1.3 AREA DE DEMONSTRACAO DO POLDER ITOPAVIRIM

[illegible] ANO [illegible] AREA=49.7 ha DIA PARA "PADDLING"=20 DIA

(80.0 mm - rain 5.0 mm) 80% chuva efectivo. Eficiencia de Irrigação=75%

Agua necessario para paddling (D1)=150 mm em profundidade

Agua necessario normal (D2)=10 mm em profundidade

Agua completado: H1,H2   Agua necessario limpo: W1,W2

Agua necessario para paddling / Agua necessario normal

Date	Rain mm	[illegible] mm	D1 mm	H1 mm	Area ha	W1 m3	D2 mm	H2 mm	Area ha	W2 m3	W1+W2 m3	Agua Nec. m3	m3/s
10 1	0.0	0.0	150.0	150.0	2.49	3728	10.0	10.0	0.00	0	3728	4971	[illegible]
2	0.0	0.0	150.0	150.0	2.49	3728	10.0	10.0	2.49	249	3977	5302	[illegible]
3	0.0	0.0	150.0	150.0	2.49	3728	10.0	10.0	4.97	497	4225	5633	.065
4	0.0	0.0	150.0	150.0	2.49	3728	10.0	10.0	7.46	746	4474	5965	.069
5	0.0	0.0	150.0	150.0	2.49	3728	10.0	10.0	9.9[illegible]	994	4722	6296	.073
total	0.0	0.0				18640				2486	21126	28168	.065
10 6	2.[illegible]	0.0	150.0	150.0	2.49	3728	10.0	10.0	12.43	1243	4971	6628	.077
7	0.0	0.0	150.0	150.0	2.49	3728	10.0	10.0	14.91	1491	5219	6959	.081
8	0.0	0.0	150.0	150.0	2.49	3723	10.0	10.0	17.40	1740	5468	7291	.08[illegible]
9	0.0	0.0	150.0	150.0	2.49	3728	10.0	10.0	19.88	1988	5716	7621	.0[illegible]
10	0.0	0.0	150.0	150.0	2.49	3728	10.0	10.0	22.37	2237	5965	7953	.0[illegible]
total	2.8	0.0				18640				8609	27339	36419	.0[illegible]
10 11	0.0	0.0	150.0	150.0	2.49	3728	10.0	10.0	24.85	24[illegible]	6213	[illegible]	[illegible]
12	12.5	10.0	150.0	140.0	2.49	3479	10.0	0.0	27.31	0	3479	4639	[illegible]
13	30.3	24.2	150.0	125.0	2.49	3126	10.0	0.0	29.82	0	3126	4168	.048
14	0.0	0.0	150.0	150.0	2.49	3723	10.0	10.0	32.31	3231	6959	9279	.107
15	0.0	0.0	150.0	150.0	2.49	3728	10.0	10.0	34.79	3479	7207	9609	.11[illegible]
total	42.8	34.2				17769				9195	[illegible]	35979	.0[illegible]
10 16	0.0	0.0	150.0	150.0	2.49	3728	10.0	10.0	37.28	372[illegible]	7456	9941	.115
17	0.0	0.0	150.0	150.0	2.49	372[illegible]	10.0	10.0	39.76	39.6	7704	10272	.119
18	.6	0.0	150.0	150.0	2.49	3728	10.0	10.0	42.25	4225	7953	10604	.12[illegible]
19	.1	0.0	150.0	150.0	2.49	3728	10.0	10.0	44.73	4473	8201	10935	.12[illegible]
20	.7	0.0	150.0	150.0	2.49	3728	10.0	10.0	47.22	4722	8450	11267	.130
total	1.4	0.0				18640				21124	39764	53019	.1[illegible]
TOTAL	47.0	34.2				73709				41504	115213	153618	

PADDY FIELD IRRIGATION REQUIREMENT (Período Normal) (/)

1959 Ano

10 th Area = 49.7 ha (80.0 mm > R > 5.0 mm) ; 80 % = E.R. I.E. = 75.0 %

Date	R. mm	E.R. mm	D mm	H mm	N m3	Água m3	Necessária m3/s	Total
21	0.0	0.0	10.0					
22	12.0	9.6	10.0					
23	0.0	0.0	10.0					
24	0.0	0.0	10.0					
25	0.0	0.0	10.0					
total	12.0	9.6	50.0	40.4	20079	26772	.062	
26	0.0	0.0	10.0					
27	0.0	0.0	10.0					
28	0.0	0.0	10.0					
29	18.0	14.4	10.0					
30	0.0	0.0	10.0					
31	0.0	0.0	10.0					
total	18.0	14.4	60.0	45.6	22663	30218	.058	
TOTAL	30.0	24.0			42742	56990		

PADDY FIELD IRRIGATION REQUIREMENT (Period (Normal) (-/-))

19 59 Amo

11 th Area = 49.7 ha (80.0 mm > R > 5.0 mm) 80 % E.R. I.E. = 75.0 l/s

Date	R	R'	H	H'	Agua Necesaria	Total
	mm	mm	mm	mm	m3	m3/s
1	0.0	0.0	15.0			
2	0.0	0.0	15.0			
3	0.0	0.0	15.0			
4	0.0	0.0	15.0			
5	0.0	0.0	15.0			
total	0.0	0.0	75.0	75.0	37275	49700 .115
6	8.1	6.5	15.0			
7	0.0	0.0	15.0			
8	1.0	0.0	15.0			
9	.6	0.0	15.0			
10	0.0	0.0	15.0			
total	9.7	6.5	75.0	68.5	34015	45393 .105
11	0.0	0.0	15.0			
12	31.5	25.0	15.0			
13	7.6	6.1	15.0			
14	0.0	0.0	15.0			
15	0.0	0.0	15.0			
total	39.1	31.1	75.0	43.9	21818	29091 .067
16	0.0	0.0	15.0			
17	0.0	0.0	15.0			
18	0.0	0.0	15.0			
19	7.7	6.2	15.0			
20	.9	0.0	15.0			
total	8.6	6.2	75.0	68.8	34194	45591 .106
21	.2	0.0	15.0			
22	.9	0.0	15.0			
23	4.8	0.0	15.0			
24	0.0	0.0	15.0			
25	0.0	0.0	15.0			
total	5.9	0.0	75.0	75.0	37275	49700 .115
26	23.8	19.0	15.0			
27	2.9	0.0	15.0			
28	0.0	0.0	15.0			
29	0.0	0.0	15.0			
30	.1	0.0	15.0			
total	27.1	19.0	75.0	56.0	27832	37109 .086
20[illegible]	99.8	62.8			192438	256584

FARM-FIELD IRRIGATION SIMULATION (Normal) (mm/mm)

1959 Alle 12 th Area = 49.7 ha (80.0 mm > R > 5.0 mm) 80 % E.R. I.E. = 75.0 %

Date	R. mm	E.R. mm	D mm	Ir mm	Ir m3	Avail. m3	Necessity m3/s	Total
1	0.0	0.0	17.0					
2	0.0	0.0	17.0					
3	0.0	0.0	17.0					
4	0.0	0.0	17.0					
5	0.0	0.0	17.0					
total	0.0	0.0	85.0	85.0	42245	56327	.130	
6	0.0	0.0	17.0					
7	0.0	0.0	17.0					
8	1.1	0.0	17.0					
9	10.0	14.4	17.0					
10	0.0	0.0	17.0					
total	19.1	1.4	85.0	70.6	35088	46784	.108	
11	4.5	0.0	17.0					
12	0.0	0.0	17.0					
13	0.0	0.0	17.0					
14	0.0	0.0	17.0					
15	0.0	0.0	17.0					
totnl	4.5	0.0	85.0	85.0	42245	56327	.130	
16	0.0	0.0	17.0					
17	0.0	0.0	17.0					
18	1.6	0.0	17.0					
19	0.0	0.0	17.0					
20	0.0	0.0	17.0					
total	1.6	0.0	85.0	85.0	42245	56327	.130	
21	0.0	0.0	17.0					
22	5.5	4.4	17.0					
23	0.0	0.0	17.0					
24	12.4	9.9	17.0					
25	.2	0.0	17.0					
total	13.1	14.3	85.0	70.7	35138	46851	.108	
26	0.0	0.0	17.0					
27	0.0	0.0	17.0					
28	0.0	0.0	17.0					
29	0.0	0.0	17.0					
30	0.0	0.0	17.0					
31	0.0	0.0	17.0					
total	0.0	0.0	102.0	102.0	50691	67592	.130	
TOTAL	43.4	28.7			247655	330209		

SANDY CLAY LOAM IRRIGATION REQUIREMENTS (Normal) (/)

1960 Ano

1 th Area = 49.7 ha (80.0 mm > R.> 5.0 mm) 80 % - R.A. I.R. = 75.0 %

Date	R. mm	E.R. mm	D mm	I mm	V m3	Agua Necesario m3	Necesario m3/s	Total
1	9.0	7.2	15.0					
2	3.0	0.0	15.0					
3	.2	0.0	15.0					
4	0.0	0.0	15.0					
5	0.0	0.0	15.0					
total	12.2	7.2	75.0	67.8	33697	44929	.104	
6	0.0	0.0	15.0					
7	17.1	13.7	15.0					
8	37.5	30.0	15.0					
9	.2	0.0	15.0					
10	1.2	0.0	15.0					
total	56.0	43.7	75.0	31.3	15556	20741	.048	
11	30.5	24.4	15.0					
12	51.4	41.1	15.0					
13	11.6	9.3	15.0					
14	0.0	0.0	15.0					
15	0.0	0.0	15.0					
total	93.5	74.8	75.0	.2	99	133	.000	
16	0.0	0.0	15.0					
17	0.0	0.0	15.0					
18	0.0	0.0	15.0					
19	0.0	0.0	15.0					
20	0.0	0.0	15.0					
total	0.0	0.0	75.0	75.0	37275	49700	.115	
21	0.0	0.0	15.0					
22	1.5	0.0	15.0					
23	0.0	0.0	15.0					
24	0.0	0.0	15.0					
25	2.0	0.0	15.0					
total	3.5	0.0	75.0	75.0	37275	49700	.115	
26	0.0	0.0	15.0					
27	0.0	0.0	15.0					
28	0.0	0.0	15.0					
29	0.0	0.0	15.0					
30	0.0	0.0	15.0					
31	0.0	0.0	15.0					
total	0.0	0.0	90.0	90.0	44730	59640	.115	
TOTAL	165.2	125.7			168632	224843		

[illegible] (PERIODO PARA PADDLING)

[illegible] 1983 ANO AREA= [illegible] ha DIA PARA "PADDLING"=20 DIA

(60.0mm [illegible] 5.0 mm) 80% =chuva efetivo Eficiencia de irrigação=75%

Agua necessario para paddling (D1)=150 mm em profundidade

Agua [illegible] normal (D2)=10 mm cm profundidade

Agua necessario N1, N2   Agua necessario limpo N1, N2

Date	Rain mm	R.E. mm	D1 mm	H1 mm	Area ha	N1 m3	D2 mm	H2 mm	Area ha	N2 m3	N1+N2 m3	Agua Necessaria m3	Total m3/s
			Agua necessario para paddling				Agua necessario normal						
2 1	0.0	0.0	150.0	150.0	2.49	3723	10.0	10.0	0.00	0	3723	4964	.057
2	.5	0.0	150.0	150.0	2.49	3723	10.0	10.0	2.49	249	3977	5303	.061
3	9.7	7.8	150.0	142.2	2.49	3534	10.0	2.2	4.97	109	3643	[illegible]	[illegible]
4	0.0	0.0	150.0	150.0	2.49	3728	10.0	10.0	7.46	746	4474	5965	.069
5	17.0	13.6	150.0	136.4	2.49	3390	10.0	0.0	9.94	0	3390	4520	.052
6	2.0	0.0	150.0	150.0	2.49	3728	10.0	10.0	12.43	1243	4971	6628	.077
7	0.0	0.0	150.0	150.0	2.49	3728	10.0	10.0	14.91	1491	5219	6959	.081
8	13.5	10.8	150.0	139.2	2.49	3459	10.0	0.0	17.40	0	3459	4612	.053
9	17.5	14.0	150.0	136.0	2.49	3380	10.0	0.0	19.88	0	3340	4507	.052
10	18.5	14.8	150.0	135.2	2.49	3360	10.0	0.0	22.37	0	3360	4480	.052
total	78.7	61.0				35763				3838	39601	52802	.122
2 11	6.9	5.5	150.0	144.5	2.49	3591	10.0	4.5	24.85	1118	4709	6279	.073
12	4.0	0.0	150.0	150.0	2.49	3728	10.0	10.0	27.34	2734	6462	8616	.100
13	0.0	0.0	150.0	150.0	2.49	3728	10.0	10.0	29.82	2982	6710	8947	.104
14	35.1	28.4	150.0	121.6	2.49	3022	10.0	0.0	32.31	0	3022	4029	.047
15	9.5	7.6	150.0	142.4	2.49	3539	10.0	2.4	34.79	835	4374	5832	.068
total	55.0	41.5				17608				7669	25277	33703	.078
2 16	0.0	0.0	150.0	150.0	2.49	3728	10.0	10.0	37.28	3728	7456	9941	.115
17	0.0	0.0	150.0	150.0	2.49	3728	10.0	10.0	39.76	3976	7704	10272	.119
18	0.0	0.0	150.0	150.0	2.49	3728	10.0	10.0	42.25	4225	7953	10604	.123
19	22.3	17.8	150.0	132.2	2.49	3285	10.0	0.0	44.73	0	3285	4380	.051
20	4.7	0.0	150.0	150.0	2.49	3728	10.0	10.0	47.22	4722	8450	11267	.130
total	27.0	17.8				18197				16651	34848	46464	.108
TOTAL	161.6	120.3				71568				28158	99726	132969	

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PADDY FIELD IRRIGATION REQUIREMENT (Periodo Normal) (/)

1960 Ano

2 th Area = 49.7 ha (80.0 mm > R > 5.0 mm) = 80 % = L.R. I.E. = 75.0

Date	P mm	ET mm	D mm	R mm	m3	Agua m3	Necessario m3/s	Total
21	31.2	25.0	10.0					
22	22.5	26.0	10.0					
23	1.4	0.0	10.0					
24	0.0	0.0	10.0					
25	20.0	24.0	10.0					
total	95.1	75.0	50.0	0.0	0	0	0.000	
26	11.0	10.4	10.0					
27	0.0	0.0	10.0					
28	0.0	0.0	10.0					
29	13.7	11.0	10.0					
total	20.7	21.4	40.0	18.6	9244	12326	.036	
TOTAL	121.8	96.4			9244	12326		

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DAILY TIME IRRIGATION REQUIREMENT (Periodo Normal) (/ /)

1960 Año

3 th Area = 49.7 ha (180.0 mm > R.> 5.0 mm) 80 % R.R. I.E. = 75.0

Date	R.R. mm	R. mm	D mm	H mm	Q m3	Agua Necesaria m3	Total m3/s
1	0.0	0.0	15.0				
2	0.0	0.0	15.0				
3	7.0	5.6	15.0				
4	0.0	0.0	15.0				
5	0.0	0.0	15.0				
total	7.0	5.6	75.0	69.4	34492	45989	.106
6	0.0	0.0	15.0				
7	0.0	0.0	15.0				
8	0.0	0.0	15.0				
9	0.0	0.0	15.0				
10	0.0	0.0	15.0				
total	0.0	0.0	75.0	75.0	37275	49700	.115
11	0.0	0.0	15.0				
12	6.1	4.9	15.0				
13	0.0	0.0	15.0				
14	1.1	0.0	15.0				
15	0.3	0.0	15.0				
total	7.5	4.9	75.0	70.1	34840	46453	.103
16	11.0	8.8	15.0				
17	0.0	0.0	15.0				
18	0.0	0.0	15.0				
19	0.0	0.0	15.0				
20	0.0	0.0	15.0				
total	11.0	8.8	75.0	66.2	32901	43869	.102
21	0.0	0.0	15.0				
22	0.0	0.0	15.0				
23	11.2	9.0	15.0				
24	0.0	0.0	15.0				
25	0.0	0.0	15.0				
total	11.2	9.0	75.0	66.0	32802	43736	.101
26	0.0	0.0	15.0				
27	0.0	0.0	15.0				
28	0.0	0.0	15.0				
29	0.0	0.0	15.0				
30	0.0	0.0	15.0				
31	0.0	0.0	15.0				
total	0.0	0.0	90.0	90.0	44730	59640	.115
TOTAL	36.7	28.3			217040	289387	

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PADDY FIELD IRRIGATION REQUIREMENT (Periodo Normal) (-/-)

1960 Ano 4 th Area = 49.7 ha (P = 80.0 mm > R.> (5.0 mm) * 80 % = E.R. I.D. = 75.0 %

Date	R. mm	E.R. mm	D. mm	H mm	N m3	Agua (Necessario) m3	Total m3/s
1	0.0	0.0	17.0				
2	0.0	0.0	17.0				
3	0.0	0.0	17.0				
4	0.0	0.0	17.0				
5	0.0	0.0	17.0				
total	0.0	0.0	85.0	85.0	42245	56327	.130
6	27.0	21.6	17.0				
7	0.0	0.0	17.0				
8	3.5	0.0	17.0				
9	0.0	0.0	17.0				
10	4.5	0.0	17.0				
total	35.0	21.6	85.0	63.4	31510	42013	.097
11	4.0	0.0	17.0				
12	0.0	0.0	17.0				
13	0.0	0.0	17.0				
14	0.0	0.0	17.0				
15	0.0	0.0	17.0				
total	4.0	0.0	85.0	85.0	42245	56327	.130
16	0.0	0.0	17.0				
17	0.0	0.0	17.0				
18	0.0	0.0	17.0				
19	59.8	47.8	17.0				
20	30.0	24.0	17.0				
total	89.8	71.8	85.0	13.2	6560	8747	.020
21	0.0	0.0	17.0				
22	0.0	0.0	17.0				
23	0.0	0.0	17.0				
24	0.0	0.0	17.0				
25	0.0	0.0	17.0				
total	0.0	0.0	85.0	85.0	42245	56327	.130
26	0.0	0.0	17.0				
27	0.0	0.0	17.0				
28	0.0	0.0	17.0				
29	0.0	0.0	17.0				
30	0.0	0.0	17.0				
total	0.0	0.0	85.0	85.0	42245	56327	.130
TOTAL	128.8	93.4			207050	276068	

PADDY FIELD IRRIGATION REQUIREMENT (Periodo Normal) (/)

1960 Año 5 th Area = 49.7 ha (80.0 mm > R.> 5.0 mm)* 80 % = S.R. I.E. = 75.0 %

Date	R. mm	E.R. mm	D mm	H mm	V m3	Agua Necesario Total m3	m3/s
1	14.5	11.6	15.0				
2	0.0	0.0	15.0				
3	0.0	0.0	15.0				
4	0.0	0.0	15.0				
5	0.0	0.0	15.0				
total	14.5	11.6	75.0	63.4	31510	42013	.097
6	0.0	0.0	15.0				
7	0.0	0.0	15.0				
8	0.0	0.0	15.0				
9	0.0	0.0	15.0				
10	7.0	5.6	15.0				
total	7.0	5.6	75.0	69.4	34492	45989	.106
11	3.2	0.0	15.0				
12	0.0	0.0	15.0				
13	0.0	0.0	15.0				
14	5.5	4.4	15.0				
15	18.0	14.4	15.0				
total	26.7	18.8	75.0	56.2	27931	37242	.086
16	5.7	4.6	15.0				
17	0.0	0.0	15.0				
18	0.0	0.0	15.0				
19	0.0	0.0	15.0				
20	28.0	22.4	15.0				
total	33.7	27.0	75.0	48.0	23856	31808	.074
21	49.0	39.2	15.0				
22	0.0	0.0	15.0				
23	0.0	0.0	15.0				
24	0.0	0.0	15.0				
25	0.0	0.0	15.0				
total	49.0	39.2	75.0	35.8	17793	23723	.055
26	0.0	0.0	15.0				
27	0.0	0.0	15.0				
28	0.0	0.0	15.0				
29	0.0	0.0	15.0				
30	0.0	0.0	15.0				
31	3.7	0.0	15.0				
total	3.7	0.0	90.0	90.0	44730	59640	.115
TOTAL	134.6	102.2			180312	240415	

1.4.- AREA DE DEMONDTRACAO DO POLDER BOA VISTA

AGUA NECESSARIO PARA PROJ.AT(PERIODO [illegible] PUDLING)

1959 ANO

(ET 60.0mm) (rain 5.0 mm) 80% = chuva efetivo   AREA= 38.5 ha   DIA PARA PUDLING=20 DIA

Agua necessario para pudling(D1)=150 mm em profundidade   Eficiencia de irrigação=75%

Agua necessario normal (D2)= 10 mm em profundidade

Agua completado H1,H2   Agua necessario limpo H1,H2

Date	Rain mm	E.R. mm	D1 mm	H1 mm	Area ha	W1 m3	D2 mm	H2 mm	Area ha	W2 m3	W1+W2 m3	Agua Necessaria m3	Q Total m3/s
			Agua necessario para padling				Agua necessario normal						
10 1	0.0	0.0	150.0	150.0	1.94	2910	10.0	10.0	0.00	0	2910	3880	.045
2	0.0	0.0	150.0	150.0	1.94	2910	10.0	10.0	1.94	194	3104	4139	.048
3	0.0	0.0	150.0	150.0	1.94	2910	10.0	10.0	3.88	388	3298	4397	.051
4	0.0	0.0	150.0	150.0	1.94	2910	10.0	10.0	5.82	582	3492	4655	.054
5	0.0	0.0	150.0	150.0	1.94	2910	10.0	10.0	7.75	775	3685	4915	.057
total	0.0	0.0				14550				1940	16490	21987	.051
10 6	2.8	0.0	150.0	150.0	1.94	2910	10.0	10.0	9.70	970	3880	5173	.060
7	0.0	0.0	150.0	150.0	1.94	2910	10.0	10.0	11.64	1164	4074	5432	.063
8	0.0	0.0	150.0	150.0	1.94	2910	10.0	10.0	13.58	1358	4268	5691	.066
9	0.0	0.0	150.0	150.0	1.94	2910	10.0	10.0	15.52	1552	4462	5949	.069
10	0.0	0.0	150.0	150.0	1.94	2910	10.0	10.0	17.46	1746	4656	6208	.072
total	2.8	0.0				14550				6790	21340	28453	.066
10 11	0.0	0.0	150.0	150.0	1.94	2910	10.0	10.0	19.40	1940	4850	6467	.075
12	12.5	10.0	150.0	140.0	1.94	2716	10.0	0.0	21.34	0	2716	3621	.042
13	30.3	24.2	150.0	125.0	1.94	2441	10.0	0.0	23.28	0	2441	3255	.038
14	0.0	0.0	150.0	150.0	1.94	2910	10.0	10.0	25.22	2522	5432	7243	.084
15	0.0	0.0	150.0	150.0	1.94	2910	10.0	10.0	27.16	2716	5626	7501	.087
total	42.8	34.2				13887				7178	21065	28087	[illegible]
10 16	0.0	0.0	150.0	150.0	1.94	2910	10.0	10.0	29.10	2910	5820	7760	[illegible]
17	.4	0.0	150.0	150.0	1.94	2910	10.0	10.0	31.04	3104	6014	8019	[illegible]
18	.6	0.0	150.0	150.0	1.94	2910	10.0	10.0	32.98	3298	6208	8277	[illegible]
19	.1	0.0	150.0	150.0	1.94	2910	10.0	10.0	34.92	3492	6402	8536	.099
20	.7	0.0	150.0	150.0	1.94	2910	10.0	10.0	36.86	3686	6596	8795	.102
total	1.8	0.0				14550				16490	31040	41387	[illegible]
TOTAL	47.4	34.2				57537				32398	89935	119914	

PADDY FIELD IRRIGATION REQUIREMENT (Periodo Normal) * (/)

1959 Ago

10 th Area = 38.8 ha (80.0 mm > R > 5.0 mm) 80 % = S.R. I.E. = 75.0 %

Data	P. mm	E.h. mm	D mm	H mm	H m3	Agua m3	Necesaria m3/s	Total
21	14.5	11.6	10.0					
22	12.0	9.6	10.0					
23	0.0	0.0	10.0					
24	0.0	0.0	10.0					
25	0.0	0.0	10.0					
total	26.5	21.2	50.0	28.8	11174	14899	.034	
26	0.0	0.0	10.0					
27	0.0	0.0	10.0					
28	0.0	0.0	10.0					
29	18.0	14.4	10.0					
30	0.0	0.0	10.0					
31	0.0	0.0	10.0					
total	18.0	14.4	60.0	45.6	17693	23590	.046	
Total	44.5	35.6			28867	38489		

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PADDY FIELD IRRIGATION REQUIREMENT (Periodo Normal) (/)

1959 Ano

11 th Area = 38.8 ha (100.0 mm > R.> 5.0 mm)* 80 % = E.R. I.R. = 75.0

Date	R. mm	E.R. mm	D mm	N mm	N m3	Água Necessario m3	Total m3/s
1	0.0	0.0	15.0				
2	0.0	0.0	15.0				
3	0.0	0.0	15.0				
4	0.0	0.0	15.0				
5	0.0	0.0	15.0				
total	0.0	0.0	75.0	75.0	29100	38800	.090
6	8.1	6.5	15.0				
7	0.0	0.0	15.0				
8	1.0	0.0	15.0				
9	.6	0.0	15.0				
10	0.0	0.0	15.0				
total	9.7	6.5	75.0	68.5	26578	35437	.082
11	0.0	0.0	15.0				
12	31.3	25.0	15.0				
13	7.6	6.1	15.0				
14	0.0	0.0	15.0				
15	0.0	0.0	15.0				
total	38.9	31.1	75.0	43.9	17033	22711	.053
16	0.0	0.0	15.0				
17	0.0	0.0	15.0				
18	0.0	0.0	15.0				
19	7.7	6.2	15.0				
20	.9	0.0	15.0				
total	8.6	6.2	75.0	68.8	26694	35593	.082
21	.2	0.0	15.0				
22	.9	0.0	15.0				
23	4.8	0.0	15.0				
24	0.0	0.0	15.0				
25	0.0	0.0	15.0				
total	5.9	0.0	75.0	75.0	29100	38800	.090
26	23.9	19.0	15.0				
27	2.9	0.0	15.0				
28	0.0	0.0	15.0				
29	0.0	0.0	15.0				
30	.2	0.0	15.0				
total	27.1	19.0	75.0	56.0	21728	28971	.067
TOTAL	90.2	62.8			150234	200312	

PADDY FIELD IRRIGATION REQUIREMENT (Normal) (/)

1959 Ano 12 th Area = 38.8 ha (80.0 mm > R > 5.0 mm) * 80 % <= P.R. I.E. = 75.0 %

Date	R. mm	N.R. mm	D mm	H mm	N m3	A m3	Necesario Total m3/s	
1	0.0	0.0	17.0					
2	0.0	0.0	17.0					
3	0.0	0.0	17.0					
4	0.0	0.0	17.0					
5	0.0	0.0	17.0					
total	0.0	0.0	85.0	85.0	32980	43973		.102
6	0.0	0.0	17.0					
7	0.0	0.0	17.0					
8	1.4	0.0	17.0					
9	18.0	14.4	17.0					
10	0.0	0.0	17.0					
total	19.4	14.4	85.0	70.6	27393	36524		.085
11	4.5	0.0	17.0					
12	0.0	0.0	17.0					
13	0.0	0.0	17.0					
14	0.0	0.0	17.0					
15	0.0	0.0	17.0					
total	4.5	0.0	85.0	85.0	32980	43973		.102
16	0.0	0.0	17.0					
17	0.0	0.0	17.0					
18	1.6	0.0	17.0					
19	0.0	0.0	17.0					
20	0.0	0.0	17.0					
total	1.6	0.0	85.0	85.0	32980	43973		.102
21	0.0	0.0	17.0					
22	5.5	4.4	17.0					
23	0.0	0.0	17.0					
24	12.4	9.9	17.0					
25	.2	0.0	17.0					
total	18.1	14.3	85.0	70.7	27432	36575		.085
26	0.0	0.0	17.0					
27	0.0	0.0	17.0					
28	0.0	0.0	17.0					
29	0.0	0.0	17.0					
30	0.0	0.0	17.0					
31	0.0	0.0	17.0					
total	0.0	0.0	102.0	102.0	39576	52768		.102
TOTAL	43.6	28.7			193340	257786		

PADDY FIELD IRRIGATION REQUIREMENT (Periode Normal) (/)

1950 Ang

1. th. [illegible] = 33.8 ha (80.0 mm > R. > 5.0 mm) * 80 % = R.E. I.E. = 75.0 %

Date	R. mm	R.E. mm	[illegible] mm	N mm	m3	A'gun m3	Necessary Total m3/s
1	9.0	7.2	15.0				
2	3.0	0.0	15.0				
3	.2	0.0	15.0				
4	0.0	0.0	15.0				
5	0.0	0.0	15.0				
total	12.2	7.2	75.0	67.8	26306	35075	.031
6	0.0	0.0	15.0				
7	17.1	13.7	15.0				
8	37.5	30.0	15.0				
9	.2	0.0	15.0				
10	1.2	0.0	15.0				
total	56.0	43.7	75.0	31.3	12144	16193	.037
11	30.5	24.4	15.0				
12	51.4	41.1	15.0				
13	11.6	9.3	15.0				
14	0.0	0.0	15.0				
15	0.0	0.0	15.0				
total	93.5	74.8	75.0	.2	78	103	.000
16	0.0	0.0	15.0				
17	0.0	0.0	15.0				
18	0.0	0.0	15.0				
19	0.0	0.0	15.0				
20	0.0	0.0	15.0				
total	0.0	0.0	75.0	75.0	29100	38800	.090
21	0.0	0.0	15.0				
22	1.5	0.0	15.0				
23	0.0	0.0	15.0				
24	0.0	0.0	15.0				
25	2.0	0.0	15.0				
total	3.5	0.0	75.0	75.0	29100	38800	.090
26	0.0	0.0	15.0				
27	0.0	0.0	15.0				
28	0.0	0.0	15.0				
29	0.0	0.0	15.0				
30	0.0	0.0	15.0				
31	0.0	0.0	15.0				
total	0.0	0.0	90.0	90.0	34920	46560	.090
TOTAL	165.2	125.7			131648	175531	

AGUA NECESSARIO PARA ARROZAL(PERIODO PARA "PADDLING")

(1966 ANO) AREA=38.8 ha, DIA PARA "PADDLING"=20 DIA

((80.0mm - (min. 5.0 mm)) 80% =chuva efetivo. Eficiencia de irrigacao=75%

Agua necessario para puddling(D1)=150 mm em profundidade

Agua necessario normal (D2)=10 mm em profundidade

Agua completado H1,H2

Agua necessario limbo H1,H2

Date	Rain mm	E.R. mm	D1 mm	H1 mm	Area ha	N1 m3	D2 mm	H2 mm	Area ha	N2 m3	N1-N2 m3	Agua necessario m3	m3/s
			Agua necessario para puddling				Agua necessario normal						
2 1	0.0	0.0	150.0	150.0	1.94	2910	10.0	10.0	0.00	0	2910	3850	.045
2	.5	0.0	150.0	150.0	1.94	2910	10.0	10.0	1.94	194	3104	4139	.048
3	9.7	7.8	150.0	142.2	1.94	2759	10.0	2.2	3.88	85	2844	3792	.044
4	0.0	0.0	150.0	150.0	1.94	2910	10.0	10.0	5.82	582	3492	4656	.054
5	17.0	13.6	150.0	136.4	1.94	2646	10.0	0.0	7.76	0	2646	3528	.041
total	27.2	21.4				14125				861	14996	19995	.046
2 6	2.0	0.0	150.0	150.0	1.94	2910	10.0	10.0	9.70	970	3880	5173	.060
7	0.0	0.0	150.0	150.0	1.94	2910	10.0	10.0	11.64	1164	4074	5432	.063
8	13.5	10.8	150.0	139.2	1.94	2700	10.0	0.0	13.58	0	2700	3600	.042
9	17.5	14.0	150.0	136.0	1.94	2638	10.0	0.0	15.52	0	2638	3517	.041
10	18.5	14.8	150.0	135.2	1.94	2623	10.0	0.0	17.46	0	2623	3497	.040
total	51.5	39.6				13781				2134	15915	21219	.049
2 11	6.9	5.5	150.0	144.5	1.94	2803	10.0	4.5	19.40	873	3676	4901	.057
12	4.0	0.0	150.0	150.0	1.94	2910	10.0	10.0	21.34	2134	5044	6725	.078
13	0.0	0.0	150.0	150.0	1.94	2910	10.0	10.0	23.28	2328	5238	6984	.081
14	35.5	28.4	150.0	121.6	1.94	2359	10.0	0.0	25.22	0	2359	3145	.036
15	9.5	7.6	150.0	142.4	1.94	2763	10.0	2.4	27.16	652	3415	4553	.053
total	55.9	41.5				13745				5987	19732	26309	.061
2 16	0.0	0.0	150.0	150.0	1.94	2910	10.0	10.0	29.10	2910	5820	7760	.090
17	0.0	0.0	150.0	150.0	1.94	2910	10.0	10.0	31.04	3104	6014	8019	.093
18	0.0	0.0	150.0	150.0	1.94	2910	10.0	10.0	32.98	3298	6208	8277	.096
19	22.3	17.8	150.0	132.2	1.94	2565	10.0	0.0	34.92	0	2565	3420	.040
20	4.7	0.0	150.0	150.0	1.94	2910	10.0	10.0	36.86	3686	6596	8795	.102
total	27.0	17.8				14205				12998	27203	36271	.084
TOTAL	161.6	120.3				55865				21930	77846	103793	

PADDY FIELD IRRIGATION REQUIREMENT (Paddy Normal) (1/5)

1960 Mo 2 th Area = 39.8 ha (80.0 mm > R.> 5.0 mm) 80 % E.R. I.E. = 75.0 %

Date	R. mm	E.R. mm	n mm	H mm	M m3	Aqua m3	Necessario m3/s	Total
21	31.2	25.0	10.0					
22	32.5	26.0	10.0					
23	1.4	0.0	10.0					
24	0.0	0.0	10.0					
25	30.0	24.0	10.0					
total	95.1	75.0	50.0	0.0	0	0	0.000	
26	13.0	10.4	10.0					
27	0.0	0.0	10.0					
28	0.0	0.0	10.0					
29	13.7	11.0	10.0					
total	26.7	21.4	40.0	18.6	7217	9622	.028	
TOTAL	121.8	96.4			7217	9622		

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PADDY FIELD IRRIGATION REQUIREMENT (Rewadee) (Normal) (—/—)

1960 Ano 3 th Area = 37.9 ha (80.0 mm > R > 5.0 mm) 80 % = R. I.R. = 75.0

Date	R. mm	S.R. mm	P mm	II mm	II m3	Agua m3	Necesario Total m3/s
1	0.0	0.0	15.0				
2	0.0	0.0	15.0				
3	7.0	5.6	15.0				
4	0.0	0.0	15.0				
5	0.0	0.0	15.0				
total	7.0	5.6	75.0	69.4	26927	35903	.083
6	0.0	0.0	15.0				
7	0.0	0.0	15.0				
8	0.0	0.0	15.0				
9	0.0	0.0	15.0				
10	0.0	0.0	15.0				
total	0.0	0.0	75.0	75.0	29100	38800	.090
11	0.0	0.0	15.0				
12	6.1	4.9	15.0				
13	0.0	0.0	15.0				
14	1.1	0.0	15.0				
15	0.3	0.0	15.0				
total	7.5	4.9	75.0	70.1	27199	36265	.034
16	11.0	8.8	15.0				
17	0.0	0.0	15.0				
18	0.0	0.0	15.0				
19	0.0	0.0	15.0				
20	0.0	0.0	15.0				
total	11.0	8.8	75.0	66.2	25686	34247	.079
21	0.0	0.0	15.0				
22	0.0	0.0	15.0				
23	11.2	9.0	15.0				
24	0.0	0.0	15.0				
25	0.0	0.0	15.0				
total	11.2	9.0	75.0	66.0	25608	34144	.079
26	0.0	0.0	15.0				
27	0.0	0.0	15.0				
28	0.0	0.0	15.0				
29	0.0	0.0	15.0				
30	0.0	0.0	15.0				
31	0.0	0.0	15.0				
total	0.0	0.0	90.0	90.0	34920	46560	.090
TOTAL	37.7	28.3			169440	225919	

1960 Ano — Month (Normal) — (mm/mm)

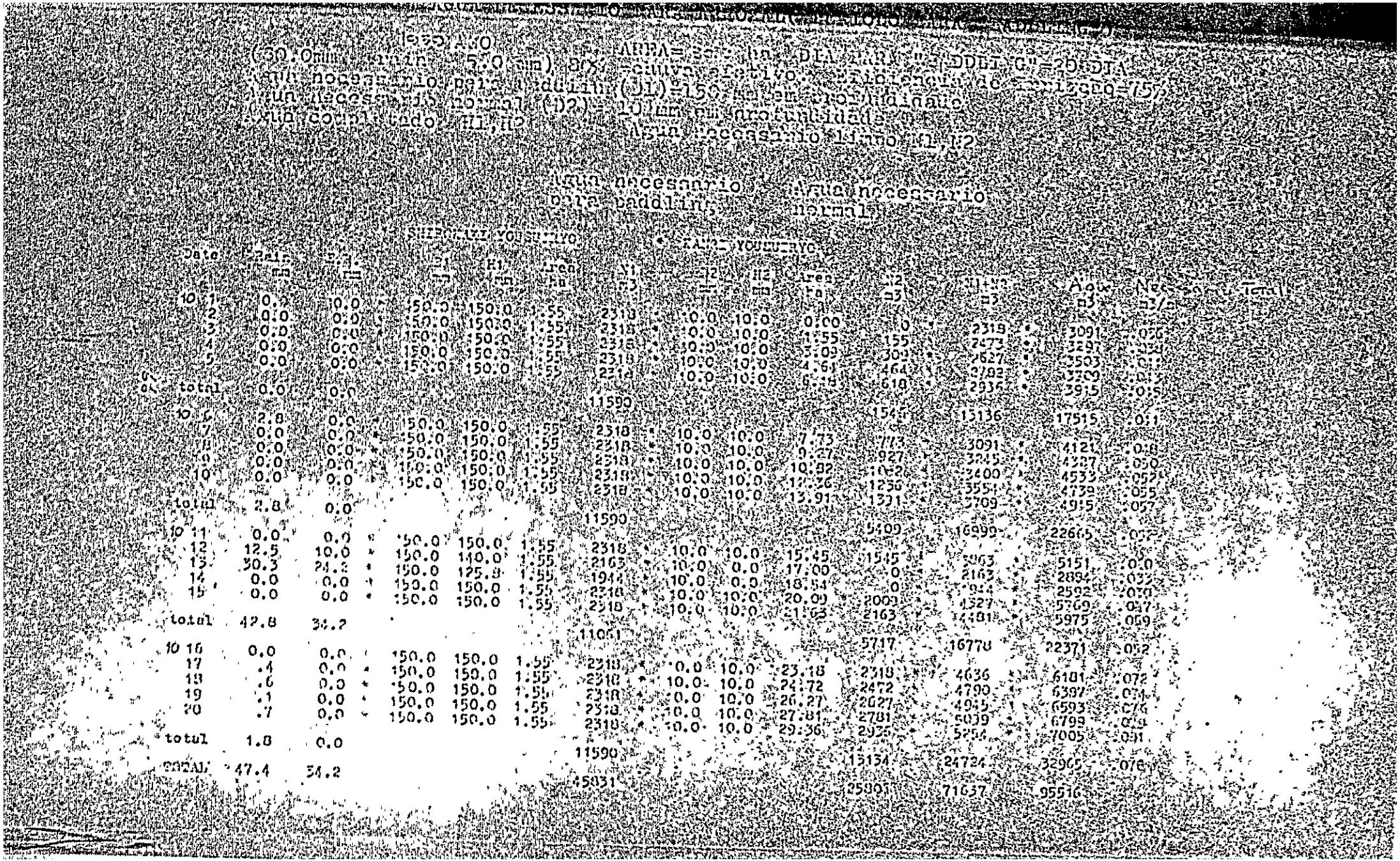
4th Area = 33.8 ha (100.0 mm > R.> 5.0 mm) 80 % = E.R. I.E. = 75.0 %

Date	R. mm	E.T. mm	D mm	H mm	Q m3	Aguas m3	Necessario m3/s	Total
1	0.0	0.0	17.0					
2	0.0	0.0	17.0					
3	0.0	0.0	17.0					
4	0.0	0.0	17.0					
5	0.0	0.0	17.0					
total	0.0	0.0	85.0	85.0	32930	43973	.102	
6	27.0	21.6	17.0					
7	0.0	0.0	17.0					
8	3.5	0.0	17.0					
9	0.0	0.0	17.0					
10	4.5	0.0	17.0					
total	35.0	21.6	85.0	63.4	24599	32799	.076	
11	1.0	0.0	17.0					
12	0.0	0.0	17.0					
13	0.0	0.0	17.0					
14	0.0	0.0	17.0					
15	0.0	0.0	17.0					
total	1.0	0.0	85.0	85.0	32930	43973	.102	
16	0.0	0.0	17.0					
17	0.0	0.0	17.0					
18	0.0	0.0	17.0					
19	59.8	47.8	17.0					
20	30.0	24.0	17.0					
total	89.8	71.8	85.0	13.2	5122	6829	.016	
21	0.0	0.0	0.0					
22	0.0	0.0	0.0					
23	0.0	0.0	0.0					
24	0.0	0.0	0.0					
25	0.0	0.0	0.0					
total	0.0	0.0	0.0	0.0	0	0	0.000	
26	0.0	0.0	17.0					
27	0.0	0.0	17.0					
28	0.0	0.0	17.0					
29	0.0	0.0	17.0					
30	0.0	0.0	17.0					
total	0.0	0.0	85.0	85.0	32930	43973	.102	
TOTAL	128.8	93.4			126661	171547		

1960 Aug. 5th Area = 38.8 ha (80.0 mm > R.> 5.0 mm) 80 % = U.R. I.E. = 75.0 %

Date	P mm	E.R. mm	p mm	H mm	H m3	Aqua m3	Nec. m3/a	Tutal
1	14.5	11.6	15.0					
2	0.0	0.0	15.0					
3	0.0	0.0	15.0					
4	0.0	0.0	15.0					
5	0.0	0.0	15.0					
total	14.5	11.6	75.0	63.4	24599	32799	.076	
6	0.0	0.0	15.0					
7	0.0	0.0	15.0					
8	0.0	0.0	15.0					
9	0.0	0.0	15.0					
10	7.0	5.6	15.0					
total	7.0	5.6	75.0	69.4	26927	35903	.083	
11	3.2	0.0	15.0					
12	0.0	0.0	15.0					
13	0.0	0.0	15.0					
14	5.5	4.4	15.0					
15	18.0	14.4	15.0					
total	26.7	18.8	75.0	56.2	21806	29074	.067	
16	5.7	4.6	15.0					
17	0.0	0.0	15.0					
18	0.0	0.0	15.0					
19	0.0	0.0	15.0					
20	28.0	22.4	15.0					
total	33.7	27.0	75.0	48.0	18624	24832	.057	
21	49.0	39.2	15.0					
22	0.0	0.0	15.0					
23	0.0	0.0	15.0					
24	0.0	0.0	15.0					
25	0.0	0.0	15.0					
total	49.0	39.2	75.0	35.8	13890	18521	.043	
26	0.0	0.0	15.0					
27	0.0	0.0	15.0					
28	0.0	0.0	15.0					
29	0.0	0.0	15.0					
30	0.0	0.0	15.0					
31	3.7	0.0	15.0					
total	3.7	0.0	90.0	90.0	34920	46560	.090	
TOTAL	134.6	103.2			140766	187689		

1.5. AREA DE DEMONSTRACAO DO POLDER PILOT I



PADDY FIELD IRRIGATION REQUIREMENT (Periode) (Norma(%)) (E/T)

1959 Ano

10 th Area = 30.9 ha (80.0 mm ≥ R.≥ 5.0 mm) * 80 % = E.R. I.E. = 75.0 %

Date	R. mm	E.R. mm	D mm	H mm	Agua m3	Necesario m3	Total m3/s
21	0.0	0.0	10.0				
22	12.0	9.6	10.0				
23	0.0	0.0	10.0				
24	0.0	0.0	10.0				
25	0.0	0.0	10.0				
total	12.0	9.6	50.0	40.4	12484	16645	.039
26	0.0	0.0	10.0				
27	0.0	0.0	10.0				
28	0.0	0.0	10.0				
29	18.0	14.4	10.0				
30	0.0	0.0	10.0				
31	0.0	0.0	10.0				
total	18.0	14.4	60.0	45.6	14090	18787	.036
TOTAL	30.0	24.0			26574	35432	

PADDY FIELD IRRIGATION REQUIREMENT (Pastagem Normal) (m3/s)

1959 Ano

11 th area = 30.9 ha (80.0 mm > R.> 5.0 mm)* 80 % = E.R. I.R. = 75.0

Date	R. mm	E.R. mm	D mm	H mm	H m3	Água Necessario Total m3	m3/s
1	0.0	0.0	15.0				
2	0.0	0.0	15.0				
3	0.0	0.0	15.0				
4	0.0	0.0	15.0				
5	0.0	0.0	15.0				
total	0.0	0.0	75.0	75.0	23175	30900	.072
6	8.1	6.5	15.0				
7	0.0	0.0	15.0				
8	1.0	0.0	15.0				
9	.6	0.0	15.0				
10	0.0	0.0	15.0				
total	9.7	6.5	75.0	68.5	21167	28222	.065
11	0.0	0.0	15.0				
12	31.3	25.0	15.0				
13	7.6	6.1	15.0				
14	0.0	0.0	15.0				
15	0.0	0.0	15.0				
total	38.9	31.1	75.0	43.9	13565	18087	.042
16	0.0	0.0	15.0				
17	0.0	0.0	15.0				
18	0.0	0.0	15.0				
19	7.7	6.2	15.0				
20	.9	0.0	15.0				
total	8.6	6.2	75.0	68.8	21259	28346	.066
21	.2	0.0	15.0				
22	.9	0.0	15.0				
23	4.8	0.0	15.0				
24	0.0	0.0	15.0				
25	0.0	0.0	15.0				
total	5.9	0.0	75.0	75.0	23175	30900	.072
26	23.8	19.0	15.0				
27	2.9	0.0	15.0				
28	0.0	0.0	15.0				
29	0.0	0.0	15.0				
30	.4	0.0	15.0				
total	27.1	19.0	75.0	56.0	17304	23072	.053
TOTAL	90.2	62.8			119645	159527	

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PADDY FIELD IRRIGATION REQUIREMENT (Revised / Normal) (m³/s)

1959 Aug. 12th Area = 30.9 ha (80.0 mm > R.> 5.0 mm) 80 % = E.R. I.E. = 75.0 %

Date	R. mm	E.R. mm	H mm	N m3	Aqua m3	Necessario m3/s	Total
1	0.0	0.0	17.0				
2	0.0	0.0	17.0				
3	0.0	0.0	17.0				
4	0.0	0.0	17.0				
5	0.0	0.0	17.0				
total	0.0	0.0	85.0	85.0	26265	35020	.081
6	0.0	0.0	17.0				
7	0.0	0.0	17.0				
8	1.4	0.0	17.0				
9	18.0	14.4	17.0				
10	0.0	0.0	17.0				
total	19.4	14.4	85.0	70.6	21815	29087	.067
11	4.5	0.0	17.0				
12	0.0	0.0	17.0				
13	0.0	0.0	17.0				
14	0.0	0.0	17.0				
15	0.0	0.0	17.0				
total	4.5	0.0	85.0	85.0	26265	35020	.031
16	0.0	0.0	17.0				
17	0.0	0.0	17.0				
18	1.0	0.0	17.0				
19	0.0	0.0	17.0				
20	0.0	0.0	17.0				
total	1.0	0.0	85.0	85.0	26265	35020	.031
21	0.0	0.0	17.0				
22	5.5	4.4	17.0				
23	0.0	0.0	17.0				
24	12.4	9.9	17.0				
25	.2	0.0	17.0				
total	18.1	14.3	85.0	70.7	21846	29128	.067
26	0.	0.0	17.0				
27	0.0	0.0	17.0				
28	0.0	0.0	17.0				
29	0.0	0.0	17.0				
30	0.0	0.0	17.0				
31	0.0	0.0	17.0				
total	0.0	0.0	102.0	102.0	31518	42024	.031
20??	43.6	28.7			153975	205299	

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PADDY FIELD IRRIGATION REQUIREMENT (Modified) (mm/day)

1960 Aman

13 th Area = 30.9 ha (80.0 mm > R.> 5.0 mm)* 80 % R.R. = 75.0 %

Date	R.	E.R.	D	H	N	Agua Necesaria	Total
	mm	mm	mm	mm	m3	m3	m3/s
1	9.0	7.2	15.0				
2	3.0	0.0	15.0				
3	.2	0.0	15.0				
4	0.0	0.0	15.0				
5	0.0	0.0	15.0				
total	12.2	7.2	75.0	67.8	20950	279343	.065
6	0.0	0.0	15.0				
7	17.1	13.7	15.0				
8	37.5	30.0	15.0				
9	.2	0.0	15.0				
10	1.2	0.0	15.0				
total	56.0	43.7	75.0	31.3	9672	12896	.030
11	30.5	24.4	15.0				
12	51.4	41.1	15.0				
13	11.6	9.3	15.0				
14	0.0	0.0	15.0				
15	0.0	0.0	15.0				
total	93.5	74.9	75.0	.2	62	82	.000
16	0.0	0.0	15.0				
17	0.0	0.0	15.0				
18	0.0	0.0	15.0				
19	0.0	0.0	15.0				
20	0.0	0.0	15.0				
total	0.0	0.0	75.0	75.0	23175	30900	.072
21	0.0	0.0	15.0				
22	.5	0.0	15.0				
23	0.0	0.0	15.0				
24	0.0	0.0	15.0				
25	2.0	0.0	15.0				
total	2.5	0.0	75.0	75.0	23175	30900	.072
26	0.0	0.0	15.0				
27	0.0	0.0	15.0				
28	0.0	0.0	15.0				
29	0.0	0.0	15.0				
30	0.0	0.0	15.0				
31	0.0	0.0	15.0				
total	0.0	0.0	90.0	90.0	27810	37080	.072
TOTAL	165.2	125.7			104844	139792	

(ETO 0mm — rain — 5.0 mm) 80% = chuva efetivo — Eficiencia de irrigação = 75%

Agua necessario para padding (D1) = 150 mm em profundidade

Agua necessario normal (D2) = 10 mm em profundidade

Agua completado H1, H2 — Agua necessario limpo N1, N2

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Data	Rain mm	E.R. mm		D1 mm	H1 mm	Area ha	N1 m3		D2 mm	H2 mm	Area ha	N2 m3		H1+N2 m3		Agua Necessario Total m3	m3/s
				Agua necessario para padding					Agua necessario normal								
2 1	0.0	0.0		150.0	150.0	1.55	2318		10.0	10.0	0.00	0		2318		3091	.036
2	.5	0.0	*	150.0	150.0	1.55	2310	*	10.0	10.0	1.55	155	*	2473	*	3297	.038
3	9.7	7.8		150.0	142.2	1.55	2197		10.0	2.2	3.09	68	*	2265	*	3020	.035
4	0.0	0.0	*	150.0	150.0	1.55	2319		10.0	10.0	4.64	464	*	2782	*	3709	.043
5	17.0	13.6	*	150.0	136.4	1.55	2107	*	10.0	0.0	6.19	0	*	2107	*	2809	.033
total	27.2	21.4					11259					687		11945		15926	.037
2 6	2.0	0.0	*	150.0	150.0	1.55	2318	*	10.0	10.0	7.73	773	*	3091	*	4121	[illegible]
7	0.0	0.0		150.0	150.0	1.55	2318	*	10.0	10.0	9.27	927	*	3245	*	4327	.050
8	13.5	10.8		150.0	139.2	1.55	2151	*	10.0	0.0	10.82	0	*	2151	*	2869	.033
9	17.5	14.0	*	150.0	[illegible]	1.55	2101	*	10.0	0.0	12.36	0	*	2101	*	2801	.032
10	10.5	14.8	*	150.0	135.2	1.55	2039	*	10.0	0.0	13.91	0	*	2089	*	2785	.032
11	6.9	5.5	*	150.0	144.5	1.55	2235	*	10.0	4.5	15.45	695	*	2928	*	3904	.015
12	4.0	0.0	*	150.0	150.0	1.55	2319	*	10.0	10.0	17.00	1700	*	4018	*	5357	.072
13	0.0	0.0	*	150.0	150.0	1.55	2318	*	10.0	10.0	18.54	1854	*	4172	*	5563	.074
14	35.5	28.4	*	150.0	121.6	1.55	1879	*	10.0	0.0	20.09	0	*	1879	*	2505	.029
15	9.5	7.6	*	150.0	142.4	1.55	2200	*	10.0	2.4	21.63	519	*	2719	*	3625	.042
total	107.4	81.1					21925					6468		28393		37856	.038
2 16	0.0	0.0	*	150.0	150.0	1.55	2318	*	10.0	10.0	23.18	2318	*	4636	*	6181	.072
17	0.0	0.0	*	150.0	150.0	1.55	2318	*	10.0	10.0	24.72	2472	*	4790	*	6387	.074
18	0.0	0.0	*	150.0	150.0	1.55	2318	*	10.0	10.0	26.27	2627	*	4945	*	6593	.076
19	22.3	17.3	*	150.0	132.2	1.55	2042	*	10.0	0.0	27.81	0	*	2042	*	2723	.032
20	4.7	0.0	*	150.0	150.0	1.55	2318	*	10.0	10.0	29.36	2936	*	5254	*	7005	.081
total	27.0	17.3					11314					10353		21667		28889	.067
TOTAL	161.6	120.3					44497					17508		62005		82671	

PADDY FIELD IRRIGATION REQUIREMENT (Periodo Normal) (?/?)

1960 Ago

2 th Area = 30.9 ha (80.0 mm > R > 5.0 mm) 80 % = E.R. I.E. = 75.0 %

Date	R. mm	E.R. mm	D mm	H mm	N m3	Agua Necessario m3	Total m3/s
21	31.2	25.0	10.0				
22	32.5	26.0	10.0				
23	1.4	0.0	10.0				
24	0.0	0.0	10.0				
25	30.0	24.0	10.0				
total	95.1	75.0	50.0	0.0	0	0	0.000
26	13.0	10.4	10.0				
27	0.0	0.0	10.0				
28	0.0	0.0	10.0				
29	13.7	11.0	10.0				
total	26.7	21.4	40.0	18.6	5747	7663	.022
TOTAL	121.8	96.4			5747	7663	

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PADDY FIELD IRRIGATION REQUIREMENT (Period) (Normal) (—/—)

1960 Aug 3 th Area = 30.7 ha (30.0 mm > R > 5.0 mm) × 80 % = E.R. I.E. = 75.0 %

Date	R mm	E.R. mm	D mm	H mm	H m3	A'gw m3	Necessario m3/s	Total
1	0.0	0.0	15.0					
2	0.0	0.0	15.0					
3	7.0	5.6	15.0					
4	0.0	0.0	15.0					
5	0.0	0.0	15.0					
total	7.0	5.6	75.0	69.4	21306	28408	.066	
6	0.0	0.0	15.0					
7	0.0	0.0	15.0					
8	0.0	0.0	15.0					
9	0.0	0.0	15.0					
10	0.0	0.0	15.0					
total	0.0	0.0	75.0	75.0	23025	30700	.071	
11	0.0	0.0	15.0					
12	6.1	4.9	15.0					
13	0.0	0.0	15.0					
14	1.1	0.0	15.0					
15	.3	0.0	15.0					
total	7.5	4.9	75.0	70.1	21521	28694	.066	
16	11.0	8.8	15.0					
17	0.0	0.0	15.0					
18	0.0	0.0	15.0					
19	0.0	0.0	15.0					
20	0.0	0.0	15.0					
total	11.0	8.8	75.0	66.2	20323	27098	.063	
21	0.0	0.0	15.0					
22	0.0	0.0	15.0					
23	11.2	9.0	15.0					
24	0.0	0.0	15.0					
25	0.0	0.0	15.0					
total	11.2	9.0	75.0	66.0	20262	27016	.063	
26	0.0	0.0	15.0					
27	0.0	0.0	15.0					
28	0.0	0.0	15.0					
29	0.0	0.0	15.0					
30	0.0	0.0	15.0					
31	0.0	0.0	15.0					
total	0.0	0.0	90.0	90.0	27630	36840	.071	
TOTAL	37.7	28.3			134067	178756		

Paddy Field Irrigation Requirement (Period of Normal) (mm/day)

1990 Aman Area = 30.9 ha (80.0 mm > R.> 5.0 mm) S = 80 % E.R. I.E. = 75.0 %

Date	R. mm	E.R. mm	D mm	W.R. mm	W.R. m3	Avail. m3	Necessity m3/s	Total
1	0.0	0.0	17.0					
2	0.0	0.0	17.0					
3	0.0	0.0	17.0					
4	0.0	0.0	17.0					
5	0.0	0.0	17.0					
total	0.0	0.0	85.0	85.0	26265	35020	.031	
6	27.0	21.6	17.0					
7	0.0	0.0	17.0					
8	3.5	0.0	17.0					
9	0.0	0.0	17.0					
10	6.5	0.0	17.0					
total	35.0	21.6	85.0	63.4	19591	26121	.050	
11	4.0	0.0	17.0					
12	0.0	0.0	17.0					
13	0.0	0.0	17.0					
14	0.0	0.0	17.0					
15	0.0	0.0	17.0					
total	4.0	0.0	85.0	85.0	26265	35020	.031	
16	0.0	0.0	17.0					
17	0.0	0.0	17.0					
18	0.0	0.0	17.0					
19	50.8	47.8	17.0					
20	30.0	24.0	17.0					
total	80.	71.8	85.0	13.2	4079	5439	.013	
21	0.0	0.0	17.0					
22	0.0	0.0	17.0					
23	0.0	0.0	17.0					
24	0.0	0.0	17.0					
25	0.0	0.0	17.0					
total	0.0	0.0	85.0	85.0	26265	35020	.031	
26	0.0	0.0	17.0					
27	0.0	0.0	17.0					
28	0.0	0.0	17.0					
29	0.0	0.0	17.0					
30	0.0	0.0	17.0					
total	0.0	0.0	85.0	85.0	26265	35020	.031	
TOTAL	154.8	93.4			128729	171639		

DAILY FIELD IRRIGATION REQUIREMENT - (Perennial) (Normal) (—/—)

1960 Area = 30.9 ha (80.0 mm > R.> 5.0 mm) * 80 % = E.R. I.E. = 75.0 %

Date	R. mm	E.R. mm	D mm	H mm	H m3	Aqua m3	Necessario m3/s	Total
1	14.5	11.6	15.0					
2	0.0	0.0	15.0					
3	0.0	0.0	15.0					
4	0.0	0.0	15.0					
5	0.0	0.0	15.0					
total	14.5	11.6	75.0	63.4	19591	26121	.060	
6	0.0	0.0	15.0					
7	0.0	0.0	15.0					
8	0.0	0.0	15.0					
9	0.0	0.0	15.0					
10	7.0	5.6	15.0					
total	7.0	5.6	75.0	69.4	21445	28593	.066	
11	2.2	0.0	15.0					
12	0.0	0.0	15.0					
13	0.0	0.0	15.0					
14	5.5	4.4	15.0					
15	18.0	14.4	15.0					
total	26.7	18.8	75.0	56.2	17366	23154	.054	
16	5.7	4.6	15.0					
17	0.0	0.0	15.0					
18	0.0	0.0	15.0					
19	0.0	0.0	15.0					
20	28.0	22.4	15.0					
total	33.7	27.0	75.0	48.0	14832	19776	.046	
21	49.0	39.2	15.0					
22	0.0	0.0	15.0					
23	0.0	0.0	15.0					
24	0.0	0.0	15.0					
25	0.0	0.0	15.0					
total	49.0	39.2	75.0	35.8	11062	14750	.034	
26	0.0	0.0	15.0					
27	0.0	0.0	15.0					
28	0.0	0.0	15.0					
29	0.0	0.0	15.0					
30	0.0	0.0	15.0					
31	3.7	0.0	15.0					
total	3.7	0.0	90.0	90.0	27810	37080	.072	
2034	134.6	102.2			112105	149474		

1.6 Traçado do vertedouro

1)Determinação do local

A posição do vertedouro exige considerações a respeito da segurança, devendo ser construído num local completamente separado. O prorrogamento do conduto deve ser curto. No sentido de reduzir a quantidade de terra escavada, é vantajoso construir o vertedouro na margem esquerda, de relevo mais suave. O conduto desempenha ainda as funções de canal recolhedor da água que corre dos declives. Decidimos assim construir o vertedouro de maneira mais racional, na margem esquerda.

2)Determinação da forma

A represa é de pequeno tamanho, e assim a forma do vertedouro deve ser a não-ajustável. Como é ainda uma represa do tipo cheio, é necessário considerar o aspecto da segurança ao se construir o vertedouro em morros. Considerando os aspectos que acabamos de citar, o vertedouro com vala é o mais indicado.

3)Traçado hidráulico

(1)Condições do traçado

quantidade de inundação do traçado	Q = 17,7m^3/seg.
coeficiente de aspereza	n = 0,015
profundidade de super-fluxo	H = 0,50m
altura da água	F.W.L = 10,00
altura da inundação da planta	H.W.L = 10,50
altura do diquo do super-fluxo	R.L = 10.00
altura do leito na entrada	R.L = 9,50

(2) secção do super-fluxo

a) deverá ser adotada a seguinte forma na parte da secção do super-fluxo

$$W \geq H/5$$

W : profundidade na entrada 0,50m

H : profundidade do super-fluxo 0,50m

$$0.50 \geq 0.5/5 = 0.1$$

O.K

b) Inclinação da parte superior do dique

$$\frac{W}{H} = \frac{0.5}{0.5} = 1.0$$ logo, no âmbito de $0.4 \leq \frac{W}{H} < 2.50$

neste caso, a inclinação 1: 2/3 é apropriada (segundo o critério do planejamento).

c) Coeficiente da descarga

Segundo o critério do planejamento, C = 2,16.

d) Comprimento do ponto mais alto do diquo de super-fluxo do dique do super-fluxo

$$Q = C.B.H^{3/2}$$

em que Q : quantidade do água inundada 17,7m^3/seg.

B : comprimento do dique de super-fluxo

$$B = \frac{Q}{C.H^{3/2}} = \frac{17.7}{2.16 \times 0.5^{3/2}} = 23.16 \fallingdotseq 23.2\ m$$

e) carga de velocidade dentro do
do canal d'água de aproximação

carga geral a partir do canal 1,00m
aproximação

largura 23,2m descarga $Q = 17,7 m^3/seg.$

se acotamos 10,47 como valor da posição d'água dentro
do canal de aproximação,

a profundidade d'água $d = 10,47 - 9,50 = 0,97m$

área do corte seccional $A = 0,97 \times 23,2 = 22,5 m^2$

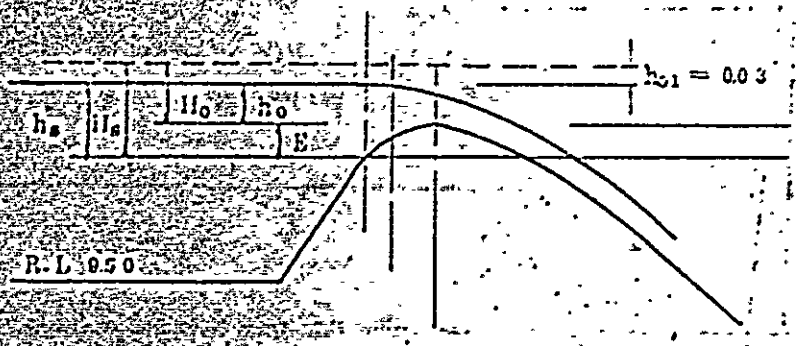
do fluxo

velocidade da corrente $V = \frac{Q}{A} = \frac{17.7}{22.5} = 0.787\ (m/sec)$

carga de velocidade $hv = \frac{V^2}{2g} = 0.03\ (m)$

carga geral $0.97 + 0.03 = 1.00\ m$

f) Força da secção do corte



Admitimos que

$H_s = 0,53$ m

$h_s / H_s = 0.03 / 0.53 = 0.057$

logo, segundo o gráfico

$E / H_s = 0.057$

$E = 0.057 \times 0.53 = 0.030$

$H_o + E = 0.50 + 0.03 = 0.53 = H_s$

g.3-14 COORDENADAS CRUZADAS DA REPRESA

(na superf. defronte 2/3, ha/hs = 0,06) Hs = 0,53

X/Hs	0,00	0,05	0,10	0,15	0,20	0,25
X	0	0,027	0,053	0,08	0,106	0,133
Y/Hs	0,00	0,029	0,046	0,054	0,056	0,052
Y	0	0,015	0,024	0,029	0,030	0,028
Elevação	9,970	9,985	9,994	9,999	10,00	9,998
X/Hs	0,30	0,35	0,40	0,45	0,50	0,60
X	0,159	0,186	0,212	0,239	0,265	0,319
Y/Hs	0,045	0,035	0,023	0,006	-0,009	-0,052
Y	0,024	0,019	0,012	0,004	-0,005	0,028
Elevação	9,994	9,989	9,982	9,974	9,965	9,942
X/Hs	0,70	0,80	0,90	1,00	1,20	1,40
X	0,371	0,424	0,477	0,530	0,636	0,742
Y/Hs	-0,105	-0,165	-0,233	-0,307	-0,482	-0,690
Y	-0,056	-0,087	-0,123	-0,163	-0,255	-0,366
Elevação	9,914	9,883	9,847	9,807	9,715	9,604
X/Hs	1,60	1,80	2,00	2,20	2,40	2,50
X	0,848	0,954	1,060	1,166	1,272	1,325
Y/Hs	-0,935	-1,205	-1,506	-1,833	-2,199	-2,399
Y	-0,056	-0,087	-0,123	-0,163	-0,255	-0,366
Elevação	9,474	9,331	9,172	8,999	8,805	8,699

(3)Canal lateral

a)Ambito do leito do canal lateral

O âmbito do leito do canal lateral é tanto melhor quanto mais estreito. Consideramos aqui o contacto com o canal de divisão, admitindo 2,00m.

b)Cálculo hidráulico

Pelo processo básico,

$$Q_x = q \cdot x$$

$$Y = a \cdot x^n$$

$$Y = \frac{n+1}{n} \cdot hv = \frac{n+1}{n} \cdot \frac{v^2}{2g}$$

em que, Qx : descarga no ponto x (m^3 x seg)
q : descarga no dique, pelo (m^3 x seg)
comprimento unitário
x : distância da extremidade superior
do dique até um ponto arbitrário (m)
u : velocidade da corrente num ponto (m/seg)
arbitrário
a : coeficiente da velocidade da corrente
n : índice da velocidade da corrente
y : distância perpendicular entre o alto do
dique a uma inclinação arbitrária e a su-
perfície da água no canal lateral
hv : cabeça d'água da velocidade

para uma profundidade de super-fluxo H = 0,50, realiza-se um ajuntamento de n, a, em que n = 0,40 ~ 0,80 , a escavação se torna mínima, procurando com calculadora a secção vertical do canal d'água lateral nesse momento.

Como resultado, n = 0,607 , a = 0,3583, e a fórmula da velocidade da corrente será $V = 0,3583 \times X^{0,607}$.

c) Determinação da inclinação do fundo do canal lateral

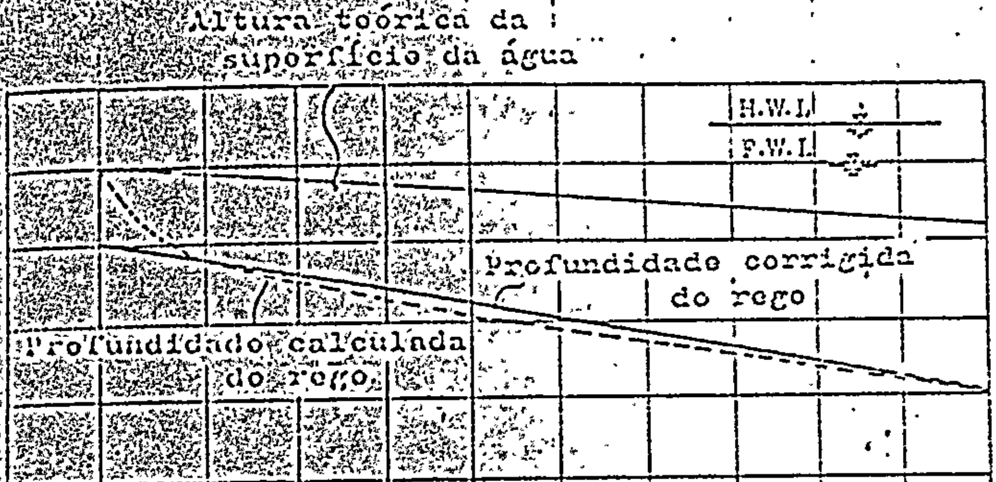
A inclinação do fundo do canal lateral será determinada considerando como fundo do canal corrigido a linha reta que liga um ponto 1/10 a partir do terminal do canal lateral e do terminal superior do canal lateral

inclinação do fundo I = 0,088 = 1/11,36

d) Profundidade limite do terminal do canal lateral:

Q = 17.70 m³/seg b = 2.00 m $\frac{b}{m} = 0.60\ b$

de profundidade limite, a partir da fórmula simplificada



Altura da superfície d'água	10000	9951	9855	9811	9741	9660	9576	9489	9392	9306	9212
Lateral: Valor corrigido	9044	3316	8636	8432	8233	8021	7830	7616	7412	7208	7002
Lateral: Valor de cálculo		3110	8511	8251	8047	7852	7670	7496	7329	7166	7002
Água inundada		0557	0810	1153	1363	1556	1772	1946	2110	2266	2416
Distância	80	232	464	696	928	1160	1392	1624	1856	2088	2370

$b^{2.5} = 2.0^{2.5} = 5.66$

$K = Q/b^{2.5} = 17.70/5.66 = 3.13$

para fazer frente a isto, dc/b, a partir do gráfico,

$dc/b = 0.84$

$dc/b = 0.84$

$dc = 0.84 \times 2.00 = 1.600\ m$

Por outro lado, como a profundidade na extremidade do canal lateral 6 de 2,205m, desce a corrente num fluxo ordinário.

e) Rebaixamento da superfície das águas no ponto de transição

Princípios de hidráulica na extremidade do vertedouro

I_1 =	1/11,36
h_1 =	2,205m
largura do fundo =	2,0m
inclinação lat.	1 : 0,5, 1 : 0,7
área de fluxo em secção cruzada	A_1 = 7,327m^2
descarga	Q = 17,70m^3/seg.
velocidade da corrente	V_1 = 2,416m/seg.

f) Princípios de hidráulica no ponto inicial do canal de diversão

$I_2 = 1/500$

$h_1 = 2.58\ m$

$b = 2.0\ m$

$A_2 = 11.816\ m^2$

$V_2 = 1.498\ m$

comprimento da transição = L = 10,0m

$$\Delta h_{go} = f_{go} \frac{V_1^2 - V_2^2}{2g} + Im \cdot L + \frac{V_2^2 - V_1^2}{2g}$$

em que, Δh_{go} : queda da superfície pela extensão

Im : gradiente hidráulico médio entre os pontos de transição

$$Im = \frac{I_1 + I_2}{2}$$

f_{go} : coeficiente de perda com a extensão forma em linha reta 0,50

$$\Delta h_{go} = 0.50 \frac{2.41^2 - 1.49^2}{2 \times 9.8} + \frac{0.088 + 0.002}{2} \times 10 + \frac{1.49^2 - 2.41^2}{2 \times 9.8}$$

$$= 0.092 + 0.45 - 0.183 = 0.359\ (m)$$

posição d'água no ponto final : 9,212
do vertedouro

altura do leito: 7,007

posição inicial no ponto inicial do canal de diversão 9,212 - 0,359 = 8,853

altura do leito 8,853 - 2,58 = 6,273

Fig. 3-15 : PROCÉ

X	ΔX	EL	① ΔYi	W.L	b	d'	A	
23,20	2,32	7,007		9,212	200	2,205	7,327	1
20,88	2,32	7,208	0,079	9,291	200	2,083	6,769	1
18,56	2,32	7,412	0,087	9,378	200	1,996	6,251	1
16,24	2,32	7,616	0,097	9,475	200	1,859	5,792	12
13,92	2,32	7,820	0,107	9,582	200	1,762	5,387	10
11,60	2,32	8,024	0,112	9,694	200	1,670	5,013	8
9,28	2,32	8,228	0,111	9,805	200	1,577	4,645	7
6,96	2,32	8,432	0,106	9,911	200	1,497	4,270	5
4,64	2,32	8,636	0,097	10,008	200	1,372	3,873	3
2,32	2,32	8,840	0,083	10,091	200	1,251	3,441	1
0	2,32	9,044	0,074	10,165	200	1,121	2,995	0

$Q = 17,70 m^3/sec$ $B = 23,2 (m)$

$q = Q/B = \frac{17,70}{23,2} = 0,763 m^3/sec$

$A = bd - md^2 = 2 \times d - 0,6 \times d^2$

Fig.3-15 PROCURA DA SUPERFICIE D'AGUA NO REGO

EL	① ΔY:	W.L	S		A	Q	V	Q_1+Q_2	② $\frac{Q_1}{q(Q_1+Q_2)}$	③ V_1+V_2	④ ΔV	⑤ $\frac{q.V_1\,\Delta X}{Q_1}$	⑥ ②+③	⑦ ②×③×⑤	①-②	Erro
7,007		9,212	200	2,205	7,327	17,70	2,416									
7,208	0,079	9,291	200	2,083	6,769	15,93	2,353	33,63	0,054	4,769	0,063	0,242	0,305	0,097	0	
7,412	0,087	9,378	200	1,996	6,251	14,16	2,265	30,09	0,054	4,618	0,088	0,261	0,349	0,087	0	
7,616	0,097	9,475	200	1,859	5,792	12,39	2,139	26,55	0,054	4,404	0,126	0,283	0,409	0,097	0	
7,820	0,107	9,582	200	1,762	5,387	10,62	1,791	23,01	0,055	4,110	0,168	0,306	0,474	0,107	0	
8,024	0,112	9,694	200	1,670	5,013	8,85	1,765	19,47	0,056	3,763	0,206	0,329	0,535	0,112	0	
8,228	0,111	9,805	200	1,577	4,645	7,08	1,524	15,593	0,057	3,289	0,241	0,353	0,594	0,111	0	
8,432	0,106	9,911	200	1,497	4,270	5,31	1,243	12,39	0,058	2,765	0,281	0,381	0,662	0,106	0	
8,636	0,097	10,008	200	1,372	3,873	3,54	0,914	8,85	0,061	2,157	0,329	0,414	0,743	0,097	0	
8,840	0,083	10,091	200	1,251	3,441	1,77	0,514	5,31	0,068	1,423	0,400	0,457	0,857	0,083	0	
9,044	0,074	10,165	200	1,121	2,995	0	0	1,77	0,102	0,514	0,514	0,909	1,923	0,074	0	

B = 23,2(m)

= 0,763m^3/sec

^{2} x d 0,6 x d^2

CALCULO HIDRAULICO

***** RIO RIOCIPA *******

INPUT DATA

FLOOD DISCHARGE	MAX DISCHARGE	Q-COEFFICIENT	SIDE SLOPE	ELEVATION	DELTA-X
17.700	17.700	2.160	0.600	10.000	10.00

KIND OF OVERFLOW
0.50

TABLE OF OVERFLOW-H,LENGTH OF WEIR,DELTA-H

H (M)	H**3/2	CH**3/2	B (M)	USING-B (M)	QMAX/2B	MAX-H (M)	DELTA-H (M)
0.5	0.3536	0.7637	23.177	23.2	0.381	0.526	0.026

TABLES OF LOWEST SECTION AT SIDE CHANNEL

WATER DEPTH ..... 1.703(M)

WIDE OF BOTTOM ..... 2.000(M)

WIDE OF WATER SURFACE ... 3.973(M)

AREA OF FLOW ..... 5.027(M2)

CONDITION OF END OF SPILLWAY

N	(N+1)/N	Y2	D/B	D	A	V
0.4	3.50	3.497	1.190	2.380	8.160	2.169
0.5	3.00	2.997	1.141	2.282	7.688	2.302
0.6	2.67	2.664	1.105	2.209	7.346	2.409
0.7	2.43	2.426	1.076	2.153	7.086	2.498
0.8	2.25	2.248	1.054	2.108	6.881	2.572

***** RIO RINCIPA *******

IN CASE OF H= 0.5 (M) B= 23.2 (M)

N= 0.4 (N+1)/N*(Q2/GB5)= 3.4965 D/B= 1.190 D= 2.380 (M) A= 8.160 (M2) V= 2.169 (M/S)

WA	(N+1)/N	XL (M)	VX (M/S)	HY (M)	QX (M3/S)	B (M)	AX (M2)	D (M)	D+HY (M)	EL (M)
0.6167	3.50	2.32	0.864	0.133	1.77	2.00	2.050	0.822	0.955	9.045
		4.64	1.139	0.232	3.54		3.107	1.154	1.386	8.614
		6.96	1.340	0.321	5.31		3.963	1.396	1.717	8.283
		9.28	1.503	0.404	7.08		4.709	1.593	1.997	8.003
		11.60	1.644	0.483	8.85		5.384	1.761	2.244	7.756
		13.92	1.768	0.558	10.62		6.006	1.909	2.468	7.532
		16.24	1.881	0.632	12.39		6.588	2.042	2.674	7.326
		18.56	1.984	0.703	14.16		7.138	2.164	2.867	7.133
		20.88	2.080	0.772	15.93		7.660	2.276	3.048	6.952
		23.20	2.169	0.840	17.70		8.160	2.380	3.220	6.780

N= 0.5 (N+1)/N*(Q2/GB5)= 2.8970 D/B= 1.141 D= 2.282 (M) A= 7.688 (M2) V= 2.302 (M/S)

WA	(N+1)/N	XL (M)	VX (M/S)	HY (M)	QX (M3/S)	B (M)	AX (M2)	D (M)	D+HY (M)	EL (M)
0.4780	3.00	2.32	0.728	0.081	1.77	2.00	2.431	0.947	1.028	8.972
		4.64	1.030	0.162	3.54		3.438	1.250	1.412	8.588
		6.96	1.261	0.243	5.31		4.211	1.463	1.707	8.293
		9.28	1.456	0.325	7.08		4.862	1.632	1.957	8.043
		11.60	1.628	0.406	8.85		5.436	1.774	2.180	7.820
		13.92	1.783	0.487	10.62		5.955	1.897	2.384	7.616
		16.24	1.926	0.568	12.39		6.432	2.007	2.575	7.425
		18.56	2.059	0.649	14.16		6.876	2.107	2.756	7.244
		20.88	2.184	0.730	15.93		7.294	2.198	2.928	7.072
		23.20	2.302	0.811	17.70		7.688	2.282	3.093	6.907

N= 0.6 (N+1)/N*(Q2/GB5)= 2.6640 D/B= 1.105 D= 2.209 (M) A= 7.346 (M2) V= 2.409 (M/S)

WA	(N+1)/N	XL (M)	VX (M/S)	HY (M)	QX (M3/S)	B (M)	AX (M2)	D (M)	D+HY (M)	EL (M)
0.3653	2.67	2.32	0.605	0.050	1.77	2.00	2.925	1.100	1.149	8.851
		4.64	0.917	0.114	3.54		3.859	1.368	1.483	8.517
		6.96	1.170	0.186	5.31		4.539	1.549	1.735	8.265
		9.28	1.390	0.263	7.08		5.092	1.690	1.953	8.047
		11.60	1.590	0.344	8.85		5.568	1.806	2.149	7.851
		13.92	1.773	0.428	10.62		5.989	1.905	2.333	7.667
		16.24	1.945	0.515	12.39		6.370	1.993	2.508	7.492
		18.56	2.107	0.604	14.16		6.719	2.072	2.676	7.324
		20.88	2.262	0.696	15.93		7.043	2.143	2.839	7.161
		23.20	2.409	0.790	17.70		7.346	2.209	2.999	7.001

***** IRIO RIBEIRA *****

IN CASE OF H= 0.5 (M) B= 23.2 (M)

N= 0.7 (N+1)/N*(Q2/GB5)= 2.4262 D/B= 1.076 D= 2.153 (M) A= 7.086 (M2) V= 2.498 (M/S)

WA	(N+1)/N
0.2765	2.43

XL (M)	VX (M/S)	HY (M)	QX (M3/S)	B (M)	AX (M2)	D (M)	D+HY (M)	EL (M)
2.32	0.498	0.031	1.77	2.00	3.552	1.282	1.313	8.687
4.64	0.810	0.081	3.54		4.372	1.506	1.587	8.413
6.96	1.075	0.143	5.31		4.938	1.651	1.794	8.206
9.28	1.315	0.214	7.08		5.383	1.761	1.975	8.025
11.60	1.538	0.293	8.85		5.756	1.851	2.143	7.857
13.92	1.747	0.378	10.62		6.079	1.926	2.305	7.695
16.24	1.946	0.469	12.39		6.367	1.993	2.462	7.538
18.56	2.137	0.566	14.16		6.627	2.051	2.617	7.383
20.88	2.320	0.667	15.93		6.866	2.104	2.771	7.229
23.20	2.498	0.773	17.70		7.086	2.153	2.926	7.074

N= 0.8 (N+1)/N*(Q2/GB5)= 2.2478 D/B= 1.054 D= 2.108 (M) A= 6.981 (M2) V= 2.572 (M/S)

WA	(N+1)/N
0.2070	2.25

XL (M)	VX (M/S)	HY (M)	QX (M3/S)	B (M)	AX (M2)	D (M)	D+HY (M)	EL (M)
2.32	0.408	0.019	1.77	2.00	4.342	1.498	1.517	8.483
4.64	0.710	0.058	3.54		4.987	1.663	1.721	8.279
6.96	0.982	0.111	5.31		5.408	1.767	1.878	8.122
9.28	1.236	0.175	7.08		5.729	1.844	2.019	7.981
11.60	1.477	0.251	8.85		5.990	1.906	2.156	7.844
13.92	1.709	0.335	10.62		6.213	1.957	2.293	7.707
16.24	1.934	0.429	12.39		6.407	2.002	2.431	7.569
18.56	2.152	0.532	14.16		6.581	2.041	2.572	7.428
20.88	2.364	0.642	15.93		6.737	2.076	2.718	7.282
23.20	2.572	0.760	17.70		6.881	2.108	2.867	7.133

TABLE OF N, SA, RATIO

N	SA(M2)	RATIO
0.4	48.640	1.031
0.5	47.497	1.007
0.6	47.155	1.000
0.7	47.400	1.005
0.8	48.114	1.020

***** RIO RIBEIRA *******

IN CASE OF H= 0.5 (M) B= 23.2 (M)

N=0.607 (N+1)/N*(02/GRS)= 2.6448 D/B= 1.102 D= 2.205 (M) A= 7.326 (M2) V= 2.416 (M/S)

WA	(N+1)/N	XL (M)	VX (M/S)	HY (M)	QX (M3/S)	B (M)	AX (M2)	D (M)	D+HY (M)	EL (M)
0.3583	2.65	2.32	0.597	0.048	1.77	2.00	2.964	1.111	1.160	8.840
		4.64	0.910	0.112	3.54		3.892	1.377	1.489	8.511
		6.96	1.163	0.183	5.31		4.564	1.556	1.739	8.261
		9.28	1.385	0.259	7.08		5.111	1.694	1.953	8.047
		11.60	1.586	0.340	8.85		5.579	1.808	2.148	7.852
		13.92	1.772	0.424	10.62		5.993	1.906	2.330	7.670
		16.24	1.946	0.511	12.39		6.368	1.993	2.504	7.496
		18.56	2.110	0.601	14.16		6.711	2.070	2.671	7.329
		20.88	2.266	0.694	15.93		7.029	2.140	2.834	7.166
		23.20	2.416	0.788	17.70		7.326	2.205	2.993	7.007

VERTICAL AREA IN SIDE CHANNEL SPILLWAY ..... 47.155(M2)

VELOCITY FORMULA ..... V= 0.3583XL**0.607