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TO:

SUPERSEDED BY EI 01-013
EFFECTIVE 11/1/01

ENGINEERING INSTRUCTION

NEW YORK STATE DEPARTMENT OF TRANSPORTATION

SUBJECT: **Solar Charged Flashing Arrowboards**

Subject Code: 727-1-619

Distribution: 30 Main Office 32 Regions 34 Specials 31

Code: EI 92-032
Date: 7/7/92
Supersedes:
EI 90-29

APPROVED:

J R Lambert

J.R. LAMBERT, Deputy Chief Engineer, Facilities Design Division

EI 90-29, "Solar Charged Flashing Arrowboards (Experimental)" transmitted specifications for items 91619.0301, Solar Charged Flashing Arrowboard (Calendar Days) and 91619.0303, Solar Charged Flashing Arrowboard (Lump Sum). The EI also authorized conditional usage of the items for experimental purposes.

EB 91-15 authorized the limited substitution of solar charged arrowboards for conventional arrowboards supplied under item 15619.0303 of the Standard Specifications.

The 1990 and 1991 construction seasons served as a two year evaluation period for solar charged flashing arrowboards. During the evaluation period only (32%) of the solar arrowboard sightings were judged to be adequate. (58%) of the sightings were judged inadequate and (10%) were marginal.

Two deficiencies were common to the solar charged flashing arrowboards. Both resulted in less than adequate visibility.

1. The arrow displays are not bright enough to attract the attention of approaching motorists. The flashing arrow is intended to be a high level, attention getting device which is conspicuous at long distances.

2. The beam spread of the solar arrowboard bulbs allows minimal tolerance for errors in orienting the arrowboard toward approaching traffic. Slight positioning errors in the field resulted in the arrow being either not visible or barely visible to approaching traffic. The narrow beam spread also resulted in poor approach visibility on curves as the arrow was only visible on a portion of the curve.

Based on the inadequate visibility, solar charged flashing arrowboards are not to be used on Department projects until an Approved List of acceptable solar charged arrowboards is developed. It is the consensus of both the Traffic Engineering & Safety and Construction Divisions that continued use of the currently available solar arrowboards could potentially compromise work zone safety. Solar arrowboards which were supplied under the provisions of either EI 90-29 or EB 91-15 can continue to be used until the end of the contract containing the special specification if their performance is acceptable to the EIC. EICs should be cautioned to monitor the performance of these "grandfathered" devices. Effective with the October 22, 1992 letting, EI 90-29 will be rescinded, and the pay items for the Solar Charged Flashing

Arrowboards, items 91619.0301 and 91619.0303 will be disapproved. Designers should instead specify the standard diesel powered flashing arrowboards, items 15619.0301 and 619.0303.

We recognize the advantages of solar charged arrowboards and are continuing to look at new or redesigned arrowboards in the hopes that the industry can develop a product which will provide adequate visibility. At such time, we will write an Approved List of acceptable solar charged Arrow Boards and re-evaluate the performance of these devices in the field.

Any questions with respect to this EI or solar charged flashing arrowboards in general should be directed to Chuck Riedel of the Safety Capital Projects Bureau at (518) 457-3537.