

## Summary Table of J-Turn Design Considerations

Carlos Sun and Praveen Edara  
 University of Missouri  
 E2509 Lafferre Hall  
 Columbia, Missouri 65211

September 22, 2016

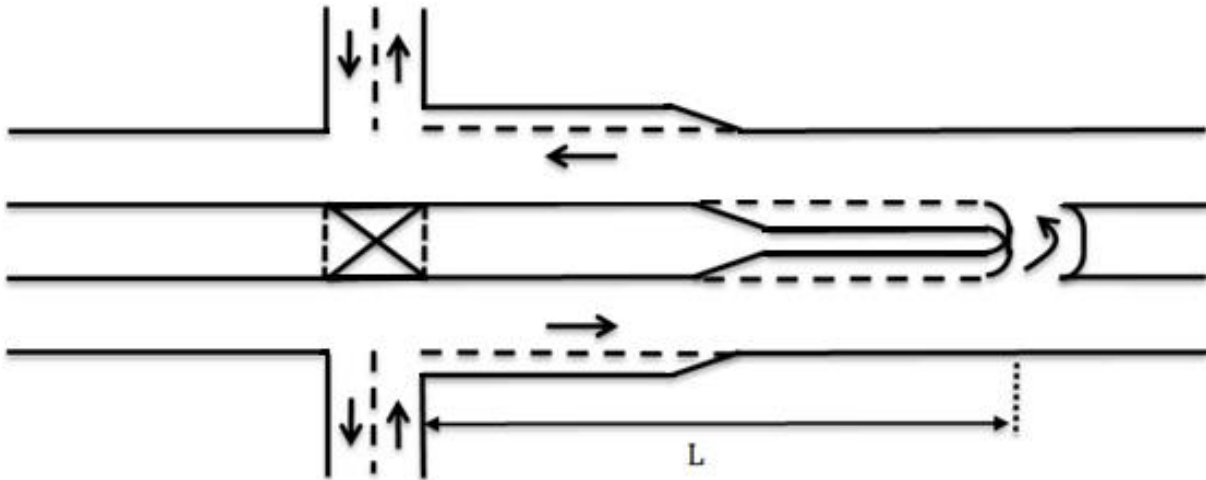
This document presents a lookup table for designers to determine J-turn design parameters such as acceleration/deceleration configurations and U-turn offset distance. The information contained in this document can be easily included into the MoDOT Engineering Policy Guide. This document was based on the research presented in the following reports:

- Sun, C., Edara, P., Balakrishnan, B., Qing, Z., and Hopfenblatt, J. (2016). [\*Driving Simulator Study of J-turn Acceleration /Deceleration Lane and U-turn Spacing Configurations\*](#). Final Report, MoDOT Project# TR201515.
- Edara, P., Sun, C., Claros, B., Qing, Z., and Brown, H. (2016). [\*System-wide Safety Treatments and Design Guidance for J-Turns\*](#). Final Report, MoDOT Project# TR201510.

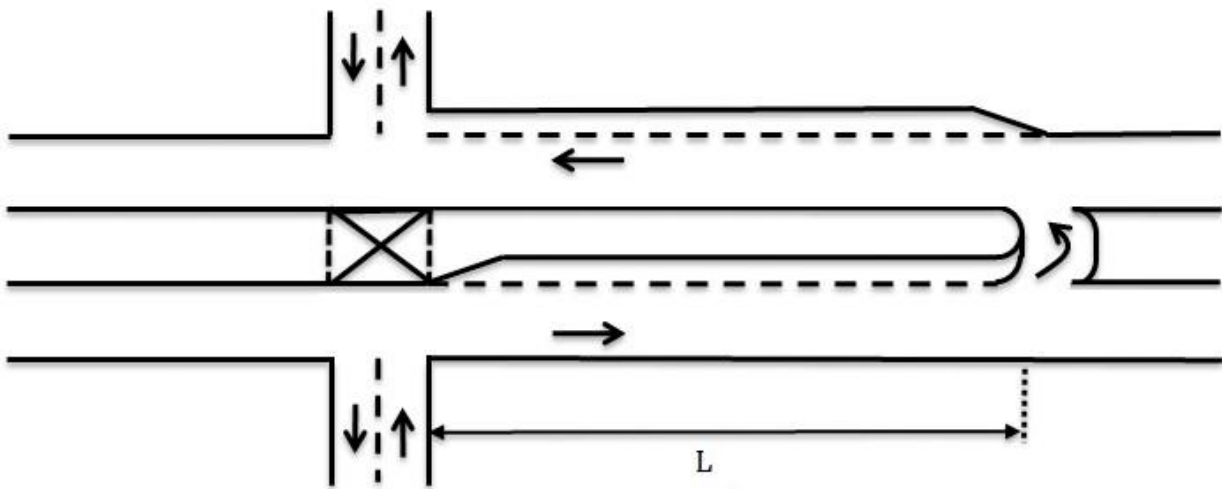
**Recommended J-Turn U-turn Offset Length (L) Design Values**

Major Total (veh/hr)	Minor Crossing Left-Turn+ Through (veh/hr)	Minor Crossing Right-Turn (veh/hr)	Total Minor/Major	With Acceleration Lane (in ft) "AD"	No Acceleration Lane (in ft) "DF"
1000	150	150	30%	1000-2000	1000
	250	250	50%	1000-2000	1000
	350	350	70%	2000	1000
1300	195	195	30%	1000-2000	not preferred
	325	325	50%	2000	not preferred
	455	455	70%	2000-3000	not preferred
1504	226	226	30%	2000	not preferred
	376	376	50%	>2000	not preferred
	526	526	70%	>2000	not preferred
1800	270	270	30%	2000	not preferred
	450	450	50%	2000	not preferred
	630	630	70%	3000	not preferred

The following are schematic examples of J-turn designs with and without acceleration lanes.

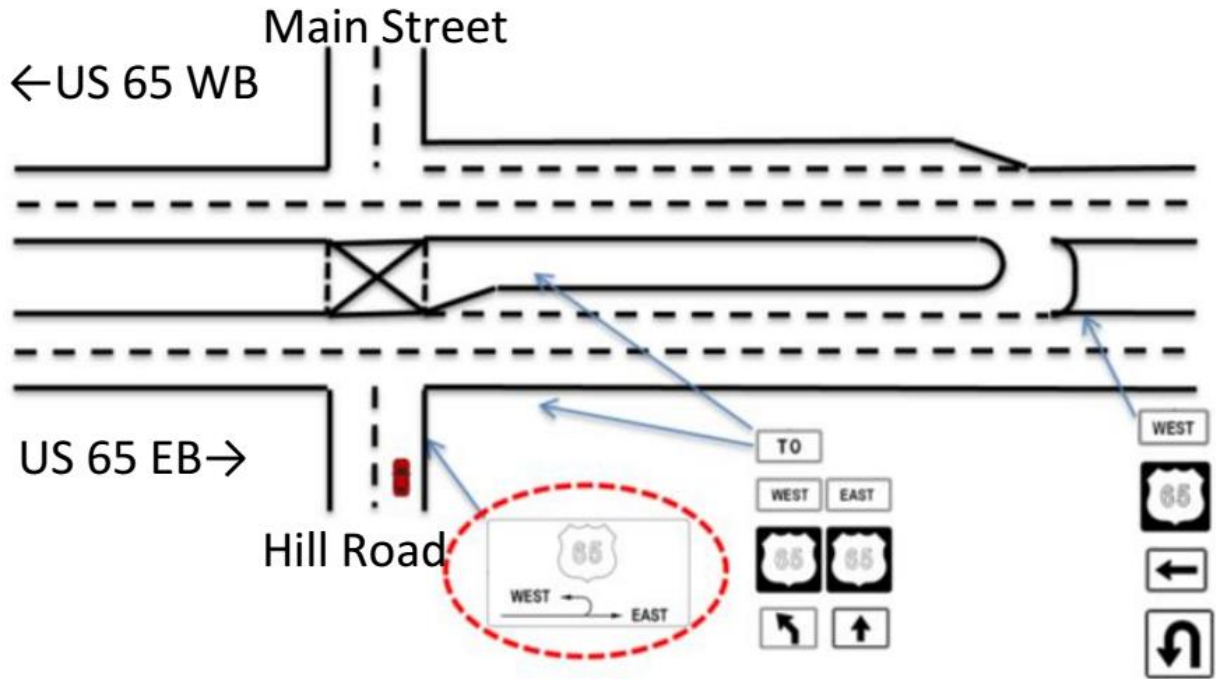


**Acceleration and deceleration lanes (AD).**

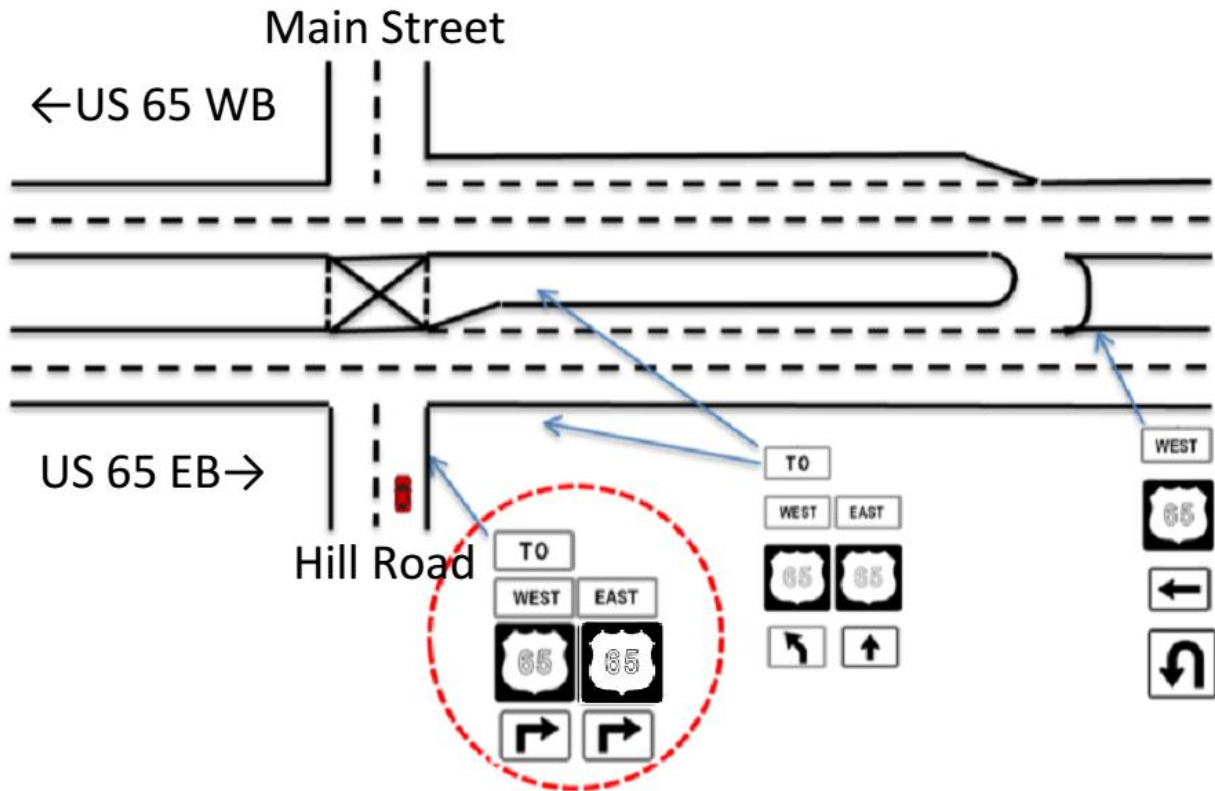


**Full deceleration lanes only (DF).**

The diagrammatic and the directional minor road signage both work equally well. See examples below for the two types of signage.



Diagrammatic-style signage on minor road.



Directional-style signage on minor road.