

FIG-7.3.16 LOCATION MAP OF SABO WORKS IN THE OGSONG RIVER

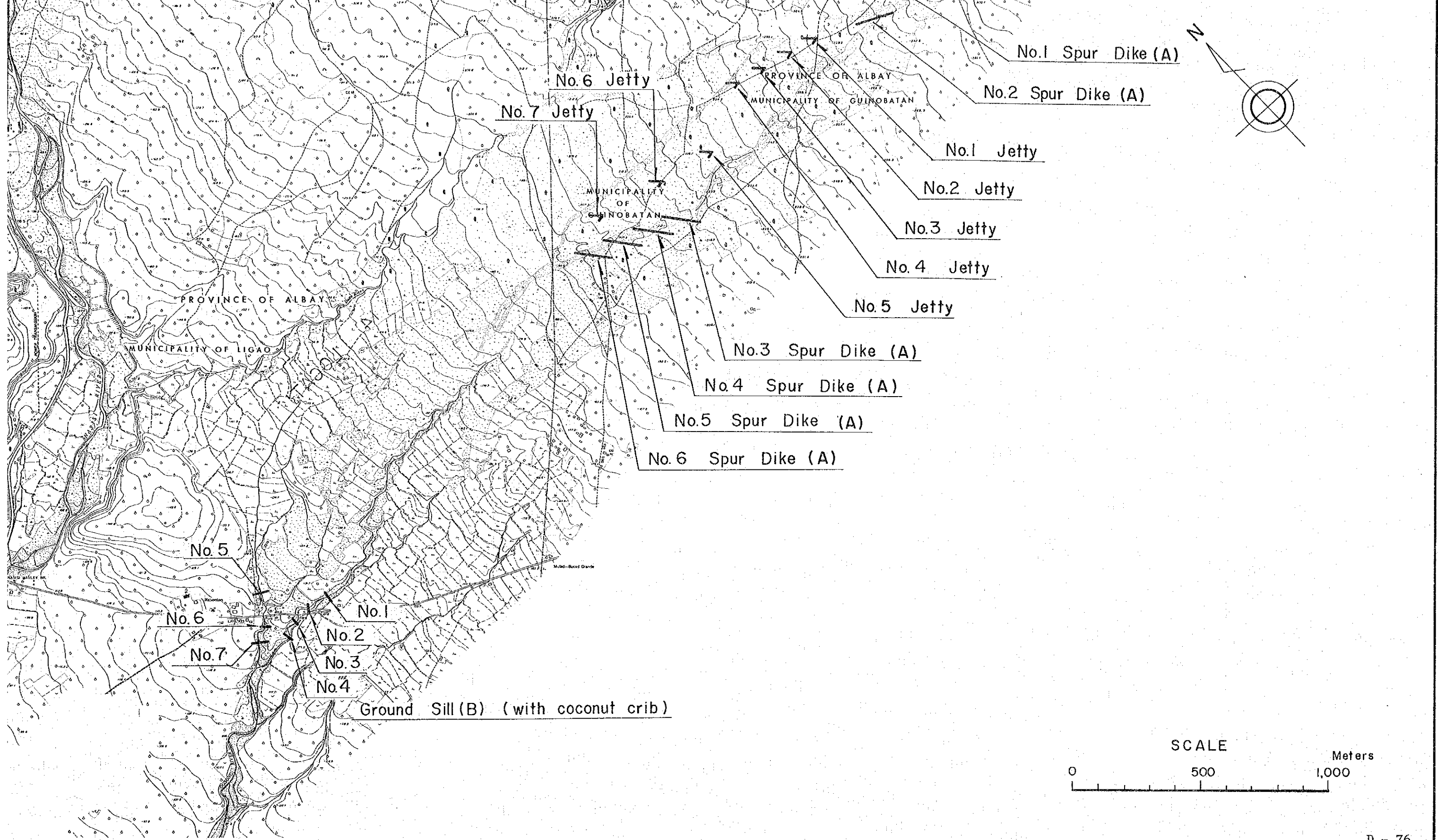


FIG.-7. 3. 17 LOCATION MAP OF SABO WORKS IN THE NASISI R

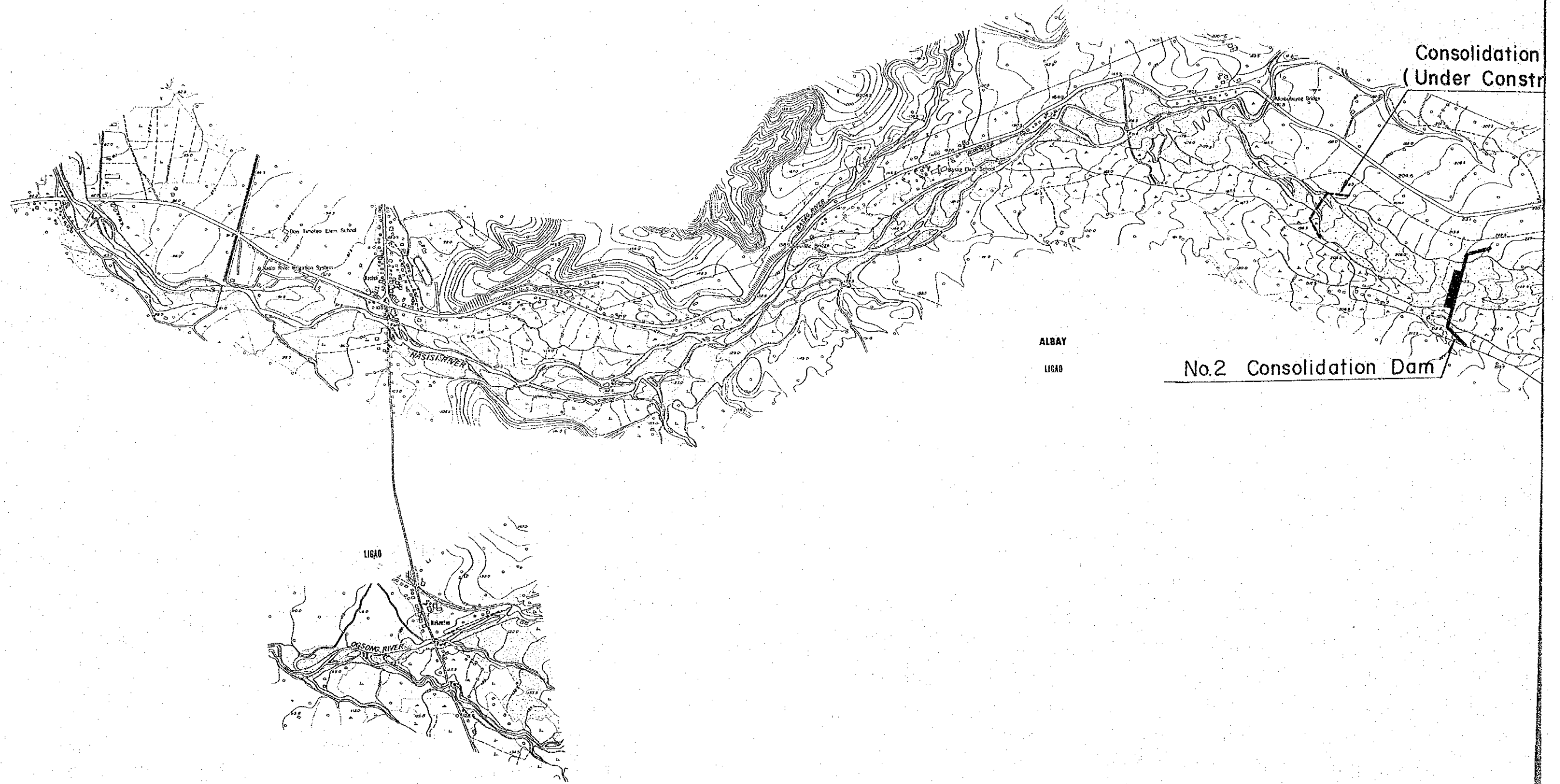


FIG.-7. 3. 17 LOCATION MAP OF SABO WORKS IN THE NASISI RIVER

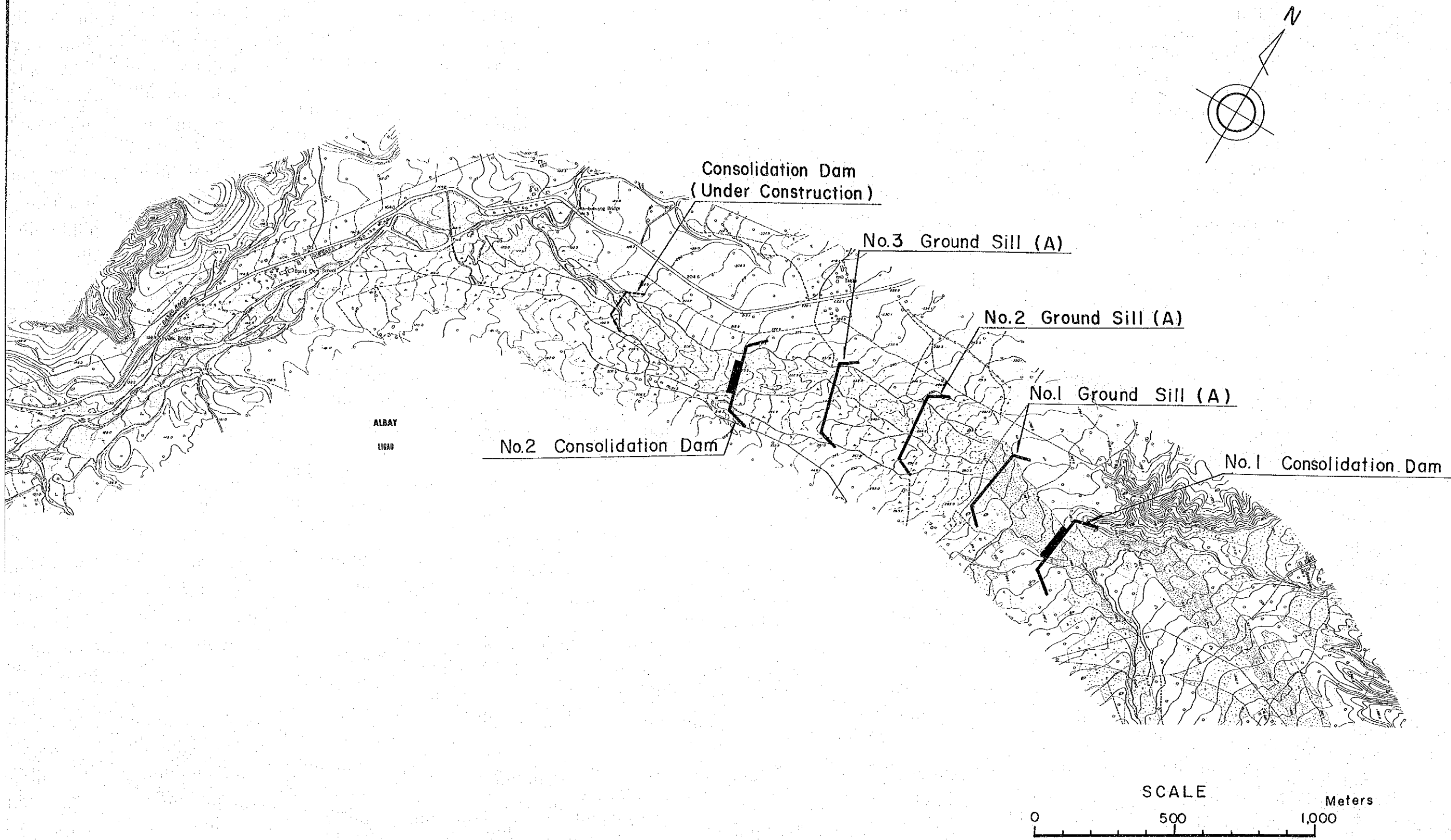
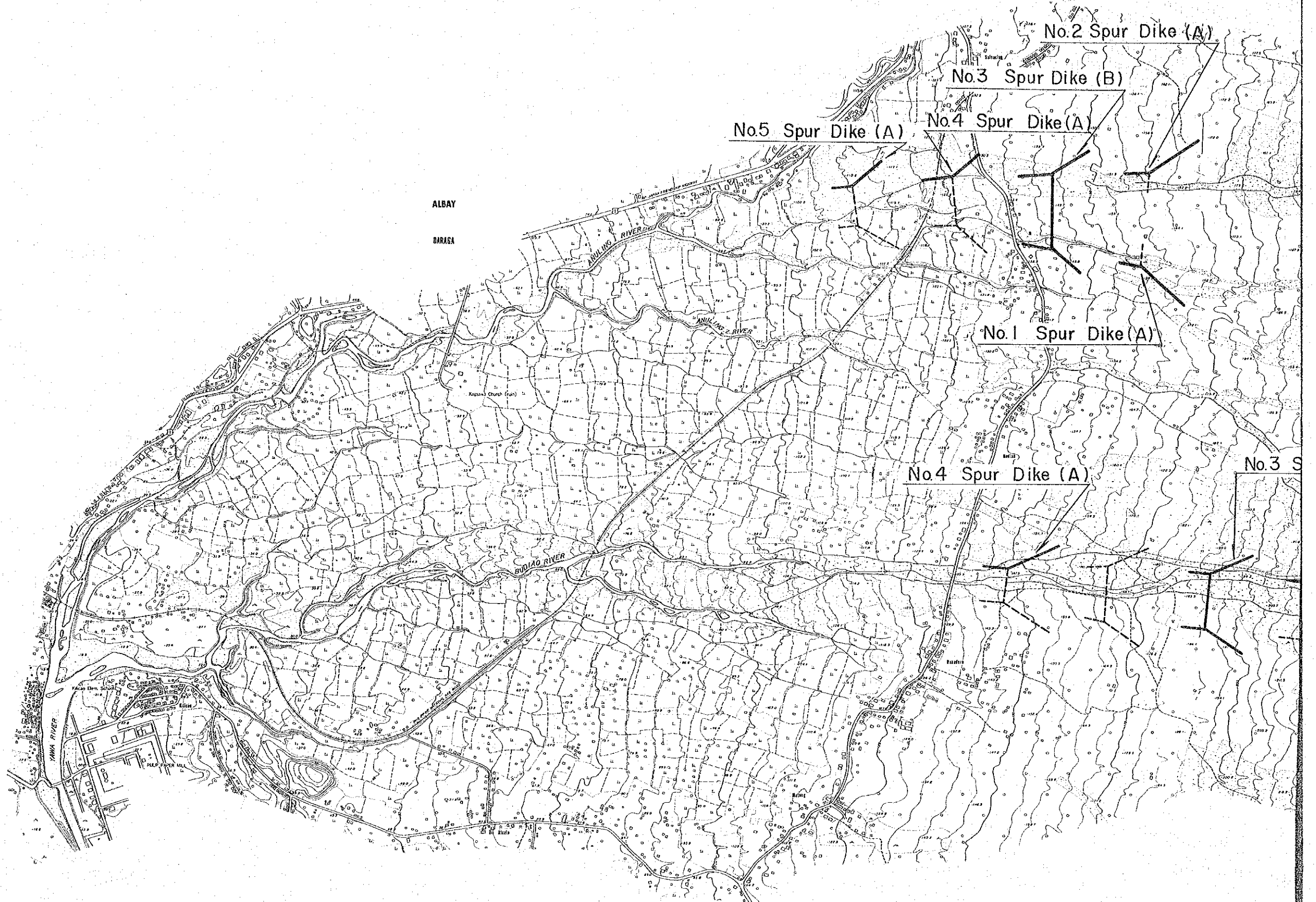


FIG-7.3.18 LOCATION MAP OF SABO WORKS IN THE



ABO WORKS IN THE ANULING AND THE BUDIAO RIVERS

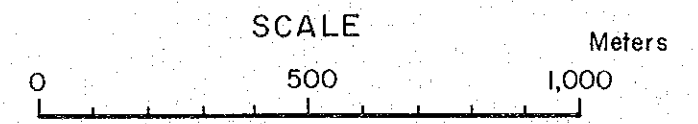
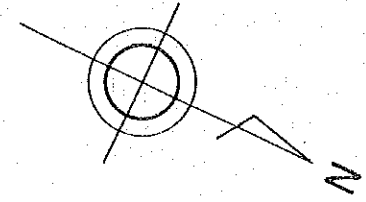
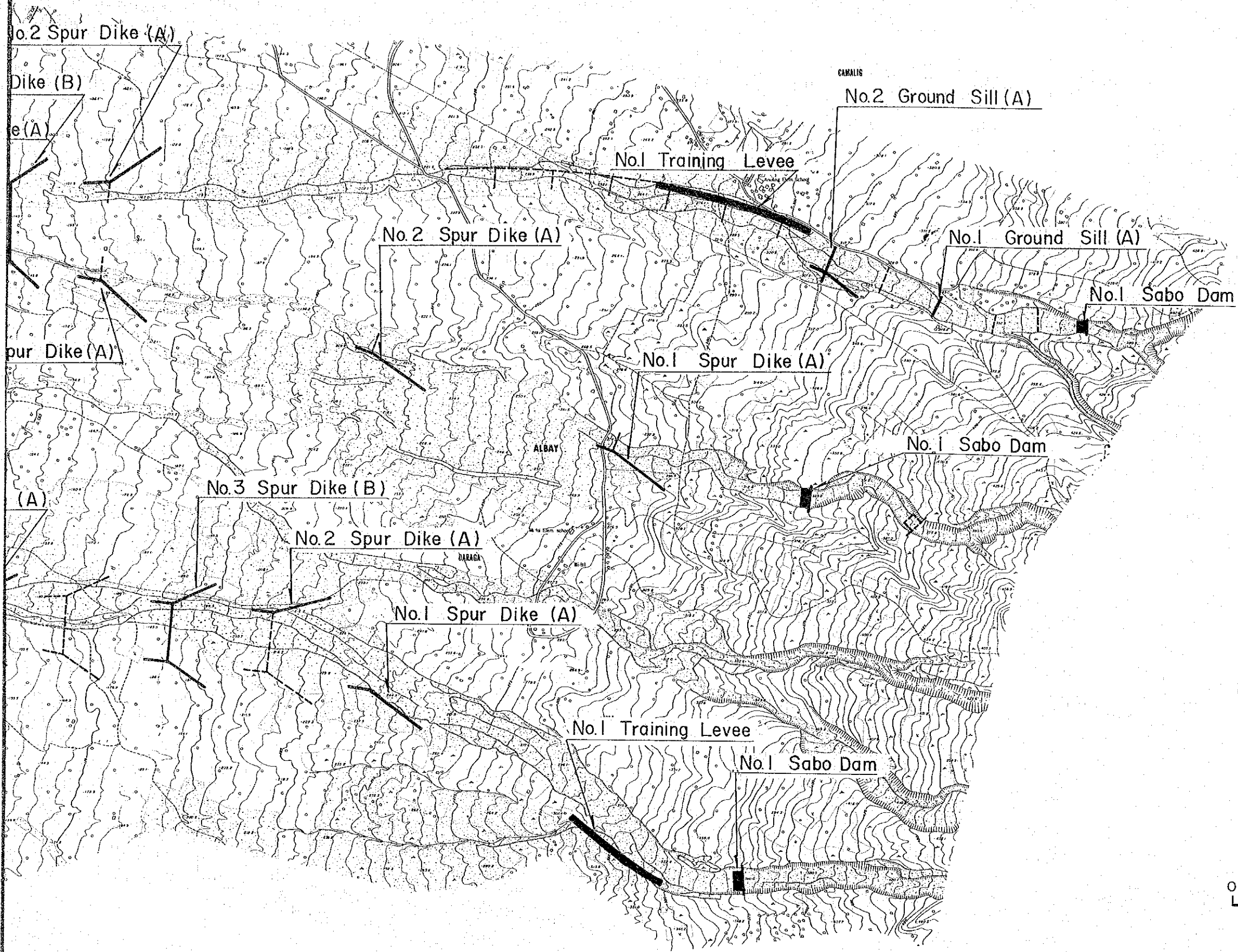
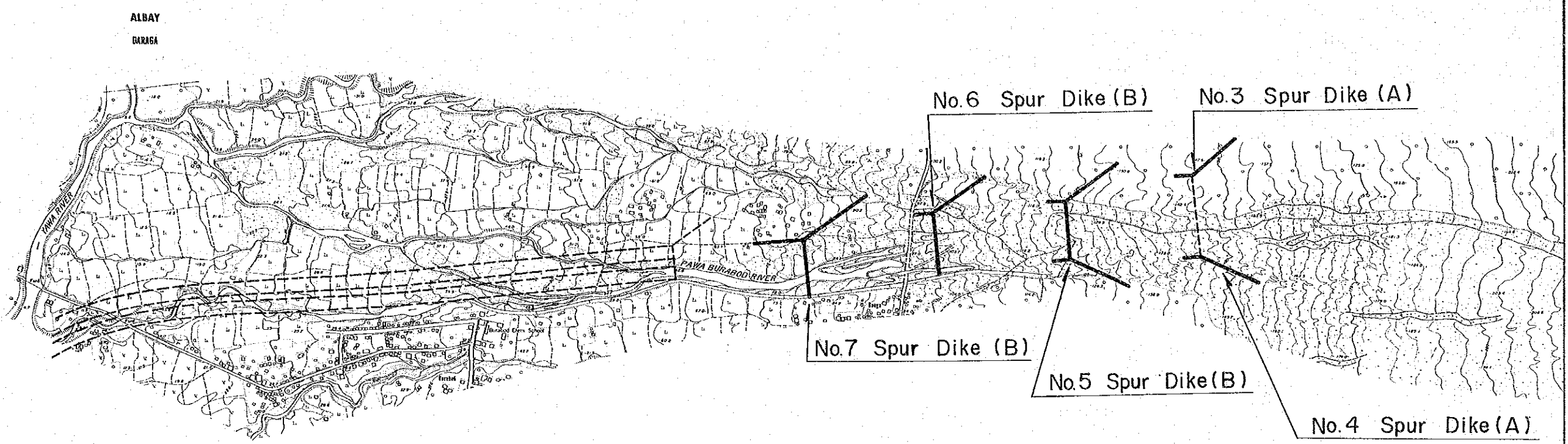
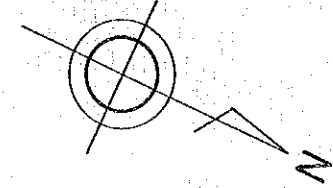


FIG-7.3.19 LOCATION MAP OF SABO WORKS



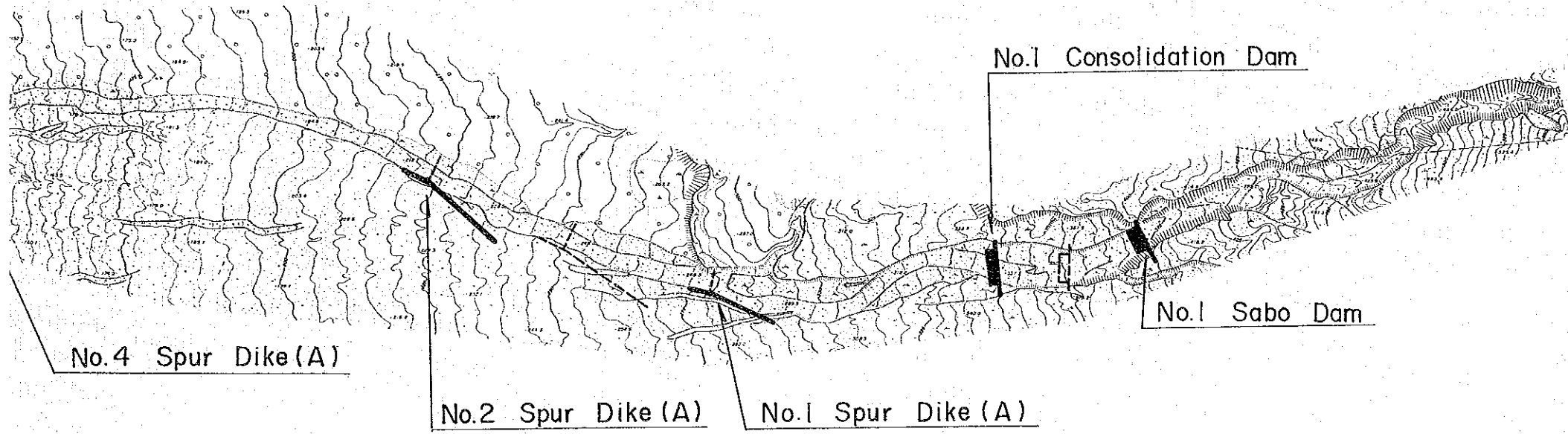
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MAP OF SABO WORKS IN THE PAWA-BURABOD RIVER



Spur Dike (A)

ALBAY
BARAGA



No.1 Consolidation Dam

No.4 Spur Dike (A)

No.1 Sabo Dam

No.2 Spur Dike (A)

No.1 Spur Dike (A)

LEGASPI

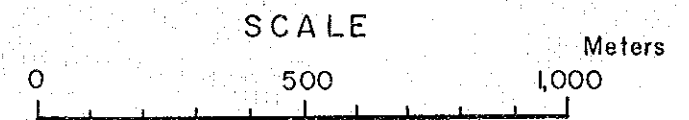
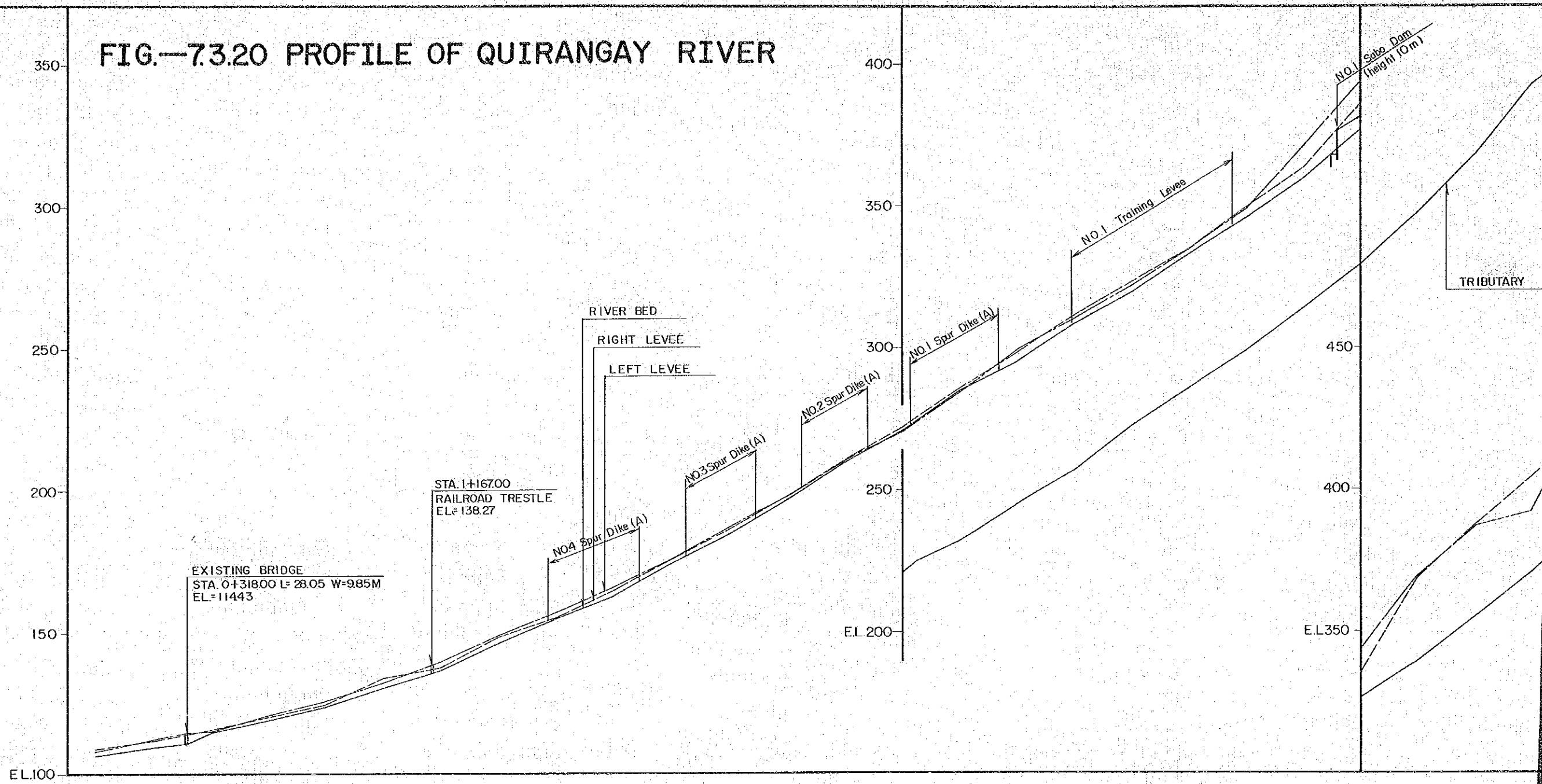
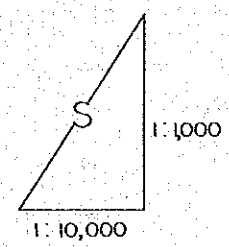
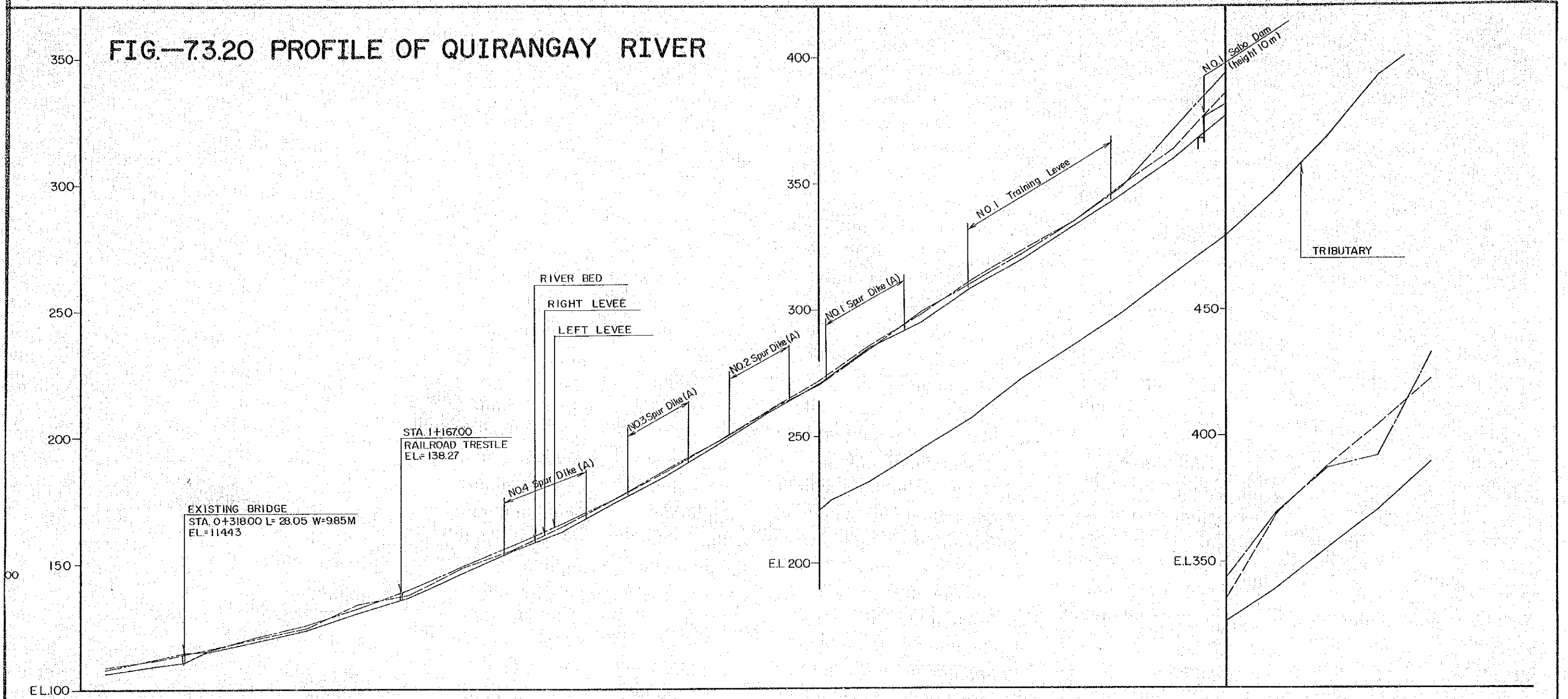


FIG.—7.3.20 PROFILE OF QUIRANGAY RIVER



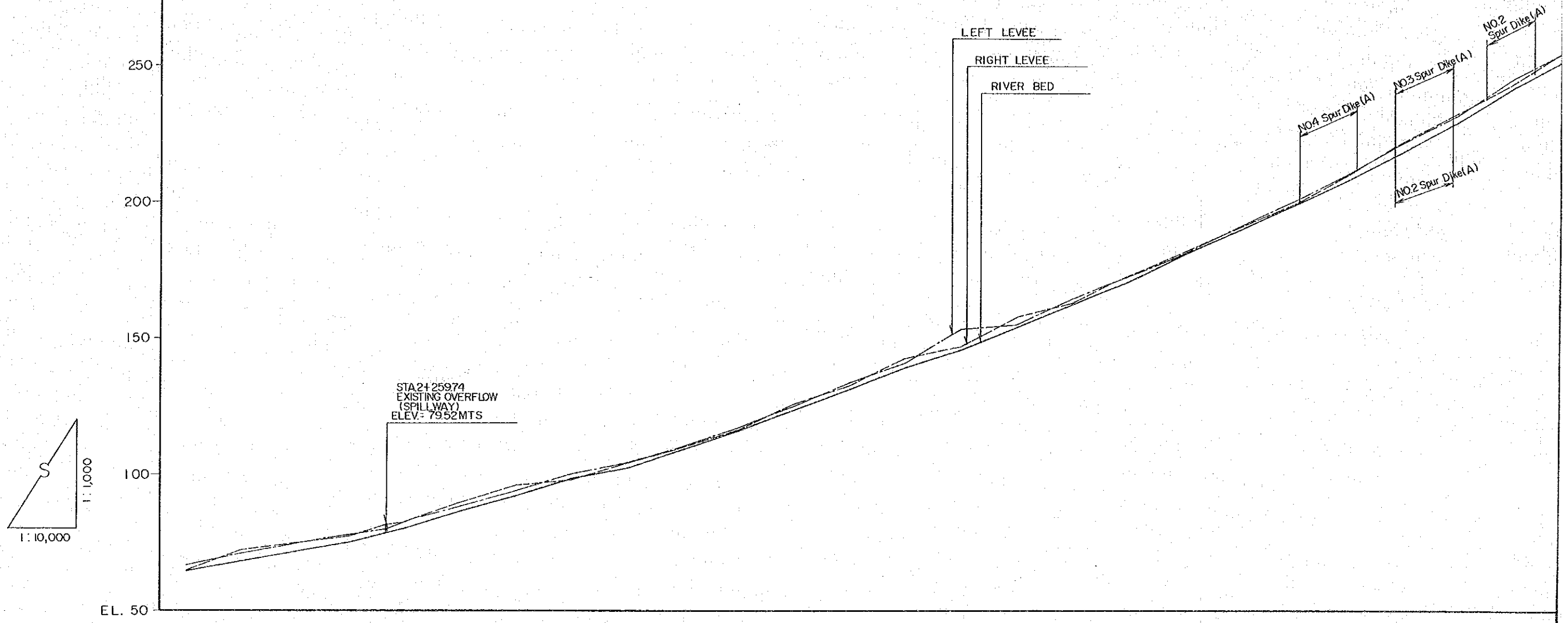
STATION NO.	DISTANCE	CUMULATIVE DISTANCE	EXISTING ELEVATION		
			RIVER BED	LEFT LEVEE	RIGHT LEVEE
0+000	0	0	106.61	108.14	108.80
0+200	200	200	109.53	112.34	111.70
0+318	118	318	110.96	114.61	114.40
0+400	82	400	114.81	115.23	115.70
0+600	200	600	119.14	120.73	120.38
0+800	200	800	124.02	125.76	124.65
1+000	200	1000	130.58	132.38	134.08
1+167	167	1167	136.70	139.82	137.65
1+200	33	1200			
1+400	200	1400	146.09	148.91	148.02
1+600	200	1600	154.97	157.21	155.08
1+800	200	1800	162.57	165.76	164.47
2+000	200	2000	173.99	175.26	175.25
2+200	200	2200	184.60	186.92	186.32
2+400	200	2400	196.71	197.87	197.87
2+600	200	2600	209.60	210.27	210.26
2+800	200	2800	220.80	220.63	221.78
		(2850)	(22500)		
3+000	200	3000	234.89	234.66	235.70
		(30200)	(24500)		
3+200	200	3200	244.96	249.05	248.25
		(34500)			
3+400	200	3400	258.37	260.37	261.59
		(35750)			
3+600	200	3600	269.86	272.90	273.29
		(37250)			
3+800	200	3800	282.88	284.87	284.86
		(38600)			
4+000	200	4000	295.67	298.97	299.18
		(39900)			
4+200	200	4200	309.36	320.76	313.49
		(31400)			
4+400	200	4400	326.59	343.45	335.09
		(32900)			
4+600	200	4600	339.74	369.15	368.83
		(34750)			
4+800	200	4800	355.37	387.06	387.56
		(36800)			
5+000	200	5000	370.9	392.08	404.63
		(38900)			

FIG.-7.3.20 PROFILE OF QUIRANGAY RIVER



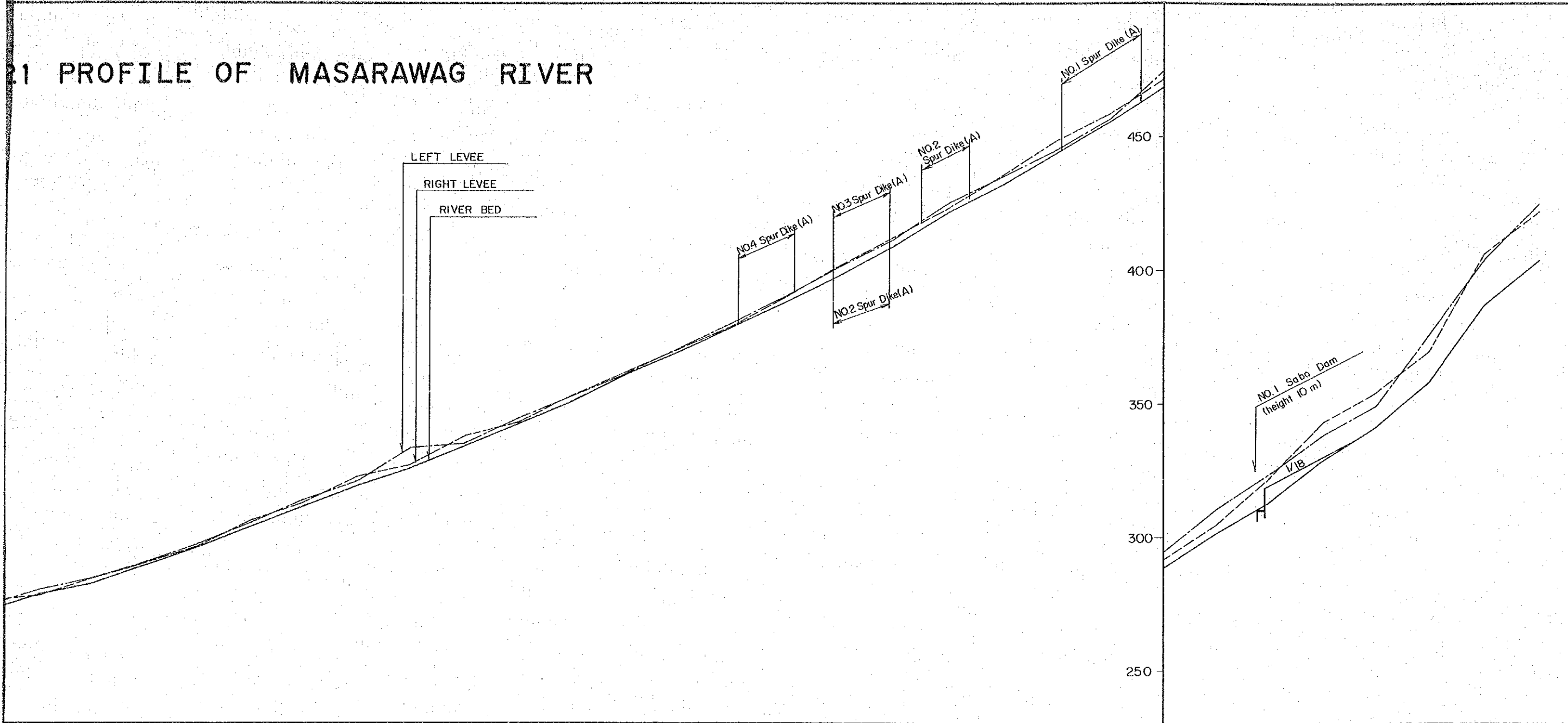
RIGHT LEVEE	108.80	108.14	111.70	114.40	115.70	120.38	124.65	134.08	137.65	148.02	155.08	164.47	175.25	186.32	197.87	210.26	221.78	235.70	249.25	261.59	273.29	284.86	299.18	313.49	335.09	368.83	367.56	404.63	422.20
LEFT LEVEE	108.14	112.34	114.61	115.23	120.73	125.76	132.38	139.82	148.91	157.21	165.76	175.26	186.92	197.87	210.27	220.63	234.66	249.05	260.37	272.50	284.87	298.97	320.76	343.45	369.15	387.06	392.08	431.61	
RIVER BED	106.61	109.53	109.96	114.81	119.14	124.02	130.58	136.70	145.09	154.97	162.57	173.99	184.60	196.71	209.60	220.80	234.89	244.96	258.37	267.50	269.86	282.88	295.67	309.36	326.59	339.74	355.37	370.91	389.25
CUMULATIVE DISTANCE	0	200	318	400	600	800	1000	1167	1400	1600	1800	2000	2200	2400	2600	2800	3000	3200	3400	3600	3800	4000	4200	4400	4600	4800	5000	5200	
STATIONING	0+000	0+200	0+318	0+400	0+600	0+800	1+000	1+167	1+400	1+600	1+800	2+000	2+200	2+400	2+600	2+800	3+000	3+200	3+400	3+600	3+800	4+000	4+200	4+400	4+600	4+800	5+000	5+200	
SECTION NO.	0+000	0+200	0+318	0+400	0+600	0+800	1+000	1+167	1+400	1+600	1+800	2+000	2+200	2+400	2+600	2+800	3+000	3+200	3+400	3+600	3+800	4+000	4+200	4+400	4+600	4+800	5+000	5+200	

FIG.—7.3.21 PROFILE OF MASARAWAG RIVER

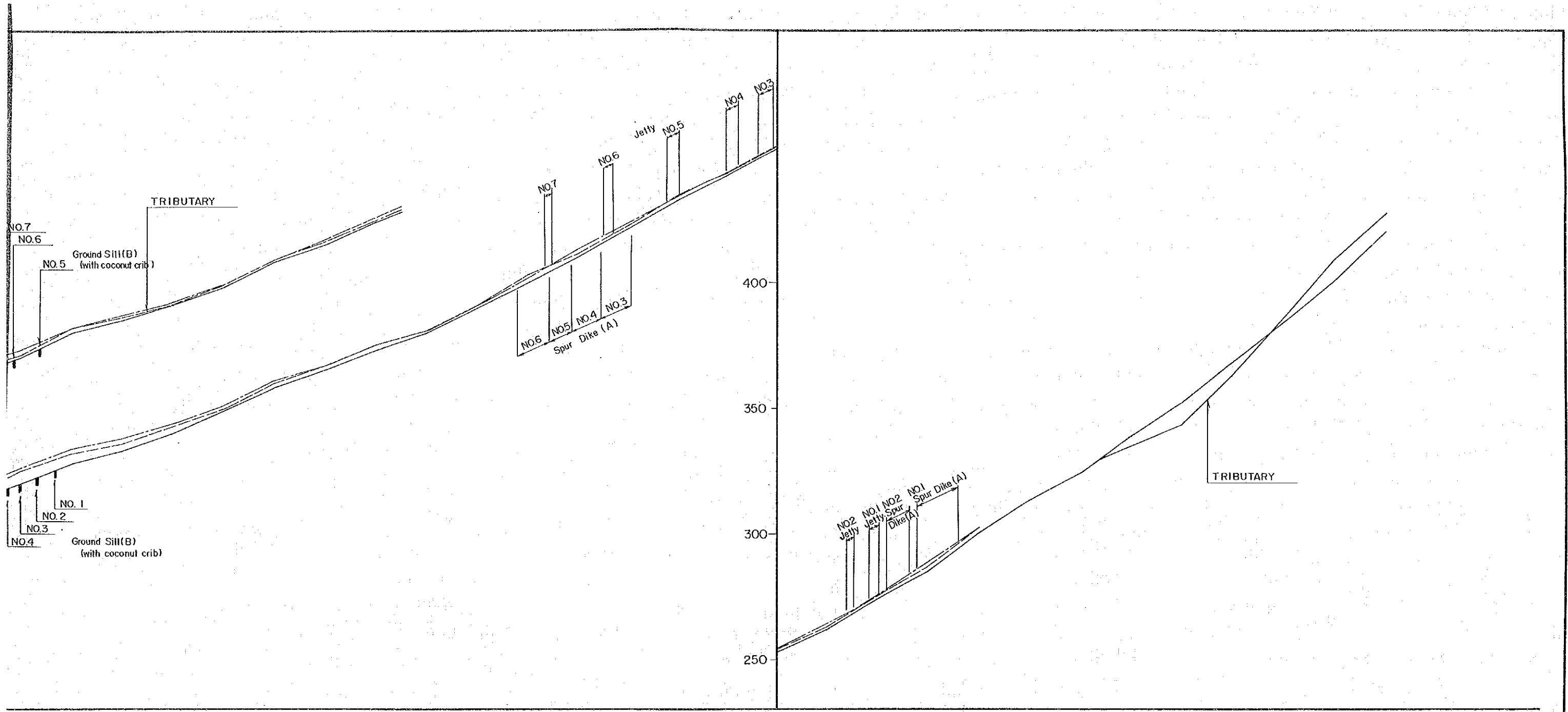


STATION NO.	DISTANCE	CUMULATIVE DISTANCE	EXISTING ELEVATION		
			RIVER BED	LEFT LEVEE	RIGHT LEVEE
1+800	0	0	64.46	66.73	64.86
2+000	200	200	68.15	71.02	72.09
2+200	200	400	71.94	74.97	75.01
2+400	200	600	75.36	78.18	77.67
2+259.74	729.74	729.74	78.86	80.22	81.79
2+600	200	800	80.49	83.02	82.91
2+800	200	1000	86.86	88.74	90.14
3+000	200	1200	92.48	94.32	96.17
3+200	200	1400	98.76	100.35	98.25
3+400	200	1600	102.74	104.45	104.32
3+600	200	1800	109.42	110.13	110.08
3+800	200	2000	116.19	117.25	116.32
4+000	200	2200	123.95	125.57	126.14
4+200	200	2400	131.52	134.01	132.83
4+400	200	2600	139.27	141.15	142.73
4+600	200	2800	145.92	153.59	147.17
4+800	200	3000	154.29	155.29	157.85
5+000	200	3200	162.81	164.67	163.19
5+200	200	3400	171.00	172.73	173.13
5+400	200	3600	180.75	181.53	181.75
5+600	200	3800	189.75	190.92	190.72
5+800	200	4000	198.7	200.43	199.32
6+000	200	4200	208.27	210.43	210.23
6+200	200	4400	218.51	221.96	222.00
6+400	200	4600	229.42	232.13	232.53
6+600	200	4800	241.85	245.28	243.52

21 PROFILE OF MASARAWAG RIVER

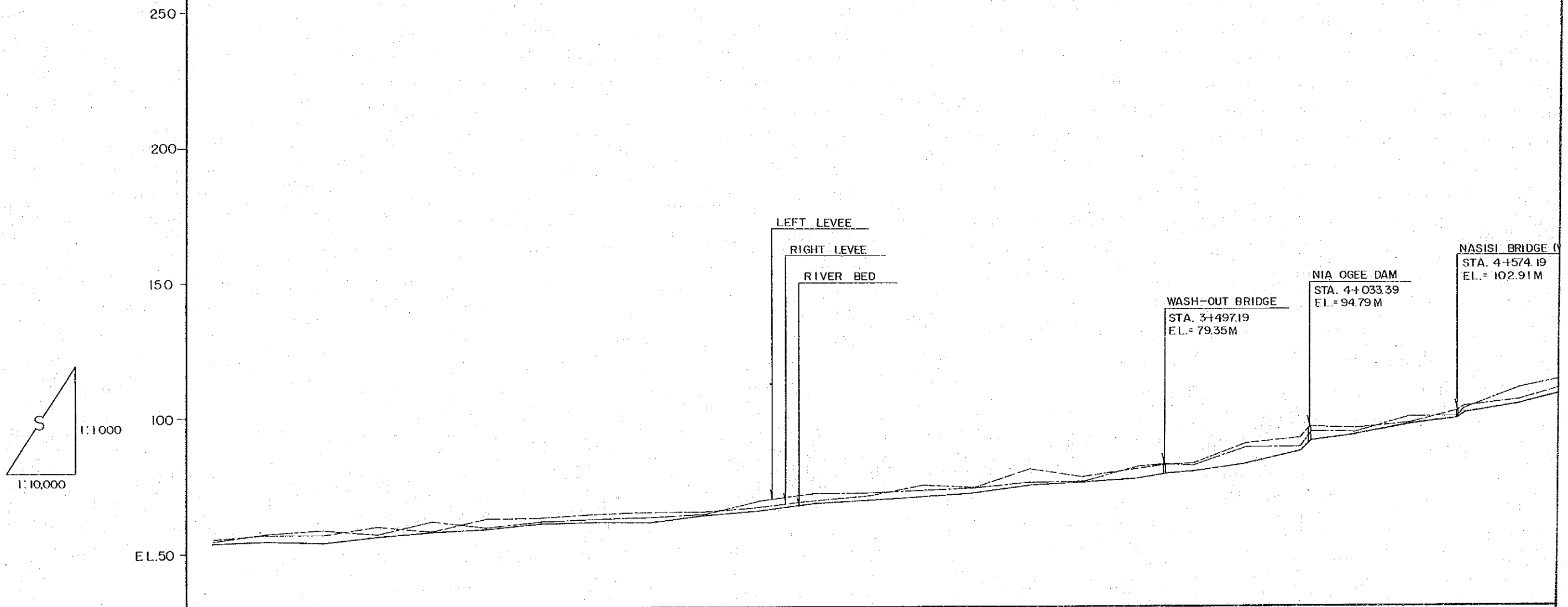


3+200	200	1 400	98.76	100.35	98.25
3+400	200	1 600	102.74	104.45	104.32
3+600	200	1 800	109.42	110.13	110.08
3+800	200	2 000	116.19	117.25	116.32
4+000	200	2 200	123.96	125.57	126.14
4+200	200	2 400	131.62	134.01	132.83
4+400	200	2 600	139.27	141.15	142.73
4+600	200	2 800	145.92	153.59	147.17
4+800	200	3 000	154.29	155.29	157.85
5+000	200	3 200	162.81	164.67	163.19
5+200	200	3 400	171.00	172.73	173.13
5+400	200	3 600	180.75	181.53	181.75
5+600	200	3 800	189.75	190.92	190.72
5+800	200	4 000	198.71	200.43	199.32
6+000	200	4 200	208.27	210.43	210.23
6+200	200	4 400	218.51	221.96	222.00
6+400	200	4 600	229.42	232.13	232.53
6+600	200	4 800	241.85	245.28	243.52
6+800	200	5 000	252.17	255.29	255.67
7+000	200	5 200	263.85	265.05	268.41
7+200	200	5 400	275.56	276.62	278.59
7+400	200	5 600	288.68	294.30	291.61
7+600	200	5 800	301.42	310.34	304.42
7+800	200	6 000	313.02	323.27	321.89
8+000	200	6 200	328.62	336.14	343.00
8+200	200	6 400	341.69	349.45	354.32
8+400	200	6 600	358.55	376.11	370.02
8+600	200	6 800	367.29	404.33	406.45
8+800	200	7 000	404.00	425.00	422.13



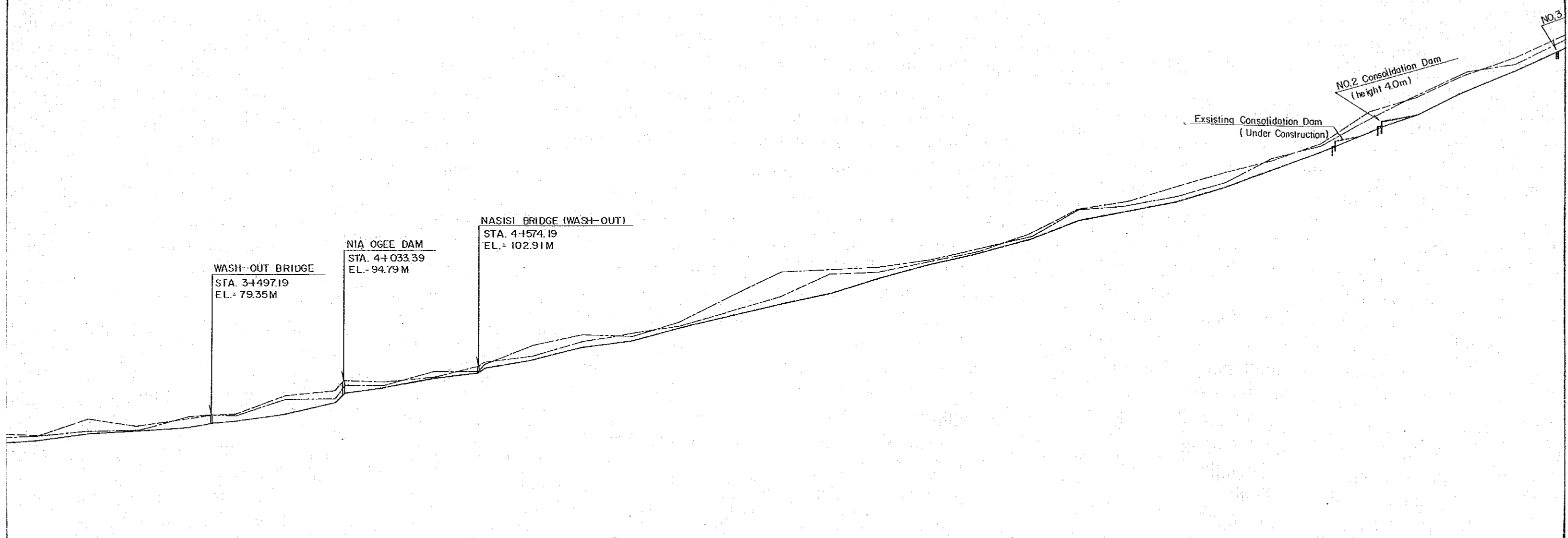
200	3000	120.00 (120.00)	125.00 (121.00)
200	3200	128.00 (130.00)	132.00 (132.00)
200	3400	133.00 (135.00)	135.00 (135.00)
200	3600	140.00 (141.00)	143.00 (141.00)
200	3800	149.00 (148.00)	150.00 (149.00)
200	4000	158.00 (158.00)	160.00 (159.00)
200	4200	165.00 (165.00)	167.00 (167.00)
200	4400	173.00 (174.00)	175.00 (175.00)
200	4600	180.00 (178.00)	181.00 (180.00)
200	4800	190.00	191.00
200	5000	200.00	203.00
200	5200	210.00	211.00
200	5400	221.00	222.00
200	5600	232.00	234.00
200	5800	242.00	243.00
200	6000	253.00	254.00
200	6200	262.00	263.00
200	6400	274.00	275.00
200	6600	285.00	287.00
200	6800	300.00	302.00
200	7000	313.00	
200	7200	324.00	
200	7400	339.00 (335.00)	
200	7600	352.00 (343.00)	
200	7800	368.00 (363.00)	
200	8000	384.00 (386.00)	
200	8200	400.00 (409.00)	
200	8400	420.00 (427.00)	

FIG.—7.3.23 PROFILE OF NASISI

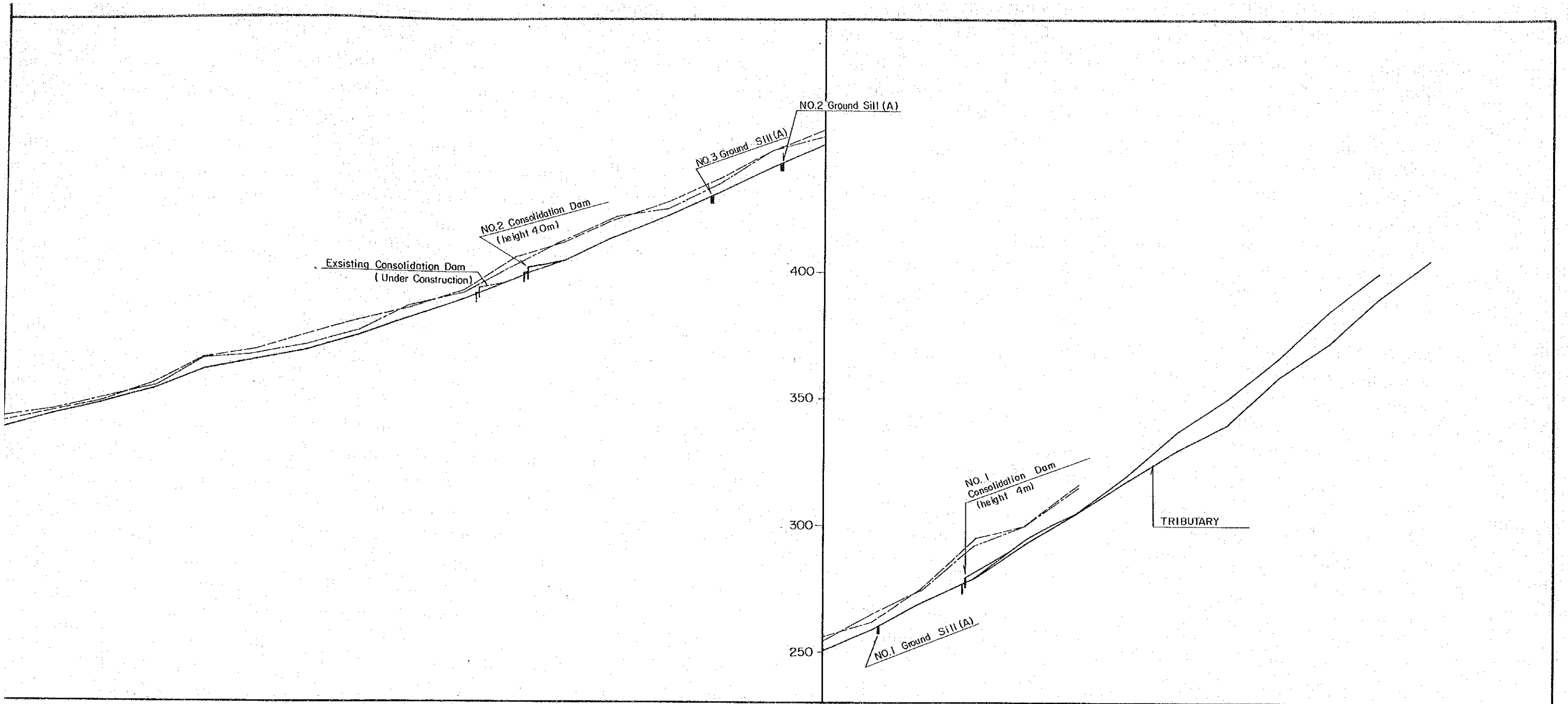


STATION NO.	DISTANCE	CUMULATIVE DISTANCE	EXISTING ELEVATION		
			RIVER BED	LEFT LEVEE	RIGHT LEVEE
0+000	0	0	54.02	54.92	55.41
0+200	200	200	54.97	57.61	57.11
0+400	200	400	54.46	59.09	57.12
0+600	200	600	56.87	57.87	60.23
0+800	200	800	58.34	62.22	58.68
1+000	200	1000	59.62	60.00	63.09
1+200	200	1200	61.35	62.24	63.53
1+400	200	1400	61.80	62.99	64.75
1+600	200	1600	61.97	63.47	65.41
1+800	200	1800	64.29	64.75	65.48
2+000	200	2000	66.18	69.60	67.19
2+200	200	2200	68.84	72.19	69.50
2+400	200	2400	69.90	72.63	71.42
2+600	200	2600	71.21	73.59	75.18
2+800	200	2800	72.62	74.16	74.43
3+000	200	3000	75.23	76.08	81.09
3+200	200	3200	76.32	76.62	78.13
3+400	200	3400	77.83	82.05	81.31
3+497.19	97.19	3497.19	79.35	82.77	82.71
3+600	102.81	3600	80.37	82.49	83.09
3+800	200	3800	83.22	89.08	90.58
4+000	200	4000	88.04	89.43	92.78
4+033.39	33.39	4033.39	91.40	94.79	96.79
4+200	166.61	4200	94.03	94.97	96.33
4+400	200	4400	97.68	100.59	98.22
4+574.19	174.19	4574.19	99.99	100.64	102.91
4+600	25.81	4600	101.99	103.66	104.32
4+800	200	4800	105.61	111.29	106.84

FIG.—7.3.23 PROFILE OF NASISI RIVER

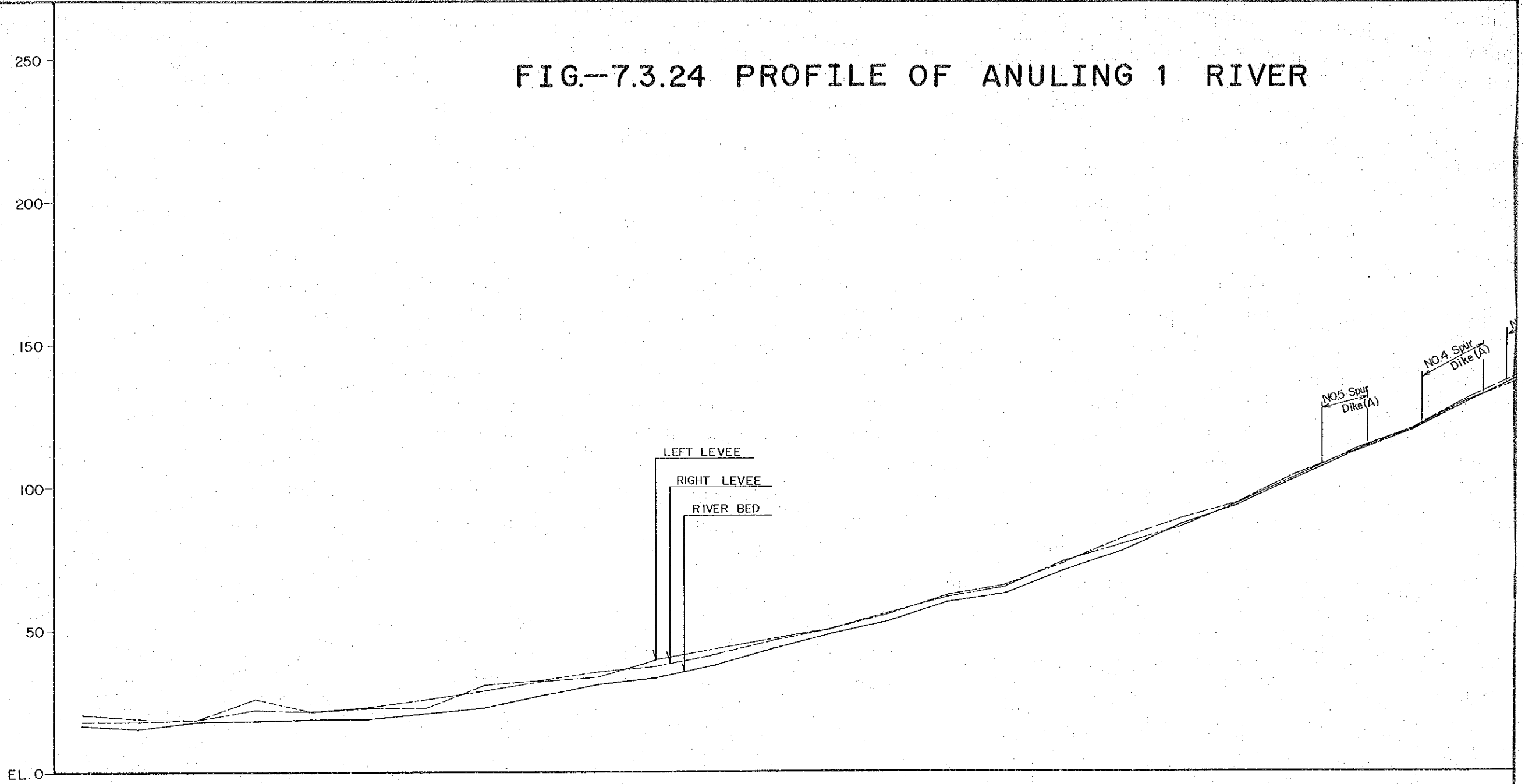
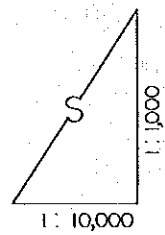


2+800	200	2800	72.62	74.16	74.43
3+000	200	3000	75.23	76.08	81.09
3+200	200	3200	76.32	76.62	78.13
3+400	200	3400	77.83	82.05	81.31
3+497.19	97.19	3497.19	79.35	82.77	82.71
3+600	102.81	3600	80.37	82.49	83.09
3+800	200	3800	83.22	89.08	90.58
4+000	200	4000	88.04	89.43	92.78
4+033.39	33.39	4033.39	91.40	94.79	96.79
4+200	166.61	4200	94.03	94.97	96.33
4+400	200	4400	97.68	100.59	98.22
4+574.19	174.19	4574.19	99.99	100.64	102.91
4+600	25.81	4600	101.99	103.66	104.32
4+800	200	4800	105.61	111.29	106.84
4+997.68	197.68	4997.68	110.22	115.44	12.67
5+200	200	5200	113.00	115.00	116.00
5+400	200	5400	118.50	121.00	119.00
5+600	200	5600	123.00	131.00	125.00
5+800	200	5800	128.00	141.00	131.00
6+000	200	6000	132.50	142.00	140.00
6+200	200	6200	138.50	143.00	141.00
6+400	200	6400	144.00	146.00	145.00
6+600	200	6600	148.50	150.00	149.00
6+800	200	6800	154.00	155.00	156.00
7+000	200	7000	161.50	166.00	166.00
7+200	200	7200	165.00	167.5	169.00
7+400	200	7400	169.00	171.00	175.00
7+600	200	7600	175.00	177.00	181.00
7+800	200	7800	182.50	187.00	186.00
8+000	200	8000	189.50	192.00	193.00
8+200	200	8200	197.50	203.00	206.00
8+400	200	8400	205.00	213.00	212.00
8+600	200	8600	214.50	220.00	221.00
8+800	200	8800	222.50	226.00	228.00

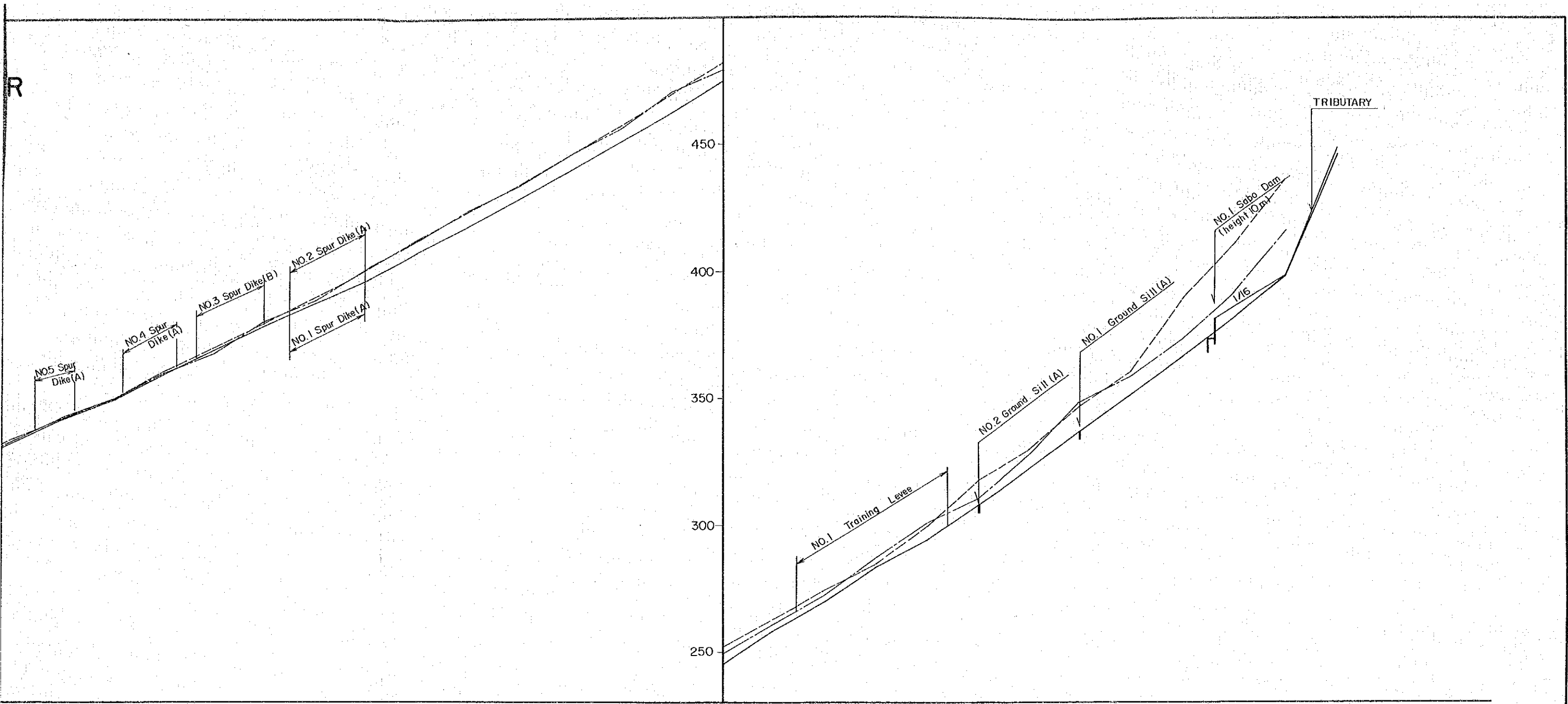


200	6400	144.00	146.00	145.00
200	6600	148.50	150.00	149.00
200	6800	154.00	155.00	156.00
200	7000	161.50	166.00	166.00
200	7200	165.00	167.5	169.00
200	7400	169.00	171.00	175.00
200	7600	175.00	177.00	181.00
200	7800	182.50	187.00	186.00
200	8000	189.50	192.00	193.00
200	8200	197.50	203.00	206.00
200	8400	205.00	213.00	212.00
200	8600	214.50	220.00	221.00
200	8800	222.50	226.00	228.00
200	9000	231.50	235.00	237.00
200	9200	241.50	248.00	248.00
200	9400	250.50	254.00	256.00
200	9600	259.00	265.00	262.00
200	9800	270.00	275.00	276.00
200	10000	279.50	293.00	295.00
200	10200	295.00	300.00	300.00
200	10400	305.00	315.00	316.00
200	10600	320.00	318.00	
200	10800	337.00	330.00	
200	11000	350.00	340.00	
200	11200	366.00	359.00	
200	11400	385.00	372.00	
200	11600	400.00	390.00	
200	11800	405.00		

FIG.-7.3.24 PROFILE OF ANULING 1 RIVER

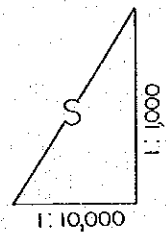


EXISTING ELEVATION	RIGHT LEVEE	17.78	17.87	18.54	25.93	21.20	22.76	22.79	30.74	32.33	35.18	37.08	41.04	46.04	50.38	55.35	61.93	65.36	73.25	81.65	88.93	94.44	104.05	112.42	119.90	131.00
	LEFT LEVEE	20.32	18.94	18.56	22.10	21.32	22.89	25.67	28.82	32.23	33.64	39.36	43.22	47.02	50.30	55.52	61.73	65.06	73.84	79.93	86.31	93.98	103.85	112.90	120.11	130.12
RIVER BED	16.28	15.19	17.74	18.14	18.70	18.84	20.68	22.69	26.97	30.86	33.22	37.36	43.34	48.50	52.82	59.57	62.67	70.43	77.25	86.70	93.64	102.99	112.19	119.45	130.01	
CUMULATIVE DISTANCE	0	200	400	600	800	1000	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000	3200	3400	3600	3800	4000	4200	4400	4600	4800	
DISTANCE	0	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	200	
STATION NO.	0+000	0+200	0+400	0+600	0+800	1+000	1+200	1+400	1+600	1+800	2+000	2+200	2+400	2+600	2+800	3+000	3+200	3+400	3+600	3+800	4+000	4+200	4+400	4+600	4+800	



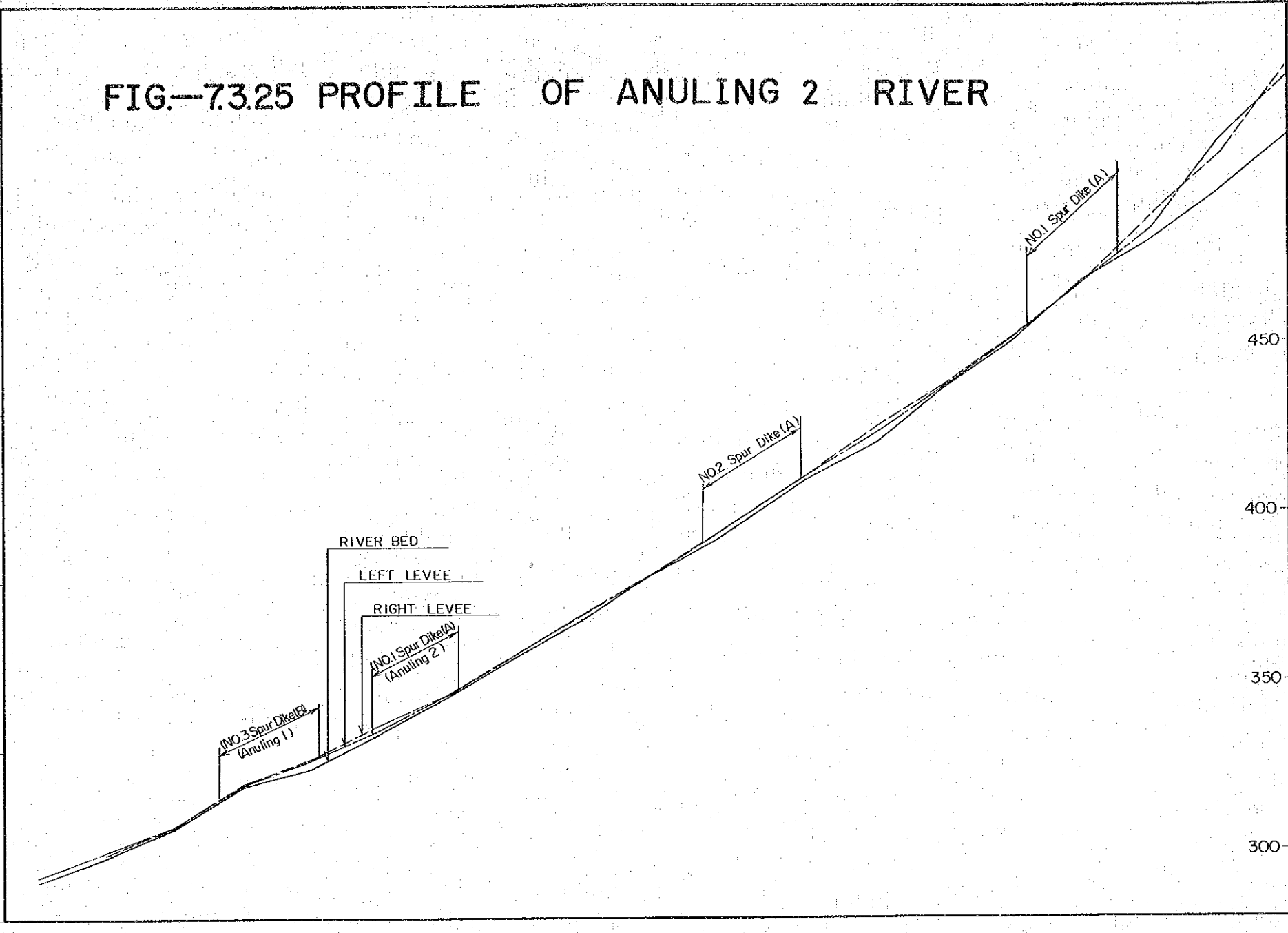
4+200	200	4200	102.99	103.85	104.05
4+400	200	4400	112.19	112.90	112.42
4+600	200	4600	119.45	120.11	119.90
4+800	200	4800	130.01	130.12	131.00
5+000	200	5000	139.29	138.19	140.18
5+200	200	5200	148.71	150.55	149.78
5+400	200	5400	157.93	158.82	159.86
5+600	200	5600	166.55	171.10	170.98
5+800	200	5800	177.37	182.19	182.56
6+000	200	6000	187.57	193.60	193.30
6+200	200	6200	198.45	203.81	203.88
6+400	200	6400	209.47	215.66	215.62
6+600	200	6600	220.98	226.31	227.16
6+800	200	6800	232.74	240.61	239.76
7+000	200	7000	244.65	249.24	251.77
7+200	200	7200	258.25	260.95	262.70
7+400	200	7400	269.99	272.48	274.29
7+600	200	7600	283.47	287.16	284.78
7+800	200	7800	294.13	300.77	299.30
8+000	200	8000	307.90	310.48	317.55
8+200	200	8200	321.96	327.39	329.45
8+400	200	8400	337.02	348.29	346.05
8+600	200	8600	351.53	358.93	360.65
8+800	200	8800	366.63	373.56	389.03
9+000	200	9000	381.80	391.50	410.50
9+200	200	9200	398.30	415.60	436.60
9+400	200	9400	446.00	448.00	

FIG.—7.3.25 PROFILE OF ANULING 2 RIVER

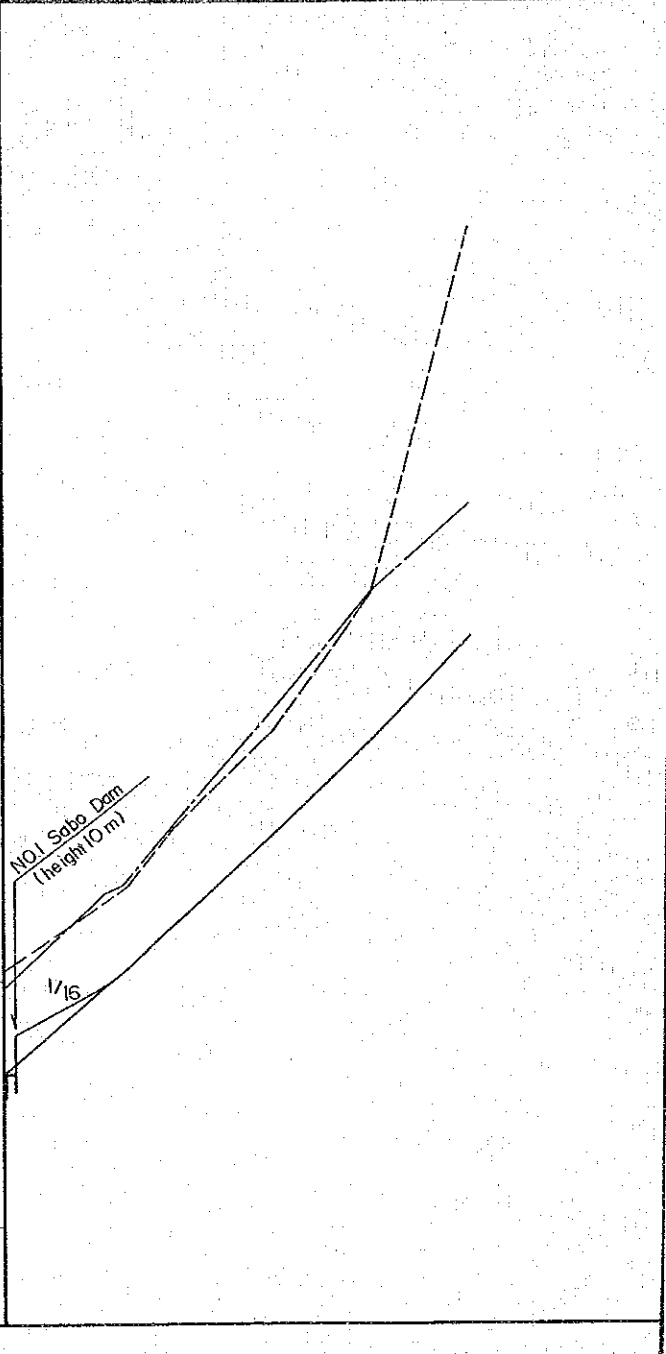


E.L. 100

350
300
250
200
150
100

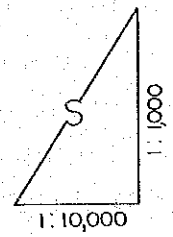


450
400
350
300

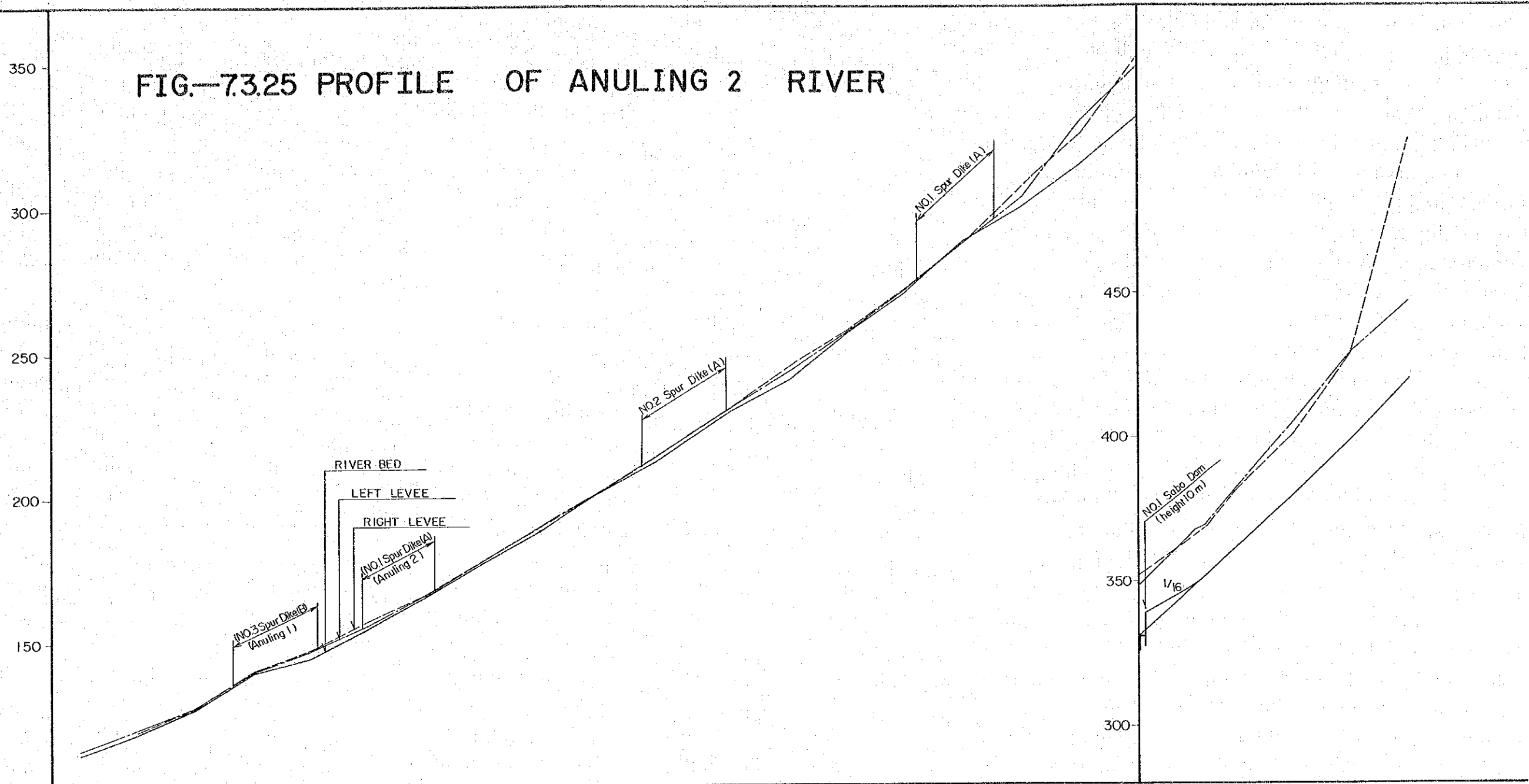


STATION NO.	DISTANCE	CUMULATIVE DISTANCE	EXISTING ELEVATION		
			RIVER BED	LEFT LEVEE	RIGHT LEVEE
4+400	0	4 400	111.07	112.56	
4+600	200	4 600	116.36	119.63	119.35
4+800	200	4 800	126.96	127.43	127.28
5+000	200	5 000	139.19	139.90	140.05
5+200	200	5 200	144.48	147.02	147.25
5+400	200	5 400	154.57	155.91	157.22
5+600	200	5 600	165.74	166.38	166.49
5+800	200	5 800	177.38	178.01	178.24
6+000	200	6 000	188.45	189.98	189.76
6+200	200	6 200	201.35	201.28	202.12
6+400	200	6 400	212.22	214.01	214.08
6+600	200	6 600	229.90	231.03	231.20
6+800	200	6 800	240.63	243.56	245.13
7+000	200	7 000	256.76	257.15	257.63
7+200	200	7 200	270.65	271.61	271.81
7+400	200	7 400	288.63	287.78	287.39
7+600	200	7 600	300.20	303.61	307.07
7+800	200	7 800	314.77	329.91	325.18
8+000	200	8 000	331.06	348.67	352.28
8+200	200	8 200	348.73	367.75	365.89
8+400	140	8 305.70	352.36	369.49	369.24
			360.70	381.30	380.40
8+600	200	8 600	379.30	404.60	400.20
8+800	200	8 800	399.00	429.00	426.70
9+000	200	9 000	420.00	447.00	503.00

FIG.—73.25 PROFILE OF ANULING 2 RIVER

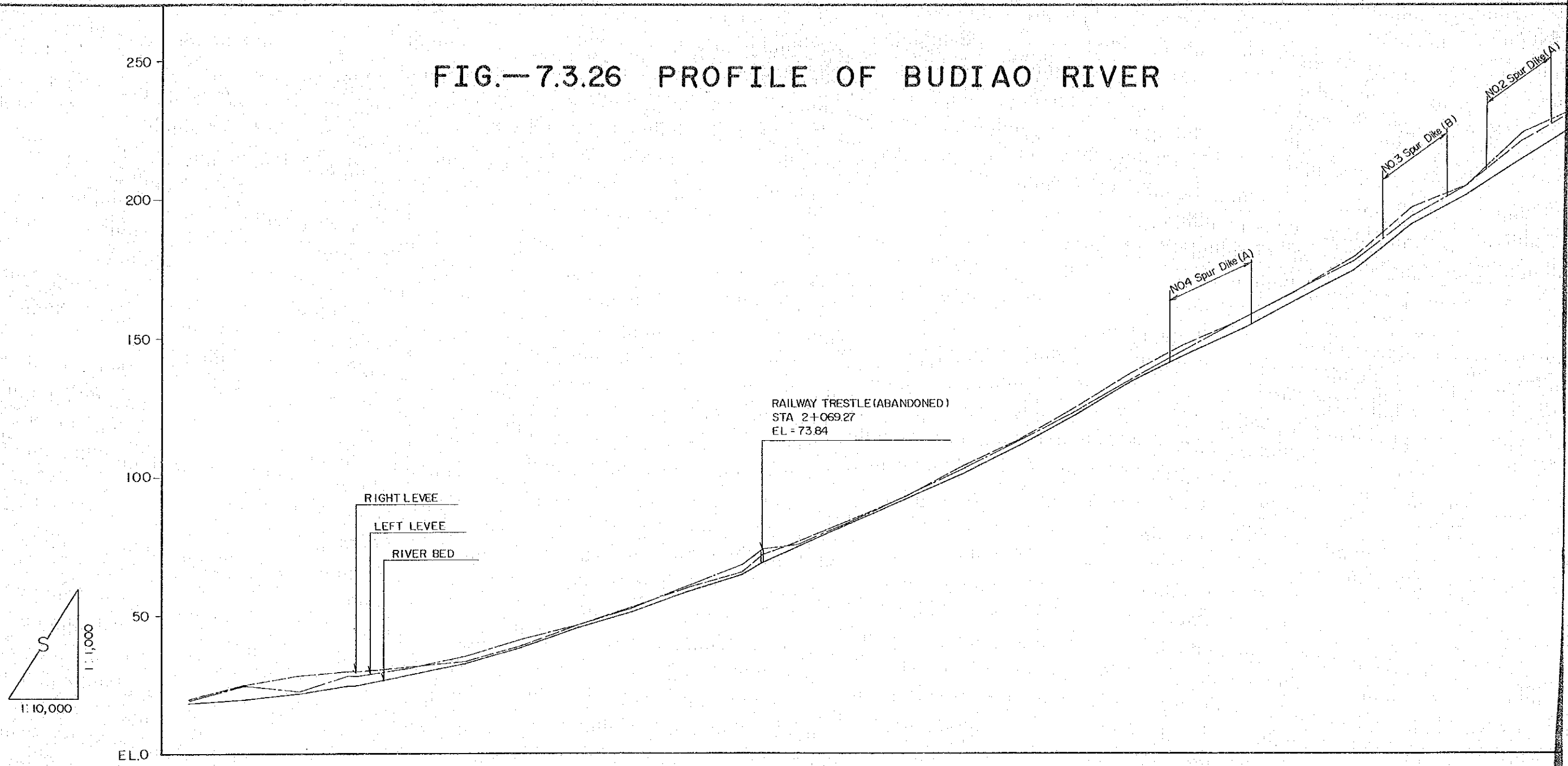


E.L. 100



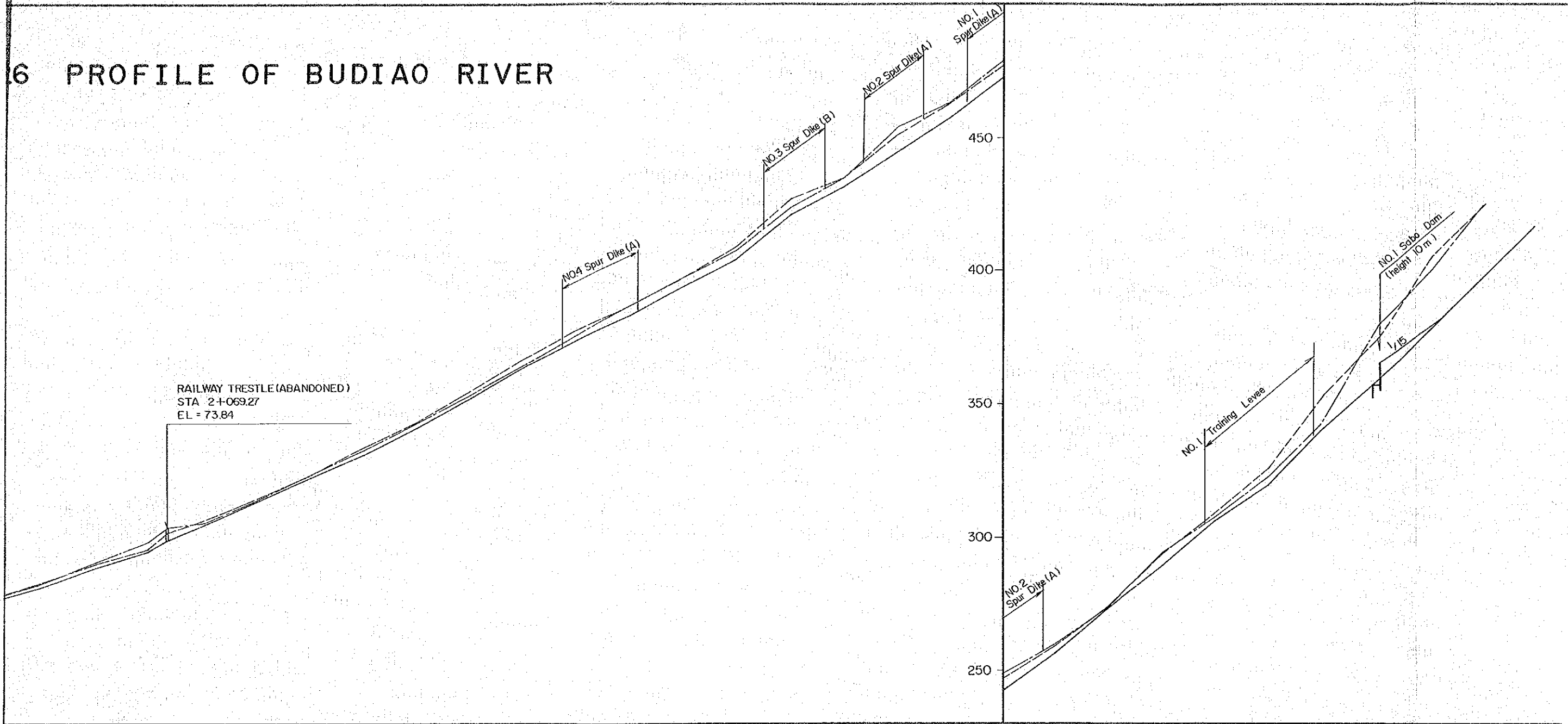
STATION NO.	DISTANCE	CUMULATIVE DISTANCE	EXISTING ELEVATION	
			RIVER BED	RIGHT LEVEE
4+400	0	4 400	111.07	112.56
4+600	200	4 600	118.38	119.35
4+800	200	4 800	126.96	127.28
5+000	200	5 000	139.19	140.05
5+200	200	5 200	144.48	147.25
5+400	200	5 400	154.57	157.22
5+600	200	5 600	165.74	166.49
5+800	200	5 800	177.38	178.01
6+000	200	6 000	188.45	189.78
6+200	200	6 200	201.35	202.12
6+400	200	6 400	212.22	214.01
6+600	200	6 600	229.90	231.20
6+800	200	6 800	240.63	245.13
7+000	200	7 000	256.76	257.63
7+200	200	7 200	270.65	271.81
7+400	200	7 400	288.63	287.39
7+600	200	7 600	300.20	307.07
7+800	200	7 800	314.77	325.18
8+000	200	8 000	331.06	352.26
8+200	200	8 200	348.73	365.89
8+400	140	8 300	352.36	369.24
8+600	200	8 400	360.70	360.40
8+800	200	8 600	379.30	400.20
9+000	200	8 800	399.00	428.70
	200	9 000	420.00	503.00

FIG.—7.3.26 PROFILE OF BUDIAO RIVER



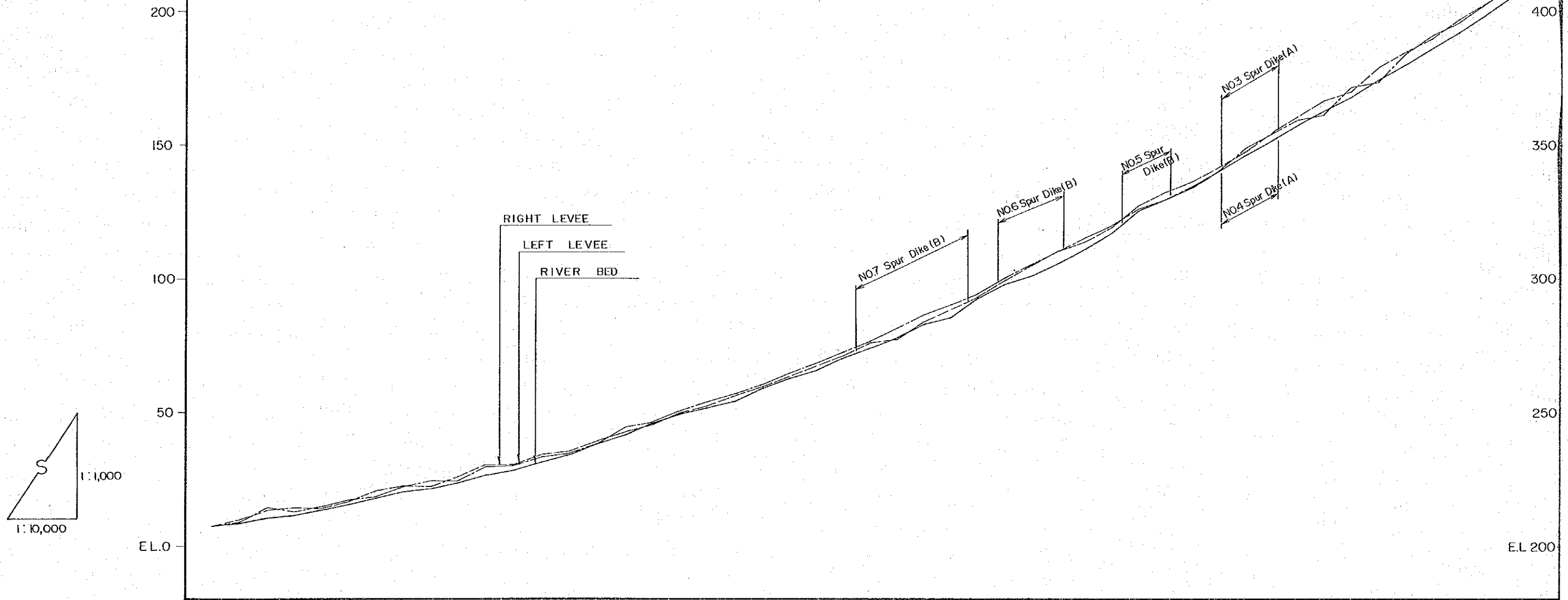
STATION NO.	DISTANCE	CUMULATIVE DISTANCE	EXISTING ELEVATION		
			RIVER BED	LEFT LEVEE	RIGHT LEVEE
0+000	0	0	18.51	19.34	19.90
0+200	200	200	19.80	24.90	25.03
0+400	200	400	22.00	22.81	28.44
0+563.50	163.50	563.50	24.55	28.12	29.89
0+600	36.50	600	24.55	28.12	29.89
0+800	200	800	28.71	31.37	31.51
1+000	200	1000	32.75	35.40	33.50
1+200	200	1200	38.57	41.62	39.29
1+400	200	1400	45.48	46.72	46.73
1+600	200	1600	51.35	52.93	53.13
1+800	200	1800	58.50	60.31	59.95
2+000	200	2000	64.99	68.46	65.77
2+069.27	69.27	2069.27	69.09	73.84	71.91
2+200	130.73	2200	74.79	75.38	76.27
2+400	200	2400	83.57	84.13	84.56
2+600	200	2600	92.48	93.55	93.39
2+800	200	2800	101.12	103.09	104.00
3+000	200	3000	111.83	113.68	113.91
3+200	200	3200	122.49	123.73	125.22
3+400	200	3400	134.29	135.06	137.25
3+600	200	3600	144.15	146.26	148.06
3+800	200	3800	153.46	156.96	156.91
4+000	200	4000	163.96	167.41	167.16
4+200	200	4200	174.43	177.93	179.13
4+400	200	4400	190.95	193.55	196.65
4+600	200	4600	201.54	204.70	204.89
4+800	200	4800	214.53	223.96	220.85

6 PROFILE OF BUDIAO RIVER



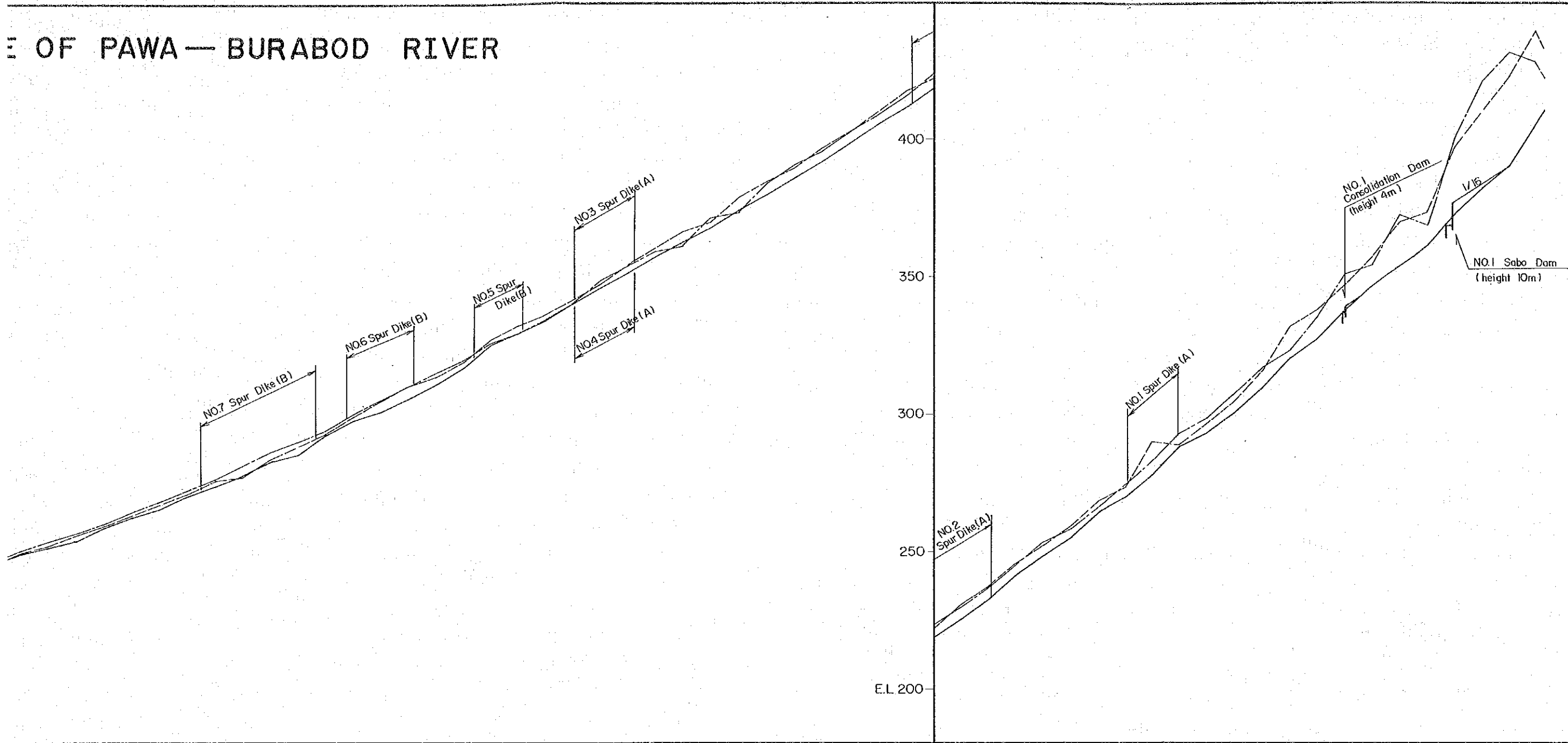
1+600	200	1 600	51.35	52.93	53.13
1+800	200	1 800	58.50	60.31	59.95
2+000	200	2 000	64.99	66.46	66.77
2+069.27	200	2069.27	69.09	73.84	71.91
2+200	200	2 200	74.79	75.38	76.27
2+400	200	2 400	83.57	84.13	84.56
2+600	200	2 600	92.48	93.55	93.99
2+800	200	2 800	101.12	103.09	104.00
3+000	200	3 000	111.83	113.68	113.91
3+200	200	3 200	122.49	123.73	125.22
3+400	200	3 400	134.29	135.06	137.25
3+600	200	3 600	144.15	146.26	148.06
3+800	200	3 800	153.46	156.96	156.91
4+000	200	4 000	163.96	167.41	167.16
4+200	200	4 200	174.43	177.93	179.13
4+400	200	4 400	190.95	193.55	196.65
4+600	200	4 600	201.54	204.70	204.89
4+800	200	4 800	214.53	223.96	220.85
5+000	200	5 000	227.39	232.75	232.69
5+200	200	5 200	242.22	248.72	246.78
5+400	200	5 400	256.82	269.79	259.26
5+600	200	5 600	273.38	273.63	273.70
5+800	200	5 800	289.12	293.82	293.12
6+000	200	6 000	306.25	307.72	308.96
6+200	200	6 200	319.66	322.76	325.78
6+400	200	6 400	340.35	342.68	352.26
6+600	200	6 600	357.70		
6+800	200	6 800	376.80		
7+000	200	7 000	396.40		
7+200	200	7 200	416.80		

FIG.—7.3.27 PROFILE OF PAWA — BURABOD RIVER



STATION NO.	DISTANCE	CUMULATIVE DISTANCE	EXISTING ELEVATION		
			RIVER BED	LEFT LEVEE	RIGHT LEVEE
0+000	0	0	7.43	7.44	7.34
0+100	100	100	8.55	8.71	9.73
0+200	100	200	10.38	14.62	13.41
0+300	100	300	11.37	13.05	14.37
0+400	100	400	13.30	14.72	14.02
0+500	100	500	15.41	17.29	16.80
0+600	100	600	18.28	18.50	20.94
0+700	100	700	20.33	22.30	22.59
0+800	100	800	21.46	24.62	22.55
0+900	100	900	23.83	24.63	26.07
1+000	100	1000	26.49	29.86	30.52
1+100	100	1100	28.38	30.13	30.69
1+200	100	1200	31.52	33.48	34.32
1+300	100	1300	34.32	34.96	35.78
1+400	100	1400	38.44	38.47	39.65
1+500	100	1500	41.30	44.50	42.80
1+600	100	1600	46.00	46.58	45.56
1+700	100	1700	49.35	50.65	49.65
1+800	100	1800	51.42	53.92	52.14
1+900	100	1900	54.19	57.32	56.47
2+000	100	2000	59.14	60.66	59.72
2+100	100	2100	62.71	64.73	63.61
2+200	100	2200	65.77	68.54	67.34
2+300	100	2300	70.35	72.59	71.24
2+400	100	2400	74.16	76.77	76.08
2+500	100	2500	78.06	81.74	77.76
2+600	100	2600	83.31	86.43	84.10
2+700	100	2700	85.83	90.40	88.66
2+800	100	2800	92.79	94.41	93.23
2+900	100	2900	98.12	100.24	99.36
3+000	100	3000	100.97	105.31	105.17
3+100	100	3100	105.97	110.63	110.88
3+200	100	3200	111.22	115.75	114.10
3+300	100	3300	117.36	120.19	119.58
3+400	100	3400	125.81	126.26	127.57
3+500	100	3500	129.48	129.51	132.65
3+600	100	3600	134.10	134.48	136.09
3+700	100	3700	140.54	141.69	141.85
3+800	100	3800	146.27	148.71	147.66
3+900	100	3900	151.71	154.24	154.33
4+000	100	4000	157.47	159.64	160.54
4+100	100	4100	162.96	161.64	166.93
4+200	100	4200	167.93	171.78	169.93
4+300	100	4300	174.45	173.81	178.84
4+400	100	4400	180.03	183.99	184.91
4+500	100	4500	186.32	190.75	189.97
4+600	100	4600	191.88	195.58	196.49
4+700	100	4700	198.33	202.50	202.76
4+800	100	4800	205.08	208.74	209.60
4+900	100	4900	211.88	215.72	217.23

E OF PAWA — BURABOD RIVER

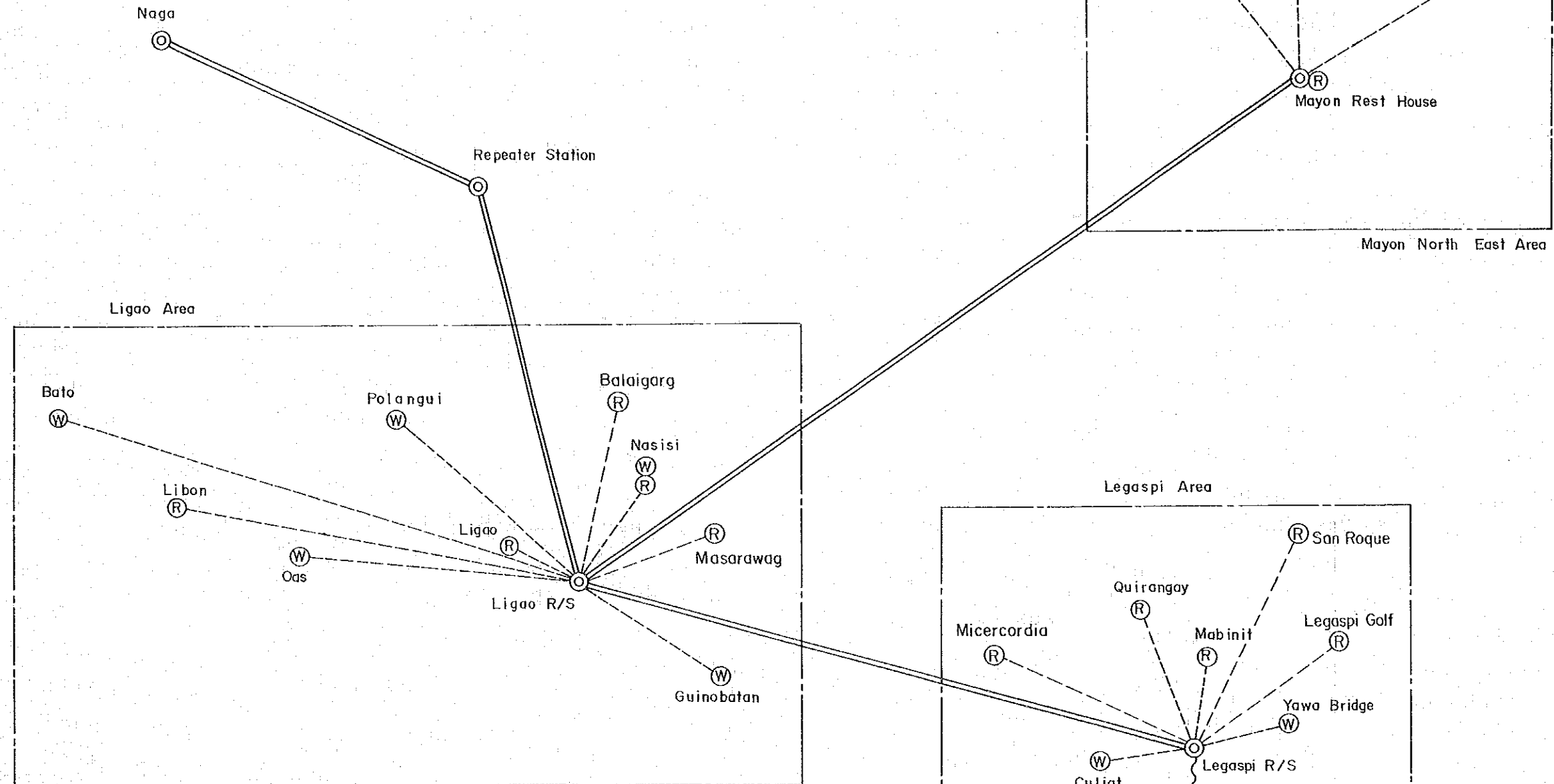


1+700	100	4935	5065	49.65
1+800	100	5142	5392	52.14
1+900	100	5419	5732	56.47
2+000	100	5914	6066	59.72
2+100	100	6271	6473	63.61
2+200	100	6577	6854	67.34
2+300	100	7035	7259	71.24
2+400	100	7415	7677	76.09
2+500	100	7806	8174	77.76
2+600	100	8331	8643	84.10
2+700	100	8583	9040	88.66
2+800	100	9279	9441	93.23
2+900	100	9812	10024	99.36
3+000	100	10097	10531	105.17
3+100	100	10597	11063	110.88
3+200	100	11122	11575	114.10
3+300	100	11735	12019	119.58
3+400	100	1258	12626	127.57
3+500	100	12948	12951	132.65
3+600	100	13410	13448	136.09
3+700	100	14054	14169	141.85
3+800	100	14627	14871	147.66
3+900	100	15171	15424	154.33
4+000	100	15747	15964	160.54
4+100	100	16296	16164	166.93
4+200	100	16793	17178	169.93
4+300	100	17445	17381	178.84
4+400	100	18003	18399	184.91
4+500	100	18632	19075	189.97
4+600	100	19188	19558	196.49
4+700	100	19833	20250	202.76
4+800	100	20508	20874	209.60
4+900	100	21188	21572	217.23
5+000	100	21880	22357	222.05
5+100	100	22516	23020	230.74
5+200	100	23259	23698	238.75
5+300	100	24140	24520	245.78
5+400	100	24857	25331	252.30
5+500	100	25513	25857	259.37
5+600	100	26418	26633	268.60
5+700	100	27008	27430	273.87
5+800	100	27793	28317	290.25
5+900	100	28825	29293	289.06
6+000	100	29311	29882	296.79
6+100	100	30047	30788	304.72
6+200	100	30979	31707	316.06
6+300	100	32079	32330	332.05
6+400	100	32748	33557	338.25
6+500	100	33805	35119	347.14
6+600	100	34666	35418	357.12
6+700	100	35334	37252	370.08
6+800	100	36173	36831	373.51
6+900	100	37277	40040	396.90
7+000	100	38224	42108	410.20
7+100	100	39051	43171	422.79
7+200	100	40567	42813	439.79
7+250	30.13	41060	422.95	433.55

FIG. - 7.3.28 CONSTRUCTION TIME SCHEDULE OF SABO PROJECT

Description	'82	1983	1984	1985	1986	1987	1988	1989	1990
a. Detailed Design	██████████	██████████	██████████	██████████	██████████	██████████	██████████	██████████	
b. Preparation of Tender Document	██████████	██████████	██████████	██████████	██████████	██████████	██████████	██████████	
c. Tender and contract	██████████	██████████	██████████	██████████	██████████	██████████	██████████	██████████	
1. Quiranggy River									
No.1 Sabo Dam									
No.1 Training Levee									
No.1-No.4 Spur Dike									
2. Tumpa River									
Consolidation Fence									
3. Maninila River									
Ground Sill									
4. Masarawag River									
No.1 Sabo Dam									
No.1 Spur Dike									
No.2-No.4 Spur Dike									
5. Ogsong River									
No.1-No.6 Spur Dike									
No.1-No.7 Jetty									
Ground Sill									
6. Nasisi River									
No.1 Consolidation Dam									
No.2 Consolidation Dam									
No.1-No.3 Ground Sill									
7. Anuling River									
No.1 Sabo Dam									
No.1 Ground Sill									
No.2 Ground Sill									
No.1 Training Levee									
No.1-No.2 Spur Dike									
No.3 Spur Dike									
No.4 Spur Dike									
No.5 Spur Dike									
No.1 Sabo Dam(Anuling - 2)									
No.1-No.2 Spur Dike(Anuling 2)									
8. Budiao River									
No.1 Sabo Dam									
No.1 Training Levee									
No.1 Spur Dike									
No.2 Spur Dike									
No.3 Spur Dike									
No.4 Spur Dike									
9. Pawa-Burabod River									
No.1 Sabo Dam									
No.1 Consolidation Dam									
No.1-No.2 Spur Dike									
No.3 Spur Dike									
No.4 Spur Dike									
No.5 Spur Dike									
No.6 Spur Dike									
No.7 Spur Dike									

FIG.-74.1 NETWORK OF TELEMETRY SYSTEM



- | | |
|-------------------------------|--|
| □ Master Station | ==== 800MHz Band Multiplex Radio Link |
| ⊙ Multiplex Radio Station | ----- 150MHz Band Telemetry Radio Link |
| Ⓡ Rainfall Gauging Station | ~~~~~ Wired Link |
| Ⓜ Water-level Gauging Station | |

FIG.-74.2 NETWORK OF MUNICIPAL MULTI-DISASTER COMMUNICATION SYSTEM
(Multi Channel Access System)

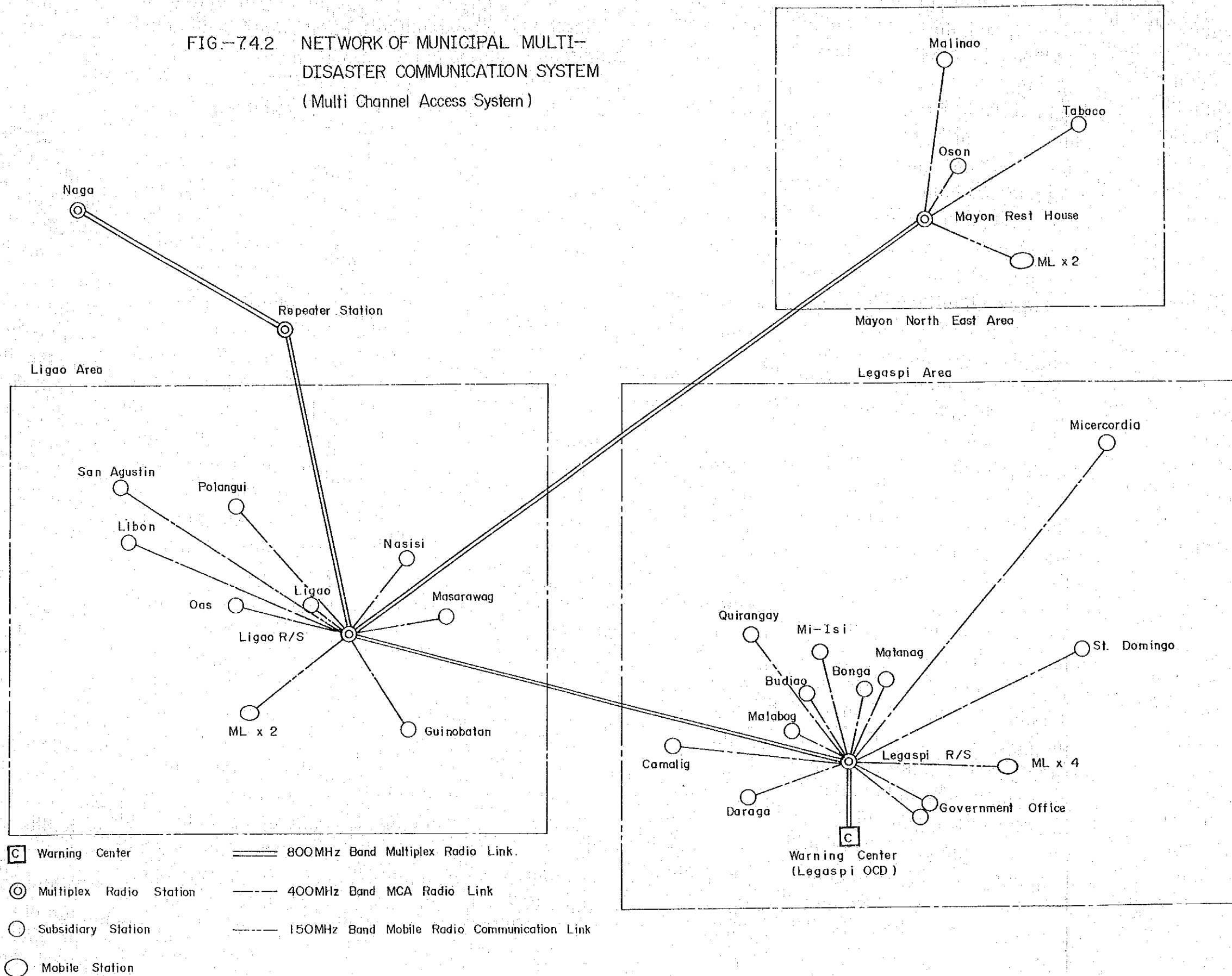
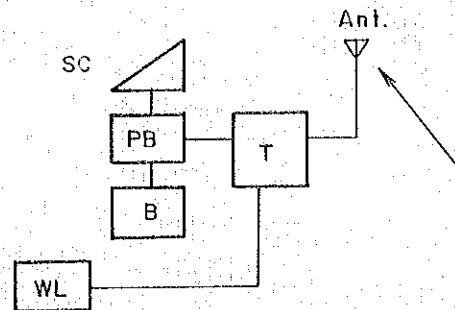
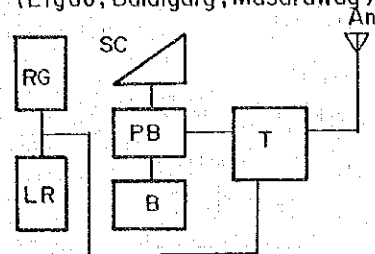


FIG.-7.4.3 SYSTEM DIAGRAM OF TELEMETERY SYSTEM

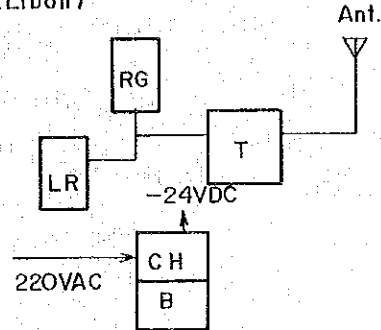
Water-level Gauging Stations
(Bato, Oas, Polangui, Guinobatan)



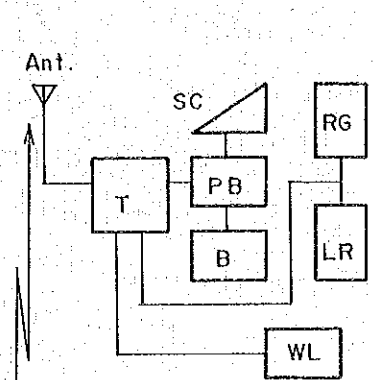
Rainfall Gauging Station
(Ligao, Balaigarg, Masarawaq)



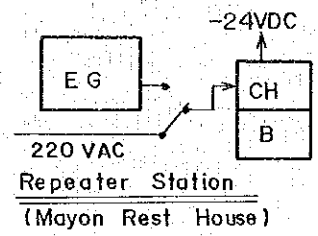
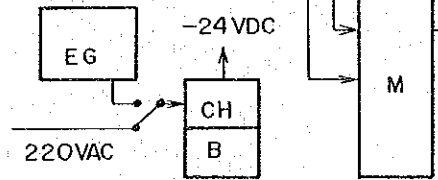
Rainfall Gauging Station
(Libon)



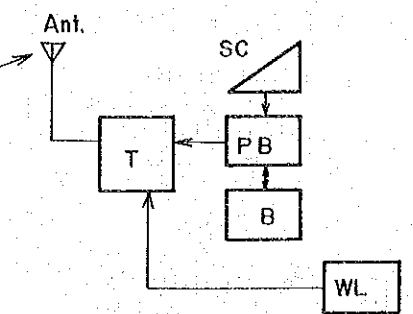
Water-level and Rainfall Gauging Station (Nasisi)



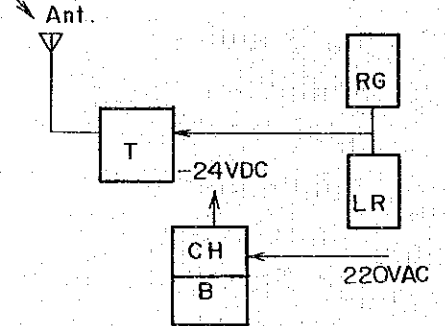
Repeater Station
(Ligao R/S)



Water-level Gauging Stations
(Balza Bridge, Bantayan)



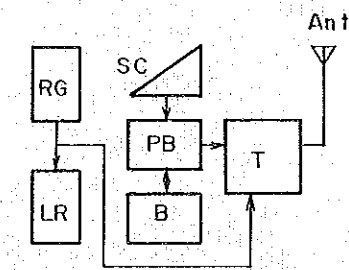
Rainfall Gauging Station
(Tabaco)



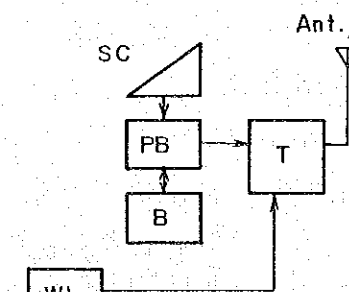
— LEGEND —

- Ant.: Antenna Equipment
- SE: Telemetering Supervisory Equipment
- T: Telemetering Equipment
- R: Repeater Equipment
- DE: Display Equipment
- OC: Operating Console
- TW: Typewriter
- EG: Engine Generator
- CH: Charger
- B: Battery
- DTC: Desk Top Computer
- SC: Solar Battery
- PB: Power Board
- WL: Water-level Gauging Equipment
- RG: Tipping Bucket Rain-Gauge
- LR: Long-Term Recorder
- M: Multiplex Radio Telephone Equipment

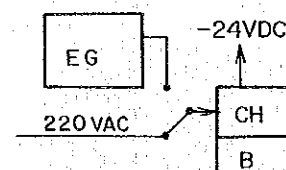
Rainfall Gauging Station
(Quirangay Legaspi Golf, San Roque, Micercordia, Mabinit)



Water-level Gauging Stations
(Culiat, Yawa Bridge)



Repeater Station
(Regaspi R/S)



Master Station
(Legaspi Weather Station)

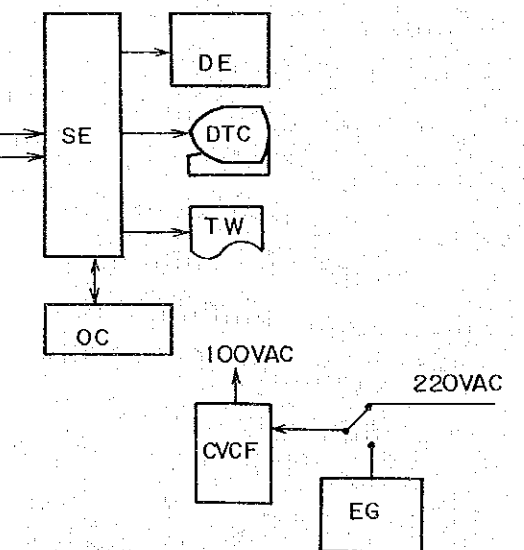


FIG-74.4 SYSTEM DIAGRAM OF COMMUNICATION SYSTEM
(MULTI-CHANNEL ACCESS)

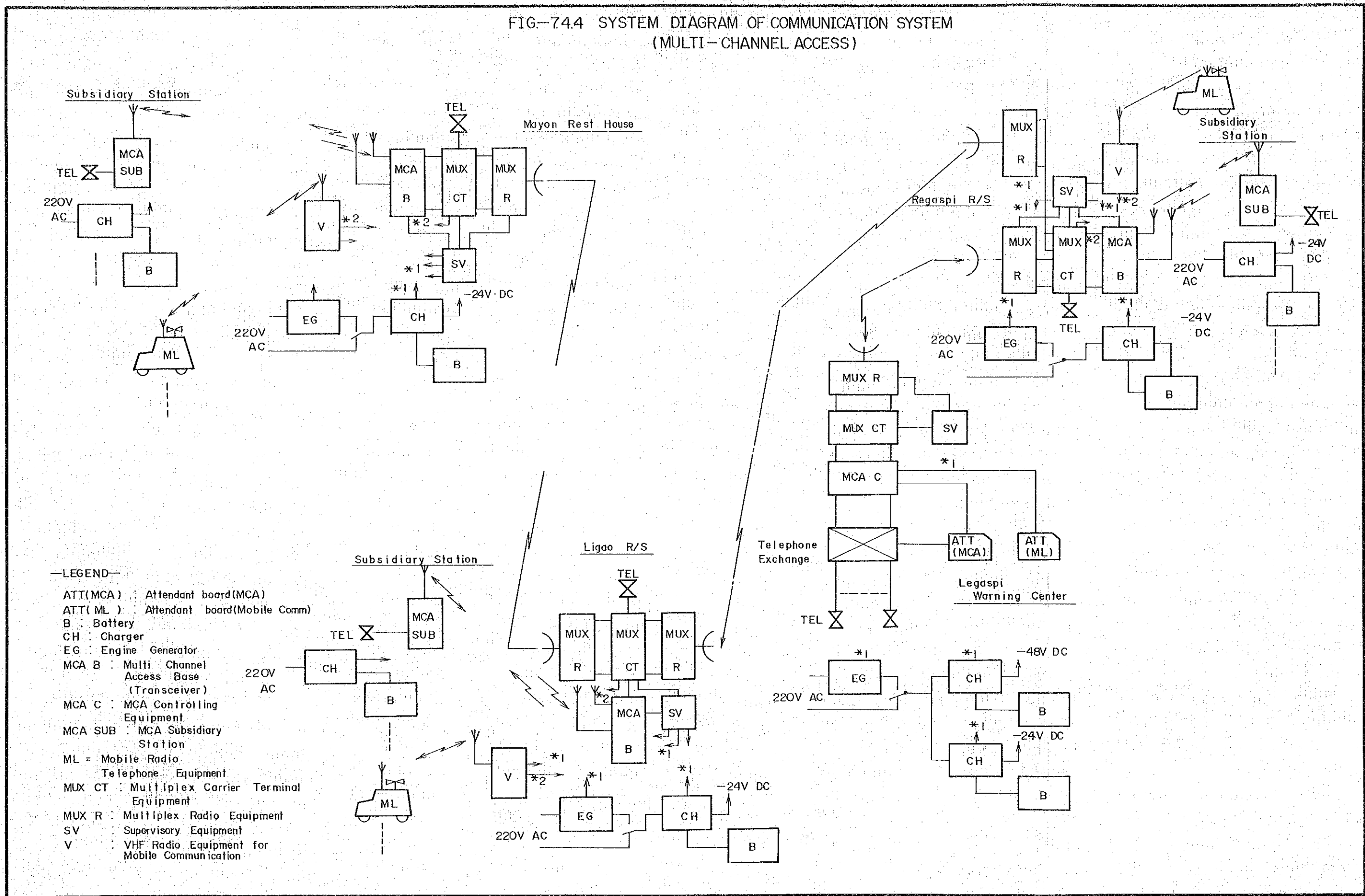


FIG.-7.4.5 CHANNEL ACCOMMODATION PLAN OF UHF TELECOMMUNICATION SYSTEM

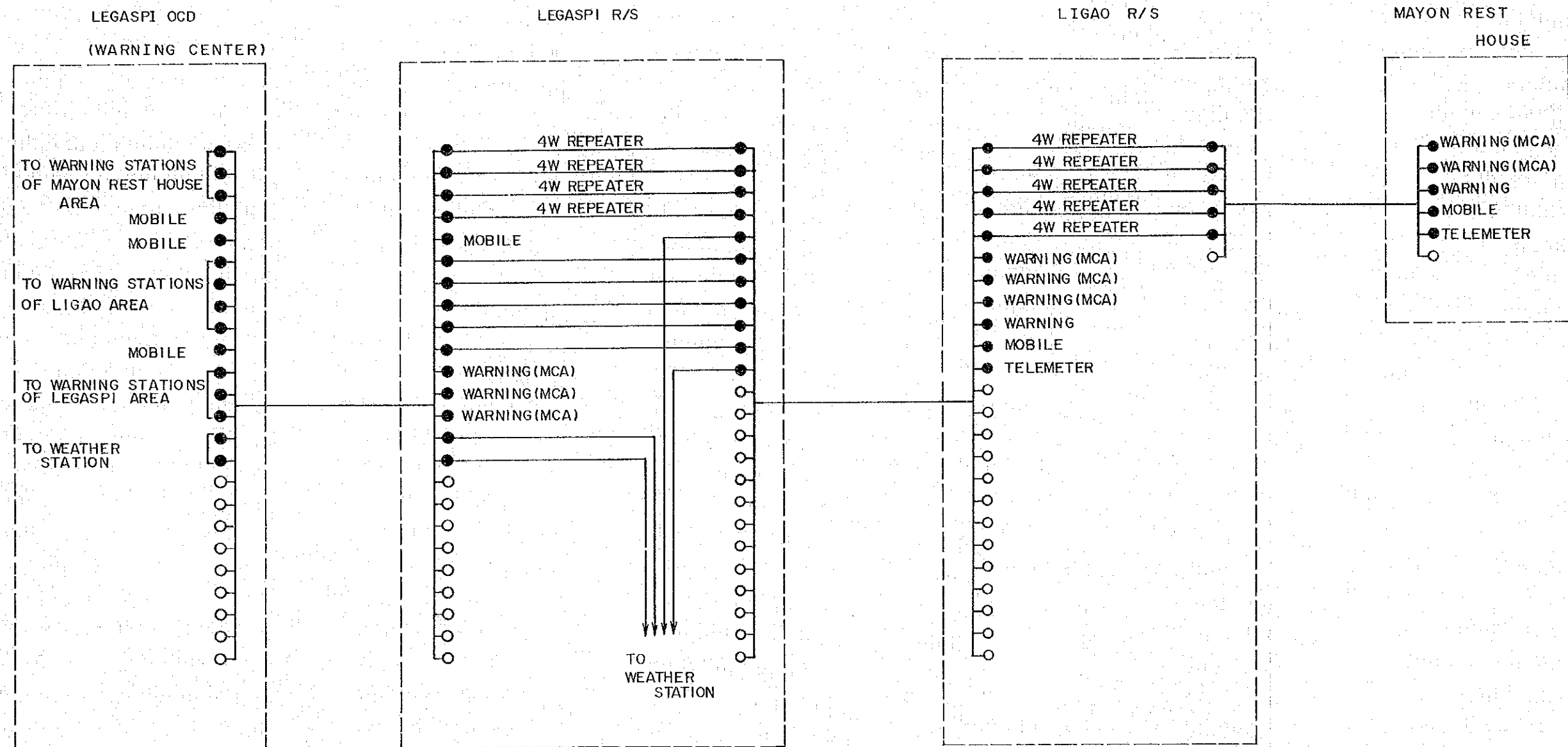


FIG-7.4.6 IMPLEMENTATION SCHEDULE OF STAGE-I

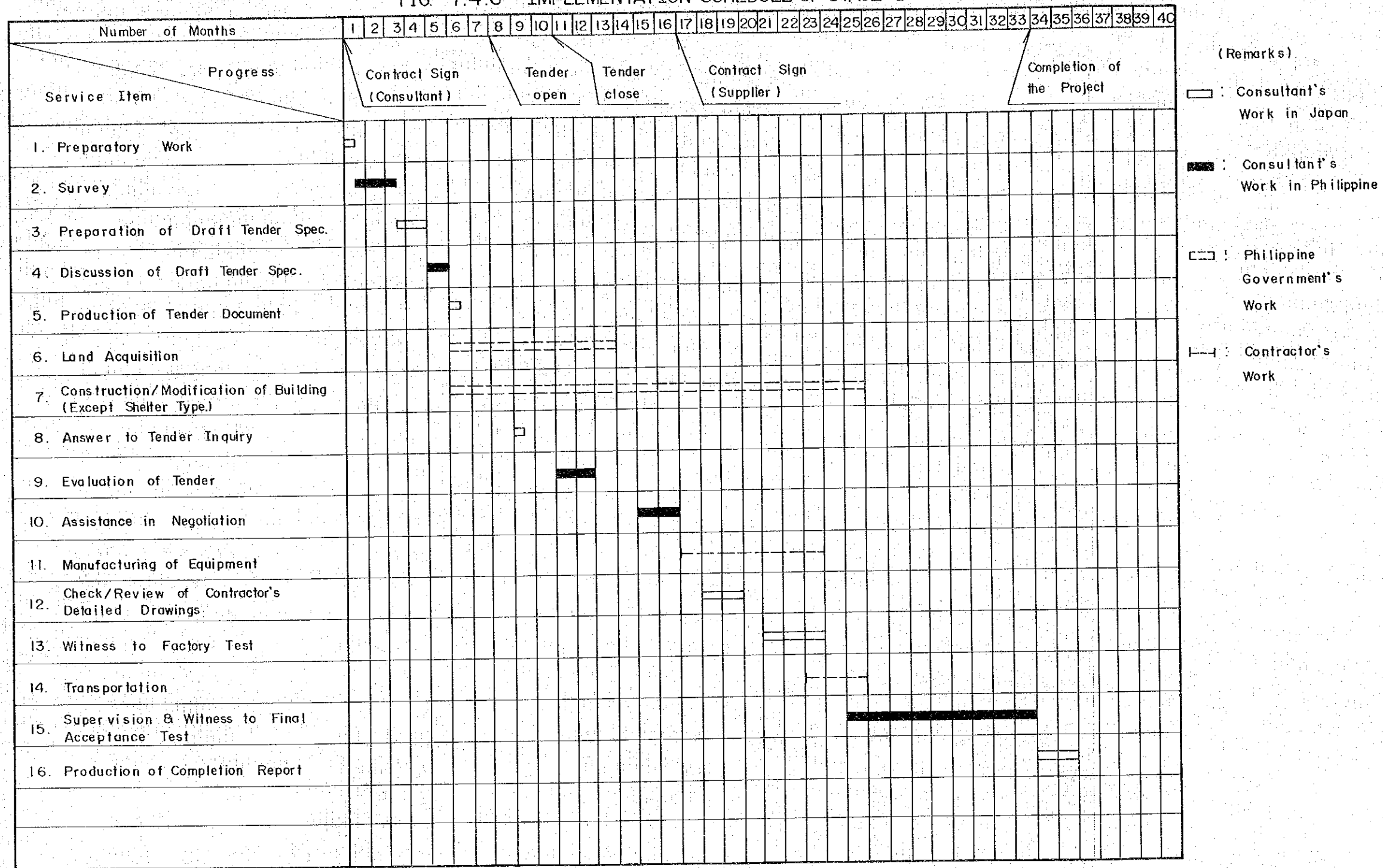


FIG.-74.7 IMPLEMENTATION SCHEDULE OF STAGE--II

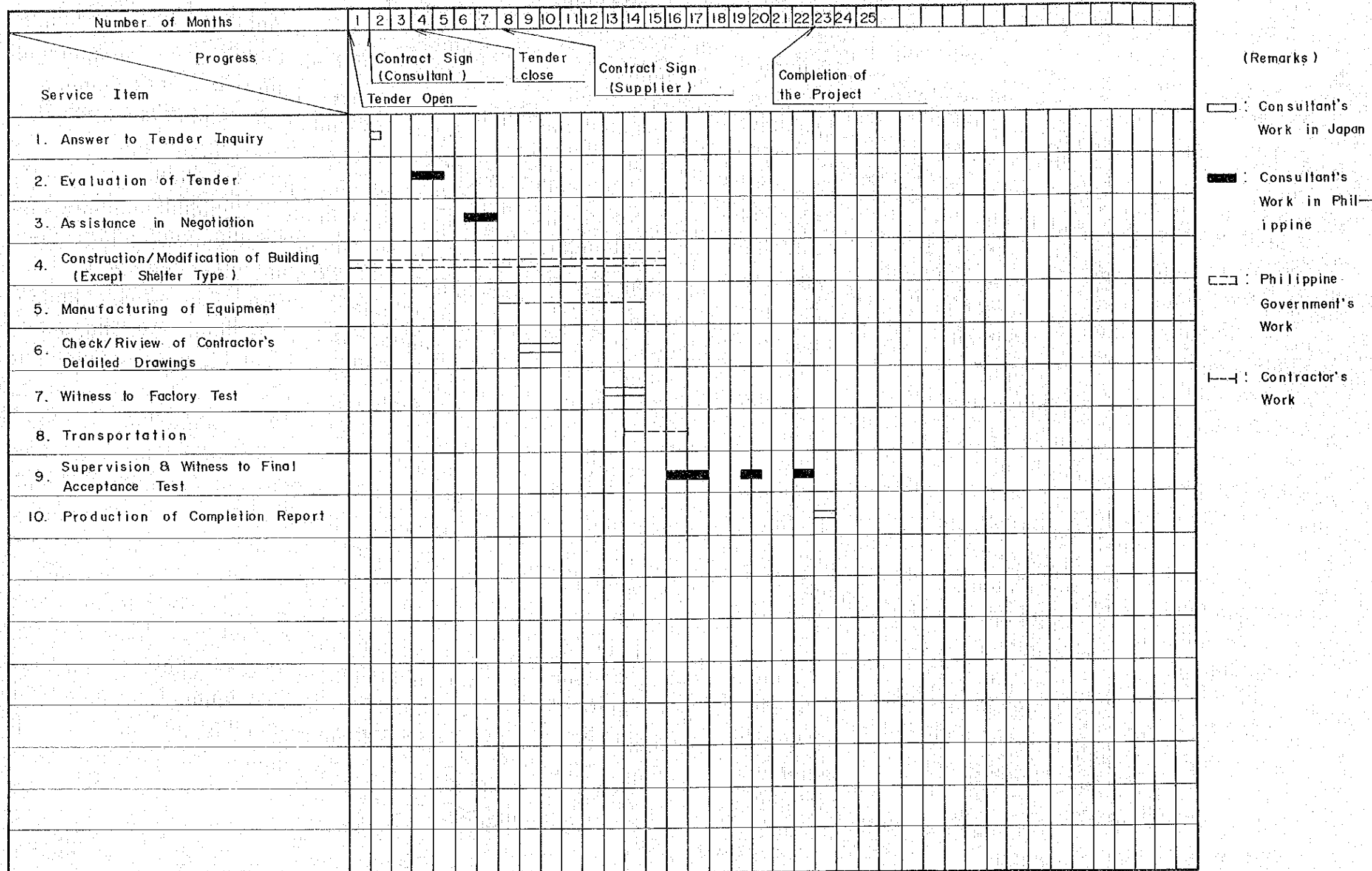


FIG-74.8 IMPLEMENTATION SCHEDULE OF STAGE-III

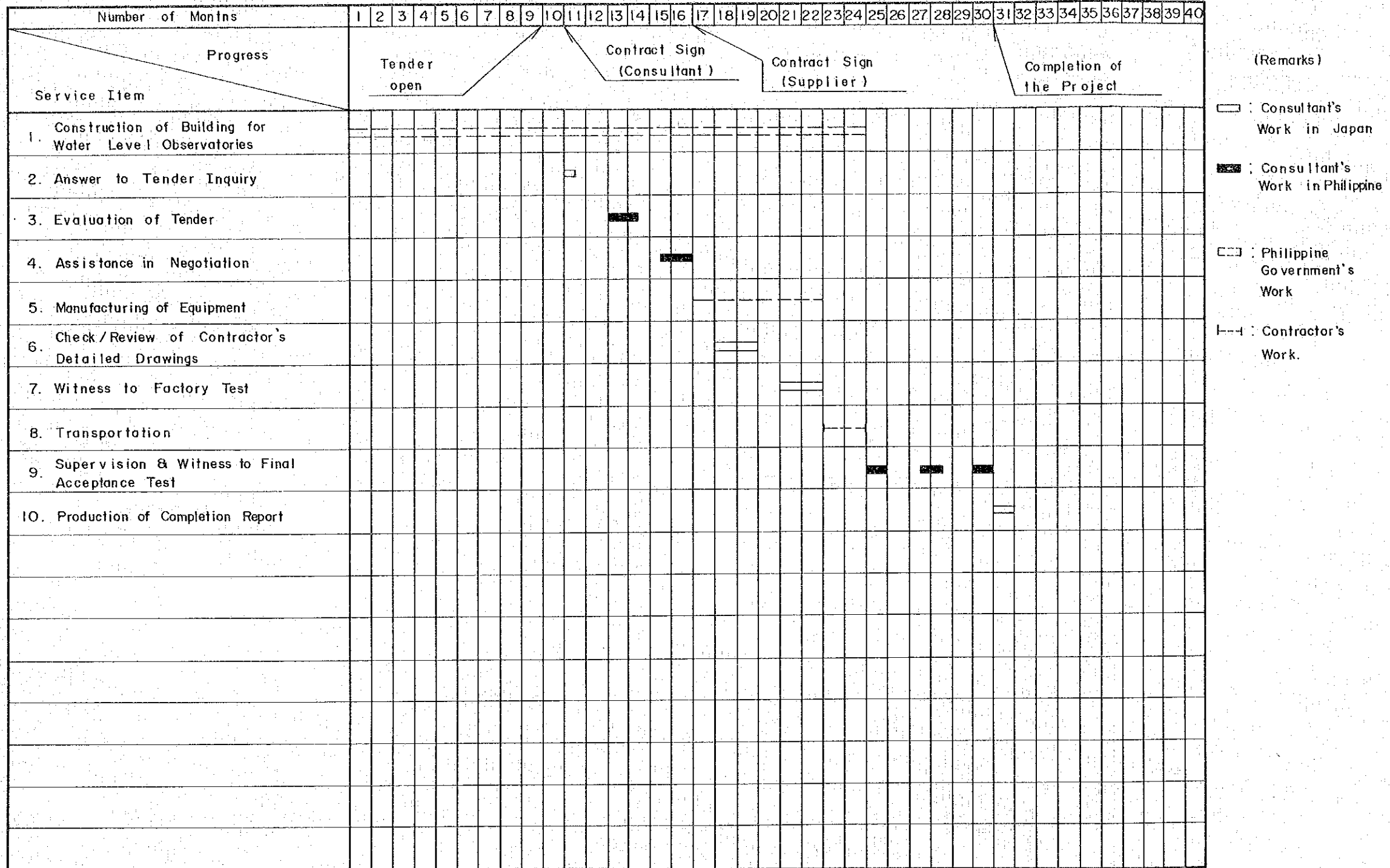


FIG. - 7.6.1 PROJECT ORGANIZATION CHART

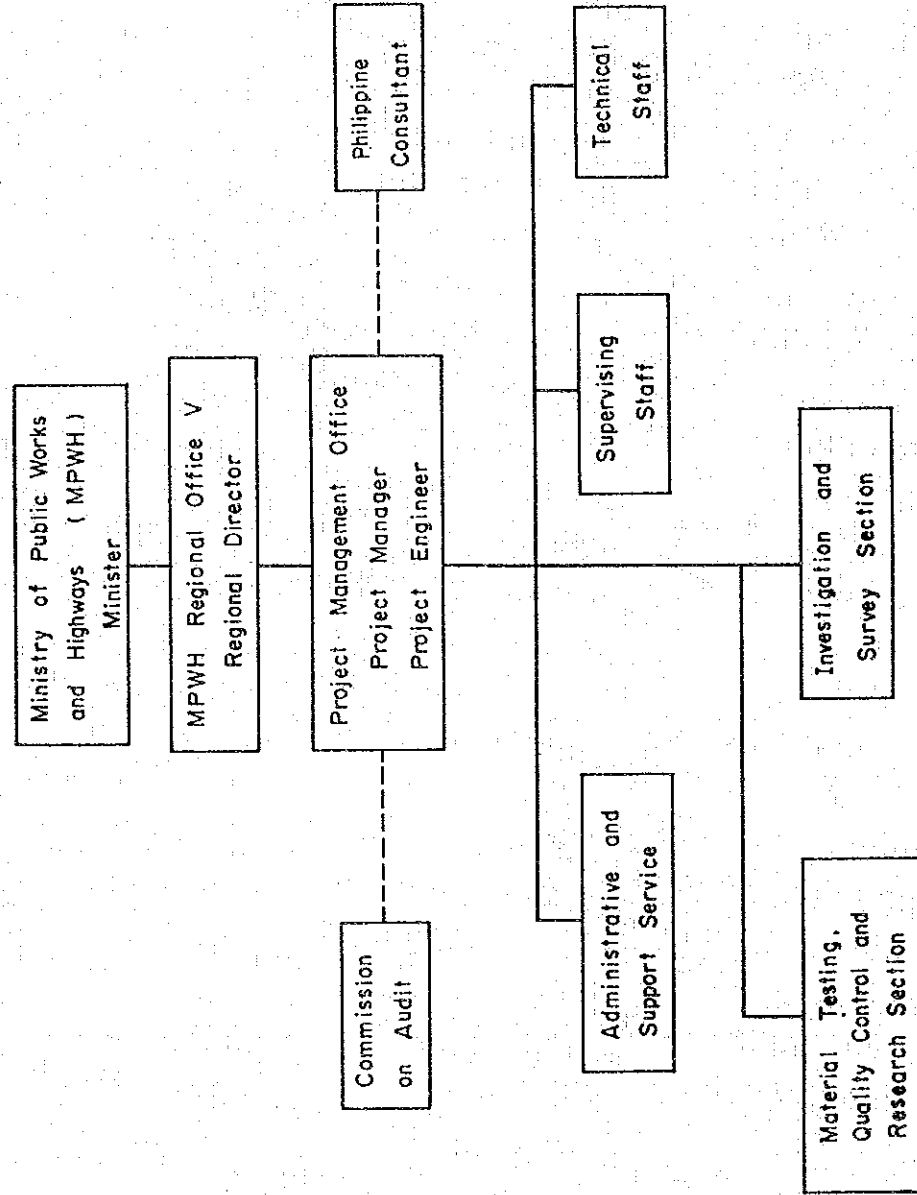
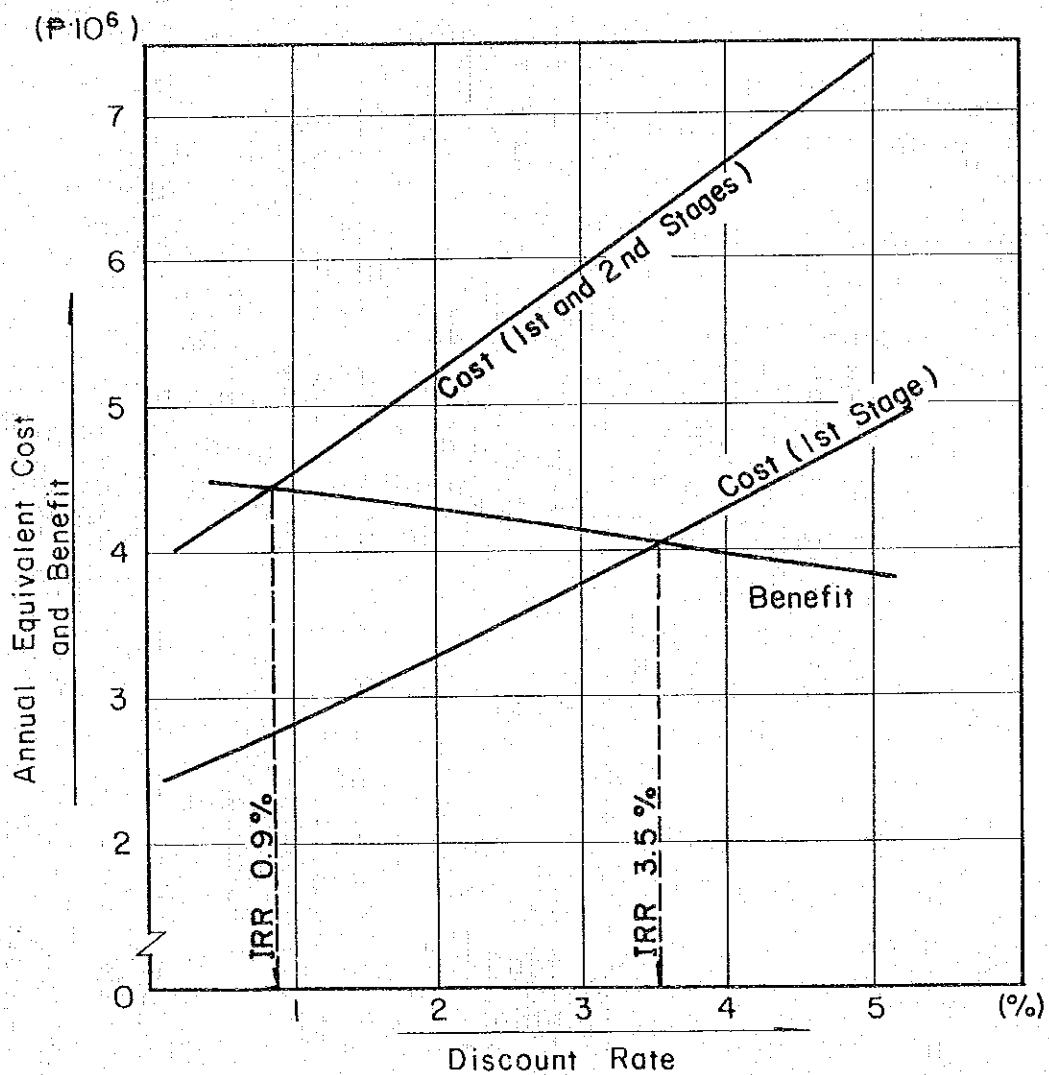


FIG.-7.7.1 INTERNAL RATE OF RETURN FOR THE SABO PROJECT



Note: Most benefit of the Sabo project is expected just after completion of the Stage-I construction works. The Stage-II construction works are planned mainly ensuring and maintaining function of the Stage-I construction works and the benefit from the Stage-II construction works is not significant. Therefore, the benefit curve is commonly used for both stage works.

JICA