

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

STATE PROJECT REFERENCE NO.	SHEET NO.
R-4403	TCP-1

**PLAN FOR PROPOSED
TRAFFIC CONTROL, MARKING & DELINEATION
ORANGE, GUILFORD, ROCKINGHAM, AND CASWELL COUNTIES**

R-4403

ROADWAY STANDARD DRAWINGS

THE FOLLOWING ROADWAY STANDARDS AS APPEAR IN "ROADWAY STANDARD DRAWINGS"-ROADWAY DESIGN UNIT-N.C. DEPARTMENT OF TRANSPORTATION-RALEIGH, N.C., DATED JULY 2006 ARE APPLICABLE TO THIS PROJECT AND BY REFERENCE HEREBY ARE CONSIDERED A PART OF THESE PLANS:

STD. NO.	TITLE
1101.02	TEMPORARY LANE CLOSURES
1101.04	TEMPORARY SHOULDER CLOSURES
1101.05	WORK ZONE VEHICLE ACCESSES
1101.11	TRAFFIC CONTROL DESIGN TABLES
1110.02	PORTABLE WORK ZONE SIGNS
1115.01	FLASHING ARROW PANELS
1130.01	DRUM
1135.01	CONES
1150.01	FLAGGING DEVICES
1165.01	TRUCK MOUNTED IMPACT ATTENUATOR
1261.01	GUARDRAIL & BARRIER DELINEATOR SPACING
1261.02	GUARDRAIL & BARRIER DELINEATOR TYPES
1262.01	GUARDRAIL END DELINEATION

PHASING

STEP 1: INSTALL GUARDRAIL IN ACCORDANCE WITH CONSTRUCTION PLANS, GENERAL NOTES, ROADWAY STANDARD DRAWINGS (RSD) AND SHEETS TCP-3 THROUGH TCP-8.

- NOTES:
- FOR MEDIAN WORK ON MULTI-LANE DIVIDED FACILITIES, USE SHEET TCP-3.
 - FOR WORK ON TWO LANE-TWO WAY UNDIVIDED FACILITIES, USE RSD 1101.04 (SHEET 1 OF 9) AND SHEET TCP-4 IF PERSONNEL OR EQUIPMENT ARE WITHIN 5' OF EDGE OF TRAVEL LANE, OTHERWISE, USE RSD 1101.04 AND SHEET TCP-3.
 - FOR OUTSIDE SHOULDER WORK ON DIVIDED MULTI-LANE FACILITIES, USE RSD 1101.04.
 - FOR TEMPORARY LANE CLOSURES ON DIVIDED MULTI-LANE FACILITIES, USE SHEET TCP-5.
 - FOR INTERCHANGES WITHIN THE WORK ZONE INSTALL PORTABLE "ROAD WORK AHEAD" (W20-1) SIGNS AND "END ROAD WORK" (G20-2a) SIGNS ON ENTRANCE / EXIT RAMP AS SHOWN ON SHEET TCP-4, DETAILS "C" AND "D".
 - MAY USE "MOVING OPERATION CARAVAN" (SEE SHEETS TCP-6, TCP-7, AND TCP-8) FOR SEEDING AND WATERING OPERATIONS ONLY.
 - REMOVE ALL TEMPORARY TRAFFIC CONTROL DEVICES AND RETURN TRAFFIC TO ITS EXISTING TRAFFIC PATTERN AT THE END OF EACH WORK PERIOD.

STEP 2: UPON COMPLETION OF THE PROJECT, REMOVE ALL TRAFFIC CONTROL DEVICES.

INDEX OF SHEETS

SHEET NO.	TITLE
TCP-1	LIST OF APPLICABLE ROADWAY STANDARD DRAWINGS, LEGEND, INDEX OF SHEETS AND PHASING
TCP-2	GENERAL NOTES
TCP-3	WORK ZONE WARNING SIGNS FOR GUIDERAIL AND GUARDRAIL INSTALLATION IN MEDIANS
TCP-4	ADVANCE WORK ZONE SIGNS FOR FREEWAYS (4 LANES OR GREATER), TWO-WAY UNDIVIDED, RAMP & Y LINES
TCP-5	TEMPORARY LANE CLOSURES
TCP-6	MOVING OPERATION CARAVAN
TCP-7	MOVING OPERATION CARAVAN
TCP-8	MOVING OPERATION CARAVAN

LEGEND

- GENERAL**
- ← DIRECTION OF TRAFFIC FLOW
 - ↑ NORTH ARROW
 - PROPOSED PVMT. - - - - EXIST. PVMT.
 - WORK AREA
 - ▨ REMOVAL OF EXISTING PAVEMENT
- TRAFFIC CONTROL DEVICES**
- I TYPE I BARRICADE
 - II TYPE II BARRICADE
 - ▨ TYPE III BARRICADE
 - ▲ CONE
 - DRUM ● SKINNY DRUM
 - ⚡ FLASHING ARROW PANEL (TYPE C)
 - T STATIONARY SIGN
 - ⚡ PORTABLE SIGN
 - ⊕ STATIONARY OR PORTABLE SIGN
 - ~ CRASH CUSHION
 - ⚡ CHANGEABLE MESSAGE SIGN
 - ⊠ TRUCK MOUNTED IMPACT ATTENUATOR (TMIA)
 - ⊠ POLICE
 - ⊠ FLAGGER
- PAVEMENT MARKINGS**
- CRYSTAL/CRYSTAL PAVEMENT MARKER
 - ◆ YELLOW/YELLOW PAVEMENT MARKER
 - ⊠ CRYSTAL/RED PAVEMENT MARKER
 - ↔ PAVEMENT MARKING SYMBOLS

APPROVED: DATE:	PLAN PREPARED BY: N.C.D.O.T. TRAFFIC CONTROL, MARKING & DELINEATION SECTION
	STUART BOURNE, P.E. TRAFFIC CONTROL ENGINEER JOSEPH ISHAK, P.E. TRAFFIC CONTROL PROJECT ENGINEER HABIB LAWANDOS TRAFFIC CONTROL PROJECT DESIGN ENGINEER JOE FUTRELL TRAFFIC CONTROL DESIGN ENGINEER

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TIP PROJECT:

GENERAL NOTES

ADAPT THE TRAFFIC CONTROL PLANS, WHEN DIRECTED BY THE ENGINEER, TO MEET FIELD CONDITIONS TO PROVIDE SAFE AND EFFICIENT TRAFFIC MOVEMENT. CHANGES MAY BE REQUIRED WHEN PHYSICAL DIMENSIONS IN THE DETAIL DRAWINGS, STANDARD DETAILS AND ROADWAY DETAILS ARE NOT ATTAINABLE, OR RESULT IN DUPLICATE, OR UNDESIRABLE OVERLAPPING OF DEVICES. MODIFICATION MAY INCLUDE: MOVING, SUPPLEMENTING, COVERING OR REMOVAL OF DEVICES.

THE FOLLOWING GENERAL NOTES APPLY AT ALL TIMES FOR THE DURATION OF THE CONSTRUCTION PROJECT, EXCEPT WHEN OTHERWISE NOTED IN THE PLAN, OR DIRECTED BY THE ENGINEER.

TIME RESTRICTIONS

A) DO NOT CLOSE OR NARROW TRAVEL LANES AS FOLLOWS:

ROAD NAME	DAY AND TIME RESTRICTIONS
1. US 220 NORTHBOUND	7:00AM TO 9:00AM MONDAY THRU FRIDAY (GUILFORD)
US 220 SOUTHBOUND	4:00PM TO 6:00PM MONDAY THRU FRIDAY (GUILFORD)
2. US 29	7:00AM TO 9:00AM AND 4:00PM TO 6:00PM MONDAY THRU FRIDAY (GUILFORD/ROCKINGHAM)
3. US 421 NORTHBOUND	7:00AM TO 9:00AM MONDAY THRU FRIDAY (GUILFORD)
US 421 SOUTHBOUND	4:00PM TO 6:00PM MONDAY THRU FRIDAY (GUILFORD)
4. US 158	7:00AM TO 9:00AM AND 4:00PM TO 6:00PM MONDAY THRU FRIDAY (CASWELL/ROCKINGHAM)
5. US 15-501	7:00AM TO 7:00PM MONDAY THRU SUNDAY (ORANGE)
6. NC 68	7:00AM TO 9:00AM AND 4:00PM TO 6:00PM MONDAY THRU FRIDAY (GUILFORD)
7. US 311	7:00AM TO 9:00AM MONDAY THRU FRIDAY (GUILFORD)

B) DO NOT CLOSE OR NARROW TRAVEL LANES DURING HOLIDAYS AND SPECIAL EVENTS AS FOLLOWS:

ROAD NAME
1. US 220
2. US 29
3. US 421
4. US 158
5. US 15-501
6. NC 68
7. US 311

IN ADDITION, THE CONTRACTOR SHALL NOT CLOSE OR NARROW A LANE OF TRAFFIC ON ALL MAPS, DETAIN AND/OR ALTER THE TRAFFIC FLOW ON OR DURING HOLIDAYS, HOLIDAY WEEKENDS, SPECIAL EVENTS, OR ANY OTHER TIME WHEN TRAFFIC IS UNUSUALLY HEAVY, INCLUDING THE FOLLOWING SCHEDULES:

HOLIDAY

- FOR UNEXPECTED OCCURRENCE THAT CREATES UNUSUALLY HIGH TRAFFIC VOLUMES, AS DIRECTED BY THE ENGINEER.
- FOR NEW YEAR'S, BETWEEN THE HOURS OF 4:00 P.M. DECEMBER 31ST TO 9:00 A.M. JANUARY 2ND. IF NEW YEAR'S DAY IS ON A SATURDAY OR A SUNDAY, THEN UNTIL 9:00 A.M. THE FOLLOWING TUESDAY.
- FOR EASTER, BETWEEN THE HOURS OF 4:00 P.M. THURSDAY AND 9:00 A.M. MONDAY.
- FOR MEMORIAL DAY, BETWEEN THE HOURS OF 4:00 P.M. FRIDAY TO 9:00 A.M. TUESDAY.
- FOR JULY 4TH, BETWEEN THE HOURS OF 4:00 P.M. THE FRIDAY BEFORE THE WEEK OF JULY 4TH AND 9:00 A.M. THE FOLLOWING MONDAY AFTER THE WEEK OF JULY 4TH.
- FOR LABOR DAY, BETWEEN THE HOURS OF 4:00 P.M. FRIDAY TO 9:00 A.M. TUESDAY.
- FOR THANKSGIVING, BETWEEN THE HOURS OF 4:00 P.M. TUESDAY TO 9:00 A.M. MONDAY.
- FOR CHRISTMAS, BETWEEN THE HOURS OF 4:00 P.M. THE FRIDAY BEFORE THE WEEK OF CHRISTMAS DAY AND 9:00 A.M. THE FOLLOWING MONDAY AFTER THE WEEK OF CHRISTMAS.
- FOR SPECIAL EVENTS AT SMITH CENTER AND KENAN STADIUM, FROM FOUR (4) HOURS BEFORE EVENT UNTIL TWO (2) HOURS AFTER EVENT FOR US 15-501 (ORANGE COUNTY).
- FOR THE HIGH POINT FURNITURE MARKETS, BETWEEN THE HOURS OF 4 P.M. THE FRIDAY BEFORE THE WEEK OF FURNITURE MARKET AND 9 A.M. THE FOLLOWING TUESDAY AFTER THE WEEK OF FURNITURE MARKET NC 68/US 311(GUILFORD COUNTY).
- FOR THE GOLF TOURNAMENT, HELD IN GREENSBORO BETWEEN 4:00PM THE TUESDAY BEFORE THE TOURNAMENT AND 9:00AM THE TUESDAY AFTER TOURNAMENT FOR US 220 SOUTHBOUND/US 29/US 421(GUILFORD COUNTY).

LANE AND SHOULDER CLOSURE REQUIREMENTS

- REMOVE LANE CLOSURE DEVICES FROM THE LANE WHEN WORK IS NOT BEING PERFORMED BEHIND THE LANE CLOSURE OR WHEN A LANE CLOSURE IS NO LONGER NEEDED, OR AS DIRECTED BY THE ENGINEER.
- WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN 30 FT (12m) OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN SHOULDER USING TCP-10 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.
- WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO AN UNDIVIDED FACILITY AND WITHIN 5 FT (1.5m) OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING ROADWAY STANDARD DRAWING NO. 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.
- WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING ON THE SHOULDER ADJACENT TO A DIVIDED FACILITY AND WITHIN 10 FT (3m) OF AN OPEN TRAVEL LANE, CLOSE THE NEAREST OPEN TRAVEL LANE USING 1101.02 UNLESS THE WORK AREA IS PROTECTED BY BARRIER OR GUARDRAIL.
- WHEN PERSONNEL AND/OR EQUIPMENT ARE WORKING WITHIN A LANE OF TRAVEL OF AN UNDIVIDED OR DIVIDED FACILITY, CLOSE THE LANE ACCORDING TO THE TRAFFIC CONTROL PLANS, ROADWAY STANDARD DRAWINGS OR AS DIRECTED BY THE ENGINEER. CONDUCT THE WORK SO THAT ALL PERSONNEL AND/OR EQUIPMENT REMAIN WITHIN THE CLOSED TRAVEL LANE.
- DO NOT WORK SIMULTANEOUSLY, ON BOTH SIDES OF AN OPEN TRAVELWAY, WITHIN THE SAME LOCATION, ON A TWO-LANE, TWO-WAY ROAD.
- DO NOT PERFORM WORK INVOLVING HEAVY EQUIPMENT WITHIN 15 FT (5m) OF THE EDGE OF TRAVELWAY WHEN WORK IS BEING PERFORMED BEHIND A LANE CLOSURE ON THE OPPOSITE SIDE OF THE TRAVELWAY.
- DO NOT INSTALL MORE THAN 2 MILES OF LANE CLOSURE ON ANY ROUTE, MEASURED FROM THE BEGINNING OF THE MERGE TAPER TO THE END OF THE LANE CLOSURE.
- DO NOT INSTALL MORE THAN 2 SIMULTANEOUS LANE CLOSURES, IN ANY ONE DIRECTION, ON ANY ROUTE.
- AS DIRECTED BY THE ENGINEER, USE PILOT VEHICLE OPERATION IN CONJUNCTION WITH FLAGGERS AND ANY OTHER TRAFFIC CONTROL DEVICES TO MAINTAIN TRAFFIC WITHIN THE 2 MILE STATIONARY WORK ZONE WHEN GUARDRAIL EQUIPMENT IS LOCATED WITHIN 5 FEET OF THE EDGE OF PAVEMENT.
- COMPLETE EACH GUARDRAIL SECTION BEFORE MOVING TO ANOTHER SECTION AND/OR BY THE END OF EACH WORKDAY UNLESS INCLEMENT WEATHER OR OTHER CONDITIONS BEYOND THE CONTROL OF CONTRACTOR, INTERFERE WITH THE WORK.
- AT END OF EACH WORKDAY, ALL INSTALLED POSTS SHALL HAVE A GUARDRAIL ON THEM AND FOR UNFINISHED WORK PLACE TEMPORARY END UNITS OR OTHER METHODS APPROVED BY THE ENGINEER TO PROTECT THE TRAVELING PUBLIC FROM THE INCOMPLETE GUARDRAIL SECTION AT NO EXPENSE TO THE DEPARTMENT.
- WHEN A PERIOD OF INACTIVITY IS ANTICIPATED TO BE GREATER THAN 4 HOURS WITHIN THE 2 MILE WORK ZONE, STAGE THE WORK SO THAT ALL LANES OF TRAFFIC CAN BE REOPENED TO TRAFFIC AND ALL CONSTRUCTION AND TRAFFIC CONTROL EQUIPMENT CAN BE REMOVED TO A LOCATION GREATER THAN 10 FEET FROM EDGE OF PAVEMENT UNLESS DIRECTED OTHERWISE BY THE ENGINEER.
- PROVIDE A MINIMUM OF 2 MILES BETWEEN LANE CLOSURES, MEASURED FROM THE END OF ONE CLOSURE TO THE FIRST SIGN OF THE NEXT LANE CLOSURE.

TRAFFIC CONTROL DEVICES

- SPACE CHANNELIZING DEVICES IN WORK AREAS NO GREATER THAN TWICE THE POSTED SPEED LIMIT (MPH), EXCEPT 10 FT (3m) ON-CENTER IN RADIUS, AND 3 FT (1m) OFF THE EDGE OF AN OPEN TRAVELWAY, WHEN LANE CLOSURES ARE NOT IN EFFECT.
- PLACE SETS OF THREE DRUMS PERPENDICULAR TO THE EDGE OF THE TRAVELWAY ON 500 FT (150m) CENTERS WHEN UNOPENED LANES ARE CLOSED TO TRAFFIC. THESE DRUMS SHALL BE IN ADDITION TO CHANNELIZING DEVICES.

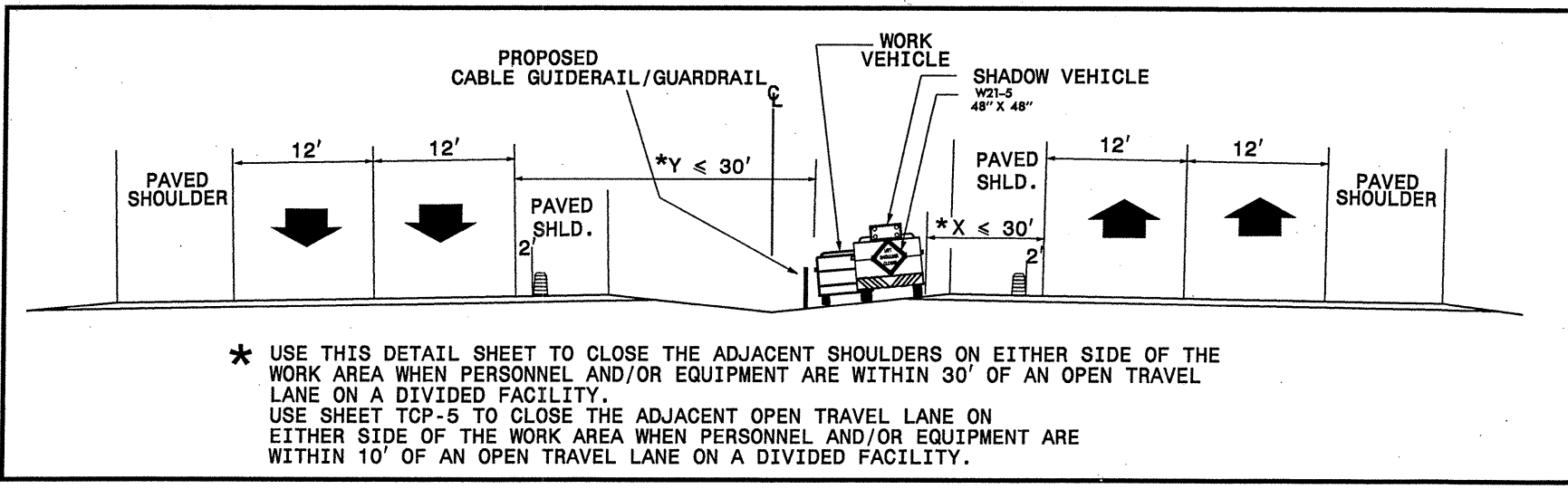
MISCELLANEOUS

- MAINTAIN CONTINUOUS AND SAFE VEHICULAR ACCESS, INCLUDING BUT NOT LIMITED TO ALL RESIDENCES, BUSINESSES, SCHOOLS, POLICE AND FIRE STATIONS, HYDRANTS, OTHER EMERGENCY SERVICES, HOSPITAL AND MAILBOXES USING SUITABLE BACKFILL MATERIAL APPROVED BY THE ENGINEER.

PROJ. REFERENCE NO.	SHEET NO.
R-4403	TCP-2

APPROVED:	DATE: 06/06	GENERAL NOTES	
SEAL			
SCALE: NONE	DESIGN BY: JLF		REVISIONS
DATE:	DESIGN BY: JLF		
REVIEWED BY: HAL			

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* USE THIS DETAIL SHEET TO CLOSE THE ADJACENT SHOULDERS ON EITHER SIDE OF THE WORK AREA WHEN PERSONNEL AND/OR EQUIPMENT ARE WITHIN 30' OF AN OPEN TRAVEL LANE ON A DIVIDED FACILITY.
 USE SHEET TCP-5 TO CLOSE THE ADJACENT OPEN TRAVEL LANE ON EITHER SIDE OF THE WORK AREA WHEN PERSONNEL AND/OR EQUIPMENT ARE WITHIN 10' OF AN OPEN TRAVEL LANE ON A DIVIDED FACILITY.

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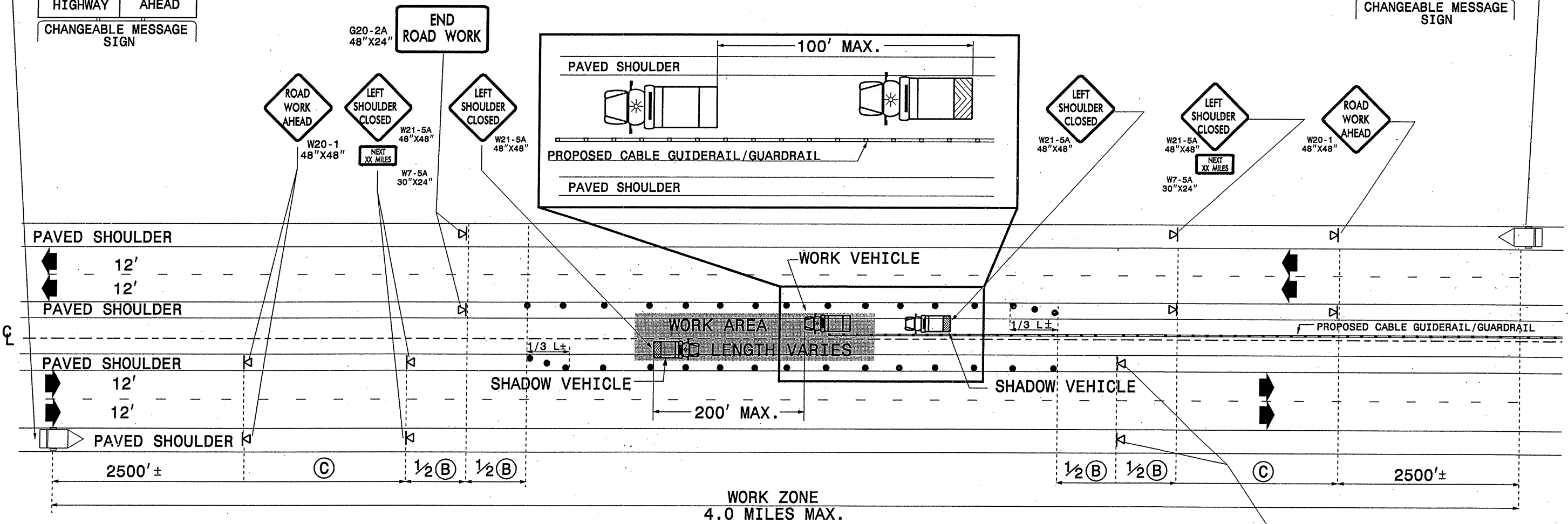
MESSAGE NO. 1	MESSAGE NO. 2
TRUCKS ENTERING HIGHWAY	MEDIAN WORK AHEAD

CHANGEABLE MESSAGE SIGN

**

MESSAGE NO. 1	MESSAGE NO. 2
TRUCKS ENTERING HIGHWAY	MEDIAN WORK AHEAD

CHANGEABLE MESSAGE SIGN



NOTES

- USE PORTABLE MOUNT WORK ZONE WARNING SIGNS.
- WHEN WORK IS COMPLETED IN THE WORK ZONE, REMOVE ALL SIGNING AND SET UP NEXT WORK ZONE.
- MOUNT FLASHING ARROW BOARDS ON SHADOW WORK ZONE VEHICLES ONLY.
- OPERATE FLASHING ARROW BOARDS IN FOUR (4) CORNER CAUTION MODE.
- REFER TO ROADWAY STANDARD DRAWING 1101.11 (SHEET 4 OF 4) FOR SIGN SPACING.

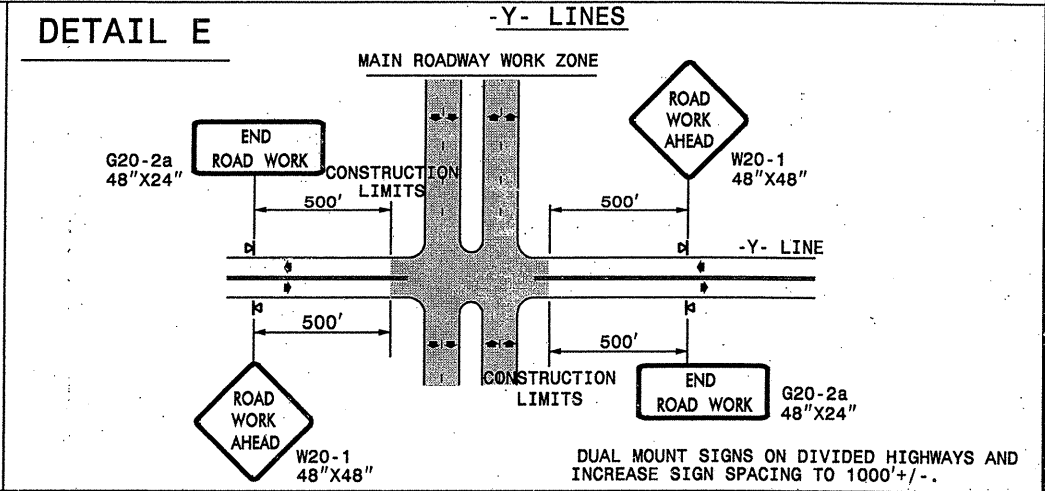
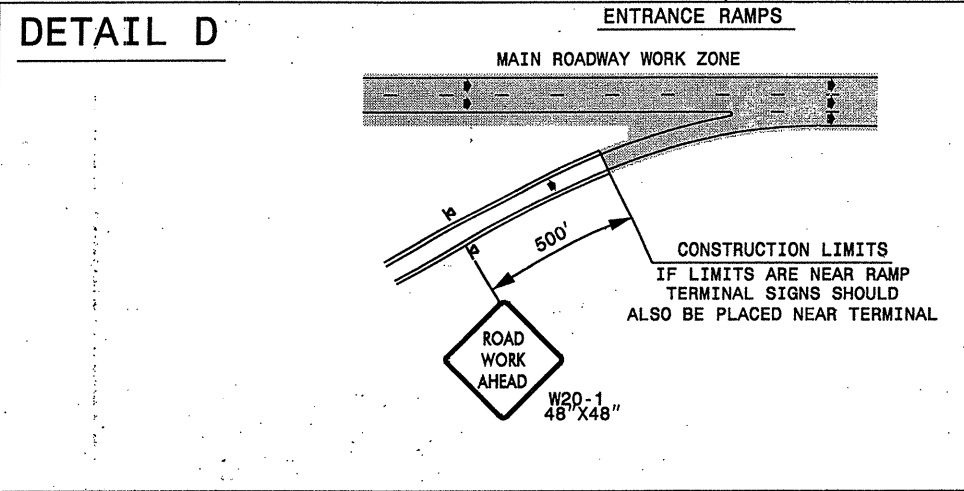
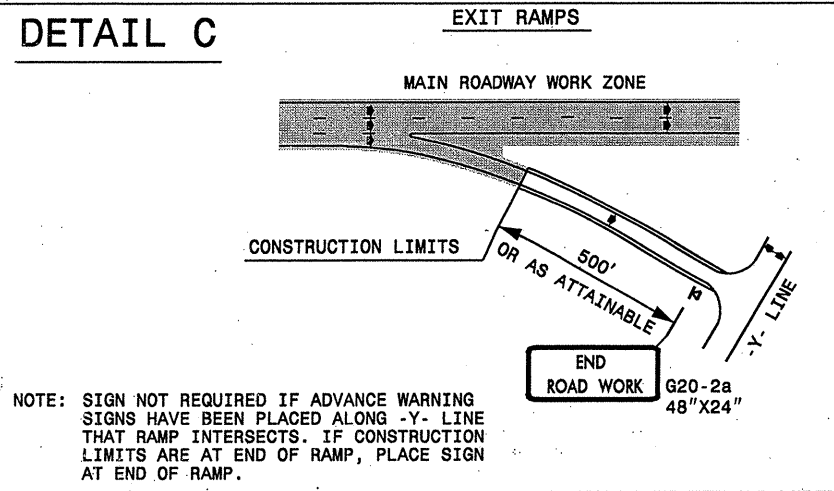
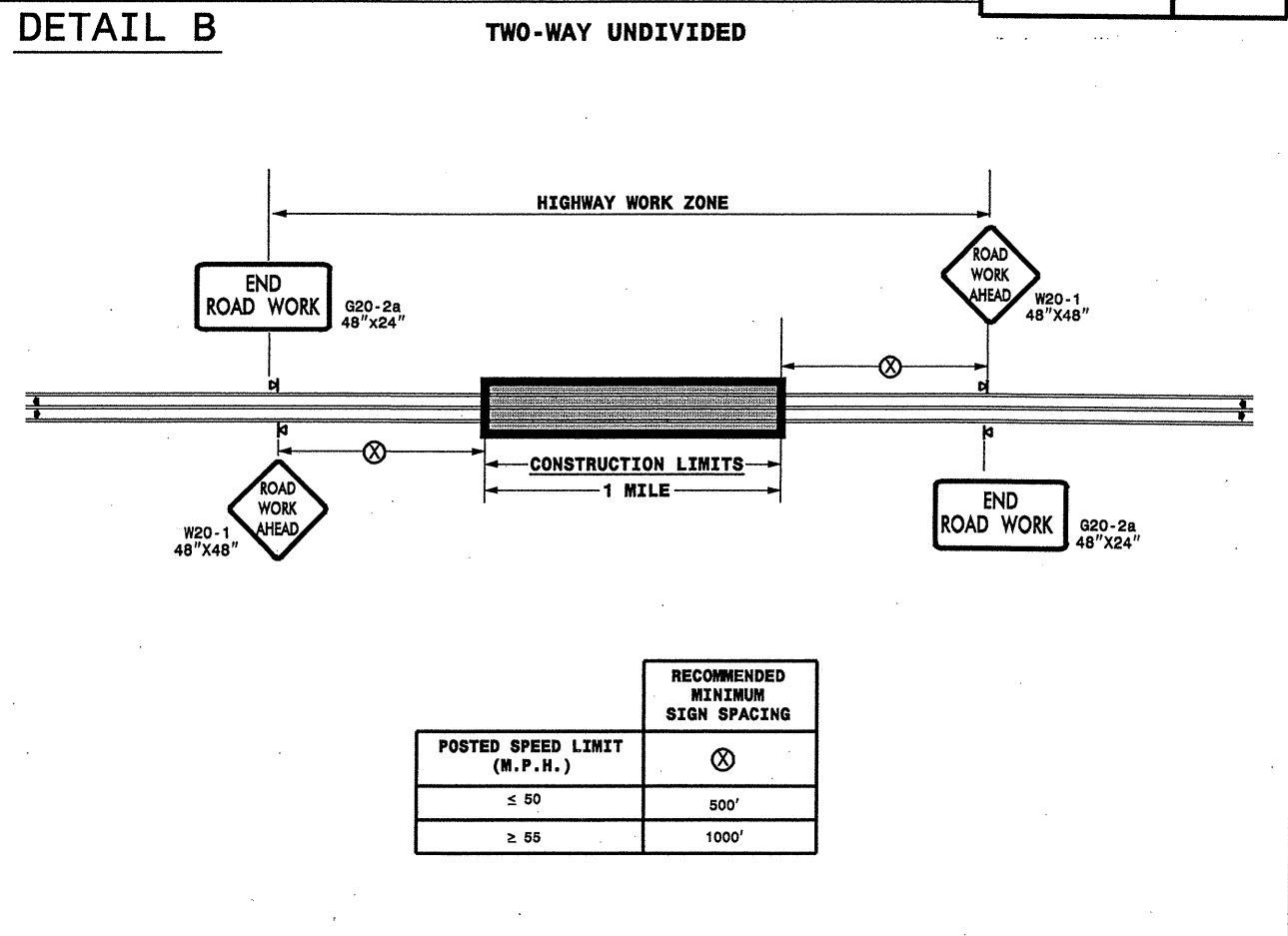
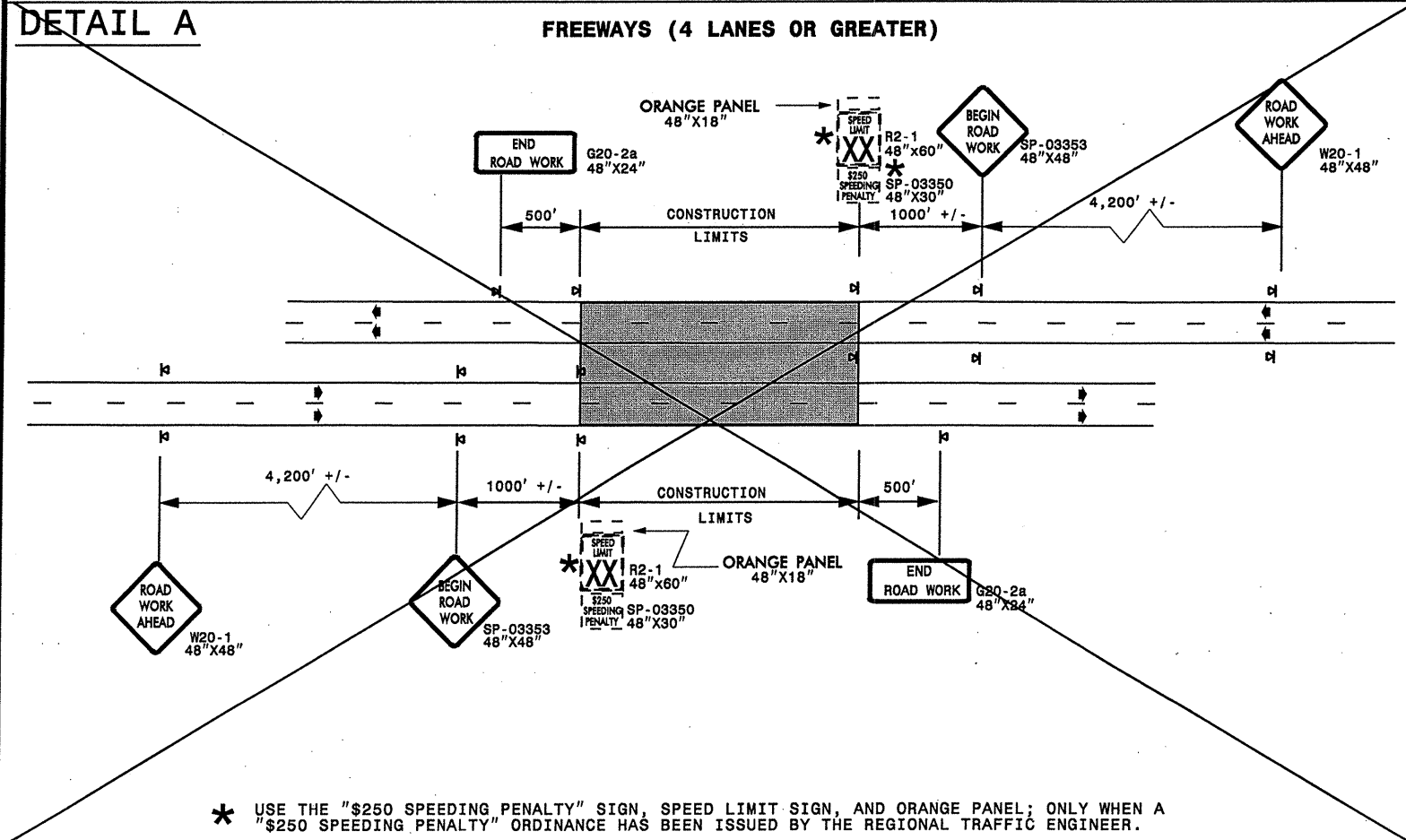
** USE CHANGEABLE MESSAGE SIGNS ON HIGHWAYS WITH SPEED LIMIT OVER 55 MPH

APPROVED: _____ DATE: _____	WORK ZONE WARNING SIGNS FOR GUIDERAIL AND GUARDRAIL INSTALLATION IN MEDIANS		
	SCALE: NONE		
	DATE: _____		REVISIONS
	DWG. BY: JI		
	DESIGN BY: JI		
	REVIEWED BY: JI		

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ADVANCED WORK ZONE WARNING SIGNING FOR FREEWAYS(4 LANES OR GREATER), TWO-WAY UNDIVIDED, RAMPS & Y-LINES

PROJ. REFERENCE NO.	SHEET NO.
R-4403	TCP-4



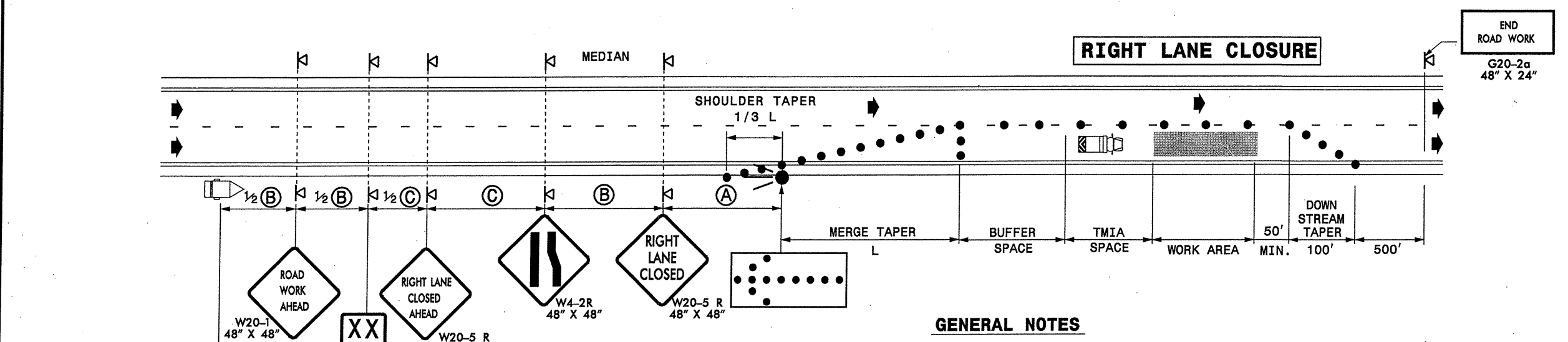
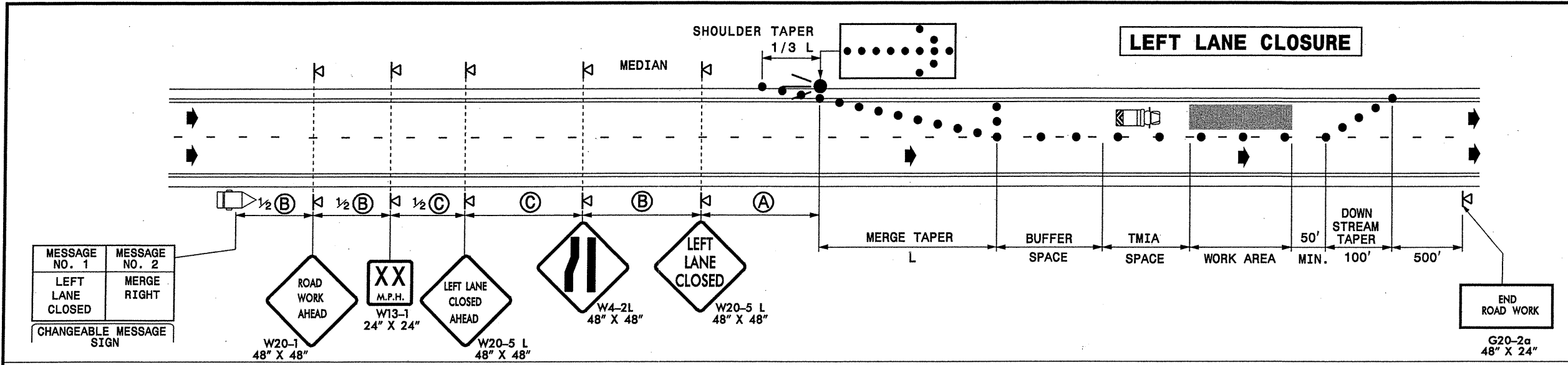
- ### GENERAL NOTES
- USE FLUORESCENT ORANGE SHEETING (TYPE VII, VIII, OR IX) ON ALL ADVANCED WORK ZONE SIGNS.
 - USE PORTABLE MOUNTED WORK ZONE WARNING SIGNS.
 - WHEN WORK IS COMPLETED IN THE WORK ZONE, REMOVE ALL SIGNING AND SET UP NEXT WORK ZONE.
 - ALL SIGN SPACING DIMENSIONS ARE APPROXIMATE. FIELD ADJUST AS NECESSARY OR AS DIRECTED.
 - MOUNT SIGNS A MINIMUM OF 5 FEET ABOVE PAVEMENT ELEVATION.
 - TWO-WAY UNDIVIDED ADVANCE WARNING SIGN CONFIGURATION MAY BE USED ON URBAN MULTI-LANE FACILITIES WHERE CONDITIONS LIMIT THE USE OF DUAL MOUNTED SIGNS AS DETERMINED BY THE ENGINEER.

LEGEND

⊗	PORTABLE SIGN
→	DIRECTION OF TRAFFIC FLOW

APPROVED: _____ DATE: _____	ADVANCED WORK ZONE WARNING SIGNS FOR FREEWAYS (4 LANES OR GREATER), TWO-WAY UNDIVIDED, RAMPS & Y-LINES	SCALE: NONE		REVISIONS _____ _____ _____
		DWG. BY: JLF DESIGN BY: HAL REVIEWED BY: JI		

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GENERAL NOTES

- IF NECESSARY USE THIS STD FOR ONE-WAY CITY TYPE STREETS WHERE SIGNS MAY BE MOUNTED ON BOTH SIDES OF THE ROADWAY.
- PLACE ARROW PANELS ON THE SHOULDER (PAVED OR UNPAVED). PLACE ARROW PANELS WITHIN THE TAPER IF SHOULDERS DO NOT EXIST. MEET THE REQUIREMENTS FOR STOPPING SIGHT DISTANCE AT THE LOCATION OF THE ARROW PANEL. IF NEEDED, EXTEND LANE CLOSURES AT THE BUFFER SPACE, SUCH THAT STOPPING SIGHT DISTANCE TO THE ARROW PANEL IS MET. (SEE STD. 1101.11 -SHEET 2)
- PLACE DRUMS IN TAPERS AT THE MAXIMUM SPACING EQUAL IN FEET TO THE POSTED SPEED LIMIT. PLACE DRUMS ALONG THE BUFFER SPACE AND WORK AREA AT THE MAXIMUM SPACING EQUAL IN FEET TO 2 TIMES THE POSTED SPEED LIMIT.
- REFER TO STD. 1101.11 -SHEETS 1 & 4, FOR "L" DISTANCE AND SIGN SPACING.
- REFER TO SHEETS 6 AND 7 FOR TREATMENT OF LANE CLOSURES THRU INTERCHANGES.
- PORTRAY A SPEED 10 MPH LESS THAN THE POSTED SPEED LIMIT ON ADVISORY SPEED PANELS (XX MPH, SIGN W13-1), UNLESS A LOWER SPEED IS DETERMINED NECESSARY BY THE ENGINEER.
- INSTALL LANE CLOSURES WITH THE TRAFFIC FLOW, BEGINNING WITH DEVICES ON THE UPSTREAM SIDE OF TRAFFIC. REMOVE LANE CLOSURES AGAINST THE TRAFFIC FLOW, BEGINNING WITH DEVICES ON THE DOWNSTREAM SIDE OF TRAFFIC.
- TMIA'S ARE REQUIRED ONLY WHEN A BUFFER SPACE CANNOT BE ATTAINED, OR WHEN DIRECTED BY THE ENGINEER OR THE PLANS. WHEN USED, POSITION THE TMIA TO MAINTAIN A ROLL-AHEAD DISTANCE AS RECOMMENDED BY THEIR MANUFACTURER.
- REFER TO ROADWAY STANDARD DRAWING 1101.11 (SHEET 4 OF 4) FOR SIGN SPACING.
- PLACE CHANGEABLE MESSAGE SIGN (CMS) ON THE OUTSIDE OF THE TRAVELWAY AS DIRECTED BY THE ENGINEER. PLACE CMS APPROXIMATELY 1/2 MILE IN ADVANCE OF THE W20-5 SIGNS. IF TRAFFIC BACKS UP TO WHERE THE CMS IS INITIALLY PLACED, RELOCATE CMS 1/2 MILE FROM ANTICIPATED BACKUP. CONTINUE TO MONITOR TRAFFIC, MOVE CMS APPROXIMATELY 1/2 MILE IN CONJUNCTION WITH ANTICIPATED BACKUP.

MESSAGE NO. 1	MESSAGE NO. 2
RIGHT LANE CLOSED	MERGE LEFT

CHANGEABLE MESSAGE SIGN

LEGEND

- FLASHING ARROW PANEL (TYPE C)
- ▢ TRUCK MOUNTED IMPACT ATTENUATOR (TMIA)
- DRUM
- ◁ PORTABLE SIGN
- ⊙ TYPE B WARNING LIGHT (FOR NIGHT USE)
- ➔ DIRECTION OF TRAFFIC FLOW
- ▢ CHANGEABLE MESSAGE SIGN (CMS)

APPROVED: _____	DATE: _____	TEMPORARY LANE CLOSURES			
SCALE: NONE	DESIGN BY: JI	<table border="1"> <tr> <th>REVISIONS</th> </tr> <tr> <td> </td> </tr> <tr> <td> </td> </tr> </table>	REVISIONS		
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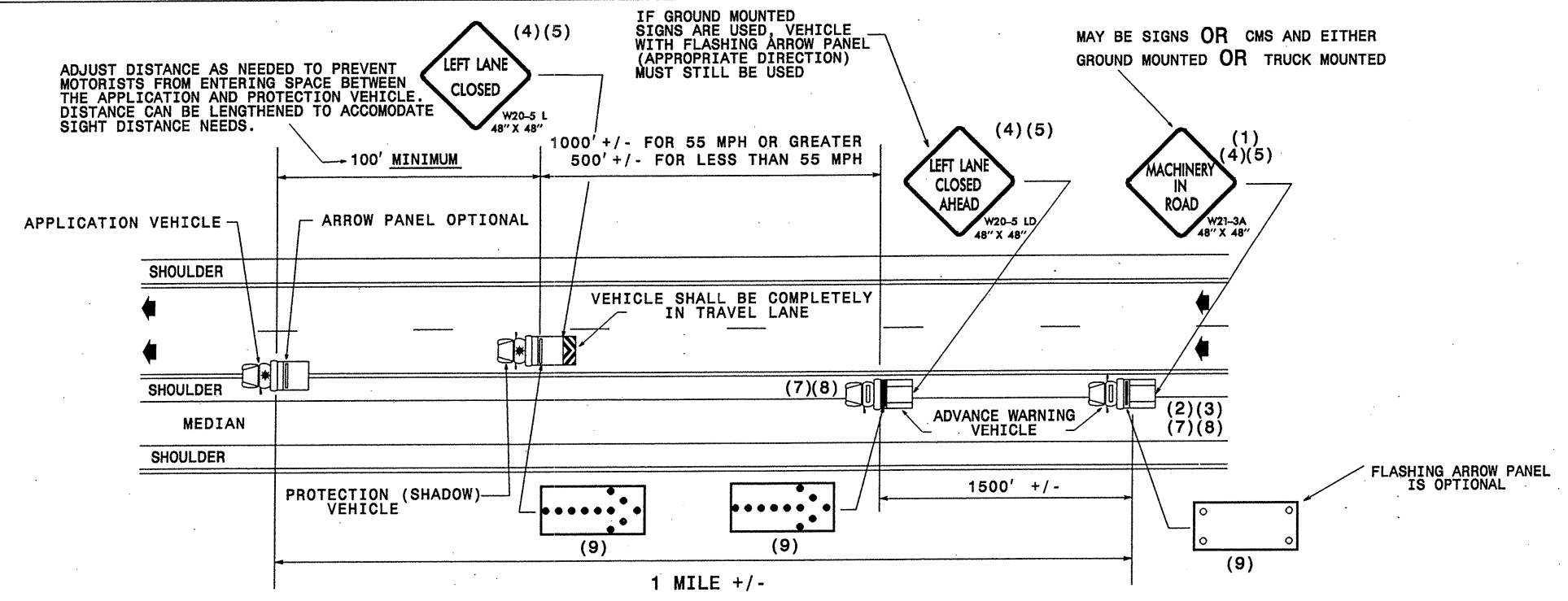
GENERAL NOTES

- (1) THE FOLLOWING OPTIONS MAY BE USED AS THE FIRST ADVANCE WARNING THE MOTORISTS SEES:
 - A. TRUCK MOUNTED ADVANCE WARNING SIGNS
 - B. MOVING CHANGEABLE MESSAGE SIGN (CMS)
 - C. GROUND MOUNTED ADVANCE WARNING SIGNS (MUST USE 'NEXT 10 MILES' AND MAKE CIRCLE TO PICK UP SIGNS)
 - D. STATIONARY CHANGEABLE MESSAGE SIGN (CMS) (MUST USE 'NEXT 10 MILES' AND MAKE CIRCLE TO PICK UP CMS)
- (2) TOTAL DISTANCE BETWEEN FIRST AND LAST VEHICLE IN CARAVAN SHOULD BE APPROXIMATELY ONE (1) MILE IN LENGTH.
- (3) IF USING GROUND MOUNTED ADVANCE WARNING SIGNS OR STATIONARY CMS, THE TOTAL DISTANCE BETWEEN THE FIRST ADVANCE WARNING SIGN OR CMS AND APPLICATION VEHICLE SHOULD NOT EXCEED 10 MILES AND SIGN W21-3BSP SHOULD READ 'MACHINERY IN ROAD NEXT 10 MILES'.
- (4) SIGNS ON VEHICLES SHOULD BE MOUNTED A MINIMUM OF ONE (1) FOOT FROM THE GROUND AND SHOULD NOT BLOCK THE MOTORIST'S SIGHT OF THE FLASHING ARROW PANEL AND/OR LIGHT BAR.
- (5) SIGN W20-5L SHOULD BE PLACED ON BACK OF PROTECTION VEHICLE AND SIGN W20-LD ON BACK OF ADVANCE WARNING VEHICLE IN MULTILANE DIVIDED TRAFFIC SO VEHICLES APPROACHING FROM REAR ARE NOTIFIED OF OPERATION
- (6) RADIO COMMUNICATION BETWEEN VEHICLES IS RECOMMENDED.
- (7) USE A LIGHT BAR OR ROTATING BEACON ON THE ADVANCE WARNING VEHICLES.
- (8) USE OF CMS'S ARE OPTIONAL WITH ADVANCED WARNING VEHICLES.
- (9) USE A TYPE "B" FLASHING ARROW PANEL.

PANEL TYPE	MIN. SIZE
B	60"X30"

LEGEND

- PORTABLE SIGN
- DIRECTION OF TRAFFIC FLOW
- APPLICATION VEHICLE WITH ROTATING BEACON
- PROTECTION VEHICLE WITH TRUCK MOUNTED IMPACT ATTENUATOR (TMIA) AND ROTATING BEACON (SEE ROADWAY STANDARD NO. 1185.01)
- ADVANCE WARNING VEHICLE 1.0 PICKUP TRUCK WITH MOUNTED SIGN
- FLASHING ARROW PANEL, TYPE "B" "CAUTION MODE"
- FLASHING ARROW PANEL, TYPE "B" APPROPRIATE DIRECTION INDICATED



MOVING OPERATION CARAVAN
(OPERATIONS TRAVELING 3 MPH OR FASTER)

FOR INTERSTATE & HIGH VOLUME MULTILANE DIVIDED ROADWAYS
IN MEDIAN AND ON RIGHT SIDE W/PAVED SHOULDERS LESS THAN 10' WIDE

DRAWING NUMBER 1
IMPLEMENTATION DATE: 02/27/97
REVISED: 07/29/02

APPROVED:	DATE: 09/29/06	MOVING OPERATION CARAVAN	
	SCALE: NONE		
	DATE:		
	DWG. BY: JI		
	DESIGN BY: JI		
REVIEWED BY: JI	REVISIONS:		







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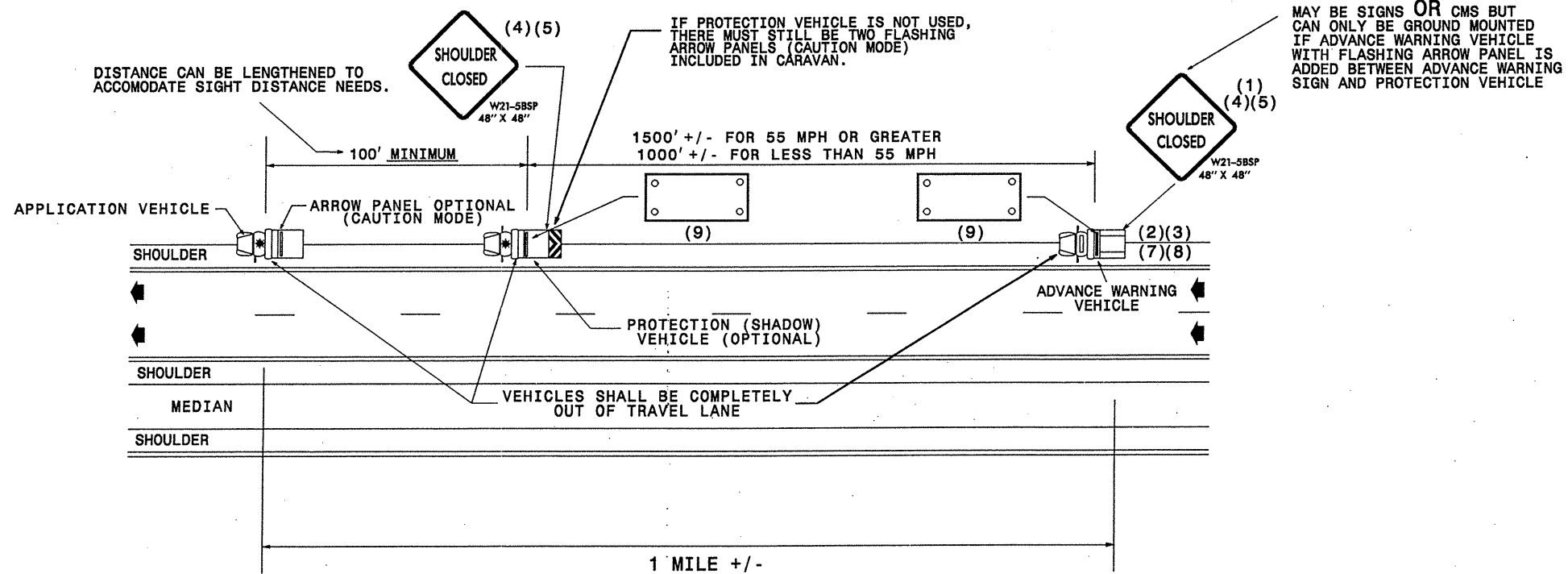
GENERAL NOTES

- (1) THE FOLLOWING OPTIONS MAY BE USED FOR THE FIRST ADVANCE WARNING THE MOTORISTS SEES:
 - A. TRUCK MOUNTED ADVANCE WARNING SIGNS
 - B. MOVING CHANGEABLE MESSAGE SIGN (CMS)
 - C. GROUND MOUNTED ADVANCE WARNING SIGNS
(MUST USE 'NEXT 10 MILES' AND MAKE CIRCLE TO PICK UP SIGNS)
 - D. STATIONARY CHANGEABLE MESSAGE SIGN (CMS)
(MUST USE 'NEXT 10 MILES' AND MAKE CIRCLE TO PICK UP CMS)
- (2) TOTAL DISTANCE BETWEEN FIRST AND LAST VEHICLE IN CARAVAN SHOULD BE APPROXIMATELY ONE (1) MILE IN LENGTH.
- (3) IF USING GROUND MOUNTED ADVANCE WARNING SIGNS OR STATIONARY CMS, THE TOTAL DISTANCE BETWEEN THE FIRST ADVANCE WARNING SIGN OR CMS AND APPLICATION VEHICLE SHOULD NOT EXCEED 10 MILES AND SIGN W21-5CSP SHOULD READ 'SHOULDER CLOSED NEXT 10 MILES'.
- (4) SIGNS ON VEHICLES SHOULD BE MOUNTED A MINIMUM OF ONE (1) FOOT FROM THE GROUND AND SHOULD NOT BLOCK THE MOTORIST'S SIGHT OF THE FLASHING ARROW PANEL AND/OR LIGHT BAR.
- (5) SIGN W21-5BSP SHOULD BE PLACED ON BACK OF PROTECTION VEHICLE AND SIGN W21-5ASP ON BACK OF ADVANCE WARNING VEHICLE IN MULTILANE DIVIDED TRAFFIC SO VEHICLES APPROACHING FROM REAR ARE NOTIFIED OF OPERATION.
- (6) RADIO COMMUNICATION BETWEEN VEHICLES IS RECOMMENDED.
- (7) USE A LIGHT BAR OR ROTATING BEACON ON THE ADVANCE WARNING VEHICLES.
- (8) USE OF CMS's ARE OPTIONAL WITH ADVANCED WARNING VEHICLES.
- (9) USE A TYPE "B" FLASHING ARROW PANEL.

PANEL TYPE	MIN. SIZE
B	60"X30"

LEGEND

-  PORTABLE SIGN
-  DIRECTION OF TRAFFIC FLOW
-  APPLICATION VEHICLE WITH ROTATING BEACON
-  PROTECTION VEHICLE WITH TRUCK MOUNTED IMPACT ATTENUATOR (TMIA) AND ROTATING BEACON (SEE ROADWAY STANDARD NO. 1165.01)
-  ADVANCE WARNING VEHICLE i.e. PICKUP TRUCK WITH MOUNTED SIGN
-  FLASHING ARROW PANEL, TYPE "B" "CAUTION MODE"

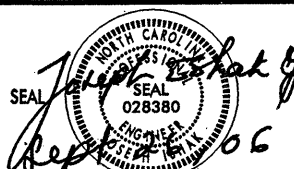



MOVING OPERATION CARAVAN

(OPERATIONS TRAVELING 3 MPH OR FASTER)

FOR INTERSTATE & HIGH VOLUME MULTILANE DIVIDED ROADWAYS
IN MEDIAN AND ON RIGHT SIDE W/PAVED SHOULDERS 10' OR WIDER

DRAWING NUMBER 2
IMPLEMENTATION DATE: 02/27/97
REVISED: 07/29/02

APPROVED: _____ DATE: _____	MOVING OPERATION CARAVAN		<table border="1"> <tr> <th colspan="2">REVISIONS</th> </tr> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> </table>	REVISIONS					
REVISIONS									
	SCALE: NONE DATE: _____ DWG. BY: JI DESIGN BY: JI REVIEWED BY: JI								







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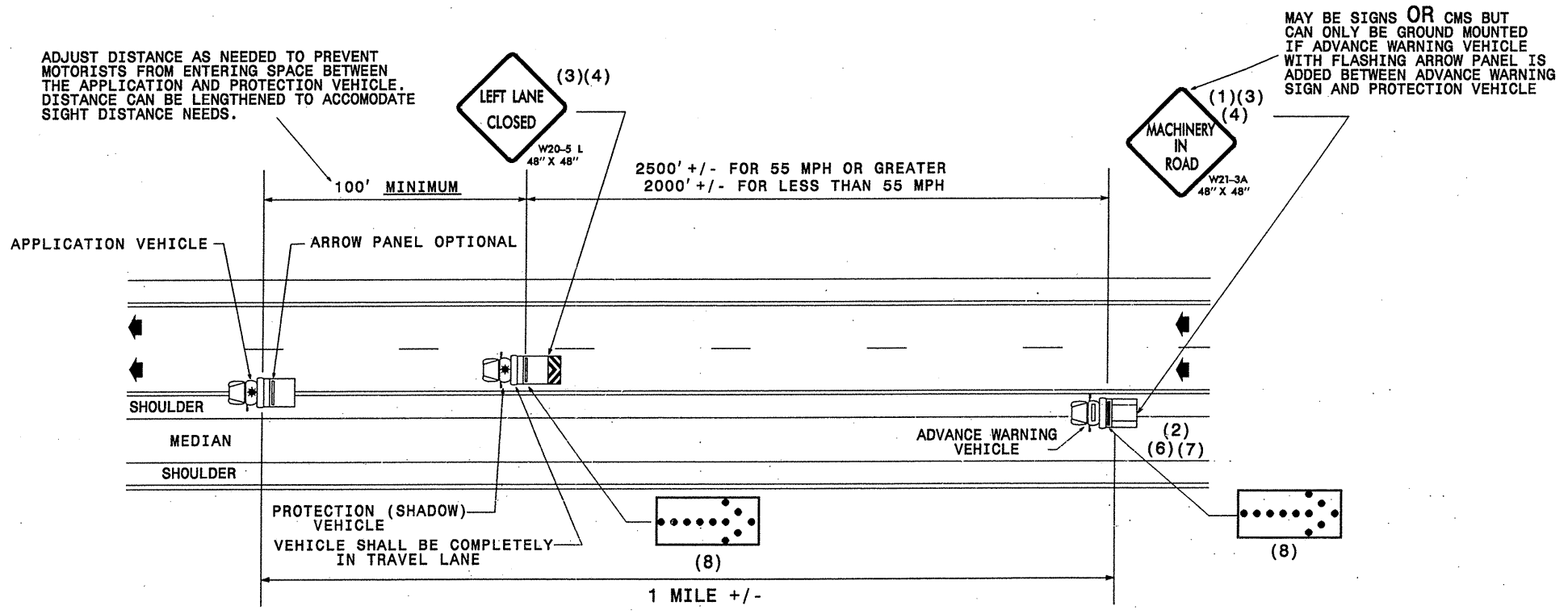
GENERAL NOTES

- (1) THE FOLLOWING OPTIONS MAY BE USED AS THE FIRST ADVANCE WARNING THE MOTORISTS SEES:
 - A. TRUCK MOUNTED ADVANCE WARNING SIGNS
 - B. MOVING CHANGEABLE MESSAGE SIGN (CMS)
- (2) TOTAL DISTANCE BETWEEN FIRST AND LAST VEHICLE IN CARAVAN SHOULD BE APPROXIMATELY ONE (1) MILE IN LENGTH.
- (3) SIGNS ON VEHICLES SHOULD BE MOUNTED A MINIMUM OF ONE (1) FOOT FROM THE GROUND AND SHOULD NOT BLOCK THE MOTORIST'S SIGHT OF THE FLASHING ARROW PANEL AND/OR LIGHT BAR.
- (4) SIGN W20-L SHOULD BE PLACED ON BACK OF PROTECTION VEHICLE AND SIGN W21-3BSP ON BACK OF ADVANCE WARNING VEHICLE IN MULTILANE DIVIDED TRAFFIC SO VEHICLES APPROACHING FROM REAR ARE NOTIFIED OF OPERATION.
- (5) RADIO COMMUNICATION BETWEEN VEHICLES IS RECOMMENDED.
- (6) USE A LIGHT BAR OR ROTATING BEACON ON THE ADVANCE WARNING VEHICLES.
- (7) USE OF CMS's ARE OPTIONAL WITH ADVANCED WARNING VEHICLES.
- (8) USE A TYPE "B" FLASHING ARROW PANEL.

PANEL TYPE	MIN. SIZE
B	60"X30"

LEGEND

-  PORTABLE SIGN
-  DIRECTION OF TRAFFIC FLOW
-  APPLICATION VEHICLE WITH ROTATING BEACON
-  PROTECTION VEHICLE WITH TRUCK MOUNTED IMPACT ATTENUATOR (TMIA) AND ROTATING BEACON (SEE ROADWAY STANDARD NO. 1165.01)
-  ADVANCE WARNING VEHICLE i.e. PICKUP TRUCK WITH MOUNTED SIGN
-  FLASHING ARROW PANEL, TYPE "B" APPROPRIATE DIRECTION INDICATED



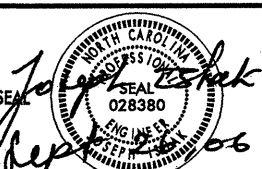
MOVING OPERATION CARAVAN

(OPERATIONS TRAVELING 3 MPH OR FASTER)

FOR OTHER MULTILANE DIVIDED ROADWAYS

IN MEDIAN AND ON RIGHT SIDE W/PAVED SHOULDERS LESS THAN 10' WIDE

DRAWING NUMBER 3
 IMPLEMENTATION DATE: 07/01/97
 REVISED: 07/29/02

APPROVED: _____ DATE: _____


MOVING OPERATION CARAVAN

SCALE: NONE
 DATE: 07/13/05
 DWG. BY: JI
 DESIGN BY: JI
 REVIEWED BY: JI



REVISIONS

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