



# National Committee on Uniform Traffic Control Devices

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Item No.: 20B-TTC-02

## NCUTCD Proposal for Changes to the Manual on Uniform Traffic Control Devices

**TECHNICAL COMMITTEE:** Temporary Traffic Control Technical Committee  
**ITEM NUMBER:** 20B-TTC-02  
**TOPIC:** Typical Application Coordination  
**ORIGIN OF REQUEST:** Tim Baughman  
**AFFECTED SECTIONS OF THE MUTCD:** Table 6H-1, Table 6H-2  
Notes for Figure 6H-8  
Notes for Figure 6H-9  
Notes for Figure 6H-10, Figure 6H-10  
Notes for Figure 6H-11, Figure 6H-11  
Notes for Figure 6H-12, Figure 6H-12  
Notes for Figure 6H-13, Figure 6H-13  
Notes for Figure 6H-14, Figure 6H-14  
Notes for Figure 6H-15, Figure 6H-15  
Notes for Figure 6H-16, Figure 6H-16  
Notes for Figure 6H-19  
Notes for Figure 6H-20  
**TASK FORCE MEMBERS:** Ryan Lancaster (chair), Tim Baughman, Scott Tison, Neil Boudreau, David Church, Dave Royer, Jim Bragdon, Fred Hanscom, Charles Adams, Laura Huizinga, Craig Rhodes, Tom Macchione, John Leonard

### DEVELOPMENT HISTORY:

- Approved by Task Force: 04/14/2020
- Approved by Technical Committee: 06/17/2020
- Revisions from sponsor comments approved by Task Force: 01/05/2021
- Revisions from sponsor comments approved by Technical Committee: 01/13/2021
- Approved by NCUTCD Council: 01/20/2021

*This is a proposal for recommended changes to the MUTCD that has been approved by the NCUTCD Council. This proposal does not represent a revision of the MUTCD and does not constitute official MUTCD standards, guidance, or options. It will be submitted to FHWA for consideration for inclusion in a future MUTCD revision. The MUTCD can be revised only through the federal rulemaking process.*

20 **SUMMARY:**

21 Eleven temporary traffic control typical applications are proposed to be revised. The revisions  
22 are due to several factors: worker safety concerns, conflicts with sections of Part 6 and other  
23 sections of the Manual, to clarify worker duties, the need to assess operational impacts on detour  
24 routes, clearer guidance on warning sign use and placement.

25  
26 **DISCUSSION**

27 Typical Applications 15 and 16 are proposed to be combined and revised for simplification and  
28 to address concerns safety concerns for workers. A note is added to four Typical Applications  
29 (TA-8, TA-9, TA-19, TA-20) to direct users to evaluate operational impacts on detour routes.  
30 Changes are proposed to TA-10, TA-11, TA-12, TA-13, TA-14 to provide clearer guidance and  
31 explanation regarding warning sign use and placement.

32  
33 The following are summaries of proposed revisions to the typical application notes, figures, or  
34 both:

35  
36 *Table 6H-1*

37 Typical Application 16 is proposed to be removed and the concepts combined with Typical  
38 Application 15.

39  
40 *Table 6H-2*

41 The surveyor symbol is used only in Typical Application 16. With the proposed removal of that  
42 typical application the symbol is no longer needed in the table.

43  
44 *Typical Applications 8, 9, 19, and 20*

45 A guidance statement is added to the notes to evaluate the impacts of additional traffic on a  
46 detour route.

47  
48 *Typical Application 10*

49 In note 3, use of the ROAD WORK AHEAD should not be optional; it should be used in  
50 flagging applications, regardless of work duration. Use of the END ROAD WORK sign is  
51 optional in Part 6 regardless of work duration. For these reasons note 3 is proposed to be deleted  
52 in its entirety.

53  
54 A second sentence should be added to note 7 to indicate that the sign spacing criteria in Table  
55 6H-3 should be used for all four signs in the sequence. This is necessary so the BE PREPARED  
56 TO STOP sign is not placed at a ½ B distance between the Flagger symbol and ONE LANE  
57 ROAD signs, just in the middle of these two signs. Indication of the spacing distance seems  
58 unnecessary given that the A, B, and C dimensions are the same for urban (low speed), urban  
59 (high speed), and rural road types and the typical application is not for use on expressways or  
60 freeways.

61  
62 On Figure 6H-10 “(optional)” is added adjacent to the END ROAD WORK signs for consistency  
63 throughout the typical applications. Currently there is inconsistency in showing the END ROAD  
64 WORK sign and whether its use is optional. These inconsistencies will be addressed as typical  
65 applications are revised.

66  
67 *Typical Application 11*  
68 In note 3, warning lights are not suggested on the Yield Ahead warning sign and the YIELD  
69 regulatory sign - the most important signs in the series. And in this option for a night lane  
70 closure, Type B warning lights are suggested when they should be Type A. Recommend that the  
71 note be revised, similar to note 3 for Typical Application 10 “Flashing warning lights and/or  
72 flags may be used to call attention to the advance warning signs.”  
73

74 On Figure 6H-11, remove warning light symbols above the signs. The use of warning lights is  
75 addressed in the revised note for this figure and are removed from the figure for consistency with  
76 other typical application figures.  
77

78 *Typical Application 12*  
79 Note 7 presents guidance that sign locations may need to be adjusted. Presently it states that  
80 “recognizing that the distances shown for sign spacings are minimums”. However, Section  
81 6C.04, P06 indicates that, “These distances should be adjusted for field conditions, if necessary,  
82 by increasing or decreasing the recommended distances.” An example of decreasing a sign  
83 spacing is in Section 6C.04, P07 – at intersections or major driveways. Therefore, the note is  
84 proposed to be revised by deleting that sign spacings are minimums.  
85

86 In note 9, warning lights are not suggested on the Signal Ahead warning signs - the most  
87 important signs in the series. Recommend that note 8 be revised, similar to note 3 for Typical  
88 Application 10 “Flashing warning lights and/or flags may be used to call attention to the advance  
89 warning signs.”  
90

91 Given that Typical Application 12 is similar to Typical Application 10 except in the method for  
92 indicating right-of-way, it is proposed to add the text from Typical Application 10 regarding  
93 optional use of the BE PREPARED TO STOP sign. This text is added to the end of note 9 and a  
94 guidance statement is added after note 10.  
95

96 On Figure 6H-12, remove warning light symbols above the signs. The use of warning lights is  
97 addressed in the revised note for this figure and are removed from the figure for consistency with  
98 other typical application figures.  
99

100 Also on Figure 6H-12 “(optional)” is added adjacent to the END ROAD WORK signs for  
101 consistency throughout the typical applications. Currently there is inconsistency in showing the  
102 END ROAD WORK sign and whether its use is optional. These inconsistencies will be  
103 addressed as typical applications are revised.  
104

105 *Typical Application 13*  
106 The option in note 4 is proposed to be reversed to make use of the BE PREPARED TO STOP  
107 sign typical and omission of it optional. In following the idea of a typical three-sign sequence in  
108 advance of a work zone, the BE PREPARED TO STOP sign should be used unless there is  
109 reason to omit it. The sign is shown on the figure making, note 5 (note 6 after 01/10/2020  
110 council approved recommended changes) unnecessary.  
111

112 On Figure 6H-13, remove the “(optional)” tags by the BE PREPARED TO STOP signs.  
113

114 Also on Figure 6H-13, the END ROAD WORK sign is added with accompanying “(optional)”  
115 text next to the sign for consistency throughout the typical applications. Currently there is  
116 inconsistency in showing the END ROAD WORK sign and whether its use is optional. These  
117 inconsistencies will be addressed as typical applications are revised.  
118

119 *Typical Application 14*

120 Recommend adding an option similar to note 4 from Typical Application 10 “Flashing warning  
121 lights and/or flags may be used to call attention to the advance warning signs.” On Figure 6H-14,  
122 remove warning light symbols above the signal ahead sign. The use of warning lights is addressed  
123 in the new note for this figure and are removed from the figure for consistency with other typical  
124 application figures.  
125

126 Since some states do not typically use the NO PASSING ZONE pennant sign, “(optional)” is added  
127 adjacent to this sign in Figure 6H-14.  
128

129 *Typical Applications 15 and 16*

130 Due to the exposure workers will have in Typical Application 15, the proposed changes to  
131 Typical Application 15 include a new note 3 is copied from Typical Application 6 that indicates  
132 the typical application should be used on low speed roads, that a lane should be closed on higher  
133 speed roads, and references to Typical Applications 10 or 12 if the roadway has high volumes or  
134 high speeds.  
135

136 Note 7 (originally note 4) is recommended to be revised to remove “heavy vehicles.” In Typical  
137 Application 15, the length and width of vehicles are relevant, not the vehicle weight.  
138 Additionally, “low volume” and “low speed roadways” should be deleted from the sentence  
139 because they are redundant with the proposed title of the typical application.  
140

141 A clarification is needed for note 8 (originally note 5) about eliminating channelizing devices or  
142 high level warning device if a work vehicle is used – this should only be an option for mobile or  
143 short duration work.  
144

145 On Figure 6H-15 “(optional)” is added adjacent to the END ROAD WORK signs for consistency  
146 throughout the typical applications. Currently there is inconsistency in showing the END ROAD  
147 WORK sign and whether its use is optional. These inconsistencies will be addressed as typical  
148 applications are revised.  
149

150 The task force identified several deficiencies in Typical Application 16, the most egregious of  
151 which is use of flaggers in the center of the road performing non-flagging duties. While  
152 proposing revisions, it was decided that Typical Application 16 appears to be a surveying  
153 specific application of Typical Application 15 and that the relevant information can be addressed  
154 in revisions to Typical Application 15. The task force also supposes that surveying equipment  
155 and practices have evolved to the point where it is unlikely to necessitate the setup shown in  
156 Typical Application 16. The task force recommends combining Typical Applications 15 and 16.  
157 The notes and figure for Typical Application 16 are proposed to be removed. Concepts from

158 Typical Application 16 are added to Typical Application 15 as two additional notes regarding the  
159 use of spotters, rather than flaggers, and Survey Crew warning signs. They are:

- 160 • “A spotter should be used to warn workers and surveyors who cannot watch road users.  
161 The spotter should be provided with an audible warning device, such as a two-way radio,  
162 air horn, or whistle.”
- 163 • “A SURVEY CREW sign may be used in place of the ROAD WORK AHEAD sign.”

164

#### 165 **RECOMMENDED MUTCD CHANGES**

167 The following present the proposed changes to the current MUTCD within the context of the  
168 current MUTCD language. Proposed additions to the MUTCD are shown in blue underline and  
169 proposed deletions from the MUTCD are shown in ~~red-strikethrough~~. Changes previously  
170 approved by NCUTCD Council (but not yet adopted by FHWA) are shown in green double  
171 underline for additions and ~~green-double-strikethrough~~ for deletions. In some cases, background  
172 comments may be provided with the MUTCD text. These comments are indicated by [black font  
173 in brackets highlighted light blue].

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175  
176  
177


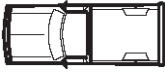





















**PART 6. TEMPORARY TRAFFIC CONTROL**  
**CHAPTER 6H. TYPICAL APPLICATIONS**

**Table 6H-1. Index to Typical Applications**

Typical Application Description	Typical Application Number
<b>Work Outside of the Shoulder (see Section 6G.06)</b>	
Work Beyond the Shoulder	TA-1
Blasting Zone	TA-2
<b>Work on the Shoulder (see Sections 6G.07 and 6G.08)</b>	
Work on the Shoulders	TA-3
Short Duration or Mobile Operation on a Shoulder	TA-4
Shoulder Closure on a Freeway	TA-5
Shoulder Work with Minor Encroachment	TA-6
<b>Work Within the Traveled Way of a Two-Lane Highway (see Section 6G.10)</b>	
Road Closed with a Diversion	TA-7
Roads Closed with an Off-Site Detour	TA-8
Overlapping Routes with a Detour	TA-9
Lane Closure on a Two-Lane Road Using Flaggers	TA-10
Lane Closure on a Two-Lane Road with Low Traffic Volumes	TA-11
Lane Closure on a Two-Lane Road Using Traffic Control Signals	TA-12
Temporary Road Closure	TA-13
Haul Road Crossing	TA-14
Work in the Center of a Road with Low Traffic Volumes	TA-15
<del>Surveying Along the Center Line of a Road with Low Traffic Volumes</del>	<del>TA-16</del>
Mobile Operations on a Two-Lane Road	TA-17
<b>Work Within the Traveled Way of an Urban Street (see Section 6G.11)</b>	
Lane Closure on a Minor Street	TA-18
Detour for One Travel Direction	TA-19
Detour for a Closed Street	TA-20
<b>Work Within the Traveled Way at an Intersection and on Sidewalks (see Section 6G.13)</b>	
Lane Closure on the Near Side of an Intersection	TA-21
Right-Hand Lane Closure on the Far Side of an Intersection	TA-22
Left-Hand Lane Closure on the Far Side of an Intersection	TA-23
Half Road Closure on the Far Side of an Intersection	TA-24
Multiple Lane Closures at an Intersection	TA-25
Closure in the Center of an Intersection	TA-26
Closure at the Side of an Intersection	TA-27
Sidewalk Detour or Diversion	TA-28
Crosswalk Closures and Pedestrian Detours	TA-29
<b>Work Within the Traveled Way of a Multi-Lane, Non-Access Controlled Highway (see Section 6G.12)</b>	
Interior Lane Closure on a Multi-Lane Street	TA-30
Lane Closure on a Street with Uneven Directional Volumes	TA-31
Half Road Closure on a Multi-Lane, High-Speed Highway	TA-32
Stationary Lane Closure on a Divided Highway	TA-33
Lane Closure with a Temporary Traffic Barrier	TA-34
Mobile Operation on a Multi-Lane Road	TA-35
<b>Work Within the Traveled Way of a Freeway or Expressway (see Section 6G.14)</b>	
Lane Shift on a Freeway	TA-36
Double Lane Closure on a Freeway	TA-37
Interior Lane Closure on a Freeway	TA-38
Median Crossover on a Freeway	TA-39
Median Crossover for an Entrance Ramp	TA-40
Median Crossover for an Exit Ramp	TA-41
Work in the Vicinity of an Exit Ramp	TA-42
Partial Exit Ramp Closure	TA-43
Work in the Vicinity of an Entrance Ramp	TA-44
Temporary Reversible Lane Using Movable Barriers	TA-45
<b>Work in the Vicinity of a Grade Crossing (see Section 6G.18)</b>	
Work in the Vicinity of a Grade Crossing	TA-46

178

**Table 6H-2. Meaning of Symbols on Typical Application Diagrams**

	Arrow board		Shadow vehicle
	Arrow board support or trailer (shown facing down)		Sign (shown facing left)
	Changeable message sign or support trailer		Surveyor
	Channelizing device		Temporary barrier
	Crash cushion		Temporary barrier with warning light
	Direction of temporary traffic detour		Traffic or pedestrian signal
	Direction of traffic		Truck-mounted attenuator
	Flagger		Type 3 barricade
	High-level warning device (Flag tree)		Warning light
	Longitudinal channelizing device		Work space
	Luminaire		Work vehicle
	Pavement markings that should be removed for a long-term project		

179  
180  
181

182 **Notes for Figure 6H-8—Typical Application 8**  
183 **Road Closure with an Off-Site Detour**

184 *Guidance:*

- 185 1. *Regulatory traffic control devices should be modified as needed for the duration of the*  
186 *detour.*
- 187 2. *The detour route should be evaluated using engineering judgment to assess the impacts*  
188 *from additional traffic directed onto the detour.*

189 *Option:*

- 190 ~~2.3.~~ If the road is opened for some distance beyond the intersection and/or there are  
191 significant origin/destination points beyond the intersection, the ROAD CLOSED and  
192 DETOUR signs on Type 3 Barricades may be located at the edge of the traveled way.
- 193 ~~3.4.~~ A Route Sign Directional assembly may be placed on the far left corner of the  
194 intersection to augment or replace the one shown on the near right corner.
- 195 ~~4.5.~~ Flashing warning lights and/or flags may be used to call attention to the advance  
196 warning signs.
- 197 ~~5.6.~~ Cardinal direction plaques may be used with route signs.

198  
199 **Notes for Figure 6H-9—Typical Application 9**  
200 **Overlapping Routes with a Detour**

201 *Support:*

- 202 1. TTC devices are shown for one direction of travel only.

203 **Standard:**

- 204 2. **Devices similar to those depicted shall be placed for the opposite direction of travel.**

205 *Guidance:*

- 206 3. *STOP or YIELD signs displayed to side roads should be installed as needed along the*  
207 *temporary route.*
- 208 4. *The detour route should be evaluated using engineering judgment to assess the impacts*  
209 *from additional traffic directed onto the detour.*

210 *Option:*

- 211 ~~4.5.~~ Flashing warning lights and/or flags may be used to call attention to the advance  
212 warning signs.
- 213 ~~5.6.~~ Flashing warning lights may be used on the Type 3 Barricades.
- 214 ~~6.7.~~ Cardinal direction plaques may be used with route signs.



215 **Notes for Figure 6H-10 – Typical Application 10**  
216 **Lane Closure on a Two-Lane Road Using Flaggers**

217 Option:

218 1. Positive protection devices may be used per Section 6F.84a. [approved by Council  
219 01/10/2020]

220 ~~2.~~ For low-volume situations with short work zones on straight roadways where the  
221 flagger is visible to road users approaching from both directions, a single flagger,  
222 positioned to be visible to road users approaching from both directions, may be used  
223 (see Chapter 6E).

224 ~~3.~~ ~~The ROAD WORK AHEAD and the END ROAD WORK signs may be omitted for~~  
225 ~~short duration operations.~~

226 4.3. Flashing warning lights and/or flags may be used to call attention to the advance  
227 warning signs. A BE PREPARED TO STOP sign may be added to the sign series.

228 Guidance:

229 ~~5.4.~~ *The buffer space should be extended so that the two-way traffic taper is placed before*  
230 *a horizontal (or crest vertical) curve to provide adequate sight distance for the flagger*  
231 *and a queue of stopped vehicles.*

232 Standard:

233 ~~6.5.~~ **At night, flagger stations shall be illuminated, except in emergencies.**

234 Guidance:

235 ~~7.6.~~ *When used, the BE PREPARED TO STOP sign should be located between the Flagger*  
236 *sign and the ONE LANE ROAD sign. When the BE PREPARED TO STOP sign is*  
237 *added, sign spacing criteria in Table 6H-3 should be used for all four signs in the*  
238 *sequence.*

239 ~~8.7.~~ *When a grade crossing exists within or upstream of the transition area and it is*  
240 *anticipated that queues resulting from the lane closure might extend through the grade*  
241 *crossing, the TTC zone should be extended so that the transition area precedes the*  
242 *grade crossing.*

243 ~~9.8.~~ *When a grade crossing equipped with active warning devices exists within the activity*  
244 *area, provisions should be made for keeping flaggers informed as to the activation*  
245 *status of these warning devices.*

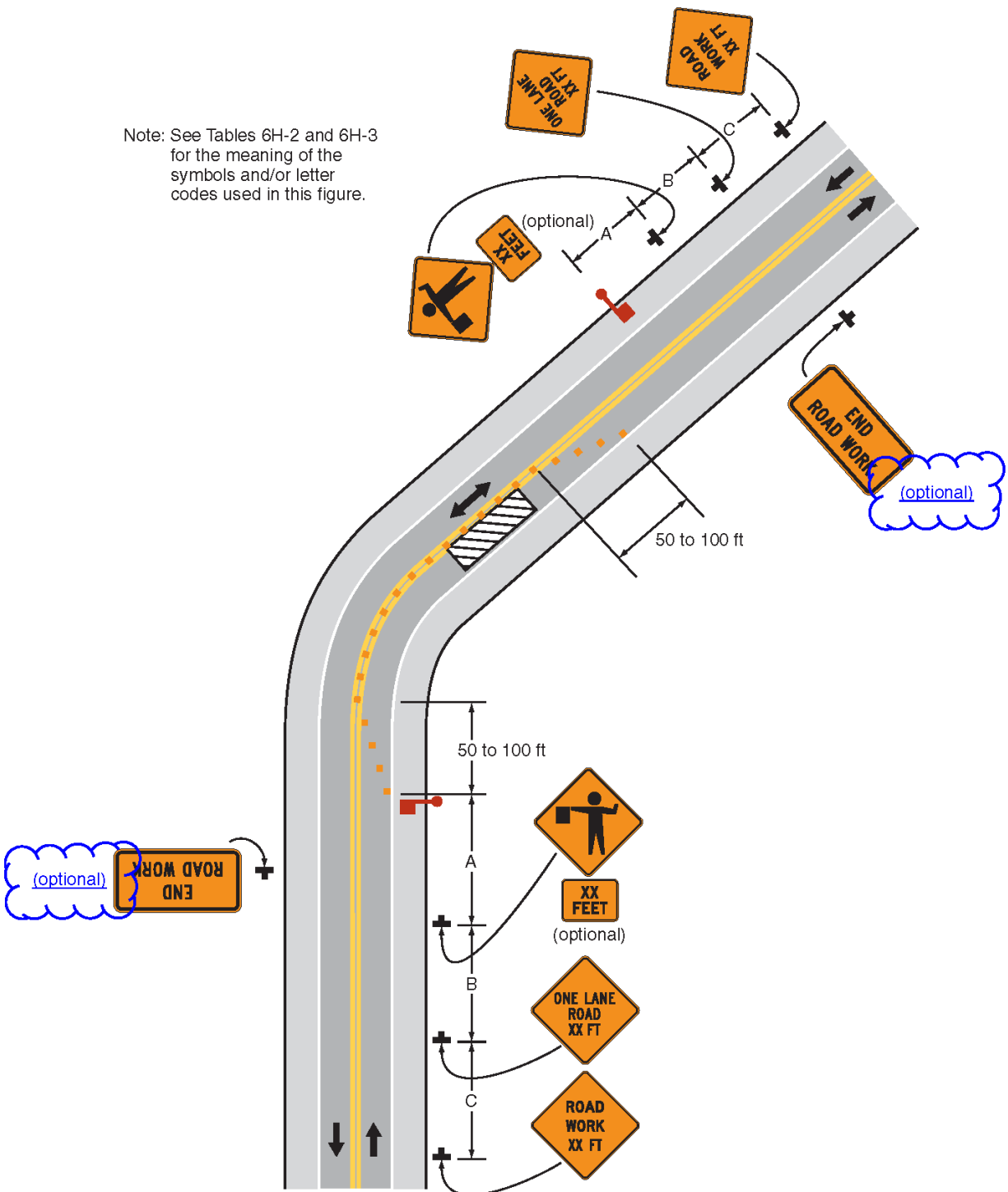
246 ~~10.9.~~ *When a grade crossing exists within the activity area, drivers operating on the left-*  
247 *hand side of the normal center line should be provided with comparable warning*  
248 *devices as for drivers operating on the right-hand side of the normal center line.*

249 ~~11.10.~~ *Early coordination with the railroad company or light rail transit agency should occur*  
250 *before work starts.*

251 Option:

252 ~~12.11.~~ A flagger or a uniformed law enforcement officer may be used at the grade crossing to  
253 minimize the probability that vehicles are stopped within 15 feet of the grade crossing,  
254 measured from both sides of the outside rails.

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



Typical Application 10

255  
256

257 **Notes for Figure 6H-11 – Typical Application 11**  
258 **Lane Closure on a Two-Lane Road with Low Traffic Volumes**

259 Option:

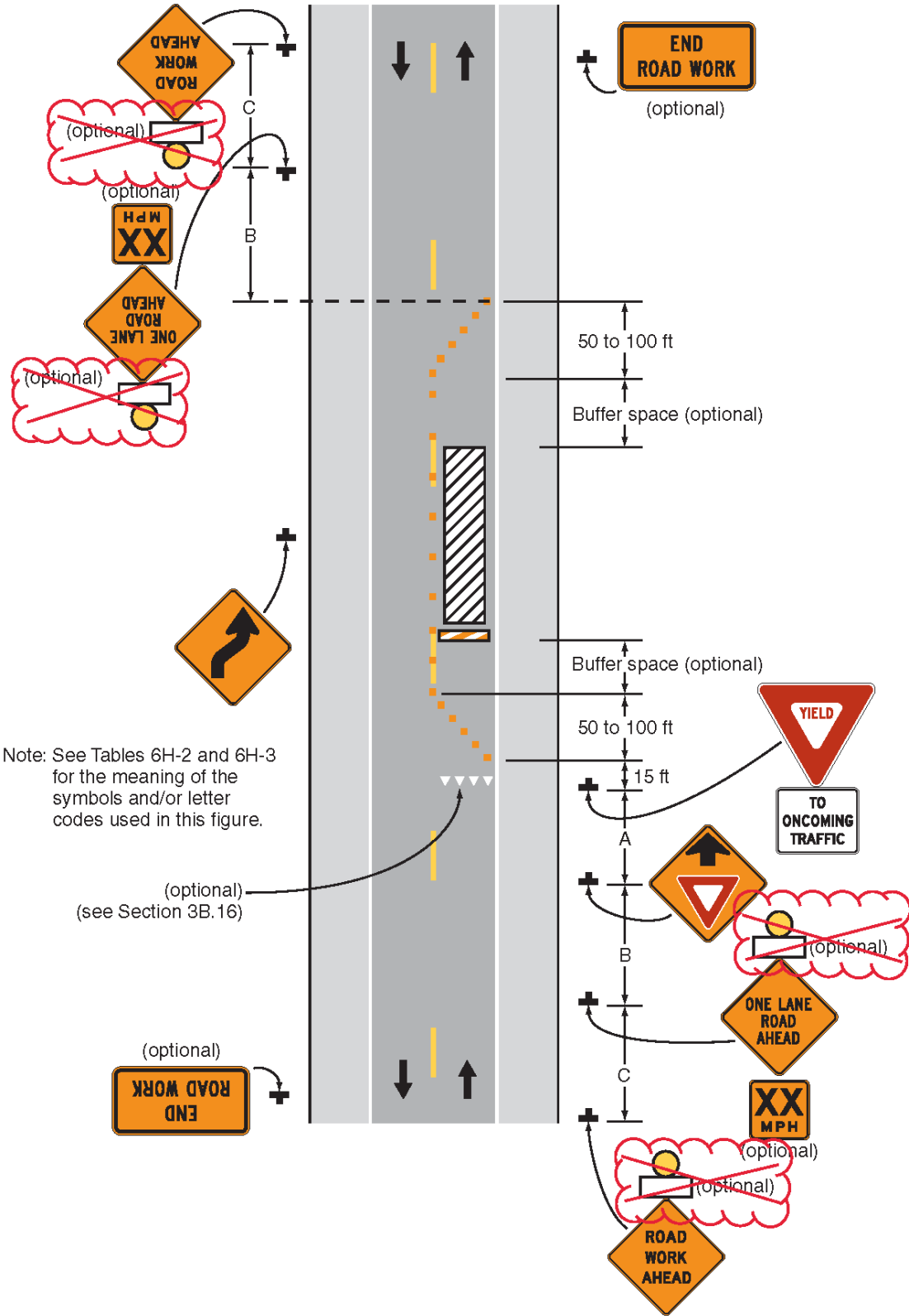
260 1. Positive protection devices may be used per Section 6F.84a. [approved by Council  
261 01/10/2020]

262 2. This TTC zone application may be used as an alternate to the TTC application shown in  
263 Figure 6H-10 (using flaggers) when the following conditions exist:

- 264 a. Vehicular traffic volume is such that sufficient gaps exist for vehicular traffic that  
265 must yield.  
266 b. Road users from both directions are able to see approaching vehicular traffic through  
267 and beyond the worksite and have sufficient visibility of approaching vehicles.

268 3. ~~The Type B flashing warning lights may be placed on the ROAD WORK AHEAD and~~  
269 ~~the ONE LANE ROAD AHEAD signs whenever a night lane closure is necessary.~~  
270 Flashing warning lights and/or flags may be used to call attention to the advance  
271 warning signs.

**Figure 6H-11. Lane Closure on a Two-Lane Road with Low Traffic Volumes (TA-11)**



Notes for Figure 6H-12 – Typical Application 12  
Lane Closure on a Two-Lane Road Using Traffic Control Signals

Standard:

1. Temporary traffic control signals shall be installed and operated in accordance with the provisions of Part 4. Temporary traffic control signals shall meet the physical display and operational requirements of conventional traffic control signals.
2. Temporary traffic control signal timing shall be established by authorized officials. Durations of red clearance intervals shall be adequate to clear the one-lane section of conflicting vehicles.
3. When the temporary traffic control signal is changed to the flashing mode, either manually or automatically, red signal indications shall be flashed to both approaches.
4. Stop lines shall be installed with temporary traffic control signals for intermediate and long-term closures. Existing conflicting pavement markings and raised pavement marker reflectors between the activity area and the stop line shall be removed. After the temporary traffic control signal is removed, the stop lines and other temporary pavement markings shall be removed and the permanent pavement markings restored.
5. Safeguards shall be incorporated to avoid the possibility of conflicting signal indications at each end of the TTC zone.

Guidance:

6. Where no-passing lines are not already in place, they should be added.
7. Adjustments in the location of the advance warning signs should be made as needed to accommodate the horizontal or vertical alignment of the roadway, ~~recognizing that the distances shown for sign spacings are minimums~~. Adjustments in the height of the signal heads should be made as needed to conform to the vertical alignment.

Option:

8. Positive protection devices may be used per Section 6F.84a. [approved by Council 01/10/2020]
9. ~~Flashing warning lights shown on the ROAD WORK AHEAD and the ONE LANE ROAD AHEAD signs may be used.~~ Flashing warning lights and/or flags may be used to call attention to the advance warning signs. A BE PREPARED TO STOP sign may be added to the sign series.
10. Removable pavement markings may be used.

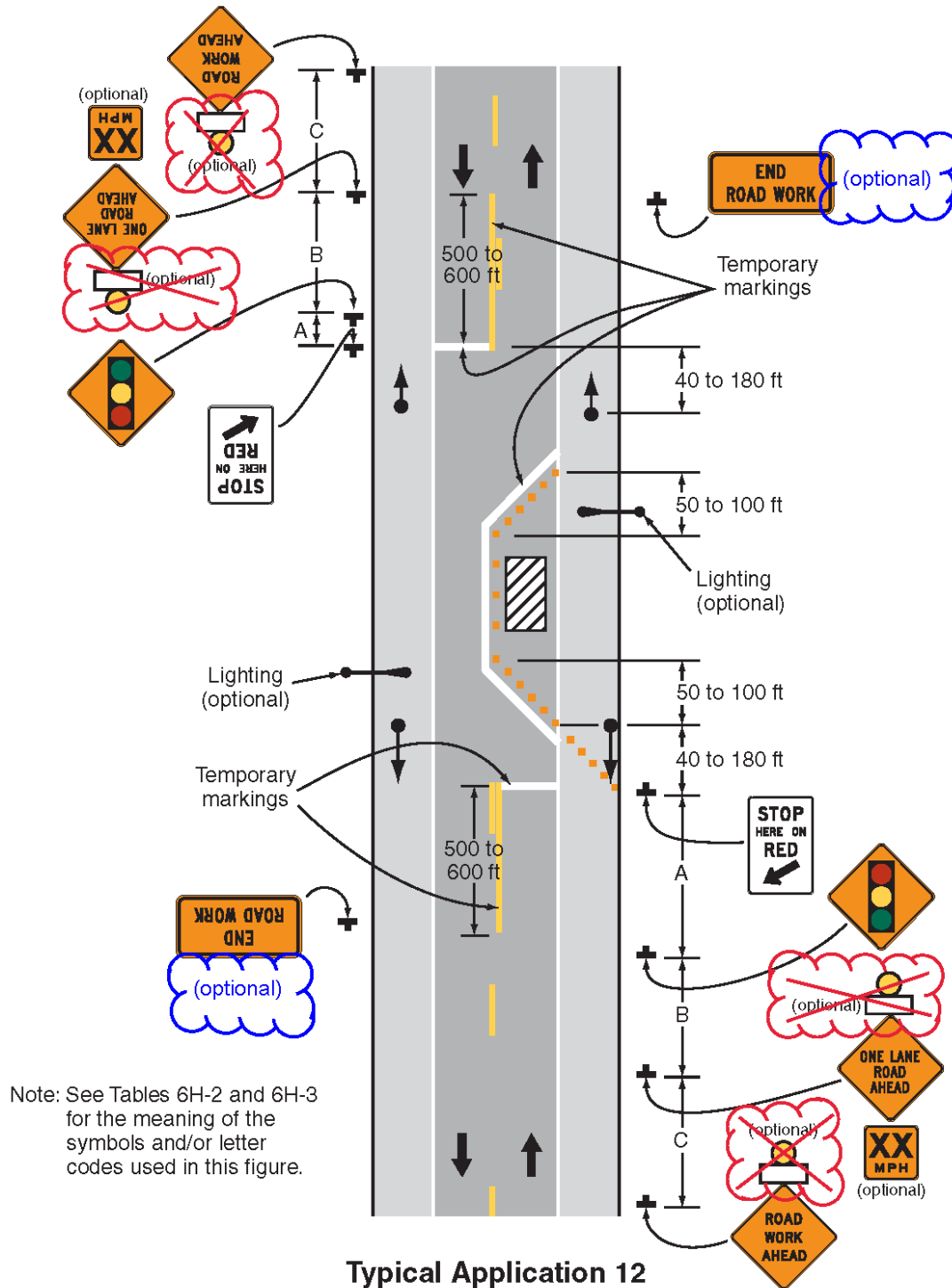
Guidance:

11. When used, the BE PREPARED TO STOP sign should be located between the Signal Ahead sign and the ONE LANE ROAD sign. When the BE PREPARED TO STOP sign is added, sign spacing criteria in Table 6H-3 should be used for all four signs in the sequence.

Support:

- ~~12~~.12. Temporary traffic control signals are preferable to flaggers for long-term projects and other activities that would require flagging at night.
- ~~13~~.13. The maximum length of activity area for one-way operation under temporary traffic control signal control is determined by the capacity required to handle the peak demand.

**Figure 6H-12. Lane Closure on a Two-Lane Road Using Traffic Control Signals (TA-12)**



**Typical Application 12**

320 **Notes for Figure 6H-13 – Typical Application 13**  
321 **Temporary Road Closure**

322 Support:

- 323 1. Conditions represented are a planned closure not exceeding 20 minutes during the  
324 daytime.

325 **Standard:**

- 326 2. **A flagger or uniformed law enforcement officer shall be used for this application.**  
327 **The flagger, if used for this application, shall follow the procedures provided in**  
328 **Sections 6E.07 and 6E.08.**

329 *Guidance:*

- 330 3. *The uniformed law enforcement officer, if used for this application, should follow the*  
331 *procedures provided in Sections 6E.07 and 6E.08.*

332 Option:

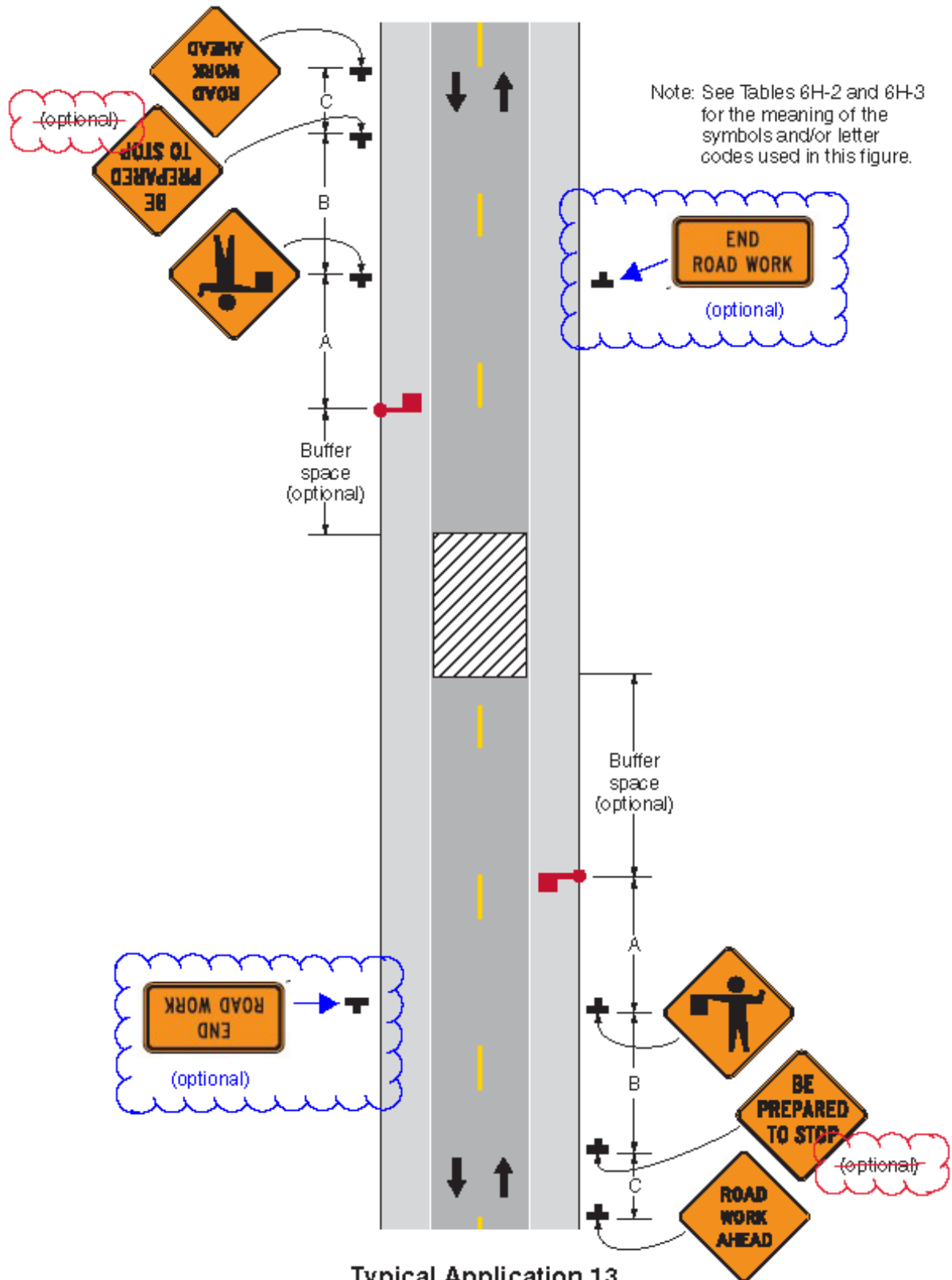
- 333 4. A BE PREPARED TO STOP sign may be ~~added~~ omitted from the sign series where the  
334 space to place signs is constrained.

- 335 5. Positive protection devices may be used per Section 6F.84a. [approved by Council  
336 01/10/2020]

337 *Guidance:*

- 338 6. ~~*When used, the BE PREPARED TO STOP sign should be located before the Flagger*~~  
339 ~~*symbol sign.*~~

Figure 6H-13. Temporary Road Closure (TA-13)



Typical Application 13



341 **Notes for Figure 6H-14 – Typical Application 14**  
342 **Haul Road Crossing**

343 *Guidance:*

- 344 1. *Floodlights should be used to illuminate haul road crossings where existing light is*  
345 *inadequate.*
- 346 2. *Where no-passing lines are not already in place, they should be added.*

347 **Standard:**

- 348 3. **The traffic control method selected shall be used in both directions.**

349 **Flagging Method**

- 350 4. **When a road used exclusively as a haul road is not in use, the haul road shall be**  
351 **closed with Type 3 Barricades and the Flagger symbol signs covered.**
- 352 5. **The flagger shall follow the procedures provided in Sections 6E.07 and 6E.08.**
- 353 6. **At night, flagger stations shall be illuminated, except in emergencies.**

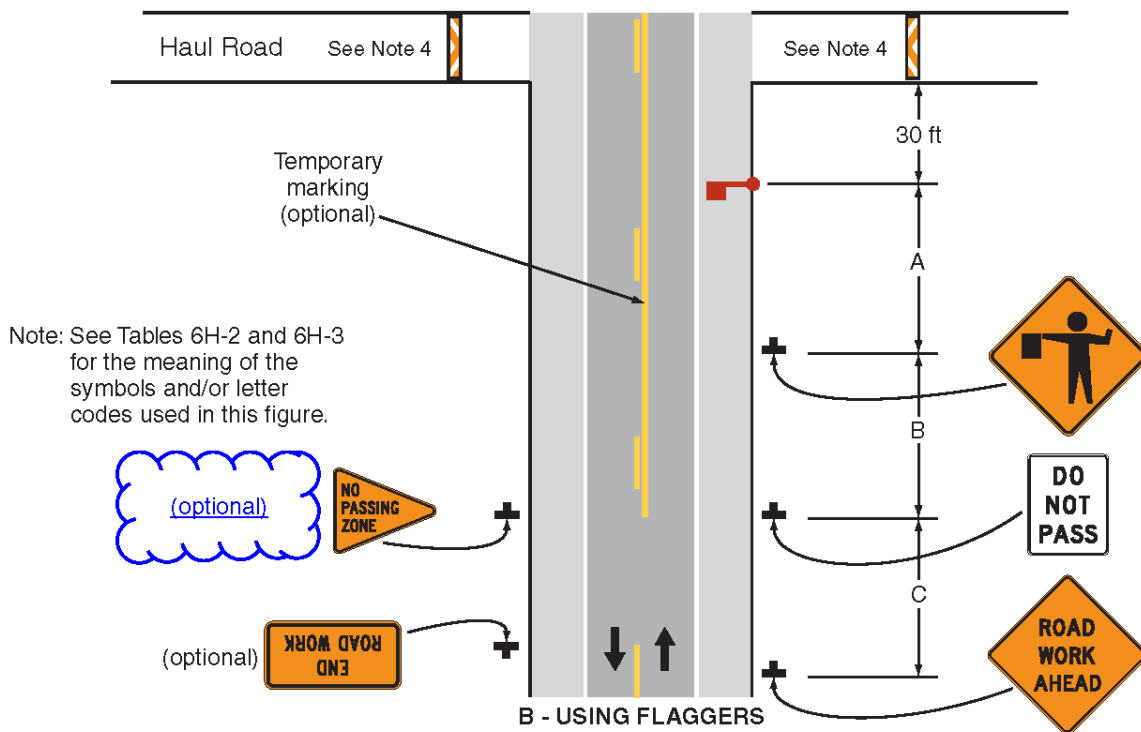
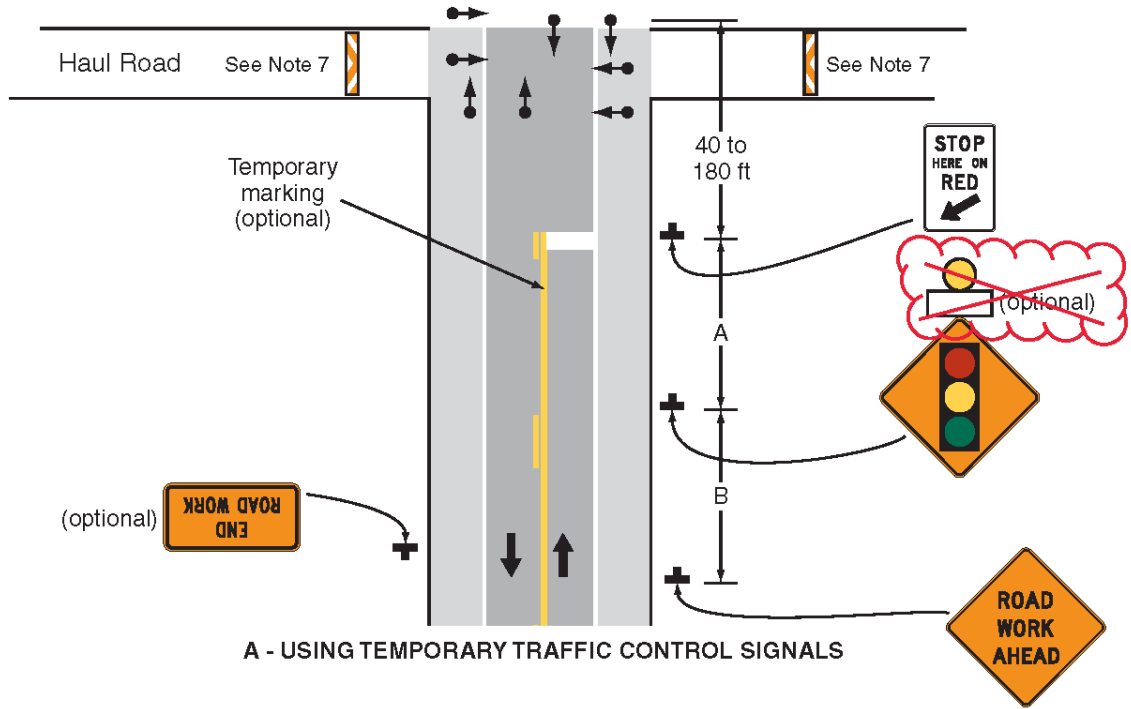
354 **Signalized Method**

- 355 7. **When a road used exclusively as a haul road is not in use, the haul road shall be**  
356 **closed with Type 3 Barricades. The signals shall either flash yellow on the main road**  
357 **or be covered, and the Signal Ahead and STOP HERE ON RED signs shall be**  
358 **covered or hidden from view.**
- 359 8. **The temporary traffic control signals shall control both the highway and the haul**  
360 **road and shall meet the physical display and operational requirements of**  
361 **conventional traffic control signals as described in Part 4. Traffic control signal**  
362 **timing shall be established by authorized officials.**
- 363 9. **Stop lines shall be used on existing highway with temporary traffic control signals.**
- 364 10. **Existing conflicting pavements markings between the stop lines shall be removed.**  
365 **After the temporary traffic control signal is removed, the stop lines and other**  
366 **temporary pavement markings shall be removed and the permanent pavement**  
367 **markings restored.**

368 **Option**

- 369 11. **Flashing warning lights and/or flags may be used to call attention to the advance warning**  
370 **signs.**

**Figure 6H-14. Haul Road Crossing (TA-14)**



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

**Typical Application 14**

**Notes for Figure 6H-15 – Typical Application 15**  
**Work in the Center of a Road with Low Traffic Volumes**

*Guidance:*

1. *The lanes on either side of the center work space should have a minimum width of 10 feet as measured from the near edge of the channelizing devices to the edge of the pavement or the outside edge of the paved shoulder.*
2. *A spotter or spotters should be used to warn workers and surveyors who cannot watch road users. The spotter(s) should be provided with an audible warning device, such as a two-way radio, air horn, or whistle.*
3. *The treatment shown should be used on a minor road having low speeds. For higher volume or higher speed traffic conditions, a lane closure should be used as shown in Figure 6H-10 or Figure 6H-12.*

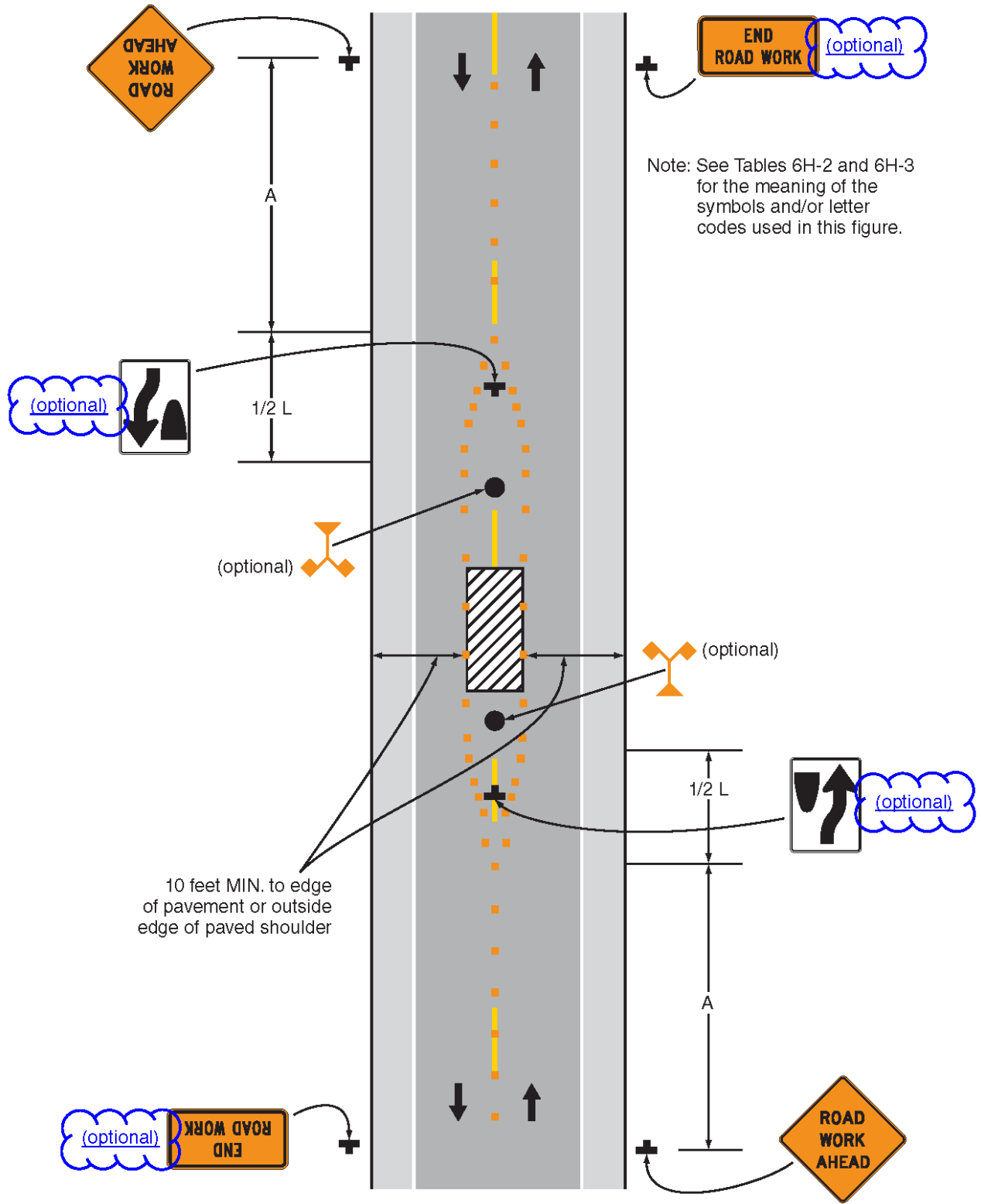
*Option:*

4. Positive protection devices may be used per Section 6F.84a. [approved by Council 01/10/2020]
5. A SURVEY CREW sign may be used in place of the ROAD WORK AHEAD sign.
- ~~2.6.~~ Flashing warning lights and/or flags may be used to call attention to the advance warning signs.
- ~~3.7.~~ If the closure continues overnight, warning lights may be used on the channelizing devices.
- ~~4.8.~~ A lane width of 9 feet may be used for short-term stationary work ~~on low-volume, low-speed roadways~~ when motor vehicle traffic does not include longer ~~and~~ or wider ~~heavy commercial~~ vehicles.
- ~~5.9.~~ A For mobile and short duration work, a work vehicle displaying high-intensity rotating, flashing, oscillating, or strobe lights may be used instead of the channelizing devices forming the tapers or the high-level warning devices.
- ~~6.10.~~ Vehicle hazard warning signals may be used to supplement high-intensity rotating, flashing, oscillating, or strobe lights.

**Standard:**

- ~~7.11.~~ **Vehicle hazard warning signals shall not be used instead of the vehicle's high-intensity rotating, flashing, oscillating, or strobe lights.**

**Figure 6H-15. Work in the Center of a Road with Low Traffic Volumes (TA-15)**



**Typical Application 15**

404 **Notes for Figure 6H-16—Typical Application 16**  
405 **Surveying Along the Center Line of a Road with Low Traffic Volumes**

406 *Guidance:*

- 407 1. ~~The lanes on either side of the center work space should have a minimum width of 10~~  
408 ~~feet as measured from the near edge of the channelizing devices to the edge of the~~  
409 ~~pavement or the outside edge of the paved shoulder.~~  
410 2. ~~Cones should be placed 6 to 12 inches on either side of the center line.~~  
411 3. ~~A flagger should be used to warn workers who cannot watch road users.~~

412  
413 **Standard:**

- 414 **4. For surveying on the center line of a high-volume road, one lane shall be closed**  
415 **using the information illustrated in Figure 6H-10.**

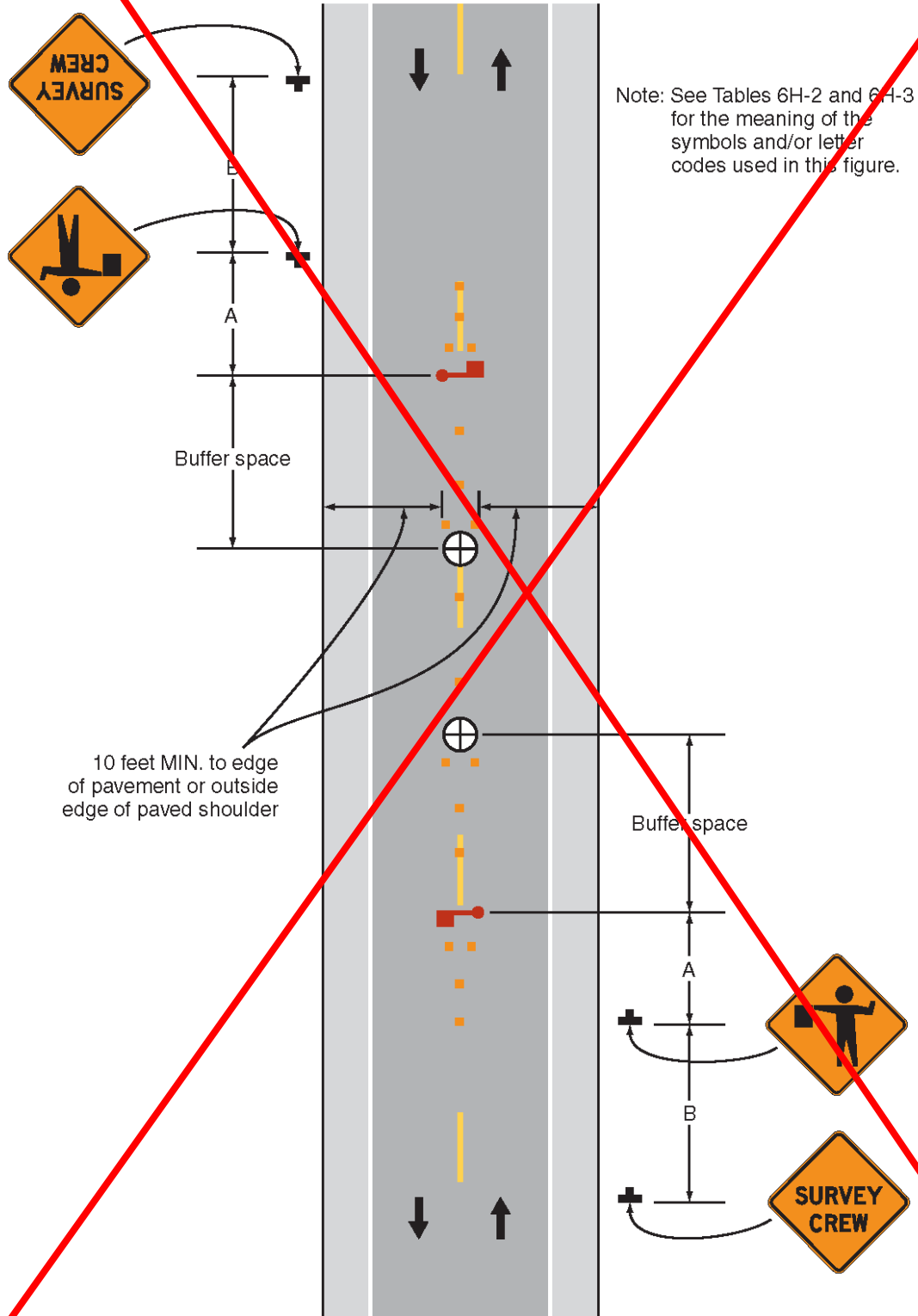
416 *Option:*

- 417 5. ~~A high-level warning device may be used to protect a surveying device, such as a~~  
418 ~~target on a tripod.~~  
419 6. ~~Cones may be omitted for a cross-section survey.~~  
420 7. ~~ROAD WORK AHEAD signs may be used in place of the SURVEY CREW~~  
421 ~~AHEAD signs.~~  
422 8. ~~Flags may be used to call attention to the advance warning signs.~~  
423 9. ~~If the work is along the shoulder, the flagger may be omitted.~~  
424 10. ~~For a survey along the edge of the road or along the shoulder, cones may be placed~~  
425 ~~along the edge line.~~  
426 11. ~~A BE PREPARED TO STOP sign may be added to the sign series.~~

427  
428 *Guidance:*

- 429 12. ~~When used, the BE PREPARED TO STOP sign should be located before the Flagger~~  
430 ~~symbol sign.~~

**Figure 6H-16. Surveying Along the Center Line of a Road with Low Traffic Volumes (TA-16)**



**Typical Application 16**

432 **Notes for Figure 6H-19 – Typical Application 19**  
433 **Detour for One Travel Direction**

434 *Guidance:*

- 435 1. *This plan should be used for streets without posted route numbers.*
- 436 2. *On multi-lane streets, Detour signs with an Advance Turn Arrow should be used in*  
437 *advance of a turn.*
- 438 3. *The detour route should be evaluated using engineering judgment to assess the impacts*  
439 *from additional traffic directed onto the detour.*

440 *Option:*

- 441 ~~3.4.~~ The STREET CLOSED legend may be used in place of ROAD CLOSED.
- 442 ~~4.5.~~ Additional DO NOT ENTER signs may be used at intersections with intervening streets.
- 443 ~~5.6.~~ Warning lights may be used on Type 3 Barricades.
- 444 ~~6.7.~~ Detour signs may be located on the far side of intersections.
- 445 ~~7.8.~~ A Street Name sign may be mounted with the Detour sign. The Street Name sign may be  
446 either white on green or black on orange.

447 **Standard:**

- 448 **~~8.9.~~ When used, the Street Name sign shall be placed above the Detour sign.**

451  
452 **Notes for Figure 6H-20 – Typical Application 20**  
453 **Detour for a Closed Street**

454 *Guidance:*

- 455 1. *This plan should be used for streets without posted route numbers.*
- 456 2. *On multi-lane streets, Detour signs with an Advance Turn Arrow should be used in*  
457 *advance of a turn.*
- 458 3. *The detour route should be evaluated using engineering judgment to assess the impacts*  
459 *from additional traffic directed onto the detour.*

460 *Option:*

- 461 ~~3.4.~~ Flashing warning lights and/or flags may be used to call attention to the advance  
462 warning signs.
- 463 ~~4.5.~~ Flashing warning lights may be used on Type 3 Barricades.
- 464 ~~5.6.~~ Detour signs may be located on the far side of intersections. A Detour sign with an  
465 advance arrow may be used in advance of a turn.
- 466 ~~6.7.~~ A Street Name sign may be mounted with the Detour sign. The Street Name sign may be  
467 either white on green or black on orange.

468 **Standard:**

- 469 **~~7.8.~~ When used, the Street Name sign shall be placed above the Detour sign.**

470 *Support:*

- 471 ~~8.9.~~ See Figure 6H-9 for the information for detouring a numbered highway.