2.1.3 HIGHWAY BRIDGES (1994)

Unless otherwise specified by highway authority, all highway bridges shall be designed in accordance with the latest Standard Specifications for Highway Bridges adopted by the American Association of State Highway and Transportation Officials.

2.1.4 BUILDINGS (1994)

Unless otherwise specified by local governing ordinances or state codes, all railway buildings shall be designed in accordance with the latest "Building Code Requirements for Reinforced Concrete (ACI 318)" of the American Concrete Institute, subject to design loads conforming to railway requirements.

2.1.5 PIER PROTECTION (1994)

2.1.5.1 Adjacent to Railroad Tracks[1]

a. To limit damage by the redirection and deflection of railroad equipment, piers supporting bridges over railways and with a clear distance of less than 25 feet from the centerline of a railroad track shall be of heavy construction (defined below) or shall be protected by a reinforced concrete crash wall. Crash walls for piers from 12 to 25 feet clear from the centerline of track shall have a minimum height of 6 feet above the top of rail. Piers less than 12 feet clear from the centerline of track shall have a minimum crash wall height of 12 feet above the top of rail.

b. The crash wall shall be at least 2′-6″ thick and at least 12 feet long. When two or more columns compose a pier, the crash wall shall connect the columns and extend at least 1 foot beyond the outermost columns parallel to the track. The crash wall shall be anchored to the footings and columns, if applicable, with adequate reinforcing steel and shall extend to at least 4 feet below the lowest surrounding grade.

c. Piers shall be considered of heavy construction if they have a cross-sectional area equal to or greater than that required for the crash wall and the larger of its dimensions is parallel to the track.

d. Consideration may be given to providing protection for bridge piers over 25 feet from the centerline of track as conditions warrant. In making this determination, account shall be taken of such factors as horizontal and vertical alignment of the track, embankment height, and an assessment of the consequences of serious damage in the case of a collision.

2.1.5.2 Over Navigable Streams

Piers located adjacent to channels of navigable waterways shall have a protection system in accordance with Part 23, Pier Protection Systems at Spans Over Navigable Streams.

[1] See Commentary