



# 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.

<b>Typical Section</b>				
<b>Straight Line Mile</b>	<b>Item</b>	<b>Location</b>	<b>Existing</b>	<b>Required</b>
0.3	Lane Width (Bridge Width)	I-75 NB Mill Creek Bridge Connector (End of BSB to at-grade)	11 Feet	12 Feet
0.2	Lane Width (Bridge Width)	I-75 SB Mill Creek Bridge Connector (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 Expressway To WB 6th Steet Expressway	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 Connector (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 Connector (End of BSB to at-grade)	Varies <6 Feet Both Sides	10 Feet Both Sides

## Typical Section (continued)

Straight Line Mile	Item	Location	Existing	Required
0.5	Shoulder Width (Curbed)	Ramp G - 4th Street to NB Mill Creek Expressway	3 Feet Both Sides	6 Feet Right 3 Feet Left
0.6	Shoulder Width (Curbed)	Ramp P - Sixth Street to NB Mill Creek Expressway	3 Feet Both Sides	10 Feet Right 4 Feet Left
0.6	Shoulder Width (Curbed)	Ramp R - EB 6th Street Expressway To SB Mill Creek Bridge Connector	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 Street Connector To SB Mill Creek Bridge Connector	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 Street	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 Avenue 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 Avenue	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

### Typical Section (continued)

Straight Line Mile	Item	Location	Existing	Required
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
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 Expressway To WB Western Hills Viaduct	3 Feet Both Sides	6 Feet Right 3 Feet Left

## Horizontal Alignment

Straight Line Mile	Item	Location	Existing	Required
0.5	Horizontal Curves Radii	I-75 NB Mill Creek Bridge Connector (First Curve on-grade)	R=1146 Feet	R=1349 Feet
0.4	Horizontal Curves Radii	Directional Ramp EB Distributor Bridge Connector 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 DiStreet Bridge Connector	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 DiStreet Bridge Connector	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 DiStreet Bridge Connector	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 Street 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 Expressway To 6th-5th Street Connector (at 6th-5th Street Connector)	R=100 Feet	V=30 mph R=232 Feet
0.6	Horizontal Curves Radii	Ramp Q - 9th Street Connector To SB Mill Creek Bridge Connector	R=90 Feet	V=30 mph R=232 Feet
2.5	Horizontal Curves Radii	Ramp E - EB Western Hills Viaduct to SB Mill Creek Expressway (at Curve Nearest Expressway)	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 Expressway To WB Western Hills Viaduct (at Curve Nearest Expressway)	R=~ 229 Feet	Directional Ramp Min. V=40 mph R=488 Feet Pref. V=50 mph R=849 Feet

## Horizontal Alignment (continued)

Straight Line Mile	Item	Location	Existing	Required
0.5	Horizontal Alignment - Intersection Angle	Ramp G - 4th Street to NB Mill Creek Expressway w/ Central Avenue	~ 15 Deg.	70 deg. Max.
0.4	Ramp Acceleration Length	Ramp R - EB 6th Street Expressway To SB Mill Creek Bridge Connector	~ 450 Feet	910 Feet Beg. 30 mph End 60 mph
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
0.4	Left-hand Entrances and Exits	Ramp from EB 6th Street Expressway To SB Mill Creek Bridge Connector	Left-hand Entrance	Avoid left-hand entrances in the design of interchanges. L&D Vol.1 503.5.2
2.5	Left-hand Entrances and Exits	Ramp to WB Western Hills Viaduct from NB Mill Creek Expressway	Left-hand Exit	Avoid left-hand exit in the design of interchanges. L&D Vol.1 503.5.2
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 Street (Median Pier)	5-6 Feet	10 Feet
1.2	Horizontal Clearance	Mill Creek Expressway under Ramp F (Gest Street to Winchell Avenue) (Median Pier)	5-6 Feet	10 Feet
1.4	Horizontal Clearance	Mill Creek Expressway under Ezzard Charles Drive (Median Pier)	5-6 Feet	10 Feet

## Vertical Alignment

State Line Mile	Item	Location	Existing	Required
0.0	Vertical Curve Length / SSD	I-75 NB Mill Creek Bridge Connector (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 Connector (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 Connector (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 Connector (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 Connector (at 6th Street 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 Connector 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 Connector To I-71 (Over 3rd Street)	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 DiStreet Bridge Connector	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 Street Connector)	Length=500 Feet K=82 SSD=374 Feet V=45 mph	Directional Ramp Min. Des. Spd.=40 mph Pref. V=50 mph

### Vertical Alignment (continued)

Straight Line Mile	Item	Location	Existing	Required
0.4	Vertical Curve Length / SSD	Directional Ramp SB Mill Creek Expressway Under SB DiStreet Bridge Connector	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 Expressway To WB 6th Street Expressway Under 6th-5th Street 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 Expressway To 6th-5th Street 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 Street 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 Street Expressway To SB Mill Creek Bridge Connector 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 Street 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 Street 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 Street 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 Street 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

## Vertical Alignment (continued)

State Line Mile	Item	Location	Existing	Required
1.3	Vertical Curve Length / SSD	Ramp A - 9th Street 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 Street 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 Street (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 Expressway)	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 Avenue to NB Mill Creek Expressway (at Diverge from Winchell Avenue)	Length=150 Feet K=46 SSD=316 Feet V=41 mph	Directional Ramp Min. Des. Spd.=40 mph Pref. V=50 mph

### Vertical Alignment (continued)

State Line Mile	Item	Location	Existing	Required
1.6	Vertical Curve Length / SSD	Ramp M - NB Winchell Avenue to NB Mill Creek Expressway (at Merge with NB Mill Creek Expressway)	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 Avenue (at SB Mill Creek Expressway 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 Street 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 Expressway to WB Western Hills Viaduct (at Diverge from NB Mill Creek Expressway)	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 Expressway (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

## Vertical Alignment (continued)

Straight Line Mile	Item	Location	Existing	Required
2.5	Vertical Curve Length / SSD	Ramp E - EB Western Hills Viaduct to SB Mill Creek Expressway(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
2.5	Vertical Curve Length / SSD	Ramp E - EB Western Hills Viaduct to SB Mill Creek Expressway (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 Expressway To WB Western Hills Viaduct (at Diverge from Expressway)	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 Expressway 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 Expressway To WB Western Hills Viaduct (at Diverge From Expressway)	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 Street to Winchell Avenue Overpass to Just North of Ezzard Charles Drive Overpass)	0.43% - Compounded by Superelevation Transition Near a Sag	0.50% Min.

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

### Vertical Clearance (continued)

Straight Line Mile	Item	Location	Existing	Required
0.6	Vertical Clearance	Ramp Q - EB 6th Street Expressway To SB Mill Creek Bridge Connector Over SB Mill Creek Bridge Connector	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 Street	15.2 Feet	16.5 Feet
1.2	Vertical Clearance	NB Mill Creek Expressway under Ramp F (Gest Street to Winchell Avenue)	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 Street 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

### Vertical Clearance (continued)

Straight Line Mile	Item	Location	Existing	Required
2.5	Vertical Clearance	Ramp E - EB Western Hills Viaduct to SB Mill Creek Expressway 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 Expressway to WB Western Hills Viaduct Over NB Mill Creek Expressway	15.0 Feet	16.5 Feet

# Brent Spence Bridge Project (BSB)

## Review of Existing Geometrics Mainline and Ramps, Kentucky

Functional Classification (Mainline) - Interstate  
 Design Speed (Mainline) - 60 Mile 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 clear zone width is also deficient.
5. Review is based upon design criteria established by the KYTC Highway Design Policy.

<b>Typical Section</b>				
<b>Straight Line Mile</b>	<b>Item</b>	<b>Location</b>	<b>Existing</b>	<b>Required</b>
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	1 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 Street 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

<b>Horizontal Alignment</b>				
<b>State Line Mile</b>	<b>Item</b>	<b>Location</b>	<b>Existing</b>	<b>Required</b>
190.8	Horizontal Curves Lack of Spirals	I-75 Over 9th Street	Super=5.4% No spirals provided	
190.6	Horizontal Curves Radii	12th Street Under I-75	Hard PI w/ Delta ~ 15 degrees No Horizontal Curve	
191.4	Horizontal Curves Radii	Ramp H - 4th Street 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 Street	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 Street	R=65 Feet V=15 mph	Directional Ramp Min. R=275 Feet V=30 mph
191.4	Ramp Acceleration Length	Ramp H - 4th Street 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 Street	~ 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		

## Vertical Alignment

Straight Line Mile	Item	Location	Existing	Required
191.2	Vertical Curve Length / SSD	I-75 at 5th Street 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 at 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 Street 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 Street	~ 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 Street	14.5 Feet	16.5 Feet
190.8	Vertical Clearance	Ramp Y (NB Pike Street to I-75 NB) Over 9th Street	14.5 Feet	16.5 Feet
190.7	Vertical Clearance	Ramp G (NB I-75 to 5th Street) Over Pike Street	15.0 Feet	16.5 Feet
190.6	Vertical Clearance	I-75 Over 12th Street	13.4 Feet	16.5 Feet