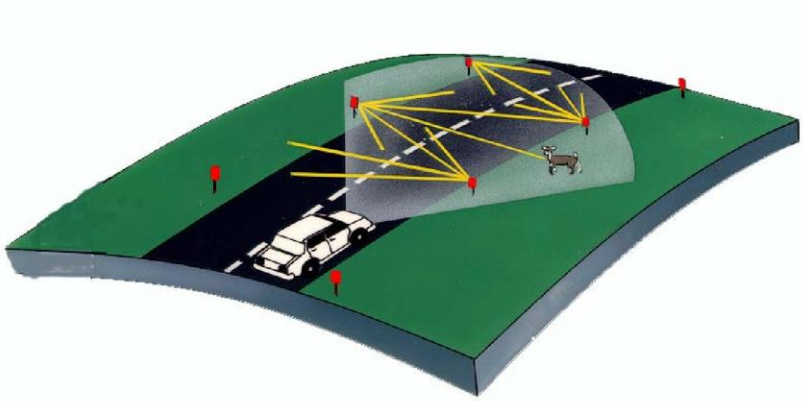
STRIETER-LITE ®

Wild Animal Highway Warning Reflector System



Installation Instructions

Strieter Corporation

2100 18th Avenue

Rock Island, Illinois 61201-3611

Ph: 309-794-9800 Fax: 309-788-5646 www.strieter-lite.com

STRIETER-LITE

Wild Animal Highway Warning Reflector System

Preface

The *STRIETER-LITE* reflector, manufactured by Swareflex in Austria, is a proven wild animal highway warning reflector system. Headlights from passing vehicles strike rows of reflectors along each side of the highway, with each reflector in turn directing reflected light across the road. Entering light is reflected at approximately 90° into the roadsides and is not seen by the motorists. The new design is a single, multi-purpose reflector. Properly installed, it provides complete reflective light coverage for any roadside terrain to warn wild animals against crossing at night.

The *STRIETER-LITE* warning reflectors are easy to install. The all weather-resistant design allows years of continued highway use. Regular maintenance must be performed to ensure continued effectiveness.

STRIETER-LITE reflectors are mounted at average headlight height on highway delineator posts which are located along both sides of the highway. (Figure 1) Their spacing equals the distance between the lines of reflectors. These may be offset up to 40 ft from the road's edge on level terrain. (Figure 3) Reflectors face across the highway, never directly across from each other. Offsets of reflector lines may vary. The distances between lines of reflectors varies, spacing must also vary to equal the distance between reflector lines.

Additional reflectors are required only in areas where roadsides slope downwards and where the reflectors on the opposite side of the road cannot be seen due to the terrain being below the highway. The additional reflectors are directed away from the road and mounted back-to-back on the same posts with the reflectors which are directed across the road. (Figure 4)

SIRIETER-LITE® Wild Animal Highway Warning Reflector System

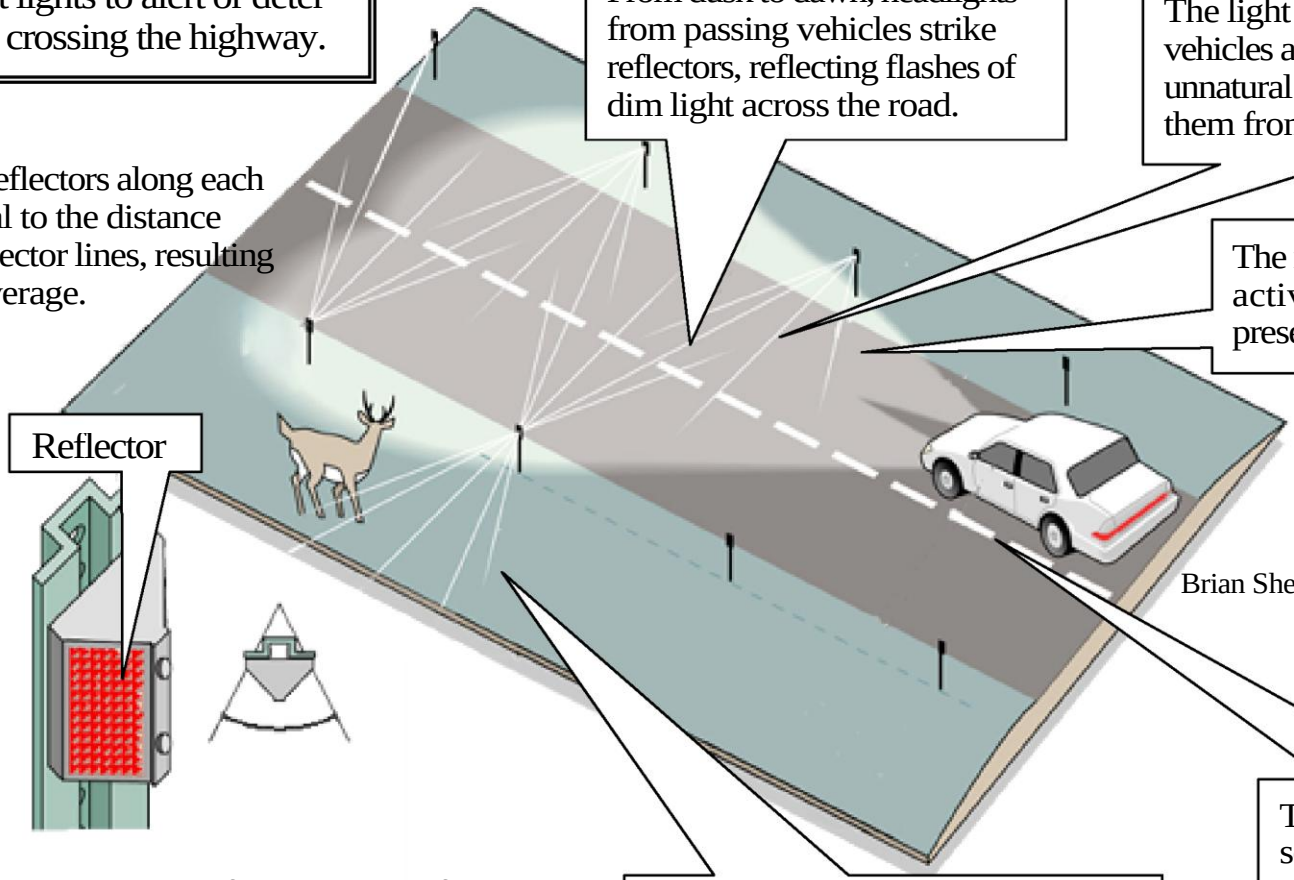
Deer and other wild animals have acute night vision and do not need bright lights to alert or deter them from crossing the highway.

From dusk to dawn, headlights from passing vehicles strike reflectors, reflecting flashes of dim light across the road.

The light patterns move as vehicles approach and appear unnatural to deer. This deters them from crossing.

Spacing of the reflectors along each roadside is equal to the distance between the reflector lines, resulting in complete coverage.

The reflectors are only activated with the presence of headlights



Brian Shellito / The Detroit News

The reflected light is not seen by the motorist.

Reflector directs flashes of dim light at 54° angles horizontally & vertically.

Reflectors are directed away from the road only in down slope areas where deer cannot see the glow from the reflectors across the road and/or where high traffic exists. In all other instances, reflectors are directed across the road.

Not to Scale

DESIGN and INSTALLATION Procedure for the STRIETER-LITE

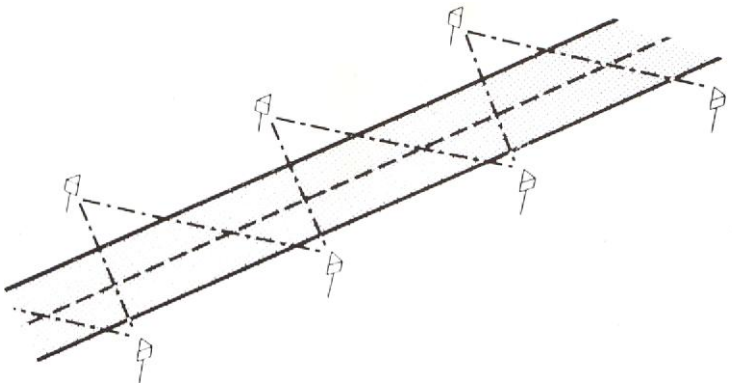
Wild Animal Highway Warning Reflector System

TWO LANE TWO-WAY HIGHWAYS

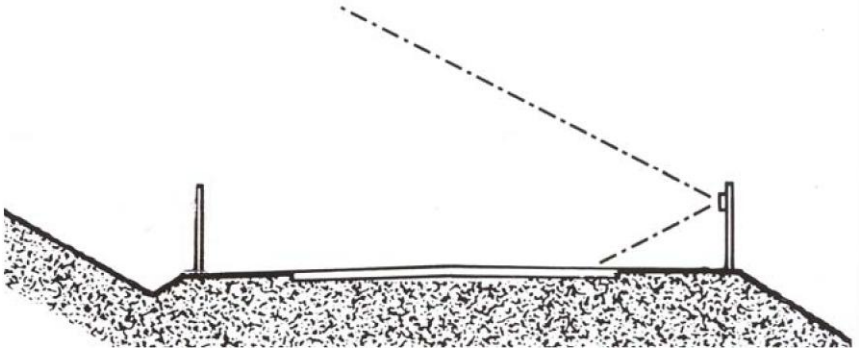
I. Determine the length of the area to be protected with reflectors.

End the protection at a natural barrier on both ends of the area, or extend protection at least **1000 ft** *beyond* the area to discourage deer going around the ends of protection.

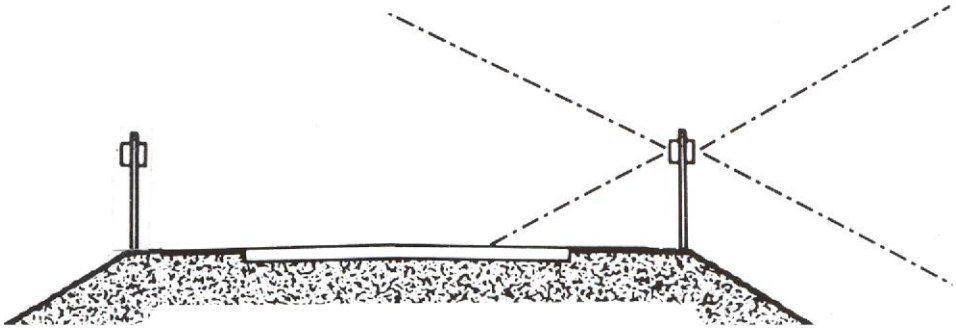
A. Reflectors are installed on both sides of the road over the ***entire length*** of job. Install them so as to reflect ***across*** the road in ***staggered*** locations.



B. When up-slopes are encountered the reflectors (which reflect up, down, and level) will protect the up-slope area.



C. When down-slopes are encountered, additional reflectors directed away from the road and toward the low lying areas may need to be installed back-to-back on the posts with the reflectors directed across the road. *

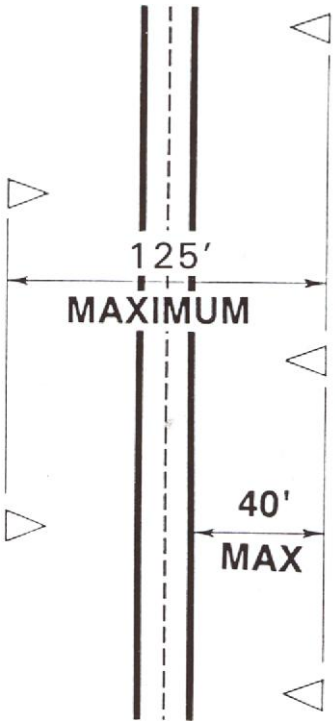


* NOTE: This is required along the shoulder break where the roadside terrain is 4 ft or more BELOW the road elevation. Deer in these areas will not be able to see the reflectors on the opposite side of the road.

II. Determination of Location and Spacing of Reflectors

A. Reflector Spacing

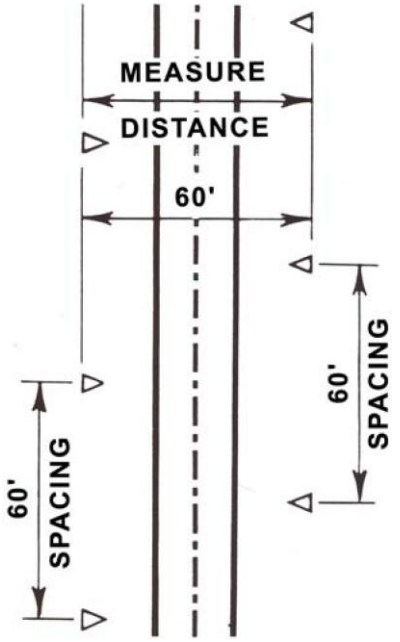
Determine best location to place line of reflectors on ***both sides*** of road to reduce snow plowing and mowing problems. There must be no obstructions between reflectors and edge of road. (***Note***: Reflectors must be ***staggered*** across the road from each other. They are ***not*** to be directly across from each other). ***Maximum*** permissible distance across the road between reflector lines is 125 ft. However, we ***recommend*** that Reflectors be located ***not more than 40 ft*** from the edge of the traveled lane of road.



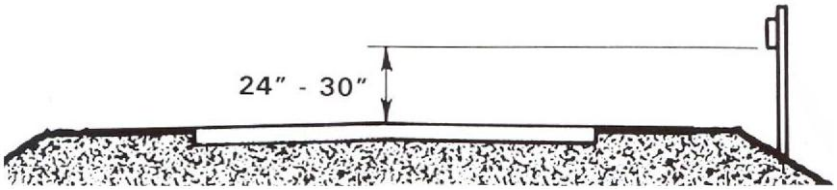
Measure distance across the road between two reflector lines.

For example, let's say the distance is 60 ft.

The spacing distance between reflectors, along reflector lines on both sides of the road, equals this across-the-road distance (60 ft).



Mount reflector on post so ***bottom*** of reflector is 24”- 30” above crown of road.

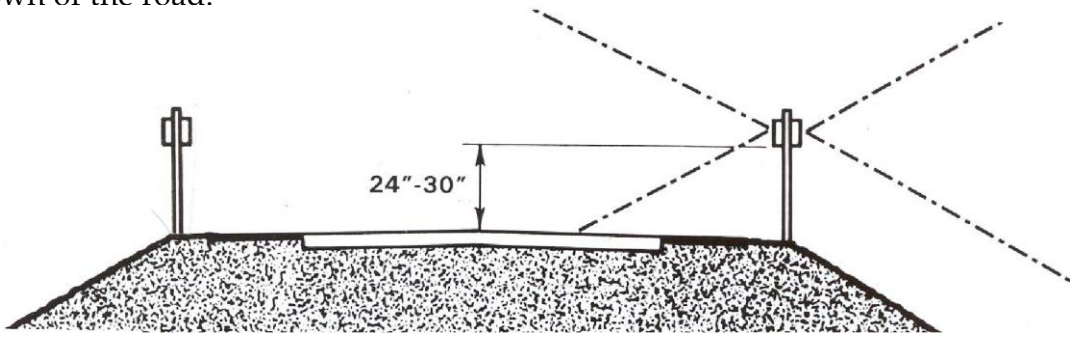


Make certain Reflectors are reflecting ***across*** road.

B. Down-Slope Areas

On ***down-slope*** roadsides that are on just one side or both sides of road, and where the terrain is 4 ft or more below the road elevation on just one side or both sides of road, install reflectors on one or both sides of road.

1. Install reflectors on the back of the post reflecting ***away*** from road toward ***down-slope*** roadsides using the back-to-back method with the bottom of the reflector 24" above the crown of the road.

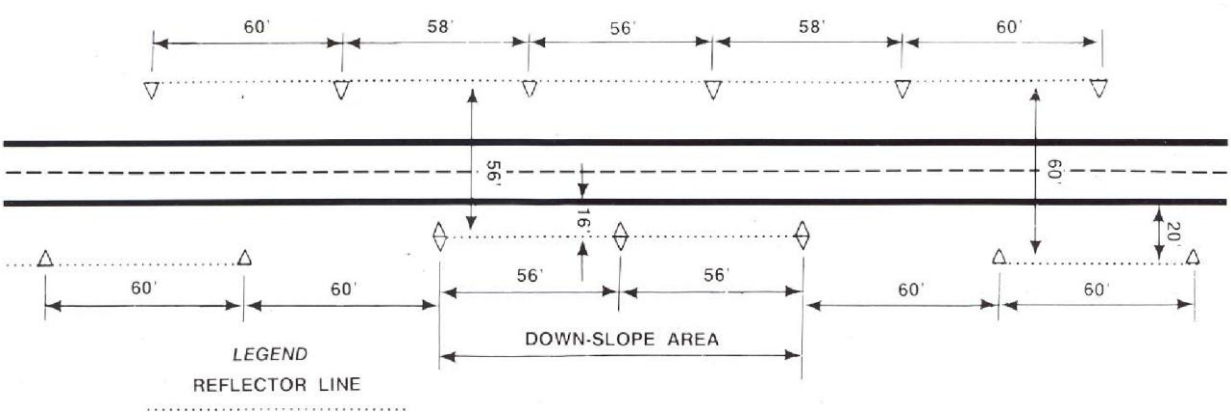


2. Special Note

In *down-slope* areas where back-to-back Reflector mounting is required, the posts must be located within 16 feet of the outside edge of traveled lane of road.
If the posts and reflectors must be moved in to 16 ft off road's edge, spacing between all reflectors in this area changes.

Example:

Distance ***across*** the road between reflector lines is 60 ft.
Spacing between reflectors = 60 ft.
In ***down-slope*** area, reflector line must be moved closer to road.
Assume that distance across the road between reflector lines is 56 ft.
New spacing between reflectors = 56 ft.
The 56 ft spacing is to be used between reflectors in ***down-slope*** areas.



Note: On opposite side of road, if level, Reflectors need not be moved closer to road, but spacing in ***this down-slope area*** should become 56 ft. At the transition from 56 ft to 60 ft spacing, there will be one space at each end that is half the difference between 56 ft and 60 ft, or 58 ft.

At down-slope areas, install Reflectors directed away from the road toward the down-slope using the back-to-back method. If the distance between Reflector lines is 100 ft. to 125 ft., an intermediate Reflector must be placed equidistant between the posts, and mounted singly on the outside of the intermediate post and directed away from the road toward the down-slope.

C. Curved Sections of Highways

On curved sections of highway, reflector spacing and location are same as for straight sections of highway with ***one exception***:

Spacing for reflectors applies to reflectors on ***outside of curve***. Spacing of reflectors on the inside of the curve should be evenly spaced and ***staggered*** from reflectors on the outside of the curve.

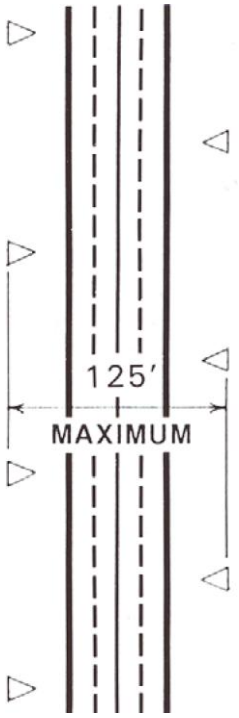
On ***super elevated curves***, the bottom of the reflector should be 24" – 30" above the edges of the pavement on the outside of the curve and also on the inside of the curve.

Multi-Lane and Multi-Lane Divided Highways

II. Multi-Lane Undivided Highways

Where distance between reflector lines placed on both sides of the highway is no more than 125 ft, treat layout the same as a two-way, two-lane road.

A. Again, spacing between reflectors equals the distance between reflector lines placed on both sides of the highway.



I. **Multi-Lane Divided Highways**

A. If distance between reflector lines on the outsides of the highway is 125 ft or less,

AND If there are ***no sight obstructions*** such as trees, brush or bushes, in median,

AND If median is ***relatively level, AND***

If separate highway lanes are at ***same elevation***,

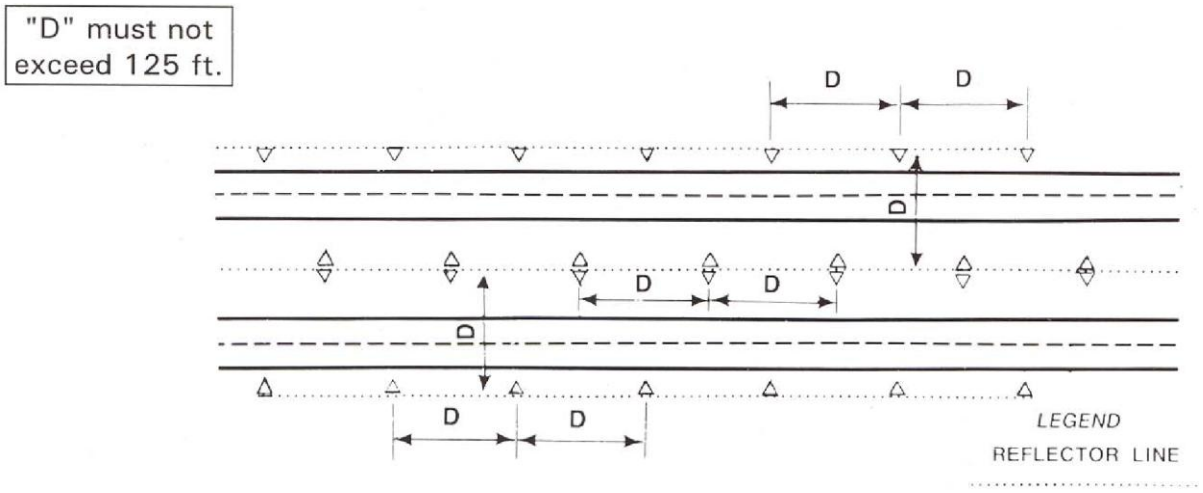
Then ***treat layout same as a two-way, two-lane road.***

B. If distance between reflector lines on the outsides of the highway exceeds 125 ft,
AND If there are ***no sight obstructions*** in median, ***AND***
If median is ***relatively level, AND***
If separate highway lanes are at ***same elevation, AND***
If distance between the center of the median and the reflector line on the outside of the highway is 125 ft or less,

Then **a "single" line of reflectors is placed along the center of the median with reflectors on both sides of the post (back-to-back) and directed across the road.**

The spacing between reflectors equals the distance between the reflector line in the middle of the median and the reflector line on the outside of the highway.

Reflectors on the outside of the highway must be *staggered* between reflectors in the median.



C. If median has **sight obstructions**, ***OR***
If median is **depressed** more than 4 ft or 5 ft, ***OR***
If separate highway lanes are at **different elevations**, ***OR***
If the distance between the center of the median and the reflector line on the outside of highway is **more than 125 ft**,

Then **treat the layout the same as two separate two-way two-lane roads.**

D. If the distance between reflector lines **exceeds 125 ft**, or if Jersey Barriers exist, or if other unusual situations exist in your particular highway situation, please contact us for specific information prior to your design and installation.

NOTE: ***At down-slope areas***, install reflectors directed away from the highway toward the down-slope using the back-to-back method. If the distance between reflector lines is 125 ft, an intermediate reflector must be placed equidistant between the posts, and mounted singly on the outside of the intermediate post and directed away from the highway toward the down-slope.

POSTS

We recommend 2 lbs/ft "U" channel galvanized or painted delineator steel posts.

FASTENERS

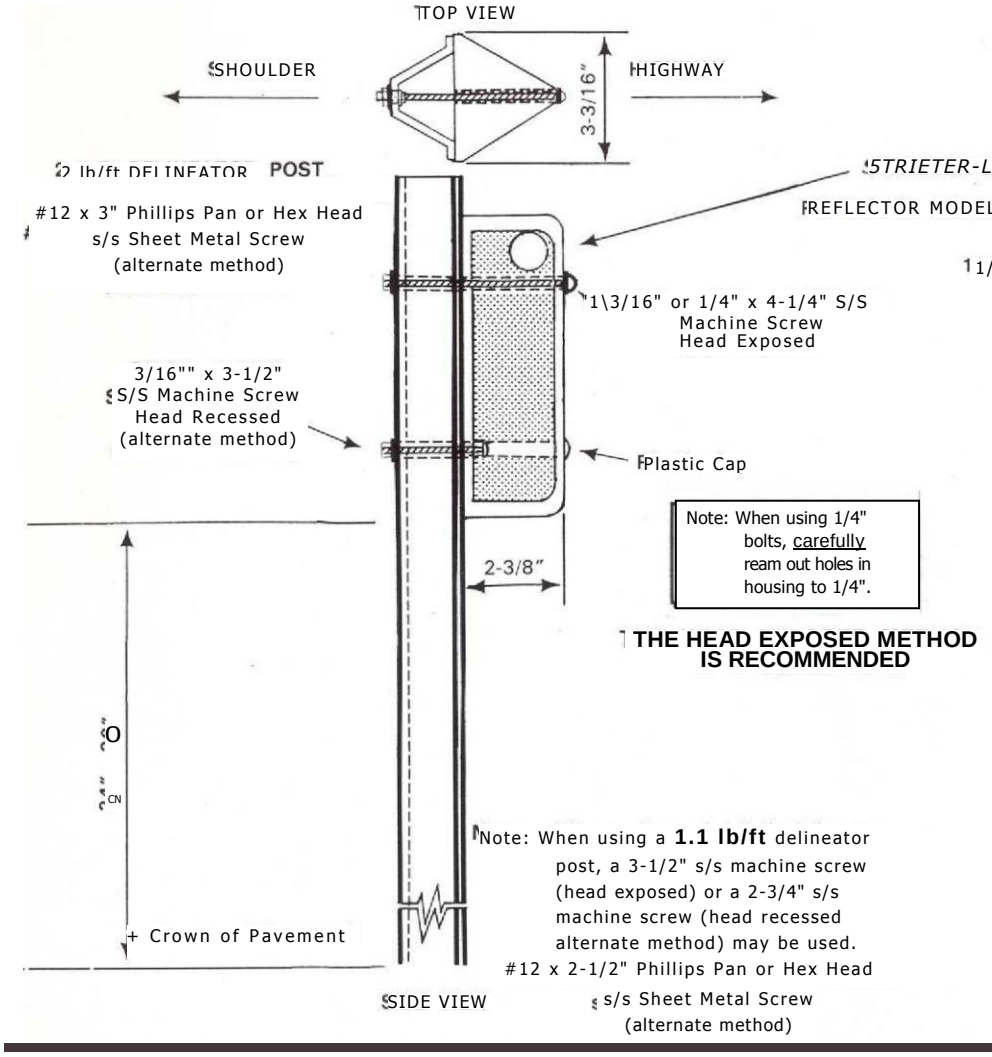
The reflectors should be fastened to steel posts with two machine screws. We recommend using 3/16" screws for lengths up to 3 inches and 1/4" bolts for lengths over 3 inches with self locking nuts and flat washers, all of stainless steel.

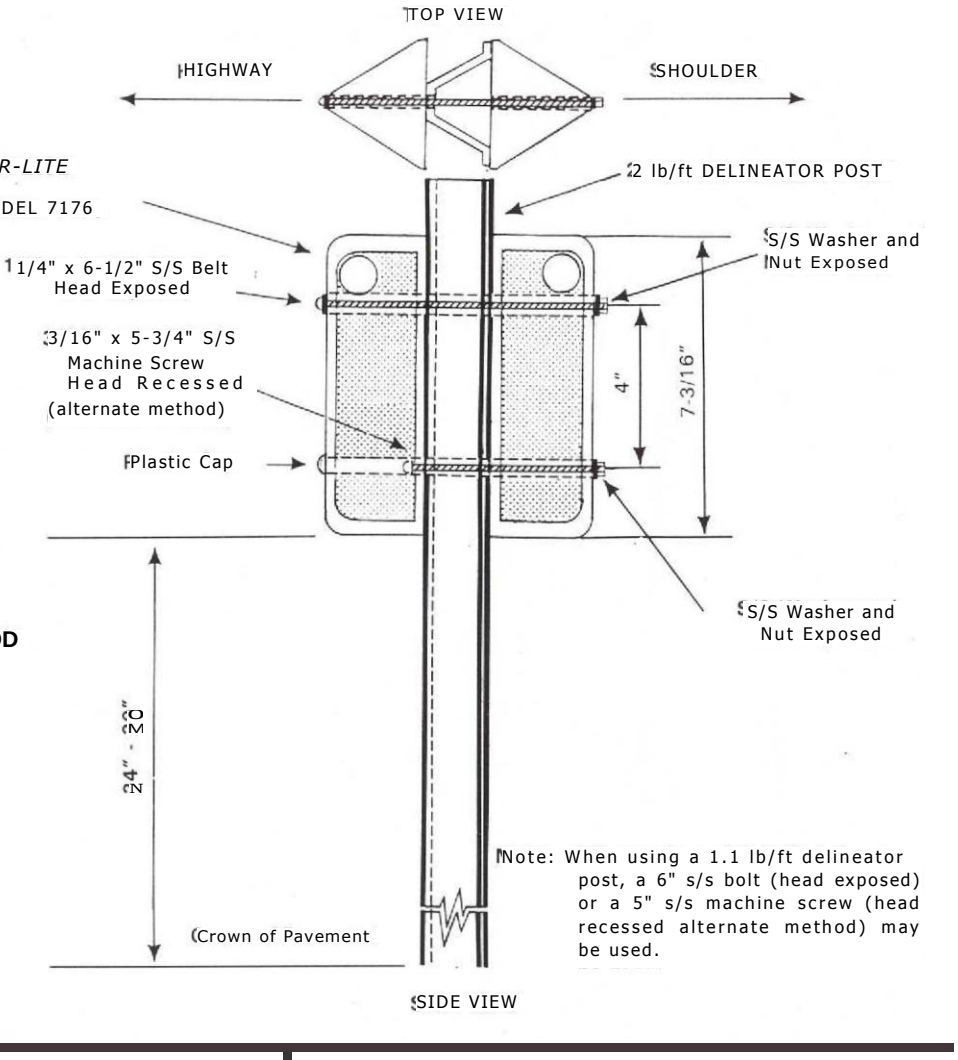
When using 1/4” bolts, the 3/16” diameter holes should be carefully reamed out to 1/4” diameter.

To avoid any chance of breakage resulting from over tightening of the nuts, we recommend the exposed screw head method rather than the recessed.

SINGLE AND BACK-TO-BACK MOUNTING METHODS

Using The Modified *STRIETERLITE* · Model Produced After March 1995





STRIETER CORPORATION

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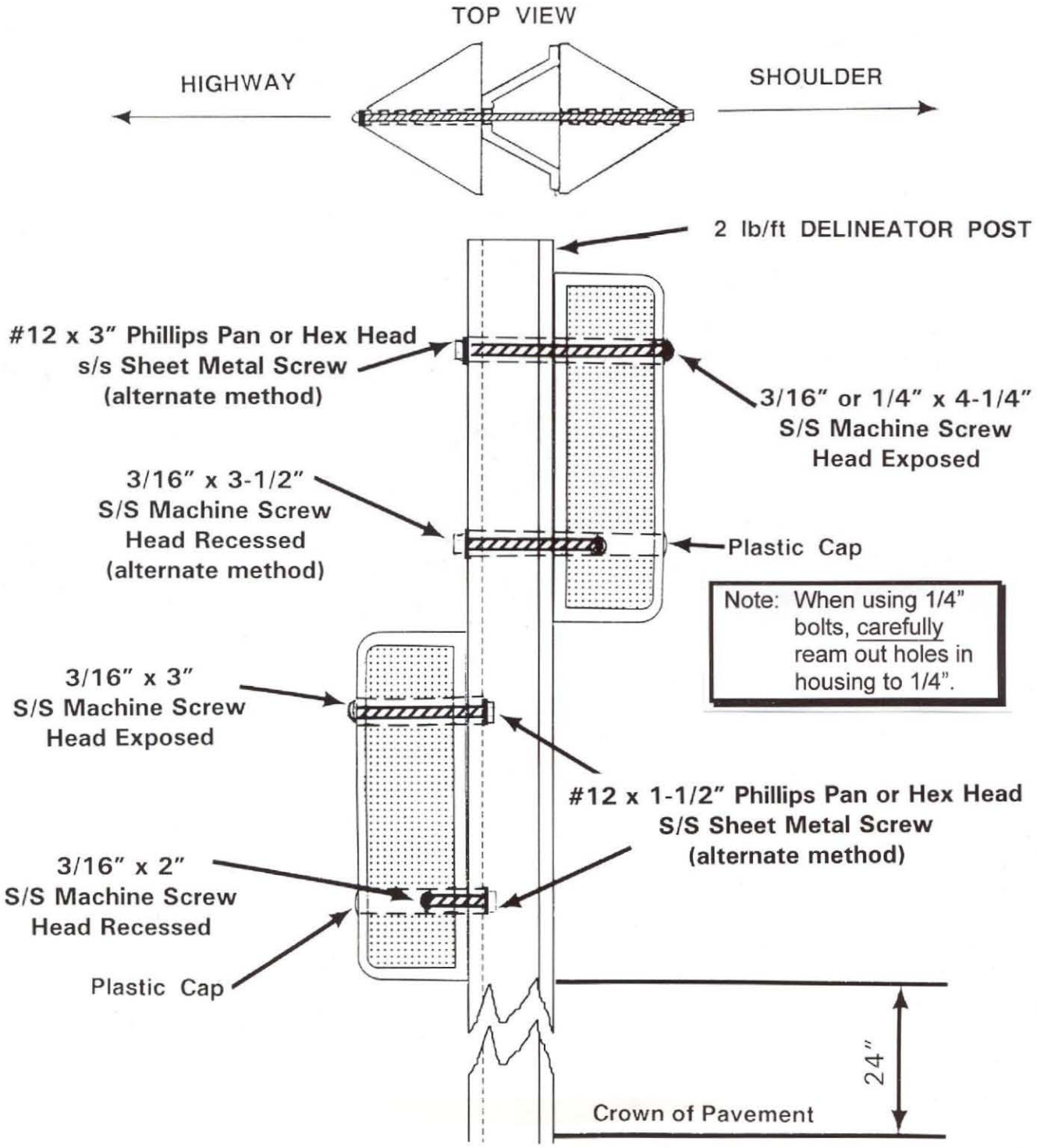
Single mounting method using Telespar posts

Single mounting method using standard "U" posts

Back-to-Back mounting method using Telespar posts

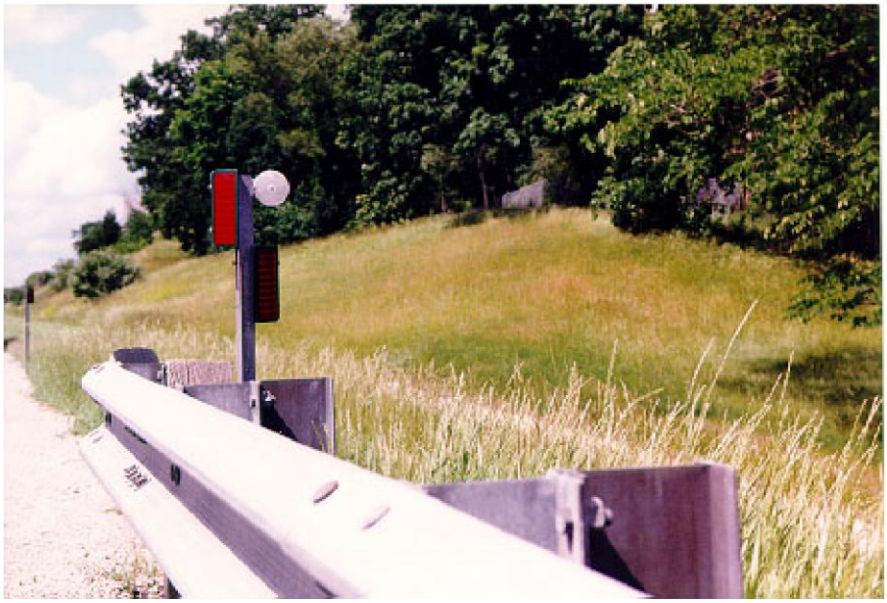
Back-to-Back mounting method using standard "U" posts

Alternate Back-to-Back Mounting Method



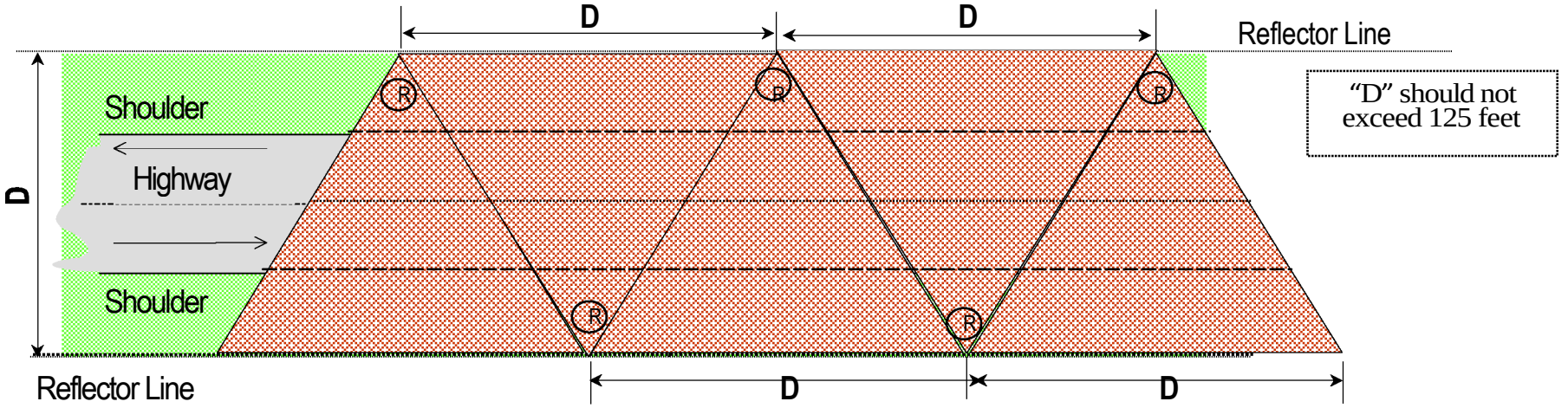
Alternate Back-to-Back mounting method using Telespar posts

Alternate Back-to-Back mounting method using standard “U” posts



New Method

Legend
D=Distance
R=Reflector



Typical Plan View

STRIETER-LITE Wild Animal Highway Warning Reflector System
STRIETER CORPORATION - EXCLUSIVE DISTRIBUTOR - UNITED STATE AND CANADA

Strieter Corporation
2100 Eighteenth Ave. - Rock Island, Illinois 61201-3611
Phone: 309-794-9800 Fax: 309-788-5646

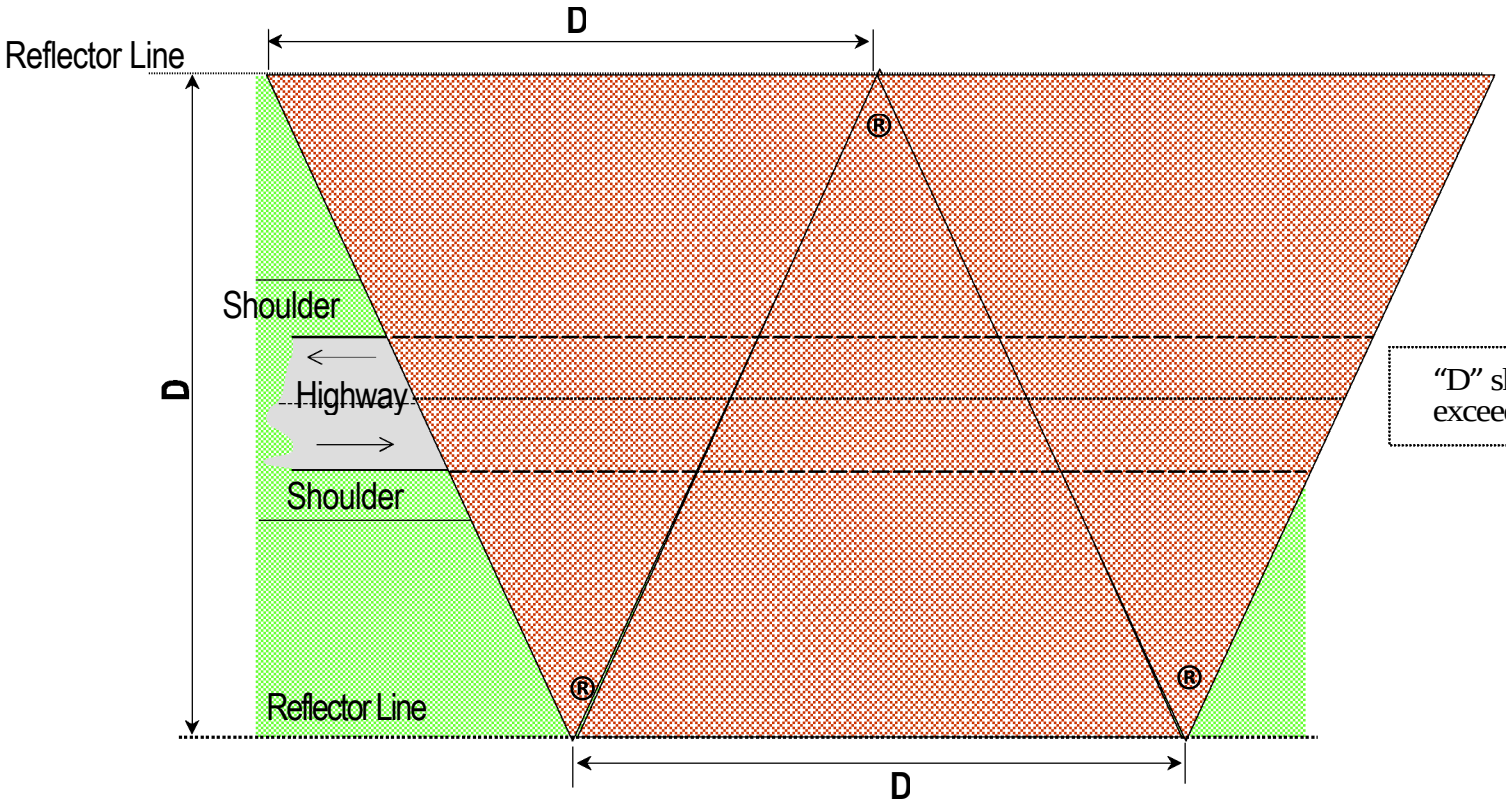
12 June 1997

Reflector’s off-set up to 40’ from pavement edge

New Method

Reflectors Off-set up to 40’ From Pavement Edge.

Legend
D=Distance
R=Reflector



“D” not to exceed 125 feet

Typical Plan View

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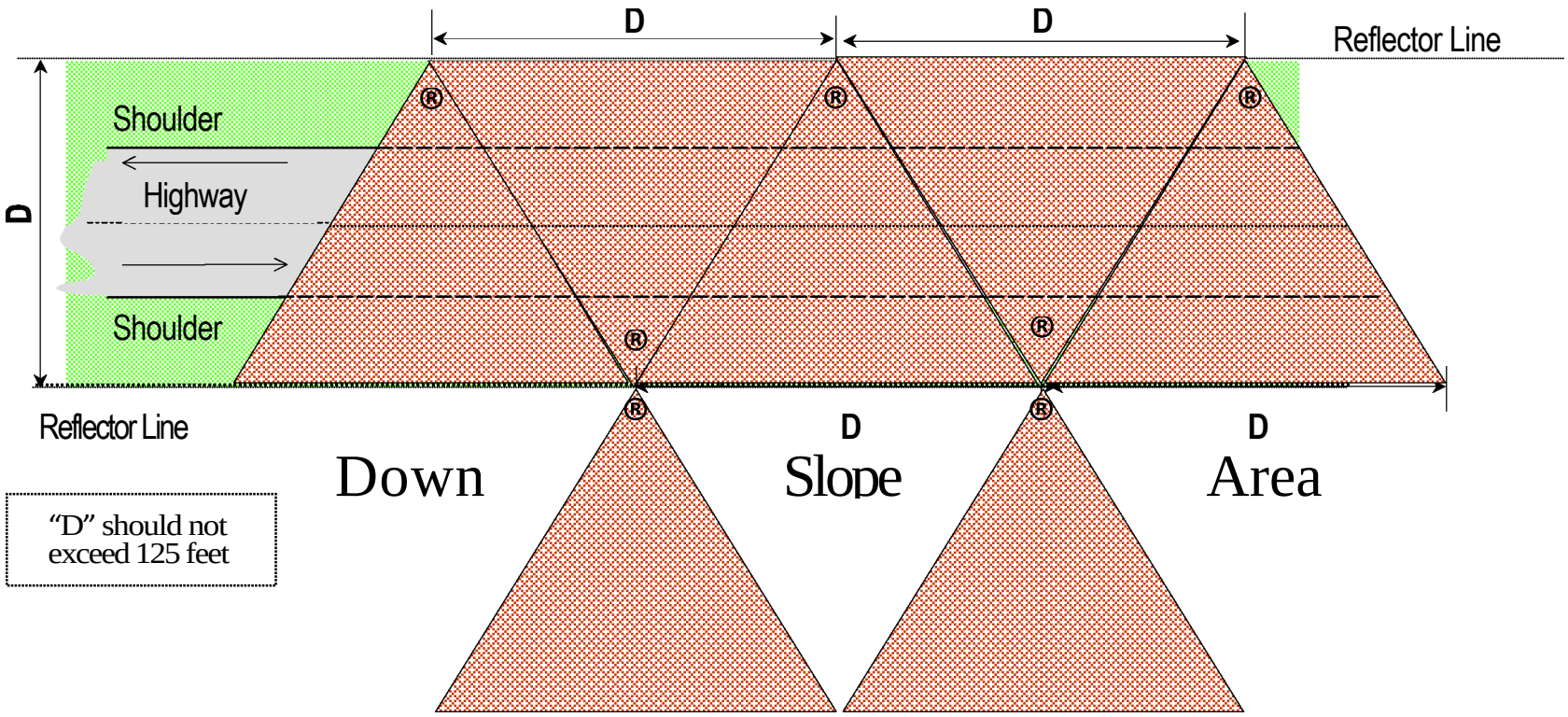
Reflector Installation for Down-Slope Areas using Telespar posts

Reflector Installation for Down-Slope Areas using standard “U” posts

New Method

For Down-Slope Areas

Legend
D=Distance
R=Reflector



Typical Plan View

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12 June 1997

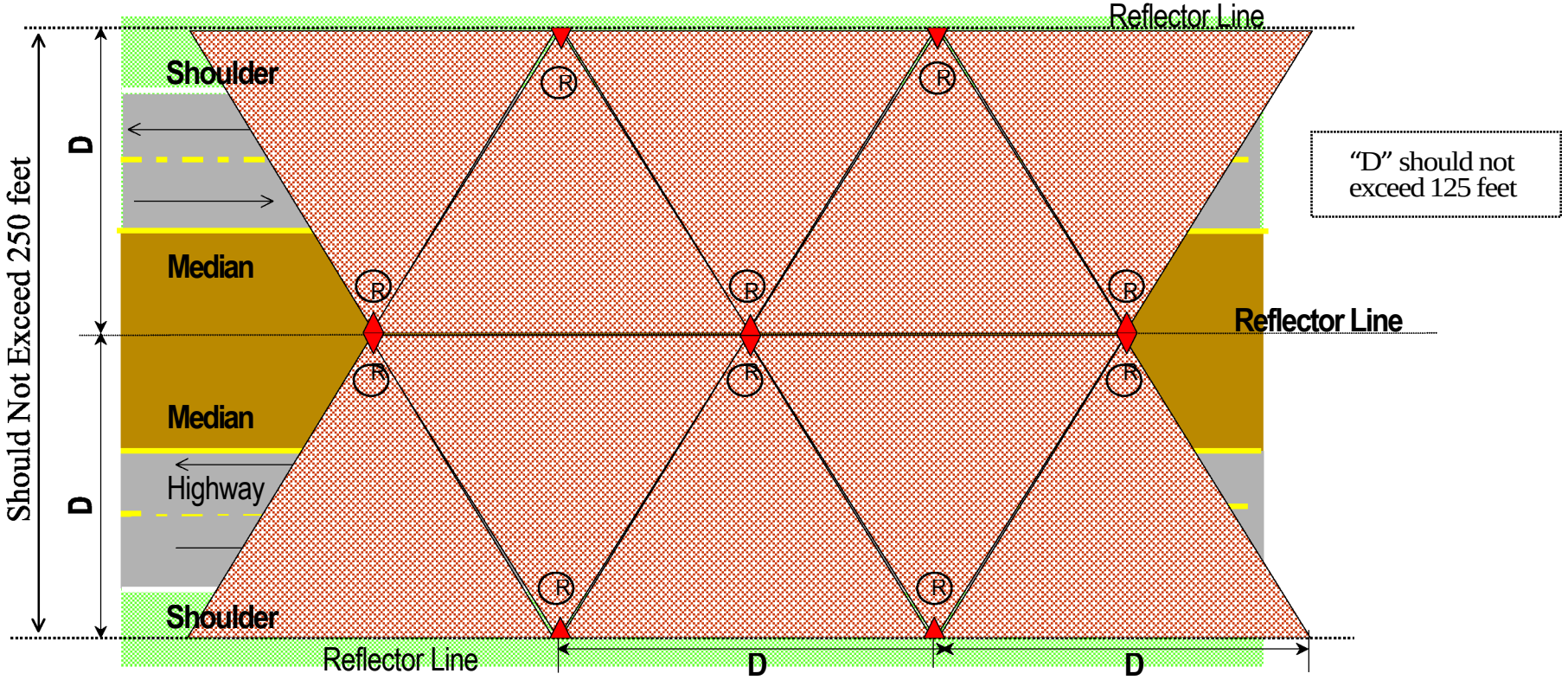
New Method

Dual Highways

Legend
D=Distance
R=Reflector

Situations where the median width permits the placement of a single line of reflectors down the middle while still maintaining the distance between reflector lines.

Distance between reflector lines not to exceed 125 feet.



Typical Plan View

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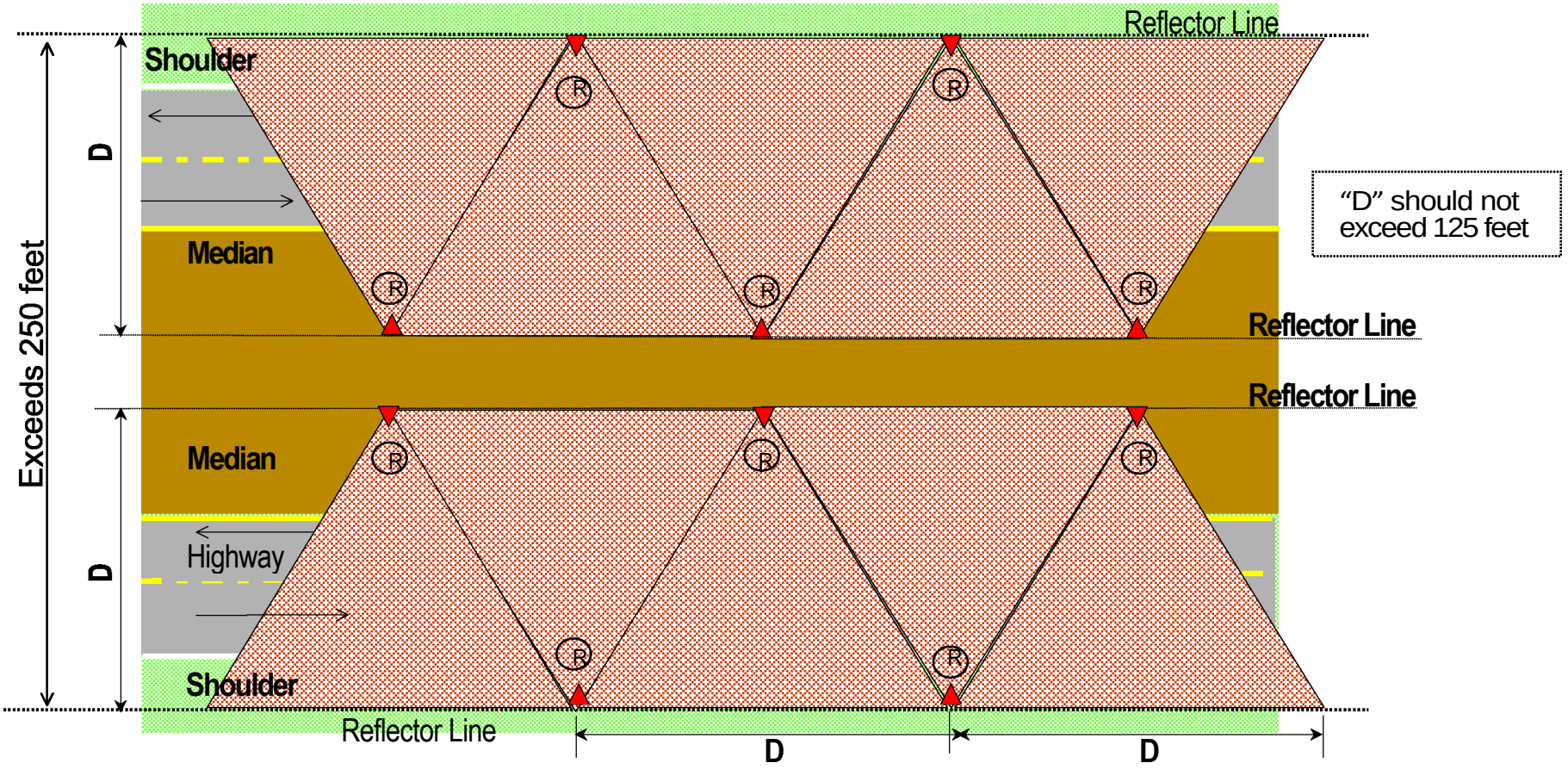
New Method

Dual Highways

Situations where median widths require placement of reflector lines on both sides of median while maintaining the maximum allowed distance between the reflector lines of 125 feet.

Legend
D=Distance
R=Reflector



Typical Plan View

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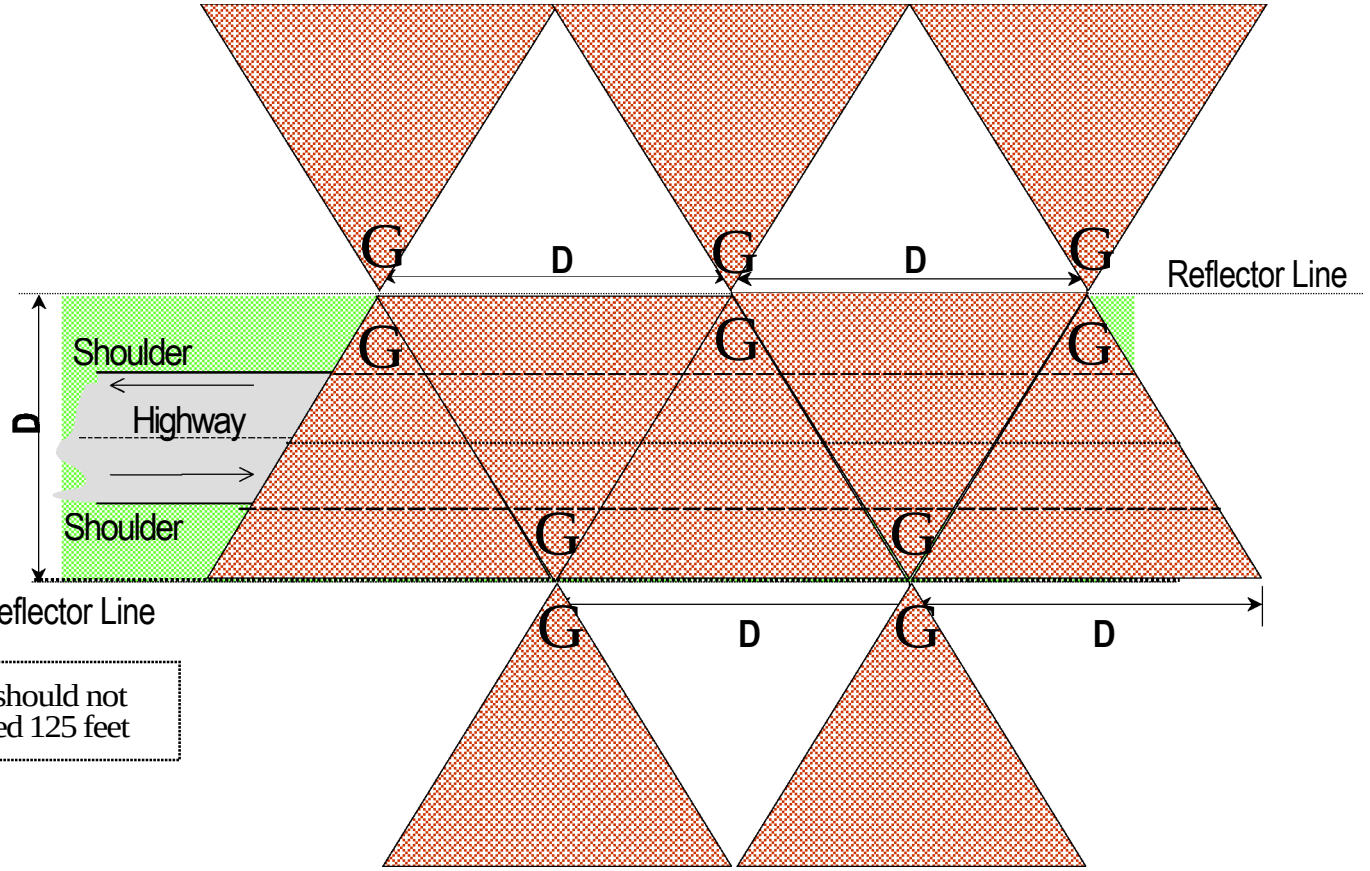
4/9/01

New Method

Method for High Traffic Areas

Legend
D=Distance
R=Reflector



Typical Plan View

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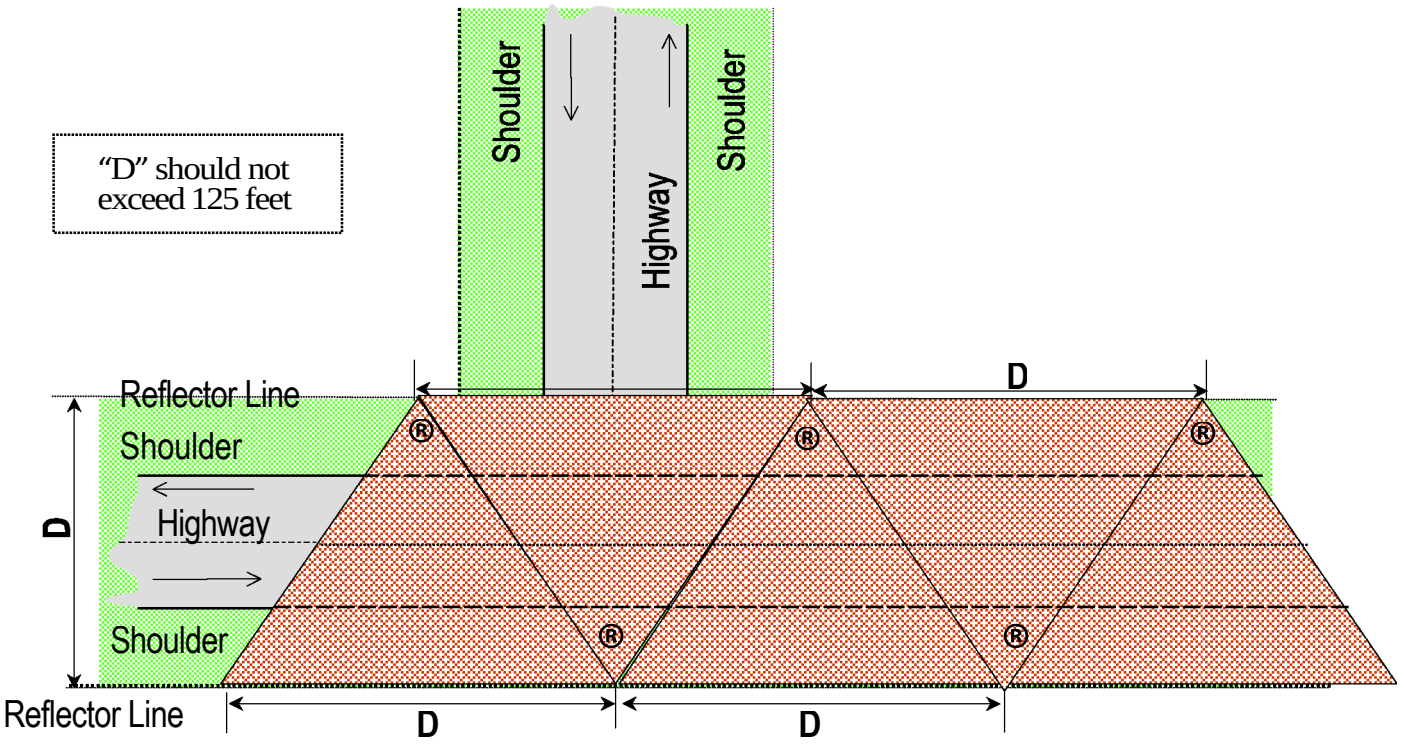
New Method

For a "T" Intersection

Legend
D=Distance
R=Reflector



Typical Plan View

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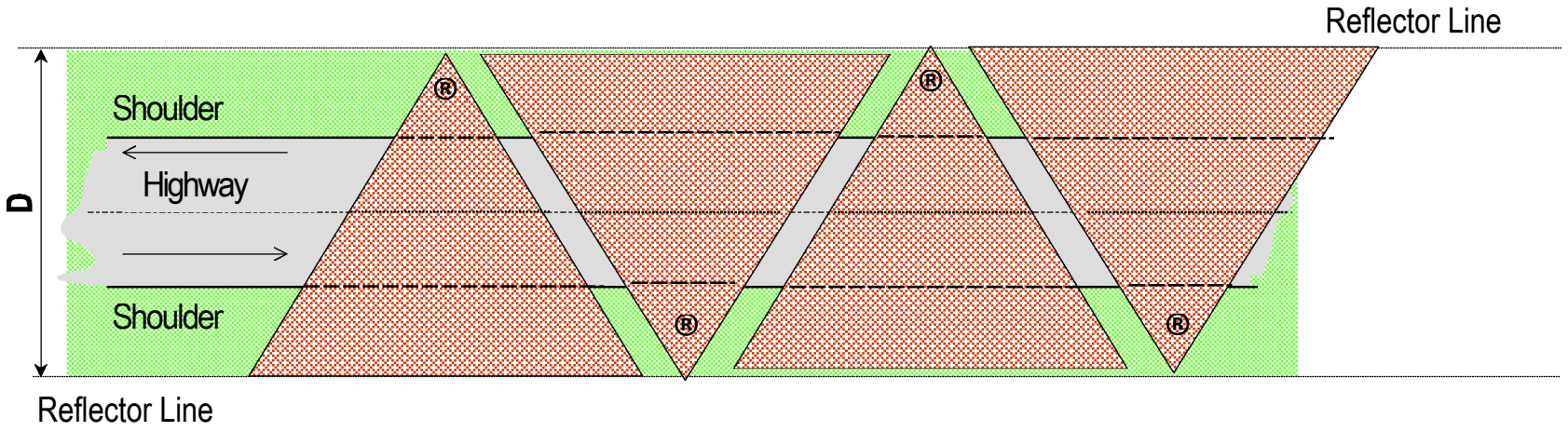
New Method

Legend
D=Distance
R=Reflector

Example of Reflectors Spaced Too Far Apart



"D" should not exceed 125 feet

Typical Plan View

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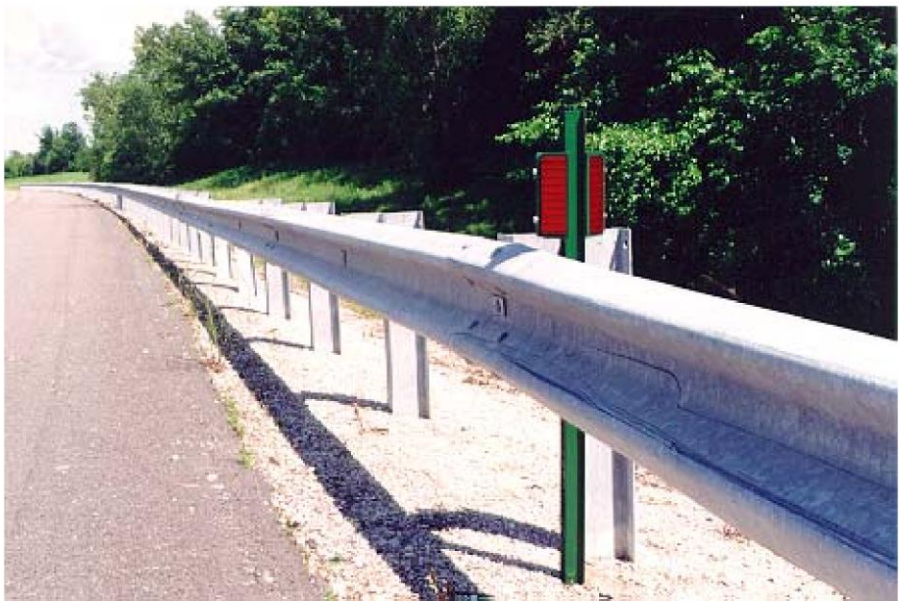
Example of vegetation control using chemical defoliation

Example of Reflector Installation where guard rails are present



MAINTENANCE CHECKLIST ON EXISTING INSTALLATION

Proper maintenance of any system is absolutely necessary to achieve maximum results.

It is important to conduct maintenance checks at least twice a year.

1) Replace any damaged or missing reflectors.
2) Straighten and adjust bent or twisted posts so the reflectors are vertical and the bases of the reflector housings are parallel with the direction of traffic.
3) Wash with detergent and rinse with clear water.
4) Keep vegetation from interfering with the light directed to and from reflectors at all times.

Give a copy of this Procedure to the Installer and to the person in charge of Maintenance.

<u>For further information or questions, contact:</u>

STRIETER CORPORATION

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johnstrieter@gmail.com *www.strieter-lite.com*

Exclusive Distributor and Importer - United States
Exclusive Distributor and Exporter - Canada

Prevent vegetation from interfering with reflector line of sight

Reflector posts should be properly aligned