

Appendix A – KY 69 GEOMETRIC ANALYSES FROM AS-BUILTS

Functional Classification = Rural Major Collector

e max = 8%

Vd = 55 mph

therefore

Rmin = 960

Source: 2011 Green Book Table 3-10b

As-Built Plan Set	Existing Horizontal Curve				Is the Radius Adequate?
	Road	P.I. Station Number	Derived Milepoint	Radius (ft)	
pj06731	KY 69	55+70.5	12.972	2,864.8	Yes
pj06803	KY 69	120+45.	12.708	5,729.6	Yes
pj06803	KY 69	129+82.	12.531	955.4	No
pj06803	KY 69	134+28.	12.447	573.7	No
pj06803	KY 69	140+20.	12.334	716.8	No
pj06803	KY 69	144+27.	12.257	287.9	No
pj06803	KY 69	146+00.	12.225	674.7	No
pj06803	KY 69	150+01.	12.149	2,864.9	Yes
pj06803	KY 69	169+80.	11.774	1,146.3	Yes
pj06803	KY 69	180+79.	11.566	2,864.9	Yes
pj06803	KY 69	197+50.	11.249	5,729.6	Yes
pj06803	KY 69	211+31.	10.988	2,864.9	Yes
pj06803	KY 69	222+60.	10.774	5,729.6	Yes
pj06803	KY 69	229+75.	10.638	111,459.0	Yes
pj06803	KY 69	236+50.	10.511	1,146.3	Yes
pj06803	KY 69	244+02.	10.368	425.4	No
pj06803	KY 69	249+66.	10.261	359.3	No
pj06803	KY 69	252+00.	10.217	716.8	No
pj06803	KY 69	257+25.	10.118	716.8	No
pj06803	KY 69	270+30.	9.870	2,292.0	Yes
pj06803	KY 69	284+65.	9.599	1,910.1	Yes
pj06803	KY 69	302+92.	9.253	2,292.0	Yes
pj06803	KY 69	308+50.	9.147	2,864.9	Yes
pj06802	KY 69	330+50.	8.739	1,432.7	Yes
pj06802	KY 69	338+83.	8.582	955.4	No
pj06802	KY 69	352+52.	8.322	1,273.6	Yes
pj06802	KY 69	377+54.	7.848	716.8	No
pj06802	KY 69	401+50.	7.395	1,910.1	Yes
pj06802	KY 69	409+00.	7.253	1,910.1	Yes
pj06802	KY 69	412+68.	7.183	1,273.6	Yes
pj06802	KY 69	427+71.	6.899	955.4	No
pj06802	KY 69	438+68.6	6.691	716.8	No
pj06802	KY 69	456+59.6	6.353	954.9	No
pj06802	KY 69	479+21.6	5.925	716.2	No
pj06802	KY 69	496+82.9	5.615	1,452.4	Yes
pj06802	KY 69	523+33.	5.131	573.7	No
pj06802	KY 69	538+48.	4.845	1,432.7	Yes
pj06802	KY 69	549+39.	4.638	5,729.6	Yes
pj06797	KY 69	554+48.	4.558	2,864.9	Yes
pj06797	KY 69	592+39.	3.840	2,864.9	Yes
pj06797	KY 69	610+84.	3.491	2,864.9	Yes
pj06797	KY 69	620+38.	3.310	521.7	No
pj06797	KY 69	628+63.	3.154	3,819.8	Yes
pj06797	KY 69	634+97.	3.034	2,864.9	Yes
pj06797	KY 69	640+00.	2.938	1,958.6	Yes
pj06797	KY 69	644+20.	2.859	1,910.1	Yes
pj06797	KY 69	650+39.	2.741	1,910.1	Yes
pj06797	KY 69	659+30.	2.573	5,729.6	Yes
pj06797	KY 69	668+35.	2.401	1,432.7	Yes
pj06797	KY 69	675+83.	2.260	1,432.7	Yes
pj06797	KY 69	684+23.	2.101	1,146.3	Yes
pj06797	KY 69	690+50.	1.982	955.4	No
pj06797	KY 69	697+25.	1.854	359.3	No
pj06797	KY 69	702+25.	1.759	955.4	No
pj06797	KY 69	709+87.	1.615	573.7	No
pj06797	KY 69	713+70.	1.542	716.8	No
pj06797	KY 69	717+40.	1.472	1,910.1	Yes
pj06797	KY 69	721+76.	1.390	2,864.9	Yes
pj06797	KY 69	734+29.	1.152	955.4	No
pj06797	KY 69	746+00.	0.931	1,432.7	Yes
pj06797	KY 69	767+50.	0.523	1,432.7	Yes
pj06797	KY 69	781+63.	0.256	1,432.7	Yes
pj06797	KY 69	787+19.	0.151	5,729.6	Yes

Total Number of HC's = 63

Number of Deficient HC's = 23

Archived As-Built Plans: pj0673 (1994), pj06803 (1932), pj06802 (1935) and pj06797 (1937)

Functional Classification = Rural Major Collector
 Terrain = Rolling
 Vd = 55 mph
 therefore
 therefore

Minimum Stopping Sight Distance = 495 ft
 Maximum Grade = 7 %

Source: 2011 Green Book Table 6-3.
 Source: 2011 Green Book Table 6-4. Note: Grades less than 500 ft in length may be up to 2 percent steeper.

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.	
pj06731	KY 69	52+00.	13.042	-0.500	-6.500	200.00	268.20	No	N/A	279.83	Yes	No	
pj06731	KY 69	62+00.	12.853	0.744	0.400	150.00	970.72	No	N/A	3,216.01	Yes	Yes	
pj06803	KY 69	127+00.	12.584	4.400	-4.400	400.00	313.19	Yes	No	322.61	No	N/A	
pj06803	KY 69	145+00.	12.243	7.000	5.050	200.00	470.46	No	N/A	653.33	Yes	Yes	
pj06803	KY 69	155+50.	12.045	6.500	-2.600	400.00	307.99	Yes	No	318.57	No	N/A	
pj06803	KY 69	170+00.	11.770	2.300	-4.000	400.00	370.16	Yes	No	371.27	No	N/A	
pj06803	KY 69	180+00.	11.581	6.600	0.255	300.00	319.43	No	N/A	320.06	Yes	No	
pj06803	KY 69	185+50.	11.476	0.255	-3.300	200.00	348.43	No	N/A	403.52	Yes	No	
pj06803	KY 69	200+50.	11.192	-0.871	-6.000	300.00	355.28	No	N/A	360.37	Yes	No	
pj06803	KY 69	206+50.	11.079	0.336	-0.720	200.00	639.31	No	N/A	1,121.78	Yes	Yes	
pj06803	KY 69	221+50.	10.795	0.454	-0.500	200.00	672.61	No	N/A	1,231.03	Yes	Yes	
pj06803	KY 69	236+00.	10.520	3.313	-1.333	300.00	373.31	No	N/A	382.27	Yes	No	
pj06803	KY 69	246+50.	10.321	-1.333	-7.000	300.00	337.99	No	N/A	340.40	Yes	No	
pj06803	KY 69	301+25.	9.284	6.498	1.200	250.00	319.11	No	N/A	328.66	Yes	No	
pj06802	KY 69	309+00.	9.147	1.200	-6.422	500.00	376.25	Yes	No	391.56	No	N/A	
pj06802	KY 69	317+50.	8.986	4.496	-5.000	450.00	319.79	Yes	No	338.63	No	N/A	
pj06802	KY 69	329+50.	8.758	-5.000	-6.364	200.00	562.51	No	N/A	891.06	Yes	Yes	
pj06802	KY 69	342+00.	8.522	4.142	-7.000	400.00	278.34	Yes	No	296.84	No	N/A	
pj06802	KY 69	367+75.	8.034	1.500	0.000	200.00	536.41	No	N/A	819.33	Yes	Yes	
pj06802	KY 69	372+00.	7.953	0.000	-2.000	200.00	464.54	No	N/A	639.50	Yes	Yes	
pj06802	KY 69	378+00.	7.840	2.600	0.360	200.00	438.95	No	N/A	581.70	Yes	Yes	
pj06802	KY 69	407+00.	7.290	3.120	-2.000	400.00	410.60	No	N/A	410.74	Yes	No	
pj06802	KY 69	437+25.	6.718	6.600	-2.841	500.00	338.07	Yes	No	364.29	No	N/A	
pj06802	KY 69	447+00.	6.535	3.880	0.000	250.00	372.89	No	N/A	403.09	Yes	No	
pj06802	KY 69	454+25.	6.398	6.878	-1.164	450.00	347.50	Yes	No	359.17	No	N/A	
pj06802	KY 69	459+75.	6.293	-1.164	-7.000	300.00	333.06	No	N/A	334.89	Yes	No	
pj06802	KY 69	467+00.	6.156	-0.400	-6.000	350.00	367.25	No	N/A	367.68	Yes	No	
pj06802	KY 69	487+75.	5.787	3.920	-5.000	450.00	329.95	Yes	No	345.96	No	N/A	
pj06802	KY 69	503+47.9	5.507	4.431	-4.260	450.00	334.27	Yes	No	349.15	No	N/A	
pj06802	KY 69	524+50.	5.109	3.800	-3.486	400.00	344.20	Yes	No	348.09	No	N/A	
pj06802	KY 69	537+00.	4.873	0.500	0.000	200.00	929.09	No	N/A	2,258.00	Yes	Yes	
pj06802	KY 69	550+00.	4.626	2.600	-1.880	300.00	380.14	No	N/A	390.85	Yes	No	
pj06797	KY 69	568+50.	4.292	0.850	0.000	200.00	712.58	No	N/A	1,369.41	Yes	Yes	
pj06797	KY 69	589+50.	3.895	4.467	-2.800	400.00	344.66	Yes	No	348.49	No	N/A	
pj06797	KY 69	612+00.	3.469	0.616	0.000	200.00	837.05	No	N/A	1,851.62	Yes	Yes	
pj06797	KY 69	623+50.	3.251	0.750	-0.308	200.00	638.80	No	N/A	1,120.15	Yes	Yes	
pj06797	KY 69	634+50.	3.042	2.100	0.903	200.00	600.58	No	N/A	1,001.75	Yes	Yes	
pj06797	KY 69	646+25.	2.820	3.333	0.000	200.00	359.84	No	N/A	423.70	Yes	No	
pj06797	KY 69	667+00.	2.427	2.400	1.653	200.00	760.09	No	N/A	1,544.33	Yes	Yes	
pj06797	KY 69	693+00.	1.934	7.000	-3.000	500.00	328.48	Yes	No	357.90	No	N/A	
pj06797	KY 69	699+50.	1.811	3.600	-1.600	200.00	288.10	No	N/A	307.50	Yes	No	
pj06797	KY 69	705+25.	1.702	-1.600	-4.655	250.00	420.23	No	N/A	478.19	Yes	No	
pj06797	KY 69	711+25.	1.589	-0.308	-7.000	250.00	283.93	No	N/A	286.24	Yes	No	
pj06797	KY 69	729+50.	1.243	-0.200	-3.733	500.00	552.61	No	N/A	555.38	Yes	Yes	
pj06797	KY 69	743+00.	0.988	-0.400	-2.343	200.00	471.33	No	N/A	655.37	Yes	Yes	
pj06797	KY 69	758+50.	0.694	1.762	0.600	200.00	609.36	No	N/A	1,028.29	Yes	Yes	
pj06797	KY 69	767+50.	0.523	5.760	-5.200	500.00	313.77	Yes	No	348.45	No	N/A	
pj06797	KY 69	787+00.	0.154	4.700	-4.144	400.00	312.41	Yes	No	322.00	No	N/A	
												Total Number of Crest VC's =	48
												Number of Deficient Crest VC's =	31
													65%

¹ Source: 2011 Green Book Formula 3-43
² Source: 2011 Green Book Formula 3-44

Functional Classification = Rural Major Collector

Terrain = Rolling

Vd = 55 mph

Vd = 55 mph

therefore

therefore

Minimum Stopping Sight Distance = 495 ft

Maximum Grade = 7 %

Source: 2011 Green Book Table 6-3.

Source: 2011 Green Book Table 6-4. Note: Grades less than 500 ft in length may be up to 2 percent steeper.

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.	
pi06731	KY 69	57+00.	12.947	-6.500	0.744	800	478.82	-92.26	Yes	No	563.83	No	N/A	
pi06803	KY 69	120+50.	12.707	0.400	4.400	300	348.57	-86.07	No	N/A	355.56	Yes	No	
pi06803	KY 69	131+00.	12.509	-4.400	2.767	400	276.17	-80.83	Yes	No	301.53	No	N/A	
pi06803	KY 69	134+00.	12.452	2.767	5.800	200	314.63	-83.83	No	N/A	392.28	Yes	No	
pi06803	KY 69	142+50.	12.291	5.800	7.000	200	681.20	-97.87	No	N/A	-581.82	No	Yes	
pi06803	KY 69	152+50.	12.101	5.800	6.500	200	1,103.56	-103.56	No	N/A	-257.14	No	Yes	
pi06803	KY 69	163+00.	11.903	-2.600	2.300	300	296.80	-82.51	Yes	No	296.83	No	N/A	
pi06803	KY 69	174+50.	11.685	-4.000	6.600	400	205.52	-73.44	Yes	No	262.15	No	N/A	
pi06803	KY 69	193+50.	11.325	-3.300	-0.871	200	375.82	-87.64	No	N/A	652.28	Yes	Yes	
pi06803	KY 69	204+50.	11.117	-6.000	0.336	300	243.50	-77.78	Yes	No	250.85	No	N/A	
pi06803	KY 69	216+00.	10.899	-0.720	0.454	200	694.39	-98.13	No	N/A	-551.04	No	Yes	
pi06803	KY 69	232+00.	10.596	-0.500	3.313	200	263.30	-79.69	No	N/A	281.82	Yes	No	
pi06803	KY 69	259+50.	10.075	-7.000	0.000	300	225.89	-75.89	Yes	No	238.10	No	N/A	
pi06803	KY 69	268+50.	9.904	0.000	0.650	200	1,181.13	-104.20	No	N/A	-240.91	No	Yes	
pi06803	KY 69	278+50.	9.715	0.650	1.800	200	707.08	-98.38	No	N/A	-525.00	No	Yes	
pi06803	KY 69	288+00.	9.535	1.800	6.498	300	306.76	-83.27	No	N/A	306.89	Yes	No	
pi06802	KY 69	313+50.	9.061	-6.422	4.496	400	201.10	-72.87	Yes	No	259.99	No	N/A	
pi06802	KY 69	332+25.	8.706	-6.364	0.000	250	211.71	-74.22	Yes	No	215.76	No	N/A	
pi06802	KY 69	338+50.	8.588	0.000	4.142	200	247.15	-78.15	No	N/A	256.77	Yes	No	
pi06802	KY 69	348+50.	8.398	-7.000	-3.167	200	262.22	-79.60	No	N/A	280.03	Yes	No	
pi06802	KY 69	354+50.	8.285	-3.167	0.000	200	304.10	-83.07	No	N/A	364.64	Yes	No	
pi06802	KY 69	365+75.	8.072	0.000	1.500	200	561.63	-94.96	No	N/A	-1,400.00	No	Yes	
pi06802	KY 69	374+00.	7.915	-2.000	2.600	200	228.34	-76.16	No	N/A	231.58	Yes	No	
pi06802	KY 69	390+50.	7.603	0.360	1.480	200	723.70	-98.70	No	N/A	-495.24	No	Yes	
pi06802	KY 69	400+00.	7.423	1.480	3.120	300	739.23	-98.98	No	N/A	-4,054.55	No	Yes	
pi06802	KY 69	411+00.	7.215	-2.000	2.000	400	440.75	-90.75	No	N/A	444.44	Yes	No	
pi06802	KY 69	423+50.	6.978	2.000	3.000	200	800.00	-100.00	No	N/A	-400.00	No	Yes	
pi06802	KY 69	432+75.	6.803	3.000	6.600	300	379.50	-87.83	No	N/A	400.00	Yes	No	
pi06802	KY 69	443+25.	6.606	-2.841	3.880	350	261.82	-79.56	Yes	No	276.84	No	N/A	
pi06802	KY 69	449+75.	6.483	0.000	6.878	300	228.89	-76.23	Yes	No	240.19	No	N/A	
pi06802	KY 69	463+75.	6.218	-7.000	-0.400	300	236.10	-77.01	Yes	No	245.36	No	N/A	
pi06802	KY 69	482+50.	5.863	-6.480	3.920	300	169.17	-68.21	Yes	No	203.47	No	N/A	
pi06802	KY 69	491+00.	5.725	-5.000	-2.051	200	321.73	-84.33	No	N/A	412.87	Yes	No	
pi06802	KY 69	494+50.	5.659	-2.051	-0.414	200	521.32	-93.74	No	N/A	-3,221.52	No	Yes	
pi06802	KY 69	499+25.	5.569	-0.414	4.431	200	219.65	-75.17	No	N/A	221.16	Yes	No	
pi06802	KY 69	507+00.	5.441	-4.260	-1.193	200	311.83	-83.63	No	N/A	384.63	Yes	No	
pi06802	KY 69	511+00.	5.365	-1.193	0.000	200	684.69	-97.94	No	N/A	-573.25	No	Yes	
pi06802	KY 69	521+00.	5.176	0.000	3.800	200	263.97	-79.76	No	N/A	282.93	Yes	No	
pi06802	KY 69	528+00.	5.043	-3.486	0.000	200	282.14	-81.34	No	N/A	316.01	Yes	No	
pi06802	KY 69	535+00.	4.910	0.000	0.500	200	1,506.23	-106.23	No	N/A	-200.00	No	Yes	
pi06802	KY 69	547+50.	4.674	0.000	2.600	200	355.73	-86.50	No	N/A	541.18	Yes	Yes	
pi06802	KY 69	552+50.	4.579	-1.880	0.000	200	464.04	-91.70	No	N/A	2,984.62	Yes	Yes	
pi06797	KY 69	566+50.	4.330	0.000	0.850	200	925.25	-101.72	No	N/A	-316.67	No	Yes	
pi06797	KY 69	577+00.	4.131	0.000	1.875	200	465.07	-91.74	No	N/A	3,100.00	Yes	Yes	
pi06797	KY 69	585+00.	3.980	1.875	4.467	200	356.65	-86.55	No	N/A	545.58	Yes	Yes	
pi06797	KY 69	595+25.	3.786	-2.800	-0.961	300	668.50	-97.60	No	N/A	5,335.56	Yes	Yes	
pi06797	KY 69	607+50.	3.554	-0.961	0.616	200	538.20	-94.27	No	N/A	-2,065.25	No	Yes	
pi06797	KY 69	619+50.	3.327	0.000	0.750	200	1,036.27	-102.93	No	N/A	-275.00	No	Yes	
pi06797	KY 69	630+00.	3.128	-0.308	2.100	300	530.12	-94.02	No	N/A	853.22	Yes	Yes	
pi06797	KY 69	641+75.	2.905	0.903	3.333	250	451.34	-91.19	No	N/A	741.21	Yes	Yes	
pi06797	KY 69	648+25.	2.782	0.000	1.579	200	537.58	-94.25	No	N/A	-2,092.21	No	Yes	
pi06797	KY 69	653+00.	2.692	1.579	2.157	200	1,315.81	-105.15	No	N/A	-220.02	No	Yes	
pi06797	KY 69	660+00.	2.559	2.157	2.400	200.00	2,992.40	-110.08	No	N/A	-148.82	No	Yes	
pi06797	KY 69	675+50.	2.266	1.653	3.450	200	481.90	-92.38	No	N/A	8,068.55	Yes	Yes	
pi06797	KY 69	685+50.	2.077	3.450	7.000	200	278.19	-81.01	No	N/A	308.33	Yes	No	
pi06797	KY 69	697+00.	1.859	-3.000	3.600	300	236.10	-77.01	Yes	No	245.36	No	N/A	
pi06797	KY 69	708+00.	1.650	-4.655	-0.308	200	238.27	-77.24	No	N/A	244.40	Yes	No	
pi06797	KY 69	716+25.	1.494	-7.000	-5.600	250	723.70	-98.70	No	N/A	-1,071.43	No	Yes	
pi06797	KY 69	725+00.	1.328	-5.600	-0.200	200	202.71	-73.08	No	N/A	202.74	Yes	No	
pi06797	KY 69	734+75.	1.144	-3.733	-0.400	200.00	292.15	-82.15	No	N/A	336.85	Yes	No	
pi06797	KY 69	746+50.	0.921	-2.343	0.000	200	387.01	-88.23	No	N/A	732.54	Yes	Yes	
pi06797	KY 69	754+25.	0.774	0.000	1.762	250	592.30	-95.80	No	N/A	34,031.88	Yes	Yes	
pi06797	KY 69	762+75.	0.613	0.000	5.760	250	247.79	-78.21	Yes	No	247.80	No	N/A	
pi06797	KY 69	775+75.	0.367	-5.200	0.358	250	234.24	-76.81	Yes	No	234.97	No	N/A	
pi06797	KY 69	783+00.	0.230	0.358	4.700	300	326.48	-84.65	No	N/A	328.43	Yes	No	
pi06797	KY 69	791+50.	0.069	-4.144	-0.500	400	476.37	-92.17	No	N/A	490.39	Yes	No	

* 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 Sag VC's =	66	
Number of Deficient Sag VC's =	36	55%

Total Number of VC's =	114	
Number of Deficient VC's =	67	59%