

APPENDIX A – KY 90 GEOMETRIC ANALYSES FROM AS-BUILTS

Functional Classification = Rural Minor Arterial

e max = 8%

Vd = 45 mph

Vd = 55 mph

therefore

therefore

Rmin =

Rmin =

587 Source: 2011 Green Book Table 3-10b

960 Source: 2011 Green Book Table 3-10b

As-Built Plan Set	Existing Horizontal Curve				Is the Radius Adequate?	Notes
	Road	P.I. Station Number	Derived Milepoint	Radius (ft)		
pj00429	KY 90	79+90.	N/A	11,459.2	Yes	
pj00429	KY 90	94+62.6	N/A	11,459.2	Yes	
pj00429	KY 90	107+50.1	N/A	7,639.4	Yes	
pj00429	KY 90	138+65.1	N/A	2,864.8	Yes	Spiral Curve
pj00429	KY 90	218+17.2	N/A	5,729.6	Yes	
pj00429	KY 90	278+27.	N/A	5,729.6	Yes	
pj00429	KY 90	363+66.1	N/A	5,729.6	Yes	
pj00429	KY 90	419+63.4	N/A	7,639.4	Yes	
pj00429	KY 90	475+19.4	N/A	3,819.7	Yes	Spiral Curve
pj00429	KY 90	517+46.4	N/A	1,145.9	Yes	Spiral Curve
pj00433	KY 90	27+52.1	N/A	1,432.4	Yes	Spiral Curve

Total Number of HC's = 11

Number of Deficient HC's = 0 0%

Archived As-Built Plans: pj00429 (1968) and pj00433 (1967)

Functional Classification = Rural Minor Arterial

Terrain = Rolling

Vd = 45 mph

Vd = 45 mph

Vd = 55 mph

Vd = 55 mph

therefore Minimum Stopping Sight Distance =

360 ft

therefore Maximum Grade =

6 %

therefore Minimum Stopping Sight Distance =

495 ft

therefore Maximum Grade =

5 %

Source: 2011 Green Book Table 7-1.

Source: 2011 Green Book Table 7-2. Note: Grades less than 500 ft in length may be up to 2 percent steeper. 7% max for Urban Minor Arterial 2011 Green Book Table 7-4

Source: 2011 Green Book Table 7-1.

Source: 2011 Green Book Table 7-2. Note: Grades less than 500 ft in length may be up to 2 percent steeper. 6% max for Urban Minor Arterial 2011 Green Book Table 7-4

Crest Vertical Curves

As-Built Plan Set	Existing Vertical Curve						SSD < L ¹			SSD >= L ²		
	Road	VPI Station Number	Derived Milepoint	G1 (%)	G2 (%)	Length of Curve (ft)	SSD	Is SSD<L	Meet SSD Req.	SSD	Is SSD>=L	Meet SSD Req.
pj00429	KY 90	88+50.		2.600	-5.000	1,400.00	630.50	Yes	Yes	841.97	No	N/A
pj00429	KY 90	139+75.		4.000	0.500	700.00	656.96	Yes	Yes	658.29	No	N/A
pj00429	KY 90	172+00.		2.850	-3.100	1,100.00	631.63	Yes	Yes	731.34	No	N/A
pj00429	KY 90	195+50.		3.000	-2.000	1,000.00	656.96	Yes	Yes	715.80	No	N/A
pj00429	KY 90	218+00.		2.000	-1.800	700.00	630.50	Yes	Yes	633.95	No	N/A
pj00429	KY 90	278+25.		4.000	-4.000	1,400.00	614.53	Yes	Yes	834.88	No	N/A
pj00429	KY 90	353+00.		4.000	-4.000	1,400.00	614.53	Yes	Yes	834.88	No	N/A
pj00429	KY 90	435+25.		1.984	0.500	650.00	972.35	No	N/A	1,052.28	Yes	Yes
pj00429	KY 90	461+75.		0.500	-2.000	1,000.00	929.09	Yes	Yes	931.60	No	N/A
pj00433	KY 90	21+25.		4.000	-4.000	1,700.00	677.18	Yes	Yes	984.88	No	N/A
										Total Number of Crest VC's =		10
										Number of Deficient Crest VC's =		0
										0%		

¹ Source: 2011 Green Book Formula 3-43

² Source: 2011 Green Book Formula 3-44

Sag Vertical Curves

As-Built Plan Set	Existing Vertical Curve						HSSD < L ¹				HSSD >= L ²		
	Road	VPI Station Number	Derived Milepoint	G1 (%)	G2 (%)	Existing Length (ft)	HSSD #1 (+)	HSSD #2 (-)	Is HSSD<L	Meet SSD Req.	HSSD*	Is HSSD>=L	Meet SSD Req.
pj00429	KY 90	117+50.		-5.000	0.587	1200	852.52	-100.78	Yes	Yes	925.78	No	N/A
pj00429	KY 90	127+50.		0.587	4.000	800	922.08	-101.68	No	N/A	941.19	Yes	Yes
pj00429	KY 90	156+00.		0.500	2.850	600	996.14	-102.52	No	N/A	1,508.33	Yes	Yes
pj00429	KY 90	182+75.		-3.100	3.000	700	494.47	-92.83	Yes	Yes	536.78	No	N/A
pj00429	KY 90	207+50.		-2.000	2.000	600	621.54	-96.54	No	N/A	622.22	Yes	Yes
pj00429	KY 90	242+00.		-1.800	1.000	600	850.75	-100.75	No	N/A	990.48	Yes	Yes
pj00429	KY 90	256+50.		1.000	4.000	1000	1,271.53	-104.86	No	N/A	1,360.00	Yes	Yes
pj00429	KY 90	298+00.		-4.000	-2.000	600	1,153.99	-103.99	No	N/A	3,200.00	Yes	Yes
pj00429	KY 90	322+50.		-2.000	0.500	600	941.92	-101.92	No	N/A	1,266.67	Yes	Yes
pj00429	KY 90	336+75.		0.500	4.000	1000	1,103.56	-103.56	No	N/A	1,114.29	Yes	Yes
pj00429	KY 90	374+35.		-4.000	-1.000	1000	1,271.53	-104.86	No	N/A	1,360.00	Yes	Yes
pj00429	KY 90	399+00.		-1.000	1.000	600	1,153.99	-103.99	No	N/A	3,200.00	Yes	Yes
pj00429	KY 90	420+00.		1.000	1.984	800	2,956.69	-110.03	No	N/A	-774.34	No	Yes
pj00429	KY 90	481+00.		-2.000	-1.194	1000	4,451.70	-111.43	No	N/A	-639.25	No	Yes
pj00429	KY 90	506+00.		-1.194	-0.560	1000	5,636.00	-112.01	No	N/A	-462.92	No	Yes
pj00429	KY 90	521+50.		-0.560	0.580	400	1,333.82	-105.27	No	N/A	-700.97	No	Yes
pj00433	KY 90	8+50.		-0.679	4.000	500	465.78	-91.77	Yes	Yes	467.65	No	N/A
pj00434	KY 90	34+25.		-4.000	4.000	900	486.29	-92.54	Yes	Yes	608.00	No	N/A
										Total Number of Sag VC's =		18	0%
										Number of Deficient Sag VC's =		0	

* Note: A Negative Sign Indicates Unlimited Sight Distance

¹ Source: 2011 Green Book Formula 3-48

² Source: 2011 Green Book Formula 3-50

Total Number of VC's =	28
Number of Deficient VC's =	0
0%	