CHAPTER 8E. PATHWAY AND SIDEWALK GRADE CROSSINGS

Section 8E.01 Purpose

Support:

01 Traffic control for pathway and sidewalk grade crossings includes all signs, signals, markings, other warning devices, and their supports at pathway and sidewalk grade crossings and along pathway and sidewalk approaches to grade crossings. The function of this traffic control is to promote safety and provide effective operation of both rail and pathway or sidewalk traffic at pathway or sidewalk grade crossings.

02 Other physical treatments that are described in this Chapter that are also applicable to pathways and sidewalks at grade crossings, such as detectable warnings, swing gates, and fencing, provide increased safety for pathway and sidewalk users.

03 Crosswalk markings at intersections where pedestrians cross LRT tracks in mixed-use alignments are covered by the provisions of Chapter 3C rather than by the provisions of this Chapter.

04 Figure 8E-1 illustrates the difference between a pathway grade crossing and a sidewalk grade crossing. A pathway is frequently placed in its own right-of-way on an alignment that is independent of any roadway. If a pathway is built parallel to a roadway, it is physically separated from the roadway by an open space or barrier such that the traffic control devices for the roadway grade crossing do not exert an influence over or provide adequate warning to pathway users. A sidewalk runs parallel to a roadway within the highway right-of-way and is close enough to the edge of the roadway's traveled way that the traffic control devices for the roadway grade crossing can frequently exert an influence over or provide adequate warning to sidewalk users. Pathways are typically used by both pedestrians and bicyclists, whereas sidewalks are typically used only by pedestrians.

Section 8E.02 Use of Standard Devices, Systems, and Practices

Guidance:

01 *The pathway or sidewalk user's ability to detect the presence of approaching rail traffic should be considered in determining the type and placement of traffic control devices at pathway or sidewalk grade crossings.*

02 *The traffic control devices, including the appropriate traffic control system to be used, and other physical treatments at a pathway or sidewalk grade crossing should be ~~determined~~ evaluated by a Diagnostic Team that includes the agency with jurisdiction over the pathway or sidewalk.*

03 *At skewed grade crossings, the adjustment, re-alignment, or relocation of existing sidewalk grade crossings should be considered when determining the placement of traffic control devices for roadway users.*

Support:

04 The safety of pathway and sidewalk users is enhanced when pathways and sidewalks are designed such that they do not cross the tracks at a narrow angle. The casters of wheelchairs and the wheels of bicycles could fall into and might be constrained in the flangeway gap at a skewed crossing. The flangeway gap is typically 2.5 inches wide at LRT grade crossings and 3 inches wide at railroad grade crossings.

05 It is desirable that pathways and sidewalks be designed such that they maintain a relatively consistent horizontal alignment and profile from the nearest rail to the detectable warning (if present) or from the nearest rail to the stop line (if present) on each approach to the crossing. Providing a pedestrian refuge area in advance of the stop line or the detectable warning surface so that pedestrians have a place to wait while rail traffic approaches and occupies the crossing can be beneficial to pedestrian safety.

06 When designing new sidewalk grade crossings, placing the sidewalk outside of the area occupied by grade crossing traffic control devices for vehicular traffic is desirable (see Figure 8E-2). This includes making sure that the counterweights and support arms for the automatic gates for vehicular traffic do not obstruct the sidewalk when the gate is fully lowered.

07 Additional information regarding the design of pathways and sidewalks is contained in the U.S. Department of Justice 2010 ADA Standards for Accessible Design, September 15, 2010, 28 CFR 35 and 36, Americans with Disabilities Act of 1990.

Section 8E.03 Pathway and Sidewalk Grade Crossing Signs and Markings

Standard:

01 **Pathway and sidewalk grade crossing signs shall be standard in shape, legend, and color.**

02 **The minimum sizes of sidewalk grade crossing signs that are intended to be viewed only by sidewalk users and of pathway grade crossing signs shall be as shown in the shared-use path column in Table 9A-1.**

Guidance:

03 *No portion of a traffic control device or its support should protrude into the pathway or sidewalk grade crossing. Sidewalk and pathway grade crossing traffic control devices should be located such that all physical features of the device, including the support hardware, conform to clearance requirements provided by the railroad company and/or transit agency, and ~~the regulatory agency with statutory authority (if applicable)~~ CPUC.*

04 *The minimum mounting height for post-mounted signs adjacent to pathways and sidewalks should be 4 feet, measured vertically from the bottom of the sign to the elevation of the near edge of the pathway or sidewalk surface (see Figure 9A-1).*

05 *If overhead traffic control devices are placed above pathways, the clearance from the bottom of the device to the pathway surface directly under the sign or device should be at least 8 feet.*

06 *If overhead traffic control devices are placed above pathways that are used by equestrians, the clearance from the bottom of the device to the pathway surface directly under the sign or device should be at least 10 feet.*

Standard:

07 **If overhead traffic control devices are placed above sidewalks, the clearance from the bottom of the device to the sidewalk surface directly under the sign or device shall be at least 7 feet.**

Guidance:

08 *Traffic control devices mounted adjacent to pathways at a height of less than 8 feet measured vertically from the bottom of the device to the elevation of the near edge of the pathway surface should have a minimum lateral offset of 2 feet from the near edge of the device to the near edge of the pathway (see Figure 9A-1).*

09 *If pathway users include those who travel faster than pedestrians, such as bicyclists or skaters, warning signs should be installed in advance of the pathway grade crossing (see Figure 8E-3).*

Option:

10 The Skewed Crossing (W10-12) sign (see Section 8B.22) may be used at a skewed pathway or sidewalk grade crossing to warn pathway or sidewalk users that the tracks are not perpendicular to the pathway or sidewalk.

11 The LOOK (R15-8) sign (see Figure 8B-1) may be used at a pathway or sidewalk grade crossing to inform pathway or sidewalk users to look in both directions prior to crossing the track(s).

Guidance:

12 *If a LOOK (R15-8) sign is used at a pathway or sidewalk grade crossing, it should be mounted on a separate post that is farther from the pathway or sidewalk than the Crossbuck sign or Crossbuck Assembly.*

Support:

13 The LOOK (R15-8) sign is used to provide additional warning for pedestrians and bicyclists.

Section 8E.04 Stop Lines, Edge Lines, and Detectable Warnings

Guidance:

01 *A stop line should be provided at a pathway grade crossing if the surface where the marking is to be applied is capable of retaining the application of the marking.*

Option:

02 A stop line may be provided at a sidewalk grade crossing if the surface where the marking is to be applied is capable of retaining the application of the marking.

Support:

02a At a sidewalk grade crossing, detectable warning is typically used without a stop line.

Guidance:

03 *If used at pathway or sidewalk grade crossings, the stop line should be a transverse line that extends across the full width of the pathway or sidewalk at the point where a pathway or sidewalk user is to stop. If no detectable warning is provided, the stop line should be placed at least 2 feet in advance of the automatic gate, counterweight, flashing-light signals, or Crossbuck Assembly (if any of these are present), and at least 12 feet from the nearest rail.*

Option:

04 Edge lines (see Section 3B.09) to delineate the designated user route may be used on the approach to and across the tracks at a pathway grade crossing, a sidewalk grade crossing, or a station crossing if the surface where the marking is to be applied is capable of retaining the application of the marking.

Support:

05 Edge line delineation can be beneficial where the distance across the tracks is long, commonly because of a skewed grade crossing or because of multiple tracks, or where the pathway or sidewalk surface is immediately adjacent to a traveled way.

06 Information regarding the design of detectable warning surfaces is contained in the U.S. Department of Justice 2010 ADA Standards for Accessible Design, September 15, 2010, 28 CFR 35 and 36, Americans with Disabilities Act of 1990.

Standard:

07 **Detectable warnings (see Chapter 3C) shall be used at pathway grade crossings where pedestrian travel is permitted and at sidewalk grade crossings and shall extend across the full width of the pathway or sidewalk.**

Guidance:

08 *The dimension of the detectable warning in the direction of pedestrian travel should be at least 2 feet.*

09 *Detectable warnings should be placed immediately beyond the pathway or sidewalk stop line (if a stop line is present) or should be incorporated into and made a part of the stop line. The downstream edge of the detectable warning should be located at least 2 feet upstream from the automatic gate, counterweight, flashing-light signals, or Crossbuck Assembly (if any of these are present), which would be on the side of the device further from the tracks, and at least 12 feet from the nearest rail (see Figures 8E-2 and 8E-3).*

10 *If the distance between the nearest rail of two adjacent tracks at a sidewalk or pathway grade crossing is 30 feet or more, additional detectable warnings should be used to designate the limits of the pedestrian refuge area (see Figure 8E-4).*

Option:

11 At pathway-LRT and sidewalk-LRT grade crossings, the downstream edge of the detectable warning may be located less than 12 feet from the nearest rail.

Guidance:

12 *The downstream edge of the detectable warning at pathway-LRT and sidewalk-LRT grade crossings should be located at least 2 feet upstream from the automatic gate, counterweight, flashing-light signals, or Crossbuck assembly (if any of these are present), at least 6 feet from the nearest rail as measured perpendicular to the rail and in accordance with the requirements of the railroad company and/or transit agency, and ~~regulatory agency with statutory authority (if applicable)~~ CPUC.*

Section 8E.05 Passive Traffic Control Devices– Crossbuck Assemblies

Standard:

01 **Where the nearest edge of a passive pathway or sidewalk grade crossing is located more than 25 feet from the center of the nearest traffic control warning device at the grade crossing, a Crossbuck Assembly (see Figure 8E-5) shall be installed on each approach to the pathway or sidewalk grade crossing. The distance shall be measured perpendicular to the traveled way from the center of the support post of a Crossbuck Assembly at a passive grade crossing or from the center of the mast of an active traffic control warning device at an active grade crossing to the nearest edge of the pathway or sidewalk surface where it crosses the track(s) (see Figure 8E-2).**

Option:

02 A Crossbuck Assembly may be installed on the approaches to a pathway or sidewalk grade crossing where the nearest edge of the pathway or sidewalk is located 25 feet or less from the center of the nearest traffic control warning device at a grade crossing.

03 The Crossbuck Assembly may be omitted at station crossings.

04 The retroreflective strip on the back of the support may be omitted on the Crossbuck support at a pathway or sidewalk grade crossing.

Standard:

05 **The minimum height, measured vertically from the bottom of the YIELD or STOP sign to the elevation of the near edge of the pathway or sidewalk, of Crossbuck Assemblies installed on pathways or sidewalks shall be 4**

feet where the lateral offset to the nearest edge of the sign is 2 feet or more and shall be 7 feet where the lateral offset to the nearest edge of the sign is less than 2 feet (see Figure 8E-5).

06 **The minimum lateral offset, measured horizontally from the nearest edge of the pathway or sidewalk to the nearest edge of the Crossbuck Assembly signs, shall be 0 feet for sidewalks and 2 feet for pathways.**

Section 8E.06 Channelizing Devices used with Sidewalk and Pathway Traffic Control Devices

Support:

01 The pathway or sidewalk user's ability to detect the presence of approaching rail traffic needs to be considered in determining the type and placement of channelizing devices such as swing gates, fencing, and pedestrian barriers.

02 Where automatic gates and swing gates are used, it is desirable to design the pathway or sidewalk in a manner that channelizes or directs users to the entrance to and exit from the pathway or sidewalk grade crossing.

02a Where automatic pedestrian gates are installed, swing gates are typically installed along an emergency escape route in conjunction with each automatic pedestrian gate.

03 Swing gates (see Figures 8E-6, 8E-9, and 8E-10) are designed to open away from the track(s) so that pathway or sidewalk users can quickly push the swing gate open when moving away from the track(s), and to automatically return to the closed position after each use.

04 It is important to use retroreflective material, appropriate object markers (see Section 9C.09), and/or signs on swing gates, maze fencing, or pedestrian barriers that are placed at pathway or sidewalk grade crossings. Illumination of such areas can also be beneficial.

05 When used in conjunction with automatic gates at a pathway or sidewalk grade crossing, swing gates are typically ~~equipped with a latching device that permits the swing gate~~ designed to be opened only from the track side of the swing gate. Push bars, kick plates, or similar devices are also appropriate for use on a swing gate.

06 Latching devices that are used on swing gates need to be designed in a manner such that they are operable by all users of the pathway or sidewalk.

Guidance:

07 *A swing gate should be equipped with a PUSH TO EXIT (I13-2) sign on the track side of the swing gate, and a DO NOT ENTER (R5-1) sign on the side of the swing gate facing away from the tracks (see Figure 8E-10).*

Support:

07a Where swing gates are placed along an emergency escape route near a roadway, signs mounted on the swing gate are typically oriented and sized to be visible to pedestrians rather than motorists.

08 The U.S. Department of Justice 2010 ADA Standards for Accessible Design, September 15, 2010, 28 CFR 35 and 36, Americans with Disabilities Act of 1990 contains information regarding the design of swing gates and related hardware.

09 Where fencing (see Figures 8E-6 and 8E-9) is installed to direct pathway or sidewalk users to the grade crossing, it is desirable that this fencing be connected to any continuous existing or new fencing or channelization that has been installed parallel to the track(s) to discourage pedestrians from circumventing the grade crossing.

10 Pedestrian barriers or fencing, sometimes referred to as a "maze fencing," direct pathway or sidewalk users to face approaching rail traffic before entering the trackway.

11 Where used, maze fencing or pedestrian barriers need to be designed to permit the passage of wheelchairs and power-assisted mobility devices, and if bicycles are permitted, to permit the passage of dismounted bicyclists with tandem bicycles, cargo bicycles, or bicycles with trailers.

Section 8E.07 Active Traffic Control Systems

Standard:

01 **Except as provided in Paragraph 5 of this Section, at pathway-LRT and sidewalk-LRT grade crossings where LRT operating speeds on a semi-exclusive alignment exceed 25 mph, active traffic control systems shall be used.**

02 **Except as provided in Paragraph 5 of this Section, at pathway-LRT and sidewalk-LRT grade crossings where LRT operating speeds on a semi-exclusive alignment exceed ~~40~~ 35 mph, active traffic control systems, including automatic gates, shall be used. Refer to CPUC General Order 143.**

03 **If used at a pathway or sidewalk grade crossing, an active traffic control system (see Section 8D.01) shall include flashing-light signals (see Figure 8E-7) on each approach to the crossing.**

~~*Guidance:*~~
Standard:

04 **If used at a pathway or sidewalk grade crossing, an active traffic control system (see Section 8D.01) ~~should~~ shall include an audible device such as a bell that is operated in conjunction with the flashing-light signals.**

Option:

05 Flashing-light signals, bells, and other audible warning devices may be omitted at pathway or sidewalk grade crossings that are located within 25 feet of an active warning device at a grade crossing that is equipped with those devices.

06 Additional pairs of flashing-light signals, bells, or other audible warning devices may be installed on the active traffic control devices at a grade crossing for pathway or sidewalk users approaching the grade crossing from the back side of those devices.

Guidance:

07 *Where railroad or LRT tracks in a semi-exclusive alignment are parallel and immediately adjacent to a roadway and if adequate space exists, a pedestrian refuge area or island should be provided between the tracks and the roadway to permit pedestrians to stand clear of the tracks while waiting to cross the roadway and to stand clear of the roadway while waiting to cross the tracks. If a pedestrian refuge area or island is provided at a signalized crossing of the roadway, additional pedestrian features (see Chapter 4I), such as signal heads, signing, and detectors, should be installed in the refuge area or on the island.*

Section 8E.08 Active Traffic Control Devices – Signals

Support:

01 Pedestrian signal heads are typically used at highway-highway intersections where pedestrians have an expectation that other roadway users will sometimes be legally required to yield the right-of-way to them. At grade crossings where rail traffic does not stop, pedestrians will not have the right-of-way yielded to them. Therefore, pedestrian signal heads are not an appropriate traffic control device to use at a pathway or sidewalk grade crossing where rail traffic does not stop. Instead, the universal application of horizontally-aligned, alternately-flashing red lights is the uniform active traffic control device for all grade crossings where rail traffic does not stop including pathway and sidewalk grade crossings.

Standard:

02 **Except as provided in Paragraph 3 of this Section, pedestrian signal heads as described in Chapter 4I comprised of Upraised Hand and Walking Person symbols shall not be used at a pathway or sidewalk grade crossing.**

Option:

03 Pedestrian signal heads may be used at a pathway or sidewalk grade crossing where the movement of LRT vehicles is controlled by a traffic control signal or by special LRT signals (see Section 8D.15).

Standard:

04 **If used at a pathway or sidewalk grade crossing, flashing-light signals shall be aligned horizontally and the light units shall have a diameter of at least ~~4~~ 12 inches. For ~~4-inch~~ 12-inch diameter light units, the light centers shall be spaced approximately ~~16~~ 30 inches apart and, if used, the flashing light unit backgrounds shall be at least ~~8~~ 24 inches in diameter.**

Support:

04a Refer to FHWA's List of Known Errors for error in Paragraph 4 text. Refer to Section 1A.04 for more details.

05 **Each red signal unit in the flashing-light signal shall flash alternately. The number of flashes per minute for each lamp shall be 35 minimum and 65 maximum. Each lamp shall be illuminated for approximately the same length of time. The total time of illumination of each pair of lamps shall be the entire operating time.**

06 **The minimum mounting height of the flashing-light signals shall be 4 feet, measured vertically from the bottom edge of the lights to the elevation of the near edge of the pathway or sidewalk surface.**

Option:

07 At station, pathway, or sidewalk grade crossings with multiple tracks, traffic control devices may be installed between the tracks in compliance with any railroad clearance requirements.

Standard:

08 **The mounting height for flashing-light signals that are installed between the tracks at multiple-track crossings shall be a minimum of 1 foot, measured vertically from the bottom edge of the lights to the elevation of the near**

edge of the pathway surface.

Guidance:

09 *If a Diagnostic Team finds that a flashing-light signal with a Crossbuck sign and an audible device is still not resulting in appropriate pedestrian behavior, consideration should be given to also installing an automatic pedestrian gate (see Section 8E.09).*

10 *Flashing-light signals (see Figure 8E-7) with a Crossbuck (R15-1) sign and an audible device should be installed along semi-exclusive LRT alignments at station, pathway, or sidewalk grade crossings where the Diagnostic Team has determined that the sight distance is not sufficient for pathway or sidewalk users to complete their crossing prior to the arrival of LRT traffic at the crossing.*

11 *If the Diagnostic Team determines that flashing-light signals with a Crossbuck sign and an audible device would not provide sufficient notice of approaching LRT traffic, consideration should be given to also installing an automatic pedestrian gate (see Section 8E.09) with appropriate channelization or fencing.*

Section 8E.09 Active Traffic Control Devices – Automatic Pedestrian Gates

Option:

01 Automatic pedestrian gates *(see Figures 8E-6, 8E-8, 8E-9, 8E-11, and 8E-12)* may be used at pathway or sidewalk grade crossings.

Support:

01a If used at a pathway or sidewalk grade crossing, an automatic pedestrian gate typically includes an audible device such as a bell, a Crossbuck (R15-1) sign, flashing-light signals, and, if applicable, the Pedestrian Grade Crossing Sign (R15-1D(CA)). Refer to CPUC General Order 75, as amended.

Standard:

02 **A pathway or sidewalk grade crossing across tracks where trains are permitted to travel at speeds of 80 mph or higher shall be equipped with a system of automatic pedestrian gates and an escape area with swing gates and fencing installed in the vicinity of the crossing to direct users to the pathway or sidewalk grade crossing (see Figure 8E-6) unless the Diagnostic Team recommends and CPUC determines that other safety treatments for the crossing would be more appropriate.**

Guidance:

03 *Where automatic pedestrian gates are installed across a pathway or sidewalk at a grade crossing, or where a sidewalk is located between the edge of a roadway and the support for an automatic gate arm that extends across the sidewalk and into the roadway, an emergency escape route (see Figures 8E-9 and 8E-10) should be provided to allow pedestrians to egress away from the track area when the automatic pedestrian gates are activated.*

Standard:

04 **~~Except as provided in Paragraph 6 of this Section,~~ automatic pedestrian gate arms shall be provided with at least one red light as shown in Figures 8E-6, 8E-8, 8E-9, 8E-11, and 8E-12. This light shall be continuously illuminated whenever the warning system is active.**

05 **If any red lights in addition to the continuously-illuminated red light that is required in Paragraph 4 of this Section are provided on the automatic pedestrian gate arm, they shall be installed in pairs and shall be flashed alternately in unison with the other flashing-light units at the crossing.**

~~Option:~~

06 ~~The red light on an automatic pedestrian gate arm may be omitted if the pathway or sidewalk grade crossing is located within 25 feet of the traveled way at a highway-rail or highway-LRT grade crossing that is equipped with active warning devices (see Figure 8E-11).~~

Guidance:

07 *If used at a pathway or sidewalk grade crossing, the height of the automatic pedestrian gate arm when in the down position should be a minimum of 3 feet and a maximum of 4 feet above the pathway or sidewalk.*

08 *If used at a pathway or sidewalk grade crossing, the gate configuration, which might include a combination of automatic pedestrian gates and swing gates, should provide for full-width coverage of the pathway or sidewalk on each approach to the crossing.*

Standard:

09 **Where a sidewalk is located between the edge of a roadway and the support for an automatic gate arm that extends across the sidewalk and into the roadway, the location, placement, and height prescribed for vehicular**

gates shall be used (see Section 8D.03).

Guidance:

10 *Except as provided in Paragraph 11 of this Section, if a separate automatic pedestrian gate is used for a sidewalk at a highway-rail or highway-LRT grade crossing, instead of a supplemental or auxiliary gate arm installed as a part of the same mechanism as the vehicular gate, a separate mechanism (see Figure 8E- 11) should be provided for the separate automatic pedestrian gate so that if a pedestrian manually raises the pedestrian gate arm, it will have no effect on the vehicular gate.*

Option:

11 A supplemental or auxiliary pedestrian gate arm installed as a part of the same mechanism as the vehicular gate may be used if the operating mechanism is designed to prevent the vehicular gate from being raised as a result of a pedestrian manually raising the pedestrian gate arm.

12 A horizontal hanging bar (see Figure 8E-12) may be attached to an automatic pedestrian gate at a pathway or sidewalk grade crossing to inform pedestrians with vision disabilities that the automatic pedestrian gate is in the down position and to reduce the likelihood that pedestrians will violate a lowered crossing gate.

Support:

12a Striping of the horizontal hanging bar typically matches the pattern of the gate arm.

Guidance:

13 *If a horizontal hanging bar is attached to an automatic pedestrian gate, the height of the horizontal hanging bar when in the down position should be a maximum of 26 inches above the pathway or sidewalk.*

Section 8E.10 Active Traffic Control Devices – Multiple-Track Pathway or Sidewalk Grade Crossings

Guidance:

01 *Where railroad or LRT tracks are immediately adjacent to other tracks, the traffic control devices that control pedestrian movements should be designed to avoid having pedestrians wait between sets of tracks.*

Figure 8E-1. Illustration of the Difference between a Pathway Grade Crossing and a Sidewalk Grade Crossing

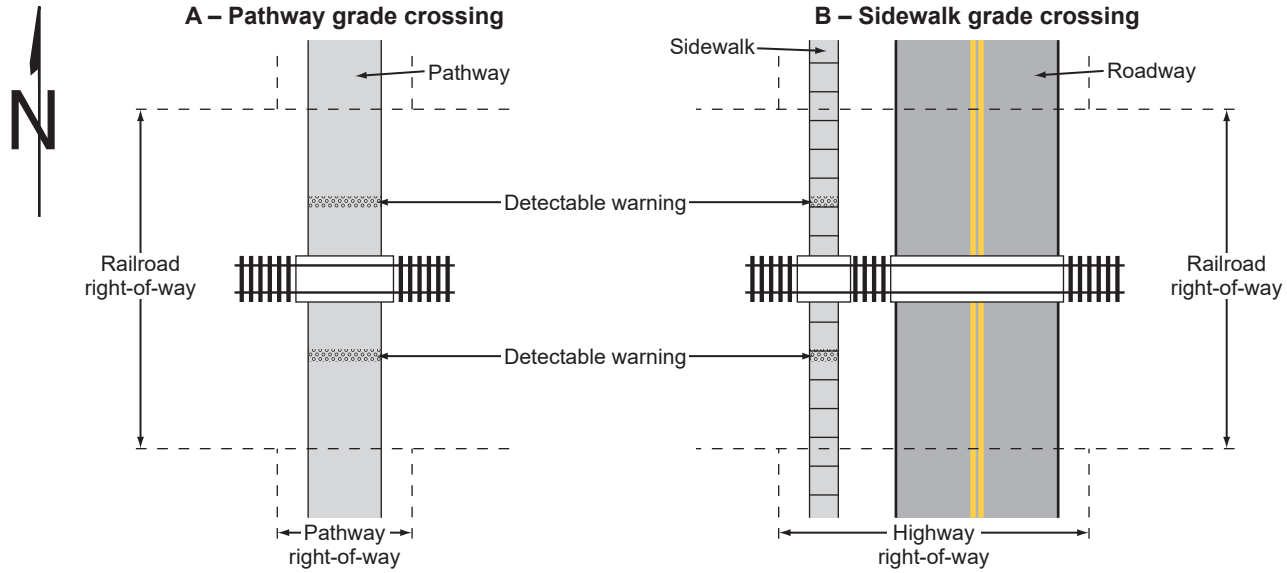
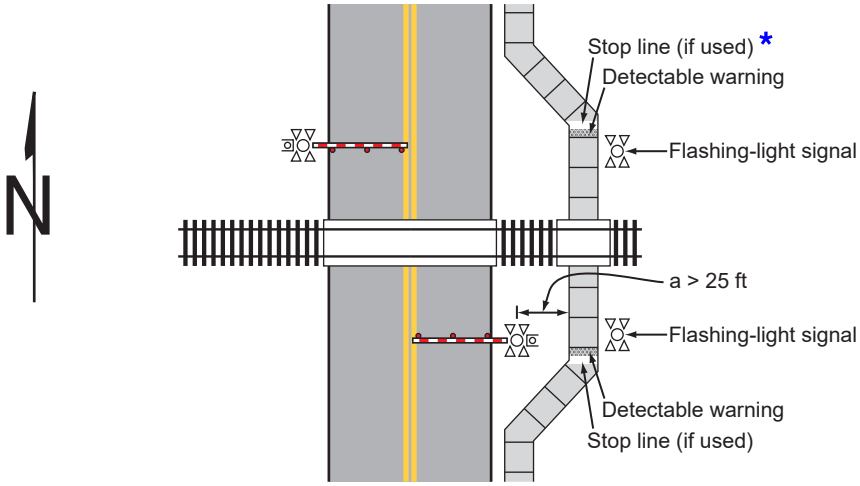


Figure 8E-2. Example of an Active Traffic Control System for a Sidewalk or Pathway Grade Crossing

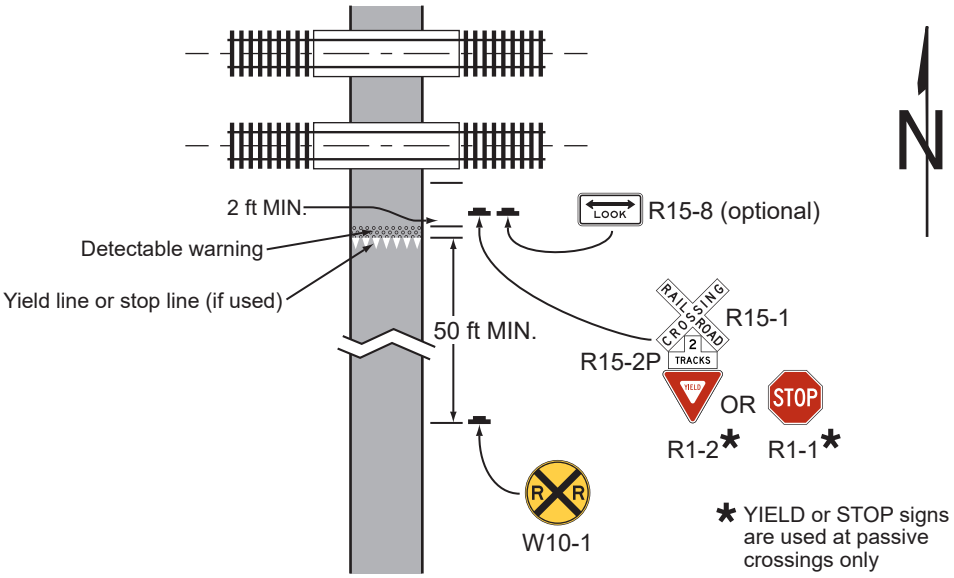


Notes: The dimension "a" is the distance from the edge of the sidewalk grade crossing to the center of the traffic control warning devices at the grade crossing.

If a ≤ 25 feet, flashing-light signals may be omitted at a pathway or sidewalk grade crossing (see Section 8E.07).

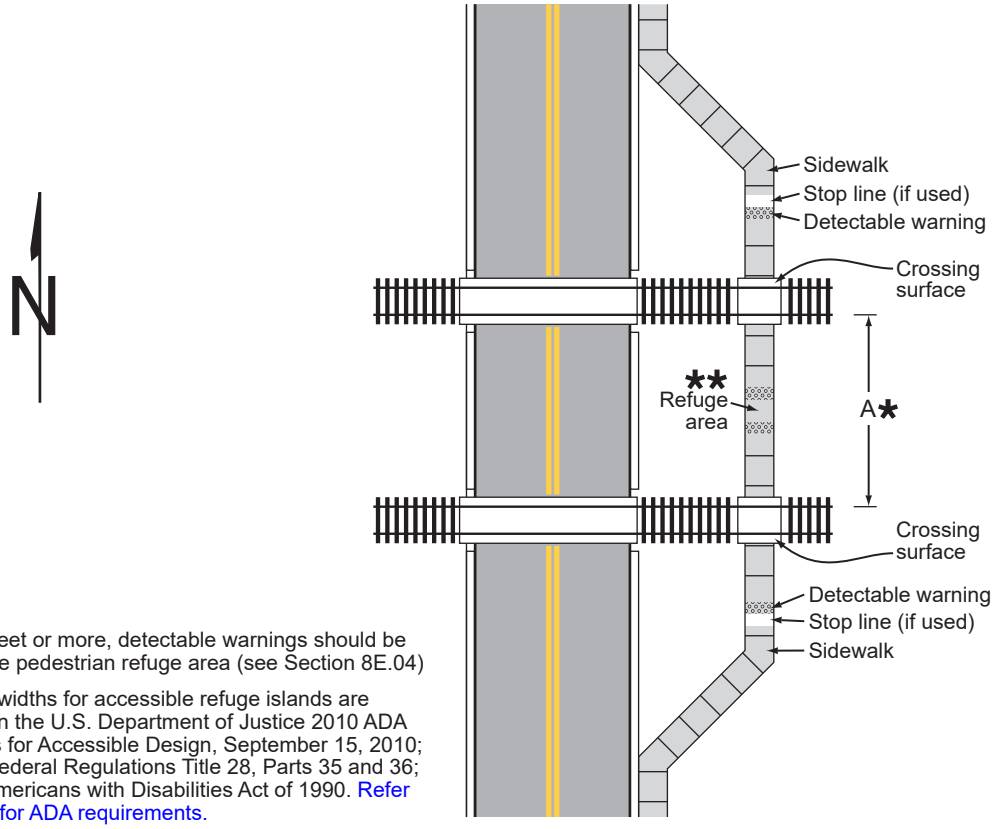
* At a sidewalk grade crossing, detectable warning is typically used without a stop line (Refer to Section 8E.04).

Figure 8E-3. Example of Signing and Markings at a Pathway Grade Crossing



Note: The Pedestrian Grade Crossing (R15-1D(CA)) sign shall be posted at grade crossings exclusively used by pedestrians and/or bicyclists (Refer to Section 8B.103(CA)).

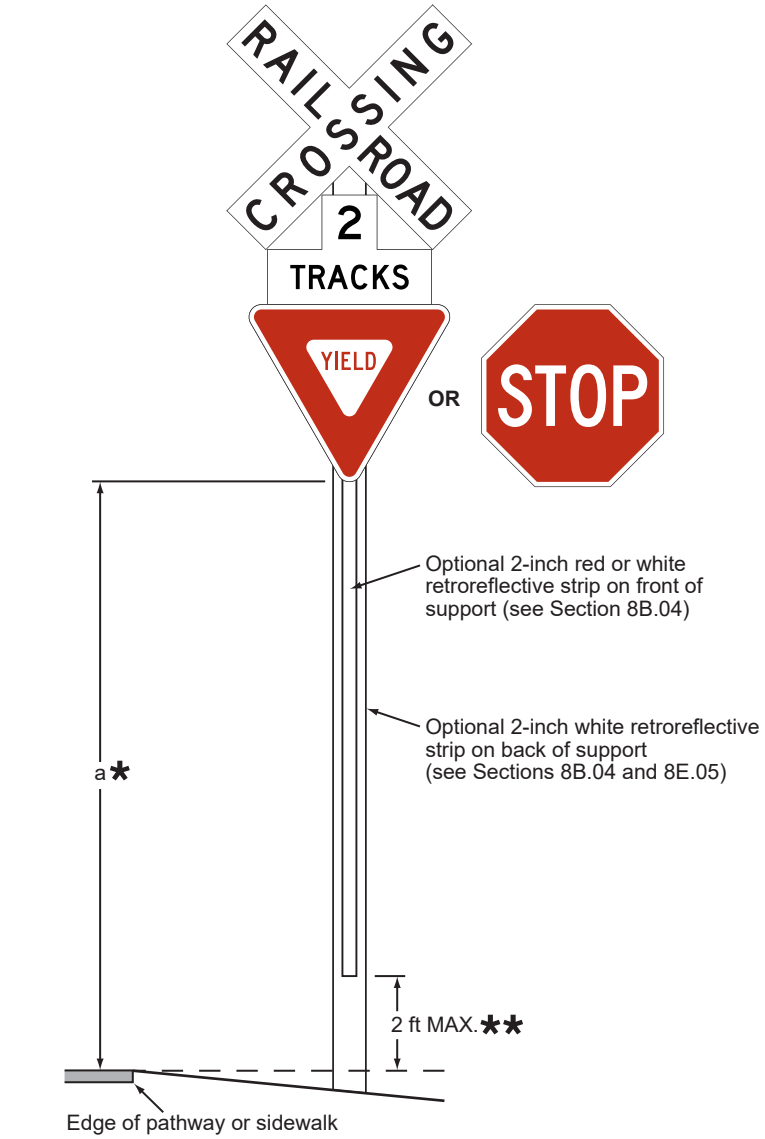
Figure 8E-4. Example of Detectable Warning and Stop Lines for a Refuge Area at a Sidewalk Grade Crossing



* If A is 30 feet or more, detectable warnings should be used at the pedestrian refuge area (see Section 8E.04)

** Minimum widths for accessible refuge islands are provided in the U.S. Department of Justice 2010 ADA Standards for Accessible Design, September 15, 2010; Code of Federal Regulations Title 28, Parts 35 and 36; and the Americans with Disabilities Act of 1990. Refer to DIB 82 for ADA requirements.

Figure 8E-5. Example of a Crossbuck Assembly at a Pathway or Sidewalk Grade Crossing



* Mounting height shall be at least 7 feet for sidewalks where the lateral offset is less than 2 feet, at least 4 feet for sidewalks where the lateral offset is 2 feet or more, and at least 4 feet for pathways.

** Measured to the elevation at the near edge of the pathway or sidewalk.

Notes: YIELD or STOP signs are used only at passive crossings.
A STOP sign is used only if an engineering study determines that it is appropriate for that particular approach.

The R15-1D(CA) Pedestrian Grade Crossing sign is required for pathway grade crossings, but not for sidewalk grade crossings.
Refer to Section 8B.103(CA)

Figure 8E-6. Example of an Automatic Pedestrian Gate and an Emergency Escape Route at a Pathway Grade Crossing

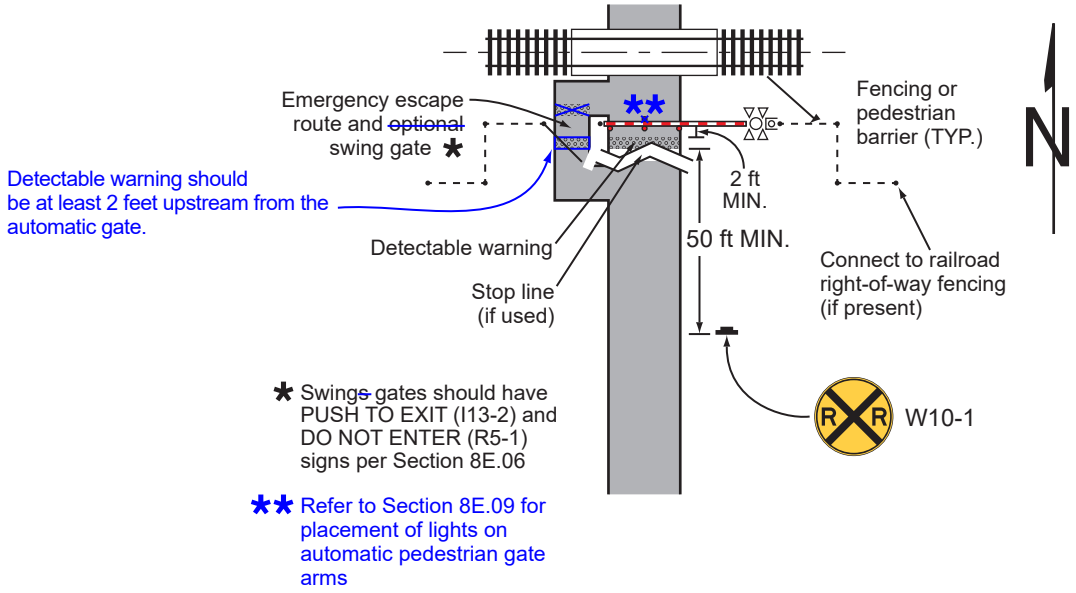
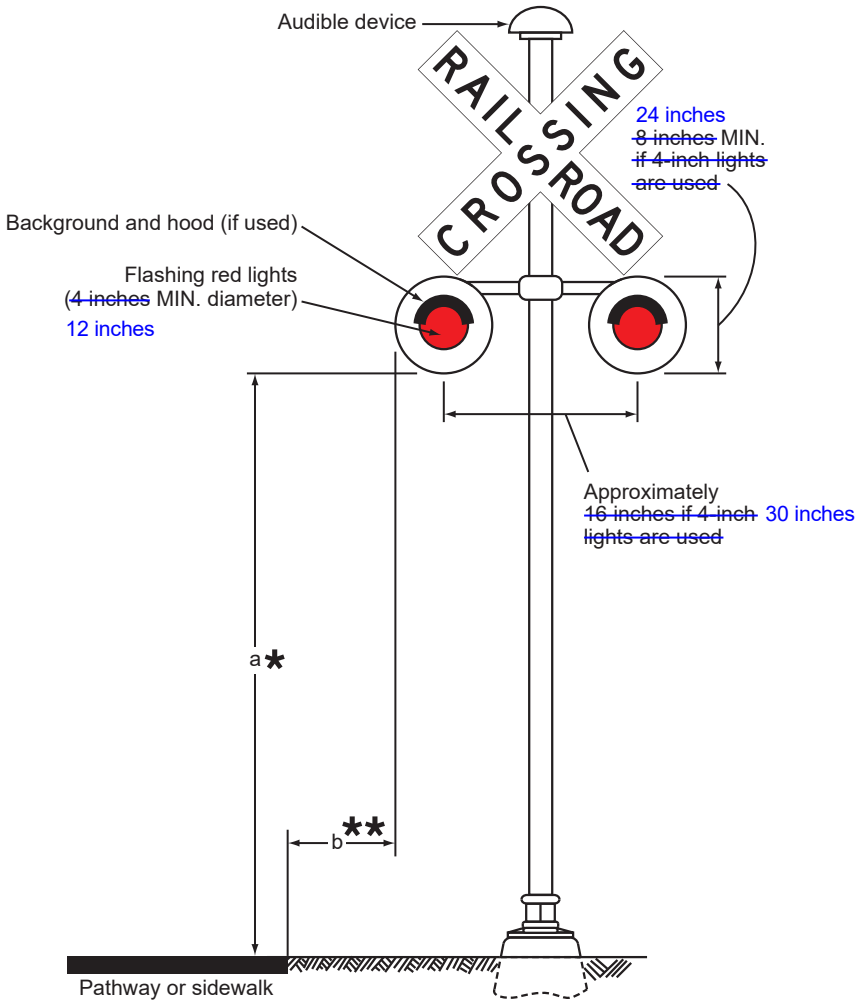


Figure 8E-7. Example of a Flashing-Light Signal Assembly at a Pathway or Sidewalk Grade Crossing

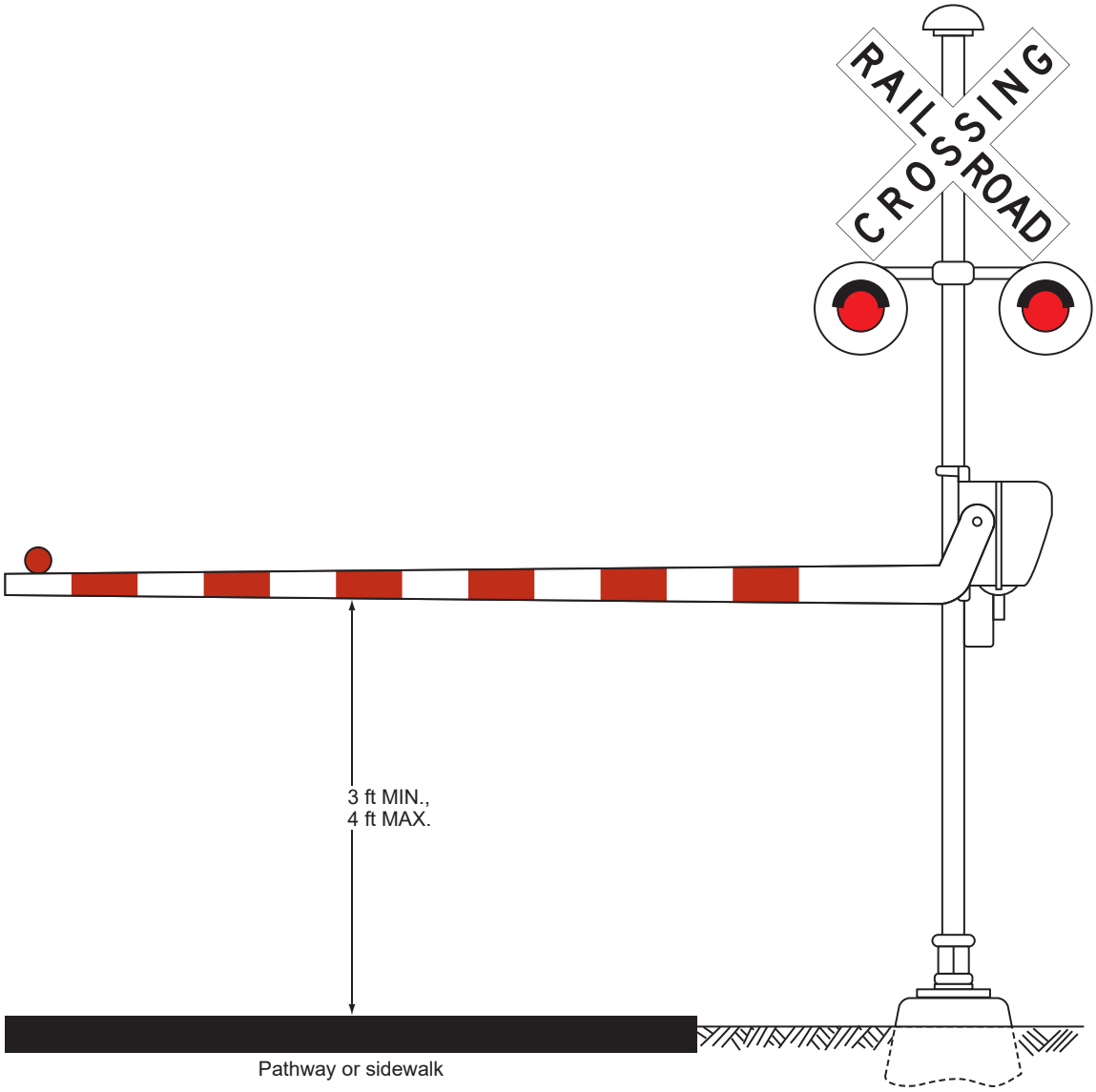


* Minimum mounting height adjacent to sidewalks and pathways should be 4 feet. Minimum mounting height above a sidewalk shall be 7 feet. Minimum mounting height above a pathway should be 8 feet.

** Minimum lateral offset for pathways should be 2 feet. Sidewalks do not have a minimum lateral offset.

Note: The R15-1D(CA) Pedestrian Grade Crossing sign is required for pathway grade crossings, but not for sidewalk grade crossings (Refer to Section 8B.103(CA)).

Figure 8E-8. Example of an Automatic Pedestrian Gate at a Pathway or Sidewalk Grade Crossing



Note: The R15-1D(CA) Pedestrian Grade Crossing sign is required for pathway grade crossings, but not for sidewalk grade crossings (Refer to Section 8B.103(CA)).

Figure 8E-9. Example of Active Traffic Control Systems with Automatic Pedestrian Gates and Swing Gates at a Sidewalk Grade Crossing

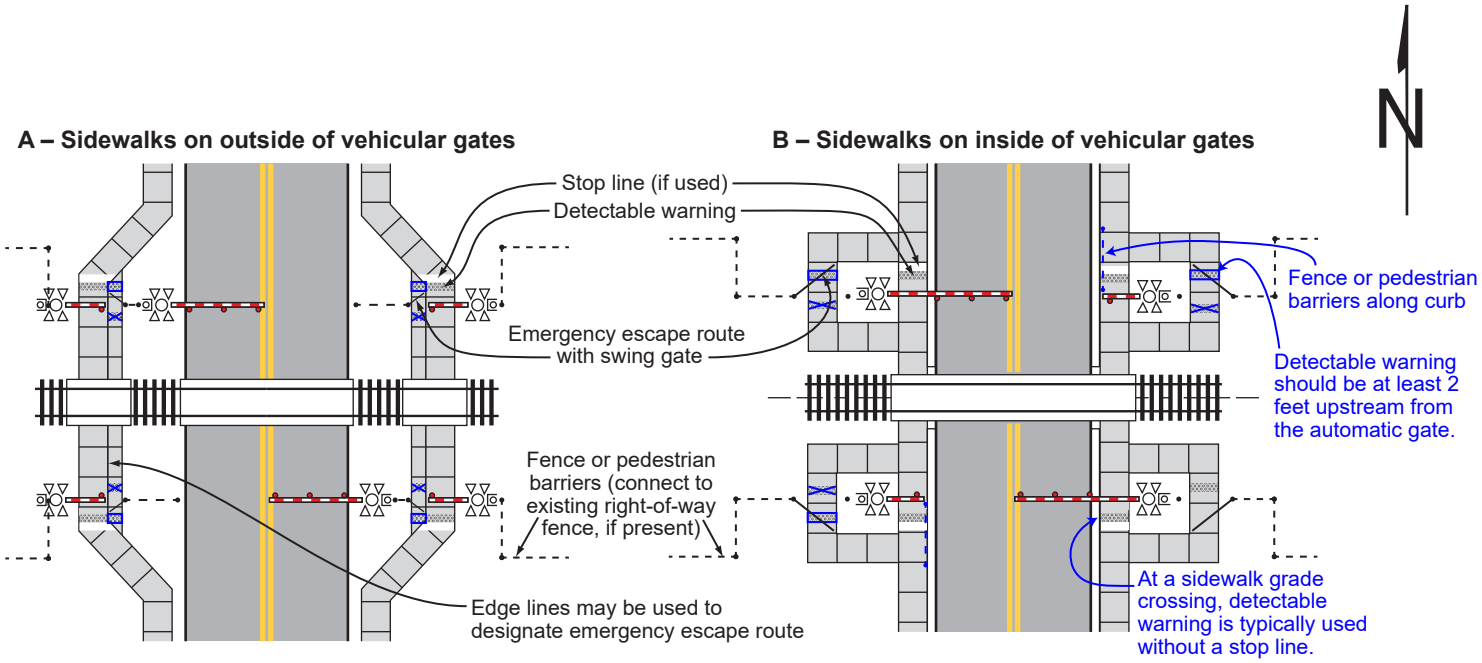
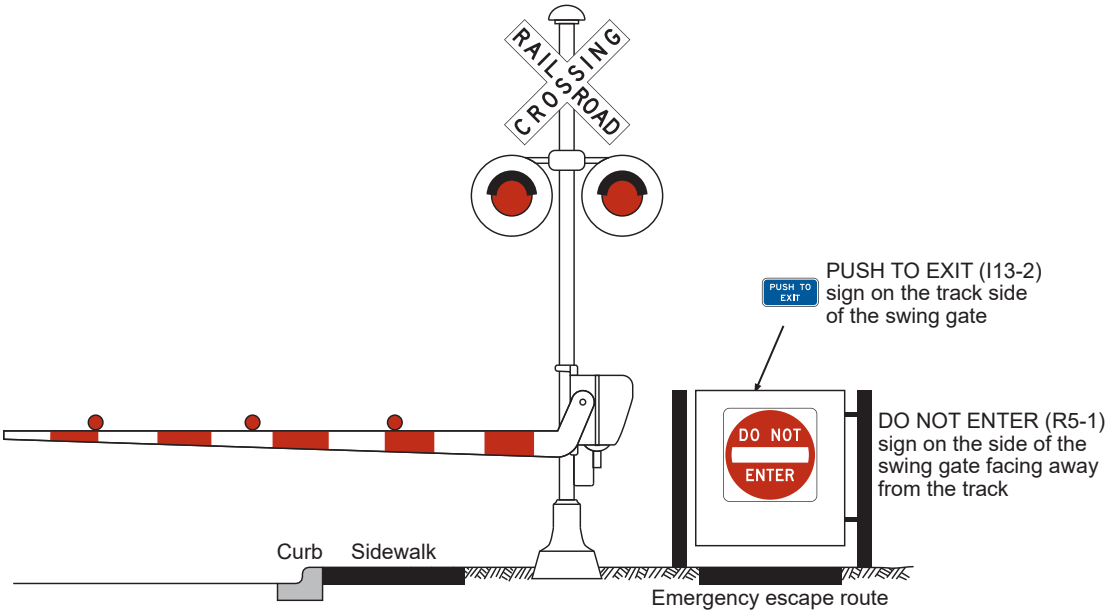
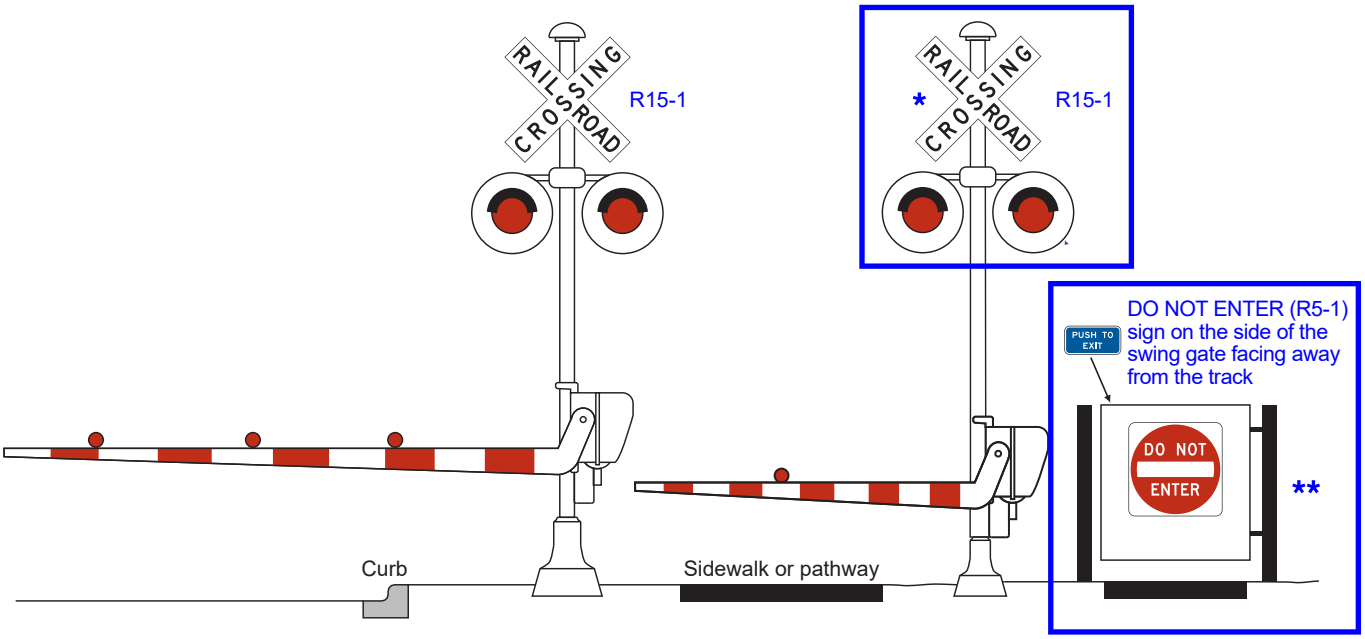


Figure 8E-10. Example of Traffic Control Devices for an Optional Swing Gate



Note: Where swing gates are placed along an emergency escape route near a roadway, signs are typically oriented and sized to be visible to pedestrians rather than motorists (Refer to Section 8E.06).

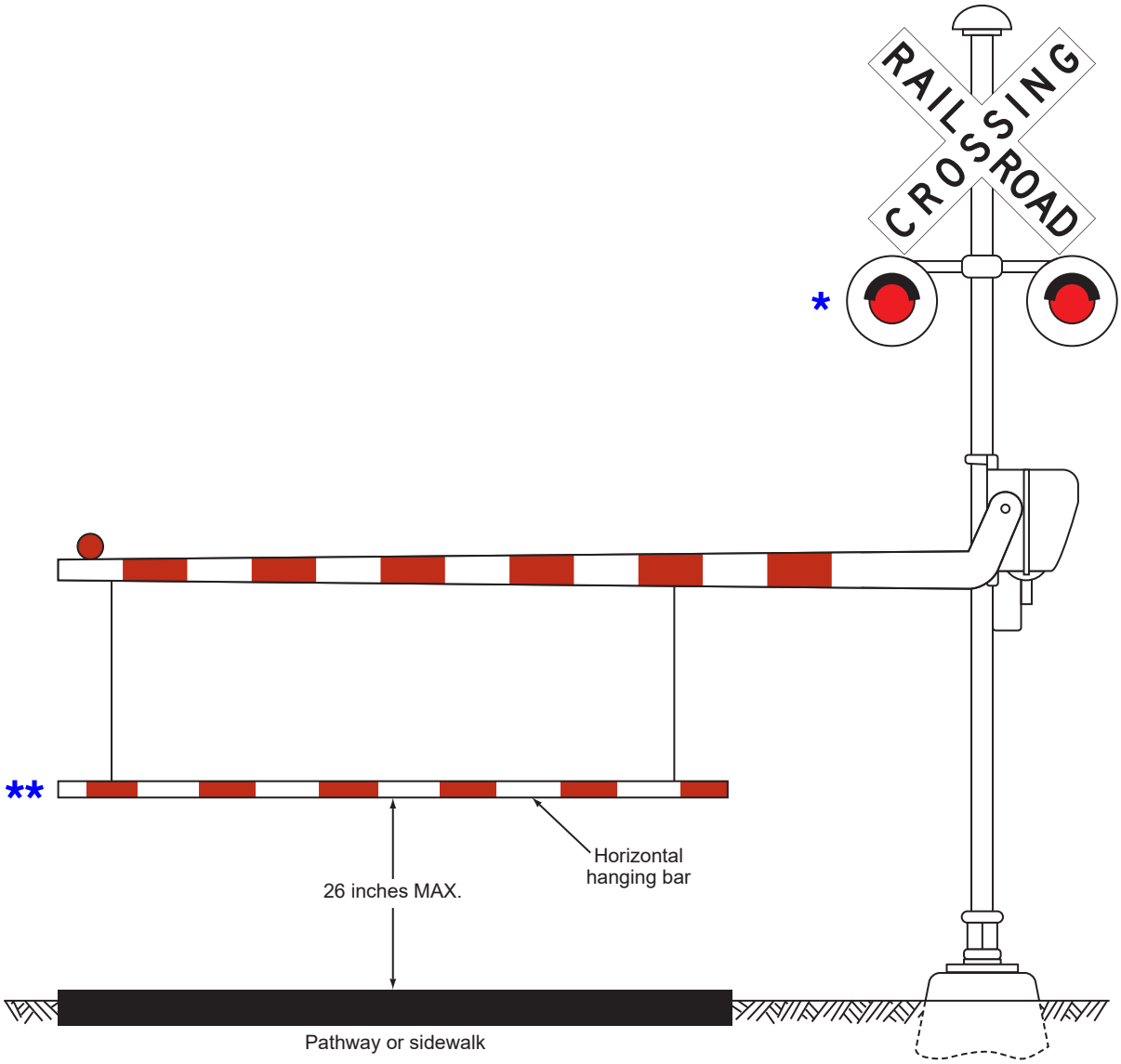
Figure 8E-11. Example of a Separate Automatic Pedestrian Gate



* If used at a pathway or sidewalk grade crossing, an automatic pedestrian gate typically includes an audible device such as a bell, a Crossbuck (R15-1) sign, flashing-light signals, and, if applicable, the Pedestrian Grade Crossing Sign (R15-1D(CA)).

** Refer to Section 8E.06.

Figure 8E-12. Example of an Automatic Pedestrian Gate with a Horizontal Hanging Bar at a Pathway or Sidewalk Grade Crossing



* Refer to Section 8E.08 regarding the diameter of flashing-light signals and backgrounds.

** Striping of the horizontal hanging bar typically matches the pattern of the gate arm.