

Decision No. 3374

BEFORE THE RAILROAD COMMISSION OF THE STATE OF CALIFORNIA

In the Matter of the Investigation on the Commission's own Motion, dealing with regulation governing the protection of crossings at grade of roads, highways, and streets with railroads or street railroads in the State of California.

ORIGINAL

Case No. 3374

In the Matter of the Application of the People of the State of California, on relation of the Department of Public Works, for an order revising the regulations governing the protection of crossings at grade of roads, highways, and streets with railroads or street railroads in the State of California.

Application No. 21829

FRANK B. DURKEE, for Applicant in Application No. 21829

FRANCIS X. VIEIRA, for Southern Pacific Company, Northwestern Pacific Railroad Company, Visalia Electric Railroad Company, Fresno Traction Company, Stockton Electric Railroad Company, Central California Traction Company, Peninsula Railway Company, San Jose Railroads, and San Diego and Arizona Eastern Railway Company.

E. E. BENNETT, for Union Pacific Railroad Company

L. N. BRADSHAW, for The Western Pacific Railroad Company, Sacramento Northern Railway, and Tidewater Southern Railroad Company, Ltd.

C. W. CORNELL, for Pacific Electric Railway Company

F. D. KINNIE, and E. WINANS, for The Atchison, Topeka and Santa Fe Railway Company.

SANBORN, ROEHL AND MACLEOD, for California Western Railroad & Navigation Company.

BY THE COMMISSION:

OPINION AFTER REHEARING

In Application No. 21829 the Department of Public Works of the State of California asks that this Commission revise or amend its General Order No. 75-A, entitled "Regulations governing the protection of crossings at grade of roads, highways and streets with railroads or street railroads in the State of California," to include (a) reflectorized crossing signs, and (b) automatic flashing light signals, in order to conform to the rules and regulations promulgated by the Bureau of Public Roads.

General Order No. 75-A was authorized by Decision No. 25409, in Case No. 3374. In order to determine whether General Order No. 75-A should be rescinded, altered, or amended, Case No. 3374 was reopened and set for public hearing along with Application No. 21829.⁽¹⁾

The United States Bureau of Public Roads, a bureau or agency of the Department of Agriculture, is an agency of the Federal Government charged with the administration of funds appropriated by Congress for aid to states in the construction of streets and highways, the elimination of crossings at grade of streets and highways with railroads, and additional protection at grade crossings. Said bureau has promulgated rules and regulations prescribing the types of grade crossing protection, certain of which are not included in General Order No. 75-A as a standard for California.

The Department of Public Works of the State of California requests that the following types of protection be made standard by this Commission:

1. Reflectorized crossing sign
2. Automatic Flashlight signal
3. Automatic Wigwag signal with flashing light aspect.

Furthermore, the Department of Public Works requests that this Commission prescribe the terms upon which said crossings shall be protected and the proportions in which the expense of installation and maintenance of such crossing protection shall be divided between the various parties.

The record shows that the types of protection enumerated above have been installed at numerous crossings in the State, under

(1) Public hearing was held in these matters before Examiner Hall in San Francisco on December 1, 1938, and the matters were consolidated for hearing and determination.

special authorization of this Commission, and that these types of protection are effective in warning the motorist of the existence of a crossing or of the approach of trains. The various interested parties appearing at the hearing recommended that these types of protection be added to the Commission's standards of grade crossing protective devices.

In view of the fact that these types of protection have proved effective and are generally in use throughout the United States, particularly where protection is provided by Federal funds, it is concluded that they should be approved for use in California.

The request for the establishment of standard methods of allocating the cost of construction and maintenance of protective devices was not supported by evidence at the hearing. It appears that the conditions surrounding the several locations where crossing protection is needed are not always similar and therefore each case should be considered on its merits. It is therefore concluded that no standard allocation of costs should be promulgated at this time.

The record clearly indicates that General Order No. 75-A should be revised so as to include the above types of protection and that this revision will provide for the protection sought in Application No. 21829; therefore that proceeding should be dismissed and the following Order will so provide.

O R D E R

A public hearing having been held in the above-entitled proceedings and the matters having been duly submitted,

The Railroad Commission of the State of California hereby finds as a fact that the types of grade crossing protection, as set forth in the General Order attached hereto and made a part hereof, are just and reasonable, and with their issuance this Commission's General Order No. 75-A may be properly cancelled, revoked, annulled,

and set aside.

IT IS HEREBY ORDERED that from and after the effective date of this Order the grade crossing protective devices, rules, and regulations attached hereto and made a part hereof shall be in full force and effect, and said grade crossing protective devices, rules, and regulations governing their installation and operation shall be known as General Order No. 75-B.

IT IS HEREBY FURTHER ORDERED that General Order No. 75-A of the Railroad Commission of the State of California be and it is hereby revoked, annulled, and set aside, effective as of the effective date of this Order.

IT IS HEREBY FURTHER ORDERED that Application No. 21829 is hereby dismissed without prejudice.

The effective date of this Order shall be twenty (20) days from the date hereof.

Dated at San Francisco, California, this 27th day of

June, 1939.

Raymond
Harold R. Nelson
Carl C. Croy
H. B. Allen
Justus J. Green
Commissioners

General Order No. 75-B.

(Superseding G. O. No. 75 and Supplements 1 and 2 thereto
and G. O. No. 75-A)

RAILROAD COMMISSION OF THE STATE OF CALIFORNIA

REGULATIONS GOVERNING THE PROTECTION OF CROSSINGS AT GRADE OF
ROADS, HIGHWAYS AND STREETS WITH RAILROADS OR STREET RAILROADS
IN THE STATE OF CALIFORNIA.

Issued under authority of Public Utilities Act.
Approved Effective

IT IS HEREBY ORDERED by the Railroad Commission of the
State of California that the following regulations governing the
protection of street, road and highway crossings with railroads
and portions of street railroads be observed in this State unless
otherwise authorized or directed by the Commission.

I. Purpose of Rules.

The purpose of these rules is to formulate, for the State of
California, uniform standards for grade crossing protection, the
application of which will insure greater safety to the public using
grade crossings.

II. Scope of Rules.

These rules are not intended as complete construction speci-
fications but embody only the requirements which are most important
from the standpoint of public safety. Construction shall be ac-
cording to accepted good practice for the given local conditions in
all particulars not specified in the rules.

III. Identification of Public Crossings.

Unless otherwise specified by this Commission, each carrier
shall at each public crossing of its track paint or otherwise main-
tain on the crossing sign post or other structure an identification
number, assigned to the particular crossing preceded by the words
"Crossing Number," provided that this Commission shall have assigned
such identification number and shall have notified the carrier

Answer
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thereof. Such number shall be placed so as to be readily legible from the highway. In all matters pertaining to any crossing brought to the attention of the Commission, reference shall be given to the assigned crossing number.

At crossings of named streets within incorporated cities where the carrier is not required to maintain a Standard No. 1 or No. 1-A crossing sign, or other special types of signs or crossing signals supported by posts, pedestals, foundations, or crossing gates, carrier will not be required to paint or maintain such identification number.

IV. Identification of Private Crossings.

Each private road crossing at grade with a track of a railroad or street railroad shall have a distinctly legible sign installed in a conspicuous location, indicating that the crossing is for private use only and not for public use. Such sign need not be installed where the railroad right of way is fenced on both sides and fence gates are maintained and kept closed.

V. Crossing Signs.

(a) Each public crossing at grade of a road, highway or street with a track of a railroad or of a street railroad, as outlined in Section X hereof, shall, unless exemption is provided for herein, be protected by at least one crossing sign, constructed and installed in substantial conformity with the specifications herein illustrated and designated as Standard No. 1, or Standard No. 1-A, provided, ^{at} however, that/crossings where crossing gates are operated continuously, or where two or more crossing signals are maintained, no such crossing sign need be maintained.

(b) Each crossing sign (Standard No. 1 or Standard No. 1-A) herein illustrated shall be located in a conspicuous position facing highway travel, preferably at either corner of the crossing intersection on the right-hand side of the highway traffic flow and in advance of the railroad track.

(c) A suspended "X" sign, constructed and installed in substantial conformity with Standard No. 2 herein illustrated, may be used at a crossing in addition to the crossing sign designated as Standard No. 1, or in cases approved by this Commission, may be installed in lieu thereof. Said suspended sign shall be placed in a conspicuous location, facing highway traffic, and shall, where required by the Commission, be illuminated during night hours.

(d) Special crossing signs for unusual conditions shall be approved by this Commission before the installation thereof.

VI. Automatic Crossing Signals.

(a) All automatic signals installed at a public crossing at grade of a street, road or highway with the track of a railroad or street railroad, shall substantially conform to the specifications herein illustrated and designed as Standard No. 3, No. 4, No. 5, No. 6, No. 7, or No. 8.

(b) A distinctive warning aspect may be used at crossings having more than one main track, to indicate the approach of another train, when a warning aspect is being displayed for the first train, provided, however, that the type of such distinctive warning aspect shall have been approved by this Commission.

(c) Crossing signals shall, unless the Commission otherwise directs, be located in a conspicuous position at both corners of the crossing intersection on the right-hand side of highway traffic flow and in advance of the railroad track and arranged to face the highway travel. Signals may, however, be installed in the center of the street and in advance of the track, only with the consent of the Commission. This Section of the Order will not be retroactive with respect to crossings provided with automatic signals as of the effective date of the Order until signals at such locations are replaced, except when replacement is due to accident.

(d) Crossing signals, automatically controlled, shall be installed so as to display the warning aspect for approximately 25 seconds with limits of from 20 to 30 seconds in advance of the

normally fastest train operated over the crossing protected, except where special conditions prevail. Where both high and low speed tracks are included in the crossing, the normally fastest train operated over each individual track shall govern the length of ringing circuit on that track. Unless the Commission otherwise directs, tracks other than main or branch line tracks are not required to be connected with operating circuits.

(e) Circuits for automatic crossing signals shall be arranged so that signals will operate until rear of train reaches or clears crossing, provided, however, this requirement shall not be retroactive with respect to electric railroads. Such warning aspect shall not be displayed after the movement of the train over the crossing has been completed.

(f) Crossing signals shall be installed in so far as practicable so that failure of control circuits or other apparatus will result in a warning aspect being displayed.

VII. Installation of Additional Protection.

This Commission shall be notified within thirty (30) days following the close of the month of installation of additional protection at any public crossing at grade of a street road or highway with the tracks of a railroad or street railroad, provided, however, that the Commission need not be notified of the temporary installation of a human flagman to protect a crossing during an emergency.

VIII. Removal, Reduction or Substitution of Protection.

No railroad or street railroad shall hereafter remove an automatic crossing signalling device, crossing gates, crossing watchman or other form of crossing protection or reduce the hours during which any such protection is maintained or substitute any form of crossing protection for a form already maintained at any public crossing at grade of a street, road, or highway with its track, unless the consent for such removal, reduction or substitution shall have been secured from this Commission; provided, however, that a

human flagman, installed to temporarily protect a crossing during an emergency, may be removed without such consent. Notice of any change in protection made under authority of such consent shall be given the Commission within thirty (30) days following the close of the month in which the change is effective.

IX. Replacement of Crossing Protection Following Accident.

Absence of crossing signs and automatic signals, due to accidents, shall not be considered a violation of this order until after a reasonable time for replacement has elapsed.

X. Applies to Railroads and Portions of Street Railroads.

This general order applies to all railroads and to those portions of street railroads located on private rights of way, excluding, however, those portions where such private rights of way lie longitudinally between the two parts of a divided street or highway.

XI. Exemptions.

If, in a particular case, exemption from any of the requirements herein is desired, the Commission will consider the application of a carrier for such exemption when accompanied by a full statement of the conditions existing and the reasons why such exemption is asked. It is to be understood that any exemption so granted shall be limited to the particular case covered by the application.

Nothing herein shall be construed as limiting the trial installation of experimental grade crossing protective devices, provided, however, that the Commission shall be notified of such plan in advance of the time the device is installed.

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.

Compliance with these rules shall not relieve a utility from any statutory requirement.

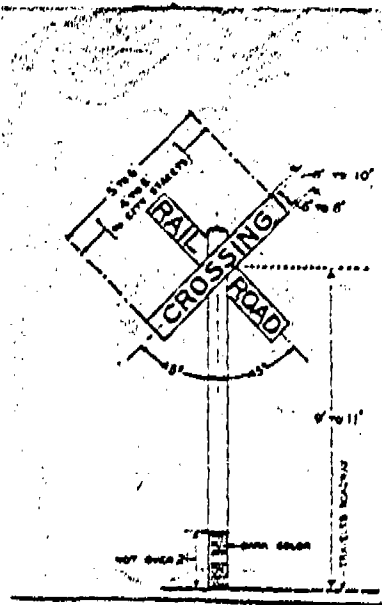
This order shall be effective on and after the _____
day of _____, 1939.

Approved and dated at San Francisco, California, this
_____ day of _____, 1939.

RAILROAD COMMISSION OF THE STATE OF CALIFORNIA,

By

H. G. MATHEWSON, Secretary.



STANDARD NO. 1

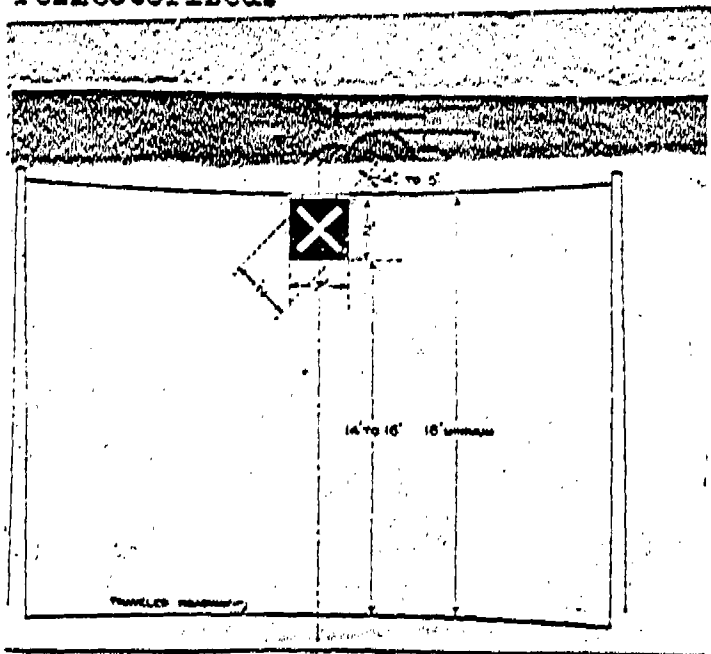
Painting:

Post and Arms: White or Aluminum, except that post may be of a dark color for not over two (2) feet above ground line.

Lettering: Black - width of stroke 1" to 1-3/8".

STANDARD NO. 1-A

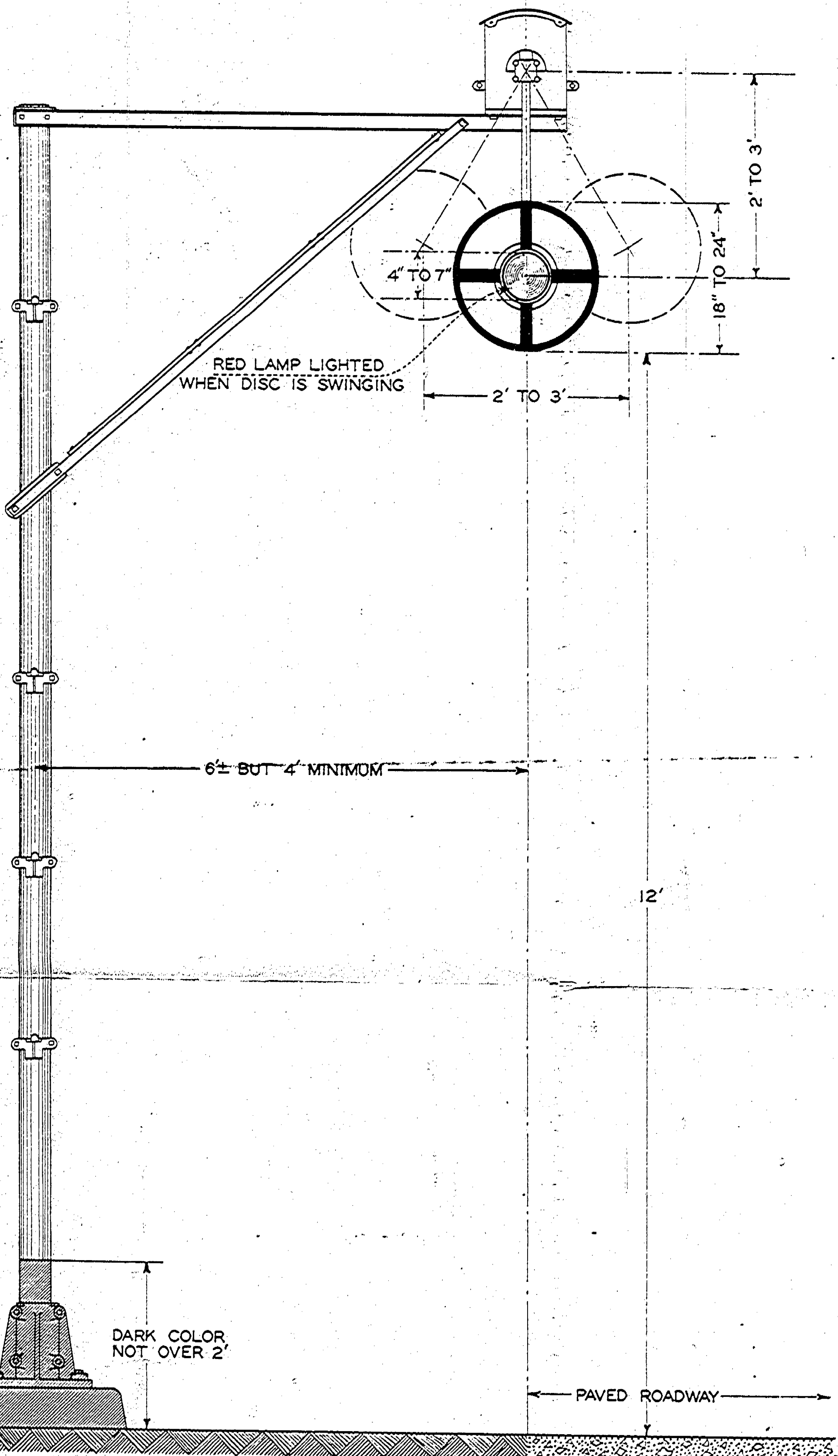
Same as Standard No. 1 except that the letters in the words "Railroad Crossing" will be reflectorized.



STANDARD NO. 2

Painting:

Field: Black.
Letter: White.



SIDE OF STREET INSTALLATION

STANDARD NO. 3

STANDARD NO. 3

Wigwag - Side of street installation.

Painting:

Post: White or Aluminum, except that not over 2' above ground line may be of a dark color.

Banner: Field White; 1" Black Border, 2½" Black Cross, both sides. Not retroactive but effective on new installations, all replacements and banner repainting.

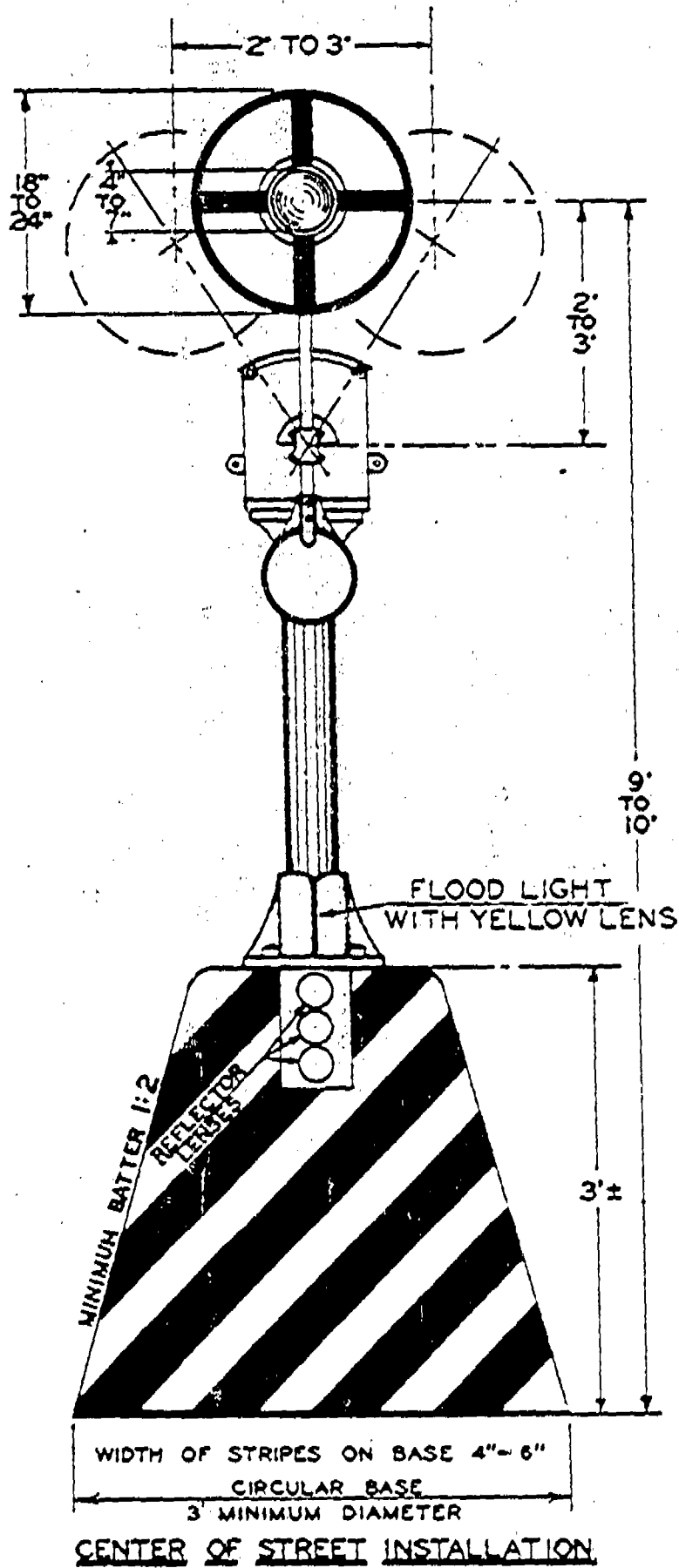
Warning Aspect:

Cycles: Min. 30, Max. 45 per minute. The movement from one extreme to the other and back constitutes a cycle.

Signals: Warning aspect shall consist of a swinging banner by day in combination with a swinging red light at night. Unless omitted by permission of the Commission, the warning aspect shall be accompanied by the sounding of a bell. Both banner and light shall be so constructed as to display a danger signal in both directions along the highway.

NOTE: In a curbed street, the supporting post shall be placed near curb line.

The distance from the surface of the paved roadway to the lower edge of the banner shall be 12', except that this distance may, where justified, by special conditions, be from 11' to 14'.



STANDARD NO. 4

STANDARD NO. 4

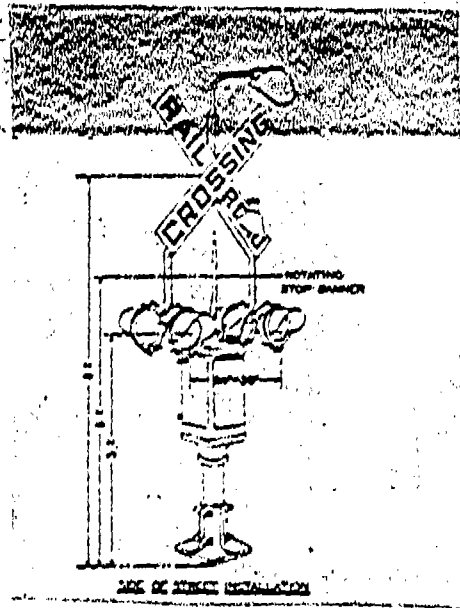
Wigwag - Center or side of street installation.

Painting:

- Banner:** Field White, 1" Black Border, 2 $\frac{1}{2}$ " Black Cross, both sides. Not retroactive but effective on new installations, all replacements and banner repainting.
- Post:** (Side of street installation). White or Aluminum, except that not over 2' above ground line may be of a dark color.
- Base:** (Center of street installation). Diagonal black and white stripes, angle 45 degrees to vertical.

Warning Aspect:

- Cycles:** Min. 30, Max. 45 per minute. The movement from one extreme to the other and back constitutes a cycle.
- Signals:** Warning aspect shall consist of a swinging banner by day in combination with a swinging red light at night. Unless omitted by permission of the Commission, the warning aspect shall be accompanied by the sounding of a bell. Both banner and light shall be so constructed as to display a danger signal in both directions along the highway.
- Base:** (Center of street installation). Base shall be illuminated by floodlights during night hours.
- NOTE:** For side of street installations in a curbed street, the supporting post should be placed near the curb line, and in an uncurbed street, it should be placed about 4' from the edge of the pavement.



STANDARD NO. 5

Flashing light-rotating stop banner -
Side of street installation.

Painting:

Banner: Field Vermilion; Letters White.

Crossing Sign: Field White; Letters Black.

Warning Aspect:

Flashes: Red lights shall flash alternately. The number of flashes of each light per minute shall be 30 minimum, 45 maximum.

Hoods: Lamps shall be properly hooded.

Range: When lamps are operated at normal voltage, the range, on tangent, shall be at least 300 feet on a clear day, with a bright sun at or near the zenith.

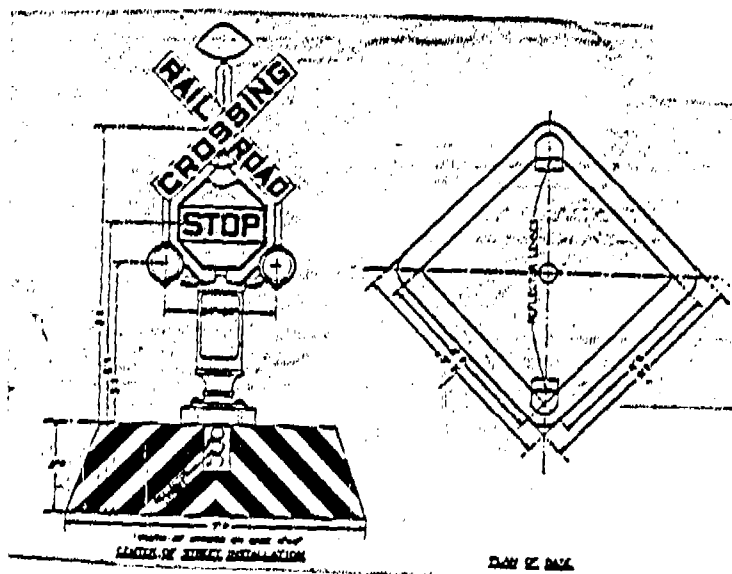
Spread: The beam spread shall be not less than 10 degrees each side of the axial beam under normal conditions. This beam spread is interpreted to refer to the point at the angle mentioned where the intensity of the beam is 50 per cent of the axial beam under normal conditions.

Lenses and Roundels: Lenses and roundels shall be 5 inches minimum, 9 inches maximum.

Peep Holes: Peep holes may be used.

Display: Signals shall be so constructed as to display a danger warning in both directions along the highway. Unless omitted by permission of the Commission, the warning aspect shall be accompanied by the sounding of a bell.

NOTE: In a curbed street, the supporting post should be placed near curb line, and in an uncurbed street, the supporting post should be placed 4' from the edge of the pavement where there are no shoulders. Where shoulders are constructed, the post should be located not less than 5' from the edge of the pavement.



STANDARD NO. 6

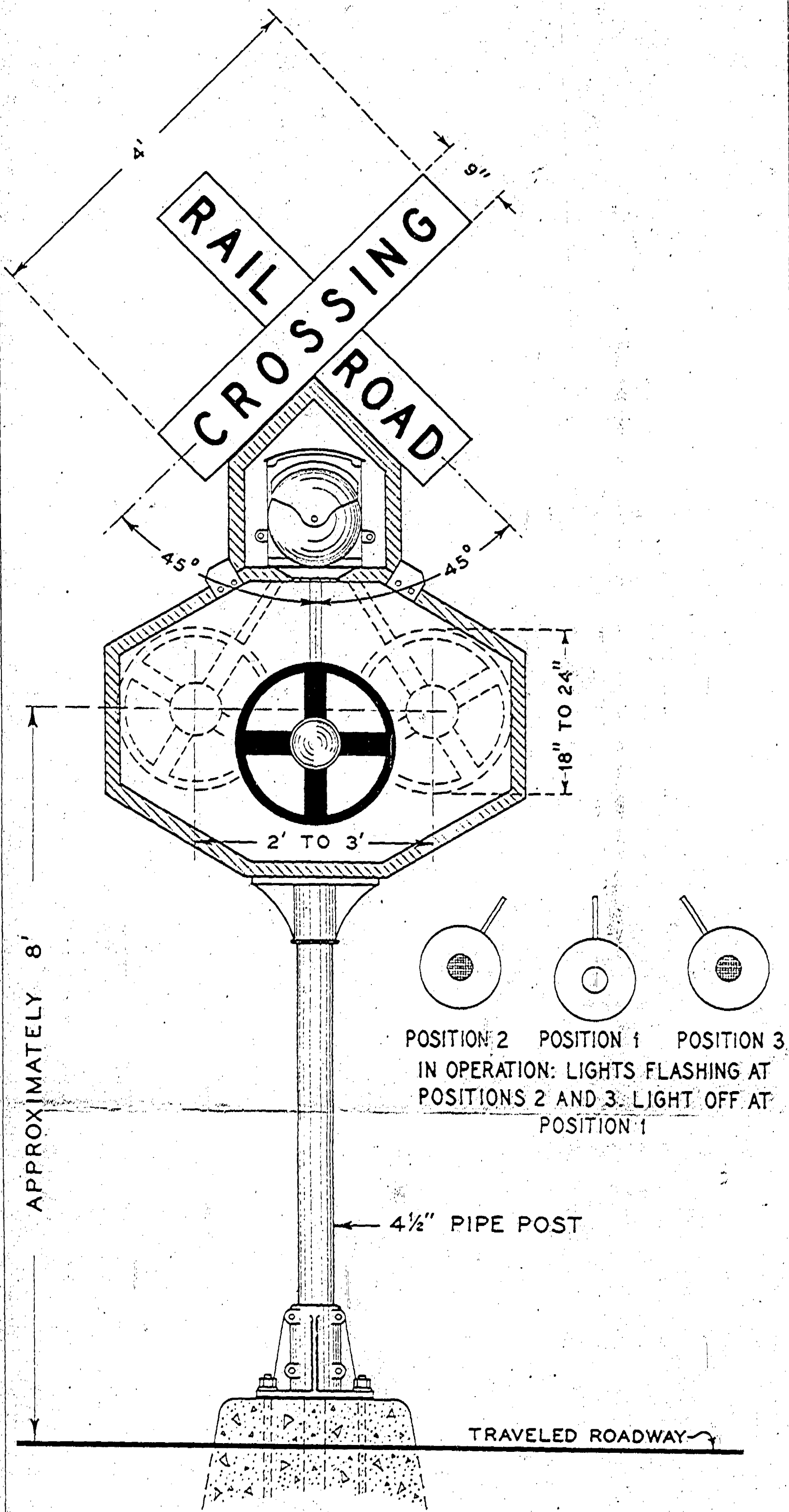
Flashing light-rotating stop banner.
Center of street installation.

Painting:

- Banner: Field Vermilion; Letters White.
 Crossing Sign: Field White; Letters Black.
 Base: Diagonal Black and White Stripes, angle 45 degrees to vertical.

Warning Aspect:

- Flashes: Red lights shall flash alternately. The number of flashes of each light per minute shall be 30 min., 45 max.
- Hoods: Lamps shall be properly hooded.
- Range: When lamps are operated at normal voltage, the range, on tangent, shall be at least 300 feet on a clear day, with a bright sun at or near the zenith.
- Spread: The beam spread shall be not less than 10 degrees each side of the axial beam under normal conditions. This beam spread is interpreted to refer to the point at the angle mentioned where the intensity of the beam is 50 per cent of the axial beam under normal conditions.
- Lenses and Roundels: Lenses and roundels shall be 5 inches min., and 9 inches max.
- Peep Holes: Peep holes may be used.
- Display: Signals shall be so constructed as to display a danger warning in both directions along the highway. Unless omitted by permission of the Commission, the warning aspect shall be accompanied by the sounding of a bell.
- Base: Base shall be illuminated by flood lights during night hours.



STANDARD NO. 7

STANDARD NO. 7

Wigwag - Side of street installation.

Painting:

Post and Frame: White or Aluminum.

Banner: Field White; 1" Black Border, 2 $\frac{1}{2}$ " Black Cross, both sides.

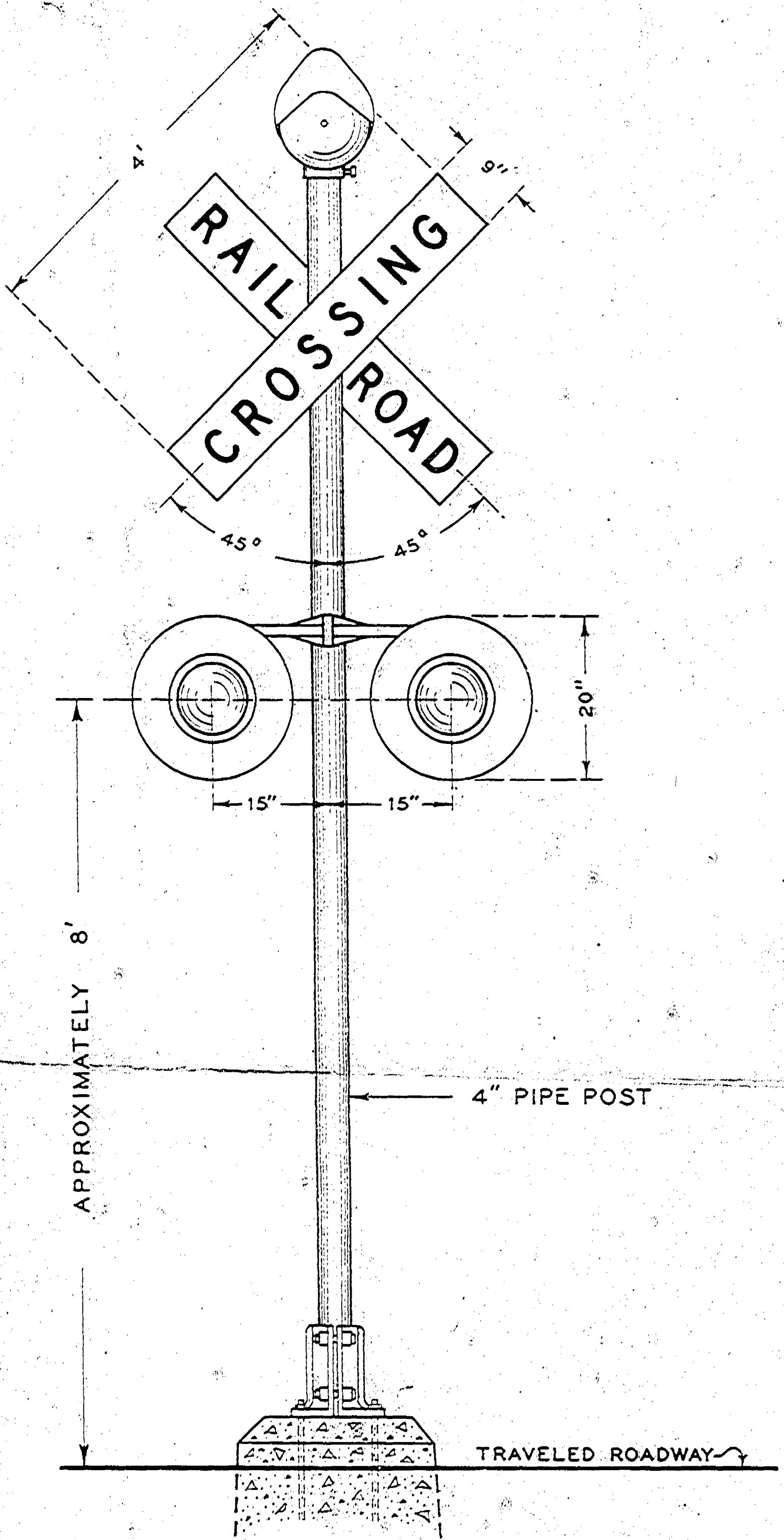
Crossing Sign: Field White; Letters Black on both sides. If reflector lenses are used, the crossing sign shall display the words "railroad crossing" in white letters with white reflector lenses on black background toward highway traffic approaching the near side of the crossing.

Warning Aspect:

Cycles: Minimum 30, Maximum 45 per minute. The movement from one extreme to the other and back constitutes a cycle.

Signals: Warning aspect shall consist of a swinging banner in combination with a red light in the center thereof which flashes on at each extreme of the swing and off during the remainder. Unless omitted by permission of the Commission, the warning aspect shall be accompanied by the sounding of a bell. Both banner and light shall be so constructed as to display a danger signal in both directions along the highway.

NOTE: In a curbed street, the supporting post should be placed near curb line, and in an uncurbed street the supporting post should be placed 4' from the edge of the pavement where there are no shoulders. Where shoulders are constructed, the post should be located not less than 5' from the edge of the pavement.



STANDARD NO. 8

STANDARD NO. 8

Flashing Light - Side of street installation.

Painting:

Lamp Cases, Hoods, and Backgrounds: Black.

Crossing Sign: Field White; Letters Black on Both Sides.
If reflector lenses are used, the crossing sign shall display the words "railroad crossing" in white letters with white reflector lenses on black background toward highway traffic approaching the near side of the crossing.

Post: White or Aluminum.

Warning Aspect:

Flashes: Red lights shall flash alternately. The number of flashes of each light per minute shall be 30 minimum, 45 maximum.

Hoods and Background: Lamps shall be properly hooded. Backgrounds, 20 inches in diameter, shall be painted black on both sides.

Range: When lamps are operated at normal voltage, the range, on tangent, shall be at least 300 feet on a clear day, with a bright sun at or near the zenith.

Spread: The beam spread shall be not less than 3 degrees each side of the axial beam under normal conditions. This beam spread is interpreted to refer to the point at the angle mentioned where the intensity of the beam is 50 per cent of the axial beam under normal conditions.

Lenses and Roundels: Lenses and roundels shall be 5 inches minimum, 9 inches maximum.

Short Range Indication: Signal shall display a satisfactory short range indication.

Peep Holes: Peep holes may be used.

Display: Signals shall be so constructed as to display a danger warning in both directions along the highway. Unless omitted by permission of the Commission, the warning aspect shall be accompanied by the sounding of a bell.

NOTE: In a curbed street the supporting post should be placed near curb line, and in an uncurbed street the supporting post should be placed 4' from the edge of the pavement where there are no shoulders. Where shoulders are constructed, the post should be located not less than 5' from the edge of the pavement.