TEMPORARY TRAFFIC CONTROL TYPICALS FOR TRAFFIC COUNTER TUBE WORK

June 2014

SHA
State Highway Administration

PREFACE

Temporary Traffic Control Typicals for Traffic Counter Tube Work

June 2014

The purpose of this document is to provide guidance to field staff on establishing temporary traffic control for traffic counter tube work requiring less than one-hour to complete, day or night, during non-inclement weather. Typical applications are illustrated for shoulder-closure and lane-encroachment scenarios for various types of roadway facilities, including ramps. This document is a supplement to, and does not supersede criteria promulgated by, the most recent editions of the *SHA Book of Standards* or the *Maryland Manual of Uniform Traffic Control Devices*. For applications not addressed in this document, refer to the most recent edition of the *SHA Book of Standards*.

The Table of Contents contains three tables of hyperlinks to typical applications of temporary traffic control for traffic counter tube work, one table each for three ranges of posted speed limit, as follows: 1) 20, 25 or 30 mph; 2) 35 or 40 mph; and 3) 45, 50 or 55 mph. To navigate to a typical traffic control application, enter the table associated with the roadway's posted speed limit and select the Plate Number (in blue text) associated with the roadway's number of lanes, directionality, cross section, shoulder usage, and the number of work (i.e., shadow) vehicles that will be deployed to the site where the traffic counter tubes will be set.

The following provides additional guidance associated with implementing temporary traffic control for traffic counter tube work:

1. Traffic Cones. Where used, ensure that traffic cones meet current Maryland SHA specifications for a 36″ reflectorized traffic cone.

2. Advanced Warning Signs. Where used, ensure that advance warning signs meet current Maryland SHA specifications for a 48″ x 48″ fabric sign mounted on a foldable, weighted base, deploying a W20-1(1) sign for "ROAD WORK AHEAD" and a W5-4 sign for "RAMP NARROWS," as designated in the plates.

3. Work / Shadow Vehicles. At least one vehicle will be deployed to the site where the traffic counter tubes will be set; however, some field crews elect to deploy two vehicles. Each typical application designates the distance of the vehicle to the work site as well as the distance between vehicles when field crews elect to deploy two vehicles. Each vehicle must be equipped with a roof-mounted yellow flashing or revolving, high-intensity strobe light or light bar meeting current Maryland SHA specifications. Ensure that the company name and contact information is prominently displayed on each vehicle that is deployed. Once positioned, it is good practice to turn the front wheels of the stationary vehicle(s) away from travel lanes and engage the emergency brake.

4. Vehicle Roof-Mounted Arrow Panel. Some field crews elect to use a vehicle roof-mounted arrow panel as an integral part of their temporary traffic control setup. The advantage of using such a device is that it can be deployed and retracted automatically from within the cab of the vehicle and is typically visible to oncoming traffic 0.5 to 1 mile in advance of the work site. When used, ensure that the vehicle roof-mounted arrow panel meets current Maryland SHA specifications for a Type A 48″ x 24″ device, minimum, and that only the four-corner caution display mode is used for the typical applications addressed in this document.

5. Field Crew. Ensure that field crew staff have taken and passed a Maryland SHA-approved safety course prior to field deployment. Determine the number of field crew staff needed to install or remove traffic counter tubes and related equipment as follows: [Maximum Number of Staff Necessary to Perform the Work + One (1) Traffic Spotter]. For example, if a traffic counter tube set requires two people to physically set the tubes and equipment, then a field crew of three staff will be needed. This concept is to ensure the safety of the field crew in the traveled way who are focusing on the work, tubes and equipment, not the traffic. When the field crew is in the traveled way performing the work, the traffic spotter has one job – to look for and warn the field crew of oncoming traffic. When field staff are not in the travel lanes, the traffic spotter typically performs other duties. The traffic spotter is positioned with a clear view of oncoming traffic, is not a flagger, does not control traffic, nor uses hand-held devices such as red flags. It is good practice for a traffic spotter to use a reliable audible device such as a whistle and to not rely entirely on verbal commands, which may be misunderstood.

6. Field Crew Safety Attire. Ensure safety attire meet current Maryland SHA specifications. Wear Class 3 safety vests for work performed during daylight hours. For work performed during nighttime hours, wear Class 3 trousers and safety vests. To enhance safety, consider other devices such as Class 3 ball caps, arm-band flashing lights, and head-band work lights.

7. Field Crew Work Preparation. Complete all preparatory work (e.g., mapping, route planning, inventory checks, cutting tape and tubes) prior to field deployment. It is good practice to perform a pre-installation reconnaissance to ascertain potential problems with the traffic counter set location or traffic control. To enhance safety, select a traffic counter set location that is not obscured by sharp horizontal or crest vertical curvature.

8. Traffic Exposure Considerations. A daylight period has better visibility but generally more traffic, and a nighttime period generally has less traffic but limited visibility. The typical applications presented in this document are appropriate for traffic counter tube work that requires less than one-hour to complete, day or night, during non-inclement weather for either Traffic Condition A or Traffic Condition B, as described below.

    a. Traffic Condition A – Low Volume: DESIRABLE. Vehicles approach the work zone somewhat randomly and generally present minimal conflict. Typified by:

        - A rough estimate of traffic volume at less than 5 vehicles per lane per minute.
        - Significant gaps exist in traffic flow.
        - Few vehicles are visible at any given time.
        - Random platoons of vehicles exist.
        - Free flow traffic at the posted speed limit.
        - Near unrestricted access exists to the work area.
        - Safe walking pace conditions exist across the roadway.

b. Traffic Condition B – Moderate Volume: ACCEPTABLE. The frequency of vehicles increases and more care and vigilance are required by the field crew to ensure safe work operations. Typified by:

- A rough estimate of traffic volume at 12 vehicles per lane per minute.
- Gaps in traffic are present, but may be more consistent.
- Vehicles are generally present all the time.
- Traffic is constant but still flows freely.
- Generally free flow traffic speed at the posted limit.
- Good work area access, but vehicles are usually present.
- Safe walking pace conditions exist across the roadway, but may require waiting for a gap in traffic.

c. Traffic Condition C – High Volume: NOT RECOMMENDED. Vehicles are constantly present at this level. Typified by:

- A rough estimate of 20 vehicles per lane per minute.
- Minimal gaps exist in traffic.
- Constantly present vehicles.
- Restricted or unstable traffic flow.
- Reduced traffic speeds, as volume starts to approach road capacity.
- Unacceptable backups and delays.
- A safe walking condition across the roadway may not exist.

Where Traffic Condition C exists and cannot be mitigated by selecting a time period that exhibits conditions similar to Traffic Condition A or Traffic Condition B, give consideration to using non-intrusive data collection methods, lane closures, traffic drags, and/or police assistance.

9. Ramp Considerations. Do not stage the field crew, vehicles or equipment in the gore area of an exit ramp. As practicable, avoid setting traffic counter tubes along a ramp just beyond the gore area, which is a location know to be used as a recovery area for errant vehicles attempting to exit the roadway. Do not travel in reverse along ramps to avoid tolls or save time traveling to another set location.

TABLE OF CONTENTS
Temporary Traffic Control Typicals for Traffic Counter Tube Work
POSTED SPEED LIMIT: 20, 25 or 30 MPH

# Lanes/Direction	Cross Section	Shoulder Usage	Roadway Impact	# Shadow Vehicles	Plate #
1-LANE, 1-WAY	RAMP	NO OR NARROW SHOULDER	LANE ENCROACHMENT	1	19
				2	19C
		USABLE SHOULDER	LEFT SHOULDER CLOSURE	1	17
				2	17C
			RIGHT SHOULDER CLOSURE	1	18
				2	18C
2-LANE, 1-WAY	UNDIVIDED	NO OR NARROW SHOULDER	LANE ENCROACHMENT	1	11
				2	11B
		USABLE PARKING LANE	PARKING LANE CLOSURE	1	12
				2	12B
2-LANE, 2-WAY	UNDIVIDED	NO OR NARROW SHOULDER	LANE ENCROACHMENT	1	1
				2	1C
		USABLE SHOULDER	SHOULDER CLOSURE	1	2
				2	2C
3-LANE, 1-WAY	UNDIVIDED	NO OR NARROW SHOULDER	LANE ENCROACHMENT	1	13
				2	13B
		USABLE PARKING LANE	PARKING LANE CLOSURE	1	14
				2	14B
4-LANE, 2-WAY	RAISED MEDIAN	NO OR NARROW SHOULDER	LANE ENCROACHMENT	1	7
				2	7C
		USABLE SHOULDER	SHOULDER CLOSURE	1	8
				2	8C
	UNDIVIDED	NO OR NARROW SHOULDER	LANE ENCROACHMENT	1	3
				2	3C
		USABLE SHOULDER	SHOULDER CLOSURE	1	4
				2	4C
6-LANE, 2-WAY	RAISED MEDIAN	NO OR NARROW SHOULDER	LANE ENCROACHMENT	1	9
				2	9C
		USABLE SHOULDER	SHOULDER CLOSURE	1	10
				2	10C
	UNDIVIDED	NO OR NARROW SHOULDER	LANE ENCROACHMENT	1	5
				2	5C
		USABLE SHOULDER	SHOULDER CLOSURE	1	6
				2	6C

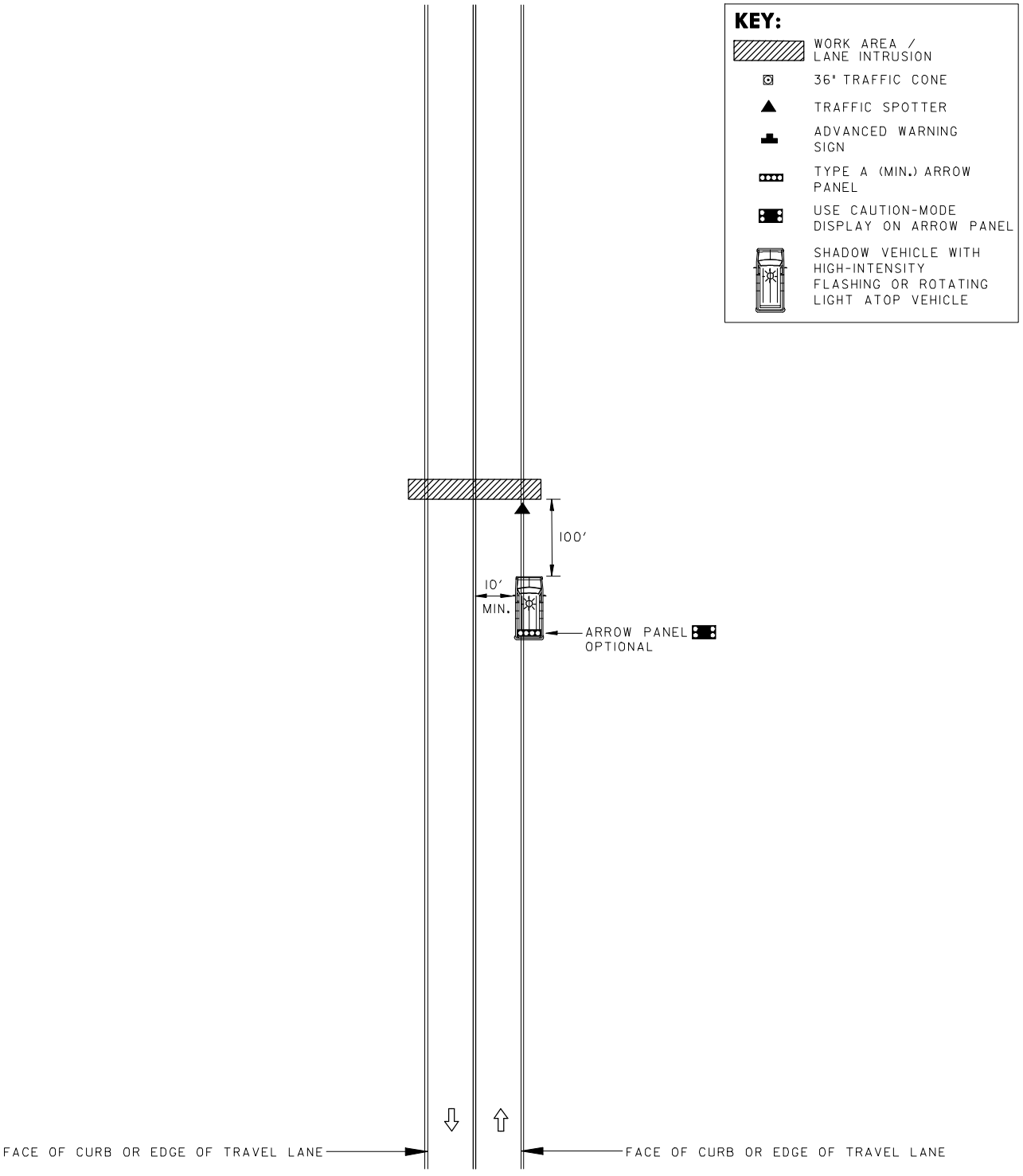
TABLE OF CONTENTS (continued)
Temporary Traffic Control Typicals for Traffic Counter Tube Work
POSTED SPEED LIMIT: 35 or 40 MPH

# Lanes/Direction	Cross Section	Shoulder Usage	Roadway Impact	# Shadow Vehicles	Plate #
1-LANE, 1-WAY	RAMP	NO OR NARROW SHOULDER	LANE ENCROACHMENT	1	19A
				2	19D
		USABLE SHOULDER	LEFT SHOULDER CLOSURE	1	17A
				2	17D
			RIGHT SHOULDER CLOSURE	1	18A
				2	18D
2-LANE, 1-WAY	UNDIVIDED	NO OR NARROW SHOULDER	LANE ENCROACHMENT	1	11A
				2	11C
		USABLE PARKING LANE	PARKING LANE CLOSURE	1	12A
				2	12C
2-LANE, 2-WAY	UNDIVIDED	NO OR NARROW SHOULDER	LANE ENCROACHMENT	1	1A
				2	1D
		USABLE SHOULDER	SHOULDER CLOSURE	1	2A
				2	2D
3-LANE, 1-WAY	UNDIVIDED	NO OR NARROW SHOULDER	LANE ENCROACHMENT	1	13A
				2	13C
		USABLE PARKING LANE	PARKING LANE CLOSURE	1	14A
				2	14C
4-LANE, 2-WAY	DIVIDED	USABLE SHOULDER	SHOULDER CLOSURE	1	15
				2	15B
	RAISED MEDIAN	NO OR NARROW SHOULDER	LANE ENCROACHMENT	1	7A
				2	7D
		USABLE SHOULDER	SHOULDER CLOSURE	1	8A
				2	8D
	UNDIVIDED	NO OR NARROW SHOULDER	LANE ENCROACHMENT	1	3A
				2	3D
		USABLE SHOULDER	SHOULDER CLOSURE	1	4A
				2	4D
6-LANE, 2-WAY	DIVIDED	USABLE SHOULDER	SHOULDER CLOSURE	1	16
				2	16B
	RAISED MEDIAN	NO OR NARROW SHOULDER	LANE ENCROACHMENT	1	9A
				2	9D
		USABLE SHOULDER	SHOULDER CLOSURE	1	10A
				2	10D
	UNDIVIDED	NO OR NARROW SHOULDER	LANE ENCROACHMENT	1	5A
				2	5D
		USABLE SHOULDER	SHOULDER CLOSURE	1	6A
				2	6D

TABLE OF CONTENTS (continued)
Temporary Traffic Control Typicals for Traffic Counter Tube Work
POSTED SPEED LIMIT: 45, 50 or 55 MPH

# Lanes/Direction	Cross Section	Shoulder Usage	Roadway Impact	# Shadow Vehicles	Plate #
1-LANE, 1-WAY	RAMP	NO OR NARROW SHOULDER	LANE ENCROACHMENT	1	19B
				2	19E
		USABLE SHOULDER	LEFT SHOULDER CLOSURE	1	17B
				2	17E
			RIGHT SHOULDER CLOSURE	1	18B
				2	18E
2-LANE, 2-WAY	UNDIVIDED	NO OR NARROW SHOULDER	LANE ENCROACHMENT	1	1B
				2	1E
		USABLE SHOULDER	SHOULDER CLOSURE	1	2B
				2	2E
4-LANE, 2-WAY	DIVIDED	USABLE SHOULDER	SHOULDER CLOSURE	1	15A
				2	15C
	RAISED MEDIAN	NO OR NARROW SHOULDER	LANE ENCROACHMENT	1	7B
				2	7E
		USABLE SHOULDER	SHOULDER CLOSURE	1	8B
				2	8E
	UNDIVIDED	NO OR NARROW SHOULDER	LANE ENCROACHMENT	1	3B
				2	3E
		USABLE SHOULDER	SHOULDER CLOSURE	1	4B
				2	4E
6-LANE, 2-WAY	DIVIDED	USABLE SHOULDER	SHOULDER CLOSURE	1	16A
				2	16C
	RAISED MEDIAN	NO OR NARROW SHOULDER	LANE ENCROACHMENT	1	9B
				2	9E
		USABLE SHOULDER	SHOULDER CLOSURE	1	10B
				2	10E
	UNDIVIDED	NO OR NARROW SHOULDER	LANE ENCROACHMENT	1	5B
				2	5E
		USABLE SHOULDER	SHOULDER CLOSURE	1	6B
				2	6E

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



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STATE HIGHWAY ADMINISTRATION

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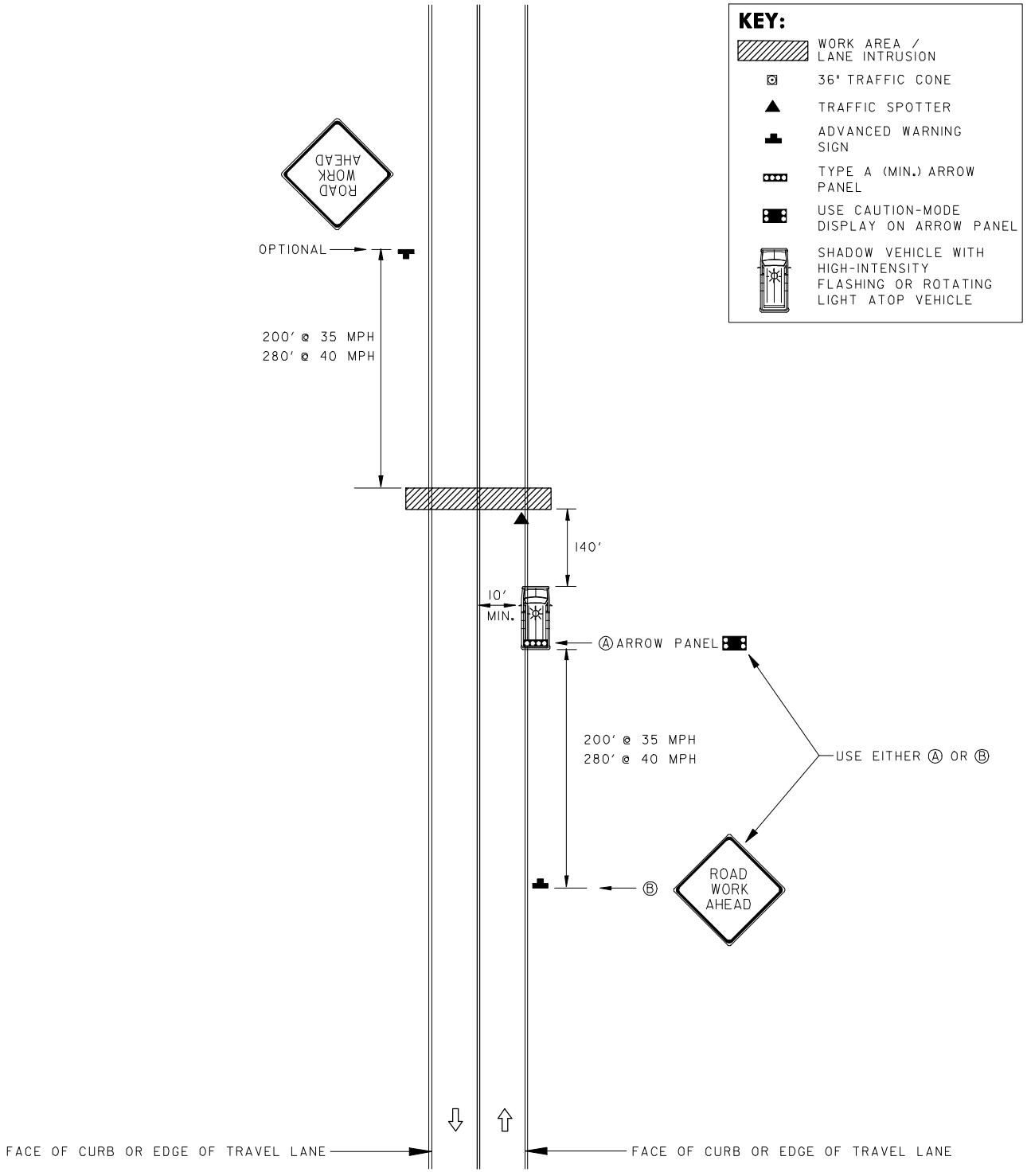
TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
2-LANE, 2-WAY / UNDIVIDED / NO OR NARROW SHOULDER
POSTED SPEED: 20, 25 OR 30 MPH
LANE ENCROACHMENT

Figure 1

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



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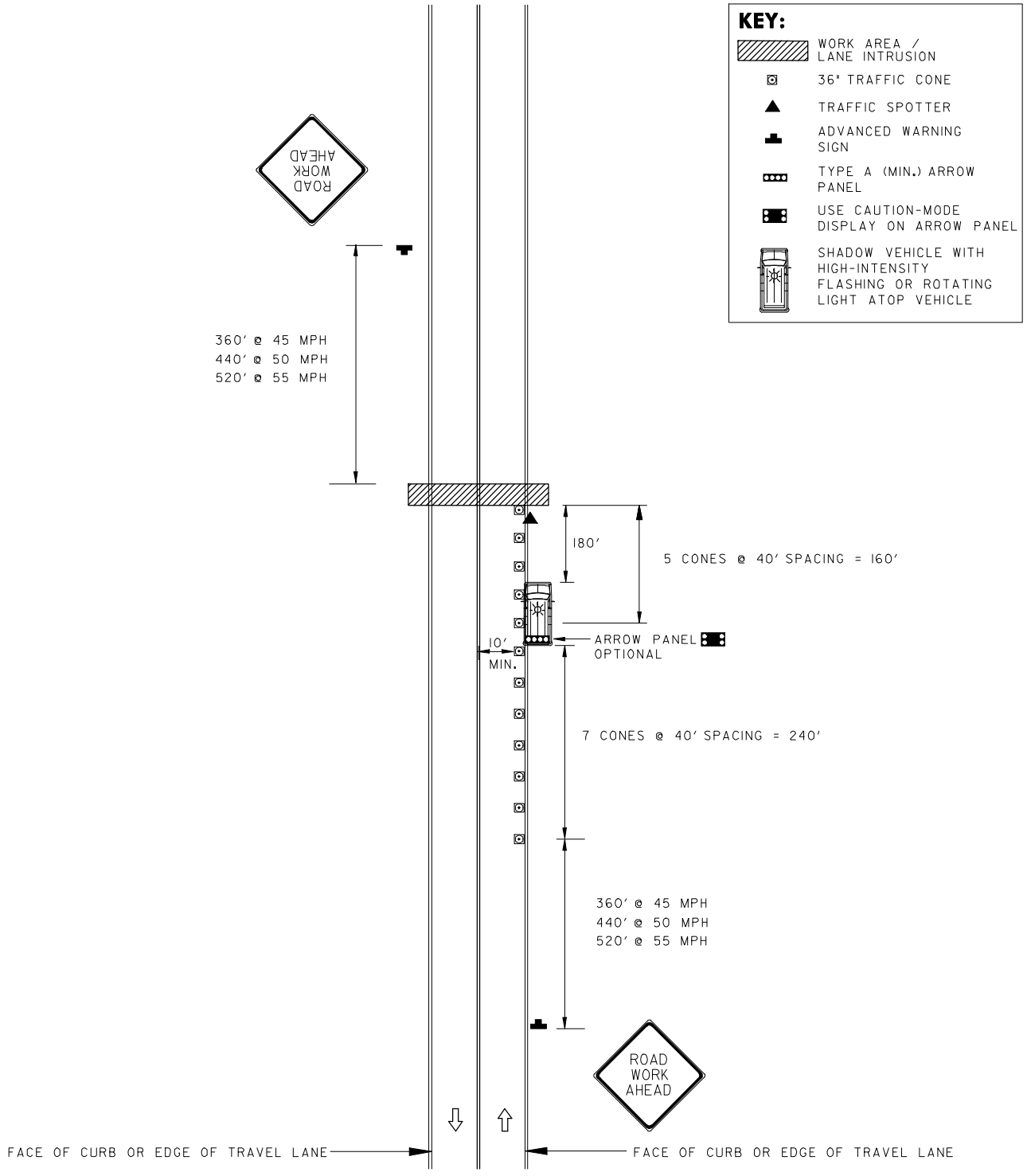
TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
2-LANE, 2-WAY / UNDIVIDED / NO OR NARROW SHOULDER
POSTED SPEED: 35 OR 40 MPH
LANE ENCROACHMENT

Figure 1A

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



CONES SPACED AT 40' TYP.

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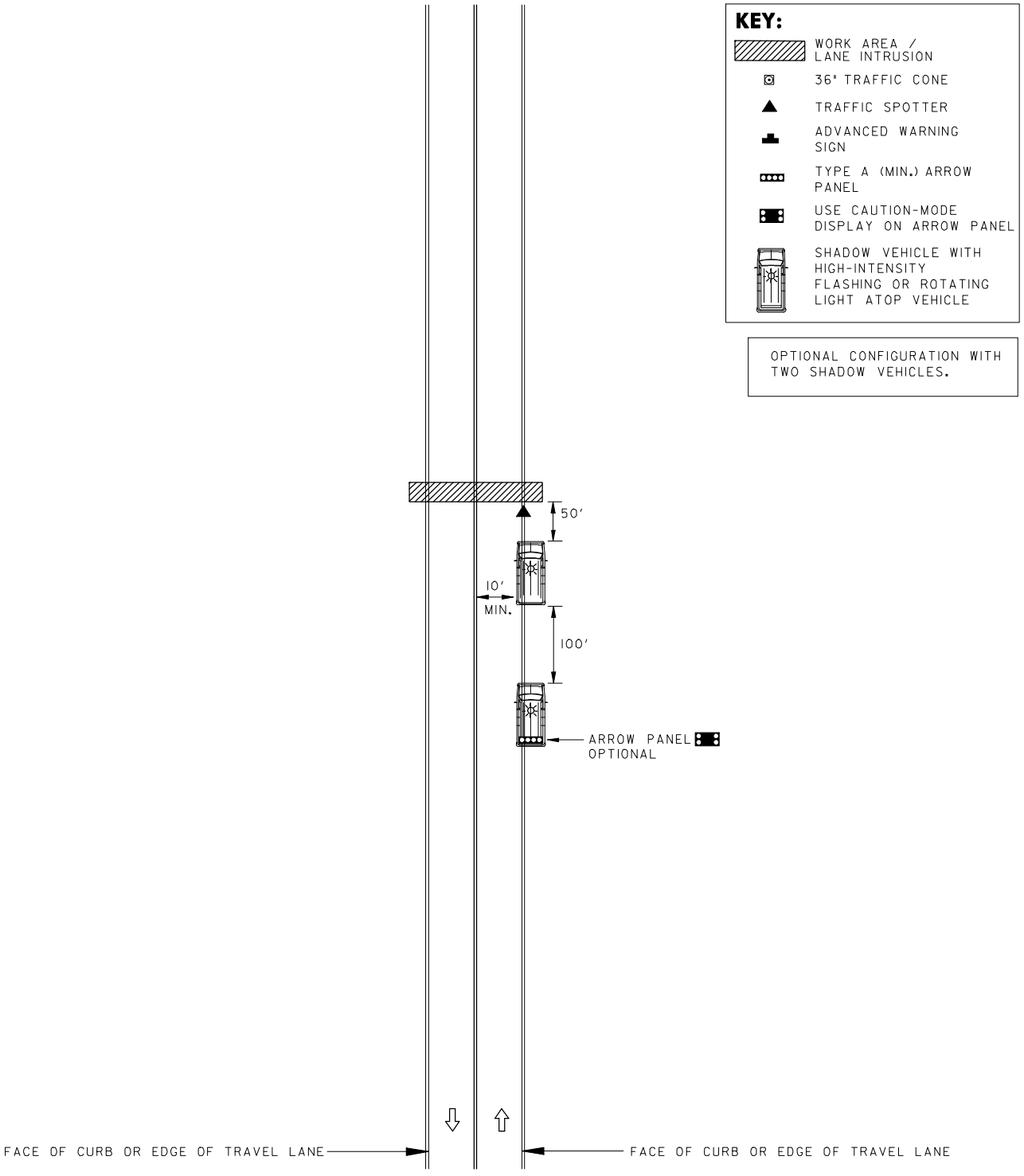
TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
2-LANE, 2-WAY / UNDIVIDED / NO OR NARROW SHOULDER
POSTED SPEED: 45, 50 OR 55 MPH
LANE ENCROACHMENT

Figure 1B

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



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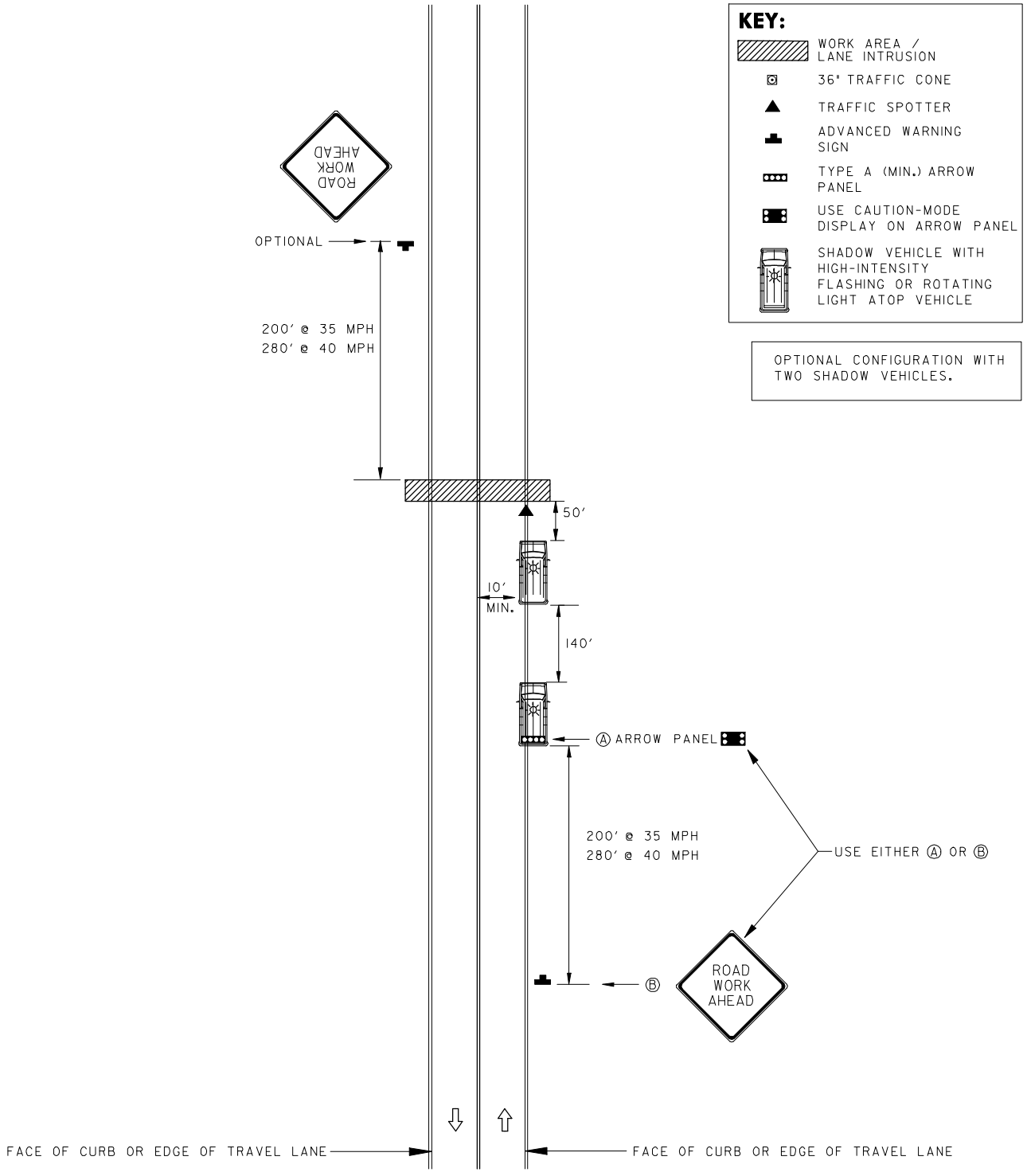
TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
2-LANE, 2-WAY / UNDIVIDED / NO OR NARROW SHOULDER
POSTED SPEED: 20, 25 OR 30 MPH
LANE ENCROACHMENT

Figure 1C

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



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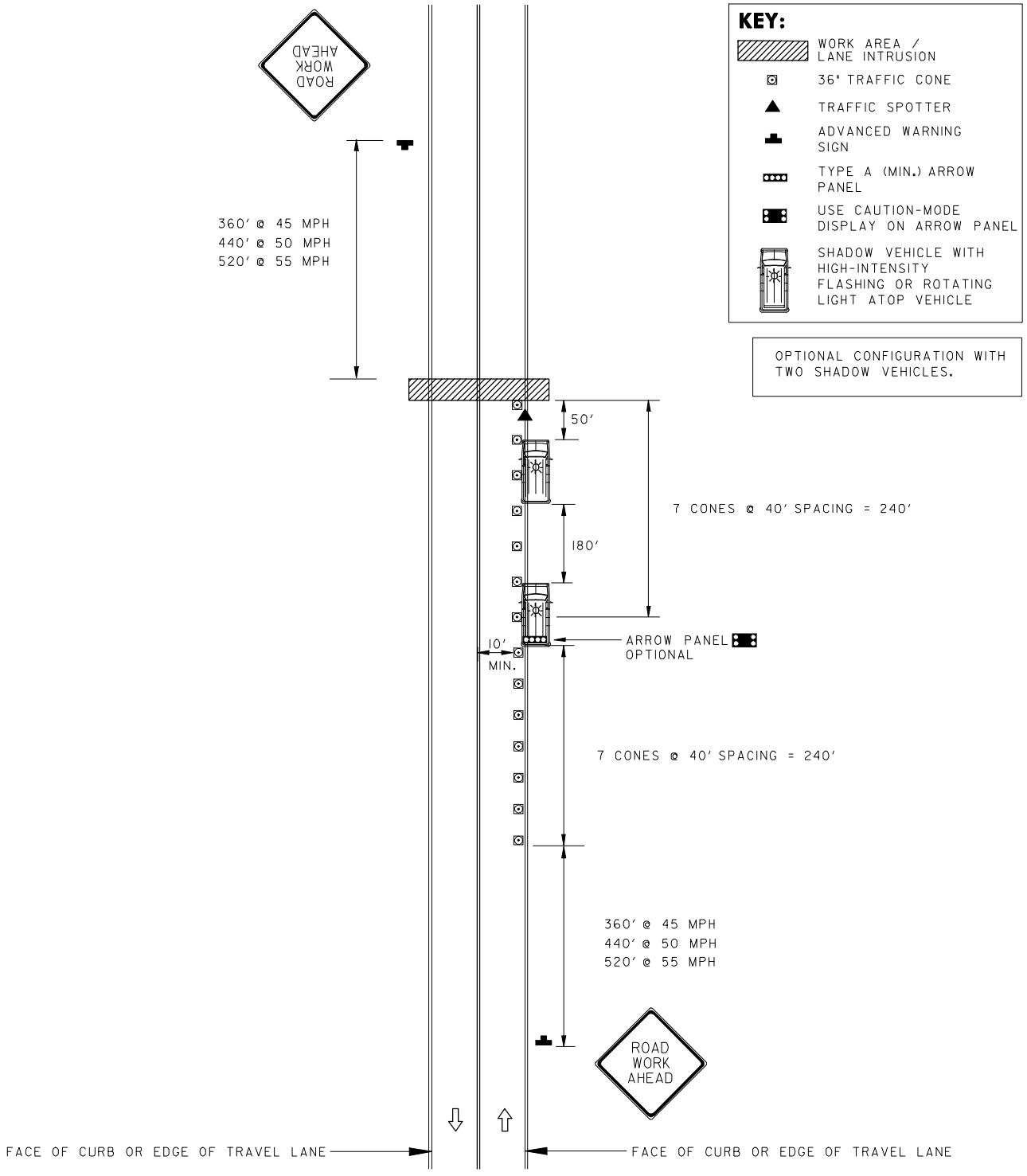
TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
2-LANE, 2-WAY / UNDIVIDED / NO OR NARROW SHOULDER
POSTED SPEED: 35 OR 40 MPH
LANE ENCROACHMENT

Figure 1D

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



CONES SPACED AT 40′ TYP.

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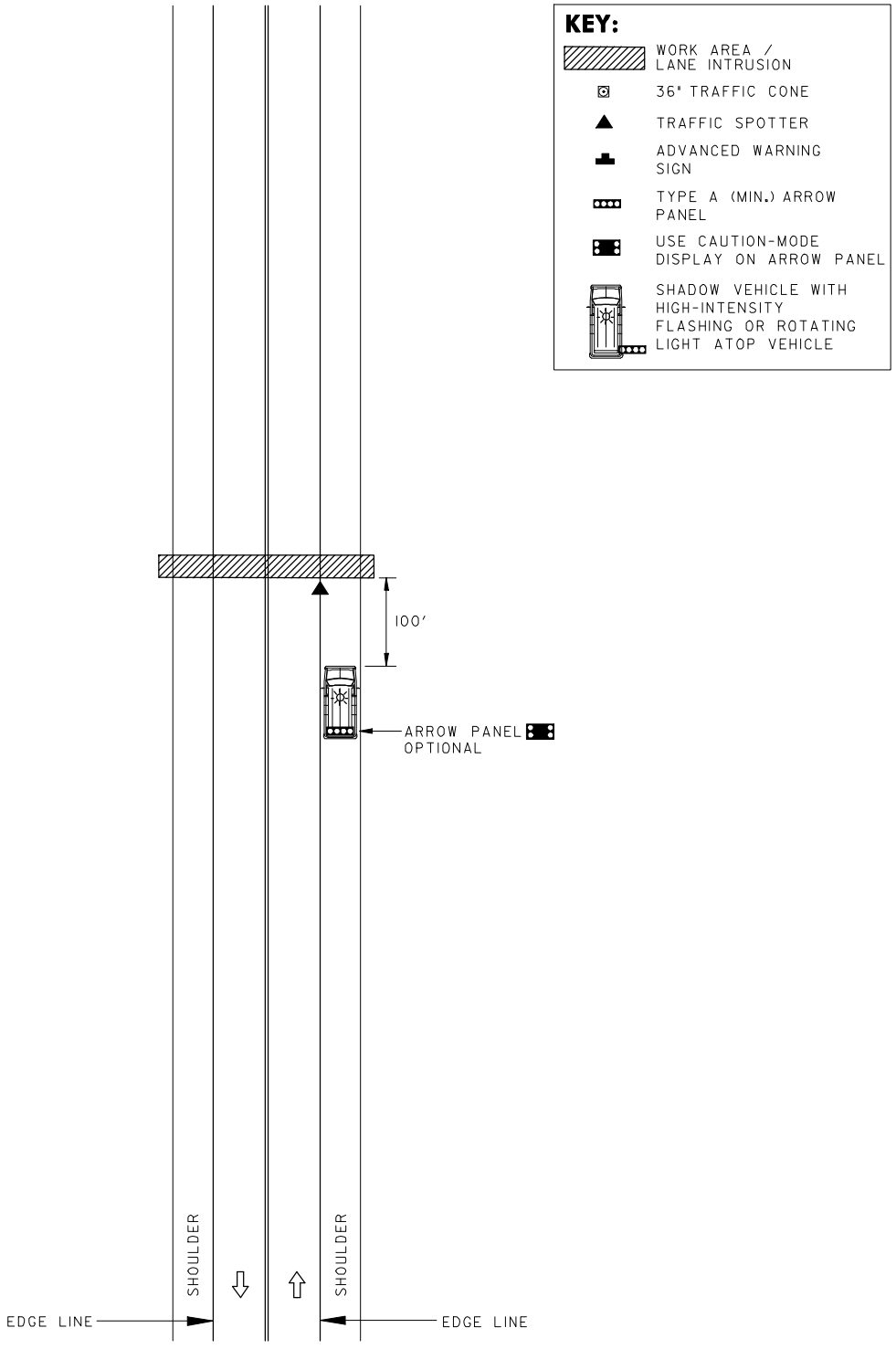
TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
2-LANE, 2-WAY / UNDIVIDED / NO OR NARROW SHOULDER
POSTED SPEED: 45, 50 OR 55 MPH
LANE ENCROACHMENT

Figure 1E

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



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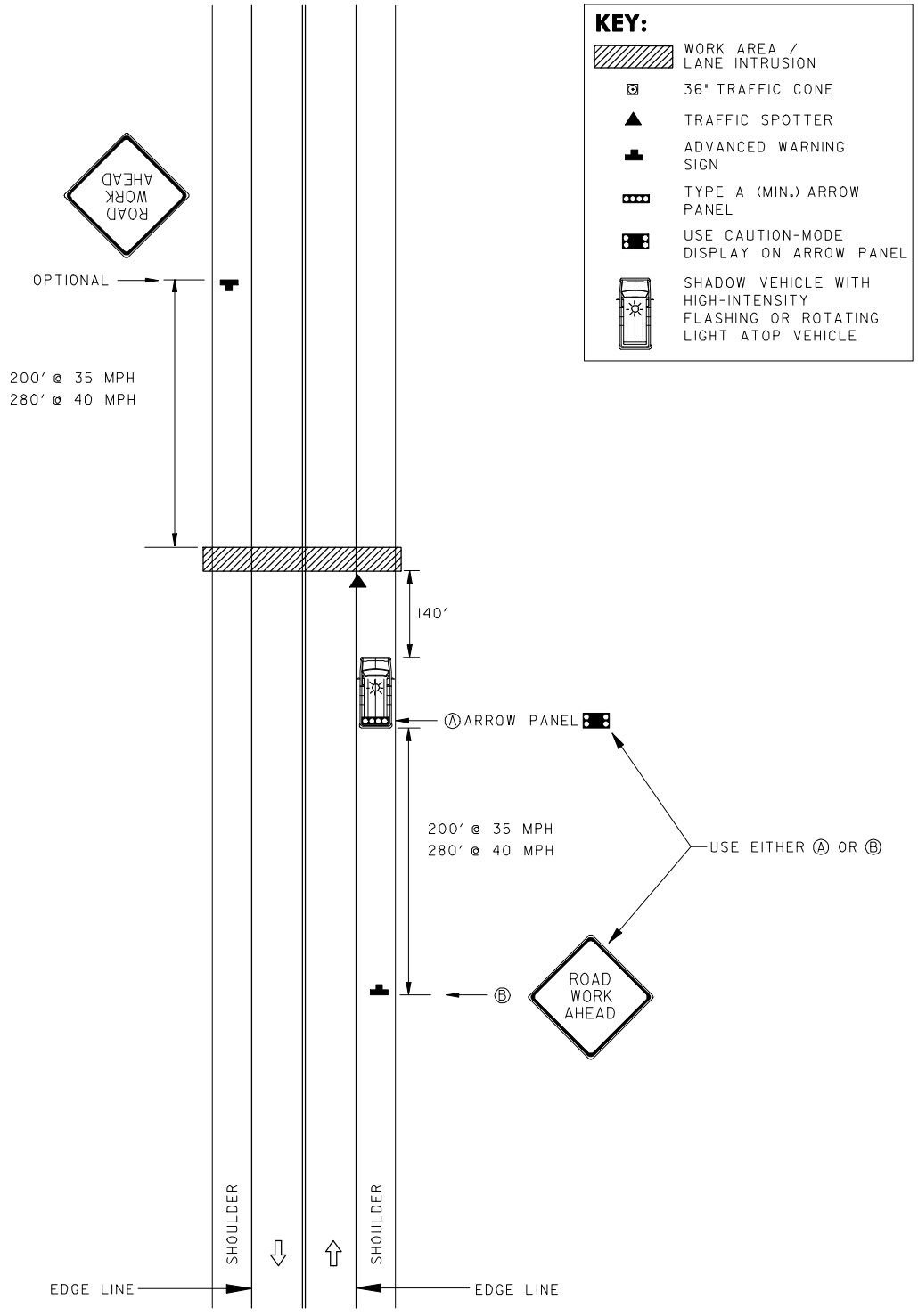
TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
2-LANE, 2-WAY / UNDIVIDED / USABLE SHOULDER
POSTED SPEED: 20, 25 OR 30 MPH
SHOULDER CLOSURE

Figure 2

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



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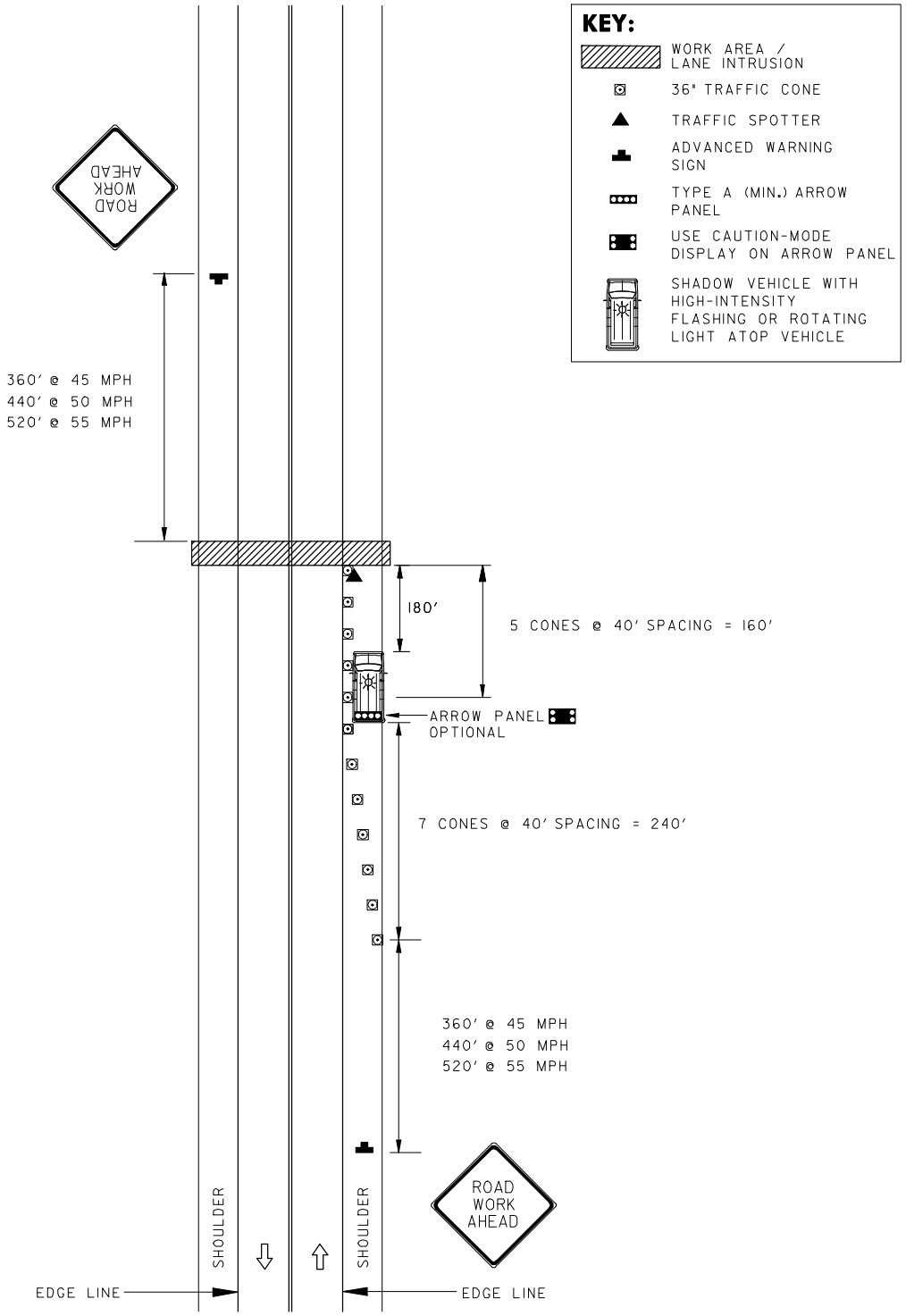
TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
2-LANE, 2-WAY / UNDIVIDED / USABLE SHOULDER
POSTED SPEED: 35 OR 40 MPH
SHOULDER CLOSURE

Figure 2A

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



CONES SPACED AT 40' TYP.

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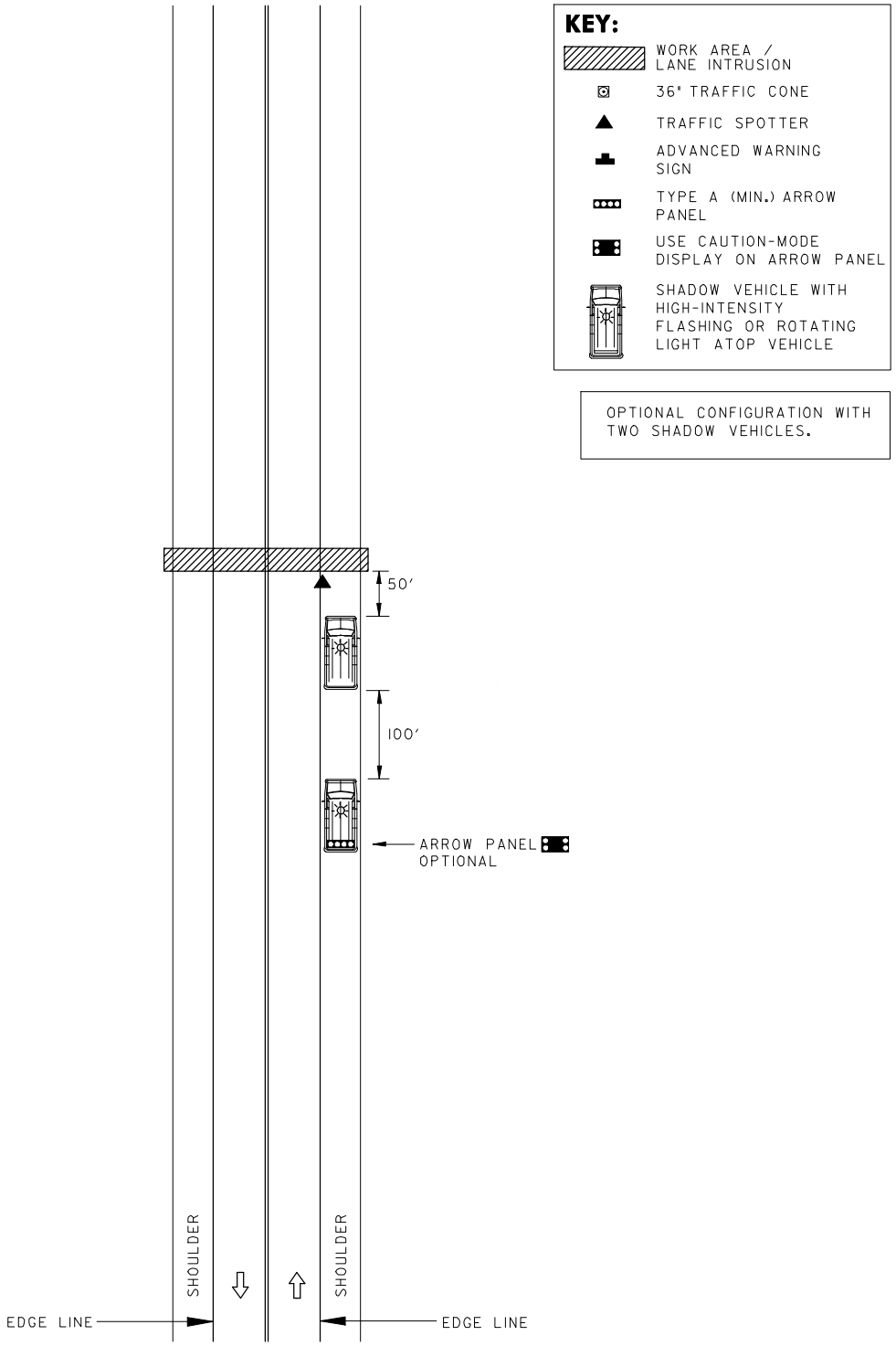
TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
2-LANE, 2-WAY / UNDIVIDED / USABLE SHOULDER
POSTED SPEED: 45, 50 OR 55 MPH
SHOULDER CLOSURE

Figure 2B

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



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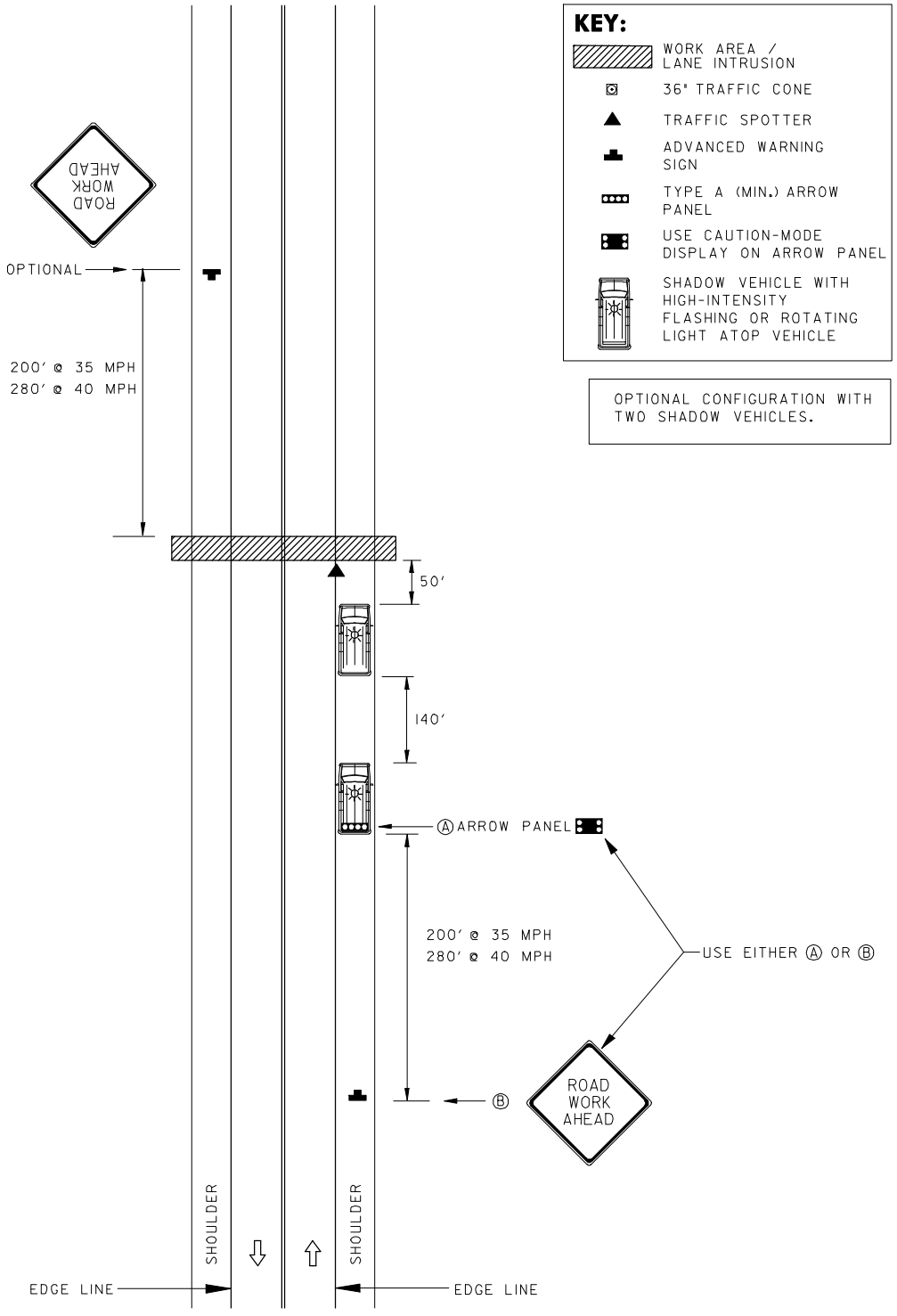
TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
2-LANE, 2-WAY / UNDIVIDED / USABLE SHOULDER
POSTED SPEED: 20, 25 OR 30 MPH
SHOULDER CLOSURE

Figure 2C

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



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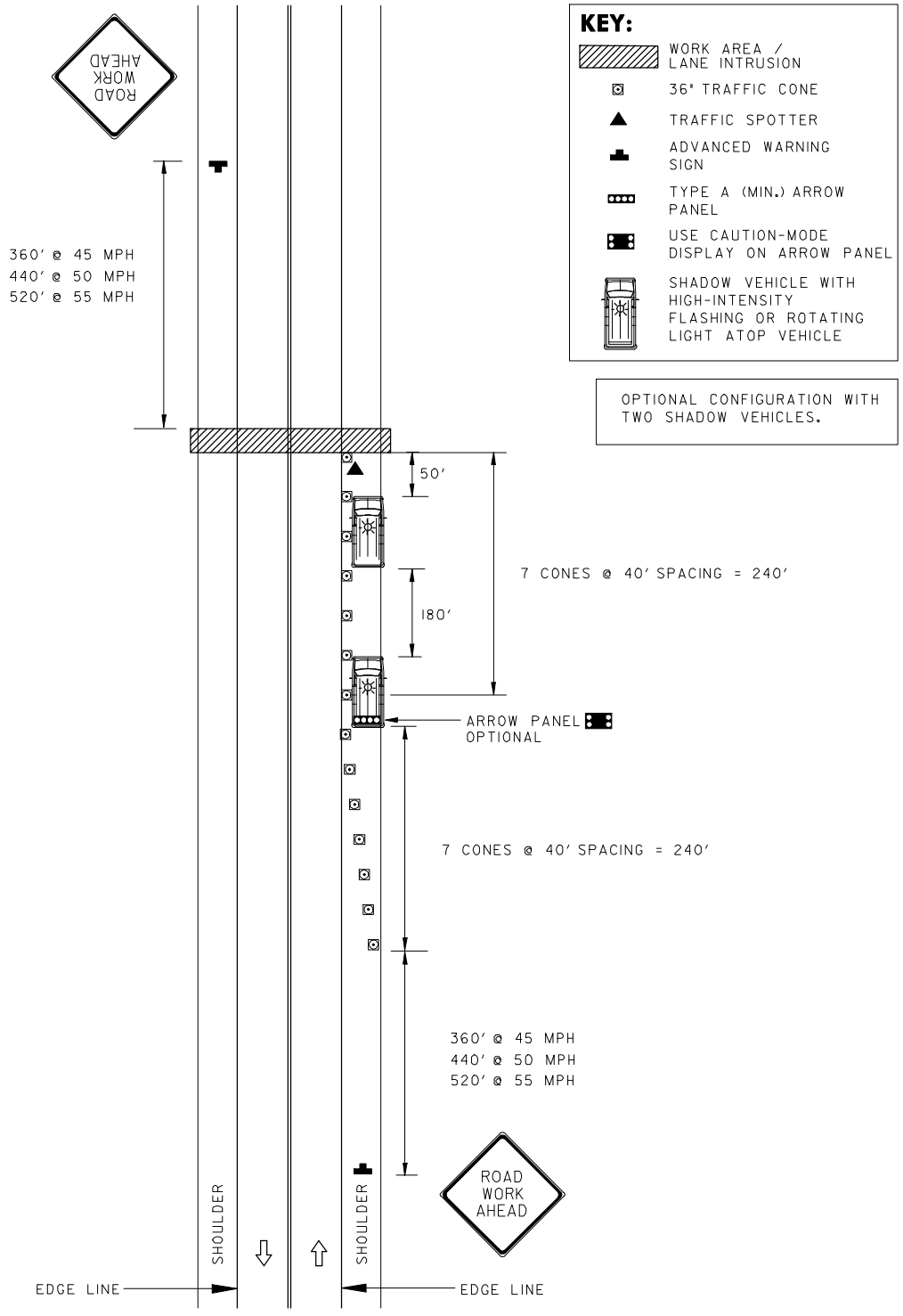
TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
2-LANE, 2-WAY / UNDIVIDED / USABLE SHOULDER
POSTED SPEED: 35 OR 40 MPH
SHOULDER CLOSURE

Figure 2D

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



CONES SPACED AT 40′ TYP.

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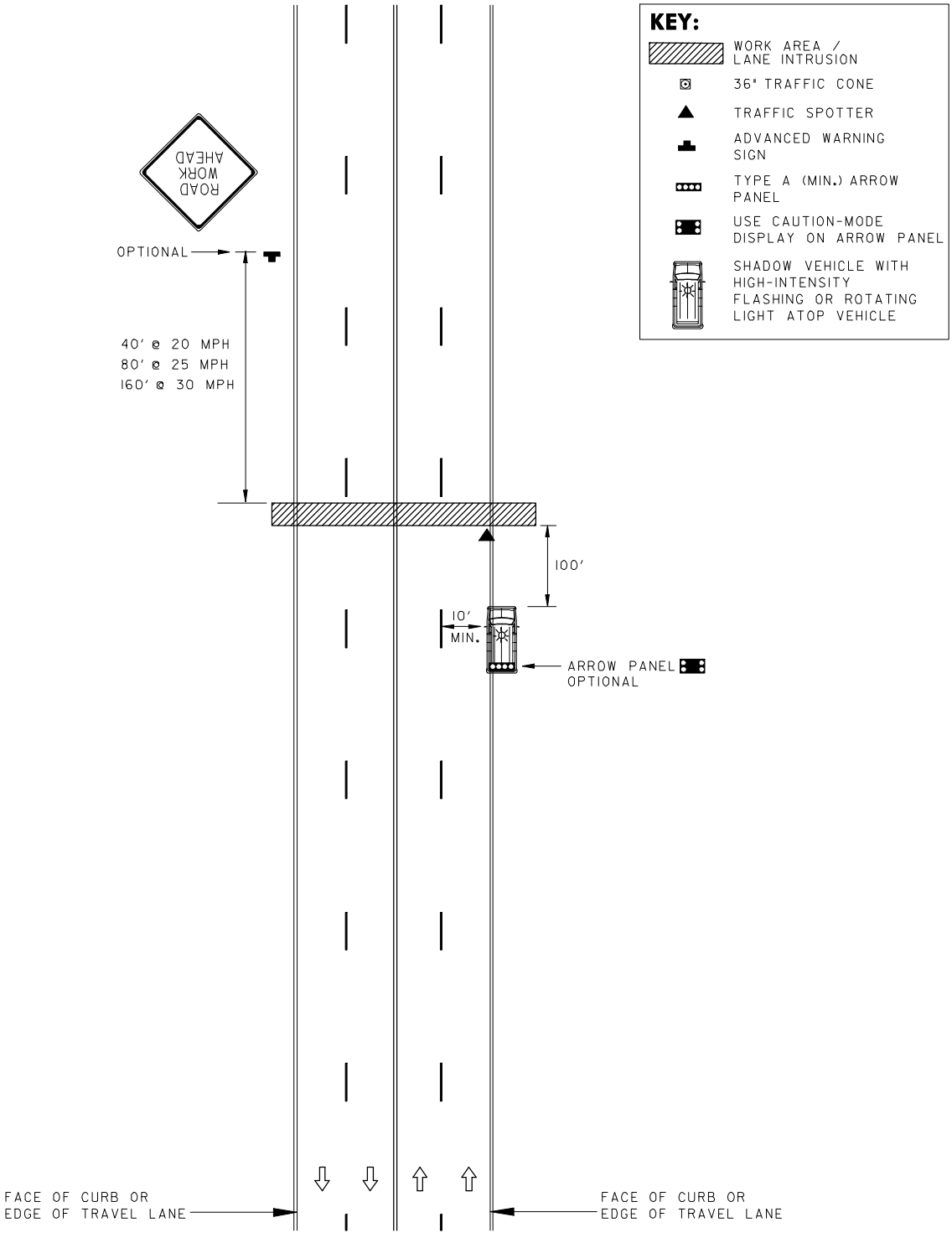
TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
2-LANE, 2-WAY / UNDIVIDED / USABLE SHOULDER
POSTED SPEED: 45, 50 OR 55 MPH
SHOULDER CLOSURE

Figure 2E

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



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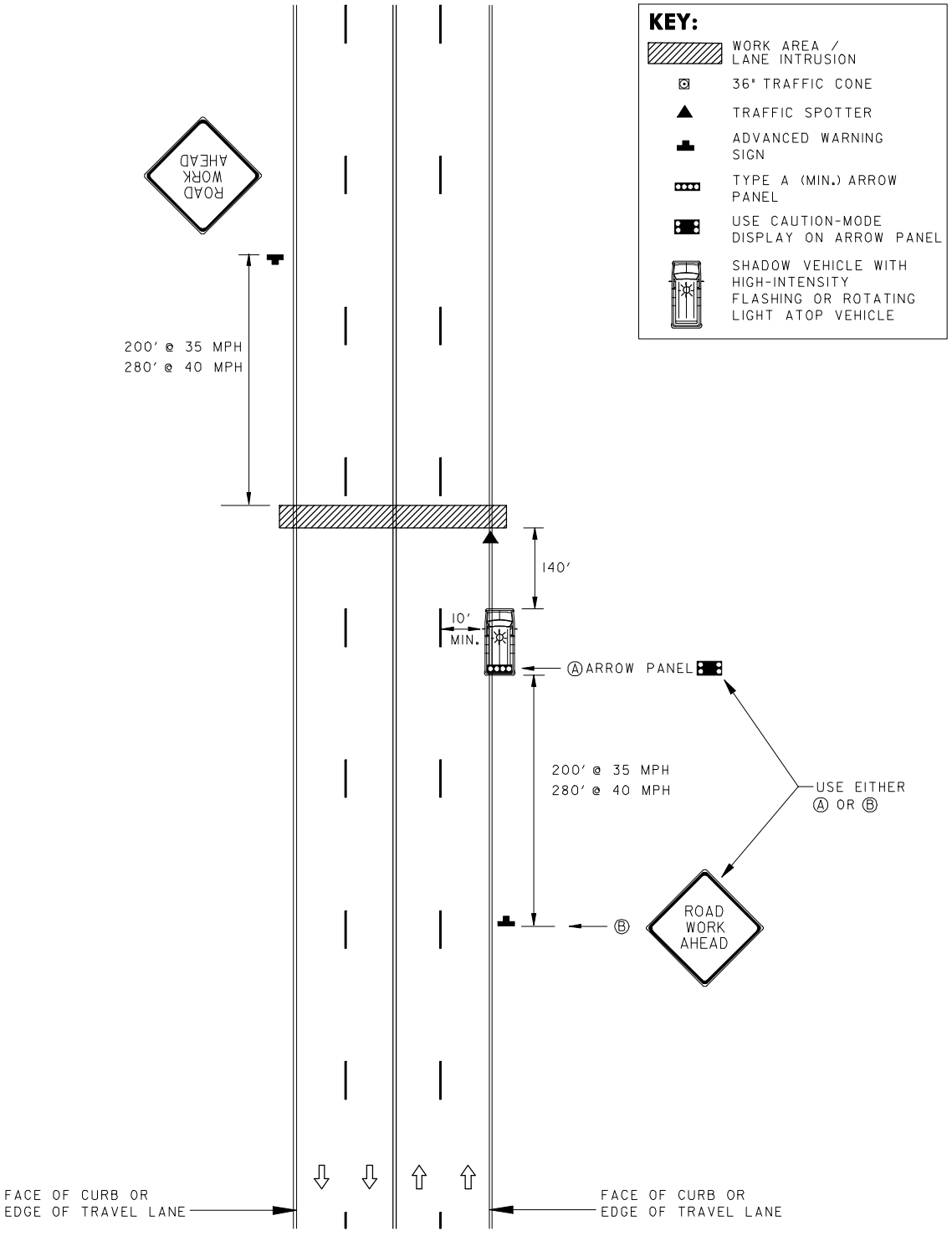
TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
4-LANE, 2-WAY / UNDIVIDED / NO OR NARROW SHOULDER
POSTED SPEED: 20, 25 OR 30 MPH
LANE ENCROACHMENT

Figure 3

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



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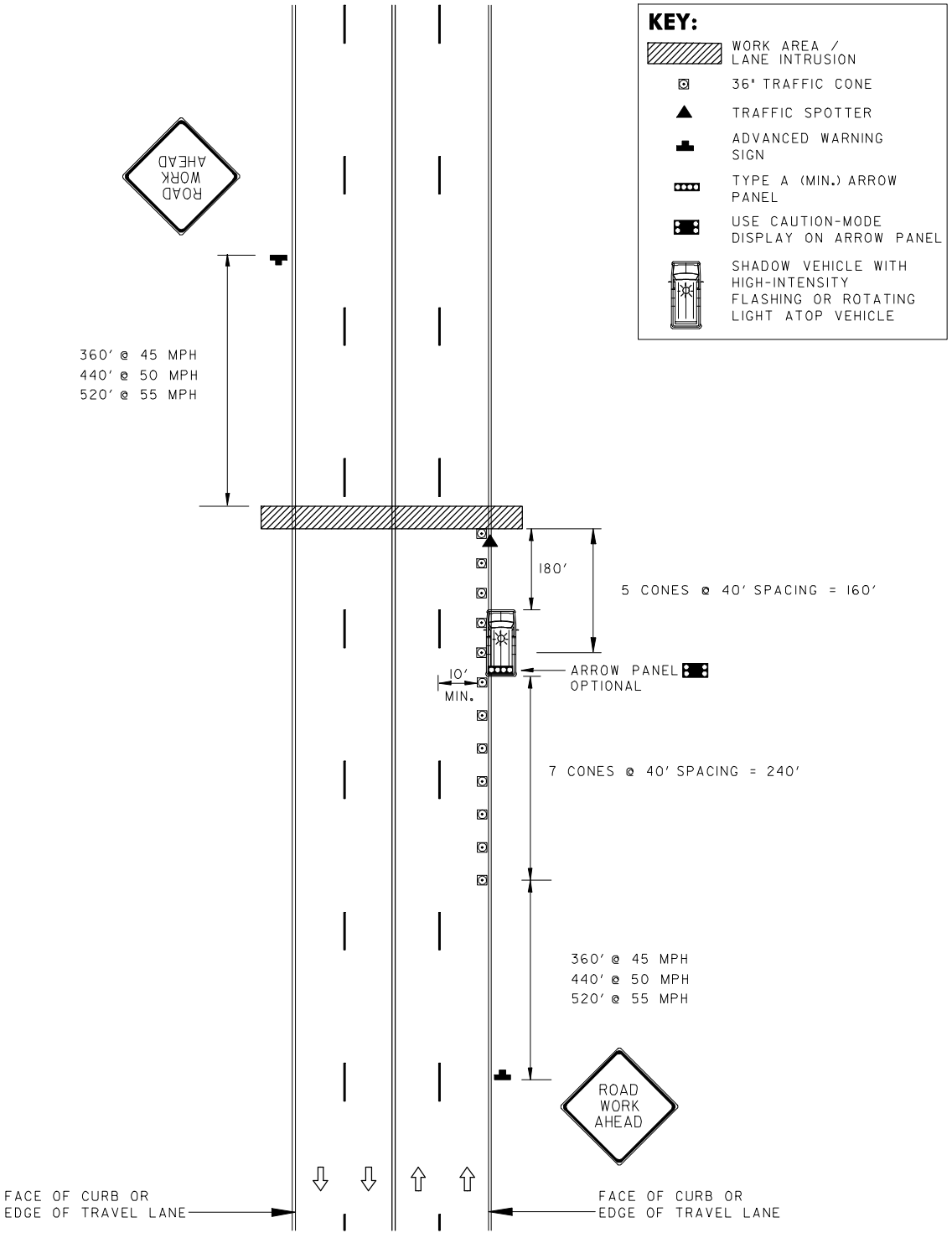
TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
4-LANE, 2-WAY / UNDIVIDED / NO OR NARROW SHOULDER
POSTED SPEED: 35 OR 40 MPH
LANE ENCROACHMENT

Figure 3A

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



CONES SPACED AT 40′ TYP.

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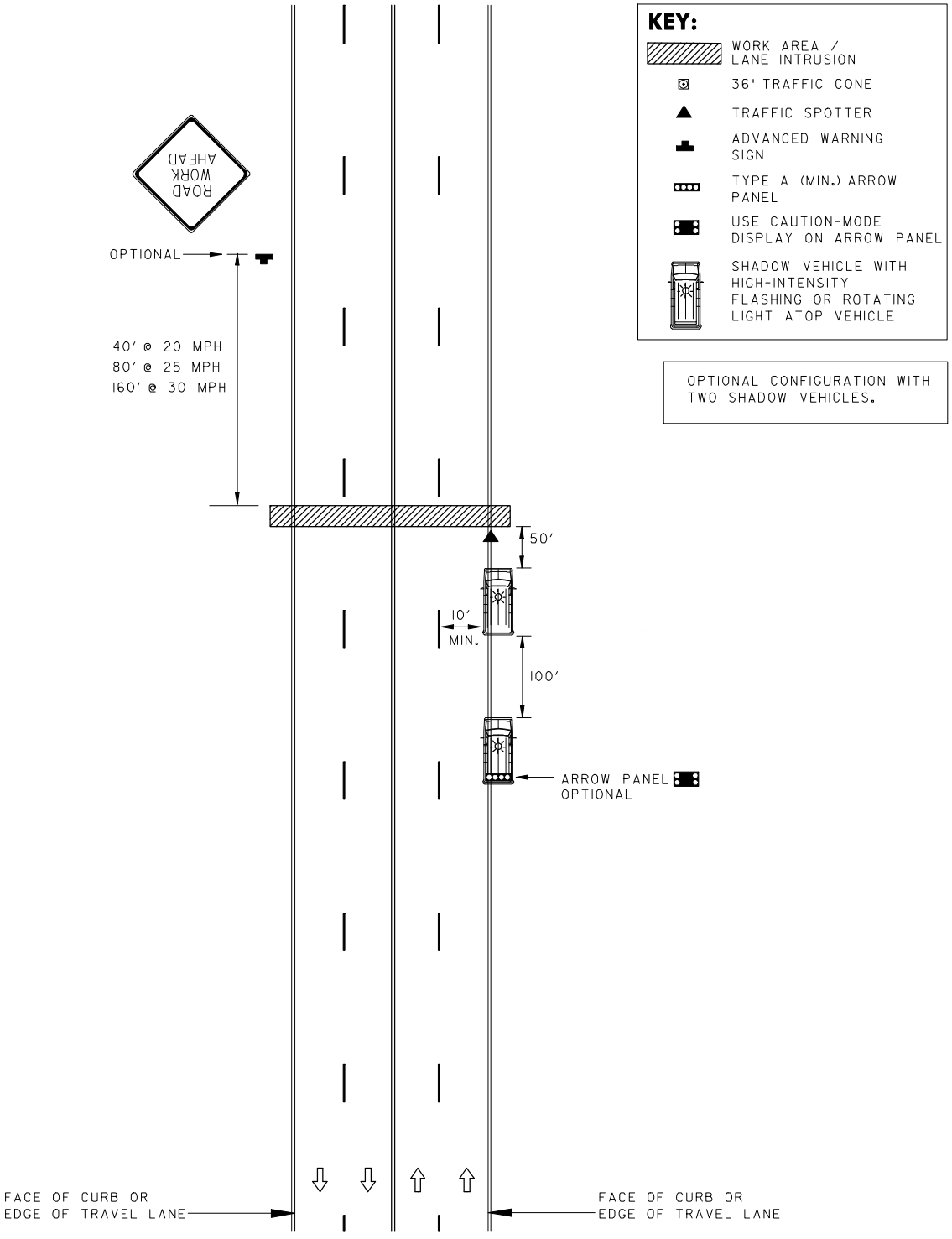
TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
4-LANE, 2-WAY / UNDIVIDED / NO OR NARROW SHOULDER
POSTED SPEED: 45, 50 OR 55 MPH
LANE ENCROACHMENT

Figure 3B

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



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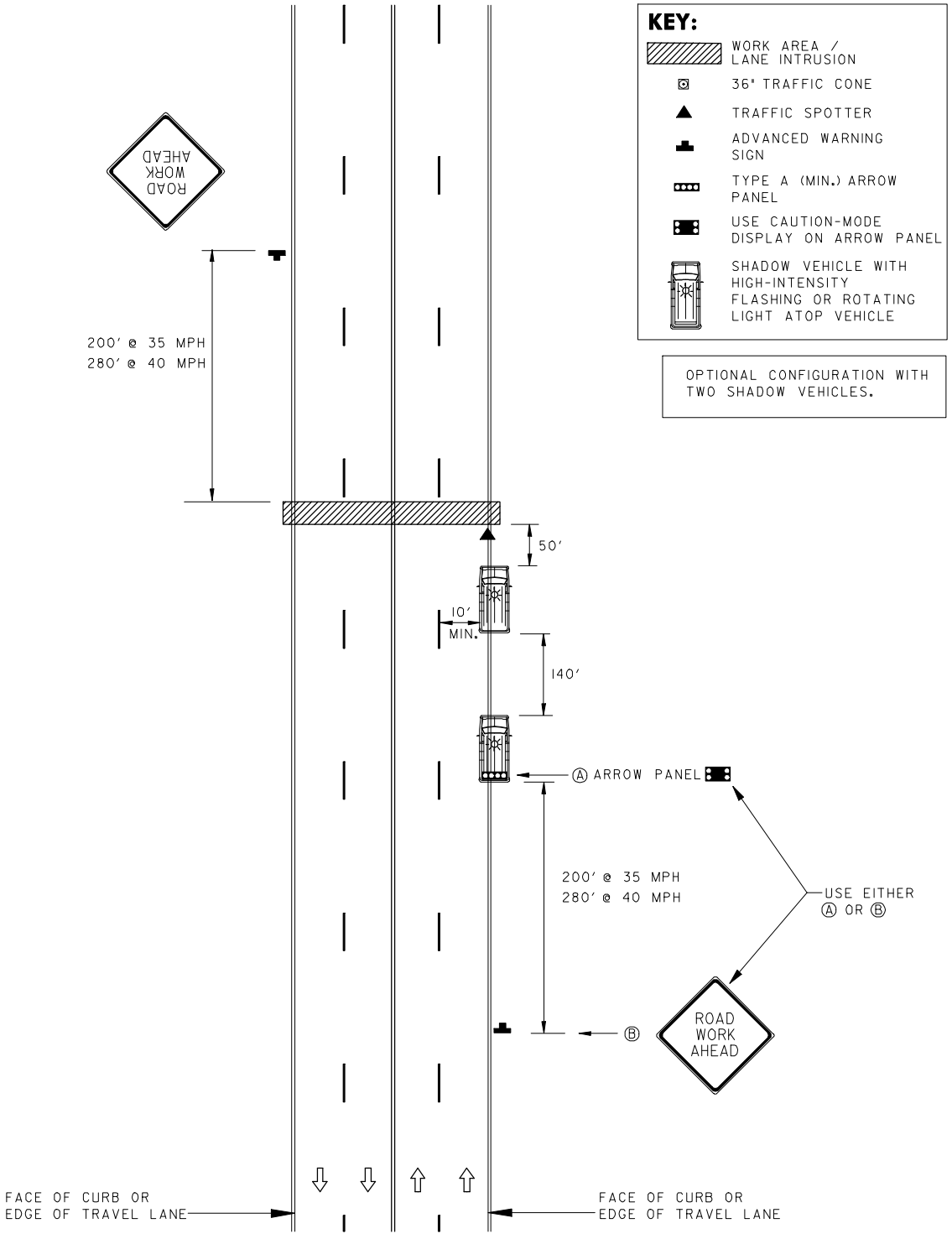
TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
4-LANE, 2-WAY / UNDIVIDED / NO OR NARROW SHOULDER
POSTED SPEED: 20, 25 OR 30 MPH
LANE ENCROACHMENT

Figure 3C

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



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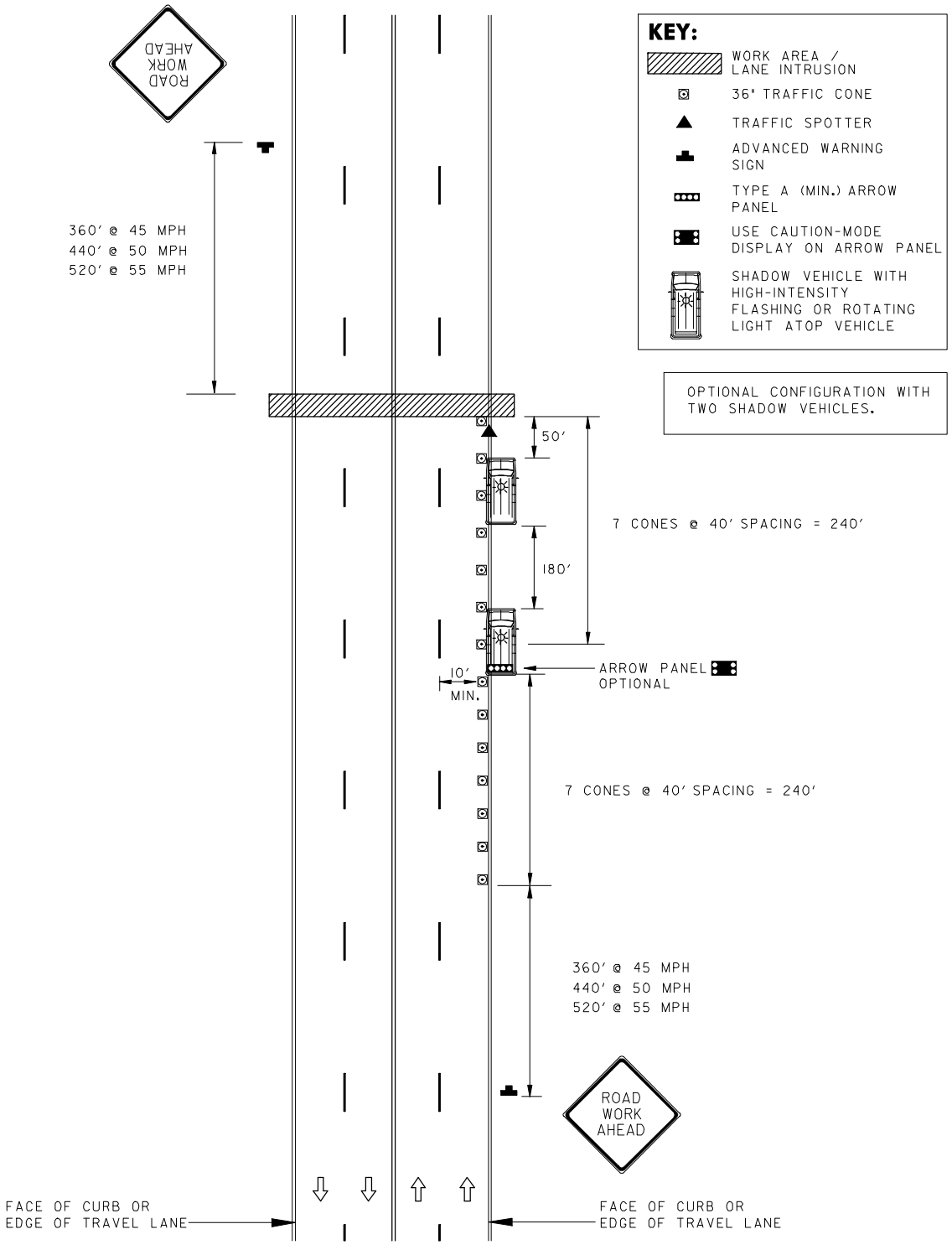
OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
4-LANE, 2-WAY / UNDIVIDED / NO OR NARROW SHOULDER
POSTED SPEED: 35 OR 40 MPH
LANE ENCROACHMENT

Figure 3D

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



CONES SPACED AT 40′ TYP.

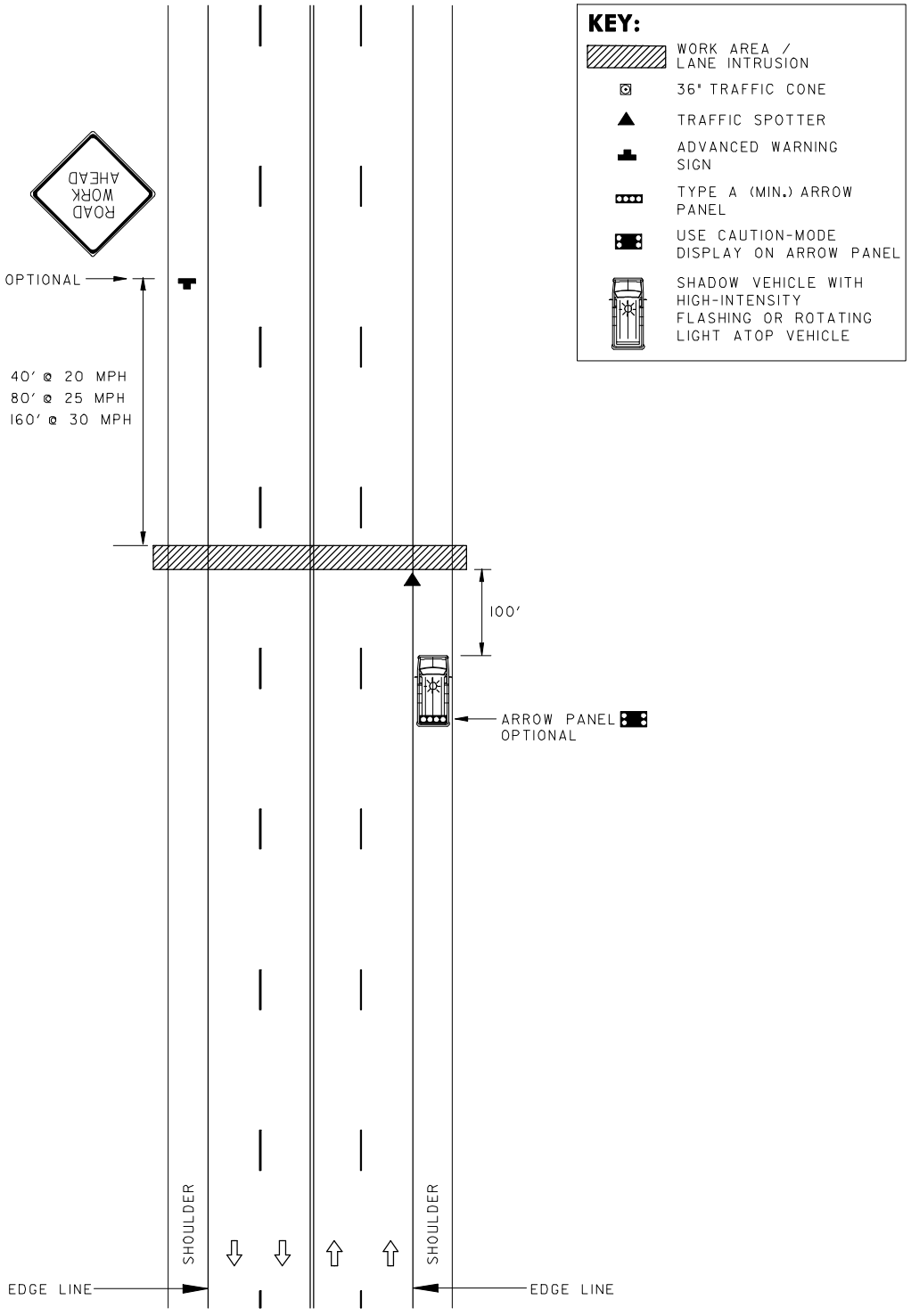
Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
4-LANE, 2-WAY / UNDIVIDED / NO OR NARROW SHOULDER
POSTED SPEED: 45, 50 OR 55 MPH
LANE ENCROACHMENT

Figure 3E

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



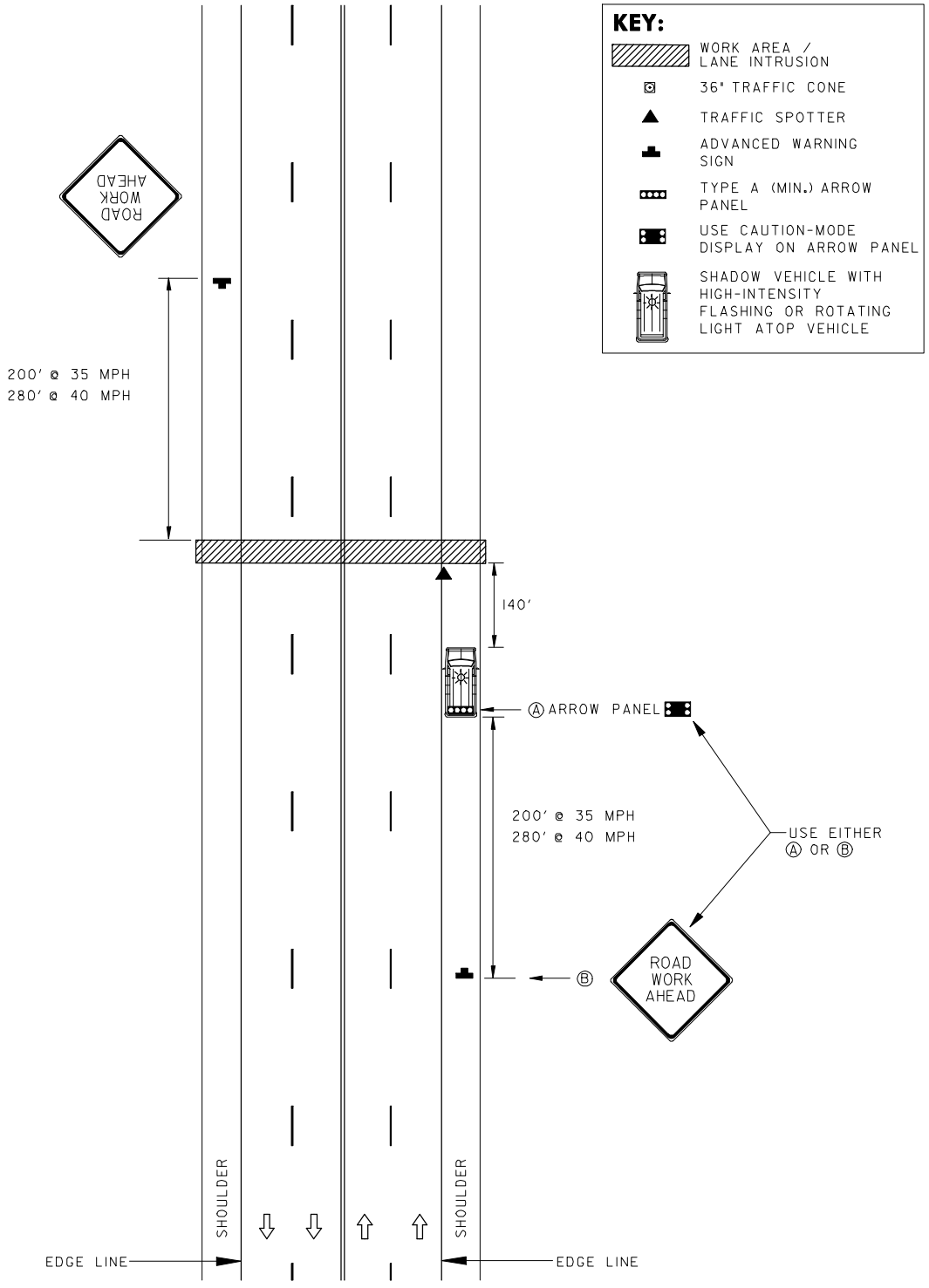
Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
4-LANE, 2-WAY / UNDIVIDED / USABLE SHOULDER
POSTED SPEED: 20, 25 OR 30 MPH
SHOULDER CLOSURE

Figure 4

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



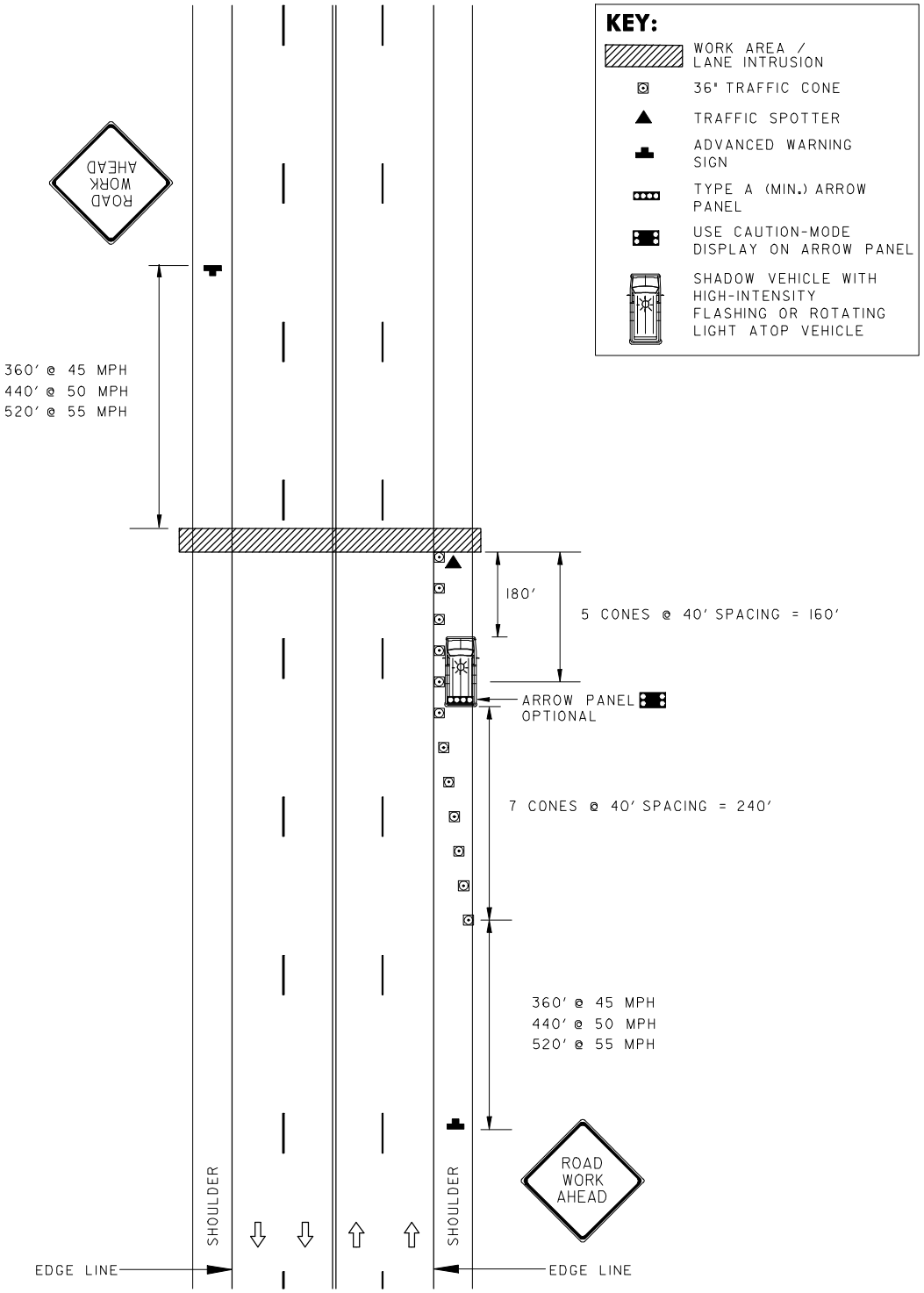
Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
4-LANE, 2-WAY / UNDIVIDED / USABLE SHOULDER
POSTED SPEED: 35 OR 40 MPH
SHOULDER CLOSURE

Figure 4A

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



CONES SPACED AT 40' TYP.

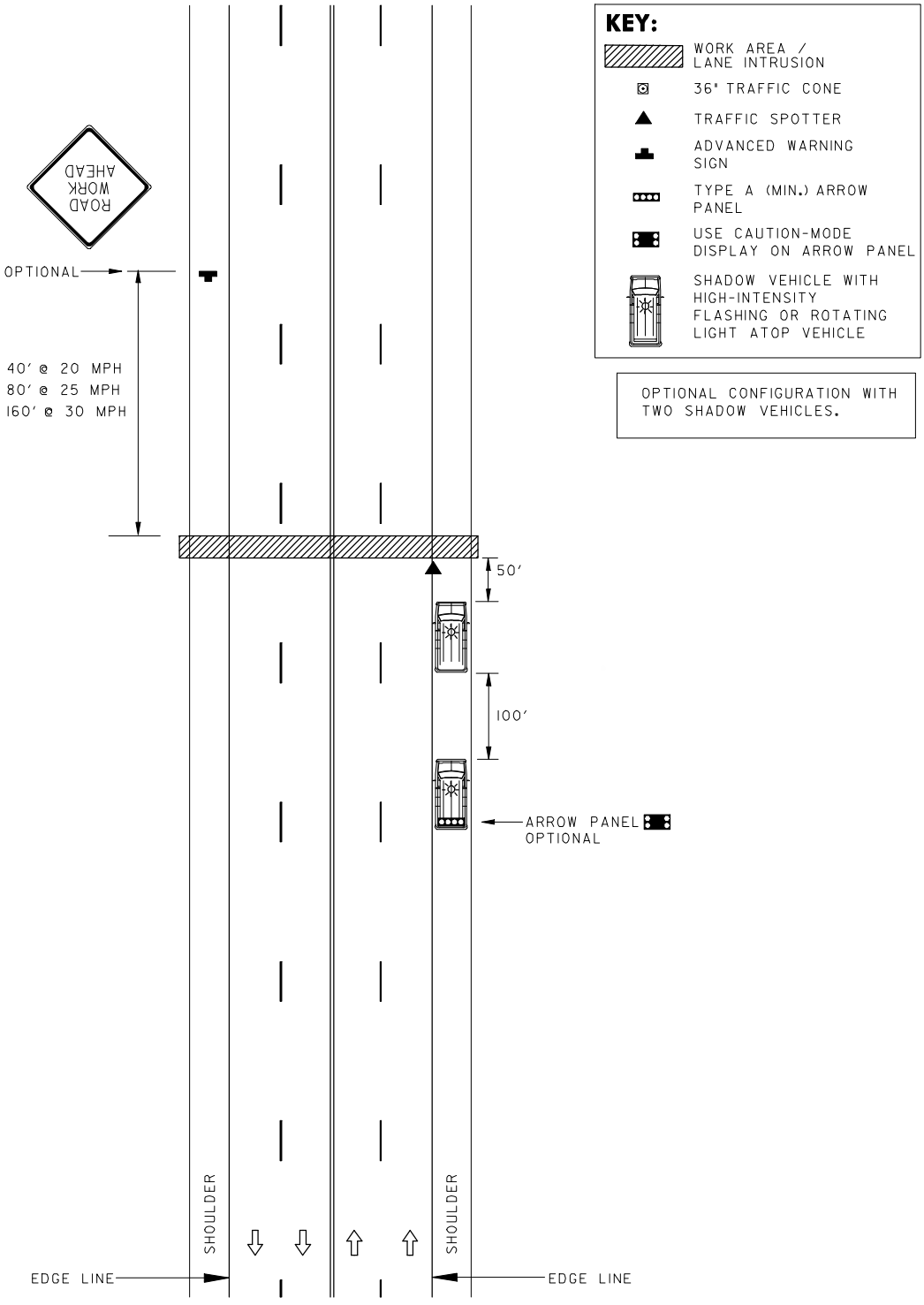
Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
4-LANE, 2-WAY / UNDIVIDED / USABLE SHOULDER
POSTED SPEED: 45, 50 OR 55 MPH
SHOULDER CLOSURE

Figure 4B

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



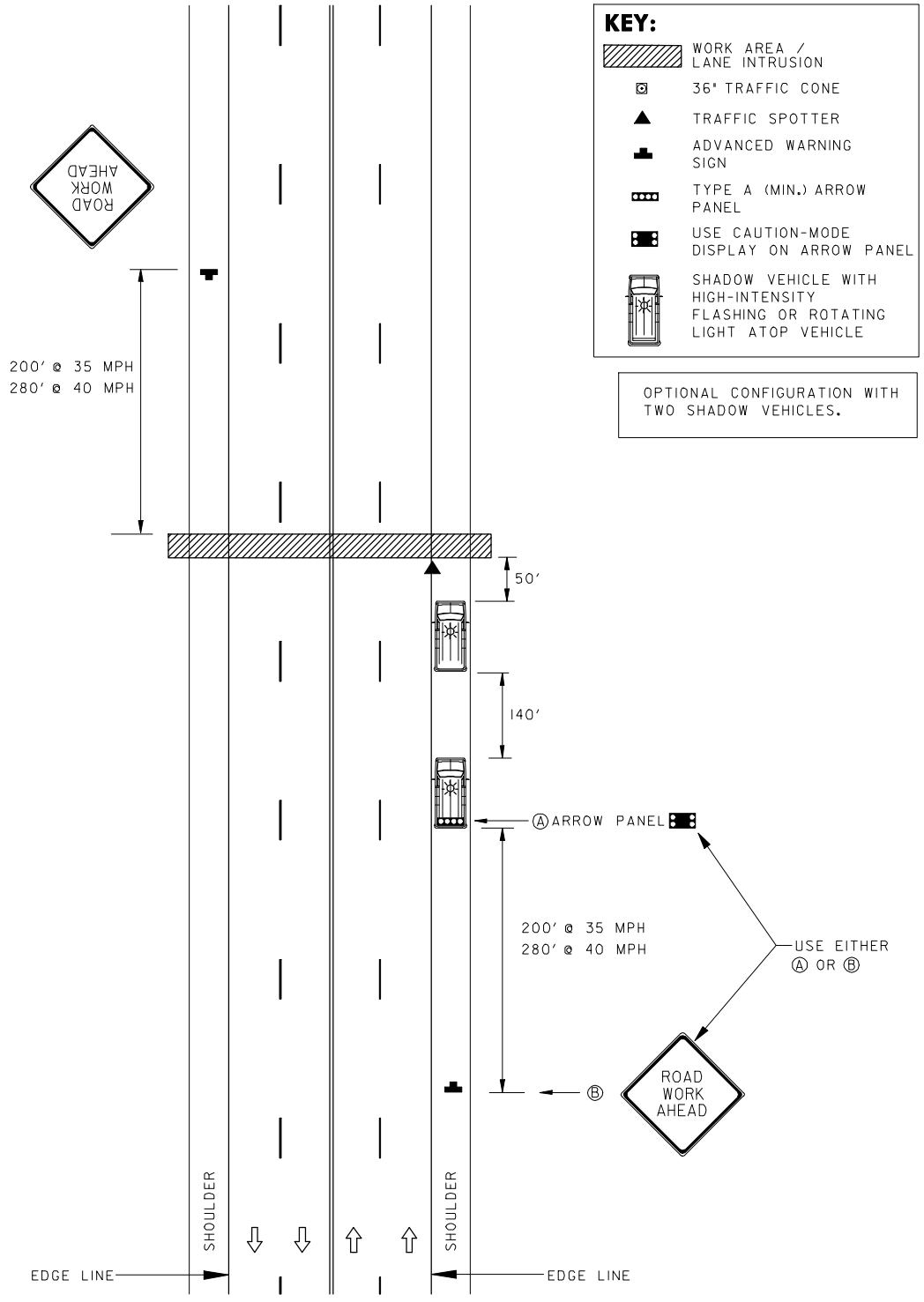
Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
4-LANE, 2-WAY / UNDIVIDED / USABLE SHOULDER
POSTED SPEED: 20, 25 OR 30 MPH
SHOULDER CLOSURE

Figure 4C

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



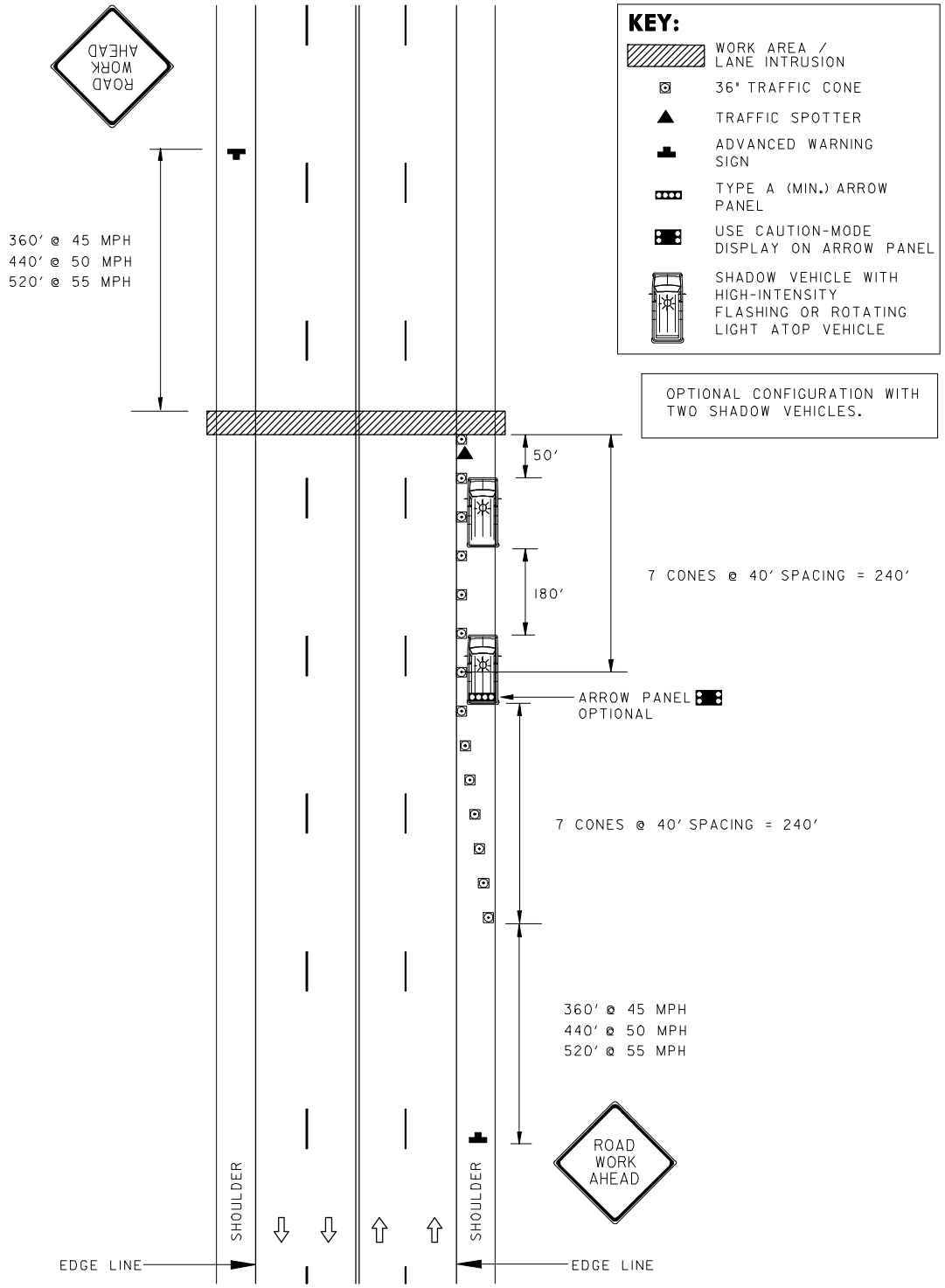
Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
4-LANE, 2-WAY / UNDIVIDED / USABLE SHOULDER
POSTED SPEED: 35 OR 40 MPH
SHOULDER CLOSURE

Figure 4D

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



CONES SPACED AT 40′ TYP.

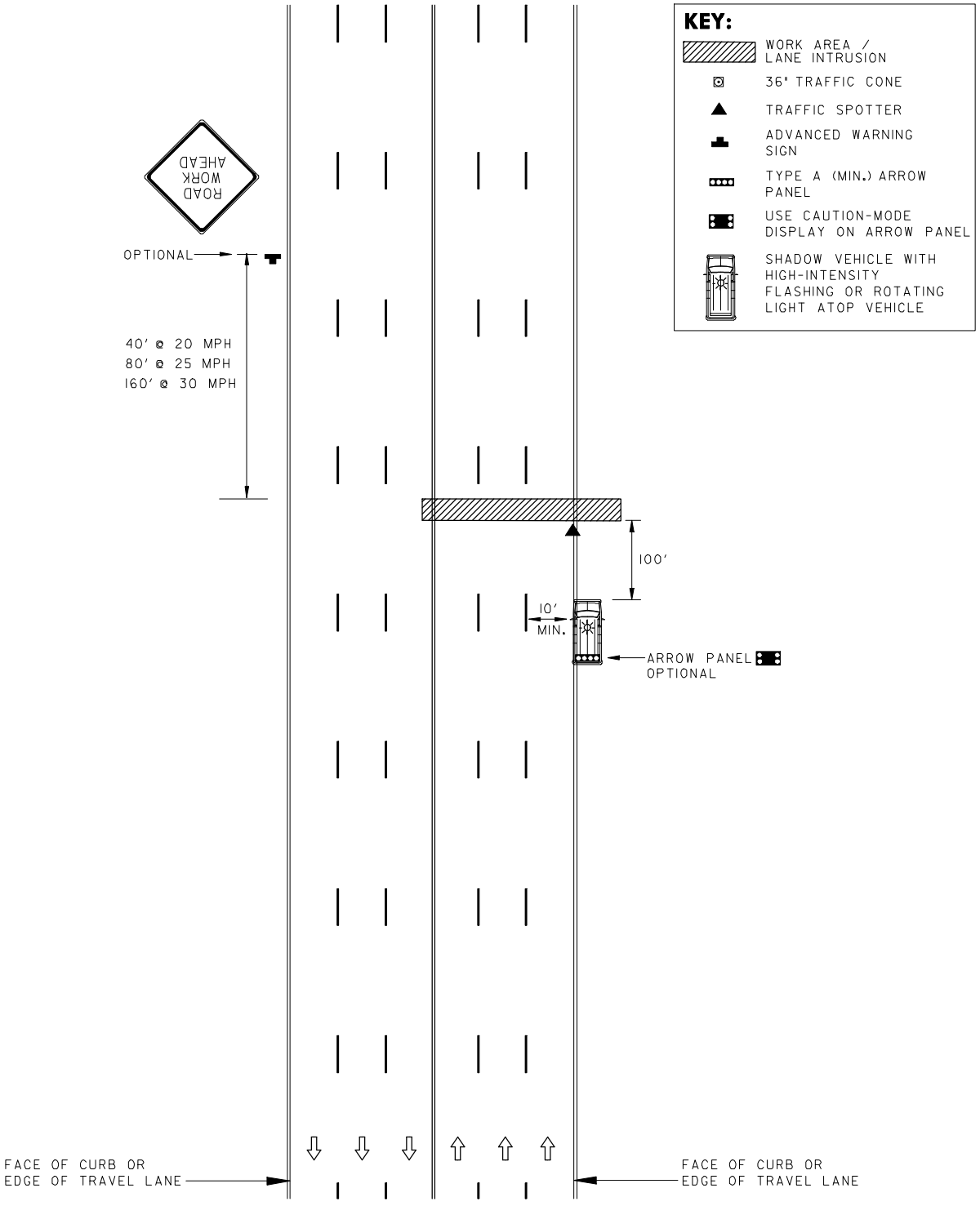
Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
4-LANE, 2-WAY / UNDIVIDED / USABLE SHOULDER
POSTED SPEED: 45, 50 OR 55 MPH
SHOULDER CLOSURE

Figure 4E

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



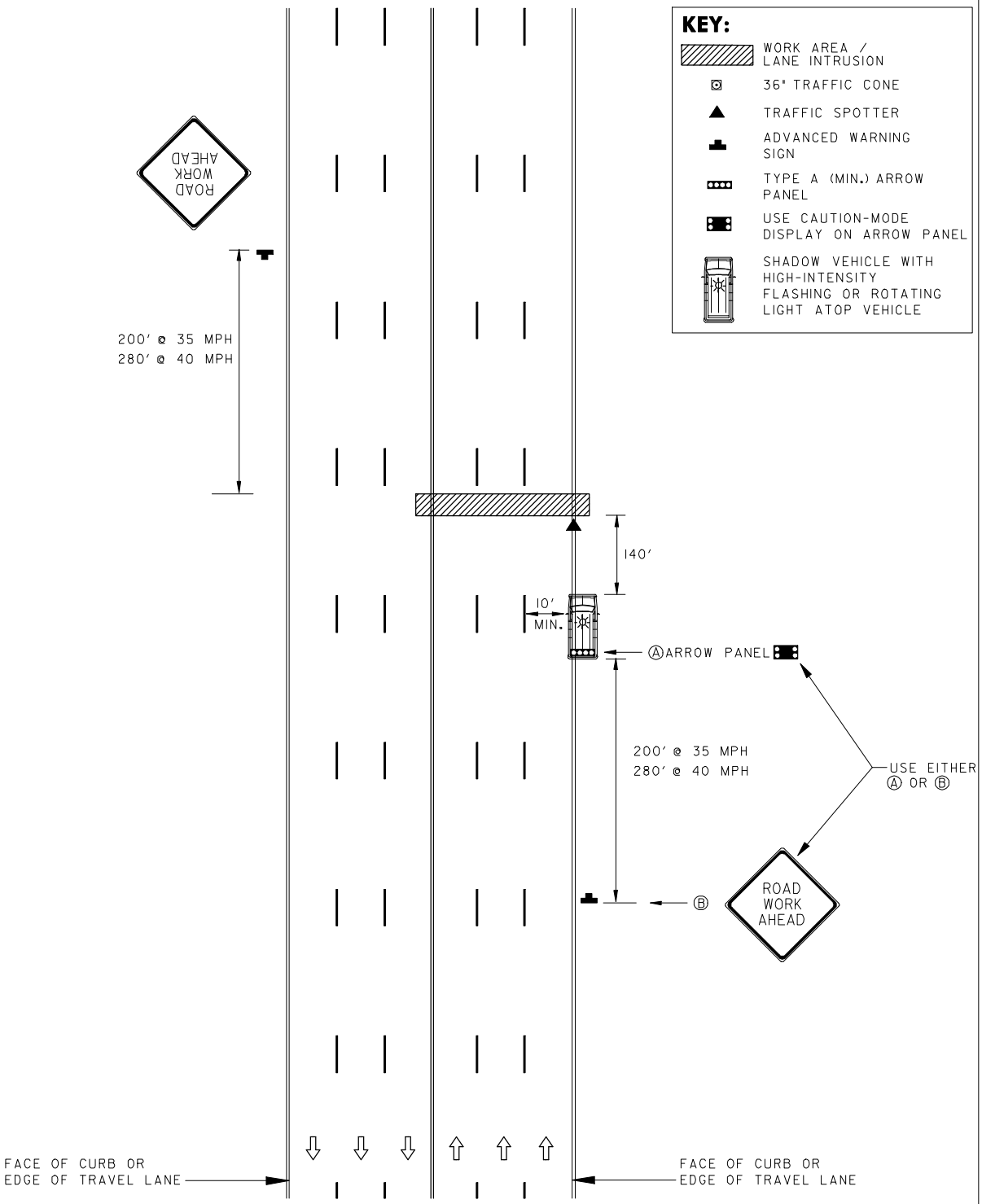
Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
≥ 6-LANE, 2-WAY / UNDIVIDED / NO OR NARROW SHOULDER
POSTED SPEED: 20, 25 OR 30 MPH
LANE ENCROACHMENT

Figure 5

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



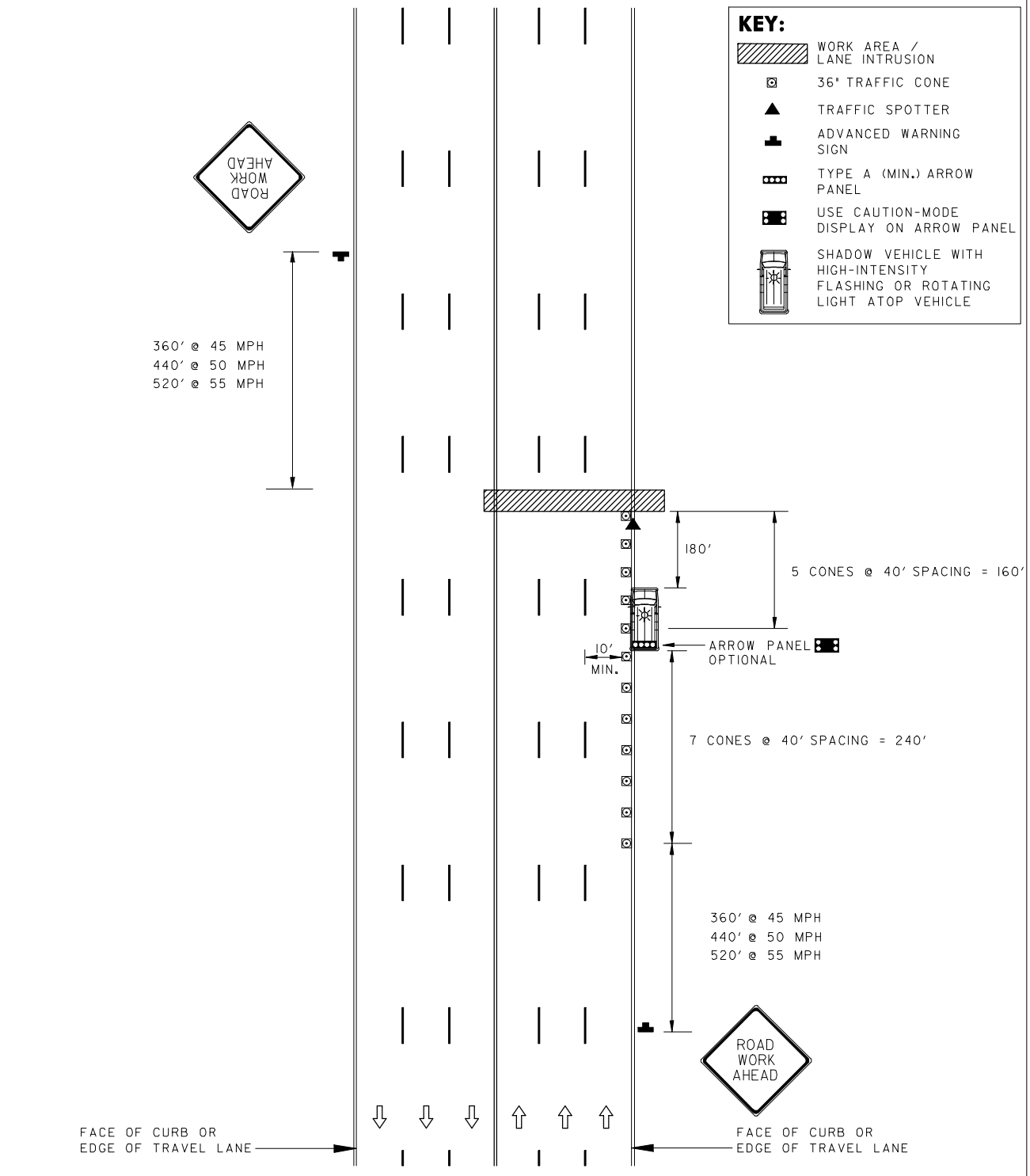
Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
≥ 6-LANE, 2-WAY / UNDIVIDED / NO OR NARROW SHOULDER
POSTED SPEED: 35 OR 40 MPH
LANE ENCROACHMENT

Figure 5A

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



CONES SPACED AT 40' TYP.

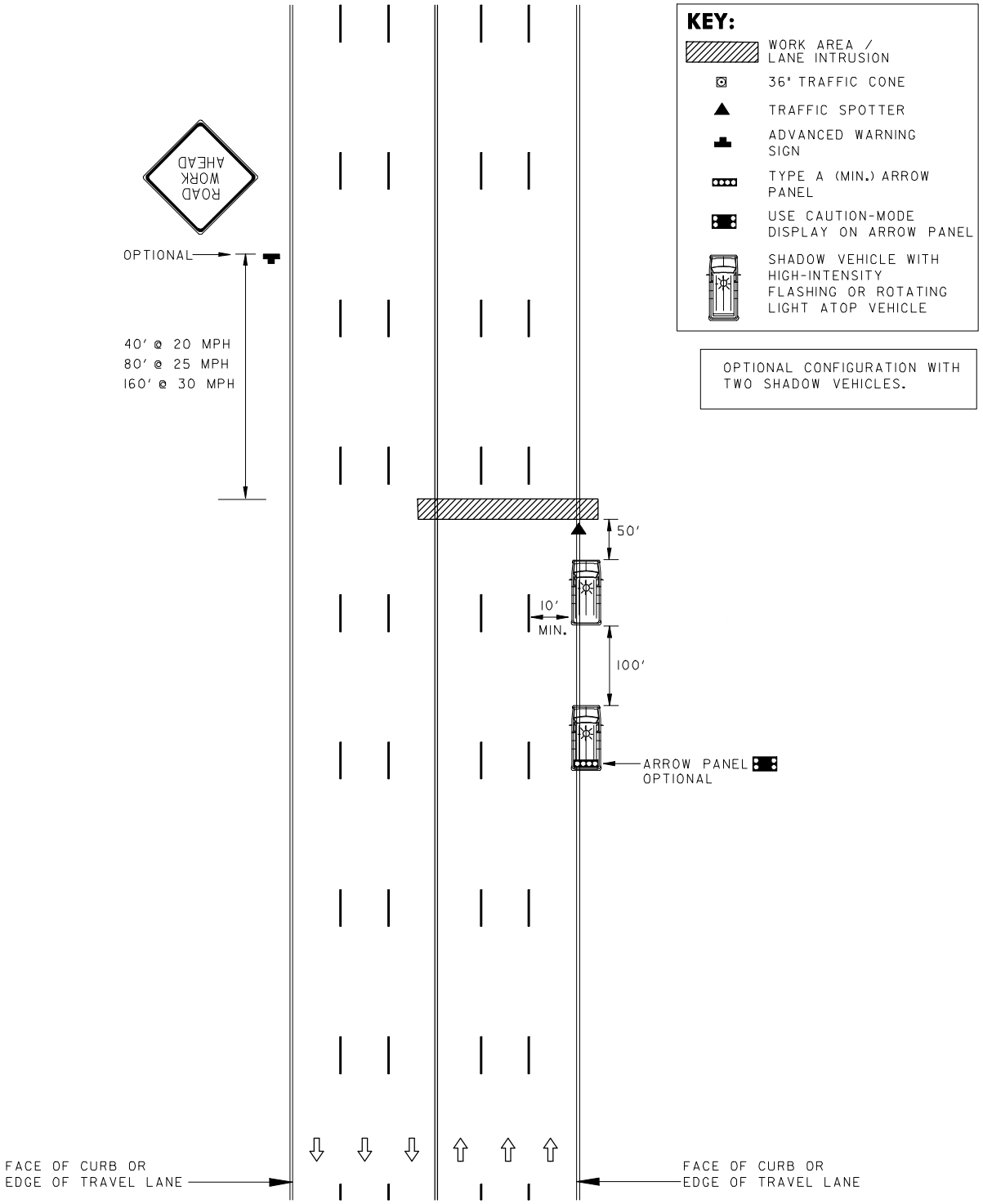
Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
≥ 6-LANE, 2-WAY / UNDIVIDED / NO OR NARROW SHOULDER
POSTED SPEED: 45, 50 OR 55 MPH
LANE ENCROACHMENT

Figure 5B

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
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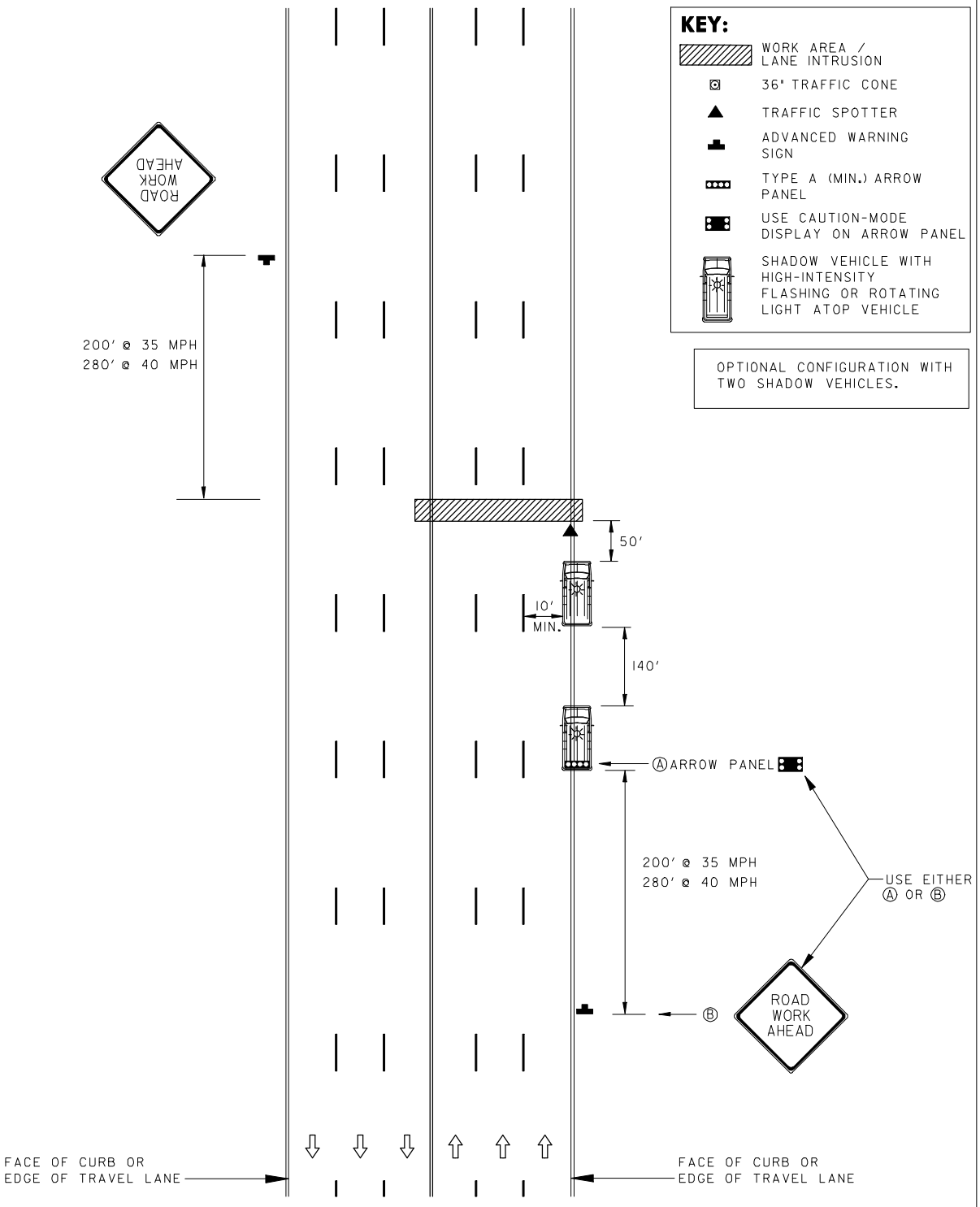
≥ 6-LANE, 2-WAY / UNDIVIDED / NO OR NARROW SHOULDER
POSTED SPEED: 20, 25 OR 30 MPH
LANE ENCROACHMENT

Figure 5C

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
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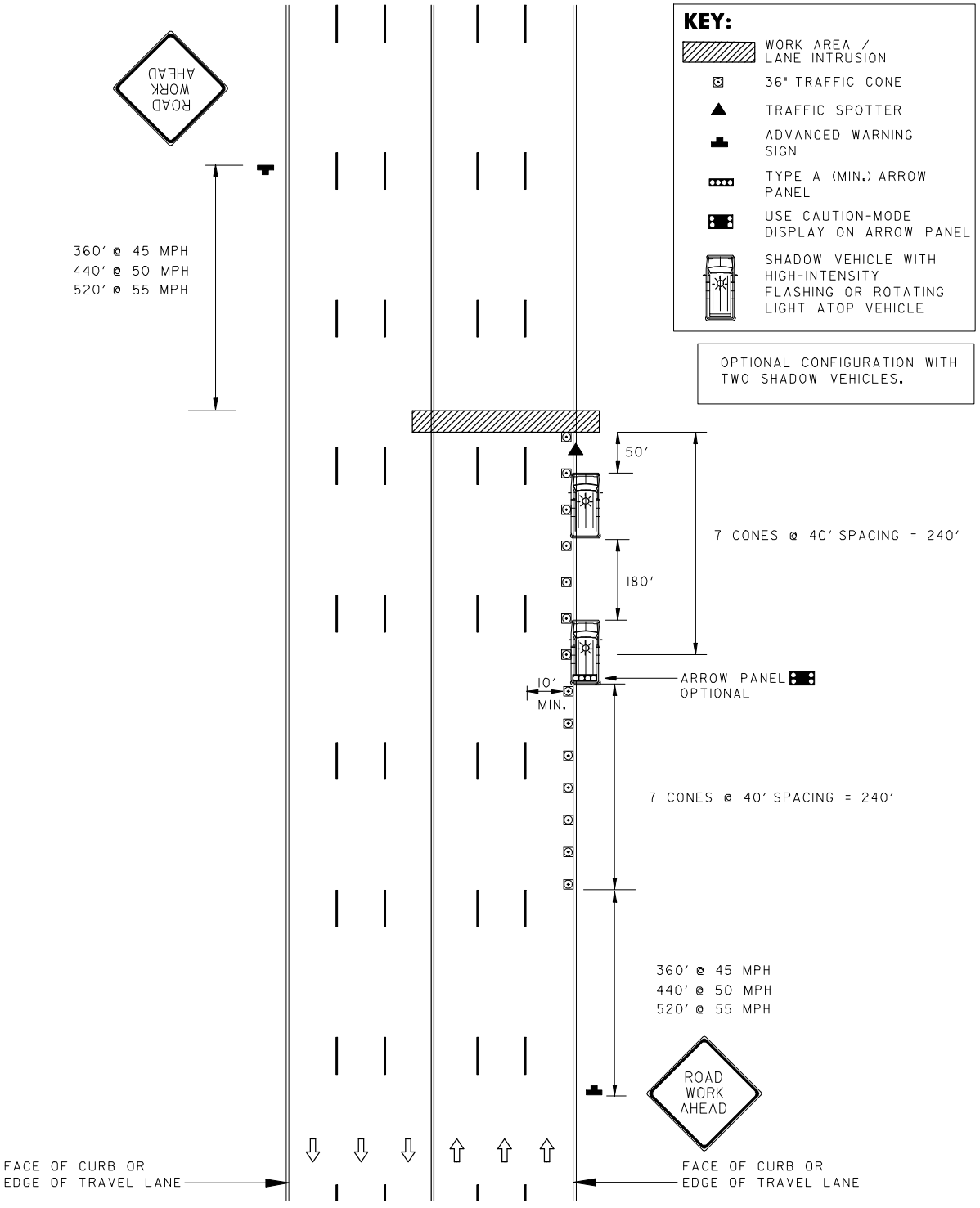
POSTED SPEED: 35 OR 40 MPH
LANE ENCROACHMENT

Figure 5D

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



CONES SPACED AT 40′ TYP.

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

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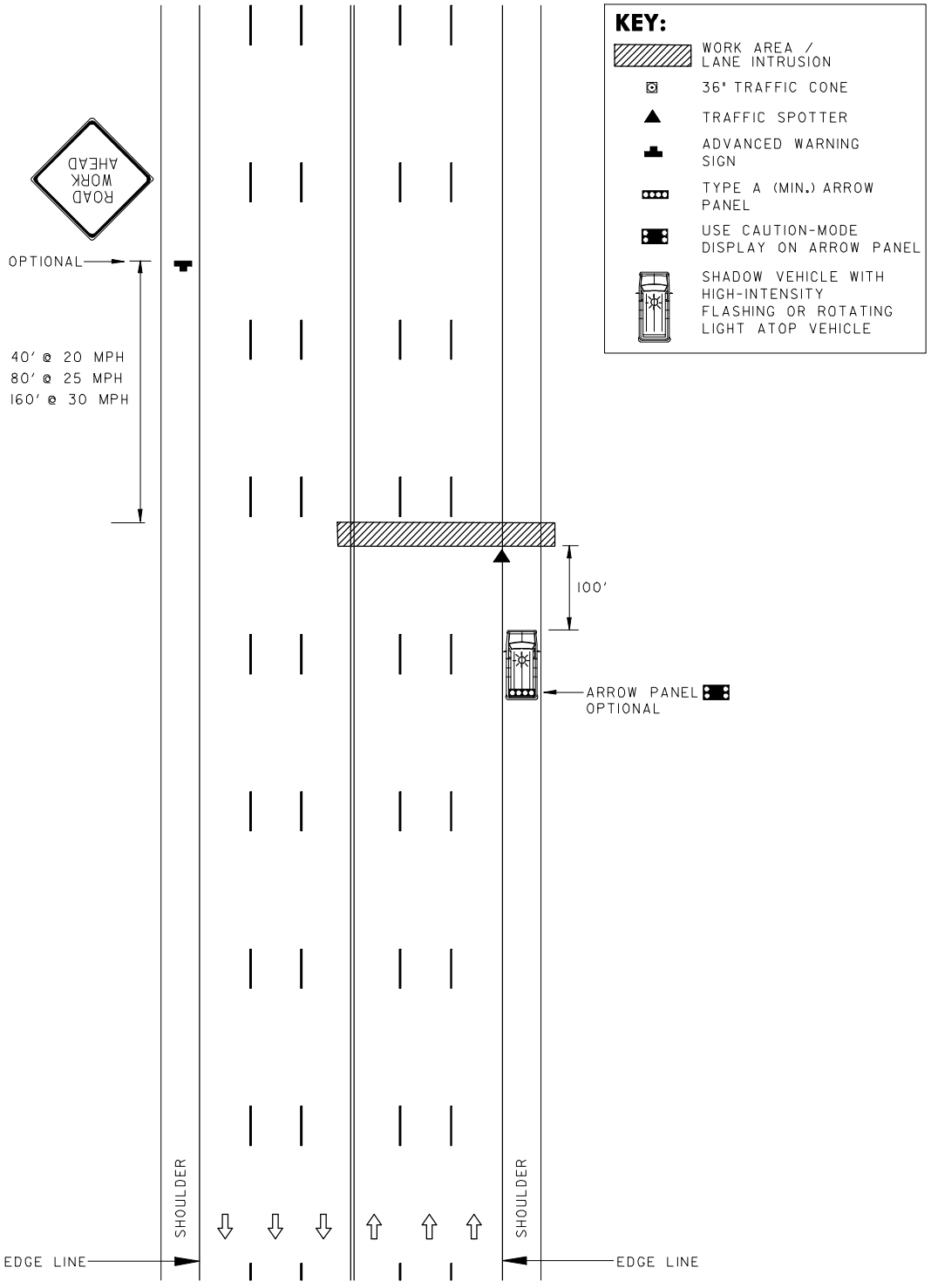
POSTED SPEED: 45, 50 OR 55 MPH
LANE ENCROACHMENT

Figure 5E

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

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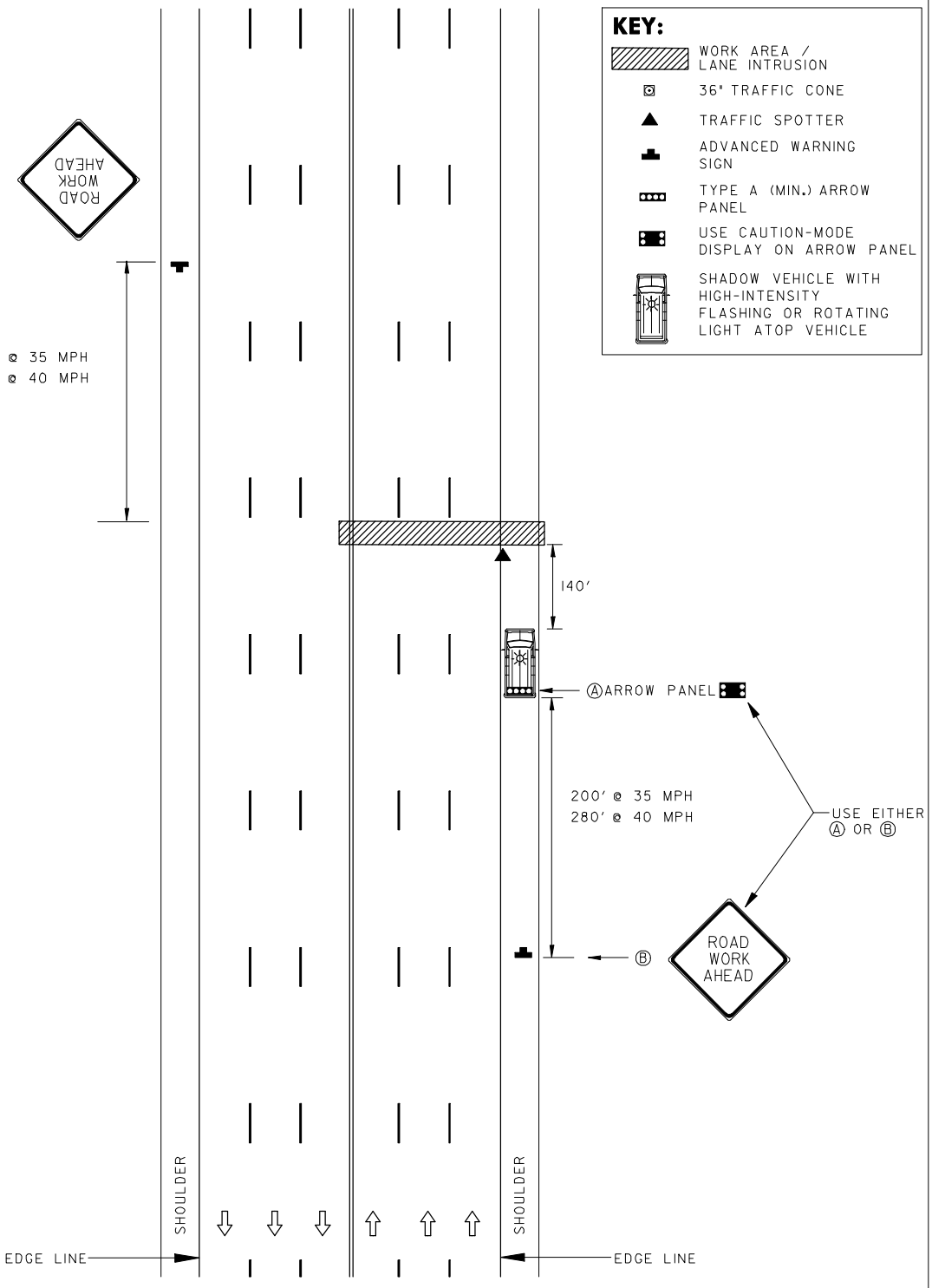
<1 HOUR DURATION / DAY OR NIGHT
≥ 6-LANE, 2-WAY / UNDIVIDED / USABLE SHOULDER
POSTED SPEED: 20, 25 OR 30 MPH
SHOULDER CLOSURE

Figure 6

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



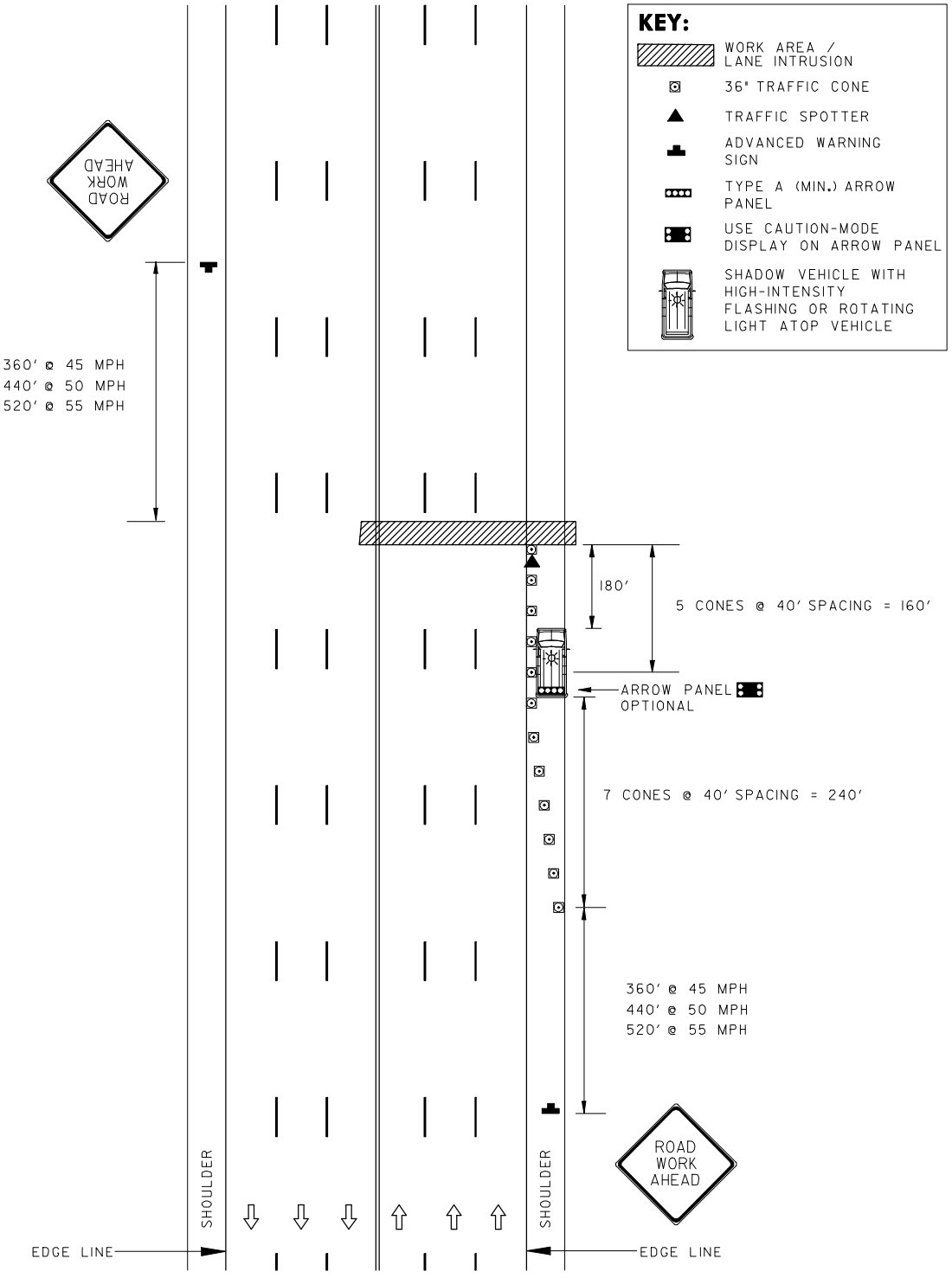
Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
≥ 6-LANE, 2-WAY / UNDIVIDED / USABLE SHOULDER
POSTED SPEED: 35 OR 40 MPH
SHOULDER CLOSURE

Figure 6A

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



CONES SPACED AT 40' TYP.

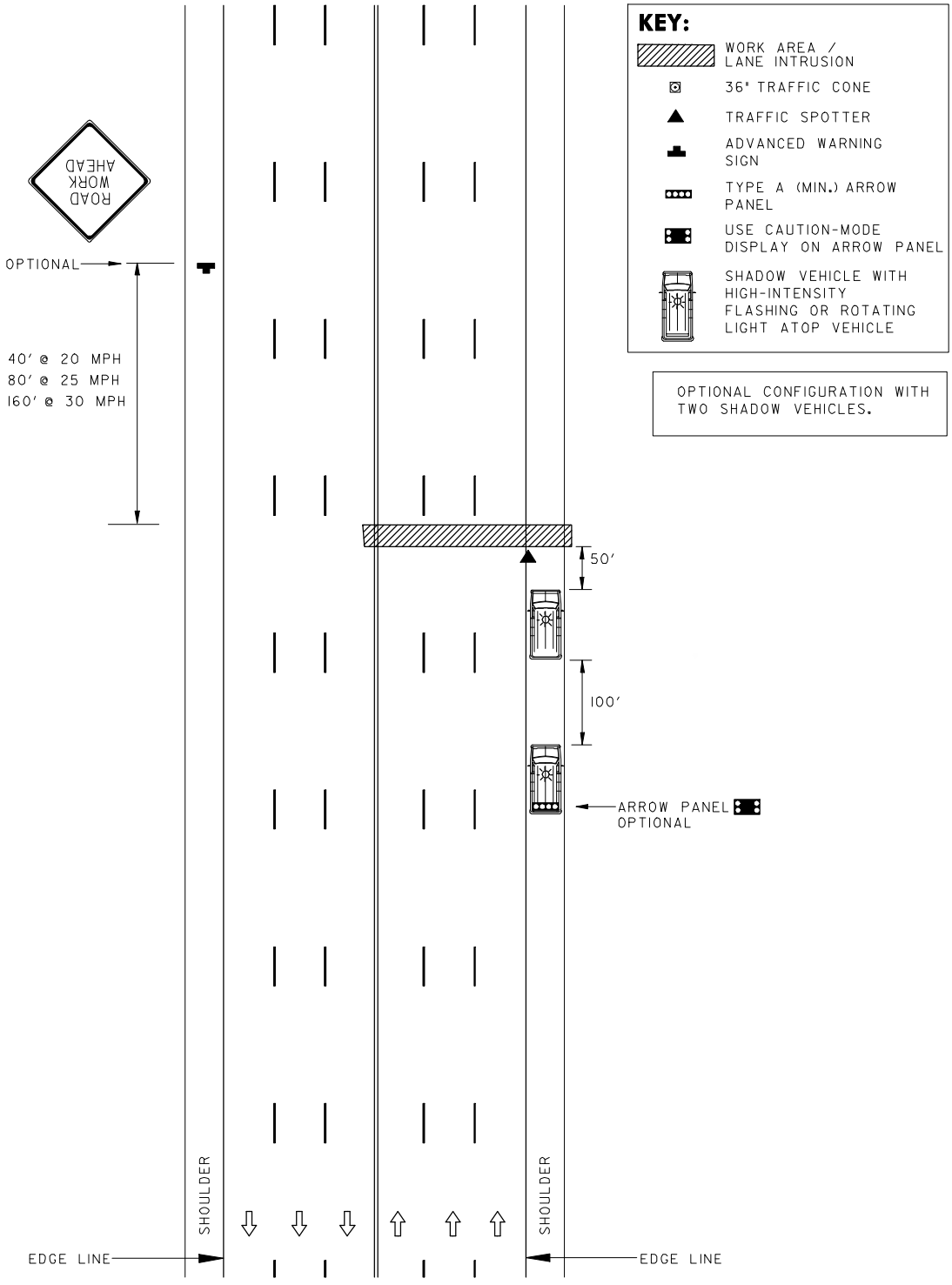
Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
≥ 6-LANE, 2-WAY / UNDIVIDED / USABLE SHOULDER
POSTED SPEED: 45, 50 OR 55 MPH
SHOULDER CLOSURE

Figure 6B

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



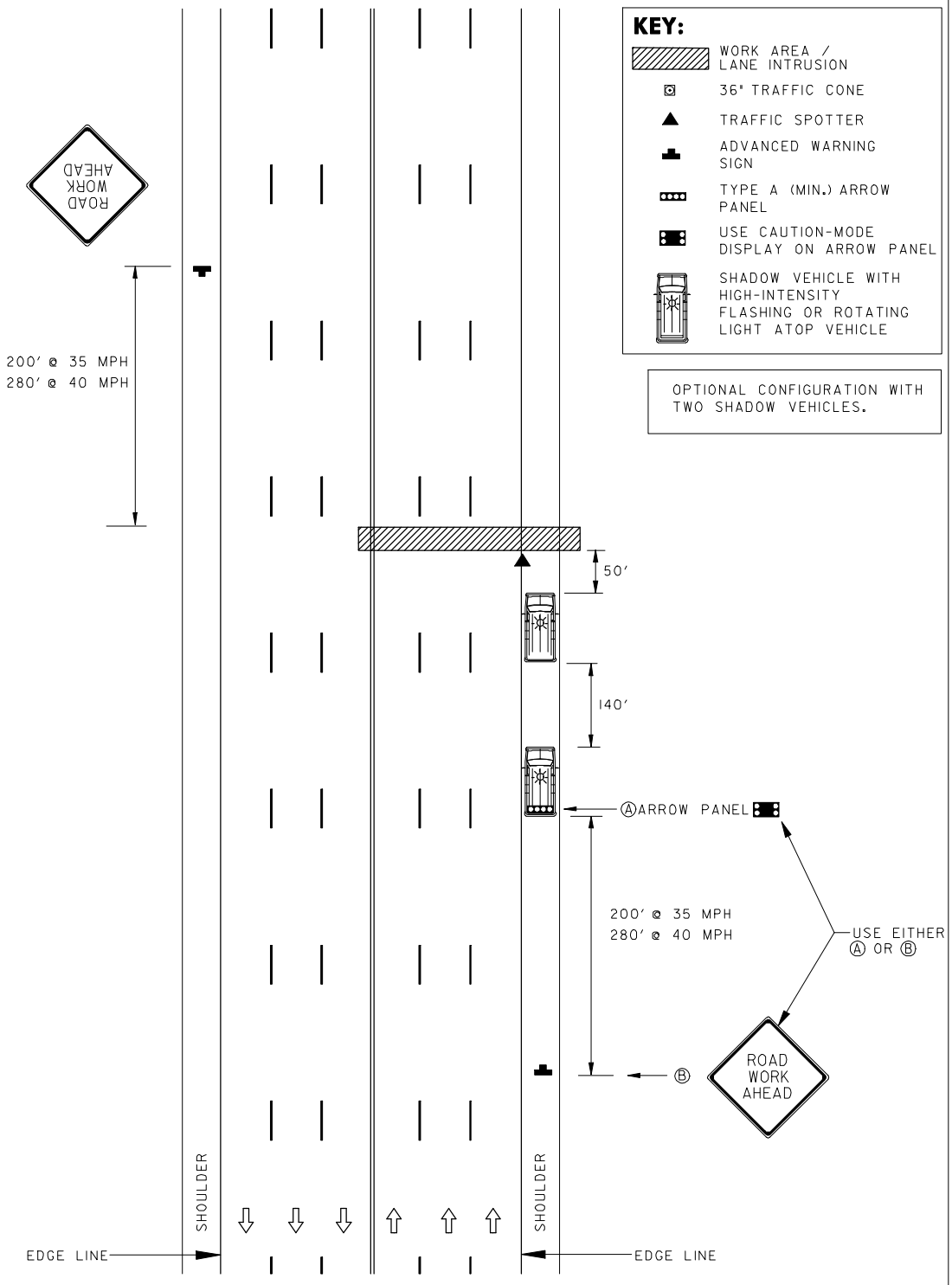
Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
≥ 6-LANE, 2-WAY / UNDIVIDED / USABLE SHOULDER
POSTED SPEED: 20, 25 OR 30 MPH
SHOULDER CLOSURE

Figure 6C

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



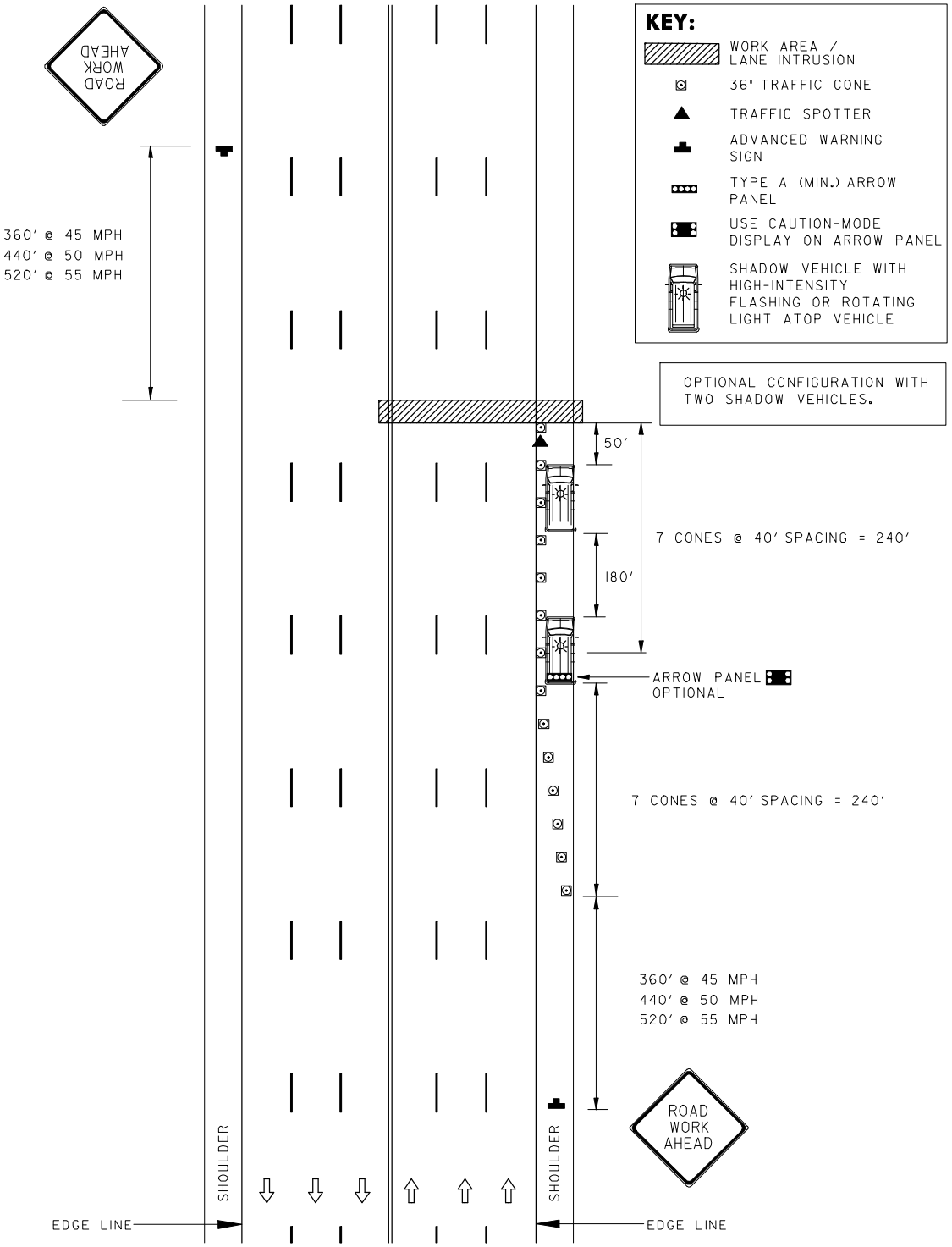
Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
≥ 6-LANE, 2-WAY / UNDIVIDED / USABLE SHOULDER
POSTED SPEED: 35 OR 40 MPH
SHOULDER CLOSURE

Figure 6D

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



CONES SPACED AT 40′ TYP.

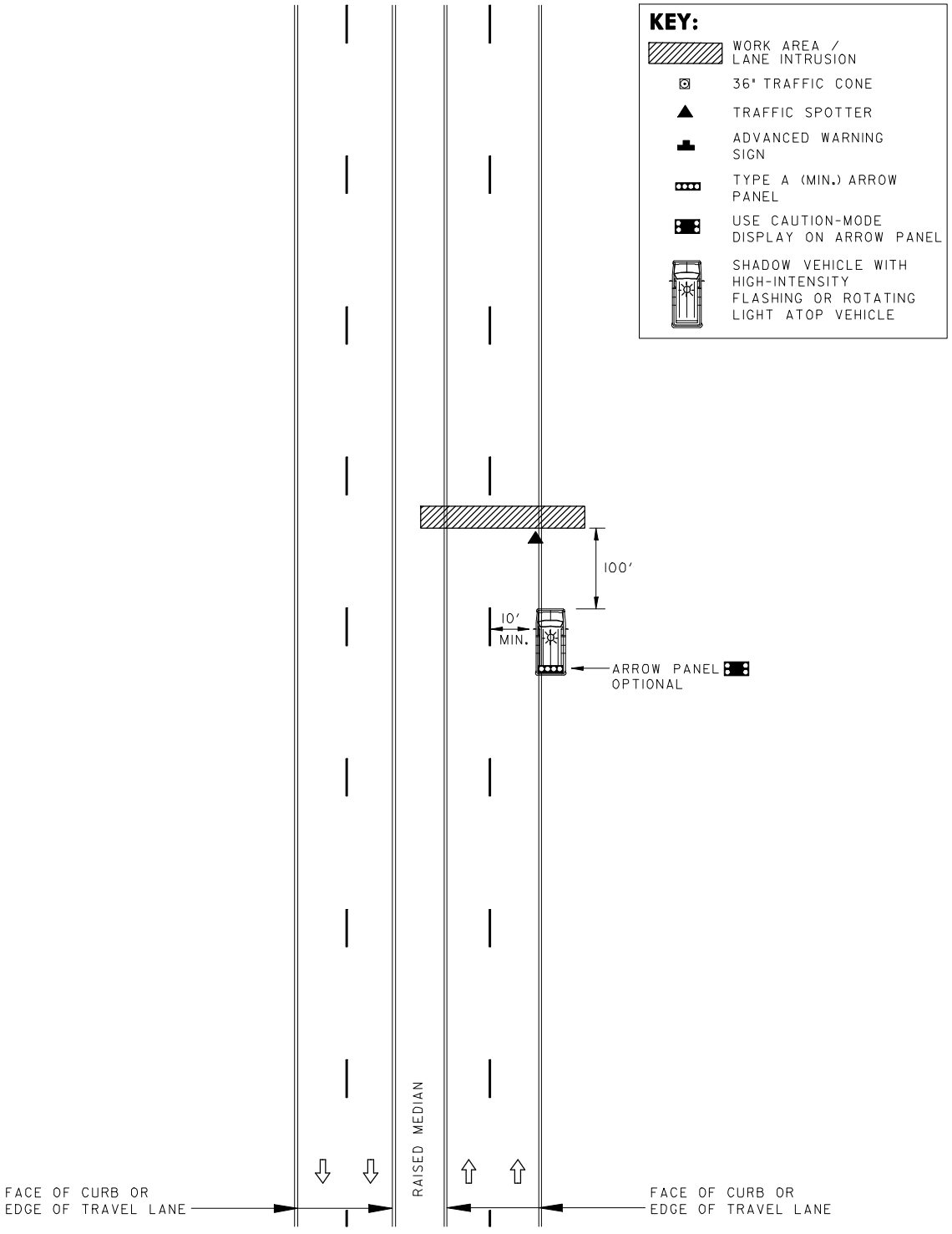
Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
≥ 6-LANE, 2-WAY / UNDIVIDED / USABLE SHOULDER
POSTED SPEED: 45, 50 OR 55 MPH
SHOULDER CLOSURE

Figure 6E

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



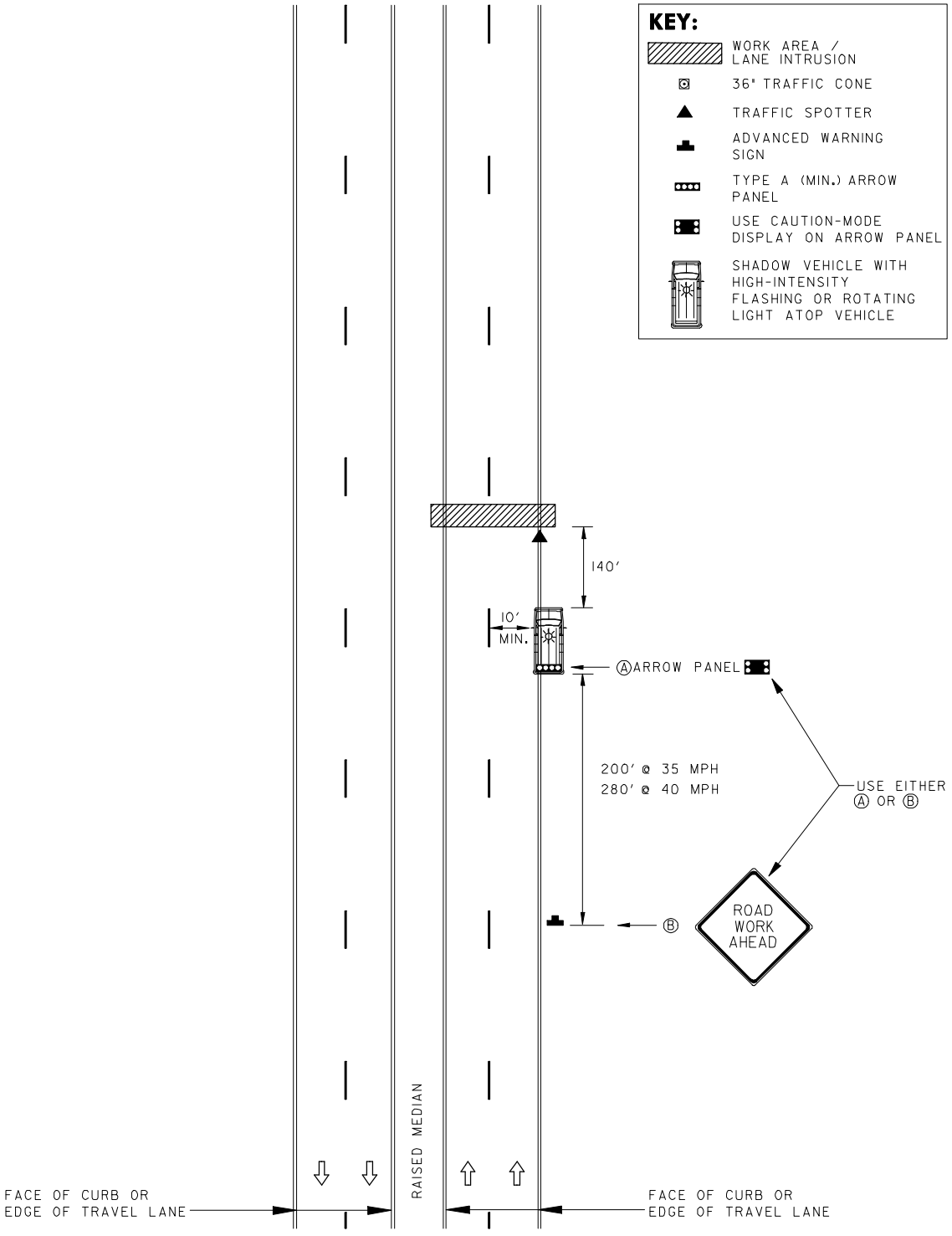
Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
4-LANE, 2-WAY / RAISED MEDIAN / NO OR NARROW SHOULDER
POSTED SPEED: 20, 25 OR 30 MPH
LANE ENCROACHMENT

Figure 7

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



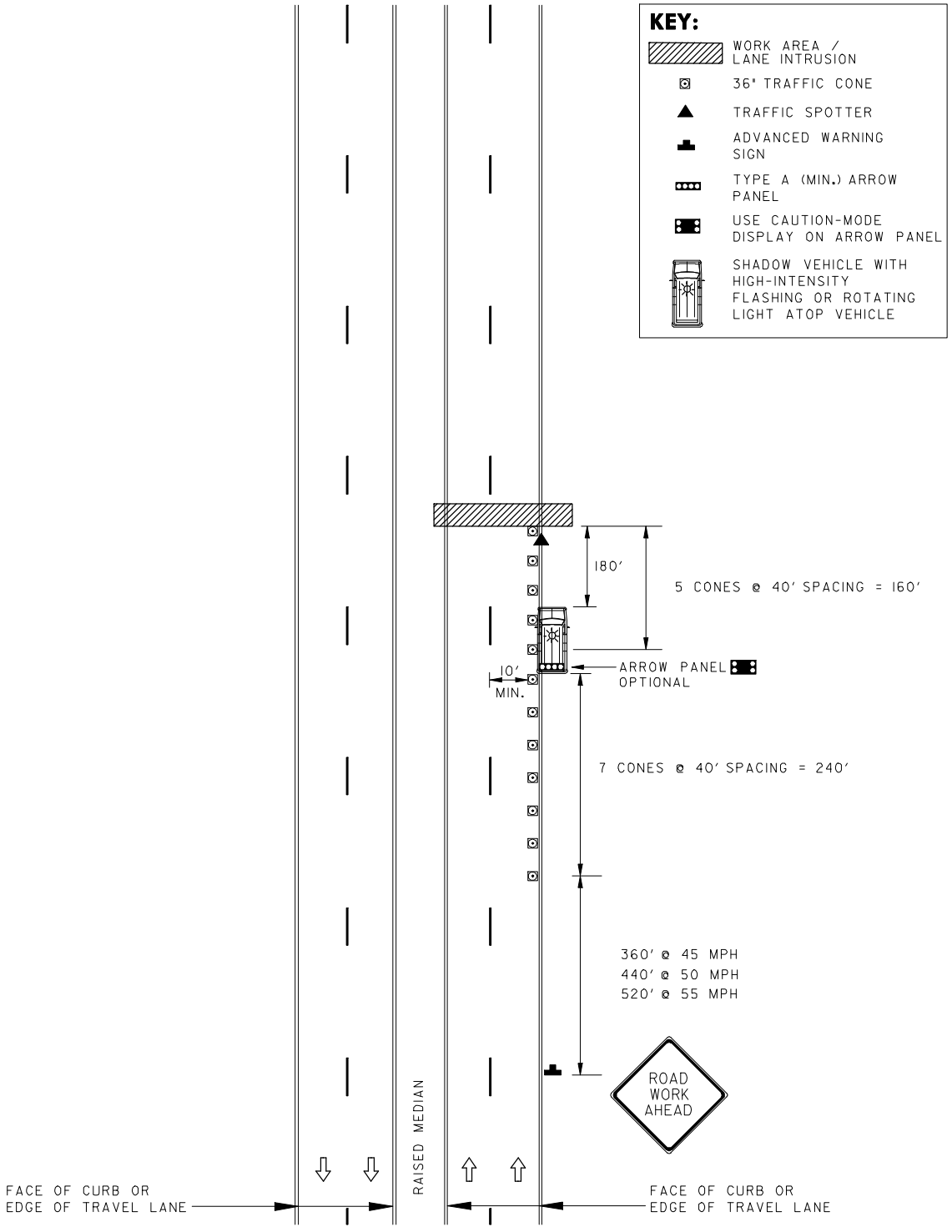
Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
4-LANE, 2-WAY / RAISED MEDIAN / NO OR NARROW SHOULDER
POSTED SPEED: 35 OR 40 MPH
LANE ENCROACHMENT

Figure 7A

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



CONES SPACED AT 40' TYP.

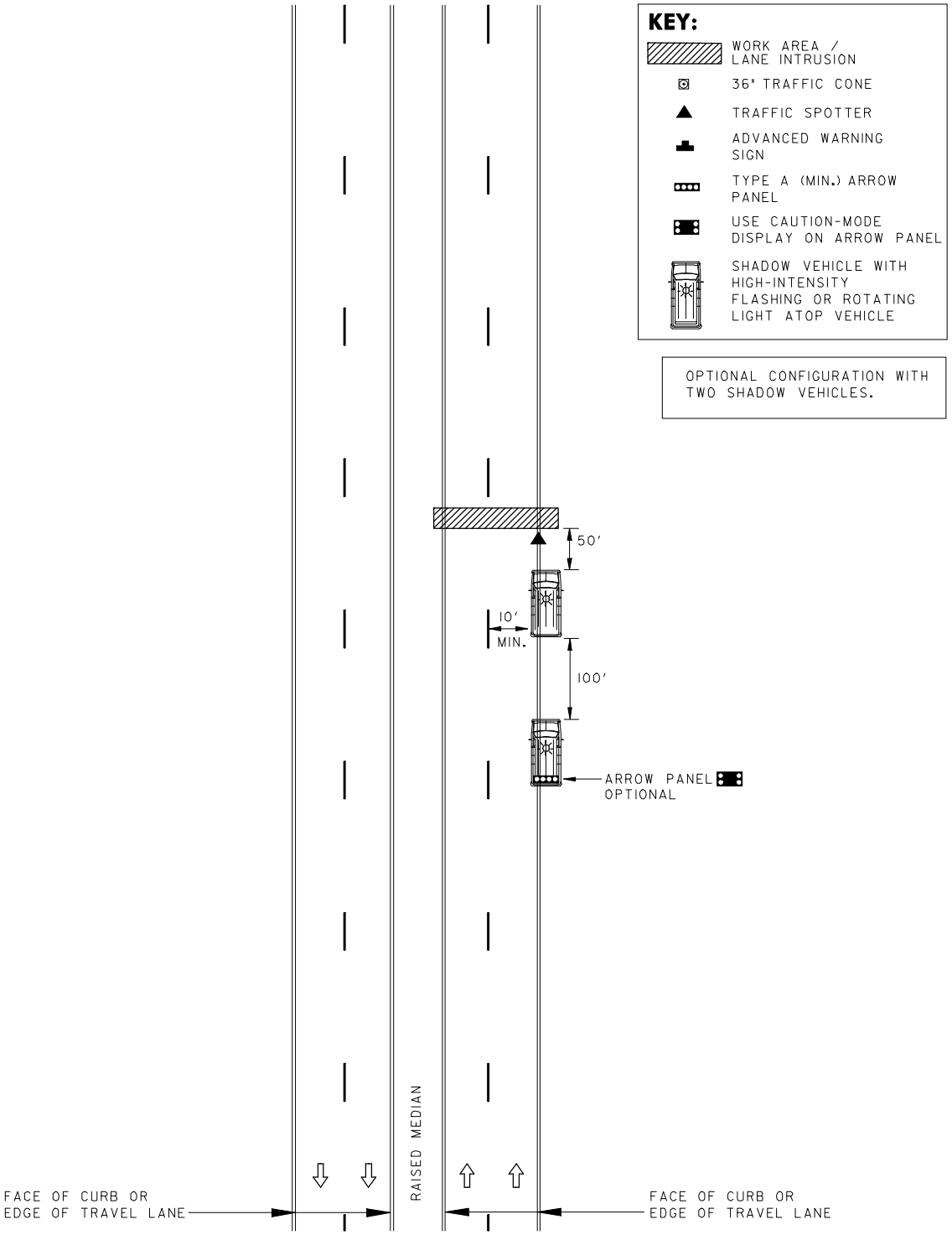
Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
4-LANE, 2-WAY / RAISED MEDIAN / NO OR NARROW SHOULDER
POSTED SPEED: 45, 50 OR 55 MPH
LANE ENCROACHMENT

Figure 7B

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION

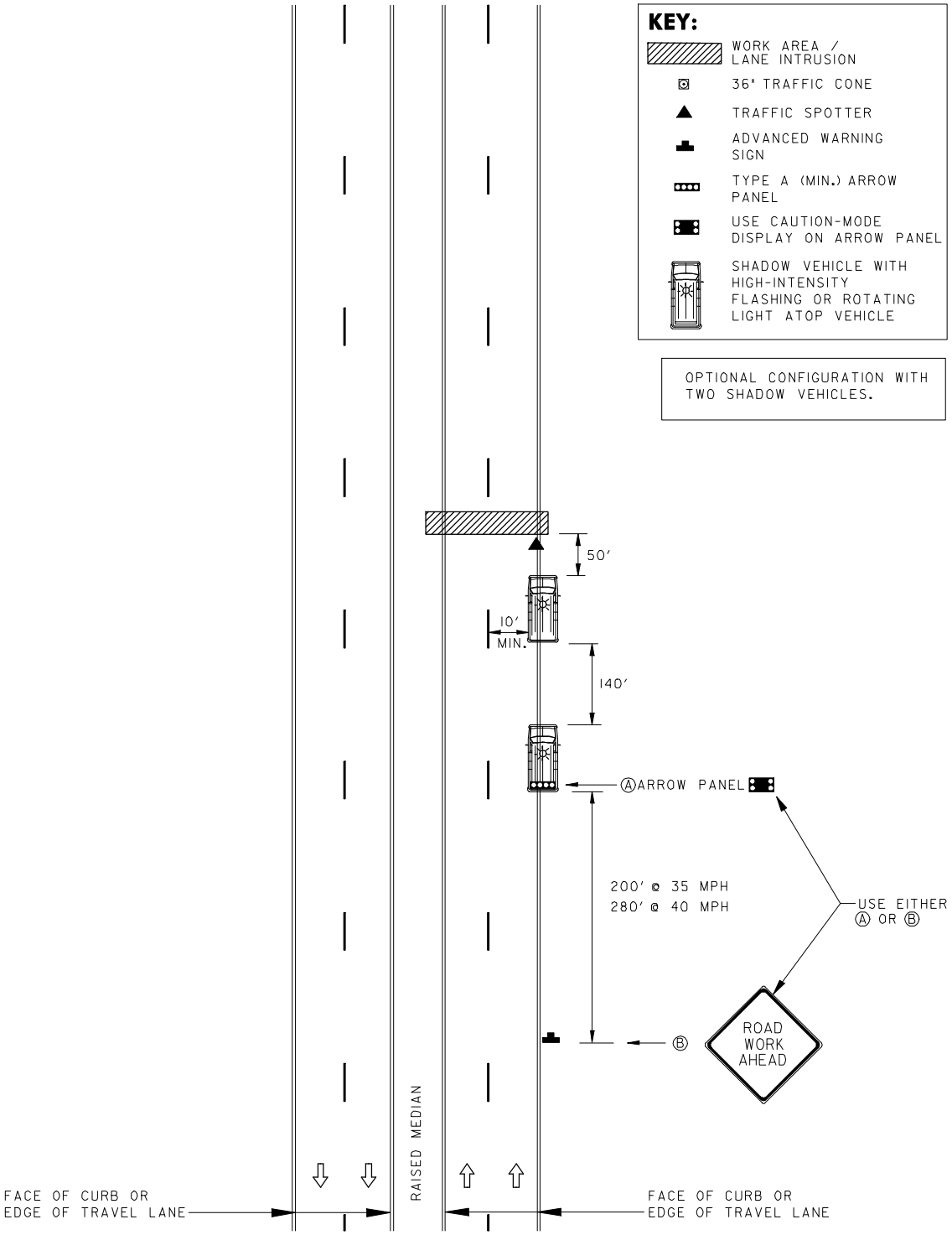


Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
4-LANE, 2-WAY / RAISED MEDIAN / NO OR NARROW SHOULDER
POSTED SPEED: 20, 25 OR 30 MPH
LANE ENCROACHMENT

Figure 7C

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION

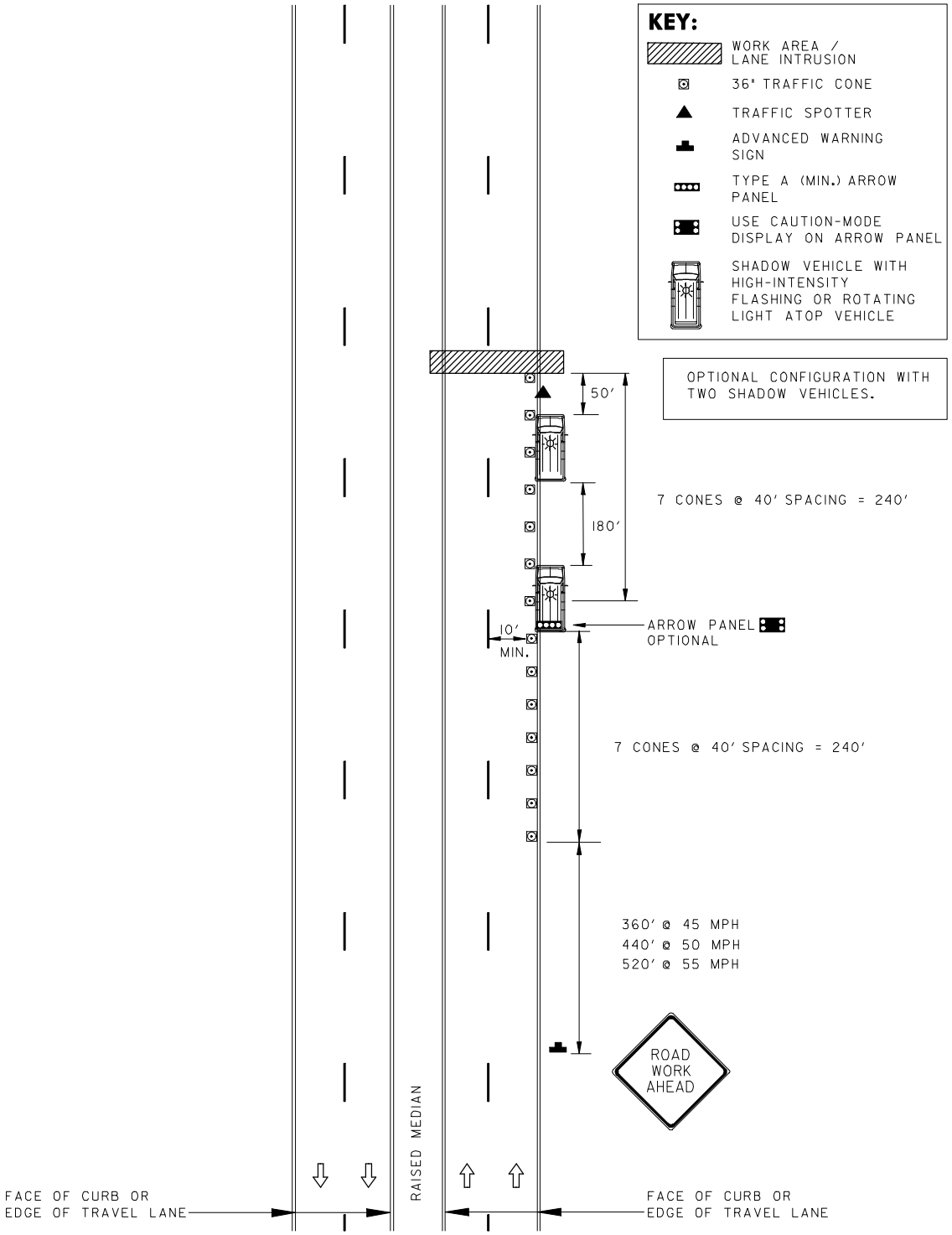


Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
4-LANE, 2-WAY / RAISED MEDIAN / NO OR NARROW SHOULDER
POSTED SPEED: 35 OR 40 MPH
LANE ENCROACHMENT

Figure 7D

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



CONES SPACED AT 40' TYP.

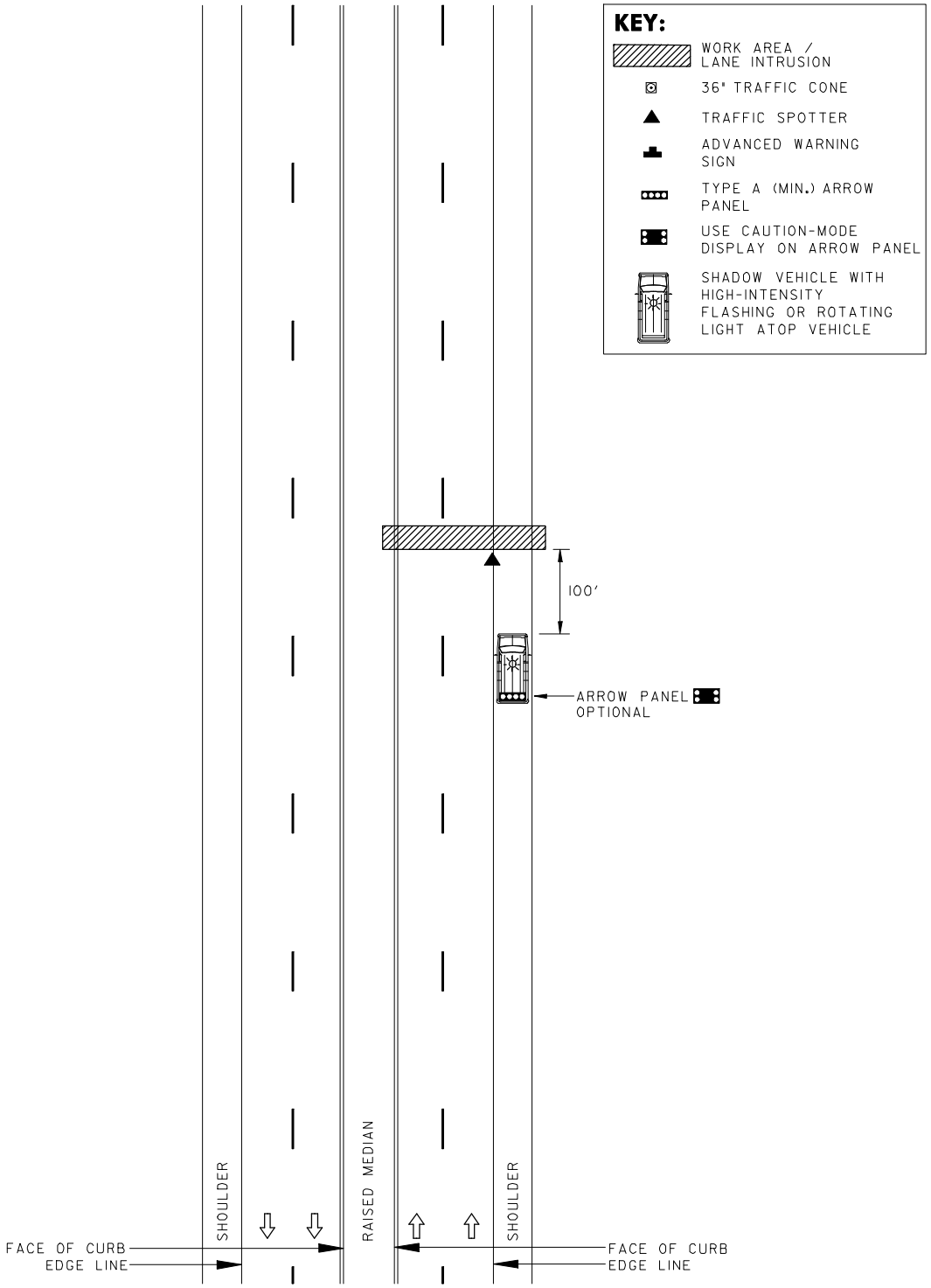
Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
4-LANE, 2-WAY / RAISED MEDIAN / NO OR NARROW SHOULDER
POSTED SPEED: 45, 50 OR 55 MPH
LANE ENCROACHMENT

Figure 7E

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

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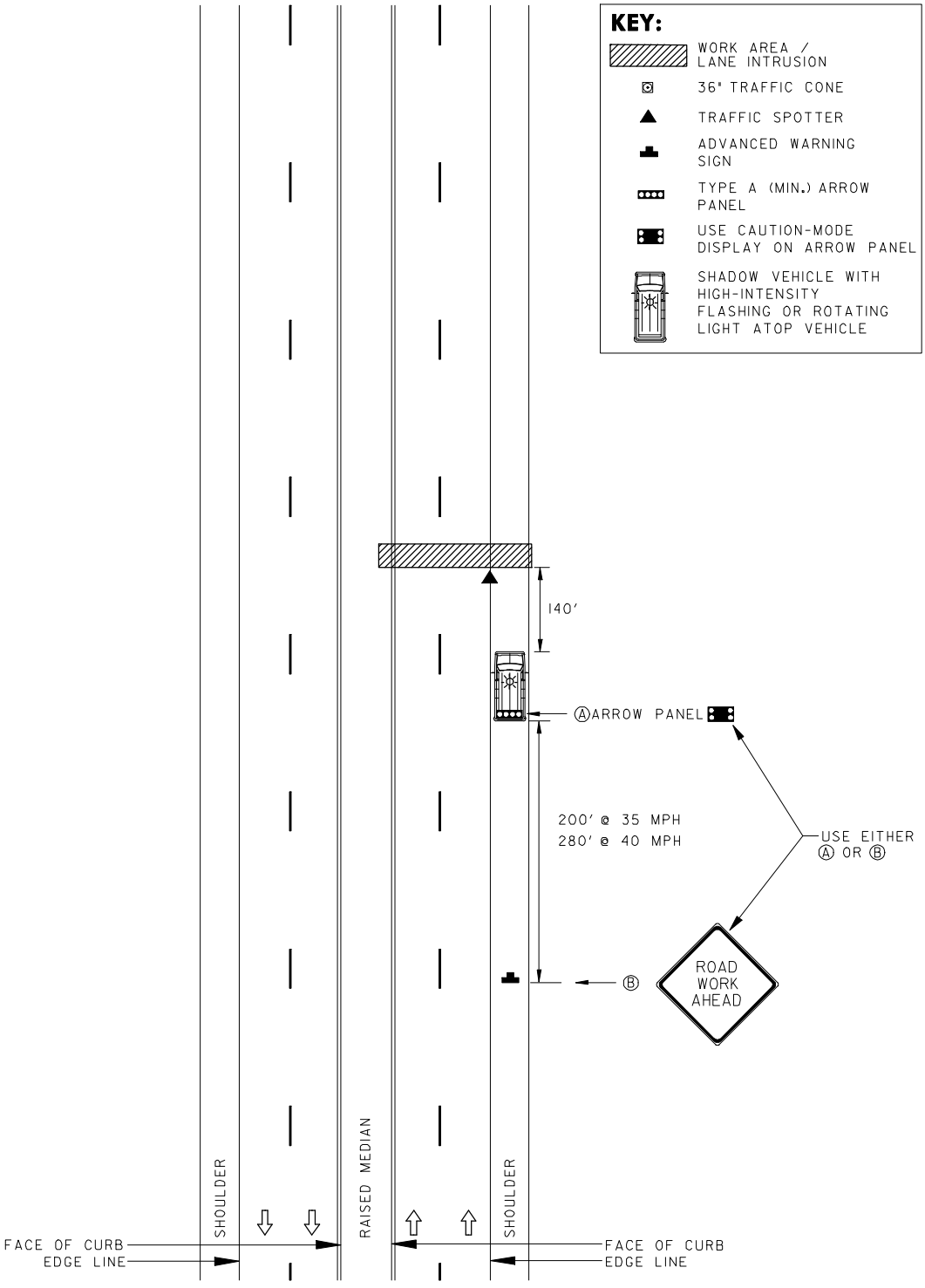
TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
4-LANE, 2-WAY / RAISED MEDIAN / USABLE SHOULDER
POSTED SPEED: 20, 25 OR 30 MPH
SHOULDER CLOSURE

Figure 8

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



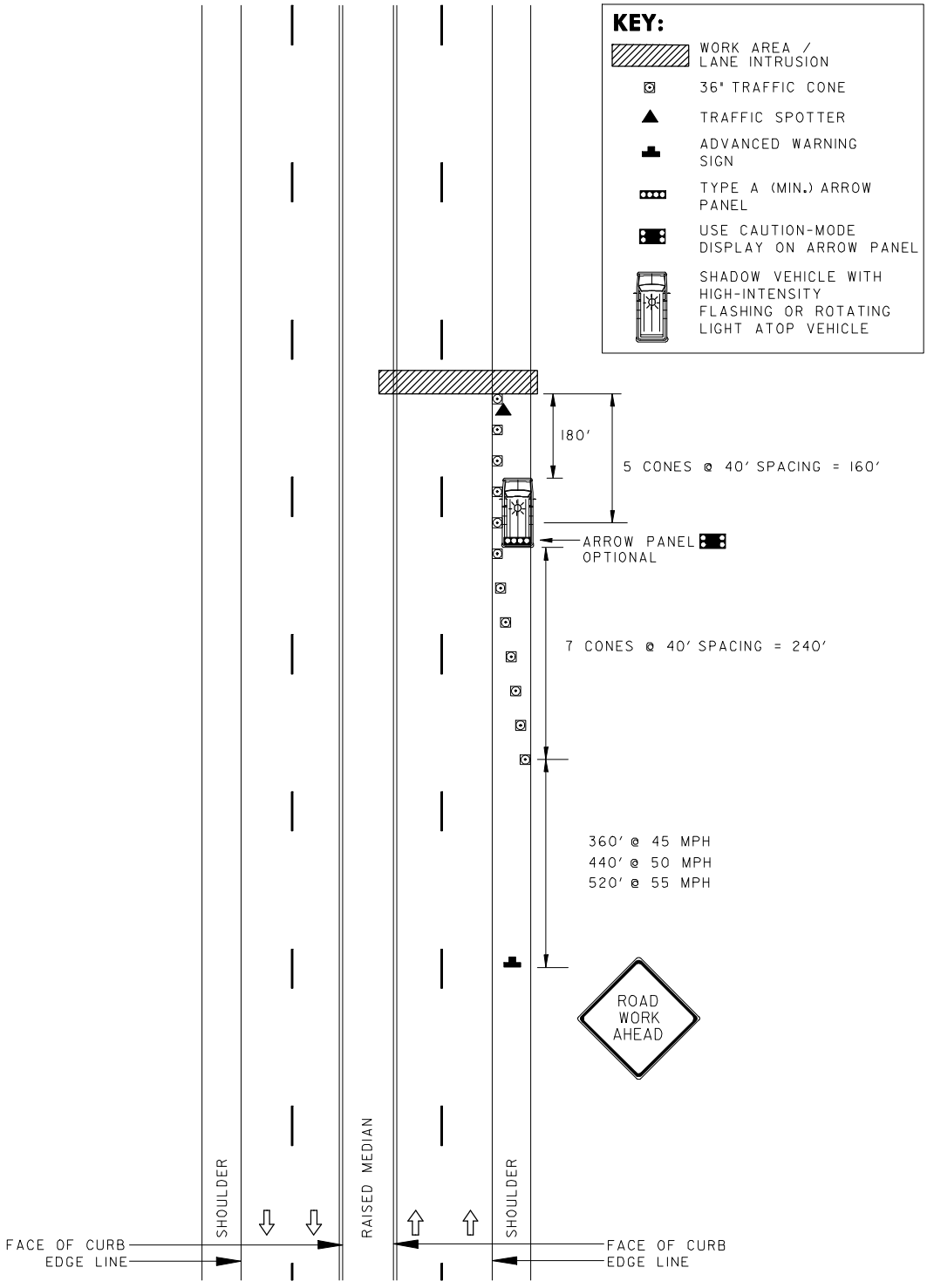
Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
4-LANE, 2-WAY / RAISED MEDIAN / USABLE SHOULDER
POSTED SPEED: 35 OR 40 MPH
SHOULDER CLOSURE

Figure 8A

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



CONES SPACED AT 40' TYP.

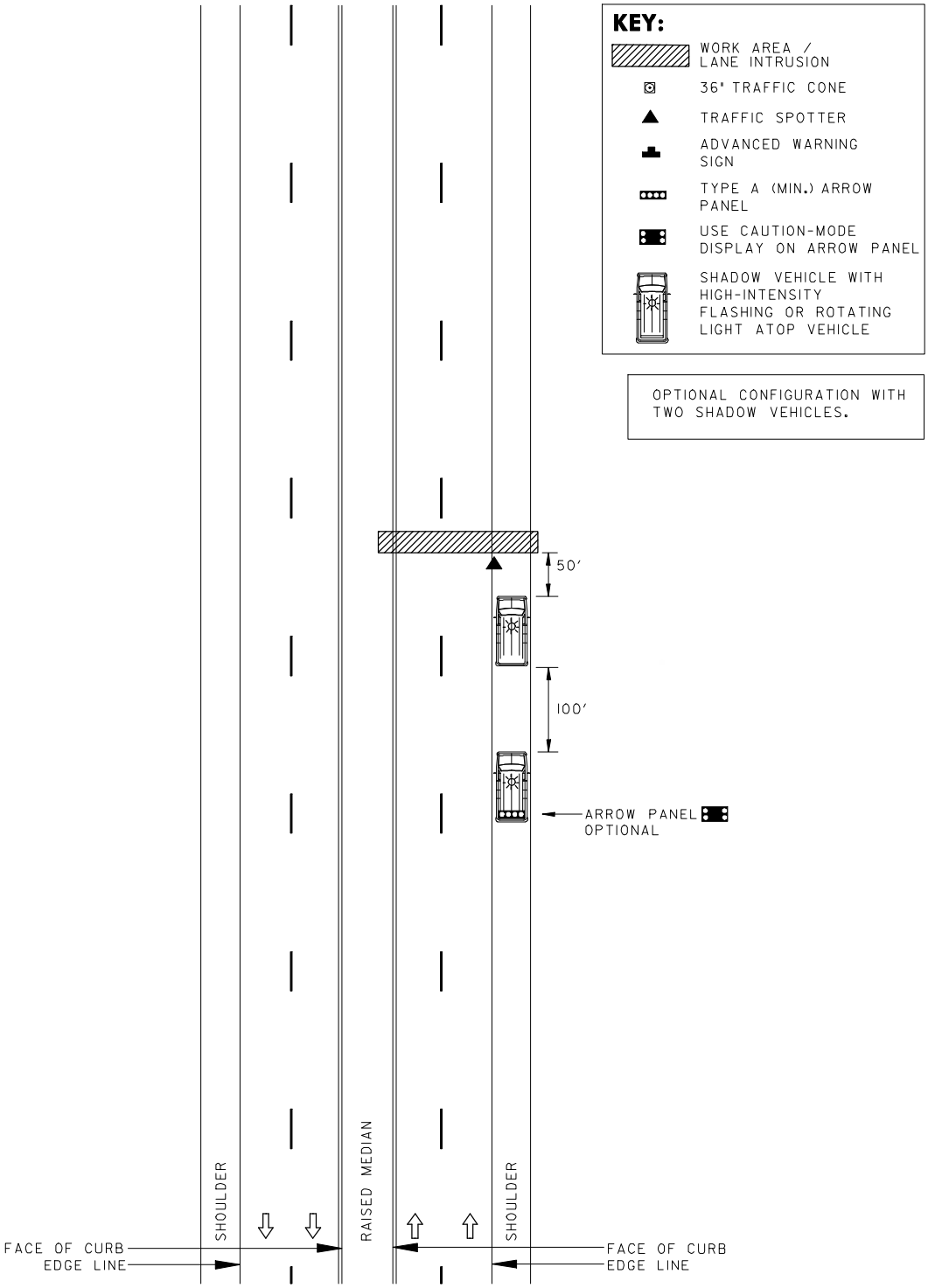
Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
4-LANE, 2-WAY / RAISED MEDIAN / USABLE SHOULDER
POSTED SPEED: 45, 50 OR 55 MPH
SHOULDER CLOSURE

Figure 8B

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

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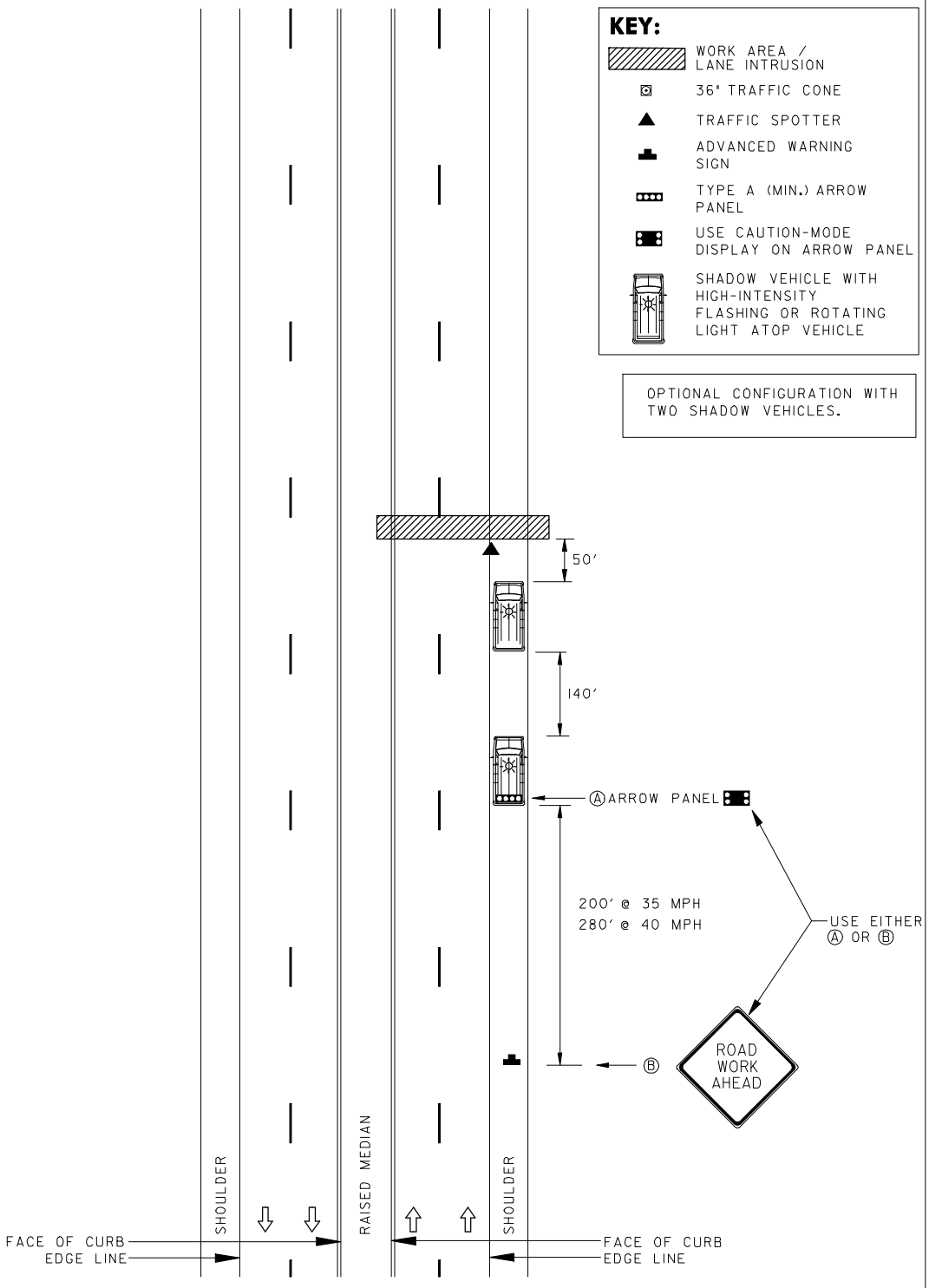
TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
4-LANE, 2-WAY / RAISED MEDIAN / USABLE SHOULDER
POSTED SPEED: 20, 25 OR 30 MPH
SHOULDER CLOSURE

Figure 8C

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

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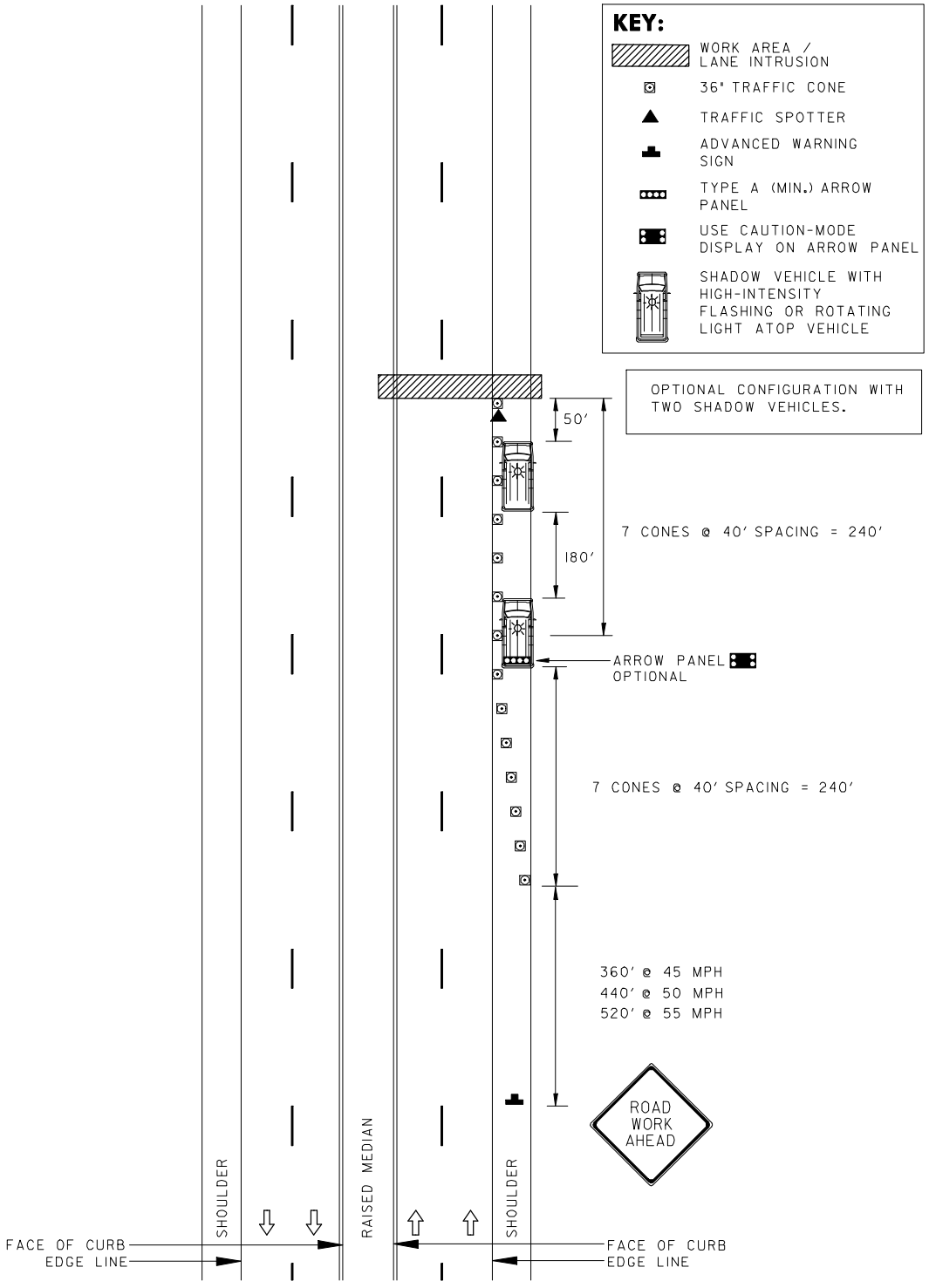
TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
4-LANE, 2-WAY / RAISED MEDIAN / USABLE SHOULDER
POSTED SPEED: 35 OR 40 MPH
SHOULDER CLOSURE

Figure 8D

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



CONES SPACED AT 40' TYP.

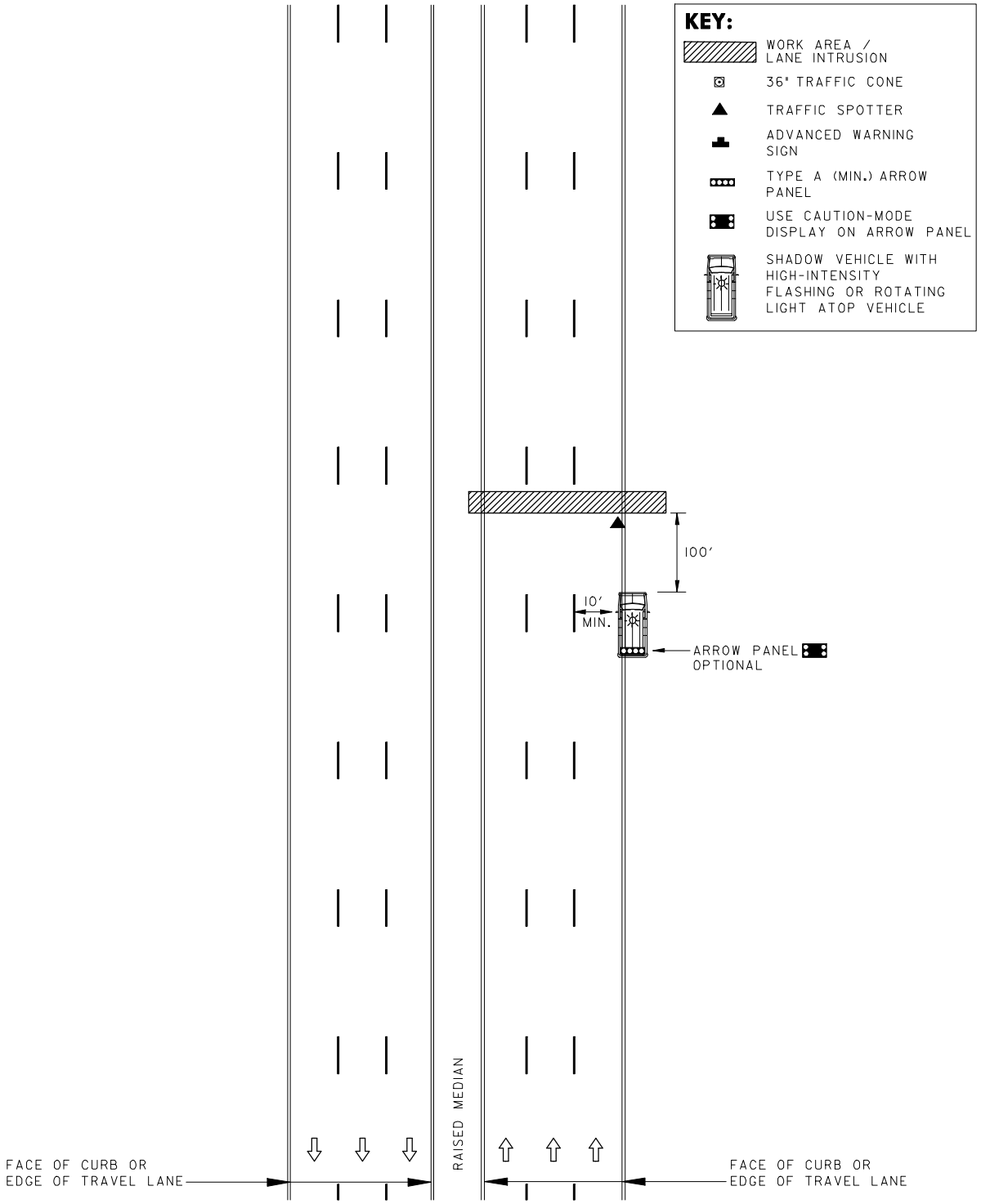
Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
4-LANE, 2-WAY / RAISED MEDIAN / USABLE SHOULDER
POSTED SPEED: 45, 50 OR 55 MPH
SHOULDER CLOSURE

Figure 8E

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



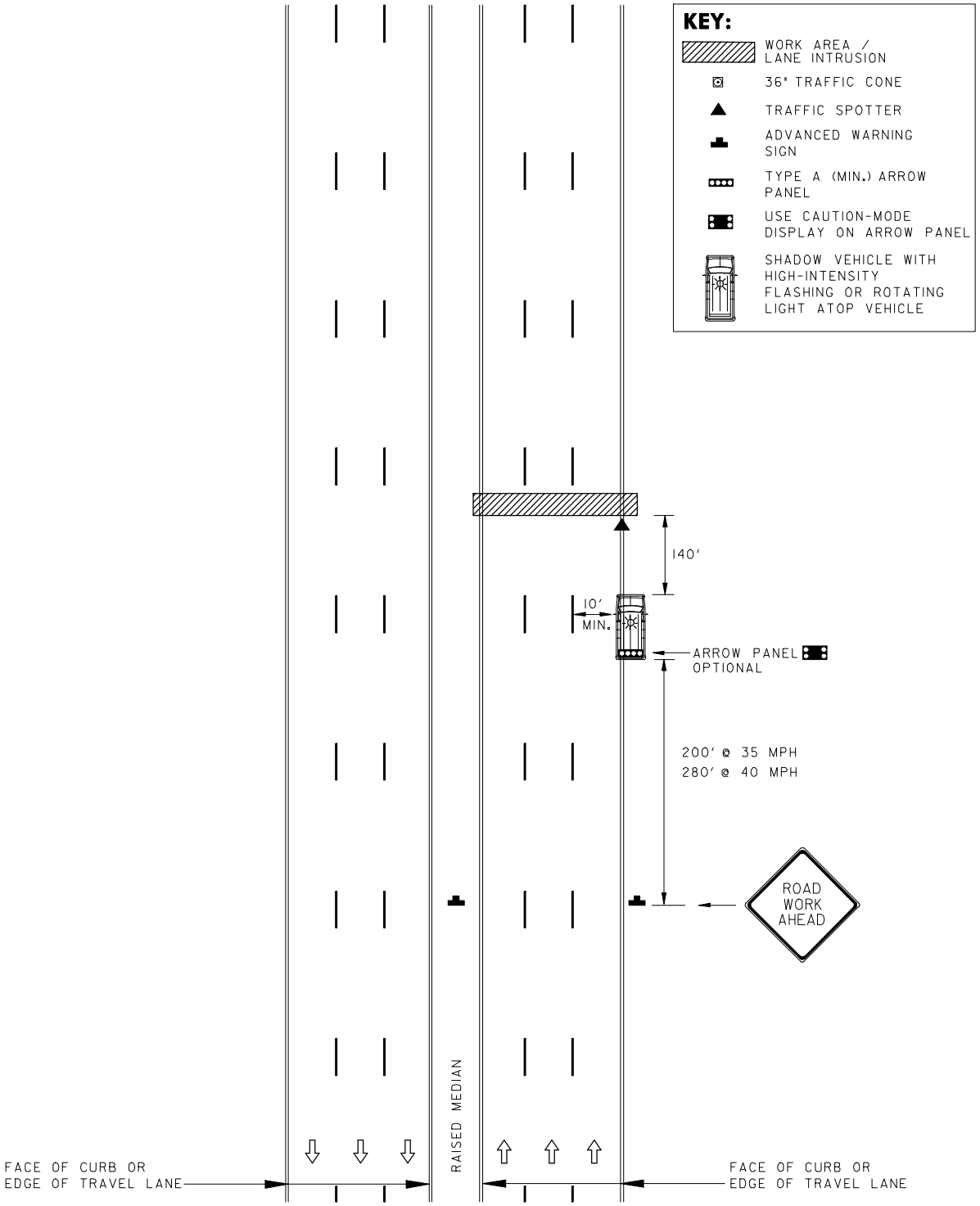
Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
≥ 6-LANE, 2-WAY / RAISED MEDIAN / NO OR NARROW SHOULDER
POSTED SPEED: 20, 25 OR 30 MPH
LANE ENCROACHMENT

Figure 9

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION

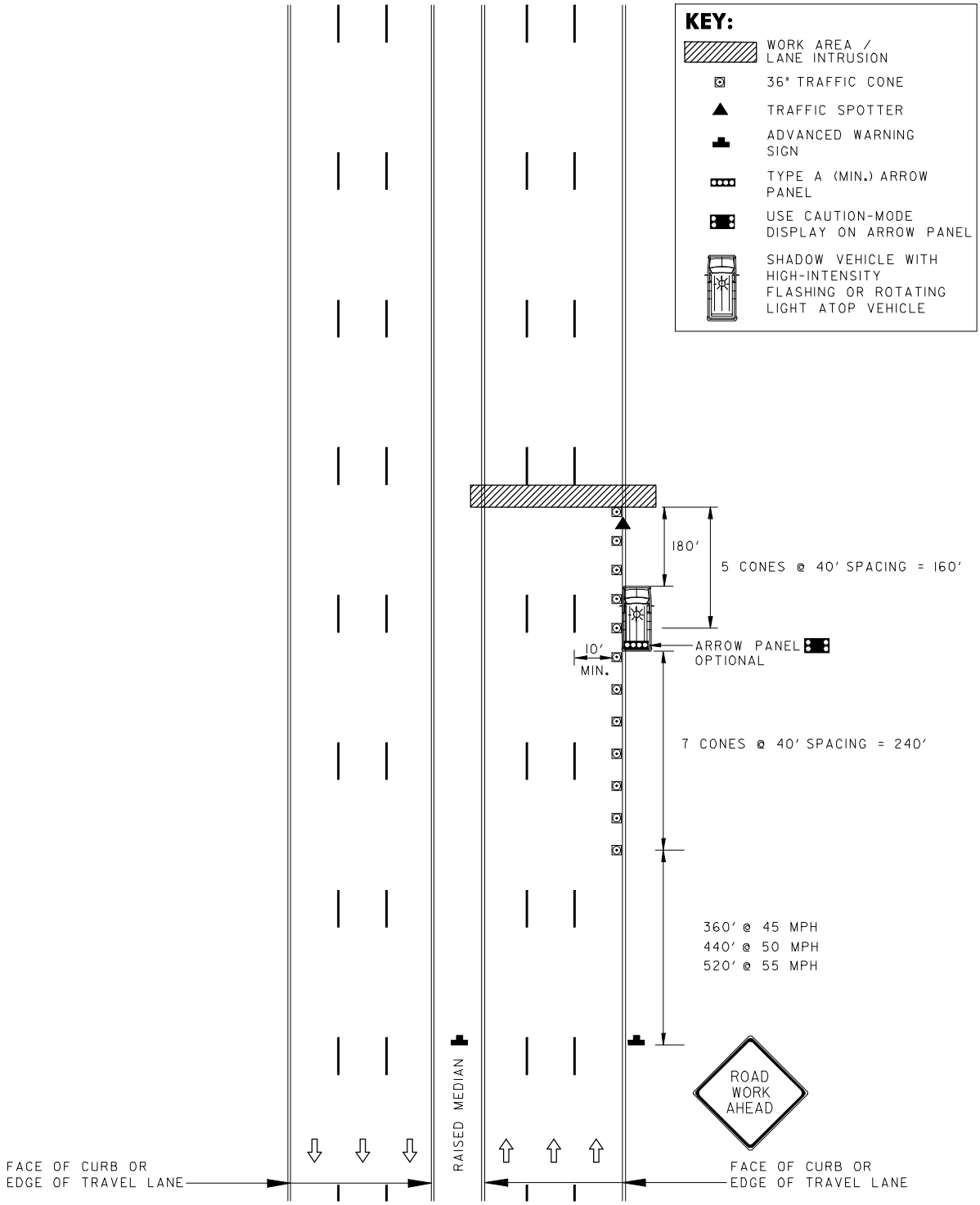


Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
≥ 6-LANE, 2-WAY / RAISED MEDIAN / NO OR NARROW SHOULDER
POSTED SPEED: 35 OR 40 MPH
LANE ENCROACHMENT

Figure 9A

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



CONES SPACED AT 40' TYP.

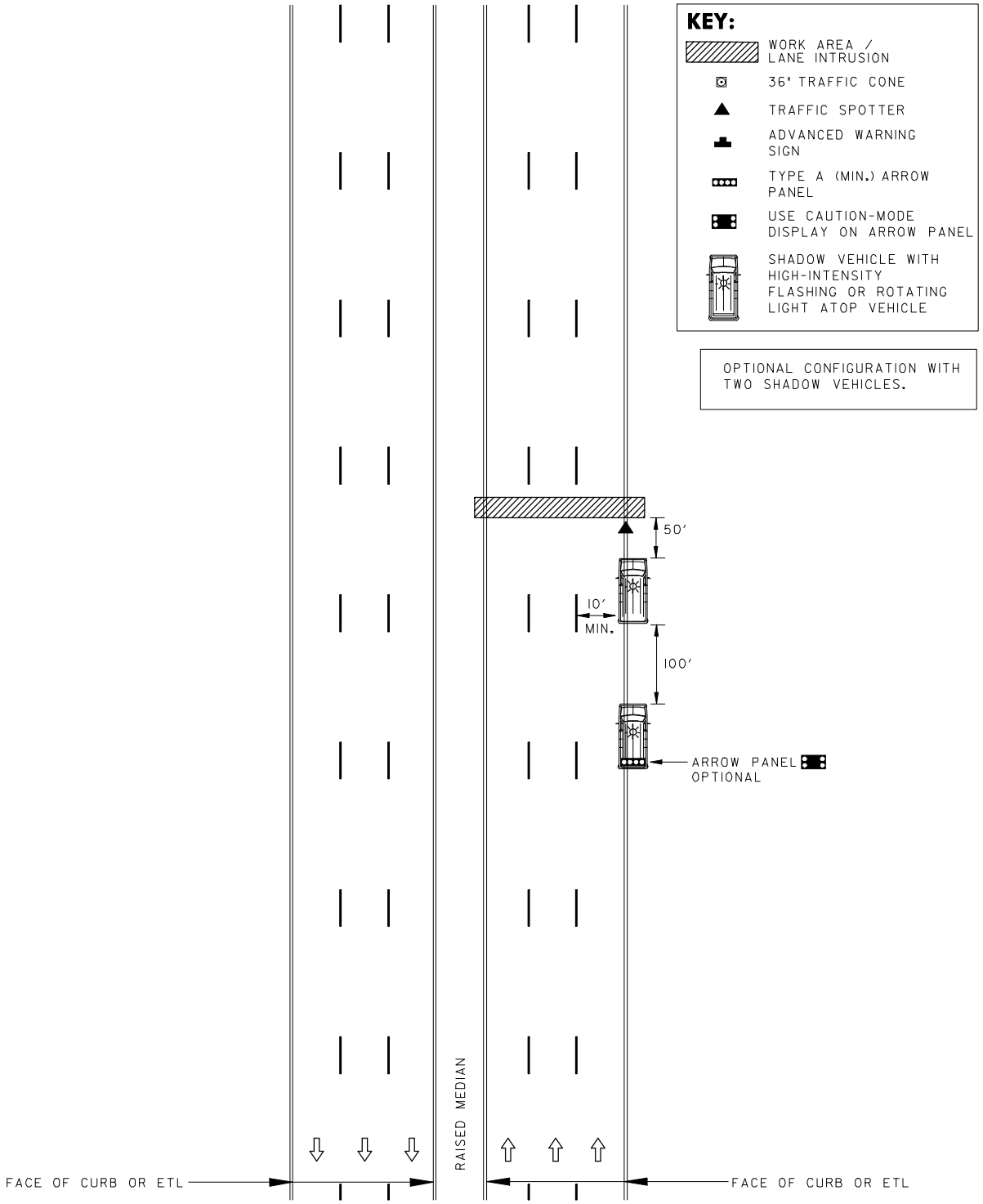
Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
≥ 6-LANE, 2-WAY / RAISED MEDIAN / NO OR NARROW SHOULDER
POSTED SPEED: 45, 50 OR 55 MPH
LANE ENCROACHMENT

Figure 9B

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION

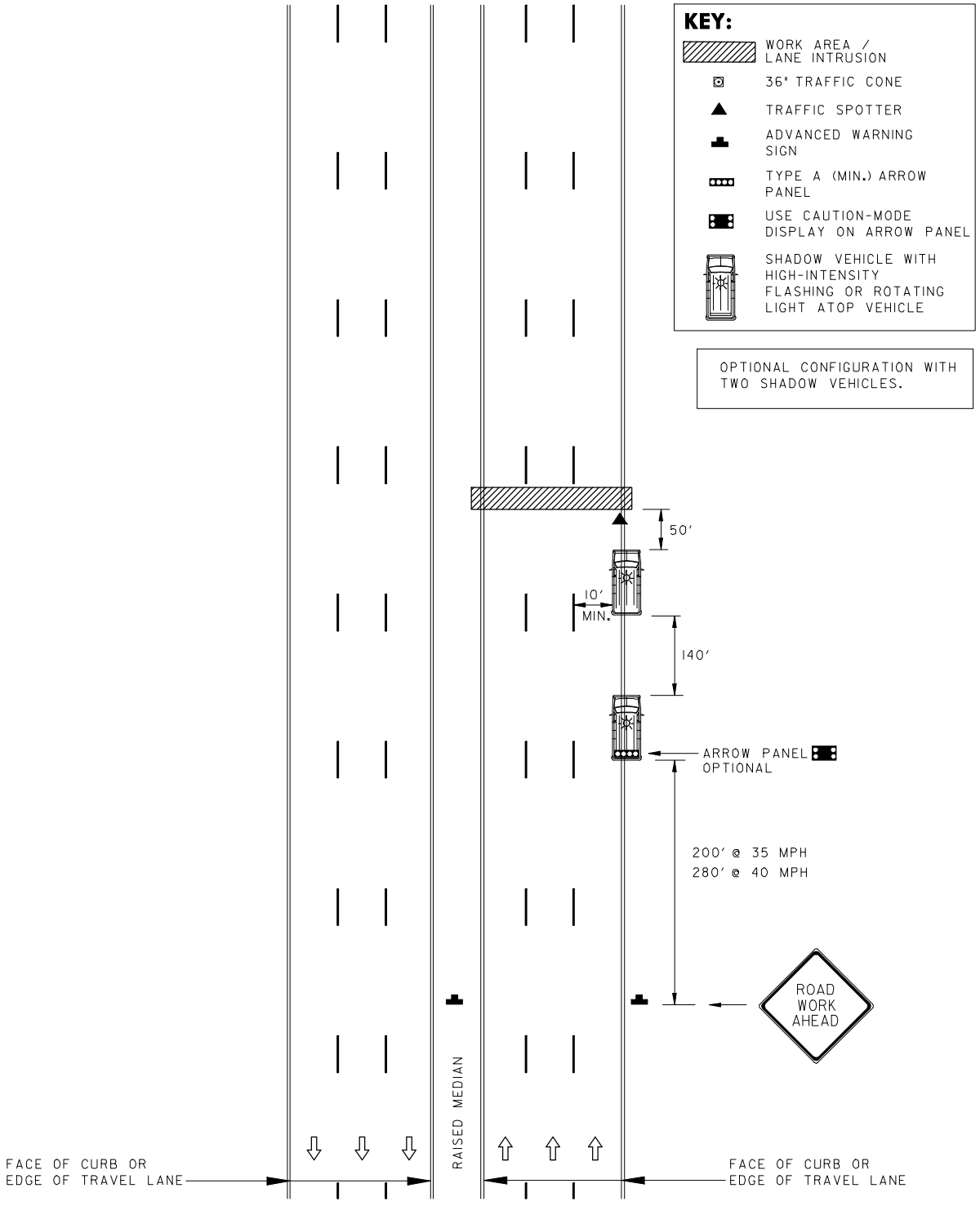


Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
≥ 6-LANE, 2-WAY / RAISED MEDIAN / NO OR NARROW SHOULDER
POSTED SPEED: 20, 25 OR 30 MPH
LANE ENCROACHMENT

Figure 9C

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION

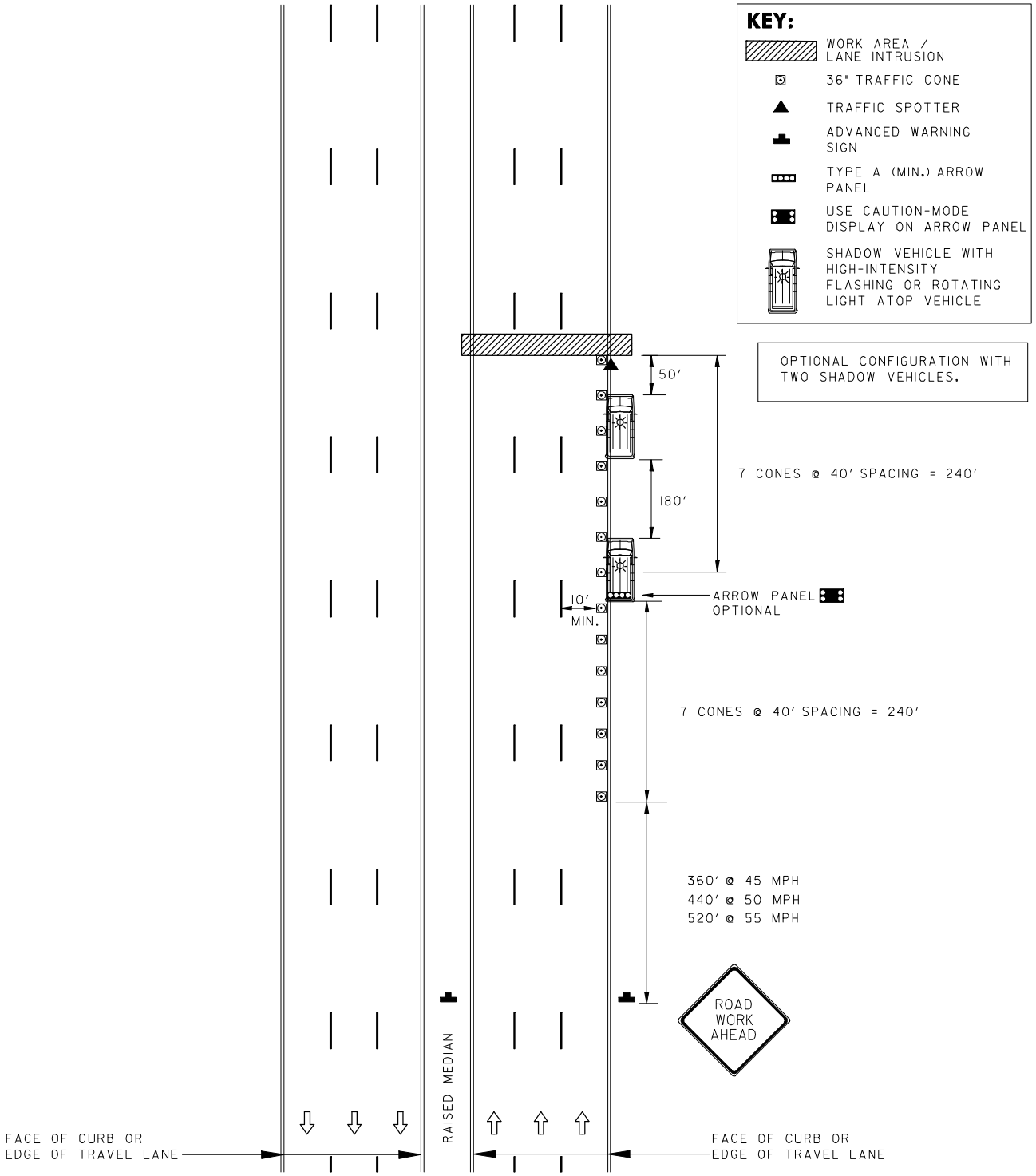


Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
≥ 6-LANE, 2-WAY / RAISED MEDIAN / NO OR NARROW SHOULDER
POSTED SPEED: 35 OR 40 MPH
LANE ENCROACHMENT

Figure 9D

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



CONES SPACED AT 40' TYP.

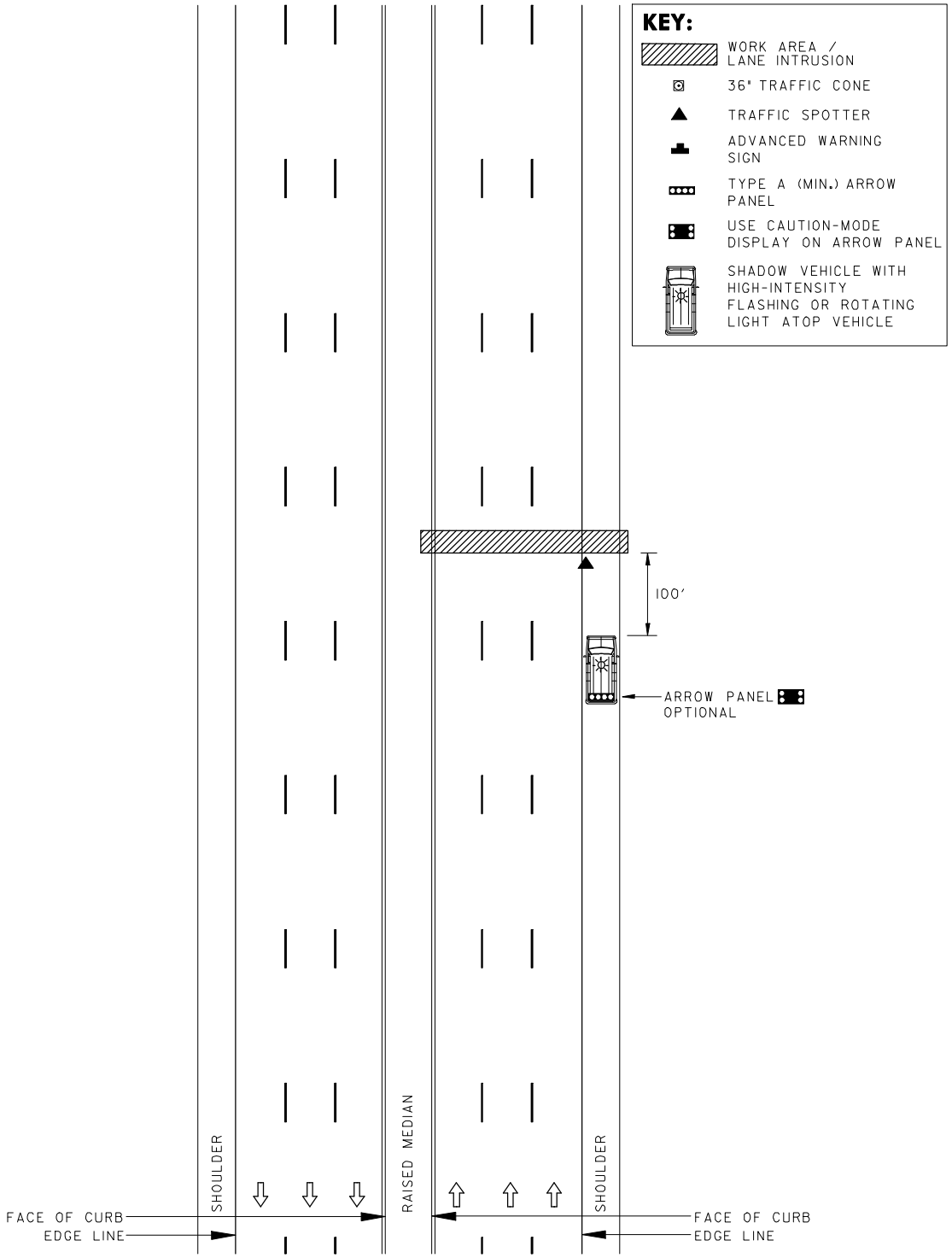
Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
≥ 6-LANE, 2-WAY / RAISED MEDIAN / NO OR NARROW SHOULDER
POSTED SPEED: 45, 50 OR 55 MPH
LANE ENCROACHMENT

Figure 9E

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION

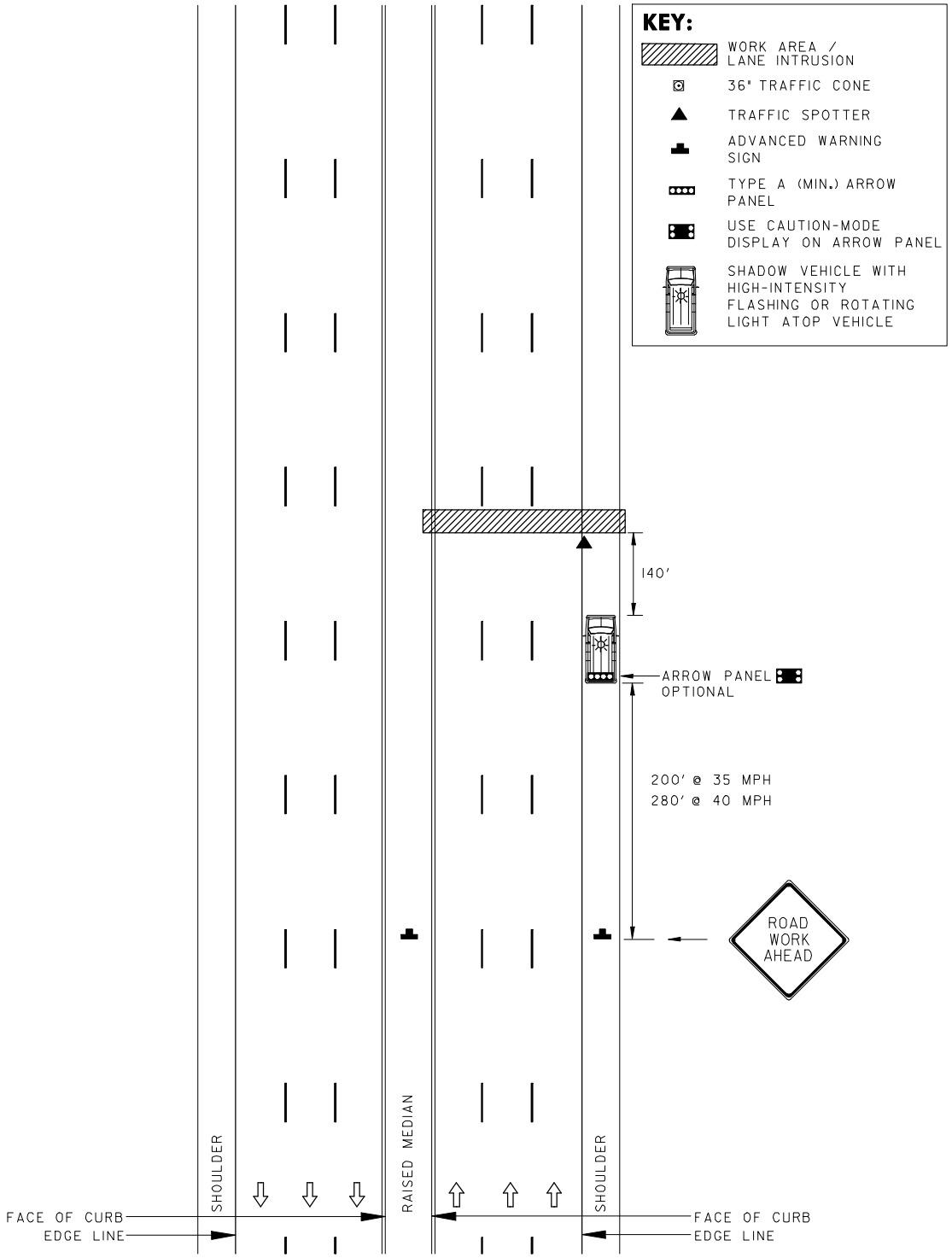


Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
≥ 6-LANE, 2-WAY / RAISED MEDIAN / USABLE SHOULDER
POSTED SPEED: 20, 25 OR 30 MPH
SHOULDER CLOSURE

Figure 10

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



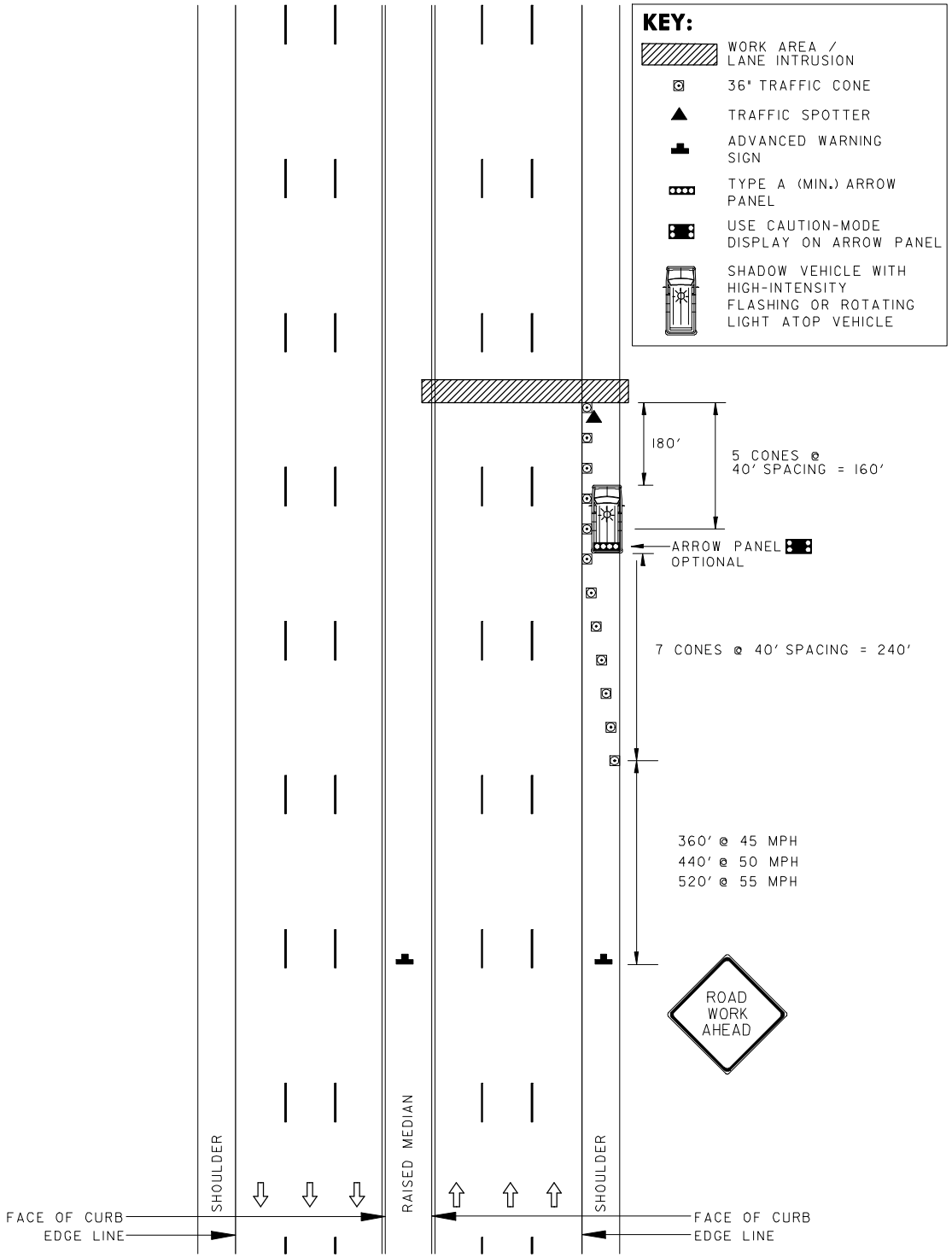
Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
≥ 6-LANE, 2-WAY / RAISED MEDIAN / USABLE SHOULDER
POSTED SPEED: 35 OR 40 MPH
SHOULDER CLOSURE

Figure 10A

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



CONES SPACED AT 40' TYP.

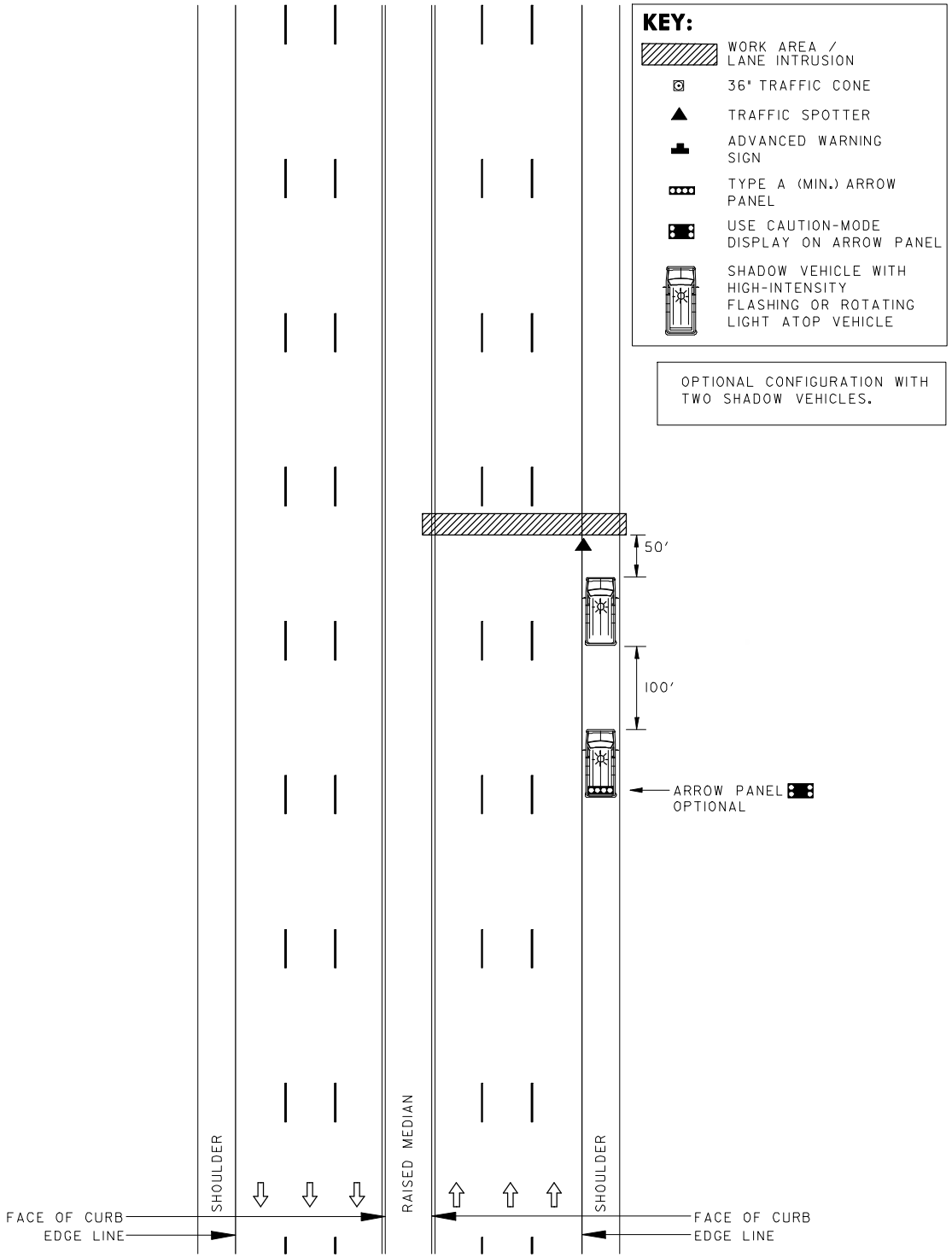
Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
≥ 6-LANE, 2-WAY / RAISED MEDIAN / USABLE SHOULDER
POSTED SPEED: 45, 50 OR 55 MPH
SHOULDER CLOSURE

Figure 10B

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION

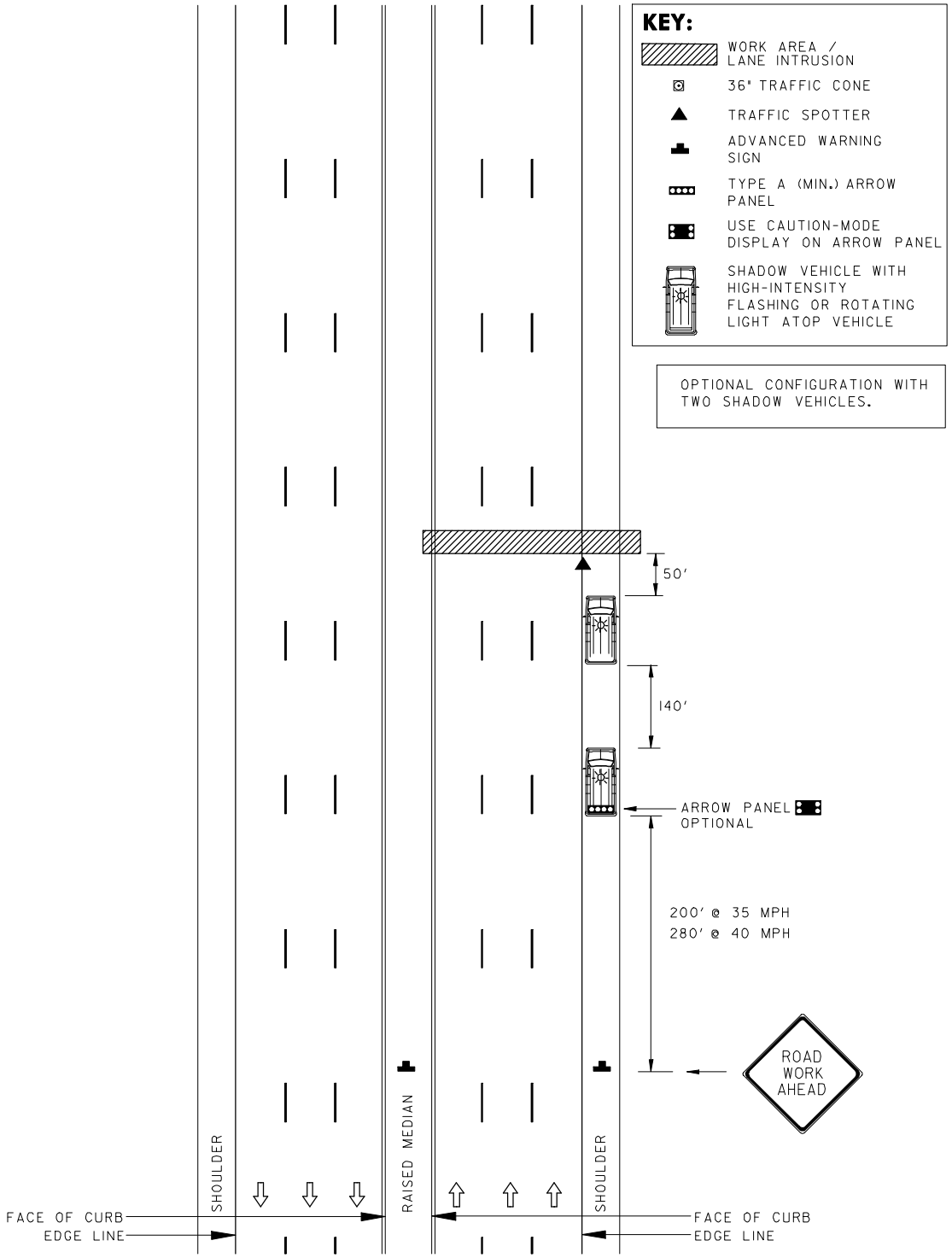


Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
≥ 6-LANE, 2-WAY / RAISED MEDIAN / USABLE SHOULDER
POSTED SPEED: 20, 25 OR 30 MPH
SHOULDER CLOSURE

Figure 10C

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION

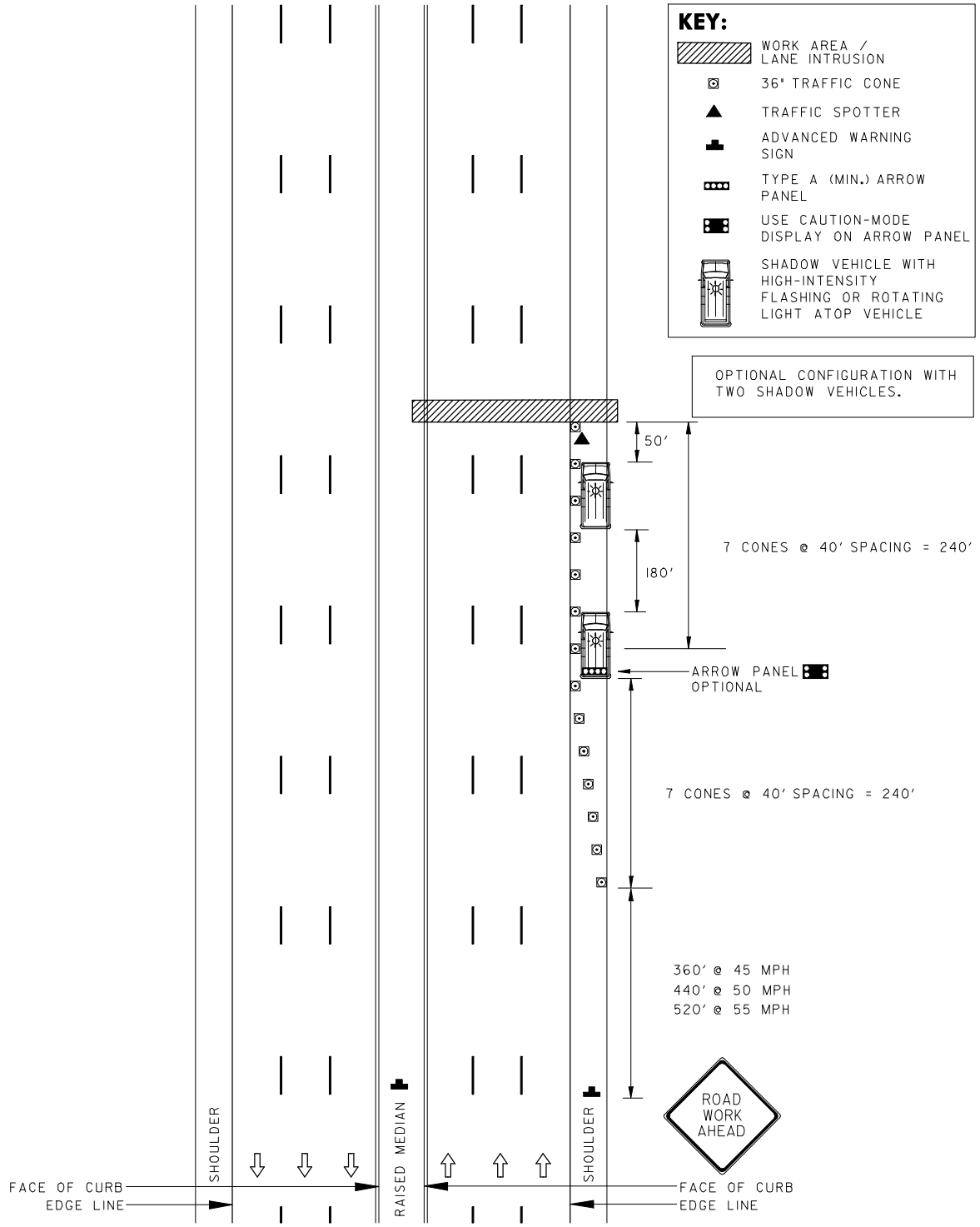


Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
≥ 6-LANE, 2-WAY / RAISED MEDIAN / USABLE SHOULDER
POSTED SPEED: 35 OR 40 MPH
SHOULDER CLOSURE

Figure 10D

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



CONES SPACED AT 40' TYP.

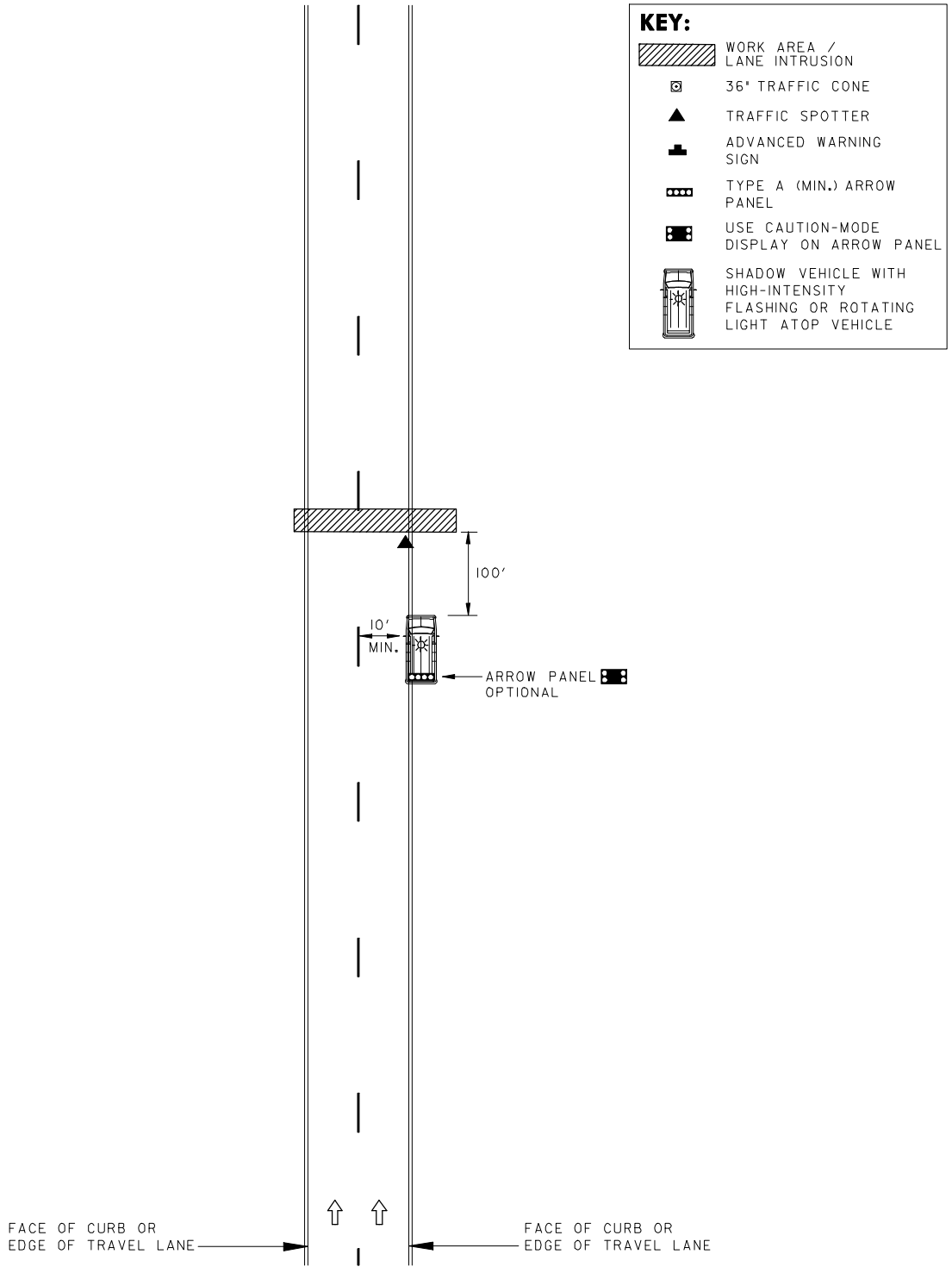
Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
≥ 6-LANE, 2-WAY / RAISED MEDIAN / USABLE SHOULDER
POSTED SPEED: 45, 50 OR 55 MPH
SHOULDER CLOSURE

Figure 10E

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



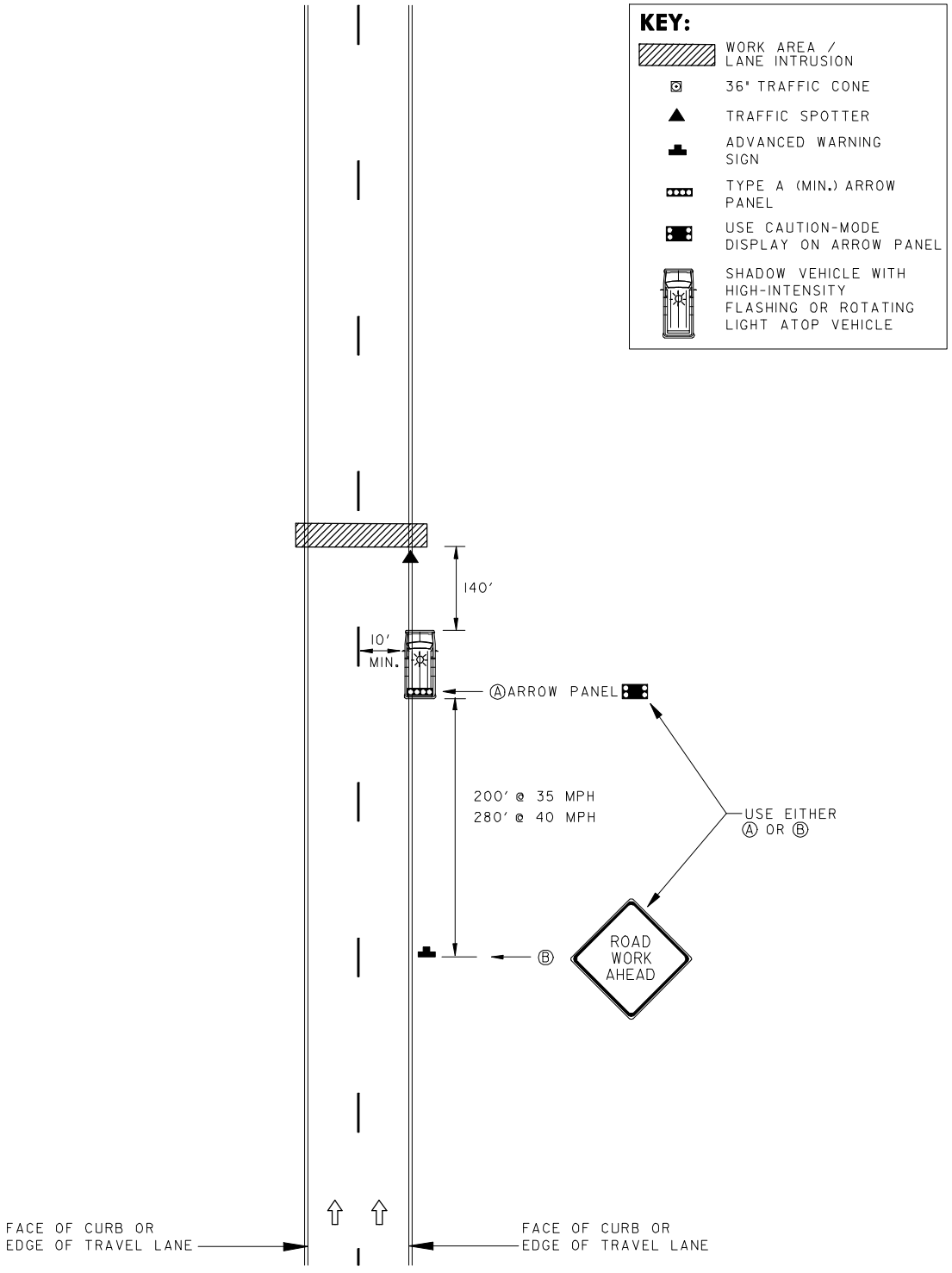
Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
2-LANE, 1-WAY / NO OR NARROW SHOULDER
POSTED SPEED: 20, 25 OR 30 MPH
LANE ENCROACHMENT

Figure 11

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



Maryland Department of Transportation
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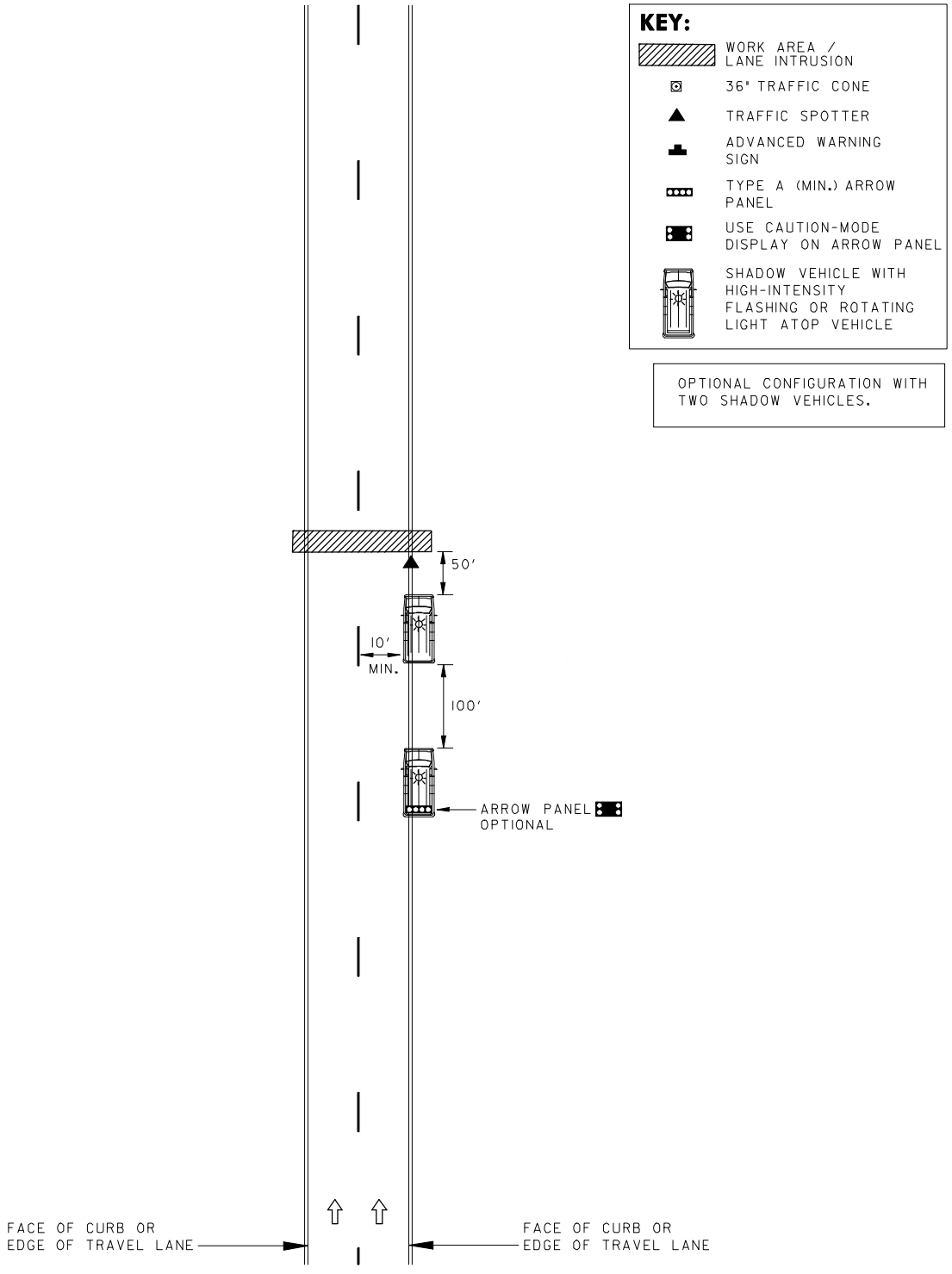
OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
2-LANE, 1-WAY / NO OR NARROW SHOULDER
POSTED SPEED: 35 OR 40 MPH
LANE ENCROACHMENT

Figure 11A

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION

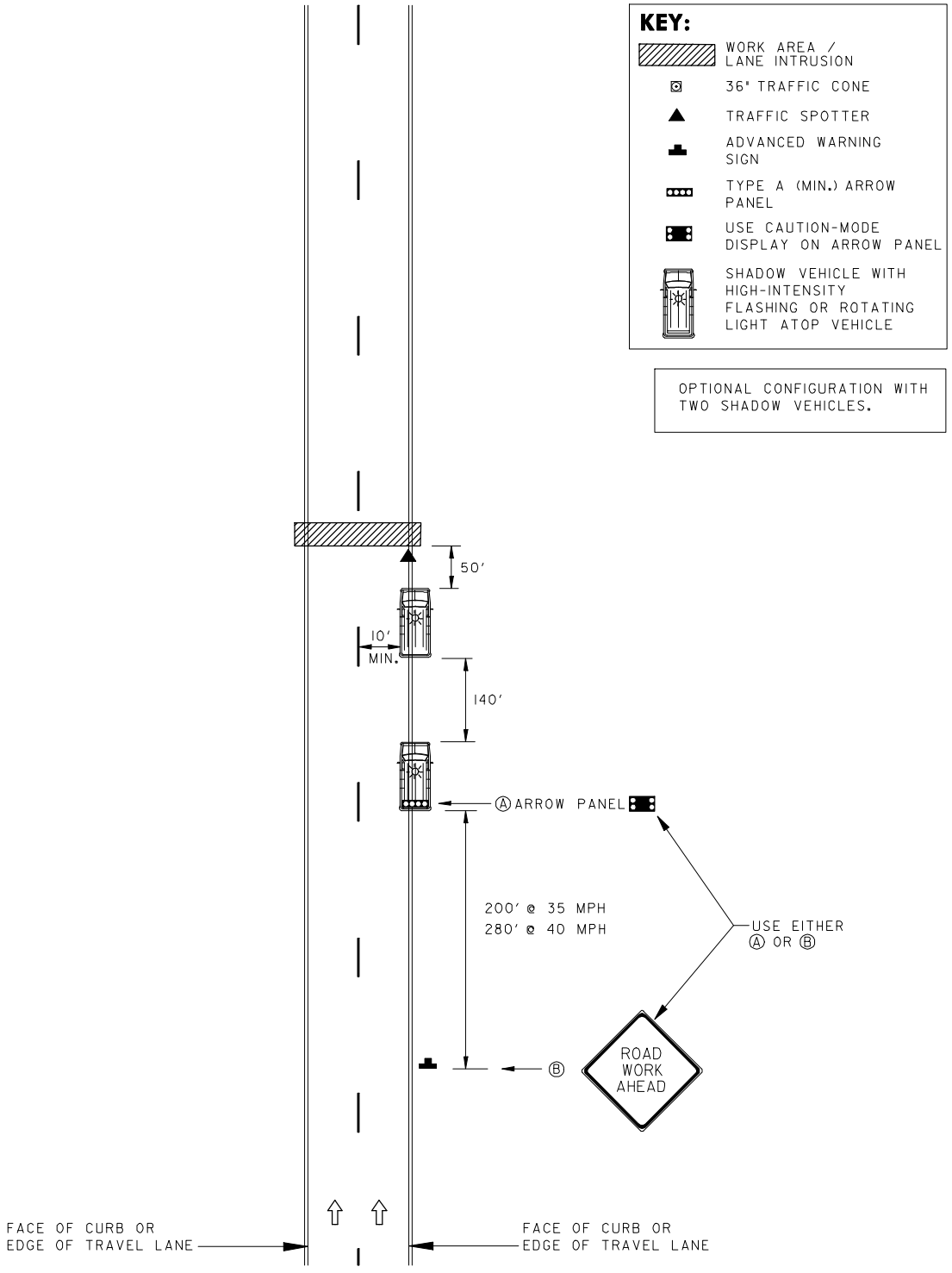


Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
2-LANE, 1-WAY / NO OR NARROW SHOULDER
POSTED SPEED: 20, 25 OR 30 MPH
LANE ENCROACHMENT

Figure 11B

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



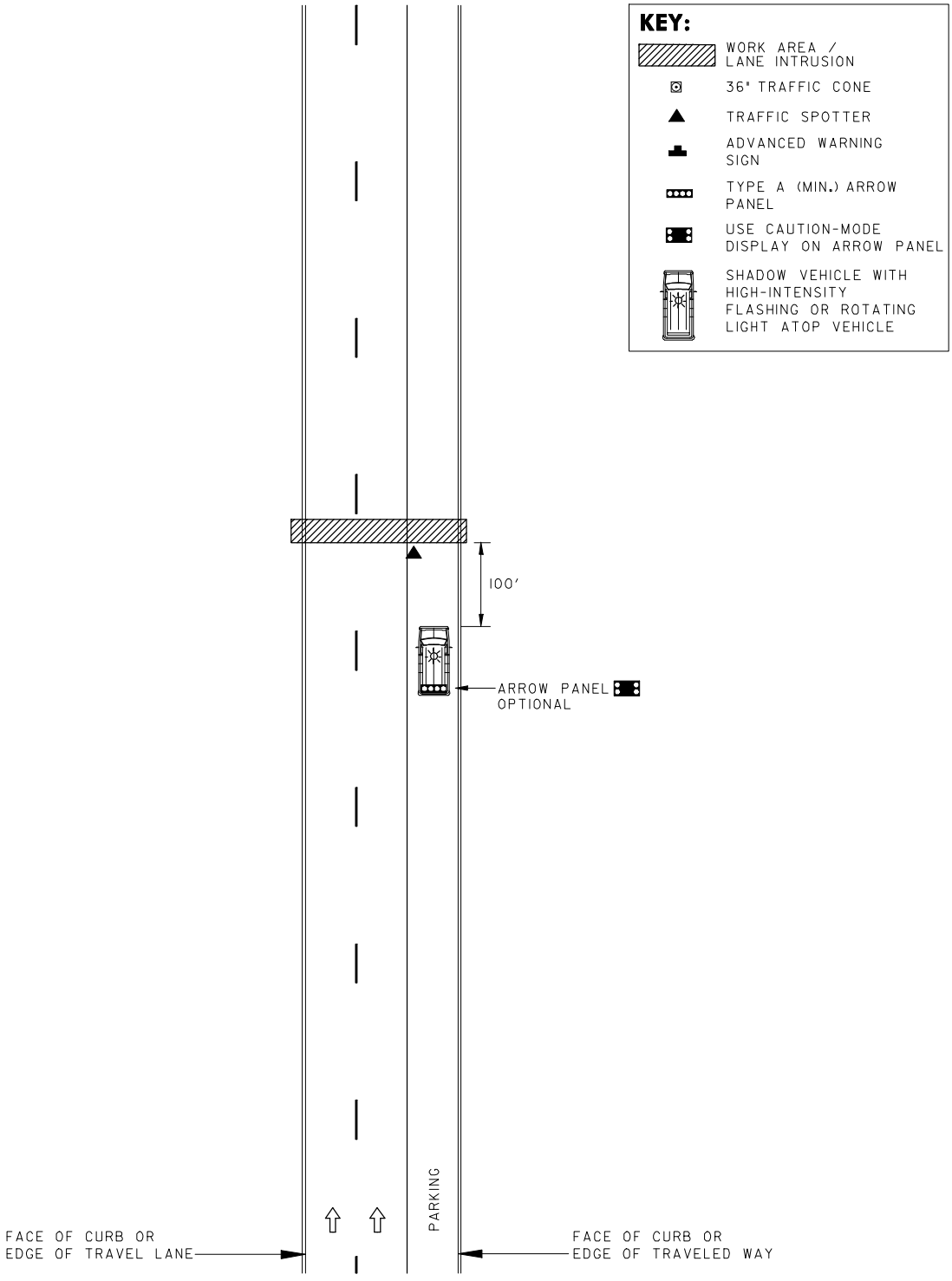
Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
2-LANE, 1-WAY / NO OR NARROW SHOULDER
POSTED SPEED: 35 OR 40 MPH
LANE ENCROACHMENT

Figure 11C

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



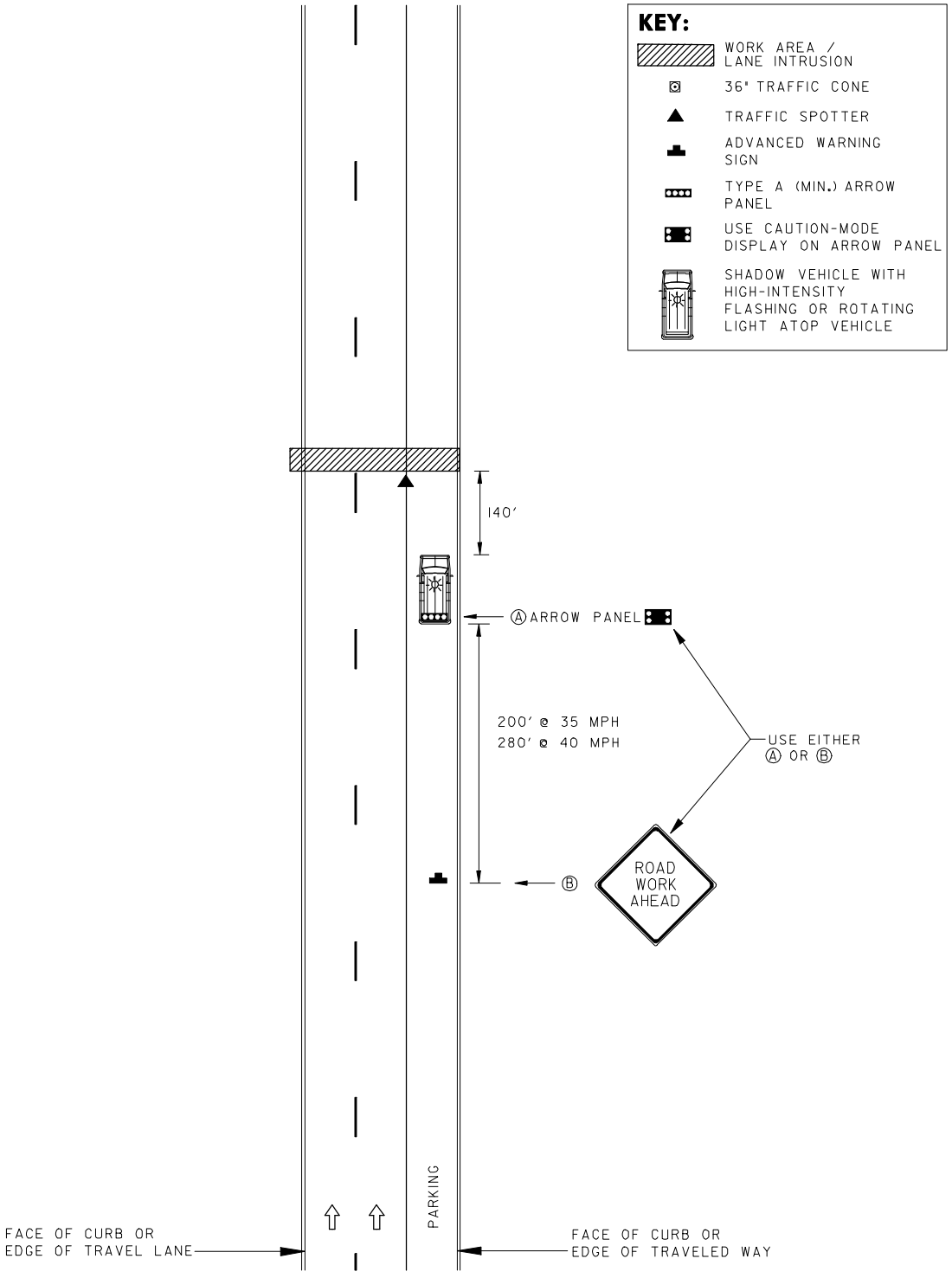
Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
2-LANE, 1-WAY / USABLE PARKING LANE
POSTED SPEED: 20, 25 OR 30 MPH
PARKING LANE CLOSURE

Figure 12

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION

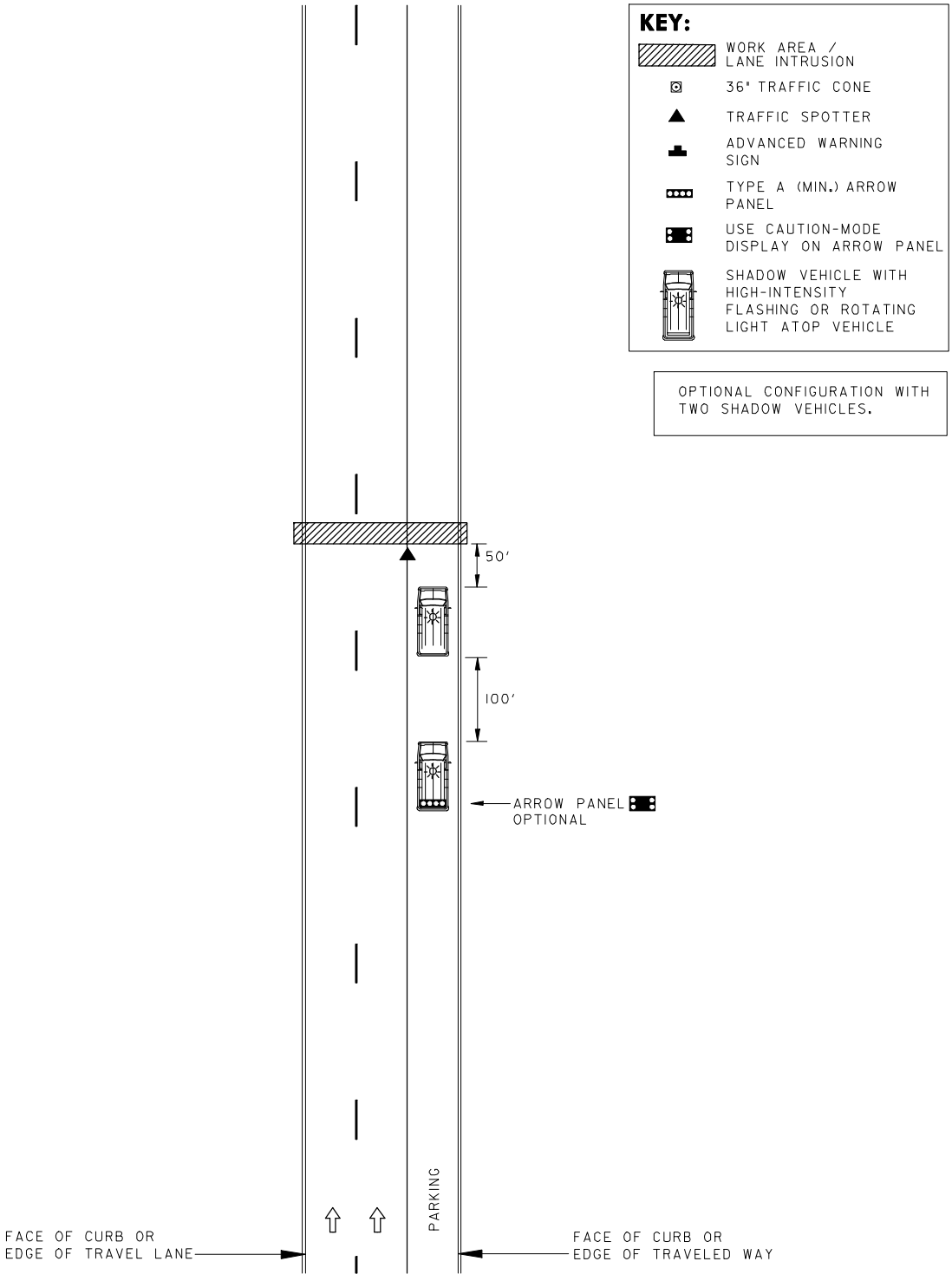


Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
2-LANE, 1-WAY / USABLE PARKING LANE
POSTED SPEED: 35 OR 40 MPH
PARKING LANE CLOSURE

Figure 12A

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION

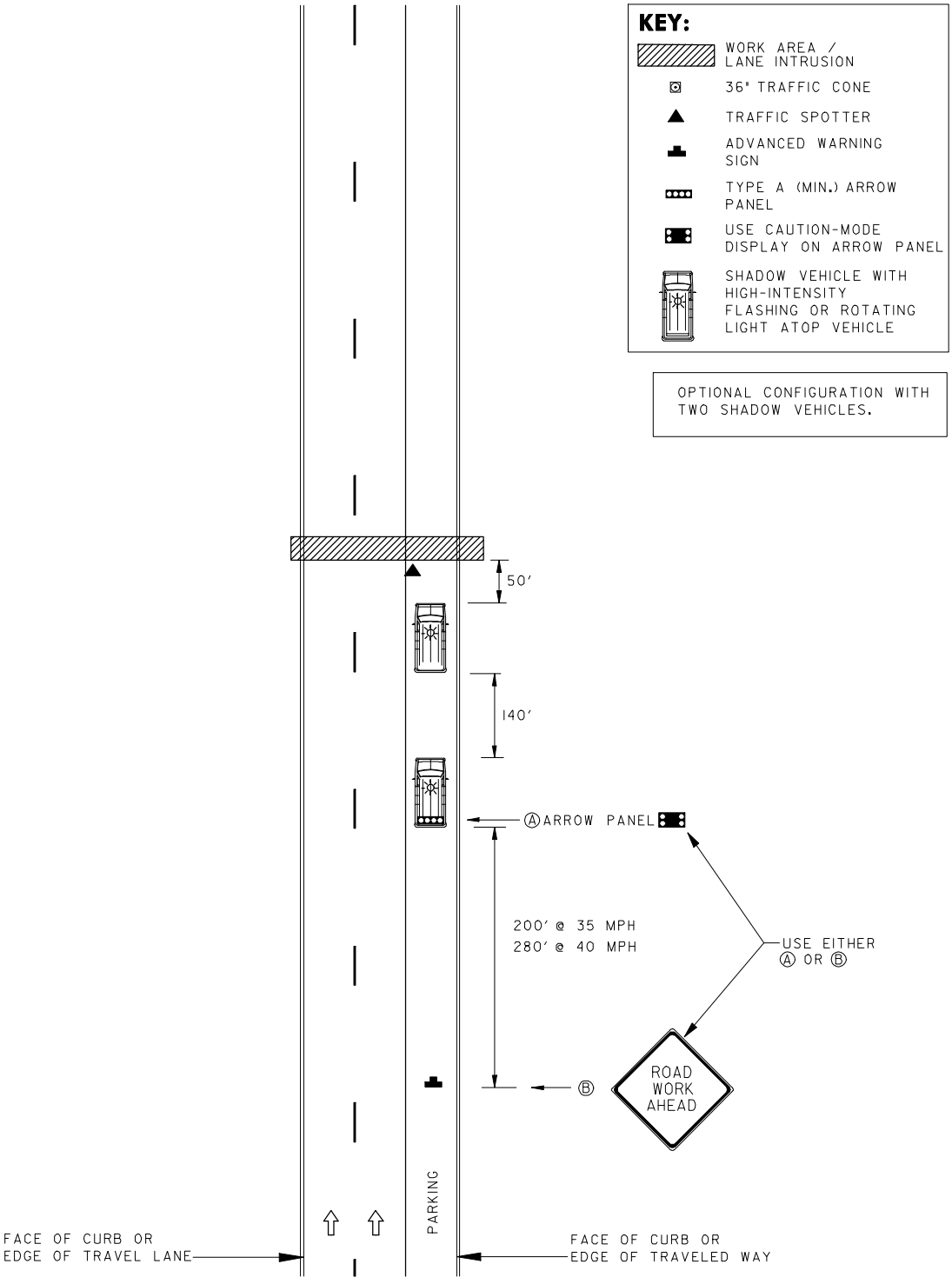


Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
2-LANE, 1-WAY / USABLE PARKING LANE
POSTED SPEED: 20, 25 OR 30 MPH
PARKING LANE CLOSURE

Figure 12B

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION

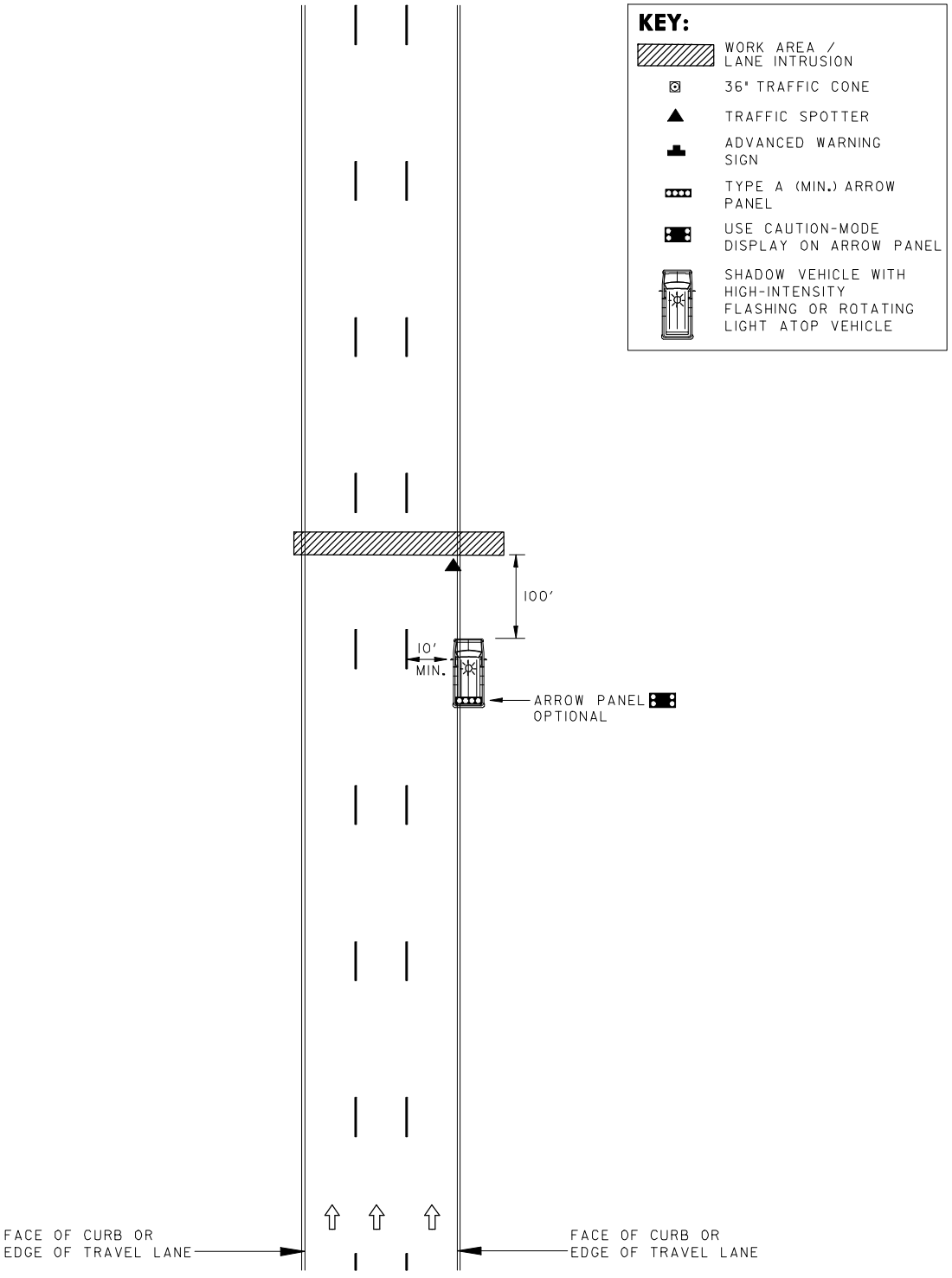


Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
2-LANE, 1-WAY / USABLE PARKING LANE
POSTED SPEED: 35 OR 40 MPH
PARKING LANE CLOSURE

Figure 12C

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



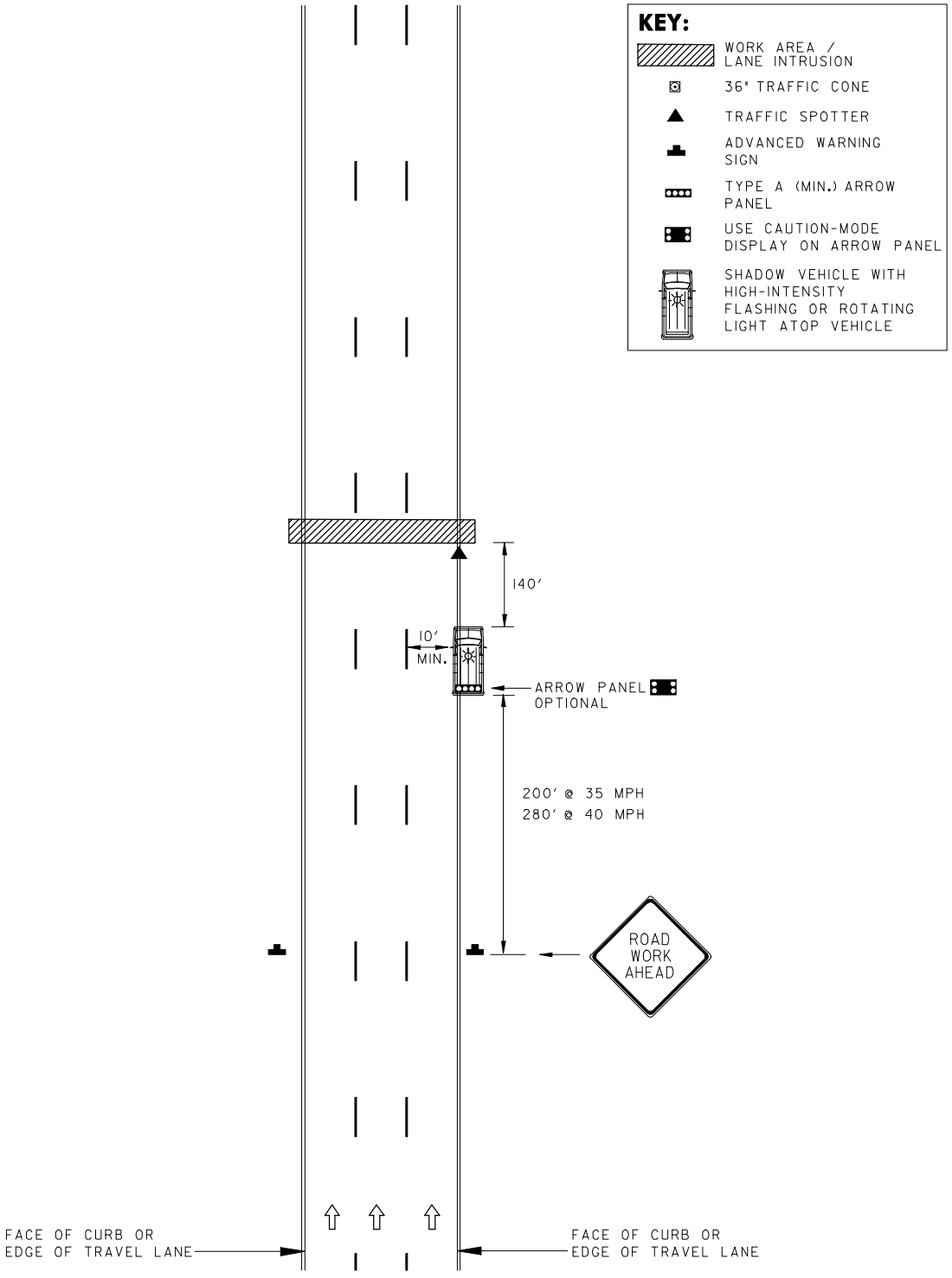
Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
≥ 3-LANE, 1-WAY / NO OR NARROW SHOULDER
POSTED SPEED: 20, 25 OR 30 MPH
LANE ENCROACHMENT

Figure 13

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION

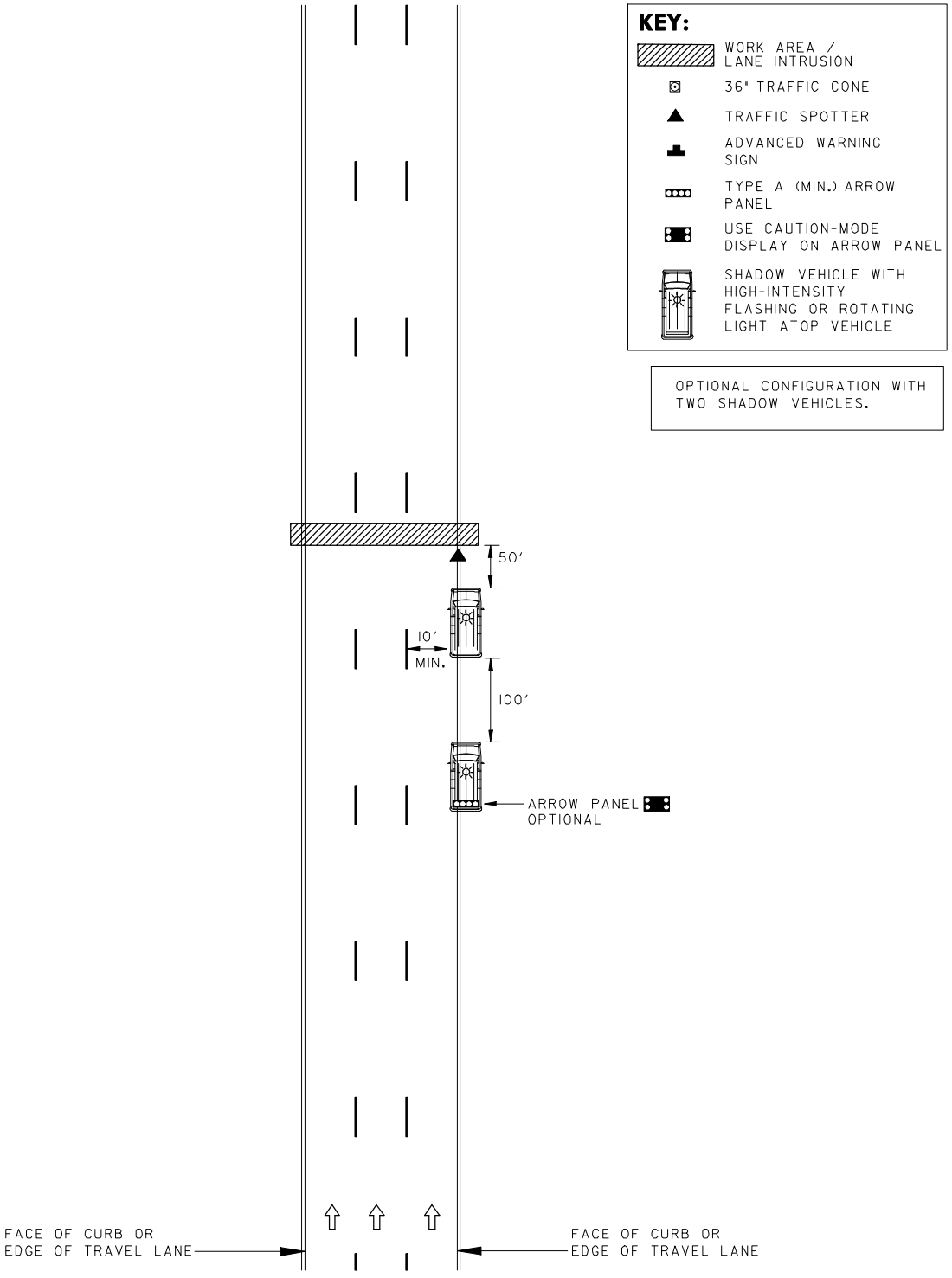


Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
≥ 3-LANE, 1-WAY / NO OR NARROW SHOULDER
POSTED SPEED: 35 OR 40 MPH
LANE ENCROACHMENT

Figure 13A

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION

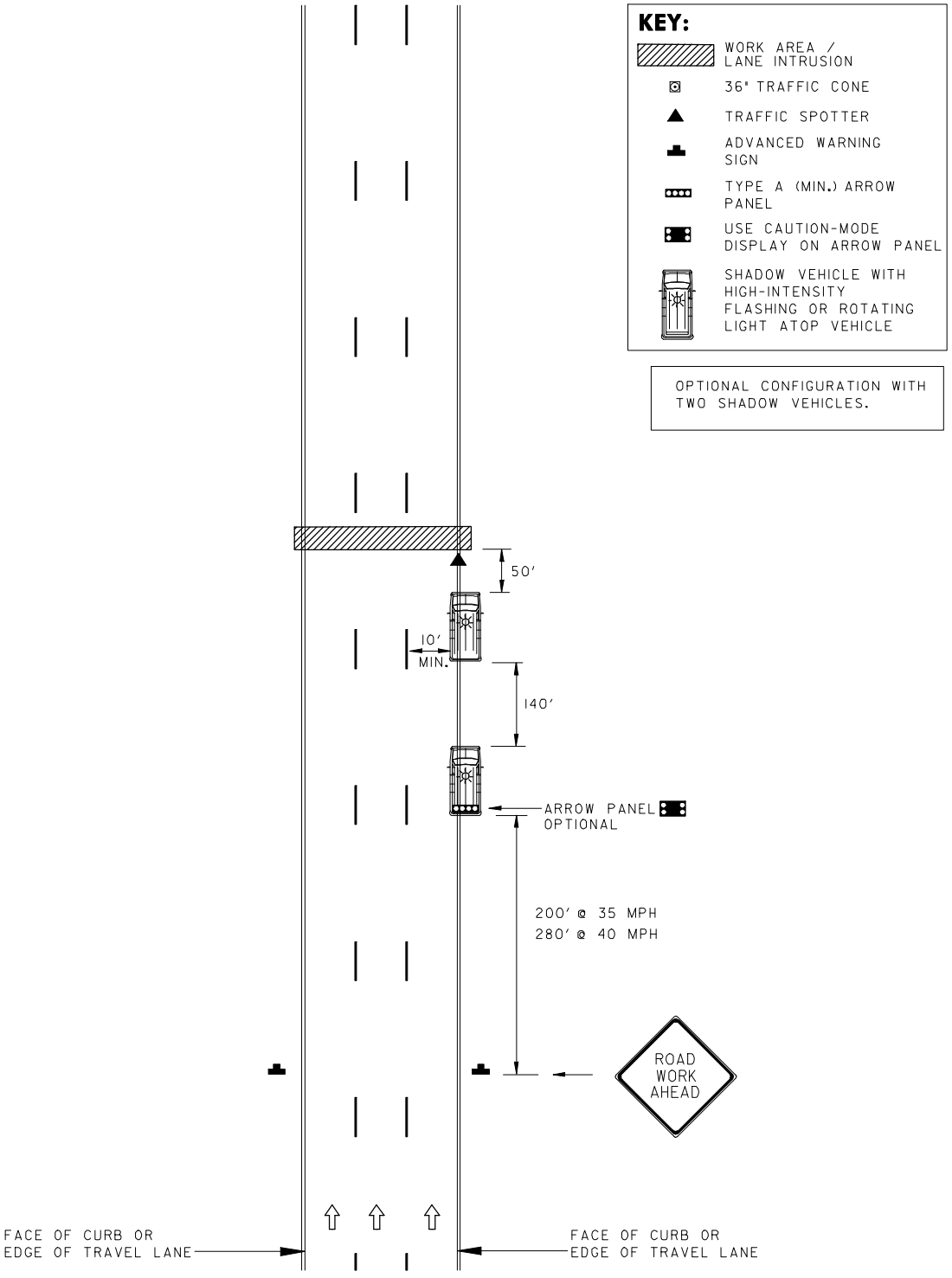


Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
≥ 3-LANE, 1-WAY / NO OR NARROW SHOULDER
POSTED SPEED: 20, 25 OR 30 MPH
LANE ENCROACHMENT

Figure 13B

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION

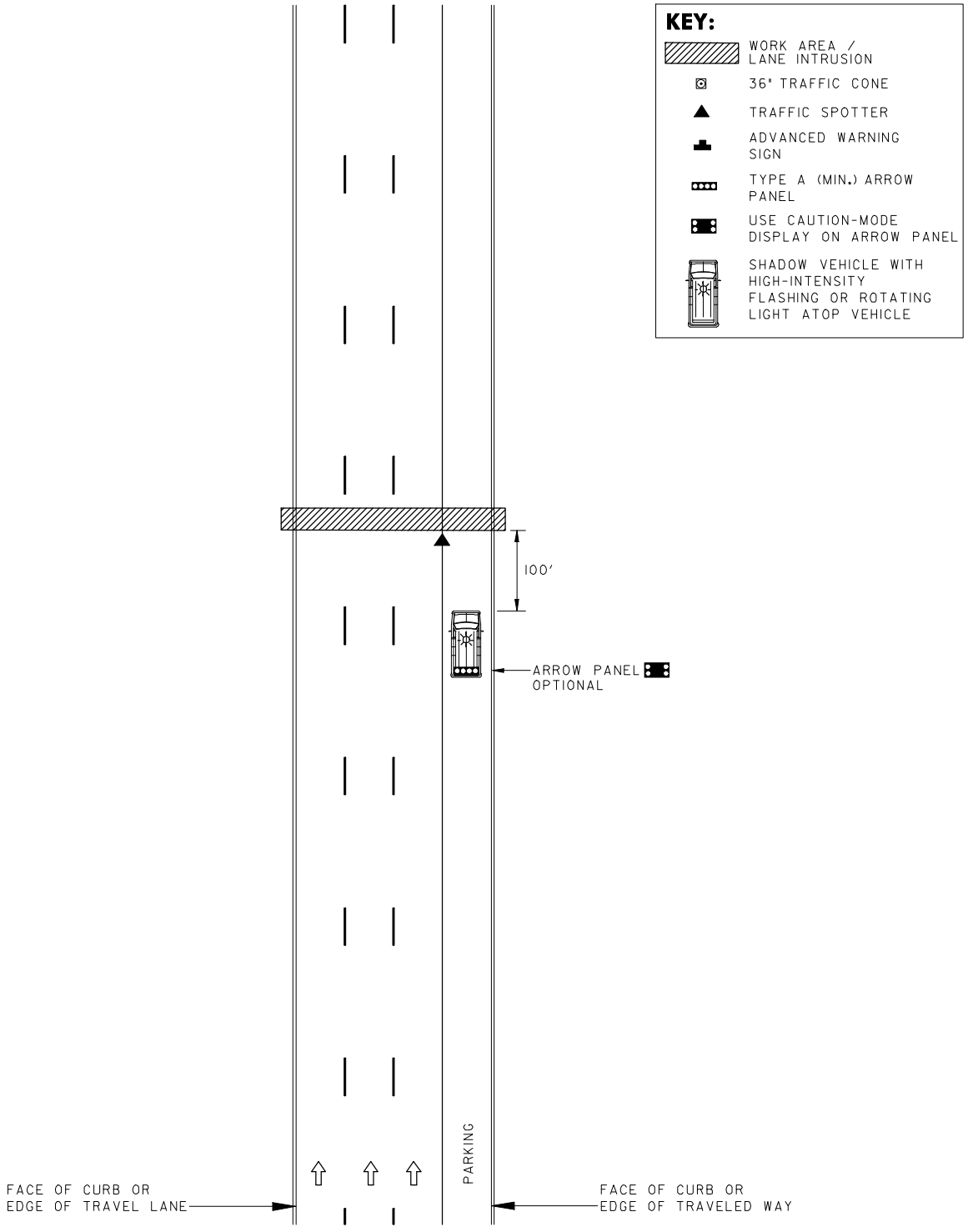


Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
≥ 3-LANE, 1-WAY / NO OR NARROW SHOULDER
POSTED SPEED: 35 OR 40 MPH
LANE ENCROACHMENT

Figure 13C

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



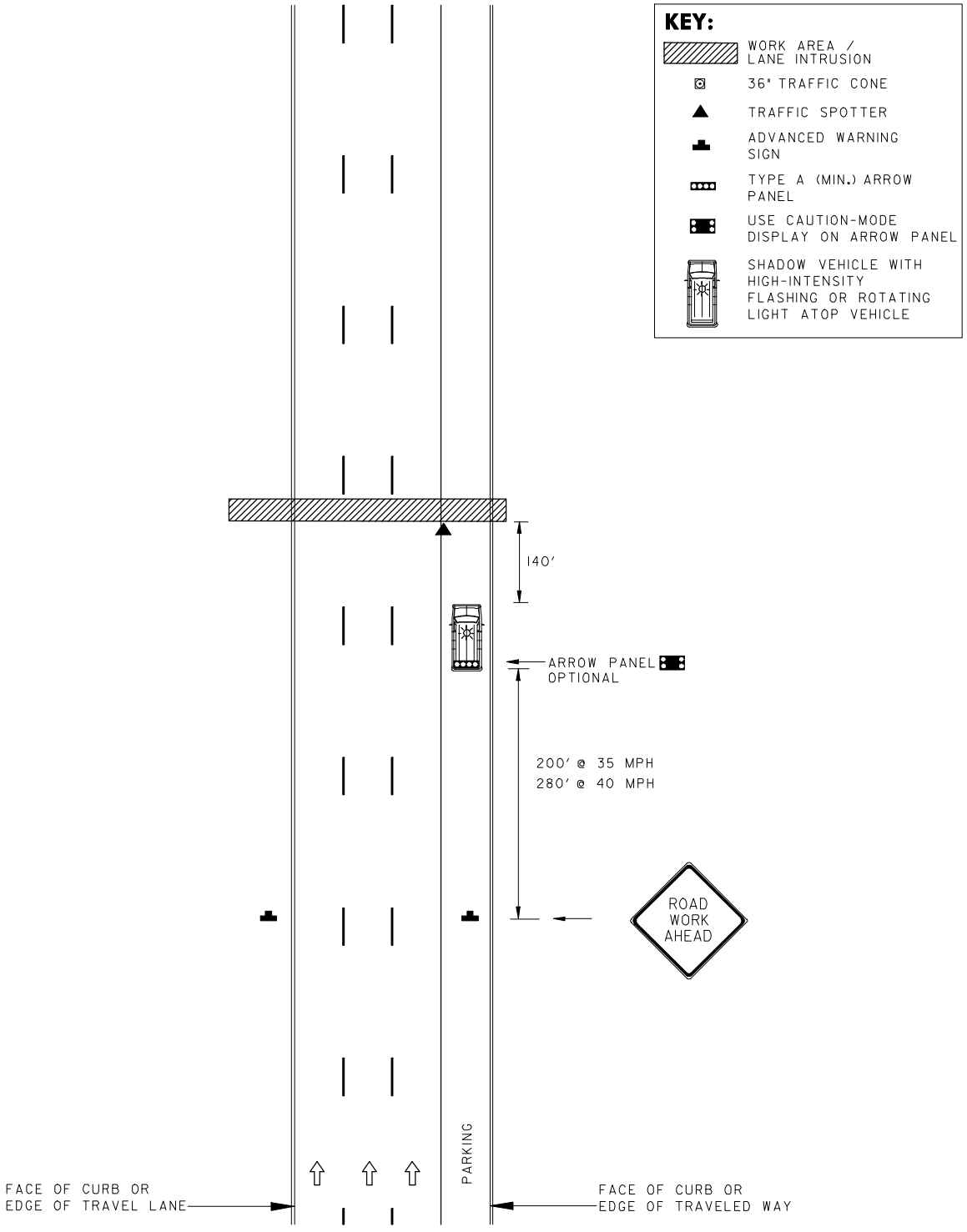
Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
3-LANE, 1-WAY / USABLE PARKING LANE
POSTED SPEED: 20, 25 OR 30 MPH
PARKING LANE CLOSURE

Figure 14

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION

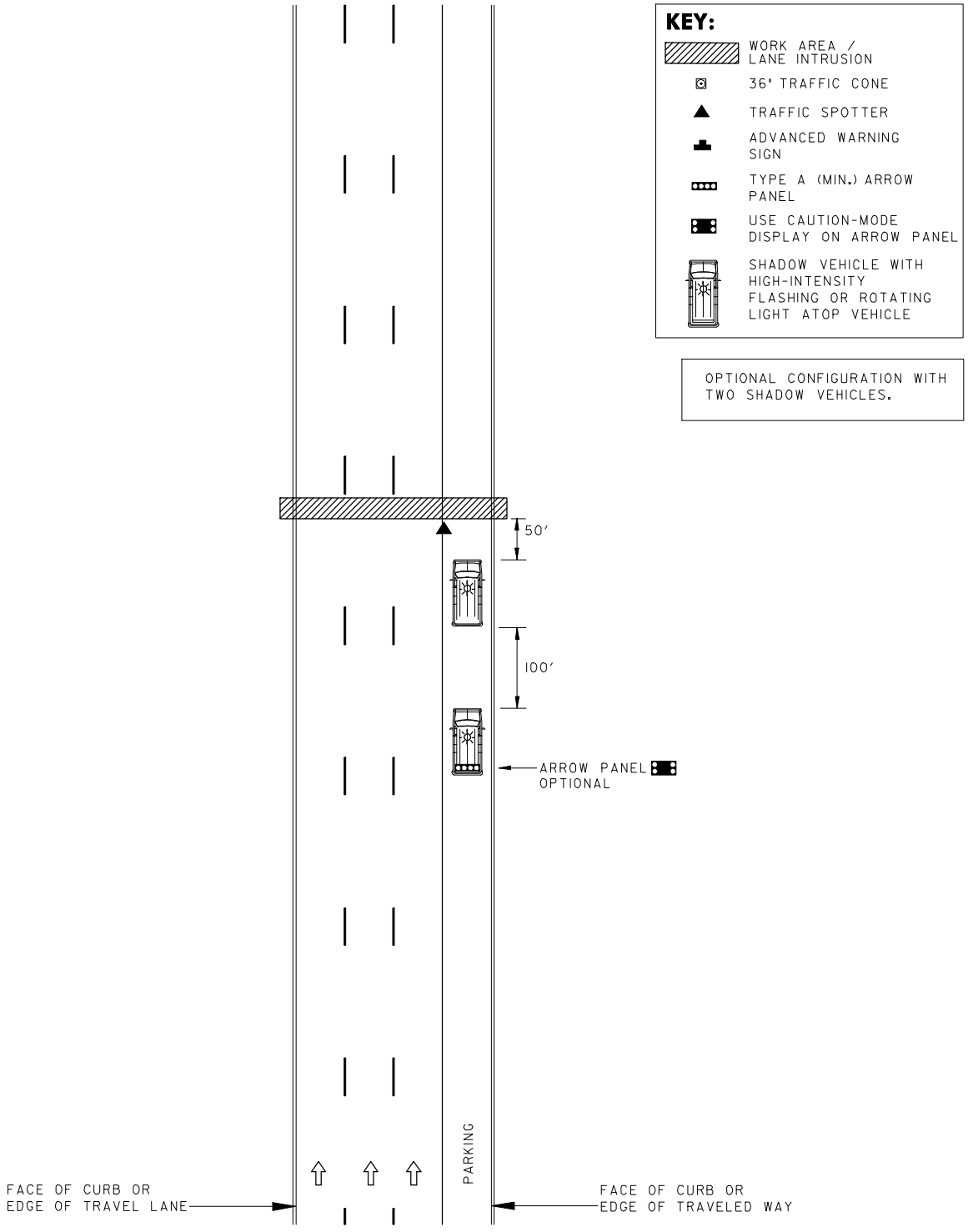


Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
3-LANE, 1-WAY / USABLE PARKING LANE
POSTED SPEED: 35 OR 40 MPH
PARKING LANE CLOSURE

Figure 14A

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION

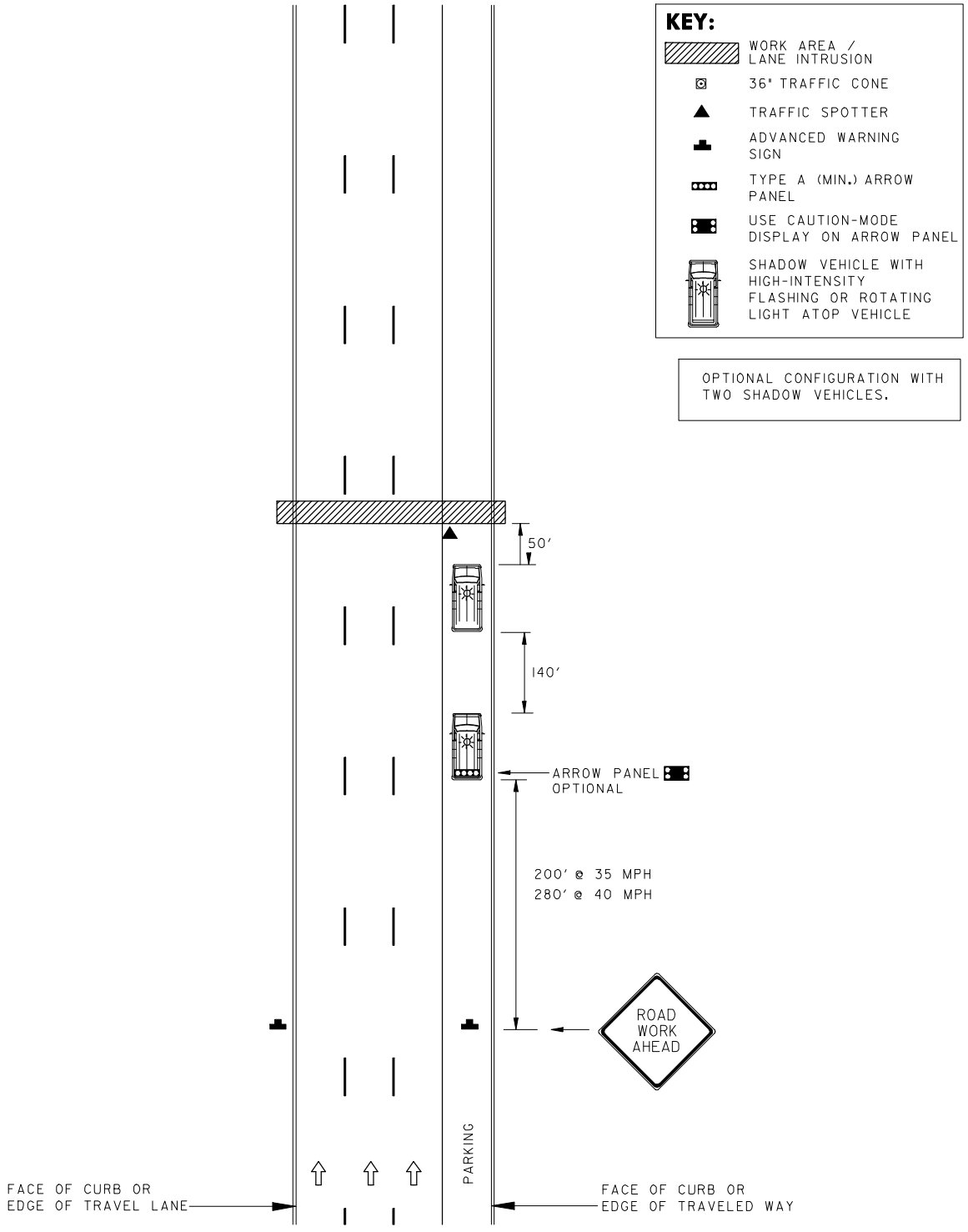


Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
3-LANE, 1-WAY / USABLE PARKING LANE
POSTED SPEED: 20, 25 OR 30 MPH
PARKING LANE CLOSURE

Figure 14B

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



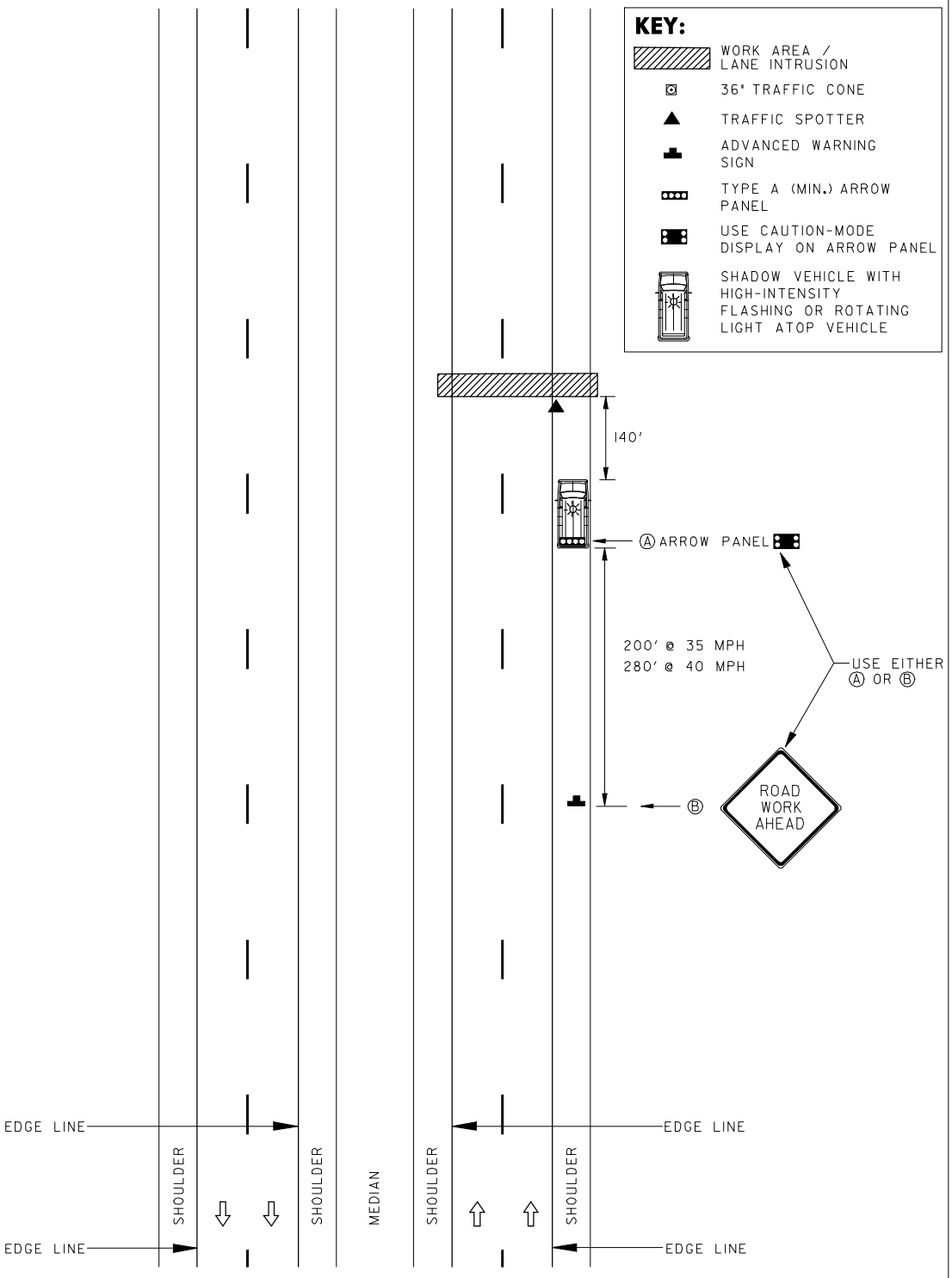
Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
3-LANE, 1-WAY / USABLE PARKING LANE
POSTED SPEED: 35 OR 40 MPH
PARKING LANE CLOSURE

Figure 14C

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



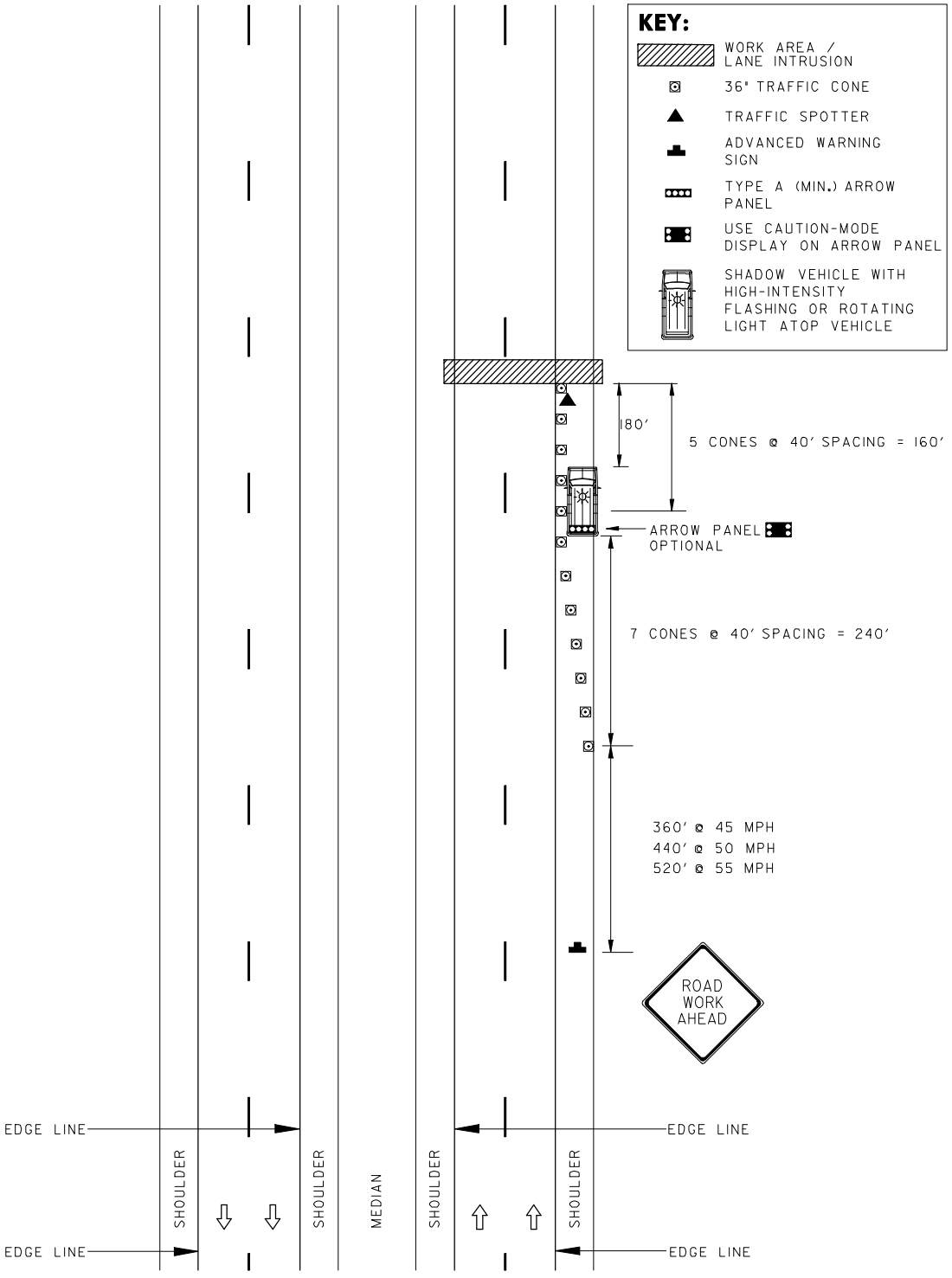
Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
4-LANE, 2-WAY / DIVIDED / USABLE SHOULDER
POSTED SPEED: 35 OR 40 MPH
SHOULDER CLOSURE

Figure 15

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



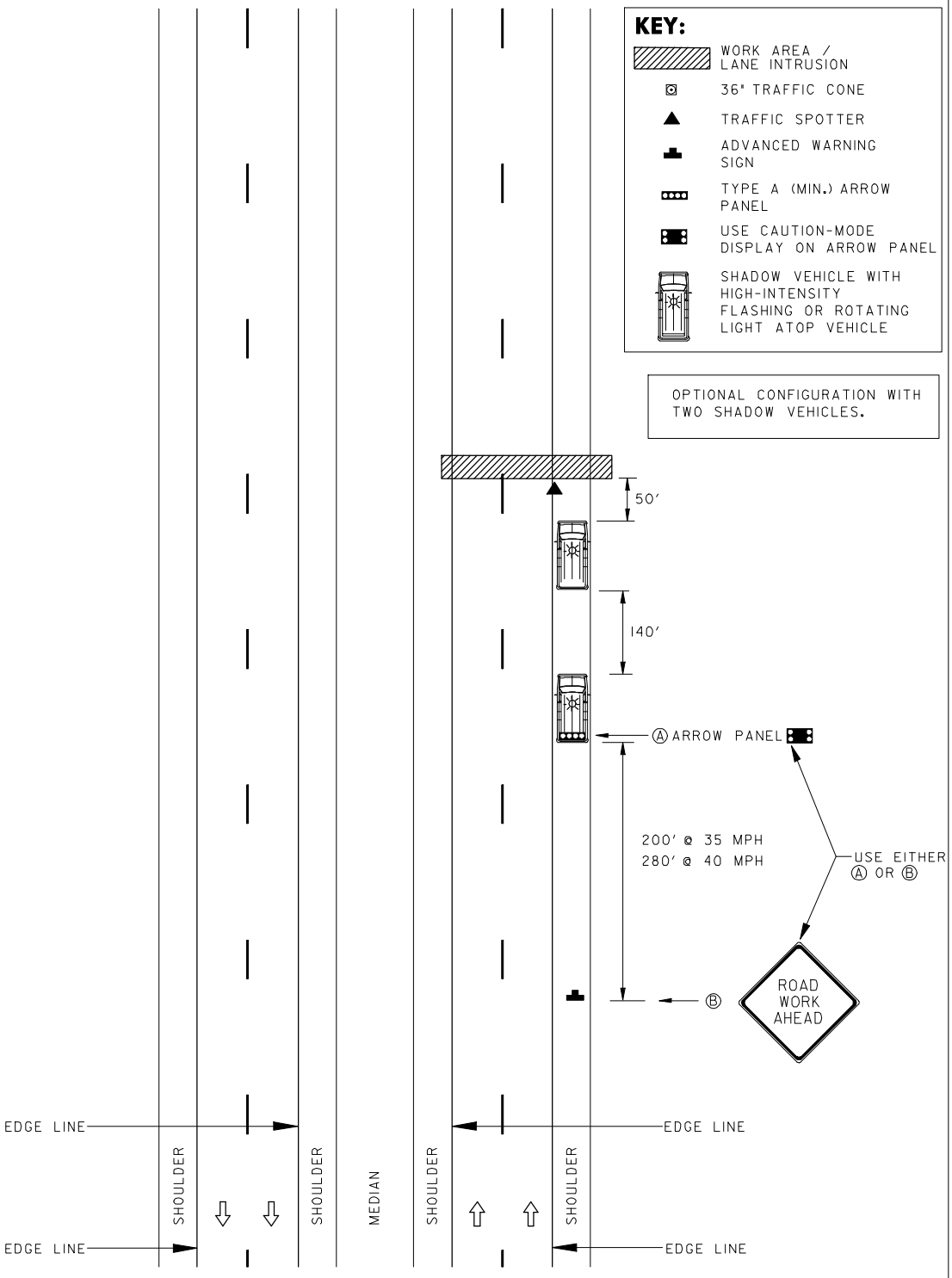
CONES SPACED AT 40' TYP.

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
4-LANE, 2-WAY / DIVIDED / USABLE SHOULDER
POSTED SPEED: 45, 50 OR 55 MPH
SHOULDER CLOSURE

Figure 15A

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



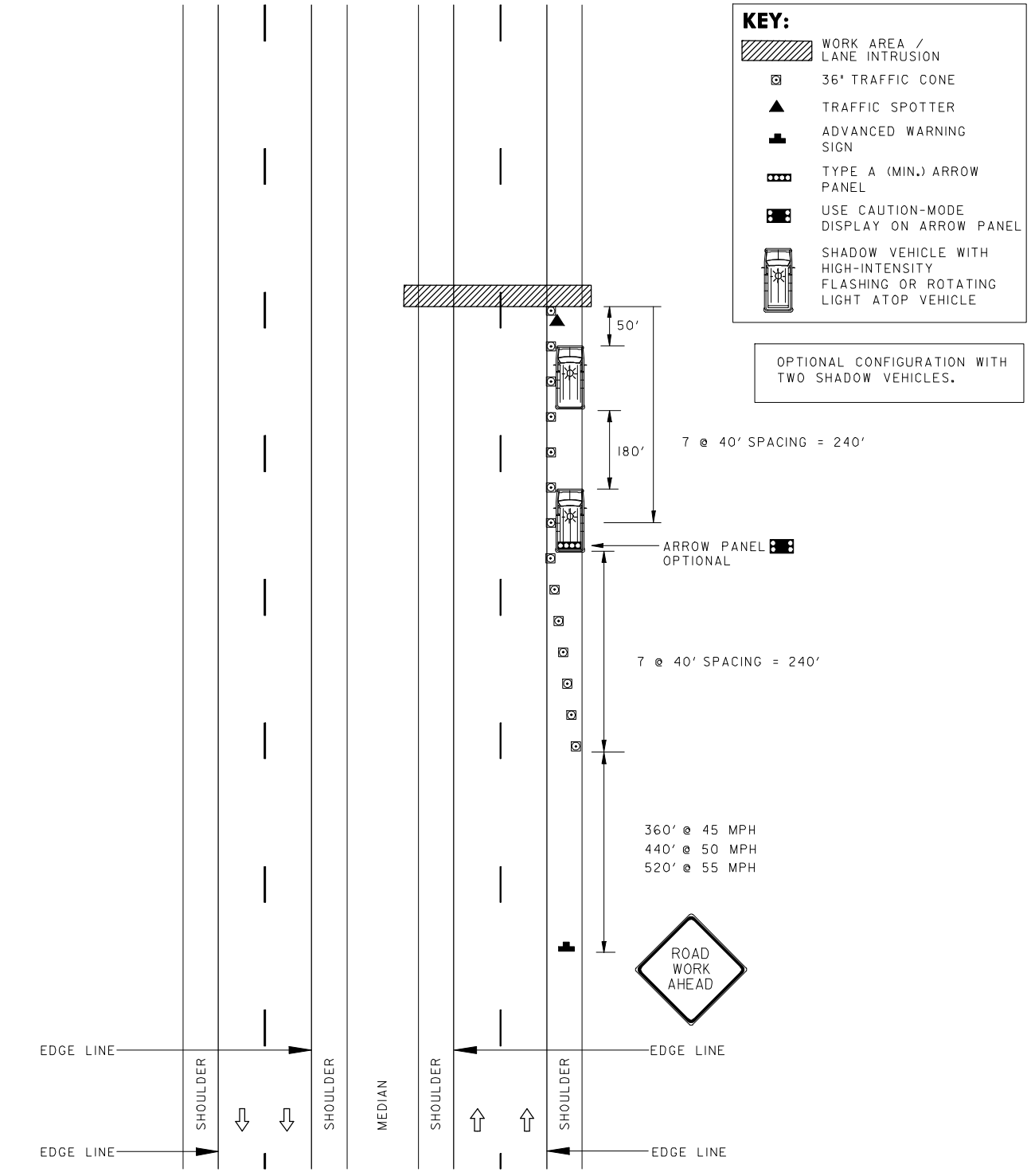
Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
4-LANE, 2-WAY / DIVIDED / USABLE SHOULDER
POSTED SPEED: 35 OR 40 MPH
SHOULDER CLOSURE

Figure 15B

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



CONES SPACED AT 40' TYP.

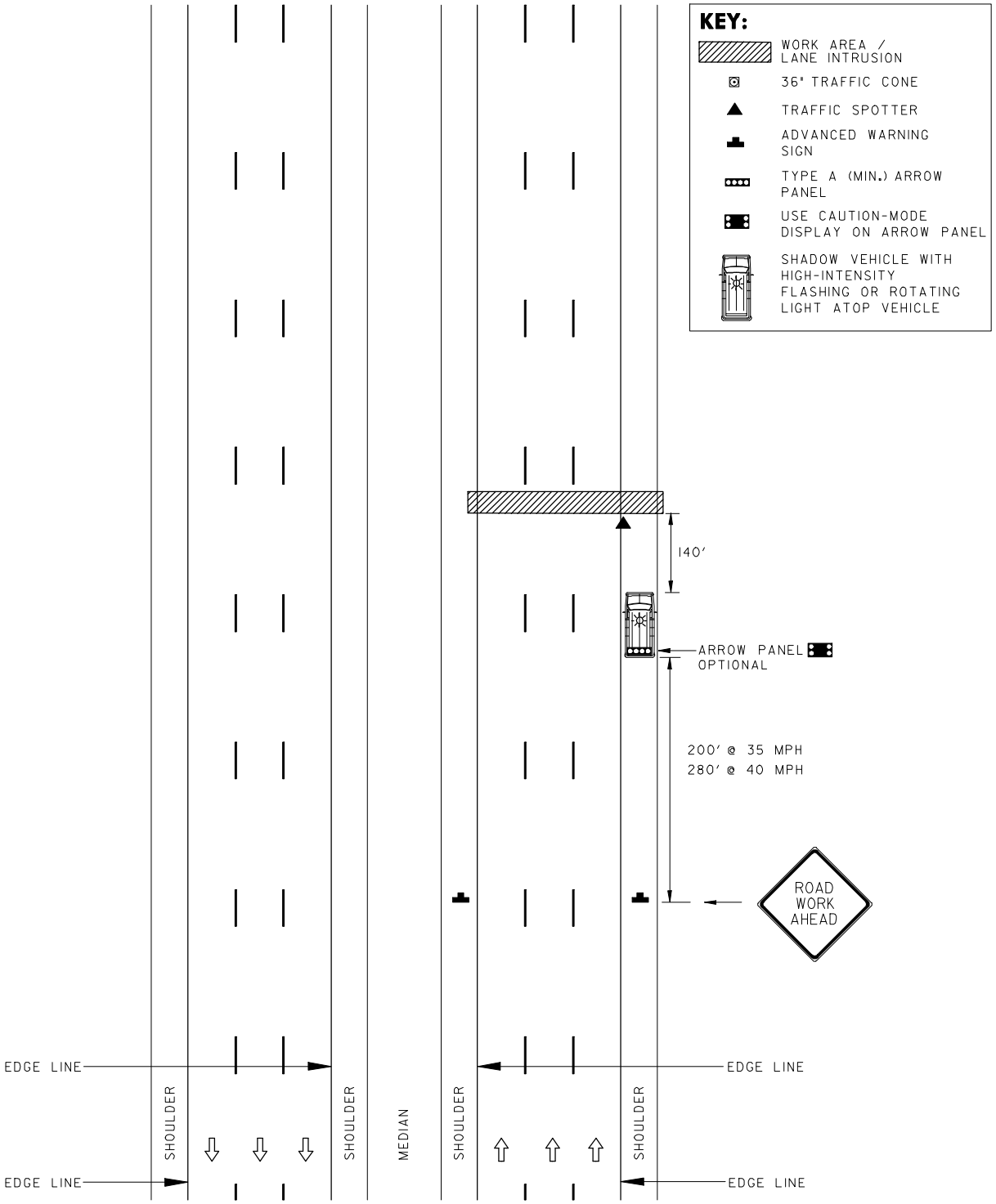
Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
4-LANE, 2-WAY / DIVIDED / USABLE SHOULDER
POSTED SPEED: 45, 50 OR 55 MPH
SHOULDER CLOSURE

Figure 15C

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION

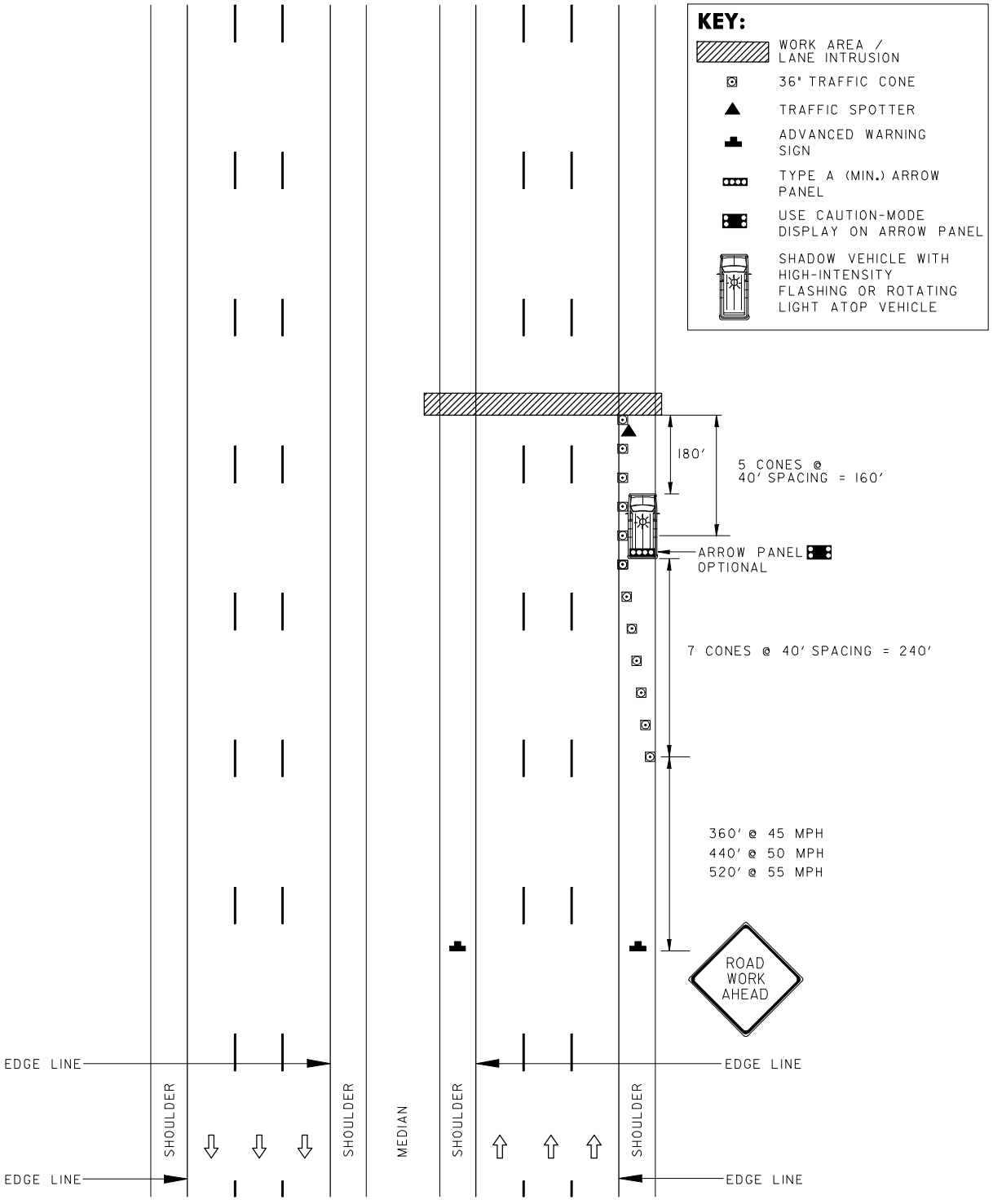


Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
≥ 6-LANE, 2-WAY / DIVIDED / USABLE SHOULDER
POSTED SPEED: 35 OR 40 MPH
SHOULDER CLOSURE

Figure 16

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



CONES SPACED AT 40' TYP.

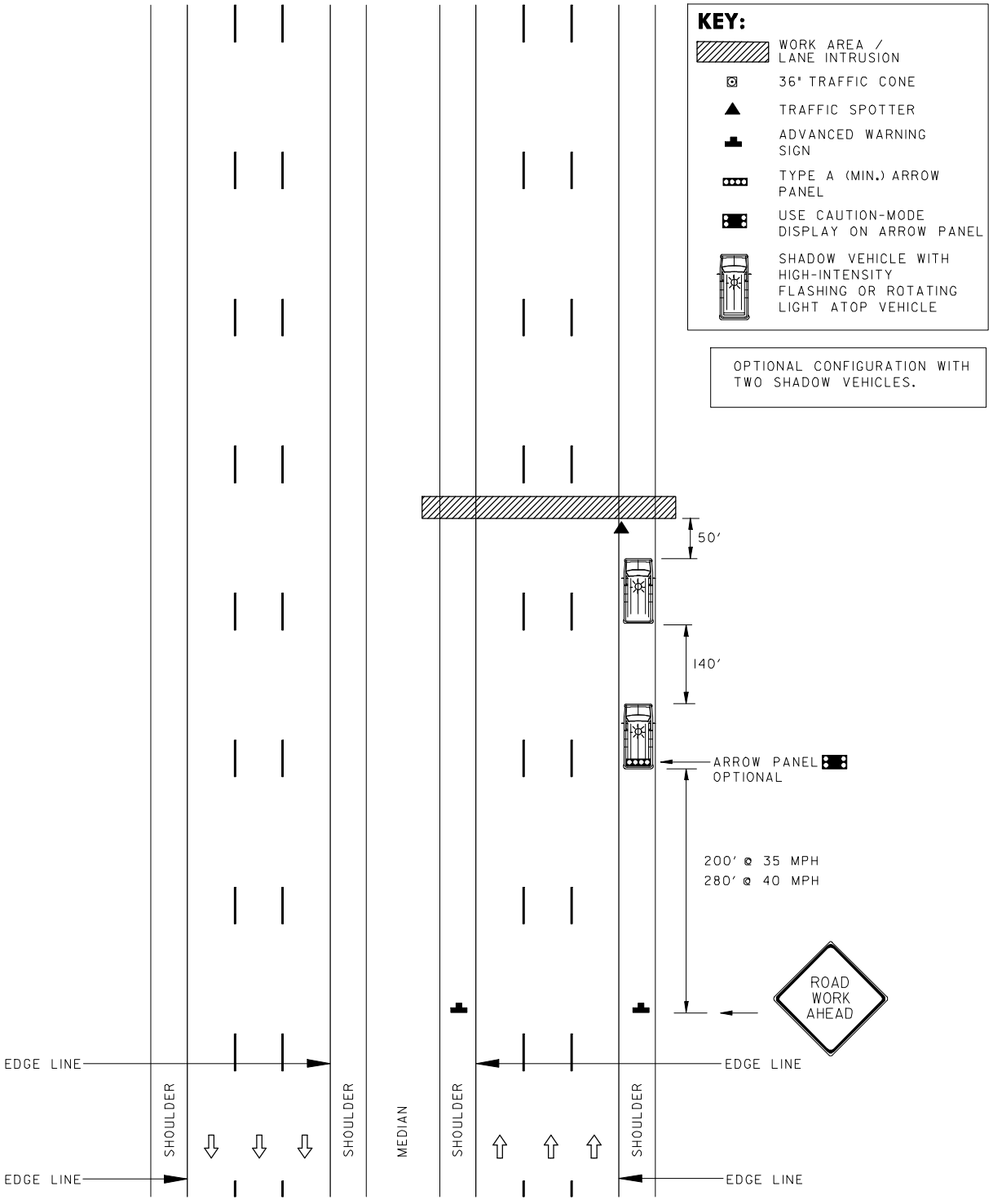
Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
≥ 6-LANE, 2-WAY / DIVIDED / USABLE SHOULDER
POSTED SPEED: 45, 50 OR 55 MPH
SHOULDER CLOSURE

Figure 16A

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION

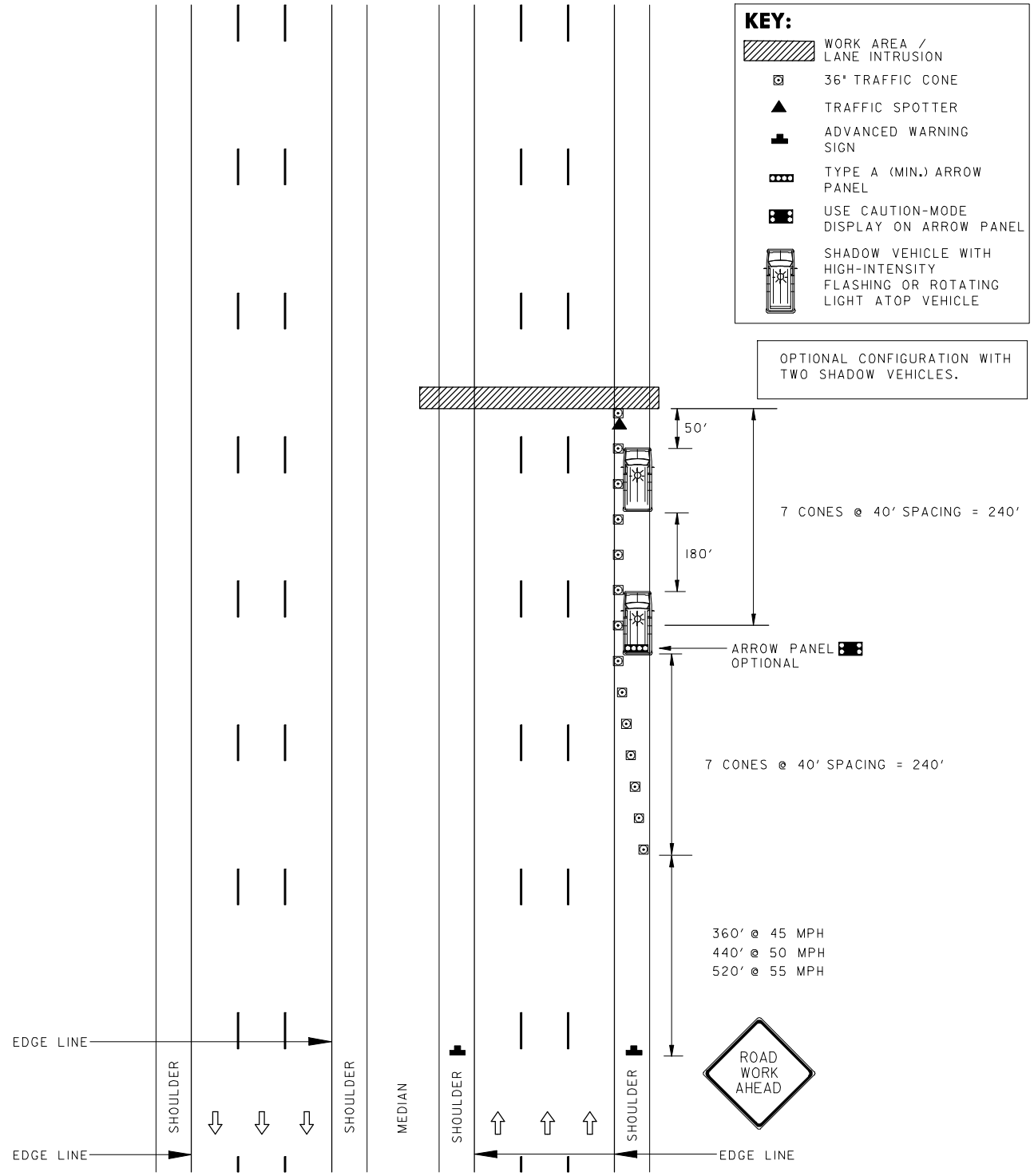


Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
≥ 6-LANE, 2-WAY / DIVIDED / USABLE SHOULDER
POSTED SPEED: 35 OR 40 MPH
SHOULDER CLOSURE

Figure 16B

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



CONES SPACED AT 40' TYP.

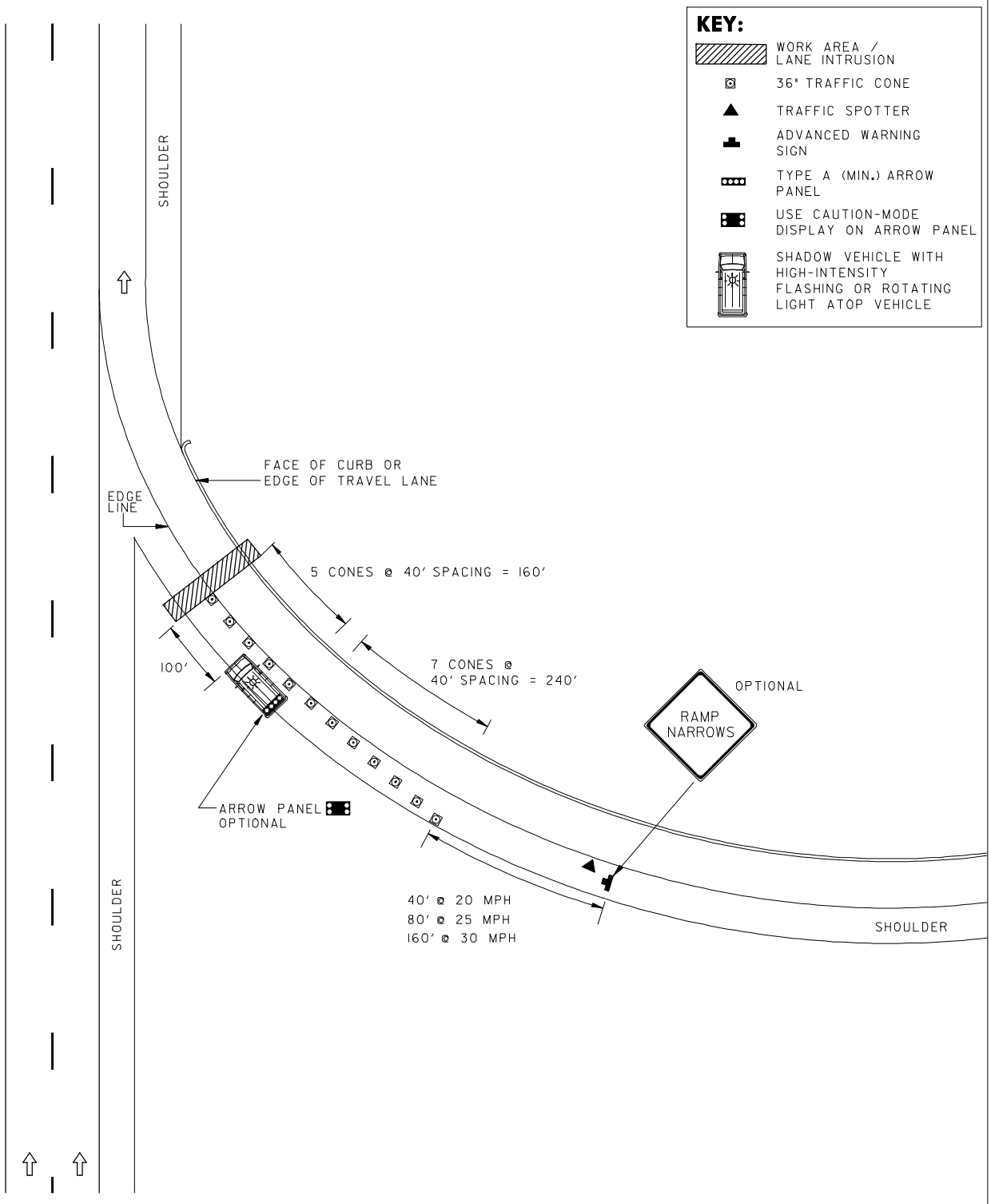
Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
≥ 6-LANE, 2-WAY / DIVIDED / USABLE SHOULDER
POSTED SPEED: 45, 50 OR 55 MPH
SHOULDER CLOSURE

Figure 16C

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



CONES SPACED AT 40' TYP.

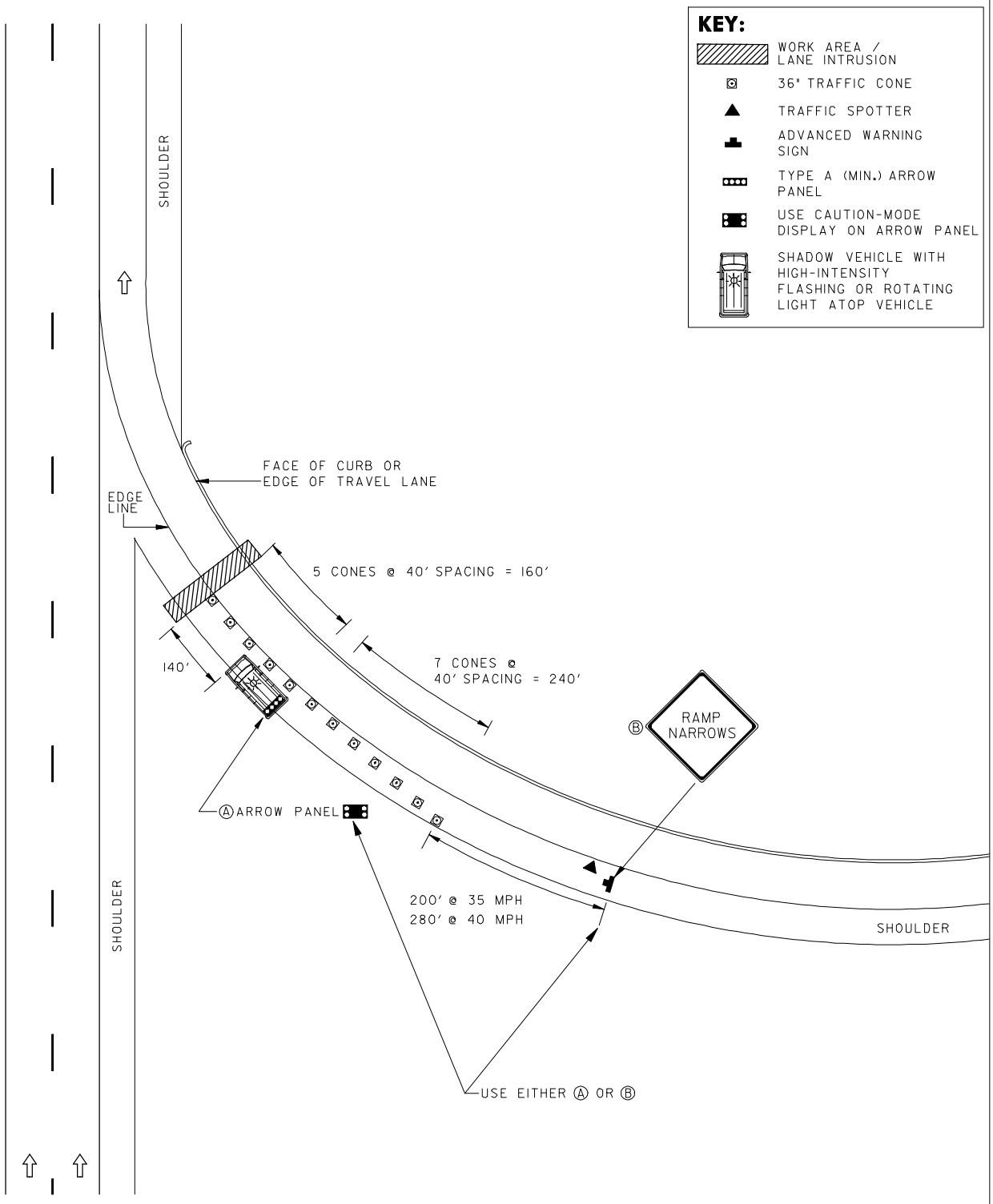
Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
1-LANE, 1-WAY / RAMP / USABLE SHOULDER
POSTED SPEED: 20, 25 OR 30 MPH
RAMP SHOULDER CLOSURE

Figure 17

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



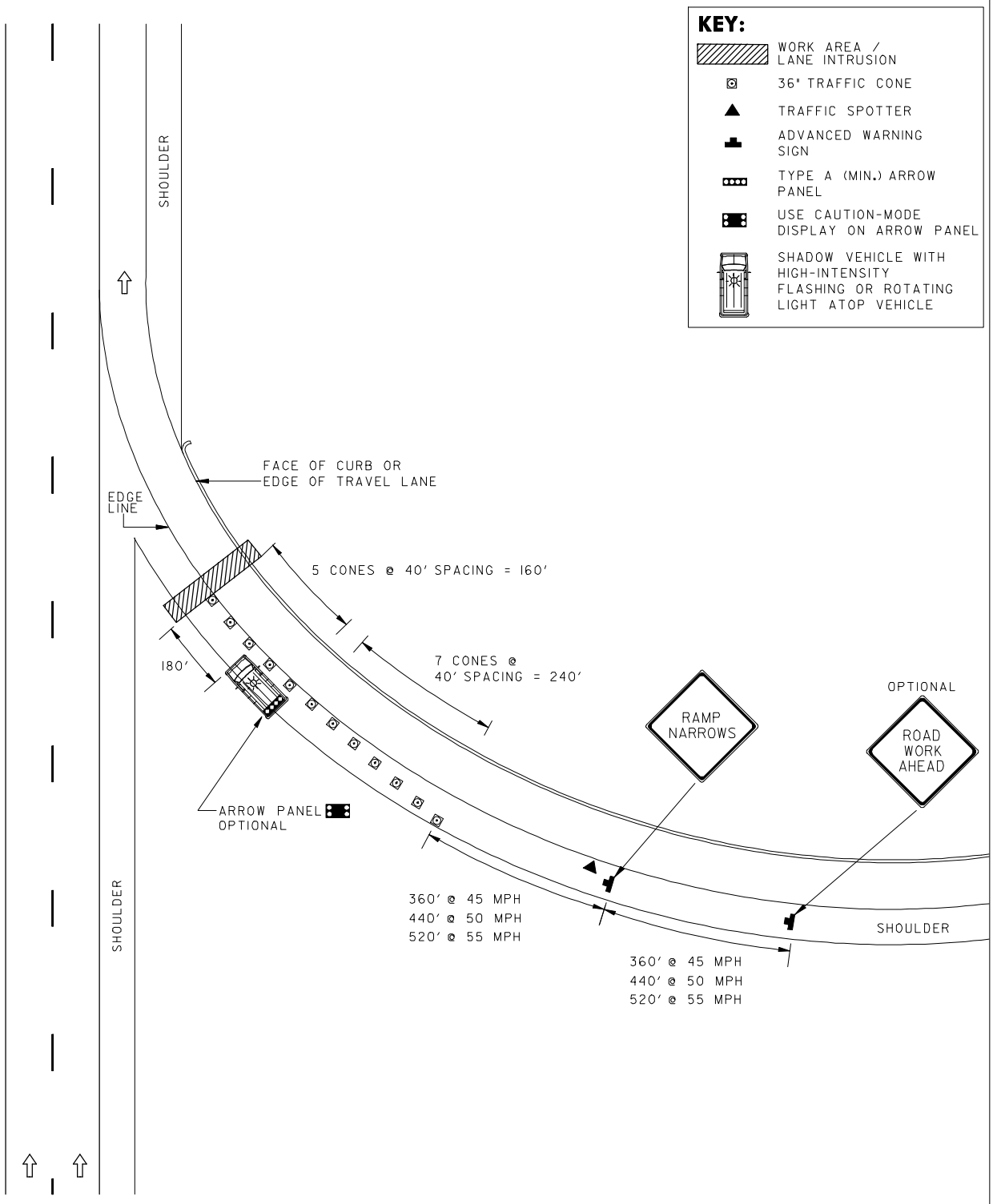
CONES SPACED AT 40' TYP.

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
1-LANE, 1-WAY / RAMP / USABLE SHOULDER
POSTED SPEED: 35 OR 40 MPH
RAMP SHOULDER CLOSURE

Figure 17A

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



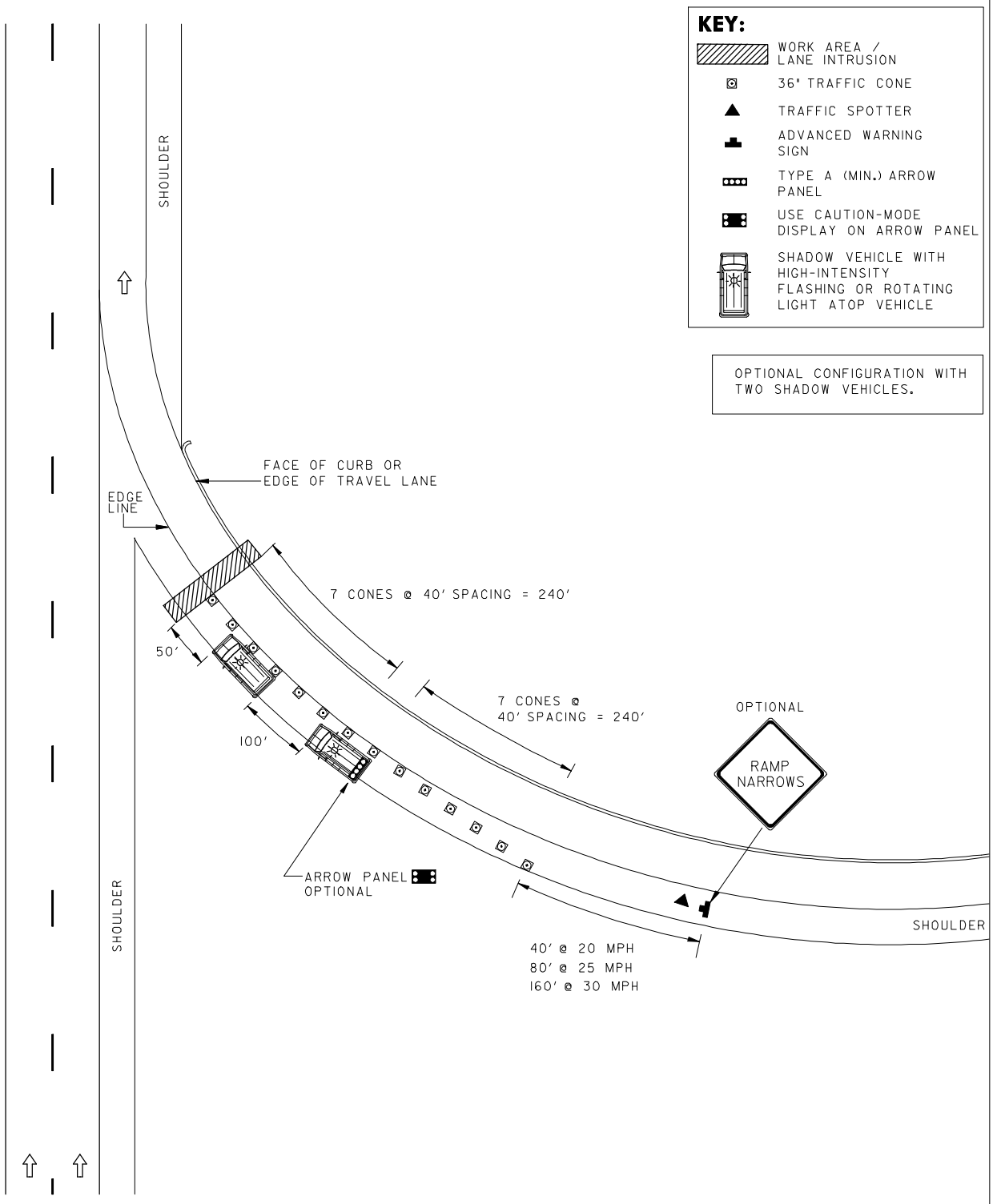
CONES SPACED AT 40' TYP.

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
1-LANE, 1-WAY / RAMP / USABLE SHOULDER
POSTED SPEED: 45, 50 OR 55 MPH
RAMP SHOULDER CLOSURE

Figure 17B

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



CONES SPACED AT 40' TYP.

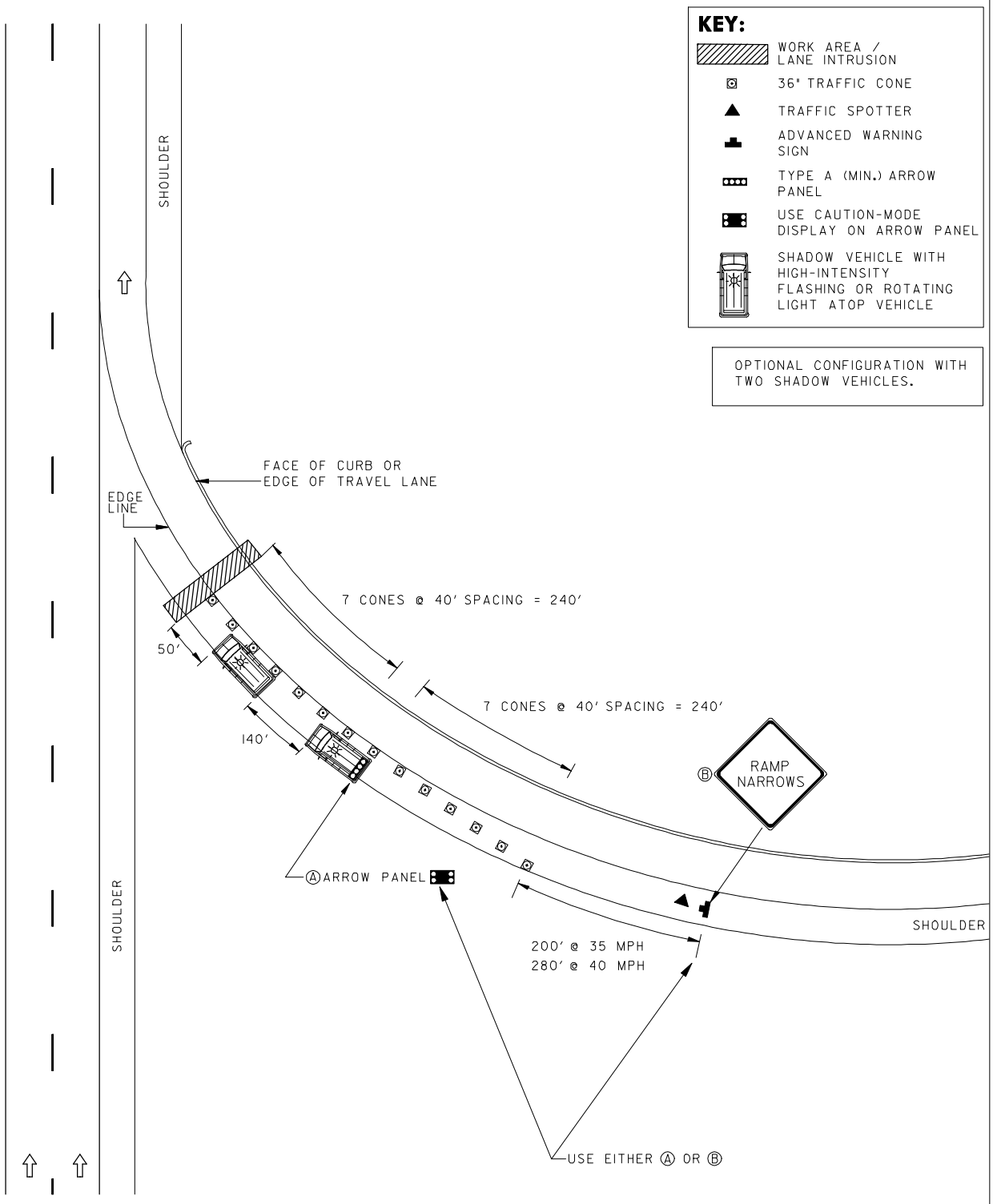
Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
1-LANE, 1-WAY / RAMP / USABLE SHOULDER
POSTED SPEED: 20, 25 OR 30 MPH
RAMP SHOULDER CLOSURE

Figure 17C

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



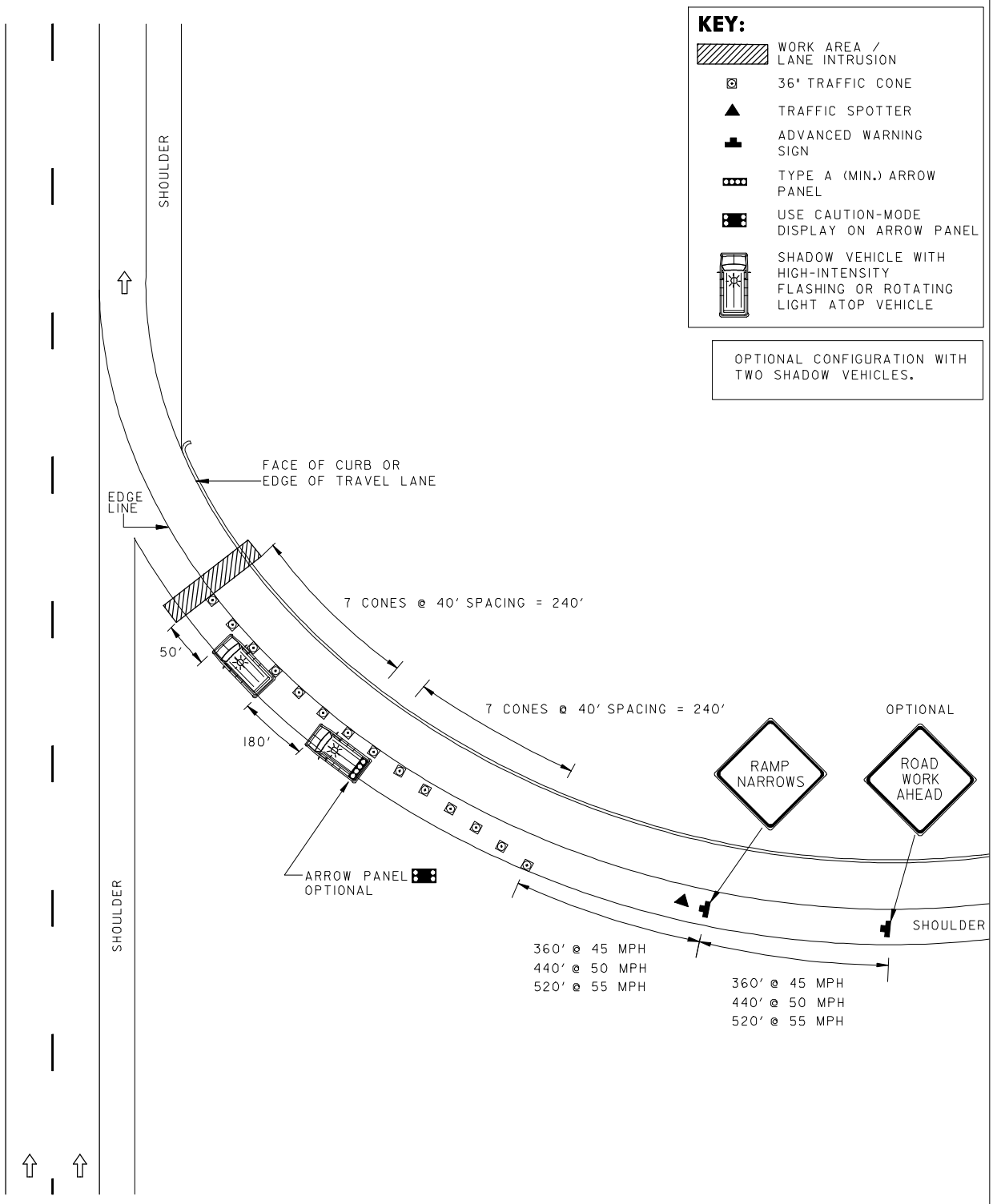
CONES SPACED AT 40' TYP.

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
1-LANE, 1-WAY / RAMP / USABLE SHOULDER
POSTED SPEED: 35 OR 40 MPH
RAMP SHOULDER CLOSURE

Figure 17D

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



CONES SPACED AT 40' TYP.

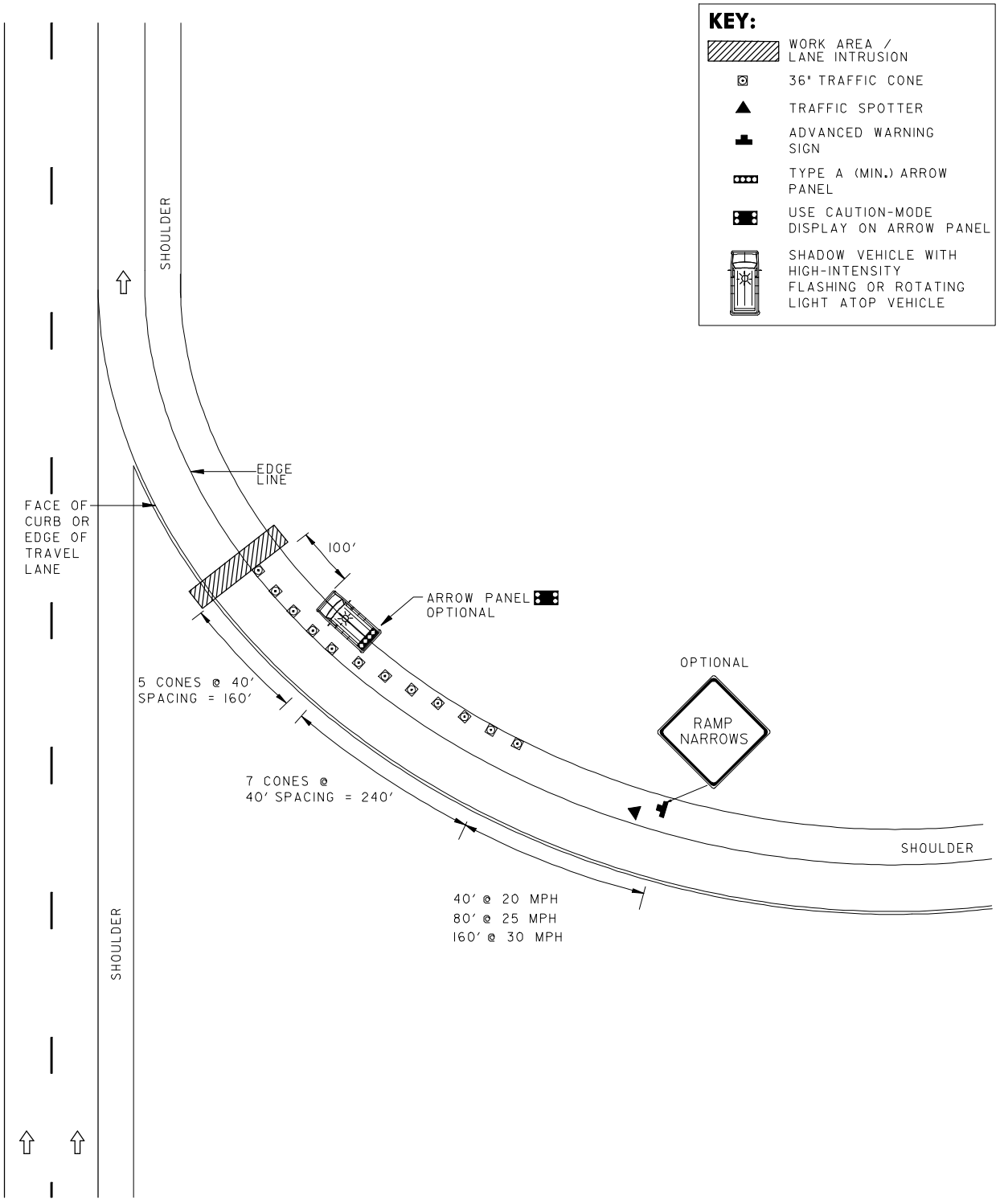
Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
1-LANE, 1-WAY / RAMP / USABLE SHOULDER
POSTED SPEED: 45, 50 OR 55 MPH
RAMP SHOULDER CLOSURE

Figure 17E

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



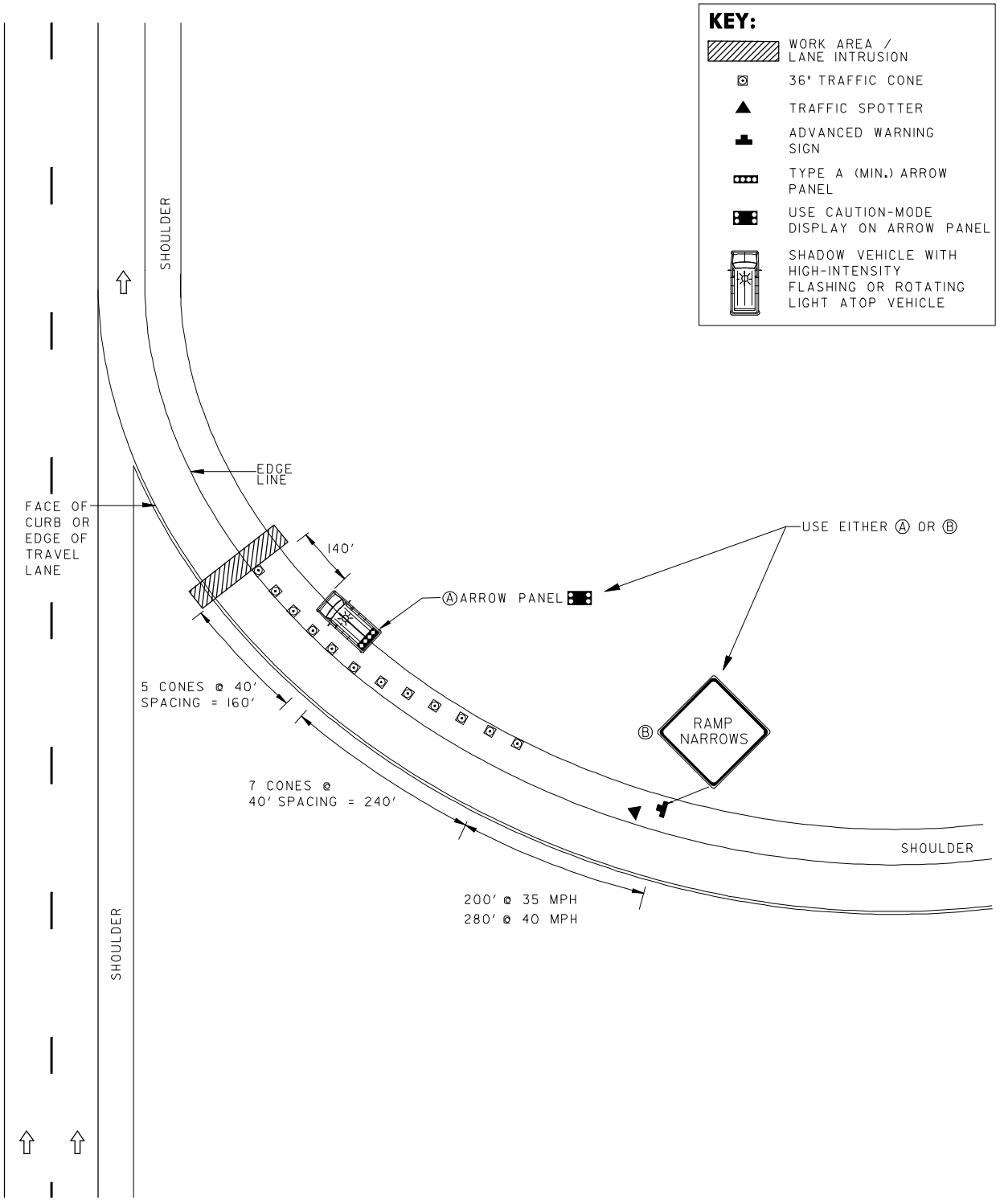
CONES SPACED AT 40' TYP.

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
1-LANE, 1-WAY / RAMP / USABLE SHOULDER
POSTED SPEED: 20, 25 OR 30 MPH
RAMP SHOULDER CLOSURE

Figure 18

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



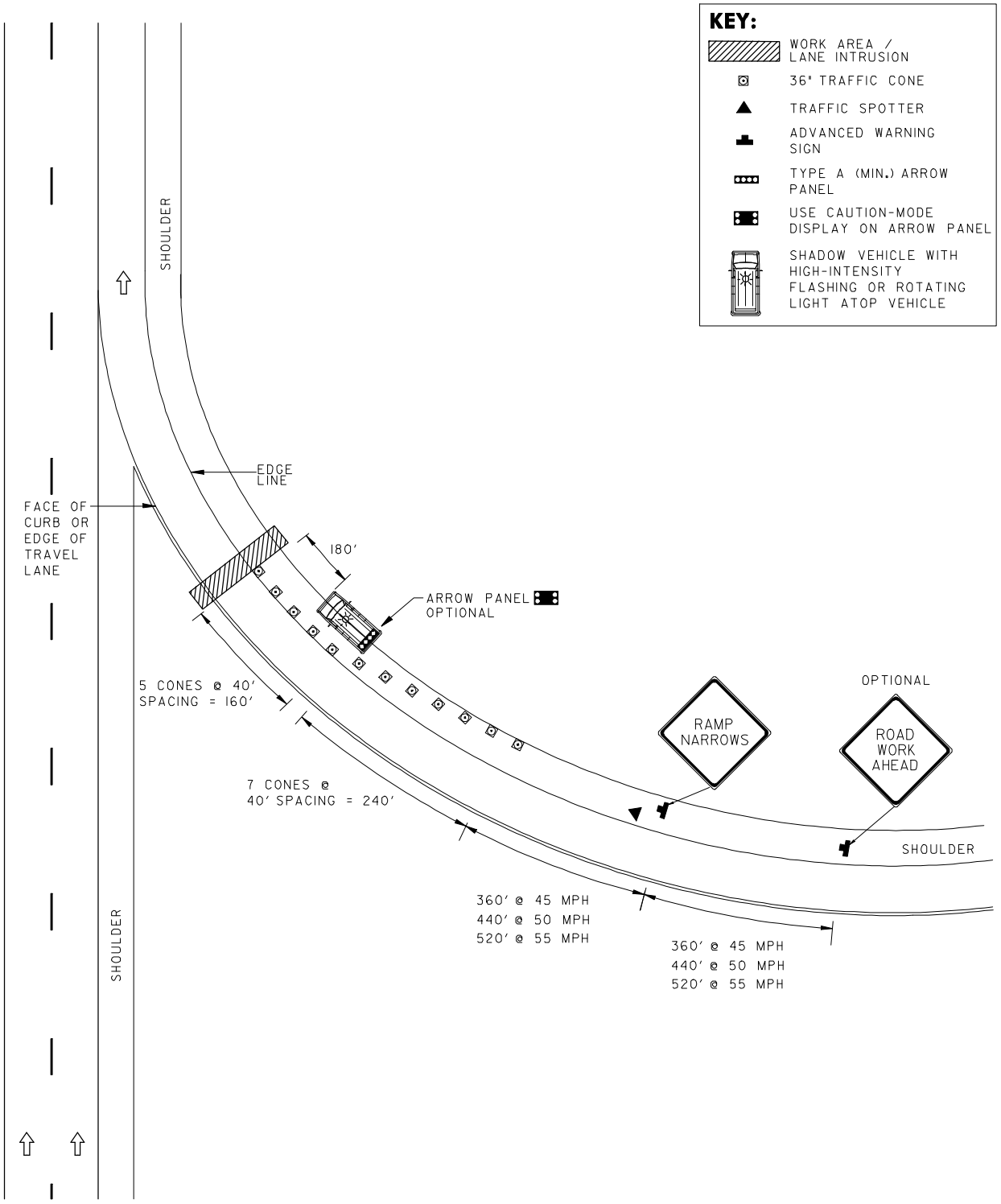
CONES SPACED AT 40' TYP.

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
1-LANE, 1-WAY / RAMP / USABLE SHOULDER
POSTED SPEED: 35 OR 40 MPH
RAMP SHOULDER CLOSURE

Figure 18A

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



CONES SPACED AT 40' TYP.

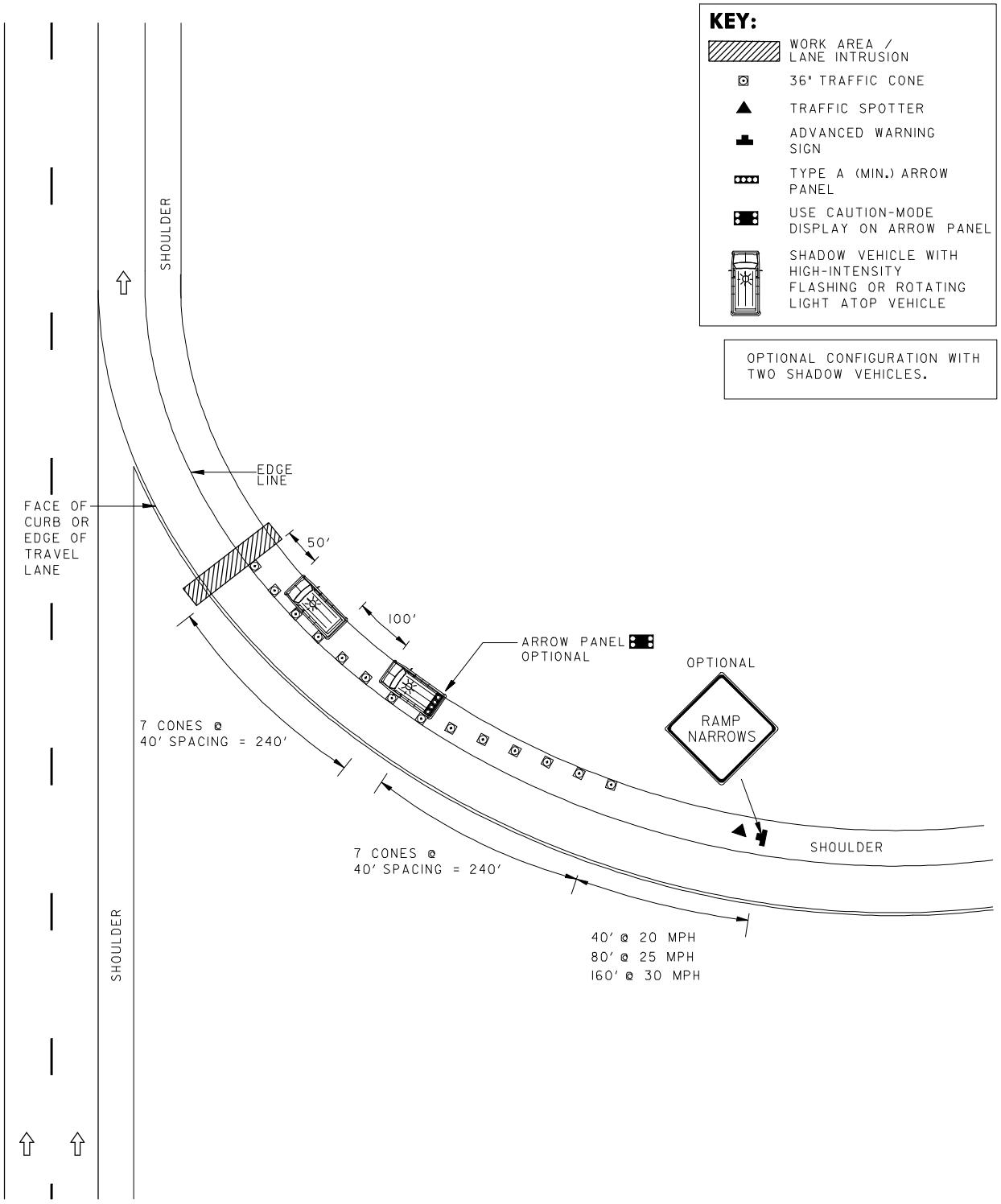
Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION

OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
1-LANE, 1-WAY / RAMP / USABLE SHOULDER
POSTED SPEED: 45, 50 OR 55 MPH
RAMP SHOULDER CLOSURE

Figure 18B

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



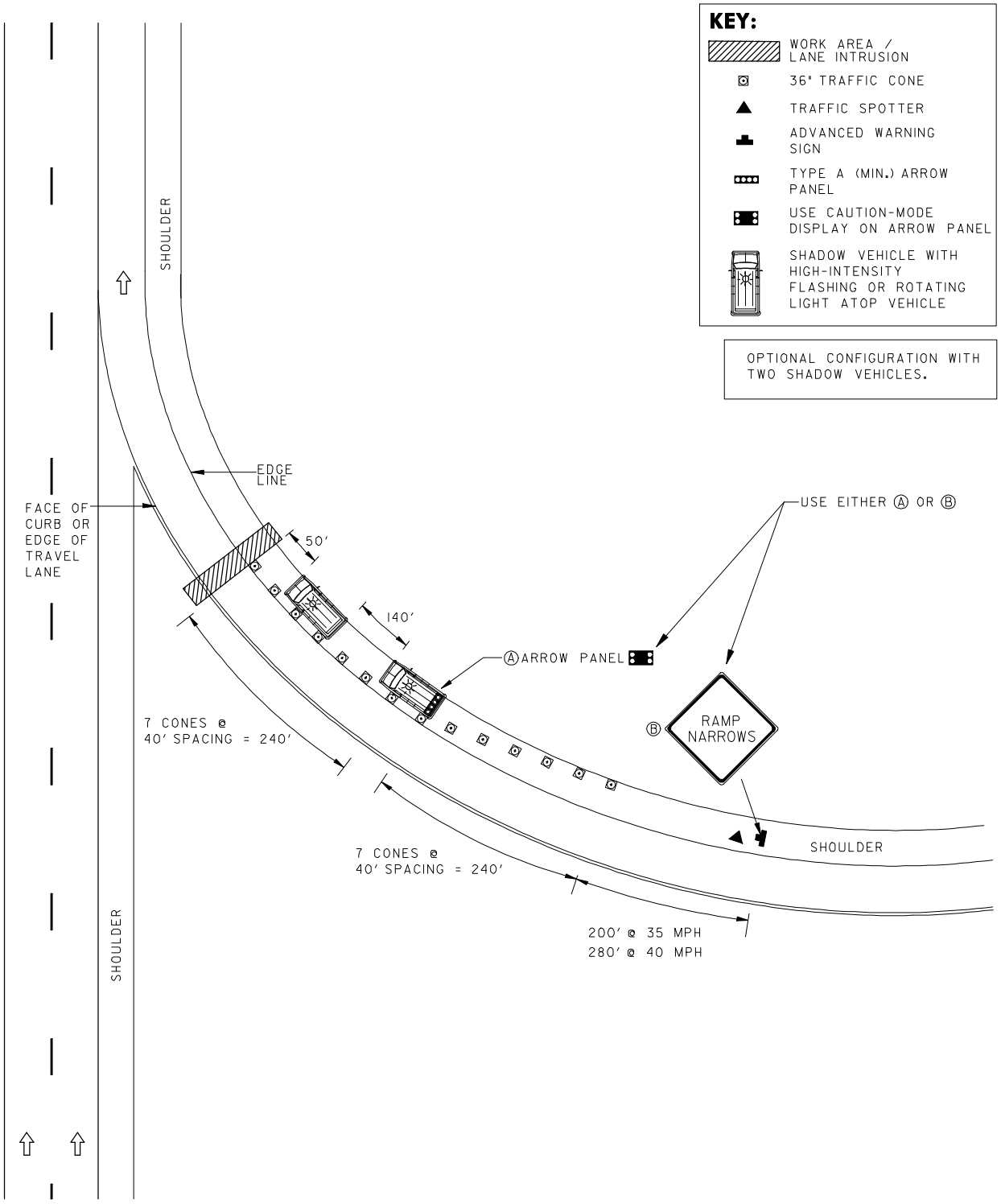
CONES SPACED AT 40' TYP.

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
1-LANE, 1-WAY / 1-RAMP / USABLE SHOULDER
POSTED SPEED: 20, 25 OR 30 MPH
RAMP SHOULDER CLOSURE

Figure 18C

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



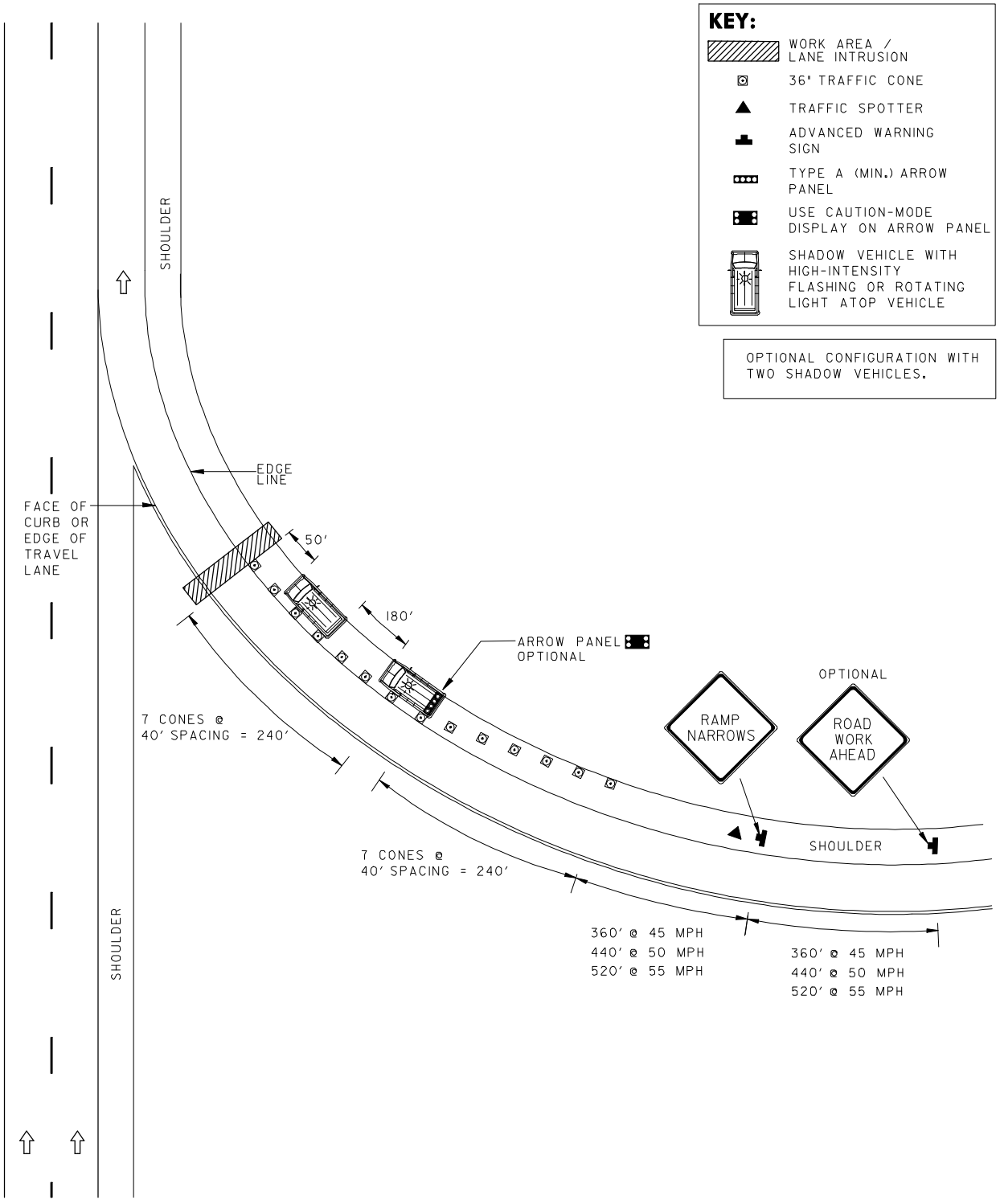
CONES SPACED AT 40' TYP.

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
1-LANE, 1-WAY / 1-RAMP / USABLE SHOULDER
POSTED SPEED: 35 OR 40 MPH
RAMP SHOULDER CLOSURE

Figure 18D

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



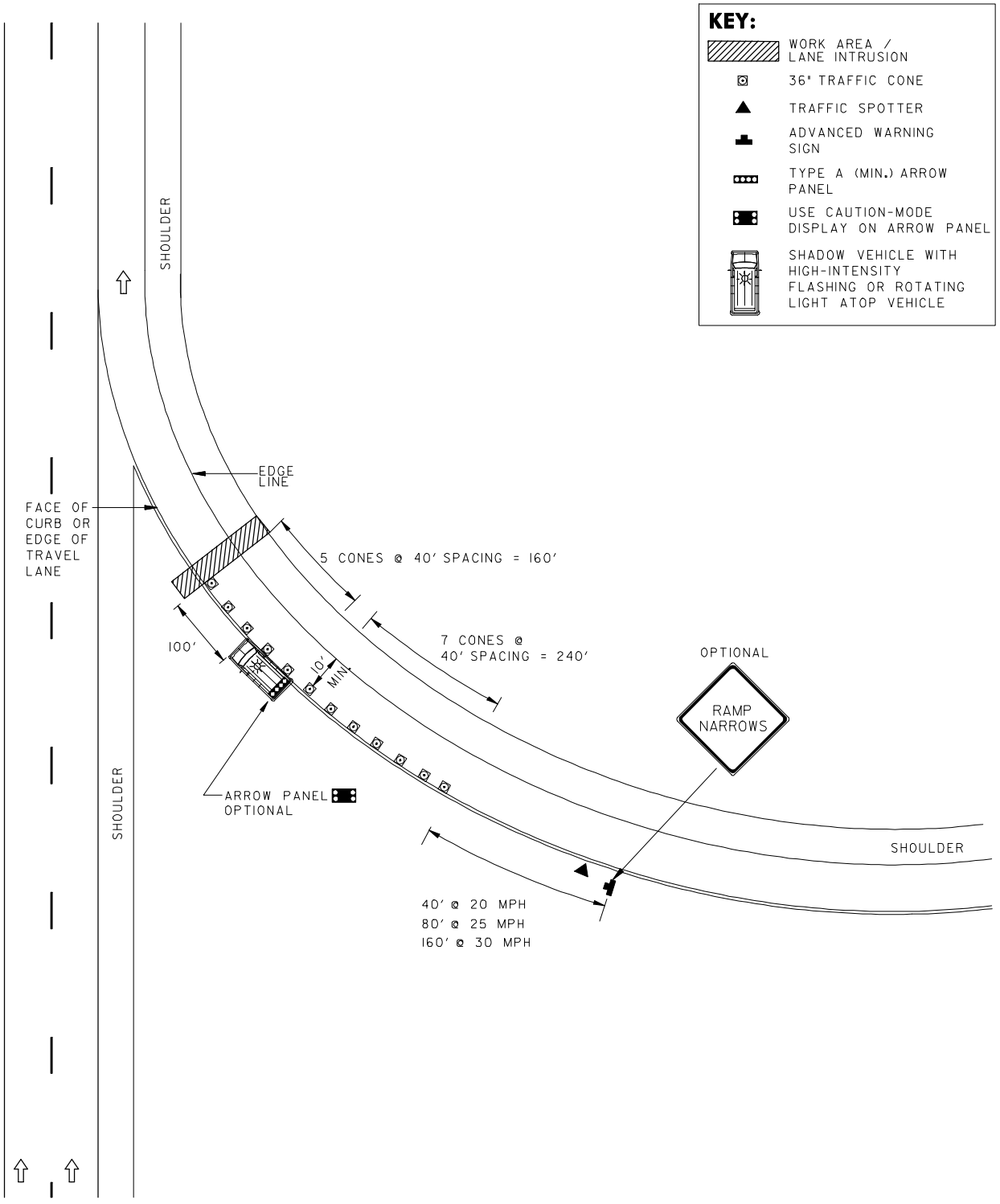
CONES SPACED AT 40' TYP.

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
1-LANE, 1-WAY / 1-RAMP / USABLE SHOULDER
POSTED SPEED: 45, 50 OR 55 MPH
RAMP SHOULDER CLOSURE

Figure 18E

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



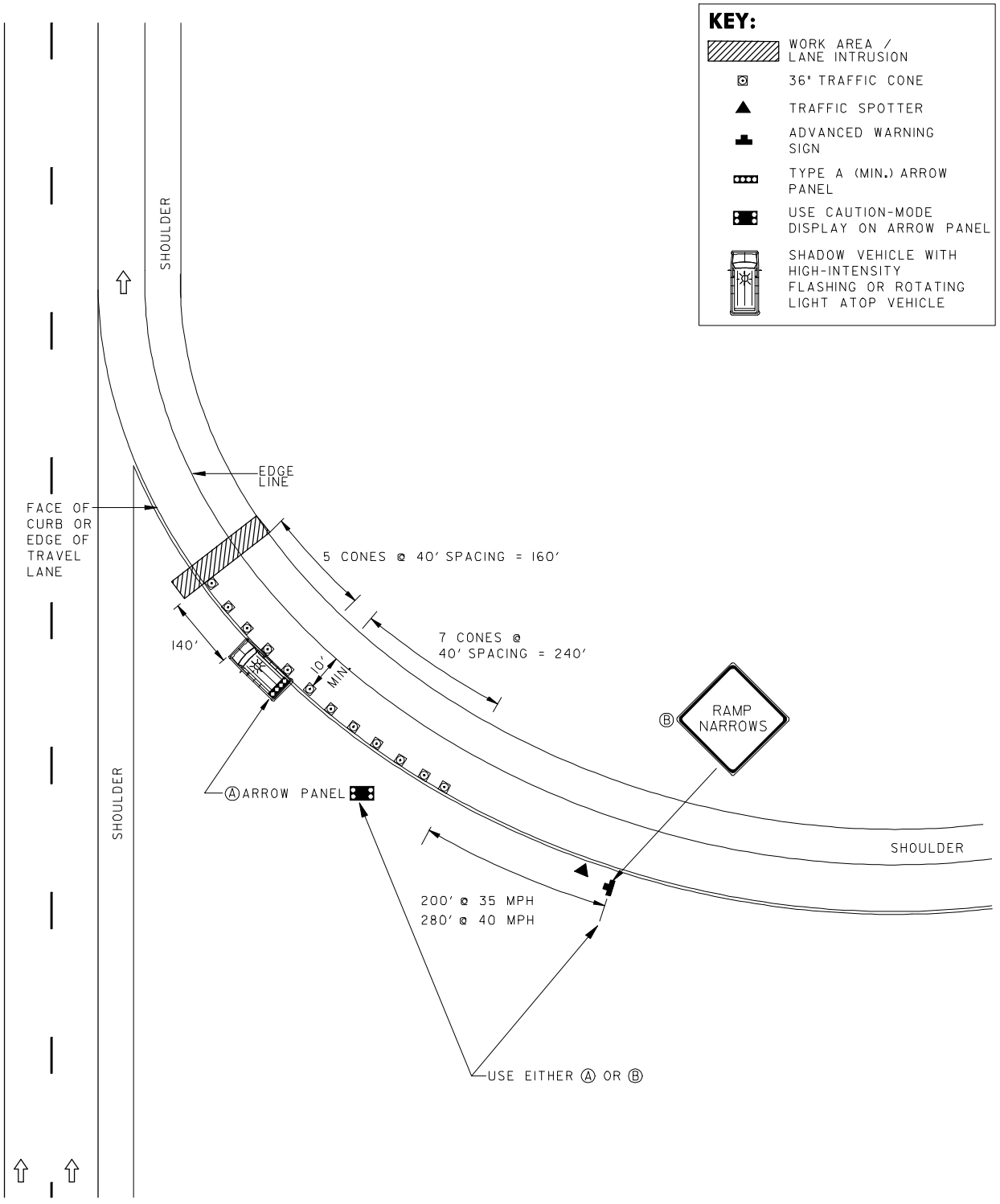
CONES SPACED AT 40' TYP.

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
1-LANE, 1-WAY / RAMP / NO OR NARROW SHOULDER
POSTED SPEED: 20, 25 OR 30 MPH
LANE ENCROACHMENT

Figure 19

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



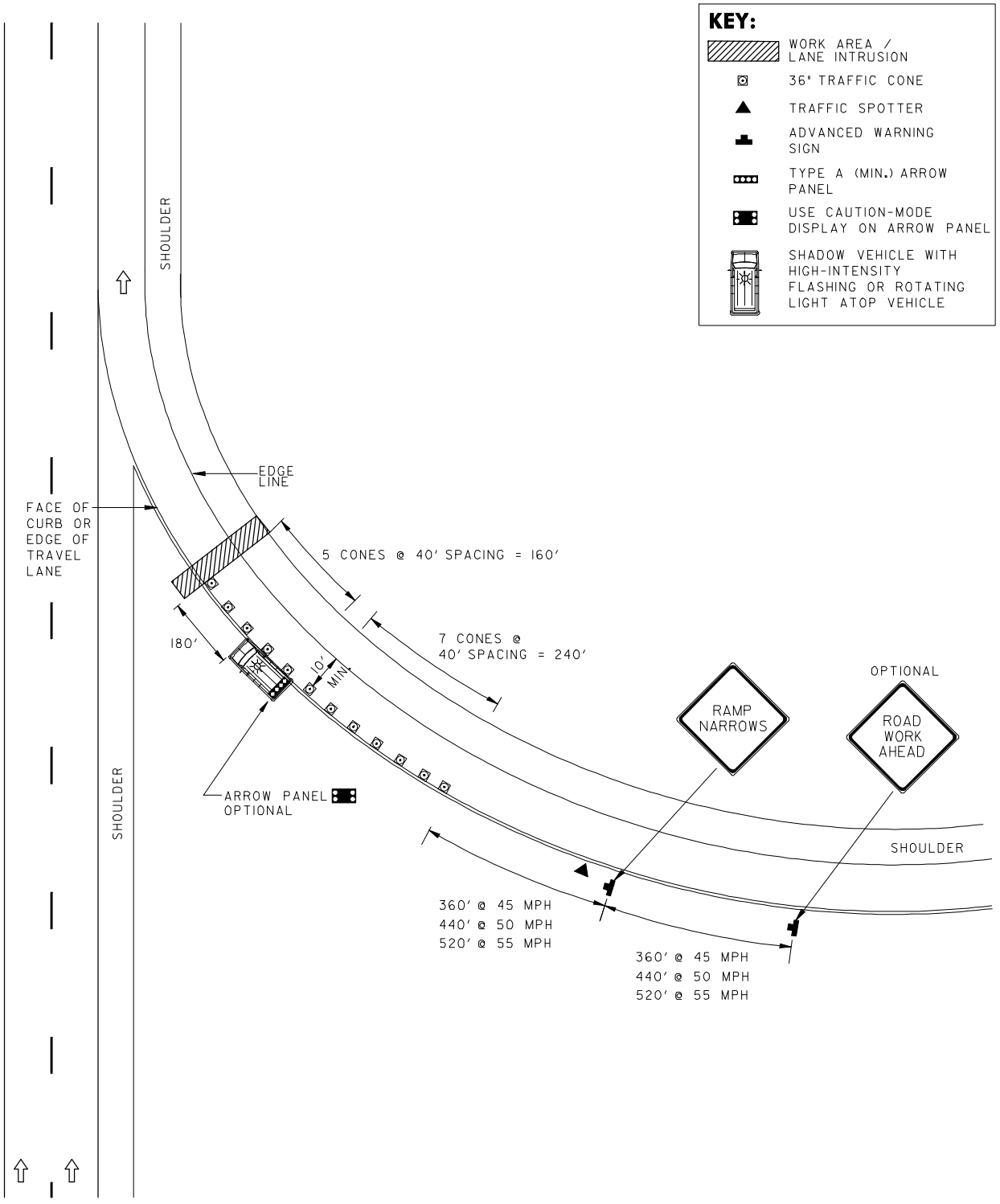
CONES SPACED AT 40' TYP.

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
1-LANE, 1-WAY / RAMP / NO OR NARROW SHOULDER
POSTED SPEED: 35 OR 40 MPH
LANE ENCROACHMENT

Figure 19A

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



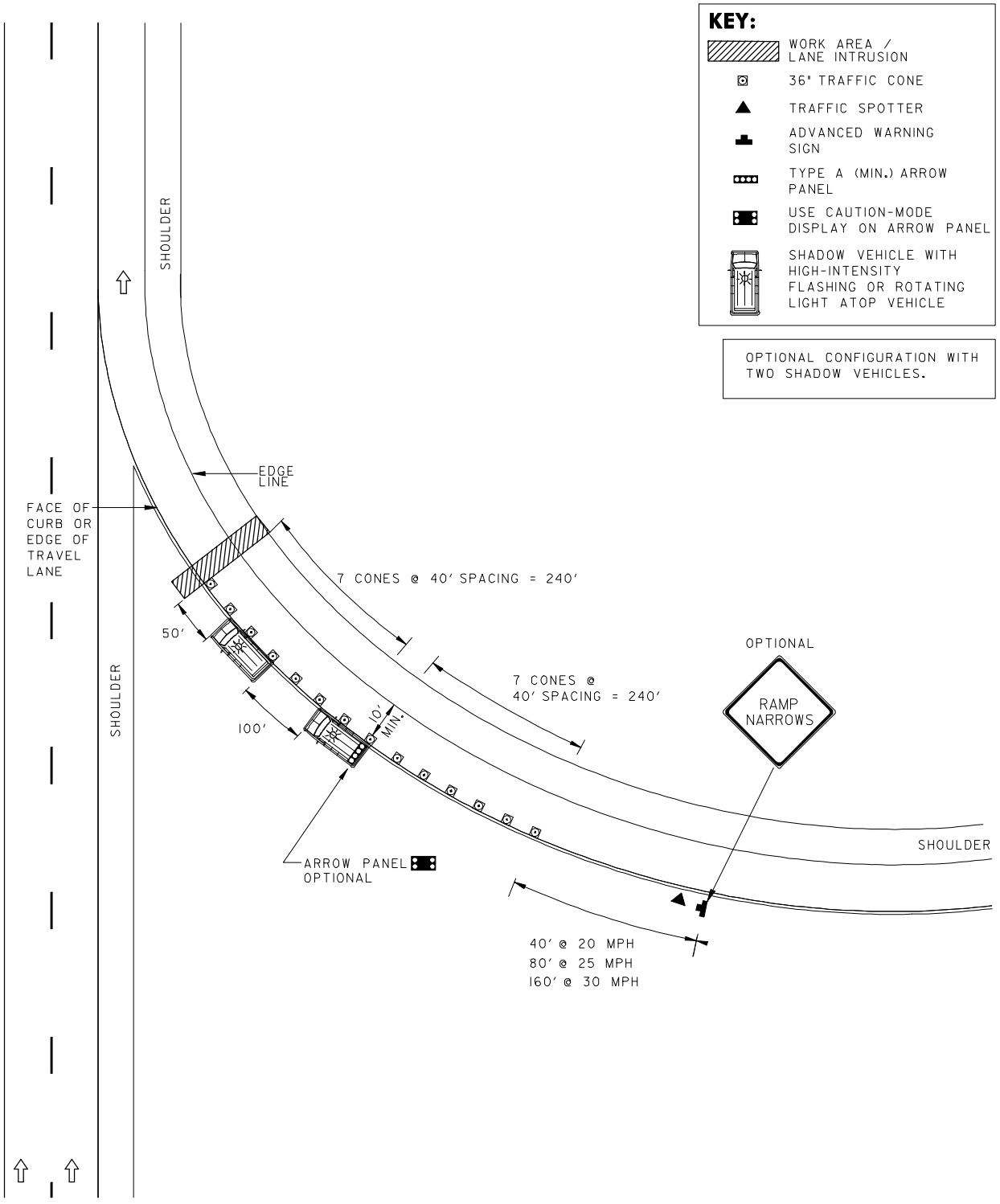
CONES SPACED AT 40' TYP.

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
1-LANE, 1-WAY / RAMP / NO OR NARROW SHOULDER
POSTED SPEED: 45, 50 OR 55 MPH
LANE ENCROACHMENT

Figure 19B

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



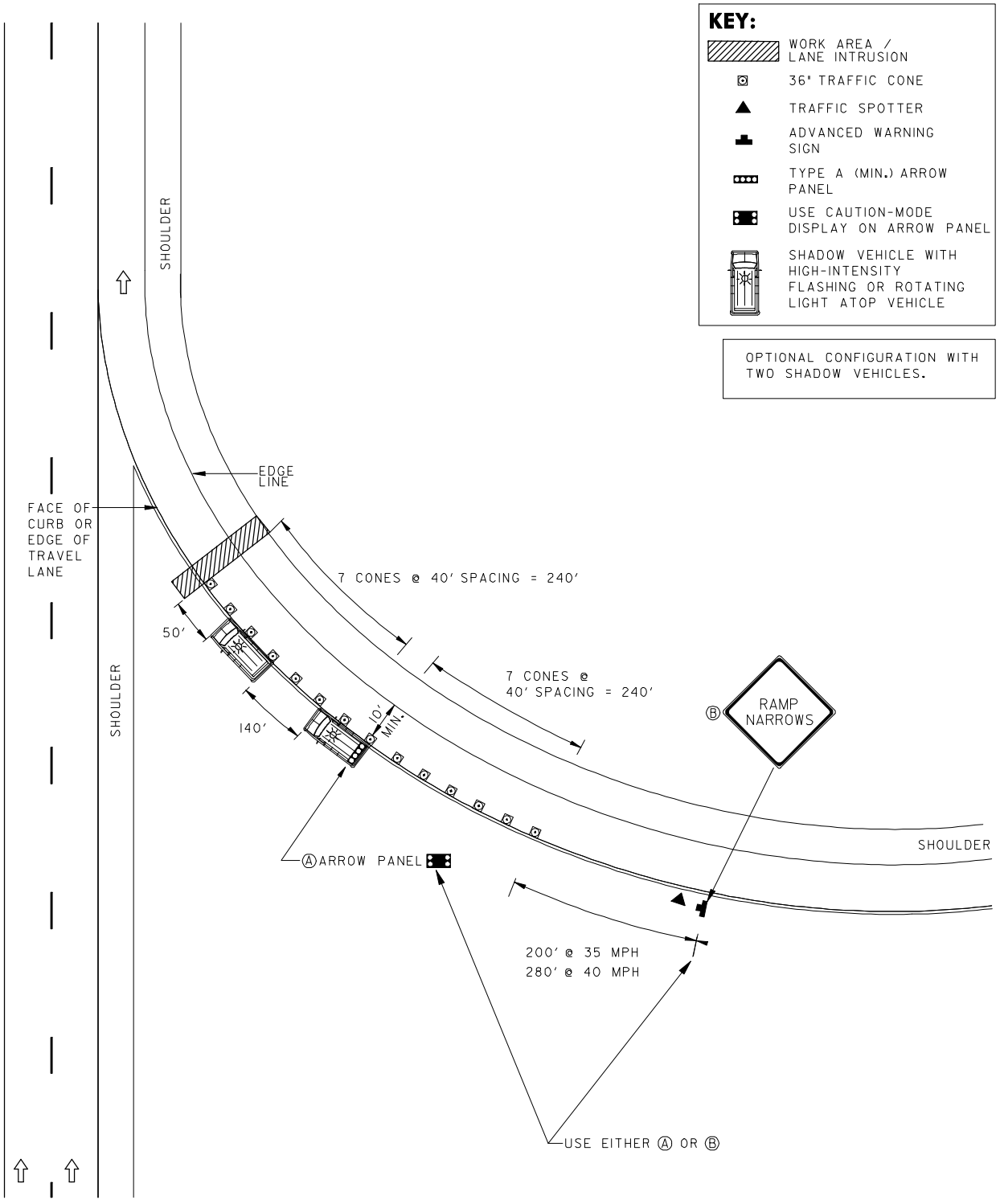
CONES SPACED AT 40' TYP.

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
1-LANE, 1-WAY / RAMP / NO OR NARROW SHOULDER
POSTED SPEED: 20, 25 OR 30 MPH
LANE ENCROACHMENT

Figure 19C

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



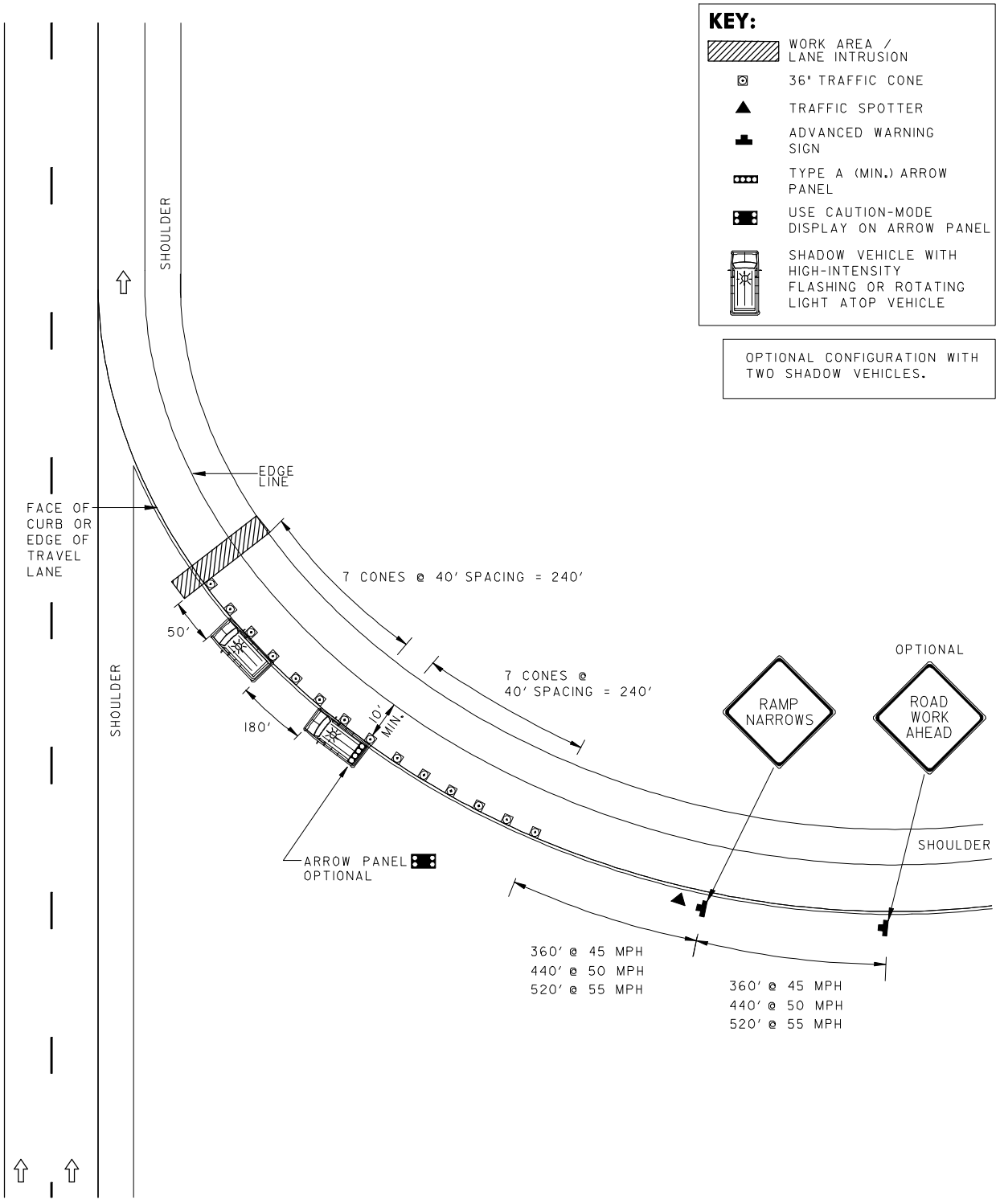
CONES SPACED AT 40' TYP.

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
1-LANE, 1-WAY / RAMP / NO OR NARROW SHOULDER
POSTED SPEED: 35 OR 40 MPH
LANE ENCROACHMENT

Figure 19D

TRAFFIC COUNTER TUBE WORK TYPICAL APPLICATION



CONES SPACED AT 40' TYP.

Maryland Department of Transportation
STATE HIGHWAY ADMINISTRATION
OFFICE OF PLANNING & PRELIMINARY ENGINEERING (OPPE)

TRAFFIC COUNTER TUBE WORK
<1 HOUR DURATION / DAY OR NIGHT
1-LANE, 1-WAY / RAMP / NO OR NARROW SHOULDER
POSTED SPEED: 45, 50 OR 55 MPH
LANE ENCROACHMENT

Figure 19E