TABLE

TABLE-1 WATER QUALITY OF EXISTING WELL

Description	Unit	Syrian Standard	Jarajir	Harasta	Urbin	Yabroud	Qara	Ruheibe	Dier Atiya	Nabek	Domair	Qodsaya
Colectioin Date			95.08.27	95.03.19	95.03.07	95.04.03	95.08.27	95.08.27	95.08.27	95.03.18	95.10.24	95.02.18
Test Date			95.08.28	95.03.19	95.03.07	95.04.03	95.08.28	95.08.28	95.08.28	95.03.18	95.10.24	95.02.18
Turbidity	NTU	5.00	0.90	1.80	1.60	0.40	1.90	1.20	3.40	1.40	0.60	1.50
Electro Conductivity	μs/cm		385.00	877.00	952.00	580.00	533.00	822.00	718.00	765.00	1,506.20	1,512.00
PH		6.5～8.5	7.40	7.96	7.53	8.05	7.90	7.90	8.10	7.90	6.96	7.79
Total Dissolved Solids	mg/l	1,000.00	193.00	440.00	477.00	291.00	266.00	412.00	360.00	383.00	927.05	
NH4+	mg/l	0.05	0.03	0.00	0.00	0.03	0.01	0.06	0.13	0.03	0.02	0.00
Na+	mg/l	200.00	6.21	11.96	38.41	2.30	9.20	5.98	44.16	28.75	100.05	87.17
K+	mg/l		1.00	3.00	1.75	0.50	4.75	1.50	0.50	2.75		3.25
Ca++	mg/l		60.00	112.00	128.00	96.00	48.00	100.00	104.00	96.00	156.00	140.00
Mg++	mg/l		56.80	36.48	34.05	17.02	24.32	34.05	12.16	36.48	56.09	53.50
Fe+++	mg/l		0.03	0.02	0.01	0.02	0.02	0.04	0.29	0.01	0.12	0.05
Total Positive Ion	mg/l		124.07	163.16	202.22	115.87	86.30	141.63	161.24	164.02	312.28	283.97
F-	mg/l	0.70	0.10	0.14	0.18	0.30	0.20	0.60	0.29	0.50	1.08	
Cl-	mg/l	250.00	14.20	49.70	49.70	28.40	14.20	42.60	49.70	42.60	347.90	142.00
SO4--	mg/l	250.00	7.00	42.00	30.00	7.00	8.00	65.00	65.00	85.00	125.00	200.00
CO3--	mg/l		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HCO3-	mg/l		256.20	300.40	488.00	305.00	244.00	329.40	317.20	366.00	244.00	390.40
NO3-	mg/l	40.00	7.07	30.94	53.04	19.90	19.89	7.07	10.61	7.51	18.56	41.99
NO2-	mg/l	0.01	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00
PO4---	mg/l		1.26	0.50	0.38	0.80	0.78	0.49	1.19	0.21	0.23	0.90
Total Negative Ion	mg/l		285.85	513.71	621.30	361.40	287.07	444.56	443.70	501.33	736.77	775.29
Total Salt	mg/l		409.90	677.17	823.52	477.27	373.37	586.19	604.94	665.35	1,049.05	1,059.26
Hardness	mg/l	500.00	230.00	430.00	460.00	310.00	220.00	390.00	310.00	390.00	620.00	570.00
CO2	mg/l		7.80	4.40	4.40	4.40	4.40	4.40	4.40	8.80	8.80	8.80
Hg	mg/l	0.001	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Pb	mg/l	0.010	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Cd	mg/l	0.005	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Cr	mg/l	0.050	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Colon Bacillus	/100ML	0.00	40.00	24.00	36.00	Nil	N.A.	N.A.	Negative	Negative	N.A.	N.A.
Total Bacillus	/100ML	200 or 2000colon	Layer of colonies	Layer of colonies	Layer of colonies	3colonies	N.A.	N.A.	Negative	Negative	N.A.	N.A.

TABLE-2 WATER QUALITY OF PROPOSED WELL

Description	Unit	Syrian Standard	Jarajir	Harasta	Yabroud		Rasalain	Qara	Ruheibe	Dier Atiya	Nabek		Domair		Qodsaya	
					Coraine						Alcoup		Adra		Dimas	
					(1)	(2)					(1)	(2)	(1)	(2)	(1)	(2)
Collection Date			94. .	95.03.19	95.04.03	94. .	94.06.22	94. .	95.03.29	95.02.20	95.03.18	95.08.27	94.07.09	95.02.18	93.04.13	94. .
Test Date			94. .	95.03.19	95.04.03	94. .	94.06.23	94. .	95.03.29	95.02.21	95.03.18	95.08.28	94.07.09	95.02.18	93.04.13	94. .
Turbidity	NTU	5.00	0.00	2.00	0.40	0.50	1.90	1.00	1.00	1.00	1.40	0.60	1.60	1.00	3.50	
Electro Conductivity	μs/cm		663.00	668.00	580.00	593.00	265.80	662.00	518.00	660.00	765.00	691.00	551.00	667.00	186.00	884.00
PH		6.5～8.5	8.02	8.22	8.05		8.58	8.03	7.90	8.02	7.90	7.20	7.89	8.02	7.70	7.15
Total Dissolved Solids	mg/l	1,000.00	330.00	323.00	291.00	297.00	196.51	331.00	260.00	330.00	383.00	349.00	372.87	334.00	166.66	441.00
NH4+	mg/l	0.05	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.00	0.03	0.00	0.00	0.00	0.00	0.05
Na+	mg/l	200.00	6.44	7.59	2.30	22.77	9.89	6.42	23.69	6.44	28.75	28.75	3.22	6.44	2.30	24.61
K+	mg/l		4.00	3.00	0.50	0.50	3.00	4.00	0.50	9.00	2.75	0.50	15.50	4.00		
Ca++	mg/l		72.00	80.00	96.00	80.00	52.00	70.00	72.00	72.00	96.00	112.00	68.00	72.00	36.00	72.00
Mg++	mg/l		41.30	29.18	17.02	24.32	7.30	41.20	7.30	41.34	36.48	24.32	38.91	41.34	17.07	17.02
Fe+++	mg/l		0.03	0.01	0.02	0.01	0.02	0.02	0.01	0.04	0.01	0.02	0.02	0.04	0.01	0.18
Total Positive Ion	mg/l		123.77	119.78	115.87	127.60	72.21	121.64	103.50	128.82	164.02	165.59	125.65	123.82	55.38	113.86
F-	mg/l	0.70		0.28	0.30	0.32			0.30		0.50	0.33	0.52		0.30	0.36
Cl-	mg/l	250.00	28.40	28.40	28.40	14.20	7.10	28.20	28.40	28.40	42.60	35.50	28.40	28.40	3.55	14.20
SO4--	mg/l	250.00	70.00	50.00	7.00	10.00	9.50	69.00	9.50	70.00	85.00	62.00	53.00	70.00	5.00	15.00
CO3--	mg/l		0.00	0.00	0.00	0.00	3.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
HCO3-	mg/l		310.00	292.80	305.00	366.00	183.00	309.00	244.00	305.00	366.00	390.40	305.00	305.00	170.80	317.20
NO3-	mg/l	40.00	6.50	9.28	19.90	22.10	12.82	6.40	13.26	6.60	7.51	8.40	12.38	6.60	16.79	8.80
NO2-	mg/l	0.01	0.00	0.01	0.00	0.01	0.00	0.00	0.01	0.00	0.01	0.00	0.02	0.00	0.00	0.06
PO4---	mg/l		0.60	0.61	0.80	0.30	0.38	0.50	0.36	0.65	0.21	0.54	0.40	0.65	0.24	0.69
Total Negative Ion	mg/l		415.50	381.38	361.40	412.93	215.80	413.10	295.53	410.65	501.33	497.17	399.72	410.65	196.68	356.31
Total Salt	mg/l		539.27	501.16	477.27	540.53	288.01	534.74	399.03	539.47	665.35	662.76	525.37	534.47	252.06	470.17
Hardness	mg/l	500.00	350.00	320.00	310.00	300.00	160.00	300.00	210.00	400.00	390.00	360.00	330.00	350.00	160.00	250.00
CO2	mg/l		4.20	2.20	4.40	4.40	0.00	4.00	4.40	4.30	8.80	4.40	4.40	4.40	4.40	4.40
Hg	mg/l	0.001	0.00087	0.00043	N.A.	N.A.	0.00040	0.00066	0.00049	0.00055	0.00045	N.A.	0.00095	N.A.	0.00064	N.A.
Pb	mg/l	0.010	0.00012	0.00052	N.A.	N.A.	0.00150	0.00037	0.00009	0.00089	0.00060	N.A.	0.00003	N.A.	0.00036	N.A.
Cd	mg/l	0.005	0.00023	0.00002	N.A.	N.A.	0.00008	0.00062	0.00007	0.00039	0.00003	N.A.	0.00060	N.A.	0.00006	N.A.
Cr	mg/l	0.050	0.00021	0.00038	N.A.	N.A.	0.00170	0.00049	0.00026	0.00001	0.00010	N.A.	0.00030	N.A.	0.00013	N.A.
Colon Bacillus	/100ML	0.00	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Total Bacillus	/100ML	200 or 2000colon	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.

TABLE-3 GUIDELINES FOR DRINKING WATER QUALITY

(Syrian Standard No.45 (Ameded) and WHO Guidline)

Description	Unit	Syrian Standard	WHO Guidline
Colour	TCU	Below 5	Below 15
Taste		Shuld be acceptable	Shuld be acceptable
Odour		Shuld be acceptable	Shuld be acceptable
Turbidity	NTU	2	Below 5
PH		6.5~8.5	-
Total Disolved Soids (TDS)	mg/l	1,000	1,000
Hardness	mg/l	500	
NO2-	mg/l	0.01	3
NO3-	mg/l	N<10, NO3-<40	50
PO4---	mg/l		
F-	mg/l	1.5	1.5
Cl-	mg/l	250	250
SO4--	mg/l	250	
Fe	mg/l	0.3	0.3
Mn	mg/l	0.1	0.5
Cu	mg/l	1.0	1.0
Pb	mg/l	0.01	0.01
Zn	mg/l	2.0	3.0
Hg	mg/l	0.001	0.001
Cr	mg/l	0.05	0.05
Cd	mg/l	0.005	0.003
NH4+	mg/l	0.05	
Na+	mg/l	200	200

NOTE; TCU : True Colour Unit
NTU : Nephelometric Turbidity Unit
WHO : Guidline : 1993

TABLE-4 YEARLY DESIGN POPULATION AND DESIGN DEMAND

DESCRIPTION	UNIT	HARASTA			AVERAGE DAILY DEMAND	JARAJIR	YABROUD	QARA	RUHEIBE	DIER ATIYA	NABEK	DOMAIR	QODSAYA	TOTAL OR AVERAGE
		HARASTA	URBIN	TOTAL										
DESIGN DAILY DEMAND	l/man·day	200	200	200	-	110～125	110～125	110～125	110～125	110～125	110～125	110～125	200	-
GROWTH RATE	%	4.00	4.00	4.00	-	3.35	3.35	3.35	3.35	3.35	3.35	3.35	4.00	-
DESIGN POPULATION														
1994	Person	70,192	40,945	111,137	-	3,928	51,241	17,500	25,099	24,201	43,562	27,598	N.A.	193,129
2000	Person	88,815	51,808	140,624	-	4,787	62,443	21,326	30,586	29,491	53,085	33,631	N.A.	235,348
2005	Person	108,057	63,033	171,090	-	5,644	73,626	25,145	36,064	34,774	62,593	39,655	N.A.	277,500
2010	Person	131,468	76,689	208,158	-	6,655	86,813	29,649	42,523	41,002	73,803	46,757	N.A.	327,201
2015	Person	159,951	93,304	253,255	-	7,847	102,362	34,959	50,139	48,345	87,022	55,131	N.A.	385,805
DESIGN DEMAND														
1994	m3/D	14,038	8,189	22,227	110	432	5,637	1,925	2,761	2,662	4,792	3,036	N.A.	43,472
2000	m3/D	17,763	10,362	28,125	110	527	6,869	2,346	3,364	3,244	5,839	3,699	N.A.	54,013
2005	m3/D	21,611	12,607	34,218	115	649	8,467	2,892	4,147	3,999	7,198	4,560	N.A.	66,131
2010	m3/D	26,294	15,338	41,632	120	799	10,418	3,558	5,103	4,920	8,856	5,611	N.A.	80,896
2015	m3/D	31,990	18,661	50,651	125	981	12,795	4,370	6,267	6,043	10,878	6,891	N.A.	98,877

TABLE-5 EXISTING CONSUMPTION AND ESTIMATED POPULATION

Project / Description	Unit	Jarajir	Harasta		Yabroud	Qara	Ruheibe	Dier Atiya	Nabek	Domair	Qodsaya	Total or Average
			Harasta	Urbin								
Population in 1994	P	3,928	70,192	40,945	51,241	17,500	25,099	24,201	43,562	27,598	(159,000)	304,266
Consumption in 1994	m3/Y	146,000	3,000,000	1,218,000	1,300,000	603,000	796,000	625,000	1,392,000	964,000	N.A	10,044,000
Daily Consumption	m3/D	400	8,219	3,337	3,562	1,652	2,181	1,712	3,814	2,641	N.A	27,518
M/D Consumption in 1994	l/M/D	102	117	81	70	94	87	71	88	96	N.A	90
Seasonal Consumption in 1994												
1st season (J.F.M)	m3	15,000	600,000	25,000	250,000	105,000	125,000	100,000	250,000	175,000		1,370,000
Effectiveness	%	42	82	83	78	71	64	65	73	74		76
2nd season (A.M.J)	m3	40,000	700,000	350,000	300,000	160,000	221,000	150,000	392,000	250,000		2,563,000
Effectiveness	%	110	94	115	93	106	111	96	113	104		102
3rd season (J.A.S)	m3	71,000	1,000,000	368,000	500,000	228,000	300,000	250,000	450,000	339,000		3,506,000
Effectiveness	%	193	132	120	153	150	150	159	128	140		138
4th season (O.N.D)	m3	20,000	700,000	250,000	250,000	110,000	150,000	125,000	300,000	200,000		2,105,000
Effectiveness	%	54	93	81	76	72	75	79	86	82		83
Total	m3/Y	146,000	3,000,000	1,218,000	1,300,000	603,000	796,000	625,000	1,392,000	964,000		10,044,000
Daily Average Consumption	M3/D	400	8,219	3,337	3,562	1,652	2,181	1,712	3,814	2,641		27,518
Estimated Population												
1981	P	N.A	N.A	N.A	N.A	7,484	N.A	N.A	N.A	N.A	N.A	N.A
1990	P	3,450	60,000	35,000	45,000	10,068	22,000	N.A	N.A	N.A	N.A	N.A
1991	P	3,564	62,400	36,400	46,485	10,405	22,737	N.A	N.A	25,000	N.A	N.A
1992	P	3,681	64,896	37,856	48,019	10,753	23,499	N.A	N.A	25,838	N.A	N.A
1993	P	3,803	67,492	39,370	49,604	11,114	24,286	N.A	N.A	26,703	N.A	N.A
1994	P	3,928	70,192	40,945	51,241	11,486	25,099	N.A	43,562	27,598	159,000	457,252

TABLE-6 DESIGN WATER VOLUME

PROJECT: HARASTA

DESCRIPTION		YEAR	1994	2000	2005	2010	2015	REMARKS
DESIGN POPULATION	GROWTH RATE (A) R=4.00%	man	111,137	140,624	171,090	208,158	253,255	
DESIGN MAN/DAY CONSUMPTION	(B)	l/M/D	200	200	200	200	200	
DESIGN AVERAGE DAILY CONSUMPTION	① = A x B	m3/D	22,227	28,125	34,218	41,632	50,651	
DESIGN MAXIMUM DAILY CONSUMPTION	② =1.5x①	m3/D	33,341	42,187	51,327	62,447	75,977	
DESIGN TOTAL DEMAND	③ =①/16 ③ =②/24	m3/H	1,389	1,758	2,139	2,602	3,166	
EXISTING WELL CAPACITY	④	m3/H	1,205	1,205	1,205	1,205	1,205	700 + 505
DESIGN DEMAND	⑤ = ③ - ④	m3/H	184	553	934	1,397	1,961	
DESIGN WELL CAPACITY	⑥	m3/H	600	600	600	600	600	120 x 5
DEFERENCE	⑦ = ⑥ - ⑤	m3/H	416	47	-334	-797	-1,361	
DESIGN SUPPLY WATER VOLUME	⑧ = ⑤ or ⑥	m3/H	184	553	600	600	600	
MAXIMUM YEAR	⑨	YEAR		2000.62				

Note: MAXIMUM YEAR is the year to reach maximum demand by proposed facilities.

TABLE-7 DESIGN WATER VOLUME

PROJECT: JARAJIR

DESCRIPTION		YEAR	1994	2000	2005	2010	2015	REMARKS
DESIGN POPULATION	GROWTH RATE (A) R=3.35%	man	3,928	4,787	5,644	6,655	7,847	
DESIGN MAN/DAY CONSUMPTION	(B)	l/M/D	110	110	115	120	125	
DESIGN DAILY CONSUMPTION	① = A x B	m3/D	432	527	649	799	981	
DESIGN MAXIMUM DAILY CONSUMPTION	② = 1.5x①	m3/D	648	790	974	1,198	1,471	
DESIGN TOTAL DEMAND	③ = ①/16 ③ = ②/24	m3/H	27	33	41	50	61	
EXISTING WELL CAPACITY	④	m3/H	0	0	0	0	0	
DESIGN DEMAND	⑤ = ③ - ④	m3/H	27	33	41	50	61	
DESIGN WELL CAPACITY	⑥	m3/H	50x1 Case 50	50	50	50	50	50 x 1
DEFERENCE	⑦ = ⑥ - ⑤	m3/H	23	17	9	0	-11	
DESIGN SUPPLY WATER VOLUME	⑧ = ⑤ or ⑥	m3/H	27	33	41	50	50	
MAXIMUM YEAR	⑨	YEAR				2010		
DESIGN WELL CAPACITY	⑥	m3/H	50x2 Case 100	100	100	100	100	50 x 2
DEFERENCE	⑦ = ⑥ - ⑤	m3/H	73	67	59	50	39	
DESIGN SUPPLY WATER VOLUME	⑧ = ⑤ or ⑥	m3/H	27	33	41	50	61	
MAXIMUM YEAR	⑨	YEAR					2015	

Note: MAXIMUM YEAR is the year to reach maximum demand by proposed facilities.

TABLE-8 DESIGN WATER VOLUME

PROJECT: YABROUD

DESCRIPTION		YEAR	1994	2000	2005	2010	2015	REMARKS
DESIGN POPULATION	GROWTH RATE (A) R=3.35%	man	51,241	62,443	73,626	86,813	102,362	
DESIGN MAN/DAY CONSUMPTION	(B)	l/M/D	110	110	115	120	125	
DESIGN AVERAGE DAILY CONSUMPTION	① = A x B	m3/D	5,637	6,869	8,467	10,418	12,795	
DESIGN MAXIMUM DAILY CONSUMPTION	② =1.5x①	m3/D	8,455	10,303	12,701	15,626	19,193	
DESING TOTAL DEMAND	③ =①/16 ③ =②/24	m3/H	352	429	529	651	800	
EXISTING WELL CAPACITY	④	m3/H	120 180	120 180	120 180	120 180	120 180	60 x 2 45 x 4
DESIGN DEMAND	⑤ =③-④	m3/H	52	129	229	351	500	
DESIGN WELL CAPACITY	⑥	m3/H	200	200	200	200	200	Asalain 100 x 2
DEFERENCE	⑦ =⑥-⑤	m3/H	148	71	-29	-151	-300	
DESIGN SUPPLY WATER VOLUME	⑧ =⑤ or ⑥	m3/H	52	129	200	200	200	
MAXIMUM YEAR	⑨	YEAR		2004				

Note: MAXIMUM YEAR is the year to reach maximum demand by proposed facilities.

TABLE-9 DESIGN WATER VOLUME

PROJECT: QARA

DESCRIPTION		YEAR	1994	2000	2005	2010	2015	REMARKS
DESIGN POPULATION	GROWTH RATE (A) R=3.35%	man	17,500	21,326	25,145	29,649	34,959	
DESIGN MAN/DAY CONSUMPTION	(B)	l/M/D	110	110	115	120	125	
DESIGN AVERAGE DAILY CONSUMPTION	① = A x B	m3/D	1,925	2,346	2,892	3,558	4,370	
DESIGN MAXIMUM DAILY CONSUMPTION	② =1.5x①	m3/D	2,888	3,519	4,338	5,337	6,555	
DESIGN TOTAL DEMAND	③ =①/16 ③ =②/24	m3/H	120	147	181	222	273	
EXISTING WELL CAPACITY	④	m3/H	16	16	16	16	16	7 x 1 + 9 x 1
DESIGN DEMAND	⑤ =③-④	m3/H	104	131	165	206	257	
DESING WELL CAPACITY	⑥	m3/H	135	135	135	135	135	50 x 2 + 35 x 1
DEFERENCE	⑦ =⑥-⑤	m3/H	31	4	-30	-71	-122	
DESIGN SUPPLY WATER VOLUME	⑧ =⑤ or ⑥	m3/H	104	131	135	135	135	
MAXIMUM YEAR	⑨	YEAR		2000.47				

Note: MAXIMUM YEAR is the year to reach maximum demand by proposed facilities.

TABLE-10 DESIGN WATER VOLUME

PROJECT: RUHEIBE

DESCRIPTION		YEAR	1994	2000	2005	2010	2015	REMARKS
DESIGN POPULATION	GROWTH RATE (A) R=3.35%	man	25,099	30,586	36,064	42,523	50,139	
DESIGN MAN/DAY CONSUMPTION	(B)	l/M/D	110	110	115	120	125	
DESIGN AVERAGE DAILY CONSUMPTION	① = A x B	m3/D	2,761	3,364	4,147	5,103	6,267	
DESIGN MAXIMUM DAILY CONSUMPTION	② = 1.5x①	m3/D	4,141	5,047	6,221	7,654	9,401	
DESIGN TOTAL DEMAND	③ = ①/16 ③ = ②/24	m3/H	173	210	259	319	392	
EXISTING WELL CAPACITY	④	m3/H	105	105	105	105	105	50 +7 + 17 + 15 + 16
DESIGN DEMAND	⑤ = ③ - ④	m3/H	68	105	154	214	287	
DESIGN WELL CAPACITY	⑥	m3/H	180	180	180	180	180	45 x 4
DEFERENCE	⑦ = ⑥ - ⑤	m3/H	112	75	26	-34	-107	
DESIGN SUPPLY WATER VOLUME	⑧ = ⑤ or ⑥	m3/H	68	105	154	180	180	
MAXIMUM YEAR	⑨	YEAR			2007.17			

Note: MAXIMUM YEAR is the year to reach maximum demand by proposed facilities.

TABLE-11 DESIGN WATER VOLUME

PROJECT: DIER ATIYA

DESCRIPTION		YEAR	1994	2000	2005	2010	2015	REMARKS
DESIGN POPULATION	GROWTH RATE (A) R=3.35%	man	24,201	29,491	34,774	41,002	48,345	
DESIGN MAN/DAY CONSUMPTION	(B)	l/M/D	110	110	115	120	125	
DESING AVERAGE DAILY CONSUMPTION	① = A x B	m3/D	2,662	3,244	3,999	4,920	6,043	
DESIGN MAXIMUM DAILY CONSUMPTION	② =1.5x①	m3/D	3,993	4,866	5,998	7,380	9,065	
DESIGN TOTAL DEMAND	③ =①/16 ③ =②/24	m3/H	166	203	250	308	378	
EXISTING WELL CAPACITY	④	m3/H	147	147	147	147	147	35 x 1 + 15 x 1 + (35 + 20 + 42) x 1
DESIGN WATER VOLUME	⑤ =③-④	m3/H	19	56	103	161	231	
DESIGN WELL CAPACITY	⑥	m3/H	45	45	45	45	45	45 x 1
DEFERENCE	⑦ =⑥-⑤	m3/H	26	-11	-58	-116	-186	
DESIGN SUPPLY WATER VOLUME	⑧ =⑤ or ⑥	m3/H	-	-	-	-	-	By existing pipe
MAXIMUM YEAR	⑨	YEAR	1998					

Note: MAXIMUM YEAR is the year to reach maximum demand by proposed facilities.

TABLE-12 DESIGN WATER VOLUME

PROJECT: NABEK

DESCRIPTION		YEAR	1994	2000	2005	2010	2015	REMARKS
DESIGN POPULATION	GROWTH RATE (A) R=3.35%	人	43,562	53,085	62,593	73,803	87,022	
DESING MAN/DAY CONSUMPTION	(B)	l/M/D	110	110	115	120	125	
DESIGN AVERAGE DAILY CONSUMPTION	① = A x B	m3/D	4,792	5,839	7,198	8,856	10,878	
DESIGN MAXIMUM DAILY CONSUMPTION	② =1.5x①	m3/D	7,188	8,759	10,797	13,285	16,317	
DESIGN TOTAL DEMAND	③ =①/16 ③ =②/24	m3/H	299	365	450	554	680	
EXISTING WELL CAPACITY	④	m3/H	115	115	115	115	115	50 x 2 + 15 x 1
DESIGN DEMAND	⑤ =③-④	m3/H	184	250	335	439	565	
DESIGN WELL CAPACITY	⑥	m3/H	220	220	220	220	220	55 x 4
DEFERENCE	⑦ =⑥-⑤	m3/H	36	-30	-115	-219	-345	
DESIGN SUPPLY WATER VOLUME	⑧ =⑤ or ⑥	m3/H	-	-	-	-	-	By existing pipe.
MAXIMUM YEAR	⑨	YEAR	1997					

Note: MAXIMUM YEAR is the year to reach maximum demand by proposed facilities.

TABLE-13 DESIGN WATER VOLUME

PROJECT: DOMAIR

DESCRIPTION		YEAR	1994	2000	2005	2010	2015	REMARKS
DESIGN POPULATION	GROWTH RATE (A) R=3.35%	man	27,598	33,631	39,655	46,757	55,131	
DESIGN MAN/DAY CONSUMPTION	(B)	l/M/D	110	110	115	120	125	
DESIGN AVERAGE DAILY CONSUMPTION	① = A x B	m3/D	3,036	3,699	4,560	5,611	6,891	
DESIGN MAXIMUM DAILY CONSUMPTION	② = 1.5x①	m3/D	4,554	5,549	6,840	8,416	10,337	
DESIGN TOTAL DEMAND	③ = ①/16 ③ = ②/24	m3/H	190	231	285	351	431	
EXISTING WELL CAPACITY	④	m3/H	30	30	30	30	30	15 x 2
DESIGN DEMAND	⑤ = ③ - ④	m3/H	160	201	255	321	401	
DESIGN WELL CAPACITY	⑥	m3/H	200	200	200	200	200	100 x 2
DEFERENCE	⑦ = ⑥ - ⑤	m3/H	40	-1	-55	-121	-201	
DESIGN SUPPLY WATER VOLUME	⑧ = ⑤ or ⑥	m3/H	-	-	-	-	-	By existing pipe.
MAXIMUM YEAR	⑨	YEAR	1999.85					

Note: MAXIMUM YEAR is the year to reach maximum demand by proposed facilities.

TABLE-14 TEST RECORD OF WELL

Description	Unit	Jarajir	Harasta	Yabroud	Qara	Ruheibe	Dier Atiya	Nabek	Domair	Qodsaya
Date		93.08.10	93.09.05	92.05.12	93.10.02	95.09.20	92.	93.08.25	93.10.15	
Test capacity	m3/D	50.00	90.00	59.00	50.00	60.00	45.00	55.00	94.00	N.A.
Depth of well	m	370.00		257.00	325.00		320.00	400.00		
Depth of pump	m	180.00	110.00		270.00	260.00	240.00	364.00	125.00	
Pump Output	Hp	60.00	120.00		90.00	100.00	50.00	120.00	70.00	
①Initial WL	GL-(m)	171.00	85.00	23.30	260.00	180.00	180.00	320.00	90.80	
②Balance WL	GL-(m)	172.00	85.91	25.95	263.01	240.10	220.00	340.00	104.37	
③Drow down WL	(②-①)m	1.00	0.91	2.65	3.01	60.10	40.00	20.00	13.57	
④Initial Time	ti Hr	8.00	8.00		8.00	8.00	6.00	6.00	6.00	
⑤Balanced Time	tb Hr	52.00	58.00		46.00	44.00	30.00	60.00	72.00	
⑥Drow down Time	(⑤-④)Hr	44.00	50.00		38.00	36.00	24.00	54.00	66.00	
⑦Recovery WL	GL-(m)	171.00	85.00		260.00	180.00	180.00	320.00	90.80	
⑧Operation Hour	tp Hr	70.00	70.00		70.00	36.00	72.00	72.00	72.00	
⑨W.L Recovery Time	tr Hr	75.00	72.00		84.00	46.00	84.00	77.00	75.00	
⑩Recovery Time	(⑨-⑧)Hr	5.00	2.00		14.00	10.00	12.00	5.00	3.00	
⑪Unit Capacity	m2/hr	50.00	98.90	22.30	16.60	1.00	1.13	2.75	6.93	

TABLE-15 DESIGN DIAMETER OF PIPE, WELL CAPACITY AND PUMP UNIT

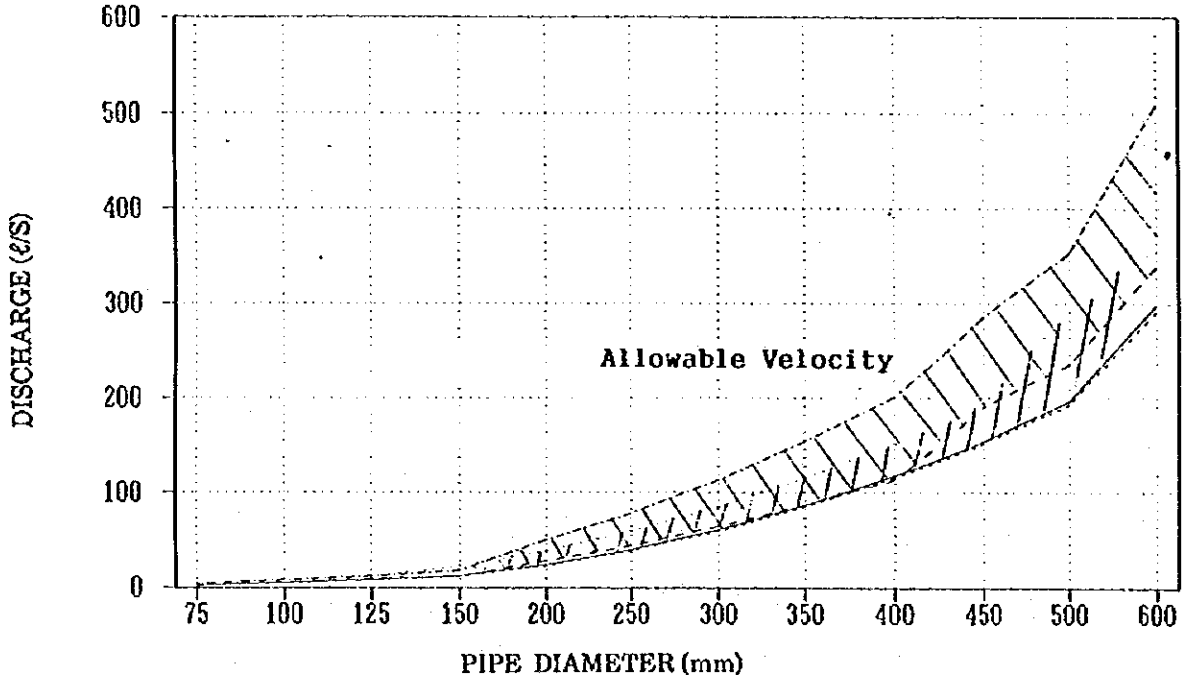
Description	Unit	Jarajir	Harasta			Yabroud	Qara	Ruheibe	Dier Atiya	Nabek	Domair	
			Upstream	Harasta	Urbin						Upstream	Downstream
Target Year 2000	m3/hr	33	553	410	143	129	131	105	56(45)	250(220)	200	200
Discharge	l / s	9.2	153.6	113.9	39.7	35.8	36.4	29.2	-	-	55.6	55.6
Design Diameter	mm	125	400	350	200	200	200	200	-	-	300	250
Velocity	m/s	0.75	1.22	1.18	1.26	1.14	1.16	0.93	-	-	0.79	1.13
Hydroulic Slope	m/Km	5.84	3.73	4.10	8.92	7.38	7.59	5.04	-	-	2.30	5.60
Lengh	Km	7.100	5.475	1.620	2.839	2.000	11.350	2.300	-	-	19.000	3.480
Loss Head	m	41.48	20.40	6.65 27.05	25.34 45.74	14.75	86.13	11.59	-	-	43.78	19.49
Dynamic Head	m	186	(77)	59	72	44	490	102	-	-	50	-72
Judgement	-	OK	OK	OK	OK	OK	OK	OK	-	-	OK	-
Request Diameter	mm	150	500	400	250	250	250	250	-	-	300	300
Design Capacity	m3/hr	33	553	-	-	(129 +) 180	131	105	56(45)	250(220)	200	Booster Pump 200
Requested Pump Capacity×Set No.	m3/hrxS	50 x 2	(120 x) (5)	-	-	45 x 4	50 x 2 + 35 x 1	45 x 4	45 x 1	55 x 4	(100 x) (2)	-
Designed Pump Capacity×Set No.	m3/hrxS	33 x 1	(110 x) (5)	-	-	45 x 4	50 x 2 + 31 x 1	35 x 3	45 x 1	55 x 4	(100 x) (2)	-

TABLE-16 PUMP DIMENSION FOR PROPOSED WELL

Description	Unit	Jarajir	Harasta	Yabroud	Qara		Ruheibe	Dier Atia	Nabek	Domair
Design Capacity	m3/時 m3/分	33 0.55	110 1.83	45 0.75	50 0.83	31 0.52	35 0.58	45 0.75	55 0.92	100 1.67
Pump Size	mm	80	125	100	100	80	80	100	100	-
Length	m	185.00	115.00	65.00	270.00	270.00	265.00	245.00	355.00	-
Velocity	m/s	1.82	2.49	1.59	1.77	1.71	1.93	1.59	1.95	-
Hydroulic Slope	m/m	0.05134	0.05418	0.03074	0.03735	0.04573	0.05724	0.03074	0.04456	-
Loss Head	m	9.50	6.23	2.00	10.09	12.35	15.17	7.53	15.82	-
Pipe Size	mm	125	200	150	150	125	150	150	150	-
Length	m	50.00	150.00	50.00	50.00	50.00	250.00	50.00	50.00	-
Velocity	m/s	0.75	0.97	0.71	0.79	0.70	0.55	0.71	0.86	-
Hydroulic Slope	m/m	0.00584	0.00549	0.00427	0.00519	0.00520	0.00268	0.00427	0.00619	-
Loss Head	m	0.29	0.82	0.21	0.26	0.26	0.67	0.21	0.31	-
Total Loss Head	m	9.79	7.05	2.21	10.34	12.61	15.84	7.74	16.13	-
Well W.L	m	172	86	172	265	265	245	220	340	-
Outlet W.L	m	5	50	5	5	5	5	5	5	-
Actual Depth	m	177	136	177	270	270	250	225	345	-
Total Depth	m	187	143	179	280	283	266	233	361	-
Mortor Capacity	KW	30	75	37	75	45	45	55	90	-

FIGURE

FIGURE-1 DISCHARGE AND PIPE DIAMETER



PIPE DIAMETER - ALLOWABLE VELOCITY

PIPE	WA Criteria			MOA Criteria		WA Criteria			MOA Criteria	
d	V1	V1Min	V1Max	V2Min	V2Max	Q1	Q1Min	Q1Max	Q2Min	Q2Max
(mm)	(m/s)	(m/s)	(m/s)	(m/s)	(m/s)	(l/s)	(l/s)	(l/s)	(l/s)	(l/s)
75	0.570	-	0.595	0.700	1.000	2.52		4.67	3.00	4.00
100	0.620	0.595	0.640	0.700	1.000	4.88	4.67	7.85	5.00	8.00
125	0.660	0.640	0.680	0.700	1.000	8.14	7.85	12.02	9.00	12.00
150	0.700	0.680	0.730	0.700	1.000	12.37	12.02	22.93	12.00	18.00
200	0.760	0.730	0.785	0.900	1.600	23.94	22.93	38.53	28.00	50.00
250	0.810	0.785	0.835	0.900	1.600	39.96	38.53	59.02	44.00	78.00
300	0.860	0.835	0.880	0.900	1.600	60.79	59.02	84.67	64.00	113.00
350	0.900	0.880	0.920	0.900	1.600	86.59	84.67	115.61	87.00	154.00
400	0.940	0.920	0.955	0.900	1.600	117.62	115.61	151.89	113.00	201.00
450	0.970	0.955	0.985	1.200	1.800	154.11	151.89	193.40	191.00	286.00
500	1.000	0.985	1.030	1.200	1.800	196.35	193.40	291.23	235.00	353.00
600	1.060	1.030		1.200	1.800	298.29	291.23		339.00	509.00

NOTE WA Criteria: Alowable velocity by Water Facility Criteria in Japan
MOA Criteria: Alowable velocity by Ministry of Agriculture in Japan

FIGURE - 2 ORGANIZATION CHART OF THE MINISTRY OF HOUSING AND UTILITIES

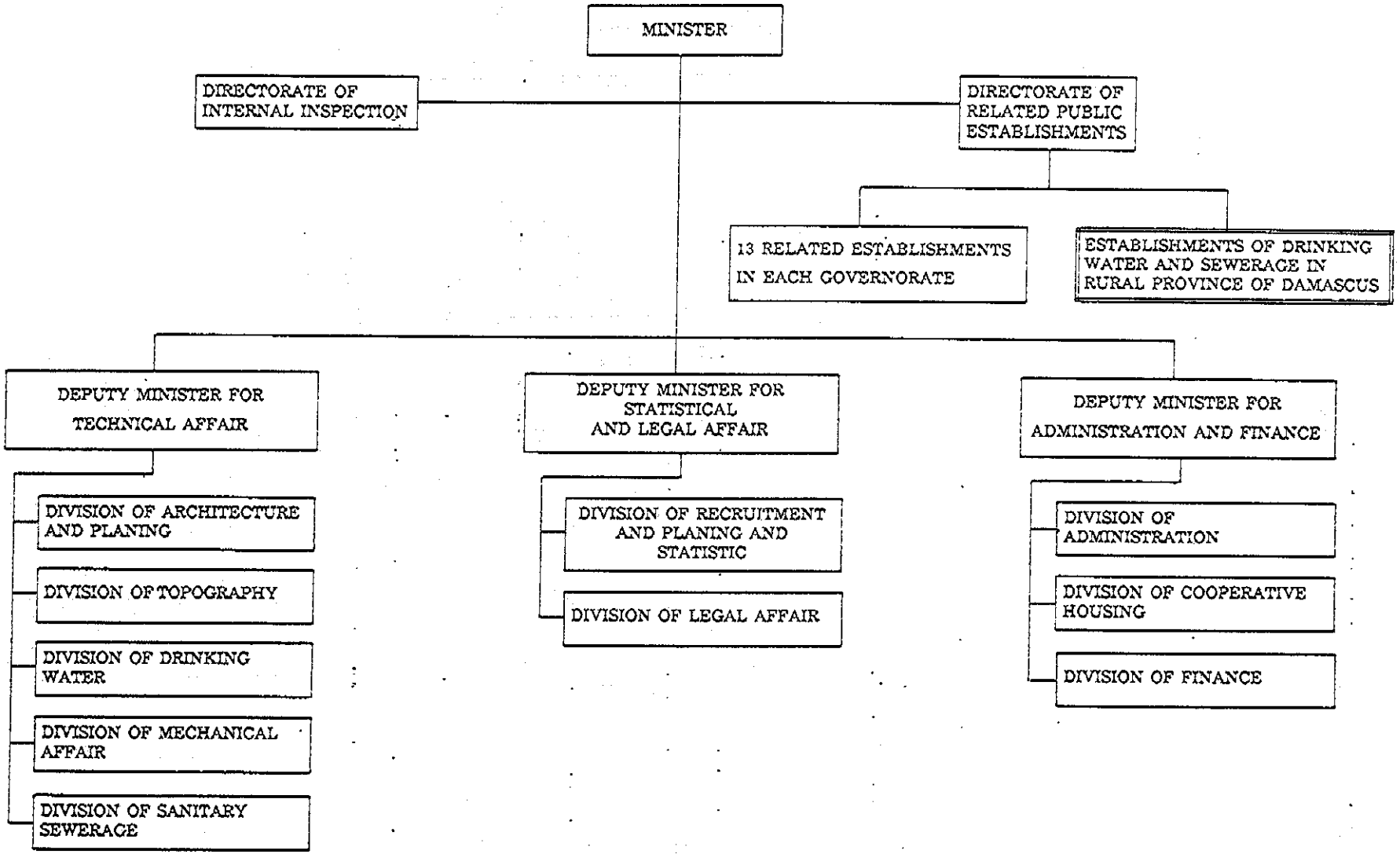


FIGURE - 3 ORGANIZATION CHART OF THE ESTABLISHMENT OF DRINKING WATER AND SEWERAGE IN RURAL PROVINCE OF DAMASCUS

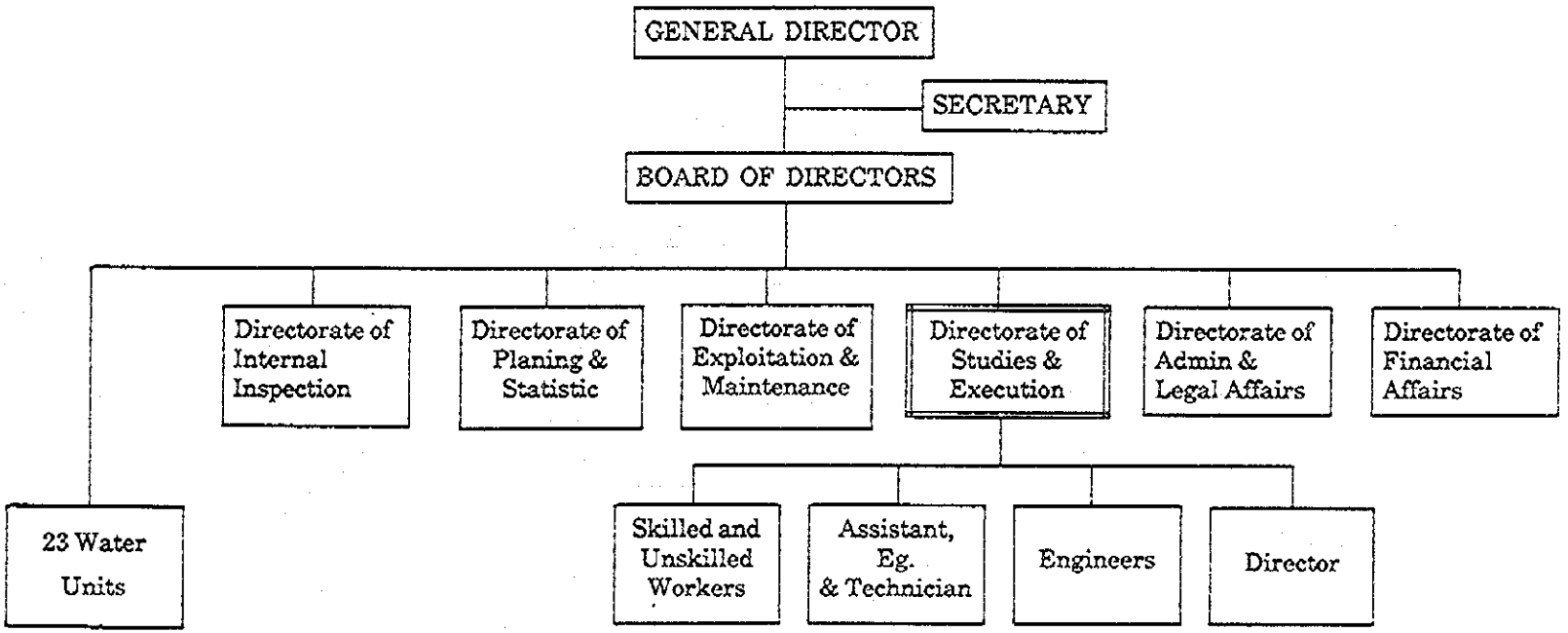


FIGURE - 4 PROJECT EXECUTING ORGANIZATION

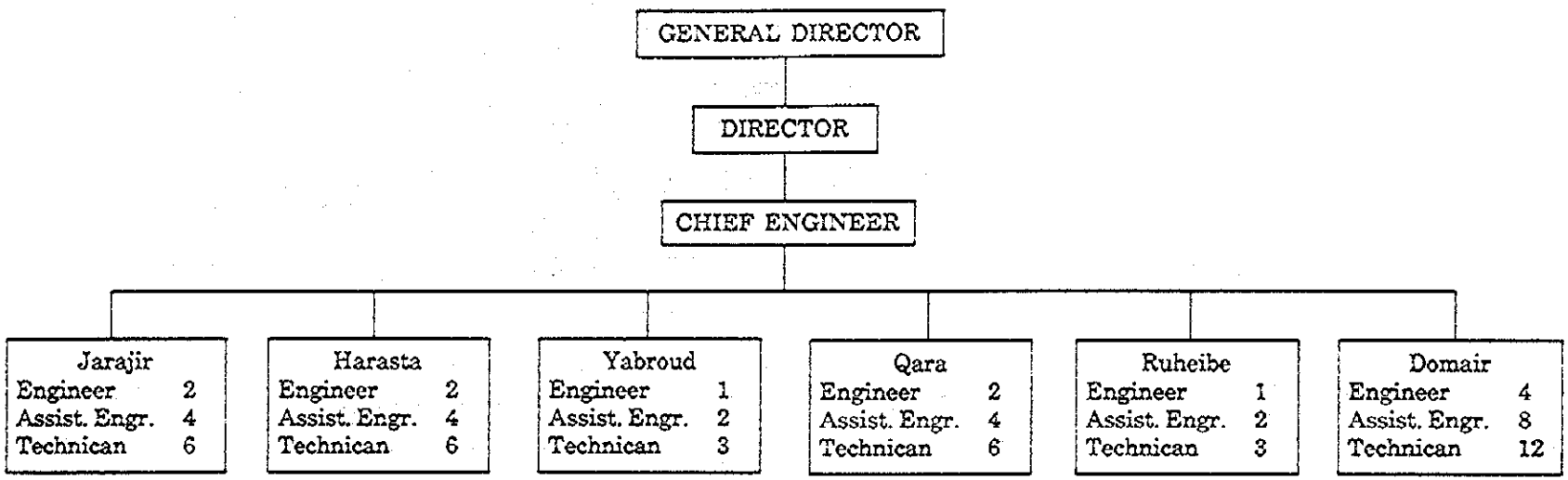


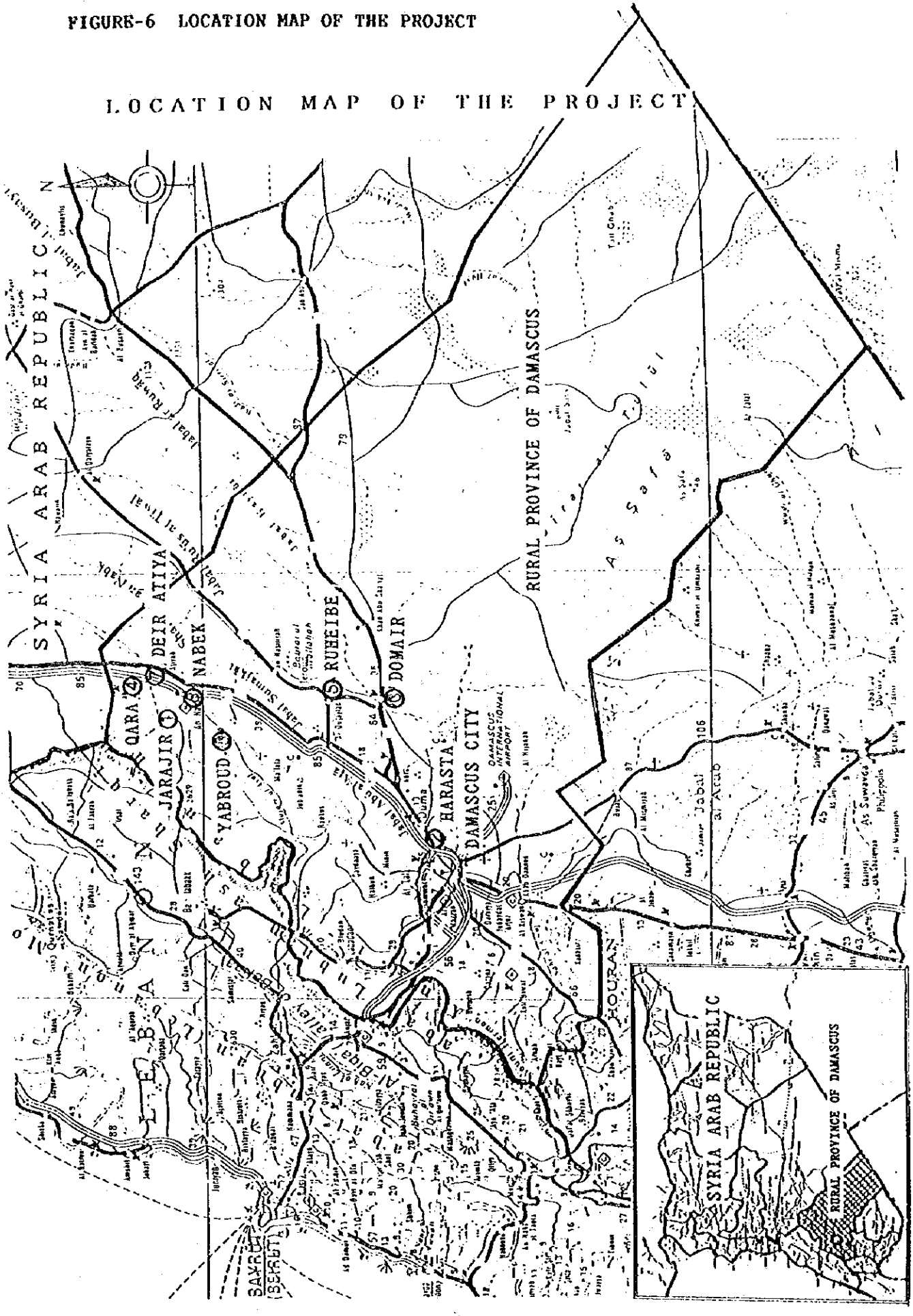
FIGURE - 5-1 Construction Schedule

Description	Unit	Year / month Q'ty	1996 J	F	M	A	M	J	J	A	S	O	N	D	1997 J	F	M	A	M	J	J	A	S	O	N	D	1998 J	F	M	A	M	J	J	A	S	O
Jarajir																																				
Pumping House	lot	1 Achieve.																																		
Reservoir	lot	1 Achieve.																																		
Transformer Tower	lot	1																																		
Pipe Installation	km	7.0																																		
Generator Install	lot	1																																		
Pump Install	lot	2																																		
Fuel Tank	lot	1																																		
Digging Well No.1	lot	1																																		
Gr Reservoir	lot	1																																		
Pump House	lot	1																																		
Harasta/Urbin																																				
Pumping House	lot	2 Achieve																																		
Reservoir	lot	3 Achieve																																		
Transformer Build	lot	1 Achieve																																		
Pipe Install	km	9.9																																		
Generator Install	lot	2																																		
Pump Install	lot	5																																		
Gr Reservoir	lot	1																																		
Fuel Tank	lot	1																																		
Yobroud																																				
Pumping House	lot	2																																		
Reservoir	lot	1																																		
Pipe Install	km	2.7																																		
Pump Install	lot	4																																		
Qara																																				
Pumping House	lot	3 Achieve																																		
Reservoir	lot	1 Achieve																																		
Transformer Build	lot	1																																		
Pipe Install	km	11.5																																		
Generator Install	lot	1																																		
Pump Install	lot	3																																		
Transformer Inst.	lot	1																																		
Fuel Tank	lot	1																																		
Reheibeh																																				
Pumping House	lot	3 Achieve.																																		
Reservoir	lot	1 Achieve																																		
Transformer Build	lot	1 Achieve																																		
Pipe Install	km	2.8																																		
Generator Install	lot	1																																		
Pump Install	lot	4																																		
Generator House	lot	1 Achieve																																		
Fuel Tank	lot	1																																		
Pump House	lot	1																																		

FIGURE - 5 - 2 Construction Schedule

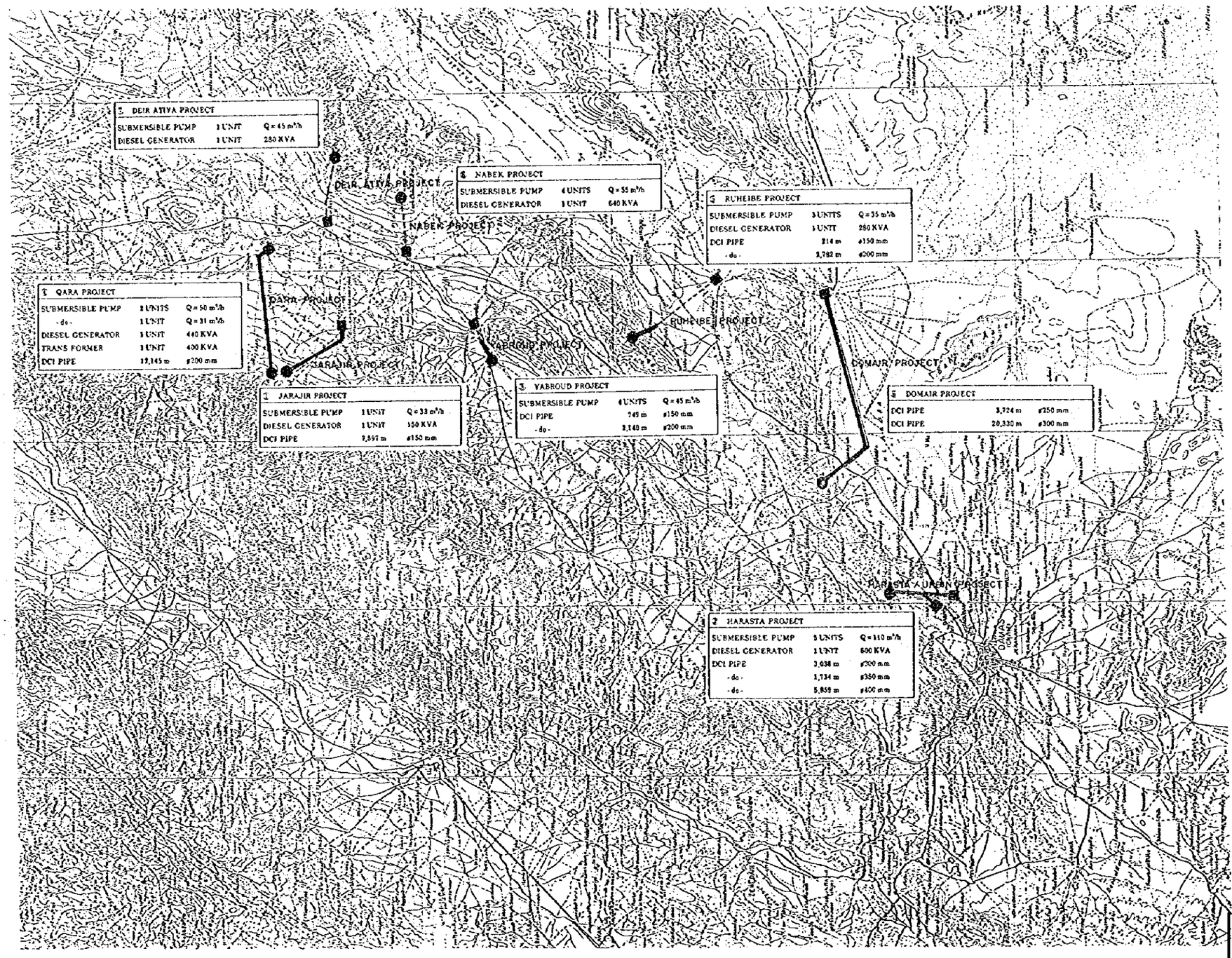
Description	Unit	Year / month Q'ty	1996 J	F	M	A	M	J	J	A	S	O	N	D	1997 J	F	M	A	M	J	J	A	S	O	N	D	1998 J	F	M	A	M	J	J	A	S	O
Domair																																				
Facilities Const.	lot	1 Achieve																																		
Pumping House	lot	1 Achieve																																		
Reservoir	lot	1 Achieve																																		
Pipe Install	km	23.3																																		
Generator Install	lot	1 Achieve																																		
Pump Install	lot	2 Achieve																																		
Deir Atiya	lot																																			
Pumping House	lot	1 Achieve																																		
Reservoir	lot	1 Achieve																																		
Pipe Install	km	6 Achieve																																		
Generator Install	lot	1																																		
Pump Install	lot	1																																		
Nabek																																			
Pumping House	lot	1 Achieve																																		
Reservoir	lot	1 Achieve																																		
Pipe Install	km	7 Achieve																																		
Generator Install	lot	1																																		
Pump Install	lot	4																																		
Qodsaya																																			
Pumping House	lot	3																																		
Reservoir	lot	1																																		
Pipe Install	km	17.7																																		
Generator Install	lot	3																																		
Pump Install	lot	11																																		
Transformer Inst.	lot	1																																		

FIGURE-6 LOCATION MAP OF THE PROJECT



DRAWINGS

GENERAL PLAN



DEIR ATIYA PROJECT		
SUBMERSIBLE PUMP	1 UNIT	Q = 45 m³/h
DIESEL GENERATOR	1 UNIT	280 KVA

NABEK PROJECT		
SUBMERSIBLE PUMP	4 UNITS	Q = 55 m³/h
DIESEL GENERATOR	1 UNIT	640 KVA

RUHEIBE PROJECT		
SUBMERSIBLE PUMP	3 UNITS	Q = 35 m³/h
DIESEL GENERATOR	1 UNIT	280 KVA
DCI PIPE	214 m	ø150 mm
- do -	2,782 m	ø200 mm

QARA PROJECT		
SUBMERSIBLE PUMP	2 UNITS	Q = 50 m³/h
- do -	1 UNIT	Q = 31 m³/h
DIESEL GENERATOR	3 UNIT	440 KVA
TRANS FORMER	1 UNIT	400 KVA
DCI PIPE	12,145 m	ø200 mm

JARAJIR PROJECT		
SUBMERSIBLE PUMP	1 UNIT	Q = 33 m³/h
DIESEL GENERATOR	1 UNIT	350 KVA
DCI PIPE	7,597 m	ø150 mm

YABROUD PROJECT		
SUBMERSIBLE PUMP	4 UNITS	Q = 45 m³/h
DCI PIPE	749 m	ø150 mm
- do -	2,140 m	ø200 mm

DOMAIR PROJECT		
DCI PIPE	3,724 m	ø250 mm
DCI PIPE	20,330 m	ø300 mm

HARASTA PROJECT		
SUBMERSIBLE PUMP	5 UNITS	Q = 110 m³/h
DIESEL GENERATOR	1 UNIT	600 KVA
DCI PIPE	3,038 m	ø200 mm
- do -	1,734 m	ø350 mm
- do -	5,859 m	ø400 mm

N

ECHELLE 1:200,000

CONTENTS OF PROCUREMENT

Jarajir

- Ductile Iron Pipe	ø150mm	7,597 m
- Submersible Pump	(33m³/h, 177m)	1 unit
- Diesel Generator	(150KVA)	1 unit

Harasta

- Ductile Iron Pipe	ø200mm	3,038 m
- Ductile Iron Pipe	ø350mm	1,734 m
- Ductile Iron Pipe	ø400mm	5,859 m
- Submersible Pump	(110m³/h, 136m)	5 unit
- Diesel Generator	(600KVA)	1 unit

Yabroud

- Ductile Iron Pipe	ø150mm	749 m
- Ductile Iron Pipe	ø200mm	2,140 m
- Submersible Pump	(45m³/h, 177m)	4 unit

Qara

- Ductile Iron Pipe	ø200mm	12,145 m
- Submersible Pump	(50m³/h, 270m)	2 unit
- Submersible Pump	(31m³/h, 270m)	1 unit
- Diesel Generator	(440KVA)	1 unit
- Transformer	(400KVA)	1 unit

Ruheibe

- Ductile Iron Pipe	ø150mm	214 m
- Ductile Iron Pipe	ø200mm	2,782 m
- Submersible Pump	(35m³/h, 250m)	3 unit
- Diesel Generator	(280KVA)	1 unit

Domair

- Ductile Iron Pipe	ø250mm	3,724 m
- Ductile Iron Pipe	ø300mm	20,330 m

Dier AGya

- Submersible Pump	(45m³/h, 225m)	1 unit
- Diesel Generator	(280KVA)	1 unit

Nabek

- Submersible Pump	(55m³/h, 345m)	4 unit
- Diesel Generator	(640KVA)	1 unit

And other procurement for hole project are:

4WD Pick up	2 unit
Spar parts	1 lot

LEGEND

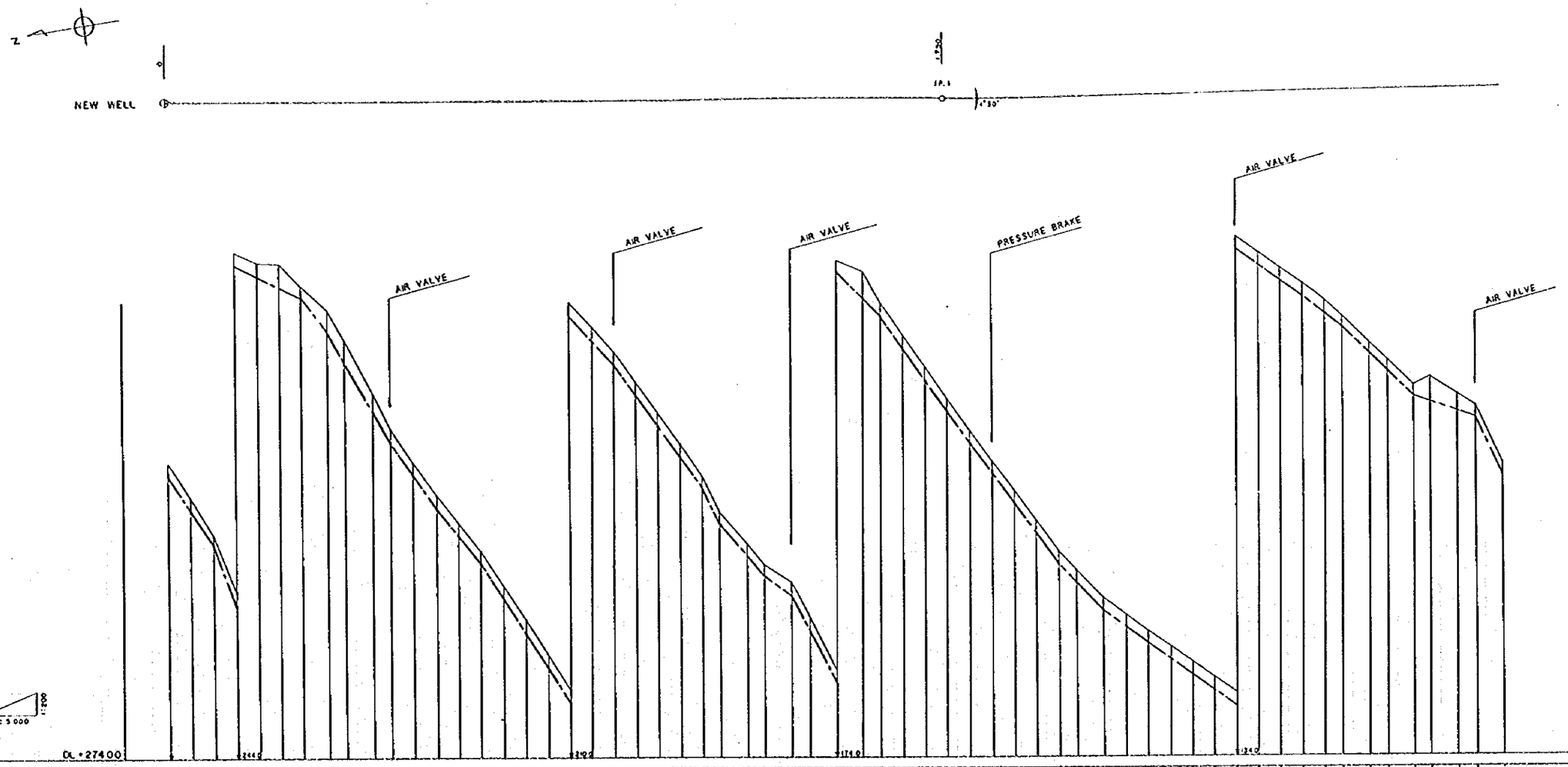
- WELL
- DERIVERY TANK
- PROPOSED PIPELINE
- EXISTING PIPELINE

THE SYRIAN ARAB REPUBLIC
THE PROJECT FOR WATER SUPPLY DEVELOPMENT IN RURAL PROVINCE OF DAMASCUS

GENERAL PLAN

DRW. NO. 1

JAPAN INTERNATIONAL COOPERATION AGENCY



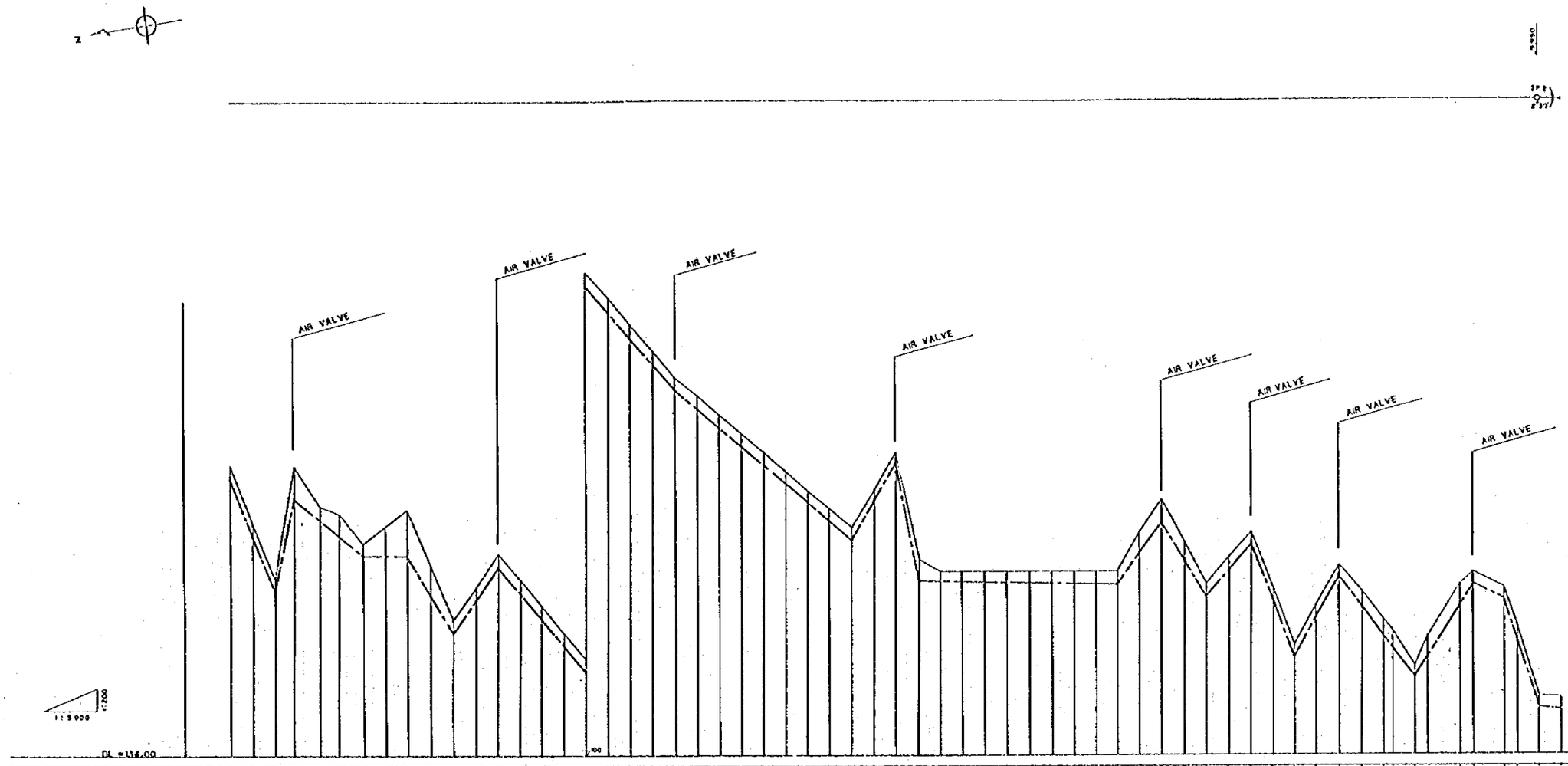
PLAN	PIPE SPECIFICATIONS	DIP φ150m K=9
	HYDRALIC ELEVATION	
	PIPE CENTER	
PRESENT CONDITION	GROUND ELEVATION	
	ACCUMULATED DISTANCE	
	DISTANCE	
	NUMBERAGE	
	ALIGNMENT	

THE SYRIAN ARAB REPUBLIC
THE PROJECT FOR WATER SUPPLY DEVELOPMENT IN RURAL PROVINCE OF DAMASCUS

JARAJIR PROJECT
PLAN & PROFILE (1/3)

DRW. NO. 2

JAPAN INTERNATIONAL COOPERATION AGENCY



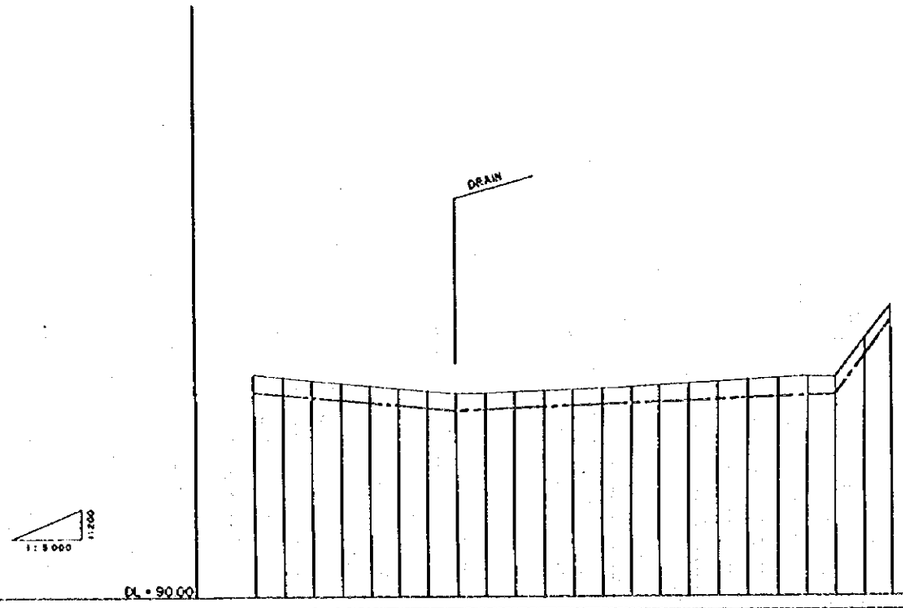
PLAN	PIPE SPECIFICATIONS	D I P ϕ150m K=9
	HYDRALIC ELEVATION	
	PIPE CENTER	
PRESENT CONDITION	GROUND ELEVATION	
	ACCUMULATED DISTANCE	
	DISTANCE	
	NUMBERAGE	
	ALIGNMENT	

THE SYRIAN ARAB REPUBLIC
THE PROJECT FOR WATER SUPPLY DEVELOPMENT IN RURAL PROVINCE OF DAMASCUS

JARAJIR PROJECT
PLAN & PROFILE (2/3)

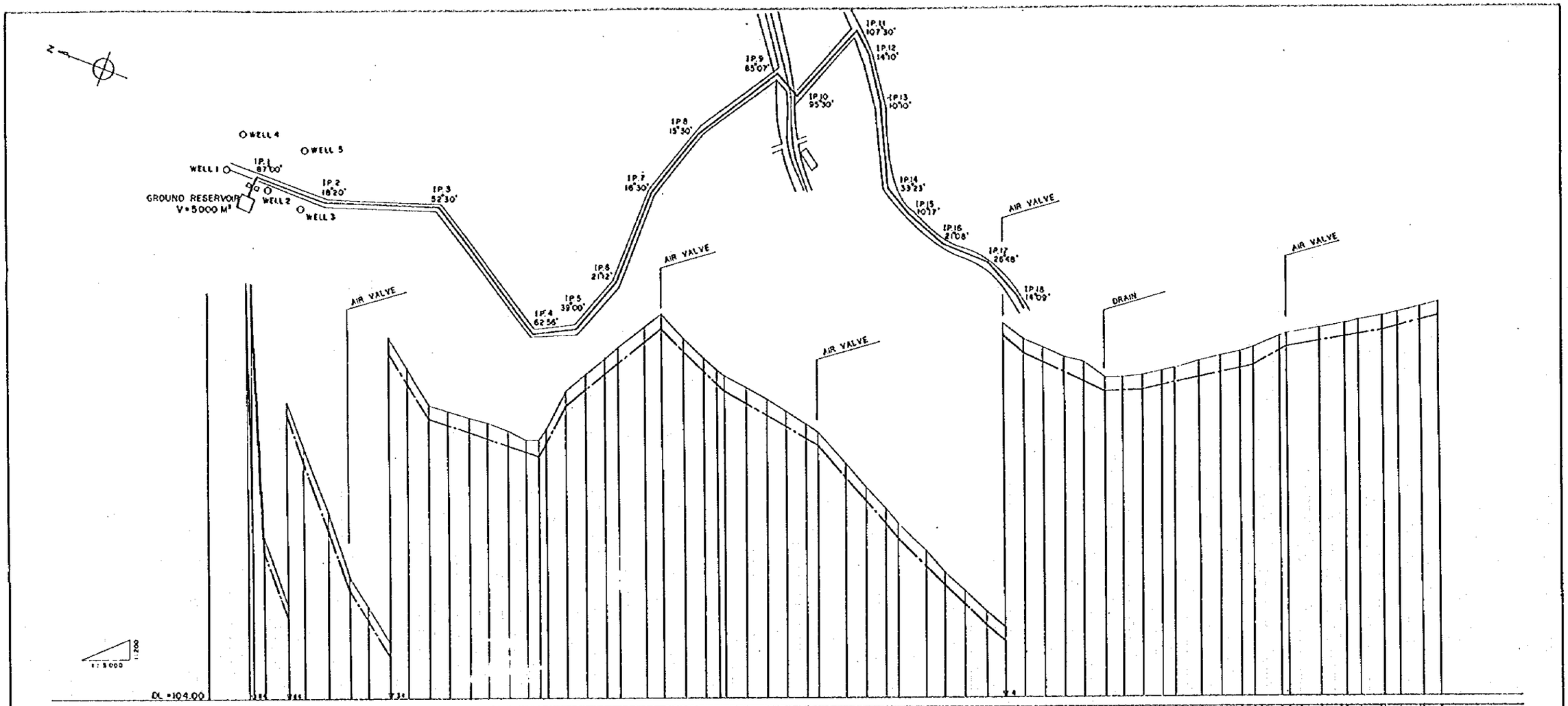
DRW. NO. 3

JAPAN INTERNATIONAL COOPERATION AGENCY



PLAN	PIPE SPECIFICATIONS	DIP ϕ150㎜ K=9
	HYDRALIC ELEVATION	
	PIPE CENTER	
PRESENT CONDITION	GROUND ELEVATION	
	ACCUMULATED DISTANCE	
	DISTANCE	
	NUMBERAGE	
	ALIGNMENT	18°30'

THE SYRIAN ARAB REPUBLIC THE PROJECT FOR WATER SUPPLY DEVELOPMENT IN RURAL PROVINCE OF DAMASCUS	
JARAJIR PROJECT PLAN & PROFILE (3/3)	DRW. NO. 4
JAPAN INTERNATIONAL COOPERATION AGENCY	



PLAN	PIPE SPECIFICATIONS
	HYDRALIC ELEVATION
	PIPE CENTER
PRESENT CONDITION	GROUND ELEVATION
	ACCUMULATED DISTANCE
	DISTANCE
	NUMBERAGE
	ALIGNMENT

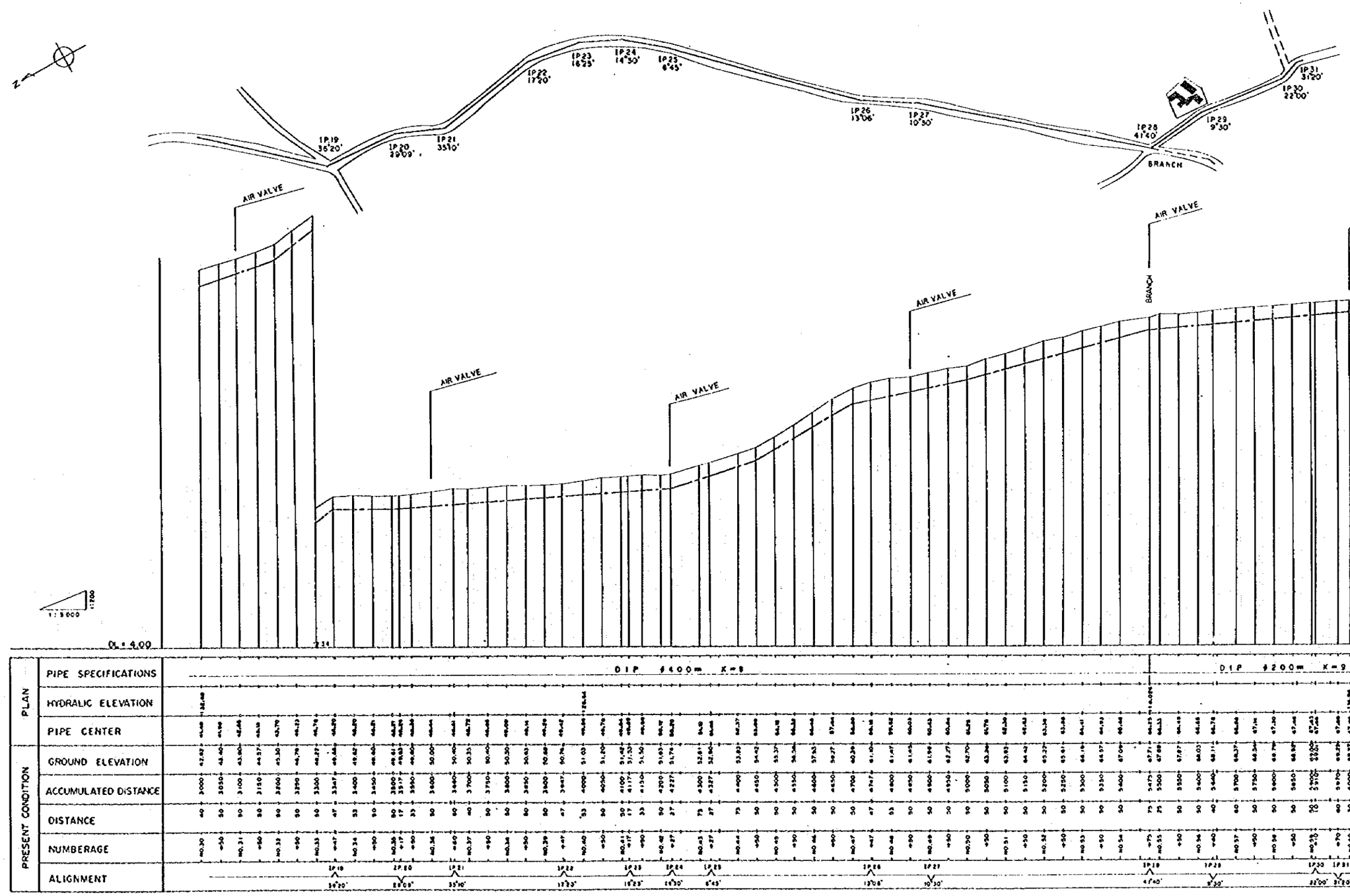
DIP ϕ400mm K=9

THE SYRIAN ARAB REPUBLIC
THE PROJECT FOR WATER SUPPLY DEVELOPMENT IN RURAL PROVINCE OF DAMASCUS

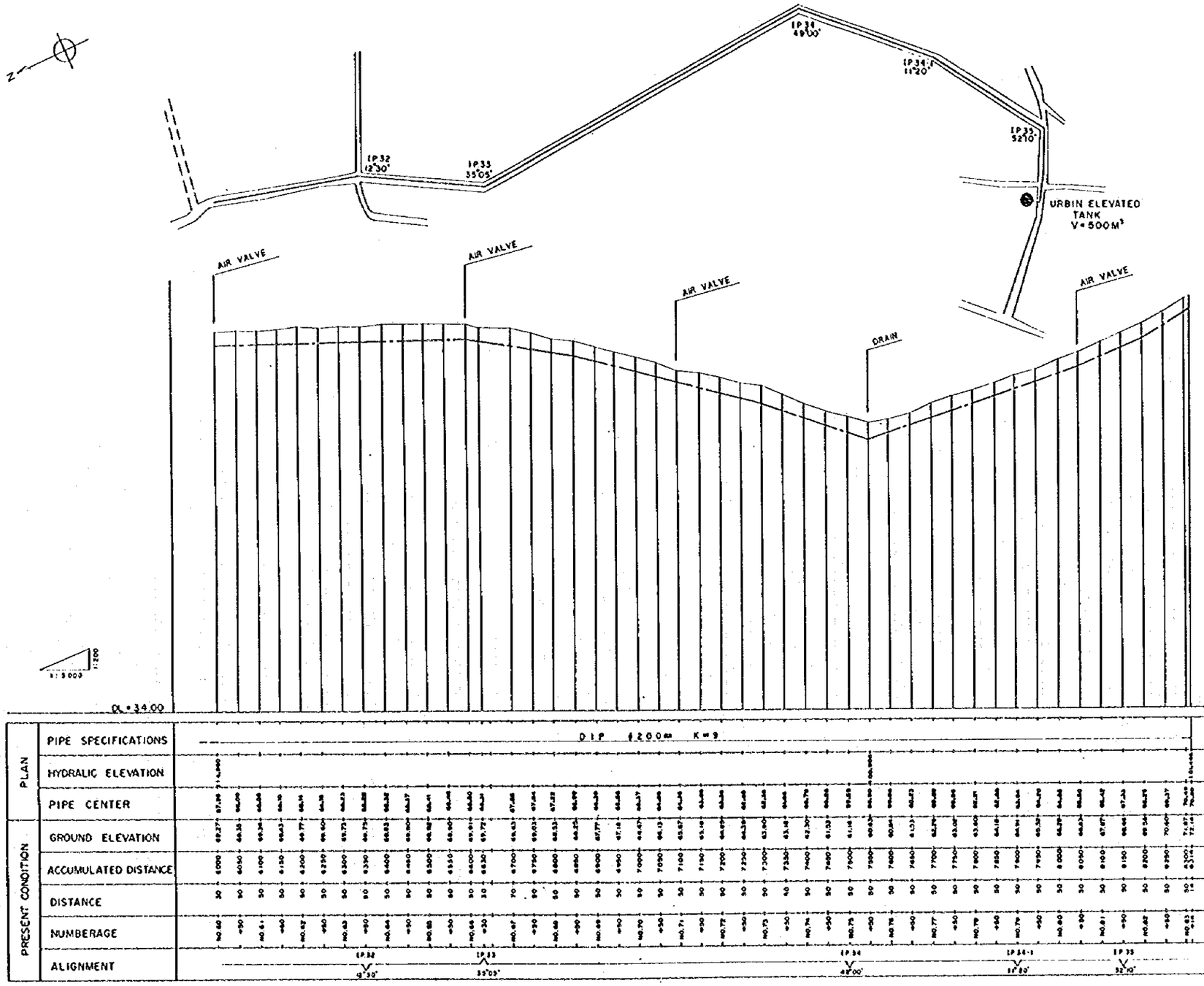
HARASTA PROJECT
PLAN & PROFILE (1/4)

DRW. NO. 5

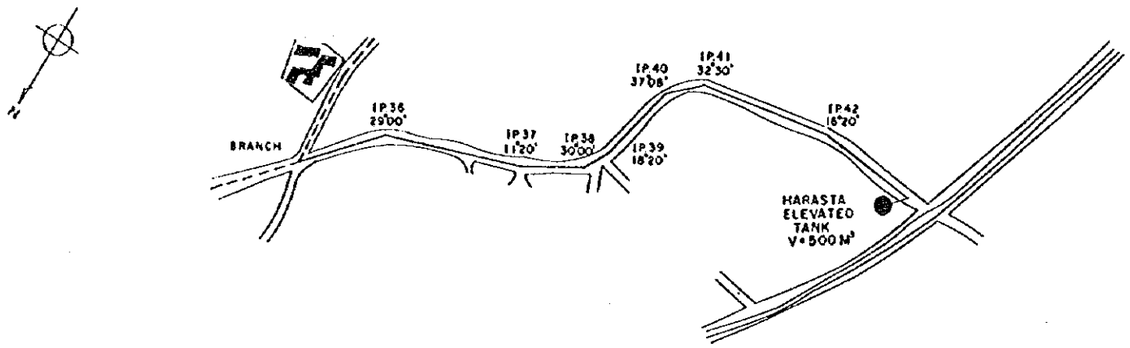
JAPAN INTERNATIONAL COOPERATION AGENCY

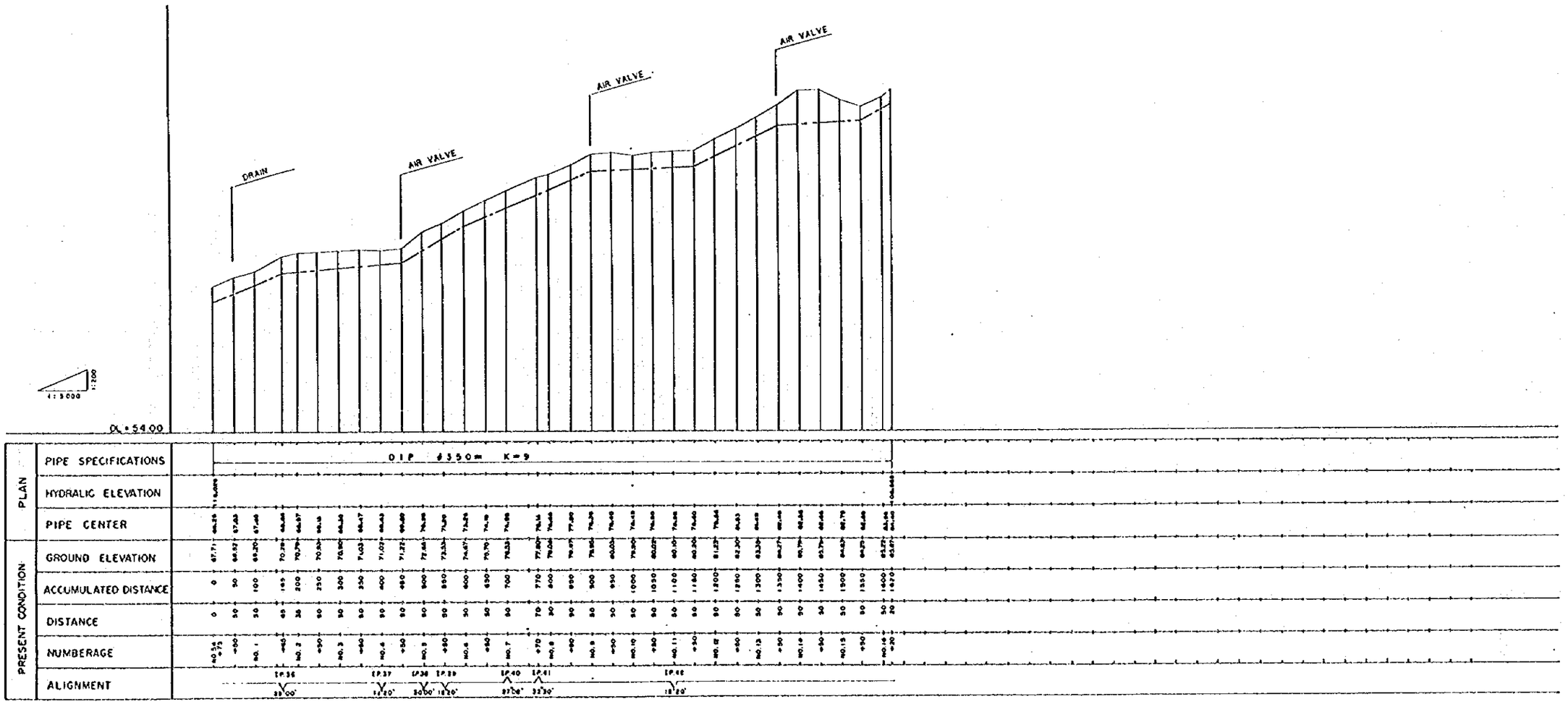


THE SYRIAN ARAB REPUBLIC THE PROJECT FOR WATER SUPPLY DEVELOPMENT IN RURAL PROVINCE OF DAMASCUS	
HARASTA PROJECT PLAN & PROFILE (2/4)	DRW. NO. 6
JAPAN INTERNATIONAL COOPERATION AGENCY	



THE SYRIAN ARAB REPUBLIC THE PROJECT FOR WATER SUPPLY DEVELOPMENT IN RURAL PROVINCE OF DAMASCUS	
HARASTA PROJECT PLAN & PROFILE (3/4)	DRW. NO. 7
JAPAN INTERNATIONAL COOPERATION AGENCY	



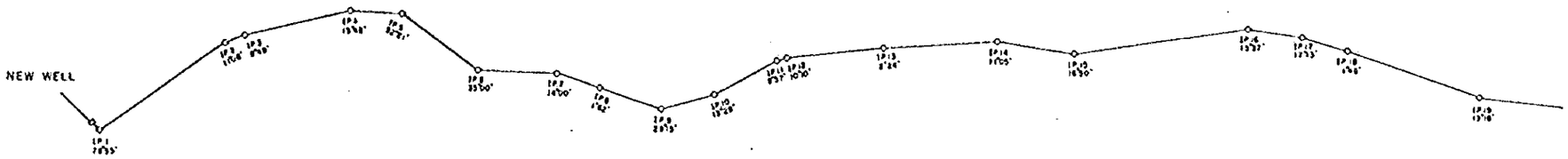


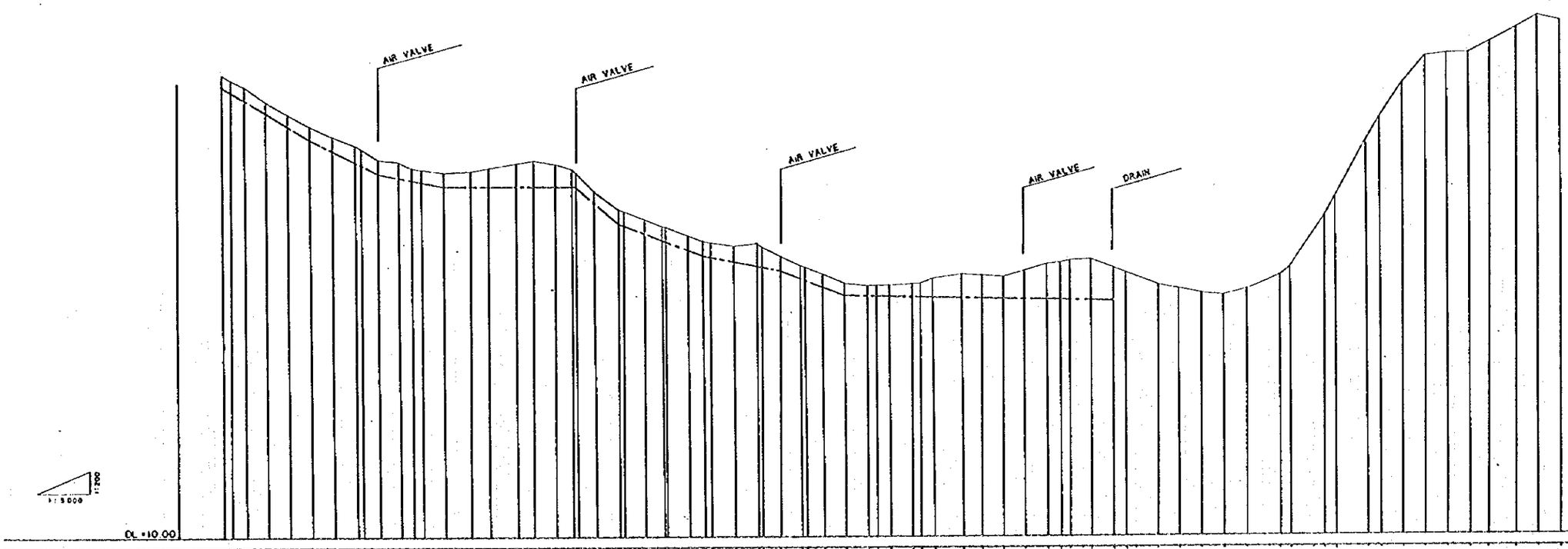
THE SYRIAN ARAB REPUBLIC
THE PROJECT FOR WATER SUPPLY DEVELOPMENT IN RURAL PROVINCE OF DAMASCUS

HARASTA PROJECT
PLAN & PROFILE (4/4)

DRW. NO.
8

JAPAN INTERNATIONAL COOPERATION AGENCY





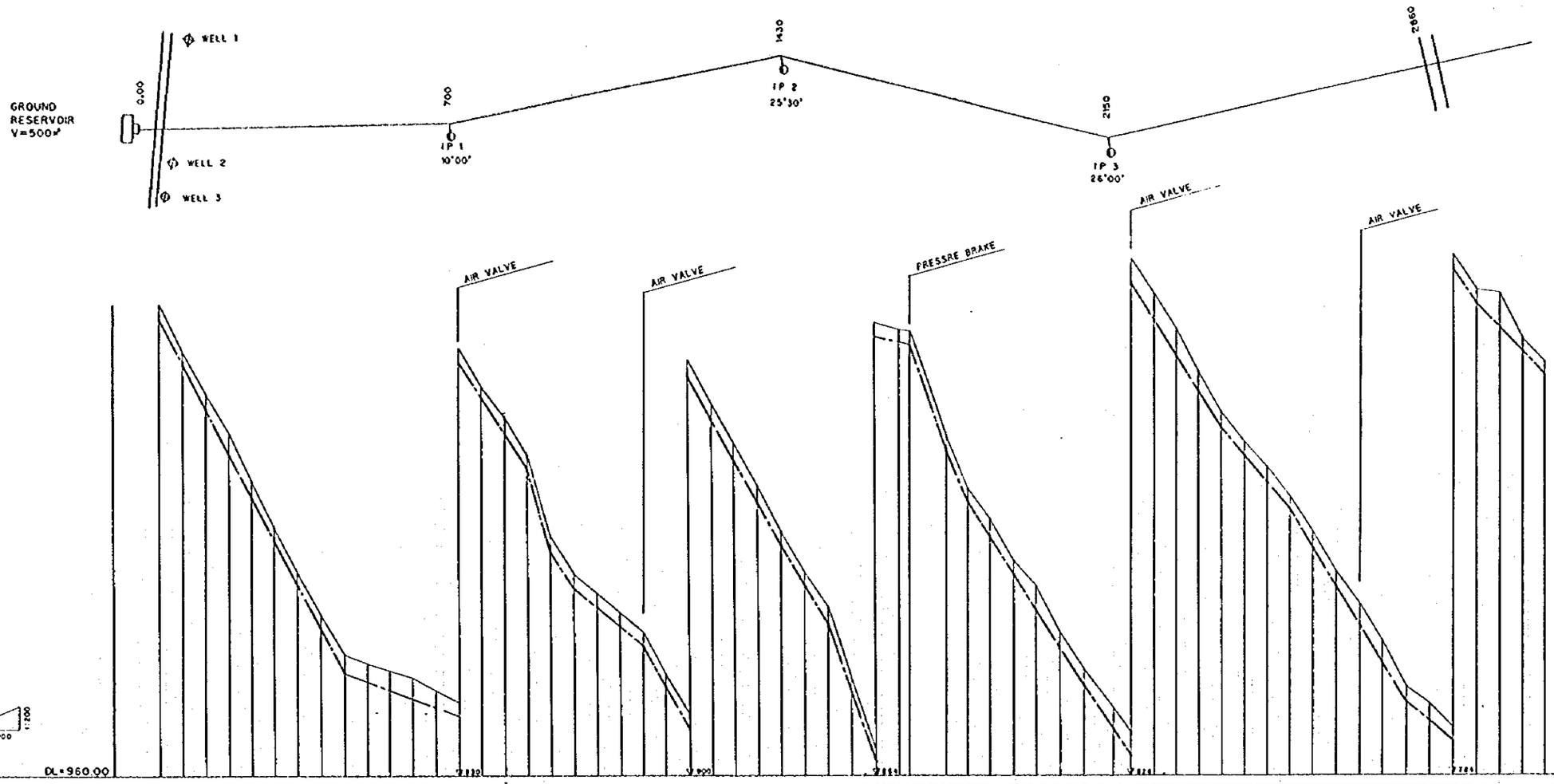
PLAN	PIPE SPECIFICATIONS	DIP ϕ200m K=9
	HYDRALIC ELEVATION	
	PIPE CENTER	
PRESENT CONDITION	GROUND ELEVATION	
	ACCUMULATED DISTANCE	
	DISTANCE	
	NUMBERAGE	
	ALIGNMENT	

THE SYRIAN ARAB REPUBLIC
THE PROJECT FOR WATER SUPPLY DEVELOPMENT IN RURAL PROVINCE OF DAMASCUS

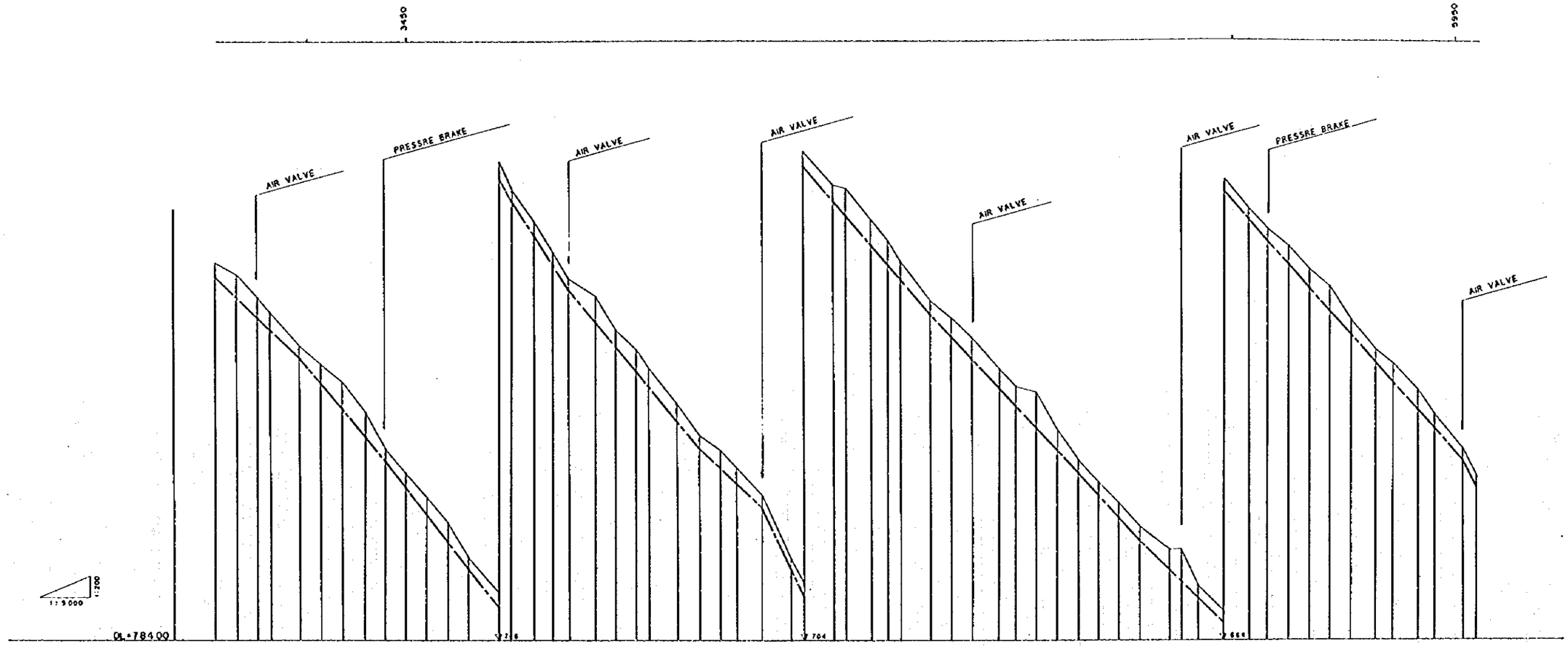
YABUROUD
PLAN & PROFILE (1/1)

DRW. NO.
9

JAPAN INTERNATIONAL COOPERATION AGENCY



THE SYRIAN ARAB REPUBLIC THE PROJECT FOR WATER SUPPLY DEVELOPMENT IN RURAL PROVINCE OF DAMASCUS	
QARA PROJECT PLAN & PROFILE (1/4)	DRW. NO. 10
JAPAN INTERNATIONAL COOPERATION AGENCY	



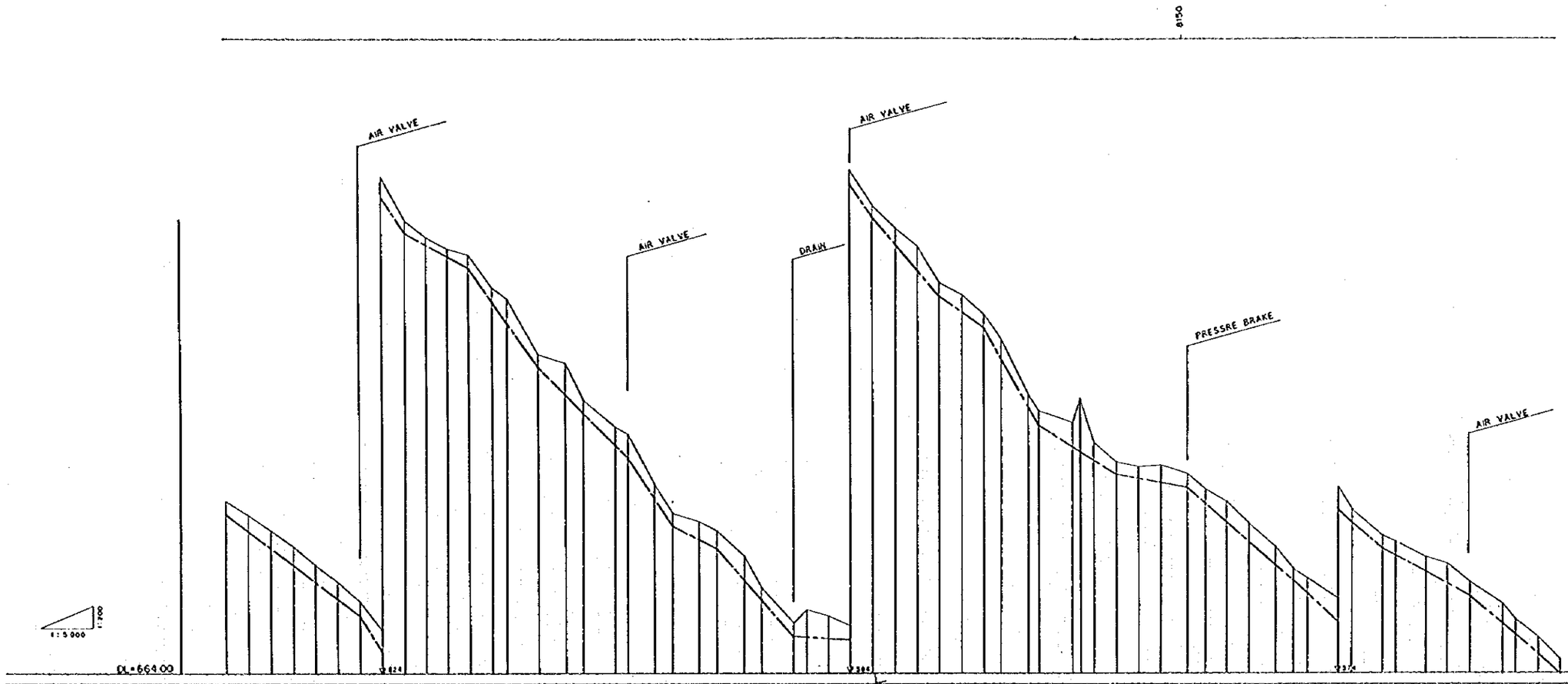
PLAN	PIPE SPECIFICATIONS	DIP ϕ200m K=9
	HYDRALIC ELEVATION	
	PIPE CENTER	
PRESENT CONDITION	GROUND ELEVATION	
	ACCUMULATED DISTANCE	
	DISTANCE	
	NUMBERAGE	
	ALIGNMENT	

THE SYRIAN ARAB REPUBLIC
THE PROJECT FOR WATER SUPPLY DEVELOPMENT IN RURAL PROVINCE OF DAMASCUS

QARA PROJECT
PLAN & PROFILE (2/4)

DRW. NO.
11

JAPAN INTERNATIONAL COOPERATION AGENCY



PLAN	PIPE SPECIFICATIONS
	HYDRALIC ELEVATION
	PIPE CENTER
PRESENT CONDITION	GROUND ELEVATION
	ACCUMULATED DISTANCE
	DISTANCE
	NUMBERAGE
	ALIGNMENT

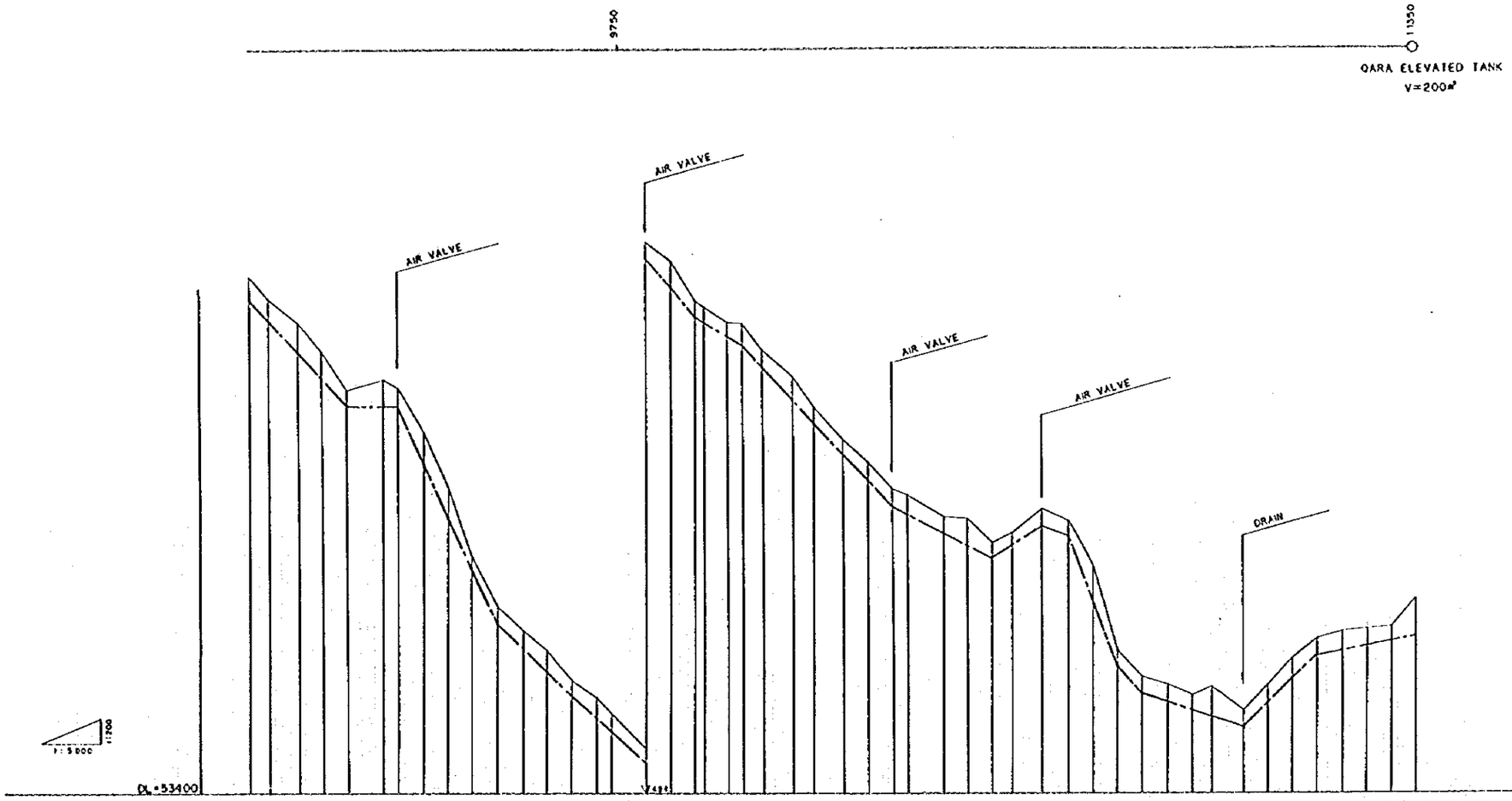
D.I.P. ϕ200m K=9

THE SYRIAN ARAB REPUBLIC
THE PROJECT FOR WATER SUPPLY DEVELOPMENT IN RURAL PROVINCE OF DAMASCUS

QARA PROJECT
PLAN & PROFILE (3/4)

DRW. NO.
12

JAPAN INTERNATIONAL COOPERATION AGENCY



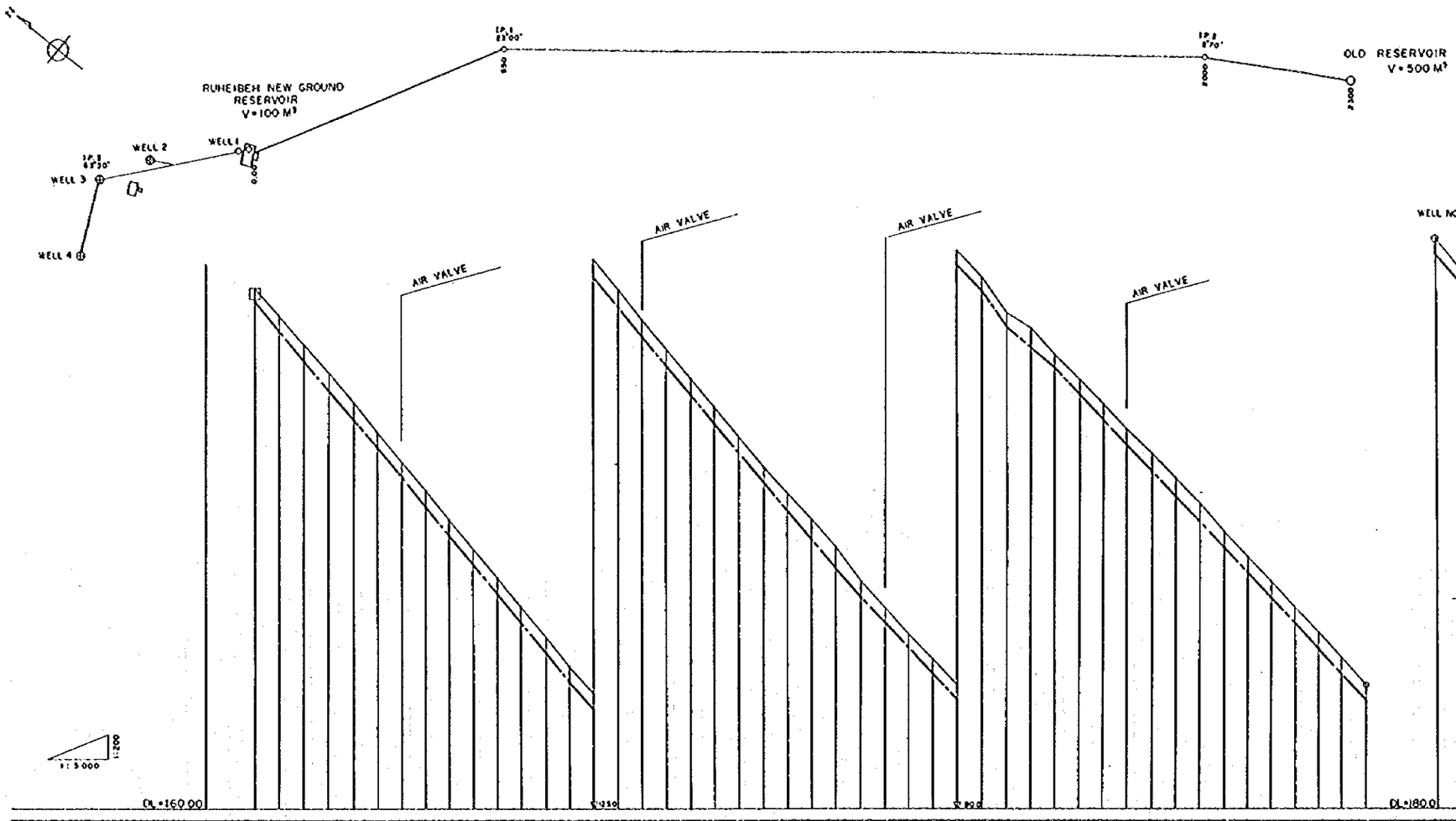
PLAN	PIPE SPECIFICATIONS	DIP φ200㎜ K=9
	HYDRALIC ELEVATION	
	PIPE CENTER	
PRESENT CONDITION	GROUND ELEVATION	
	ACCUMULATED DISTANCE	
	DISTANCE	
	NUMBERAGE	
	ALIGNMENT	

THE SYRIAN ARAB REPUBLIC
THE PROJECT FOR WATER SUPPLY DEVELOPMENT IN RURAL PROVINCE OF DAMASCUS

QARA PROJECT
PLAN & PROFILE (4/4)

DRW. NO.
13

JAPAN INTERNATIONAL COOPERATION AGENCY



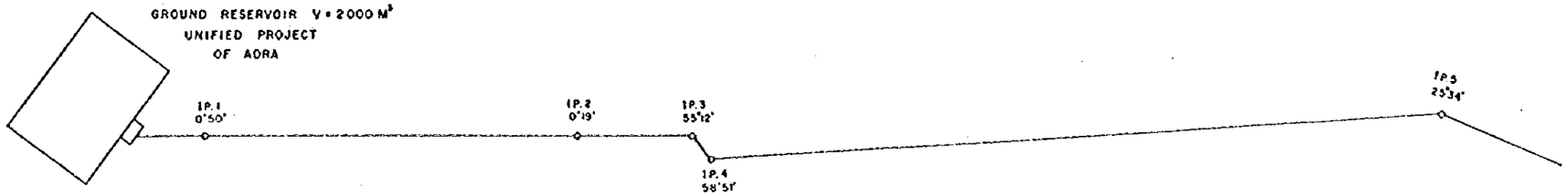
PLAN	PIPE SPECIFICATIONS	DIP φ200m K=9 / DIP φ200m K=9 / DIP φ200m K=9
	HYDRALIC ELEVATION	
	PIPE CENTER	
PRESENT CONDITION	GROUND ELEVATION	
	ACCUMULATED DISTANCE	
	DISTANCE	
	NUMBERAGE	
	ALIGNMENT	IP.1 83°00' / IP.2 8°42' / IP.3 83°30'

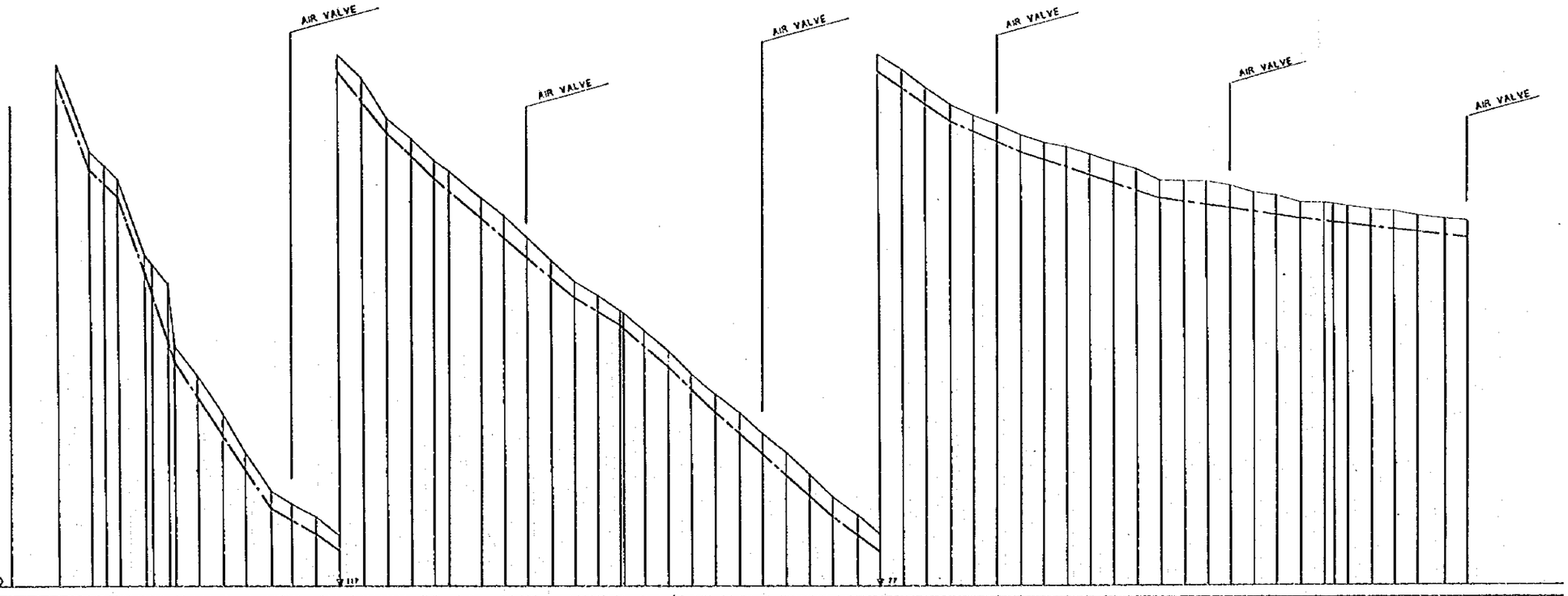
THE SYRIAN ARAB REPUBLIC
THE PROJECT FOR WATER SUPPLY DEVELOPMENT IN RURAL PROVINCE OF DAMASCUS

RUHEIBE PROJECT
PLAN & PROFILE (1/1)

DRW. NO. 14

JAPAN INTERNATIONAL COOPERATION AGENCY





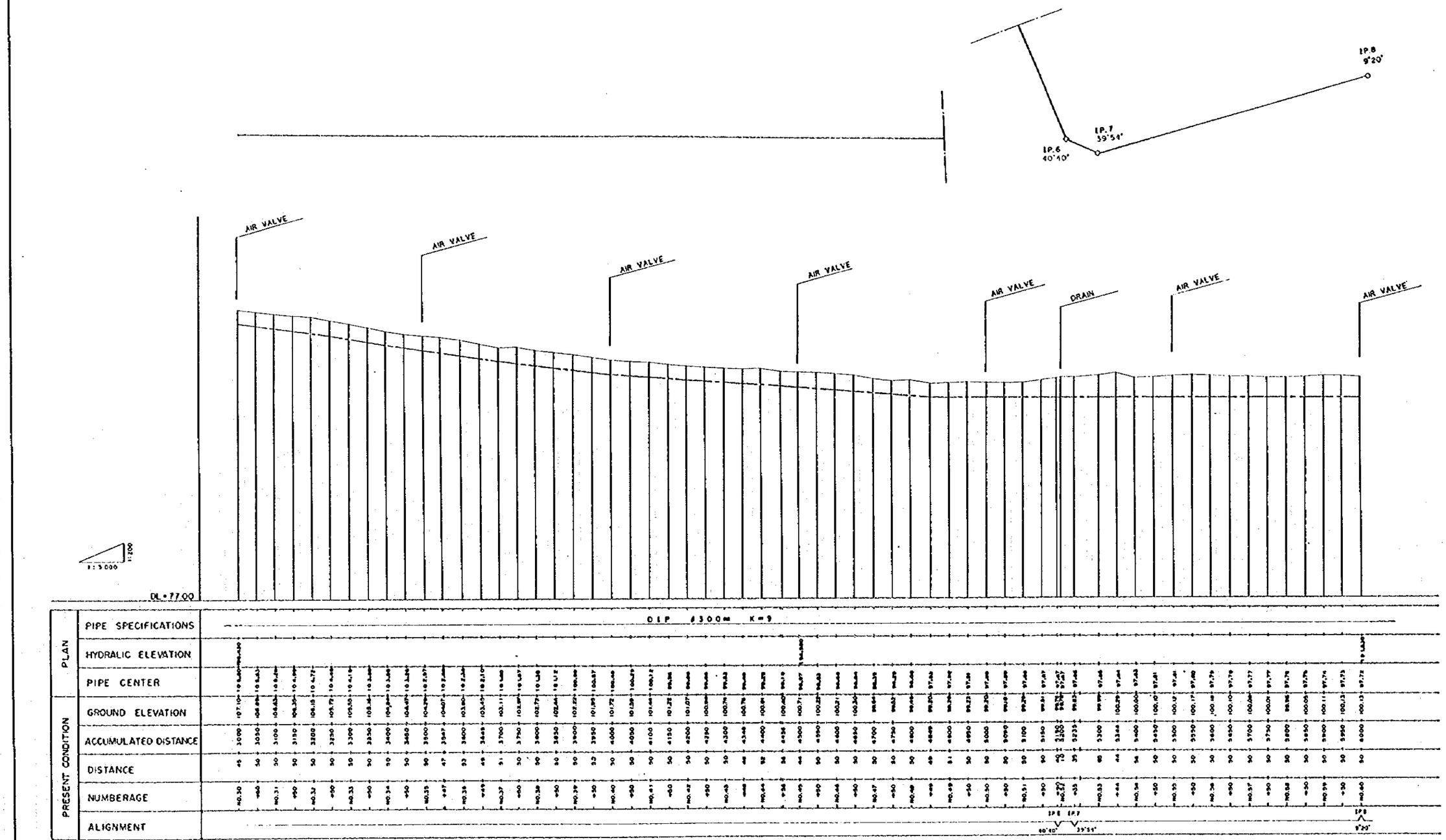
PLAN	PIPE SPECIFICATIONS	D.I.P φ300mm K=9
	HYDRALIC ELEVATION	
	PIPE CENTER	
PRESENT CONDITION	GROUND ELEVATION	
	ACCUMULATED DISTANCE	
	DISTANCE	
	NUMBERAGE	
	ALIGNMENT	I.P.1 0°50' I.P.2 0°19' I.P.3 55°12' I.P.4 58°51' I.P.5 25°34'

THE SYRIAN ARAB REPUBLIC
THE PROJECT FOR WATER SUPPLY DEVELOPMENT IN RURAL PROVINCE OF DAMASCUS

DOMAIR PROJECT
PLAN & PROFILE (1/8)

DRW. NO.
15

JAPAN INTERNATIONAL COOPERATION AGENCY



THE SYRIAN ARAB REPUBLIC THE PROJECT FOR WATER SUPPLY DEVELOPMENT IN RURAL PROVINCE OF DAMASCUS	
DOMAIR PROJECT PLAN & PROFILE (2/8)	DRW. NO. 16
JAPAN INTERNATIONAL COOPERATION AGENCY	

IP.8
9°20'

AIR VALVE | AIR VALVE | AIR VALVE | DRAIN | AIR VALVE | AIR VALVE | AIR VALVE

1:200
1:5000

EL. = 77.00

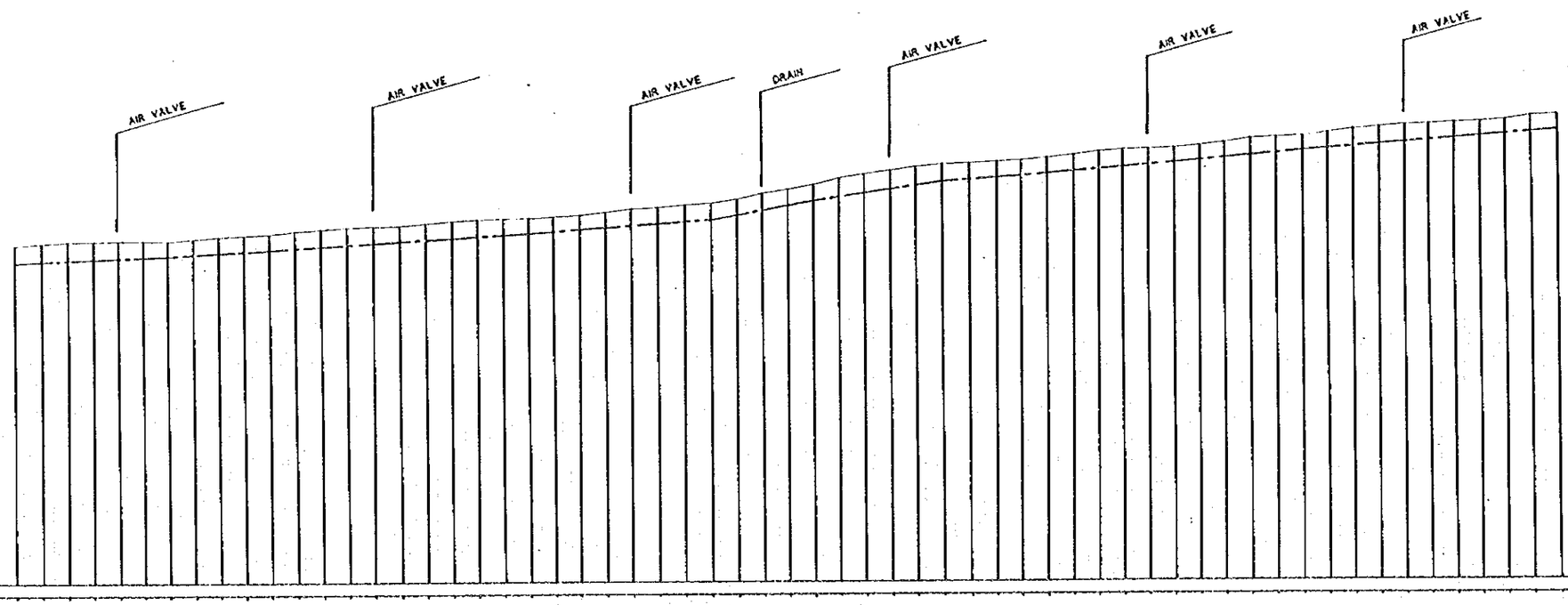
PLAN	PIPE SPECIFICATIONS	D I P ϕ300m r=9
	HYDRALIC ELEVATION	
	PIPE CENTER	
PRESENT CONDITION	GROUND ELEVATION	
	ACCUMULATED DISTANCE	
	DISTANCE	
	NUMBERAGE	
	ALIGNMENT	IP.8 9°20'

THE SYRIAN ARAB REPUBLIC
THE PROJECT FOR WATER SUPPLY DEVELOPMENT IN RURAL PROVINCE OF DAMASCUS

DOMAIR PROJECT
PLAN & PROFILE (3/8)

DRW. NO.
17

JAPAN INTERNATIONAL COOPERATION AGENCY



PLAN

PRESENT CONDITION

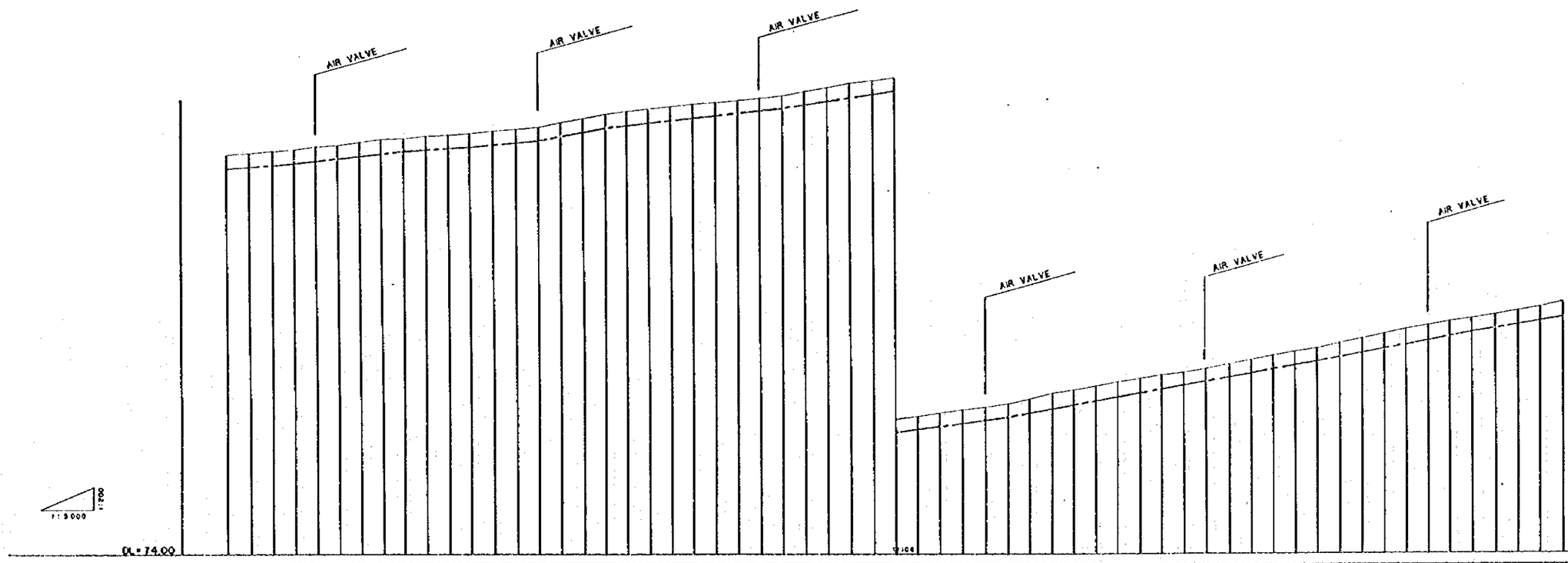
PIPE SPECIFICATIONS	DIP Φ300m K=9
HYDRALIC ELEVATION	
PIPE CENTER	
GROUND ELEVATION	
ACCUMULATED DISTANCE	
DISTANCE	
NUMBERAGE	
ALIGNMENT	

THE SYRIAN ARAB REPUBLIC
THE PROJECT FOR WATER SUPPLY DEVELOPMENT IN RURAL FROVINCE OF DAMASCUS

DOMAIR PROJECT
PLAN & PROFILE (4/8)

DRW. NO.
18

JAPAN INTERNATIONAL COOPERATION AGENCY



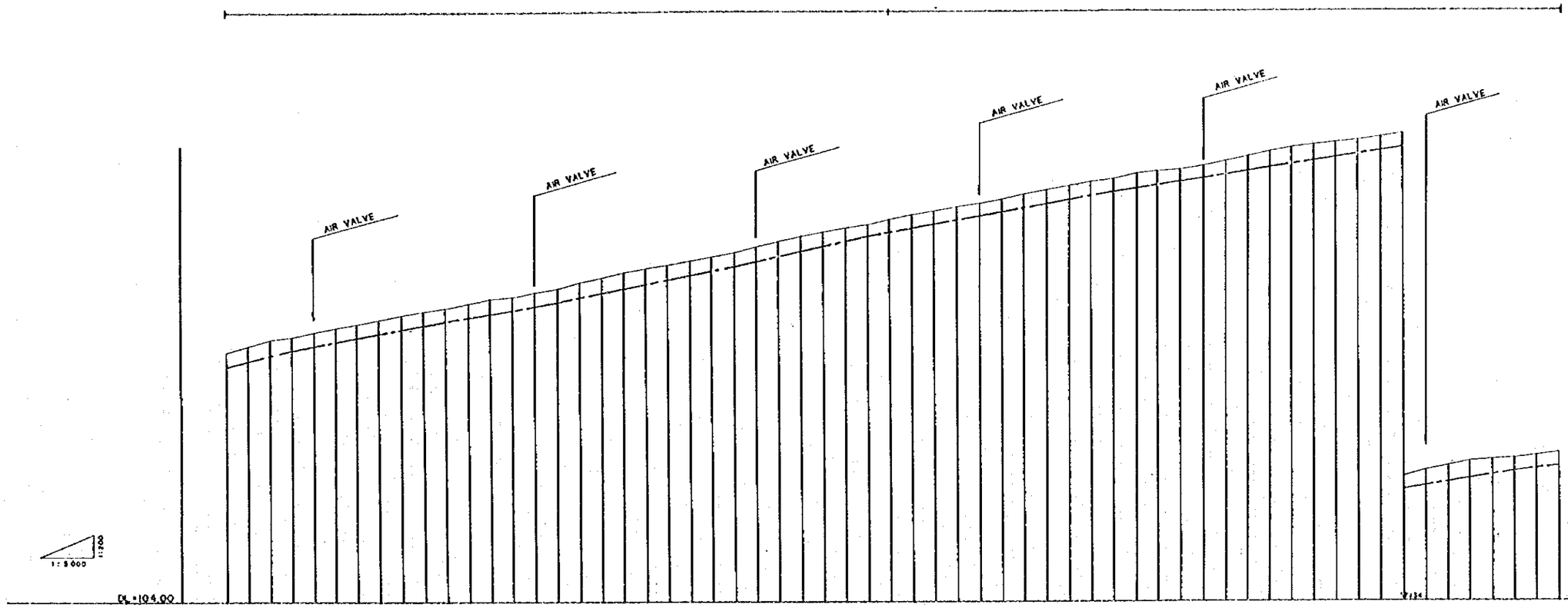
PLAN	PIPE SPECIFICATIONS	DIP ϕ300m K=9
	HYDRALIC ELEVATION	
	PIPE CENTER	
PRESENT CONDITION	GROUND ELEVATION	
	ACCUMULATED DISTANCE	
	DISTANCE	
	NUMBERAGE	
	ALIGNMENT	

THE SYRIAN ARAB REPUBLIC
THE PROJECT FOR WATER SUPPLY DEVELOPMENT IN RURAL PROVINCE OF DAMASCUS

DOMAIR PROJECT
PLAN & PROFILE (5/8)

DRW. NO.
19

JAPAN INTERNATIONAL COOPERATION AGENCY



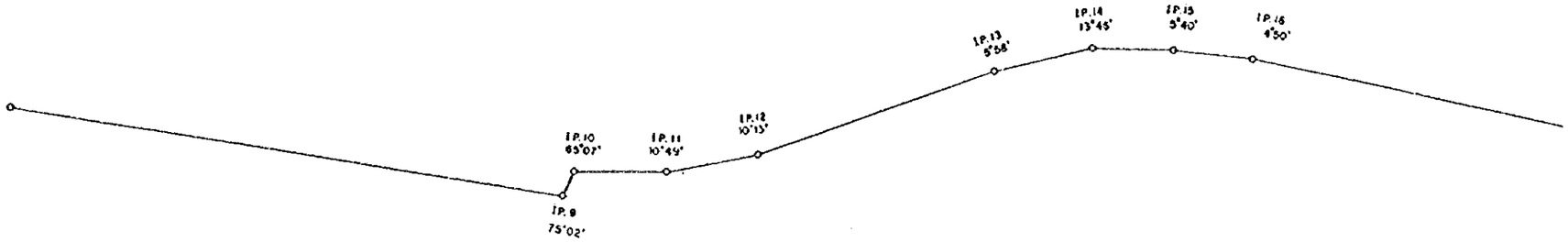
PLAN	PIPE SPECIFICATIONS	D.I.P ϕ300m K=9
	HYDRALIC ELEVATION	
	PIPE CENTER	
PRESENT CONDITION	GROUND ELEVATION	
	ACCUMULATED DISTANCE	
	DISTANCE	
	NUMBERAGE	
	ALIGNMENT	

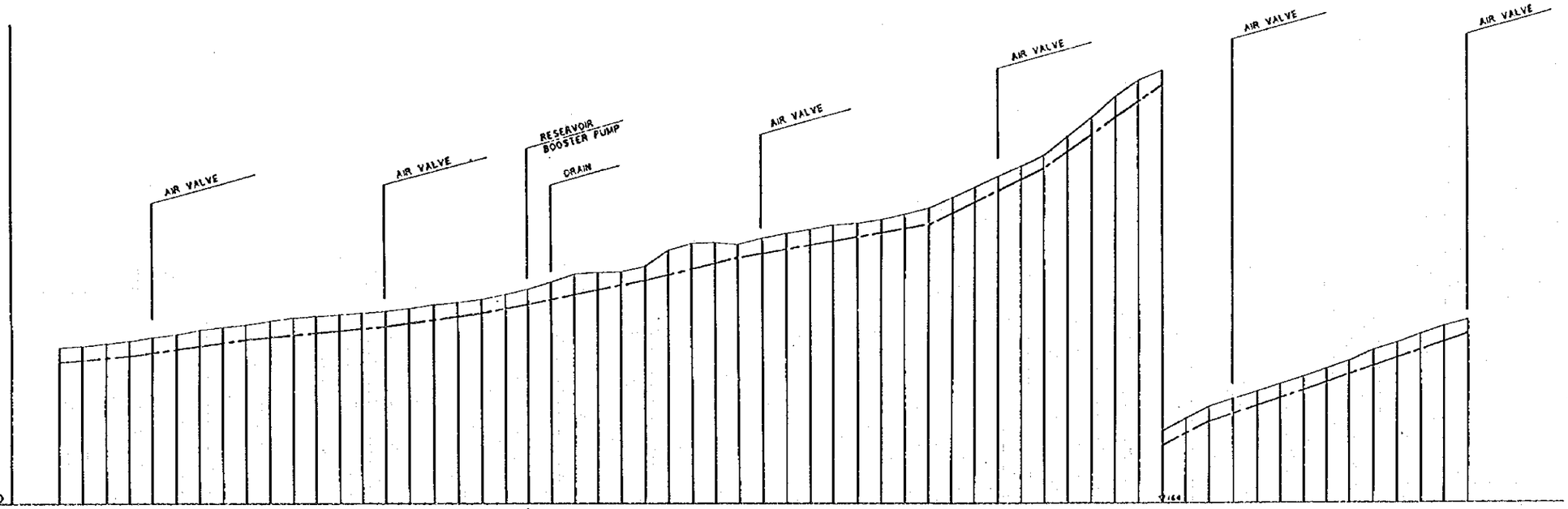
THE SYRIAN ARAB REPUBLIC
THE PROJECT FOR WATER SUPPLY DEVELOPMENT IN RURAL PROVINCE OF DAMASCUS

DOMAIR PROJECT
PLAN & PROFILE (6/8)

DRW. NO.
20

JAPAN INTERNATIONAL COOPERATION AGENCY





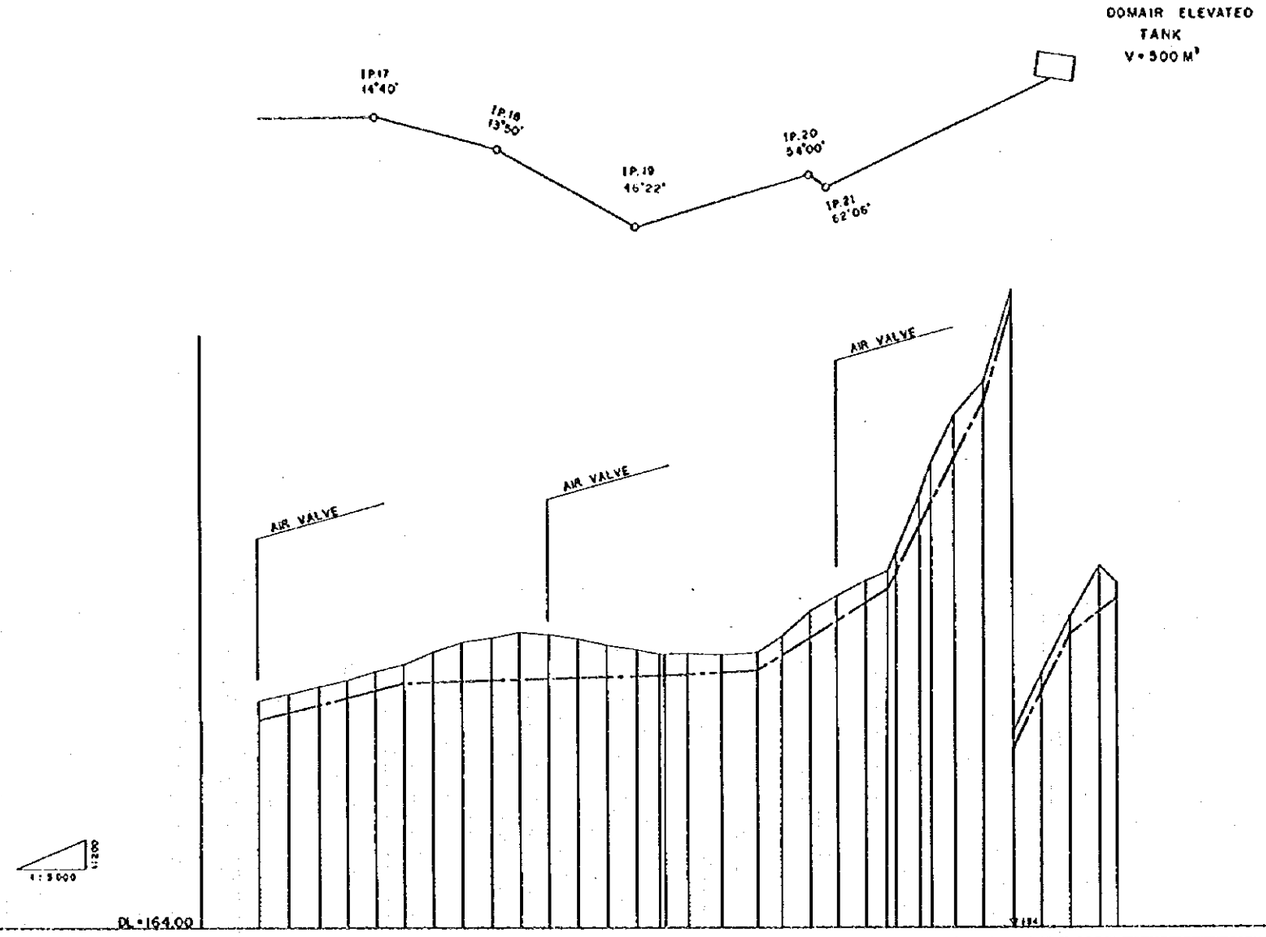
PLAN	PIPE SPECIFICATIONS	DIP φ300m K=9 / DIP φ250m K=9
	HYDRALIC ELEVATION	
	PIPE CENTER	
PRESENT CONDITION	GROUND ELEVATION	
	ACCUMULATED DISTANCE	
	DISTANCE	
	NUMBERAGE	
	ALIGNMENT	I.P.9 75°02' / I.P.10 65°02' / I.P.11 10°49' / I.P.12 10°13' / I.P.13 5°58' / I.P.14 13°45' / I.P.15 5°40' / I.P.16 4°50'

THE SYRIAN ARAB REPUBLIC
THE PROJECT FOR WATER SUPPLY DEVELOPMENT IN RURAL PROVINCE OF DAMASCUS

DOMAIR PROJECT
PLAN & PROFILE (7/8)

DRW. NO. 21

JAPAN INTERNATIONAL COOPERATION AGENCY



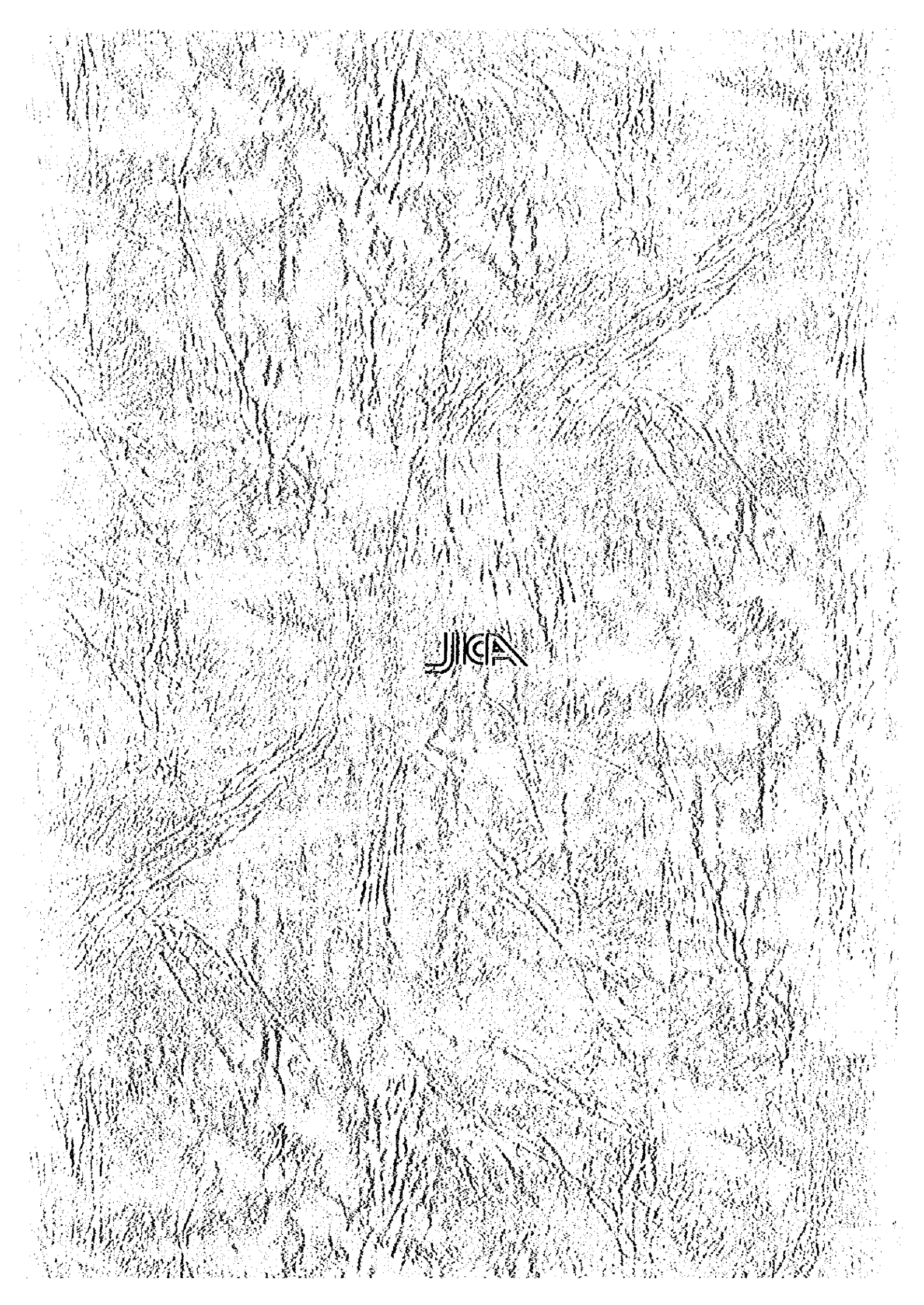
PLAN	PIPE SPECIFICATIONS	D.I.P φ250m K=9
	HYDRALIC ELEVATION	
	PIPE CENTER	
PRESENT CONDITION	GROUND ELEVATION	
	ACCUMULATED DISTANCE	
	DISTANCE	
	NUMBERAGE	
	ALIGNMENT	IP.17 14°40' IP.18 13°50' IP.19 16°22' IP.20 IP.21 54°00' 62°06'

THE SYRIAN ARAB REPUBLIC
THE PROJECT FOR WATER SUPPLY DEVELOPMENT IN RURAL PROVINCE OF DAMASCUS

DOMAIR PROJECT
PLAN & PROFILE (8/8)

DRW. NO. 22

JAPAN INTERNATIONAL COOPERATION AGENCY


JICA