

No. 2

AGENCIA DE COOPERACION INTERNACIONAL DEL JAPON (JICA)

SECRETARIA DE RECURSOS NATURALES

REPUBLICA DE HONDURAS

**ESTUDIO DE FACTIBILIDAD  
DEL PROYECTO DE DESARROLLO AGRICOLA BAJO RIEGO  
DEL VALLE DE JESUS DE OTORO, DEPARTAMENTO DE INTIBUCA**

**VOLUMEN IV**

**PLANOS**

**MARZO DE 1994**

**KOKUSAI KOGYO CO., LTD.  
NAIGAI ENGINEERING CO., LTD.**

**A F A**

**J R**

**94-27**



AGENCIA DE COOPERACION INTERNACIONAL DEL JAPON (JICA)

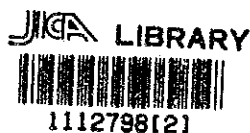
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NAIGAI ENGINEERING CO., LTD.

国際協力事業団

26238



# Drawing list

## Irrigation Development Plan

Drawing  
No.

- I - 1      General Layout of Irrigation Development Plan
- Rio Grande de Otoro :Left Bank
- I - 2      Plan (1)
- I - 3      Plan (2)
- I - 4      Plan (3)
- I - 5      Diversion Wear (1)
- I - 6      Diversion Wear (2)
- I - 7      Irrigation Main Canal Profile (1)
- I - 8      Irrigation Main Canal Profile (2)
- I - 9      Irrigation Main Canal Profile (3)
- I - 10     Irrigation Main Canal Profile (4)
- I - 11     Irrigation Main Canal Profile (5)
- I - 12     Irrigation Main Canal Profile (6)
- Rio Grande de Otoro :Right Bank
- I - 13     Plan
- I - 14     Diversion Wear
- I - 15     Irrigation Main Canal Profile (1)
- I - 16     Irrigation Main Canal Profile (2)
- Rio Yucanguare
- I - 17     Plan :Right Bank
- I - 18     Plan :Left Bank
- I - 19     Diversion Wear :Right Bank
- I - 20     Diversion Wear :Left Bank
- I - 21     Irrigation Main Canal Profile :Right Bank (1)
- I - 22     Irrigation Main Canal Profile :Right Bank (2)
- I - 23     Irrigation Main Canal Profile :Left Bank (3)
- Rio Naranjo
- I - 24     Plan
- I - 25     Diversion Wear :Right & Left Bank
- I - 26     Irrigation Main Canal Profile :Right Bank (1)
- I - 27     Irrigation Main Canal Profile :Left Bank (2)
- Rio Mixcure
- I - 28     Plan
- I - 29     Diversion Wear :Right & Left Bank
- I - 30     Irrigation Main Canal Profile :Right Bank (1)
- I - 31     Irrigation Main Canal Profile :Right Bank (2)
- I - 32     Irrigation Main Canal Profile :Left Bank (3)
- Rio Cumes
- I - 33     Plan
- I - 34     Diversion Wear :Right & Left Bank
- I - 35     Irrigation Main Canal Profile :Right Bank (1)
- I - 36     Irrigation Main Canal Profile :Left Bank (2)

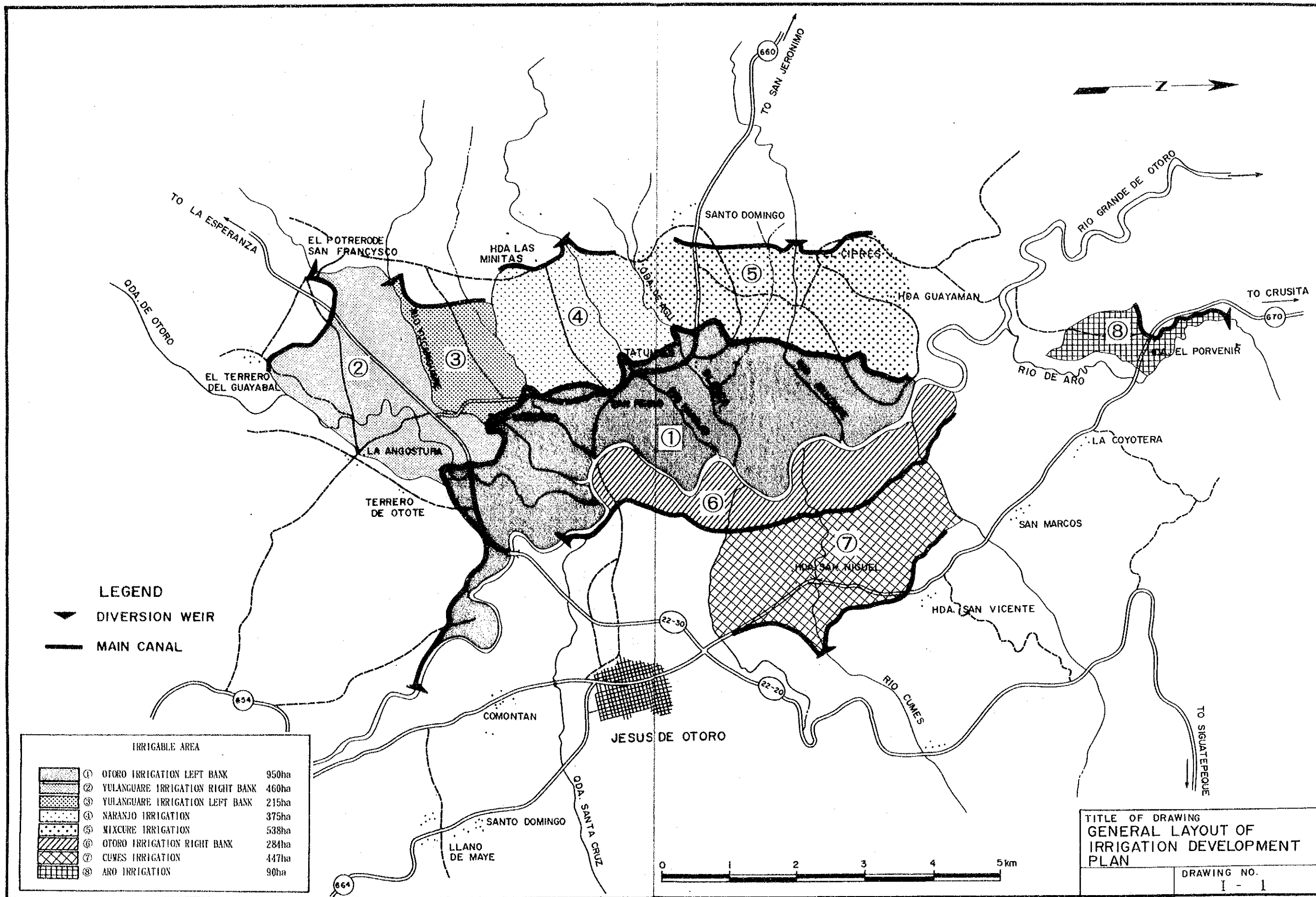
Drawing  
No.

Rio Aro	
I - 37	Plan
I - 38	Diversion Wear :Right Bank
I - 39	Irrigation Main Canal Profile (1)
I - 40	Irrigation Main Canal Profile (2)
I - 41	Typical Cross Section of Main Canal
I - 42	Typical Cross Section of Secondary & Drainage Canal
I - 43	Syphon
I - 44	Drop & Cross Drain
I - 45	Check & Culvert
I - 46	Transition, Turnout & Foot Path
I - 47	Farm Bridge

Rural Development

Drawing  
No.









R - 1	General Plan
R - 2	Agriculture Development Center :Plan & Others (1)
R - 3	Agriculture Development Center :Main Office (2)
R - 4	Agriculture Development Center :Public Facility (3)
R - 5	Rural Road Improvement :Typical Cross Section
R - 6	Rural Road Improvement :Route-A Profile (1)
R - 7	Rural Road Improvement :Route-A Profile (2)
R - 8	Rural Road Improvement :Route-B Profile
R - 9	Rural Road Improvement :Route-C Profile (1)
R - 10	Rural Road Improvement :Route-C Profile (2)
R - 11	Rural Road Improvement :No.1 Bridge
R - 12	Rural Road Improvement :No.2 Bridge
R - 13	Rural Road Improvement :No.3 Bridge



**LEGEND**

-  DIVERSION WEIR
-  MAIN CANAL

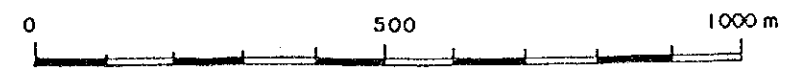
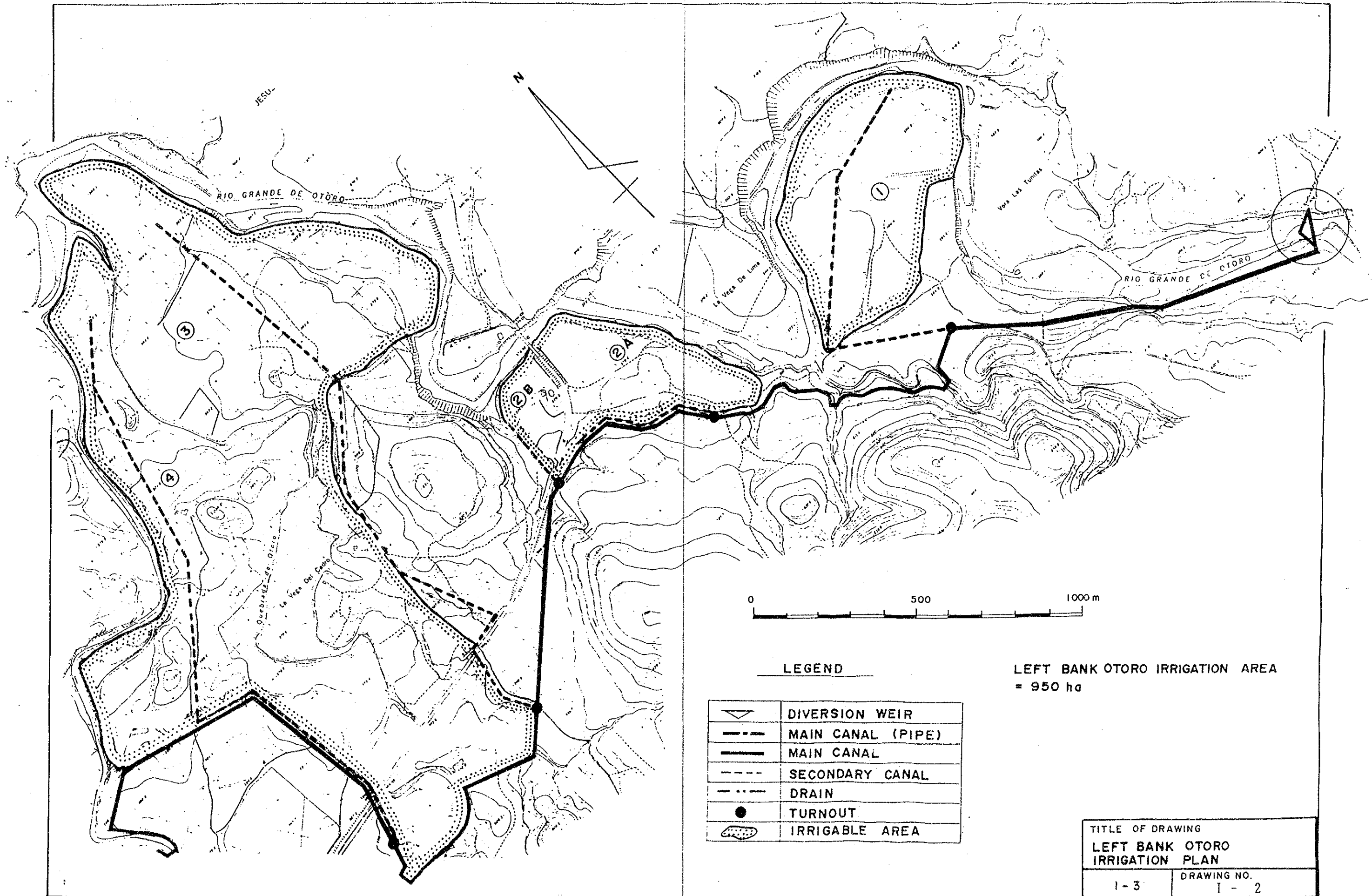
**IRRIGABLE AREA**

	① OTORO IRRIGATION LEFT BANK	950ha
	② YULANGUARE IRRIGATION RIGHT BANK	460ha
	③ YULANGUARE IRRIGATION LEFT BANK	215ha
	④ NARANJO IRRIGATION	375ha
	⑤ MIXCURE IRRIGATION	538ha
	⑥ OTORO IRRIGATION RIGHT BANK	284ha
	⑦ CUMES IRRIGATION	447ha
	⑧ ARO IRRIGATION	90ha

TITLE OF DRAWING  
**GENERAL LAYOUT OF  
 IRRIGATION DEVELOPMENT  
 PLAN**

DRAWING NO.  
 I - 1



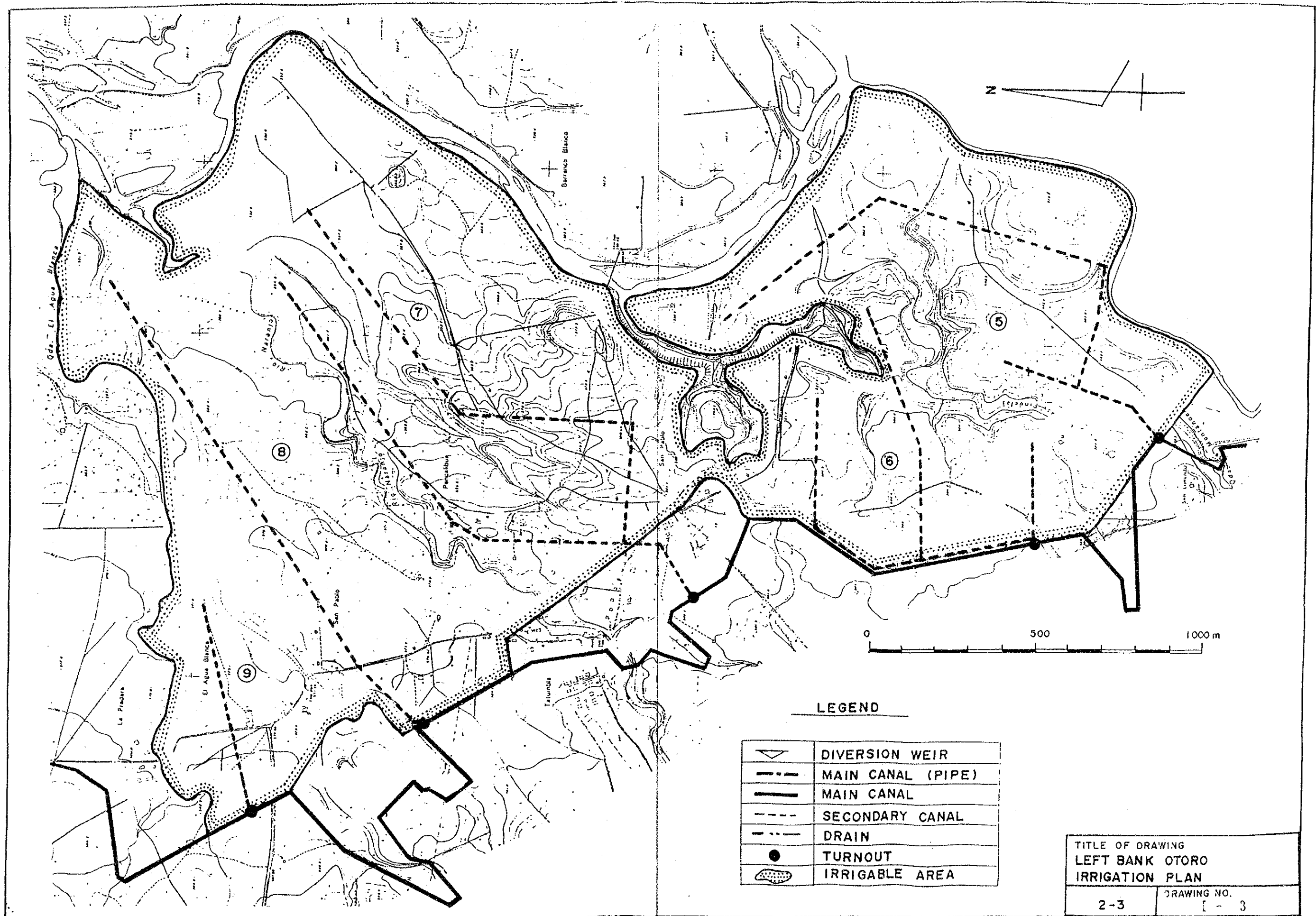


**LEGEND**

	DIVERSION WEIR
	MAIN CANAL (PIPE)
	MAIN CANAL
	SECONDARY CANAL
	DRAIN
	TURNOUT
	IRRIGABLE AREA

LEFT BANK OTORO IRRIGATION AREA  
= 950 ha

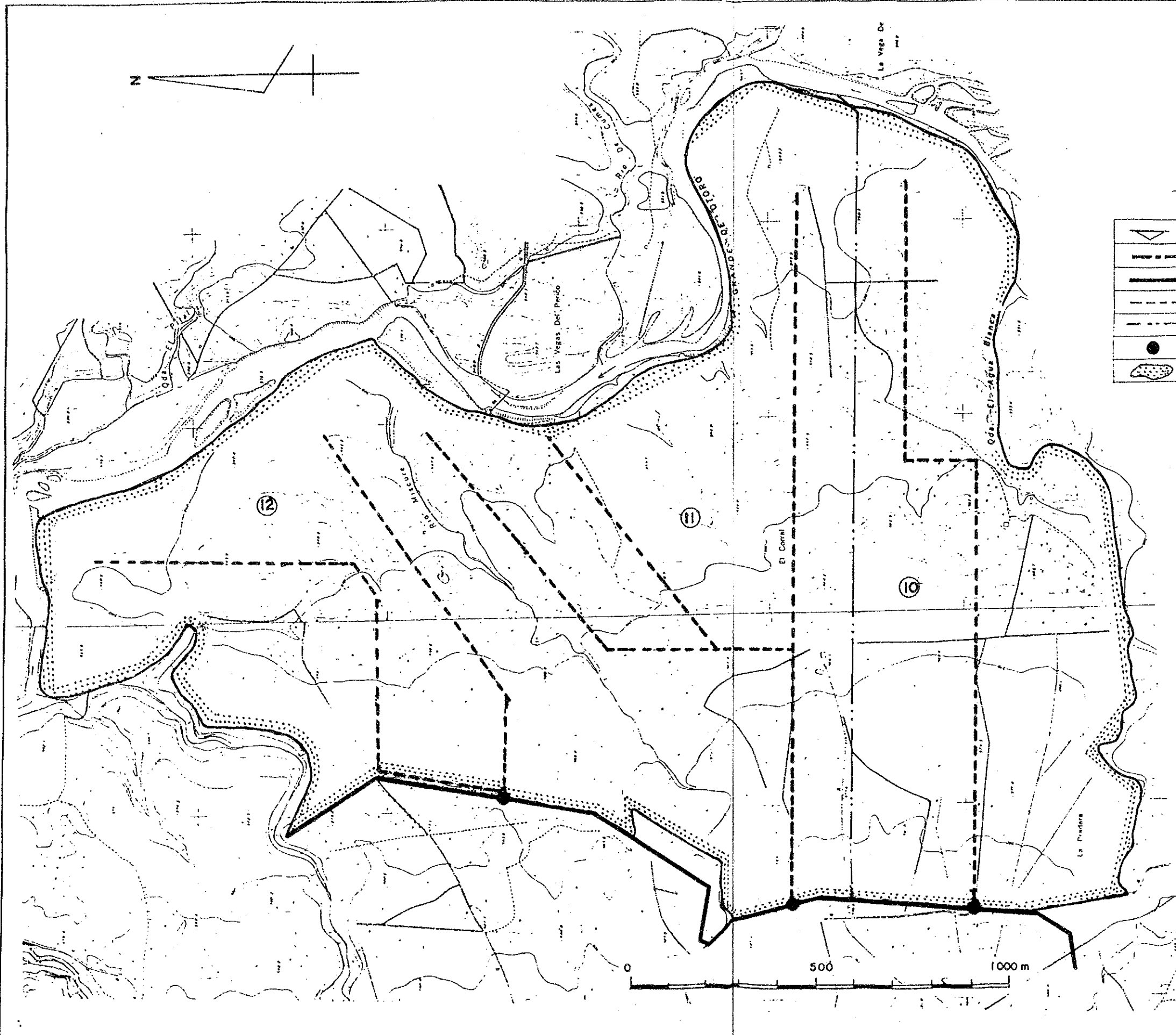
TITLE OF DRAWING	
LEFT BANK OTORO IRRIGATION PLAN	
1-3	DRAWING NO. 1-2



**LEGEND**

	DIVERSION WEIR
	MAIN CANAL (PIPE)
	MAIN CANAL
	SECONDARY CANAL
	DRAIN
	TURNOUT
	IRRIGABLE AREA

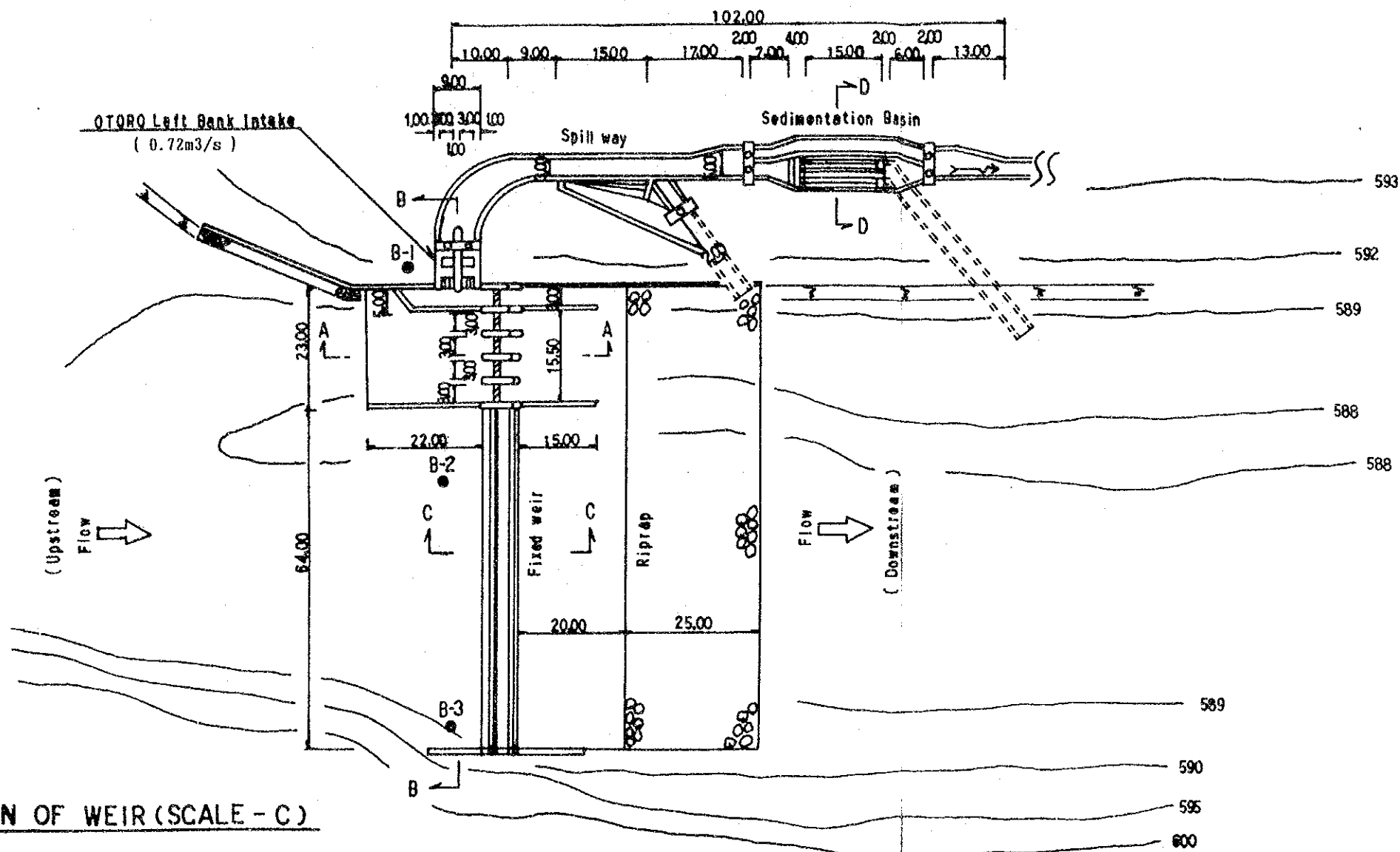
TITLE OF DRAWING LEFT BANK OTORO IRRIGATION PLAN	
2-3	DRAWING NO. 1-3



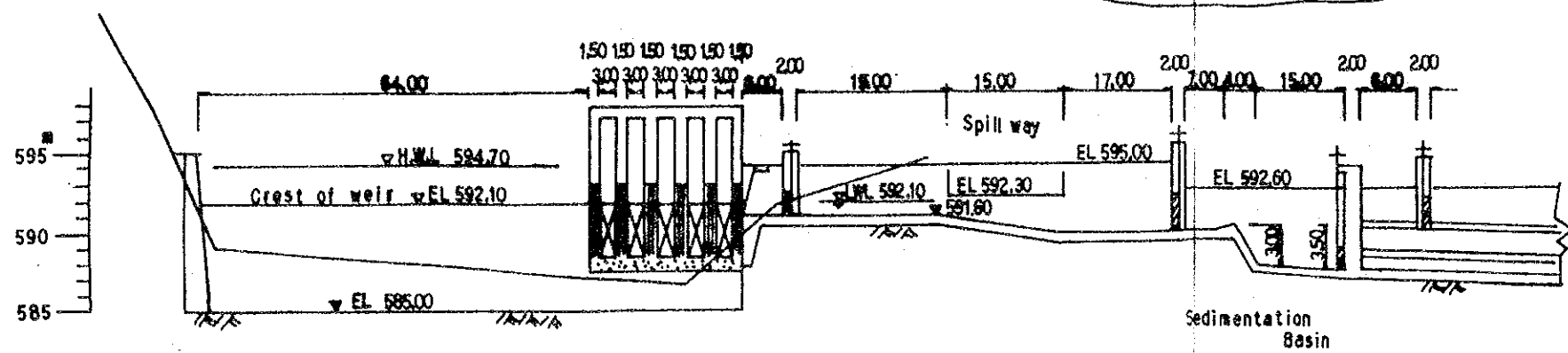
**LEGEND**

	DIVERSION WEIR
	MAIN CANAL (PIPE)
	MAIN CANAL
	SECONDARY CANAL
	DRAIN
	TURNOUT
	IRRIGABLE AREA

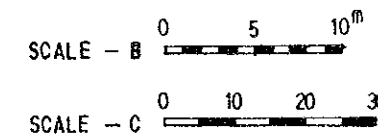
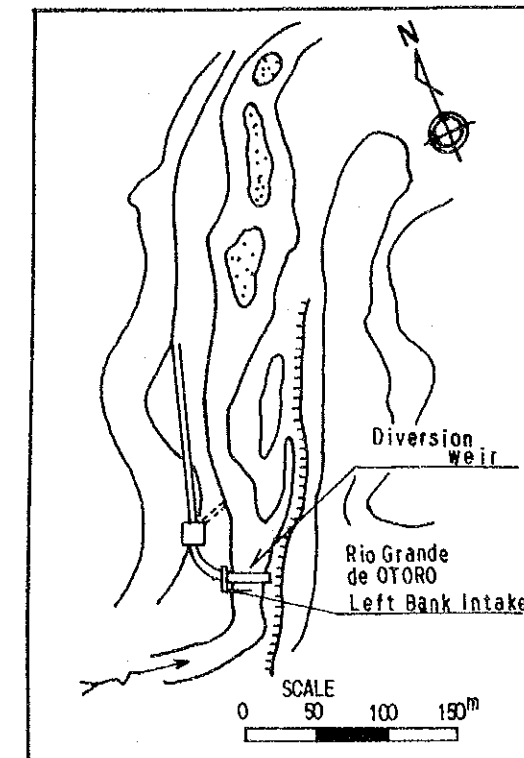
TITLE OF DRAWING <b>LEFT BANK OTORO IRRIGATION PLAN</b>	
3-3	DRAWING NO. I - 4



PLAN OF WEIR (SCALE - C)

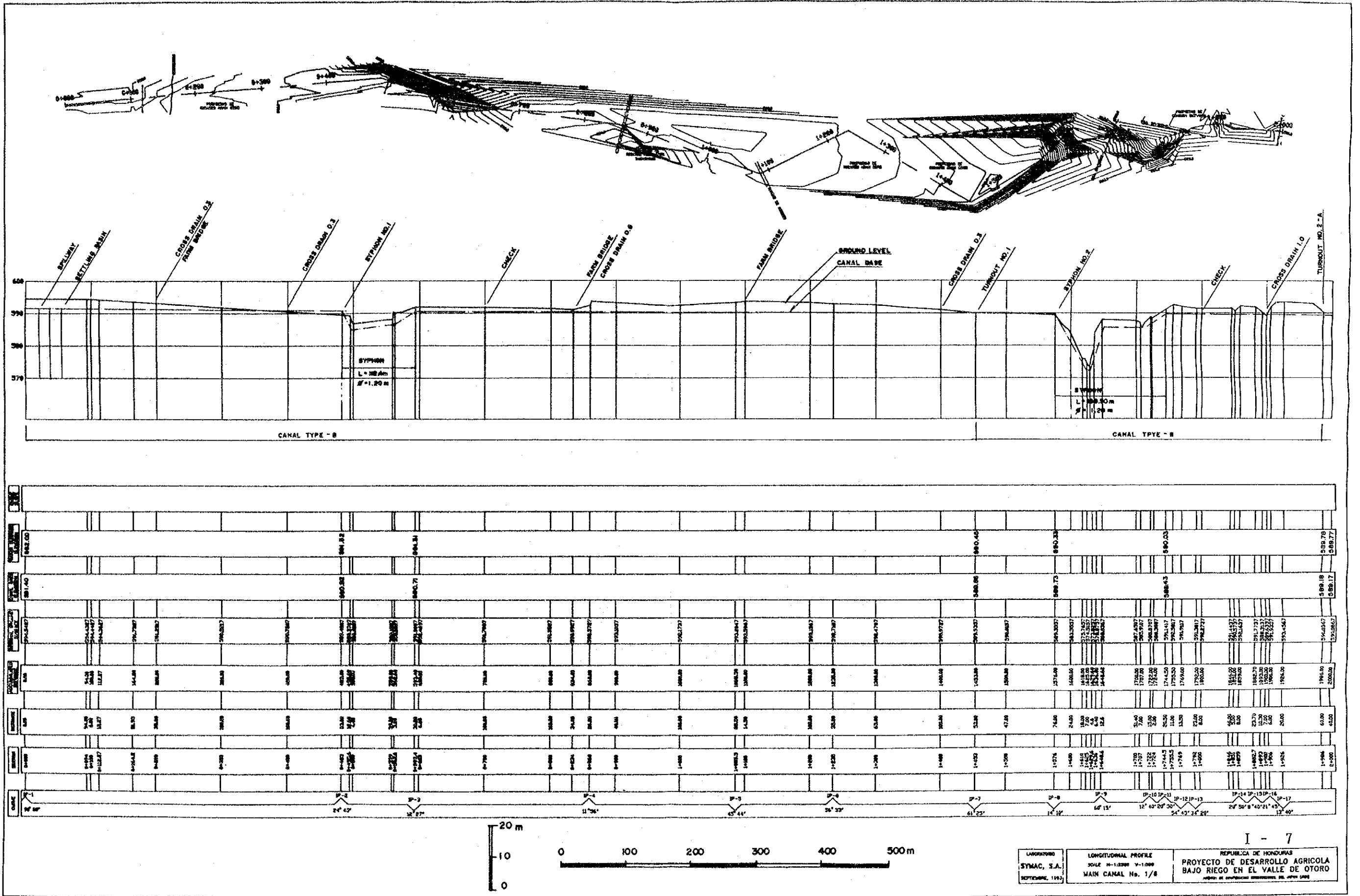


PROFILE (VERTICAL SCALE - B)



TITLE OF DRAWING	
RIO GRANDE DE OTORO IRRIGATION	
DIVERSION WEIR LEFT BANK	
1/2	DRAWING No. I - 5



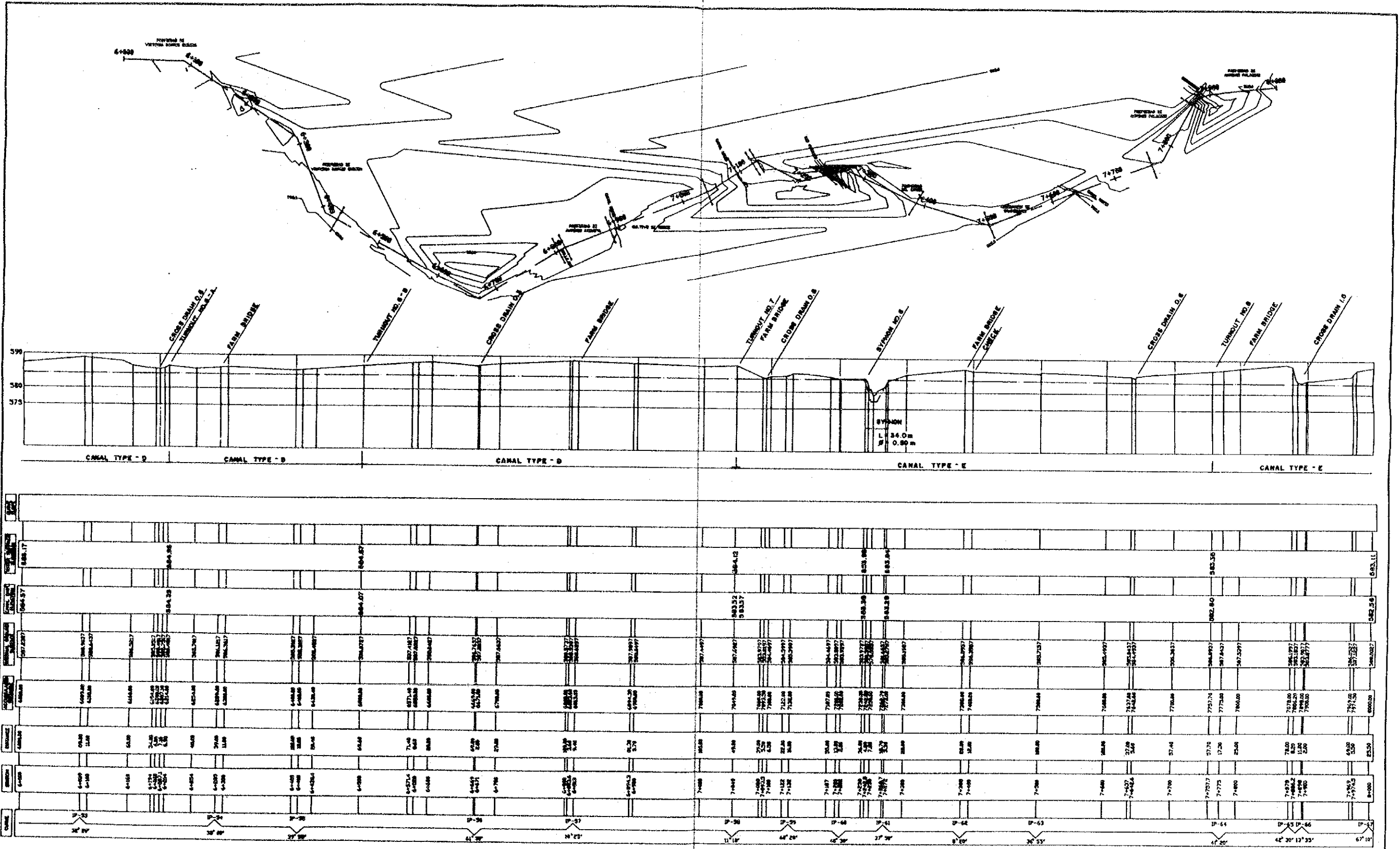




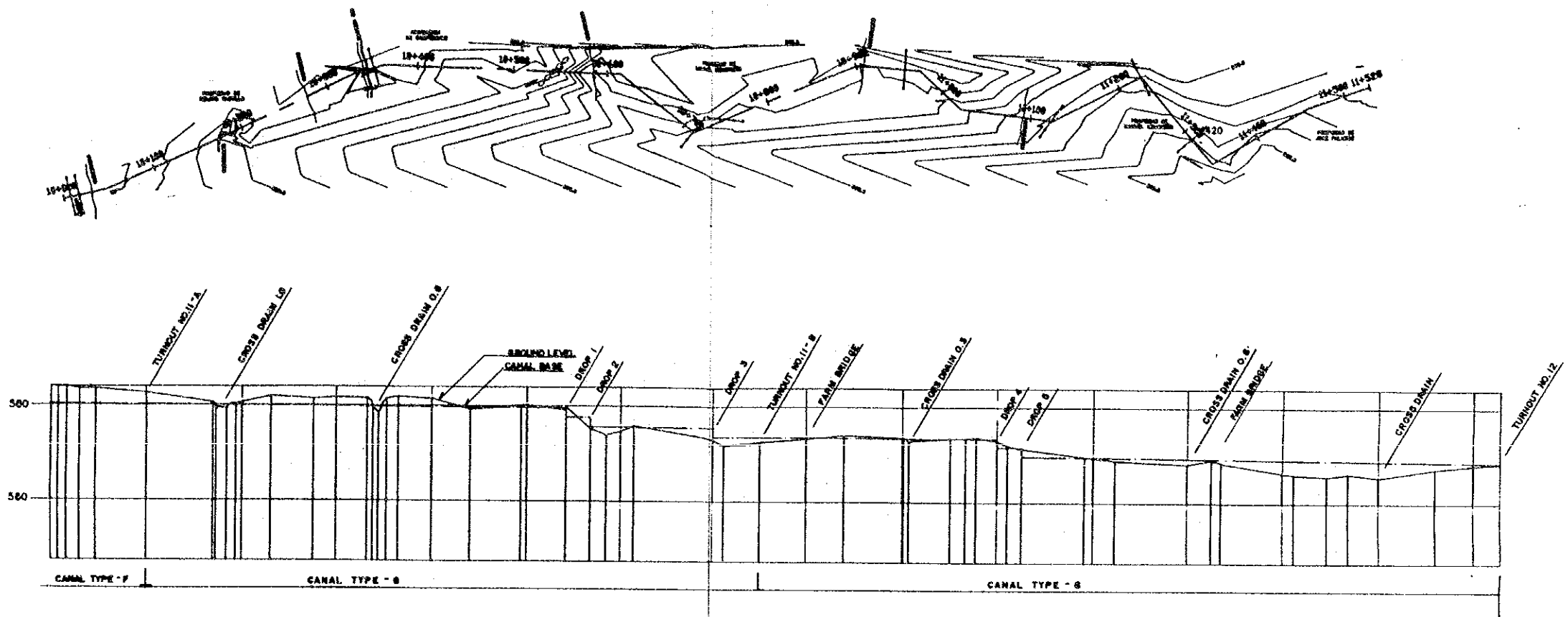




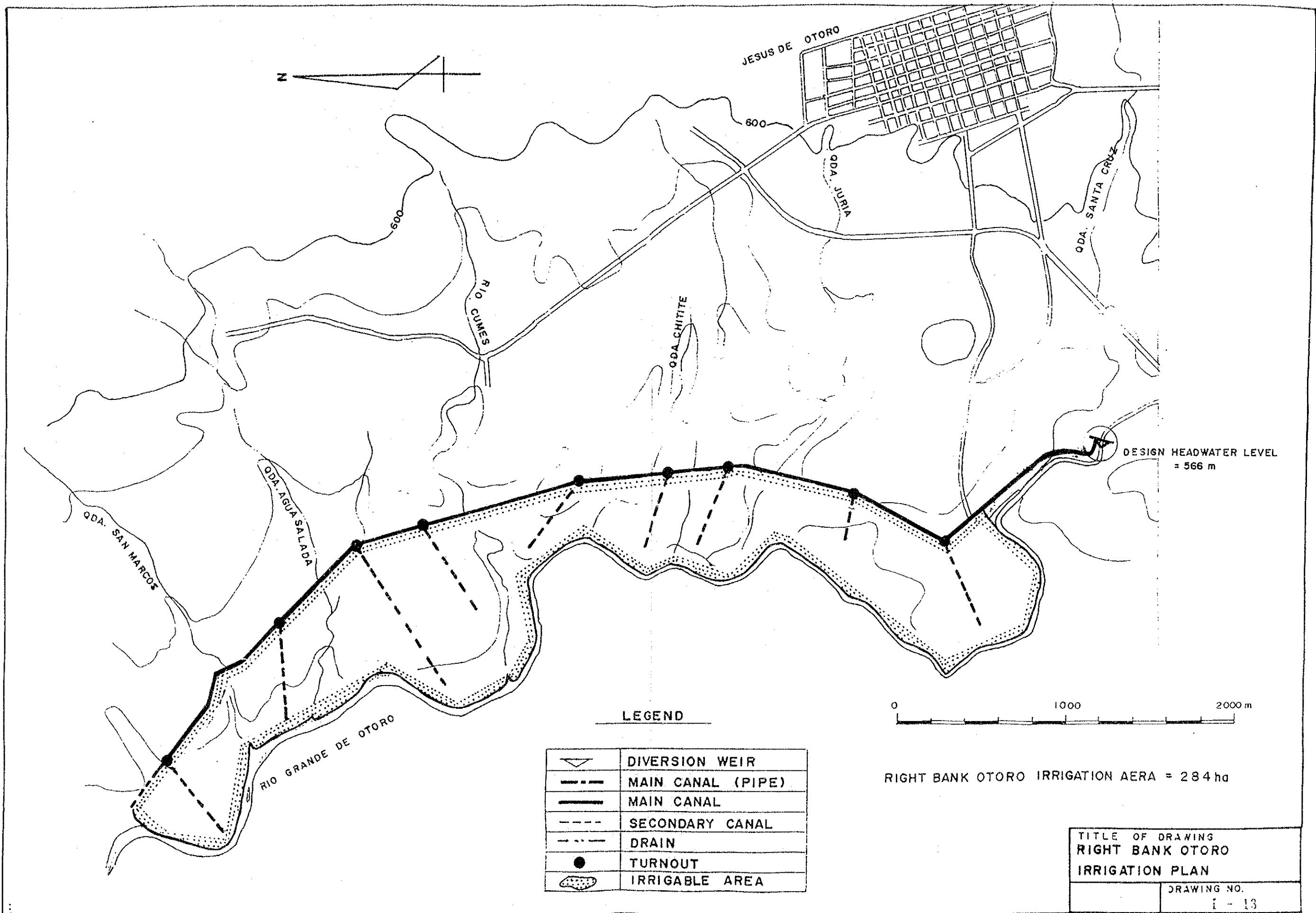








CURVE SLOPE																					
WATER SURFACE ELEVATION	560.71	560.81																			560.10
CANAL BASE ELEVATION	560.29	560.10																			560.03
ORIGINAL GROUND SURFACE	561.17	561.17	561.17	561.17	561.17	561.17	561.17	561.17	561.17	561.17	561.17	561.17	561.17	561.17	561.17	561.17	561.17	561.17	561.17	561.17	561.17
ACCUMULATED DISTANCE	0.00	7.28	14.56	21.84	29.12	36.40	43.68	50.96	58.24	65.52	72.80	80.08	87.36	94.64	101.92	109.20	116.48	123.76	131.04	138.32	145.60
DISTANCE	7.28	7.28	7.28	7.28	7.28	7.28	7.28	7.28	7.28	7.28	7.28	7.28	7.28	7.28	7.28	7.28	7.28	7.28	7.28	7.28	7.28
STATION	11+00	11+07.28	11+14.56	11+21.84	11+29.12	11+36.40	11+43.68	11+50.96	11+58.24	11+65.52	11+72.80	11+80.08	11+87.36	11+94.64	11+101.92	11+109.20	11+116.48	11+123.76	11+131.04	11+138.32	11+145.60
CURVE		IP-06	IP-06	IP-06	IP-06	IP-06	IP-06	IP-06	IP-06	IP-06	IP-06	IP-06	IP-06	IP-06	IP-06	IP-06	IP-06	IP-06	IP-06	IP-06	IP-06



JESUS DE OTORO

600

600

RIO CUMES

QDA CHITITE

QDA JURIA

QDA SANTA CRUZ

QDA AGUA SALADA

QDA SAN MARCOS

DESIGN HEADWATER LEVEL = 566 m

RIO GRANDE DE OTORO

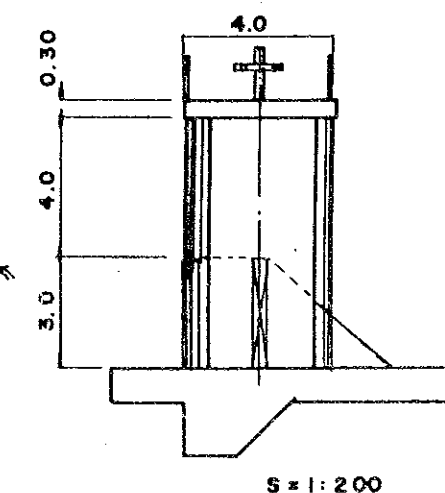
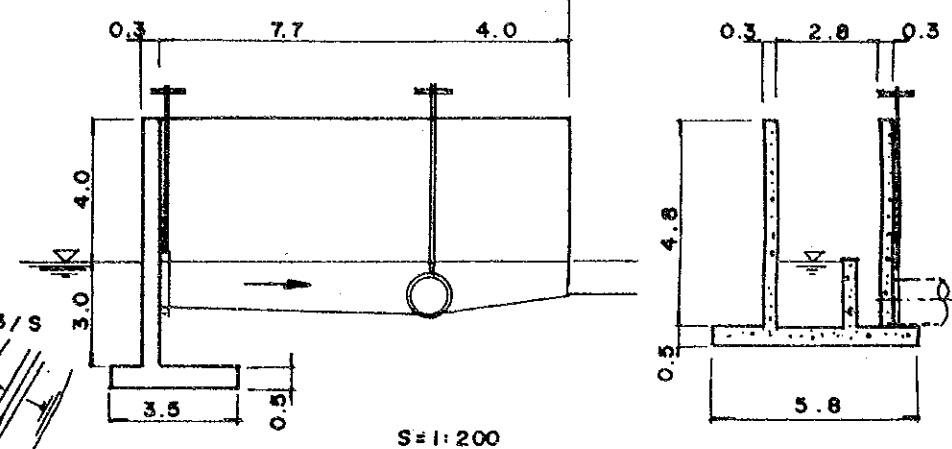
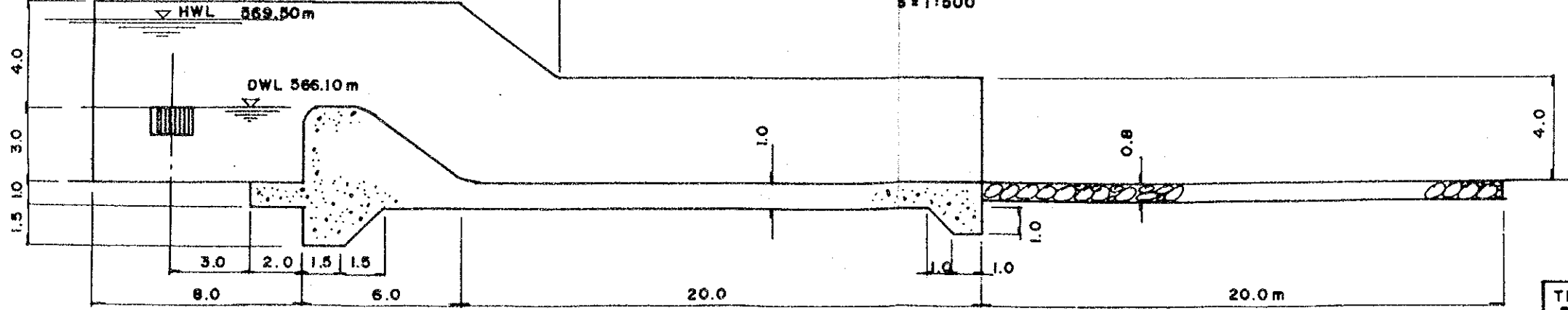
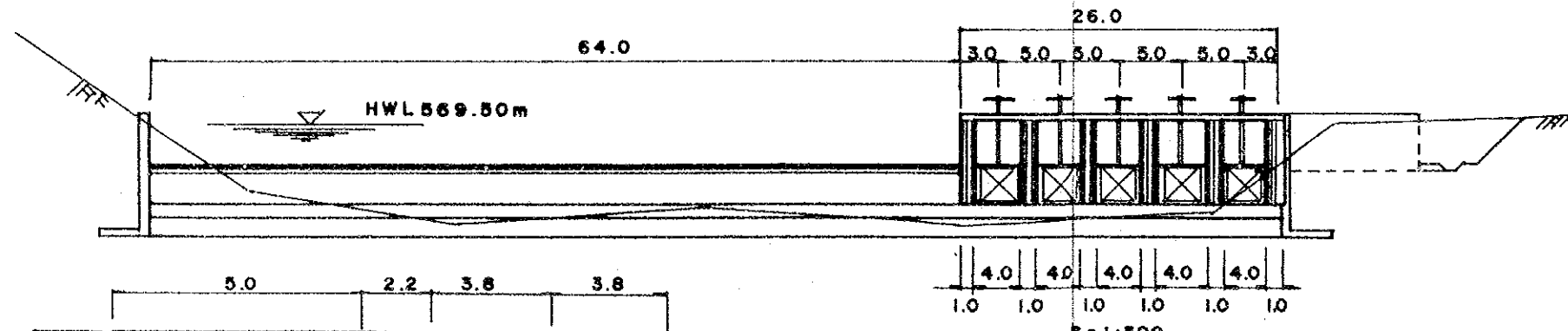
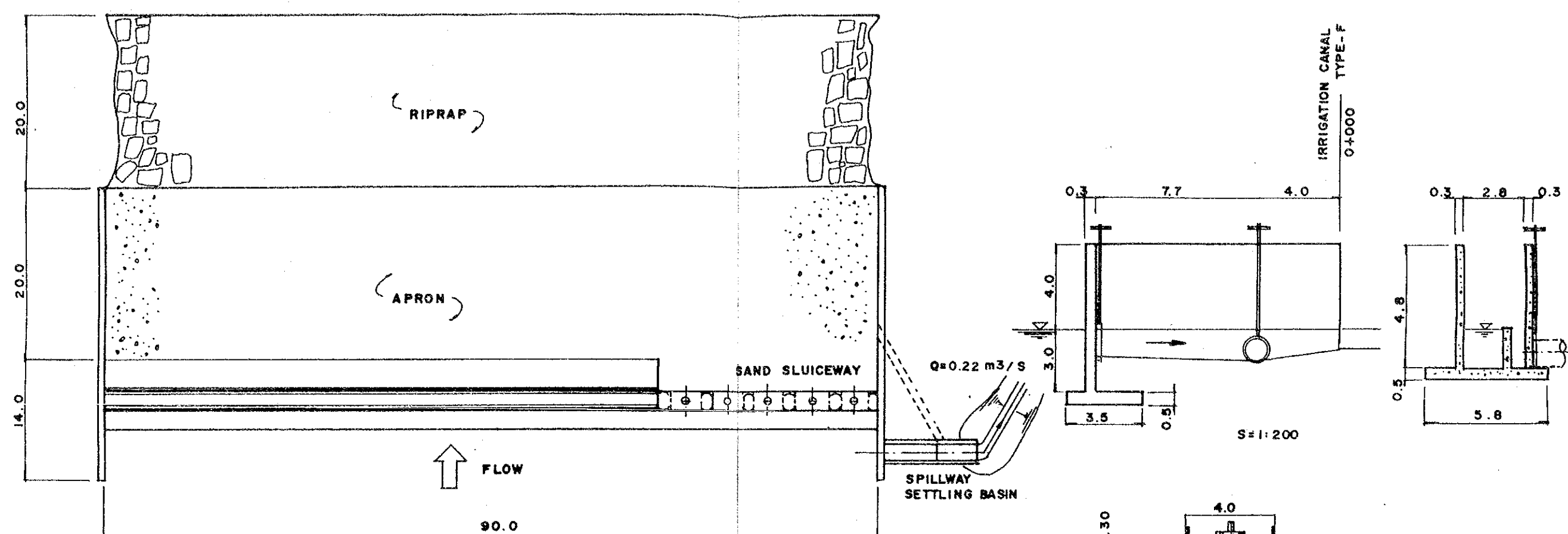
LEGEND

	DIVERSION WEIR
	MAIN CANAL (PIPE)
	MAIN CANAL
	SECONDARY CANAL
	DRAIN
	TURNOUT
	IRRIGABLE AREA

0 1000 2000 m

RIGHT BANK OTORO IRRIGATION AERA = 284 ha

TITLE OF DRAWING RIGHT BANK OTORO IRRIGATION PLAN	
DRAWING NO.	I - 13



TITLE OF DRAWING  
**RIGHT BANK OTORO IRRIGATION  
 DIVERSION WEIR**

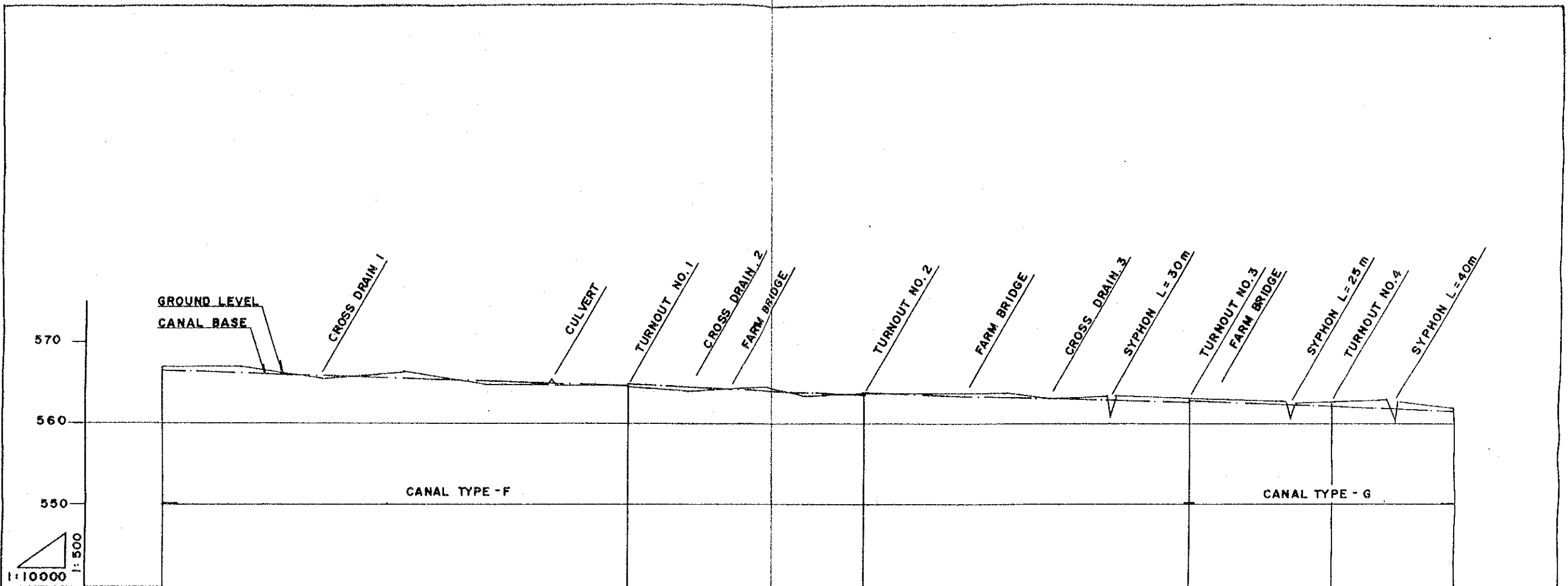
DRAWING NO.  
 I - 14

S = 1:200

S = 1:500

S = 1:200

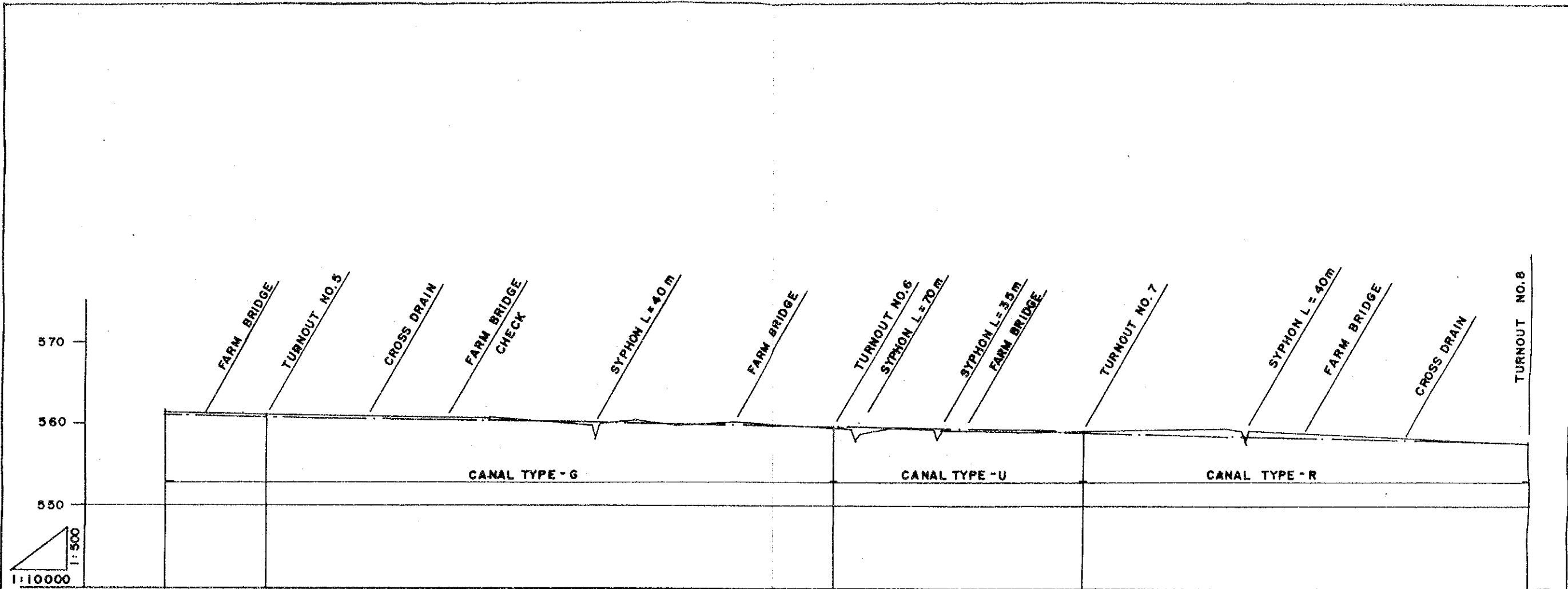
S = 1:200



WATER ELEVATION	566.00																																								
CANAL BASE ELEVATION	565.55																																								
GROUND LEVEL	567.04	567.10	567.32	566.13	565.58	566.12	566.40	565.11	564.78	564.34	563.95	564.07	564.52	564.34	563.50	563.70	563.46	563.81	563.77	563.85	563.76	563.04	563.22	561.84	563.87	563.29	563.15	563.00	562.95	560.24	562.84	563.03	560.11	563.10	561.66	562.00					
ACCUMULAT DISTANCE	0	100	200	300	400	500	600	700	800	900	950	1000	1100	1150	1200	1300	1400	1500	1600	1700	1750	1800	1900	2000	2100	2200	2300	2350	2400	2500	2550	2600	2700	2800	2900	3000	3050	3100	3200		
DISTANCE	0	100	100	100	100	100	100	100	100	100	50	50	100	50	50	100	100	100	100	100	50	50	100	100	100	100	100	50	50	100	50	50	100	100	100	100	100	50	50	100	
STATION	0+00		0+200		0+400		0+600		0+800		1+000		1+100		1+200		1+400		1+600		1+800		2+000		2+200		2+400		2+600		2+800		3+000		3+200						
CURVE																																									

TITLE OF DRAWING  
**RIGHT BANK OTORO IRRIGATION**  
 Main Canal Profile

DRAWING NO.  
 1/2 I - 15

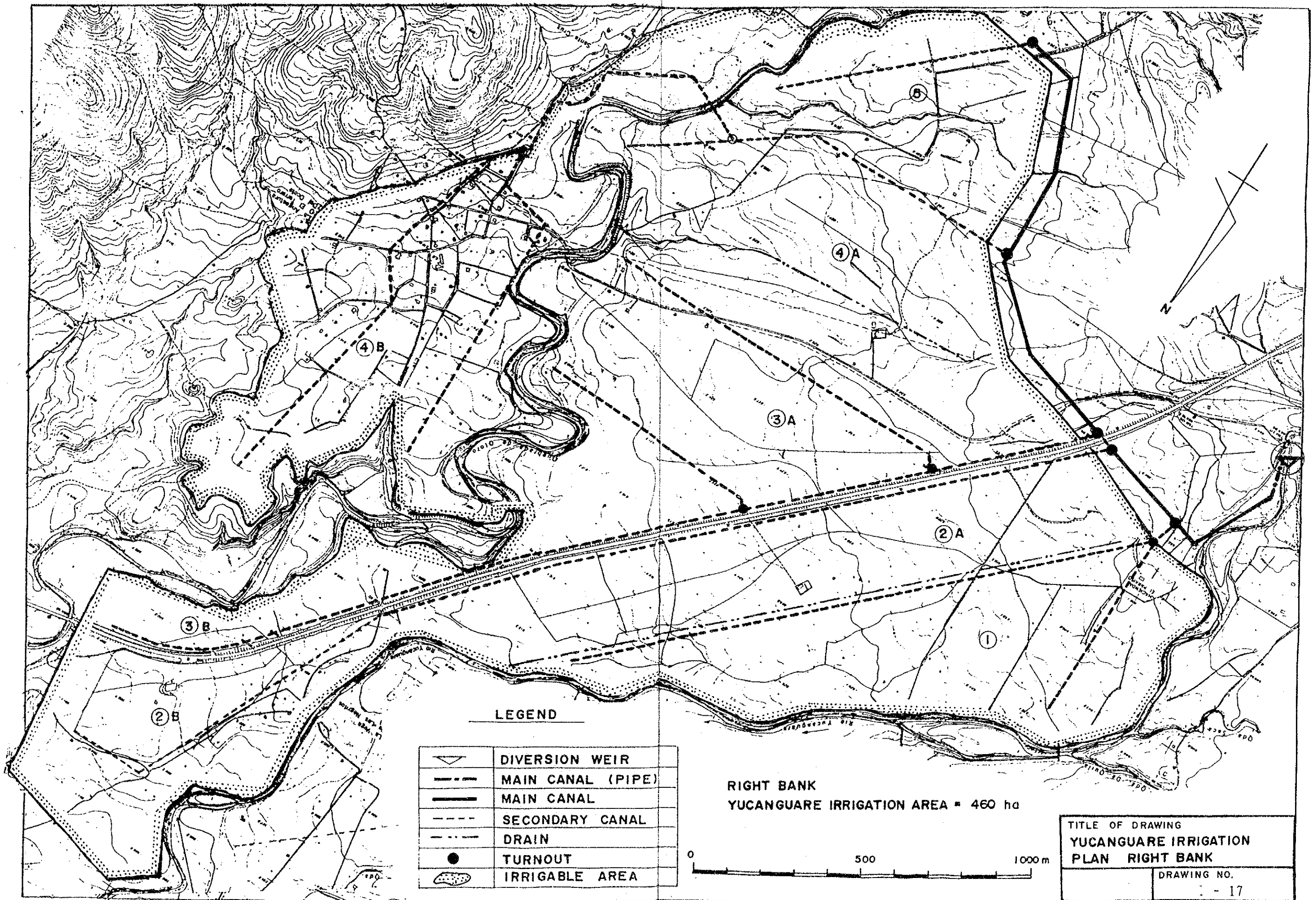


WATER ELEVATION	562.00		561.69		559.94		559.18		557.81																																	
CANAL BASE ELEVATION	561.65		561.34		559.59	559.69	558.94	558.98		557.61																																
GROUND LEVEL	561.66	561.32	561.15	561.10	561.00	560.75	560.55	560.45	560.33	560.21	560.11	560.03	558.12	560.02	560.12	560.34	560.23	560.18	559.93	559.53	559.40	557.23	559.21	557.65	559.33	559.50	559.43	559.07	559.39	559.42	559.21	559.57	556.87	559.02	558.95	558.82	558.42	558.02	558.12	557.96	557.69	
ACCUMULAT DISTANCE	3200	3300	3400	3450	3500	3600	3700	3800	3900	4000	4100	4200	4250	4300	4400	4450	4500	4600	4700	4800	4850	4900	5000	5100	5200	5300	5400	5450	5500	5600	5700	5800	5850	5900	6000	6100	6200	6300	6400	6500	6550	
DISTANCE	100	100	100	50	50	100	100	100	100	100	100	100	50	50	100	50	50	100	100	100	50	50	100	100	100	100	100	50	50	100	100	100	50	50	100	100	100	100	100	100	50	
STATION	3+200		3+400			3+600		3+800		4+000		4+200			4+400			4+600		4+800			5+000		5+200			5+400			5+600		5+800			6+000		6+200		6+400		
CURVE																																										

TITLE OF DRAWING  
**RIGHT BANK OTORO IRRIGATION**  
 Main Canal Profile

DRAWING NO.  
 I - 16

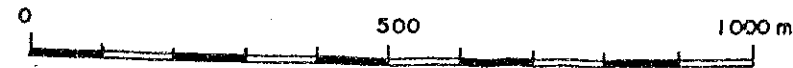
2/2



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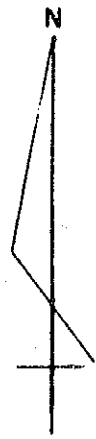
	DIVERSION WEIR
	MAIN CANAL (PIPE)
	MAIN CANAL
	SECONDARY CANAL
	DRAIN
	TURNOUT
	IRRIGABLE AREA

RIGHT BANK  
YUCANGUARE IRRIGATION AREA = 460 ha



TITLE OF DRAWING YUCANGUARE IRRIGATION PLAN RIGHT BANK	
DRAWING NO.	- 17

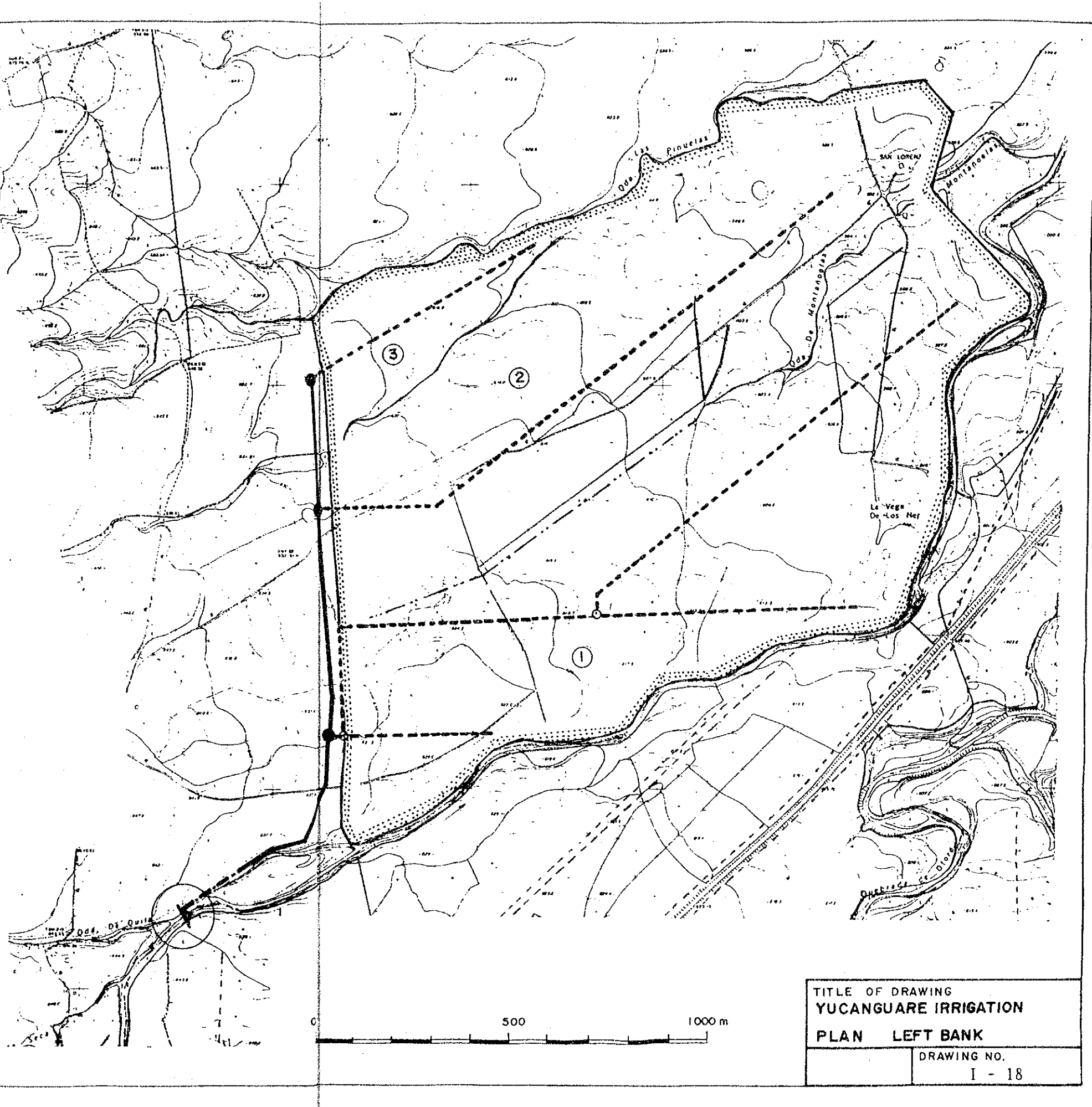




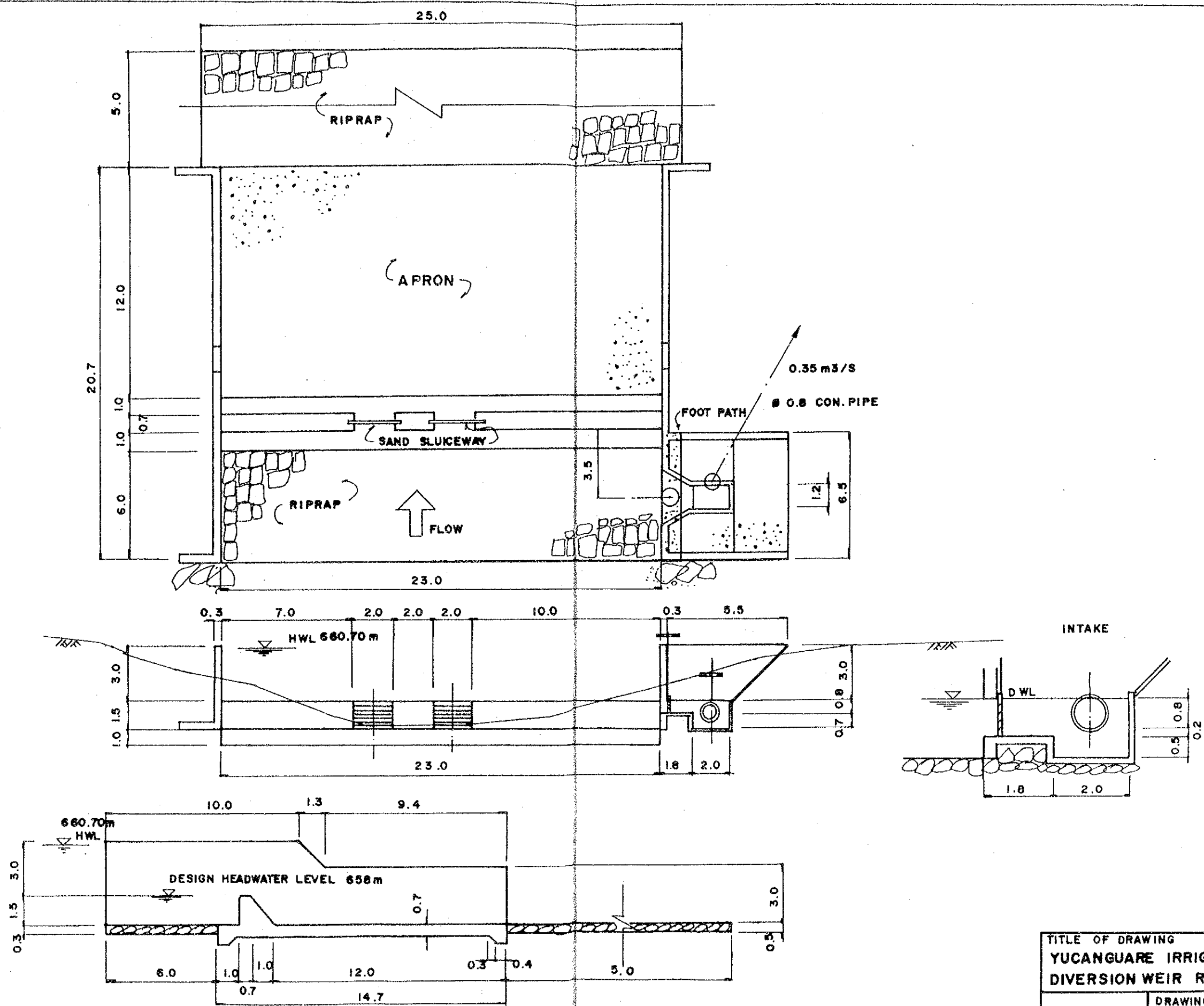
LEGEND

	DIVERSION WEIR
	MAIN CANAL (PIPE)
	MAIN CANAL
	SECONDARY CANAL
	DRAIN
	TURNOUT
	IRRIGABLE AREA

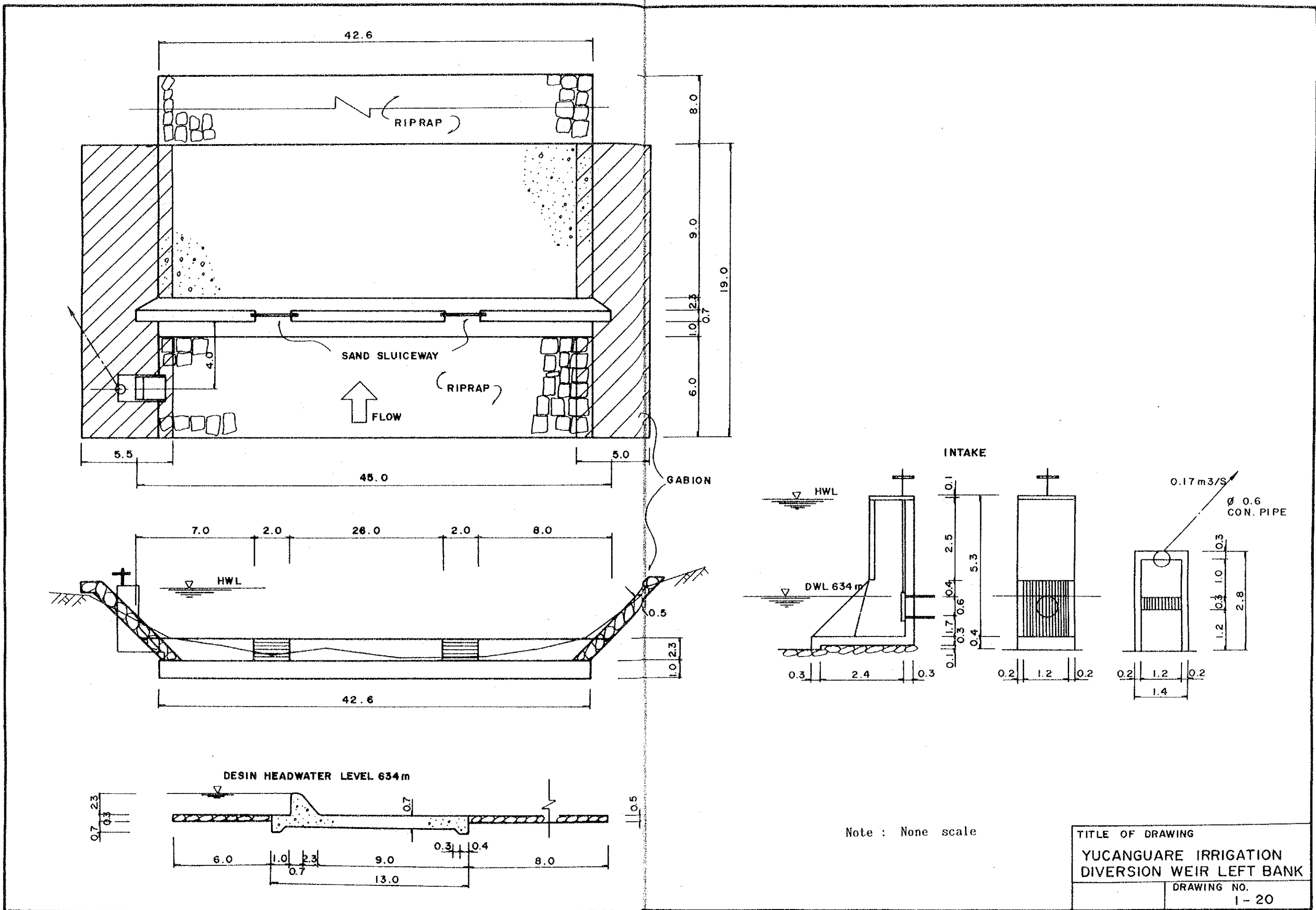
LEFT BANK  
YUCANGUARE IRRIGATION AREA  
= 215 ha

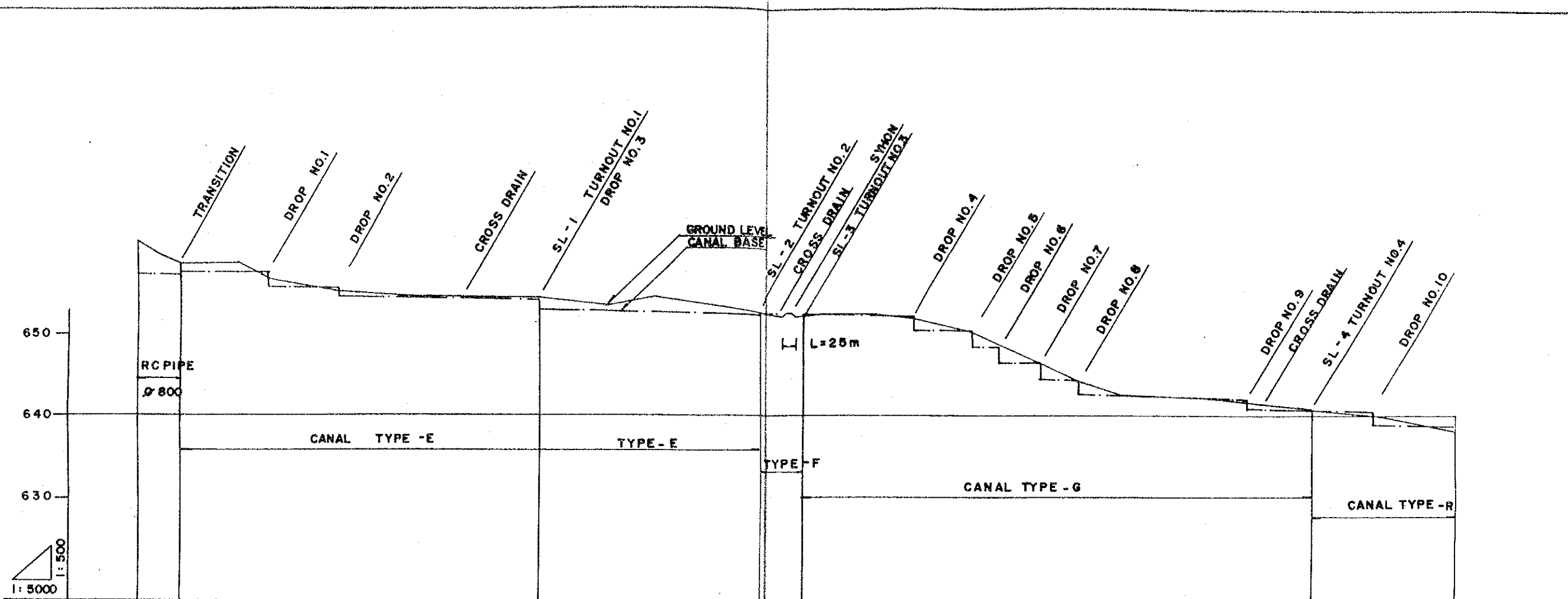


TITLE OF DRAWING YUCANGUARE IRRIGATION PLAN LEFT BANK	
DRAWING NO. I - 18	



TITLE OF DRAWING	
YUCANGUARE IRRIGATION	
DIVERSION WEIR RIGHT BANK	
DRAWING NO.	I - 19



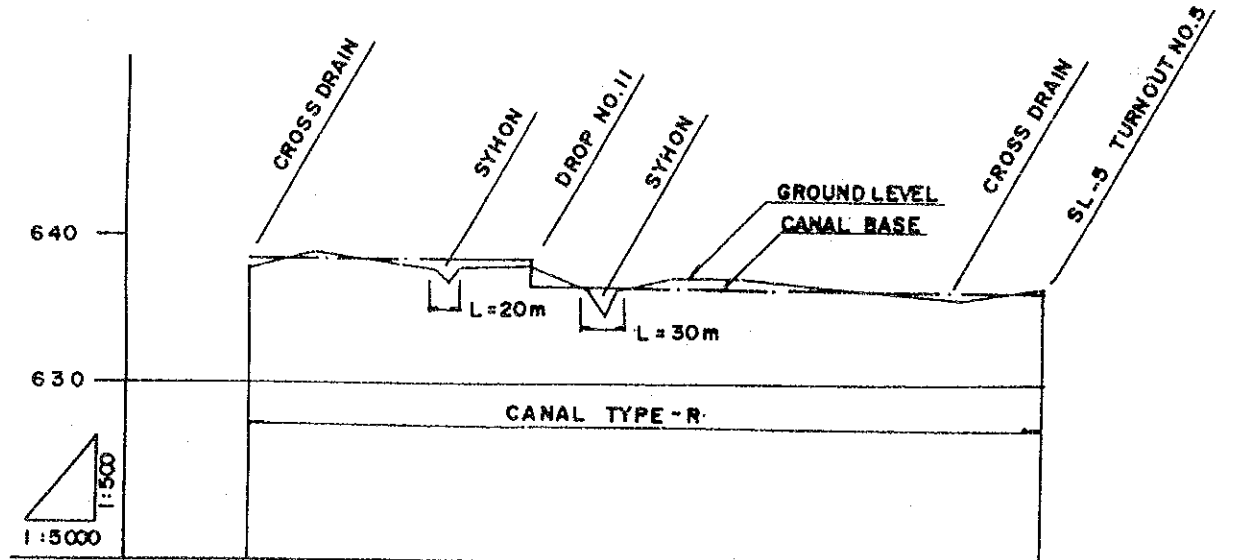
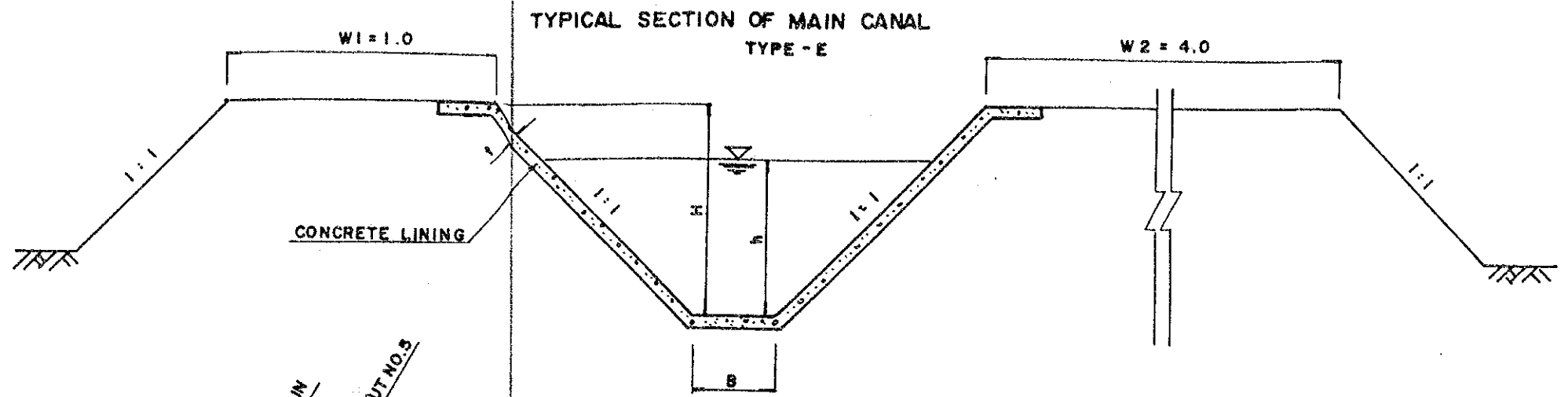


WATER ELEVATION	658.00	657.93	657.79	655.67	654.67		653.04	652.96	652.80	650.90	650.71	648.71	648.67	646.87	646.80	644.60	644.54	642.54		642.29	641.29	641.19	641.10	639.10	638.97												
CANAL BASE ELEVATION	657.20	657.13	657.24	655.12	654.12		652.49	652.51	652.45	650.45	650.36	648.36	648.32	646.32	646.25	644.25	644.19	642.19		641.94	640.94	640.84	640.85	638.85	638.72												
GROUND LEVEL	661.07	659.50	658.30	658.39	656.84	655.67	654.55	654.40	654.26	654.33	654.21	654.00	653.12	654.03	654.44	653.18	652.60	652.01	652.00	662.28	651.83	650.46	650.07	648.22	646.19	644.02	642.19	642.10	642.01	641.47	640.78	640.39	640.94	640.00	649.15	638.01	
ACCUMULAT DISTANCE	0	30.0	50.0	100.0	160.0	200.0	250.0	300.0	350.0	400.0	450.0	490.0	500.0	575.0	600.0	630.0	700.0	760.0	800.0	820.0	900.0	950.0	1000.0	1020.0	1050.0	1100.0	1150.0	1200.0	1250.0	1300.0	1350.0	1400.0	1430.0	1500.0	1550.0	1600.0	
DISTANCE	0	30.0	20.0	50.0	60.0	40.0	50.0	50.0	50.0	50.0	50.0	40.0	10.0	75.0	25.0	30.0	70.0	60.0	40.0	20.0	80.0	50.0	50.0	20.0	30.0	50.0	50.0	50.0	50.0	50.0	50.0	30.0	70.0	50.0	50.0		
STATION	0+00		0+100		0+200		0+300		0+400		0+500		0+600		0+700		0+800		0+900		1+000		1+100		1+200		1+300		1+400		1+500		1+600				
CURVE																																					

TITLE OF DRAWING  
**YUCANGUARE IRRIGATION  
 MAIN CANAL PROFILE (RIGHT)**

DRAWING NO.  
**I - 21**

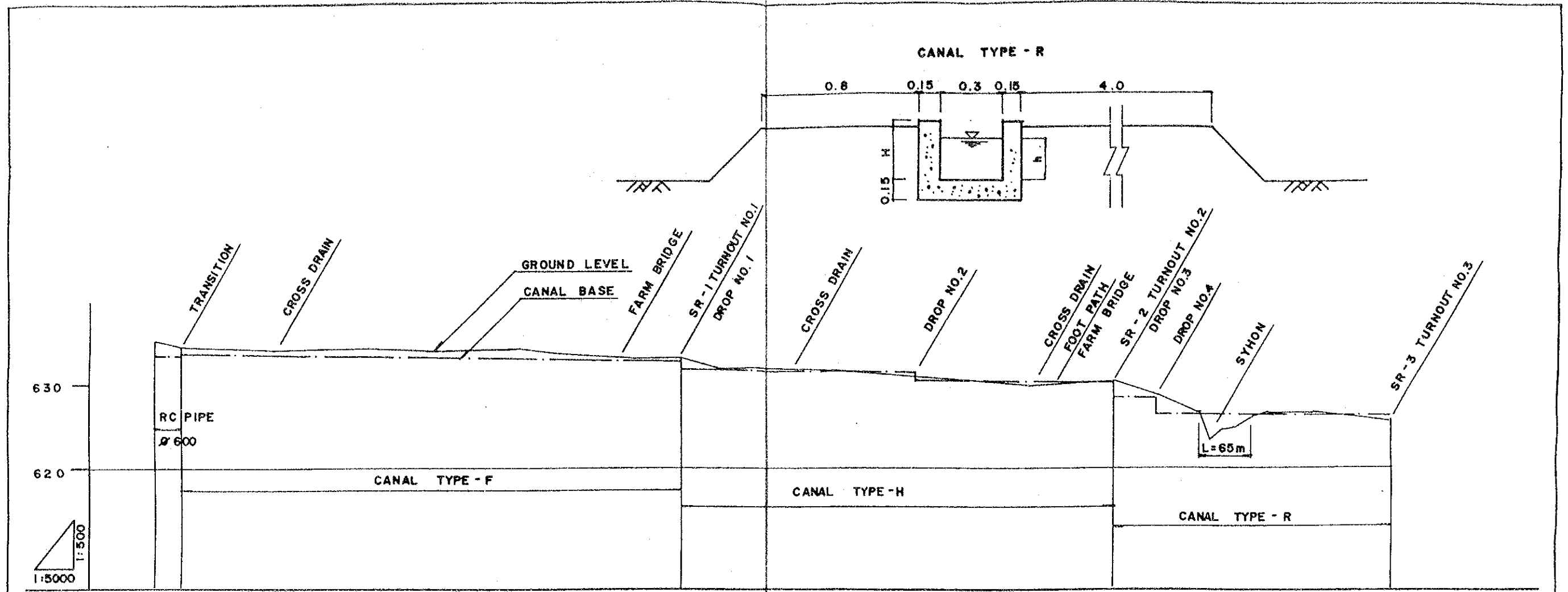
**1-3**



WATER ELEVATION	CANAL BASE ELEVATION	GROUND LEVEL	ACCUMULAT DISTANCE	DISTANCE	STATION	CURVE
636.97	638.72	630.05	1600.0	50.0	1+600	
		638.92	1650.0	50.0		
		638.29	1700.0	50.0	1+700	
		637.19	1745.0	45.0		
636.72	636.47	638.00	1800.0	55.0	1+800	
636.72	636.47	634.88	1850.0	50.0		
		637.10	1900.0	50.0	1+900	
		637.12	1950.0	50.0		
		636.44	2000.0	50.0	2+000	
		636.20	2050.0	50.0		
		635.73	2100.0	50.0	2+100	
636.27	636.02	636.17	2160.0	60.0	2+160	

TITLE OF DRAWING  
**YUCANGUARE IRRIGATION  
 MAIN CANAL PROFILE (RIGHT)**

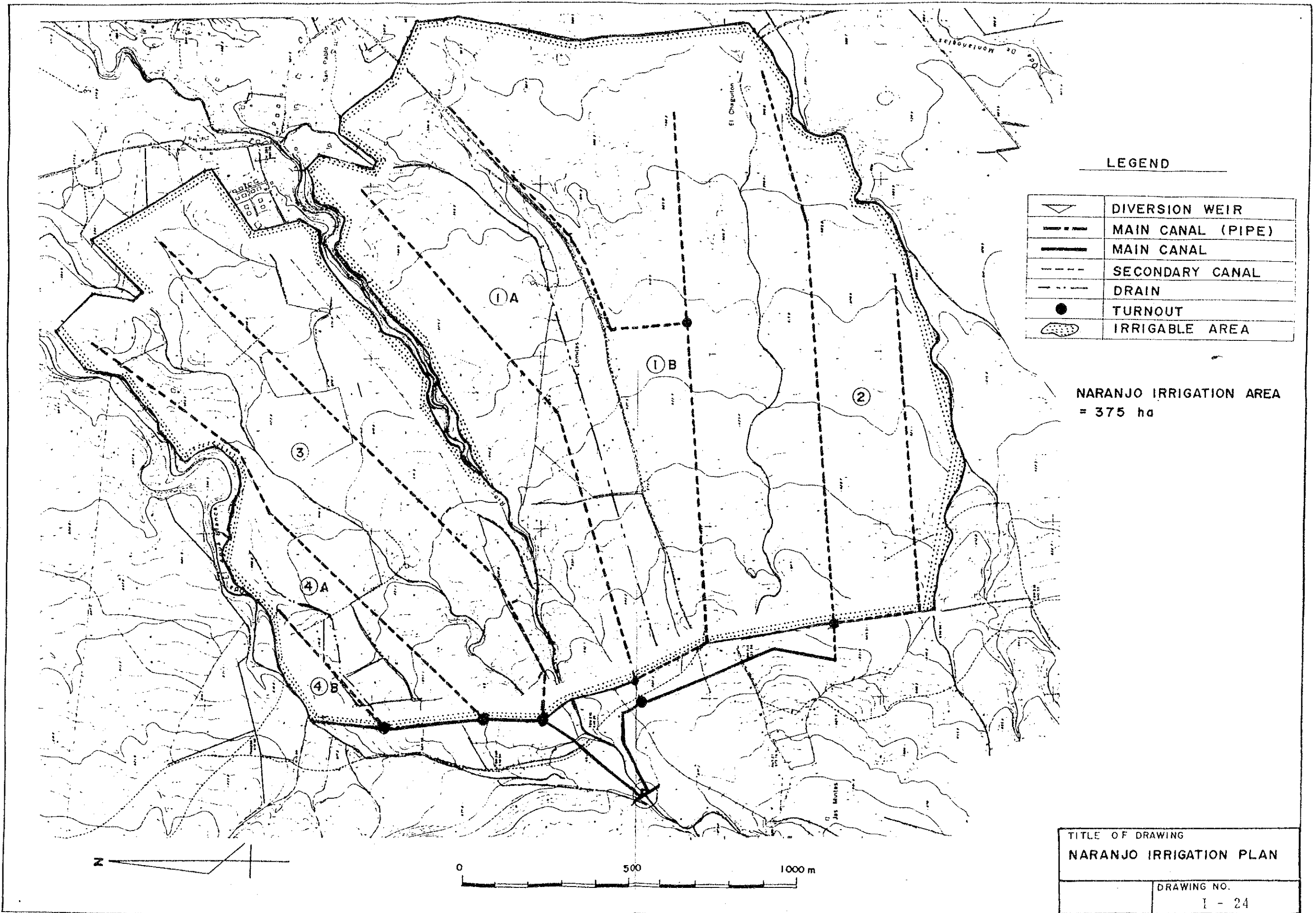
DRAWING NO.  
 2-3      1 - 22

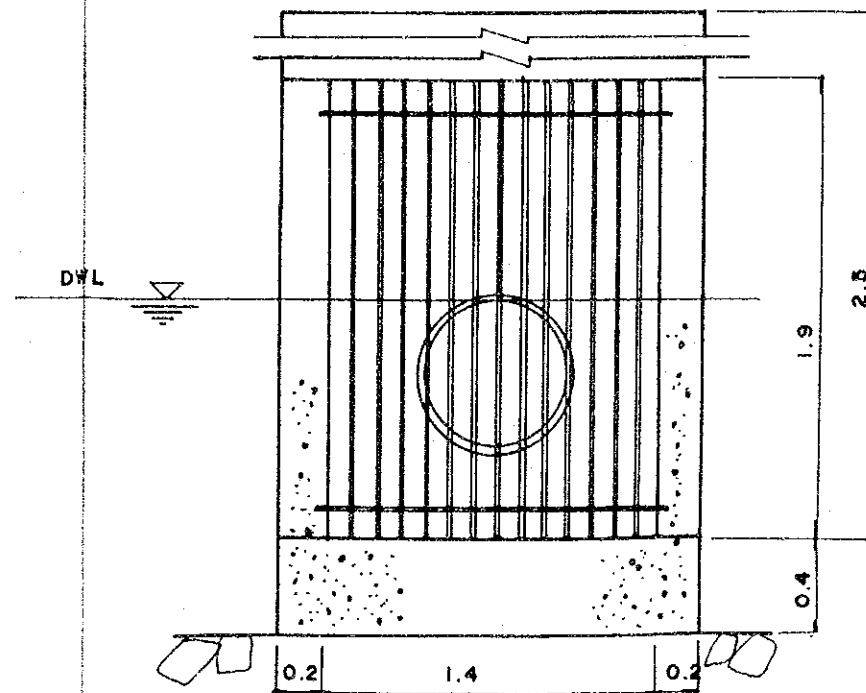
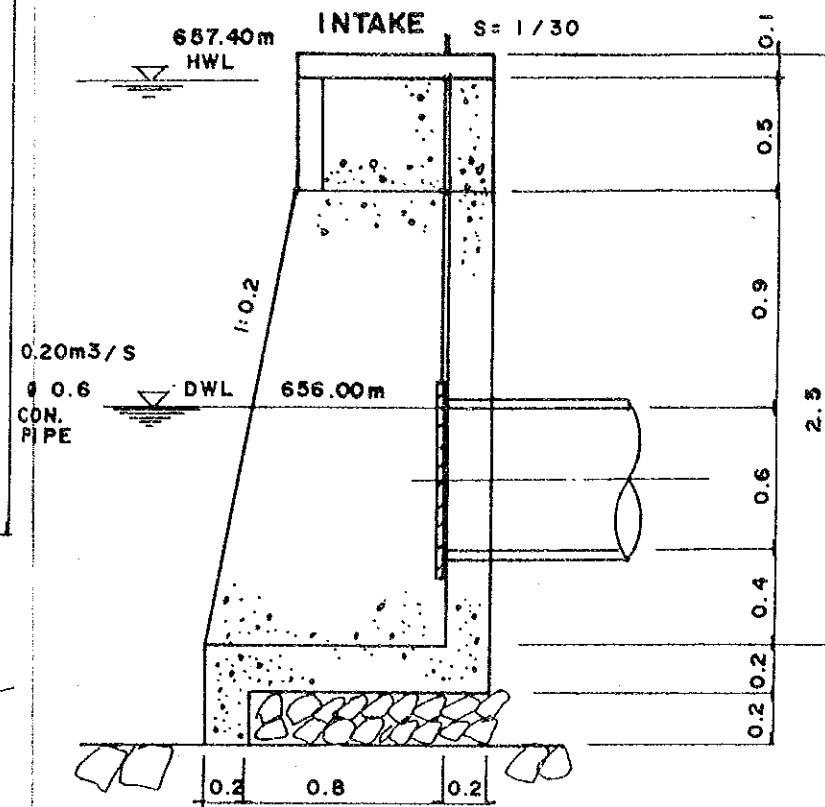
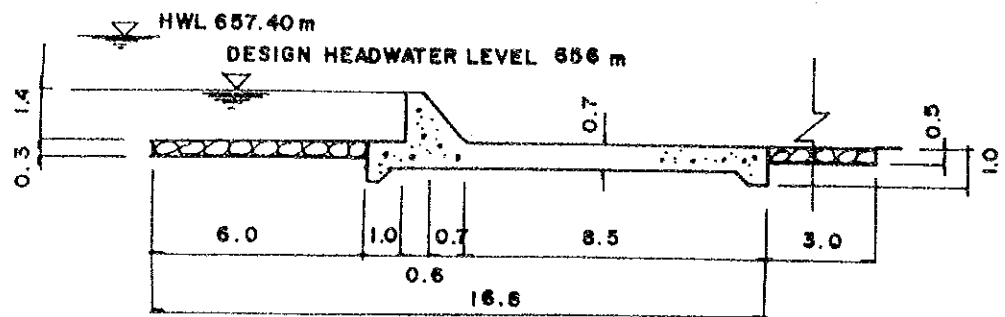
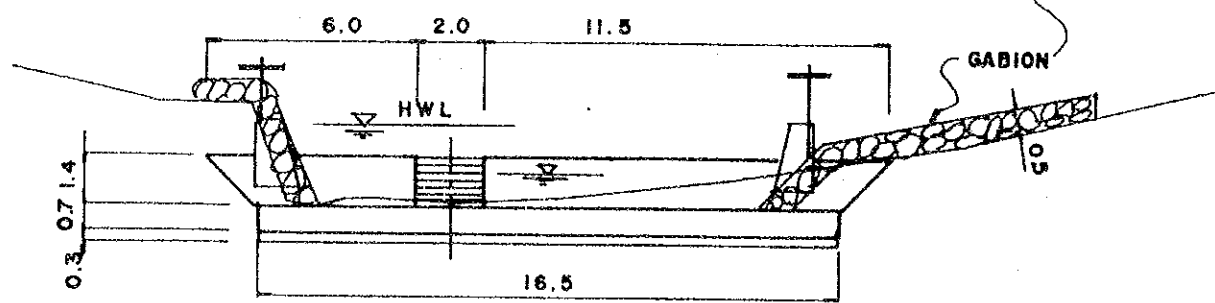
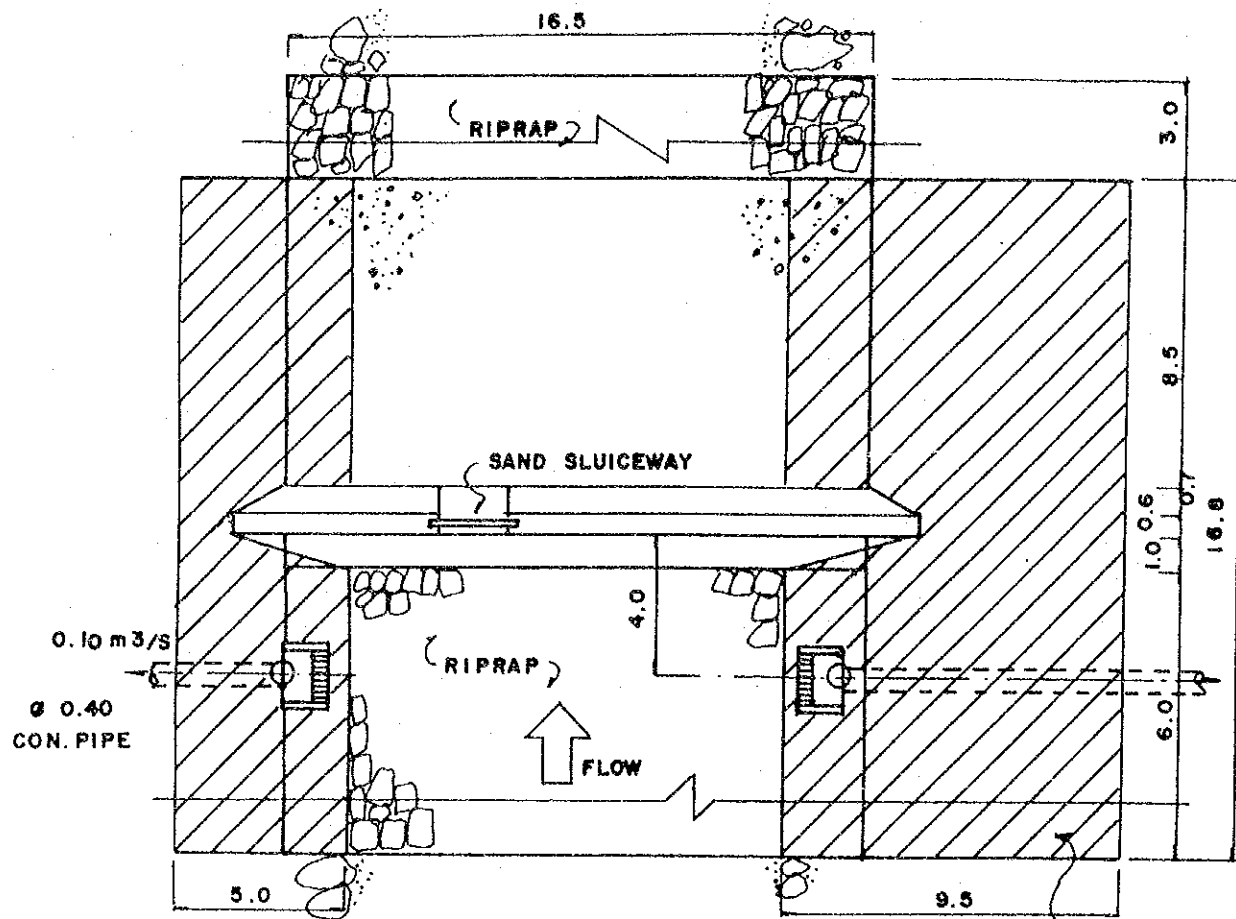


WATER ELEVATION	CANAL BASE ELEVATION	GROUND LEVEL	ACCUMULAT DISTANCE	DISTANCE	STATION	CURVE
634.00	633.40	635.50	0	0	0+00	
633.96	633.36	634.85	30.0	30.0		
	633.51	634.60	50.0	20.0		
		634.21	100.0	50.0	0+100	
		634.06	150.0	50.0		
		634.30	200.0	50.0	0+200	
		634.34	250.0	50.0		
		634.08	300.0	50.0	0+300	
		634.01	350.0	50.0		
		634.10	400.0	50.0	0+400	
		634.15	450.0	50.0		
		633.86	500.0	50.0	0+500	
		633.27	550.0	50.0		
		633.04	600.0	50.0	0+600	
	632.89	633.24	650.0	50.0		
	632.09	632.34	700.0	50.0	0+700	
		631.83	750.0	50.0		
		632.02			0+800	
		631.84	800.0	50.0		
		631.50	850.0	50.0		
		631.29	900.0	50.0	0+900	
	631.71	630.77	950.0	50.0		
	630.71	630.55	1000.0	50.0	1+000	
		630.12	1050.0	50.0		
		630.00	1100.0	50.0	1+100	
		630.15	1150.0	50.0		
	630.39	630.51	1200.0	50.0	1+200	
	628.45	628.65	1250.0	50.0		
	628.38	628.84	1300.0	50.0	1+300	
	626.36	626.79	1350.0	50.0		
		623.51	1400.0	20.0	1+400	
		624.88	1450.0	30.0		
		625.42	1500.0	50.0	1+500	
		626.59	1545.0	45.0		
	626.01	626.21				

TITLE OF DRAWING  
**YUCANGUARE IRRIGATION  
 MAIN CANAL PRFILE (LEFT)**

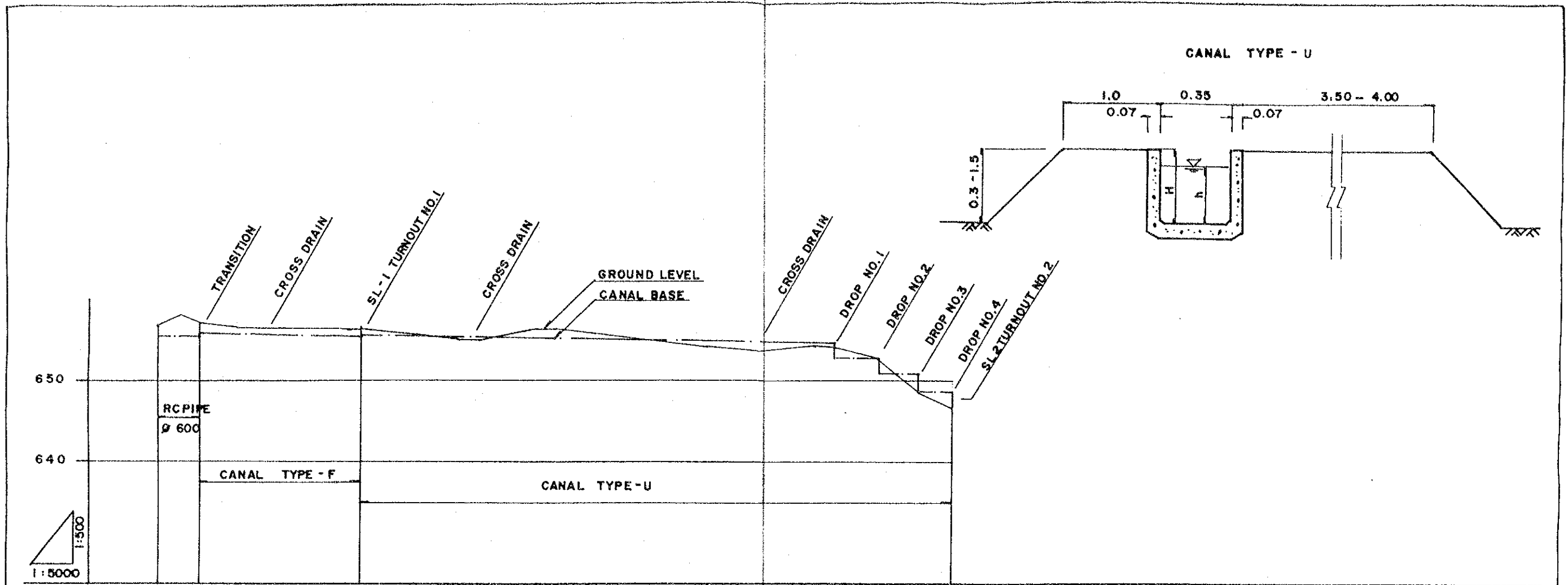
DRAWING NO.  
**3-3**      I - 23





TITLE OF DRAWING NARANJO IRRIGATION DIVERSION WEIR, L & R BANK	
DRAWING NO. I - 25	



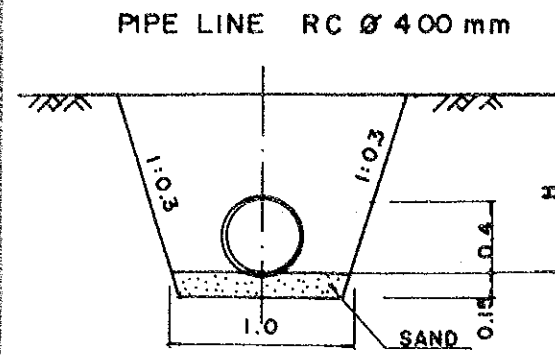
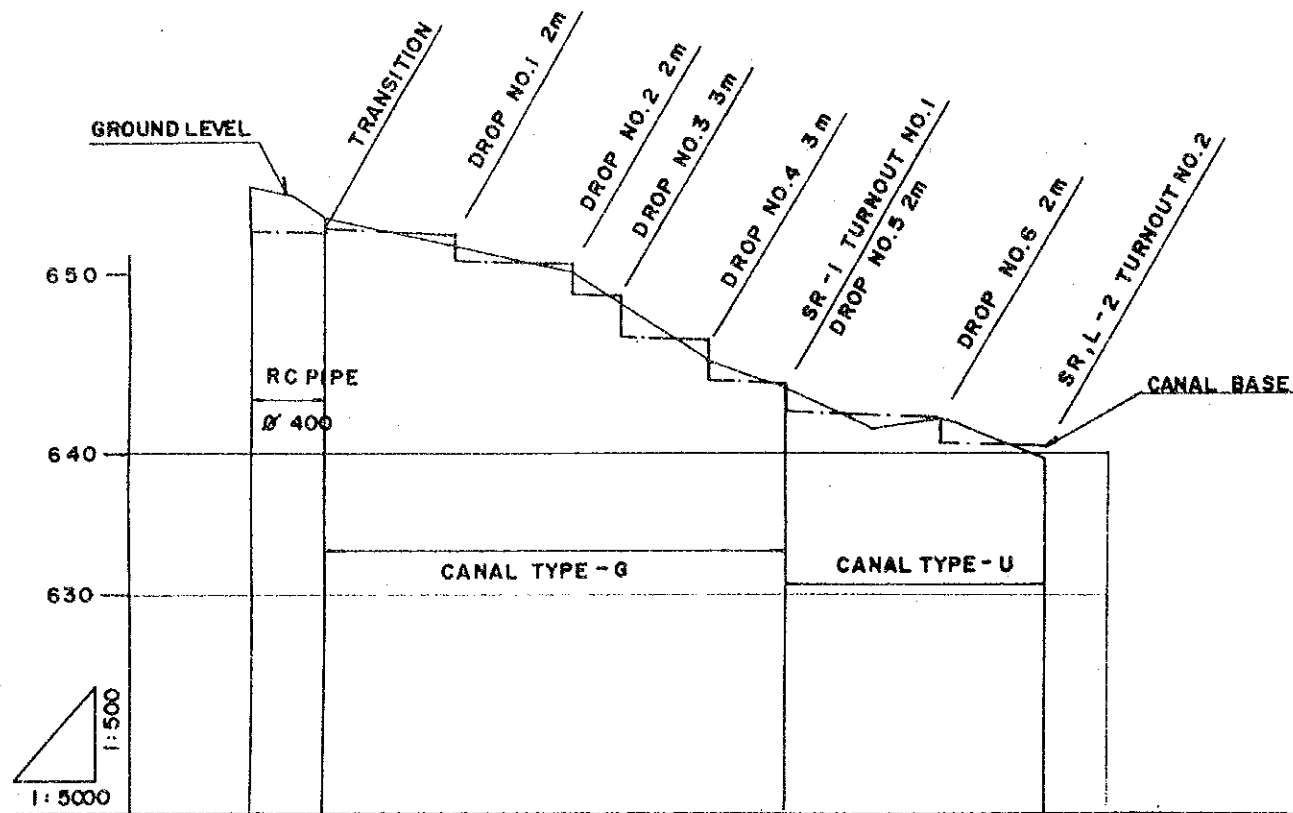


WATER ELEVATION	CANAL BASE ELEVATION	GROUND LEVEL	ACCUMULAT DISTANCE	DISTANCE	STATION	CURVE
656.00	655.40	656.80	0	0	0+00	
655.95	655.35	658.10	30.0	30.0		
	655.30	656.93	50.0	20.0		
		656.48	100.0	50.0	0+100	
		656.36	150.0	50.0		
		656.27	200.0	50.0	0+200	
655.70	655.25	656.10	255.0	55.0		
	655.40	655.93	300.0	45.0	0+300	
		655.81	325.0	25.0		
		655.03	375.0	50.0		
		655.09	400.0	25.0	0+400	
		656.07	470.0	70.0		
		655.47	500.0	30.0	0+500	
		654.89	550.0	50.0		
		654.20	600.0	50.0	0+600	
		654.95	665.0	65.0		
652.95	652.65	654.09	700.0	35.0	0+700	
652.89	652.59	652.61	750.0	50.0		
650.89	650.99	652.51	800.0	50.0	0+800	
648.83	648.53	648.20	850.0	50.0		
646.83	646.53	646.20	900.0	50.0	0+900	
646.77	646.47	646.20	950.0	50.0		
		646.77	995.0	45.0	0+995	

TITLE OF DRAWING  
**NARANJO IRRIGATION  
 MAIN CANAL PROFILE (RIGHT)**

DRAWING NO.  
 I - 26

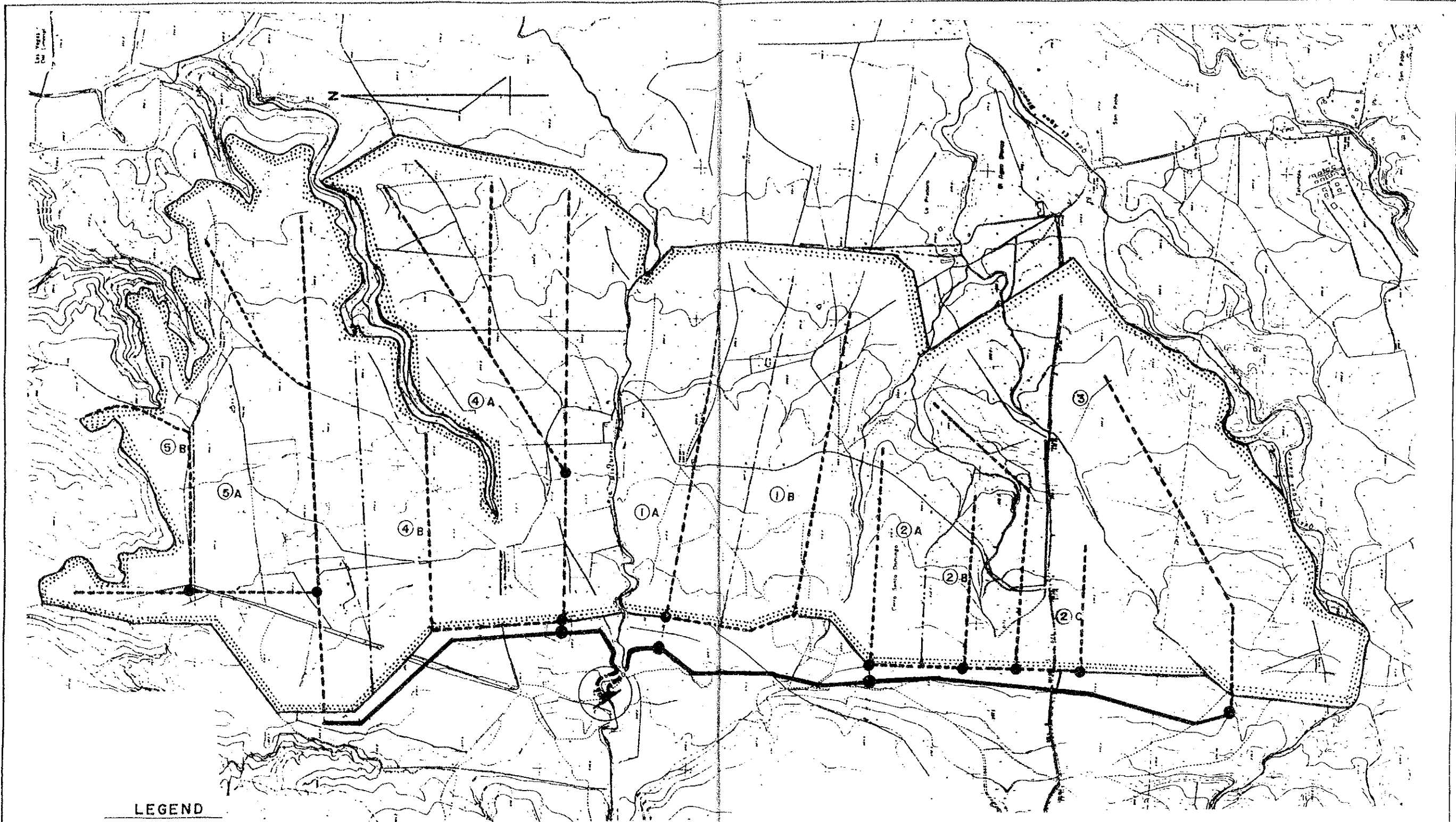
1-2



WATER ELEVATION	656.00	655.91	655.76	653.62	651.62	651.55	648.45	645.35	643.16	641.16	641.04	
CANAL BASE ELEVATION	655.60	655.66	655.51	653.37	651.37	648.30	648.20	645.10	642.91	640.91	640.79	
GROUND LEVEL	658.76	658.21	656.60	655.52	654.56	653.00	648.09	644.45	642.25	641.95	639.76	
ACCUMULAT DISTANCE	0	30.0	50.0	100.0	140.0	200.0	300.0	375.0	485.0	500.0	555.0	
DISTANCE	0	30.0	20.0	50.0	40.0	60.0	40.0	55.0	50.0	15.0	55.0	
STATION	0+00		0+100		0+200		0+300		0+400		0+500	0+555
CURVE												

TITLE OF DRAWING  
**NARANJO IRRIGATION  
 MAIN CANAL PROFILE (LEFT)**

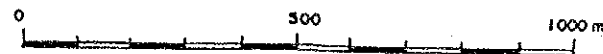
DRAWING NO.  
 2-2 I - 27



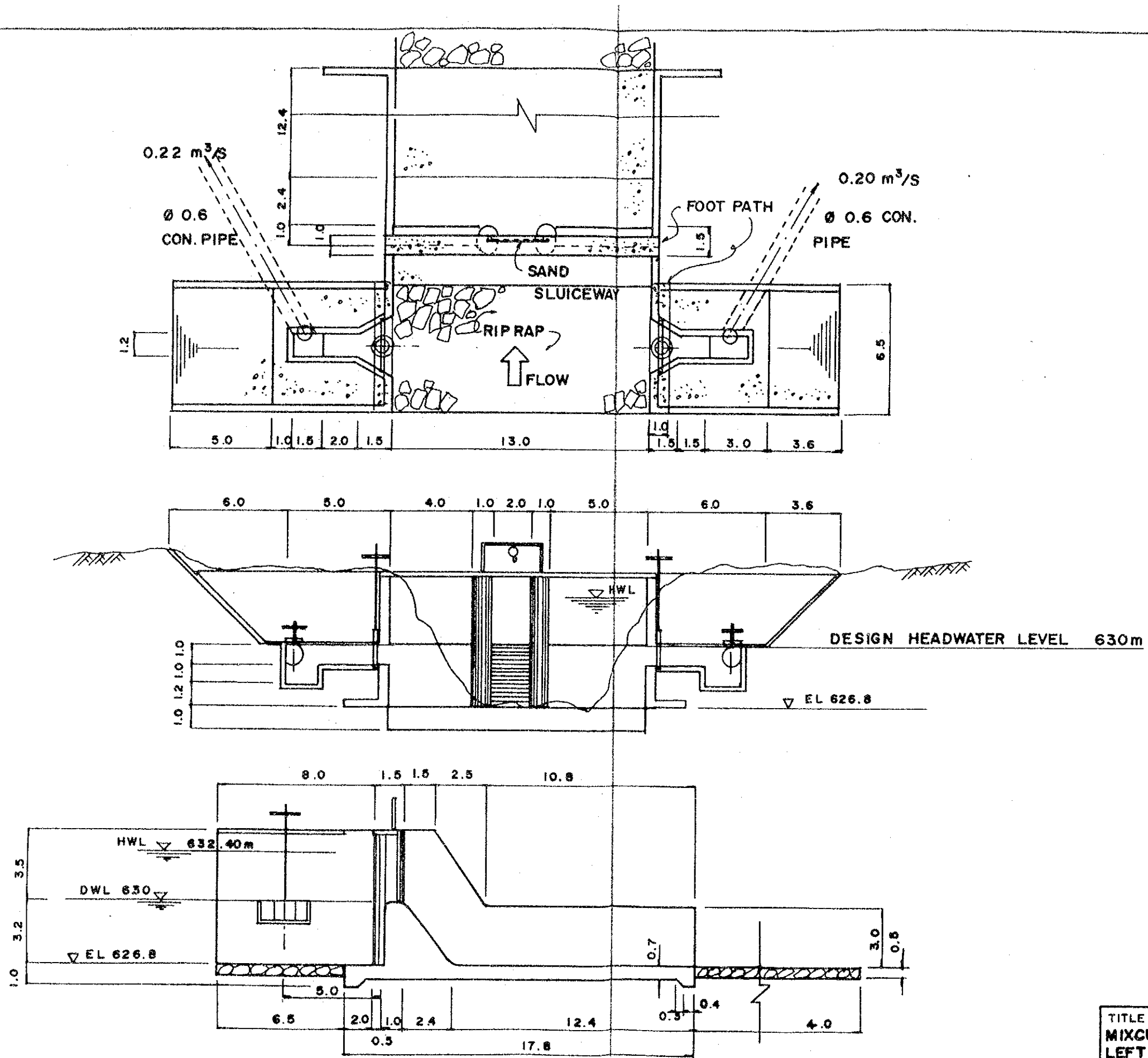
LEGEND

	DIVERSION WEIR
	MAIN CANAL (PIPE)
	MAIN CANAL
	SECONDARY CANAL
	DRAIN
	TURNOUT
	IRRIGABLE AREA

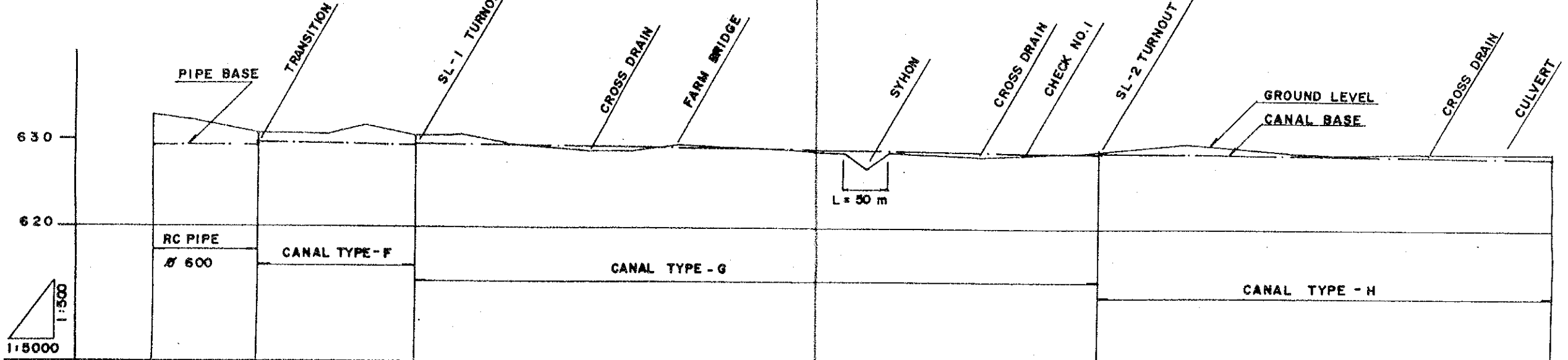
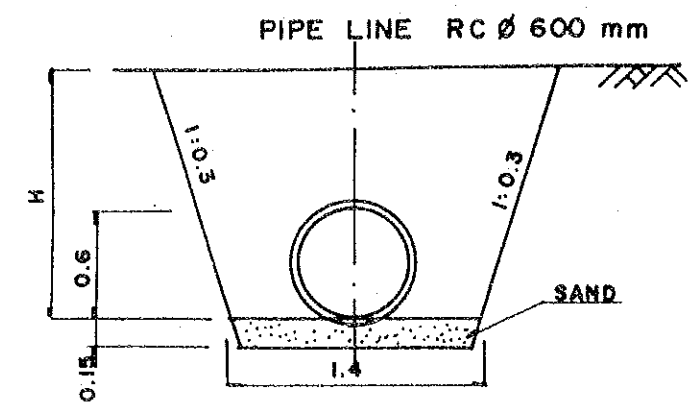
MIXCURE IRRIGATION AREA = 538 ha



TITLE OF DRAWING	
MIXCURE IRRIGATION PLAN	
DRAWING NO.	
I - 28	



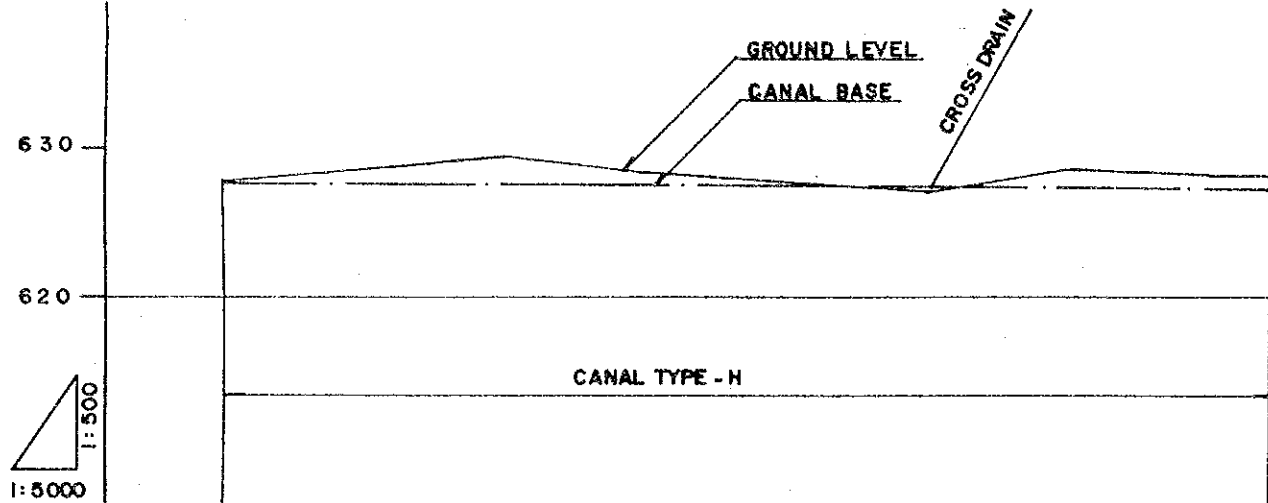
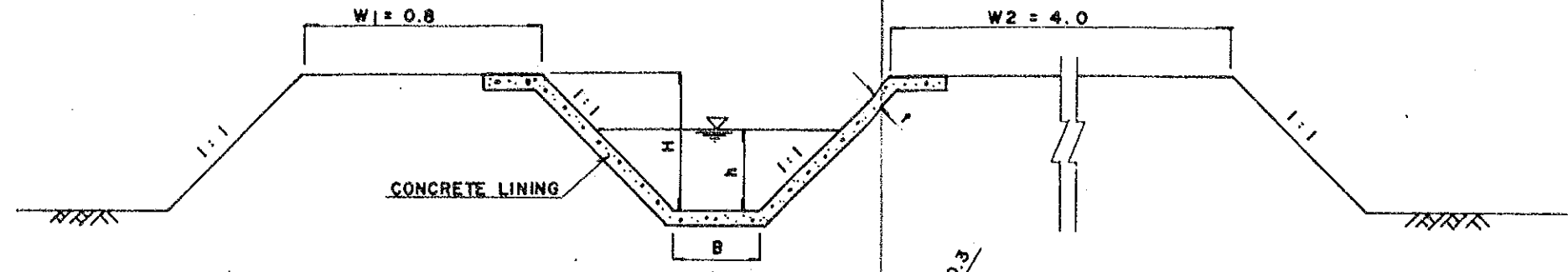
TITLE OF DRAWING	
MIXCURE IRRIGATION	
LEFT & RIGHT BANK D. WEIR	
DRAWING NO.	I - 29



WATER ELEVATION	630.00	629.88	629.70	629.56	629.41	629.27	629.18	629.03	628.91	628.79	628.69	628.34	626.51	626.26	628.70	628.03	628.32	628.55	628.66	628.64	629.27	629.64	629.18	628.90	628.65	628.16	628.51	628.84	628.86	628.56	628.40							
CANAL BASE ELEVATION	629.40	629.28	629.25	629.28	629.43	629.59	629.72	629.86	629.91	628.79	628.69	628.34	626.51	626.26	628.70	628.03	628.32	628.55	628.66	628.64	629.27	629.64	629.18	628.90	628.65	628.16	628.51	628.84	628.86	628.56	628.40							
GROUND LEVEL	632.95	632.03	631.21	630.67	630.41	630.19	630.86	630.72	629.84	628.80	628.72	628.54	628.91	628.79	628.70	628.03	628.32	628.55	628.66	628.64	629.27	629.64	629.18	628.90	628.65	628.16	628.51	628.84	628.86	628.56	628.40							
ACCUMULAT DISTANCE	0	50.0	100.0	115.0	150.0	200.0	250.0	300.0	350.0	400.0	450.0	500.0	550.0	600.0	650.0	700.0	750.0	800.0	825.0	850.0	900.0	950.0	1000.0	1050.0	1085.0	1100.0	1150.0	1185.0	1200.0	1250.0	1300.0	1350.0	1400.0	1450.0	1500.0	1550.0	1600.0	
DISTANCE	0	50.0	50.0	15.0	35.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	25.0	25.0	50.0	50.0	50.0	50.0	35.0	15.0	50.0	35.0	15.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	
STATION	0+00	0+100	0+200	0+300	0+400	0+500	0+600	0+700	0+800	0+825	0+850	0+900	0+950	1+000	1+050	1+100	1+150	1+200	1+225	1+250	1+300	1+350	1+400	1+450	1+500	1+535	1+550	1+600	1+650	1+700	1+750	1+800	1+850	1+900	1+950	2+000	2+050	2+100
CURVE																																						

TITLE OF DRAWING  
**MIXCURE IRRIGATION  
 MAIN CANAL PROFILE (RIGHT)**  
 DRAWING NO.  
 I - 30

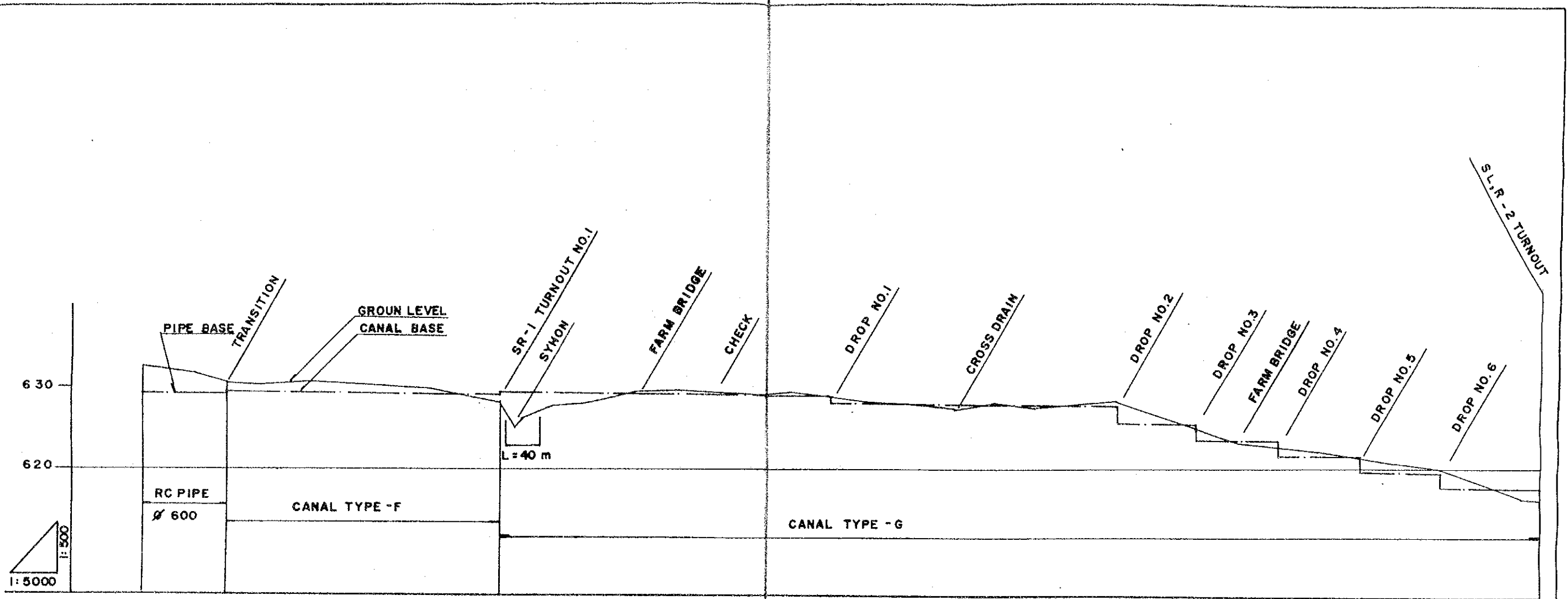
TYPICAL SECTION OF MAIN CANAL CANAL TYPE - H



WATER ELEVATION	628.40															627.66
CANAL BASE ELEVATION	628.15															627.41
GROUND LEVEL	628.10	628.45	628.92	629.10	629.71	629.11	628.63	628.05	627.93	627.74	627.11	628.15	628.89	628.56	628.35	628.56
ACCUMULAT DISTANCE	1600.0	1650.0	1700.0	1750.0	1800.0	1850.0	1900.0	1950.0	2000.0	2050.0	2100.0	2150.0	2200.0	2250.0	2300.0	2340.0
DISTANCE	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	40.0
STATION	1+600		1+700		1+800		1+900		2+000		2+100		2+200		2+300	2+340
CURVE																

TITLE OF DRAWING  
**MIXCURE IRRIGATION  
 MAIN CANAL PROFILE (RIGHT)**

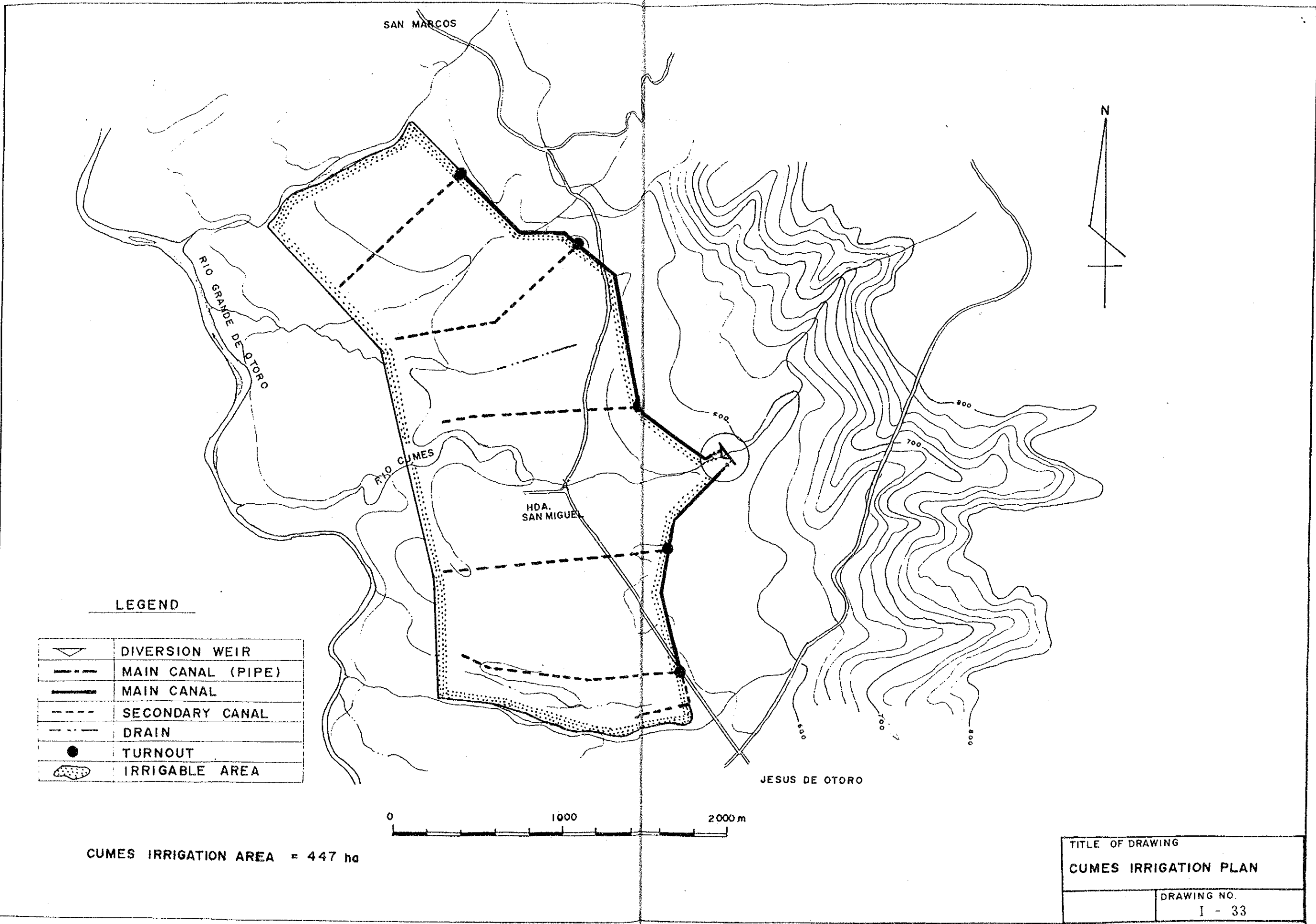
DRAWING NO.  
**2-3**      I - 31



WATER ELEVATION	630.00	629.90	629.56	629.15	628.80	628.15	627.80	627.70	627.40	627.02	626.68	625.70	623.60	621.50	619.40	617.28																						
CANAL BASE ELEVATION	629.40	629.30	629.11	628.80	628.45	628.25	627.80	627.45	627.35	627.15	626.55	625.35	623.25	621.15	619.05	616.93																						
GROUND LEVEL	632.85	631.66	630.50	629.04	628.40	628.15	628.10	628.30	627.40	628.02	626.68	625.19	622.33	621.03	620.06	616.42																						
ACCUMULAT DISTANCE	0	60.0	100.0	140.0	200.0	250.0	300.0	350.0	400.0	435.0	453.0	463.0	500.0	550.0	600.0	650.0	700.0	750.0	800.0	850.0	900.0	950.0	1000.0	1050.0	1100.0	1150.0	1200.0	1250.0	1300.0	1350.0	1400.0	1450.0	1500.0	1540.0	1600.0	1650.0	1700.0	1720.0
DISTANCE	0	60.0	40.0	60.0	50.0	50.0	50.0	50.0	50.0	35.0	18.0	10.0	47.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	50.0	20.0
STATION	0+00	0+100	0+200	0+300	0+400	0+435	0+453	0+500	0+600	0+700	0+800	0+900	1+000	1+100	1+200	1+300	1+400	1+500	1+600	1+700	1+720																	
CURVE																																						

TITLE OF DRAWING  
 MIXCURE IRRIGATION  
 MAIN CANAL PROFILE (LEFT)

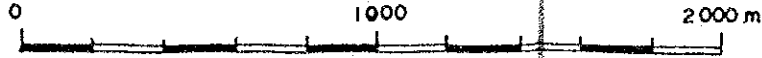
3-3      DRAWING NO. I-32



LEGEND

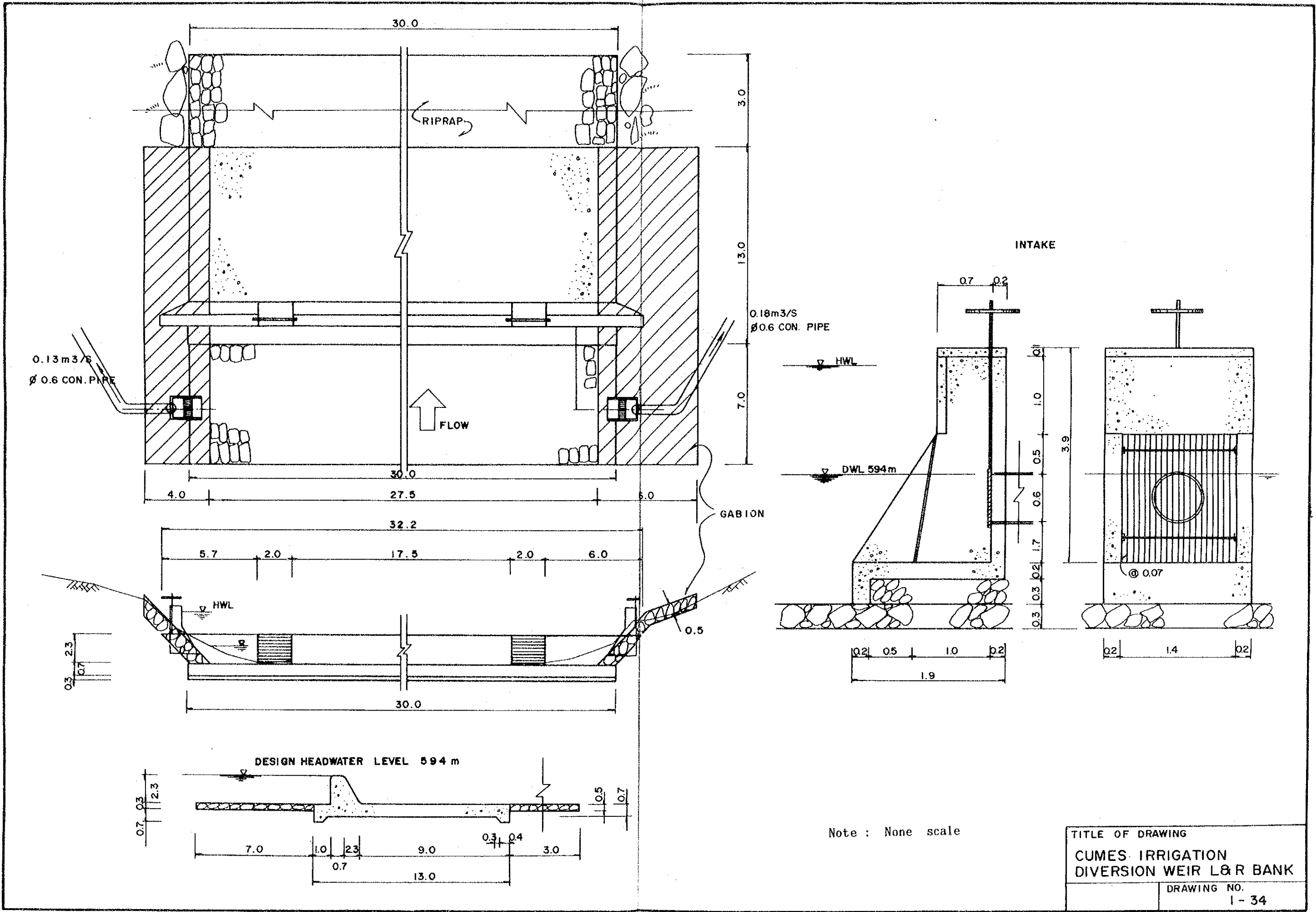
	DIVERSION WEIR
	MAIN CANAL (PIPE)
	MAIN CANAL
	SECONDARY CANAL
	DRAIN
	TURNOUT
	IRRIGABLE AREA

CUMES IRRIGATION AREA = 447 ha

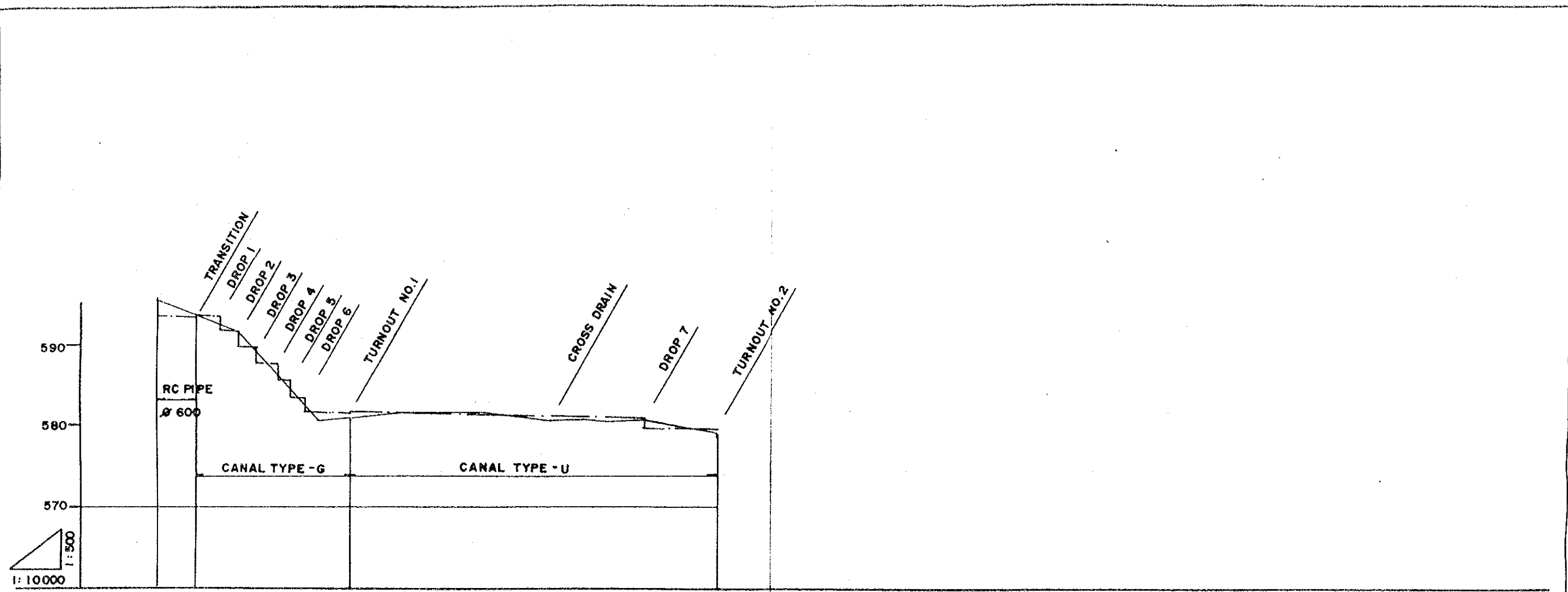


TITLE OF DRAWING	
CUMES IRRIGATION PLAN	
DRAWING NO.	
I - 33	



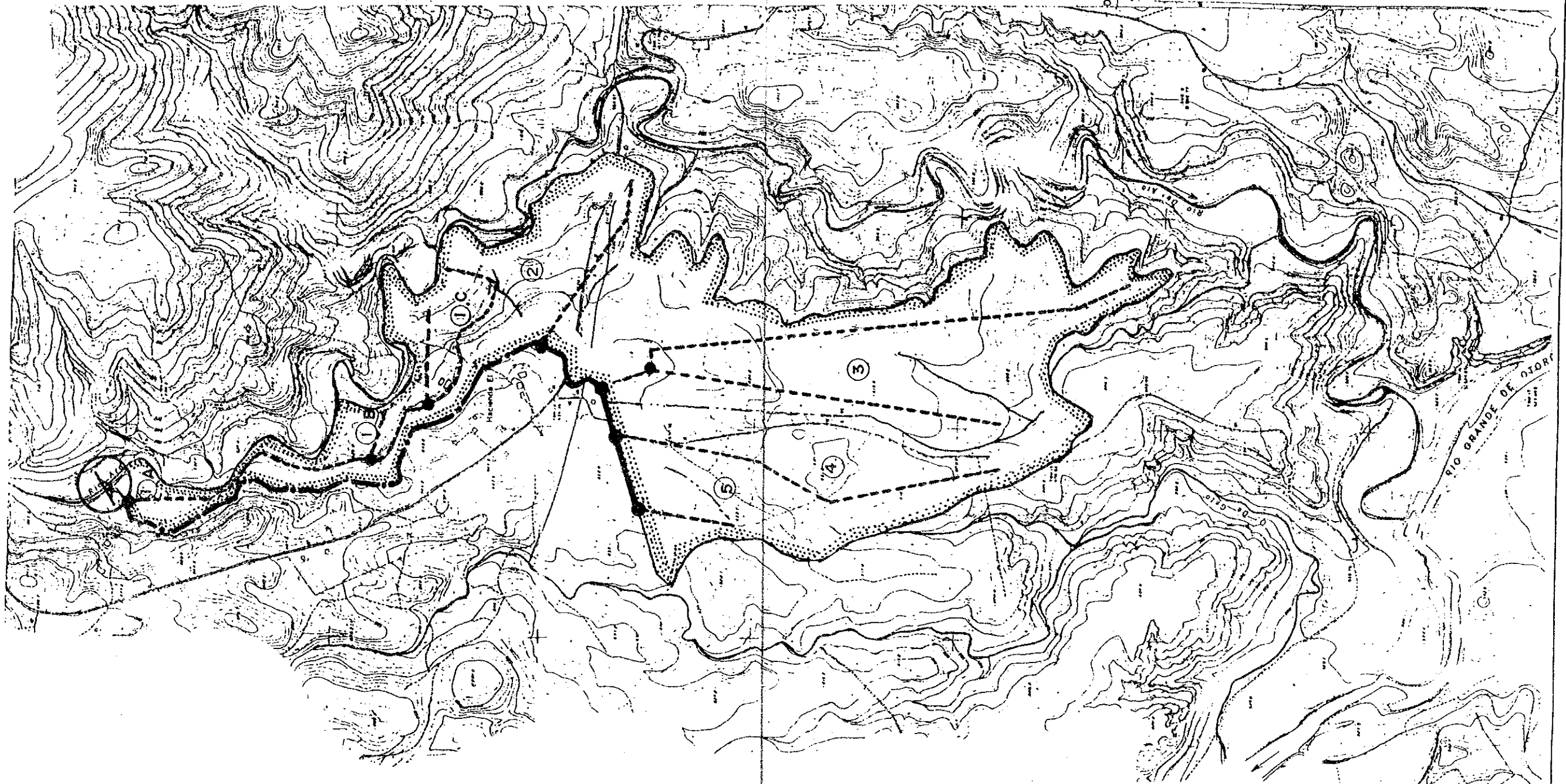
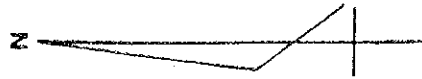






WATER ELEVATION	594.00
CANAL BASE ELEVATION	593.40 593.28 593.53
GROUND LEVEL	596.02 594.17 591.87 586.22 580.07 580.55 581.23 581.66 581.19 580.83 580.51 580.01 580.33 579.55 578.86 579.28
ACCUMULAT DISTANCE	0 100.0 200.0 300.0 400.0 480.0 600.0 700.0 800.0 900.0 1000.0 1100.0 1200.0 1300.0 1380.0
DISTANCE	0 100.0 100.0 100.0 100.0 80.0 120.0 100.0 100.0 100.0 100.0 100.0 100.0 100.0 80.0
STATION	0+00 0+200 0+400 0+600 0+800 1+000 1+200 1+380
CURVE	

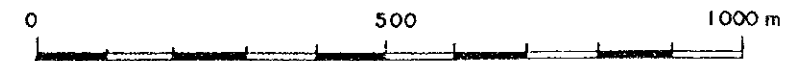
TITLE OF DRAWING	
CUMES IRRIGATION MAIN CANAL PROFILE (LEFT)	
2/2	DRAWING NO. I - 36



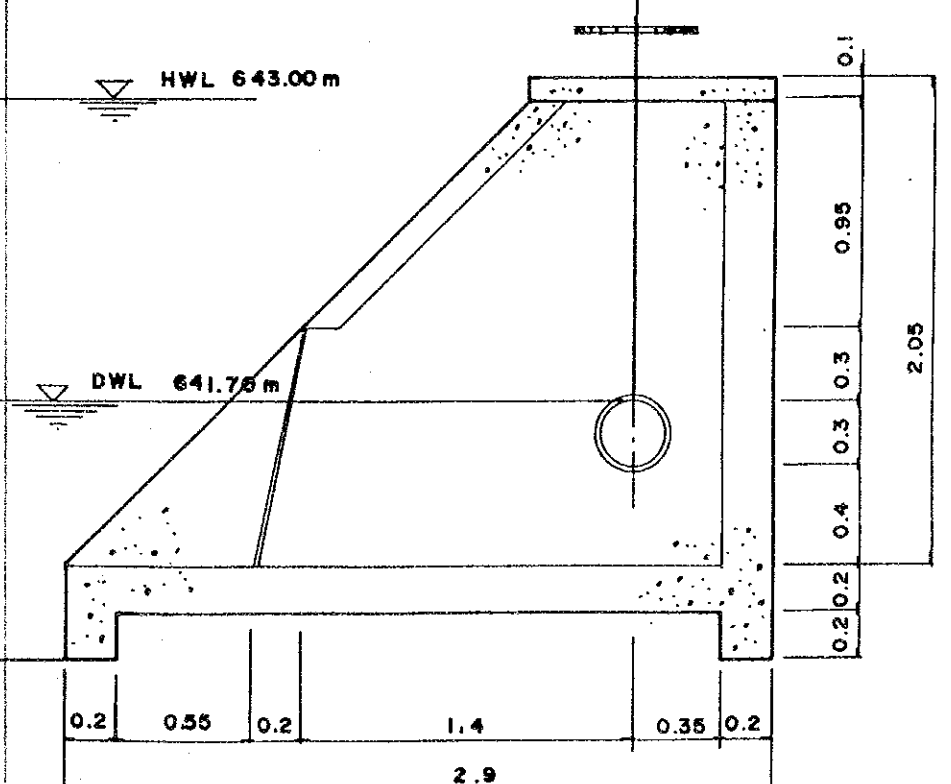
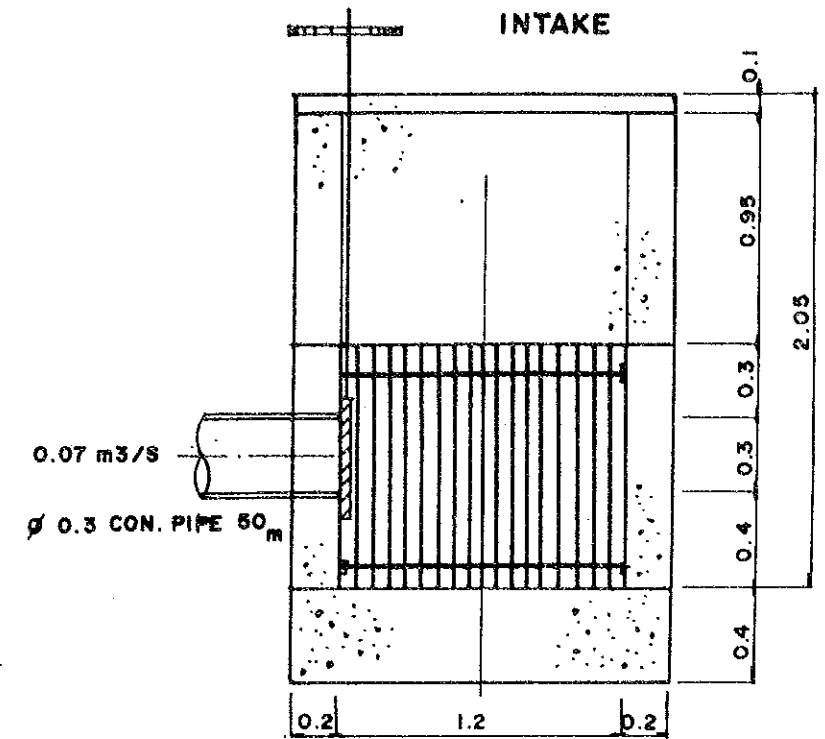
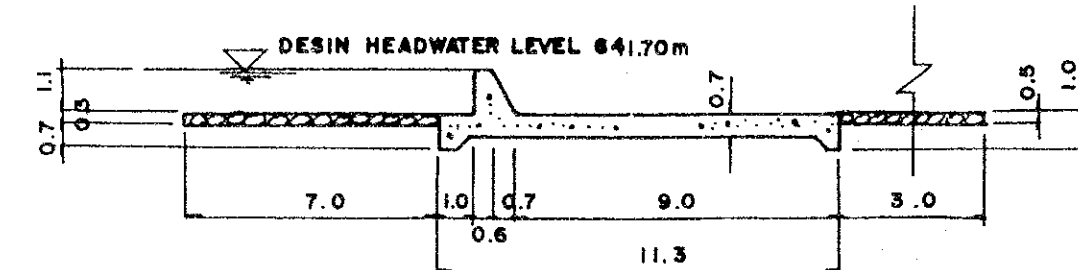
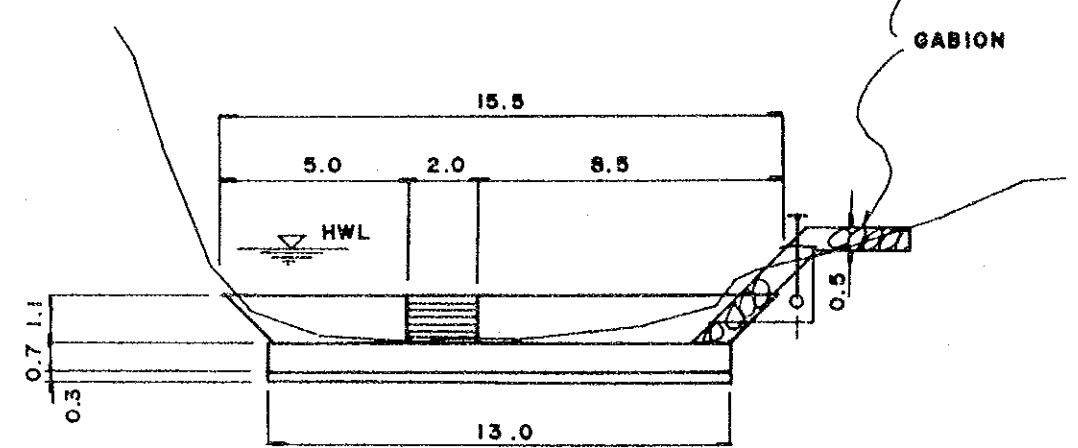
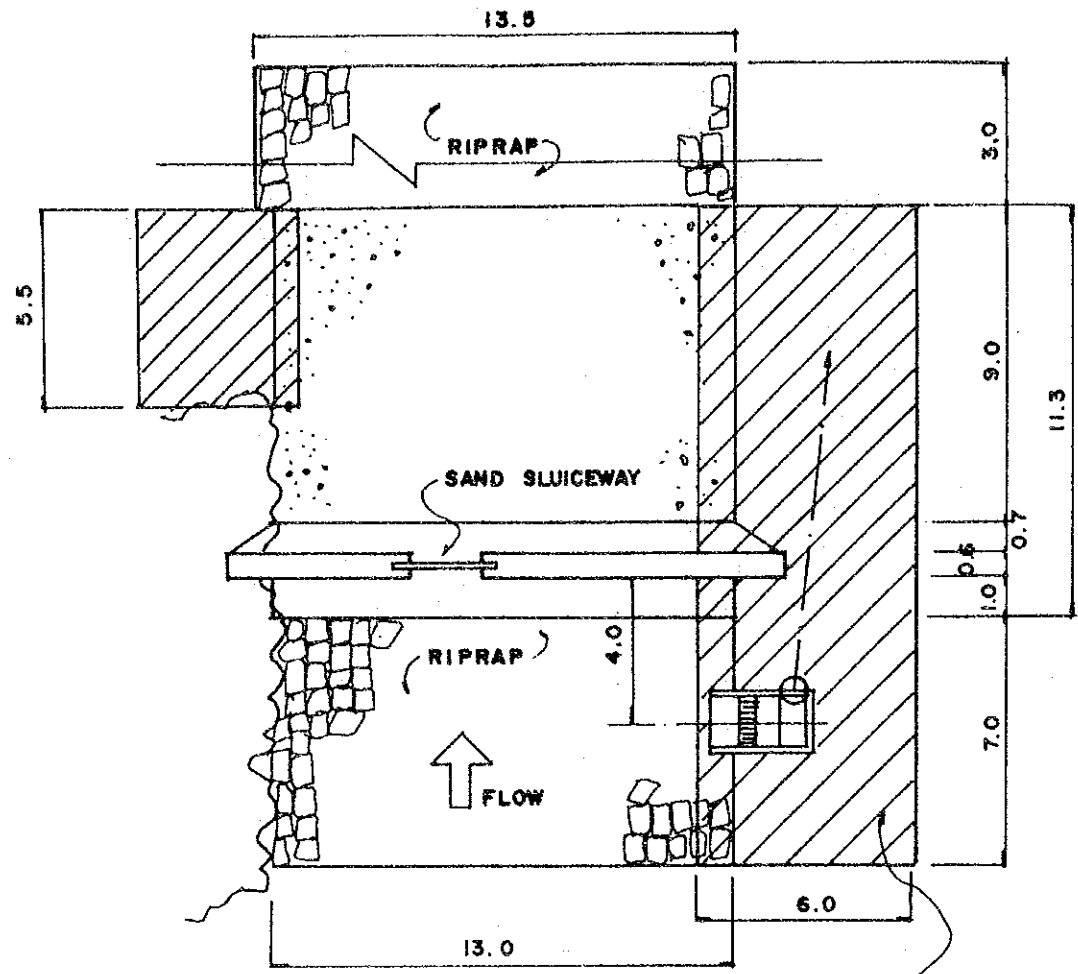
LEGEND

	DIVERSION WEIR
	MAIN CANAL (PIPE)
	MAIN CANAL
	SECONDARY CANAL
	DRAIN
	TURNOUT
	IRRIGABLE AREA

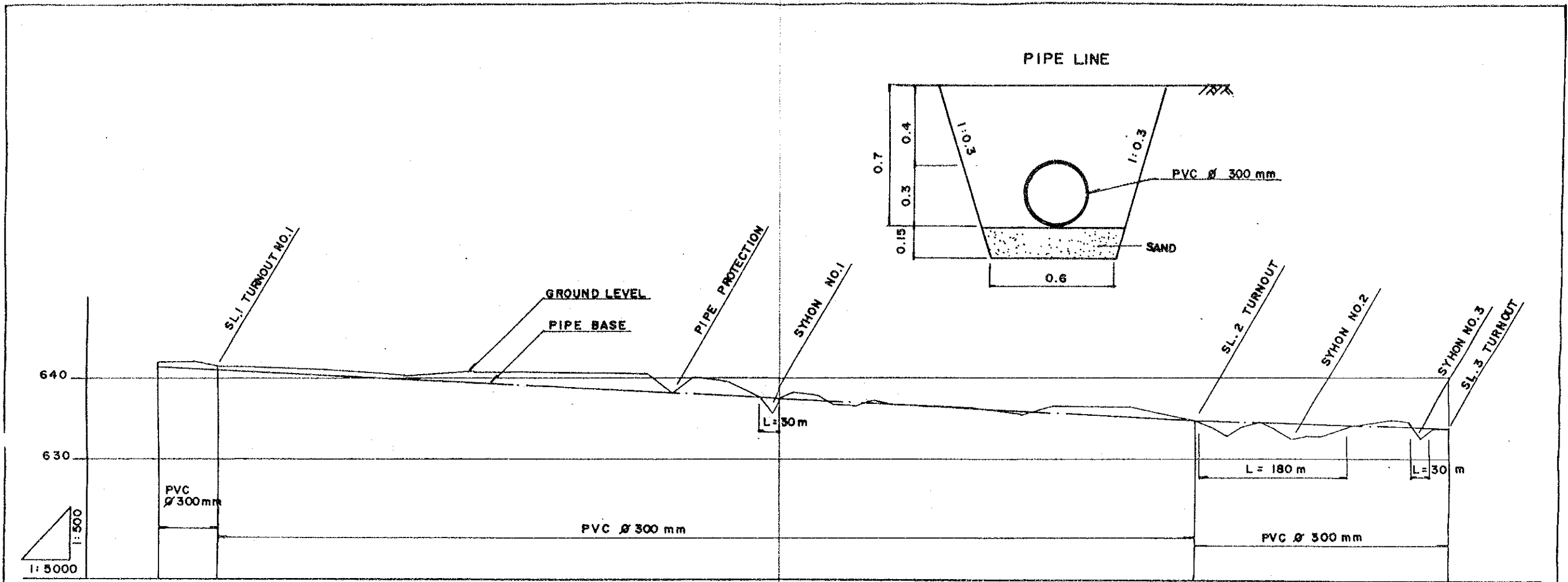
ARO IRRIGATION AREA = 90 ha



TITLE OF DRAWING PLAN OF ARO IRRIGATION	
DRAWING NO	I - 37



TITLE OF DRAWING	
ARO IRRIGATION DIVERSION WEIR RIGHT BANK	
DRAWING NO.	
I - 38	



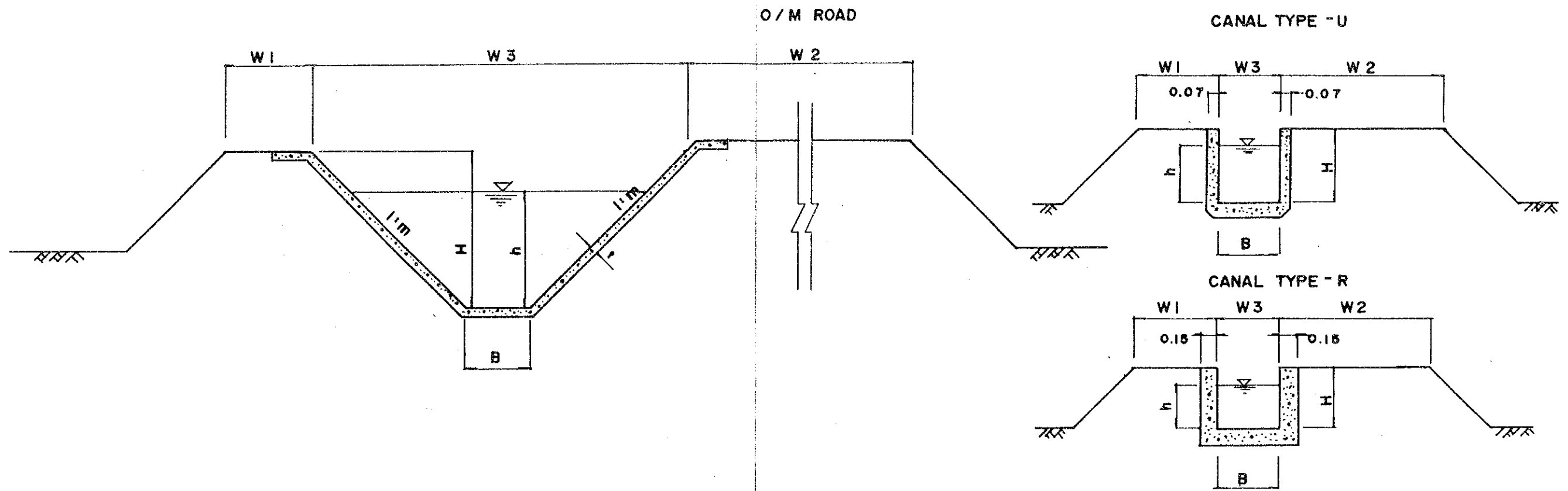
WATER ELEVATION	CANAL BASE ELEVATION	GROUND LEVEL	ACCUMULAT DISTANCE	DISTANCE	STATION	CURVE
641.70	641.40	642.10	0	0	0+00	
641.41	641.11	642.06	45.0	45.0		
		641.32	75.0	30.0		
		641.23	100.0	25.0	0+100	
		641.76	150.0	50.0		
		641.27	200.0	50.0	0+200	
		640.81	250.0	50.0		
		640.42	300.0	50.0	0+300	
		640.95	350.0	50.0		
		640.62	400.0	50.0	0+400	
		640.83	450.0	50.0		
		640.63	500.0	50.0	0+500	
		640.61	550.0	50.0		
		640.41	600.0	50.0	0+600	
	638.97	638.32	630.5	30.5		
		640.03	660.2	29.7		
		639.34	700.0	39.8	0+700	
		635.62	755.6	55.6		
		638.10	800.0	44.4	0+800	
		636.12	830.2	30.2		
		636.10	860.9	30.7		
		637.03	900.0	39.1	0+900	
		636.53	950.0	50.0		
		636.32	1000.0	50.0	1+000	
		636.04	1060.0	60.0		
		636.43	1100.0	40.0	1+100	
		636.34	1150.0	50.0		
		636.21	1200.0	50.0	1+200	
		635.62	1250.0	50.0		
		634.36	1280.0	30.0		
634.70	634.40	634.04	1300.0	20.0	1+300	
		632.59	1320.6	20.6		
		634.36	1360.6	40.0		
		632.46	1400.0	39.4	1+400	
		632.28	1440.0	40.0		
		634.09	1470.0	30.0		
		634.21	1500.0	30.0	1+500	
		634.97	1540.0	40.0		
		632.30	1565.0	25.0		
		633.40	1600.0	35.0	1+600	

TITLE OF DRAWING  
**ARO IRRIGATION  
 MAIN CANAL PROFILE**

DRAWING NO.  
 I - 39



TYPICAL CROSS SECTION MAIN CANAL  
CONCRETE LINING



UNIT = m

CANAL TYPE	MIN. Q m <sup>3</sup> /s	B	H	h	W1	W3	W2	m	n	f	l
A	0.60	0.70	0.90	0.60	1.50	2.60	4.50	1.25	0.015	0.10	1/1000
B	0.72	0.70	0.85	0.55	1.50	2.50	4.50	1.25	0.015	0.10	1/1000
C	0.63	0.60	0.85	0.55	1.50	2.40	4.50	1.25	0.015	0.10	1/1000
D	0.55	0.60	0.85	0.55	1.50	2.00	4.50	1	0.015	0.10	1/1000
E	0.39	0.60	0.65	0.45	1.00	1.80	4.00	1	0.015	0.10	1/1000
F	0.25	0.60	0.60	0.40	1.00	1.60	4.00	1	0.015	0.10	1/1000
G	0.15	0.60	0.50	0.30	1.00	1.40	4.00	1	0.015	0.10	1/1000
H	0.08	0.40	0.45	0.25	1.00	1.20	4.00	1	0.015	0.07	1/1000
U	0.06	0.35	0.37	0.30	1.00	0.35	4.00	-	0.015	0.07	1/1000
R	0.03	0.30	0.30	0.20	1.00	0.30	4.00	-	0.015	0.15	1/1000

TITLE OF DRAWING  
TYPICAL CROSS SECTION  
MAIN CANAL

DRAWING NO.

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