ЕЛЕМЕНТИ НА ВЕРТИКАЛНИТЕ КРИВИ

Проект: „Повишаване на трансграничната мобилност, чрез подобряване на третостепенни възли към TEN-T инфраструктурата и разработване и координиране на трансгранични транспортни системи“ /INFRASYS/

Обект „Реконструкция на път PVN 1112/ ос III-303 Градище – Овча могила-Драгомирово- ос III-302/ в участъка от км 12 +316 до км 22+744
Проектна скорост : 80 (50) км/ч
Вид нивелета : кубична парабола

Таблица 3

No	Километър (m)	Кота (m)	Наклон (%)	Радиус (m)	B (m)	dx (m)	dxw (m)
1	12316.00	93.121	-0.200	-17616.00	2588.350		
2	12345.85	93.037	-0.363	-19116.00	2205.980	29.85	
***	12356.52	92.995	-0.417	-19952.00			100.520
3	12385.53	92.854	-0.554	-22646.00	572.930	39.68	
*	12400.03	92.770	-0.586	&			
4	12425.15	92.631	-0.490	13065.00	483.840	39.62	
*	12443.07	92.551	-0.421	&			
5	12474.96	92.394	-0.639	-7341.00	574.710	49.81	
***	12479.56	92.363	-0.698	-8177.00			123.040
*	12519.96	92.015	-0.945	&			
6	12524.85	91.968	-0.942	67478.00	620.510	49.89	
7	12574.58	91.572	-0.547	6945.00	617.260	49.73	
8	12624.48	91.533	0.499	3637.00	584.180	49.90	
9	12664.37	91.981	1.828	2552.00	256.680	39.89	
*	12690.19	92.540	2.334	&			
10	12714.20	93.066	1.897	-2743.00	407.640	49.83	
***	12744.56	93.502	1.067	-5501.00			265.000
11	12764.10	93.683	0.827	-15570.00	793.240	49.90	
12	12804.00	93.978	0.697	&	1974.310	39.90	
13	12853.82	94.319	0.661	-73558.00	770.890	49.82	
*	12861.90	94.373	0.656	&			
14	12903.68	94.667	0.803	14224.00	1228.970	49.86	
15	12952.94	95.134	1.069	26532.00	454.930	49.26	
*	12960.74	95.219	1.083	&			
***	13002.05	95.609	0.671	-5010.00			257.480
16	13002.73	95.614	0.657	-4929.00	443.800	49.79	
*	13042.69	95.768	0.252	&			
17	13052.51	95.794	0.276	20057.00	1237.080	49.78	
18	13082.35	95.896	0.396	32940.00	267.010	29.84	
*	13084.51	95.904	0.399	&			
19	13112.30	95.965	-0.142	-2566.00	443.770	29.95	
***	13145.90	95.730	-1.165	-4564.00			143.850
20	13162.18	95.515	-1.454	-7329.00	734.030	49.88	
21	13212.03	94.658	-1.904	-22767.00	833.770	49.85	
*	13242.57	94.063	-1.971	&			
22	13256.31	93.793	-1.957	50579.00	1835.820	44.28	
23	13301.73	92.929	-1.837	30077.00	534.780	45.42	
24	13351.82	92.124	-1.232	4799.00	499.580	50.09	
25	13401.68	91.686	-0.691	116023.00	900.380	49.86	
26	13441.75	91.429	-0.557	17227.00	265.860	40.07	
*	13445.85	91.407	-0.545	&			

No	Километър (m)	Кота (m)	Наклон (%)	Радиус (m)	B (m)	dx (m)	dxw (m)
***	13485.30	91.047	-1.646	-1792.00			339.410
27	13491.65	90.931	-2.029	-1543.00	208.160	49.90	
*	13519.73	90.191	-2.939	&			
28	13537.03	89.702	-2.593	2504.00	312.800	45.38	
29	13566.70	89.153	-0.958	1423.00	228.600	29.67	
30	13601.73	89.111	0.328	31058.00	876.510	35.03	
31	13651.66	89.342	0.651	10289.00	1384.870	49.93	
32	13701.58	89.799	1.202	8116.00	271.680	49.92	
*	13710.67	89.912	1.258	&			
33	13751.60	90.272	0.123	-1803.00	286.940	50.02	
***	13753.20	90.273	0.036	-1869.00			267.900
*	13797.25	89.943	-1.143	&			
34	13801.63	89.893	-1.131	18815.00	1017.250	50.03	
35	13851.53	89.375	-0.986	202957.00	775.900	49.90	
36	13891.41	89.003	-0.834	14051.00	1976.800	39.88	
37	13941.39	88.680	-0.447	11910.00	768.000	49.98	
38	13981.45	88.550	-0.246	62339.00	705.730	40.06	
39	14031.26	88.489	0.082	8617.00	502.180	49.81	
*	14060.53	88.546	0.252	&			
40	14081.23	88.593	0.167	-12180.00	780.920	49.97	
41	14129.15	88.608	-0.038	-283579.00	4762.590	47.92	
42	14171.20	88.590	-0.049	-597912.00	625.410	42.05	
***	14197.14	88.569	-0.139	-14709.00			443.930
43	14221.28	88.510	-0.378	-7710.00	581.110	50.08	
*	14265.08	88.261	-0.662	&			
44	14271.27	88.221	-0.656	54575.00	484.860	49.99	
45	14311.25	88.018	-0.243	5308.00	285.820	39.98	
*	14326.64	87.996	-0.098	&			
46	14341.26	87.975	-0.229	-5587.00	790.530	30.01	
47	14381.22	87.724	-1.072	-4117.00	932.630	39.96	
***	14394.01	87.566	-1.392	-3882.00			196.880
48	14431.30	86.858	-2.432	-3328.00	287.170	50.08	
*	14456.08	86.194	-2.805	&			
49	14481.26	85.520	-2.420	3275.00	336.070	49.96	
*	14515.75	84.806	-1.894	&			
50	14531.43	84.504	-2.003	-7201.00	478.990	50.17	
***	14537.38	84.382	-2.078	-8854.00			143.360
*	14563.29	83.819	-2.224	&			
51	14571.51	83.636	-2.209	27910.00	1445.140	40.08	
52	14621.32	82.590	-1.971	16756.00	4182.340	49.81	
53	14661.37	81.849	-1.728	16137.00	1248.380	40.05	
54	14711.11	81.079	-1.340	10651.00	367.520	49.74	
*	14723.79	80.915	-1.281	&			
55	14751.01	80.541	-1.555	-4962.00	385.380	39.90	
***	14751.93	80.527	-1.573	-5119.00			214.550
*	14780.94	80.016	-1.856	&			
56	14800.91	79.654	-1.722	7437.00	273.770	49.90	
57	14850.55	79.237	0.589	1255.00	204.900	49.64	
*	14884.00	79.731	1.922	&			
58	14900.58	80.031	1.595	-2533.00	825.250	50.03	
59	14940.36	80.369	0.140	-2972.00	463.140	39.78	
***	14973.78	80.257	-0.724	-5536.00			221.850
60	14990.20	80.117	-0.958	-9607.00	3304.700	49.84	
61	15029.97	79.654	-1.365	-9955.00	472.730	39.77	

No	Километър (m)	Кота (m)	Наклон (%)	Радиус (m)	B (m)	dx (m)	dxw (m)
62	15079.77	78.758	-2.420	-3093.00	266.190	49.80	
*	15102.68	78.147	-2.790	&			
63	15119.67	77.685	-2.586	4170.00	344.890	39.90	
*	15148.20	77.012	-2.244	&			
64	15169.64	76.517	-2.437	-5547.00	440.050	49.97	
***	15174.46	76.398	-2.518	-6436.00			200.680
*	15204.55	75.593	-2.752	&			
65	15219.45	75.186	-2.695	12995.00	1218.210	49.81	
66	15259.30	74.166	-2.442	19959.00	433.240	39.85	
67	15308.93	73.124	-1.537	3180.00	360.160	49.63	
*	15349.73	72.672	-0.895	&			
68	15358.63	72.591	-0.926	-14571.00	581.250	49.70	
***	15364.02	72.541	-0.958	-18980.00			189.560
*	15381.82	72.364	-1.005	&			
69	15398.62	72.198	-0.964	20106.00	616.160	39.99	
70	15448.48	71.834	-0.388	5523.00	554.970	49.86	
71	15498.35	71.798	0.111	52218.00	437.960	49.87	
72	15548.26	71.985	0.856	3580.00	479.370	49.91	
73	15588.08	72.594	2.313	2209.00	263.610	39.82	
*	15619.53	73.471	3.025	&			
74	15637.96	74.013	2.781	-3771.00	379.560	49.88	
75	15688.19	74.929	0.574	-1629.00	1547.070	50.23	
***	15717.18	74.839	-1.189	-1662.00			353.170
76	15728.28	74.670	-1.854	-1675.00	327.160	40.09	
77	15778.28	73.191	-3.671	-7696.00	819.090	50.00	
78	15828.34	71.222	-4.135	-18077.00	377.320	50.06	
*	15836.22	70.895	-4.157	&			
79	15888.30	68.896	-3.204	2733.00	293.980	59.96	
80	15918.26	68.048	-2.627	52129.00	634.760	29.96	
81	15968.26	66.810	-2.221	6979.00	863.810	50.00	251.080
82	16018.30	65.912	-1.300	4451.00	486.910	50.04	
83	16068.33	65.455	-0.703	73253.00	785.330	50.03	
84	16108.31	65.202	-0.519	12743.00	798.600	39.98	
85	16158.27	65.073	0.068	6377.00	598.930	49.96	
86	16208.29	65.246	0.504	57576.00	766.060	50.02	
87	16258.16	65.554	0.803	9771.00	240.880	49.87	
*	16264.10	65.603	0.833	&			
88	16298.15	65.773	-0.166	-1704.00	284.220	39.99	
***	16306.24	65.741	-0.600	-2054.00			477.940
89	16338.19	65.368	-1.524	-10961.00	483.180	40.04	
*	16359.49	65.030	-1.621	&			
90	16377.51	64.742	-1.552	12956.00	973.650	39.32	
91	16418.09	64.164	-1.325	29090.00	279.280	40.58	
92	16448.09	63.840	-0.645	2387.00	530.610	30.00	
93	16488.08	63.879	0.746	3611.00	134.790	39.99	
*	16493.11	63.919	0.816	&			
94	16508.07	64.010	0.200	-1215.00	153.740	19.99	
***	16509.63	64.012	0.077	-1321.00			203.400
*	16527.53	63.945	-0.601	&			
95	16528.06	63.942	-0.600	44727.00	784.800	19.99	
96	16568.08	63.737	-0.381	11450.00	693.110	40.02	
97	16608.02	63.633	-0.198	238343.00	2909.980	39.94	
98	16657.97	63.541	-0.162	99064.00	774.740	49.95	
99	16707.99	63.508	0.097	10703.00	1003.030	50.02	

No	Километър (m)	Кота (m)	Наклон (%)	Радиус (m)	B (m)	dx (m)	dxw (m)
100	16758.08	63.694	0.689	6982.00	351.480	50.09	
101	16798.08	64.171	1.910	2141.00	330.300	40.00	
102	16848.05	65.517	3.099	111301.00	973.650	49.97	
103	16897.99	67.098	3.275	16217.00	463.160	49.94	
*	16911.22	67.535	3.316	&			
***	16938.13	68.412	3.147	-7970.00			428.500
104	16947.79	68.710	3.004	-5866.00	258.900	49.80	
*	16959.22	69.046	2.907	&			
105	16987.58	69.927	3.507	2363.00	272.710	39.79	
106	17017.45	71.104	4.171	46496.00	274.960	29.87	
*	17019.08	71.171	4.173	&			
107	17057.26	72.642	3.209	-1980.00	1108.970	39.81	
108	17107.19	73.632	0.788	-2153.00	1278.320	49.93	
***	17119.89	73.694	0.203	-2190.00			181.760
109	17156.96	73.461	-1.448	-2304.00	490.460	49.77	
110	17206.85	72.285	-3.095	-4413.00	305.520	49.89	
*	17228.00	71.596	-3.335	&			
111	17256.61	70.684	-2.897	3263.00	380.030	49.76	
112	17296.51	69.699	-2.225	33123.00	489.770	39.90	
113	17346.36	68.713	-1.557	4202.00	323.720	49.85	
*	17371.30	68.374	-1.260	&			
114	17396.12	68.037	-1.554	-4223.00	385.730	49.76	
***	17399.78	67.979	-1.636	-4712.00			279.890
*	17431.36	67.392	-1.971	&			
115	17445.96	67.107	-1.899	10187.00	973.260	49.84	
116	17495.83	66.304	-1.278	6631.00	2792.970	49.87	
117	17540.72	65.880	-0.614	6894.00	610.830	44.89	
118	17585.63	65.710	-0.233	40501.00	450.810	44.91	
*	17590.65	65.699	-0.227	&			
***	17634.43	65.530	-0.699	-4642.00			234.650
119	17635.50	65.523	-0.722	-4531.00	443.160	49.87	
120	17675.40	65.113	-1.197	-57057.00	270.370	39.90	
*	17676.68	65.098	-1.198	&			
121	17725.33	64.777	0.420	1503.00	224.300	49.93	
*	17758.81	65.167	1.535	&			
122	17775.12	65.402	1.270	-3086.00	626.240	49.79	
123	17814.99	65.678	0.181	-4496.00	299.180	39.87	
***	17833.96	65.660	-0.442	-2302.00			199.530
124	17854.83	65.456	-1.592	-1498.00	233.590	39.84	
*	17891.25	64.581	-2.808	&			
125	17904.59	64.214	-2.645	4091.00	464.790	49.76	
126	17954.29	63.107	-2.001	69561.00	3782.080	49.70	
127	18004.16	62.128	-1.921	55984.00	539.930	49.87	
128	18044.09	61.412	-1.576	6459.00	325.370	39.93	
*	18060.48	61.167	-1.449	&			
***	18091.40	60.672	-1.901	-3424.00			257.440
129	18093.83	60.625	-1.975	-3175.00	289.090	49.74	
*	18120.16	60.033	-2.389	&			
130	18143.70	59.496	-2.058	3550.00	600.520	49.87	
131	18193.53	58.763	-0.998	6968.00	567.810	49.83	
132	18237.73	58.418	-0.667	156048.00	1306.350	44.20	
133	18283.26	58.130	-0.577	30223.00	608.870	45.53	
134	18333.27	57.939	-0.074	5953.00	452.400	50.01	
*	18367.65	57.980	0.214	&			

No	Километър (m)	Кота (m)	Наклон (%)	Радиус (m)	B (m)	dx (m)	dxw (m)
135	18383.32	58.010	0.154	-13062.00	633.120	50.05	
***	18388.82	58.017	0.116	-15912.00			297.420
*	18414.01	58.033	0.037	&			
136	18423.27	58.037	0.048	43283.00	502.390	39.95	
137	18463.27	58.117	0.457	5507.00	868.530	40.00	
138	18499.95	58.396	1.034	7521.00	375.250	36.68	
*	18518.67	58.605	1.158	&			
139	18535.66	58.796	1.056	-8288.00	532.160	35.71	
***	18541.97	58.860	0.987	-10165.00			153.150
*	18569.83	59.110	0.850	&			
140	18583.21	59.225	0.881	21160.00	1685.820	47.55	
141	18633.22	59.718	1.074	33714.00	1144.780	50.01	
142	18683.26	60.308	1.318	14740.00	335.950	50.04	
*	18690.92	60.410	1.344	&			
143	18723.43	60.796	0.875	-3471.00	425.110	40.17	
***	18745.89	60.931	0.368	-6106.00			203.930
144	18773.52	60.989	0.127	-91651.00	898.810	50.09	
145	18823.80	61.013	-0.085	-13670.00	553.990	50.28	
*	18846.25	60.982	-0.167	&			
146	18873.87	60.947	-0.043	11113.00	799.240	50.07	
147	18923.96	61.006	0.212	86428.00	3983.640	50.09	
148	18974.08	61.125	0.262	118877.00	3407.040	50.12	
149	19024.21	61.265	0.293	244295.00	239.940	50.13	
*	19024.45	61.266	0.293	&			
***	19068.74	61.144	-1.411	-1300.00			322.850
150	19074.29	61.054	-1.864	-1155.00	198.520	50.08	
*	19108.41	60.081	-3.341	&			
151	19112.08	59.959	-3.324	10738.00	717.890	37.79	
152	19152.50	58.670	-3.106	68037.00	1517.500	40.42	
153	19184.29	57.688	-3.082	&	491.590	31.79	
154	19234.24	56.235	-2.561	4817.00	1307.960	49.95	
155	19284.27	55.226	-1.449	4222.00	325.120	50.03	
*	19309.30	54.913	-1.153	&			
156	19325.21	54.723	-1.273	-6645.00	381.840	40.94	
***	19327.32	54.696	-1.303	-7353.00			258.580
*	19347.15	54.420	-1.438	&			
157	19374.33	54.052	-1.184	5365.00	849.730	49.12	
158	19434.38	53.627	-0.315	9688.00	465.450	60.05	
*	19456.74	53.574	-0.199	&			
159	19474.53	53.534	-0.272	-12180.00	863.810	40.15	
160	19514.67	53.373	-0.494	-35049.00	1736.850	40.14	
***	19546.59	53.202	-0.568	-55709.00			172.210
161	19564.86	53.096	-0.596	-84076.00	947.370	50.19	
162	19615.06	52.758	-0.796	-14743.00	652.580	50.20	
*	19643.95	52.509	-0.894	&			
163	19665.21	52.323	-0.841	20027.00	1058.320	50.15	
164	19715.42	51.983	-0.477	10553.00	799.670	50.21	
165	19765.55	51.830	-0.199	61102.00	6831.750	50.13	
166	19815.67	51.751	-0.114	57340.00	1565.410	50.12	
167	19865.12	51.724	0.022	26582.00	1212.180	49.45	
168	19905.66	51.756	0.119	99715.00	10210.660	40.54	
169	19945.68	51.812	0.158	103683.00	1599.630	40.02	
*	19970.36	51.853	0.170	&			
170	19995.51	51.894	0.157	-101739.00	716.060	49.83	

No	Километър (m)	Кота (m)	Наклон (%)	Радиус (m)	B (m)	dx (m)	dxw (m)
***	20031.60	51.929	-0.005	-12465.00			485.010
171	20038.73	51.927	-0.067	-10624.00	658.880	43.22	
*	20079.59	51.847	-0.260	&			
172	20085.55	51.832	-0.255	72844.00	2468.710	46.82	
173	20135.55	51.718	-0.207	181035.00	1173.990	50.00	
*	20143.16	51.702	-0.205	&			
174	20185.54	51.606	-0.270	-32525.00	1739.550	49.99	
***	20195.98	51.576	-0.301	-36638.00			164.380
175	20235.46	51.439	-0.383	-70186.00	1079.160	49.92	
*	20252.05	51.375	-0.394	&			
176	20285.47	51.248	-0.347	34851.00	1967.680	50.01	
177	20335.49	51.116	-0.171	24031.00	615.080	50.02	
*	20351.23	51.093	-0.138	&			
178	20385.47	51.028	-0.293	-11050.00	1110.680	49.98	
***	20395.62	50.993	-0.381	-12155.00			199.640
179	20425.52	50.846	-0.590	-17231.00	513.340	40.05	
*	20440.81	50.752	-0.635	&			
180	20465.60	50.604	-0.518	10631.00	1755.580	40.08	
181	20505.60	50.469	-0.168	12333.00	448.280	40.00	
*	20521.89	50.448	-0.102	&			
182	20545.58	50.413	-0.241	-8484.00	937.810	39.98	
***	20572.42	50.310	-0.517	-11448.00			176.800
183	20595.62	50.169	-0.689	-16401.00	809.720	50.04	
184	20635.58	49.861	-0.811	&	719.690	39.96	
*	20635.59	49.861	-0.811	&			
185	20675.57	49.557	-0.656	12955.00	895.070	39.99	
186	20715.55	49.343	-0.447	36653.00	8319.580	39.98	
187	20755.68	49.186	-0.339	37448.00	1402.890	40.13	
188	20795.63	49.066	-0.273	156149.00	7500.780	39.95	
189	20845.56	48.937	-0.243	181269.00	3178.800	49.93	
190	20895.59	48.825	-0.203	95532.00	2640.670	50.03	
191	20935.66	48.750	-0.173	211805.00	2788.110	40.07	
192	20985.70	48.672	-0.133	89618.00	2137.890	50.04	
193	21035.72	48.624	-0.050	45243.00	868.450	50.02	
*	21052.39	48.618	-0.032	&			
194	21085.68	48.599	-0.105	-22657.00	1418.420	49.96	
195	21135.57	48.502	-0.263	-51707.00	634.560	49.89	
***	21149.09	48.464	-0.312	-18898.00			576.670
196	21175.60	48.355	-0.540	-8421.00	532.520	40.03	
*	21209.27	48.128	-0.740	&			
197	21225.68	48.009	-0.692	17286.00	1293.120	50.08	
198	21265.58	47.773	-0.509	29421.00	1219.470	39.90	
199	21315.53	47.575	-0.255	14798.00	675.750	49.95	
*	21346.39	47.518	-0.151	&			
200	21365.66	47.486	-0.192	-23694.00	1328.960	50.13	
***	21381.78	47.450	-0.252	-30233.00			232.690
201	21415.75	47.349	-0.332	-72235.00	735.680	50.09	
*	21423.24	47.324	-0.337	&			
202	21455.12	47.226	-0.243	16979.00	829.580	39.37	
203	21485.61	47.172	-0.131	68524.00	2419.470	30.49	
204	21525.55	47.133	-0.059	46693.00	1697.640	39.94	
205	21575.49	47.123	0.004	244592.00	605.910	49.94	
206	21615.62	47.157	0.240	8819.00	533.340	40.13	
*	21647.87	47.274	0.423	&			

No	Километър (m)	Кота (m)	Наклон (%)	Радиус (m)	B (m)	dx (m)	dxw (m)
207	21665.67	47.346	0.367	-15983.00	1004.560	50.05	
208	21705.71	47.454	0.196	-43693.00	428.720	40.04	
***	21720.79	47.477	0.100	-9529.00			339.010
209	21735.77	47.478	-0.119	-5364.00	394.680	30.06	
*	21764.81	47.391	-0.389	&			
210	21775.81	47.349	-0.350	14160.00	934.810	40.04	
211	21825.71	47.239	-0.140	73983.00	1464.430	49.90	
*	21854.70	47.202	-0.121	&			
212	21875.73	47.176	-0.131	-101966.00	5462.070	50.02	
***	21891.77	47.153	-0.146	-107881.00			170.980
213	21925.70	47.098	-0.176	-122966.00	557.910	49.97	
*	21928.23	47.094	-0.177	&			
214	21965.70	47.056	0.048	8307.00	581.670	40.00	
*	22006.43	47.142	0.294	&			
215	22015.86	47.169	0.280	-35867.00	1101.120	50.16	
***	22065.76	47.258	0.039	-14486.00			173.980
216	22065.90	47.258	0.038	-14461.00	927.920	50.04	
217	22116.03	47.214	-0.163	-91468.00	1141.570	50.13	
*	22130.28	47.190	-0.171	&			
218	22165.95	47.135	-0.122	36532.00	1144.490	49.92	
219	22215.85	47.124	0.110	15274.00	807.970	49.90	
*	22258.59	47.211	0.250	&			
220	22265.82	47.229	0.246	-90276.00	1187.100	49.97	
221	22305.90	47.311	0.144	-25304.00	1192.060	40.08	
***	22333.15	47.337	0.063	-49156.00			267.390
222	22355.93	47.348	0.034	-231923.00	898.750	50.03	
223	22396.86	47.344	-0.087	-18188.00	664.120	40.93	
*	22421.11	47.312	-0.154	&			
224	22446.08	47.280	-0.083	17664.00	706.010	49.22	
*	22474.30	47.272	-0.003	&			
225	22486.04	47.271	-0.017	-42456.00	1696.960	39.96	
226	22536.02	47.226	-0.178	-24444.00	1034.160	49.98	
227	22576.00	47.132	-0.267	-283548.00	2093.750	39.98	
228	22626.11	46.989	-0.313	-66857.00	1007.760	50.11	
***	22638.00	46.950	-0.338	-37504.00			304.850
229	22665.95	46.842	-0.451	-18455.00	253.200	39.84	
230	22685.68	46.723	-0.861	-2763.00	328.380	19.73	
231	22705.70	46.490	-1.400	-5673.00	1517.500	20.02	67.700