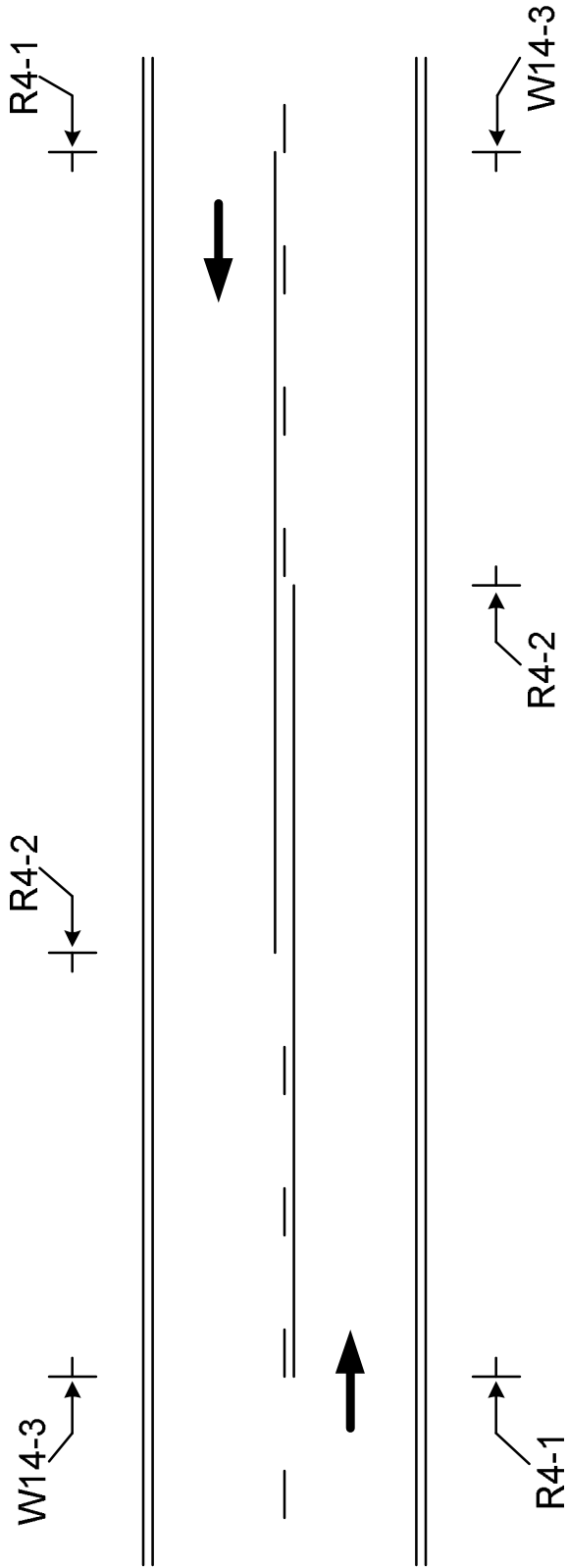
WORKING NUMBER

SHEET NUMBER

FILE NAME: SPEED_SIGN_DETAIL.DWG

DATE: 02/08/09

CHECKED: _____



The W14-3, No Passing Zone sign, shall be placed on the left side of the road at the beginning of each no passing zone.

The R4-1, Do Not Pass signs, shall be placed on the right side of the road at the beginning of the no passing zone. Additional R4-1 signs shall be placed right and left in increments of 750 to 1000 feet throughout the length of the no passing zone.

The R4-2, Pass With Care sign, shall be placed on the right side of the road at the end of the no passing zone.

The R4-1, R4-2 and W14-3 signs are to be used when standard pavement markings are not in place. The signs may also be used to emphasize pavement markings.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-618-3

CODE: (SP)

DATE: 01/17/2017

SUBJECT: Additional Signing Requirements

Section 618, Maintenance of Traffic and Traffic Control Plan, of the 2017 Edition of the Mississippi Standard Specifications for Road and Bridge Construction is hereby amended as follows.

907-618.01.2--Traffic Control Plan. At the end of Subsection 618.01.2 on page 441, add the following:

For compliance with the traffic control plan, the Contractor will be required to install and maintain construction signs at various locations throughout the project. Payment for these signs will be included in the price bid for pay item no. 618-A, Maintenance of Traffic per lump sum.

MISSISSIPPI DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION NO. 907-624-1

CODE: (SP)

DATE: 01/17/2017

SUBJECT: **Inverted Profile Thermoplastic Traffic Stripe**

Section 907-624, Inverted Profile Thermoplastic Traffic Stripe, is hereby added to and made part of the 2017 Edition of the Mississippi Standard Specifications for Road and Bridge Construction as follows.

907-624.01--Description. Inverted profile thermoplastic pavement markings consists of furnishing materials and placing inverted profile thermoplastic pavement markings in reasonably close conformity with these specifications and the details shown on the plans or established.

Inverted profile thermoplastic pavement markings, high contract, shall consist of furnishing materials and placing inverted profile thermoplastic pavement markings over a black thermoplastic pavement marking in order to enhance the marking's visibility.

907-624.02--Materials.

907-624.02.1--General. The inverted profile thermoplastic marking material shall consist of an alkyd/maleic or hydrocarbon based formulation. The material shall be so manufactured as to be applied to the pavement in a molten form, with internal and surface application of glass spheres, and upon cooling to normal pavement temperature, shall produce an adherent, reflectorized pavement marking of specified thickness and width, capable of resisting deformation.

Materials shall be obtained from approved sources as listed on the Department's "List of Approved Sources" for Inverted Profile Thermoplastic Pavement Marking Materials. The material shall not scorch, break down, discolor, or deteriorate when held at the application temperature for four hours or when reheated four times to the application temperature. Temperature-vs-viscosity characteristics of the plastic material shall remain constant when reheated four times, and shall be the same from batch to batch.

The thermoplastic material shall be a product especially compounded for pavement markings. The pavement markings shall maintain their original dimension and shall not smear or spread under normal traffic at temperatures below 140°F. The markings shall have a uniform cross section. Pigment shall be evenly dispersed throughout its thickness. The exposed surface shall be free from tack and shall not be slippery when wet. The material shall not lift from pavement in freezing weather. Cold ductility of the material shall be such as to permit normal movement with the pavement surface without chipping or cracking.

Black thermoplastic compound for the placement of inverted profile thermoplastic pavement markings, high contract, shall consist of a hydrocarbon or alkyd/maleic based formulation.

The manufacturers of the thermoplastic compound, glass beads and epoxy primer sealer shall furnish to the Engineer three copies of certified test reports showing results of all tests specified herein and shall further certify that the materials meet all requirements. The Contractor shall provide the warranty as specified herein to the Engineer.

907-624.02.2--Inverted Profile Thermoplastic Material. The thermoplastic material shall consist of homogeneously mixed pigments, fillers, resins and glass beads, and shall be available in both white and yellow. The material shall be free from all skins, dirt, and foreign objects. Materials shall conform to AASHTO M 249 with the following modifications:

907-624.02.2.1--Intermixed Glass Beads. The thermoplastic material shall contain a minimum of 40 percent Class H glass beads by weight. Class H glass beads shall meet the requirements of ASTM D 1155, and shall be coated with an adhesion promoting coating which shall also provide moisture resistance as tested by AASHTO M 247, Section 4.4.2. Class H beads shall have a minimum of 70 percent true spheres and the +20 sieve shall be tested visually.

The gradation of the Class H beads shall meet the following:

<u>U. S. Standard Sieve</u>	<u>% Passing</u>
12	100
14	95 - 100
16	80 - 100
18	30 - 100
20	15 - 100
30	10 - 100
50	0 - 50
100	0 - 5

907-624.02.2.2--Binder Content. The binder content of the thermoplastic material shall be 19 percent minimum.

907-624.02.2.3--Titanium Dioxide. The titanium dioxide shall meet ASTM D 476, Type II, Rutile grade - 10 percent minimum titanium content.

907-624.02.2.4--Yellow Pigment. The yellow pigment for the yellow thermoplastic material shall be five (5) percent minimum.

907-624.02.2.5--Specific Gravity. The specific gravity of the thermoplastic pavement marking material shall not exceed 2.35.

907-624.02.2.6--Flow Characteristics.

907-624.02.2.6.1--Flowability. After heating the thermoplastic material for four (4) hours ±5 minutes at 425 ±3°F and testing flowability, the white thermoplastic shall have a maximum percent residue of 22 percent and the yellow thermoplastic shall have a maximum residue of 24 percent.

907-624.02.2.6.2--Flow Resistance. The material shall exhibit a maximum flow of 10%. The material's ability to form ribs on the markings shall be evaluated by casting a disc of material approximately 3.5 inches wide by 1.0 inch long by and 0.60 inch deep. After the material is cooled to ambient temperature, measure the exact height. The material shall then be stored at 190°F for four (4) hours. After the material is cooled to ambient temperature, re-measure the exact height and express the flow resistance as a flow percentage.

907-624.02.2.7--Reflectivity. The initial reflectance for the in-place marking shall have a minimum reflectance value of 450 mcd/ft² for white and 350 mcd/ft² for yellow, when measured with a MiroLux Ultra 30 retroreflectometer, or approved equal.

907-624.02.2.8--Wet Reflectivity. The initial reflectance for the in-place marking when wet shall have a minimum reflectance value of 200 mcd/ft² for white and 175 mcd/ft² for yellow, when measured with an approved retroreflectometer. The stripe shall be wetted utilizing a pump type sprayer for five (5) seconds. After 30 seconds, place the retroreflectometer on the stripe and measure the reflectance.

907-624.02.2.9--Inverted Profile. The thermoplastic pavement marking material shall be applied to have individual profiles having a minimum height of 0.140 inches with the recessed inverted profiles having a thickness of 0.025 to 0.050 inches. The profiles shall be well defined, spaced approximately one (1) inch apart, and not excessively run back together.

907-624.02.3--Black Pavement Marking Material for High Contrast Inverted Profile Pavement Markings.

907-624.02.3.1--General. In the molten state, the material shall not give off fumes that are toxic or otherwise injurious to persons or property. The manufacturer shall provide material safety data sheets for the product.

The temperature versus viscosity characteristic of the plastic material shall remain constant and the material shall not deteriorate in any manner during three reheating processes. There shall be no obvious change in color of the material as a result of up to three reheatings, or in maintaining the material at application temperature up to an aggregate time of four (4) hours, or from batch to batch. The maximum elapsed time after application at which normal traffic will leave no impression or imprint on the new stripe shall be 30 seconds when the air and road surface temperature is approximately 68 ±5°F. The applied stripe shall remain free from tack and shall not lift from the pavement under normal traffic conditions within a road temperature range of -20°F to 150°F. The stripe shall maintain its original dimensions and placement. Cold ductility of the material shall be such as to permit normal dimensional distortion as a result of tire impact within the temperature range specified.

The material shall provide a stripe that has a uniform thickness throughout its cross section.

907-624.02.3.2--Binder. The binder shall be hydrocarbon or alkyd/maleic based. The binder shall consist of a homogeneous mixture of pigment, fillers, resins, waxes and plasticizers. The total

binder content shall be well distributed throughout the compound. The binder shall be free from all foreign objects or ingredients that would cause bleeding, staining or discoloration. The binder shall be 19 percent minimum by weight of the thermoplastic compound.

907-624.02.3.3--Pigment. The pigment used for black pavement marking compound shall be as required and shall be uniformly distributed throughout the marking compound.

907-624.02.3.4--Filler. The filler to be incorporated with the resins shall be a white calcium carbonate, silica or any approved substitute.

907-624.02.3.5--Specific Gravity. The specific gravity of the marking compound shall not exceed 2.0.

907-624.02.3.6--Softening Point. After heating the marking compound for 4 hours \pm 5 minutes at $375 \pm 3^\circ\text{F}$ and testing in accordance with ASTM E 28, the material shall have a minimum softening point of 180°F as measured by the ring and ball method.

907-624.02.3.7--Tensile Bond Strength. After heating the marking compound for 4 hours \pm 5 minutes at $375 \pm 3^\circ\text{F}$, the tensile bond strength shall exceed 180 psi when tested in accordance with ASTM D 4806. The material shall be applied to unprimed, sandblasted Portland cement concrete block at a thickness of 0.0625-inch and at a temperature of $375 \pm 3^\circ\text{F}$. The test shall be conducted at room temperature.

907-624.02.3.8--Impact Resistance. After heating the marking compound for 4 hours \pm 5 minutes at $375 \pm 3^\circ\text{F}$, the impact resistance shall be a minimum of 50 inch-pounds minimum when tested in accordance with ASTM D 2794. No cracks or bond loss shall occur when a 0.0625-inch thick film drawdown is made at $375 \pm 3^\circ\text{F}$ on an unprimed sandblasted Portland cement concrete block. The sample is tested with a male indenter 5/8-inch and no female Die at room temperature.

907-624.02.3.9--Identification. Each package of material shall be stenciled with the manufacturer's name, the type of material and specification number, the month and year the material was packaged and lot number. The letters and numbers used in the stencils shall be a minimum of 1/2 inch in height.

907-624.02.3.10--Packaging. The material shall be packaged in suitable containers that will not adhere to the product during shipment and storage. The container of pavement marking material shall weigh approximately 50 lbs. Each container shall designate the color, type of resin, type of application and user information. The label shall warn the user that the material shall be heated in the range of 350° to 425°F .

907-624.02.3.11--Storage Life. The material shall meet the requirements of this specification for a period of one year. The material must also meet uniformly with no evidence of skins or unmelted particles for this one-year period. The manufacturer shall replace any material not meeting the above requirements.

907-624.02.3.12--Certifications. The material manufacturer shall furnish a certified copy of material test reports to the Engineer.

907-624.02.4--Drop-On Glass Beads. Drop-on glass beads shall be separated into two (2) classes, as follows:

907-624.02.4.1--Class G Glass Beads. Class G glass beads shall be coated with an adhesion promoting coating which shall also provide moisture resistance as tested by AASHTO M 247, Section 4.4.2 and shall exhibit the following characteristics:

- **Color and Clarity:** The glass beads shall be colorless and clear, and shall be free of carbon residues.
- **Index of Refraction:** minimum 1.50
- **Roundness:** The glass beads shall have a minimum of 80% true spheres per screen for the two highest sieve quantities, determined visually, and a maximum of 3% angular particles per sieve, determined visually. The remaining sieves shall have a minimum of 75% true spheres, determined visually per aspect ratio using microfiche reader.
- **Air Inclusions:** 10% maximum
- **Specific Gravity:** The specific gravity of the glass beads shall be a minimum of 2.50.
- **Gradation:** The gradation of Class G glass beads shall be as follows:

<u>U. S. Standard Sieve</u>	<u>% Passing</u>
12	100
14	100 - 95
16	100 - 80
18	100 - 20
20	90 - 20
30	100 - 50
Pan	100 - 90

All Class G glass beads shall be coated with an adhesion promoting coating.

907-624.02.4.2--Class H Glass Beads. Class H glass beads shall meet the requirements of ASTM D 1155, and shall be coated with an adhesion promoting coating which shall also provide moisture resistance as tested by AASHTO M 247, Section 4.4.2. Class H beads shall have a minimum of 70 percent true spheres and the +20 sieve shall be tested visually.

The gradation of the Class H beads shall meet the following:

<u>U. S. Standard Sieve</u>	<u>% Passing</u>
16	99 - 100
20	75 - 100
30	55 - 95
50	10 - 35
100	0 - 5

907-624.03--Construction Requirements.

907-624.03.1--Equipment. The application equipment shall be specifically designed for placing thermoplastic material in a hot molten state on the pavement surface utilizing a pressure type application method. The thermoplastic stripe shall be formed by a die that is allowed to drag along in proximity with the pavement surface. The die is pulled forward by a special linkage that will allow it to automatically level itself as to float and remain parallel with the pavement surface. The traffic stripe shall be formed by reason that the hot thermoplastic material is forced under pressure through four sides to the die onto the pavement surface. The top of the die shall be enclosed and provide entry means for the hot molten thermoplastic material to enter the die cavity. The bottom of the die shall contain a movable door that is remote controlled so as to start or stop the flow of thermoplastic material onto the pavement surface. When the movable door is open, thermoplastic material can flow through the die and will apply a thermoplastic stripe that will be formed rearward of the advancing die. The pavement surface shall be at the bottom of the die enclosure. Thermoplastic material shall be fed to the die under pressure through flexible oil-jacketed stainless steel hoses. The thermoplastic material must be either pumped or fed from a pressure vessel to the die under pressure in order to obtain the proper adhesion with the pavement surface.

The system shall consist of a low pressure drop-on type glass bead gun, (bead coat #1). The thermoplastic die shall be oil-jacketed on four (4) sides and is formed from a single solid block of steel. The glass bead gun shall dispense glass beads onto the hot thermoplastic stripe from a height of approximately one (1) inch above the pavement surface. The point at which the glass beads strike the surface of the stripe shall be approximately three inches (3”) behind the strike point of the thermoplastic material itself. This reflective bead coat #1 shall utilize Class G glass beads as specified herein, and shall provide a surface coating of 50 percent of the thermoplastic stripe surface. Of this 50 percent stripe coverage, at least 50 percent of the beads shall be embedded to a depth of 60 percent of their diameter.

A second curtain coater, low pressure drop-on type glass bead gun capable of applying a continuous sheet or ribbon of glass beads, shall follow at an interval of approximately 10 inches behind the first bead gun. This second glass bead gun shall apply bead coat #2 which will form a continuous drop-on coat of Class H glass beads immediately in front of the profiling device. This second curtain of glass beads shall have a low impact speed so that they are not forced into the stripe under pressure.

A special rotatable wheel profiling device shall be located approximately eight (8) inches behind bead gun #2. This rotatable wheel device shall be approximately seven (7) inches in diameter and shall have a plurality of spaced projections located around its circumference. The profiling device shall be wider than the stripe being applied in order that the stripe shall be adequately covered. The projections on the rotatable profiling device shall have an angular profiling surface set at an angle to the pavement surface. The rotatable profile device shall be mounted with an automatic leveling device to the same carriage assembly as the thermoplastic gun. This is required so that a traffic stripe of accurate and uniform definition can be obtained. The inverted profile grooves shall be pressed into the hot molten thermoplastic stripe within one (1) second of the thermoplastic material application in order to insure proper bead adhesion to the stripe. Using rollers to place grooves in the traffic stripe utilizing a separate vehicle or grooves that are not pressed within one

(1) second of the thermoplastic material application will not be allowed. To insure that no thermoplastic material adheres to the wheel as it rotates and profiles the stripe, a small air atomizer water jet shall apply a thin mist coat of water to the rotatable profile wheel. It is the intent of this specification that a minimum amount of water be used and that no water puddles greater than ¼ inch in diameter be allowed to accumulate on the pavement surface in proximity to the freshly placed stripe. Excess water on the pavement surface can cause bond failure of the thermoplastic material.

All parts of the thermoplastic holding tank including manifolds, hoses, pipes, dies, etc., shall be oil-jacketed to insure accurate temperature control. The thermoplastic material shall be preheated in kettles designed specifically for that purpose. Each kettle of preheated thermoplastic material shall be properly mixed and heated to the correct application temperature. The preheated material shall then be fed to the thermoplastic gun for application.

The striping machine shall contain enough glass beads and water to apply one full kettle of thermoplastic material.

907-624.03.2--Cleaning of Pavement Surface. Immediately before application, the areas to receive markings shall be cleaned thoroughly using equipment capable of cleaning without damaging the pavement surface. This will include, but not be limited to, all vegetation, loose soil, oils, and other debris. On areas of pavement cured with compound, the membrane shall be removed completely by "shot" blasting, sand blasting or other approved method. Striping shall follow as closely as practical after the pavement surface has been cleaned.

907-624.03.3--Application Over Existing Striping. Where shown on the plans or directed by the Engineer, the existing traffic stripe shall be removed by grinding or sandblasting. When placing inverted profile thermoplastic pavement markings on existing pavement that has more than one light coat (pavement not showing through stripe) of striping material, the existing stripe shall be removed to the point that 80 percent of the pavement surface is visible.

Removal of existing stripe will be paid for as a separate item of work.

Where unsatisfactory striping performed by the Contractor must be removed and replaced in accordance with these specifications, the Contractor shall use the removal method described above. No payment will be made for removal or replacement of the Contractor's unsatisfactory striping.

907-624.03.4--Surface Conditions. When placing inverted profile thermoplastic pavement markings, no striping shall be permitted when the pavement surface temperature is less than 60°F. A non-contact infrared pyrometer shall be furnished by the Contractor for use by the Engineer for verification of the temperature. Striping shall not be performed when there is moisture on the pavement surface or when winds exceed 12 mph. When unseen moisture is suspected to be present, a moisture test shall be performed. The test shall be as follows:

- 1) Place a piece of roofing felt on the pavement surface.
- 2) Pour 0.5 gallon of thermoplastic material at application temperature onto the paper.

- 3) After two (2) minutes, lift the paper and inspect to see if moisture has been drawn from the pavement.
- 4) If moisture is present, striping is not to begin until the surface is moist free.

Documentation of weather and pavement conditions shall be recorded as part of completing the MDOT Inverted Profile Thermoplastic Pavement Marking Inspectors Report.

907-624.03.5--Application. Prior to the placement of pavement markings, the Contractor shall furnish the Engineer three copies of the manufacturer's warranty stating that the manufacturer will guarantee the pavement marking to meet the requirements of this specification.

The thermoplastic material shall be preheated and thoroughly mixed. The application temperature of the thermoplastic material shall be between 400°F and 430°F. A digital thermometer complete with a 24-inch probe shall be furnished by the Contractor for use by the Engineer for verification of the temperature.

When measured at the highest point of the profile, the cold thickness of the in-place thermoplastic stripe shall be a minimum of 0.140 inch for Inverted Profile Thermoplastic Pavement Markings. The thickness of the thermoplastic material in the bottom of the profiles shall range from 0.025 to 0.050 inch. The individual profiles shall be located transversely across the stripe at intervals of approximately one (1) inch. The bottoms of these intervals shall be between 3/32 inch and 5/16 inch wide. In order to drain water and to reflect light, it is normal for the top surface of the inverted profiles to be irregular. The application rate of thermoplastic material for Inverted Profile Thermoplastic Pavement Markings shall be a minimum of 2700± pounds per mile for a continuous 6-inch stripe.

The application rate for Class G glass beads (bead coat #1) shall be 300± pounds per mile for 6-inch continuous stripe.

The application rate for Class H glass beads (bead coat #2) shall be 300± pounds per mile for 6-inch continuous stripe.

The thickness of the striping materials shall be verified periodically (at least every 1320 feet) and any thickness more than five (5) percent under the designated thickness shall be reworked. A consistent, uncorrected under-run will not be allowed and the Contractor will be required to install the specified minimum thickness of 0.140 inch. A wet thickness gauge and cold thickness gauge shall be furnished by the Contractor for use by the Engineer for the verification of film thickness.

When striping over existing painted stripe (one light coat), on old oxidized asphalt, on all concrete surfaces or on asphalt surfaces when ambient temperatures are below 70°F, a two component epoxy primer sealer shall be used and installed as recommended in writing by the thermoplastic material manufacturer. The epoxy primer sealer shall be EX255/EX256 as manufactured by Crown Paint Company of Oklahoma City, Oklahoma, or approved equal. The Contractor shall furnish certification of compatibility of the epoxy primer sealer to be used with the thermoplastic material supplied. If an alternate epoxy primer sealer to the EX255/EX256 is used, the Contractor

shall furnish a mill analysis and proof of adequate performance of the alternate epoxy primer sealer when used with thermoplastic pavement markings.

907-624.03.6--Inverted Profile Thermoplastic Traffic Stripe, High Contrast. Before applying the black pavement marking material, the Contractor shall remove any dirt, glaze, grease or any other material that would reduce the adhesion of the thermoplastic to the pavement.

The pavement marking material shall be installed in a molten state by the spray method at a minimum temperature of 350°F and a maximum temperature of 425°F. Scorching or discoloration of material shall be cause for rejection by the Engineer. The machinery shall be constructed so that all mixing and conveying parts, up to and including the thermoplastic gun, maintain the material in the molten state.

The pavement marking materials shall not be applied when air and pavement surface temperatures are below 60°F or when the surface of the pavement contains any evidence of moisture.

The pavement marking material shall be applied at a thickness of not less than 0.040-inch.

The equipment used to install hot applied pavement marking material shall provide continuous mixing and agitation of the material while maintaining a minimum temperature exceeding 400°F. A strainer shall be in place between the main material reservoir and the gun to prevent accumulation and clogging. The equipment shall be constructed for easy accessibility to parts requiring cleaning and maintenance.

After the black thermoplastic pavement markings are applied, inverted profile thermoplastic markings shall be placed over the black thermoplastic pavement markings in accordance with the specifications and to the dimensions and details shown on the plans or established.

907-624.03.7--Warranty. The manufacturer shall warrant that the inverted profile thermoplastic markings will meet the minimum performance level of 150 mcd/fc/sq. ft. dry and 75 mcd/fc/sq. ft. wet for a period of 48 months from the date of final inspection when exposed to normal roadway conditions regardless of the average daily traffic. Failure to meet this requirement will result in the total replacement of the portion of the stripe shown to be below these minimums. All costs of labor, material and other incidentals necessary for the replacement of unacceptable pavement markings shall be at no additional costs to the State.

Compliance will be determined by an average brightness reading over a minimum zone marking length of 300 linear feet, using an approved reflectometer. The zone of measurement referred to includes centerline stripe, edge lines and skip lines.

Performance Requirements:	White		Yellow	
	<u>Dry</u>	<u>Wet</u>	<u>Dry</u>	<u>Wet</u>
Initial Reflectivity, mcd/fc/sq. ft.	450	200	350	175
48-Month Retained Reflectivity	150	75	150	75

The measurement procedure for this warranty will entail a visual night inspection by a manufacturer representative and a MDOT representative to identify areas of the installation, which appear to be below the specified minimum, warranted reflectance value. All reflectance measurements for dry conditions shall be made on a clean dry surface at a minimum temperature of 40°F. All reflectance measurements for wet conditions shall be made using the setting conditions of Subsection 907-624.02.2.8 at a minimum temperature of 40°F.

Measurement intervals for installations with areas less than, or equal to, three (3) miles shall be at a minimum of three (3) check points for each zone. These check points should include the start point, approximate mid-point and the end point.

Measurement intervals for installations with areas greater than three (3) miles shall be at a minimum of three (3) check points, one at the start point, one at the end point and additional measurements spaced at 3-mile intervals between the start and end points of the area in question.

The number of measurements at each check point for each zone will be as follows:

- (A) Skip Lines: Eighteen (18) measurements, distributed over six (6) skip lines, shall be made at each check point.
- (B) Center Lines and/or Edge Lines: Eighteen (18) measurements shall be made over 300 linear feet of continuous stripe.

When taking reflectivity measurements, the value of the measurement shall be determined by averaging three measurements; one at the left edge of the stripe, one at the center of the stripe and one at the right edge of the stripe.

In addition, the reflectance values measured at each check point shall be averaged by zone to determine conformance to the minimum warranted reflective values.

907-624.04--Method of Measurement. Inverted profile thermoplastic traffic stripe of the type specified will be measured by the mile or by the linear foot, as indicated, from end-to-end of individual stripes. In the case of skip lines the measurement will include skips. The length used to measure centerline and edge stripes will be the horizontal length computed along the stationed control line. Inverted profile thermoplastic detail traffic stripe will be measured by the linear foot from end-to-end of individual stripes. Measurements will be made along the surface of each stripe and will exclude skip intervals where skips are specified. Stripes more than six (6) inches in width will be converted to equivalent lengths of six-inch widths.

907-624.05--Basis of Payment. Inverted profile thermoplastic traffic stripe, measured as prescribed above, will be paid for at the contract unit price per mile or linear foot, as applicable, which shall be full compensation for completing the work.

Payment will be made under:

907-624-A:	6" Inverted Profile Thermoplastic Traffic Stripe, Skip White *	- per linear foot or mile
907-624-B:	6" Inverted Profile Thermoplastic Traffic Stripe, Continuous White *	- per linear foot or mile
907-624-C:	6" Inverted Profile Thermoplastic Traffic Stripe, Skip Yellow *	- per linear foot or mile
907-624-D:	6" Inverted Profile Thermoplastic Traffic Stripe, Continuous Yellow *	- per linear foot or mile
907-624-E:	Inverted Profile Thermoplastic Detail Traffic Stripe, <u>Color</u> *	- per linear foot

* High Contrast may be specified

SECTION 905 - PROPOSAL

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.

Level & Scrub Seal approximately 26 miles on various routes in District 7, known as State Project No. MP-7000-74(188) / 306062301 in Walthall County.

Line no.	Item Code	Adj Code	Quantity	Units	Description[Fixed Unit Price]
Roadway Items					
0010	202-B240		2,987	Linear Feet	Removal of Traffic Stripe
0020	618-A001		1	Lump Sum	Maintenance of Traffic
0030	619-A2001		50	Mile	Temporary Traffic Stripe, Continuous Yellow
0040	619-A4002		16	Mile	Temporary Traffic Stripe, Skip Yellow
0050	620-A001		1	Lump Sum	Mobilization
0060	625-B001		4	Mile	Traffic Stripe, Skip Yellow
0070	625-C001		50	Mile	Traffic Stripe, Continuous White
0080	625-D001		25	Mile	Traffic Stripe, Continuous Yellow
0090	625-E001		19,948	Linear Feet	Detail Traffic Stripe
0100	625-F001		216	Linear Feet	Legend
0110	627-H002		2,310	Each	Chip Seal Reflective Raised Markers. Two-Way Yellow
0120	627-J001		1,415	Each	Two-Way Clear Reflective High Performance Raised Markers
0130	627-L001		2,310	Each	Two-Way Yellow Reflective High Performance Raised Markers
0140	907-414-A001		342,466	Square Yard	Scrub Seal
0150	907-414-B001	(A2)	37,803	Gallon	Asphalt for Fog Seal
ALTERNATE GROUP AA NUMBER 1					
0160	628-H001		2,176	Linear Feet	6" High Performance Cold Plastic Traffic Stripe, Continuous White
0170	628-I002		225	Linear Feet	6" High Performance Cold Plastic Traffic Stripe, Skip Yellow
0180	628-J001		566	Linear Feet	6" High Performance Cold Plastic Traffic Stripe, Continuous Yellow
ALTERNATE GROUP AA NUMBER 2					
0190	907-624-B002		2,176	Linear Feet	6" Inverted Profile Thermoplastic Traffic Stripe, Continuous White
0200	907-624-C001		225	Linear Feet	6" Inverted Profile Thermoplastic Traffic Stripe, Skip Yellow
0210	907-624-D002		566	Linear Feet	6" Inverted Profile Thermoplastic Traffic Stripe, Continuous Yellow

SECTION 905 - COMBINATION BID PROPOSAL (Continued)

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).

	<u>Project No.</u>	<u>County</u>	<u>Project No.</u>	<u>County</u>
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.					

For Informational Purposes Only

SECTION 905 - COMBINATION BID PROPOSAL (Continued)

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.



TO: EXECUTIVE DIRECTOR, MISSISSIPPI DEPARTMENT OF TRANSPORTATION
JACKSON, MISSISSIPPI

CERTIFICATE

If awarded this contract, I (we) contemplate that portions of the contract will be sublet. I (we) certify that those subcontracts which are equal to or in excess of fifty thousand dollars (\$50,000.00) will be in accordance with regulations promulgated and adopted by the Mississippi State Board of Contractors on September 8, 2011.

I (we) agree that this notification of intent DOES NOT constitute APPROVAL of the subcontracts.

_____	_____
(Individual or Firm)	(Address)
_____	_____
(Individual or Firm)	(Address)
_____	_____
(Individual or Firm)	(Address)
_____	_____
(Individual or Firm)	(Address)

NOTE: Failure to complete the above DOES NOT preclude subsequent subcontracts. Subsequent subcontracts, if any, equal to or in excess of fifty thousand dollars (\$50,000.00) will be in accordance with regulations promulgated and adopted by the Mississippi State Board of Contractors on September 8, 2011.

Contractor _____

MISSISSIPPI DEPARTMENT OF TRANSPORTATION
CERTIFICATION

I, _____,
(Name of person signing bid)

individually, and in my capacity as _____ of
(Title of person signing bid)

(Name of Firm, partnership, or Corporation)

do hereby certify under 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. **MP-7000-74(188)/ 306062301000**

in **Walthall** _____ 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 are not currently under suspension, debarment, voluntary exclusion or determination of ineligibility; nor have a debarment pending; nor been suspended, debarred, voluntarily excluded or determined ineligible within the past three years by the Mississippi Transportation Commission, the State of Mississippi, any other State or a federal agency; nor been indicted, convicted or had a civil judgment rendered by a court of competent jurisdiction in any matter involving fraud or official misconduct within the past three years.

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.

All of the foregoing is true and correct.

(1/2016 S)

SECTION 902

CONTRACT FOR MP-7000-74(188)/ 306062301000

LOCATED IN THE COUNTY(IES) OF Walthall

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 _____

MISSISSIPPI TRANSPORTATION COMMISSION

Title _____

By _____

Signed and sealed in the presence of:
(names and addresses of witnesses)

Executive Director

Secretary to the Commission

Award authorized by the Mississippi Transportation Commission in session on the ___ day of _____, _____, Minute Book No. _____, Page No. _____.

SECTION 903
PERFORMANCE AND PAYMENT BOND

CONTRACT BOND FOR: MP-7000-74(188)/ 306062301000

LOCATED IN THE COUNTY(IES) OF: Walthall

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 **Level & Scrub Seal approximately 26 miles on various routes in District 7, known as State Project No. MP-7000-74(188) / 306062301 in Walthall 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__

(Witness)

(Principal) (Seal)

By: _____
(Name) (Title)

(Surety) (Seal)

(Witness)

By: _____
(Attorney-in-Fact)

(MS Agent)

Mississippi Insurance ID Number