

# Design Standards Letter

**Letter Number: G-1968-39**

**Letter Date: 10/14/1968**

**Effective Date: 10/14/1968**

**Section/Plan No.: None**

**Subject: Highway Signing 1968 Specifications and Revised Design Criteria**

## Body

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ALL DIVISION AND DISTRICT ENGINEERS AND CHIEF COUNSEL:

In conjunction with the 1968 Specifications, considerable change has been made in previous design criteria for highway signing. The following are instructions for the revised design and new specifications.

A. Reduce wind velocity from 85 mph to 80 mph. This velocity will result in a wind load of 35 lbs./ft.<sup>2</sup> to be used for design purposes of both overhead and ground mounting.

B. For designs of signs with the centroid of the sign below 15 feet, a 20% reduction in wind loading can be used, resulting in a wind load of 30 lbs./ft.<sup>2</sup>.

C. Horizontal clearance.

(1) Sheet Type Signs. Increase minimum horizontal clearance from 2' to 4' from shoulder, except for gore mounted signs.

(2) Structural Type Signs.

(a) Increase minimum clearance from 2' to 4' from shoulder.

(b) Maximum clearance to be determined by a comparison of size of sign to roadway cross-section and profile.

A structural sign should be placed as far from the pavement as practicable (max. 30 feet), when reviewed according to the following criteria:

(a) Shift longitudinally to obtain a better cross-section and still maintain sign effectiveness and pattern.

(b) Maintain minimum design height above pavement, and if possible, a vertical centroid of less than 15 feet above ground measured at the longest post.

(c) Breakaway design is preferred to guard rail protection.

It is necessary that a minimum sight distance of the sign be maintained. A rule to be followed is that a minimum of 60 feet of sight distance for each inch of letter height is required, with a desirable minimum of 1000 feet, where possible.

When the normal offset from edge of pavement is increased to 30 feet, the brightness of the sign may drop to 24 percent. The legibility remains at an 80 percent level or higher when using the normal offset. Skew angle shown on standard drawing is valid for signs on tangent sections of road regardless of offset distance. For signs on curved sections of road, the skew angle may be adjusted to maintain brightness and avoid glare. Since the legibility of the sign is the critical factor in a large sign, the increasing of the offset distance would be acceptable.

#### D. Posts for Structural Type Signs.

(1) ASTM A 441-66A steel will be used in lieu of A-36 steel for design posts for structural type signs.

(2) Eliminate the use of cover plates and post top cut off.

(3) Provide only ten (10) design posts to replace the present 21 design posts.

(4) Provide breakaway design for posts one through six, and bolt down design for posts one through ten.

E. Steel Pipe Posts for Sheet Type Signs of 30 square feet maximum. This will include the exit sign at ramps. Provide for steel pipe post using 2 1/2", 3", and 4" (max.) pipe on Interstate and Expressway Systems.

F. Concrete Base with Metal Sleeve Design. For use on primary and other roadways where stabilized shoulders (other than processed aggregate) are provided. May be provided by contract or by state forces. For the time being, you will be advised by this office those projects for which this signing will be provided by contract.

G. Roadways without Stabilized Shoulders. Continue present policy and practice of providing for signs by the Division of Maintenance, mounted on wood posts embedded in earth.

H. Wood Posts. Only Douglas Fir Posts shall be used in conjunction with

concrete bases and metal sleeves.

I. Change the design of the 6' x 5' exit sign from a structural type to a sheet type.

J. Previous instructions for use of breakaway post design is applicable as well as instructions for guard rail protection for posts without a breakaway feature. Considerable additional latitude is provided by Item C above for horizontal clearance, as well as in Item D above for structural steel posts.

Included with these instructions are the following items:

1. One chart for ground mounted signs using pipe posts (one or two posts).
2. One set charts for one sign having clear height of 8', 12', 16', 20' and 24'.
3. One set charts for two signs having clear heights of 8', 12', 16', 20' and 24'.
4. Also a quantity of SP-29, Sign Post Data sheets are furnished separately.

Standard Drawings for new post designs have previously been furnished.

For safety projects only let after January 1, 1969, under the 1968 Specifications the following additional procedures are required:

1. Posts for breakaway design shall be by new specifications and revised design criteria.
2. Posts for bolt down design shall be in accordance with old design criteria.

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