NEW YORK STATE | Department of Transportation	ENGINEERING INSTRUCTION	EI 25-007

Title: **GUIDANCE ON PEDESTRIAN BREAKS IN RUNS OF BOX BEAM GUIDE RAIL**

SUPERSEDED BY EB 26-015
EFFECTIVE 12/31/26

Approved:

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Date

ADMINISTRATIVE INFORMATION:

- Effective Date: This Engineering Instruction (EI) is effective for state and local-let projects submitted for letting after September 1, 2025.
- Superseded Issuances: This Instruction supersedes EI 19-017.
- Disposition of Issued Materials: This guidance will be incorporated into Chapter 10 of Highway Design Manual in a future update.

PURPOSE: To issue revised guidance on the use of Pedestrian Breaks in runs of box beam guide rail.

TECHNICAL INFORMATION:

- Recent Finite Element Analyses (FEA) and physical crash testing confirmed that the Pedestrian Break in Box Beam (Break) is MASH-compliant at TL-2 for traffic in an adjacent lane.
- The testing confirmed that the use of the Break does not compromise the redirection capability of the system for traffic adjacent to the run.
- While FEA predicted that the Break would not be MASH-compliant for the complete set of MASH TL-3 impact conditions (62-mph impact of 5000-lb pickup striking at 25°), the Break would satisfy MASH evaluation criteria for a reduced impact angle of 20°. On two-lane highways, the two-lane width prevents vehicles traveling at over 50 mph from being able to develop greater than a 20° angle of impact.
- Existing pedestrian breaks in box beam guide rail do not have to be immediately brought into conformance with this EI. However, closing of unwarranted gaps or upgrading existing gaps to meet the new Pedestrian Break guidance should be considered as part of guide rail repairs, guide rail projects, 1R/2R/3R/4R projects, bridge rehabilitation projects, and bridge replacement projects.
- When existing pedestrian gaps require repair, the repair should not be made in-kind. Rather, the gap, if still warranted, should be upgraded to conform to the details shown on Standard Sheet 606-04, sheet 5 of 5.
- <u>Designer Guidance:</u>
    - Where the roadway width between the outside edges of shoulder does not exceed 40 feet and the posted speed does not exceed 55 mph, the preferred terminal arrangement for a pedestrian break in box beam guide rail shall be as shown on Standard Sheet 606-04, sheet 5 of 5.

- Where the posted speed is 35 MPH to 45 MPH and there is no additional access through or around the run of box beam within 78' (breaks include driveways), a pedestrian break should replace an existing, actively used, non-conforming opening.
- Where the posted speed is 30 MPH or less and there is no additional access through or around the run of box beam within 30' (breaks include driveways), a pedestrian break should replace an existing actively used, non-conforming opening.
- Existing breaks that do not meet the above spacing requirements should be considered for removal to make the run continuous or should be upgraded and documented as non-conforming features.
- Where guide rail replacement or similar projects include the replacement of existing pedestrian breaks consisting of pairs of unflared box end pieces, designers should incorporate Pedestrian Breaks, or alternate design, consistent with the above guidance.
- Where Pedestrian Breaks are to be installed, designers should indicate on the drawings how many backup posts are to be used downstream from the pay limit for the Break and fastened to the rail in accordance with the Standard Sheet. Due to the fastening requirement, backup posts downstream from the pay limit for the Pedestrian Break should be paid for individually under item 606.4809 – I-Beam Posts for Existing Box Beam Guide Railing or item 606.4811 - Extra Long I-Beam Posts for Existing Box Beam Guide Railing, depending on the appropriate length.

IMPLEMENTATION: Designers should apply the revised guidance to projects to be let after September 1, 2025, but may apply it sooner.

BACKGROUND: When EI 19-017 was issued, the Pedestrian Break in Box Beam (Break) had not been crash-tested or evaluated by Finite Element Analyses (FEA). Beginning in 2023, under a contract with C2SMART sponsored by the Department, the break was broadly analyzed to predict what crash conditions it could adequately function for. The critical TL-2 case was then crash-tested by Calspan. That crash testing validated the FEA predictions and confirmed that the Break is MASH-compliant at TL-2 for adjacent traffic.

CONTACT: Questions on this Engineering Instruction may be addressed to the Design Quality Assurance Bureau's Terry.Hale@dot.ny.gov (preferred) or by telephone at (518) 485-7009.