

Notes for Figure 6H-3—Typical Application 3
Work on the Shoulder of a Two-Lane Road
(Delaware Revision)

Guidance:

1. A *SHOULDER CLOSED* sign should be placed on the left side of the roadway for a divided or one-way street only if the left shoulder is affected.

Option:

2. The *SHOULDER CLOSED* sign may be omitted from an intersecting roadway where drivers emerging from that roadway will encounter another advance warning sign prior to the activity area.

3. For short duration operations of 60 minutes or less, all signs and channelizing devices may be eliminated if a vehicle with activated high-intensity rotating, flashing, oscillating, or strobe lights is used.

Standard:

4. When paved shoulders having a width of 8 feet or more are closed, at least one advance warning sign shall be used. In addition, channelizing devices shall be used to close the shoulder in advance to delineate the beginning of the work space and direct vehicular traffic to remain within the traveled way.

5. If the shoulder closure is located within a passing zone, ROAD WORK AHEAD and END ROAD WORK signs shall be placed for traffic approaching in the opposite direction.

6. For long-term, intermediate-term, and short-term operations, a truck-mounted attenuator shall be used on roadways with a posted speed limit or 85th-percentile speed greater than 40 mph.

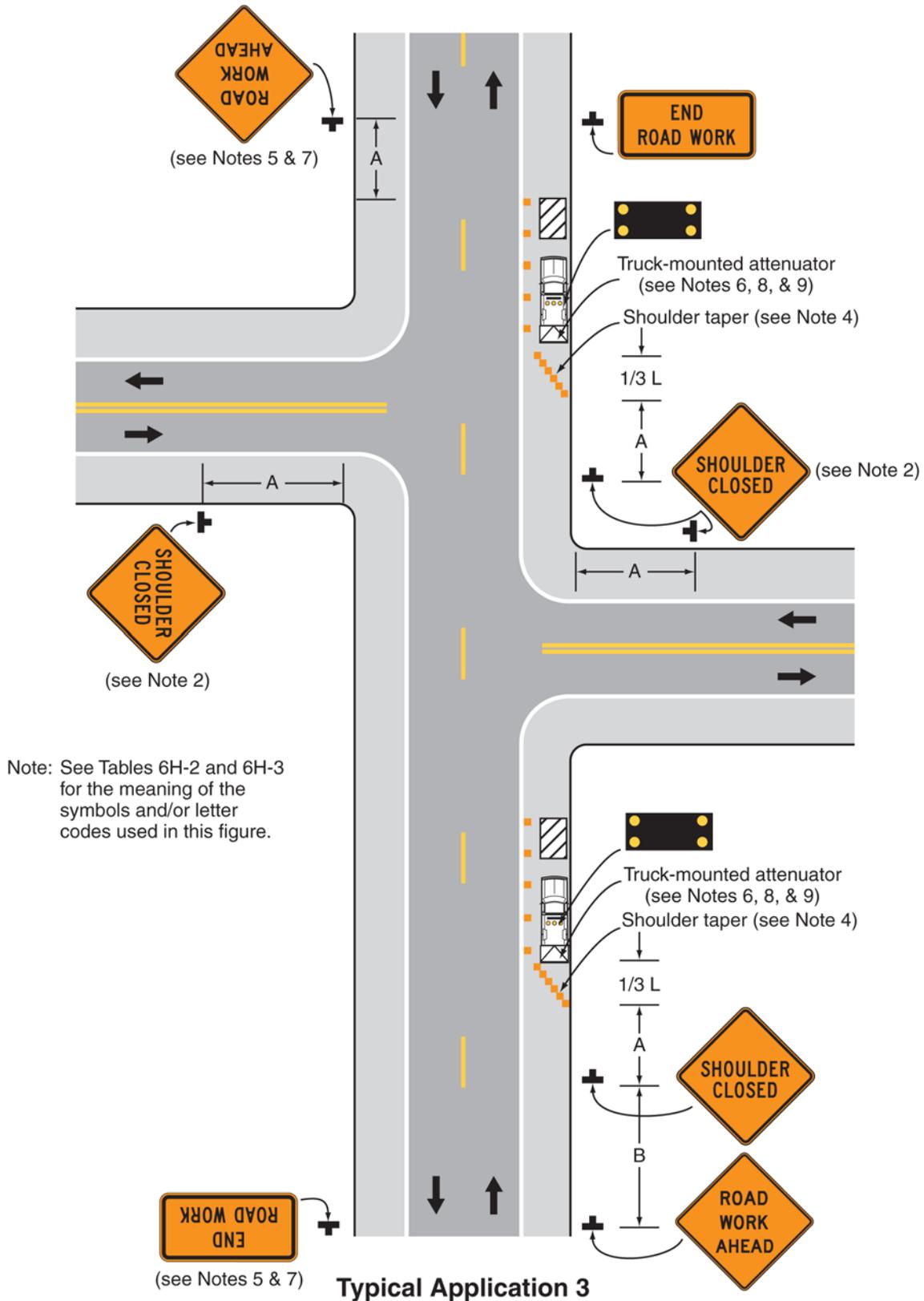
Option:

7. If the shoulder closure is located within a no-passing zone, ROAD WORK AHEAD and END ROAD WORK signs may be placed for traffic approaching in the opposite direction based on engineering judgment.

8. For short duration operations of 15 minutes or less along roadways with a posted speed limit or 85th-percentile speed greater than 40 mph, a truck-mounted attenuator may be omitted if a vehicle with activated high-intensity rotating, flashing, oscillating, or strobe lights is used or if the shoulder width is less than the width of a truck-mounted attenuator.

9. Truck-mounted attenuators may be used for all operations along roadways with a posted speed limit or 85th-percentile speed less than or equal to 40 mph.

**Figure 6H-3. Work on the Shoulder of a Two-Lane Road (TA-3)
(Delaware Revision)**



Notes for Figure 6H-6—Typical Application 6
Shoulder Work with Minor Encroachment on a Two-Lane, Low-Speed Road (≤ 40 MPH)
(Delaware Revision)

Standard:

1. This TTC zone application shall be limited to minor roads with a posted speed limit or 85th-percentile speed less than or equal to 40 mph. For higher-speed traffic conditions, a lane closure shall be used (see Figure 6H-10).

Guidance:

2. *All lanes should be a minimum of 10 feet in width as measured to the near face of the channelizing devices. Except as provided in Note 3, a lane closure (see Figure 6H-10) should be used when the operations cannot accommodate the minimum 10-foot travel lane.*

Option:

3. For short-term use on low-volume, low-speed roadways with vehicular traffic that does not include longer and wider heavy commercial vehicles, a minimum lane width of 9 feet may be used.
4. Where the opposite shoulder is suitable for carrying vehicular traffic and of adequate width, lanes may be shifted by use of closely-spaced channelizing devices, provided that the minimum lane width of 10 feet is maintained (see Figure 6H-11B).
5. Additional advance warning may be appropriate, such as a ROAD NARROWS sign.
6. Temporary traffic barriers may be used along the work space.
7. The shadow vehicle may be omitted if a taper and channelizing devices are used.
8. Truck-mounted attenuators may be used for all operations along roadways with a posted speed limit or 85th-percentile speed less than or equal to 40 mph.

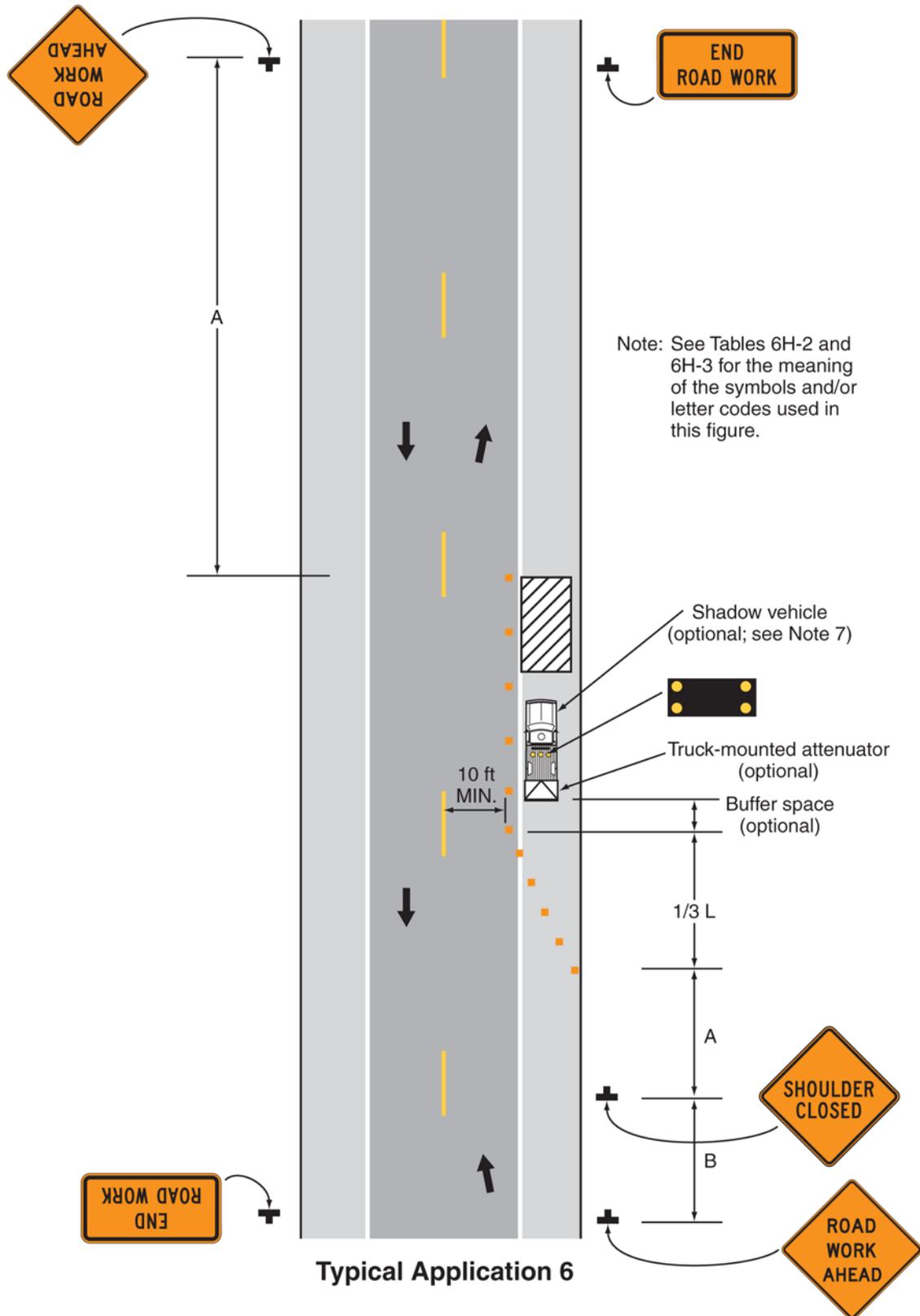
Standard:

9. Vehicle-mounted signs shall be mounted in a manner such that they are not obscured by equipment or supplies. Sign legends on vehicle-mounted signs shall be covered or turned from view when work is not in progress.

Guidance:

10. *Where drivers emerging from an intersecting roadway will not encounter an advance warning sign prior to the work zone, additional signs should be placed on the intersecting road.*

**Figure 6H-6. Shoulder Work with Minor Encroachment on a Two-Lane, Low-Speed Road (≤ 40 MPH) (TA-6)
(Delaware Revision)**



Typical Application 6

Notes for Figure 6H-10—Typical Application 10
Lane Closure on a Two-Lane Road Using Flaggers
(Delaware Revision)

Option:

1. For low-volume situations with short work zones on straight roadways where the flagger is visible to road users approaching from both directions, a single flagger, positioned to be visible to road users approaching from both directions, may be used (see Chapter 6E).
2. The ROAD WORK AHEAD and the END ROAD WORK signs may be omitted for short-duration operations.
3. A BE PREPARED TO STOP sign may be added to the sign series.

Guidance:

4. *The buffer space should be extended so that the two-way traffic taper is placed before a horizontal (or crest vertical) curve to provide adequate sight distance for the flagger and a queue of stopped vehicles.*

Standard:

5. **At night, flagger stations shall be illuminated, except in emergencies.**

Guidance:

6. *When used, the BE PREPARED TO STOP sign should be located between the Flagger symbol (or FLAGGER AHEAD) sign and the ONE LANE ROAD sign.*
7. *Where drivers emerging from an intersecting roadway will not encounter an advance warning sign prior to the work zone, additional signs should be placed on the intersecting road.*
8. *When a grade crossing exists within or upstream of the transition area and it is anticipated that queues resulting from the lane closure might extend through the grade crossing, the TTC zone should be extended so that the transition area precedes the grade crossing (see Figure 6H-46).*
9. *When a grade crossing equipped with active warning devices exists within the activity area, provisions should be made for keeping flaggers informed as to the activation status of these warning devices (see Figure 6H-46).*
10. *When a grade crossing exists within the activity area, drivers operating on the left-hand side of the normal center line should be provided with comparable warning devices as for drivers operating on the right-hand side of the normal center line (see Figure 6H-46).*
11. *Early coordination with the railroad company or light rail transit agency should occur before work starts (see Figure 6H-46).*

Option:

12. A flagger or a uniformed law enforcement officer may be used at the upstream side of the grade crossing to minimize the probability that vehicles are stopped within 50 feet of the grade crossing, measured from both sides of the outside rails (see Figure 6H-46).

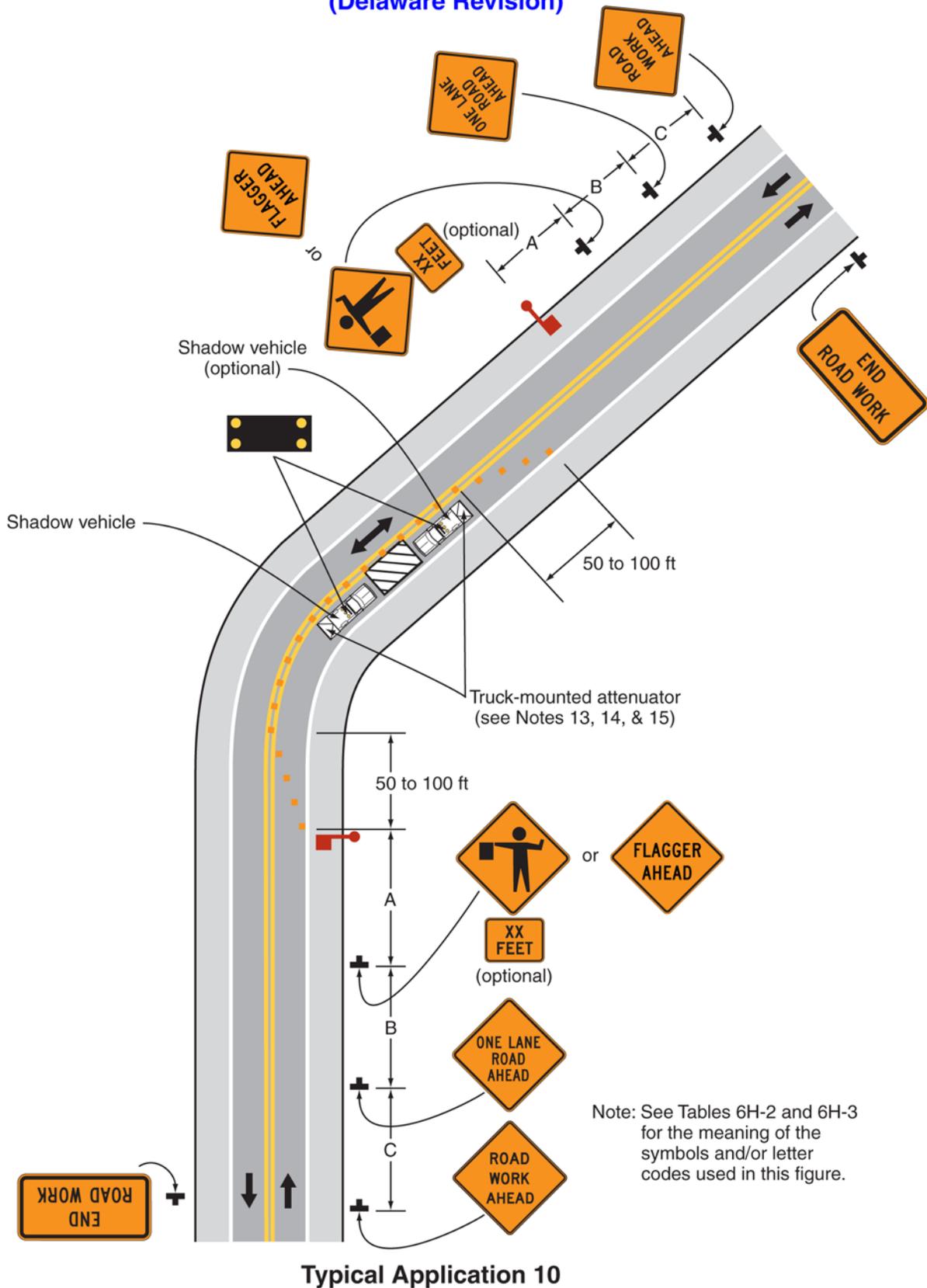
Standard:

13. **For long-term, intermediate-term, and short-term operations, a truck-mounted attenuator shall be used on roadways with a posted speed limit or 85th-percentile speed greater than 40 mph.**

Option:

14. For short duration operations of 15 minutes or less along roadways with a posted speed limit or 85th-percentile speed greater than 40 mph, a truck-mounted attenuator may be omitted if a vehicle with activated high-intensity rotating, flashing, oscillating, or strobe lights is used.
15. Truck-mounted attenuators may be used for all operations along roadways with a posted speed limit or 85th-percentile speed less than or equal to 40 mph.

**Figure 6H-10. Lane Closure on a Two-Lane Road Using Flaggers (TA-10)
(Delaware Revision)**



Notes for Figure 6H-18—Typical Application 18
Lane Closure on a Minor Street
(Delaware Revision)

Standard:

1. This TTC zone application shall be used only for low-speed facilities having low traffic volumes, such as subdivision streets.

Option:

2. Where the work space is short, where road users can see the roadway beyond, and where volume is low, vehicular traffic may be self-regulating.

Standard:

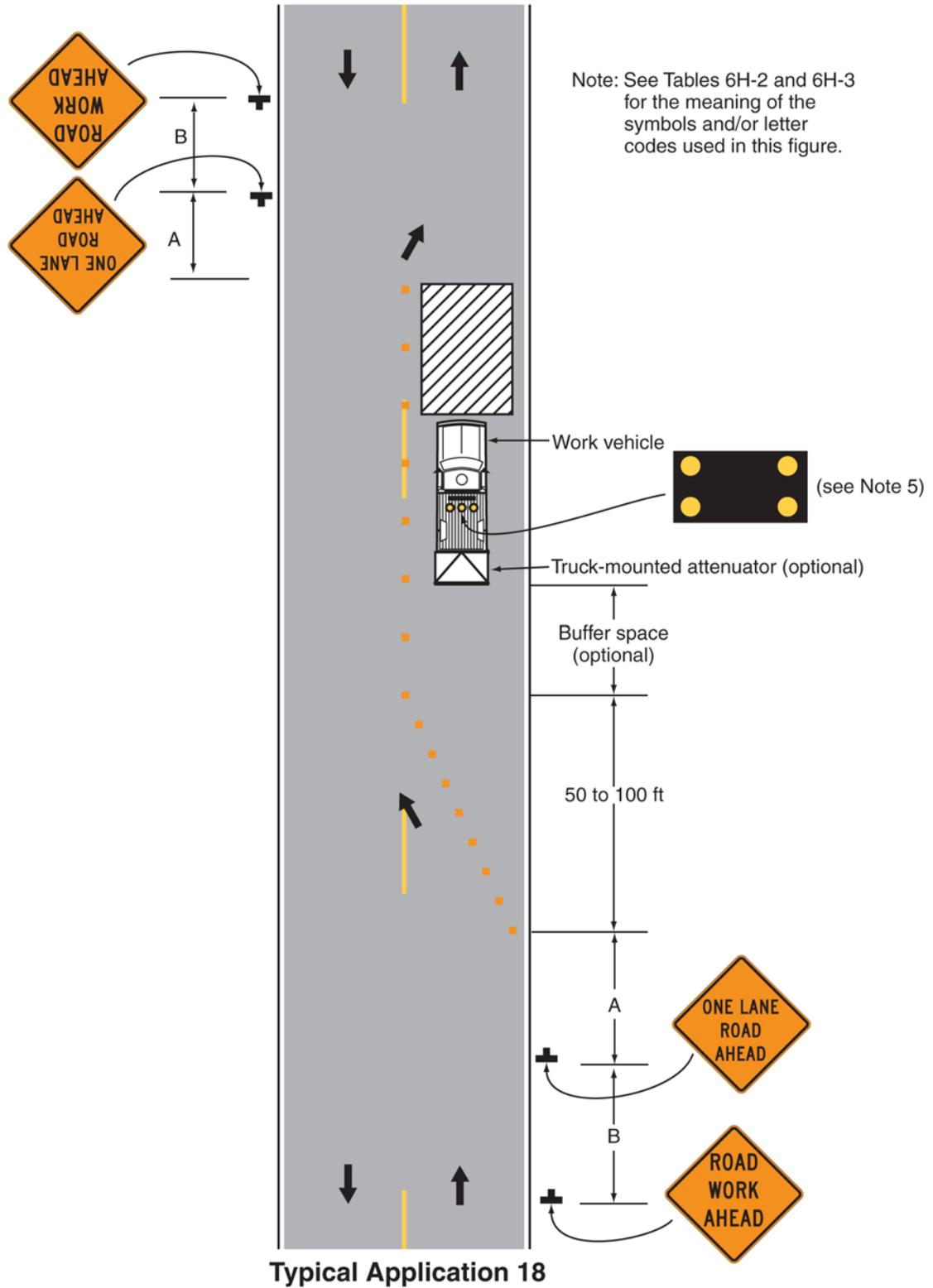
3. Where vehicular traffic cannot effectively self-regulate, one or two flaggers shall be used as illustrated in Figure 6H-10.

Option:

4. Truck-mounted attenuators may be used for all operations along roadways with a posted speed limit or 85th-percentile speed less than or equal to 40 mph.

5. Arrow boards may be omitted from work vehicles that cannot support the installation of an arrow board.

Figure 6H-18. Lane Closure on a Minor Street (TA-18)
(Delaware Revision)



Notes for Figure 6H-20—Typical Application 20
Detour for a Closed Street
(Delaware Revision)

Standard:

- 1. All detours affecting state-maintained roadways shall have a detour plan approved by DelDOT Traffic.**
- 2. Before a road is closed to traffic, all necessary detour signs shall be in place along the corresponding detour route.**

Guidance:

- 3. Under emergency conditions, personnel should be provided to ensure a safe roadway closure until proper devices are in place.*
- 4. Proper devices should be in place within 24 hours of the start of the emergency operation.*
- 5. Regulatory traffic control devices should be modified as needed for the duration of the detour.*
- 6. On multi-lane streets, Detour signs with an Advance Turn Arrow should be used in advance of a turn.*
- 7. On multi-lane, divided highways, Detour signs should be mounted on both sides of the directional roadway where adequate lateral clearance is available on the left-hand side of the roadway to accommodate the additional signs.*
- 8. For complex or overlapping detours associated with unnumbered routes, a Street Name sign should be mounted with the Detour sign.*
- 9. Route Sign Directional assemblies should be used for long-term detours associated with numbered routes.*
- 10. Where drivers emerging from an intersecting roadway will not encounter an advance warning sign prior to the road closure, additional signs should be placed on the intersecting road.*

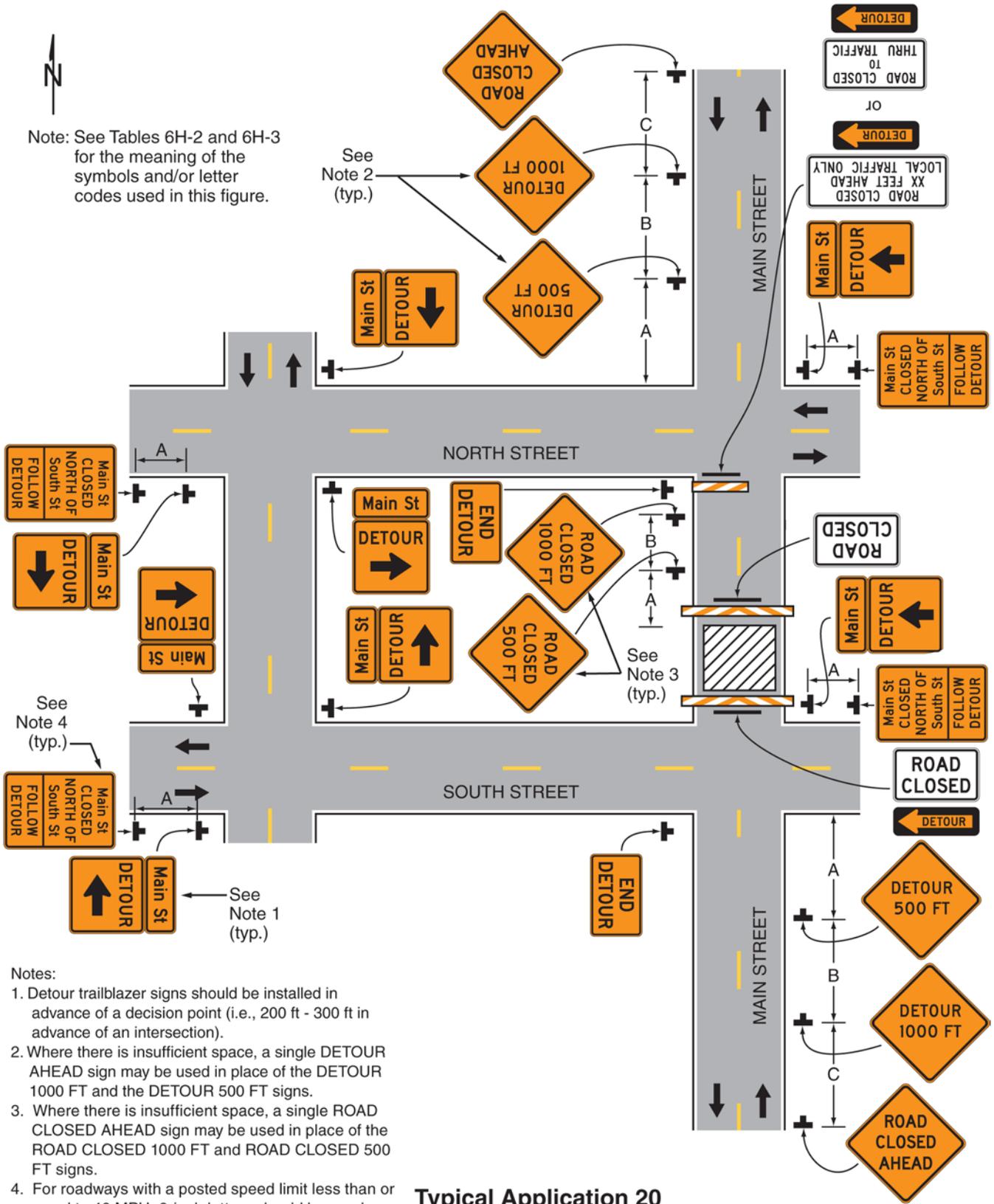
Option:

11. If the road is opened for some distance beyond the intersection and/or there are significant origin/destination points beyond the intersection, the ROAD CLOSED and DETOUR signs on Type 3 Barricades may be located at the edge of the traveled way.
12. Detour signs may be located on the far side of intersections. A Detour sign with an advance arrow may be used in advance of a turn.
13. A Street Name sign may be mounted with the Detour sign. The Street Name sign may be either white on green or black on orange.
14. Cardinal direction plaques may be used with route signs.
15. Additional temporary traffic control devices may be used for detours and road closures on multi-lane, divided highways based on engineering judgment.

Standard:

- 16. When used, the Street Name sign shall be placed above the Detour sign.**
- 17. Type 3 Barricades used at the point of the road closure shall extend entirely across the closed portion of the roadway, including any corresponding shoulders.**

Figure 6H-20. Detour for a Closed Street (TA-20)
(Delaware Revision)



Note: See Tables 6H-2 and 6H-3 for the meaning of the symbols and/or letter codes used in this figure.

See Note 2 (typ.)

See Note 3 (typ.)

See Note 4 (typ.)

See Note 1 (typ.)

Notes:

1. Detour trailblazer signs should be installed in advance of a decision point (i.e., 200 ft - 300 ft in advance of an intersection).
2. Where there is insufficient space, a single DETOUR AHEAD sign may be used in place of the DETOUR 1000 FT and the DETOUR 500 FT signs.
3. Where there is insufficient space, a single ROAD CLOSED AHEAD sign may be used in place of the ROAD CLOSED 1000 FT and ROAD CLOSED 500 FT signs.
4. For roadways with a posted speed limit less than or equal to 40 MPH, 6-inch letters should be used. For roadways with a posted speed limit greater than 40 MPH, 8-inch letters should be used.

Typical Application 20