

Shoulder Design for New and Existing Bridge Staging

Design Manual

Chapter 3

Cross Sections

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New Bridges

For new bridges full width, full depth paved shoulders should be provided that would be available to use for future staging associated with bridge repairs. Placing the shoulders during new bridge construction should provide future cost savings by eliminating the need to place shoulders in the future for staging.

Figure 1 shows possible locations of shoulders placed during new bridge construction.

Possible Shoulder Locations

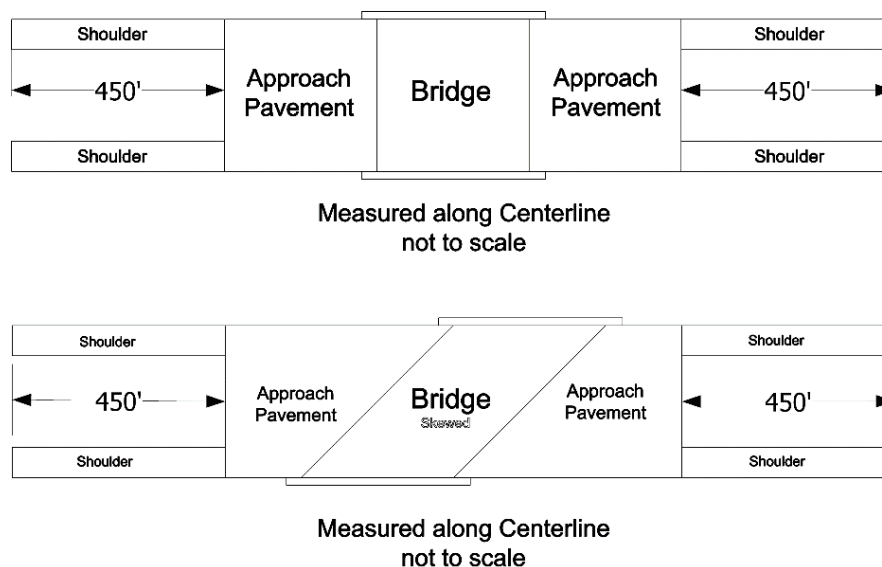


Figure 1: Possible shoulder locations.

Not all bridges will require shoulders at all four corners of the bridge, and designers should analyze the best shoulder configuration for future staging needs.

- The length of ten foot wide shoulders for staging should be 450 feet long measured from the approach pavement, along the centerline of the bridge.
- The shoulder paving width should match the proposed bridge shoulder widths.
- The inside shoulder of a four lane will likely not need additional shoulder paving since it will already have a six foot wide full depth shoulder. The outside would be 10 feet paved full depth for 450 feet.
- The intent is to construct shoulder pavement and base with the structural capacity that will handle mainline traffic loadings, i.e., the shoulder pavement and base will match mainline.
- The shoulder paving will not be tapered; instead, it will be the design width for the full length of the installation.
- The trailing side will only need 150 feet of shoulder strengthening on four lane roadways.

Existing Bridges

For bridge repairs and bridge replacements that require staging, consideration should be given to providing 450 feet of new full width, full depth shoulders, if the location allows it.

- The length of shoulders for staging should be 300 feet long for six foot shoulders and 450 feet long for 10 foot shoulders, measured from the approach pavement, along the centerline of the bridge.
- Designers should analyze the best shoulder configuration for staging needs, based on their project.
- Refer to TC-217 and TC-421 for more information.
- The shoulder paving will not be tapered; instead, it will be at the design width for the full length of the installation.
- The shoulder paving width should match the proposed bridge shoulder width.
- Bridge approach pavement will be constructed to full width matching the shoulders.

Chronology of Changes to Design Manual Section:

003C-007 Shoulder Design for New and Existing Bridge Staging

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