ATTACHMENT NO. 6
Joint RRLRT & Signals #1

National Committee on Uniform Traffic Control Devices

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TECHNICAL COMMITTEE:	**Railroad and Light Rail Transit and Signals Technical Committees**
TOPIC:	**Draft Recommendation - Traffic signal preemption for grade crossings**
STATUS/DATE OF ACTION:	Recommended to send to sponsors as a draft recommendation at the June 2013 National Committee Meeting by the by the Railroad and Light Rail Transit Committee and the Signals Technical Committee
Technical Committee Vote:	RRLRT – Unanimous FOR Signals – Unanimous FOR
Transmitted to Sponsors:	July 2013
Council Approval:	June 26, 2014
ORIGIN OF REQUEST:	RRLRT
AFFECTED SECTIONS OF MUTCD:	**Various definitions and various sections in Part 8**

SUMMARY:

The purpose of these proposed changes is to update the existing MUTCD standards, guidance, and options for traffic signal preemption for grade crossings to incorporate current capabilities, technology, and practice. This includes the addition of provisions for the use of queue cutter signals at grade crossings. It also includes preemption features and operation for specified busways in addition to light rail transit. Additional information regarding BRT and busways will be provided in a new section in the future.

The changes are extensive as preemption for grade crossings has remained largely untouched through previous editions of MUTCD. The state of the practice has changed considerably following the tragic crash between a train and school bus in Illinois in 1995. These changes are considered of highest priority by the RRLRT TC to bring MUTCD into compliance with

current practice and to promote consistent design where applicable. In many cases, the proposed changes serve to clarify and guide the successful implementation of preemption and interconnection through additional support information. While the proposed changes are extensive, the need for preemption remains a Guidance condition. It is the intent of the Technical Committees to allow for site specific engineering to be conducted by a Diagnostic Team. The Diagnostic Team must reach a consensus on the various elements of traffic control devices and their application. The proposed changes support various elements which may be used at a given location and provide Standards, Guidance and Options in order to provide for uniform application of the devices.

DISCUSSION:

The RRLRT Technical Committee initiated work on these changes in 2008 and to date, there have been three requests for comments sent to sponsors. In 2011, the RRLRT Technical Committee presented a previous version of revisions to preemption for grade crossings to the National Committee Council. The item received extensive discussion and was tabled to allow for coordination with the Signals Technical Committee.

This draft recommendation has been developed through a series of conference calls between several STC members and several RRLRT members plus follow-up discussions of the two technical committees at recent National Committee meetings. It represents hundreds of man-hours of work and has been debated in detail by the RRLRT Technical Committee over the last four years.

This draft recommendation includes major changes to what currently exists in Part 8. The amount of new, relocated, and deleted text makes it impractical to use underline and strike through text to show the changes to the current MUTCD language. Therefore, except for changes to existing MUTCD definitions, additions, relocations, and deletions are not color coded or otherwise identified. However, changes to existing definitions are shown with red underline (red underline) for new text and red double strike through (~~red double strikethrough~~) for deleted text.

Items sent to Sponsors for review are joint technical committee recommendations that will presented to the National Committee Council for action at the National Committee meeting in June of 2014. This is now a final recommendation at this point. Due to its complexity and since it is being developed jointly by the Railroad and Light Rail Transit Technical Committee and the Signals Technical Committee, sponsors were asked to review and provide comments to assist the technical committees in developing the final recommendation. The two technical committees reviewed the comments received and made changes based on the comments, These recommendations willnow be forwarded to FHWA as a recommended change to the MUTCD as approved by The National Committee Council.

Some text in the draft recommendation is in yellow highlight. Yellow highlighting indicates text that is providing supplemental information related to the draft recommendation, but it is not part of the recommended text.

Traffic signal preemption for grade crossings is a complex topic. While most traffic signal operations are governed only by the traffic signal controller unit and associated traffic signal

equipment, preemption for grade crossings is also governed by the railroad signal system. Active railroad signal systems include lights and may also include gates. If equipped with gates, the gates may be only on approach lanes or they may be four-quadrant gates covering approach and departure lanes. As with traffic signal controller units, the capabilities of railroad signal systems vary based on the age and sophistication of the equipment.

Since the overall operation of preemption for grade crossings is influenced by separate control systems typically owned and operated by separate agencies, it is important that that specific compliance dates or "trigger points" be specified for various items included in the recommendation. It may be necessary to replace the traffic signal controller unit and related equipment, the railroad signal system control equipment, or both in order to comply with the operation described in this draft recommendation. Therefore, while it is not anticipated that such compliance dates or "trigger points" would be included in the MUTCD text, they should be included in the recommendation to FHWA. Comments are requested concerning whether or not compliance dates or "trigger points" should be included in the recommendation to FHWA as well as any recommendations on what the compliance dates or "trigger points" should be.

RECOMMENDED CHANGES TO THE MUTCD

PROPOSED NEW OR REVISED DEFINITIONS

Note: Numbered definitions exist in the 2009 MUTCD. The changes to the existing MUTCD definitions are shown. Definitions that are not numbered are proposed new definitions to be added to the MUTCD.

The definitions for "bus" and "bus rapid transit" were added by RRLRT during preparation of the draft recommendation following the June meeting which will be presented to Council on June 28, 2014.

3. Grade Crossing Warning System—the flashing-light signals, with or without ~~warning~~ automatic gates, together with the necessary control equipment used to inform road users of the approach or presence of rail traffic at grade crossings.

Busway Grade Crossing Warning System - the traffic control signals, with or without automatic gates, together with the necessary control equipment used to inform road users of the approach or presence of buses at busway grade crossings.

Bus —a highway vehicle, including an articulated vehicle, which operates on rubber tires and is designed to transport passengers from one location to another location usually operating on a fixed route. A van, taxicab, limousine, or recreational vehicle is not considered to be a bus.

Bus Rapid Transit (BRT) - is a mode of public transportation that employs buses that operate on streets in mixed traffic, on a busway in a semi-exclusive right-of-way or on a busway in an exclusive right-of-way.

Busway — A busway is a traveled way intended for exclusive use of buses in a semi-exclusive or exclusive alignment.

Busway Grade Crossing – A busway grade crossing is the general area where a roadway and busway cross at the same level, within which are included the busway, roadway, and traffic control devices for bus operators and road users traversing that area.

Blank-out sign - A sign that displays a single predetermined message only when activated. When not activated, the sign legend shall not be visible.

32. Clear Storage Distance—when used in Part 8, the distance available for vehicle storage measured between 6 feet from the rail nearest the intersection to the intersection stop line or the normal stopping point on the highway. At skewed grade crossings and intersections, the 6-foot distance shall be measured perpendicular to the nearest rail either along the center line or edge line of the highway, as appropriate, to obtain the shorter distance. Where exit gates are used, the distance available for vehicle storage is measured from the point where the rear of the vehicle would be clear of the exit gate arm. In cases where the exit gate arm is parallel to the track(s) and is not perpendicular to the highway, the distance is measured either along the center line or edge line of the highway,

as appropriate, to obtain the shorter distance. See Manual Section 8A.04 for additional information.

37. Constant Warning Time Train Detection - A means of detecting rail traffic that provides relatively uniform warning time for the approach of through trains that are not accelerating or decelerating after being detected.

Diagnostic Team – A group of knowledgeable representatives of the parties of interest in a highway-rail crossing or group of crossings. (This definition was approved by the Council following the June 2013 NCUTCD meeting as it is used in other portions of MUTCD)

Fail-Safe – When used in Part 8, a railroad signal design philosophy applied to a system or device such that the result of hardware failure or the effect of a software error shall either prohibit the system or device from assuming or maintaining an unsafe state or shall cause the system or device to assume a state known to be safe.

LED enhanced sign – a sign, other than a changeable message or blank-out sign, that includes LED units as described in Section 2A.07 to improve the conspicuity or increase the legibility of sign legends and borders.

LRT or Busway exclusive alignment ("exclusive alignment") — LRT track(s) or a busway alignment that is grade-separated or protected by a fence or traffic barrier. Motor vehicles, pedestrians, and bicycles are prohibited within the traveled way. Subways and aerial structures are included within this group.

LRT or Busway semi-exclusive alignment ("semi-exclusive alignment") — LRT track(s) or a busway alignment that is in a separate traveled way or along a street or railroad right-of-way where motor vehicles, pedestrians, and bicycles have limited access and cross at designated locations only. In a semi-exclusive alignment, the LRT vehicles or buses usually have right-of-way over other roadway users at grade crossings.

LRT or Bus mixed-use alignment ("mixed-use alignment") — An alignment where the LRT vehicles or buses operate in mixed traffic with all types of road users. This includes streets, transit malls and pedestrian malls where the traveled way is shared. In a mixed-use alignment, the LRT vehicles or buses do not have right-or-way over other roadway users at grade crossings and intersections.

116. Minimum Track Clearance Distance —for standard two-quadrant warning devices, the Minimum Track Clearance Distance (MTCD) is the length along a highway at one or more railroad or light rail transit tracks. Where flashing light signals with automatic gates are used, the MTCD is measured from the portion of the gate arm farthest from the near rail. Where flashing light signals are used without automatic gates, the MTCD is measured from the stop line. Where passive traffic control devices are used, the MTCD is measured from the stop line. Where the roadway is not paved, the MTCD is measured from 10 feet perpendicular to the near rail. The MTCD ends 6 feet beyond the track(s) measured perpendicular to the far rail, along the center line or edge line of the highway, as appropriate, to obtain the longer distance. For Four-Quadrant Gate systems (where

exit gates are used), the MTCD is extended to the point where a vehicle is clear of the exit gate arm. In cases where the exit gate arm is parallel to the track(s) and is not perpendicular to the highway, the distance is measured either along the center line or edge line of the highway, as appropriate, to obtain the longer distance. See Manual Section 8A.04 for additional information.

152. Preemption – the transfer of normal operation of a traffic control signal or a hybrid beacon to a special control mode of operation.

Preemption Clearance Interval – the part of a traffic signal sequence displayed as a result of a preemption request when vehicles are provided the opportunity to clear the railroad or light rail transit tracks, a movable bridge, or a busway prior to the arrival of the train, boat, or bus for which the traffic signal is being preempted.

92. Preemption Interconnection — When used in Part 8, the connection between the grade crossing warning system , or busway grade crossing warning system and the traffic signal controller assembly for the purpose of preemption.

Preemption Time Variability – the result that occurs when the traffic signal controller enters the Preemption Clearance Interval with less than the maximum design Right-of-Way Transfer Time or the speed of a train approaching the grade crossing varies.

154 Pre-signal — highway traffic signal faces located at a grade crossing that control traffic approaching ~~a~~ the grade crossing and operated as a part of the adjacent interconnected intersection traffic control signals.

Queue cutter signal — A traffic control signal that is intended to prevent vehicular queuing across tracks at a grade crossing where traffic queuing occurs and is activated for one direction of travel by an approaching train, by an approaching bus on a busway, actuation from a downstream queue detection system, by time of day or a combination of any of these. A queue cutter signal is not operated as a part of a downstream intersection traffic control signal but is an independently controlled traffic control signal.

166. Quiet Zone —a segment of a rail line, within which is situated one or a number of consecutive public highway-rail grade crossings at which locomotive horns are not routinely sounded per 49 CFR Part 222.

175. Right-of-Way Transfer Time — When used in Part 8, the maximum amount of time needed for the worst case condition, prior to display of the Preemption Clearance Interval. This includes any railroad-light rail transit, busway or highway traffic signal control equipment time to react to a preemption call, and any traffic control signal green, pedestrian walk and clearance, yellow change, and red clearance intervals for conflicting traffic.

Through Train – a through train is a train movement that continues without stopping or reversing direction throughout the entire length of the rail traffic detection circuit length approaching a highway-rail grade crossing.

255. Wayside Horn System —a stationary horn (or series of horns) located at a grade crossing that is used in conjunction with train-activated or light rail transit-activated warning systems to provide audible warning of approaching rail traffic to road users on the highway or pathway approaches to a grade crossing, either as a supplement or alternative to the sounding of a locomotive horn.

CHAPTER 8A. GENERAL

Section 8A.01 Introduction

Support:

Whenever the acronym “LRT” is used in Part 8, it refers to “light rail transit.”

Whenever the acronym “BRT” is used in Part 8, it refers to “bus rapid transit.”

Part 8 describes the traffic control devices that are used at highway-rail and highway-LRT grade crossings. Unless otherwise provided in the text or on a figure or table, the provisions of Part 8 are applicable to all highway-rail or highway-LRT grade crossings. When the phrase “grade crossing” is used by itself without the prefix “highway-rail,” or “highway-LRT”, it refers to both highway-rail and highway-LRT grade crossings.

Chapter 8E describes some of the traffic control devices that are used at highway-busway grade crossings. Where specified in Section 8E, other provisions of Part 8 are applicable at highway-busway grade crossings.

Traffic control for grade crossings includes all signs, signals, markings, other warning devices and their supports along highways approaching and at grade crossings. The function of this traffic control is to promote safety and provide effective operation of rail and/or LRT and highway traffic at grade crossings.

For purposes of design, installation, operation and maintenance of traffic control devices at grade crossings, it is recognized that the crossing of the highway and rail tracks is situated on a right-of-way available for the joint use of both highway traffic and railroad or LRT.

Grade crossings and the associated traffic control devices are unique in that in many cases, both the highway agency or authority with jurisdiction, the regulatory agency with statutory authority (if applicable) and the railroad or LRT authority are jointly involved in development of engineering judgment or an engineering study. This joint process is accomplished through the efforts of a Diagnostic Team. A Diagnostic Team is a group of knowledgeable individuals of the parties of interest in a railroad-highway crossing or group of crossings.

The highway agency or authority with jurisdiction and the regulatory agency with statutory authority (if applicable) jointly determine the need and selection of devices at a highway-rail grade crossing.

The combination of traffic control devices selected or installed at a specific grade crossing is referred to as a “traffic control system.”. The combination of railroad or LRT active traffic control devices used to inform road users of the approach or presence of rail traffic and the necessary control equipment for the devices at a grade crossing is referred to as a “grade crossing warning system.” See Part 1.1.1 of the AREMA Communications & Signals Manual published by the American Railway Engineering & Maintenance-of-Way Association (AREMA).

Part 8 also describes the traffic control devices that are used in locations where light rail vehicles (Light Rail Transit or LRT) operate along streets and highways in mixed traffic with automotive vehicles.

LRT is a mode of public transportation that employs LRT vehicles (commonly known as light rail vehicles, streetcars, or trolleys) that operate on rails in streets in mixed traffic or that

operate in semi-exclusive or exclusive rights-of-way. Grade crossings with LRT can occur at intersections or at midblock locations, including public and private driveways.

LRT alignments can be grouped into one of the following three types:

A. LRT exclusive alignment ("exclusive alignment"). This type of alignment does not have grade crossings and is not further addressed in Part 8.

B. LRT semi-exclusive alignment ("semi-exclusive alignment").

C. LRT lane mixed-use alignment ("mixed-use alignment").

LRT operations within semi-exclusive or mixed-use alignments may operate in one of two modes:

A. LRT vehicles do not have priority over other road users.

B. LRT vehicles have priority over other road users,

Guidance:

Where LRT vehicles have priority over other road users, active grade crossing traffic control systems should be used unless otherwise determined by a Diagnostic Team.

Where LRT vehicles have priority over other road users, traffic signal preemption should be used as provided in Section 8C.10 unless otherwise determined by a Diagnostic Team

Option:

Where LRT vehicles do not have priority over other road users, traffic signal priority or preemption may be used as determined by a Diagnostic Team

Support:

An initial educational campaign along with an ongoing program to continue to educate new drivers is beneficial when introducing LRT operations to an area and, hence, new traffic control devices.

Standard:

Where LRT and railroads use the same tracks or adjacent tracks, the traffic control devices, systems, and practices for highway-rail grade crossings shall be used.

Support:

To promote an understanding of common terminology between highway, railroad, LRT and BRT signaling issues, definitions and acronyms pertaining to Part 8 are provided in Sections 1A.13 and 1A.14.

Section 8A.02 Use of Standard Devices, Systems, and Practices at Grade Crossings

Support:

Because of the large number of significant variables to be considered, no single standard system of traffic control devices is universally applicable for all grade crossings.

Standard:

The appropriate traffic control system to be used at a grade crossing shall be determined by an engineering study conducted by a Diagnostic Team involving the

highway agency with jurisdiction, the regulatory agency with statutory authority (if applicable) and the railroad company and/or transit agency, as applicable.

Option:

A regulatory agency with statutory authority may make the final determination of traffic control devices at a grade crossing.

Guidance:

Factors to be considered in the determination of what should be installed include, but are not limited to: road geometrics, stopping sight distance, clearing sight distance, the proximity of nearby roadway intersections including the traffic control devices at the intersections, adjacent driveways, traffic volume across the grade crossing, extent of queuing upstream or downstream of the grade crossing, train volume, pedestrian volume, operation of passenger trains, presence of nearby passenger station stops, variable train speeds, accelerating and decelerating trains, multiple tracks, high speed train operation, number of school buses or hazardous material haul vehicles or locations where a history of collisions occur.

Standard:

Operational changes made to a traffic control system at a grade crossing requiring the use of engineering judgment or an engineering study shall be conducted or approved by a Diagnostic Team.

The Diagnostic Team members shall reach a determination, documented as an engineering study, on proposed changes to a traffic control system at a grade crossing. The Diagnostic Team determination shall be made based on a consensus of the Diagnostic Team members.

Option:

The Diagnostic Team determination may be based on site visits, meetings, conference calls, or a combination of some or all of these methods.

When determined by the responsible public agency, the railroad company and/or transit agency, minor operational changes or general maintenance activities to the traffic control system at a grade crossing that do not have a negative impact on the overall operation of the traffic control system may be made without a review and determination by a Diagnostic Team.

Guidance:

The determination made by the Diagnostic Team should be distributed to the Diagnostic Team members.

Option:

The engineering study may include the Highway-Rail Intersection (HRI) components of the National Intelligent Transportation Systems (ITS) architecture, which is a USDOT accepted method for linking the highway, vehicles, and traffic management systems with rail operations and wayside equipment.

Support:

More detail on Highway-Rail Intersection components is available from the USDOT's Federal Railroad Administration, 1200 New Jersey Avenue, SE, Washington, DC 20590, or www.fra.dot.gov.

Standard:

Before any new grade crossing traffic control system is installed or before modifications are made to an existing system, approval shall be obtained from the highway agency with jurisdiction, the regulatory agency with statutory authority (if applicable) and from the railroad company and/or transit agency.

Support:

Many other details of grade crossing traffic control systems that are not set forth in Part 8 are contained in the publications listed in Section 1A.11, including the latest version of the AREMA Communications & Signals Manual published by the American Railway Engineering & Maintenance-of-Way Association (AREMA) and the latest version of "Preemption of Traffic Signals Near Railroad Crossings" published by the Institute of Transportation Engineers (ITE).

Section 8A.03 Use of Standard Devices, Systems, and Practices at Highway-LRT Grade Crossings

Support:

The combination of devices selected or installed at a specific highway-LRT grade crossing is referred to as a "LRT traffic control system".

The normal rules of the road and traffic control priority identified in the "Uniform Vehicle Code" and its successor documents govern the order assigned to the movement of vehicles at an intersection unless the local agency determines that it is appropriate to assign a higher priority to LRT vehicles. Examples of different types of LRT priority control include separate traffic control signal phases for LRT movements, restriction of movement of roadway vehicles in favor of LRT operations and preemption of highway traffic signal control to accommodate LRT movements.

Standard:

Highway-LRT grade crossings in semi-exclusive alignments outside of a roadway shall be equipped with flashing-light signals with or without automatic gates, unless a Diagnostic Team determines that the use of Crossbuck Assemblies, STOP signs, or YIELD signs alone would be adequate. See Section 8C. for additional information.

Section 8A.04 Minimum Track Clearance Distance

Support:

At a grade crossing, the Minimum Track Clearance Distance (MTCD) defines, on a lane-by-lane basis, the length of the roadway over the track(s) where a vehicle could be struck by rail traffic.

Where flashing light signals with automatic gates are used, the MTCD is measured from the portion of the gate arm farthest from the near rail. Where flashing light signals are used without automatic gates, the MTCD is measured from the stop line farthest from the near rail. Where passive traffic control devices are used, the MTCD is measured from the stop line. Where the roadway is not paved, the MTCD is measured from 10 feet perpendicular to the nearest rail.

The MTCD ends 6 feet beyond the track(s) measured perpendicular to the far rail, along the center line or edge line of the highway, as appropriate, to obtain the longer distance.

For grade crossings with Four-Quadrant Gate systems (where exit gates are used), the length of the MTCD is extended to the point where the rear of a vehicle is clear of the exit gate arm. In cases where the exit gate arm is parallel to the track(s) and is not perpendicular to the highway, the distance is measured either along the center line or edge line of the highway, as appropriate, to obtain the longer distance.

Where an intersection is located beyond a grade crossing, the Clear Storage Distance (CSD) defines, on a lane-by-lane basis, the area of the roadway beyond the MTCD extending to the intersection stop line, flow line or normal stopping point on the highway.

The MTCD is used to determine the amount of additional Clearance Time to be provided by the railroad where the MTCD exceeds 35 feet. One second is added for every 10 feet or portion thereof where the MTCD exceeds 35 feet. See Part 3.3.10 of the AREMA Communications & Signals Manual published by the American Railway Engineering & Maintenance-of-Way Association (AREMA) for additional information.

The MTCD and CSD are used to assist the Diagnostic Team in determining the appropriate traffic control devices and/or roadway treatments to be used at a grade crossing.

The MTCD and CSD may also be used to determine the queue start-up and queue clearance time necessary where a traffic signal is interconnected with a grade crossing active warning system.

The following figures depict various roadway configurations and the appropriate limits to determine the MTCD:

Figure 8A-1. Single track 90° grade crossing with automatic gate

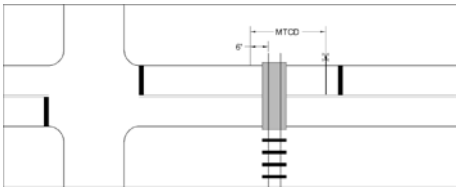


Figure 8A-2. Single track obtuse angle grade crossing with automatic gate

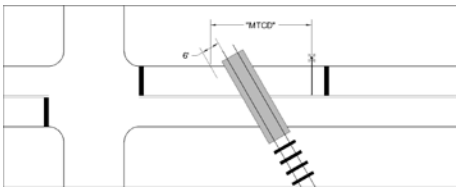


Figure 8A-3. Single track acute angle grade crossing with automatic gate

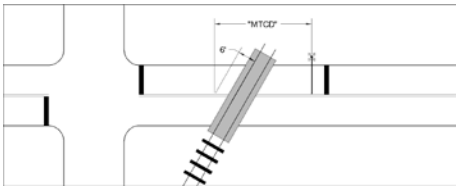


Figure 8A-4. Single track acute angle grade crossing with automatic gate on one-way roadway

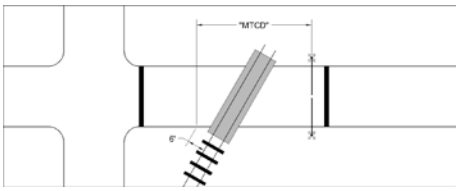


Figure 8A-5. Single track acute angle grade crossing with automatic gate on multi-lane roadway

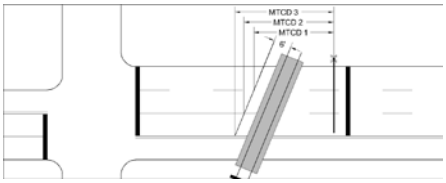


Figure 8A-6. Double track 90° grade crossing with automatic gate

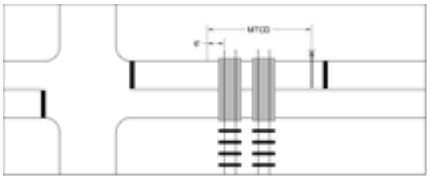


Figure 8A-7. Single track 90° grade crossing without automatic gate

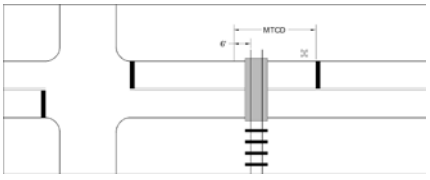


Figure 8A-8. Single track obtuse angle grade crossing without automatic gate

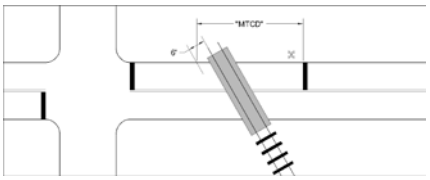


Figure 8A-9. Single track acute angle grade crossing without automatic gate

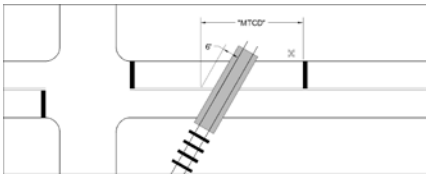


Figure 8A-10. Single track 90° grade crossing with passive traffic control devices on unpaved roadway

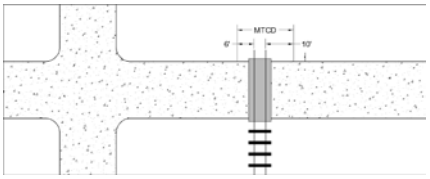


Figure 8A-11. Single track obtuse angle grade crossing with passive traffic control devices on unpaved roadway

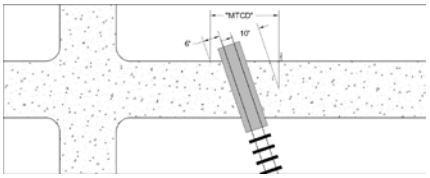
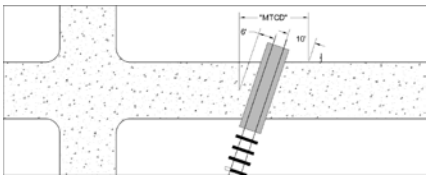


Figure 8A-12. Single track acute angle grade crossing with passive traffic control devices on unpaved roadway



Section 8A-05 Adjacent Grade Crossings

Support:

In certain cases, multiple grade crossings may exist within 200 feet of each another. These grade crossings may encompass separate railroads or a railroad and LRT.

Additional details of active traffic control device location and operation at adjacent grade crossings located within 200’ of each other that are not set forth in Part 8 are contained in Part 3.1.11 of the AREMA Communications & Signals Manual published by the American Railway Engineering & Maintenance-of-Way Association (AREMA).

Guidance:

Where grade crossings are located within 200’ of each other along the highway, the Diagnostic Team should consider the arrival of a second train when one grade crossing is occupied.

Where the distance between tracks, measured along the highway between the inside rails, is 100 feet or less, the grade crossings should be treated as one individual grade crossing.

Where the distance between tracks, measured along the highway between the inside rails, exceeds 100 feet, additional signs or other appropriate traffic control devices should be used to inform approaching road users of the long distance to cross the tracks.

Where the distance between tracks, measured along the highway between the inside rails, exceeds 200 feet, the grade crossings should be treated as individual grade crossings and traffic control devices should be installed between the grade crossings.

Where active traffic control devices are installed between grade crossings that are less than 200 feet apart, the operation of the devices should provide for additional time for vehicles to clear the extended MTCD. The operation of the active traffic control devices should conform to the recommendations in Part 3.1.11 of the AREMA Communications & Signals Manual published by the American Railway Engineering & Maintenance-of-Way Association (AREMA).

Support:

The following figures depict examples of adjacent grade crossings:

Figure 8A-13. Two adjacent grade crossings with less than 100’ of separation

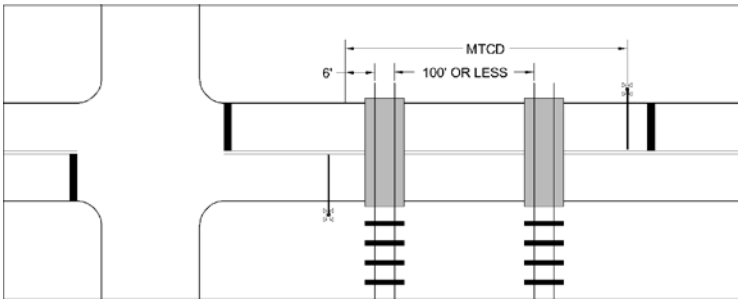


Figure 8A-14. Two adjacent grade crossings with more than 100’ but less than 200’ of separation

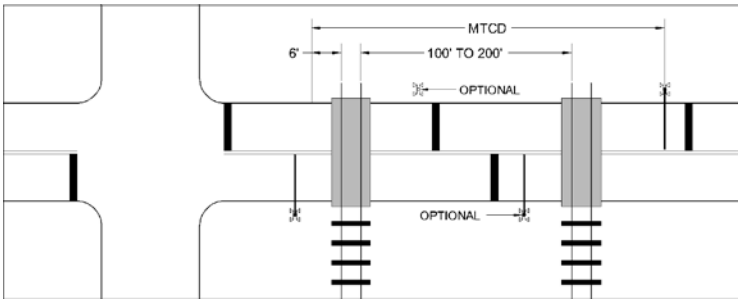
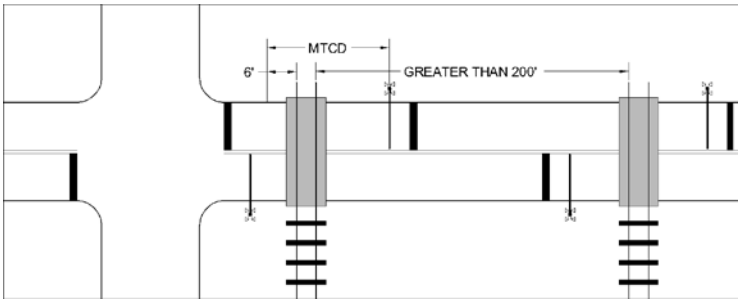


Figure 8A-15. Two adjacent grade crossings with more than 200' of separation



Section 8A.06 Grade Crossing Elimination

Standard:

When a grade crossing is eliminated, the traffic control devices for the crossing shall be removed.

If the existing traffic control devices at a multiple-track grade crossing become improperly placed or no longer applicable because of the removal of some of the tracks, the existing devices shall be relocated and/or modified.

Guidance:

Where a roadway is removed from a grade crossing, the roadway approaches in the railroad or LRT right-of-way should also be removed and appropriate signs and object markers should be placed at the roadway end in accordance with Section 2C.66.

Where a railroad or LRT is eliminated at a grade crossing, the tracks should be removed or covered.

Option:

Based on engineering judgment, the TRACKS OUT OF SERVICE (R8-9) sign (see Figure 8B-1) may be temporarily installed until the tracks are removed or covered. The length of time before the tracks will be removed or covered may be considered in making the decision as to whether to install the sign.

Section 8A.07 Illumination at Grade Crossings

Support:

Illumination is sometimes installed at or adjacent to a grade crossing in order to provide better nighttime visibility of trains or LRT equipment and the grade crossing (for example, where a substantial amount of railroad or LRT operations are conducted at night, where grade crossings are blocked for extended periods of time, or where crash history indicates that road users experience difficulty in seeing trains or LRT equipment or traffic control devices during hours of darkness).

Recommended types and locations of luminaires for illuminating grade crossings are contained in the American National Standards Institute's (ANSI) "Practice for Roadway Lighting RP-8," which is available from the Illuminating Engineering Society (see Section 1A.11).

Section 8A.08 Quiet Zone Treatments at Highway-Rail Grade Crossings

Support:

49 CFR Part 222 (Use of Locomotive Horns at Highway-Rail Grade Crossings; Final Rule) prescribes Quiet Zone requirements and treatments.

Standard:

Any traffic control device and its application where used as part of a Quiet Zone shall comply with all applicable provisions of the MUTCD.

Section 8A.09 Temporary Traffic Control Zones

Support:

Temporary traffic control planning provides for continuity of operations (such as movement of traffic, pedestrians and bicycles, transit operations, and access to property/utilities) when the normal function of a roadway at a grade crossing is suspended because of temporary traffic control operations. Temporary traffic control planning is also needed when roadway or grade crossing construction results in the detouring of traffic over an existing grade crossing with passive warning devices.

Standard:

Traffic controls for temporary traffic control zones that include grade crossings shall be as outlined in Part 6.

When a grade crossing exists either within or in the vicinity of a temporary traffic control zone, lane restrictions, flagging (see Chapter 6E), or other operations shall not be performed in a manner that would cause highway vehicles to stop on the railroad or LRT tracks, unless a flagger or uniformed law enforcement officer is provided at the grade crossing to minimize the possibility of highway vehicles stopping on the tracks, even if automatic warning devices are in place.

When a temporary traffic control zone extends over a grade crossing equipped with automatic gates and one lane two-way or reversible lane operation is used, one or more gate arms shall be removed to avoid stopping vehicles within the a Minimum Track Clearance Distance by an improperly located gate. A railroad employee serving as a flagger and one or more uniformed law enforcement officer(s) shall be in place at all times that a train may occupy the grade crossing.

When traffic is detoured over an existing grade crossing with passive warning devices, a traffic control plan shall be prepared in accordance with Section 6C.01 Temporary Traffic Control Plans.

Guidance:

Public and private agencies, including emergency services, businesses, and railroad or LRT companies, should meet to plan appropriate traffic detours and the necessary signing, marking, signalization, and flagging requirements for operations during a) temporary traffic control zone activities; or b) activities that result in the detouring of traffic over a grade crossing with passive warning devices. Consideration should be given to the length of time that the grade crossing is to be closed and the length of time the detour is to be in place. In addition, the type of rail or LRT and highway traffic affected, the time of day, and the materials and techniques of repair.

The agencies responsible for the operation of the LRT and highway should be contacted when the initial planning begins for any temporary traffic control zone that might directly or indirectly influence the flow of traffic on mixed-use facilities where LRT and road users operate.

Temporary traffic control operations should minimize the inconvenience, delay, and crash potential to affected traffic. Prior notice should be given to affected public or private agencies, emergency services, businesses, railroad or LRT companies, and road users before the free movement of road users or rail traffic is infringed upon or blocked.

Temporary traffic control zone activities should not be permitted to extensively prolong the closing of the grade crossing.

The width, grade, alignment, and riding quality of the highway surface at a grade crossing should, at a minimum, be restored to correspond with the quality of the approaches to the grade crossing.

Support:

Section 6G.18 contains additional information regarding temporary traffic control zones in the vicinity of grade crossings, and Figure 6H-46 shows an example of a typical situation that might be encountered.