

BRIDGE SAFETY

September 13, 2018

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- Design

- Design per the TxDOT Bridge Design Manual-LRFD.

- Identify the hazards. Design to mitigate the hazards.

- [\(https://static.tti.tamu.edu/conferences/tsc13/presentations/struct.../retterer.pdf\)](https://static.tti.tamu.edu/conferences/tsc13/presentations/struct.../retterer.pdf)

- Consider precast

- Consider traffic

- Consider utilities

- Consider beam erection

Bridge Railing

- Bridge Railing Manual
 - Provides a list of approved bridge rails.
 - Provides a list of old rails that are still compliant.
- For letting starting January 2020, new rails must be MASH compliant.

Bridge Railing Manual



June 2018

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Bridge Railing

- Speed - greater of the posted speed or design speed
 - > 50 mph must have railings that meet TL-3 criteria or greater.
 - < 45 mph must have railings that meet TL-2 criteria or greater.
- Protect the ends of bridge railing (MBGF transitions or crash cushions)
 - Exceptions are provided in the Bridge Railing Manual
- Protect the ends of bridge-class pipe and box culverts regardless of horizontal clearance (clear zone) by providing, in order of preference
 - safety end treatments
 - metal beam guard fence
 - bridge railing

Bridge Railing

- Retaining walls that are in-line with the edge of the bridge slab require bridge railing.
- Sidewalks
 - Railings on the outside edge of the bridge adjacent to a sidewalk must have a 42" height.
 - > 50 mph must have a separator rail
 - < 45 mph must have a raised sidewalk

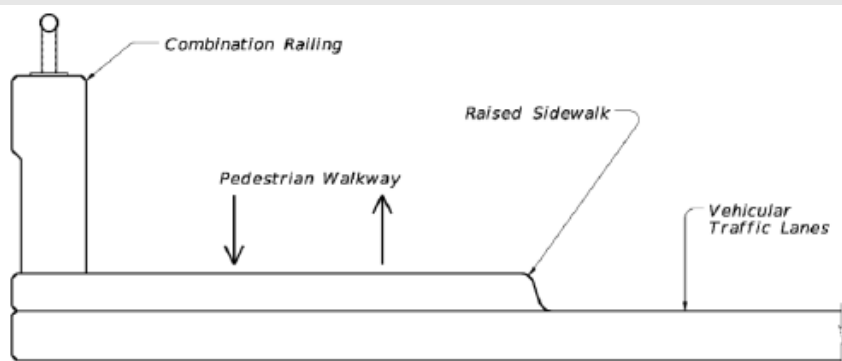


Figure B-2. Bridge railing for vehicular and non-vehicular traffic -- low speed

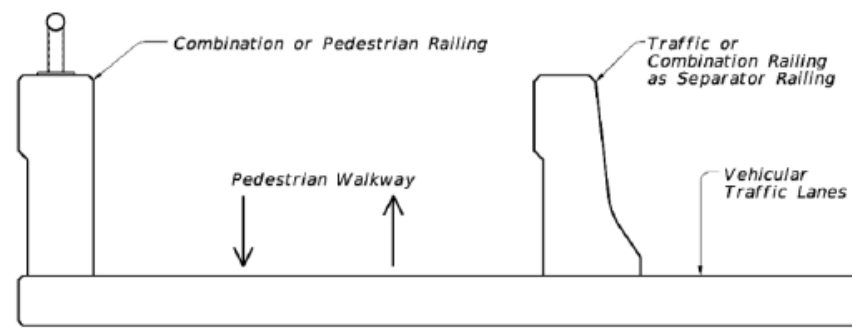


Figure B-3. Bridge railing for vehicular and non-vehicular traffic -- high speed

- Considerations:
 - Protect the traffic from the bridge.
 - Roadway design using clear zone concepts.
 - Using MBGF or rigid rails and transitions or crash cushions to keep cars from impacting a blunt end (the column).
 - Protect the bridge from traffic.
 - Vehicular collision design.
 - Design for Pier Protection

Questions?

Taya Retterer, P.E.

Bridge Standards Engineer

Taya.Retterer@txdot.gov

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