DRAFT STAFF PROPOSAL
Rev. 7-18-06

GENERAL ORDER NO. 75-D
(Supersedes G.O. No. 75-C)

PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

REGULATIONS GOVERNING STANDARDS FOR WARNING DEVICES FOR AT-GRADE HIGHWAY-RAIL CROSSINGS IN THE STATE OF CALIFORNIA

Adopted_____. Effective _____.
(Resolution No. _____)

IT IS HEREBY ORDERED by the Public Utilities Commission of the State of California, that the following regulations governing the standards for warning devices for at-grade highway-rail crossings for motor vehicles, pedestrians, and/or bicycles, hereinafter referred to as at-grade crossings, be observed in this State unless otherwise authorized or directed by the Commission. These rules, issued in accordance with Sections 768, 778, 1202, 7537, 7538, and 99152 of California Public Utilities Code, apply to the extent they are not inconsistent with federal laws or regulations.

1. PURPOSE OF RULES

The purpose of these rules is to reduce hazards associated with at-grade crossings by establishing uniform standards for warning devices for at-grade crossings in the State of California, the application of which may afford safety for all persons traversing at-grade crossings.

2. POLICY ON REDUCING NUMBER OF AT-GRADE CROSSINGS

As part of its mission to reduce hazards associated with at-grade crossings, and in support of the national goal of the Federal Railroad Administration (FRA), the Commission's policy is to reduce the number of at-grade crossings on freight or passenger railroad mainlines in California.

3. SCOPE OF RULES

These rules are not intended as complete design or construction specifications. Design or construction specifications shall be in accord with accepted industry standards for the given existing local conditions unless otherwise specified in these rules. Unless otherwise provided, this order shall not be retroactive with respect to at-grade crossings lawfully existing on its effective date, except that the Commission may require alterations or improvements at any such at-grade crossings.

4. CA MUTCD

All warning devices shall be in substantial conformance with the applicable Standards, Guidance and Options set forth in the Manual on Uniform Traffic Control Devices (MUTCD), in the form adopted by the California Department of Transportation (Caltrans), which prescribes uniform standards and specifications for all official traffic control devices in

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California (see California Vehicle Code Section 21400 et seq.), and is referenced in this GO as CA MUTCD.

5. IDENTIFICATION OF PUBLIC AT-GRADE CROSSINGS

5.1 Each public at-grade crossing, or publicly used private at-grade crossing (as determined by the Commission or a court of competent jurisdiction), except those listed in Section 5.2, shall have the following information posted conspicuously and legibly at the crossing by the entity responsible for its maintenance:

a) The Commission and/or U.S. Department of Transportation assigned number that uniquely identifies the at-grade crossing; and
b) Emergency notification telephone number.

5.2 Exceptions to posting requirements
Compliance with Section 5.1 is not required at at-grade crossings of light rail transit systems not equipped with Standard automatic warning devices as defined in Section 6.

6. STANDARD WARNING DEVICES

6.1 *Standard 1-R.* A Crossbuck sign (defined as R15-1 in the CA MUTCD) installed on a retroreflectorized wood or metal post. See Figure 1 for additional specifications.

6.2 *Standard 8.* An automatic flashing light signal assembly which, by alternately flashing red lights facing each approach, provides a warning of an approaching train. A Crossbuck sign shall be installed on the mast. See Figure 2 for additional specifications.

6.3 *Standard 8-A.* A Standard 8 with a cantilever mounted on a mast with additional flashing lights over the roadway on the cantilever arm. See Figure 3 for additional specifications.

6.4 *Standard 9.* An automatic gate arm used in combination with a Standard 8. The gate mechanism may be mounted on the Standard 8 mast or separately on an adjacent pedestal. The automatic gate shall be designed to fail in the down position. A Crossbuck sign shall be installed on the mast. See Figure 4 for additional specifications.

6.5 *Standard 9-A.* A Standard 9 with a cantilever mounted on a mast with additional flashing lights over the roadway on the cantilever arm. See Figure 5 for additional specifications.

6.6 *Standard 9-E.* A Standard 9 installed on the departure side of the at-grade crossing (also known as an exit gate) in addition to the typical approach side of the at-grade crossing (also known as an entrance gate).

a) Exit gates shall be designed to fail in the up position.
b) Entrance gates shall begin their descent before exit gates and shall be horizontal before the exit gates are horizontal (see CA MUTCD for additional specifications).
c) A vehicle presence detection system shall be installed whenever exit gates are used. The system shall be designed such that if a vehicle is detected between the entrance and exit gates, the exit gate shall remain upright until the vehicle clears the exit gate.

7. PRIVATE AT-GRADE CROSSINGS

7.1 Pursuant to Public Utilities Code Section 7537, the Commission has the authority to determine the necessity for any private at-grade crossing and the place, manner, and conditions under which the at-grade crossing shall be constructed and maintained, and to fix and assess the cost and expense thereof. The Commission exercises such jurisdiction when it is either petitioned by one of the parties or Commission staff.

7.2 The establishment of a private at-grade crossing, other than a private at-grade crossing of the railroad tracks by the owning railroad, must be authorized through a written agreement between the railroad and the party requiring the crossing.

7.3 *Standard 1-X.* "PRIVATE CROSSING" sign shall be installed at all private at-grade crossings. See Figure 6 for additional specifications.

7.4 At all approaches to private at-grade crossings there shall be installed either a STOP sign (defined as a Standard R1-1 in the CA MUTCD) or an automatic warning device described in Sections 6.2 through 6.6.

a) If a STOP sign is used, the Standard 1-X sign shall be mounted on the post below it.
b) If a Standard 8, 8-A, 9, 9-A, or 9-E device is used, the Standard 1-X sign shall be attached to the mast of the warning device below the flashing light signals.

7.5 The language contained in the lower portion of the "PRIVATE CROSSING" sign shown in Figure 6, commencing with and including the words "No Trespassing", shall be permitted at the option of the railroad.

8. PEDESTRIAN AT-GRADE CROSSING WARNING SIGN

8.1 *Standard 1-D.* "PEDESTRIANS AND BICYCLES ONLY" sign shall be posted at at-grade crossings exclusively used by pedestrians and/or bicyclists. See Figure 7 for additional specifications.

8.2 If a Standard 1-R sign is used, the Standard 1-D sign shall be mounted on the post below the Crossbuck sign. If a Number of Tracks sign (defined as R15-2 in the CA MUTCD) is used in combination with the Standard 1-R, the Standard 1-D sign shall be placed below the R15-2 sign.

8.3 If a Standard 8, 8-A, 9, 9-A, or 9-E device is used, the Standard 1-D sign shall be attached to the mast of the warning device below the flashing light signals.

9. AUTOMATIC WARNING DEVICES - GENERAL REQUIREMENTS

9.1 *Warning Devices to Conform to Commission Standards.* All automatic warning devices hereinafter installed shall, unless otherwise authorized by the Commission, conform substantially to the specifications shown in Figures 2 through 5. This rule is not to be construed as prohibiting automatic warning devices of a different type installed in

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accordance with previous orders of this Commission (former Commission Standards 3 through 7, and 10) nor shall it be construed as prohibiting the replacement in kind or the relocation of such devices at a particular at-grade crossing.

9.2 *Warning Device Activation Time*.

a) As required by 49 CFR Part 234.225, under normal operation of through trains, automatic crossing warning device activation times in no event shall be less than 20 seconds before the at-grade crossing is occupied by rail traffic.

b) Automatic warning devices described in Section 6 shall remain active until the rear of the train clears the at-grade crossing. When the train clears the at-grade crossing, and if no other train is detected, the gate arms (if provided) shall ascend to their upright positions.

9.3 *Color of Masts.* Masts, assemblies, and cantilevered structures of flashing light signals shall be painted silver, except those parts functioning as a background for the light signal indications (see Section 9.4).

9.4 *Flashing Light Signals:* Lenses and roundels shall be 12 inches in diameter and shall be properly hooded. Light emitting diode (LED) arrays shall be used for all flashing light signals. Hoods and backgrounds shall be painted non-reflecting black. Backgrounds shall be 24 inches in diameter. (See American Railway Engineering and Maintenance of Way Association's "Communications and Signals Manual of Recommended Practices" for reference).

9.5 *Audible Warning Devices:* Bells or other audible warning devices shall be included in all automatic warning device assemblies (except as provided in Section 10) and shall be operated in conjunction with the flashing light signals. (See American Railway Engineering and Maintenance of Way Association's "Communications and Signals Manual of Recommended Practices" for reference).

9.6 *Gate Arms:* When the gates are fully lowered, the gap between the ends of two complementary gates must be less than two feet. If there is a median, centerline striping, or other form of channelization installed, the gap between the gate end and the channelization device must be within one foot.

9.7 *Traffic Signal Interconnection.* At an at-grade crossing with automatic warning devices where a diagnostic team determines that preemption is necessary, for example where vehicular traffic queues from traffic signal-controlled intersections exceed the Clear Storage Distance (as defined in the CA MUTCD), the traffic signals shall be interconnected with the automatic warning devices.

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10. WARNING DEVICES ON MEDIANS

Warning devices may be installed on raised island medians. At at-grade crossings where warning devices are installed on the right-hand side of traffic flow, backlights or audible warning devices are not required on median-mounted warning devices.

11. MODIFICATIONS

The removal, reduction, addition, or change in type of warning devices at each public at-grade crossing, or publicly used private at-grade crossing (as determined by the Commission or a court of competent jurisdiction), shall not be permitted unless authorized by the Commission. This includes any changes that may affect interconnections with adjacent traffic signals, or any other modification that may impact the safety of the at-grade crossing (See General Order 88, as amended, titled "Rules for Altering Public Highway-Rail At-grade crossings").

12. FORM G

12.1 Commission Standard Form G, titled "Report of Changes at Highway Grade At-grade Crossings and Separations" shall be used when notifying the Commission of changes to crossings, including completion of construction of new crossings, alteration of existing crossings, elimination of crossings, or any other changes.

12.2 Upon completion of any approved changes, notice of such change shall be submitted to the Commission within 30 days following the end of the month in which the change is effective.

12.3 All warning devices shall be removed within 90 days after the railroad exercises abandonment authority or permanently discontinues service over the line. The entity responsible for the maintenance of warning devices shall be responsible for the removal of warning devices. (See CA MUTCD for additional rules)

13. EXEMPTIONS

13.1 If, in a particular case, an exemption from any of the requirements herein is desired, the Commission will consider the exemption when accompanied by a full statement of the existing conditions and a justification for the exemption. Any exemption so granted shall be limited to the particular case.

13.2 Nothing herein shall be construed as limiting the trial installation of experimental warning devices, provided the Commission has approved such plan in advance of the time the device is installed.

13.3 The Commission reserves the right to modify any of the provisions of these rules in specific cases, when, in the Commission's opinion, public interest would be served by so doing.

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This order shall be effective on and after the **[date]**. Approved and dated at San Francisco, California, this **[date]**.

PUBLIC UTILITIES COMMISSION
OF THE- STATE OF CALIFORNIA

By
Executive Director

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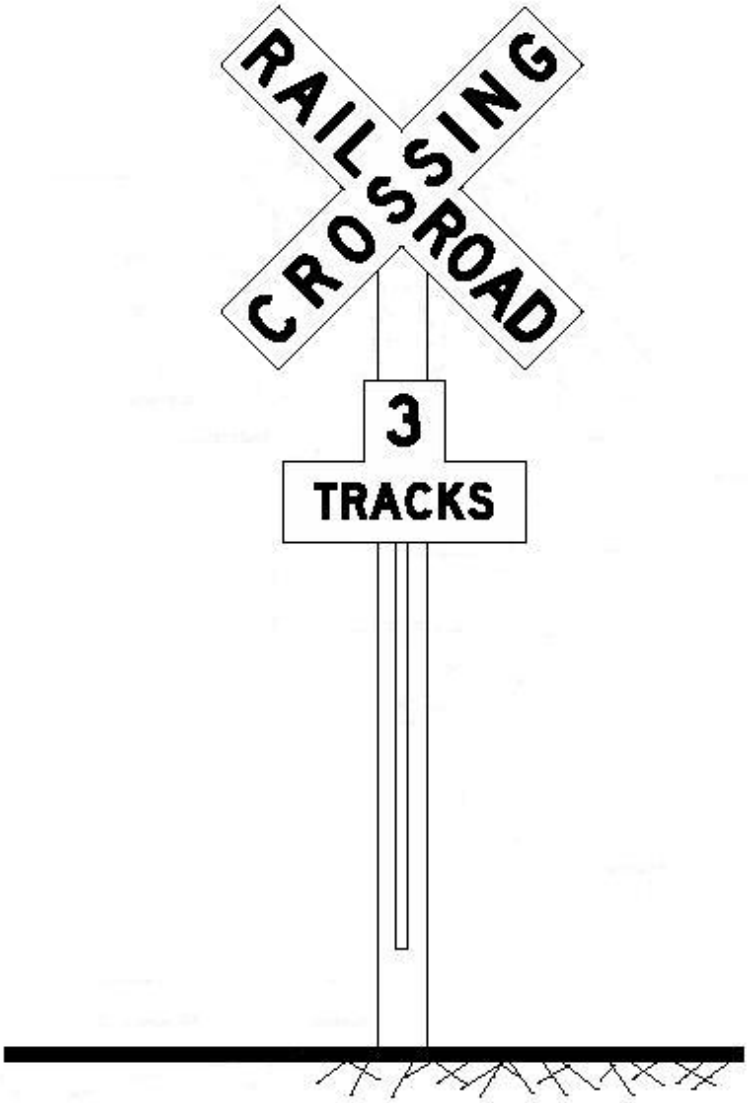
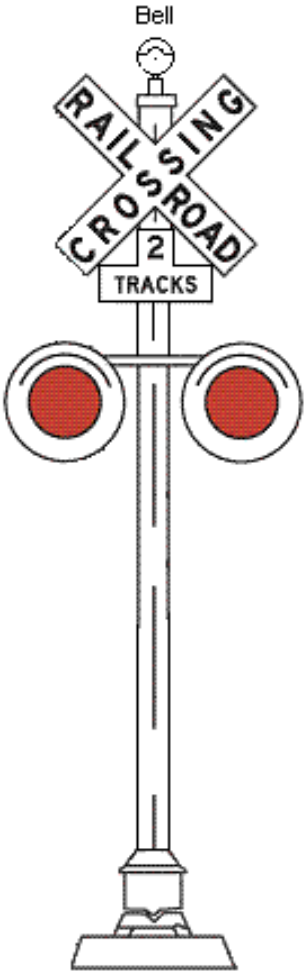
Figure 1
STANDARD 1-R



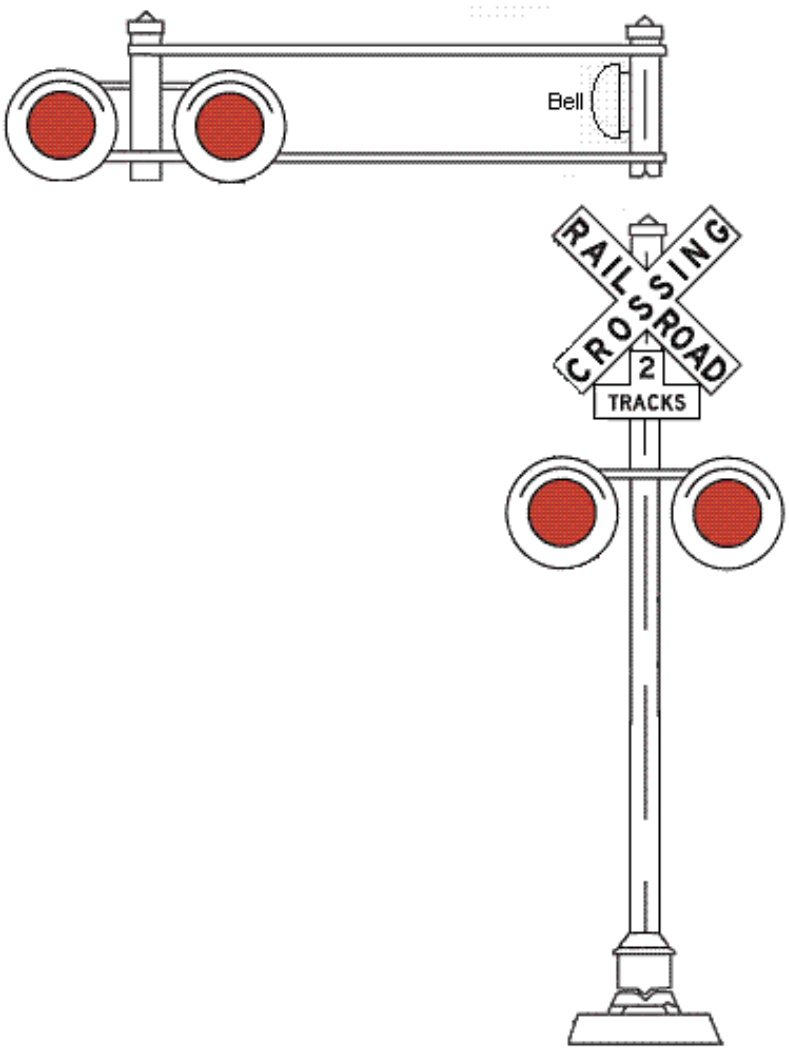
<u>Crossbuck Sign on a Post</u>
Crossbuck sign installed on a retroreflectorized wood or metal post
(See CA MUTCD for additional requirement)

Figure 2
STANDARD 8



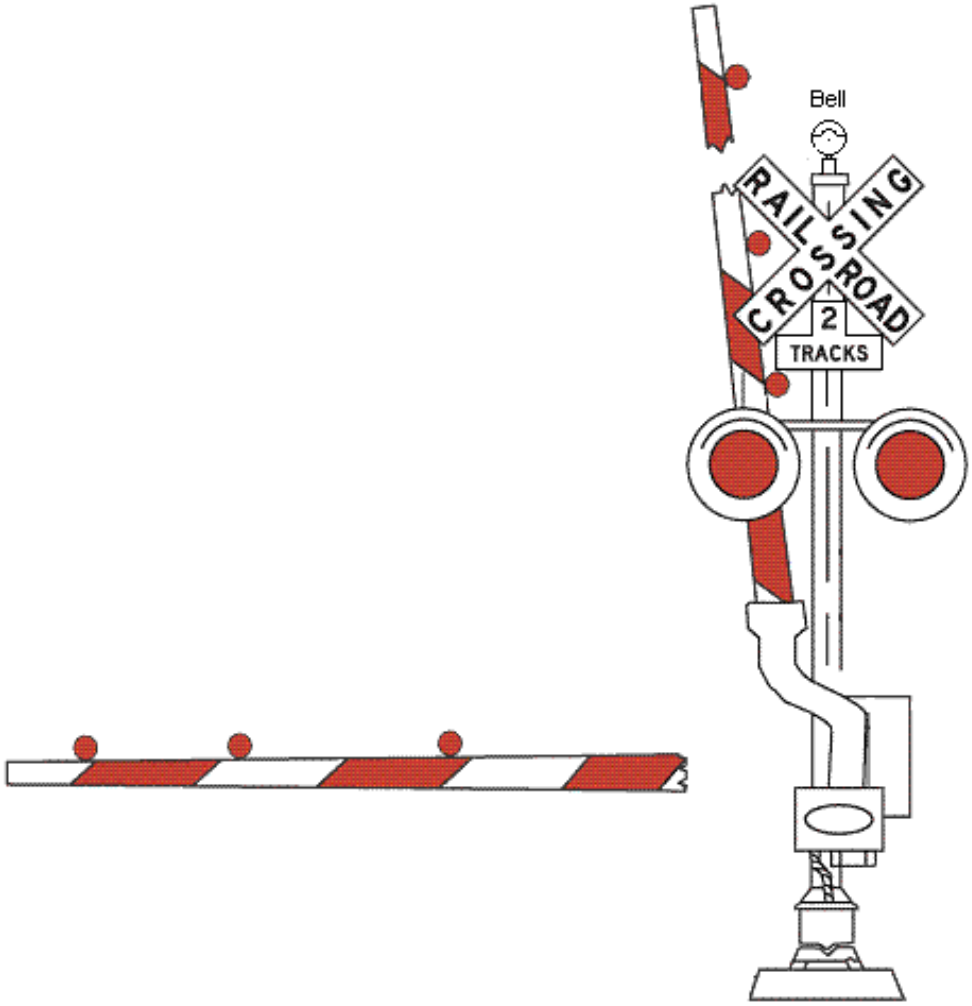
<u>Flashing Light Signal Assembly</u>
Mast mounted flashing light signals. (See CA MUTCD for additional specifications)

Figure 3
STANDARD 8-A



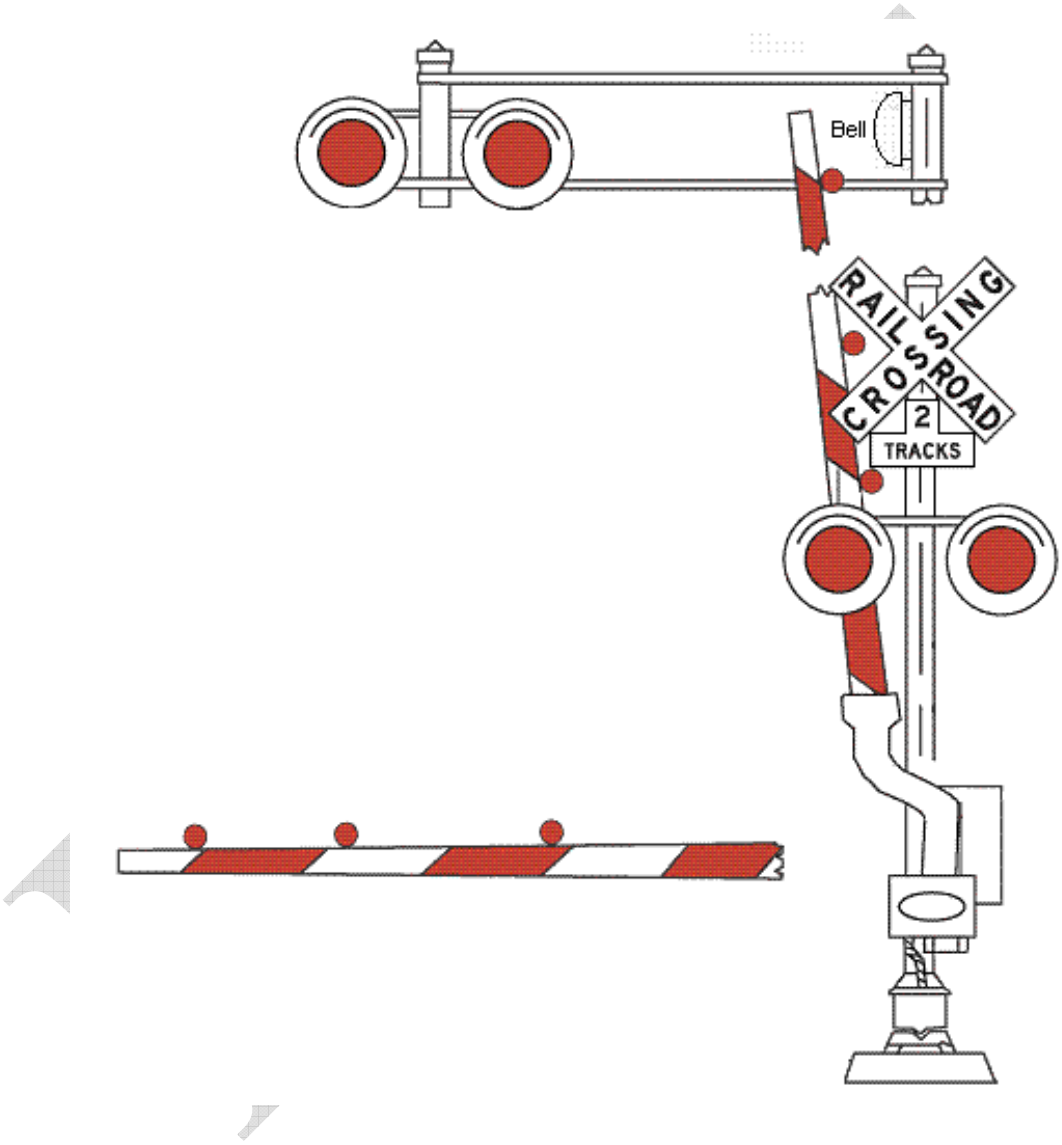
Flashing Light Signal Assembly with
<u>Additional Overhead Flashing Light Signals on a Cantilevered Mast Arm</u>

Figure 4
STANDARD 9



<u>Flashing Light Signal Assembly with Automatic Gate Arm</u>

Figure 5
STANDARD 9-A



Flashing Light Signal Assembly with Automatic Gate Arm and
<u>Additional Overhead Flashing Light Signals on a Cantilevered Mast Arm</u>

Figure 6
STANDARD 1-X

PRIVATE CROSSING SIGN

The PRIVATE CROSSING sign shall be retroreflectorized white with the words and graphics shown in the figure above in black lettering.

Figure 7
STANDARD 1-D

PEDESTRIAN CROSSING SIGN

The PEDESTRIAN CROSSING sign shall be retroreflectorized white with the words and graphics shown in the figure above in black lettering.