TRAFFIC AND SAFETY MANUAL

Chapter 2- Signing
2B – Regulatory Signs

Stop and Yield Signs

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Stop Sign

A stop sign is used to indicate that traffic is required to stop. Public approaches to primary highways are controlled by stop signs unless a traffic engineering study and resultant Staff Action or Commission Order provides for the primary highway to stop for a county road or city street. Stop signs may be placed on private drives by the owner of the adjoining property. At the intersection of two or more primary highways a Staff Action or Commission Order designates the stop-controlled approaches unless a standard drawing or construction plan does so for that particular location.

A Cross Traffic Does Not Stop plaque may be used below a Stop sign to inform road users who might misinterpret the intersection as an all-way stop intersection. The State Traffic Engineer will provide assistance with the determination for use of this plaque at the request of the District Office.

A Recheck Cross Traffic Before Proceeding or other plaque with a similar message may be used where an engineering study shows that it would be useful. The State Traffic Engineer will provide assistance at the request of the District Office.

At intersections where all approaches are controlled by stop signs, a supplemental plaque shall be mounted below each stop sign. The supplemental plaque shall be ALL-WAY. Supplemental plaques shall not be placed on stop sign faces. If all approaches are not controlled by stop signs no ALL WAY supplemental plaques are to be used.

Where two roads intersect at an acute angle, the stop sign should be positioned at an angle or else shielded so that the legend is out of view of traffic to which it does not apply.

Portable or part-time stop signs shall not be used except for emergency and temporary traffic control zone purposes, or for school crosswalks as noted in Administrative Rule 761.130.1(1). Also, Iowa Code Section 321.249 permits cities and counties to establish school zones and provide for the stopping of all approaching motor vehicles by using movable stop signs placed in the streets. The procedure for authorization of the signs to be placed on a primary highway or primary highway extension is for the city or county to submit an Application For Approval Of A Traffic Control Device. If a school is involved in placing and removing the sign, then the school may make the application, which must be approved by the city or county prior to Iowa DOT approval.

Procedures to be followed for public notice and special signing when changes occur in stop conditions at primary highway intersections are detailed in Policy number 620.05 of the Policies and Procedures Manual.

Stop sign placement shall be in accordance with Section 2A-8, Section 2A-9 and Section 2A-10 of the Traffic and Safety Manual.

Rumble Strips at Stop Signs

Rumble Strips are generally used in rural areas in advance of locations where primary highway traffic must stop at a Stop sign. A rumble strip panel consists of a series of grooves in the surface to provide a tactile and audible awareness for the driver that may not be fully aware of the other devices in advance of the Stop sign. They are not generally used where the speed limit is less than 55 miles per hour or where the sound would be obtrusive to nearby residences or businesses. When it is decided not to use rumble strips where the speed limit is 55 miles per hour or more, alternative measures may be taken, such as installation of beacons, placement of flags on existing signs, installation of signs on both sides of the road, or use of larger signs. Rumble strips may be installed at locations where the speed limit is less than 55 miles per hour if indicated by a traffic engineering study for that location. The State Traffic Engineer will provide assistance at the request of the District Office.

Location

Typical rumble strip panel locations are shown on Figure 1 of Iowa Dept. of Transportation Design Manual Section 6A-7.

Former standards called for three panels, with the first one being 200 feet in advance of the Stop Ahead sign, the third one 300 feet in advance of the Stop Line and the center one midway between those two. Current design requires only two panels with the first panel located 200 feet in advance of the Stop Ahead sign and the second one located 75% of the distance from the Stop sign to the Stop Ahead sign. Where bridges, railroad crossings or other such features make it impossible to place the rumble strips in their standard locations, they may be moved in consideration of site conditions.

Design

Each rumble strip panel is 24 feet in length, consisting of 25 grooves placed at one-foot intervals perpendicular to centerline. An 18-inch width of pavement at the outside edge of the lane is left uncut to accommodate bicycles. When cut in portland cement concrete or hot mix asphalt concrete the grooves are 3/8 inch deep and 4 inches wide. When cast in plastic portland cement concrete the grooves are ¾ inch deep, four inches wide at the top and one inch wide at the bottom. These and other design details are shown on Office of Design Detail 7132. It is critical that the design details be adhered to so that the proper tactile and audible awareness is achieved without being too rough or noisy.

Yield Sign

The Yield sign assigns right-of-way to traffic on certain approaches to an intersection. Vehicles controlled by a Yield sign need to slow down or stop when necessary to avoid interfering with conflicting traffic. Yield signs are used where designated by a Staff Action or Commission Order or where shown on a standard drawing or construction plan. They are normally used at the second crossroad of a divided highway, where the median is more than 30 feet but less than 100 feet in width. They may be used to control a merging movement on an entering roadway or entrance ramp where acceleration geometry and /or sight distance is less than desirable for merging traffic operation. They may also be used at a channelized all-way stop intersection on the separate turning roadways. Yield signs shall be used at roundabouts.

Where two roads intersect at an acute angle, the yield sign should be positioned at an angle or else shielded so that the legend is out of view of traffic to which it does not apply.

Yield sign placement shall be in accordance with Section 2A-8, Section 2A-9 and Section 2A-10 of the Traffic and Safety Manual.

Stop or Yield Sign at Passive Railroad Crossings

By definition, passive highway-rail crossings are those having warning devices such as signs and pavement markings located at or in advance of grade crossings to indicate the presence of a crossing but which do not change aspect upon the approach or presence of a train. The 2003 MUTCD requires the Crossbuck (R15-1) sign for all highway approaches to railroad grade crossings. It also allows the optional use of Yield or Stop signs at passive crossings that have two or more trains per day and at other passive crossings based on an engineering study. Yield signs are to be placed at all passive crossings on primary highways in Iowa unless a study performed by the Iowa Dept. of Transportation indicates Stop or no control other than the Crossbuck or Flagger control.

The signs should be placed on the same post as the Crossbuck and therefore should be the responsibility of the rail company, along with the strip of retroreflective material on the front and back of the support. Should rail company policy preclude the placement of other signs on the Crossbuck support, the Stop or Yield sign is to be placed on its own support by the Iowa Dept. of Transportation.

Determination of Type of Control

Yield signs are considered the default choice for traffic control at a passive crossing unless an engineering study or engineering judgment determines that a Stop sign is appropriate. A Stop sign establishes a legal requirement for each and every vehicle to come to a full stop. Indiscriminate use of the Stop sign at all or many passive grade crossings can cause poor compliance, increasing the risk of collisions associated with a high non-compliance rate. Therefore, the use of Stop signs at passive crossings should be limited to unusual conditions where requiring all vehicles to make a full stop is deemed essential by engineering study or judgment. The engineering study or engineering judgment should consider the following factors:

- The line of sight from an approaching highway vehicle to an approaching train as described in 6A-4 Horizontal Sight Distance at Intersections of the Iowa DOT Design Manual;
- Characteristics of the highway, such as the functional classification, geometric conditions, and traffic volumes and speed;
- Characteristics of the railroad including, but not limited to, frequency, type and speed of trains, and number of tracks;
- Crossing crash history; and
- Need for active control devices.

Installation Details

When used at a passive crossing, the Yield or Stop sign shall be installed in conformance with the general principles and standards for sign installations in Part 2 and Part 8 of the MUTCD and with Section 2A-8, Section 2A-9 and Section 2A-10 of the Traffic and Safety Manual. Examples of sign installation can be viewed at:

http://mutcd.fhwa.dot.gov/resources/policy/yieldstop_guidememo/yieldstop_policy.htm.

In addition, the following guidance can be considered for the installation of Yield or Stop signs at passive crossings:

When the Yield or Stop sign is installed on the same support as the Crossbuck sign, a strip of retroreflective material shall be used on the front and back of the support. The color of the retroreflective strip on the front of the support may be red (as per Section 2A.21) or white (as per Section 8B.03), while the color of the retroreflective strip on the back of the support shall be white.

The dimensions and placement of the retroreflective strips shall be in conformance with the standards in Section 8B.03.

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