

ANNEX F

DESIGN AND COST ESTIMATION

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F.1 Design

Table F.1.1.1 Reference Drawing of Pump Station

Project Name	D(mm)	N(piece)	E(m)	F(m)	G(m)	L(m)	Jmin(m)	H(m)
KALESEKISI	200	6	0.350	0.200	0.250	4.000	5.000	7.000
ASLANLAR	350	2	1.100	0.350	0.400	5.500	6.650	8.500
ILYASKOY	125	2	—	—	—	4.000	5.000	7.000
	200	2	—	—	—	4.000	5.000	7.000

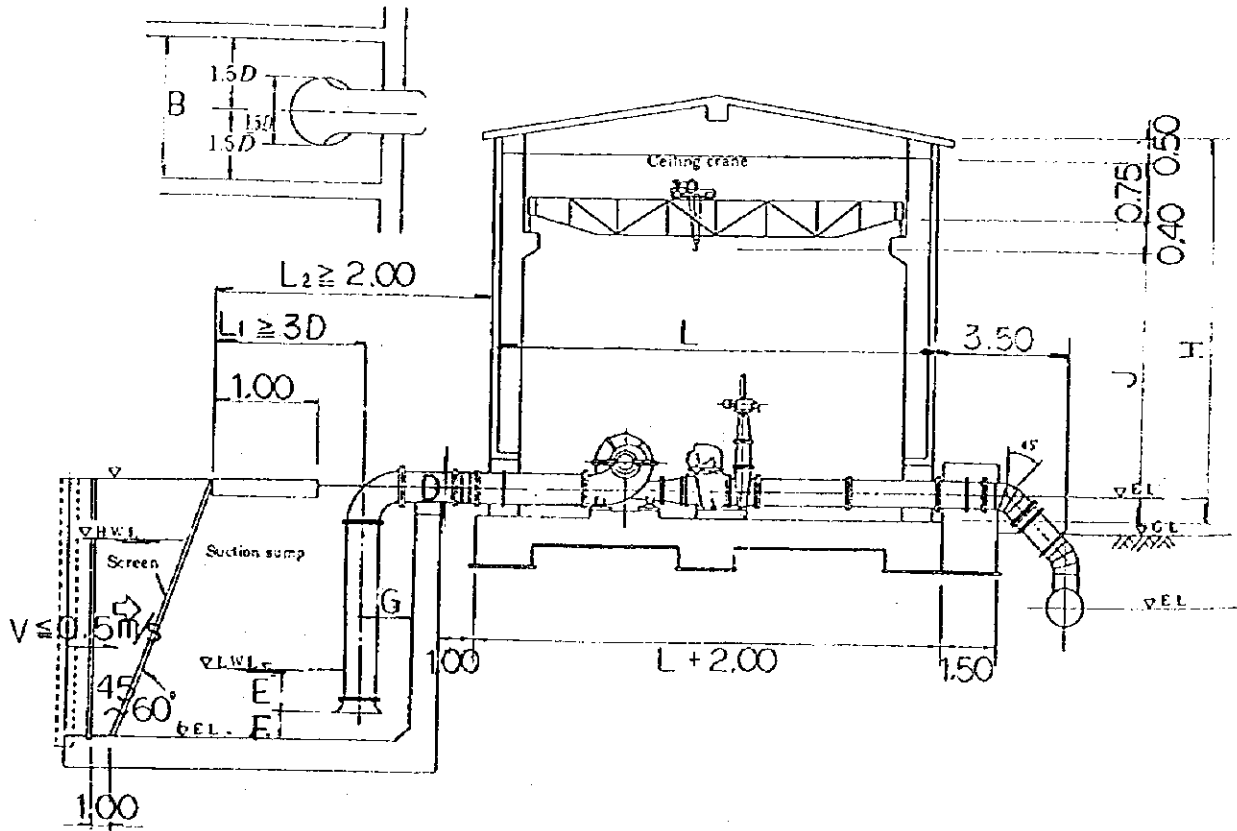


Table F.1.1.2 Electric Power of Pumps

Project Name	Pump Type	Pump Num.	Pump Diamet. (mm)	Total Capacity (P90%) (l/s)	Pump Capacity (l/s)	Total Head H(m)	Pump efficiency	Factor of Safety	Pump Power (kw)	Total Pump Power (kw)
HACILAR	A	5	300	428.0	85.6	134.0	0.693	1.0	162.43	812.15
	B	8	150	400.0	50.0	102.0	0.540	1.1	101.95	815.60
URUNLU	A	3	200	73.0	24.3	165.0	0.693	1.0	56.78	170.34
	A	3	200	80.0	26.7	288.0	0.693	1.0	108.89	326.67
Total										
KUSKARA	B	1	150	50.0	50.0	61.0	0.540	1.1	60.97	60.97
	B	1	150	45.0	45.0	78.0	0.540	1.1	70.17	70.17
ASLANLAR	B	1	150	50.0	50.0	36.0	0.540	1.1	35.98	35.98
	B	1	150	40.0	40.0	39.0	0.540	1.1	31.18	31.18
	B	2	150	60.0	30.0	95.0	0.540	1.1	56.97	113.94
	B	2	125	40.0	20.0	54.0	0.540	1.1	21.59	43.18
	B	1	80	10.0	10.0	48.0	0.540	1.1	9.60	9.60
	A	2	350	200.0	100.0	51.0	0.693	1.0	72.22	144.44
	A	2	125	23.0	11.5	51.0	0.693	1.0	8.31	16.62
ILYASKOY	A	2	150	50.0	25.0	18.0	0.693	1.0	6.37	12.74
	B	4	150	120.0	30.0	126.0	0.540	1.1	75.56	302.24

Pump Type ; A Horizontal Shaft type Multi-Stage Volute Pump
B Submersible Deep-Well Pump

Table F.1.1.3 Total Head of Pumps

Total head can be obtained from the following equation by adding line losses around the pump to the actual head.

$$H = H_a + H_l = (H_{ad} - H_{as}) + H_{ls} + H_{ld}$$

H_a : planned actual head ($H_{as} - H_{ad}$)
 H_l : total line losses around pump ($= H_{ls} + H_{ld}$)
 H_{as} : actual water level on suction side
 H_{ad} : actual water level on discharge side
 H_{ls} : total losses on suction line ($= 1.0$)
 H_{ld} : total losses on discharge line

$$H_{ld} = 10.67 * C^{-1.85} * D^{-4.87} * Q^{1.85} * L * 1.2$$

C : 130 (SP) D: Pipe Diameter (m), L: Pipe Length (m)
 ; 150 (PVC) Q: Discharge (m³/s),

Project Name	Pump Type	H_a (m)	H_{as} (m)	H_{ad} (m)	H_{ld} (m)	C	D (mm)	V (m/s)	Q (m ³ /s)	L (m)	Total Head H(m)
HACILAR	A	122.0	719.0	841.0	11.0	130	550	1.57	0.374	2,250	134.0
KALESENISI -Phase 1	A	160.0	984.0	1,144.0	4.0	130	250	1.47	0.072	335	165.0
	A	278.0	984.0	1,262.0	9.0	130	250	1.61	0.079	685	288.0
KUSKARA	B	55.0	-	-	7.0	150	200	1.11	0.035	1,000	63.0
	B	55.0	-	-	5.0	150	200	0.99	0.031	1,000	61.0
ASLANLAR	A	73.0	34.0	107.0	4.0	130	400	1.50	0.189	630	78.0
ILYASKOY	A	39.0	233.0	272.0	11.0	130	125	1.63	0.020	380	51.0
	A	15.0	233.0	248.0	2.0	130	200	1.40	0.044	125	18.0

Pump Type ; A Horizontal Shaft Type Multi-Stage Volute Pump

B Submersible Deep-Well Pump

Table F.1.2.1 Formula of the Friction Loss in the Pipeline

1)PVC

1.Hazen - Willians (Mortar lining)

$$I=10.67*150^{-1.85}*D^{-4.87}*Q^{1.85}$$

2.Brair-1

$$I=5.428*10^{-4}*D^{-1.246}*V^{1.754}$$

Diameter(mm)		100	125	150	175	200	225	250	300	Average
V= 1.50 m/s	Q(m3/s)	0.012	0.018	0.027	0.036	0.047	0.060	0.074	0.106	--
	1	0.0208	0.0149	0.0130	0.0104	0.0089	0.0079	0.0070	0.0056	0.011
	2	0.0195	0.0147	0.0118	0.0097	0.0082	0.0071	0.0062	0.0050	0.010
V= 1.70 m/s	Q(m3/s)	0.013	0.021	0.030	0.041	0.053	0.068	0.083	0.120	--
	1	0.0242	0.0198	0.0158	0.0133	0.0111	0.0099	0.0086	0.0070	0.014
	2	0.0243	0.0184	0.0146	0.0121	0.0102	0.0088	0.0077	0.0062	0.013
V= 1.90 m/s	Q(m3/s)	0.015	0.023	0.034	0.046	0.060	0.076	0.093	0.134	--
	1	0.0410	0.0305	0.0259	0.0214	0.0182	0.0159	0.0138	0.0112	0.022
	2	0.0295	0.0223	0.0178	0.0147	0.0124	0.0107	0.0094	0.0075	0.016

2)Steel Pipe (Mortar Lining)

1.Hazen - Willians

$$I=10.67*130^{-1.85}*D^{-4.87}*Q^{1.85}$$

2.Brair-2

$$I=6.40*10^{-4}*D^{-1.245}*V^{1.802}$$

Diameter(mm)		300	350	400	450	550	Average
V= 1.50 m/s	Q(m3/s)	0.106	0.144	0.188	0.239	0.356	--
	1	0.0056	0.0060	0.0052	0.0045	0.0036	0.005
	2	0.0059	0.0049	0.0042	0.0036	0.0028	0.004
V= 1.65 m/s	Q(m3/s)	0.117	0.159	0.207	0.262	0.392	--
	1	0.0087	0.0073	0.0062	0.0054	0.0043	0.006
	2	0.0070	0.0058	0.0049	0.0043	0.0033	0.005
V= 1.80 m/s	Q(m3/s)	0.127	0.173	0.226	0.286	0.428	--
	1	0.0101	0.0085	0.0073	0.0063	0.0050	0.007
	2	0.0082	0.0068	0.0058	0.0050	0.0039	0.006

Table F.1.2.2 Closed Pipeline of Urunlu Project

DIAMETER AND LENGTH OF PIPE-LINE FOR EVERY PUMP AREA												URUNRU-KONYA	
PUMP \ LINE		1-2	2-3	3-4	4-5	5-6	6-7(P)	A	B	C	D	E	TOTAL
① 46518	D (mm)	100	100	150	150	175	200	100	125	100			
	L (m)	320	330	460	130	310	240	290	120	150			2,350
② 46519	D (mm)	100	125	150	200			100	100	125			
	L (m)	245	380	300	330			245	420	210			2,130
③ 46520	D (mm)	100	125	175	200			100	125	150			
	L (m)	400	550	325	425			270	180	250			2,400
④ 46521	D (mm)	100	125	125	175			100	100	125	125	100	
	L (m)	440	370	280	10			180	310	250	230	225	2,295
⑤ 46522	D (mm)	100	100	125	150	175	200	100	100	100	100		
	L (m)	180	580	200	180	50	230	225	225	240	225		2,335
⑥ 46523	D (mm)	100	125	150	175	200		100	100	100	100	100	
	L (m)	390	80	230	80	10		240	320	275	125	270	2,020
⑦ 46524	D (mm)	100	125	175				100	125				
	L (m)	370	600	390				250	130				1,740
⑧ 46525	D (mm)	100	100	125	150	200		100	100	100	125	125	
	L (m)	210	320	100	150	130		120	130	530	230	100	2,020

TOTAL LENGTH FOR EVERY DIAMETER

	D(m)	L(m)
TOTAL	100	9,050
	125	4,010
	150	1,700
	175	1,165
	200	1,365
		17,290

Pipe Length for Every Diameter and Head Loss

20hr's/day Irrigation 0.896 (mm)
Maximan Verocity 2.0 (m/s)

URUNLU-KONYA

PUMP NO.		Main Line							Other Lines				
		1-2	2-3	3-4	4-5	5-6	6-7(P)	Σ	A	B	C	D	E
1)	A (ha)	7.5	5.2	24.0	2.6	9.0	7.0	55	11.9	12.1	9.0		
	L (m)	320	330	460	130	310	240	1,790	290	120	150		
	Σ A (ha)	7.5	12.7	36.7	39.3	48.3	55.3	—	11.9	24.0	9.0		
	Q (l/s)	6.72	11.38	32.88	35.21	43.28	49.55	49.6	10.66	21.50	8.06		
	D (mm)	100	100	150	150	175	200	—	100	125	100		
	V (m/s)	0.86	1.45	1.86	1.99	1.80	1.58	—	1.36	1.75	1.03		
	hk (m)	2.74	7.48	10.31	3.31	5.45	2.83	32.1	5.83	2.98	1.80		
2)	A (ha)	12.1	12.1	13.0	27.6			65	13.0	13.8	13.8		
	L (m)	245	380	300	330			1,255	245	420	210		
	Σ A (ha)	12.1	24.2	37.2	64.8			—	13.0	13.8	27.6		
	Q (l/s)	10.84	21.68	33.33	58.06			58.1	11.65	12.36	24.73		
	D (mm)	100	125	150	200			—	100	100	150		
	V (m/s)	1.38	1.77	1.89	1.85			—	1.48	1.57	1.40		
	hk (m)	5.08	9.57	6.89	5.21			26.8	5.80	11.09	2.78		
3)	A (ha)	12.1	12.0	22.6	13.6			60	11.3	11.3	13.6		
	L (m)	400	550	325	425			1,700	270	180	250		
	Σ A (ha)	12.1	24.1	46.7	60.3			—	11.3	22.6	36.2		
	Q (l/s)	10.84	21.59	41.84	54.03			54.0	10.12	20.25	32.44		
	D (mm)	100	125	175	200			—	100	125	150		
	V (m/s)	1.38	1.76	1.74	1.72			—	1.29	1.65	1.84		
	hk (m)	8.29	13.75	5.37	5.88			33.3	4.93	4.00	5.46		
4)	A (ha)	11.7	11.6	1.9	26.0			51	1.9	6.0	16.2	3.8	16.2
	L (m)	440	370	280	10			1,100	180	310	250	230	225
	Σ A (ha)	11.7	23.3	25.2	51.2			—	1.9	6.0	22.2	26.0	16.2
	Q (l/s)	10.48	20.88	22.58	45.88			45.9	1.70	5.38	19.89	23.30	14.52
	D (mm)	100	125	125	175			—	100	100	125	125	100
	V (m/s)	1.33	1.70	1.84	1.91			—	0.22	0.69	1.62	1.90	1.85
	hk (m)	8.56	8.70	7.61	0.20			25.1	0.12	1.76	5.37	6.62	8.01
5)	A (ha)	3.2	2.3	13.9	13.4	14.9	10.5	58	13.9	13.4	14.9	10.5	
	L (m)	180	580	200	180	50	230	1,420	225	225	240	225	
	Σ A (ha)	3.2	5.5	19.4	32.8	47.7	58.2	—	13.9	13.4	14.9	10.5	
	Q (l/s)	2.87	4.93	17.38	29.39	42.74	52.15	52.2	12.45	12.01	13.35	9.41	
	D (mm)	100	100	125	150	175	200	—	100	100	100	100	
	V (m/s)	0.37	0.63	1.42	1.66	1.78	1.66	—	1.59	1.53	1.70	1.20	
	hk (m)	0.32	2.80	3.35	3.28	0.86	2.98	13.6	6.02	5.64	7.31	3.59	
6)	A (ha)	12.3	10.8	13.8	16.1	12.0		65	10.8	13.8	16.1	6.0	6.0
	L (m)	390	80	230	80	10		790	240	320	275	125	270
	Σ A (ha)	12.3	23.1	36.9	53	65		—	10.8	13.8	16.1	6.0	12.0
	Q (l/s)	11.02	20.70	33.06	47.49	58.24		58.2	9.68	12.36	14.43	5.38	10.75
	D (mm)	100	125	150	175	200		—	100	100	100	100	100
	V (m/s)	1.40	1.69	1.87	1.97	1.85		—	1.23	1.57	1.84	0.69	1.37
	hk (m)	8.33	1.85	5.21	1.67	0.16		17.2	4.03	8.45	9.67	0.71	5.51
7)	A (ha)	10.9	14.4	25.0				50	12.4	12.6			
	L (m)	370	600	390				1,360	250	130			
	Σ A (ha)	10.9	25.3	50.3				—	12.4	25.0			
	Q (l/s)	9.77	22.67	45.07				45.1	11.11	22.40			
	D (mm)	100	125	175				—	100	125			
	V (m/s)	1.24	1.85	1.87				—	1.41	1.83			
	hk (m)	6.33	16.42	7.39				30.1	5.42	3.48			
8)	A (ha)	5.0	10.6	9.6	9.0	25.7		60	10.6	9.6	11.2	7.3	5.1
	L (m)	210	320	100	150	130		910	120	130	530	230	100
	Σ A (ha)	5.0	15.6	25.2	34.2	59.9		—	10.6	9.6	11.2	18.5	23.6
	Q (l/s)	4.48	13.98	22.58	30.64	53.67		53.7	9.50	8.60	10.04	16.58	21.15
	D (mm)	100	100	125	150	200		—	100	100	100	125	125
	V (m/s)	0.57	1.78	1.84	1.73	1.71		—	1.21	1.09	1.28	1.35	1.72
	hk (m)	0.85	10.61	2.72	2.95	1.78		18.9	1.95	1.76	9.53	3.53	2.41

Additional Head of Every Pump

PUMP No.	EL. of Sprinkler Nozzle EL1	Necessary Sprinkler Head h1(m)	Rateral Pipe Loss h2(m)	Discharge from Hydrant Q(1/s)	Hydrant Loss h3(m)	Pipe Head Loss h4(m)	Preliminary Head h5(m)	Necess. Water Head	EL. of Pump	Water Depth (m)	Additi onal Head (m)	Total Head H (m)
46518	1011.9	25.0	5.0	10.0	17.5	32.1	1.0	1092.5	1012.0	48	80.5	128.5
46519	1,008.8	25.0	5.0	6.0	7.0	26.8	1.0	1073.6	1010.5	40	63.1	103.1
46520	1,009.6	25.0	5.0	6.0	7.0	33.3	1.0	1080.9	1010.2	39	70.7	109.7
46521	1,008.0	25.0	5.0	8.0	12.5	25.1	1.0	1076.6	1007.6	36	69.0	105.0
46522	1,006.5	25.0	5.0	6.0	7.0	13.6	1.0	1058.1	1007.8	33	50.3	83.3
46523	1,008.8	25.0	5.0	4.0	5.7	17.2	1.0	1062.7	1008.8	33	53.9	86.9
46524	1,008.8	25.0	5.0	6.0	7.0	30.1	1.0	1076.9	1009.0	27	67.9	94.9
46525	1,007.3	25.0	5.0	10.0	17.5	18.9	1.0	1074.7	1005.9	36	68.8	104.8
Avg.	1,008.7	25.0	5.0	7.0	10.2	24.6	1.0	1074.5	1009.0	27.5	65.5	102.0

Table F.1.2.3 Closed Pipeline of Kareskisi Project

Pipe Length for Every Diameter and Head Loss

23hr's/day Irrigation 0.729 (mm)
 Maximan Verocity 0.8 (m/s)

KALESEKISI-ADANA

PUMP NO.	Main Line												
	K	L	M	N	O	P	Q	R	S	Σ			
A (ha)	13.0	9.0	11.0	6.0	12.0	17.0	8.0	10.0	13.0	99			
L (m)	480	420	560	1600	300	490	300	500	200	4,850			
Σ A (ha)	13	22	33	39	51	68	76	86	99	-			
Phase-1 Q (l/s)	9.48	16.04	24.06	28.43	37.18	49.57	55.40	62.69	72.17	72.2			
D (mm)	125	175	200	225	250	300	300	350	350	-			
V (m/s)	0.77	0.67	0.77	0.72	0.76	0.70	0.78	0.65	0.75	-			
h _k (m)	2.62	1.18	1.73	3.80	0.70	0.80	0.60	0.60	0.31	12.30			

PUMP NO.	Main Line												
	A	B	C	D	E	F	G	H	I	J	Σ		
A (ha)	10.0	11.0	13.0	11.0	10.0	15.0	12.0	13.0	10.0	5.0	110		
L (m)	480	420	320	1940	430	540	400	390	370	50	5,340		
Σ A (ha)	10	21	34	45	55	70	82	95	105	110	-		
Phase-2 Q (l/s)	7.29	15.31	24.79	32.81	40.10	51.03	59.78	69.26	76.55	80.19	80.2		
D (mm)	125	175	200	250	300	300	350	350	350	400	-		
V (m/s)	0.59	0.64	0.79	0.67	0.57	0.72	0.62	0.72	0.80	0.64	-		
h _k (m)	1.61	1.08	1.05	3.60	0.48	0.93	0.44	0.56	0.64	0.05	10.40		

Water Level of Distribution Pond

Case	EL. of Critical Head EL1	Necessary Drip Head h1(m)	Rateral Pipe Loss h2(m)	Discharge from Hydrant Q(l/s)	Hydrant Loss h3(m)	Pipe Head Loss h4(m)	Preliminary Head h5(m)	Distribution Pond	
								LWL	HWL
Phase-1	1100.0	5.0	5.0	10.0	17.5	12.3	1.0	1141.0	1144.0
Phase-2	1225.0	5.0	5.0	8.0	12.5	10.4	1.0	1259.0	1262.0

Case	line	K	L	M	N	O	P	Q	R	S	Σ
Phase-1	D (mm)	125	175	200	225	250	300	300	350	350	
	L (m)	480	420	560	1600	300	490	300	500	200	4,850
Phase-2	line	A	B	C	D	E	F	G	H	I	J
	D (mm)	125	175	200	250	300	300	350	350	350	400
Total	L (m)	480	420	320	1940	430	540	400	390	370	50
		Main Line									
Phase-1		φ125	L=480	φ225	L=1600	φ350	L=700	φ75	L=3,361	Secondary Line	
		φ175	L=420	φ250	L=300	φ100	L=152			Total	
		φ200	L=560	φ300	L=790					8,363	
Phase-2		φ125	L=480	φ225	L=0	φ350	L=1160	φ75	L=4,003		
		φ175	L=420	φ250	L=1940	φ400	L=50	φ100	L=338		
		φ200	L=320	φ300	L=970					9,681	

Pipe Length for Every Diameter and Head Loss

23hr's/day Irrigation 0.729 (mm)

Maximan Verocity 2.0 (m/s)

KARESEKISI-ADANA-Phase-1

Line		Secondary Line						Pipe Length		
		1	2	3	4	5	6	Σ	φ (mm)	L(m)
A	A (ha)	2.5	2.5	2.5	2.5			10.0	75	454
	L (m)	133	133	143	45			454	100	0
	Σ A (ha)	2.5	5.0	7.5	10.0			—	125	0
	Q (l/s)	1.82	3.65	5.47	7.29			18.2	150	0
	D (mm)	75	75	75	75			—		
	V (m/s)	0.41	0.83	1.24	1.65			—		
	hk(m)	0.41	1.49	3.39	1.82			7.11		
B	A (ha)	2.0	2.5	2.5	4.0			11.0	75	351
	L (m)	109	109	95	38			351	100	0
	Σ A (ha)	2.0	4.5	7.0	11.0			—	125	0
	Q (l/s)	1.46	3.28	5.10	8.02			17.9	150	0
	D (mm)	75	75	75	75			—		
	V (m/s)	0.33	0.74	1.15	1.82			—		
	hk(m)	0.22	1.00	1.98	1.83			5.03		
C	A (ha)	4.0	3.0	3.0	4.0			14.0	75	286
	L (m)	90	81	115	70			356	100	70
	Σ A (ha)	4.0	7.0	10.0	14.0			—	125	0
	Q (l/s)	2.92	5.10	7.29	10.21			25.5	150	0
	D (mm)	75	75	75	100			—		
	V (m/s)	0.66	1.15	1.65	1.30			—		
	hk(m)	0.67	1.69	4.64	1.30			7.00		
D	A (ha)	3.0	3.0	2.5	2.5			11.0	75	410
	L (m)	129	104	119	58			410	100	0
	Σ A (ha)	3.0	6.0	8.5	11.0			—	125	0
	Q (l/s)	2.19	4.37	6.20	8.02			20.8	150	0
	D (mm)	75	75	75	75			—		
	V (m/s)	0.50	0.99	1.40	1.82			—		
	hk(m)	0.56	1.63	3.56	2.79			0.56		
E	A (ha)	3.0	3.0	2.0	2.0			10.0	75	238
	L (m)	80	67	76	15			238	100	0
	Σ A (ha)	3.0	6.0	8.0	10.0			—	125	0
	Q (l/s)	2.19	4.37	5.83	7.29			4.4	150	0
	D (mm)	75	75	75	75			—		
	V (m/s)	0.50	0.99	1.32	1.65			—		
	hk(m)	0.35	1.05	2.03	0.61			1.40		
F	A (ha)	3.0	3.5	4.0	4.5			15.0	75	372
	L (m)	138	105	129	82			454	100	82
	Σ A (ha)	3.0	6.5	10.5	15.0			—	125	0
	Q (l/s)	2.19	4.74	7.65	10.94			25.5	150	0
	D (mm)	75	75	75	100			—		
	V (m/s)	0.50	1.07	1.73	1.39			—		
	hk(m)	0.60	1.91	5.69	1.73			9.93		
G	A (ha)	3.0	2.5	3.0	3.0			11.5	75	338
	L (m)	105	85	105	43			338	100	0
	Σ A (ha)	3.0	5.5	8.5	11.5			—	125	0
	Q (l/s)	2.19	4.01	6.20	8.38			20.8	150	0
	D (mm)	75	75	75	75			—		
	V (m/s)	0.50	0.91	1.40	1.90			—		
	hk(m)	0.46	1.14	3.14	2.25			6.99		

H	A (ha)	4.5	3.5	3.5				11.5	75	315
	L (m)	158	114	43				315	100	0
	ΣA (ha)	4.5	8.0	11.5				-	125	0
	Q (l/s)	3.28	5.83	8.38				17.5	150	0
	D (mm)	75	75	75				-		
	V (m/s)	0.74	1.32	1.90				-		
	hk (m)	1.46	3.04	2.25				1.46		
I	A (ha)	2.5	3.0	3.5				9.0	75	251
	L (m)	119	85	47				251	100	0
	ΣA (ha)	2.5	5.5	9.0				-	125	0
	Q (l/s)	1.82	4.01	6.56				12.4	150	0
	D (mm)	75	75	75				-		
	V (m/s)	0.41	0.91	1.48				-		
	hk (m)	0.37	1.14	1.56				1.56		
J	A (ha)	2.0	2.0	2.0	1.0			7.0	75	346
	L (m)	76	67	90	113			346	100	0
	ΣA (ha)	2.0	4.0	6.0	7.0			-	125	0
	Q (l/s)	1.46	2.92	4.37	5.10			13.9	150	0
	D (mm)	75	75	75	75			-		
	V (m/s)	0.33	0.66	0.99	1.15			-		
	hk (m)	0.16	0.50	1.41	2.36			1.41		
Total							ΣA	110	75	3,361
							ΣL	3,513	100	152
									125	0
									150	0
								Total		3,513

Pipe Length for Every Diameter and Head Loss

23hr's/day Irrigati0.729 (mm)

Maximan Verocity 2.0 (m/s)

KARESEKISI-ADANA-Phase-2

Line		Secondary Line						Pipe Length		
		1	2	3	4	5	6	Σ	φ (mm)	L(m)
K	A (ha)	2.5	3.0	3.0	2.5	2.0		13.0	75	500
	L (m)	164	163	123	50	22		522	100	22
	Σ A (ha)	2.5	5.5	8.5	11.0	13.0		-	125	0
	Q (l/s)	1.82	4.01	6.20	8.02	9.48		20.1	150	0
	D (mm)	75	75	75	75	100		-		
	V (m/s)	0.41	0.91	1.40	1.82	1.21		-		
	hk(m)	0.51	2.18	3.68	2.41	0.36		3.68		
L	A (ha)	1.5	1.5	3.0	3.0			9.0	75	380
	L (m)	104	104	104	68			380	100	0
	Σ A (ha)	1.5	3.0	6.0	9.0			-	125	0
	Q (l/s)	1.09	2.19	4.37	6.56			14.2	150	0
	D (mm)	75	75	75	75			-		
	V (m/s)	0.25	0.50	0.99	1.48			-		
	hk(m)	0.12	0.45	1.63	2.26			4.46		
M	A (ha)	1.0	2.5	3.5	4.0			11.0	75	354
	L (m)	81	124	104	45			354	100	0
	Σ A (ha)	1.0	3.5	7.0	11.0			-	125	0
	Q (l/s)	0.73	2.55	5.10	8.02			16.4	150	0
	D (mm)	75	75	75	75			-		
	V (m/s)	0.17	0.58	1.15	1.82			-		
	hk(m)	0.05	0.72	2.17	2.17			5.11		
N	A (ha)	2.0	2.0	3.0				7.0	75	325
	L (m)	81	124	120				325	100	0
	Σ A (ha)	2.0	4.0	7.0				-	125	0
	Q (l/s)	1.46	2.92	5.10				9.5	150	0
	D (mm)	75	75	75				-		
	V (m/s)	0.33	0.66	1.15				-		
	hk(m)	0.17	0.92	2.50				0.17		
O	A (ha)	3.0	2.0	1.0	2.0	2.0		10.0	75	553
	L (m)	81	104	76	182	110		553	100	0
	Σ A (ha)	3.0	5.0	6.0	8.0	10.0		-	125	0
	Q (l/s)	2.19	3.65	4.37	5.83	7.29		16.0	150	0
	D (mm)	75	75	75	75	75		-		
	V (m/s)	0.50	0.83	0.99	1.32	1.65		-		
	hk(m)	0.35	1.17	1.19	4.86	4.44		0.35		
P	A (ha)	1.5	2.0	2.5	3.0	5.0	3.0	17.0	75	550
	L (m)	109	95	153	193	202	51	803	100	253
	Σ A (ha)	1.5	3.5	6.0	9.0	14.0	17.0	-	125	0
	Q (l/s)	1.09	2.55	4.37	6.56	10.21	12.39	14.6	150	0
	D (mm)	75	75	75	75	100	100	-		
	V (m/s)	0.25	0.58	0.99	1.48	1.30	1.58	-		
	hk(m)	0.13	0.55	2.40	6.41	3.75	1.35	0.13		
Q	A (ha)	1.5	1.5	3.0	3.0			9.0	75	479
	L (m)	178	103	153	45			479	100	0
	Σ A (ha)	1.5	3.0	6.0	9.0			-	125	0
	Q (l/s)	1.09	2.19	4.37	6.56			14.2	150	0
	D (mm)	75	75	75	75			-		
	V (m/s)	0.25	0.50	0.99	1.48			-		
	hk(m)	0.21	0.45	2.40	1.49			0.45		

R	A (ha)	3.0	3.0	4.0				10.0	75	296
	L (m)	143	115	38				296	100	0
	ΣA (ha)	3.0	6.0	10.0				—	125	0
	Q (l/s)	2.19	4.37	7.29				13.9	150	0
	D (mm)	75	75	75				—		
	V (m/s)	0.50	0.99	1.65				—		
	hk(m)	0.62	1.80	1.53				1.80		
S	A (ha)	0.5	0.5	1.0	4.5	6.0		12.5	75	566
	L (m)	76	85	148	257	63		629	100	63
	ΣA (ha)	0.5	1.0	2.0	6.5	12.5		—	125	0
	Q (l/s)	0.36	0.73	1.46	4.74	9.11		7.3	150	0
	D (mm)	75	75	75	75	100		—		
	V (m/s)	0.08	0.17	0.33	1.07	1.16		—		
	hk(m)	0.01	0.05	0.31	4.68	0.95		0.05		
Total							ΣA	99	75	4,003
							ΣL	4,341	100	338
									125	0
									150	0
								Total	4,341	

Pipe Length for Every Diameter

KARESEKISI-ADANA-Phase-1

	Line	Secondary Line						Total	
		1	2	3	4	5	6	D(mm)	L(m)
A	D(mm)	75	75	75	75			75	454
	L(m)	133	133	143	45			100	0
B	D(mm)	75	75	75	75			75	351
	L(m)	109	109	95	38			100	0
C	D(mm)	75	75	75	100			75	286
	L(m)	90	81	115	70			100	70
D	D(mm)	75	75	75	75			75	410
	L(m)	129	104	119	58			100	0
E	D(mm)	75	75	75	75			75	238
	L(m)	80	67	76	15			100	0
F	D(mm)	75	75	75	100			75	372
	L(m)	138	105	129	82			100	82
G	D(mm)	75	75	75	75			75	338
	L(m)	105	85	105	43			100	0
H	D(mm)	75	75	75				75	315
	L(m)	158	114	43				100	0
I	D(mm)	75	75	75				75	251
	L(m)	119	85	47				100	0
J	D(mm)	75	75	75	75			75	346
	L(m)	76	67	90	113			100	0
Total								75	3,361
								100	152

Pipe Length for Every Diameter

KARESEKISI-ADANA-Phase-2

	Line	Secondary Line						Total	
		1	2	3	4	5	6	D(mm)	L(m)
K	D(mm)	75	75	75	75	100		75	500
	L(m)	164	163	123	50	22		100	22
L	D(mm)	75	75	75	75			75	380
	L(m)	104	104	104	68			100	0
M	D(mm)	75	75	75	75			75	354
	L(m)	81	124	104	45			100	0
N	D(mm)	75	75	75				75	325
	L(m)	81	124	120				100	0
O	D(mm)	75	75	75	75	75		75	553
	L(m)	81	104	76	182	110		100	0
P	D(mm)	75	75	75	75	100	100	75	550
	L(m)	109	95	153	193	202	51	100	253
Q	D(mm)	75	75	75	75			75	479
	L(m)	178	103	153	45			100	0
R	D(mm)	75	75	75				75	296
	L(m)	143	115	38				100	0
S	D(mm)	75	75	75	75	100		75	566
	L(m)	76	85	148	257	63		100	63
Total								75	4,003
								100	338

KALESEKISI

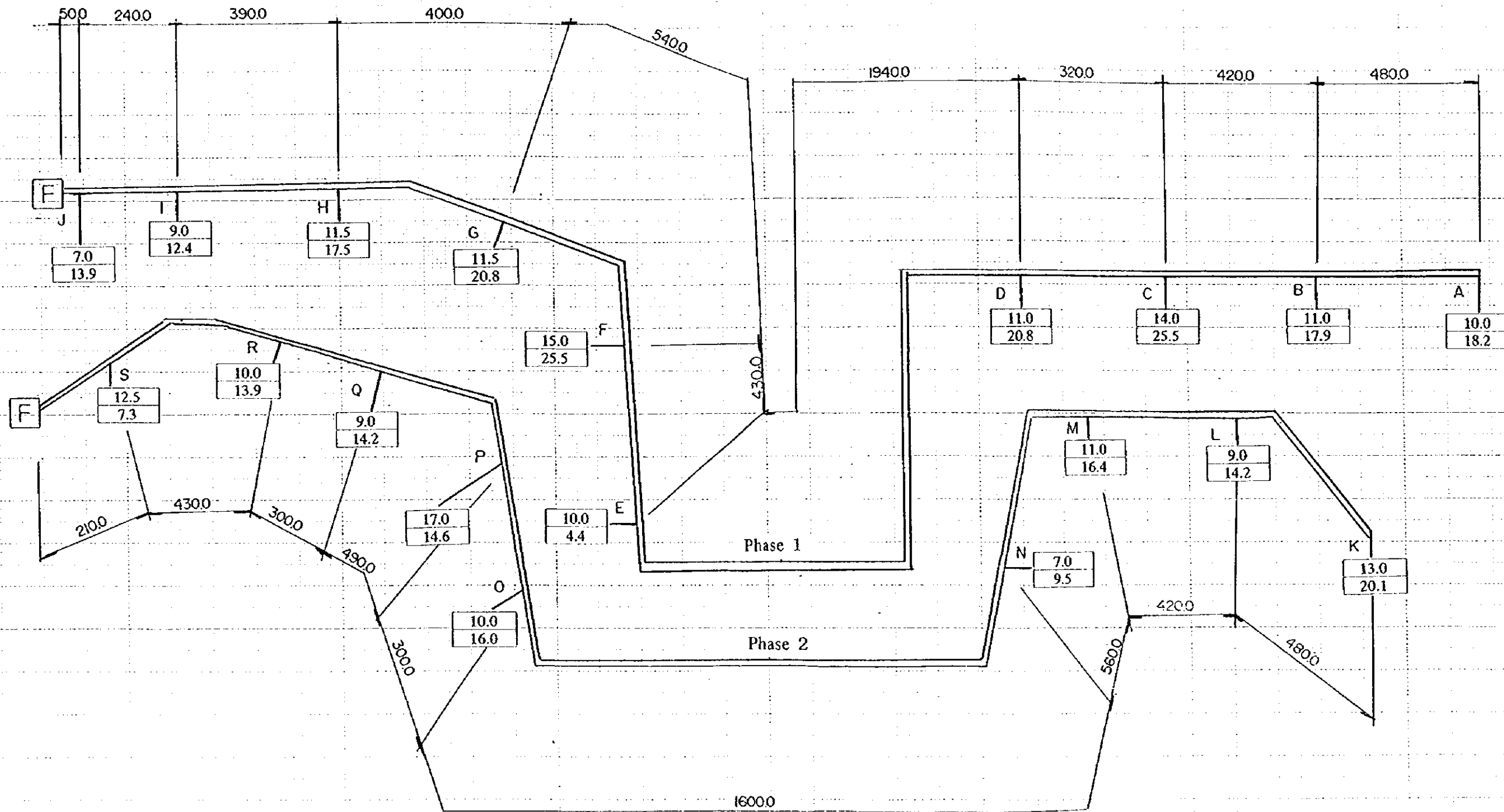


Table F.1.2.4 Irrigation Canal List by Type of Camlibel Project

(units;m)

Canal Name	Canal Type (Length)				Remarks
	I (40 l/s)	II (60 l/s)	III (80 l/s)	IV (100 l/s>)	
1-1			1,000		
2-4			500		
2-3	350				
2-2	450				
2-1			900		
3(2)	800				
3-1	700				
3(1)		100			
4(4)			1,200		
4-4		2,000			
4(3)				350	
4-3			2,000		
4-2	400				
4(2)				700	
4-1	250				
4(1)				300	
5-6	250				
5-5(2)	1,000				
5-5-1	450				
5-5(1)		300			
5-4	150				
5-3				1,350	
5-2			1,300		
5-1	350				
6(2)	700				
6-2	250				
6(1)	300				
6-1	500				
7	1,100				
8			850		
Total	8,000	2,400	7,750	2,700	20,850

Table F.1.2.5 Drainage Canal List by Type of Camlibel Project

(units;m)

Name	Canal Type		Remarks
	Type I (h=1.8m)	Type II (h=1.0m)	
D-1	850		River side
D-2	900		"
D-3	1,600		Saline Area
D-4 (5)	700		Flood Area
D-4 (4)	1,150		"
D-4 (3)	1,150		"
D-4 (2)	500		"
D-4-2	1,500		"
D-4 (1)	400		"
D-4-1		650	
D-5 (2)		1,000	
D-5 (1)	1,150		Flat plane
D-6 (4)	2,500		Flood Area
D-6-3		700	
D-6- (3)	800		Flood Area
D-6-2		550	
D-6 (2)	800		Flood Area
D-6 (1)	1,600		Flat plane
D-6-1	1,200		"
Total	16,800	2,900	(19,700m)

Table F.1.2.6 Farm Road List by Type of Camlibel Project

Name	Type	Length	Remarks	Name	Type	Length	Remarks
MR-1	I	1,900	Main Road B=6m	R-40	II	200	
MR-2	I	900		R-41	II	250	
MR-3	I	700		R-42	II	250	
MR-4	I	600		R-43	II	1,000	
MR-5	I	2,000		R-44	II	200	
Total		6,100		R-45	II	350	
				R-46	II	400	
R-1	II	300	B=4m	R-47	II	700	
R-2	II	400		R-48	II	750	
R-3	II	600		R-49	II	800	
R-4	II	750		R-50	II	800	
R-5	II	800		R-51	II	800	
R-6	II	750		R-52	II	550	
R-7	II	200		R-53	II	550	
R-8	II	300		R-54	II	550	
R-9	II	300		R-55	II	550	
R-10	II	350		R-56	II	550	
R-11	II	300		R-57	II	250	
R-12	II	250		R-58	II	200	
R-13	II	350		R-59	II	800	
R-14	II	550		R-60	II	1,000	
R-15	II	800		R-61	II	500	
R-16	II	500		R-62	II	250	
R-17	II	1,300		R-63	II	650	
R-18	II	1,000		R-64	II	500	
R-19	II	200		R-65	II	300	
R-20	II	250		R-66	II	400	
R-21	II	400		R-67	II	650	
R-22	II	450		R-68	II	750	
R-23	II	550		R-69	II	700	
R-24	II	400		R-70	II	600	
R-25	II	200		R-71	II	900	
R-26	II	350		R-72	II	1,000	
R-27	II	750		R-73	II	200	
R-28	II	750		R-74	II	150	
R-29	II	750		R-75	II	100	
R-30	II	500		R-76	II	100	
R-31	II	750		R-77	II	100	
R-32	II	700		R-78	II	150	
R-33	II	750		R-79	II	100	
R-34	II	800		R-80	II	250	
R-35	II	800		R-81	II	250	
R-36	II	850		R-82	II	250	
R-37	II	150		R-83	II	250	
R-38	II	250		R-84	II	250	
R-39	II	250		Total		41,500	
						Main Road	6,100 m
						Farm Road	41,500 m
						Total	47,600 m

Table F.1.2.7 Land use of Camlibel Project

Land use	Present	Under Project	Remarks
Village	39	39	
Guzelce	(11)	(11)	
Keruansaray	(28)	(28)	
Mountain	48	48	
Hilly Land	35	12	
Livestock Area	-	23	
Farm Land	1,438	1,366	Reduction 5%
Road and Others	16	88	
	1,576	1,576	

Table F.1.2.8 Irrigation Canal List (L,A,Q) of Camlibel Project

Name	Length	S.Area	qu	Q ₀	Q _{out}	ΣQ
	m	ha	ℓ/s/100ha	m ³ /s	ℓ/s	ℓ/s
1(2)	-	0	0.76	0	(200)	(200)
1-1	1,000	93	0.76	71	-	71
1(1)	(150)	-	-	-	-	(271)
2(4)	-	114	0.76	(86)	-	(86)
2-4	500	85	0.76	65	-	65
2(3)	(600)	-	-	-	-	(151)
2-3	350	46	0.76	35	-	35
2(2)	(500)	-	-	-	-	(186)
2-2	450	27	0.76	21	-	21
2-1	900	98	0.76	74	-	74
2(1)	(150)	-	-	-	-	(281)
3(2)	800	23	0.76	17	-	17
3-1	700	38	0.76	29	-	29
3(1)	100	-	-	-	-	46
4(4)	1,200	94	0.76	71	-	71
4-4	2,000	67	0.76	51	-	51
4(3)	350	-	-	-	-	122
4-3	2,000	91	0.76	69	-	69
4-2	400	24	0.76	18	-	18
4(2)	700	-	-	-	-	209
4-1	250	39	0.76	30	-	30
4(1)	300	-	-	-	-	239
5(5)	-	-	-	-	(200)	(200)
5-6	250	39	0.76	30	-	30
5(4)	(150)	-	-	-	-	(230)
5-5(2)	1,000	44	0.76	33	-	33
5-5-1	450	31	0.76	24	-	24
5-5(1)	300	-	-	-	-	57
5-(3)	(800)	-	-	-	-	(287)
5-4	150	46	0.76	35	-	35
5-3	1,350	136	0.76	103	-	103
5-(2)	(650)	-	-	-	-	(425)
5-2	1,300	89	0.76	67	-	67
5-1	350	26	0.76	20	-	20
5(1)	(500)	-	-	-	-	(512)
6(2)	700	50	0.76	38	-	38
6-2	250	16	0.76	12	-	12
6(1)	300	13	0.76	10	-	10
6-1	500	19	-	14	-	14
7	1,100	34	0.76	26	-	26
8	850	98	0.76	74	-	74
Total	20,850	1,366				

() ; DSI Canal

Table F.1.2.9 Drainage Canal List of Camlibel Project

Name	Length	C.Area	unit q _u	Amount Q ₀	Q _{in}	ΣQ	Remarks
	m	ha	ℓ/s/100ha	ℓ/s	ℓ/s	ℓ/s	
D-1	850	90	38	34	-	34	
D-2	900	44	38	17	20 *	37	
D-3	1,600	83	38	32	20 *	52	
D-4 (5)	700	(14)	38	5	600 *	605	CA=15km ²
D-4 (4)	1,150	150	38	57	-	662	
D-4 (3)	1,150	84	38	32	-	694	
D-4 (2)	500	-	38	-	-	964	
D-4-2	1,500	141	38	54	200 *	254	
D-4 (1)	400	-	-	-	-	948	
D-4-1	650	56	38	21	-	21	
D-4 Total	-	431 (14)				969	
D-5 (2)	1,000	42	38	16	20 *	36	
D-5 (1)	1,150	160	38	60	-	96	
D-5 Total	-	202				96	
D-6 (4)	2,500	136	38	52	500 *	552	
D-6-3	700	-	38	-	50 *	50	
D-6- (3)	800	68	38	26	50 *	678	
D-6-2	550	64	38	24	-	24	
D-6 (2)	800	51	38	19	-	721	
D-6 (1)	1,600	97	38	37	200 *	958	
D-6-1	1,200	100 (35)	38	51	-	51	
Total	-	1,366 49	1,415				

* ; Estimated discharge by villagr, () ;Guzelce and Kervansaray Village Area

Figure F.1.1.1 Akcay River Profile of Kozluk Project

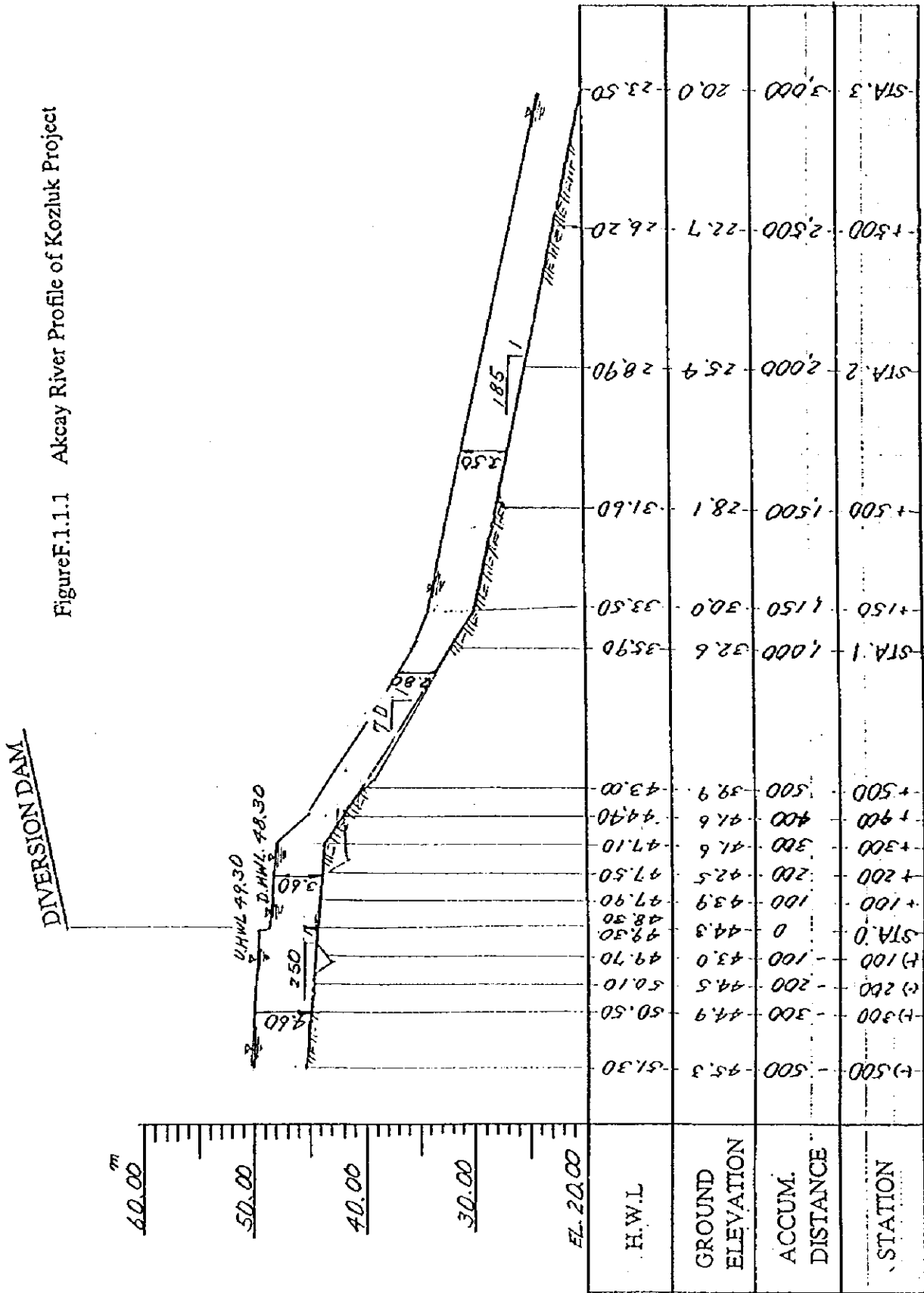


Table F.1.2.10 Canal List of Kusakara Project

(units ; m)

Name	Length		CANAL Type	Remarks
	Existing	Proposed		
1	850		Q=50 t/s	Trapezoid Concrete Canal
1-1	100		"	
1-2	500		"	
1-3		200	"	
1-4		500	"	
1-5		150	"	
1-6		300	"	
Total	1,450	1,150		
2	850		"	Trapezoid Concrete Canal
2-1	250	300	"	
2-1-1		400	"	
2-1-2		300	"	
2-2		375	"	
2-3	325		"	
2-4		325	"	
2-5		300	"	
2-6		175		
Total	1,425	2,175		
G.Total	2,875	3,325		

Table F.1.2.11 Proposed Farm Road List of Kusakara Project
(units ;m)

Name	Length	Type	Remarks
MR-1	825	Main Farm Road	Width B=8.0m
MR-2	175	"	"
Total	1,000		
R-1	600	Farm Road	B=3.0m
R-2	200	"	
R-3	125	"	
R-4	900	"	
R-5	250	"	
R-6	350	"	
R-7	500	"	
R-8	175	"	
Total	3,100		
G.Total	4,100		

Table F.1.2.12 Closed Pipeline of Ozdenk Project.

Pipe Length for Every Diameter

		OZDENK-ESKISIRER											
		Main Line											
Line		1	2	3	4	5	6	7	8	9	10	11	12
A	D(mm)	100	100	125	175	175	200	300	300	300	300	350	350
	L(m)	120	460	480	400	500	240	100	430	490	410	380	1040
B	D(mm)	100	100	125	150	175	200						
	L(m)	50	500	480	490	120	450						
C	D(mm)	100	100	125									
	L(m)	225	480	230									
Total		100	L= 7,685 m					200	L= 690 m				
		125	L= 1,190 m					300	L= 1,020 m				
		150	L= 490 m					350	L= 1,830 m				
		175	L= 1,020 m										
(Including Secondary Line)													

Pipe Length for Every Diameter and Head Loss

16hr's/day Irrigation 1.230 (mm) OZDENK-ESKISHER
 Maximan Velocity 2.0 (m/s)

Line	Main Line												Pipe Length			
	1	2	3	4	5	6	7	8	9	10	11	12	Σ	ϕ (mm)	L(m)	
A	A (ha)	1.0	6.5	7.5	17.5	4.0	11.0	45.0	9.5	8.5	6.5	4.0	5.0	126.0	100	580
	L (m)	120	460	480	400	500	240	100	430	490	410	380	1040	5,050	125	480
	Σ A (ha)	1.0	7.5	15.0	32.5	36.5	47.5	92.5	102.0	110.5	117.0	121.0	126.0	—	150	0
	Q (l/s)	1.2	9.2	18.5	40.0	44.9	58.4	113.8	125.5	135.9	143.9	148.8	155.0	995.1	175	900
	D (mm)	100	100	125	175	175	200	300	300	300	350	350	350	—	200	240
B	V (m/s)	0.15	1.17	1.51	1.66	1.87	1.86	1.61	1.78	1.92	1.50	1.55	1.61	—	300	1,020
	hk (m)	0.04	7.04	9.02	6.08	9.41	3.83	0.76	3.93	5.18	2.28	2.24	6.62	56.43	350	1,830
	A (ha)	1.0	11.0	6.0	6.5	5.0	15.5	—	—	—	—	—	—	45.0	100	550
	L (m)	50	500	480	490	120	450	—	—	—	—	—	—	2,090	125	480
	Σ A (ha)	1.0	12.0	18.0	24.5	29.5	45.0	—	—	—	—	—	—	—	150	490
C	Q (l/s)	1.23	14.76	22.14	30.14	36.29	55.35	—	—	—	—	—	—	159.9	175	120
	D (mm)	100	100	125	150	175	200	—	—	—	—	—	—	—	200	450
	V (m/s)	0.16	1.88	1.80	1.71	1.51	1.76	—	—	—	—	—	—	—	300	0
	hk (m)	0.02	18.34	12.57	9.35	1.52	6.51	—	—	—	—	—	—	48.31	350	0
	A (ha)	4.0	6.5	5.0	—	—	—	—	—	—	—	—	—	15.5	100	705
Total	L (m)	225	480	230	—	—	—	—	—	—	—	—	—	935	125	230
	Σ A (ha)	4.0	10.5	15.5	—	—	—	—	—	—	—	—	—	—	150	0
	Q (l/s)	4.92	12.92	19.07	—	—	—	—	—	—	—	—	—	36.9	175	0
	D (mm)	100	100	125	—	—	—	—	—	—	—	—	—	—	200	0
	V (m/s)	0.63	1.65	1.55	—	—	—	—	—	—	—	—	—	—	300	0
hk (m)	1.08	13.76	4.57	—	—	—	—	—	—	—	—	—	19.41	350	0	
Secondary Line												Σ A	100	5,735		
D100mm L= 1,950 m												Σ L	125	1,190		
												150	490			
												175	1,020			
												200	690			
												300	1,020			
												350	1,830			

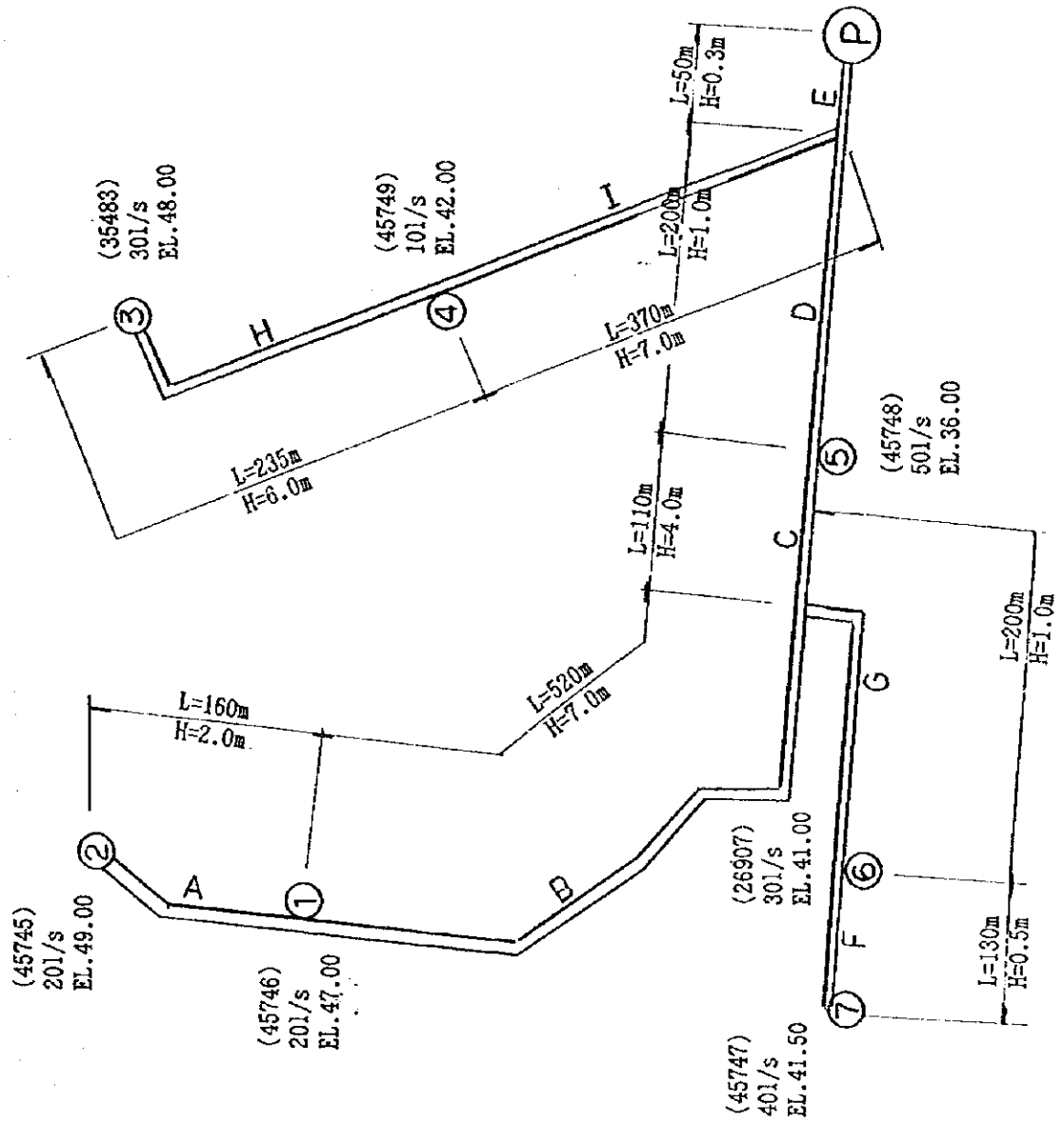
Table F.1.2.13 Closed Pipeline of Aslanlar Project

ASLANLAR-İZMİR

Line		Secondary Line														D(mm)	L(m)
		1	2	3	4	5	6	7	8	9	10	11	12	13	14		
A	D(mm)	100	100	100	125	100	100									100	565
	L(m)	100	190	135	100	60	80									125	100
B	D(mm)	100	100	100	100	125	150	100	100	125	100	100	100	100	100	100	1,670
	L(m)	200	130	200	215	140	30	295	150	100	110	100	80	120	70	125	240
																150	30
C	D(mm)	100	100	125	100	100	100	100	100	100	100					100	1,120
	L(m)	155	125	115	190	115	120	60	120	130	105					125	115
D	D(mm)	100	100	125	100	100	100									100	440
	L(m)	160	110	95	50	50	70									125	95
E	D(mm)	100	100													100	305
	L(m)	235	70														
F	D(mm)	100	100	100	100	100	100	100	100	100						100	880
	L(m)	195	80	50	110	25	110	165	105	40							
G	D(mm)	100	100	100	100											100	385
	L(m)	70	115	120	80												
H	D(mm)	175														175	425
	L(m)	425															
I	D(mm)	100	100	100	100	100	100	100								100	695
	L(m)	90	130	90	105	90	110	80									
J	D(mm)	100	100	100												100	360
	L(m)	90	160	110													
K	D(mm)	100	100	100												100	370
	L(m)	135	190	45													
L	D(mm)	100	100	100	100	100	100	100	100	100						100	855
	L(m)	55	85	90	120	135	70	75	180	45							
M	D(mm)	100	100	100	100	100	100									100	715
	L(m)	210	80	90	165	75	95										
N	D(mm)	100														100	90
	L(m)	90															
O	D(mm)	100														100	105
	L(m)	105															
P	D(mm)	100														100	105
	L(m)	105															
Q	D(mm)	100	100													100	115
	L(m)	80	35														
R	D(mm)	100	100													100	145
	L(m)	75	70														
S	D(mm)	100	100													100	285
	L(m)	215	70														
T	D(mm)	100	100	100												100	270
	L(m)	100	90	80													
U	D(mm)	100	100	100												100	265
	L(m)	95	95	75													
V	D(mm)	100	100	100												100	400
	L(m)	265	75	60													
W	D(mm)	100	100	100	100	100										100	505
	L(m)	140	140	90	75	60											
X	D(mm)	100	100	100												100	345
	L(m)	90	185	70													
Y	D(mm)	100	100	100												100	400
	L(m)	140	190	70													
Z	D(mm)	100	100	100												100	310
	L(m)	90	100	120													
Total																100	11,700
																125	550
																150	30
																175	425
																Total	12,705

ASLANLAR

RACE WAY



Pipe Length for Every Diameter and Head Loss

23hr's/day Irrigation
Maximan Verocity
0.80 (m/s)
2.0 (m/s)

ASLANLAR-IZMIR

Line		Secondary Line														Pipe Length		
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	Σ	δ(mm)	L(m)
A	A(ha)	6.0	6.5	5.5	7.0	3.5	3.5									25.0	100	565
	L(m)	100	190	135	100	60	80									665	125	100
	Σ A(ha)	6.0	12.5	18.0	25.0	3.5	3.5									-	150	0
	Q(l/s)	4.80	10.00	14.40	20.00	2.80	2.80									49.2	175	0
	D(mm)	100	100	100	125	100	100									-	200	0
	V(m/s)	0.61	1.27	1.83	1.63	0.36	0.36									-	-	-
	hk(m)	0.46	3.39	4.73	2.17	0.10	0.14									10.75	-	-
B	A(ha)	3.5	3.5	4.0	4.5	6.0	21.0	10.0	5.0	6.0	2.0	4.0	3.0	5.0	4.5	42.5	100	1,670
	L(m)	200	190	200	215	140	30	295	150	100	110	100	80	120	70	1,940	125	240
	Σ A(ha)	3.5	7.0	11.0	15.5	21.5	42.5	10.0	15.0	21.0	2.0	6.0	3.0	5.0	4.5	-	150	30
	Q(l/s)	2.80	5.60	8.80	12.40	17.20	34.00	8.00	12.00	16.80	1.60	4.80	2.40	4.00	3.60	34.0	175	0
	D(mm)	100	100	100	100	125	150	100	100	100	125	100	100	100	100	-	200	0
	V(m/s)	0.36	0.71	1.12	1.58	1.40	1.92	1.02	1.53	1.37	0.20	0.61	0.31	0.51	0.46	-	-	-
	hk(m)	0.34	0.79	2.82	5.71	2.30	0.72	3.48	3.75	1.57	0.07	0.46	0.10	0.39	0.19	12.68	-	-
C	A(ha)	3.5	3.5	18.5	2.0	6.0	3.5	2.5	2.0	2.0	6.0					25.5	100	1,120
	L(m)	155	125	115	190	115	120	60	120	130	105					1,235	125	115
	Σ A(ha)	3.5	7.0	25.5	2.0	8.0	11.5	14.0	16.0	2.0	6.0					-	150	0
	Q(l/s)	2.80	5.60	20.40	1.60	6.40	9.20	11.20	12.80	1.60	4.80					20.4	175	0
	D(mm)	100	100	125	100	100	100	100	100	100	100					-	200	0
	V(m/s)	0.36	0.71	1.66	0.20	0.81	1.17	1.43	1.63	0.20	0.61					-	-	-
	hk(m)	0.26	0.76	2.59	0.11	0.90	1.84	1.32	3.38	0.08	0.48					3.61	-	-
D	A(ha)	7.0	6.0	11.0	4.0	7.0	6.0									24.0	100	440
	L(m)	160	110	95	50	50	70									535	125	95
	Σ A(ha)	7.0	13.0	24.0	4.0	7.0	6.0									-	150	0
	Q(l/s)	5.60	10.40	19.20	3.20	5.60	4.80									5.6	175	0
	D(mm)	100	100	125	100	100	100									-	200	0
	V(m/s)	0.71	1.32	1.56	0.41	0.71	0.61									-	-	-
	hk(m)	0.98	2.11	1.91	0.11	0.31	0.32									0.98	-	-
E	A(ha)	2.0	6.0													8.0	100	305
	L(m)	235	70													305	125	0
	Σ A(ha)	2.0	8.0													-	150	0
	Q(l/s)	1.60	6.40													6.4	175	0
	D(mm)	100	100													-	200	0
	V(m/s)	0.20	0.81													-	-	-
	hk(m)	0.14	0.55													0.69	-	-
F	A(ha)	1.5	1.0	1.5	2.0	3.5	1.5	2.0	2.5	1.0						9.5	100	880
	L(m)	195	80	50	110	25	110	165	105	40						880	125	0
	Σ A(ha)	1.5	2.5	4.0	6.0	9.5	1.5	2.0	2.5	1.0						-	150	0
	Q(l/s)	1.20	2.00	3.20	4.80	7.60	1.20	1.60	2.00	0.80						7.6	175	0
	D(mm)	100	100	100	100	100	100	100	100	100						-	200	0
	V(m/s)	0.15	0.25	0.41	0.61	0.97	0.15	0.20	0.25	0.10						-	-	-
	hk(m)	0.07	0.07	0.11	0.50	0.27	0.04	0.10	0.10	0.01						1.02	-	-
G	A(ha)	1.5	2.0	1.5	2.0											7.0	100	385
	L(m)	70	115	120	80											385	125	0
	Σ A(ha)	1.5	3.5	5.0	7.0											-	150	0
	Q(l/s)	1.20	2.80	4.00	5.60											5.6	175	0
	D(mm)	100	100	100	100											-	200	0
	V(m/s)	0.15	0.36	0.51	0.71											-	-	-
	hk(m)	0.02	0.19	0.39	0.49											1.09	-	-
H	A(ha)	56.5														56.5	100	0
	L(m)	425														425	125	0
	Σ A(ha)	56.5														-	150	0
	Q(l/s)	45.20														45.2	175	425
	D(mm)	175														-	200	0
	V(m/s)	1.88														-	-	-
	hk(m)	8.10														8.10	-	-
I	A(ha)	1.5	4.5	4.5	2.5	2.0	3.0	1.5								10.5	100	695
	L(m)	90	130	90	105	90	110	80								695	125	0
	Σ A(ha)	1.5	6.0	10.5	2.5	2.0	3.0	1.5								-	150	0
	Q(l/s)	1.20	4.80	8.40	2.00	1.60	2.40	1.20								8.4	175	0
	D(mm)	100	100	100	100	100	100	100								-	200	0
	V(m/s)	0.15	0.61	1.07	0.25	0.20	0.31	0.15								-	-	-
	hk(m)	0.03	0.60	1.16	0.10	0.05	0.14	0.03								1.16	-	-
J	A(ha)	2.0	1.5	3.0												6.5	100	360
	L(m)	90	160	110												360	125	0
	Σ A(ha)	2.0	3.5	6.5												-	150	0
	Q(l/s)	1.60	2.80	5.20												5.2	175	0
	D(mm)	100	100	100												-	200	0
	V(m/s)	0.20	0.36	0.66												-	-	-
	hk(m)	0.05	0.27	0.59												0.59	-	-
K	A(ha)	2.0	2.0	1.5												5.5	100	370
	L(m)	135	190	45												370	125	0
	Σ A(ha)	2.0	4.0	5.5												-	150	0
	Q(l/s)	1.60	3.20	4.40												4.4	175	0
	D(mm)	100	100	100												-	200	0
	V(m/s)	0.20	0.41	0.56												-	-	-
	hk(m)	0.08	0.41	0.18												0.41	-	-

Pipe Length for Every Diameter and Head Loss

23hr's/day Irrigation
Maximan Verocity

0.80 (mm)
2.0 (m/s)

ASLANLAR-IZMIR

Line		Secondary Line														Pipe Length		
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	Σ	φ(mm)	L(m)
L	A(ha)	1.0	1.0	2.0	3.0	4.0	2.0	3.0	2.0	2.0						13.0	100	855
	L(m)	55	85	90	120	135	70	75	180	45						855	125	0
	Σ A(ha)	1.0	2.0	4.0	7.0	11.0	13.0	3.0	2.0	4.0						-	150	0
	Q(l/s)	0.80	1.60	3.20	5.60	8.80	10.40	2.40	1.60	3.20						10.4	175	0
	D(mm)	100	100	100	100	100	100	100	100	100						-	200	0
	V(m/s)	0.10	0.20	0.41	0.71	1.12	1.32	0.31	0.20	0.41						-	-	-
	hk(m)	0.01	0.05	0.20	0.01	0.01	0.02	0.00	0.00	0.00						0.30	-	-
M	A(ha)	1.5	2.5	3.0	5.0	4.5	3.0									16.5	100	715
	L(m)	210	80	90	165	75	95									715	125	0
	Σ A(ha)	1.5	4.0	7.0	12.0	16.5	3.0									-	150	0
	Q(l/s)	1.20	3.20	5.60	9.60	13.20	2.40									13.2	175	0
	D(mm)	100	100	100	100	100	100									-	200	0
	V(m/s)	0.15	0.41	0.71	1.22	1.68	0.31									-	-	-
	hk(m)	0.07	0.17	0.55	0.02	0.03	0.00									0.84	-	-
N	A(ha)	2.0														2.0	100	90
	L(m)	90														90	125	0
	Σ A(ha)	2.0														-	150	0
	Q(l/s)	1.60														1.6	175	0
	D(mm)	100														-	200	0
	V(m/s)	0.20														-	-	-
	hk(m)	0.05														0.05	-	-
O	A(ha)	2.0														2.0	100	105
	L(m)	105														105	125	0
	Σ A(ha)	2.0														-	150	0
	Q(l/s)	1.60														1.6	175	0
	D(mm)	100														-	200	0
	V(m/s)	0.20														-	-	-
	hk(m)	0.06														0.06	-	-
P	A(ha)	1.5														1.5	100	105
	L(m)	105														105	125	0
	Σ A(ha)	1.5														-	150	0
	Q(l/s)	1.20														1.2	175	0
	D(mm)	100														-	200	0
	V(m/s)	0.15														-	-	-
	hk(m)	0.04														0.04	-	-
Q	A(ha)	1.0	1.0													2.0	100	115
	L(m)	80	35													115	125	0
	Σ A(ha)	1.0	2.0													-	150	0
	Q(l/s)	0.80	1.60													1.6	175	0
	D(mm)	100	100													-	200	0
	V(m/s)	0.10	0.20													-	-	-
	hk(m)	0.01	0.02													0.02	-	-
R	A(ha)	2.0	1.0													3.0	100	145
	L(m)	75	70													145	125	0
	Σ A(ha)	2.0	3.0													-	150	0
	Q(l/s)	1.60	2.40													2.4	175	0
	D(mm)	100	100													-	200	0
	V(m/s)	0.20	0.31													-	-	-
	hk(m)	0.05	0.09													0.09	-	-
S	A(ha)	1.5	2.0													3.5	100	285
	L(m)	215	70													285	125	0
	Σ A(ha)	1.5	3.5													-	150	0
	Q(l/s)	1.20	2.80													2.8	175	0
	D(mm)	100	100													-	200	0
	V(m/s)	0.15	0.36													-	-	-
	hk(m)	0.08	0.12													0.12	-	-
T	A(ha)	2.0	1.5	2.0												5.5	100	270
	L(m)	100	90	80												270	125	0
	Σ A(ha)	2.0	3.5	5.5												-	150	0
	Q(l/s)	1.60	2.80	4.40												4.4	175	0
	D(mm)	100	100	100												-	200	0
	V(m/s)	0.20	0.36	0.56												-	-	-
	hk(m)	0.06	0.15	0.31												0.31	-	-
U	A(ha)	2.0	2.5	2.0												6.5	100	265
	L(m)	95	95	75												265	125	0
	Σ A(ha)	2.0	4.5	6.5												-	150	0
	Q(l/s)	1.60	3.60	5.20												5.2	175	0
	D(mm)	100	100	100												-	200	0
	V(m/s)	0.20	0.46	0.66												-	-	-
	hk(m)	0.06	0.26	0.40												0.40	-	-
V	A(ha)	2.5	2.5	2.5												5.0	100	490
	L(m)	265	75	60												400	125	0
	Σ A(ha)	2.5	5.0	2.5												-	150	0
	Q(l/s)	2.00	4.00	2.00												4.0	175	0
	D(mm)	100	100	100												-	200	0
	V(m/s)	0.25	0.51	0.25												-	-	-
	hk(m)	0.24	0.25	0.05												0.25	-	-

Pipe Length for Every Diameter and Head Loss

23hr's/day Irrigation
Maximan Verocily

0.80 (m/s)
2.0 (m/s)

ASLANLAR-IZMIR

Line		Secondary Line														Pipe Length		
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	Σ	Σ (m)	L(m)
W	A (ha)	1.5	2.0	1.5	2.0	1.5										7.0	100	505
	L (m)	140	140	90	75	60										505	125	0
	Σ A (ha)	1.5	3.5	5.0	7.0	1.5										—	150	0
	Q (l/s)	1.2	2.8	4.0	5.6	1.2										5.6	175	0
	D (mm)	100	100	100	100	100										—	200	0
	V (m/s)	0.15	0.36	0.51	0.71	0.15										—	—	—
	hk (m)	0.05	0.24	0.29	0.46	0.02										0.46	—	—
X	A (ha)	1.5	2.0	2.5												6.0	100	345
	L (m)	90	185	70												345	125	0
	Σ A (ha)	1.5	3.5	6.0												—	150	0
	Q (l/s)	1.20	2.80	4.80												4.8	175	0
	D (mm)	100	100	100												—	200	0
	V (m/s)	0.15	0.36	0.61												—	—	—
	hk (m)	0.03	0.31	0.32												0.32	—	—
Y	A (ha)	1.0	3.0	2.0												6.0	100	400
	L (m)	140	190	70												400	125	0
	Σ A (ha)	1.0	4.0	6.0												11	150	0
	Q (l/s)	0.80	3.20	4.80												4.8	175	0
	D (mm)	100	100	100												—	200	0
	V (m/s)	0.10	0.41	0.61												—	—	—
	hk (m)	0.02	0.41	0.32												0.41	—	—
Z	A (ha)	1.5	1.5	3.5												6.5	100	310
	L (m)	90	100	120												310	125	0
	Σ A (ha)	1.5	3.0	6.5												—	150	0
	Q (l/s)	1.20	2.40	5.20												5.2	175	0
	D (mm)	100	100	100												—	200	0
	V (m/s)	0.15	0.31	0.66												—	—	—
	hk (m)	0.03	0.13	0.64												0.64	—	—
Total																	100	11,700
																	125	550
																	150	30
																	175	425
																	200	0
																Total	12,705	

Table F.1.2.14 Closed Pipeline of Aslanlar Project

MANNING FORMULA $Q \cdot n / \{ (I^{1/2}) \cdot r^{(8/3)} \} = 1.600$
 $r = \{ (Q \cdot n \cdot I^{1/2}) / 1.6 \}^{(3/8)}$
 $D = 2 \cdot r$

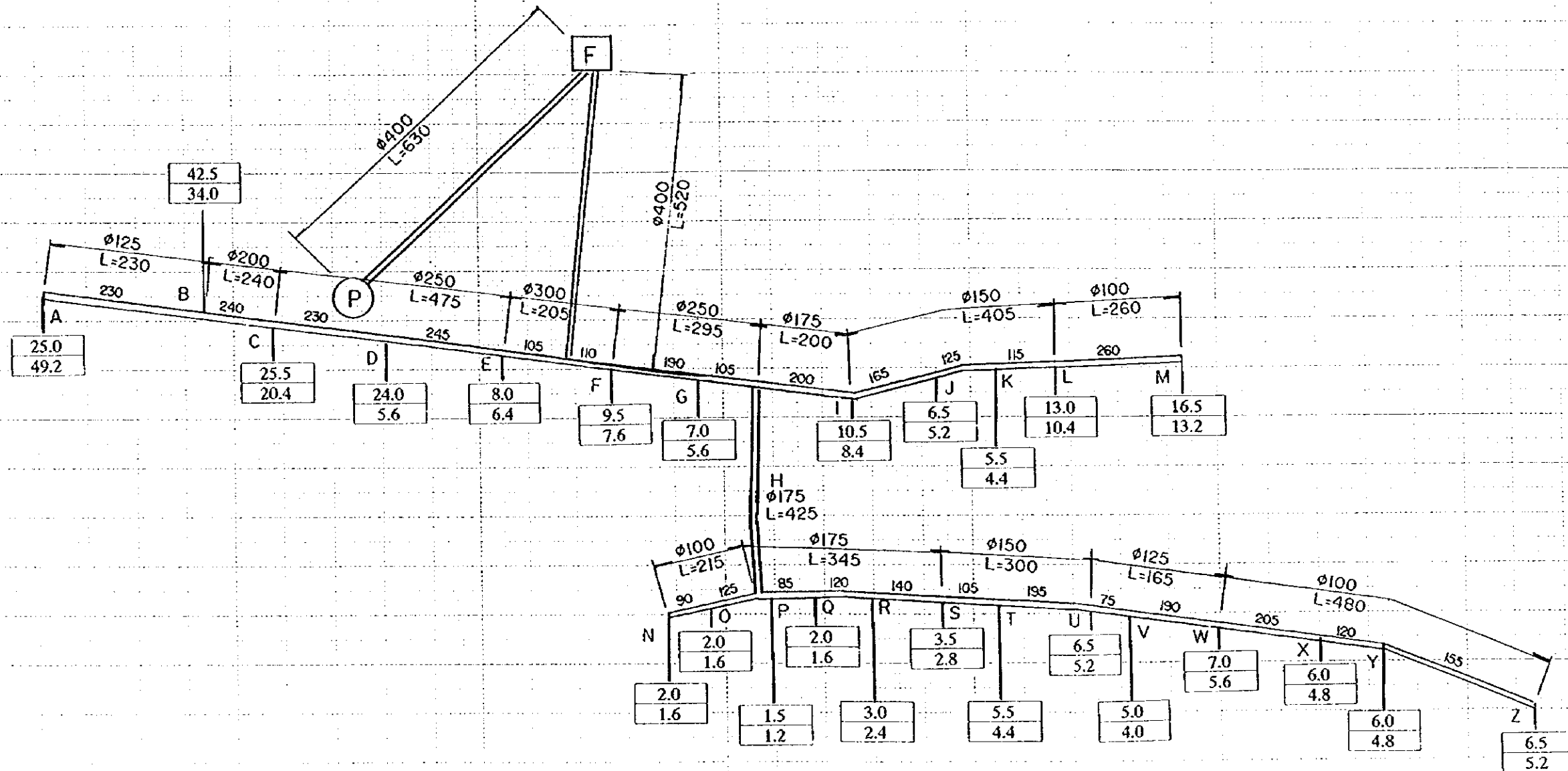
Interval	Discharge; Q		Horizontal Length L' (m)	Height H(m)	Canal slope	Min. Diameter D1(m)	Pipe Diameter D(mm)	Canal Length L(m)
	(l/s)	(m ³ /s)						
A	20	0.02	160.0	2.0	0.012500	0.035	350	160
B	40	0.04	520.0	7.0	0.013462	0.046	500	520
C	110	0.11	110.0	4.0	0.036364	0.082	900	110
D	160	0.16	230.0	1.0	0.004348	0.063	700	230
E	200	0.20	50.0	0.3	0.006000	0.073	800	50
F	40	0.04	130.0	0.5	0.003846	0.037	400	130
G	70	0.07	200.0	1.0	0.005000	0.047	500	200
H	30	0.03	235.0	6.0	0.025532	0.047	500	235
I	40	0.04	370.0	7.0	0.018919	0.049	500	370

Roughness Coefficient n = 0.015

Total Length of Every Pipe Diameter

Diameter D(mm)	Interval	Total Length(m)	Unit Price (1000TL/m)	Total Cost (1000TL/LS)
350	A	160	873	139,680
400	F	130	11,475	1,491,750
500	B, G, H, I	1,325	16,048	21,263,600
600			17,851	0
700	D	230	25,883	5,953,090
800	E	50	32,015	1,600,750
900	C	110	37,175	4,089,250
Total		2,005		34,538,120

ASLANLAR



A	ha
Q	l/s

= Farm Pond
 = Pump Station

Table F.1.2.15 Closed Pipeline of Iyaskoy Project

Case	line	Main Line						Σ
		1	2	3	4	5	6	
Eastern Side	D (mm)	100	100	125	125			
	L (m)	430	635	440	245			1,750
Western Side	D (mm)	100	100	100	125	200	200	
	L (m)	450	450	25	250	125	100	1,400
C	D (mm)	100	100	125	150			
	L (m)	310	310	180	225			1,025

TOTAL LENGTH FOR EVERY DIAMETER

D (mm)	L (m)
75	2,340
100	2,715
125	1,115
150	225
200	225
	6,620

Pipe Length for Every Diameter and Head Loss

23hr's/day Irrigation 0.673 (mm)
 Maximan Verocity 2.0 (m/s)

PUMP NO.	Main Line						Σ
	1	2	3	4	5	6	
A-	A (ha)	8.5	8.5	8.5	8.5		34
	L (m)	430	635	440	245		1,750
	Σ A (ha)	8.5	17	25.5	34		-
	Q (l/s)	5.72	11.44	17.16	22.88		57.2
	D (mm)	100	100	125	125		-
	V (m/s)	0.73	1.46	1.40	1.86		-
	h _k (m)	2.73	14.54	7.19	6.82		31.3
B-	A (ha)	5.0	5.0	5.0	10.0	50.0	75
	L (m)	450	450	25	250	125	1,300
	Σ A (ha)	5	10	15	25	75	80
	Q (l/s)	3.37	6.73	10.10	16.83	50.48	87.5
	D (mm)	100	100	100	125	200	200
	V (m/s)	0.43	0.86	1.29	1.37	1.61	1.71
	h _k (m)	1.07	3.86	0.45	3.94	1.52	1.37
C-	A (ha)	8.0	11.0	11.0	14.0		44
	L (m)	310	310	180	225		1,025
	Σ A (ha)	8	19	30	44		-
	Q (l/s)	5.38	12.79	20.19	29.61		68.0
	D (mm)	100	100	125	150		-
	V (m/s)	0.69	1.63	1.65	1.68		-
	h _k (m)	1.76	8.72	3.98	4.15		18.6

Pipe Length for Every Diameter and Head Loss

23hr's/day Irrigation 0.672 (mm)

Maximan Verocity 2.0 (m/s)

ILYASKOV-BURUSA

Line		Secondary Line						Pipe Length		
		1	2	3	4	5	6	Σ	φ (mm)	L(m)
A-1	A (ha)	2.5	3.0	3.0				8.5	75	220
	L (m)	105	100	15				220	100	0
	Σ A (ha)	2.5	5.5	8.5				-	125	0
	Q (l/s)	1.68	3.70	5.71				11.1	150	0
	D (mm)	75	75	75				-		
	V (m/s)	0.38	0.84	1.29				-		
	hk(m)	0.28	1.15	0.39				1.82		
A-2	A (ha)	4.0	4.5					8.5	75	105
	L (m)	90	15					105	100	0
	Σ A (ha)	4.0	8.5					-	125	0
	Q (l/s)	2.69	5.71					8.4	150	0
	D (mm)	75	75					-		
	V (m/s)	0.61	1.29					-		
	hk(m)	0.57	0.39					0.96		
A-3	A (ha)	4.0	4.5					8.5	75	105
	L (m)	90	15					105	100	0
	Σ A (ha)	4.0	8.5					-	125	0
	Q (l/s)	2.69	5.71					8.4	150	0
	D (mm)	75	75					-		
	V (m/s)	0.61	1.29					-		
	hk(m)	0.57	0.39					0.96		
A-4	A (ha)	4.0	4.5					8.5	75	105
	L (m)	90	15					105	100	0
	Σ A (ha)	4.0	8.5					-	125	0
	Q (l/s)	2.69	5.71					8.4	150	0
	D (mm)	75	75					-		
	V (m/s)	0.61	1.29					-		
	hk(m)	0.57	0.39					0.57		
B-1	A (ha)	2.5	2.5					5.0	75	65
	L (m)	60	5					65	100	0
	Σ A (ha)	2.5	5.0					-	125	0
	Q (l/s)	1.68	3.36					3.4	150	0
	D (mm)	75	75					-		
	V (m/s)	0.38	0.76					-		
	hk(m)	0.16	0.05					0.21		
B-2	A (ha)	2.5	2.5					5.0	75	65
	L (m)	60	5					65	100	0
	Σ A (ha)	2.5	5.0					-	125	0
	Q (l/s)	1.68	3.36					5.0	150	0
	D (mm)	75	75					-		
	V (m/s)	0.38	0.76					-		
	hk(m)	0.16	0.05					0.21		
B-3	A (ha)	2.5	2.5					5.0	75	65
	L (m)	60	5					65	100	0
	Σ A (ha)	2.5	5.0					-	125	0
	Q (l/s)	1.68	3.36					5.0	150	0
	D (mm)	75	75					-		
	V (m/s)	0.38	0.76					-		
	hk(m)	0.16	0.05					0.21		

B-4	A (ha)	10.0					10.0	75	5	
	L (m)	5					5	100	0	
	ΣA (ha)	10.0					-	125	0	
	Q (l/s)	6.72					6.7	150	0	
	D (mm)	75					-			
	V (m/s)	1.52					-			
	hk(m)	0.17					0.17			
B-5	A (ha)	2.5	2.5				5.0	75	65	
	L (m)	5	60				65	100	0	
	ΣA (ha)	2.5	5.0				-	125	0	
	Q (l/s)	1.68	3.36				5.0	150	0	
	D (mm)	75	75				-			
	V (m/s)	0.38	0.76				-			
	hk(m)	0.01	0.58				0.58			
C-1	A (ha)	5.0	3.0				8.0	75	320	
	L (m)	220	100				320	100	0	
	ΣA (ha)	5.0	8.0				-	125	0	
	Q (l/s)	3.36	5.38				8.7	150	0	
	D (mm)	75	75				-			
	V (m/s)	0.76	1.22				-			
	hk(m)	2.12	2.30				2.30			
C-2	A (ha)	5.5	5.5				11.0	75	415	
	L (m)	290	125				415	100	0	
	ΣA (ha)	5.5	11.0				-	125	0	
	Q (l/s)	3.70	7.39				11.1	150	0	
	D (mm)	75	75				-			
	V (m/s)	0.84	1.67				-			
	hk(m)	3.34	5.18				5.18			
C-3	A (ha)	6.0	5.0				11.0	75	445	
	L (m)	320	125				445	100	0	
	ΣA (ha)	6.0	11.0				-	125	0	
	Q (l/s)	4.03	7.39				11.4	150	0	
	D (mm)	75	75				-			
	V (m/s)	0.91	1.67				-			
	hk(m)	4.32	5.18				9.50			
C-4	A (ha)	9.0	5.0				14.0	75	360	
	L (m)	360	105				465	100	105	
	ΣA (ha)	9.0	14.0				-	125	0	
	Q (l/s)	6.05	9.41				15.5	150	0	
	D (mm)	75	100				-			
	V (m/s)	1.37	1.20				-			
	hk(m)	10.29	1.67				11.96			
Total							ΣA	108	75	2,340
							ΣL	2,445	100	105
								125	0	
								150	0	
								Total	2,445	

Pipe Length for Every Diameter

ILYASKOY-BURUSA

	Line	Secondary Line						Total	
		1	2	3	4	5	6	D(mm)	L(m)
A-1	D(mm)	75	75	75				75	220
	L(m)	105	100	15				100	0
A-2	D(mm)	75	75					75	105
	L(m)	90	15					100	0
A-3	D(mm)	75	75					75	105
	L(m)	90	15					100	0
A-4	D(mm)	75	75					75	105
	L(m)	90	15					100	0
B-1	D(mm)	75	75					75	65
	L(m)	60	5					100	0
B-2	D(mm)	75	75					75	65
	L(m)	60	5					100	0
B-3	D(mm)	75	75					75	65
	L(m)	60	5					100	0
B-4	D(mm)	75						75	5
	L(m)	5						100	0
B-5	D(mm)	75	75					75	65
	L(m)	5	60					100	0
C-1	D(mm)	75	75					75	320
	L(m)	220	100					100	0
C-2	D(mm)	75	75					75	415
	L(m)	290	125					100	0
C-3	D(mm)	75	75					75	445
	L(m)	320	125					100	0
C-4	D(mm)	75	100					75	360
	L(m)	360	105					100	105
Total								75	2,340
								100	105

ILYASKOY

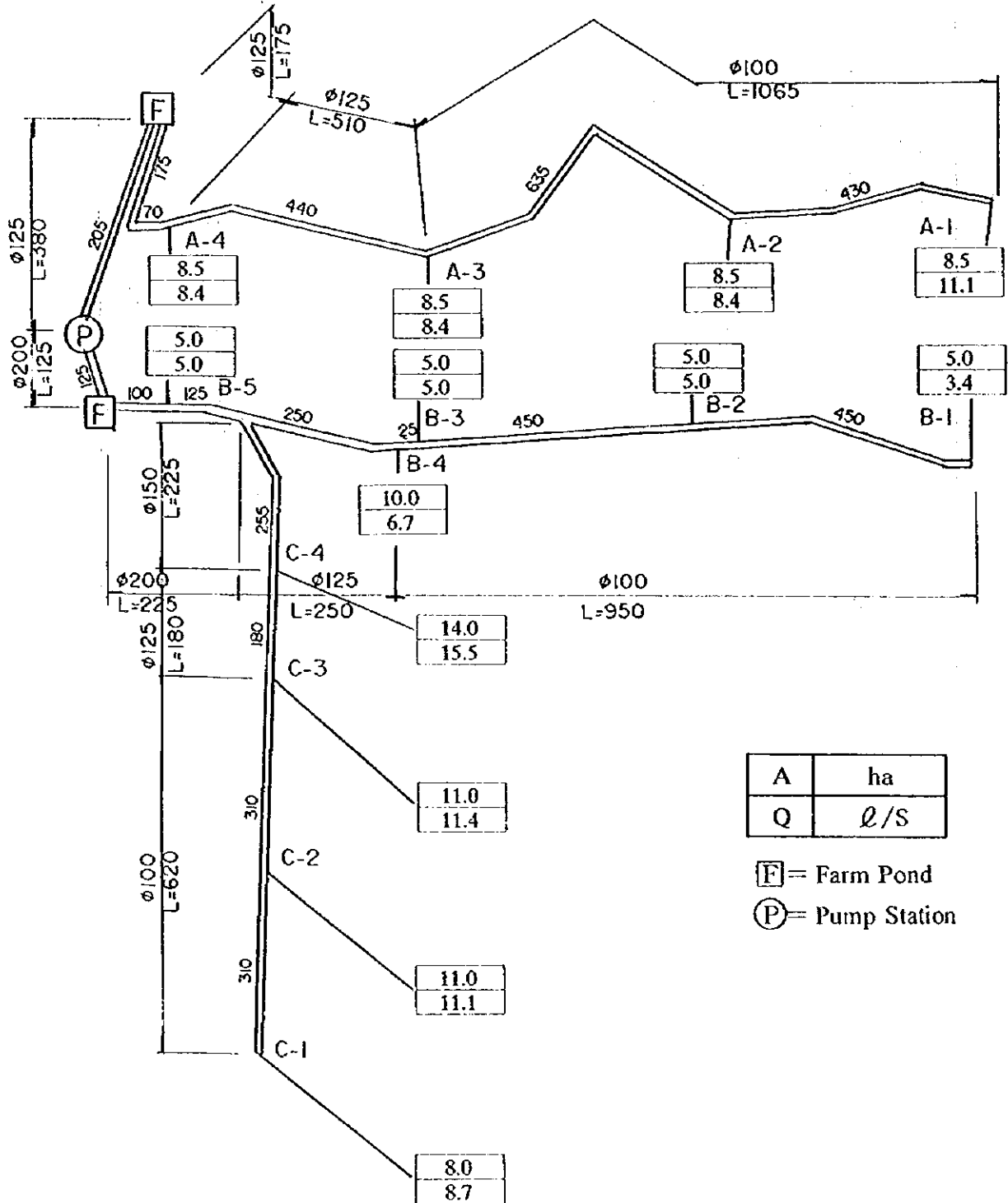


Table F.1.2.16 Closed Pipeline of K.Karistiran Project

DIAMETER AND LENGTH OF PIPE-LINE FOR EVERY PUMP AREA

PUMP NO.	Main Line												Other Lines														
	1	2	3	4	5	6	7	8	9	10	11	12	A	B	C	D	E	F	G	H	I	J	K	L	M	N	
①	D (mm)	100	100	100	100	100	100	100	100	125	125	150	100	100	100	100	100	100	100	100	100	100	100	100	100	100	
42985	L (m)	85	95	150	350	70	60	80	70	90	40	80	185	40	140	90	45	90	130	75	160	205	45	40	90	100	55
②	D (mm)	100	100	100	100	100	150						100	100	100												
42986	L (m)	105	215	90	200	70	200						365	120	115												
③	D (mm)	100	100	100									100	100	100	125	100	100									
42987	L (m)	0.3	0.52	0.68									140	50	105	70	120	90									
④	D (mm)	100	100	100	100	125	125						100	100	100	100	100	100	100	100	100	100	100	100	100		
42988	L (m)	220	90	135	55	130	100	100	125	130	100	100	70	100	150	125	85	50	120	75	135	95	155	50	50		

T 6

TOTAL LENGTH FOR EVERY DIAMETER

D (mm)	L (m)
100	6445
125	420
150	385

Pipe Length for Every Diameter and Head Loss

20hr's/day Irrigation 0.95 (mm)
Maximal Velocity 2.0 (m/s)

K. KARISTIRAN-ISTANBUL

PUMP NO.	Main Line													Other Lines													Pipe Length L(m)					
	1	2	3	4	5	6	7	8	9	10	11	12	Σ	A	B	C	D	E	F	G	H	I	J	K	L	M		N				
12985	A(ha)	2.5	1.8	1.3	4.7	0.7	0.5	0.9	0.6	0.7	3.8	1.2	12.7	31.6	4.7	2.4	0.7	0.5	1.4	0.8	1.0	1.1	1.2	0.9	2.2	5.8	0.5	6.4	100	2,355		
	L(m)	85	95	150	350	70	60	80	70	90	40	80	185	1,355	40	140	90	45	90	130	75	160	205	45	40	90	100	55	125	120		
	Σ A(N)	2.5	4.3	5.6	10.3	11.0	11.9	12.8	13.4	14.1	17.7	18.9	31.6	—	4.7	2.4	3.1	3.6	1.4	2.2	1.0	2.1	3.3	4.2	6.4	5.8	6.3	12.7	150	185		
	Q(l/s)	2.38	4.09	5.32	9.79	10.45	11.31	12.16	12.73	13.40	16.82	17.96	30.02	30.0	4.47	2.28	2.95	3.42	1.33	2.09	0.95	2.00	3.14	3.99	6.08	5.51	5.99	12.07	175	0		
	V(m/s)	0.30	0.52	0.68	1.25	1.33	1.44	1.55	1.62	1.71	1.37	1.46	1.70	—	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	100	200	0	
2	A(ha)	1.9	2.2	4.3	3.0	4.8	15.6	—	—	—	—	—	32	5.7	5.4	4.5	—	—	—	—	—	—	—	—	—	—	—	—	—	100	1,280	
	L(m)	105	215	90	200	70	200	—	—	—	—	—	880	365	120	115	—	—	—	—	—	—	—	—	—	—	—	—	—	125	0	
	Σ A(N)	1.9	4.1	8.4	11.4	16.0	31.6	—	—	—	—	—	—	5.7	11.1	15.6	—	—	—	—	—	—	—	—	—	—	—	—	—	150	200	
	Q(l/s)	1.81	3.90	7.98	10.83	15.20	30.02	—	—	—	—	—	30.0	5.42	10.55	14.82	—	—	—	—	—	—	—	—	—	—	—	—	—	—	175	0
	V(m/s)	0.23	0.50	1.02	1.28	1.94	1.70	—	—	—	—	—	—	0.69	1.24	1.89	—	—	—	—	—	—	—	—	—	—	—	—	—	200	0	
3	A(ha)	2.0	5.5	5.2	—	—	—	—	—	—	—	—	13	7.0	6.5	1.9	8.0	—	—	—	—	—	—	—	—	—	—	—	—	100	970	
	L(m)	55	135	275	—	—	—	—	—	—	—	—	465	140	50	105	70	120	90	—	—	—	—	—	—	—	—	—	—	125	70	
	Σ A(N)	2.0	7.5	12.7	—	—	—	—	—	—	—	—	—	7.0	13.5	15.4	23.4	1.9	8.0	—	—	—	—	—	—	—	—	—	—	150	0	
	Q(l/s)	1.96	7.13	12.07	—	—	—	—	—	—	—	—	12.1	6.65	12.83	14.63	22.23	1.81	7.60	—	—	—	—	—	—	—	—	—	—	175	0	
	V(m/s)	0.24	0.91	1.34	—	—	—	—	—	—	—	—	—	1.00	1.00	1.00	1.25	1.00	1.00	—	—	—	—	—	—	—	—	—	—	200	0	
4	A(ha)	4.0	4.6	2.0	2.5	1.0	3.4	8.0	—	—	—	—	8.3	1.17	1.42	3.79	1.85	0.99	0.97	—	—	—	—	—	—	—	—	—	—	—	—	—
	L(m)	220	90	135	55	130	130	100	—	—	—	—	860	70	100	150	125	85	50	120	75	135	95	155	50	—	—	—	—	125	230	
	Σ A(N)	4.0	8.6	10.6	13.1	14.1	17.5	25.5	—	—	—	—	—	4.6	2.0	3.1	5.1	6.8	8.0	1.0	1.4	2.4	4.6	4.6	1.5	6.1	—	—	—	150	0	
	Q(l/s)	3.80	8.17	10.07	12.45	13.40	16.63	24.23	—	—	—	—	24.2	4.37	1.90	2.95	4.85	6.46	7.60	0.95	1.33	2.28	4.37	1.43	5.80	—	—	—	—	175	0	
	V(m/s)	0.48	1.04	1.28	1.59	1.71	1.36	1.97	—	—	—	—	—	0.96	0.24	0.38	0.62	0.82	0.97	0.12	0.17	0.29	0.56	0.18	0.74	—	—	—	—	200	0	
Total	A(ha)	0.66	1.11	2.44	1.47	3.98	2.01	3.10	—	—	—	—	14.8	0.27	0.08	0.28	0.53	0.68	0.54	0.63	0.63	0.16	0.37	0.68	0.33	—	—	—	—	100	6,445	
	L(m)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	125	420
	Σ A(N)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	150	385
	Q(l/s)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	175	0
	V(m/s)	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	200	0

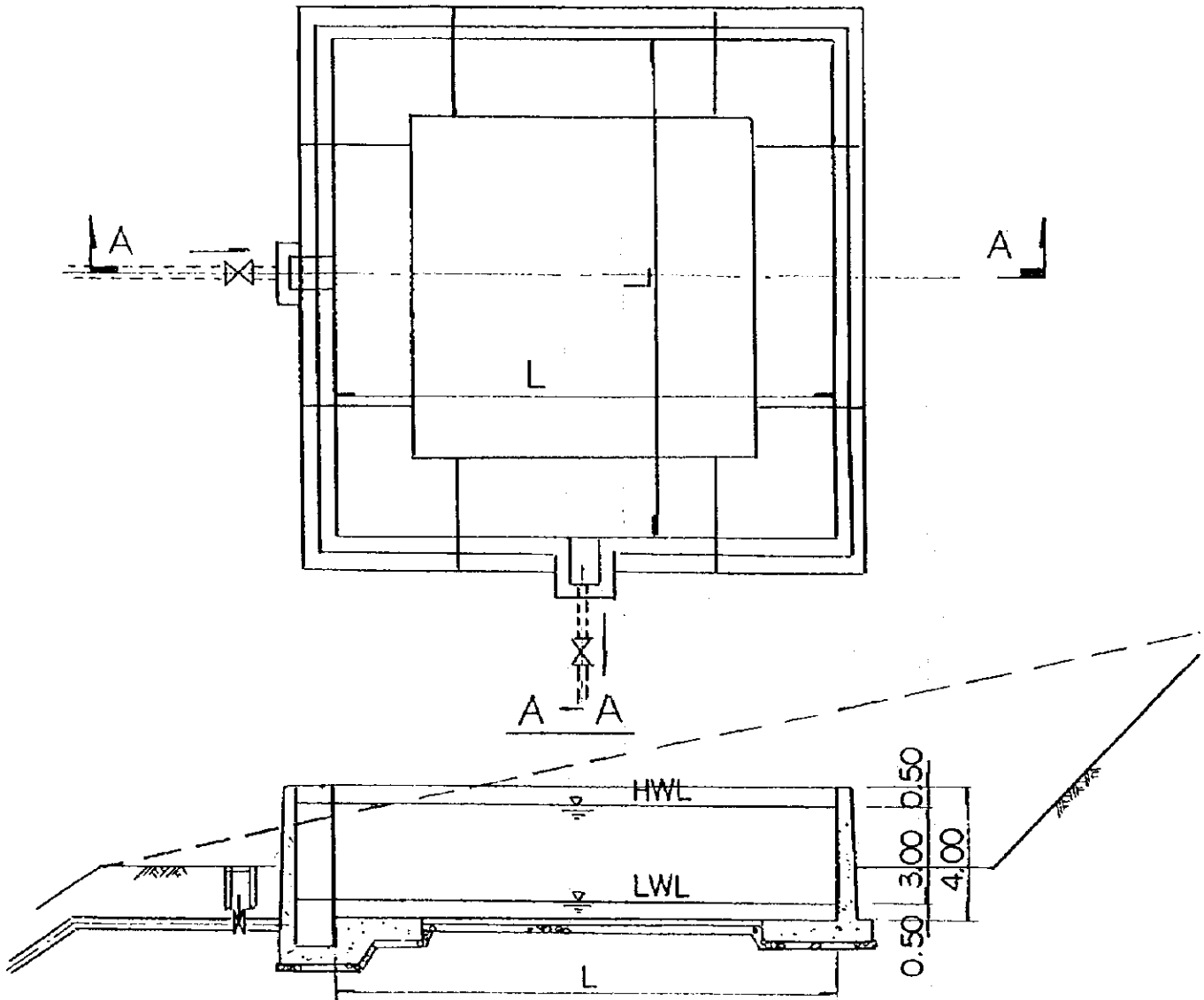
Additional Head of Every Pump

K. KARISTIRAN-ISTANBUL

PUMP No.	EL. of Sprinkler	Necessary Sprinkler	Material Pipe	Discharge from	Hydrant Loss	Pipe Line Head	Preliminary Head	Necessary Head	EL. of Pump	Water Depth	Water Level	Total Head H (m)
	EL1	h1(m)	h2(m)	Q(l/s)	h3(m)	h4(m)	h5(m)			(m)	W.L.	
42985	114.0	25.0	5.0	3.0	4.4	22.3	1.0	171.7	112.0	84	28	143.7
42986	118.0	25.0	5.0	3.0	4.4	12.5	1.0	165.9	107.0	69	38	127.9
42987	115.0	25.0	5.0	3.0	4.4	8.3	1.0	158.7	119.0	69	50	108.7
42988	113.0	25.0	5.0	3.0	4.4	14.8	1.0	163.2	115.0	75	40	123.2
AVG.	115.0	25.0	5.0	3.0	4.4	14.5	1.0	164.9	113.3	74.3	39.0	125.9

Table F.1.3.1 Reference Drawing of Farm Pond

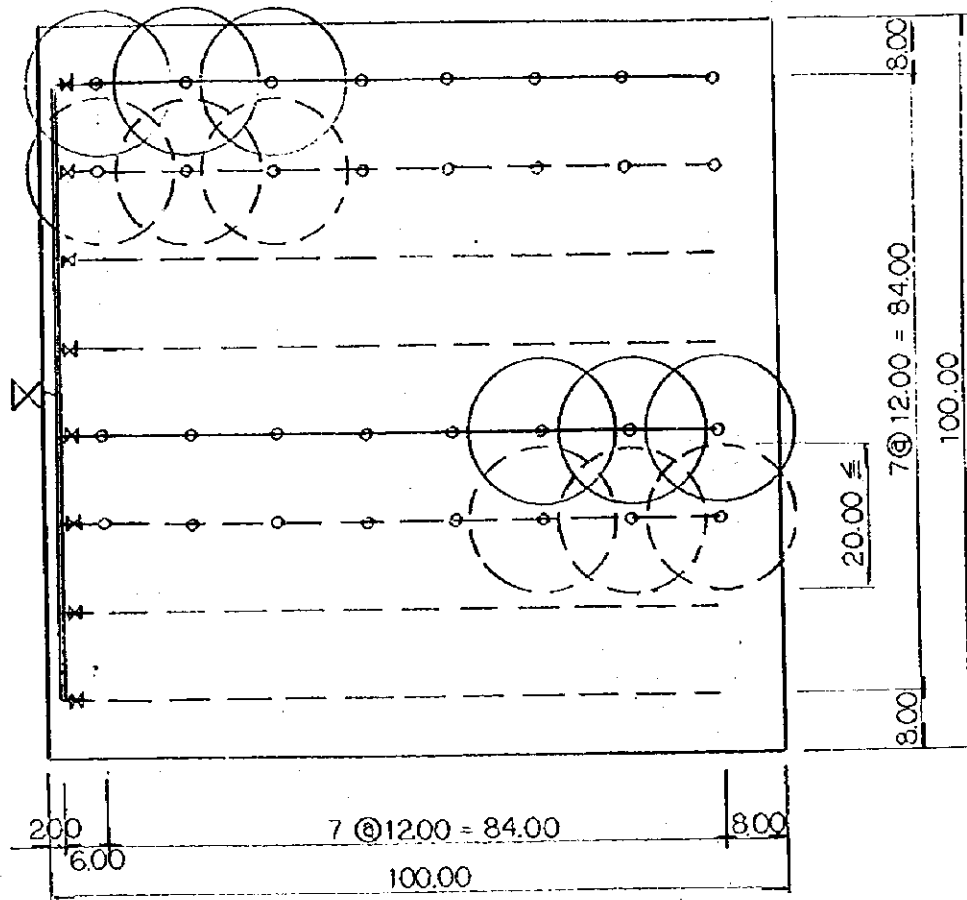
FARM POND



PROJECT	Pump Working (hr/day)	IRRIGATION (hr/day)	Discharge (m ³ /s)	Farm Pond Capacity (m ³)	Farm Pond Size L(m)	L.W.L	H.W.L
1) KALESEKISI-ADANA-FEATH-1	24	23	0.073	263	9.4	1,141	1,144
2) KALESEKISI-ADANA-FEATH-2	24	23	0.080	288	9.8	1,259	1,262
3) ASLANLAR-IZMIR	24	23	0.200	720	15.5	104	107
4) ILYASKOY-BURSA(EASTERN SIDE)	24	22	0.023	167	7.5	269	272
5) ILYASKOY-BURSA(WESTERN SIDE)	24	22	0.050	364	11.1	245	248

Table F. 1. 4. 1 Reference Drawing of Sprinkler Irrigation System

Standard type of sprinkler facility



Pitch of sprinkler	$L_1 = 12.00\text{m}$
Pitch of lateral pipe	$L_2 = 12.00\text{m}$
Diameter of wetted width	$D = 20.00 \sim 35.00\text{m}$
Pressure	$P = 2.0 \sim 3.0 \text{ kg/cm}^2$

Sprinkler facility

On-farm main pipe	PE D100mm	L= 84.00m
Lateral Pipe	PE D 75mm	L =168.00m
Riser Pipe	PE D20mm	L = 8.0m
Valve	D75mm	n = 8pice
Sprinkler Head		n = 16pice

F.2 Cost Estimation

Table F.2.1.1 Construction Cost of Hacilar Project

Serial No.	Code No.	Description	Unit	Amount	Unit Price (1,000TL)	Total Price (1,000TL)	L.C. (1,000TL)	F.C. (1,000TL)
1) Mobilization			LS	1	670,000	670,000	603,000	67,000
2) Water Source Facilities								
1		Pump House and Base Structure for Centrifugal Pump	m ²	84	70,548	5,926,032	4,740,826	1,185,206
2	36.KCH/23	Multi-level Horizontal Shaft Electric Motor Pump	piece	5	51,920,230	25,961,650	18,173,155	7,788,495
3		Pump Control system	LS	1	259,617	259,617	155,770	103,847
4	15.001/KCH	Machine Excavation	m ³	3,306	73	241,338	168,937	72,401
5	16.002/1-B	Reinforced Concrete Manufacturing	m ³	335	5,435	1,820,725	1,274,508	546,218
6	23.001/1	Reinforcement	t	16,8	77,516	1,302,069	781,361	520,708
7		Others	%	10	35,511,631	3,551,163	2,840,990	710,173
8		Transportation	LS	1		5,859,419	5,273,477	585,942
		Sub-Total				44,922,213	33,408,964	11,513,249
3) Water Conveyance Facilities								
9		Water Distribution Pond	m ³	1,080	6,681	7,215,428	5,772,342	1,443,086
10		Steel Pipe D300mm	m	40	11,459	458,360	320,852	137,508
11		Steel Pipe D400mm	m	1,059	14,257	15,098,163	10,568,714	4,529,449
12		Steel Pipe D500mm	m	1,825	15,601	28,471,825	19,500,278	8,971,548
13		Steel Pipe D550mm	m	708	17,285	12,151,355	8,905,949	3,245,407
14		Steel Pipe D1000mm	m	2,510	18,754	47,072,540	32,860,778	14,211,762
15		PVC Pipe D100mm	m	12,976	1,549	20,099,894	12,059,894	8,039,999
16		PVC Pipe D125mm	m	5,040	1,573	7,927,920	4,756,752	3,171,168
17		PVC Pipe D150mm	m	1,882	2,056	3,869,902	2,321,035	1,547,757
18		PVC Pipe D200mm	m	2,078	2,444	5,078,652	3,047,179	2,031,473
19		PVC Pipe D250mm	m	5,057	17,208,971	87,126,971	50,325,383	36,801,588
20		PVC Pipe D300mm	m	633	3,471	2,197,143	1,318,286	878,857
21		PVC Pipe D350mm	m	605	4,199	2,540,395	1,524,217	1,016,178
22		PVC Pipe D400mm	m	2,273	11,259,083	25,490,083	14,529,480	10,960,603
23		PVC Pipe D500mm	m	890	6,458,799	5,748,799	3,875,258	1,873,541
24		PVC Pipe D600mm	m	2,688	7,398	19,855,824	11,601,494	7,954,330
25	36.KCH-163	Irrigation Hydrant A	piece	156	121,972	19,007,592	14,343,856	4,663,736
26		Air Valve	piece	46	23,000	1,058,000	634,800	423,200
27		Others	%	10	231,998,012	23,199,801	18,559,841	4,639,960
28		Transportation	LS	1		38,279,672	34,451,705	3,827,967
		Sub-Total				293,477,485	203,978,683	89,498,802
4) On-farm Facilities (Sprinkler System)								
29		On-farm Main Pipe PE D100mm	ha	522	400	17,599,200	14,031,360	3,567,840
30		Lateral Pipe PE D75mm	m	43,948	200	8,789,600	7,153,200	1,636,400
31		Riser Pipe PE D200mm	m	87,696	60	5,261,760	4,384,800	876,960
32		Valve D75mm	piece	4,176	1,000	4,176,000	3,340,800	835,200
33		Sprinkler Head	piece	8,352	2,000	16,704,000	13,360,200	3,343,800
34		Others	%	10	56,208,560	5,620,856	4,496,717	1,124,139
		Sub-Total				61,429,856	49,463,885	11,965,971
5) Demobilization			LS	1	270,000	270,000	243,000	27,000
6) Land Acquisition			ha	0.4	2,100,000	840,000	840,000	0
7) Land Compensation			ha	2.0	1,680,000	3,360,000	3,360,000	0
		Sub-Total				4,200,000	4,200,000	0
8) Design								
9) Supervision								
		Sub-Total-1				405,669,554	291,897,511	113,772,043
10) Contingency								
		Sub-Total-2 (including Design, Supervision)				40,556,955	32,459,564	8,107,391
		Sub-Total				20,268,478	16,214,782	4,053,696
		Sub-Total				60,805,403	48,644,347	12,161,057
		Sub-Total-3 (including Design, Supervision)				466,174,987	340,561,838	125,613,149
		Total				23,548,749	17,027,093	6,521,656
		Maintenance				489,481,796	357,568,951	131,912,845
						405,370	291,898	113,472

Table F.2.1.2 Construction Cost of Urulu Project.

Serial No.	Code No.	Description	Unit	Amount	Unit Price (1,000TL)	Total Price (1,000TL)	L.C. (1,000TL)	V.C. (1,000TL)
1) Mobilization								
2) Water Source Facilities								
1		Submersible Pump	piece	8	2,220,750	17,766,320	13,324,740	4,441,580
2		Pump Berrick and Base Structure for Submersed Pump	piece	8	71,814	574,512	517,061	57,451
3		Electric facilities for Deep Well Pump	piece	8	2,455,795	19,486,358	13,640,451	5,845,907
4		Others	%	10	37,827,150	3,782,715	3,026,175	756,544
5		Transportation	LS	1	6,241,486	6,241,486	5,617,137	624,349
		Sub-Total			47,851,955	47,851,955	36,125,764	11,725,631
3) Water Conveyance Facilities								
6		PVC Pipe 100mm	m	9,050	1,549	14,018,450	8,411,070	5,607,380
7		PVC Pipe 125mm	m	3,800	2,056	7,812,800	4,687,680	3,125,120
8		PVC Pipe 150mm	m	1,910	2,444	4,668,040	2,800,824	1,867,216
9		PVC Pipe 175mm	m	1,165	3,405	3,964,485	2,378,697	1,585,798
10		PVC Pipe 200mm	m	1,565	4,737,915	7,407,915	4,642,749	2,765,166
11	36.NH-163	Irrigation Hydrant A	piece	46	121,972	5,610,692	3,366,415	2,244,277
12		Air Valve	piece	22	23,000	506,000	303,600	202,400
13		Others	%	10	40,812,392	4,081,239	3,294,991	816,248
14		Transportation	LS	1	52,209,576	52,209,576	46,124,951	6,084,625
		Sub-Total			140,824,945	140,824,945	118,024,599	22,800,346
4) On-farm Facilities (Sprinkler Systems)								
15		On-farm Main Pipe PE D100mm	ha	463	400	185,200	124,999,200	3,124,800
16		Lateral Pipe PE D75mm	m	78,120	200	15,624,000	12,499,200	3,124,800
17		Kiser Pipe PE D30mm	m	3,720	60	223,200	178,560	44,640
18		Valve D75mm	piece	3,720	1,000	3,720,000	2,976,000	744,000
19		Sprinkler Head	piece	7,440	2,000	14,880,000	11,904,000	2,976,000
20		Others	%	10	50,071,200	5,007,120	4,005,696	1,001,424
		Sub-Total			55,078,320	55,078,320	44,062,656	11,015,664
5) Demobilization								
6)		Land Acquisition	LS	1	270,000	270,000	243,000	27,000
7)		Land Compensation	ha	0.0	1,725,000	0	0	0
		Sub-Total		1.0	1,380,000	1,380,000	1,380,000	0
8) Design								
9)		Supervision	ha	1.0	137,459,291	137,459,291	116,599,397	20,859,894
		Sub-Total			137,459,291	137,459,291	116,599,397	20,859,894
10) Contingency								
		Sub-Total-1 (Including Design, Supervision)			15,745,929	15,745,929	12,596,743	3,149,186
		Sub-Total-2 (Including Design, Supervision)			7,872,965	6,298,372	5,038,702	1,259,670
		Sub-Total			23,618,894	23,618,894	18,895,115	4,723,779
		Total			381,078,183	381,078,183	333,494,512	47,583,671
		Maintenance			9,033,009	6,774,726	5,379,184	1,395,542
		Total			190,112,094	142,269,238	116,599	47,979,213
		Maintenance			157,459	116,599	40,860	116,599

Table F.2.1.3 Construction Cost of Kalesekisi Project(Phase-1)

Serial No.	Code No.	Description	Unit	Amount	Unit Price (1,000TL)	Total Price (1,000TL)	L.C. (1,000TL)	F.C. (1,000TL)
1) Mobilization			LS	1	670,000	670,000	603,000	67,000
2) Water Source Facilities								
1		Pump House and Base Structure for Centrifugal Pump	m ²	80	70,548	5,643,840	4,515,072	1,128,768
2	3-15.001/KH	Multi-level Horizontal Shaft Electric Motor Pump	piece	3	1,590,160	4,770,480	3,339,336	1,431,144
3	4-16.002/1-B	Machine Excavation	m ³	2,400	73	175,200	122,640	52,560
4	5-17.001/1	Reinforced Concrete Manufacturing	m ³	6,8	77,516	527,109	316,265	210,844
5		Reinforcement	t	1	95,410	95,410	57,246	38,164
6		Pump Control system	LS	240	2,532	607,680	455,760	151,920
7		Race Way	m	25	10,414,320	2,603,580	2,082,864	520,716
8		Others	%	25	1,041,432	2,603,580	2,082,864	520,716
9		Transportation	LS	1	17,608,223	17,608,223	13,608,870	3,999,353
		Sub-Total						
3) Water Conveyance Facilities								
10		Pump Pond	LS	1	3,239,041	3,239,041	2,591,233	647,808
11		Steel Pipe 250mm (Naked Type)	m	335	8,337,480	2,812,818	2,418,118	394,700
12		PVC D75mm	m	3,461	1,098	3,800,378	2,214,227	1,476,151
13		PVC D100mm	m	1,532	1,549	2,373,448	1,412,269	941,179
14		PVC D125mm	m	460	2,056	945,800	592,128	353,672
15		PVC D150mm	m	0	2,444	0	0	0
16		PVC D175mm	m	420	3,403	1,429,260	857,556	571,704
17		PVC D200mm	m	560	3,471	1,943,760	1,166,256	777,504
18		PVC D225mm	m	1,600	4,159	6,654,400	4,031,040	2,623,360
19		PVC D250mm	m	300	4,071	1,221,300	894,780	326,520
20		PVC D300mm	m	790	7,257	5,733,030	3,489,818	2,243,212
21		PVC D350mm	m	700	7,598	5,318,600	3,107,160	2,071,440
22	36-KH-163	Irrigation Hydrant B	piece	76	30,693	2,332,468	1,390,481	926,987
23		Air Valve	piece	11	23,000	253,000	151,800	101,200
24		Others	%	15	41,554,045	6,233,107	4,986,486	1,246,621
25		Transportation	LS	1	9,557,430	9,557,430	8,601,687	955,743
		Sub-Total						
4) On-farm Facilities (Drip System)								
26		Control Unit	ha	100	100,100	10,010,000	4,004,000	6,006,000
27		Screens	piece	100	3,400	340,000	136,000	204,000
28		Bell Valve	piece	100	5148	514,800	205,920	308,880
29		PE T-shaped Attachment D25mm	piece	240	607,750	145,860	58,320	87,540
30		PE Pipe D50mm	m	9,000	559,845	5,038,605	243,100	3,646,505
31		Drip Tube 20mm	m	245,000	47	11,565,500	223,938	335,907
32		Others	%	10	23,593,945	2,359,395	4,624,620	6,969,300
		Sub-Total						
5) Demobilization			LS	1	270,000	270,000	243,000	27,000
6) Land Acquisition			ha	0.1	1,275,000	127,500	127,500	0
7) Land Compensation			ha	0.5	1,020,000	511,816	511,816	0
		Sub-Total						
		Sub-Total 1						
8) Design								
9) Supervision								
		Sub-Total						
10) Contingency								
		Sub-Total 2 (Including Design, Supervision)						
		Total						
		Maintenance						
		Sub-Total						

Table F.2.1.4 Construction Cost of Kalesekisi Project(Phase-2)

Serial No.	Code No.	Description	Unit	Amount	Unit Price (1,000TL)	Total Price (1,000TL)	L.C. (1,000TL)	F.C. (1,000TL)
1) Mobilization			LS	670,000	670,000	670,000	670,000	670,000
2) Water Sources								
		Water Source Facilities						
1		Pump House and Base Structure for Centrifugal Pump	m ²	0	70,548	0	0	0
2		Multilevel Horizontal Shaft Electric Motor Pump	piece	3	3,008,720	9,026,160	6,318,312	2,707,848
3		Pump Control system	LS	1	180,523	180,523	180,523	72,209
4		Others	%	15	9,026,160	1,353,924	1,083,139	270,785
5		Transportation	LS	1		2,457,190	2,211,471	245,719
		Sub-Total			13,017,797		9,721,236	3,296,561
3) Water Conveyance								
		Water Conveyance Facilities						
6		Farm Pond	LS	1	3,340,818	3,340,818	2,706,254	676,564
7		Steel Pipe 250mm (Naked Type)	m	685	24,888	17,048,280	11,081,380	5,966,900
8		PVC D75mm	m	4,003	1,098	4,395,294	2,637,178	1,758,116
9		PVC D100mm	m	338	1,549	521,562	314,137	209,425
10		PVC D125mm	m	480	2,056	986,880	590,128	394,752
11		PVC D150mm	m	0	2,444	0	0	0
12		PVC D175mm	m	420	3,403	1,429,260	857,556	571,704
13		PVC D200mm	m	300	1,471	1,110,720	666,432	444,288
14		PVC D225mm	m	0	4,199	0	0	0
15		PVC D250mm	m	1,940	4,971	9,643,740	5,786,244	3,857,496
16		PVC D300mm	m	970	7,237	7,019,290	4,223,574	2,815,716
17		PVC D350mm	m	760	7,398	5,622,480	3,379,488	2,248,992
18		Steel Pipe D400mm	m	50	14,257	712,850	498,995	213,855
19	36,1KH-163	Irrigation Hydrant B	piece	78	30,469	2,378,454	1,427,072	951,382
20		Air Valve	piece	12	21,000	276,000	165,600	110,400
21		Others	%	15	54,549,628	8,182,444	6,543,953	1,638,490
22		Transportation	LS	1		12,546,414	11,291,775	1,254,641
		Sub-Total			75,278,486		52,167,657	23,110,719
4) On-farm Facilities (Drp System)								
23		Control Unit	ha	110	102,100	11,011,000	4,404,400	6,606,600
24		Screens	LS	110	3,400	374,000	149,600	224,400
25		Ball Valve	piece	330	51,48	1,698,840	679,536	1,019,304
26		PE T-shaped Attachment D25mm	piece	2,750	243	668,250	267,410	401,115
27		PE Pipe D50mm	m	62	61,590	3,818,580	246,332	3,599,498
28		Drip Tube 20mm	m	269,500	47	12,717,750	5,087,082	7,630,668
29		Others	%	10	27,085,900	2,708,590	1,683,456	1,025,134
		Sub-Total			270,000	29,794,400	11,917,796	17,876,604
5) Demobilization			LS	1		270,000	243,000	27,000
6) Land Acquisition			ha	0.1	1,275,000	127,500	127,500	0
7) Land Compensation			ba	0.6	1,020,000	612,000	612,000	0
		Sub-Total			799,500	799,500	799,500	0
8) Design						319,770,273	75,392,999	64,377,274
9) Supervision						11,977,027	9,381,622	2,595,405
		Sub-Total				5,988,514	4,790,811	1,197,703
		Sub-Total				17,965,541	14,372,433	3,593,108
		Sub-Total-1 (including Design, Supervision)				137,733,814	89,764,732	47,971,082
		Sub-Total-2 (including Design, Supervision)				6,886,791	4,488,237	2,398,554
10) Contingency						144,627,605	94,252,969	50,369,636
		Total				119,770	75,392	44,378
		Maintenance						

Table F.2.1.5 Construction Cost of Camlibel Project

Serial No.	Code No.	Description	Unit	Amount	Unit Price (1,000TL)	Total Price (1,000TL)	L.C. (1,000TL)	F.C. (1,000TL)
1) Mobilization								
1		Water Conveyance Facilities	LS	1	670,000	670,000	603,000	67,000
2		1) Mobilization						
1		1) Mobilization	m	8,000	1,831	14,648,000	10,986,000	3,662,000
2		2) Mobilization	m	2,400	1,962	4,708,800	3,531,600	1,177,200
3		3) Mobilization	m	7,750	2,202	17,055,500	12,799,125	4,266,375
4		4) Mobilization	m	2,700	2,532	6,836,400	5,127,300	1,709,100
5		5) Mobilization	%	10	43,258,700	432,587,000	3,460,696	865,174
6		6) Mobilization	LS	1	7,137,686	71,376,860	6,423,917	713,769
		Sub-Total			54,722,256	547,222,560	423,228,638	123,993,618
2) Drainage								
7		1) Drainage	m	16,800	471	7,912,800	5,143,320	2,769,480
8		2) Drainage	m	2,900	481	1,394,900	1,255,410	139,490
9		3) Drainage	ha	45	821,000	36,945,000	29,556,000	7,389,000
10		4) Drainage	%	10	9,307,700	93,077,000	744,616	186,154
11		5) Drainage	LS	1	7,077,521	70,775,210	6,369,769	707,752
		Sub-Total			54,260,991	542,609,910	433,069,115	111,191,876
3) Farm Road								
12		1) Farm Road	m	41,500	188	7,802,000	6,241,600	1,560,400
13		2) Farm Road	m	6,100	235	1,433,500	1,146,800	286,700
14		3) Farm Road	%	10	9,235,500	92,355,000	738,840	184,710
15		4) Farm Road	LS	1	1,523,858	15,238,580	1,371,472	152,386
		Sub-Total			11,682,908	116,829,080	9,498,712	2,184,196
4) Land Leveling, Land Reclamation								
16		1) Land Leveling	ha	1,398	10,281	14,372,838	10,060,987	4,311,851
17		2) Land Leveling	%	30	14,372,838	431,185,140	3,449,481	862,370
18		3) Land Leveling	LS	1	2,802,703	28,027,030	2,522,433	280,270
		Sub-Total			21,487,392	214,873,920	16,032,900	5,454,492
5) Village Improvement								
19		1) Village Improvement	ha	10	1,300,000	13,000,000	10,400,000	2,600,000
20		2) Village Improvement	LS	1	2,800,000	28,000,000	2,240,000	560,000
21		3) Village Improvement	%	20	15,800,000	316,000,000	2,528,000	632,000
22		4) Village Improvement	LS	1	2,844,000	28,440,000	2,559,600	284,400
		Sub-Total			21,804,000	218,040,000	17,727,600	4,076,400
6) On-farm		Surface irrigation (Soil canal)	ha	1,366	60,000	81,960,000	81,960,000	0
7) Demobilization			LS	1	270,000	2,700,000	243,000	27,000
8) Land Acquisition			ha	0.00	1,500,000	0	0	0
9) Land Compensation			ha	0.00	1,200,000	0	0	0
		Sub-Total			246,857,547	246,857,547	211,462,966	35,394,581
10) Design								
		Sub-Total-1			24,085,755	240,857,550	19,748,604	4,337,146
		Sub-Total-2 (including Design, Supervision)			12,342,877	123,428,770	9,874,302	2,468,575
		Sub-Total			37,028,632	370,286,320	29,622,906	7,405,726
11) Supervision								
		Sub-Total			283,886,179	2,838,861,790	2,410,858,711	428,003,079
12) Contingency								
		Sub-Total-2 (including Design, Supervision)			14,196,309	141,963,090	12,054,294	2,142,015
		Total			298,080,488	2,980,804,880	253,140,165	44,940,323
		Maintenance			493,715	4,937,150	422,920	70,789

Table F.2.1.6 Construction Cost of Kozluk Project

Serial No.	Code No.	Description	Unit	Amount	Unit Price (1,000TL)	Total Price (1,000TL)	L.C. (1,000TL)	F.C. (1,000TL)
1) Mobilization			LS	1	670,000	670,000	603,000	67,000
2) Water Source Facilities (Weir)								
1		Machine Excavation	m ³	1,626	73	118,535	82,975	35,561
2		Reinforced Concrete Manufacturing	m ³	372	5,435	2,021,620	1,415,274	606,346
3		Reinforcement	t	1,865	77,516	144,180	86,508	57,672
4		Concrete Manufacturing	m ³	1,665	4,721	7,860,465	5,502,326	2,358,140
5		Wet Masonry	m ³	916	1,574	1,441,479	1,225,257	216,222
6		Sheet Pile Lx5.0m	m	66	46,510	3,069,660	1,841,796	1,227,864
7		Sheet Pile Lx3.0m	m	76	27,906	2,120,856	1,272,514	848,342
8		Steel Gate 1.50m*4.0m	LS	1	353,473	353,473	265,105	88,368
9		Steel Gate 1.5m*1.5m	LS	1	104,647	104,647	78,485	26,162
10		Others	%	10	17,235,115	1,723,512	1,378,810	344,702
11		Transportation	LS	1		2,843,794	2,559,415	284,379
		Sub-Total				21,802,421	15,708,463	6,093,958
3) Water Conveyance Facilities								
12		Main Canal (Rectangular) (500/s)	m	1,100	7,688	8,456,800	6,342,600	2,114,200
13		Main Canal (Trapezoid) (500/s)	m	8,800	3,602	31,697,600	23,773,200	7,924,400
14		Main Canal (Closed Rectangular) (500/s)	m	600	14,118	8,470,800	6,353,100	2,117,700
15		AC Trapezoid Canal	m	0	0	0	0	0
16		Y1 Trapezoid Canal (300/s)	m	300	2,778	833,400	625,050	208,350
17		Y1T1 Trapezoid Canal (200/s)	m	11,700	2,238	26,184,600	19,638,450	6,546,150
18		100/s Canals	m	9,800	2,065	20,237,000	15,177,750	5,059,250
19		Others	%	10	95,880,200	9,588,020	7,670,416	1,917,604
20		Transportation	LS	1		15,820,233	14,238,210	1,582,023
		Sub-Total				121,288,453	93,818,776	27,469,677
4) Water Conveyance Facilities (Others)								
20		Machine Excavation	m ³	83,400	73	6,088,200	4,261,740	1,826,460
21		First Type Aqueduct	piece	32	101,003	3,232,096	2,424,072	808,024
22		Second Type Aqueduct	piece	29	61,327	1,778,483	1,333,862	444,621
23		Field Water Diversion	piece	500	7,539	3,769,500	3,015,600	753,900
24		Others	%	10	8,780,079	878,008	702,406	175,602
25		Transportation	LS	1		1,448,713	1,303,842	144,871
		Sub-Total				17,195,000	13,041,522	4,153,478
		Sub-Total (Water Conveyance Facilities)				138,483,453	106,860,298	31,623,155
5) On-farm		Surface Irrigation (Soil canal)	ha	550	60,000	33,000,000	33,000,000	0
6) Mobilization			LS	1	270,000	270,000	243,000	27,000
7) Land Acquisition			ha	21.6	1,125,000	24,300,000	24,300,000	0
8) Land Compensation			ha	10.8	900,000	9,720,000	9,720,000	0
		Total				34,020,000	34,020,000	0
		Sub-Total-1				228,245,874	190,434,761	37,811,113
9) Design								
10) Supervision								
		Total				22,824,587	18,259,670	4,564,917
		Sub-Total-2 (including Design, Supervision)				11,412,294	9,129,835	2,282,459
		Total				34,226,881	27,389,505	6,847,376
11) Contingency								
		Total				262,482,755	217,824,266	44,658,489
		Sub-Total-3				13,124,138	10,891,213	2,232,924
		Total				275,606,893	228,715,479	46,891,413
		Maintenance				456,492	380,870	75,622

Table F.2.1.7 Construction Cost of Kuskara Project

Serial No.	Code No.	Description	Unit	Amount	Unit Price (1,000TL)	Total Price (1,000TL)	L.C. (1,000TL)	F.C. (1,000TL)
1) Mobilization			LS	1	670,000	670,000	603,000	67,000
2) Terrace Work								
1		Terrace Work A (Slope 6%, B=20.6m)	ha	44.1	106,415	4,692,921	4,223,629	469,292
2		Terrace Work B (Slope 8%, B=11.8m)	ha	72.8	87,120	6,342,370	5,708,133	634,237
		Others	%	10	11,035,291	1,103,529	772,470	331,059
		Transportation	LS	1	1,820,822	1,820,822	1,638,741	182,082
		Sub-Total			13,959,643	13,959,643	12,342,973	1,616,670
3) Water Conveyance Facilities								
1		Open Canals (including Diversion Work, Bridge, and so on)	m	3,325	2,850	9,476,250	7,107,188	2,369,063
		Others	%	10	9,476,250	947,625	663,338	284,288
		Transportation	LS	1	1,565,581	1,565,581	1,407,223	158,358
		Sub-Total			11,987,456	11,987,456	9,177,749	2,809,707
4) Farm Road								
1		Farm Road B=3.00m	m	3,100	1,028	3,186,800	2,549,440	637,360
2		Farm Road B=8.00m	m	1,000	1,387	1,387,000	1,109,600	277,400
		Others	%	10	4,573,800	457,380	320,166	137,214
		Transportation	LS	1	754,677	754,677	679,209	75,468
		Sub-Total			5,785,857	5,785,857	4,658,415	1,127,442
5) On-farm Surface Irrigation (Soil canal)			ha	117	60,000	7,020,000	7,020,000	0
6) Mero-rillabilization			LS	1	270,000	270,000	243,000	27,000
7) Land Acquisition			ha	3.5	1,275,000	4,462,500	4,462,500	0
8) Land Compensation			ha	1.8	1,020,000	1,836,000	1,836,000	0
		Sub-Total			6,298,500	6,298,500	6,298,500	0
		Sub-Total-1			45,991,656	45,991,656	40,343,637	5,647,821
9) Design								
10) Supervision								
		Sub-Total-2 (Including Design, Supervision)			4,599,146	4,599,146	3,679,316	919,829
		Sub-Total			2,299,573	2,299,573	1,839,658	459,915
		Sub-Total-2 (Including Design, Supervision)			6,898,719	6,898,719	5,518,975	1,379,744
		Sub-Total			52,890,175	52,890,175	45,862,612	7,027,563
11) Contingency								
		Total			2,644,609	2,644,609	2,293,131	351,378
		Maintenance			55,534,664	55,534,664	48,155,743	7,378,921
		Sub-Total			91,983	91,983	80,687	11,296

Table F.2.1.8 Construction Cost of Ozdenk Project

Serial No.	Code No.	Description	Unit	Amount	Unit Price (1,000TL)	Total Price (1,000TL)	L.C. (1,000TL)	F.C. (1,000TL)
1) Mobilization			LS	1	1,340,000	1,340,000	1,340,000	
2) Water Source Facilities								
2-1) Dam Body								
1	15.301	Machine Excavation(Soil)	m ³	10,140	86	872,040	523,224	348,816
2	15.306	Machine Excavation(Rock)	m ³	2,535	305	773,175	463,905	309,270
3	15.329	Bottom Conduit	m ³	34,000	156	5,304,000	3,182,400	2,121,600
4	15.330	Dam Cut-Off Excavation	m ³	12,375	273	3,378,375	2,027,025	1,351,350
5	15.321/KH	Impervious Zone Filling	m ³	46,700	138	6,444,600	3,866,760	2,577,840
6	15.342	Placement of Filter Material	m ³	11,900	126	1,499,400	899,640	599,760
7	15.302	Dam Body Filling	m ³	142,500	117	16,672,500	10,003,500	6,669,000
8	15.348/KH	Rip-Rap Works	m ³	3,000	1,323	3,969,000	2,182,950	1,786,050
9		Clasging	m ²	6,400	150	960,000	864,000	96,000
2-2) Intake Facilities								
10	15.301	Machine Excavation(Soil)	m ³	300	86	25,800	15,480	10,320
11		Steel Pipe /Ø400	m	222	14,257	3,165,054	2,215,538	949,516
12	16.003/B	Concrete Manufacturing	m ³	140	4,721	660,940	495,705	165,235
13	16.002/1-B	Reinforced Concrete Manufacturing	m ³	88	5,435	478,280	334,796	143,484
14	23.001/1	Reinforcement	t	4.4	77,516	341,070	204,642	136,428
15	21.011	Flat Surface Framework	m ²	312	12,069	3,765,528	3,012,422	753,106
2-3) Spilway								
16	15.301	Machine Excavation(Soil)	m ³	5,600	86	481,600	288,960	192,640
17	16.002/1-B	Reinforced Concrete Manufacturing	m ³	1,750	5,435	9,511,250	6,657,875	2,853,375
18	23.001/1	Reinforcement	t	87.5	77,516	6,782,650	4,069,590	2,713,060
19	21.011	Flat Surface Framework	m ²	5,740	12,069	69,276,060	55,420,848	13,855,212
2-4) Others								
20		Reserver Clearing	ha	11.5	37,500	431,250	388,125	43,125
21		Land Consolidation	m ²	6,500	500	3,250,000	2,600,000	650,000
22		Field By-pass Bridge	LS	1	23,269,885	23,269,885	17,688,920	7,580,966
23	15KH/1.2	Service Road	m	3,000	1,500	4,500,000	3,600,000	900,000
24		Machine Excavation(Rock)	LS	1	305	305	183	122
25		Others	%	10	167,812,762	16,781,276	13,425,021	3,356,255
26		Transportation	LS	1		55,378,211	49,840,390	5,537,821
		Sub-Total				239,973,249	184,271,899	55,701,351
3) Water Conveyance Facilities								
27		PVC Pipe D100mm	m	5,735	1,549	8,883,515	5,330,109	3,553,406
28		PVC Pipe D125mm	m	1,190	2,056	2,446,640	1,467,984	978,656
29		PVC Pipe D150mm	m	490	2,444	1,197,560	718,536	479,024
30		PVC Pipe D175mm	m	1,020	3,403	3,471,060	2,082,636	1,388,424
31		PVC Pipe D200mm	m	690	3,471	2,394,990	1,436,994	957,996
32		PVC Pipe D300mm	m	1,020	7,257	7,402,140	4,441,294	2,960,846
33		PVC Pipe D350mm	m	1,830	7,598	13,938,340	8,123,004	5,815,336
34		Irrigation Hydrant A	piece	25	121,972	3,049,289	1,829,573	1,219,716
35		Air Valve	piece	15	345,000	5,175,000	2,071,000	1,380,000
36		Others	%	10	23,000	4,238,333	3,390,682	847,651
37		Transportation	LS	1	42,383,534	7,045,033	6,340,530	704,503
		Sub-Total				94,011,920	55,368,332	18,643,588

Table F.2.1.9 Construction Cost of Aslanlar Project

Serial No.	Code No.	Description	Unit	Amount	Unit Price (TL/000TL)	Total Price (TL/000TL)	L.C. (TL/000TL)	P.C. (TL/000TL)
1) Mobilization								
2) Water Source Facilities								
1	136.02/077	Submersible Pump Q=40/s	piece	(1)	1,206,920	0	0	0
2		Submersible Pump Q=40/s	piece	(1)	1,151,150	0	0	0
3		Submersible Pump Q=30/s	piece	(1)	1,362,770	0	0	0
4		Submersible Pump Q=20/s	piece	(1)	1,201,200	0	0	0
5		Submersible Pump Q=10/s	piece	(1)	800,800	0	0	0
6		Electric Facilities for Deep Well Pump	piece	(7)	2,221,295	0	0	0
7		Pump, Borehole and Base Structure for Submersed Pump	piece	(7)	71,814	0	0	0
8		Pump House and Base Structure for Centrifugal Pump	piece	(2)	3,861,000	7,722,000	5,495,400	2,316,600
9		Machine Excavation	m ²	30	70,546	2,116,440	3,693,152	4,23,208
10		Reinforcement Concrete Manufacturing	L.S	38,610	38,610	23,166	15,444	9,655
11	15.00/174	Machine Excavation	m ³	450	73	32,850	22,995	9,855
12	16.00/17-B	Reinforcement Concrete Manufacturing	m ³	32.5	5,495	1,776,634	123,647	52,991
13	13.00/17	Reinforcement Concrete Manufacturing	t	1.6	77,516	124,026	74,416	49,610
14		Roadway (RC Pipe)	L.S	1	34,534,120	34,534,120	27,630,496	6,907,624
15		Others	%	10	44,748,684	4,474,868	3,579,894	894,974
16		Transportation	L.S	1	7,340,533	7,340,533	6,645,180	705,353
		Sub-Total			56,607,085	56,607,085	45,190,345	11,406,740
3) Water Conveyance Facilities								
17		Farm Pond	L.S	1	5,238,985	5,238,985	3,667,276	1,571,690
18		Steel Pipe 400mm	m	1,150	14,277	16,318,500	9,832,330	6,554,220
19		PVC Pipe 100mm	m	12,655	1,549	19,602,595	11,761,557	7,841,038
20		PVC Pipe 125mm	m	945	2,056	1,942,920	1,165,752	716,536
21		PVC Pipe 150mm	m	735	2,444	1,796,340	1,077,804	718,536
22		PVC Pipe 175mm	m	1,395	3,403	4,747,185	2,848,311	1,898,874
23		PVC Pipe 200mm	m	240	3,471	833,040	499,824	333,216
24		PVC Pipe 250mm	m	770	4,971	3,827,670	2,294,602	1,533,068
25		Irrigation Hydrant B	piece	208	1,467,685	3,053,284	1,892,811	1,160,473
26	26.00/16.3	Air Valve	piece	91	30,493	2,774,853	1,644,912	1,099,941
27		Others	piece	23	23,000	529,000	317,400	211,600
28		Transportation	%	10	53,467,838	5,346,784	4,272,627	1,074,157
29		Sub-Total	L.S	1	73,408,230	73,408,230	48,304,464	25,103,766
4) On-farm Facilities								
4-1) Dip								
30		Control Unit	ha	250	100,100	25,025,000	10,010,000	15,015,000
31		Screen	L.S	250	3,400	850,000	340,000	510,000
32		Ball Valve	piece	250	1,287,000	321,750,000	127,000,000	204,750,000
33		PE T-shaped Attachment D25mm	piece	243	243	1,519,375	607,750	911,625
34		PE Pipe D50mm	m	22,500	1,399,613	31,491,293	15,745,647	15,745,646
35		Drip Tube 20mm	m	612,500	47	28,687,500	11,561,550	17,125,950
36		Others	%	10	53,964,863	5,396,486	4,209,394	1,187,092
		Sub-Total	L.S	1	270,000	64,863,349	25,953,340	38,910,009
5) Maintenance								
6) Land Acquisition								
7) Land Compensation								
		Sub-Total	ha	0.1	1,675,000	1,675,000	1,675,000	0
		Sub-Total	ha	1.4	1,500,000	2,287,500	2,287,500	0
Sub-Total-1								
8) Design								
9) Supervision								
		Sub-Total	ha	19,612,014	19,612,014	15,450,000	3,962,523	79,576,499
		Sub-Total-2 (Including Design, Supervision)	ha	9,908,308	9,908,308	7,825,046	1,983,262	1,983,262
		Sub-Total	m	20,720,322	20,720,322	23,275,140	5,945,785	5,945,785
		Sub-Total	m	227,495,045	227,495,045	146,384,809	81,466,265	81,466,265
10) Contingency								
		Total	m	11,392,254	11,392,254	7,318,240	4,074,014	4,074,014
		Maintenance	m	292,237,542	292,237,542	153,683,049	85,554,294	85,554,294
		Sub-Total	m	196,126	196,126	122,960	73,166	73,166

Table F.2.1.10 Construction Cost of Ilyaskoy Project

Serial No.	Code No.	Description	Unit	Amount	Unit Price (1,000TL)	Total Price (1,000TL)	L.C. (1,000TL)	P.C. (1,000TL)
1)Water Source Facilities								
2-1)Dura Body								
1	15.301	Machine Excavation(Soil)	m3	11,620	86	999,320	599,592	399,728
2	15.306	Machine Excavation(Rock)	m3	4,980	305	1,518,900	911,340	607,560
3	15.329	Bottom Conduit	m3	2,400	156	374,400	224,640	149,760
4	15.330	Dam Cut-Off Excavation	m3	13,000	273	3,549,000	2,129,400	1,419,600
5	15.321/SH	Impervious Zone Filling	m3	29,250	138	4,036,500	2,421,900	1,614,600
6	15.342	Placement of Filter Material	m3	8,700	126	1,096,200	657,720	438,480
7	15.302	Dam Body Filling	m3	53,580	117	6,268,860	3,761,316	2,507,544
8	15.348/SH	Rip-Rap Works	m3	2,800	1,323	3,704,400	2,037,420	1,666,980
9		Grassing	m2	5,180	150	777,000	699,300	77,700
2-2)Intake Facilities								
10	15.301	Machine Excavation(Soil)	m3	120	86	10,320	6,192	4,128
11		Steel Pipe φ500	m	17,285	17,285	2,972,660	1,572,685	674,115
12	16.000/B	Concrete Manufacturing	m3	140	4,721	660,940	495,705	165,235
13	16.0021-B	Reinforced Concrete Manufacturing	m3	88	5,435	478,280	334,796	143,484
14	23.001/A	Reinforcement	t	4.4	77,516	341,070	204,642	136,428
15	21.011	Flat Surface Framework	m2	512	12,069	6,179,528	3,012,422	3,167,106
2-3)Pillory								
16	15.301	Machine Excavation(Soil)	m3	3,340	86	288,960	173,276	115,684
17	16.0021-B	Reinforced Concrete Manufacturing	m3	1,500	5,435	8,152,500	5,206,750	2,945,750
18	23.001/A	Reinforcement	t	75.0	77,516	5,813,700	3,488,220	2,325,480
19	21.011	Flat Surface Framework	m2	4,920	12,069	59,379,480	47,503,564	11,875,916
2-4)Others								
20		Reservoir Clearing	ha	10.5	37,500	393,750	315,000	78,750
21	15.347/2	Service Road	m	1,500	1,500	490,000	360,000	90,000
22		Others	%	10	104,306,158	10,430,616	8,344,493	2,086,123
23		Transportation	LS	1	34,421,052	34,421,052	30,578,929	3,842,123
		Sub-Total			149,157,806		115,939,672	33,218,134
2-5)Pump								
24		Multileveled Horizontal Shaft Electric Motor Pump	piece	2	769,340	1,538,680	1,077,076	461,604
25		Multileveled Horizontal Shaft Electric Motor Pump	piece	2	1,006,720	2,013,440	1,409,408	604,032
26		Pump House and Base Structure for Centrifugal Pump	m2	20	70,548	1,410,960	1,128,768	282,192
27		Pump Control System	LS	1	355,212	355,212	177,606	177,606
28	15.001/SH	Machine Excavation	m3	1,300	73	94,900	66,430	28,470
29	16.0021-B	Reinforcement Concrete Manufacturing	m3	16	5,435	86,960	60,872	26,088
30	23.001/A	Reinforcement	t	0.8	77,516	62,013	37,208	24,805
31		Transformer	LS	1	1,392,118	1,392,118	556,847	835,271
32		Others	%	10	4,066,643	406,664	325,331	81,333
33		Transportation	LS	1	1,104,142	1,104,142	993,728	110,414
34		Sub-Total			8,463,969		5,833,274	2,631,695
3)Water Conveyance Facilities								
35		Farm Pond	LS	1	2,240,752	2,240,752	1,568,526	672,226
36		Farm Pond	LS	1	3,427,141	3,427,141	2,398,999	1,028,142
37		Steel Pipe D125mm	m	380	5,235	1,989,300	1,193,580	795,720
38		Steel Pipe D200mm	m	125	7,796	974,500	584,700	389,800
39		PVC Pipe D75mm	m	2,540	1,098	2,789,320	1,541,592	1,027,728
40		PVC Pipe D100mm	m	2,715	1,549	4,205,535	2,523,321	1,682,214
41		PVC Pipe D125mm	m	1,115	2,056	2,292,440	1,375,464	916,976
42		PVC Pipe D150mm	m	225	2,444	549,900	329,040	219,860
43		PVC Pipe D200mm	m	225	3,471	780,975	468,585	312,390
44		Impigum Hydrant B	piece	42	30,493	1,280,712	768,431	512,280

Table F.2.1.11 Construction Cost of K. Karistiran Project

Serial No.	Code No.	Description	Unit	Amount	Unit Price (1,000TL)	Total Price (1,000TL)	L.C. (1,000TL)	P.C. (1,000TL)
40		Air Valve	piece	9	23,000	207,000	124,200	82,800
41		Others	%	10		2,051,756	1,641,405	410,351
42		Transportation	LS	1	20,517,564	3,385,398	3,086,038	339,360
		Sub-Total				25,954,718	17,565,591	8,389,127
4-1) On-farm Facilities								
4-1-1) Sprinkler								
43		On-farm Main Pipe PE D100mm	ha	50		1,680,000	1,344,000	336,000
44		Lateral Pipe PE D75mm	m	4,200		1,680,000	1,344,000	336,000
45		Riser Pipe PE D20mm	m	8,400		24,000	19,200	4,800
46		Valve D75mm	piece	400		400,000	320,000	80,000
47		Sprinkler Head	piece	800		1,600,000	1,280,000	320,000
48		Sub-Total	%	10		538,400	376,880	161,520
		Sub-Total				5,922,400	4,684,080	1,238,320
4-2) Drop								
49		Control Unit	ha	58		5,805,800	2,322,320	3,483,480
50		Screen	LS	58	100,100	5,805,800	2,322,320	3,483,480
51		Ball Valve	piece	58	3,400	197,200	78,880	118,320
52		PE T-shaped Attachment D25mm	piece	58	5,148	298,584	119,434	179,150
53		PE Pipe D50mm	m	1,450	243	352,350	140,988	211,362
54		Drip Tube 20mm	m	5,220	324,710	1,695,996	1,29,884	1,566,112
55		Others	%	14,310		670,570	268,228	402,342
		Sub-Total		10	7,649,359	8,414,295	3,595,199	4,819,096
		Sub-Total				14,336,695	8,279,279	6,057,416
5) Farm Road								
56		Farm Road B=3,00m	m	130		133,640	106,912	26,728
6) Microirrigation								
7) Land Acquisition								
8) Land Compensation								
		Sub-Total				540,000	486,000	54,000
		Sub-Total				19,965,000	19,965,000	0
		Sub-Total				924,000	924,000	0
		Sub-Total				20,889,000	20,889,000	0
		Sub-Total-1				220,810,948	170,308,728	50,511,221
9) Design								
10) Supervision								
		Sub-Total				22,081,695	17,665,356	4,416,339
		Sub-Total				22,081,695	17,665,356	4,416,339
		Sub-Total-2(Including Design, Supervision)				44,163,390	35,330,712	8,832,678
11) Contingency								
		Sub-Total				264,980,338	205,636,439	59,343,899
		Sub-Total				13,380,017	10,281,822	2,967,195
		Sub-Total				278,320,355	215,918,261	62,411,093
		Maintenance				481,034	340,611	140,422

Serial No.	Code No.	Description	Unit	Amount	Unit Price (1,000TL)	Total Price (1,000TL)	L.C. (1,000TL)	F.C. (1,000TL)
1) Mobilization			LS	1	670,000	670,000	603,000	67,000
2) Water Source Facilities								
1		Electric Facilities for Deep Well Pump	piece	4	1,294,150	5,176,600	3,882,450	1,294,150
2		Pump Barmek and Base Structure for Submerged Pump	piece	4	2,406,122	9,624,489	6,737,142	2,887,347
3		Others	piece	4	71,614	287,256	201,079	86,177
4		Transportation	%	10	15,088,345	1,508,835	1,207,068	301,767
5		Sub-Total	LS	1	571,029	571,029	513,926	57,103
					17,168,209	17,168,209	12,541,666	4,626,543
3) Water Conveyance Facilities								
6		PVC Pipe 100mm	m	6,445	1,549	9,985,305	5,989,983	3,995,322
7		PVC Pipe 125mm	m	420	2,056	863,520	518,112	345,408
8		PVC Pipe 150mm	m	385	2,444	940,940	564,564	376,376
9	30.KH-16.3	Irrigation Hydrant A	piece	51	121,972	6,220,550	3,752,330	2,468,220
10		Air Valve	piece	9	23,000	207,000	124,200	82,800
11		Others	%	10	18,215,315	1,821,532	1,457,226	364,306
12		Transportation	LS	1	1,001,842	1,001,842	901,658	100,184
		Sub-Total			21,028,689	21,028,689	13,288,072	7,750,617
4) On-Farm Facilities (Sprinkler System)								
13		On-farm Main Pipe PE D100mm	ha	120	400	4,032,000	3,225,600	806,400
14		Lateral Pipe PE D75mm	m	20,160	200	4,032,000	3,225,600	806,400
15		Riser Pipe PE D20mm	m	960	60	57,600	46,080	11,520
16		Valve D75mm	piece	960	1,000	960,000	768,000	192,000
17		Sprinkler Head	piece	1,920	2,000	3,840,000	3,072,000	768,000
18		On-Farm Other Facilities	%	10	12,921,600	1,292,160	1,033,728	258,432
		Sub-Total			14,213,760	14,213,760	11,571,008	2,642,752
5) Farm Road								
19		Farm Road, 8m x 4.00m (Flat)	m	5,750	660	3,795,000	3,026,000	769,000
5) Demobilization			LS	1	270,000	270,000	243,000	27,000
6) Land Acquisition			ha	0.0	1,800,000	0	0	0
7) Land Compensation			ha	0.5	1,440,000	720,000	720,000	0
		Sub-Total			57,875,658	57,875,658	41,802,746	16,072,912
8) Design								
9) Supervision								
		Sub-Total-1 (including Design, Supervision)			5,787,566	5,787,566	4,690,053	1,157,513
					2,893,783	2,893,783	2,315,026	578,757
					8,681,348	8,681,348	6,945,079	1,736,270
		Sub-Total			66,557,007	66,557,007	48,747,825	17,809,182
10) Contingency								
		Total			3,537,850	3,537,850	2,437,391	890,459
		Maintenance			69,884,857	69,884,857	51,185,216	18,699,641
					57,876	57,876	41,803	16,073

Table F.2.2.1 Local Currency of Construction Cost
(including On-Farm facilities)
(UNIT: 1,000TL)

DESCRIPTION	HACILAR	URUNLU	KALESEKESİ		CAMLİBEL	KOZLUK	KUSKARA	ÖZDENK	ASLANLAR	LYASKOY	K-KARİST-İRAN	TOTAL
			Phase-1	Phase-2								
1) Mobilization	582	465	100	110	1,366	550	117	126	250	108	120	3,834
2) Water Source Facilities	603,000	603,000	603,000	603,000	603,000	603,000	603,000	1,206,000	603,000	1,206,000	603,000	7,839,000
Dam												297,611,570
Wear Pump	33,408,964	36,125,764	1,041,000	9,721,236	1,041,000	15,708,463		181,671,899	17,567,849	5,893,274	12,541,666	16,749,463
Groundwater Pump			12,112,110	9,721,236	21,833,346							78,643,433
Race Way			455,760		455,760				27,630,496			48,667,430
Total	33,408,964	36,125,764	13,608,870	9,721,236	13,608,870	15,708,463	0	181,671,899	45,198,345	12,177,246	12,541,666	469,758,152
3) Water Conveyance Facilities	5,772,342	34,184,977	2,591,233	2,706,254	5,297,487			35,368,332	3,667,276	3,967,525	13,288,072	5,772,342
Distribution Pond			36,994,049	49,461,513	86,455,562				44,637,209	13,598,066		12,932,288
Farm Pond	198,206,320	34,184,977										425,738,538
Pipe Line												158,366,685
Open Canal												
Total	203,978,683	34,184,977	39,585,282	52,167,767	91,753,049	106,860,298	9,177,749	35,368,332	48,304,484	17,565,591	13,288,072	602,809,854
4) On-Farm Facilities	49,463,885	44,062,656	10,381,336	11,917,796	22,299,132	33,000,000	7,020,000	2,100,000	25,953,340	3,595,199		117,450,733
Sprinkler												51,847,670
Drip												124,080,000
Surface												
Total	49,463,885	44,062,656	10,381,336	11,917,796	22,299,132	33,000,000	7,020,000	2,100,000	25,953,340	3,595,199		117,450,733
5) Drainage					43,069,115							43,069,115
6) Land Consolidation					16,032,900							16,032,900
7) Terrace							12,342,973	2,600,000				14,942,973
8) Village Improvements												17,727,600
9) Farm Road					9,498,712		4,658,415			106,912	3,036,000	17,300,039
10) Demobilization	243,000	243,000	243,000	243,000	243,000	243,000	243,000	486,000	243,000	486,000	243,000	3,159,000
11) Land Acquisition, Land Compensation	4,200,000	1,380,000	639,316	739,500	1,378,816	34,070,000	6,298,500	20,196,000	2,287,500	20,889,000	720,000	91,369,816
Sub-Total	291,897,511	116,599,397	65,060,804	75,392,299	140,453,103	190,434,761	40,343,037	251,467,335	122,589,659	170,305,728	41,802,746	1,577,356,853
Design	32,429,564	12,596,745	8,198,837	9,581,622	19,748,604	18,259,670	3,679,316	26,236,724	15,850,093	17,665,356	4,630,053	168,876,582
Supervision	16,214,782	6,298,372	4,099,418	4,790,811	9,874,302	9,129,835	1,839,658	26,236,724	7,925,046	17,665,356	2,315,026	106,389,332
Contingency	17,027,093	6,774,726	3,867,953	4,488,237	12,054,294	10,891,213	2,293,131	15,197,039	7,318,240	10,281,822	2,437,391	92,631,139
Total	357,568,951	142,269,238	81,227,012	94,252,969	253,140,165	228,715,479	48,155,743	319,137,822	153,683,049	215,918,262	51,185,216	1,945,253,906
Per ha	684,998	305,955	812,270	856,845	185,315	415,846	411,588	2,532,840	614,732	1,999,243	426,543	

Table F.2.2.2 Foreign Currency of Construction Cost

(Including On-Farm facilities) (UNIT: 000TL)

DESCRIPTION	HACILAR	URUNLU	CAMLIBEL			KOZLUK	KUSKARA	OZDENK	ASLANLAR	ILYASKOY	K.KARIST-IRAN	TOTAL
			Phase-1	Phase-2	TOTAL							
Irrigation Area (ha)	522	465	100	110	210	550	117	126	250	108	120	3,834
1) Mobilization	67,000	67,000	67,000	67,000	134,000	67,000	67,000	134,000	67,000	134,000	67,000	871,000
2) Water Source	11,513,249	11,725,631	1,041,000	3,296,561	6,102,994	6,093,958	4,501,116	4,501,116	2,631,815	4,626,543	7,124,958	24,749,174
Facilities			151,920		151,920	6,907,624						7,059,544
Groundwater Pump												
Race Way												
Total	11,513,249	11,725,631	3,999,353	3,296,561	7,295,914	6,093,958	0	55,050,351	11,408,740	35,849,949	4,626,543	143,564,336
3) Water Conveyance	1,443,086	647,808	676,564	22,434,155	39,545,647	12,393,618	2,809,709	18,643,588	1,571,690	1,700,368	7,750,617	1,493,086
Facilities	88,055,737	18,024,599	17,111,492	22,434,155	39,545,647	31,623,155	2,809,709	18,643,588	23,532,056	6,688,759	7,750,617	202,241,003
Distribution Pond												
Farm Pond												
Pipe Line												
Open Canal												
Total	89,498,822	18,024,599	17,759,300	23,110,719	40,870,019	31,623,155	2,809,709	18,643,588	25,103,746	8,389,127	7,750,617	265,106,899
4) On-Farm	12,365,971	11,015,644	15,572,004	17,876,694	33,448,698	0	0	1,959,776	38,930,009	4,819,096	2,842,752	29,422,483
Facilities												
Sprinkler												
Drop												
Surface												
Total	12,365,971	11,015,644	15,572,004	17,876,694	33,448,698	0	0	1,959,776	38,930,009	4,819,096	2,842,752	77,197,804
5) Drainage												
Total												
6) Land Consolidation												
Total												
7) Terrace												
Total												
8) Village Improvement												
Total												
9) Farm Road												
Total												
10) Demobilization	27,000	27,000	27,000	27,000	54,000	27,000	27,000	54,000	27,000	54,000	27,000	351,000
11) Land Acquisition, Land Compensation	0	0	0	0	0	0	0	0	0	0	0	0
Sub-Total	113,472,043	40,859,894	37,424,657	44,377,974	81,802,631	37,811,113	5,647,821	76,491,715	75,536,495	50,511,221	16,072,912	538,600,428
Design	8,107,391	3,149,186	2,049,709	2,395,405	4,445,115	4,564,917	919,829	6,559,181	3,962,523	4,416,339	1,157,513	42,219,146
Supervision	4,053,696	1,574,593	1,024,855	1,197,703	2,222,557	2,468,575	459,915	6,559,181	1,981,262	4,416,339	578,757	26,597,353
Contingency	6,281,656	2,279,184	2,024,961	2,398,554	4,423,515	2,232,924	351,378	4,480,504	4,074,014	2,967,195	890,459	30,120,844
Total	131,914,786	47,862,857	42,524,182	50,369,656	92,893,818	46,891,413	7,378,943	94,000,581	85,554,294	62,311,094	18,699,641	632,537,749
Per ha	252,710	102,931	423,242	457,906	883,148	85,257	63,068	746,751	342,217	576,955	155,870	

Table F.2.3.1 Construction Cost(Local currency)of every Fiscal Year

DESCRIPTION	HACILAR	URUNLU	KALESİKİSİ			TOTAL	CAMLİBEL	KOZLUK	KUSKARA	ÖZDENK	ASLANLAR	LYASKOY	K.KARISI-RAN	TOTAL
			Phase-1	Phase-2	Phase-3									
			100	110	210									
İngabon Area (ha)	522	465				1,366	550	117	126	250	108	120	3,834	
1)First Year Construction Cost (Avoiding Supervision and Contingency)	76,413,871	85,133,484	62,878,305	0	62,878,305	36,384,504	34,020,000	37,002,953	112,133,888	112,486,423	80,339,241	35,061,791	671,854,459	
Supervision	4,507,822	6,298,372	4,099,418	0	4,099,418	2,407,154	1,767,825	1,839,658	10,987,345	7,925,046	7,898,086	2,315,026	50,045,752	
Contingency	4,733,650	6,774,726	3,867,953	0	3,867,953	2,938,592	2,108,883	2,293,131	6,364,175	7,318,240	4,596,947	2,437,391	43,433,688	
Sub-Total	85,655,342	98,206,582	70,845,676	0	70,845,676	41,730,250	37,896,708	41,135,742	129,485,408	127,729,709	92,834,274	39,814,208	765,333,899	
2)Second Year Construction Cost (Avoiding Supervision and Contingency)	198,449,320	0	0	0	0	94,896,466	141,674,431	0	155,631,066	0	99,352,564	0	690,003,847	
Supervision	11,706,961	0	0	0	0	6,278,234	7,362,010	0	15,249,379	0	9,767,270	0	50,363,854	
Contingency	12,293,443	0	0	0	0	7,664,307	8,782,330	0	8,832,864	0	5,684,875	0	43,257,819	
Sub-Total	222,449,724	0	0	0	0	108,839,007	157,818,771	0	179,713,309	0	114,804,709	0	783,625,519	
3)Third Year Construction Cost (Avoiding Supervision and Contingency)	0	0	0	0	0	17,970,600	0	0	0	0	0	0	17,970,600	
Supervision	0	0	0	0	0	1,188,913	0	0	0	0	0	0	1,188,913	
Contingency	0	0	0	0	0	1,451,394	0	0	0	0	0	0	1,451,394	
Sub-Total	0	0	0	0	0	20,610,907	0	0	0	0	0	0	20,610,907	
4)Fourth Year Construction Cost (Avoiding Supervision and Contingency)	0	0	0	0	0	73,056,125	0	0	0	0	0	0	73,056,125	
Supervision	0	0	0	0	0	4,790,811	0	0	0	0	0	0	4,790,811	
Contingency	0	0	0	0	0	4,488,237	0	0	0	0	0	0	4,488,237	
Sub-Total	0	0	0	0	0	82,335,173	0	0	0	0	0	0	82,335,173	
5)Fifth Year Construction Cost (Avoiding Supervision and Contingency)	0	0	0	0	0	0	0	0	0	0	0	0	0	
Supervision	0	0	0	0	0	0	0	0	0	0	0	0	0	
Contingency	0	0	0	0	0	0	0	0	0	0	0	0	0	
Sub-Total	0	0	0	0	0	0	0	0	0	0	0	0	0	
Construction Cost (Government Payment)	308,105,066	98,206,582	70,845,676	82,335,173	153,180,849	171,180,163	195,715,479	41,135,742	309,198,718	127,729,709	207,638,983	39,814,208	1,651,905,899	
One-harm Facilities	49,463,985	44,062,656	10,381,336	11,917,796	22,299,132	81,960,000	33,000,000	7,020,000	9,939,104	25,953,340	8,279,279	11,371,008	293,348,403	
per ha	94,758	94,758	103,813	103,813	103,813	60,000	60,000	60,000	78,882	103,813	76,660	94,758	76,512	
Total	357,568,951	142,269,238	81,227,012	94,252,969	175,479,981	253,140,163	228,715,479	48,155,742	319,137,822	153,683,048	215,918,261	51,185,216	1,945,253,902	

Table F.2.3.2 Construction Cost(Foreign currency)of every Fiscal Year

DESCRIPTION	HAĞILAR	URUNLU				CAMLIBEL	KÖZLUK	KUSKARA	ÖZDENK	ASLANLAR	LYASKOY	KARISI- RAN	TOTAL							
		522	465	TOTAL										126	117	126	250	108	120	3,834
				Phase-1	Phase-2															
Irrigation Area (ha)					1,366	550														
1)First Year Construction Cost (Avoiding Supervision and Contingency)	21,130,726	32,993,416	23,902,362	0	10,458,643	0	6,567,650	26,188,304	40,569,009	16,176,686	14,387,673	192,374,469								
Supervision	784,313	1,574,593	1,024,855	0	640,140	0	459,915	2,118,282	1,981,262	1,461,869	578,757	10,623,985								
Contingency	1,215,381	2,279,184	2,024,961	0	554,939	0	351,378	1,444,975	4,074,014	982,182	890,459	13,819,473								
Sub-Total	23,130,420	36,847,193	26,952,178	0	11,653,722	0	7,378,943	29,753,560	46,624,285	18,620,737	15,856,889	216,817,927								
2)Second Year Construction Cost (Avoiding Supervision and Contingency)	88,082,787	0	0	0	25,769,690	42,376,030	0	54,902,816	0	32,693,457	0	243,824,730								
Supervision	3,269,383	0	0	0	1,577,280	2,282,459	0	4,440,899	0	2,954,470	0	14,524,491								
Contingency	5,066,275	0	0	0	1,367,348	2,232,924	0	3,033,529	0	1,985,013	0	13,685,089								
Sub-Total	96,418,395	0	0	0	28,714,318	46,891,413	0	62,377,245	0	37,632,940	0	272,034,311								
3)Third Year Construction Cost (Avoiding Supervision and Contingency)	0	0	0	0	4,103,400	0	0	0	0	0	0	4,103,400								
Supervision	0	0	0	0	251,156	0	0	0	0	0	0	251,156								
Contingency	0	0	0	0	217,728	0	0	0	0	0	0	217,728								
Sub-Total	0	0	0	0	4,572,284	0	0	0	0	0	0	4,572,284								
4)Ninth Year Construction Cost (Avoiding Supervision and Contingency)	0	0	0	28,896,685	0	0	0	0	0	0	0	28,896,685								
Supervision	0	0	0	1,197,703	0	0	0	0	0	0	0	1,197,703								
Contingency	0	0	0	2,398,554	0	0	0	0	0	0	0	2,398,554								
Sub-Total	0	0	0	32,492,942	0	0	0	0	0	0	0	32,492,942								
5)Tenth Year Construction Cost (Avoiding Supervision and Contingency)	0	0	0	0	0	0	0	0	0	0	0	0								
Supervision	0	0	0	0	0	0	0	0	0	0	0	0								
Contingency	0	0	0	0	0	0	0	0	0	0	0	0								
Sub-Total	0	0	0	0	0	0	0	0	0	0	0	0								
Construction Cost (Government Payment)	119,548,814	36,847,193	26,952,178	32,492,942	44,940,323	46,891,413	7,378,943	92,130,805	46,624,285	56,253,677	15,856,889	525,917,464								
On-Farm Facilities	12,365,971	11,015,664	15,572,004	17,876,694	33,448,698	0	0	1,959,776	38,930,009	6,057,416	2,842,752	106,620,287								
per ha	23,690	23,690	155,720	155,720	155,720	0	0	15,554	155,720	56,087	23,690	27,809								
Total	131,914,785	47,862,857	42,524,182	50,369,636	44,940,323	46,891,413	7,378,943	94,090,581	85,554,294	62,311,093	18,699,641	632,537,750								

Table F.2.4.1 Operation and Maintenance Cost (Total)

DESCRIPTION	HACIAR	URUNUJ	KALESEKUSI				CAMLISE	KOZLUK	KUSARA	OZDENK	ASLANAR	UYASKOY	X. KARIST-JEAN	TOTAL	
			Phase-1		Phase-2										TOTAL
			100	110	3,661,052	0									
Irrigation Area (ha)	522	465	100	110	210	1,366	550	117	126	250	108	120	3,834		
1) Operation Cost	10,351,261	9,909,098	1,909,483	3,661,052	5,570,535	0	0	1,344,837	0	5,045,084	329,127	3,082,653	35,532,295		
	220,220	283,140	157,300	0	157,300	0	0	220,220	0	188,760	220,220	251,680	1,541,540		
	175,175	225,225	125,125	0	125,125	225,225	100,100	175,175	250,250	150,150	175,175	200,200	1,801,800		
	44,044	56,628	31,460	0	31,460			44,044		37,752	44,044	50,336	308,308		
Sub-Total	10,790,700	10,474,091	2,223,368	3,661,052	5,884,420	225,225	100,100	1,794,276	250,250	5,421,746	768,566	3,584,859	39,284,243		
2) Maintenance Cost	405,370	157,459	102,485	119,770	222,256	489,715	456,492	91,983	655,918	198,126	441,634	57,876	3,180,828		
Total	11,196,070	10,631,550	2,325,853	3,780,822	6,106,676	718,940	556,592	1,876,259	906,168	5,619,872	1,210,200	3,642,745	42,465,071		

(UNIT:1,000TL)

Table F.2.4.2 Operation and Maintenance Cost (Local Currency)

(UNIT: L.000TL)

DESCRIPTION	HACILAR	TRUNU	KALESEKISI			CAMELBEL	KOLUK	KESKARA	OZDENK	ASLANLAR	ULYASOY	K. KARLISI- TRAV	TOTAL
			Phase-1	Phase-2	TOTAL								
Irrigation Area (ha)	522	465	100	110	210	1,366	550	117	126	250	108	120	3,834
1) Operation Cost	7,245,880	6,936,369	1,336,638	2,562,736	3,899,374	0	0	941,386	0	3,531,559	230,389	2,157,857	24,942,817
1-1) Electric Cost	220,220	283,140	157,300	0	157,300	0	0	220,220	0	188,760	220,220	251,680	1,541,540
1-2) Pump Attendance	175,175	225,225	125,125	0	125,125	225,225	100,100	175,175	250,250	150,150	175,175	200,200	1,801,800
1-3) Irrig. Material	44,044	56,628	31,460	0	31,460	0	0	44,044	0	37,752	44,044	50,336	308,308
Sub-Total	7,685,322	7,501,362	1,650,523	2,562,736	4,213,259	225,225	100,100	1,380,825	250,250	3,908,221	669,828	2,650,073	28,594,465
2) Maintenance Cost	291,898	116,599	65,061	75,392	140,453	422,926	380,870	80,887	502,835	122,590	340,611	41,803	2,441,371
Total	7,977,220	7,617,961	1,715,584	2,638,128	4,353,712	648,151	480,970	1,461,512	753,185	4,030,811	1,010,439	2,701,876	31,035,836

Table F.2.4.3 Operation and Maintenance Cost (Foreign Currency)

(UNIT: I.000TL)

DESCRIPTION	HACILAR	URUNU	KALEMELI			CAMIBEL	KOZLUK	KUSKARA	OZDENK	ASLANTAR	ILYASKOY	K. KARIST-IBAN	TOTAL	
			Phase-1		Phase-2									TOTAL
			100	110	210									
Irrigation Area (ha)	522	465	100	110	210	1,366	550	117	126	250	108	120	3,834	
1) Operation Cost	3,105,378	2,972,729	572,845	1,098,316	1,671,161	0	0	403,451	0	1,513,525	98,738	924,796	10,689,778	
1-1) Electric Cost	0	0	0	0	0	0	0	0	0	0	0	0	0	
1-2) Pump Attendant	0	0	0	0	0	0	0	0	0	0	0	0	0	
1-3) Irrig. Basins	0	0	0	0	0	0	0	0	0	0	0	0	0	
1-4) Others	0	0	0	0	0	0	0	0	0	0	0	0	0	
Sub-Total	3,105,378	2,972,729	572,845	1,098,316	1,671,161	0	0	403,451	0	1,513,525	98,738	924,796	10,689,778	
2) Maintenance Cost	113,472	40,860	37,425	44,378	81,803	70,789	75,622	11,296	152,983	75,536	101,022	16,073	739,457	
Total	3,218,850	3,013,589	610,270	1,142,694	1,752,964	70,789	75,622	414,747	152,983	1,589,061	199,760	940,869	11,429,235	

Table F.2.4.4 Annual Operation Cost

Project Name	Operation Cost											Total		
	Annual Electric Cost (1000TL/year)			Total requirement (1000m3/ year)	50%Max Water requirement (l/s)	Annual Pump Working Hour (hr/year)	Irriga. Term (Mon./ year)	Pump Attendant		Irrigation Engineer Total	Others (Electric, Mechanical) (1,000TL/ year)	Total		
	Total	L.C.	F.C.					Unit Price (1,000TL /month) (L.C.=100%)	Total			Unit Price (1,000TL /month) (L.C.=100%)	Amount	(1,000TL/year)
HACILAR	10,351,261	7,245,883	3,105,378	3,539	374	2,628	7	7.0	220,220	175,175	44,044	10,790,700	7,685,322	3,105,378
URUNLU	9,909,098	6,936,369	2,972,729	3,152	330	2,653	9	9.0	283,140	225,225	56,628	10,474,091	7,501,362	2,972,729
KALESEKISI -Phase 1	1,909,483	1,336,638	572,845	530	72	2,045	5	5.0	157,300	125,125	31,460	2,223,368	1,650,523	572,845
-Phase 2	3,661,052	2,562,736	1,098,316	583	79	2,050	5	5.0	157,300	125,125	31,460	3,974,937	2,876,621	1,098,316
Phase 1 + Phase 2	5,570,535	3,899,374	1,671,161	1,113	151	4,095	5	5.0	157,300	125,125	31,460	5,884,420	4,213,259	1,671,161
CAMLIBEL	0	0	0	0	0	0	9	9.0	0	225,225		225,225	225,225	0
KOZULUK	0	0	0	0	0	0	4	4.0	0	100,100		100,100	100,100	0
KUSKARA	1,344,837	941,386	403,451	632	66	2,660	7	7.0	220,220	175,175	44,044	1,784,276	1,380,825	403,451
OZDENK	0	0	0	0	0	0	10	10.0	0	250,250		250,250	250,250	0
ASLANLAR	5,045,084	3,531,559	1,513,525	1,729	189	2,541	6	6.0	188,760	150,150	37,752	5,421,746	3,908,221	1,513,525
ILYASKOY	329,127	230,389	98,738	531	64	2,305	7	7.0	220,220	175,175	44,044	768,566	669,828	98,738
K.KARISTIRAN	3,082,653	2,157,857	924,796	794	92	2,397	8	8.0	251,680	200,200	50,336	3,584,869	2,660,073	924,796

Annual Electric Cost

Table F.2.4.5 Annual Electric Cost

Electric Fee per kwh 5.550 (TL/kwh)

Project Name	Pump Type	Pump Num.	Pump Diamet. (mm)	Total Capacity (l/s)	Pump Capacity (l/s)	Total Head H(m)	Pump efficiency	Factor of Safety	Pump Power (kw)	Total Pump Power (kw)	Total requirement (1000m3/year)	Annual Working Hour (hr/year)	Total Electric (kwh)	Annual Electric Cost		
														L.C.	F.C.	
HACILAR	A	5	300	374.0	74.8	134.0	0.693	1.0	141.94	709.70	3,539	2,628	1,865,092	10,351,261	7,245,883	3,105,378
	B	8	150	336.0	42.0	102.0	0.540	1.1	85.64	685.12	3,152	2,606	1,785,423	9,909,098	6,936,369	2,972,729
KALESEKISI	-Phase 1	3	150	72.0	24.0	165.0	0.693	1.0	56.08	168.24	530	2,045	344,051	1,909,483	1,336,638	572,845
	-Phase 2	3	150	79.0	26.3	288.0	0.693	1.0	107.26	321.78	583	2,050	659,649	3,661,052	2,562,736	1,098,316
Total				151.0						490.02	1,113		1,003,700	5,570,535	3,899,375	1,671,161
KUSKARA	B	1	150	34.7	34.7	61.0	0.540	1.1	42.31	42.31	333	2,666	112,798	626,029	438,220	187,809
	B	1	150	31.3	31.3	78.0	0.540	1.1	48.80	48.80	299	2,654	129,515	718,808	503,166	215,642
ASLANLAR	B	1	150	47.2	47.2	36.0	0.540	1.1	33.97	33.97	432	2,544	86,420	479,631	335,742	143,889
	B	1	150	37.8	37.8	39.0	0.540	1.1	29.47	29.47	346	2,541	74,883	415,601	290,921	124,680
ILYASKOY	B	2	150	28.4	14.2	95.0	0.540	1.1	26.97	53.94	519	5,073	273,638	1,518,691	1,063,084	455,607
	B	2	125	18.9	9.5	54.0	0.540	1.1	10.25	20.50	346	5,082	104,181	578,205	404,744	173,462
K.KARISTIRAN	B	1	80	9.5	9.5	48.0	0.540	1.1	9.12	9.12	86	2,528	23,055	127,955	89,569	38,387
	A	2	200	189.0	94.5	51.0	0.693	1.0	68.25	136.50	1,729	2,541	346,847	1,925,001	1,347,501	577,500
Total												Total	909,024	5,045,084	3,531,559	1,513,525
Pump Type ;	A	2	125	20.0	10.0	51.0	0.693	1.0	7.22	14.44	167	2,322	33,530	186,092	130,264	55,828
	B	2	200	44.0	22.0	18.0	0.693	1.0	5.61	11.22	364	2,297	25,772	143,035	100,125	42,911
Total											531	Total	59,302	329,127	230,389	98,738
	B	4	150	92.0	23.0	126.0	0.540	1.1	57.93	231.72	794	2,397	555,433	3,082,653	2,157,857	924,796

Horizontal Shaft Type Multi-Stage Volute Pump
Submersible Deep-Well Pump

Table F.2.5.1 Unit Price List

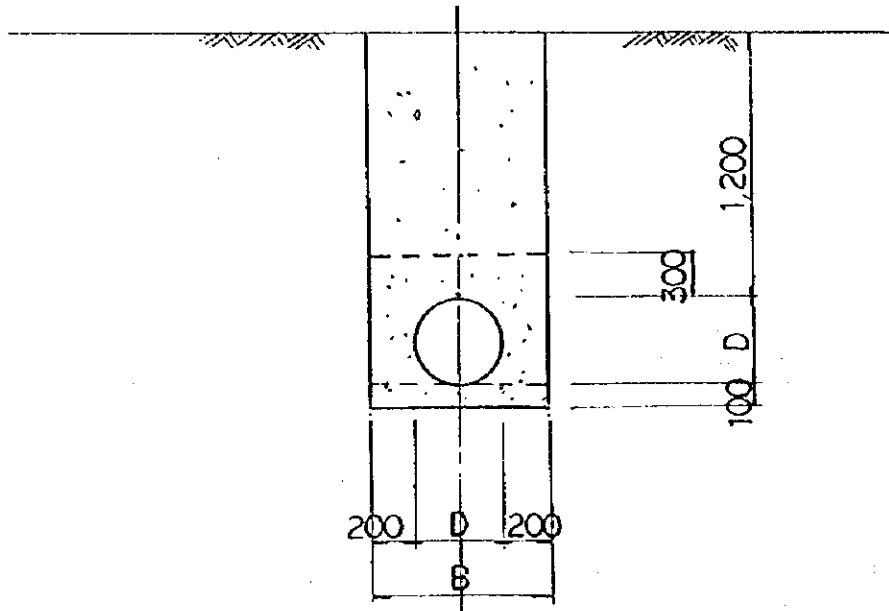
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工種	番号	コード番号	項目	単位	単価	内貨	外貨	備考
					(1,000TL) Jul.1997			
Soil Work	1	15.001 KH	Mechanical Excavation	m3	73	70	30	HACILAR Project
	2		Terrace Work A (Slope 6%, B=20.6m)	ha	106,415	90	10	KUSKARA Project
	3		Terrace Work B (Slope 8%, B=11.8m)	ha	87,120	90	10	KUSKARA Project
	4		Land Leveling, Land Reclamation	ha	10,281	70	30	CAMLIBEL Project
Concrete Work	5	16.003 B	Concrete Manufacturing	m3	4,721	70	30	KOZLUK Project
	6	16.002 1-B	Reinforced Concrete Manufacturing	m3	5,435	70	30	HACILAR Project
	7	21.011	Flat Surface Framework	m2	42,069	80	20	OZDENK Project
	8		Wet Masonry	m3	1,574	85	15	KOZLUK Project
Reinforcement	9	23.001/1	Reinforcement	t	77,516	60	40	HACILAR Project
Sheet Pile	10		Sheet Pile L=5.0m	m	46,510	60	40	KOZLUK Project
	11		Sheet Pile L=3.0m	m	27,906	60	40	KOZLUK Project
Dam	12	15.301	Machine Excavation(Soil)	m3	86	60	40	OZDENK Project
	13		Machine Excavation(Rock)	m3	305	60	40	OZDENK Project
	14	15.329	Bottom Conduit	m3	156	60	40	OZDENK Project
	15	15.302 KH	Dam Excavation, Dam Body Filling	m3	117	60	40	OZDENK Project
	16	15.330 KH	Cut Off Excavation	m3	273	60	40	OZDENK Project
	17	15.321 KH	Impervious Zone Filling	m3	138	60	40	OZDENK Project
	18	15.342	Placement of Filter Material	m3	126	60	40	OZDENK Project
	19	15.348 KH	Rip Rap Works	m3	1,323	55	45	ILYASKOY Project
	20		Glassing	m2	150	90	10	OZDENK Project
	21		Reservoir Clearing	ha	37,500	90	10	OZDENK Project
	22		Soil Conservation	m2	500	80	20	OZDENK Project
	23	15 KH 1,2	Service Road, and it's Maintenance	m	1,500	80	20	OZDENK Project
	24		Field By pass Bridge	L.S.	25,269,845	70	30	OZDENK Project
	Weir	25		Steel Gate 1.90m*4.0m	L.S.	353,473	75	25
26			Steel Gate 1.5m*1.5m	L.S.	194,647	75	25	KOZLUK Project
Pump	27		Pump House and Base Structure for Centrifugal Pump	m2	70,548	80	20	HACILAR Project
	28		Pump Barrack and Base Structure for Submerged Pump	piece	71,814	90	10	URUNL DSI Report
	29		Water Distribution Pond	m3	6,681	80	20	HACILAR Project
	30		Farm Pond	L.S.	3,239,041	80	20	KALESEKISI Project
	31			L.S.	3,382,818	80	20	KALESEKISI Project
	32			L.S.	5,238,965	70	30	ASLALAR Project Q=50L/s
	33			L.S.	2,240,752	70	30	ILYASKOY Project
	34			L.S.	3,427,141	70	30	ILYASKOY Project
	35	36 KH/33	Multi-level Horizontal Shaft Electric Motor Pump	piece	5,192,330	70	30	HACILAR Project
	36			piece	1,590,160	70	30	KALESEKISI Project
	37		(Including Electric Panel, Mechanical Facilities, Valve, and so on)	piece	3,008,720	70	30	KALESEKISI Project
	38			piece	3,861,000	70	30	ASLALAR Project
	39			piece	769,340	70	30	ILYASKOY Project
	40			piece	1,006,720	70	30	ILYASKOY Project
	41		Pump Control system	L.S.	259,617	60	40	HACILAR Project
	42			L.S.	95,410	60	40	KALESEKISI Project
	43			L.S.	180,523	60	40	KALESEKISI Project
44			L.S.	51,923	60	40	ASLALAR Project Q=50L/s	
45			L.S.	355,213	50	50	ILYASKOY Project	

工種	番号	サブ番号	項目	単位	単価 (1,000TL) Jul.1997	内貨 (%)	外貨 (%)	備考
Pump	46	36.KI.37	Submersible Pump	piece	2,220,790	75	25	URUNLU Project Q=50l/s
	47		Submersible Pump Q=50l/s	piece	1,206,920	75	25	ASLALAR Project Q=50l/s
	48		Submersible Pump Q=40l/s	piece	1,151,150	75	25	ASLALAR Project Q=40l/s
	49		Submersible Pump Q=30l/s	piece	1,342,770	75	25	ASLALAR Project Q=30l/s
	50		Submersible Pump Q=20l/s	piece	1,201,200	75	25	ASLALAR Project Q=20l/s
	51		Submersible Pump Q=10l/s	piece	800,800	75	25	ASLALAR Project Q=10l/s
	52		Submersible Pump	piece	1,294,150	75	25	K.KARISTIRAN Project Q=30l/s
	53		Electric Facilities for Deep Well Pump	piece	2,435,795	70	30	URUNLU Project
	54			piece	2,221,295	70	30	ASLALAR Project
	55			piece	2,406,122	70	30	K.KARISTIRAN Project
	56		Race Way	m	2,532	75	25	KALESEKISI Project
	57		Race Way (RC Pipe)	LS	34,536,120	80	20	ASLALAR Project
Pipe Line	58		Steel Pipe 250mm(Naked Type)	m	24,868	65	35	KALESEKISI Project
	59		Steel Pipe D125mm	m	5,235	60	40	ILYASKOY Project
	60		Steel Pipe D200mm	m	7,796	60	40	ILYASKOY Project
	61		Steel Pipe D300mm	m	11,459	70	30	HACILAR Project
	62		Steel Pipe D400mm	m	14,257	70	30	HACILAR Project
	63		Steel Pipe D450mm	m	15,601	70	30	HACILAR Project
	64		Steel Pipe D500mm	m	17,285	70	30	HACILAR Project
	65		Steel Pipe D550mm	m	18,754	70	30	HACILAR Project
	66		PVC Pipe D75mm	m	1,098	60	40	KALESEKISI Project
	67		PVC Pipe D100mm	m	1,549	60	40	HACILAR Project
	68		PVC Pipe D110mm	m	1,573	60	40	HACILAR Project
	69		PVC Pipe D125mm	m	2,056	60	40	HACILAR Project
	70		PVC Pipe D150mm	m	2,441	60	40	HACILAR Project
	71		PVC Pipe D175mm	m	3,403	60	40	HACILAR Project
	72		PVC Pipe D200mm	m	3,471	60	40	HACILAR Project
	73		PVC Pipe D225mm	m	4,159	60	40	HACILAR Project
	74		PVC Pipe D250mm	m	4,971	60	40	HACILAR Project
	75		PVC Pipe D300mm	m	7,257	60	40	HACILAR Project
	76		PVC Pipe D350mm	m	7,398	60	40	HACILAR Project
	77	36.KH.16.3	Irrigation Hydrant A	piece	121,972	60	40	HACILAR Project
	78		Irrigation Hydrant B	piece	30,493	60	40	KALESEKISI Project
	79		Air Valve	piece	23,000	60	40	KALESEKISI Project
Open Channel	80		Irrigation Canal Type 1 (Q=40l/s)	m	1,831	75	25	CAMLIBEL Project
	81		Irrigation Canal Type 2 (Q=60l/s)	m	1,962	75	25	CAMLIBEL Project
	82		Irrigation Canal Type 3 (Q=80l/s)	m	2,202	75	25	CAMLIBEL Project
	83		Irrigation Canal Type 4 (Q=100l/s)	m	2,532	75	25	CAMLIBEL Project
	84		Main Canal(Regular),(500l/s)	m	7,688	75	25	KOZLUK Project
	85		Main Canal(Trapezoid),(500l/s)	m	3,602	75	25	KOZLUK Project
	86		Main Canal(Closed Rectangular),(500l/s)	m	14,118	75	25	KOZLUK Project
	87		A2 Trapezoid Canal	m	2,775	75	25	KOZLUK Project
	88		Y1 Trapezoid Canal(300l/s)	m	2,778	75	25	KOZLUK Project
	89		Y1T1 Trapezoid Canal(200l/s)	m	2,238	75	25	KOZLUK Project
	90		100l/s Canals	m	2,065	75	25	KOZLUK Project
	91		Open Canals(Including Diversion Work,Bridge and so on)	m	2,650	75	25	KUNKARA Project

工種	番号	コード番号	項 目	単位	単価 (1,000TL) Jul.1997	内貨 (%)	外貨 (%)	備 考
Aqueduct	92		First Type Aqueduct	piece	101,003	75	25	KOZLUK Project
	93		Second Type Aqueduct	piece	61,327	75	25	KOZLUK Project
Diversion Work	94		Field Water Diversion	piece	7,539	80	20	KOZLUK Project
On Farm Facilities	95		On-farm Main Pipe PE D100mm	m	400	80	20	Sprinkler System
	96		Lateral Pipe PE D75mm	m	200	80	20	
	97		Riser Pipe PE D200mm	m	60	80	20	
	98		Valve D75mm	piece	1,000	80	20	
	99		Sprinkler Head	piece	2,000	80	20	
	100		Control Unit	LS	100,100	40	60	Drip System
	101		Screen	piece	3,400	40	60	
	102		Ball Valve	piece	5,148	40	60	
	103		PE T-shaped Attachment D25mm	piece	243	40	60	
	104		PE Pipe D50mm	m	62	40	60	
	105		Drip Tube 20mm	m	47	40	60	
Drainage	106		Deep Drainage (H=1.8m)	m	471	65	35	CAMLIBEL Project
	107		Shallow Drainage(H=1.0m)	m	481	90	10	CAMLIBEL Project
	108		Sub-Surface Drainage	ha	821,000	85	20	CAMLIBEL Project
Farm Road	109		Farm Road B=3.00m	m	1,028	80	20	KUSKARA Project
	110		Farm Road B=4.00m	m	168	80	20	CAMLIBEL Project
	111		Farm Road B=6.00m	m	235	80	20	CAMLIBEL Project
	112		Farm Road B=8.00m	m	1,387	80	20	KUSKARA Project
Village Improvement	113		New Livestock Area(Terracing)	ha	1,300,000	80	20	CAMLIBEL Project
	114		Village Road,Village Drain	LS	2,800,000	80	20	CAMLIBEL Project
Land Acquisition	115			ha	2,100,000	100	0	HACILAR Project
	116			ha	1,725,000	100	0	URUNLU Project
	117			ha	1,275,000	100	0	KALESEKISI Project
	118			ha	1,500,000	100	0	CAMLIBEL Project
	119			ha	1,125,000	100	0	KOZLUK Project
	120			ha	1,650,000	100	0	OZDENK Project
	121			ha	1,875,000	100	0	ASLALAR Project
Land Compensation	122			ha	1,800,000	100	0	K.KARISTIRAN Project
	123			ha	1,680,000	100	0	HACILAR Project
	124			ha	1,380,000	100	0	URUNLU Project
	125			ha	1,020,000	100	0	KALESEKISI Project
	126			ha	1,200,000	100	0	CAMLIBEL Project
	127			ha	900,000	100	0	KOZLUK Project
	128			ha	1,320,000	100	0	OZDENK Project
	129			ha	1,500,000	100	0	ASLALAR Project
	130			ha	1,440,000	100	0	K.KARISTIRAN Project

Table F.2.5.2 Unit Price of Closed Pipe Line(PVC,Steel Pipe)



(H= 1.50 m)

Code No.	15.001/KH	14.001/KH	15.040/KH-1	36.020/*	36.067/KH-*	Sub-Total	Others	Total Unit	
Unit Price	730,989 (TL/m3)	288,235 (TL/m3)	40,611 (TL/m3)	36.026/* (TL/m)	36.094/KH- (TL/m)				
Description	Machine Excavation (m3/m)	Manual Filling (m3/m)	Machinery Filling (m3/m)	Pipe Connecting (m/m)	Pipe Installation (m/m)	(TL/m)	(%)	(TL/m)	
D(mm)									
Steel Pipe	125	665,200	74,941	25,585	300,663	3,919,538	4,985,927	5	5,235,223
	200	789,468	95,118	29,240	319,616	6,191,347	7,424,789	5	7,796,028
	250	877,187	106,647	31,677	564,917	7,715,472	9,295,900	5	9,760,695
	300	972,215	121,059	34,113	656,935	9,129,041	10,913,363	5	11,459,031
	350	1,067,244	135,470	36,550	701,386	9,426,101	11,366,751	5	11,935,089
	400	1,169,582	147,000	38,987	781,840	11,440,466	13,577,875	5	14,256,769
	450	1,271,921	161,412	41,423	828,650	12,554,754	14,858,160	5	15,601,068
	500	1,381,569	175,823	43,860	938,195	13,922,928	16,462,375	5	17,285,494
PVC	550	1,491,217	190,235	46,297	720,818	15,412,241	17,860,808	5	18,753,848
	75	584,791	63,412	23,148	25,198	348,934	1,045,483	5	1,097,757
	100	621,341	69,176	24,367	36,728	723,467	1,475,079	5	1,548,833
	110	635,960	72,059	24,773	41,566	723,467	1,497,845	5	1,572,737
	125	665,200	74,941	25,585	51,194	1,140,767	1,957,687	5	2,055,571
	150	701,749	80,706	26,803	58,427	1,459,887	2,327,572	5	2,443,951
	175	745,609	83,353	28,022	84,423	2,293,131	3,240,538	5	3,402,565
	200	789,468	95,118	29,240	98,435	2,293,131	3,305,392	5	3,470,662
	225	833,327	100,882	30,458	116,292	2,917,914	3,958,873	5	4,198,817
	250	877,187	106,647	31,677	139,913	3,578,446	4,733,870	5	4,970,564
	300	972,215	121,059	34,113	163,533	5,620,749	6,911,669	5	7,257,252
350	1,067,244	135,470	36,550	185,687	5,620,749	7,045,700	5	7,397,985	

Unit Amount

(K= 1.50 m)

	Code No.	15.001/KH	14.001/KH	15.040/KH-1	36.020/* 36.026/*	36.067/KH-* 36.094/KH-*
	D(mm)	Machine Excavation (m ³ /m)	Manual Filling (m ³ /m)	Machinery Filling (m ³ /m)	Pipe Connecting (m/m)	Pipe Installment (m/m)
Steel Pipe	125	0.91	0.26	0.63	1.000	1.000
	200	1.08	0.33	0.72	1.000	1.000
	250	1.20	0.37	0.78	1.000	1.000
	300	1.33	0.42	0.84	1.000	1.000
	350	1.46	0.47	0.90	1.000	1.000
	400	1.60	0.51	0.96	1.000	1.000
	450	1.74	0.56	1.02	1.000	1.000
	500	1.89	0.61	1.08	1.000	1.000
PVC	550	2.04	0.66	1.14	1.000	1.000
	75	0.80	0.22	0.57	1.000	1.000
	100	0.85	0.24	0.60	1.000	1.000
	110	0.87	0.25	0.61	1.000	1.000
	125	0.91	0.26	0.63	1.000	1.000
	150	0.96	0.28	0.66	1.000	1.000
	175	1.02	0.31	0.69	1.000	1.000
	200	1.08	0.33	0.72	1.000	1.000
	225	1.14	0.35	0.75	1.000	1.000
	250	1.20	0.37	0.78	1.000	1.000
300	1.33	0.42	0.84	1.000	1.000	
350	1.46	0.47	0.90	1.000	1.000	

D(mm)	Pipe Connecting		Pipe Installment		
	Code No.	Unit Price TL/m	Code No.	Unit Price TL/m	
Steel Pipe	125	36020/0.8.7	300,663	36067/KH8.7	3,919,538
	200	36020/0.10.6	319,616	36067/KH10.6	6,191,347
	250	36020/0.11.5	564,917	36067/KH11.5	7,715,472
	300	36020/0.12.5	656,935	36067/KH12.5	9,129,041
	350	36020/0.13.4	701,386	36067/KH13.4	9,426,101
	400	36.020/1.4	781,840	36067/KH14.4	11,440,466
	450	36.020/2.4	828,650	36067/KH15.4	12,554,754
	500	36.020/3.4	938,195	36067/KH16.4	13,922,928
PVC	550	36.020/4.2	720,818	36067/KH17.3	15,412,241
	75	36.026/4	25,198	36.094/KH-5	348,934
	100	36.026/5	36,728	36.094/KH-7	723,467
	110	36.026/6	41,586	36.094/KH-7	723,467
	125	36.026/7	51,194	36.094/KH-9	1,140,767
	150	36.026/8	58,427	36.094/KH-10	1,459,887
	175	36.026/9	84,423	36.094/KH-11	2,293,131
	200	36.026/10	98,435	36.094/KH-11	2,293,131
	225	36.026/11	116,292	36.094/KH-12	2,917,914
	250	36.026/12	139,913	36.094/KH-13	3,578,446
300	36.026/13	163,533	36.094/KH-15	5,620,749	
350	36.026/14-KH	185,687	36.094/KH-15	5,620,749	

Table F.2.5.3 Unit Price of Farm Pond

1)KALESEKISI-ADANA(Phase-1)

FARM POND CAPACITY Q= 263 m3
 FARM POND SIZE L= 9.4 m

Code No.	Description	Unit	Amount	Unit Price Jul/1997 (1,000TL)	Total Cost (1,000TL)
15.330/KH	Excavation	m3	1,129	191	215,639
21.011	Flat Surface Framework	m2	348	1,150	400,200
15.040	Filling	m3	331	41	13,571
16.002/1-B	Reinforced Concreat	m3	200	5,435	1,087,000
23.001/1	Reinforcement	t	10	77,516	775,160
	Sub-Total				2,491,570
	Others	%	30	2,491,570	747,471
Total					3,239,041

2)KALESEKISI-ADANA(Phase-2)

FARM POND CAPACITY Q= 288 m3
 FARM POND SIZE L= 9.8 m

Code No.	Description	Unit	Amount	Unit Price Jul/1997 (1,000TL)	Total Cost (1,000TL)
15.330/KH	Excavation	m3	1,176	191	224,616
21.011	Flat Surface Framework	m2	363	1,150	417,450
15.040	Filling	m3	345	41	14,145
16.002/1-B	Reinforced Concreat	m3	209	5,435	1,135,915
23.001/1	Reinforcement	t	10.45	77,516	810,042
	Sub-Total				2,602,168
	Others	%	30	2,602,168	780,650
Total					3,382,818

3)ASLANLAR-IZMIR

FARM POND CAPACITY Q= 690 m3
 FARM POND SIZE L= 15.2 m

Code No.	Description	Unit	Amount	Unit Price Jul/1997 (1,000TL)	Total Cost (1,000TL)
15.330/KH	Excavation	m3	1,905	191	363,855
21.011	Flat Surface Framework	m2	408	1,150	469,200
15.040	Filling	m3	535	41	21,935
16.002/1-B	Reinforced Concreat	m3	341	5,435	1,853,335
23.001/1	Reinforcement	t	17.05	77,516	1,321,648
	Sub-Total				4,029,973
	Others	%	30	4,029,973	1,208,992
Total					5,238,965

4) ILYASKOY-BURSA (EASTERN SIDE)

FARM POND CAPACITY Q= 151 m³
 FARM POND SIZE L= 7.1 m

Code No.	Description	Unit	Amount	Unit Price Jul/1997 (1,000TL)	Total Cost (1,000TL)
15.330/KH	Excavation	m ³	877	191	167,507
21.011	Flat Surface Framework	m ²	146	1,150	167,900
15.040	Filling	m ³	250	41	10,250
16.002/1-B	Reinforced Concreat	m ³	148	5,435	804,380
23.001/1	Reinforcement	t	7.4	77,516	573,618
	Sub-Total				1,723,655
	Others	%	30	1,723,655	517,097
Total					2,240,752

5) ILYASKOY-BURSA (WESTERN SIDE)

FARM POND CAPACITY Q= 329 m³
 FARM POND SIZE L= 10.5 m

Code No.	Description	Unit	Amount	Unit Price Jul/1997 (1,000TL)	Total Cost (1,000TL)
15.330/KH	Excavation	m ³	1,261	191	240,851
21.011	Flat Surface Framework	m ²	240	1,150	276,000
15.040	Filling	m ³	370	41	15,170
16.002/1-B	Reinforced Concreat	m ³	226	5,435	1,228,310
23.001/1	Reinforcement	t	11.3	77,516	875,931
	Sub-Total				2,636,262
	Others	%	30	2,636,262	790,879
Total					3,427,141

Table F.2.5.4 Unit Price of Open Pipe Line(RC)

Unit Amount (H= 1.50 m)

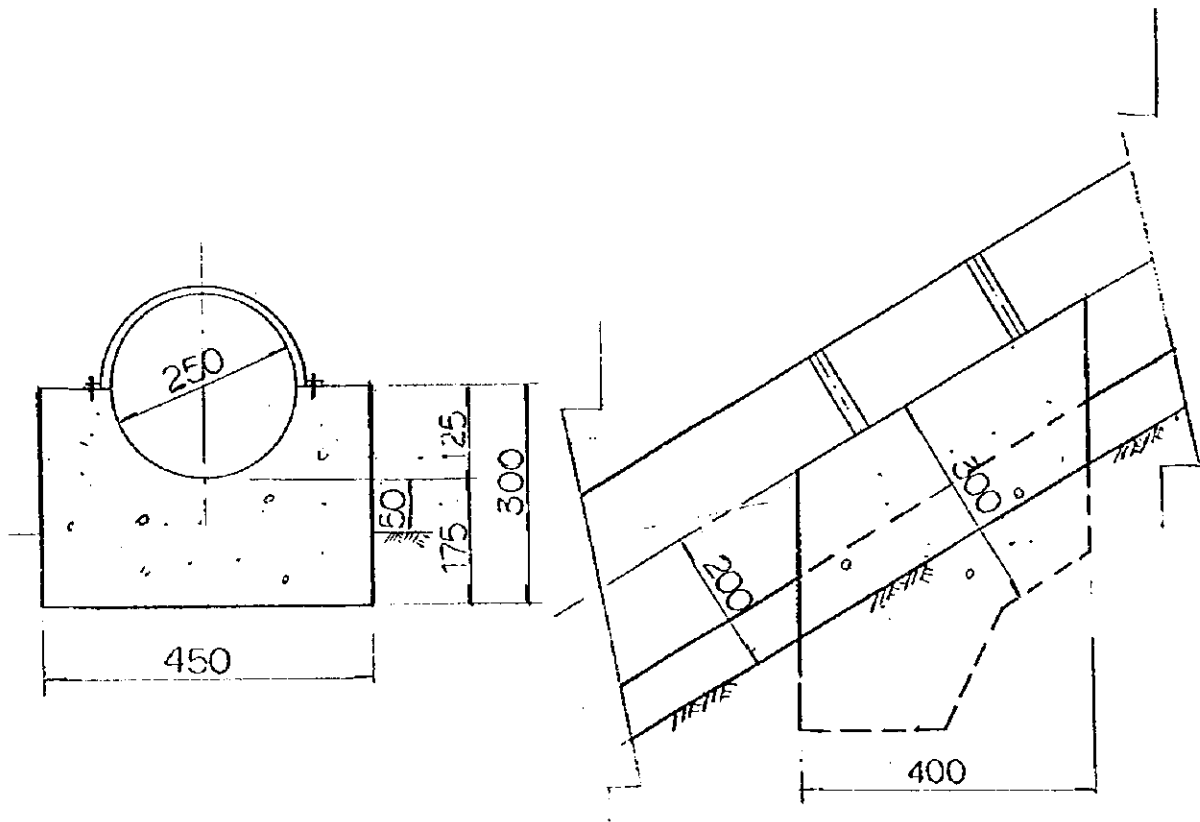
Code No.	14.012/2	14.001/KH	15.040/KH-1	21.011		
D(mm)	Manual Excavation (m3/m)	Manual Filling (m3/m)	Machinery Filling (m3/m)	Flat Surf. Framework (m2/m)	Pipe Preparing (m/m)	
RC Pipe	350	1.49	0.45	0.94	0.79	1.000
	400	1.63	0.49	1.01	0.84	1.000
	500	1.94	0.57	1.14	0.95	1.000
	600	2.26	0.66	1.27	1.06	1.000
	700	2.61	0.74	1.40	1.17	1.000
	800	2.98	0.83	1.54	1.28	1.000
	900	3.37	0.92	1.67	1.39	1.000

Unit Price (H= 1.50 m)

Code No.	14.012/2	14.001/KH	15.040/KH-1	21.011	08.724/KH-*	Sub-Total	Others	Total Unit
Unit Price	792,645 (TL/m3)	288,235 (TL/m3)	40,611 (TL/m3)	1,150,292 (TL/m2)	(TL/m)			
Descript	Manual Excavation (m3/m)	Manual Filling (m3/m)	Machinery Filling (m3/m)	Flat Surf. Framework (m2/m)	Pipe Preparing (m/m)	(TL/m)	(%)	(TL/m)
RC Pipe	350	1,181,041	129,706	38,174	908,731	3,562,130	5,819,782	50 8,729,673
	400	1,292,011	141,235	41,017	966,245	5,209,490	7,649,998	50 11,474,997
	500	1,537,731	164,294	46,297	1,092,777	7,857,850	10,698,949	50 16,048,424
	600	1,791,378	190,235	51,576	1,219,310	8,648,640	11,901,139	50 17,851,709
	700	2,068,803	213,294	56,855	1,345,842	13,570,700	17,255,494	50 25,883,241
	800	2,362,082	239,235	62,541	1,472,374	17,207,190	21,343,422	50 32,015,133
	900	2,671,214	265,176	67,820	1,598,906	20,180,160	24,783,276	50 37,174,914

D(mm)	Pipe Preparing	
	Code No.	Unit Price TL/m
350	08.724/KH-12	3,562,130
400	08.724/KH-13	5,209,490
500	08.724/KH-15	7,857,850
600	08.724/KH-16	8,648,640
700	08.725/KH-17	13,570,700
800	08.725/KH-18	17,207,190
900	08.725/KH-19	20,180,160

Table F.2.5.5 Unit Price of Naked Pipe Line(Steel Pipe)



Steel Pipe (Standard Diameter = 250 mm)

0.3375

(Unit ; m)

Code No.	Description	Unit	Amount	Unit Price (TL)Jul/1997	Total Cost (1,000TL)
14.012/2	Manual Excavation	m ³	0.23	792,645	182
14.001/KH	Manual Filling	m ³	0.13	288,235	37
21.011	Flat Surface Framework	m ²	1.50	1,150,292	1,725
16.003/B	Flat Surface Framework	m ²	0.10	1,150,292	115
36.020/0.11.10	Pipe Connecting 250mm	piece	0.167	7,421,690	1,239
36.067/KH-12.10	Pipe Installment 250mm	m	1.00	13,293,916	13,294
Sub-Total					16,592
Others		%	50	16,592	8,296
Total					24,888