

 Office of Structures <i>Guidelines and Procedures</i> <i>Memorandum</i>	DESIGN
	Number: D-87-38(4)
	Date: 04-16-2019
Guide to Location of Fixed and Expansion Bearings and Selection of Roadway Joints	Approval: DRAFT

Every effort shall be made to minimize the number of bridge roadway joints. It shall also be the goal of all designers to set up the fixed/expansion bearing system in a way that provides a fixed bearing at the low end of the bridge with expansion bearings at all other substructure units. The following list prioritizes the preferred arrangements for roadway joints and fixed bearings:

1. Place the fixed bearing at the low end of the bridge following appropriate structural details. Place expansion bearings at all other substructure units. Place the appropriate expansion joint at the uphill abutment.
2. If the total length of bridge is too long or skew angle/length combination too severe to be accommodated by the 6" compression seal, that is item 1 above will not satisfy, investigate locating the fixed bearing at a pier near the center of the bridge and placing expansion bearings at all other substructure units. Place the appropriate expansion joints at both abutments.
3. If the length of bridge contributing to expansion in either direction is too long or skew angle/length combination too severe to be accommodated by the 6" compression seal, that item 2 above will not satisfy, investigate locating the fixed bearing at the low end of the bridge and providing expansion bearings at all piers and the uphill abutment. Place a 1 3/4" compression seal at the low end abutment and provide a finger type joint at the uphill abutment.
4. If the length of bridge contributing to expansion is too long to be accommodated by a finger joint at the uphill abutment and a compression seal at the low end abutment, that is item 3 above will not satisfy, investigate locating the fixed bearing at a pier near the center of the bridge and placing expansion bearings at all other substructure units. Place a finger joint at one or both abutments. It may not be necessary to use finger joints at both abutments with this arrangement. If possible, the use of a finger joint at one abutment and a compression seal at the other is preferable.

If none of the above cases can be satisfied and roadway joints are required at piers, then each section of bridge between joints will be evaluated for roadway joints following the prioritized list appearing in items 1 through 4 above.

Exceptions to this system must be clearly presented for approval at the T.S.& L. stage of review.