

County/City Bridge Replacement Information Summary

This Spreadsheet calculates quantities based on KYTC Standard Drawings for single span-Slab, Concrete Box Beam and Steel Beam Bridges. Quantity and Cost Estimate for Piers are provided; however when designing a multiple span bridge, spans should be designed separately on each tab of the spreadsheet based on the desired design type.

Bridge Information

Bridge ID and Location	
Bridge ID	
Road Name	
Road No.	
Crossing	
Improvement Type	
Full Replacement	

Proposed Bridge Dimensions

Dimension	Existing	Proposed
Bridge Type	Girder/Floor Beam	
Bridge Length (Out to Out) (ft)	32	32
Bridge Width (Out to Out) (ft)	24	24
Number of Spans	1	1
Bridge Span (ft)	31	31
Bridge Skew (degrees)	30	15
Beam Depth (in)	24	24
Slab + Deck Depth (in)	5	5
Rock Depth Abutment No. 1 (From Bottom of Beam) (ft)	10	10
Rock Depth Abutment No. 2 (From Bottom of Beam) (ft)	10	10
Notes:		
All Measurements should be field measured and verified before finalizing design and cost estimates		

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TECHNOLOGY
TRANSFER
PROGRAM

Superstructure Design Summary

Dimension	Desired	Slab	Box Beam	Non-Comp Steel Beam	Composite Steel Beam
		Slab	CB12	W24x117	W27x84
Beam Type ¹		Slab	CB12	W24x117	W27x84
Bridge Length (Out to Out) (ft) ²	32	32	32	32	32
Bridge Width (Out to Out) (ft) ³	24	24	24	25.5	24
Number of Spans	1	1	1	1	1
Bridge Skew ⁴	15	15	15	15	15
Beam Depth (in)	24	0	12	24.3	0
Slab/Deck Depth (in) ⁵	5	17	5	8	8
Total Beam / Slab Thickness (in)	29	17	17	32.3	8
Estimated Cost		\$ 128,668	\$ 117,994	\$ 188,115	\$ 136,283

Select Superstructure

Notes:

- Beam Type is selected based on lowest cost feasible beam. This value may be adjusted in the individual worksheet tabs for each bridge type.
- Bridge Length is adjusted for Box Beams to standard 2 foot lengths. Superstructure replacements must ensure that existing abutment spans can support this.
- Bridge width is adjusted for standard 4 foot widths for box beams and 4 ft spacing for Non-Composite Steel structures with a 9" overhang. Superstructure replacement must ensure that existing abutment width can support this width.
- Bridge Skew Standard Drawings are provided for Abutment Substructures on 5 degree intervals from 0 to 45. End Bent Standard Drawings provide the option for 0, 15, 30 and 45 skews.

Substructure Design Summary

Dimension	Abutment No. 1			Abutment No. 2		
	Desired ¹	End Bent	Wall Abutment	Desired	End Bent	Wall Abutment
Bridge Width (Out to Out) (ft) ²	24	24	24	24	24	24
Bridge Length (Out to Out) (ft)	32	32	32	32	32	32
Bridge Skew (degrees) ³	15	15	15	15	15	15
Depth to Rock (ft)	10	10	10	10	10	10
Beam / Slab Thickness (in)	17	17	17	17	17	17
Wing Wall Angle (degrees)	50	--	50	50	--	50
Estimated Cost		\$ 38,142	\$ 189,667		\$ 38,142	\$ 189,667

Select Substructure

Notes:

- Desired Dimensions are based on selected Superstructure. If abutment type does not support desired value, re-enter existing bridge dimensions desired values.
- End Bent Standard Drawings are based on standard Box Beam Widths of 16, 24 or 32 feet.
- Bridge Skew Standard Drawings are provided for Wall Abutment Substructures on 5 degree intervals from 0 to 45. End Bent Standard Drawings provide for 0, 15, 30 and 45 skews.