memorandum

All District Traffic Engineers
All Electrical Design Engineers

Date: October 15, 1987

From: DEPARTMENT OF TRANSPORTATION
Division of Traffic Engineering

Subject: Breakaway/Slip Base Under Electrolers Located Along Freeways, Expressways and Conventional Highways

BACKGROUND

There are presently two types of slip bases for electrolers shown in our Standard Plans. These are the slip base and the slip base insert. Breakaway type bases were installed under electrolers as far back as the mid-sixties to minimize injuries to occupants of vehicles and damage to vehicles by enabling the poles to yield or break away from the foundations when hit by the vehicles. The initial "breakaway" was a six-inch cast aluminum insert introduced shortly before 1966. This was followed by the "transformer-type" base in 1966. In 1969, slip bases and slip base inserts were added to our Standard Plans.

PURPOSE

To establish design criteria for the installation of breakaway/slip bases and slip base inserts for new or existing electrolers located on freeways, expressways and conventional highways.

DESIGN

Design Criteria

New Installations:

a. Freeways

Slip bases shall be used under Types 30 and 31 standards on freeways, freeway ramps and collector roads where the prevailing speed is in excess of 40 miles per hour. Slip bases or slip base inserts shall be used under Type 15 standards located on freeway ramps and collector roads within an interchange area where the prevailing speed is in excess of 40 miles per hour.

Slip bases or slip base inserts shall be used under lighting standards located at a non-signalized intersection of a freeway ramp with a local street or a conventional highway where the
posted speed limit on the local street or the conventional highway is greater than 40 miles per hour.

Exceptions to this policy are that slip bases or slip base inserts are not to be used under lighting standards located:

1. on or behind structures, retaining walls or barrier railings;
2. in sidewalk areas;
3. behind guard rail;
4. more than 30 feet from the traveled way;
5. where pedestrians would be close enough to be endangered by a pole knockdown.

b. Expressways

Slip bases or slip base inserts shall be used under lighting standards located on the right shoulders of expressways where the posted speed limit on the expressway is in excess of 40 miles per hour.

Slip bases or slip base inserts shall be used under lighting standards located at the intersection of an expressway (or a ramp from an expressway) with a local street or a conventional highway where the posted speed limit is greater than 40 miles per hour.

Exceptions to this policy are that slip bases or slip base inserts are not to be used under lighting standards:

1. that have signal heads;
2. located on or behind structures, retaining walls or barrier railing;
3. located in sidewalk areas;
4. located behind guard rail;
5. located more than 30 feet from the traveled way;
6. located where pedestrians would be close enough to be endangered by a pole knockdown.
c. Convention Highways

Slip bases or slip base inserts shall be used under lighting standards located on the right shoulders of conventional highways where the posted speed limit on the highway is in excess of 40 miles per hour.

Slip bases or slip base inserts shall be used under lighting standards located at the intersection of a conventional highway with another highway or a local street where the posted speed limit is greater than 40 miles per hour.

Exceptions to this policy are that slip base or slip base inserts are not to be used under lighting standards:

1. that have traffic signal heads or flashing beacons;
2. located on or behind structures, retaining walls or barrier railing;
3. located in the sidewalk areas;
4. located close to a populated area/facility such that the occupants of the area/facility would be endangered by a pole knockdown;
5. located behind guard railing;
6. located more than 30 feet from the traveled way;
7. located where pedestrians would be close enough to be endangered by a pole knockdown.

Existing Installations:

All lighting standards that satisfy the conditions noted above under "New Installations" and are within an area of a project that has other highway lighting work should be considered to be modified to include slip bases or slip base inserts, except as noted below.

Any lighting standard which has been hit repeatedly or is in a particularly vulnerable location should be eliminated or moved laterally if such a change will not degrade the lighting level, or should be replaced with a standard with longer luminaire arm to be
All District Traffic Engineers
All Electrical Design Engineers
Page Four
October 15, 1987

installed / further away from the edge of traveled way. Such a standard / be provided with a slip base or a slip base insert if it satisfies the conditions noted above under "New Installations".

Any lighting standard with 6-inch cast aluminum breakaway insert or a "transformer-type" breakaway base may remain in place. In the event of a knockdown, a new 6-inch insert or a transformer base may be installed under a new standard. However, in the interest of standardization, preference should be given to a slip base insert for the 6-inch cast aluminum breakaway insert and a converted type of slip base for the transformer base if either is readily available and will fit the anchor bolt patterns.

C. D. BARTELL, Chief
Division of Traffic Engineering

CKLAU:jmac
bcc: JPerry
NWingerd
KGilbert
Traffic Files