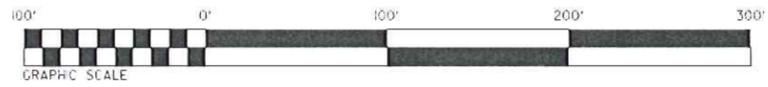
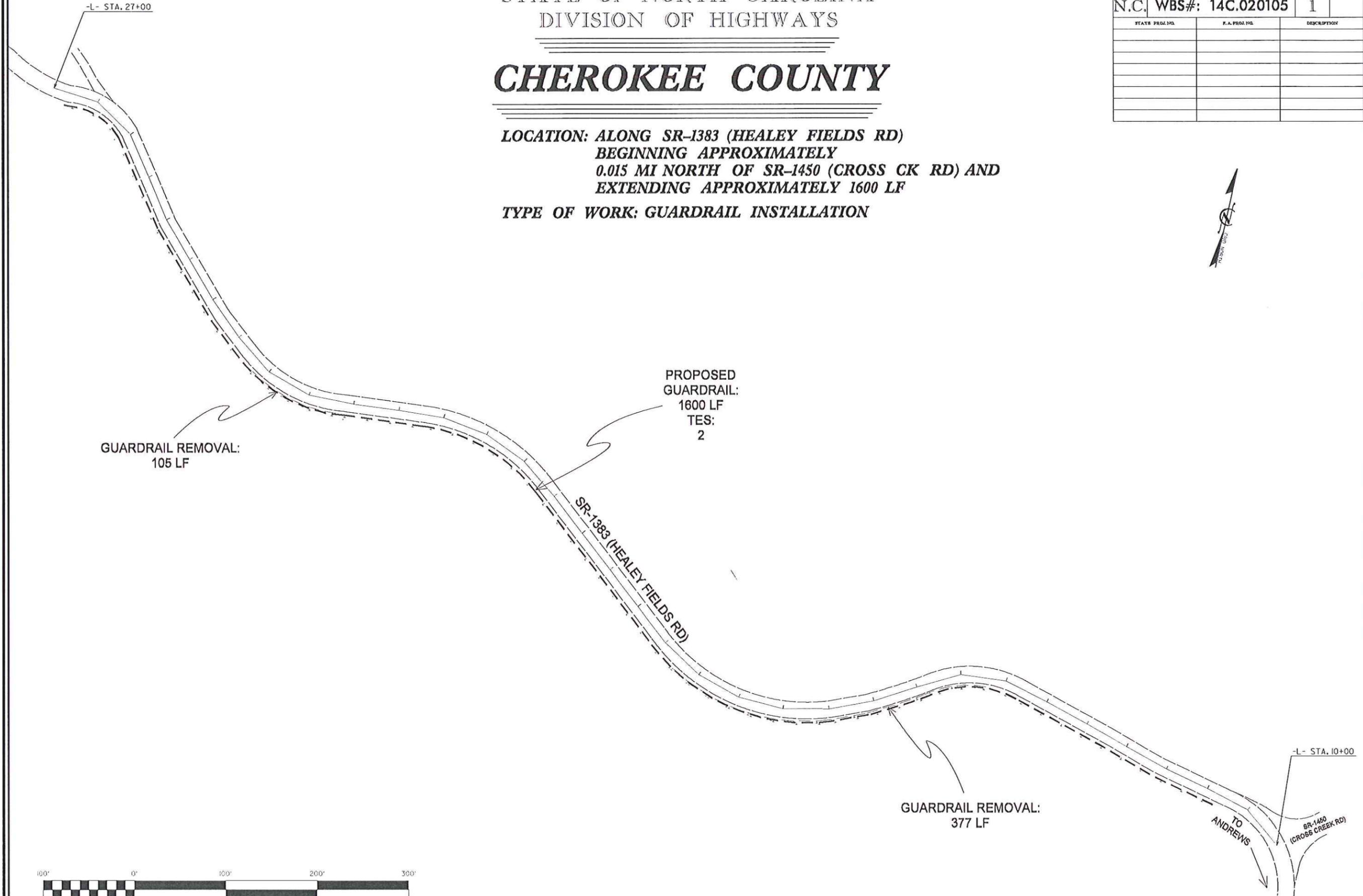


STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

CHEROKEE COUNTY

LOCATION: ALONG SR-1383 (HEALEY FIELDS RD)
BEGINNING APPROXIMATELY
0.015 MI NORTH OF SR-1450 (CROSS CK RD) AND
EXTENDING APPROXIMATELY 1600 LF
TYPE OF WORK: GUARDRAIL INSTALLATION

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	WBS#: 14C.020105	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	



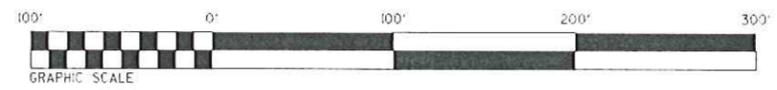
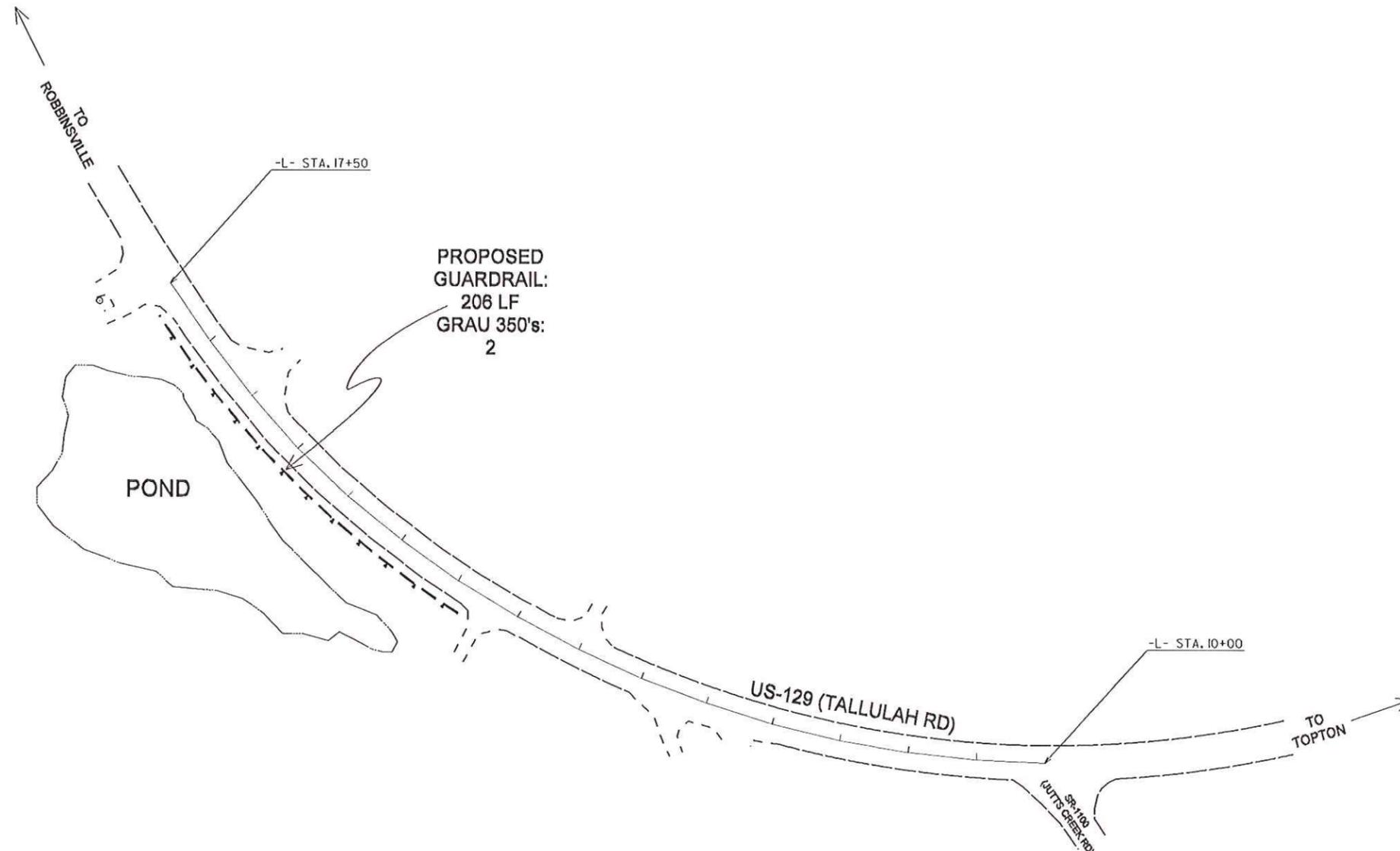
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

GRAHAM COUNTY

LOCATION: ALONG US-129 BEGINNING APPROXIMATELY
0.08 MI NORTH OF SR-1100 (JUTTS CK RD) AND
EXTENDING APPROXIMATELY 306 LF

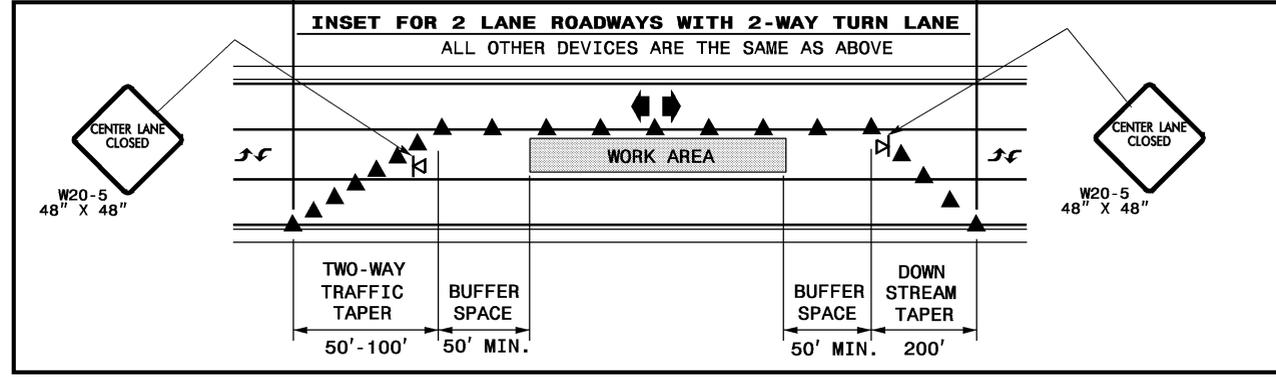
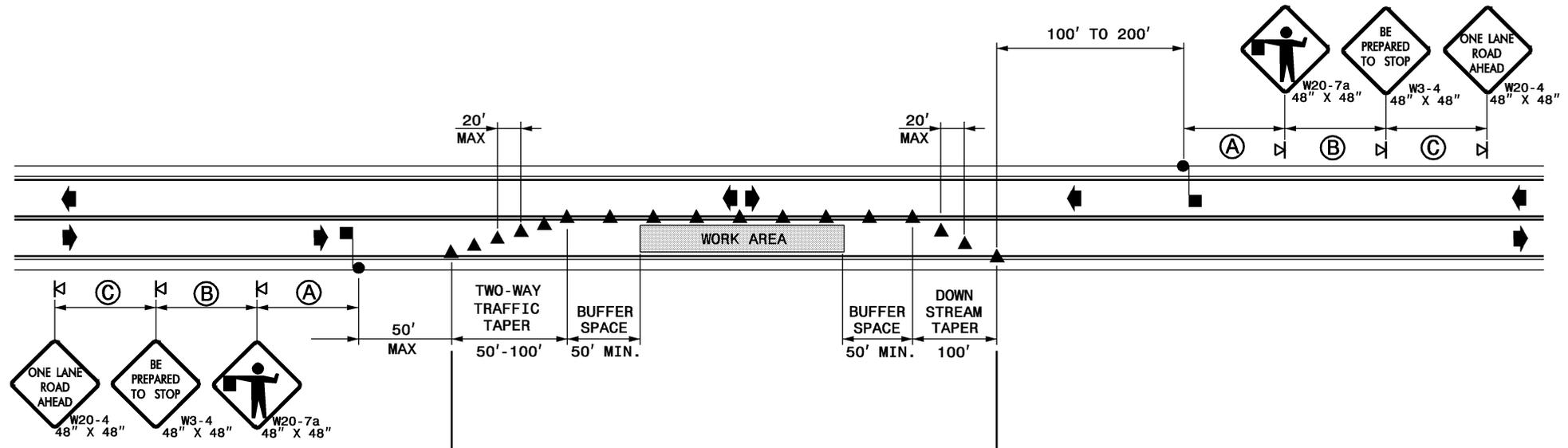
TYPE OF WORK: GUARDRAIL INSTALLATION

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	WBS#: 43585.3.1	1	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	



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GENERAL NOTES FOR FLAGGER OPERATIONS

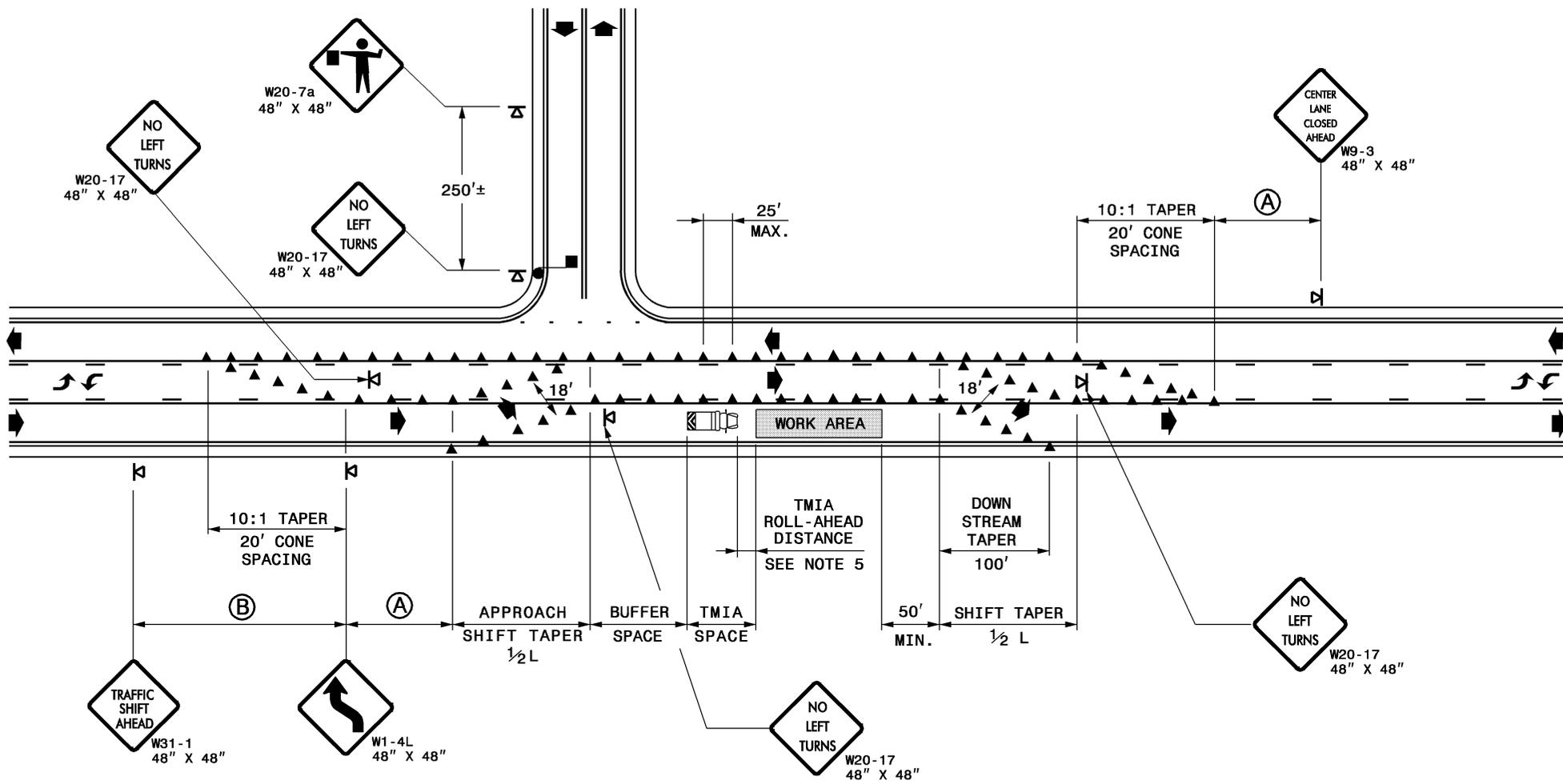
- 1- REFER TO STD. 1101.11 SHEET 4 FOR SIGN SPACING.
- 2- INSTALL LANE CLOSURES WITH THE TRAFFIC FLOW, BEGINNING WITH DEVICES ON THE UPSTREAM SIDE OF TRAFFIC.
- 3- REMOVE LANE CLOSURES AGAINST THE TRAFFIC FLOW, BEGINNING WITH DEVICES ON THE DOWNSTREAM SIDE OF TRAFFIC.
- 4- PLACE CONES THRU THE WORK AREA AT THE MAXIMUM SPACING EQUAL IN FEET TO 2 TIMES THE POSTED SPEED LIMIT.
- 5- EXTEND LANE CLOSURES AT THE BUFFER SPACE SUCH THAT STOPPING SIGHT DISTANCE IS PROVIDED TO THE FLAGGER. (REFER TO STD. 1101.11 SHEET 2)
- 6- DO NOT STOP TRAFFIC IN ANY ONE DIRECTION FOR MORE THAN 5 MINUTES AT A TIME.
- 7- DRUMS OR SKINNY-DRUMS MAY BE USED IN LIEU OF CONES.
- 8- USE FLAGGERS TO CONTROL TRAFFIC AT INTERSECTIONS AFFECTED BY THE LANE CLOSURE. SUPPLEMENT FLAGGERS LOCATED AT INTERSECTIONS WITH FLAGGER AHEAD SIGNS (W20-7a) PLACED APPROXIMATELY 250 FT. IN ADVANCE OF THE FLAGGER WHERE INTERSECTIONS ARE SIGNALIZED AND PLACE SIGNALS IN THE FLASH MODE.
- 9- FLAGGERS SHALL NOT STAND IN THE ROADWAY.

GENERAL NOTES FOR PILOT CAR OPERATIONS

- 1- USE PILOT CARS WHEN DIRECTED BY THE ENGINEER.
- 2- IF ROADWAY WIDTH IS LESS THAN 22 FEET (EOP TO EOP), CONES MAY NOT BE REQUIRED ALONG WORK AREA, AND AT THE DIGRESSION OF THE ENGINEER, CONES MAY BE OMITTED ALONG THE WORK AREA IF USING A PILOT CAR. (NOTE: CONES ARE ALWAYS REQUIRED IN THE UPSTREAM AND DOWNSTREAM TAPERS).
- 3- MOUNT SIGN G20-4 "PILOT CAR FOLLOW ME" AT A VISIBLE LOCATION ON THE REAR OF THE PILOT VEHICLE.
- 4- DO NOT INSTALL MORE THAN ONE (1) MILE OF LANE CLOSURE, MEASURED FROM THE BEGINNING OF THE MERGE TAPER TO THE END OF THE LANE CLOSURE.
- 5- ADVISE RESIDENTS AND BUSINESSES WITHIN THE LANE CLOSURE LIMITS ABOUT METHODS OF SAFE EGRESS AND INGRESS FROM DRIVEWAYS DURING FLAGGING AND PILOT CAR OPERATIONS.

LEGEND

- ▲ CONE
- ◻ PORTABLE SIGN
- FLAGGER
- ◄ DIRECTION OF TRAFFIC FLOW



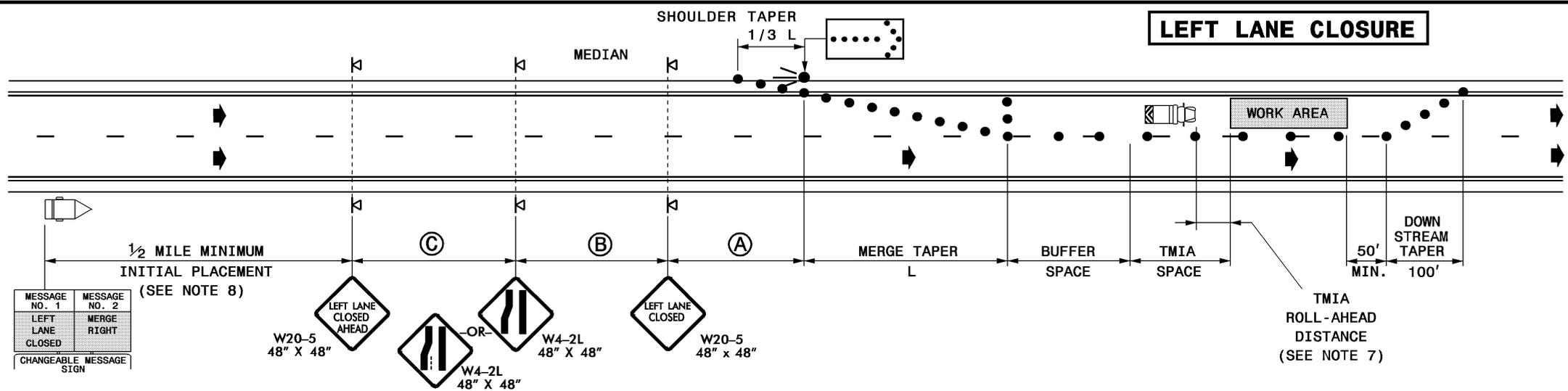
GENERAL NOTES

- 1- REFER TO STD. 1101.11 SHEETS 1 & 4, FOR "L" DISTANCE AND SIGN SPACING.
- 2- 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.
- 3- PLACE CONES ADJACENT TO THE WORK AREA AT THE MAXIMUM SPACING EQUAL IN FEET TO 2 TIMES THE POSTED SPEED LIMIT. PLACE CONES SEPARATING OPPOSING TRAFFIC AT THE MAXIMUM SPACING OF 25 FEET.
- 4- EXTEND LANE CLOSURES AT THE BUFFER SPACE SUCH THAT STOPPING SIGHT DISTANCE IS PROVIDED TO THE BEGINNING OF THE APPROACH SHIFT TAPER. (REFER TO STD. 1101.11 SHEET 2)
- 5- TMIA'S ARE REQUIRED WHEN A BUFFER SPACE CANNOT BE ATTAINED, OR WHEN DIRECTED BY THE ENGINEER OR AS SHOWN IN THE PLANS. WHEN USED, POSITION TMIA'S TO MAINTAIN A ROLL-AHEAD DISTANCE AS RECOMMENDED BY THE MANUFACTURER.
- 6- DRUMS OR SKINNY-DRUMS MAY BE USED IN LIEU OF CONES.

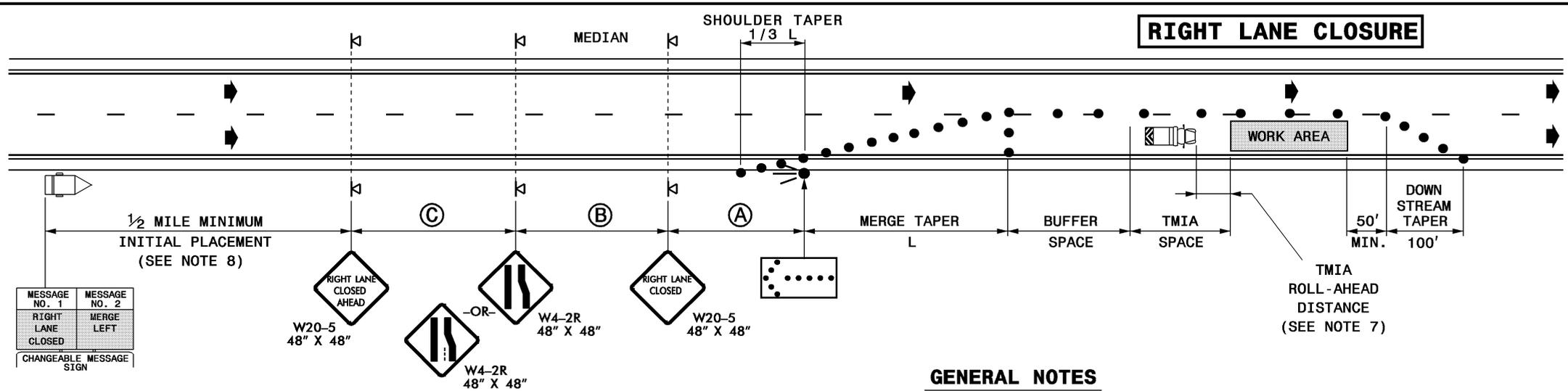
LEGEND

	TMIA
	CONE
	FLAGGER
	PORTABLE SIGN
	DIRECTION OF TRAFFIC FLOW

LEFT LANE CLOSURE



RIGHT LANE CLOSURE



GENERAL NOTES

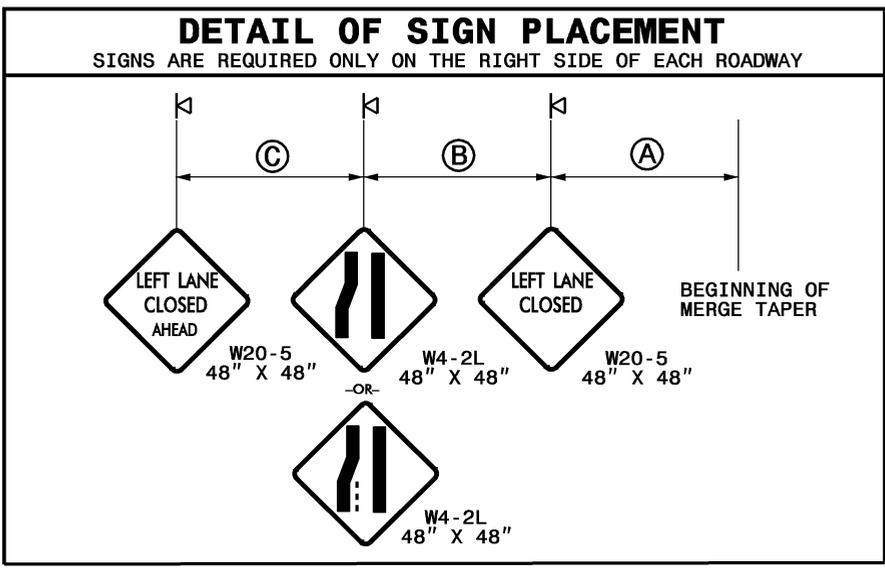
- 1- IF NECESSARY USE THIS STD. FOR ONE-WAY CITY TYPE STREETS WHERE SIGNS MAY BE MOUNTED ON BOTH SIDES OF THE ROADWAY.
- 2- PLACE ARROW PANELS ON THE SHOULDER (PAVED OR UNPAVED). PLACE ARROW PANELS WITHIN THE TAPER IF SHOULDERS DO NOT EXIST. MEET THE REQUIREMENTS FOR STOPPING SIGHT DISTANCE AT THE ARROW PANEL LOCATION. 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)
- 3- 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.
- 4- REFER TO STD. 1101.11 SHEETS 1 & 4, FOR "L" DISTANCE AND SIGN SPACING.
- 5- REFER TO STD. 1101.02 SHEETS 6 AND 7 FOR TREATMENT OF LANE CLOSURES THRU INTERCHANGES.
- 6- 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.
- 7- 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 THE MANUFACTURER.
- 8- 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.
- 9- MESSAGES MAY READ "LEFT LANE CLOSED" OR "RIGHT LANE CLOSED", "MERGE RIGHT" OR "MERGE LEFT" DEPENDING ON LANE BEING CLOSED.

LEGEND

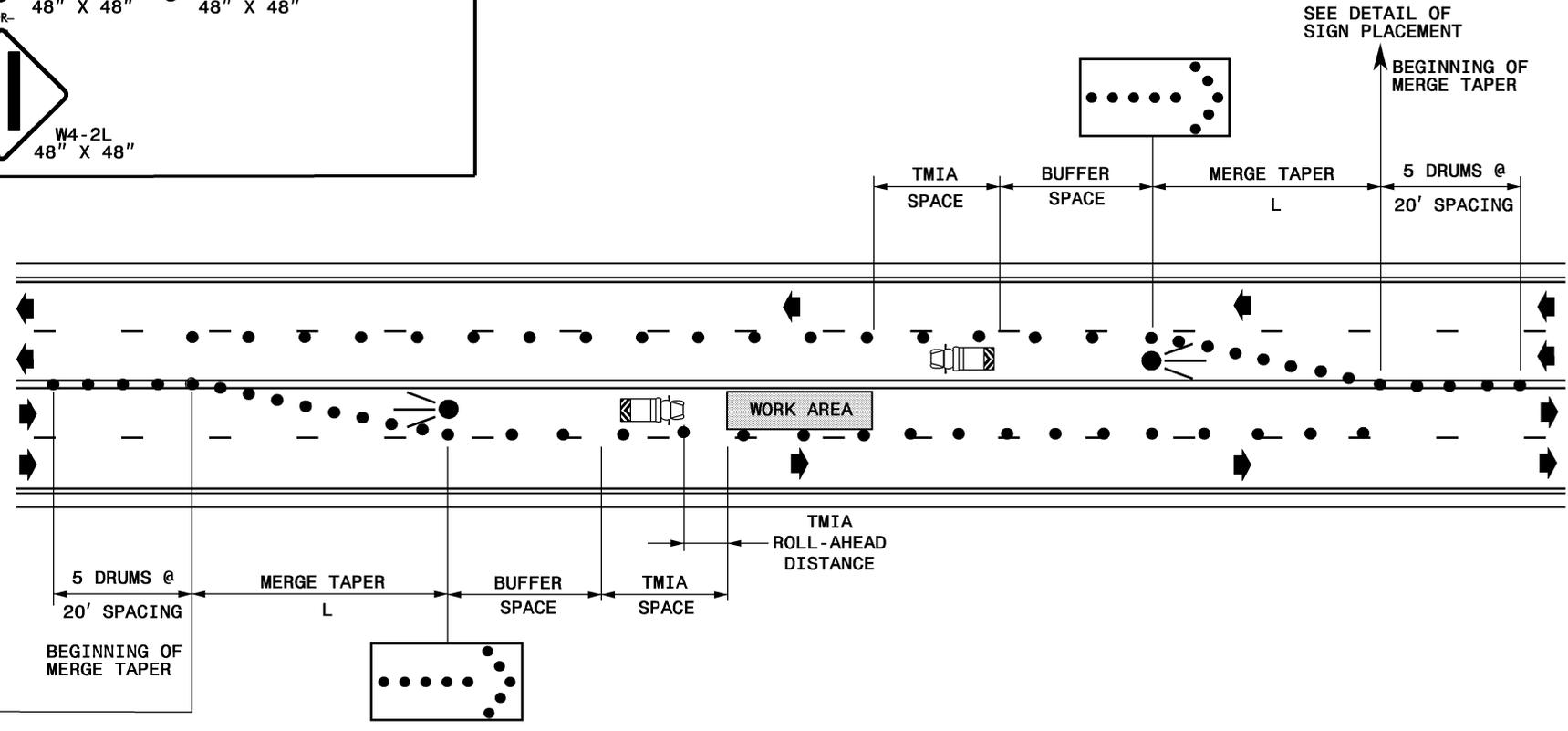
- FLASHING ARROW PANEL (TYPE C)
- TRUCK MOUNTED IMPACT ATTENUATOR(TMIA)
- CHANGEABLE MESSAGE SIGN (CMS)
- DRUM
- PORTABLE SIGN
- DIRECTION OF TRAFFIC FLOW

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LEFT LANE CLOSURE



SEE DETAIL OF SIGN PLACEMENT

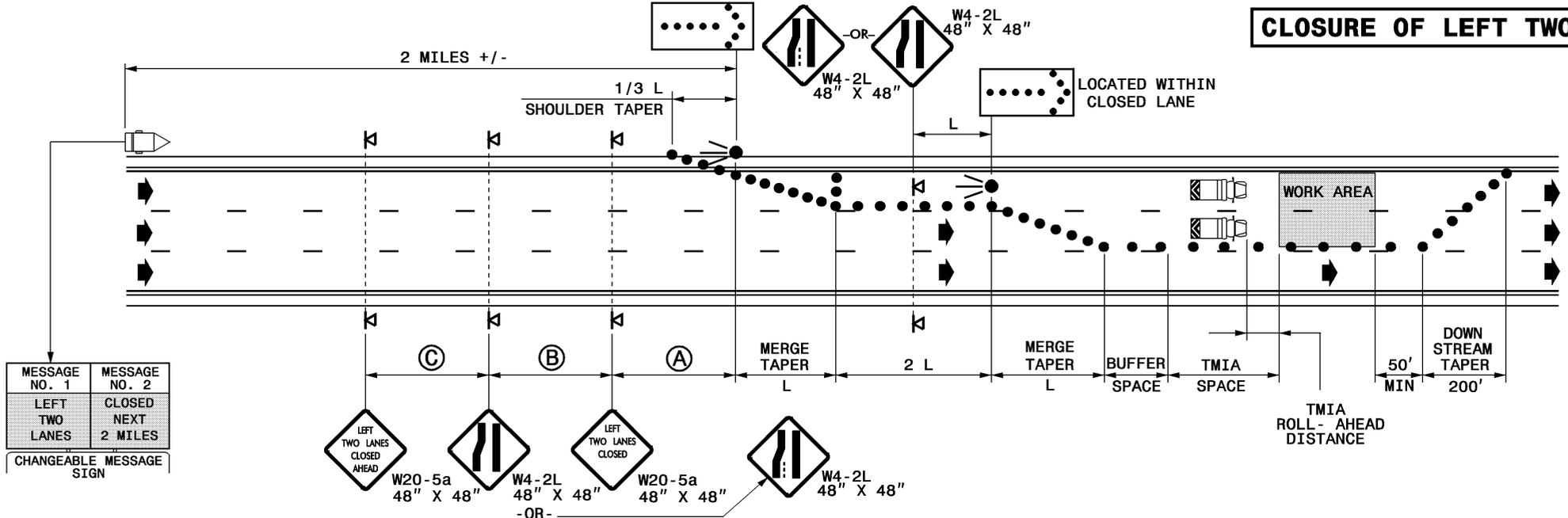
LEGEND

- FLASHING ARROW PANEL (TYPE C)
- TRUCK MOUNTED IMPACT ATTENUATOR(TMIA)
- DRUM
- PORTABLE SIGN
- DIRECTION OF TRAFFIC FLOW

GENERAL NOTES

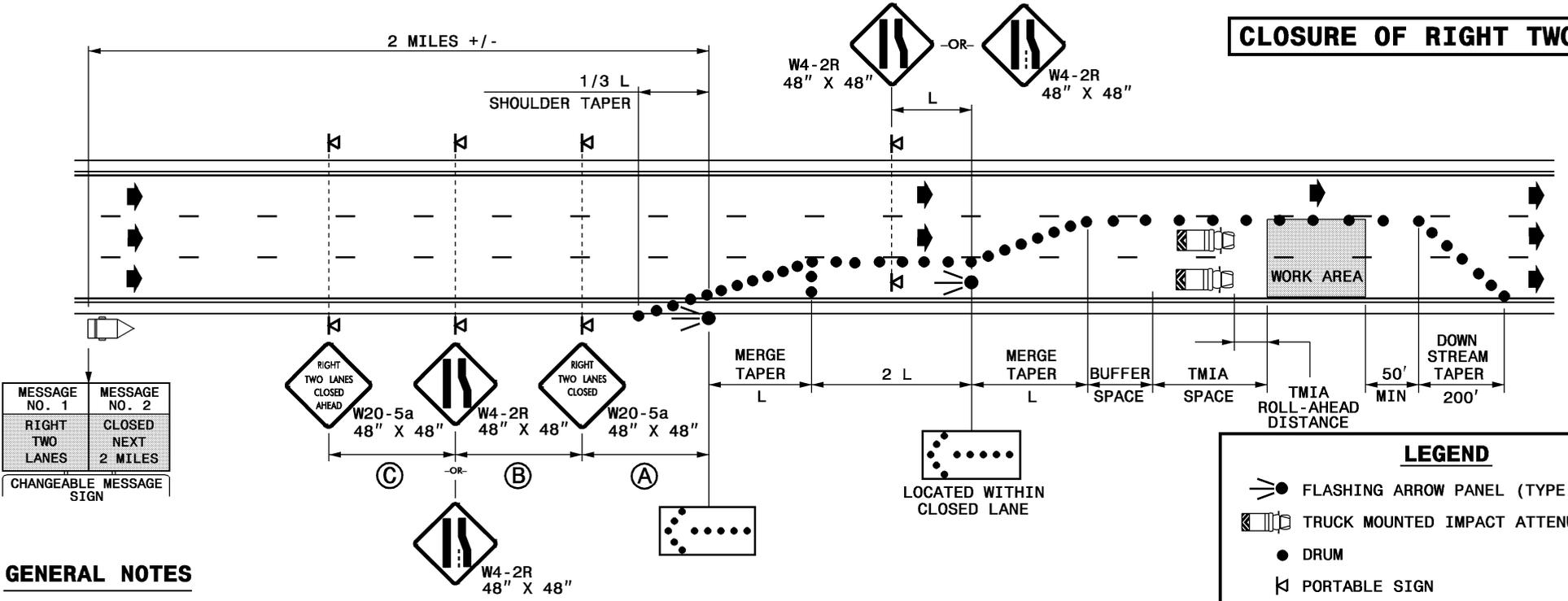
- 1- RIGHT LANE CLOSURES ON UNDIVIDED ROADWAYS ARE THE SAME AS FOR DIVIDED ROADWAYS AS SHOWN ON STD. 1101.02 SHEET 3, WITH THE EXCEPTION THAT THE APPROACH WARNING SIGNS ARE NOT REQUIRED TO BE MOUNTED ON THE LEFT SIDE OF THE ROADWAY.
- 2- REFER TO NOTES ON STD. 1101.02 SHEET 3.

CLOSURE OF LEFT TWO LANES



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CLOSURE OF RIGHT TWO LANES

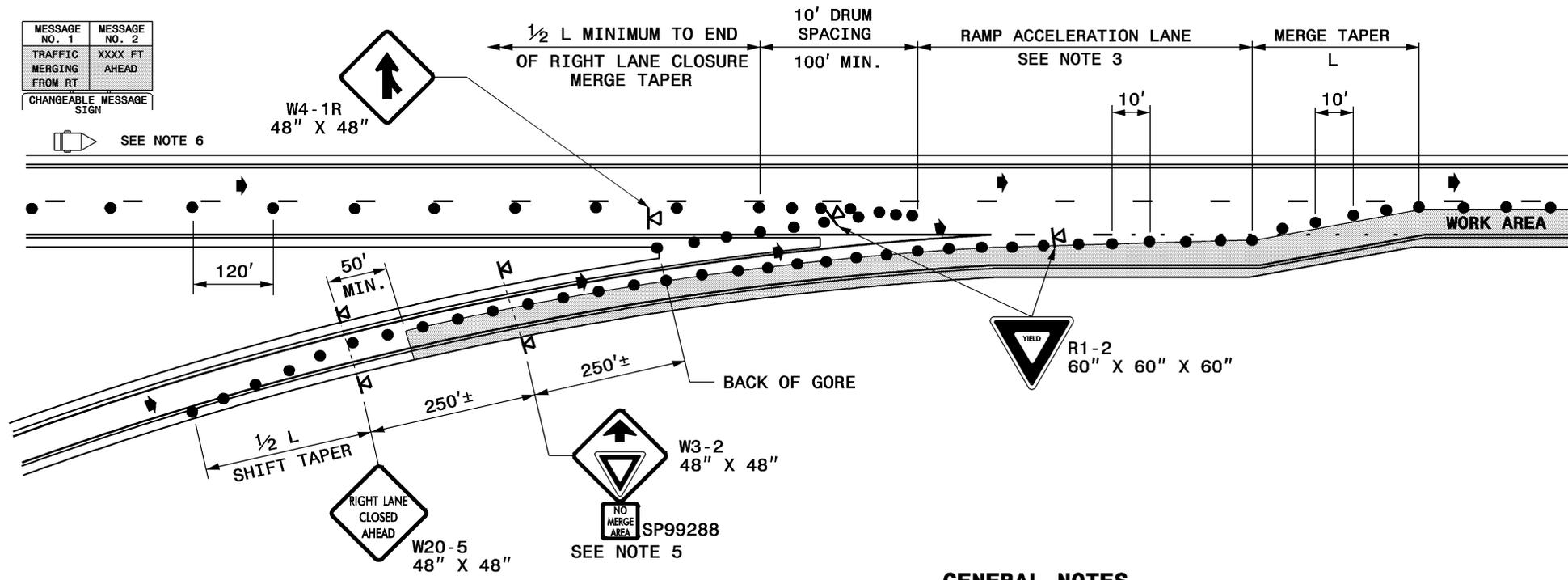
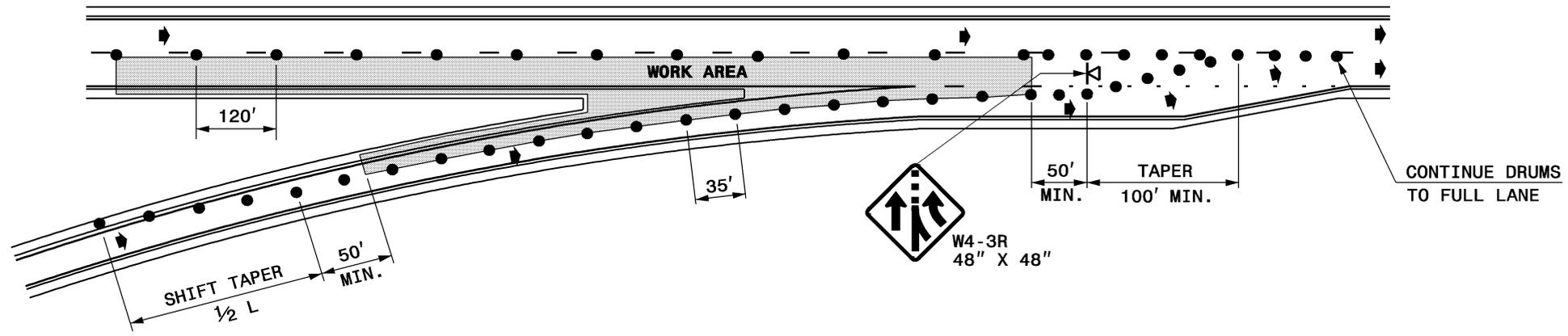


GENERAL NOTES

- 1-REFER TO NOTES ON STD. 1101.02 SHEET 3.
- 2-USE ONLY IN OFF-PEAK HOURS DURING LOWEST TRAFFIC VOLUMES.

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MESSAGE NO. 1	MESSAGE NO. 2
TRAFFIC MERGING FROM RT	XXXX FT AHEAD
CHANGEABLE MESSAGE SIGN	

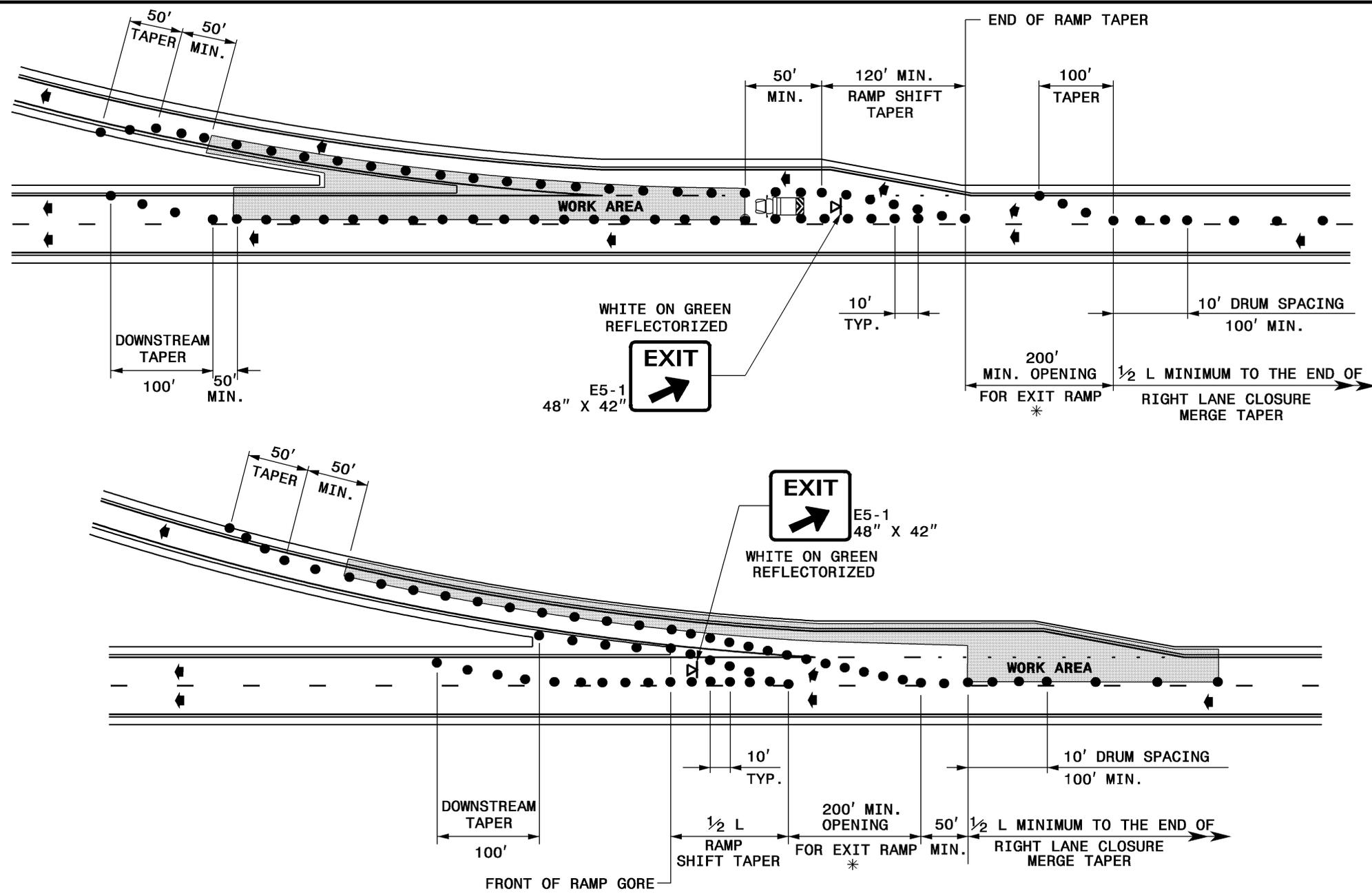
SEE NOTE 6

GENERAL NOTES

- 1- USE THE ABOVE DETAILS IN CONJUNCTION WITH A RIGHT LANE CLOSURE AS SHOWN ON ROADWAY STD. 1101.02 SHEET 3.
- 2- MOUNT SIGNS SHOWN A MINIMUM OF 5 FEET ABOVE THE PAVEMENT ELEVATION.
- 3- IF EXISTING ACCELERATION DISTANCE OR A MINIMUM OF 400' ACCELERATION DISTANCE CANNOT BE PROVIDED, CONTACT THE WORK ZONE TRAFFIC CONTROL UNIT FOR FURTHER GUIDANCE.
- 4- CLOSE THE RIGHT LANE SUFFICIENTLY IN ADVANCE TO STABILIZE MOTOR VEHICLE TRAFFIC FLOW BEFORE THE MERGE AS SHOWN ON STD. 1101.02 SHEET 3.
- 5- INSTALL SP99288 BELOW THE YIELD AHEAD SIGN (AS SHOWN) TO ALERT MOTORISTS THAT THE ACCELERATION DISTANCE HAS BEEN REDUCED.
- 6- COORDINATE WITH THE ENGINEER FOR LOCATION OF CMS.

LEGEND

- ◻ CHANGEABLE MESSAGE SIGN (CMS)
- DRUM
- ⚡ PORTABLE SIGN
- ➔ DIRECTION OF TRAFFIC FLOW



LEGEND

- TRUCK MOUNTED IMPACT ATTENUATOR
- DRUM
- PORTABLE SIGN
- DIRECTION OF TRAFFIC FLOW

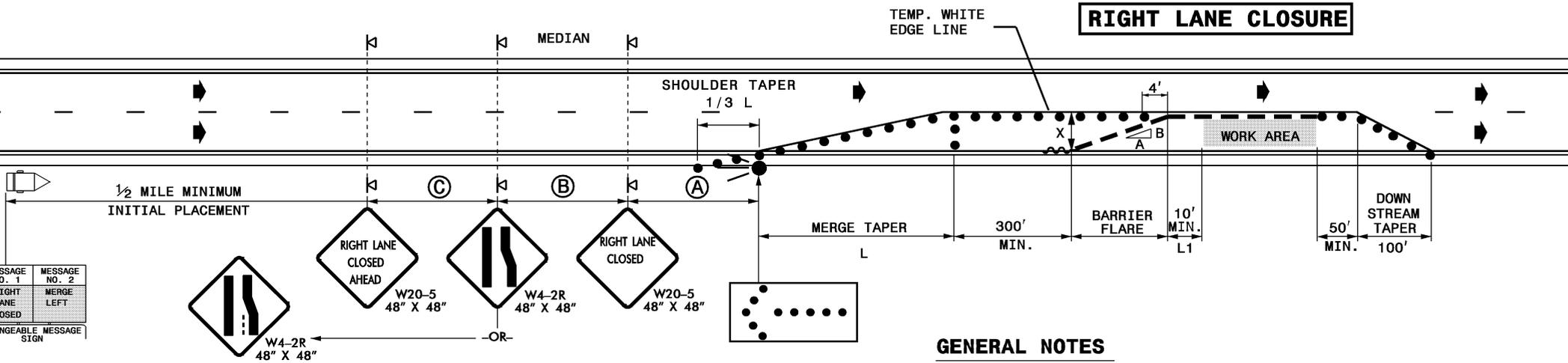
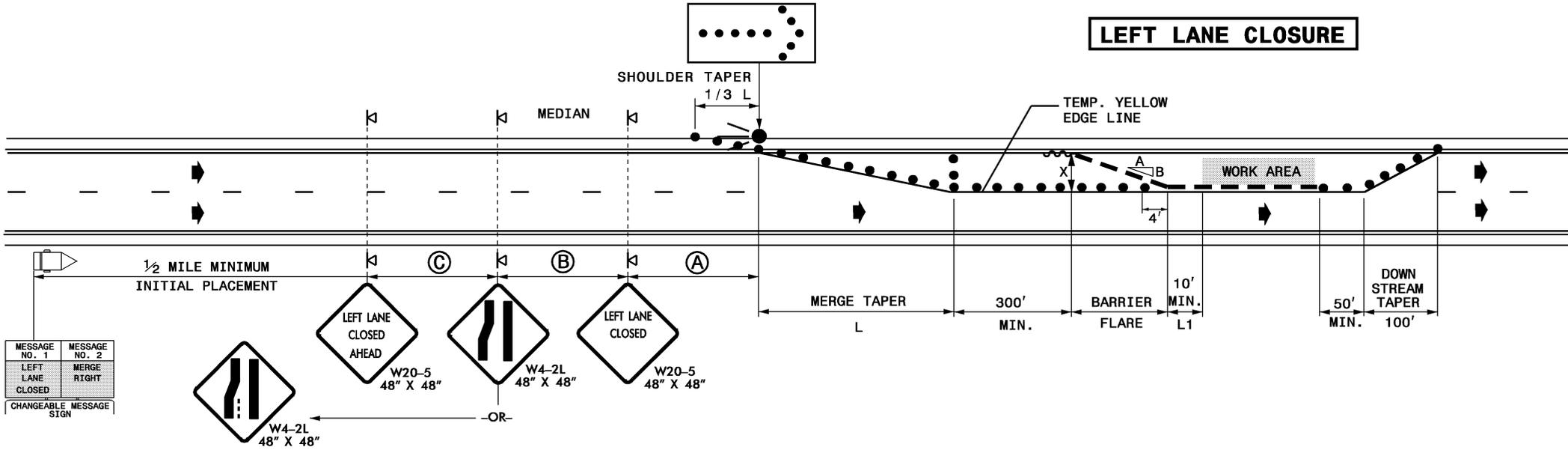
- GENERAL NOTES**
- 1-USE THE ABOVE DETAILS IN CONJUNCTION WITH A RIGHT LANE CLOSURE AS SHOWN ON STD. 1101.02 SHEET 3.
 - 2-MOUNT EXIT SIGNS A MINIMUM OF 7 FEET ABOVE THE PAVEMENT ELEVATION.

*** NOTE:**

- 1-USE EXISTING RAMP OPENING LENGTH, BUT NO LESS THAN 1/2 ORIGINAL LENGTH.
- 2-CONSIDER CLOSING RAMP IF LESS THAN 1/2 ORIGINAL LENGTH CAN NOT BE OBTAINED.

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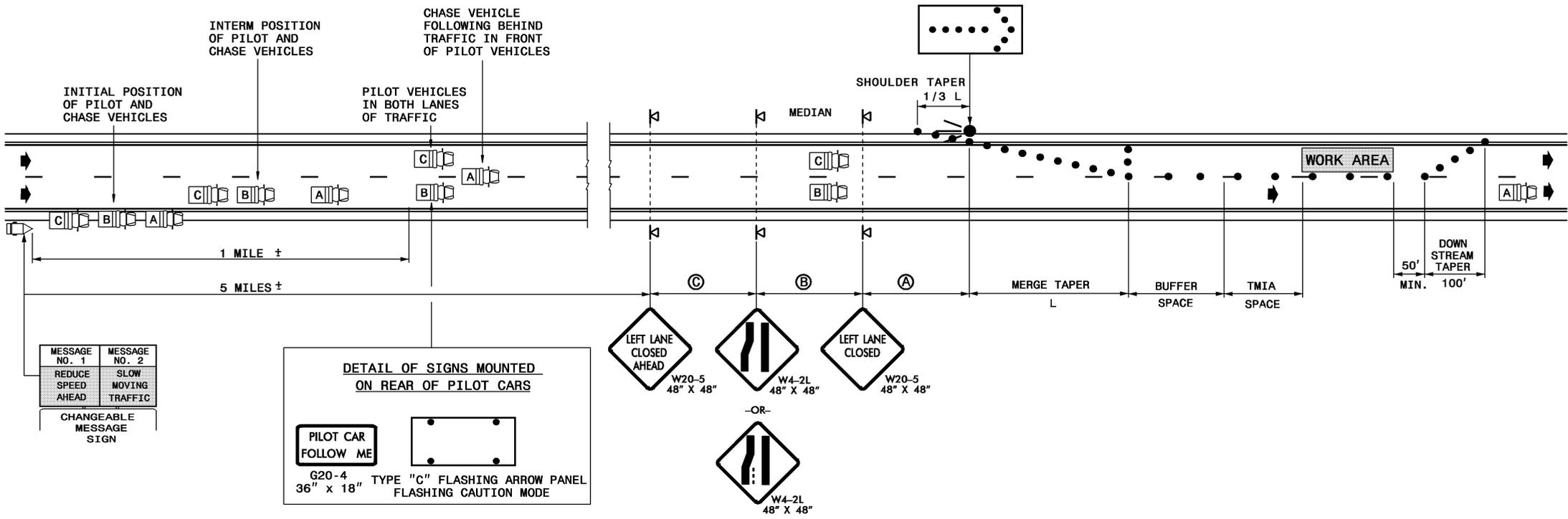


GENERAL NOTES

- 1-REFER TO STD. 1101.11 SHEETS 1, 3 & 4 FOR "L" DISTANCE, BARRIER FLARE RATES AND SIGN SPACING.
- 2-CRASH CUSHIONS ARE REQUIRED ONLY WHEN THE LATERAL OFFSET DISTANCE "X" IS LESS THAN 30 FEET (CLEAR ZONE).
- 3-IF THE BOUNDARIES OF THE WORK AREA ARE CONFINED TO THE LANE BEING CLOSED, L1 IS EQUAL TO 10 FEET UNLESS EXTRA ROOM IS NEEDED FOR STAGING AND STORAGE OF EQUIPMENT. IF THE BOUNDARIES OF THE WORK AREA ARE NOT CONFINED TO THE LANE BEING CLOSED, REFER TO THE "AASHTO ROADSIDE DESIGN GUIDE" FOR APPLICABLE VALUES FOR L1.
- 4-REFER TO THE "AASHTO ROADSIDE DESIGN GUIDE" MINIMUM LENGTH OF NEED OF PORTABLE CONCRETE BARRIER NEEDED TO PROTECT THE WORK AREA.
- 5-PORTABLE SIGNS MAY BE USED IN LIEU OF STATIONARY SIGNS FOR SHORT TERM LANE CLOSURES (3 DAYS OR LESS).
- 6-REFER TO NOTES ON STD. 1101.02 SHEET 3 FOR ADDITIONAL REQUIREMENTS.
- 8-PLACE CHANGEABLE MESSAGE SIGN (CMS) ON THE OUTSIDE OF THE TRAVELWAY AS DIRECTED BY THE ENGINEER. PLACE CMS APPROXIMATELY $\frac{1}{2}$ MILE IN ADVANCE OF THE W20-5 SIGNS. IF TRAFFIC BACKS UP TO WHERE THE CMS IS INITIALLY PLACED, RELOCATE CMS $\frac{1}{2}$ MILE FORM ANTICIPATED BACKUP. CONTINUE TO MONITOR TRAFFIC, MOVE CMS APPROXIMATELY $\frac{1}{2}$ MILE IN CONJUNCTION WITH ANTICIPATED BACKUP.

LEGEND

- ▬ PORTABLE CONCRETE BARRIER
- ⋈ CRASH CUSHION
- ⚡ FLASHING ARROW PANEL (TYPE C)
- 🚚 TRUCK MOUNTED IMPACT ATTENUATOR (TMIA)
- DRUM
- ⚡ PORTABLE SIGN
- 📄 CHANGEABLE MESSAGE SIGN (CMS)
- ➡ DIRECTION OF TRAFFIC FLOW

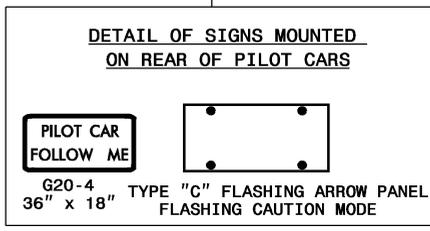


GENERAL NOTES

- 1-THIS DETAIL IS INTENDED TO BE USED FOR OPERATIONS SUCH AS INSTALLING A LANE CLOSURE ERECTION/REMOVAL OF CANTILEVERED SIGNS, OR OTHER TYPES OF OPERATIONS WHERE TRAFFIC IS NOT PERMITTED TO ENTER THE OPERATION AREA. THE TRAFFIC IS NOT STOPPED, BUT MOVES AT A REDUCED SPEED. SPACE SIGNS AS SHOWN ON STD. 1101.11 SHEET 4.
- 2-START ROLLING ROAD BLOCK BY HAVING ALL VEHICLES LEAVE THE OUTSIDE SHOULDER AND ACCELERATE TO NORMAL ROADWAY SPEEDS. WHEN NORMAL ROADWAY SPEEDS ARE ATTAINED, THE TWO PILOT VEHICLES WILL POSITION THEMSELVES SIDE BY SIDE AND THEN DECELERATE TO THE SPECIFIED ROLLING ROAD BLOCK SPEED. THE CHASE VEHICLE (A) WILL CONTINUE TO TRAVEL AT NORMAL ROADWAY SPEEDS BEHIND ANY VEHICLES IN FRONT OF THE ROLLING ROAD BLOCK.
- 3-PLACE ALL NECESSARY SIGNING BEFORE IMPLEMENTING THE ROLLING ROAD BLOCK.
- 4-DO NOT BEGIN CONSTRUCTION IN OPERATION AREA UNTIL THE CHASE CAR (A) HAS CLEARED THE OPERATION AREA.
- 5-IMPLEMENT THIS TYPE OF ROLLING ROAD BLOCK DURING PERIODS OF LOW TRAFFIC VOLUMES, AND DO NOT PLACE IN EFFECT LONGER THAN 30 MINUTES. IF MULTIPLE ROLLING ROAD BLOCKS WILL BE REQUIRED, A MINIMUM PERIOD OF 20 MINUTES SHOULD TRANSPIRE BEFORE IMPLEMENTING ADDITIONAL ROLLING ROAD BLOCKS.
- 6-PLACE CHANGEABLE MESSAGE SIGN EITHER IN THE MEDIAN OR ON THE OUTSIDE OF THE TRAVEL WAY AS DIRECTED BY THE ENGINEER. LOCATE THE SIGN APPROXIMATELY 5 MILES IN ADVANCE OF THE FIRST ADVANCE WARNING SIGN. IF IT IS ANTICIPATED THAT TRAFFIC WILL BACK UP TO THE CHANGEABLE MESSAGE SIGN THEN THE SIGN SHOULD BE PLACED IN A LOCATION APPROXIMATELY 1 MILE OR MORE PRIOR TO WHERE TRAFFIC IS EXPECTED TO BACK UP.
- 7-CHANGEABLE MESSAGE SIGN MESSAGES OTHER THAN THE ONES SHOWN MAY BE DISPLAYED AS DIRECTED BY THE ENGINEER. USE NO MORE THAN 2 MESSAGE DISPLAYS WITH ANY CYCLE, UNLESS ADDITIONAL CHANGEABLE MESSAGE SIGNS ARE USED.
- 8-RADIO COMMUNICATION BETWEEN ALL VEHICLES AND GROUND CREWS IS REQUIRED.

MESSAGE NO. 1	MESSAGE NO. 2
REDUCE SPEED AHEAD	SLOW MOVING TRAFFIC

CHANGEABLE MESSAGE SIGN



LEGEND

- CHANGEABLE MESSAGE SIGN (CMS)
- FLASHING ARROW PANEL (TYPE C)
- TRUCK - CHASE VEHICLE
- TRUCK - PILOT VEHICLE
- POLICE CAR - PILOT VEHICLE
- DRUM
- PORTABLE SIGN
- DIRECTION OF TRAFFIC FLOW

**ADVANCE WARNING SIGN
SPACING CHART**

POSTED SPEED LIMIT (MPH)	RECOMMENDED DISTANCE BETWEEN SIGNS (FEET) ±		
	(A)	(B)	(C)
≤ 35	200	200	200
40-50	350	350	350
55	500	500	500
CONTROLLED ACCESS ROADS (≥ 55)	1000	1500	2700

GENERAL NOTES

- 1-USE THIS STANDARD DRAWING IN CONJUNCTION WITH OTHER TRAFFIC CONTROL ROADWAY STANDARD DRAWINGS WHERE SIGN SPACING DISTANCES A, B, C, ARE SPECIFIED.
- 2-APPLY THE ADVANCE WARNING SIGN SPACING CHART WHERE A SERIES OF 2 OR MORE SIGNS ARE USED. ALL SIGN SPACING DIMENSIONS ARE APPROXIMATE. FIELD ADJUST AS VARIOUS CONDITIONS OCCUR, SUCH AS LIMITED SIGHT DISTANCE, OBSTRUCTION INTERFERENCE, ETC.

