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# ENGINEERING INSTRUCTION

NEW YORK STATE DEPARTMENT OF TRANSPORTATION

SUBJECT: CONCRETE BARRIER END TREATMENTS IN CONSTRUCTION WORK ZONES

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Temporary Concrete Median Barrier has been a standard since January 1979; however, there haven't been any formal, written guidelines for treatment at barrier terminals. The tapered end section shown on the standard sheet has been approved in the past for most applications but in some instances it has been necessary to provide impact attenuator devices.

The following guidelines are recommended for terminating concrete median barrier in construction work zones. They are based on several years of field observations on construction projects.

1. The barrier flare rate should follow the recommendations given in "Guide for Selecting, Locating, and Designing Traffic Barriers" (AASHTO Barrier Guide). These are:

FLARE RATE VS. OPERATING SPEED

| Speed | Rate | Speed | Rate |
|---|---|---|---|
| 70 | 20:1 | 50 | 14:1 |
| 60 | 17:1 | 40 | 11:1 |
| 55 | 15:1 | 30 | 8:1 |

2. On approaches, blunt ends should be avoided except where they can be adequately shielded by another barrier or embedded into a backslope. Where this cannot be accomplished, either a sloped end section or an impact attenuator should be provided. The following should be used to determine which:

   A. When the end of the first full height section of barrier would be 12' or more removed from approach traffic, provide a tapered end section.

   B. When the end will be within 12' of approach traffic, use the tapered end section if operating speeds will be 40 MPH or less and an impact attenuator when higher speeds are expected.

   C. When curves, weaves, merges, and other traffic conflict situations exist, impact attenuators may be warranted, even though the first full height barrier would be 12' or more removed from traffic.

In most cases when impact attenuation is required, sand filled barrels should be installed as depicted in the Highway Design Manual. While the Highway Design Manual shows an offset of 2'-6" between the face of the barrels and the face of the concrete median barrier, this can, and should be increased by flaring back the end of the barriers. Where the construction zone is especially narrow, one of the proprietary construction zone impact attenuators should be provided.

Specifications for temporary, conventional, sand filled impact attenuators are being prepared and will be available in the future. Until these specifications are available, you may use an inertial barrier array patterned after Items 15654.1105, 15654.1205, 15654.1305 and 15654.1405 or a GREAT C.Z. Specifications for the GREAT C.Z. are available from the Final Plan Review Bureau on request. This instruction takes effect with the letting of April 28, 1984