

ORTAK BİLGİLER					
BAS NOKTA	UC NOKTA	BORU BOYU (m)	Quc (lt/sn)	ARAZI KOTU (m)	
103	9008.M	113		976.00	
102	103	255	1.00	976.00	
101	102	182	1.00	977.00	
100	101	83	1.00	979.00	
99	100	86	1.00	979.00	
98	99	89	1.00	980.00	
97	98	95	1.00	980.00	
96	97	114	4.00	982.00	
95	96	120	2.00	982.00	
94	95	156	1.00	984.00	
94	9009.M	72		981.50	
93	94	139	3.00	982.00	
92	93	168	1.00	982.00	
91	92	142	2.00	983.00	
91	9007.M	171		980.00	
90	91	104	4.00	985.00	
89	90	154	4.00	986.00	
87	89	148	3.00	988.00	
88	9005.M	76		992.00	
87	88	97	2.00	991.00	
86	87	100	6.00	989.00	
85	86	94	1.00	990.00	
84	85	150	2.00	990.00	
84	9004.M	80		984.00	
83	84	107	4.00	992.00	
82	83	126	2.00	991.00	
81	82	265	4.00	991.00	
37	81	116	1.00	992.00	
80	9008.M	84		976.00	
79	80	371	1.00	977.00	
79	9009.M	66		981.50	
78	79	175	1.00	981.00	
77	78	165	2.00	984.00	
76	77	137	2.00	989.00	
76	9011.M	129		994.00	
75	76	129	1.00	992.00	
74	75	95	4.00	993.00	
73	74	98	1.00	995.00	
72	73	109	2.00	995.00	
64	72	111	1.00	994.00	
71	9010.M	113		1007.00	
70	71	167	1.00	1005.00	
68	70	200	15.00	1004.00	
69	9011.M	206		994.00	
68	69	202	1.00	995.00	
67	68	144	2.00	1000.00	
66	67	111	2.00	1015.00	
65	66	167	2.00	1013.00	
64	65	109	1.00	996.00	
63	64	98	4.00	998.00	
55	63	89	1.00	994.00	
62	9010.M	99		1007.00	
61	62	140	3.00	1006.00	
60	61	88	1.00	1004.00	
60	9006.M	122		1003.00	
59	60	101	1.00	1003.00	
58	59	137	2.00	1000.00	
57	58	100	2.00	999.00	
55	57	144	1.00	988.00	
56	9005.M	62		992.00	
55	56	122	1.00	993.00	
54	55	156	7.00	995.00	
53	54	167	1.00	995.00	
52	53	96	1.00	993.00	
41	52	108	1.00	994.00	
51	9003.M	187		1005.00	
49	51	99	1.00	1004.00	
50	50	96	2.00	998.00	
48	49	115	2.00	998.00	
48	48	109	3.00	998.00	
47	9006.M	94		1003.00	
46	47	159	2.00	1001.00	
45	46	157	3.00	1000.00	
44	45	142	1.00	999.00	
43	44	195	5.00	999.00	
42	43	223	3.00	996.00	
41	42	116	7.00	995.00	
40	41	90	4.00	994.00	
37	40	98	7.00	993.00	
39	9002.M	104		1004.00	
38	39	298	2.00	1004.00	
37	38	244	2.00	996.00	
36	37	93	8.00	993.00	
35	36	115	1.00	993.00	
34	35	93	1.00	995.00	
33	34	101	4.00	995.00	
32	33	100	4.00	997.00	
31	32	109	1.00	999.00	
24	31	113	1.00	1004.00	
30	9007.M	228		980.00	

"İSU/CAD" PROGRAMI ÖLÜNKOTA METODU						
Qtasarım (lt/sn)	ÇAP (mm)	HIZ (m/sn)	JL (m)	PIEZO KOTU (m)	İŞLETME BASINCI (m)	
0.000	90.H	0.00	0.00	1040.95	64.95	
1.000	90.H	0.16	0.09	1040.95	64.95	
2.000	90.H	0.31	0.22	1041.04	64.04	
3.000	90.H	0.47	0.22	1041.27	62.27	
4.000	90.H	0.63	0.38	1041.48	62.48	
5.000	90.H	0.79	0.60	1041.87	61.87	
6.000	90.H	0.94	0.90	1042.47	62.47	
10.000	125.H	0.81	0.56	1043.37	61.37	
10.666	125.H	0.88	0.93	1043.93	61.93	
13.000	140.H	0.84	0.72	1044.75	60.75	
0.000	90.H	0.00	0.00	1043.01	61.51	
3.000	90.H	0.47	0.36	1043.01	61.01	
4.000	90.H	0.63	0.75	1043.38	61.38	
6.000	90.H	0.94	1.34	1044.13	61.13	
0.000	90.H	0.00	0.00	1045.47	65.47	
23.000	180.H	0.90	0.40	1045.47	60.47	
27.000	200.H	0.86	0.48	1045.87	59.87	
30.000	200.H	0.95	0.56	1046.36	58.36	
0.000	90.H	0.00	0.00	1046.80	54.80	
2.000	90.H	0.31	0.12	1046.80	55.80	
38.000	225.H	0.96	0.33	1046.92	57.92	
39.000	225.H	0.98	0.33	1047.25	57.25	
41.000	250.H	0.88	0.07	1044.58	57.58	
0.000	90.H	0.00	0.00	1046.26	62.26	
4.000	90.H	0.63	0.48	1046.26	54.26	
6.000	90.H	0.94	1.19	1046.74	55.74	
51.000	280.H	0.83	0.52	1047.93	56.93	
52.000	280.H	0.84	0.24	1048.45	56.45	
0.000	90.H	0.00	0.00	1042.15	66.15	
1.000	90.H	0.16	0.13	1042.15	65.15	
0.000	90.H	0.00	0.00	1042.28	60.78	
2.000	90.H	0.31	0.22	1042.28	61.28	
4.000	90.H	0.63	0.74	1042.49	58.49	
6.000	90.H	0.94	1.30	1043.23	54.23	
0.000	90.H	0.00	0.00	1044.25	50.45	
1.000	90.H	0.16	0.07	1044.25	52.45	
11.000	125.H	0.98	0.68	1044.53	51.53	
12.000	125.H	0.98	0.68	1045.08	50.08	
14.000	140.H	0.91	0.58	1045.76	50.76	
15.000	140.H	0.97	0.67	1046.33	52.33	
0.000	90.H	0.00	0.00	1044.06	37.06	
1.000	90.H	0.16	0.06	1044.06	39.06	
16.000	160.H	0.80	0.71	1044.12	40.12	
0.000	90.H	0.00	0.00	1044.76	50.76	
1.000	90.H	0.16	0.07	1044.76	49.76	
19.000	160.H	0.94	0.70	1044.83	44.83	
21.000	180.H	0.83	0.36	1045.52	30.52	
23.000	180.H	0.90	0.65	1045.89	32.89	
24.000	180.H	0.94	0.46	1046.54	50.54	
43.000	250.H	0.88	0.25	1047.00	54.00	
44.000	250.H	0.90	0.07	1047.24	53.24	
0.000	90.H	0.00	0.00	1043.93	36.93	
3.000	90.H	0.47	0.37	1043.93	37.93	
4.000	90.H	0.63	0.39	1044.29	40.29	
0.000	90.H	0.00	0.00	1044.69	41.69	
5.000	90.H	0.79	0.68	1044.69	41.69	
7.000	110.H	0.74	0.65	1045.37	45.37	
9.000	110.H	0.95	0.75	1046.01	47.01	
10.000	125.H	0.81	0.71	1046.77	58.77	
0.000	90.H	0.00	0.00	1047.43	55.43	
1.000	90.H	0.16	0.04	1047.43	54.43	
62.000	315.H	0.80	0.25	1047.48	52.48	
63.000	315.H	0.81	0.28	1047.73	52.73	
64.000	315.H	0.86	0.15	1048.34	53.34	
65.000	315.H	0.83	0.11	1048.15	54.15	
0.000	90.H	0.00	0.00	1044.45	39.45	
1.000	90.H	0.16	0.03	1044.45	40.45	
3.000	90.H	0.47	0.25	1044.49	46.49	
5.000	90.H	0.79	0.78	1044.74	46.74	
8.000	110.H	0.84	0.66	1045.51	47.51	
0.000	90.H	0.00	0.00	1043.58	40.58	
2.000	90.H	0.31	0.20	1043.58	42.58	
5.000	90.H	0.79	1.06	1043.77	43.77	
6.000	90.H	0.94	1.34	1044.83	45.83	
19.000	160.H	0.94	0.95	1046.18	47.18	
22.000	180.H	0.86	0.80	1047.12	51.12	
29.000	200.H	0.92	0.42	1047.92	52.92	
35.000	355.H	0.89	0.17	1048.34	54.34	
105.000	400.H	0.84	0.17	1048.52	55.52	
0.000	90.H	0.00	0.00	1047.24	43.24	
2.000	90.H	0.31	0.37	1047.24	43.24	
4.000	90.H	0.63	1.09	1047.60	51.60	
169.000	500.D	0.86	0.13	1048.69	55.69	
170.000	500.D	0.87	0.16	1048.82	55.82	
171.000	500.D	0.87	0.13	1048.99	53.99	
175.000	500.D	0.89	0.15	1049.12	54.12	
179.000	500.D	0.91	0.16	1049.27	52.27	
180.000	500.D	0.92	0.17	1049.43	50.43	
181.000	500.D	0.92	0.18	1049.60	45.60	
0.000	90.H	0.00	0.00	1044.70	64.70	

"WATERCAD" PROGRAMI "HARDY-CROSS" METODU						
Qtasarım (lt/sn)	ÇAP (mm)	HIZ (m/sn)	JL (m)	PIEZO KOTU (m)	İŞLETME BASINCI (m)	
-1.334	90.H	0.21	0.07	1041.72	65.72	
-0.334	90.H	0.05	0.01	1041.65	65.65	
0.666	90.H	0.10	0.03	1041.64	64.64	
1.666	90.H	0.26	0.07	1041.67	62.67	
2.666	90.H	0.42	0.18	1041.74	62.74	
3.666	90.H	0.58	0.34	1041.93	61.93	
4.666	90.H	0.73	0.57	1042.27	62.27	
8.666	110.H	0.91	0.80	1042.83	60.83	
16.305	125.H	0.96	1.65	1044.37	63.37	
11.505	125.H	0.94	1.00	1045.02	61.02	
3.556	90.H	0.56	0.26	1043.61	62.11	
6.556	90.H	0.69	0.58	1043.87	61.87	
7.556	110.H	0.80	0.92	1044.45	62.45	
9.556	125.H	0.78	0.64	1045.37	62.37	
-32.800	225.H	0.82	0.43	1046.45	66.45	
-7.739	180.H	0.81	0.59	1046.02	61.02	
-3.739	90.H	0.59	0.61	1045.42	59.42	
-0.739	90.H	0.12	0.03	1044.81	56.81	
-5.098						

ORTAK BİLGİLER				
BAS NOKTA	UC NOKTA	BORU BOYU (m)	Quc (lt/sn)	ARAZI KOTU (m)
29	30	236	2.00	981.00
29	9004.M	80		984.00
28	29	156	4.00	984.00
27	28	136	2.00	992.00
26	27	200	2.00	1000.00
25	26	101	3.00	999.00
24	25	198	1.00	1002.00
2	24	141	2.00	1005.00
23	9001.M	78		1010.00
22	23	122	1.00	1010.00
21	22	182	1.00	1014.00
20	21	152	1.00	1012.00
17	20	150	1.00	1010.00
19	9003.M	189		1005.00
18	19	102	3.00	1013.00
17	18	77	2.00	1009.00
16	17	129	2.00	1008.00
16	9002.M	110		1004.00
15	16	120	2.00	1005.00
14	15	113	6.00	1004.00
13	14	114	1.00	1003.00
12	13	134	6.00	1002.00
7	12	81	1.00	1002.00
11	9001.M	96		1010.00
10	11	88	2.00	1010.00
9	10	164	1.00	1010.00
8	9	248	1.00	1007.00
7	8	269	1.00	1008.00
6	7	151	4.00	1005.00
5	6	113	1.00	1003.00
4	5	107	2.00	1006.00
3	4	95	1.00	1008.00
2	3	97	1.00	1010.00
1	2	100	2.00	1005.00
TOPLAM		16,695	240.00	

"İSUÇAD" PROGRAMI ÖLÜNOKTA METODU					
Qtasarım (lt/sn)	ÇAP (mm)	HIZ (m/sn)	JL (m)	PIEZO KOTU (m)	İŞLETME BASINCI (m)
2.000	90.H	0.31	0.29	1044.70	63.70
0.000	90.H	0.00	0.00	1044.99	60.99
6.000	90.H	0.94	1.47	1044.99	60.99
8.000	110.H	0.84	0.82	1046.46	54.46
10.000	125.H	0.81	0.98	1047.29	47.29
13.000	140.H	0.84	0.46	1048.27	49.27
14.000	140.H	0.91	1.04	1048.74	46.74
197.000	600.D	0.70	0.11	1049.78	44.78
0.000	90.H	0.00	0.00	1043.83	33.83
1.000	90.H	0.16	0.04	1043.83	33.83
2.000	90.H	0.31	0.22	1043.87	29.87
3.000	90.H	0.47	0.40	1044.10	32.10
4.000	90.H	0.63	0.67	1044.49	34.49
0.000	90.H	0.00	0.00	1044.38	39.38
3.000	90.H	0.47	0.27	1044.38	31.38
5.000	90.H	0.79	0.52	1044.64	35.64
11.000	125.H	0.90	0.76	1045.16	37.16
0.000	90.H	0.00	0.00	1045.92	41.92
13.000	140.H	0.84	0.55	1045.92	40.92
19.000	160.H	0.94	0.55	1046.47	42.47
20.000	160.H	0.99	0.61	1047.02	44.02
26.000	200.H	0.83	0.39	1047.63	45.63
27.000	200.H	0.86	0.25	1048.02	46.02
0.000	90.H	0.00	0.00	1044.81	34.81
2.000	90.H	0.31	0.11	1044.81	34.81
3.000	90.H	0.47	0.43	1044.92	34.92
4.000	90.H	0.63	1.11	1045.35	38.35
5.000	90.H	0.79	1.81	1046.46	38.46
36.000	225.H	0.91	0.45	1048.27	43.27
37.000	225.H	0.93	0.36	1048.73	45.73
39.000	225.H	0.98	0.37	1049.09	43.09
40.000	250.H	0.81	0.21	1049.46	41.46
41.000	250.H	0.84	0.22	1049.67	39.67
240.000	600.D	0.85	0.11	1049.89	44.89
TOPLAM		16,695		49.84	

"WATERCAD" PROGRAMI "HARDY-CROSS" METODU					
Qtasarım (lt/sn)	ÇAP (mm)	HIZ (m/sn)	JL (m)	PIEZO KOTU (m)	İŞLETME BASINCI (m)
2.405	90.H	0.38	0.41	1045.35	64.35
-3.339	90.H	0.52	0.26	1046.02	62.02
3.066	90.H	0.48	0.43	1045.76	61.76
5.066	90.H	0.80	0.94	1046.19	54.19
7.066	110.H	0.74	0.97	1047.13	47.13
10.066	125.H	0.82	0.50	1048.10	49.10
11.066	125.H	0.90	1.18	1048.60	46.60
198.732	600.D	0.70	0.11	1049.78	44.78
-0.440	90.H	0.07	0.01	1043.94	33.94
0.560	90.H	0.09	0.01	1043.94	33.94
1.560	90.H	0.25	0.14	1043.95	29.95
2.560	90.H	0.40	0.30	1044.09	32.09
3.560	90.H	0.56	0.54	1044.39	34.39
-0.325	90.H	0.05	0.01	1044.26	39.26
2.675	90.H	0.42	0.22	1044.25	31.25
4.675	90.H	0.73	0.46	1044.47	35.47
10.235	125.H	0.83	0.66	1044.93	36.93
-1.407	90.H	0.22	0.07	1045.67	41.67
10.829	125.H	0.88	0.69	1045.60	40.60
16.829	160.H	0.84	0.44	1046.28	42.28
17.829	160.H	0.89	0.49	1046.72	43.72
23.829	180.H	0.94	0.56	1047.21	45.21
24.829	180.H	0.98	0.36	1047.77	45.77
0.440	90.H	0.07	0.01	1043.94	33.94
2.440	90.H	0.38	0.16	1043.95	33.95
3.440	90.H	0.54	0.56	1044.11	34.11
4.440	90.H	0.70	1.35	1044.66	37.66
5.440	90.H	0.86	2.13	1046.01	38.01
34.268	225.H	0.86	0.42	1048.14	43.14
35.268	225.H	0.89	0.33	1048.55	45.55
37.268	225.H	0.94	0.34	1048.88	42.88
38.268	225.H	0.96	0.32	1049.22	41.22
39.268	225.H	0.99	0.34	1049.55	39.55
240.000	600.D	0.85	0.11	1049.89	44.89
TOPLAM		16,695		52.31	

JL ARTIŞI 0.05

"msSU" PROGRAMI "HARDY-CROSS" METODU					
Qtasarım (lt/sn)	ÇAP (mm)	HIZ (m/sn)	JL (m)	PIEZO KOTU (m)	İŞLETME BASINCI (m)
34.800	225.H	0.88	0.67	1047.03	66.03
7.646	110.H	0.80	0.45	1047.25	63.25
46.446	250.H	0.95	0.45	1047.70	63.70
48.446	250.H	0.99	0.43	1048.15	56.15
50.446	280.H	0.82	0.39	1048.58	48.58
53.446	280.H	0.87	0.22	1048.97	49.97
54.446	280.H	0.88	0.44	1049.18	47.18
196.016	500.D	1.00	0.26	1049.63	44.63
-0.279	90.H	0.04	0.00	1044.43	34.43
0.721	90.H	0.11	0.02	1044.42	34.42
1.721	90.H	0.27	0.17	1044.45	30.45
2.721	90.H	0.43	0.33	1044.62	32.62
3.721	90.H	0.58	0.59	1044.95	34.95
1.911	90.H	0.30	0.22	1044.30	39.30
4.911	90.H	0.77	0.67	1044.51	31.51
6.911	110.H	0.73	0.36	1045.18	36.18
12.632	140.H	0.82	0.56	1045.54	37.54
-0.927	90.H	0.15	0.03	1046.14	42.14
13.705	140.H	0.89	0.61	1046.10	41.10
19.705	160.H	0.98	0.59	1046.71	42.71
20.705	180.H	0.81	0.37	1047.30	44.30
26.705	200.H	0.85	0.41	1047.67	45.67
27.705	200.H	0.88	0.27	1048.08	46.08
0.279	90.H	0.04	0.00	1044.43	34.43
2.279	90.H	0.36	0.14	1044.43	34.43
3.279	90.H	0.52	0.51	1044.57	34.57
4.279	90.H	0.67	1.26	1045.08	38.08
5.279	90.H	0.83	2.01	1046.33	38.33
36.984	225.H	0.93	0.48	1048.35	43.35
37.984	225.H	0.96	0.38	1048.83	45.83
39.984	250.H	0.81	0.23	1049.20	43.20
40.984	250.H	0.83	0.22	1049.44	41.44
41.984	250.H	0.86	0.23	1049.66	39.66
240.000	600.D	0.85	0.11	1049.89	44.89
TOPLAM		16,695		52.48	

JL ARTIŞI 0.05

"EPA Net" PROGRAMI "HARDY-CROSS" METODU					
Qtasarım (lt/sn)	ÇAP (mm)	HIZ (m/sn)	JL (m)	PIEZO KOTU (m)	İŞLETME BASINCI (m)
2.380	90.H	0.37	0.40	1045.40	64.40
-2.180	90.H	0.34	0.12	1045.92	61.92
4.210	90.H	0.66	0.77	1045.80	61.80
6.210	110.H	0.65	0.52	1046.57	54.57
8.210	110.H	0.86	1.27	1047.09	47.09
11.210	125.H	0.91	0.62	1048.36	49.36
12.210	140.H	0.79	0.81	1048.98	46.98
198.760	600.D	0.70	0.11	1049.79	44.79
-0.440	90.H	0.07	0.01	1043.96	33.96
0.560	90.H	0.09	0.01	1043.96	33.96
1.560	90.H	0.25	0.14	1043.97	29.97
2.560	90.H	0.40	0.30	1044.11	32.11
3.560	90.H	0.56	0.54	1044.41	34.41
-0.350	90.H	0.06	0.01	1044.30	39.30
2.650	90.H	0.42	0.21	1044.29	31.29
4.650	90.H	0.73	0.46	1044.50	35.50
10.210	125.H	0.83	0.66	1044.95	36.95
-1.410	90.H	0.22	0.07	1045.69	41.69
10.800	125.H	0.88	0.68	1045.62	40.62
16.800	160.H	0.84	0.44	1046.30	42.30
17.800	160.H	0.89	0.49	1046.74	43.74
23.800	180.H	0.94	0.56	1047.23	45.23
24.800	180.H	0.97	0.36	1047.78	45.78
0.440	90.H	0.07	0.01	1043.96	33.96
2.440	90.H	0.38	0.16	1043.97	33.97
3.440	90.H	0.54	0.55	1044.13	34.13
4.440	90.H	0.70	1.34	1044.68	37.68
5.440	90.H	0.85	2.13	1046.02	38.02
34.240	225.H	0.86	0.42	1048.15	43.15
35.240	225.H	0.89	0.33	1048.56	45.56
37.240	225.H	0.94	0.34	1048.89	42.89
38.240	225.H	0.96	0.32	1049.23	41.23
39.240	225.H	0.99	0.34	1049.56	39.56
240.000	600.D	0.85	0.11	1049.90	44.90
TOPLAM		16,695		52.22	

JL ARTIŞI 0.05

2013 B.FİYAT (TL/m)
25.29
28.82
32.36
36.35
41.61
47.74
53.87
65.04
74.87
90.20
113.14
137.01
201.82
235.55
266.44
337.43

ÇAP (mm)	BORU BOYU (m)	MALİYET (TL)
90.H	9,258	234,091
110.H	482	13,892
125.H	900	29,126
140.H	795	28,897
160.H	766	31,873
180.H	714	34,087
200.H	633	34,097
225.H	565	36,749
250.H	531	39,756
280.H	381	34,366
315.H	517	58,493
355.H	90	12,331
400.D	98	19,778
450.D	0	0
500.D	724	192,901
600.D		