

TABLE 3-14
 Elgin O'Hare – West Bypass: Level One Design Exception Criteria List

No.	Project Design Section	Location	Exception Level	Jurisdiction	Design Feature	Justification
Design Speed						
	1		1		**no exception**	
	2		1		**no exception**	
	3		1		**no exception**	
	4		1		**no exception**	
	5		1		**no exception**	
Lane Width						
	1		1		**no exception**	
	2		1		**no exception**	
	3		1		**no exception**	
	4		1		**no exception**	
	5		1		**no exception**	
Through lane Cross Slope						
	1		1		**no exception**	
	2		1		**no exception**	
	3		1		**no exception**	
	4		1		**no exception**	
	5		1		**no exception**	
Shoulder Widths						
	1		1		**no exception**	
	2		1		**no exception**	

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No.	Project Design Section	Location	Exception Level	Jurisdiction	Design Feature	Justification
1..	3	Ramp P 5 NB West Bypass to Elgin O'Hare WB	1	ISTHA	The shoulder widths of this 2-lane ramp were switched for the curve on the bridge. The left shoulder is 10' and the right shoulder is 6'.	This was done to maintain the bridge width while providing additional horizontal SSD on the 950' radius curve.
2.	3	Ramp P 8 Elgin O'Hare EB to West Bypass NB	1	ISTHA	The shoulder widths of this 1- lane ramp were switched for the curve on the bridge. The left shoulder is 10' and the right shoulder is 6'.	This was done to maintain the bridge width while providing additional horizontal SSD on the 550' radius curve.
3..	4	Ramp S 2 over I-294 I-294 NB to West Bypass NB	1	ISTHA	The shoulder widths of this 2 – lane ramp were switched for the curve on the bridge. The left shoulder is 10' and the right shoulder is 6'	This was done to maintain the bridge width while providing additional horizontal SSD on the 826' radius curve.
	5		1		**no exception**	
Horizontal Curvature (minimum radius for selected design speed)						
	1		1		**no exception**	
4.	2	Ramp G 3 Elgin O'Hare EB to I 290 WB Curve EO_G3P-8	1	ISTHA	With an inside radius of 220', Ramp G 3 does not meet the 30-mph design speed criterion for a loop ramp. A 25-mph design speed is achieved.	Providing the minimum 30-mph design radius of 255' would require shifting the outer ramps in the SE quadrant of the I-290 interchange. This would greatly increase the impacts on residential properties.
5.	3	Ramp P 1 West Bypass SB to Elgin O'Hare WB Curve EO_P8P-1	1	ISTHA	With a radius of 520', Ramp P 1 does not meet the 50-mph ramp design speed criterion for directional ramps. A 40-mph design speed is achieved.	Providing the minimum 50-mph design radius of 765' would infringe on O'Hare airport property and flight corridors.
6	3	Ramp P 8 Elgin O'Hare EB to West Bypass NB	1	ISTHA	With a radius of 550', Ramp P 8 does not meet the 50-mph ramp design speed criterion for directional ramps. A 40 mph design speed is achieved.	Providing the minimum 50-mph design radius of 765' would infringe on O'Hare airport property and flight corridors.

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	4		1		**no exception**	
7	5	Ramp W 3 Touhy Ave WB to West Bypass SB Curve WB_W3P-2	1	ISTHA	With an inside radius of 230', Ramp W 3 does not meet the 30-mph design speed criterion. A 25-mph design speed is achieved.	Providing the minimum 30-mph design radius of 255' would impact the industrial and low lying areas nearby. (The design has been revised subsequent to the submittal.)
Superelevation Rate						
	1		1		**no exception**	
	2		1		**no exception**	
	3		1		**no exception**	
	4		1		**no exception**	
	5		1		**no exception**	
Stopping Sight Distance for Crest Vertical Curves (Level SSD for Passenger Cars)						
	1		1		**no exception**	
	2		1		**no exception**	
	3		1		**no exception**	
8.	4	Ramp T 1 VPI STA 16+50.00 Franklin Ave to West Bypass SB	1	ISTHA	Vertical curve K value of 63 does not meet the minimum K value of 84 for a 50-mph facility. The resulting SSD correlates to a design speed of 45-mph	The design location of gore nose is constrained by the location of possible future ramp to I-294 NB. Ramp T 1 will be an added lane to West Bypass SB.
9.	4	Ramp T 2 VPI STA 17+60 West Bypass NB to Franklin Ave	1	ISTHA	Vertical curve K value of 45 does not meet the minimum K value of 84 for a 50-mph facility. . The resulting SSD correlates to a design speed of 40-mph	The design location of gore nose is constrained by the location of possible future ramp from I-294 SB
	5		1		**no exception**	

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No.	Project Design Section	Location	Exception Level	Jurisdiction	Design Feature	Justification
Stopping Sight Distance for Sag Vertical Curves (Level SSD for Passenger Cars)						
	1		1		**no exception**	
	2		1		**no exception**	
	3		1		**no exception**	
	4		1		**no exception**	
	5		1		**no exception**	
Stopping Sight Distance on inside of Horizontal Curves (Level SSD for Passenger Cars)						
	1		1		**no exception**	
10.	2	Ramp G 1 I 290 SB to Elgin O'Hare EB Curve EO_G1P-3	1	IDOT	For a design speed of 50-mph 2-lane Ramp G-1 does not meet the minimum standard for horizontal SSD. The required middle ordinate of the 1176' inside radius curve is 19'; however, there is only 10' clear to the bridge parapet from the driver's eye. This correlates to a design speed of 40-mph for SSD.	Note that an additional 6' of horizontal clearance can be gained by switching the shoulders and providing a 10' shoulder on the left EOP. The 16' offset correlates to a design speed of 45-mph. Would need to widen this 3 rd level bridge an additional 3' to attain a 50-mph design
11.	2	Ramp G 1 I 290 SB to Elgin O'Hare EB Curve EO_G1P-4	1	IDOT	For a design speed of 50-mph, Ramp G 1 does not meet the minimum standard for horizontal SSD. The required middle ordinate of the 851' inside radius curve is 26'; however, there is only 10' clear to the bridge parapet from the driver's eye. This correlates to a design speed of 40-mph for SSD.	Note that an additional 6' of horizontal clearance can be gained by switching the shoulders and providing a 10' shoulder on the left EOP. The 16' offset correlates to SSD speed of 40-mph. Would need to widen this 3 rd level bridge an additional 10' to attain a 50-mph design

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No.	Project Design Section	Location	Exception Level	Jurisdiction	Design Feature	Justification
12.	2	Ramp G 4 Elgin O'Hare EB to I 290 EB Curve EO_G4P-3	1	ISTHA	For a design speed of 50-mph, Ramp G 4 does not meet the minimum standard for horizontal SSD. The required middle ordinate of the 850' radius curve is 26'; however, there is only 18' clear to the retaining wall from the driver's eye. This correlates to a design speed of 40-mph for SSD.	The 18' offset correlates to a design speed of 40-mph for SSD. The retaining wall would need to be moved an additional 8' on the right to attain a 50-mph design
13.	2	Ramp G 5 I 290 WB to Elgin O'Hare WB Curve EO_G5P-2	1	IDOT	For a design speed of 50-mph, Ramp G-5 does not meet the minimum standard for horizontal SSD. The required middle ordinate of the 976' inside radius curve is 23'; however, there is only 12' clear to the retaining wall from the driver's eye. This correlates to a design speed of 40-mph for SSD.	Note that an additional 6' of horizontal clearance can be gained by switching the shoulders and providing a 10' shoulder on the left EOP. The 18' offset correlates to a design speed of 45-mph for SSD. Would need to move the retaining wall an additional 4' to the left to attain a 50-mph design
14.	2	Ramp G 6 I 290 WB to Elgin O'Hare EB Curve EO_G6P-2	1	IDOT	For a design speed of 50-mph, Ramp G 6 does not meet the minimum standard for horizontal SSD. The required middle ordinate of the 850' radius curve is 26'; however, there is only 18' clear to the bridge parapet from the driver's eye. This correlates to a design speed of 45-mph for SSD.	The 18' offset correlates to a design speed of 40-mph. Would need to move retaining wall an additional 8' to the right to attain a 50-mph design
15.	3	Ramp P 8 Elgin O'Hare EB to West Bypass NB Curve EO_P8P-1	1	ISTHA	For a design speed of 40-mph, Ramp P 8 does not meet the minimum standard for horizontal SSD. The required middle ordinate of the 550' radius curve is 21'; however, there is only 18' clear to the bridge parapet from the driver's eye. This correlates to a design speed of 35-mph for SSD.	Shoulder widths have already been switched and additional width on the bridge would be costly. The 18' offset correlates to design speed of 35-mph. Would need to widen this 3 rd level bridge an additional 3' to attain a 40-mph design.

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No.	Project Design Section	Location	Exception Level	Jurisdiction	Design Feature	Justification
16.	4	Ramp S 1 West Bypass SB to I 294 SB Curve WB_S1P-2	1	ISTHA	For a design speed of 50-mph the 2-lane Ramp S 1 does not meet the minimum standard for horizontal SSD. The required middle ordinate of the 1100' radius is 21'; however, there is only 16' clear to the bridge parapet from the driver's eye. This correlates to a design speed of 45-mph for SSD.	The 16' correlates to SSD speed of 45-mph. Widening the bridge on the right is limited by the UPRR tracks and ROW
17.	4	Ramp S 2 I 294 NB to West Bypass NB Curve WB_S2P-4	1	ISTHA	For a design speed of 50-mph, the 2-lane Ramp S 2 does not meet the minimum standard for horizontal SSD. The required middle ordinate of the 826' radius is 28'; however, there is only 16' clear to the bridge parapet from the driver's eye. This correlates to a SSD speed of 42-mph.	The 16' offset correlates to a design speed of 40-mph. This 3 rd level bridge would need to be widened an additional 11' to attain a 50-mph design, which would be cost prohibitive.
18.	4	Ramp T 1 Franklin Ave to West Bypass SB Curve WB_T1P-2	1	ISTHA	For a design speed of 50-mph, Ramp T 1 does not meet the minimum standard for horizontal SSD. The required middle ordinate of the 808' radius is 28'; however, there is only 14' clear to the West Bypass bridge piers from the driver's eye. This correlates to a design speed of 40-mph for SSD	The 14' offset correlates to design speed of 40-mph. The horizontal design of the ramp is constrained by the West Bypass bridge and the UPRR to the west.
19.	5	West Bypass NB at RR spur crossing Curve WB_5CLP-2	1	ISTHA	For a design speed of 60-mph, the West Bypass does not meet the minimum standard for horizontal SSD. The required middle ordinate of the 1910' radius curve is 21'; however, there is only 18' clear to the bridge parapet from the driver's eye. This correlates to a design speed of 55-mph for SSD.	Would require widening the West Bypass bridge 3' to provide a 60 mph design for SSD.

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No.	Project Design Section	Location	Exception Level	Jurisdiction	Design Feature	Justification
20.	5	Ramp X 1 I 90 EB to West Bypass SB Curve WB_X1P-5	1	ISTHA	For a design speed of 50-mph, Ramp X 1 does not meet the minimum standard for horizontal SSD. The required middle ordinate of the 850' radius curve is 26'; however, there is only 18' clear to the retaining wall and bridge from the driver's eye. This correlates to a design speed of 43-mph for SSD.	The bridge for Ramp X 1 is immediately adjacent to Higgins Creek. Widening by 8' would impact a wetlands area.
Clear Roadway Bridge Widths						
	1		1		**no exception**	
	2		1		**no exception**	
	3		1		**no exception**	
	4		1		**no exception**	
	5		1		**no exception**	
Structural Capacity of Bridges						
	1		1		**no exception**	
	2		1		**no exception**	
	3		1		**no exception**	
	4		1		**no exception**	
	5		1		**no exception**	
Vertical Clearances						
21.	1	Ramp B 1 over Elgin O'Hare	1	ISTHA	The provided vertical clearance is 16.35', which is less than the required minimum vertical clearance of 16.42'	Adjustments to structure depth may be possible. The structure depth will be examined in more detail in future design phases.

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No.	Project Design Section	Location	Exception Level	Jurisdiction	Design Feature	Justification
22.	1	Plum Grove Road over Elgin O'Hare	1	ISTHA	The provided vertical clearance is 16.37', which is less than the required minimum vertical clearance of 16.42'	Adjustments to structure depth may be possible. The structure depth will be examined in more detail in future design phases.
	2		1		**no exception**	
	3		1		**no exception**	
	4		1		**no exception**	
	5		1		**no exception**	
Maximum Grades						
	1		1		**no exception**	
	2		1		**no exception**	
	3		1		**no exception**	
	4		1		**no exception**	
	5		1		**no exception**	
Accessibility Criteria for Disabled Persons						
	1		1		**no exception**	
	2		1		**no exception**	
	3		1		**no exception**	
	4		1		**no exception**	
	5		1		**no exception**	