

Appendix A

Review of Existing Geometrics for Mainline and Ramps Ohio and Kentucky

Brent Spence Bridge Project (BSB) Review of Existing Geometrics Mainline and Ramps, Ohio

Functional Classification (Mainline) - Interstate
Design Speed (Mainline) - 60 Miles Per Hour (MPH)

Notes:

1. Based upon review of the Original Construction, Rehabilitation, and Reconstruction Plans.
2. When a deficient lane / shoulder width is identified, it is assumed that curve widening (when applicable) and bridge width (when applicable) are also deficient.
3. When a deficient horizontal curve is identified, it is assumed that superelevation (when applicable) is also deficient.
4. When a deficient shoulder width is identified, it is assumed that the graded shoulder width is also deficient.
5. Review is based upon design criteria established by the ODOT Location & Design Guidance Manuals.

Typical Section				
State Line Mile	Item	Location	Existing	Required
0.3	Lane Width (Bridge Width)	I-75 NB Mill Creek Bridge Conn. (End of BSB to at Grade)	11 Feet	12 Feet
0.2	Lane Width (Bridge Width)	I-75 SB Mill Creek Bridge Conn. (End of BSB to at Grade)	11 Feet	12 Feet
0.2	Lane Width	Directional Ramp NB Mill Creek Expressway One Lane Portion	12 Feet	16 Feet
0.5	Lane Width	Directional Ramp SB Mill Creek Expressway One Lane Portion	12 Feet	16 Feet
0.5	Lane Width	Ramp H - Directional Ramp NB Mill Creek Expwy. To WB 6th St. Expwy.	14 Feet	16 Feet
1.3	Lane Width	Ramp J - SB Western Avenue to SB Mill Creek Expressway	14 Feet	16 Feet
0.3	Shoulder Width (Bridge Width)	I-75 NB Mill Creek Bridge Conn. (End of BSB to at Grade)	Varies <6 Feet Both Sides	10 Feet Both Sides
0.2	Shoulder Width (Bridge Width)	I-75 SB Mill Creek Bridge Conn. (End of BSB to at Grade)	Varies <6 Feet Both Sides	10 Feet Both Sides
0.5	Shoulder Width (Curbed)	Ramp G - 4th St. to NB Mill Creek Expwy.	3 Feet Both Sides	6 Feet Right 3 Feet Left

V=speed
R=radius
K=rate of verticle curvature
SSD=Stopping Sight Distance

NB=Northbound
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Brent Spence Bridge Project (BSB)

Review of Existing Geometrics

Mainline and Ramps, Ohio

Typical Section (continued)				
State Line Mile	Item	Location	Existing	Required
0.6	Shoulder Width (Curbed)	Ramp P - Sixth St. to NB Mill Creek Expressway	3 Feet Both Sides	10 Feet Right 4 Feet Left
0.6	Shoulder Width (Curbed)	Ramp R - EB 6th St. Expwy. To SB Mill Creek Bridge Conn.	6 Feet Right	10 Feet Right
0.9 - 1.3	Shoulder Width (Curbed)	Mill Creek Expressway	Median ~ 7 Feet	15 Feet
0.8	Shoulder Width (Curbed)	Ramp Q - 9th St. Conn. To SB Mill Creek Bridge Conn.	6 Feet Right 4 Feet Left	10 Feet Right 4 Feet Left
0.8	Shoulder Width (Curbed)	Ramp B - SB Mill Creek Expressway to EB 7th Street	3 Feet Right 3 Feet Left	10 Feet Right 4 Feet Left
1.3	Shoulder Width (Curbed)	Ramp F - Gest/Winchell to NB Mill Creek Expressway	3 Feet Both Sides	6 Feet Right 3 Feet Left
1.3	Shoulder Width (Curbed)	Ramp H - SB Mill Creek Expressway to Gest St.	4 Feet Right 4 Feet Left	6 Feet Right 3 Feet Left
1.3	Shoulder Width (Curbed)	Ramp J - SB Western Avenue to SB Mill Creek Expressway	3 Feet Both Sides	6 Feet Right 3 Feet Left
1.5	Shoulder Width (Curbed)	Ramp M - NB Winchell Ave. to NB Mill Creek Expressway	3-4 Feet Right 3 Feet Left	6 Feet Right 3 Feet Left
1.6	Shoulder Width (Curbed)	Ramp N - SB Mill Creek Expressway to SB Western Ave.	3 Feet Both Sides	6 Feet Right 3 Feet Left
1.6 - 2.3	Shoulder Width (Paved)	Mill Creek Expressway	Median ~ 7 Feet	15 Feet
2.7	Shoulder Width (Paved)	Mill Creek Expressway (Bifurcated Area)	Median ~ 7 Feet	15 Feet
2.1	Shoulder Width (Paved)	Ramp A - SB Mill Creek Expressway to Western Avenue	3 Feet Both Sides	6 Feet Right 3 Feet Left
2.5	Shoulder Width (Paved)	Ramp C - EB Western Hills Viaduct to NB Mill Creek Expressway	3 Feet Both Sides	6 Feet Right 3 Feet Left

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Typical Section (continued)				
State Line Mile	Item	Location	Existing	Required
2.5	Shoulder Width (Paved)	Ramp D - NB Mill Creek Expressway to WB Western Hills Viaduct	3 Feet Both Sides	6 Feet Right 3 Feet Left
2.5	Shoulder Width (Paved)	Ramp F - SB Mill Creek Expwy. To WB Western Hills Viaduct	3 Feet Both Sides	6 Feet Right 3 Feet Left

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Mainline and Ramps, Ohio

Horizontal Alignment				
State Line Mile	Item	Location	Existing	Required
0.5	Horizontal Curves Radii	I-75 NB Mill Creek Bridge Conn. (First Curve on Grade)	R=1146 Feet	R=1349 Feet
0.4	Horizontal Curves Radii	Directional Ramp EB Distributor Bridge Conn. To I-71	R=654.81 Feet	Directional Ramp Min. V=40 mph - R=510 Feet Des. V=50 mph - R=850 Feet
0.5	Horizontal Curves Radii	Directional Ramp FWW / EB Dist. Bridge Conn.	R=754 Feet	Directional Ramp Min. V=40 mph - R=510 Feet Des. V=50 mph - R=850 Feet
0.4	Horizontal Curves Radii	Directional Ramp FWW / SB Dist. Bridge Conn.	R=466 Feet	Directional Ramp Min. V=40 mph - R=510 Feet Des. V=50 mph - R=850 Feet
0.5	Horizontal Curves Radii	Directional Ramp FWW / SB Dist. Bridge Conn.	R=476 Feet	Directional Ramp Min. V=40 mph - R=510 Feet Des. V=50 mph - R=850 Feet
0.5	Horizontal Curves Radii	Ramp J - Directional Ramp I-75 NB to 6th St. WB	R=435.16 Feet	Directional Ramp Min. V=40 mph - R=510 Feet Des. V=50 mph - R=850 Feet
0.5	Horizontal Curves Radii	Ramp L - SB Mill Creek Expwy. To 6th-5th St. Connector (at 6th-5th St. Connector)	R=100 Feet	V=30 mph R=232 Feet
0.6	Horizontal Curves Radii	Ramp Q - 9th St. Conn. To SB Mill Creek Bridge Conn.	R=90 Feet	V=30 mph R=232 Feet
2.5	Horizontal Curves Radii	Ramp E - EB Western Hills Viaduct to SB Mill Creek Expwy. (at Curve Nearest Expwy.)	R = ~ 229 Feet	Directional Ramp Min. V=40 mph - R = 488 Feet Pref. V=50 mph - R = 849 Feet
2.5	Horizontal Curves Radii	Ramp F - SB Mill Creek Expwy. To WB Western Hills Viaduct (at Curve Nearest Expwy.)	R = ~ 229 Feet	Directional Ramp Min. V=40 mph - R = 488 Feet Pref. V=50 mph - R = 849 Feet
0.5	Horizontal Alignment - Intersection Angle	Ramp G - 4th St. to NB Mill Creek Expwy. w/ Central Ave.	~ 15 Deg.	70 deg. Max.
2.5	Horizontal Alignment - General	Ramp D - NB Mill Creek Expressway to WB Western Hills Viaduct	Exit Ramp On Left Side	
0.6	Horizontal Alignment - General	Ramp L - SB Mill Creek Expwy. To 6th-5th St. Connector	Exit Ramp On Left Side	
0.4	Ramp Acceleration Length	Ramp R - EB 6th St. Expwy. To SB Mill Creek Bridge Conn.	~ 450 Feet	910 Feet Beg. 30 mph End 60 mph

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Review of Existing Geometrics
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Horizontal Alignment (continued)				
State Line Mile	Item	Location	Existing	Required
2.5	Ramp Acceleration Length	Ramp C - EB Western Hills Viaduct to NB Mill Creek Expressway	~ 250 Feet	550 Feet Beg. - 25 mph End. - 50 mph
0.8	Horizontal Clearance	Mill Creek Expressway at 9th Street Connection (Median Pier)	5-6 Feet	10 Feet
1.0	Horizontal Clearance	Mill Creek Expressway at Linn St. (Median Pier)	5-6 Feet	10 Feet
1.2	Horizontal Clearance	Mill Creek Expressway under Ramp F (Gest St. to Winchell Ave.) (Median Pier)	5-6 Feet	10 Feet
1.4	Horizontal Clearance	Mill Creek Expressway under Ezzard Charles (Median Pier)	5-6 Feet	10 Feet

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Review of Existing Geometrics

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Vertical Alignment				
State Line Mile	Item	Location	Existing	Required
0.0	Vertical Curve Length / SSD	I-75 NB Mill Creek Bridge Conn. (at End of BSB)	Length=350 Feet K=70 SSD=330 Feet V=42 mph	V=60 mph Length=680 Feet K=136 SSD=570 Feet
0.3	Vertical Curve Length / SSD	I-75 NB Mill Creek Bridge Conn. (Over R/R)	Length=600 Feet K=97 SSD=429 Feet V=52 mph	V=60 mph Length=936 Feet K=151 SSD=570 Feet
0.0	Vertical Curve Length / SSD	I-75 SB Mill Creek Bridge Conn. (at End of BSB)	Length=350 Feet K=70 SSD=330 Feet V=42 mph	V=60 mph Length=680 Feet K=136 SSD=570 Feet
0.3	Vertical Curve Length / SSD	I-75 SB Mill Creek Bridge Conn. (Over R/R)	Length=500 Feet K=81 SSD=370 Feet V=49 mph	V=60 mph Length=936 Feet K=151 SSD=570 Feet
0.6	Vertical Curve Length / SSD	I-75 NB Mill Creek Bridge Conn. (at 6th St. Connector)	Length=200 Feet K=133 SSD=562 Feet V=57 mph	V=60 mph Length=227 Feet K=151 SSD=570 Feet
0.3	Vertical Curve Length / SSD	Directional Ramp EB Distributor Bridge Conn. To I-71 (Over R/R)	Length=400 Feet K=65 SSD=375 Feet V=45 mph	Directional Ramp Min. Des. Spd.=40 mph Pref. V=50 mph
0.3	Vertical Curve Length/SSD	Directional Ramp SB Distributor Bridge Conn. To I-71 (Over 3rd St.)	Length=300 Feet K=60 SSD=292 Feet V=39 mph	Directional Ramp Min. Des. Spd.=40 mph Pref. V=50 mph
0.4	Vertical Curve Length / SSD	Directional Ramp FWW / SB Dist. Bridge Conn.	Length=787 Feet K=98 SSD=460 Feet V=52 mph	Directional Ramp Min. Des. Spd.=40 mph Pref. V=50 mph
0.5	Vertical Curve Length / SSD	Directional Ramp NB Mill Creek Expressway (Under 6th St. Connector)	Length=500 Feet K=82 SSD=374 Feet V=45 mph	Directional Ramp Min. Des. Spd.=40 mph Pref. V=50 mph

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Vertical Alignment (continued)				
State Line Mile	Item	Location	Existing	Required
0.4	Vertical Curve Length / SSD	Directional Ramp SB Mill Creek Expressway Under SB Dist. Bridge Conn.	Length=450 Feet K=72 SSD=340 Feet V=42 mph	Directional Ramp Min. Des. Spd.=40 mph Pref. V=50 mph
0.5	Vertical Curve Length / SSD	Ramp H - Directional Ramp NB Mill Creek Expwy. To WB 6th St. Expwy. Under 6th-5th St. Connector	Length=300 Feet K=39 SSD=212 Feet V=31 mph	Directional Ramp Min. Des. Spd.=40 mph Pref. V=50 mph
0.7	Vertical Curve Length / SSD	Ramp L - SB Mill Creek Expwy. To 6th-5th St. Connector (at Diverge)	Length=150 Feet K=83 SSD=380 Feet V=46 mph	Directional Ramp Min. Des. Spd.=40 mph Pref. V=50 mph
0.8	Vertical Curve Length / SSD	Ramp P - Sixth St. to NB Mill Creek Expressway (at Merge w/ NB Mill Creek Expressway)	Length=200 Feet K=45 SSD=236 Feet V=33 mph	Ramp Min. Des. Spd.=40 mph Pref. V=50 mph
0.5	Vertical Curve Length / SSD	Ramp R - EB 6th St. Expwy. To SB Mill Creek Bridge Conn. Under 6th-5th Street Connection	Length=200 Feet K=42 SSD=221 Feet V=32 mph	Directional Ramp Min. Des. Spd.=40 mph Pref. V=50 mph
0.9	Vertical Curve Length / SSD	Ramp A - 9th St. to NB Mill Creek Expressway (at Merge with Ramp P)	Length=150 Feet K=48 SSD=247 Feet V=34 mph	Directional Ramp Min. Des. Spd.=40 mph Pref. V=50 mph
0.9	Vertical Curve Length / SSD	Ramp A - 9th St. to NB Mill Creek Expressway (In Ramp P Merge Area)	Length=50 Feet K=55 SSD=275 Feet V=37 mph	Directional Ramp Min. Des. Spd.=40 mph Pref. V=50 mph
1.1	Vertical Curve Length / SSD	Ramp A - 9th St. to NB Mill Creek Expressway (At Ramp P Diverge Area)	Length=300 Feet K=38 SSD=207 Feet V=30 mph	Directional Ramp Min. Des. Spd.=40 mph Pref. V=50 mph
1.2	Vertical Curve Length / SSD	Ramp A - 9th St. to NB Mill Creek Expressway (Just Prior to Ramp G Merge Area)	Length=500 Feet K=54 SSD=341 Feet V=43 mph	Directional Ramp Min. Des. Spd.=40 mph Pref. V=50 mph

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Mainline and Ramps, Ohio

Vertical Alignment (continued)				
State Line Mile	Item	Location	Existing	Required
1.3	Vertical Curve Length / SSD	Ramp A - 9th St. to NB Mill Creek Expressway (Just After Ramp G Merge Area)	Length=350 Feet K=44 SSD=232 Feet V=33 mph	Directional Ramp Min. Des. Spd.=40 mph Pref. V=50 mph
1.1	Vertical Curve Length / SSD	Ramp E - 9th St. WB to NB Mill Creek Expressway (Near Merge)	Length=100 Feet K=92 SSD=407 Feet V=48 mph	Directional Ramp Min. Des. Spd.=40 mph Pref. V=50 mph
0.9	Vertical Curve Length / SSD	Ramp B - SB Mill Creek Expressway to EB 7th Street (at Diverge)	Length=200 Feet K=50 SSD=258 Feet V=35 mph	Directional Ramp Min. Des. Spd.=40 mph Pref. V=50 mph
1.3	Vertical Curve Length / SSD	Ramp F - Gest/Winchell to NB Mill Creek Expressway (at Merge)	Length=300 Feet K=54 SSD=271 Feet V=36 mph	Directional Ramp Min. Des. Spd.=40 mph Pref. V=50 mph
1.3	Vertical Curve Length / SSD	Ramp H - SB Mill Creek Expressway to Gest St. (at Diverge)	Length=200 Feet K=58 SSD=287 Feet V=38 mph	Ramp Min. Des. Spd.=40 mph Pref. V=50 mph
1.2	Vertical Curve Length / SSD	Ramp J - SB Western Avenue to SB Mill Creek Expressway (at Merge w/ SB Mill Creek Expwy.)	Length=200 Feet K=67 SSD=317 Feet V=41 mph	Directional Ramp Min. Des. Spd.=40 mph Pref. V=50 mph
1.3	Vertical Curve Length / SSD	Ramp J - SB Western Avenue to SB Mill Creek Expressway (Under Ramp H)	Length=400 Feet K=46 SSD=240 Feet V=33	Directional Ramp Min. Des. Spd.=40 mph Pref. V=50 mph
1.3	Vertical Curve Length / SSD	Ramp J - SB Western Avenue to SB Mill Creek Expressway (at Western Avenue Diverge)	Length=200 Feet K=51 SSD=333 Feet V=42 mph	Directional Ramp Min. Des. Spd.=40 mph Pref. V=50 mph
1.5	Vertical Curve Length / SSD	Ramp M - NB Winchell Ave. to NB Mill Creek Expressway (at Diverge from Winchell Ave.)	Length=150 Feet K=46 SSD=316 Feet V=41 mph	Directional Ramp Min. Des. Spd.=40 mph Pref. V=50 mph

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Brent Spence Bridge Project (BSB) Review of Existing Geometrics Mainline and Ramps, Ohio

Vertical Alignment (continued)				
State Line Mile	Item	Location	Existing	Required
1.6	Vertical Curve Length / SSD	Ramp M - NB Winchell Ave. to NB Mill Creek Expressway (at Merge with NB Mill Creek Expwy.)	Length=200 Feet K=58 SSD=288 Feet V=38 mph	Directional Ramp Min. Des. Spd.=40 mph Pref. V=50 mph
1.6	Vertical Curve Length / SSD	Ramp N - SB Mill Creek Expressway to SB Western Ave. (at SB Mill Creek Expwy. Diverge)	Length=300 Feet K=50 SSD=254 Feet V=35 mph	Directional Ramp Min. Des. Spd.=40 mph Pref. V=50 mph
2.1	Vertical Curve Length / SSD	Mill Creek Expressway (Just South of Bank St. Overpass)	Length=400 Feet K=100 SSD=440 Feet V=51 mph	V=60 mph Length=680 Feet K=136 SSD=570 Feet
2.0	Vertical Curve Length / SSD	Ramp A - SB Mill Creek Expressway to Western Avenue (Near Merge w/ Western Avenue)	Length=200 Feet K=31 SSD=181 Feet V=27 mph	Directional Ramp Min. Des. Spd.=40 mph Pref. V=50 mph
2.1	Vertical Curve Length / SSD	Ramp A - SB Mill Creek Expressway to Western Avenue (Near Diverge w/ Expressway)	Length=200 Feet K=52 SSD=335 Feet V=42 mph	Directional Ramp Min. Des. Spd.=40 mph Pref. V=50 mph
2.5	Vertical Curve Length / SSD	Ramp C - EB Western Hills Viaduct to NB Mill Creek Expressway (at Merge w/ NB Mill Creek Expressway)	Length=150 Feet K=47 SSD=241 Feet V=34 mph	Directional Ramp Min. Des. Spd.=40 mph Pref. V=50 mph
2.5	Vertical Curve Length / SSD	Ramp D - NB Mill Creek Expwy. to WB Western Hills Viaduct (at Diverge from NB Mill Creek Expwy.)	Length=200 Feet K=38 SSD=208 Feet V=30 mph	Directional Ramp Min. Des. Spd.=40 mph Pref. V=50 mph
2.5	Vertical Curve Length / SSD	Ramp E - EB Western Hills Viaduct to SB Mill Creek Expwy. (at Diverge from Viaduct)	Length=200 Feet K=22 SSD=139 Feet V=23 mph	Directional Ramp Min. Des. Spd.=40 mph Pref. V=50 mph
2.5	Vertical Curve Length / SSD	Ramp E - EB Western Hills Viaduct to SB Mill Creek Expwy. (at Bridge Over Spring Grove)	Length=150 Feet K=42 SSD=304 Feet V=39 mph	Directional Ramp Min. Des. Spd.=40 mph Pref. V=50 mph

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Brent Spence Bridge Project (BSB)

Review of Existing Geometrics

Mainline and Ramps, Ohio

Vertical Alignment (continued)				
State Line Mile	Item	Location	Existing	Required
2.5	Vertical Curve Length / SSD	Ramp E - EB Western Hills Viaduct to SB Mill Creek Expwy. (at Diverge from Viaduct)	Length=150 Feet K=40 SSD=295 Feet V=39 mph	Directional Ramp Min. Des. Spd.=40 mph Pref. V=50 mph
2.6	Vertical Curve Length / SSD	Ramp F - SB Mill Creek Expwy. To WB Western Hills Viaduct (at Diverge from Expwy.)	Length=200 Feet K=22 SSD=139 Feet V=23 mph	Directional Ramp Min. Des. Spd.=40 mph Pref. V=50 mph
2.5	Vertical Curve Length / SSD	Ramp F - SB Mill Creek Expwy. To WB Western Hills Viaduct (at Bridge Over Spring Grove)	Length=200 Feet K=67 SSD=317 Feet V=41 mph	Directional Ramp Min. Des. Spd.=40 mph Pref. V=50 mph
2.6	Vertical Curve Length / SSD	Ramp F - SB Mill Creek Expwy. To WB Western Hills Viaduct (at Diverge From Expwy.)	Length=80 Feet K=57 SSD=351 Feet V=44 mph	Directional Ramp Min. Des. Spd.=40 mph Pref. V=50 mph
1.3	Vertical Grades	Mill Creek Expressway (~ Gest St. to Winchell Ave. Overpass to Just North of Ezzard Charles Overpass)	0.43% - Compounded by Superelevation Transition Near a Sag	0.50% Min.

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Brent Spence Bridge Project (BSB) Review of Existing Geometrics Mainline and Ramps, Ohio

Vertical Clearance				
State Line Mile	Item	Location	Existing	Required
0.3	Vertical Clearance	I-75 SB Mill Creek Bridge Conn. (R/R Bridge)	22.0 Feet	23 Feet Min.
0.4	Vertical Clearance	I-75 NB Mill Creek Bridge Conn. (SB Distributor Bridge Conn. Over)	15.0 Feet	16.5 Feet Min.
0.4	Vertical Clearance	I-75 NB Mill Creek Bridge Conn. (SB Mill Creek Expwy. Under)	15.0 Feet	16.5 Feet Min.
0.3	Vertical Clearance	Directional Ramp EB Distributor Bridge Conn. To I-71 Over R/R	22.0 Feet	23 Feet Min.
0.6	Vertical Clearance	EB 6th-5th St. Conn. Over NB Mill Creek Expwy.	15.0 Feet	16.5 Feet
0.5	Vertical Clearance	WB 6th St. Expwy. Over NB Mill Creek Expwy.	15.2 Feet	16.5 Feet
0.7	Vertical Clearance	8th-7th St. Conn. Over NB Mill Creek Expwy.	15.2 Feet	16.5 Feet
0.7	Vertical Clearance	8th-7th St. Conn. Over SB Mill Creek Expwy.	15.3 Feet	16.5 Feet
0.5	Vertical Clearance	Ramp H - Directional Ramp Under 6th-5th St. Connector	15 Feet	16.5 Feet
0.5	Vertical Clearance	Ramp G - 4th St. to NB Mill Creek Expwy. Under 6th-5th St. Connection	15 Feet	16.5 Feet
0.6	Vertical Clearance	Ramp L - SB Mill Creek Expwy. To 6th-5th St. Connector Under WB 6th St. Expwy.	15.0 Feet	16.5 Feet
0.6	Vertical Clearance	Ramp Q - EB 6th St. Expwy. To SB Mill Creek Bridge Conn. Over SB Mill Creek Bridge Conn.	15 Feet	16.5 Feet
0.8	Vertical Clearance	NB Mill Creek Expressway under 9th Street Connection	15.3 Feet	16.5 Feet
1.0	Vertical Clearance	SB Mill Creek Expressway under Linn St.	15.2 Feet	16.5 Feet

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Vertical Clearance (continued)				
State Line Mile	Item	Location	Existing	Required
1.2	Vertical Clearance	NB Mill Creek Expressway under Ramp F (Gest St. to Winchell Ave.)	15.0 Feet	16.5 Feet
1.4	Vertical Clearance	Mill Creek Expressway under Ezzard Charles	15.0 Feet	16.5 Feet
1.2	Vertical Clearance	Pedestrian Overpass over Ramp A	15.0 Feet	16.5 Feet
0.9	Vertical Clearance	Ramp B Under 9th St. Connection	16.1 Feet	16.5 Feet
1.3	Vertical Clearance	Ramp H over Ramp J	15.2 Feet	16.5 Feet
1.7	Vertical Clearance	Mill Creek Expressway Over Liberty Street	15.2 Feet	16.5 Feet
1.9	Vertical Clearance	Mill Creek Expressway Over Findlay Street	15.0 Feet	16.5 Feet
2.2	Vertical Clearance	Mill Creek Expressway Over Bank Street	15.0 Feet	16.5 Feet
2.4	Vertical Clearance	NB Mill Creek Expressway Over Harrison Avenue	15.1 Feet	16.5 Feet
2.5	Vertical Clearance	Ramp E - EB Western Hills Viaduct to SB Mill Creek Expwy. Over Spring Grove Avenue	15.0 Feet	16.5 Feet
2.5	Vertical Clearance	Ramp F - SB Mill Creek Expressway to WB Western Hills Viaduct Over Spring Grove Avenue	15.0 Feet	16.5 Feet
2.6	Vertical Clearance	Ramp D - NB Mill Creek Expwy. to WB Western Hills Viaduct Over NB Mill Creek Expwy.	15.0 Feet	16.5 Feet

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Notes:

1. Based upon review of the Original Construction, Rehabilitation, and Reconstruction Plans.
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3. When a deficient horizontal curve is identified, it is assumed that superelevation (when applicable) is also deficient.
4. When a deficient shoulder width is identified, it is assumed that the clear zone width is also deficient.
5. Review is based upon design criteria established by the KYTC Highway Design Policy.

Typical Section				
State Line Mile	Item	Location	Existing	Required
191.5	Lane Width	Brent Spence Bridge	11 Feet	12 Feet
191.4	Lane Width	Kentucky Approach Spans	11 Feet	12 Feet
191.5	Shoulder Width	Brent Spence Bridge	11 Feet on Both Sides	12 Feet
191.4	Shoulder Width	Kentucky Approach Spans	NB - 10 Feet Right, 4 Feet Left SB - 4 Feet Both Sides	12 Feet
191.0	Shoulder Width	I-75 - 9th St. to Approach Spans	10 Feet Outside ~8.5 Feet Inside	12 Feet
191.5	Bridge Width	Brent Spence Bridge	See Above	See Above
191.5	Bridge Width	Kentucky Approach Spans	Northbound - 50 Feet +/- Useable Southbound - 52 Feet +/- Useable	NB 3 Lanes = 60 Feet Useable SB 4 Lanes = 72 Feet Useable

V=speed
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SSD=

NB=Northbound
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Brent Spence Bridge Project (BSB) Review of Existing Geometrics Mainline and Ramps, Kentucky

Horizontal Alignment				
State Line Mile	Item	Location	Existing	Required
190.8	Horizontal Curves Lack of Spirals	I-75 Over 9th St.	Super=5.4% No spirals provided	
190.6	Horizontal Curves Radii	12th St. Under I-75	Hard PI w/ Delta ~ 15 degrees No Horizontal Curve	
191.4	Horizontal Curves Radii	Ramp H - 4th St. To I-75 NB (@ Merge Onto I-75 NB)	R=234 Feet	Directional Ramp Min. R = 510 Feet V = 40 mph
191.3	Horizontal Curves Radii	Ramp B1 - SB I-75 to EB 5th St.	R=90 Feet V=15 mph	Directional Ramp Min. R = 275 Feet V=30 mph
191.3	Horizontal Curves Radii	Ramp B2 - SB I-75 to WB 5th St.	R=65 Feet V=15 mph	Directional Ramp Min. R = 275 Feet V=30 mph
191.4	Ramp Acceleration Length	Ramp H - 4th St. To I-75 NB (@ Merge Onto I-75 NB)	~ 350 Feet	1020 Feet Beg. 25 mph End 60 mph
191.4	Ramp Deceleration Length	Ramp B - SB I-75 to 5th St.	~ 375 Feet	1550 Feet Beg. 60 mph End 15 mph
189.8	Horizontal Alignment - General	Undesirable Combination of Horizontal and Vertical Geometry Tight horizontal curvature with maximum superelevation combined with steep downgrade going into a sag		

V=speed
R=radius
K=rate of verticle curvature
SSD=

NB=Northbound
SB=Southbound
EB=Eastbound
WB=Westbound

Brent Spence Bridge Project (BSB) Review of Existing Geometrics Mainline and Ramps, Kentucky

Vertical Alignment				
State Line Mile	Item	Location	Existing	Required
191.2	Vertical Curve Length / SSD	I-75 @ 5th St. Ramp Diverge	Length = 750 Feet K=127 SSD=539 Feet V=57 mph	V=60 mph Length=802 Feet K=136 SSD=570 Feet
191.4	Vertical Curve Length / SSD	I-75 @ Begin Approach Spans	Length = 600 Feet K=100 SSD=375 Feet V=52 mph	V=60 mph Length=906 Feet K=151 SSD=570 Feet
191.3	Vertical Curve Length / SSD	I-75 Over 4th St. Ramp	Length=350 Feet K=73 SSD=342 Feet V=43 mph	V=60 mph Length=653 Feet K=136 SSD=570 Feet
188.9	Vertical Grades	Ramp A - SB I-75 Exit Ramp to Kyle Feets Lane	~ 6.5%	5%
188.9	Vertical Grades	Ramp E - Kyle Feets Lane to NB I-75	~ 6.9%	5%
191.3	Vertical Grades	Ramp B - SB I-75 to 5th St.	~ 8.1%	5%
190.7	Vertical Clearance	I-75 Over Pike Street	14.5 Feet	16.5 Feet
190.8	Vertical Clearance	I-75 Over 9th St.	14.5 Feet	16.5 Feet
190.8	Vertical Clearance	Ramp Y (NB Pike St. to I-75 NB) Over 9th St.	14.5 Feet	16.5 Feet
190.7	Vertical Clearance	Ramp G (NB I-75 to 5th St.) Over Pike St.	15.0 Feet	16.5 Feet
190.6	Vertical Clearance	I-75 Over 12th St.	13.4 Feet	16.5 Feet

V=speed
R=radius
K=rate of verticle curvature
SSD=

NB=Northbound
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