US 51 EIS – DESIGN CRITERIA

DESIGN ELEMENTS	GENERAL CONSIDERATIONS
Design for conditions 20 years from now	Traffic projections, land use, pavement thickness, etc.
Design as an expressway	Partial Access Control (intersections or interchanges for access)
Traffic volumes determine number of travel lanes	Two lanes of traffic in each direction (four total) are anticipated
Horizontal Alignment: Use gradual curves (roadway radius >=3,000' desirable; 2,050' minimum) Avoid curves in same direction, abrupt reversals, etc. Avoid curves in vicinity of proposed interchanges Coordinate horizontal curves with vertical curves as much as possible	In general, roadway curves are to be gentle, and abrupt changes in driving conditions are to be avoided.
Vertical Alignment: Not too steep (3% maximum) Avoid deep cuts & high fills Make vertical curves gradual	In general, avoid hilly areas if possible; keep driving comfort and visibility in mind.
Assumed cross section: Maximum pavement cross slope on curves: 6% Lane Widths: 4 @ 12' Maintenance Border Areas: 10'	Total roadway cross section width will vary dependent on existing conditions.
Rural conditions: Median Width: 50' (includes shoulders) Median Type: depressed ditch section Shoulder Widths: 10' outside, 6' inside Outside Ditch Width: 40' minimum Drainage: Open (ditches)	
Urban conditions: Median Width: 22' (includes shoulders) Median Type: flush w/ barrier or raised w/ curb & gutter Shoulder Widths: 10' outside, 6' inside (flush median) Shoulder Widths: 10' outside, curb & gutter inside (raised median) Outside Ditch Width: 40' minimum Drainage: Closed (storm sewers)	

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Access: No direct commercial access. Space private/field entrances ≥ 500' apart (1/4 mi. average) Space median openings ≥ 1/2 mi. apart (1 mi. average) Build interchange if signals are needed within 9 years Plan interchange if signals are needed from 10 to 20 years Space interchanges ≥ 3 mi. apart (preferably 7.5 mi.)	In general, each access point is a conflict point and a source of potential safety considerations. Goal is to minimize conflict and maximize safety by minimizing access to properly spaced access points.
Minimize stream and river crossings.	Bridges are costly; Environmental issues are involved that could impact project.
Rules to follow (Illinois DOT, AASHTO, Highway Capacity Manual, ITE Trip Generation, MUTCD, etc.)	In general, the goal of the rules is to maximize safety while striking a balance between cost and impacts to surrounding land.