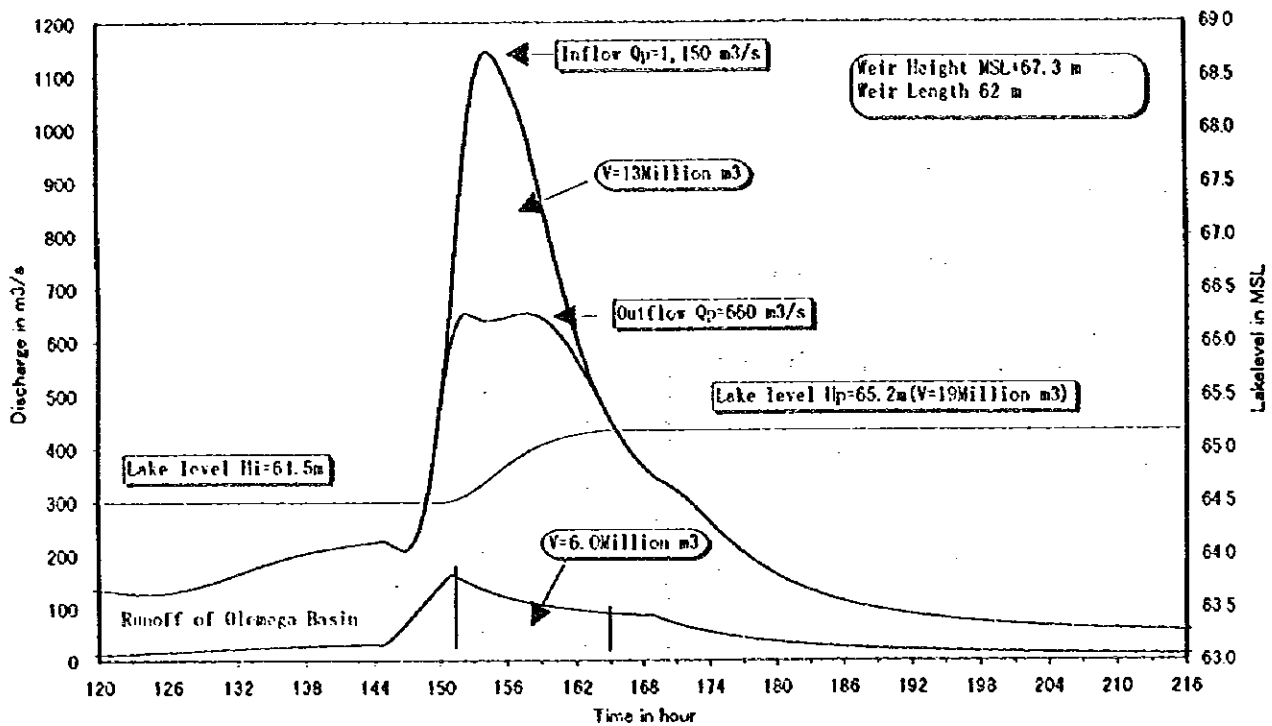


REMARKS:
 1) Unit in m³/s
 2) Top: 10-year probable discharge applied to Master Plan.
 3) Middle: 10-year probable discharge applied to Priority Project (for channel with dike).
 4) Bottom: 2-year probable discharge applied to Priority Project (for channel without dike).
 5) Discharge in () was not applied to the Priority Project.

Figura 6.3 DISTRIBUCIÓN DE LA DESCARGA DISEÑO PARA P/M Y P/P

HYDROGRAPH AT OMEGA DIVERSION FOR 10-yr. FLOOD



HYDROGRAPH AT OMEGA DIVERSION FOR 2-yr. FLOOD

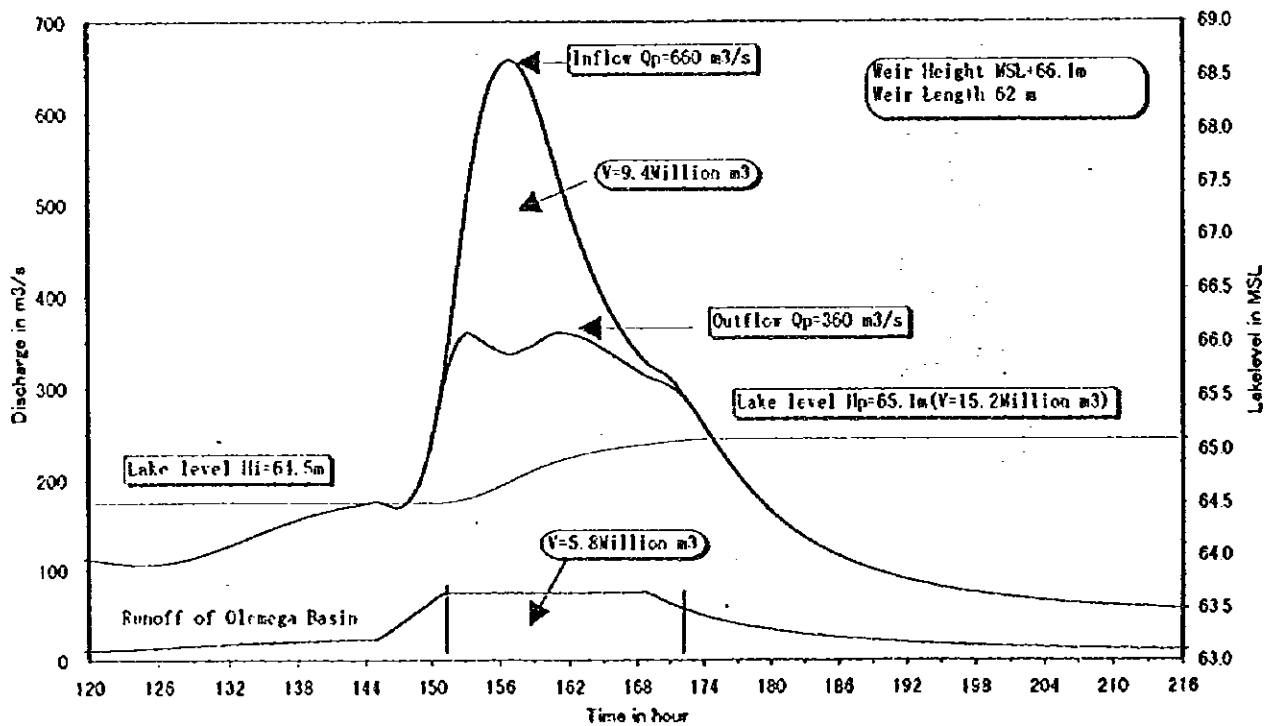


Figura 6.4 HIDROGRAMA DE LA AFLUENCIA EN LA LAGUNA DE OMEGA

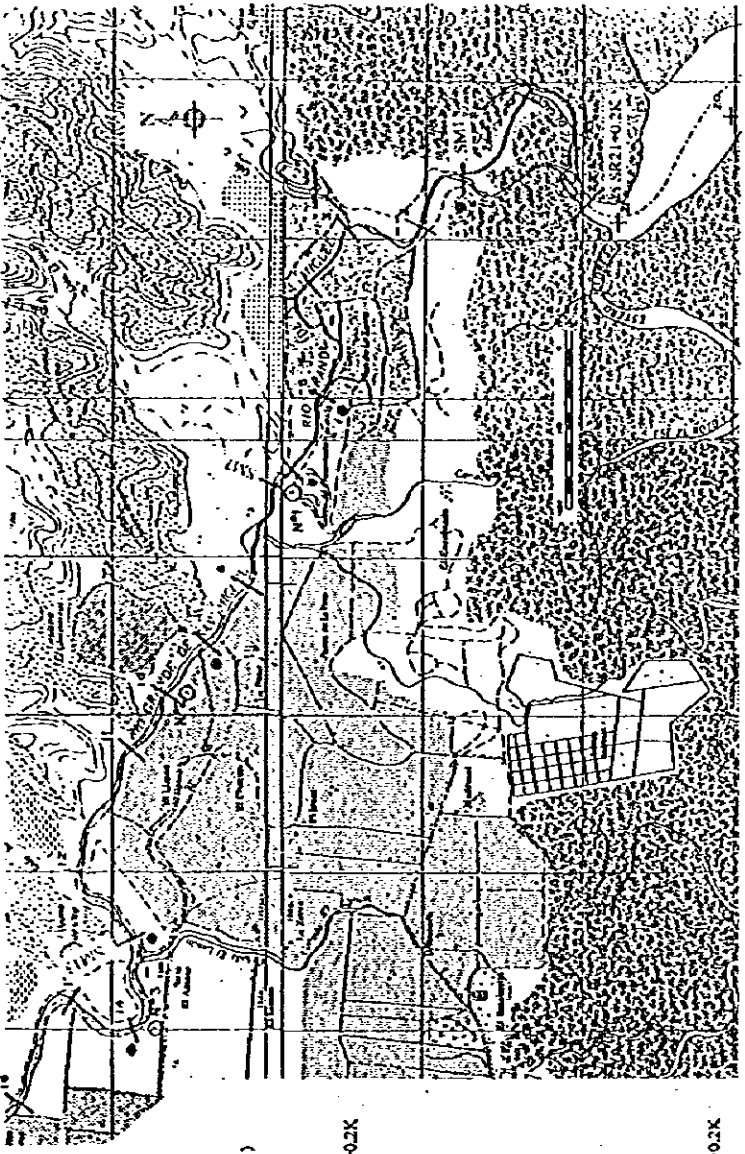
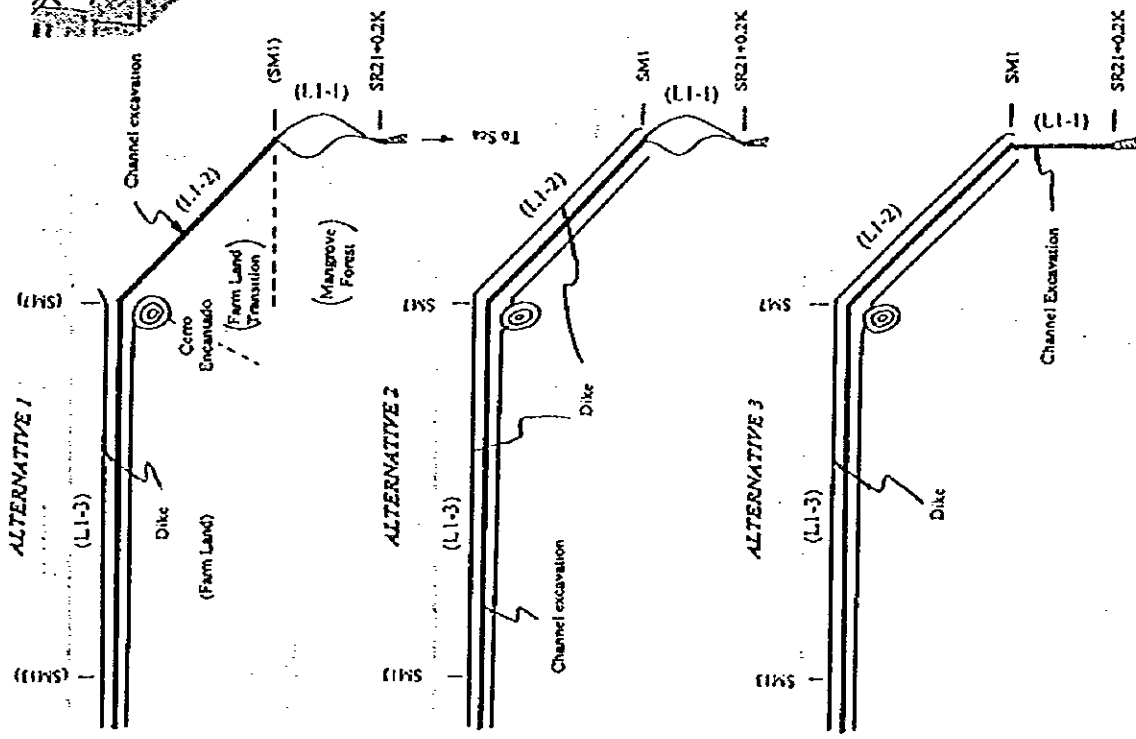
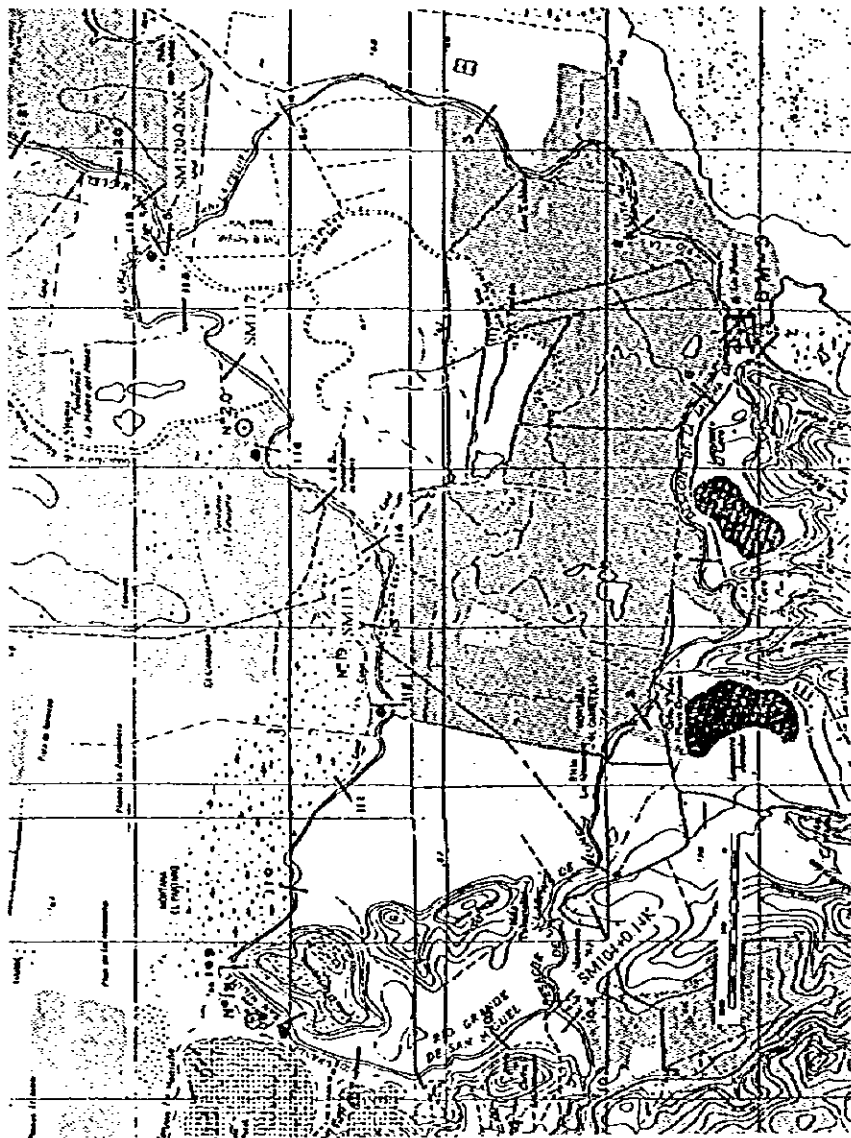
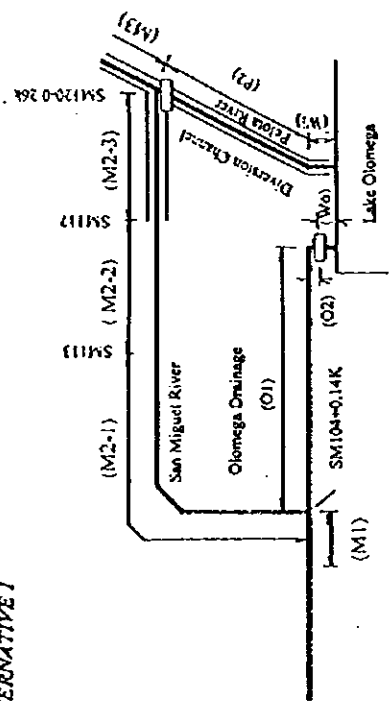


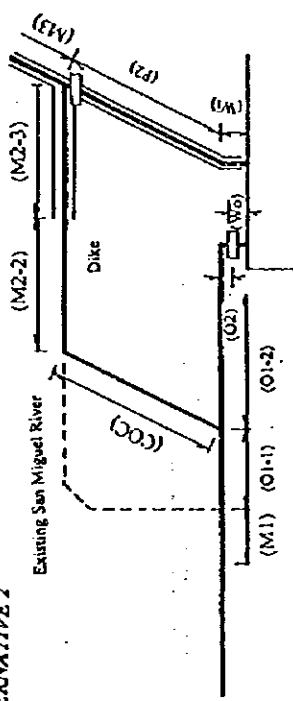
Figura 6.5 ESQUEMAS ALTERNATIVOS (EXTREMO BAJO)



ALTERNATIVE 1



ALTERNATIVE 2



ALTERNATIVE 3

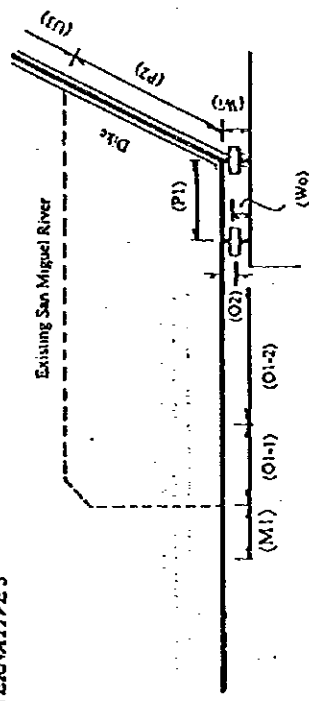


Figura 6.6 ESQUEMAS ALTERNATIVOS (AREA DE OMEGA)

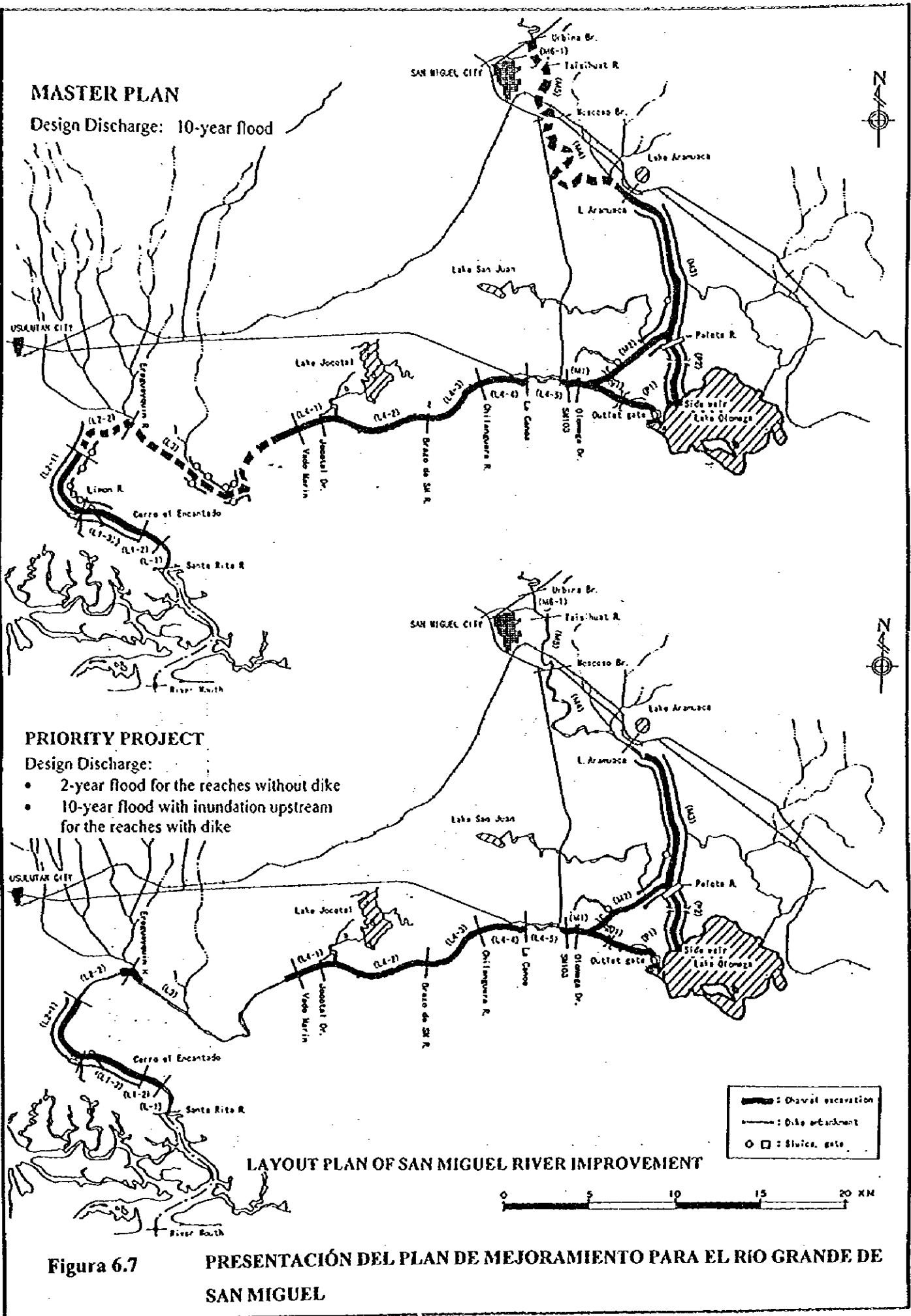


Figura 6.7

PRESENTACIÓN DEL PLAN DE MEJORAMIENTO PARA EL RIO GRANDE DE SAN MIGUEL

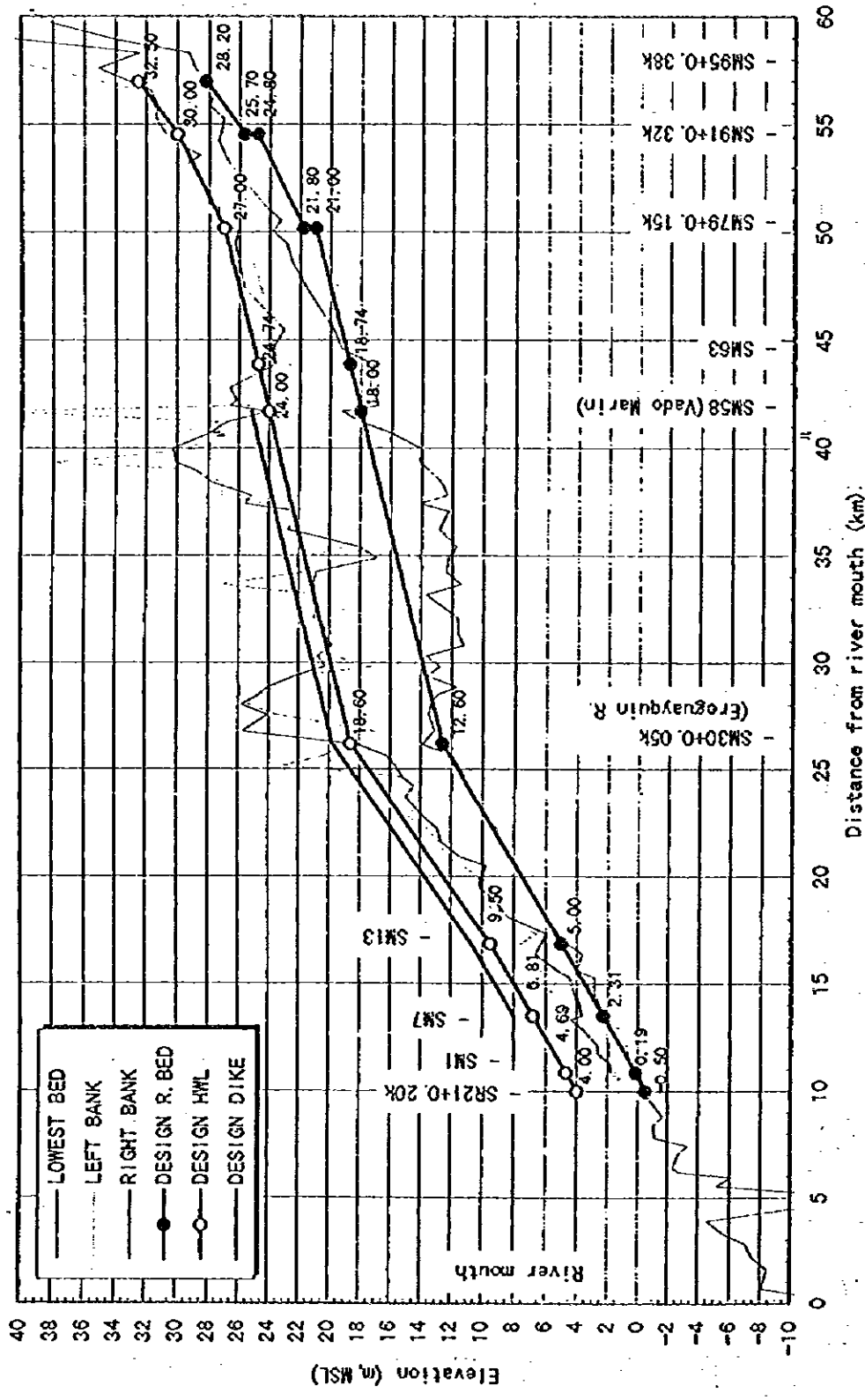


Figura 6.8 (1/3) PERFIL LONGITUDINAL PROPUESTO PARA EL RIO GRANDE DE SAN MIGUEL:
TRAMOS BAJOS

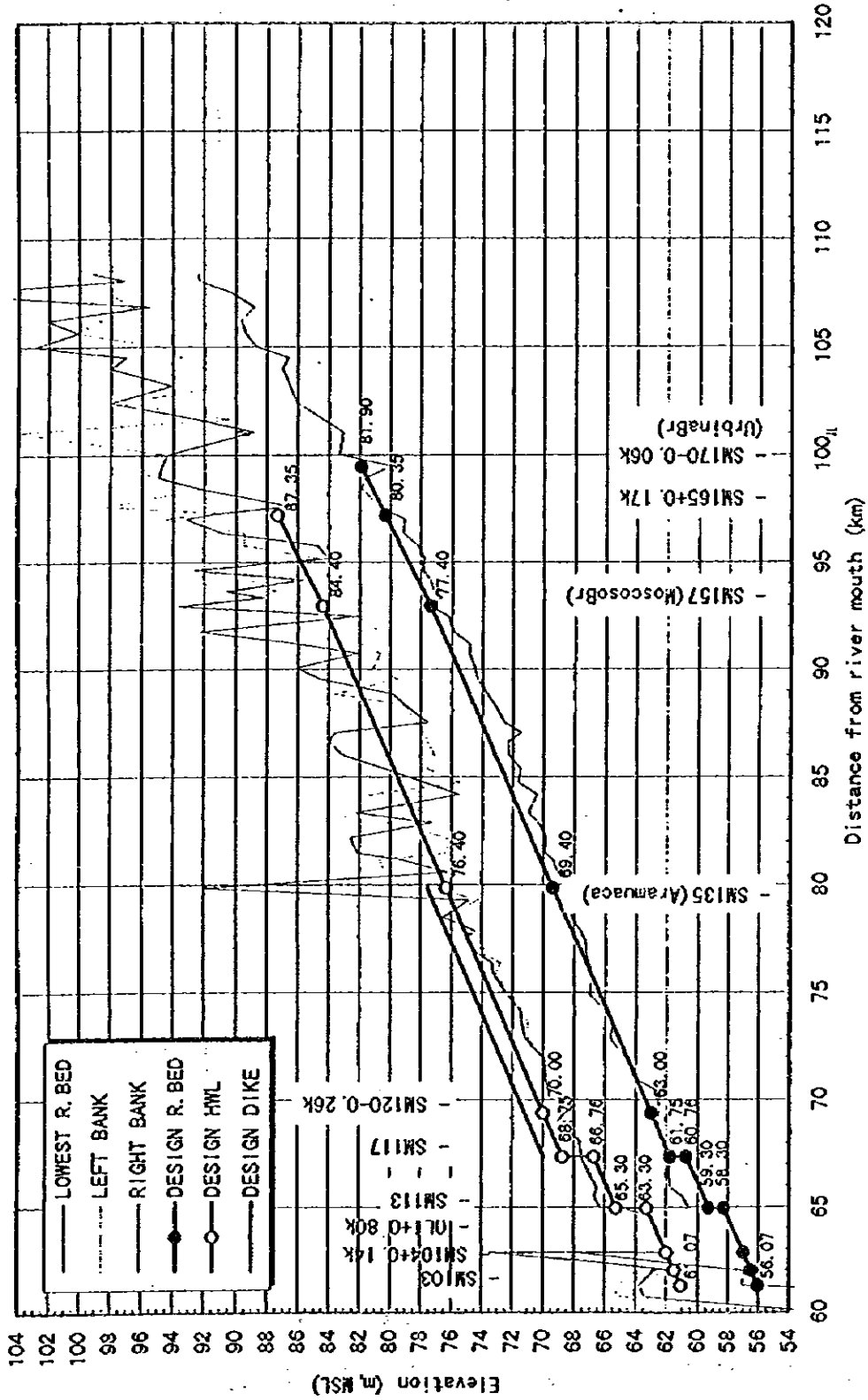


Figura 6.8 (2/3) PERFIL LONGITUDINAL PROPUESTO PARA EL RIO GRANDE DE SAN MIGUEL:
TRAMOS MEDIOS

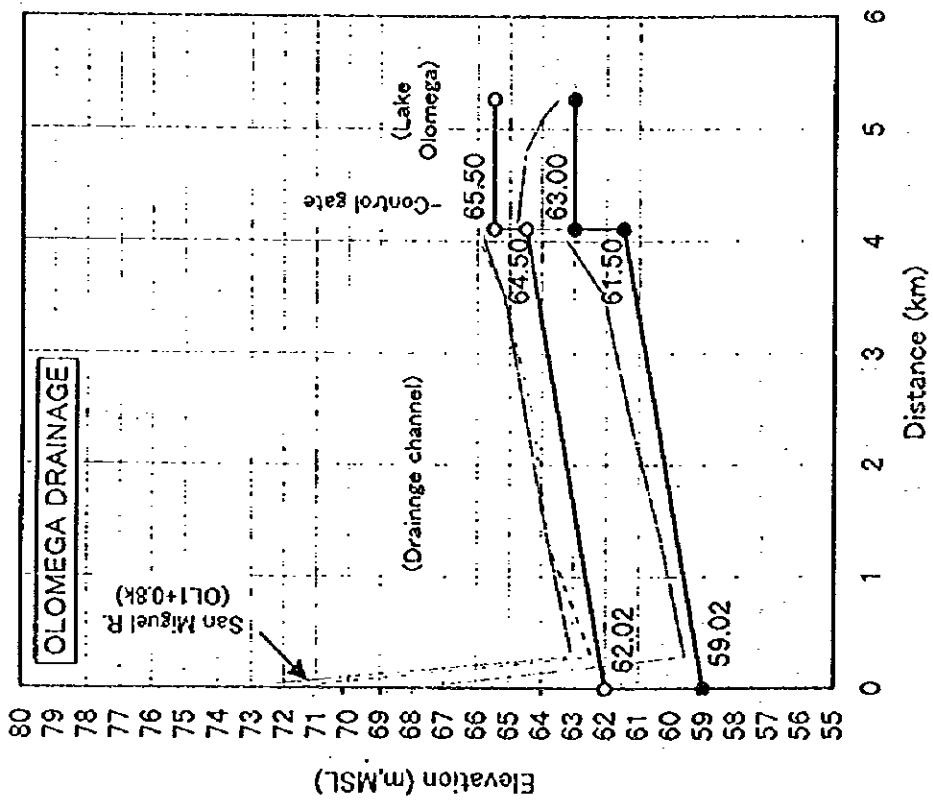
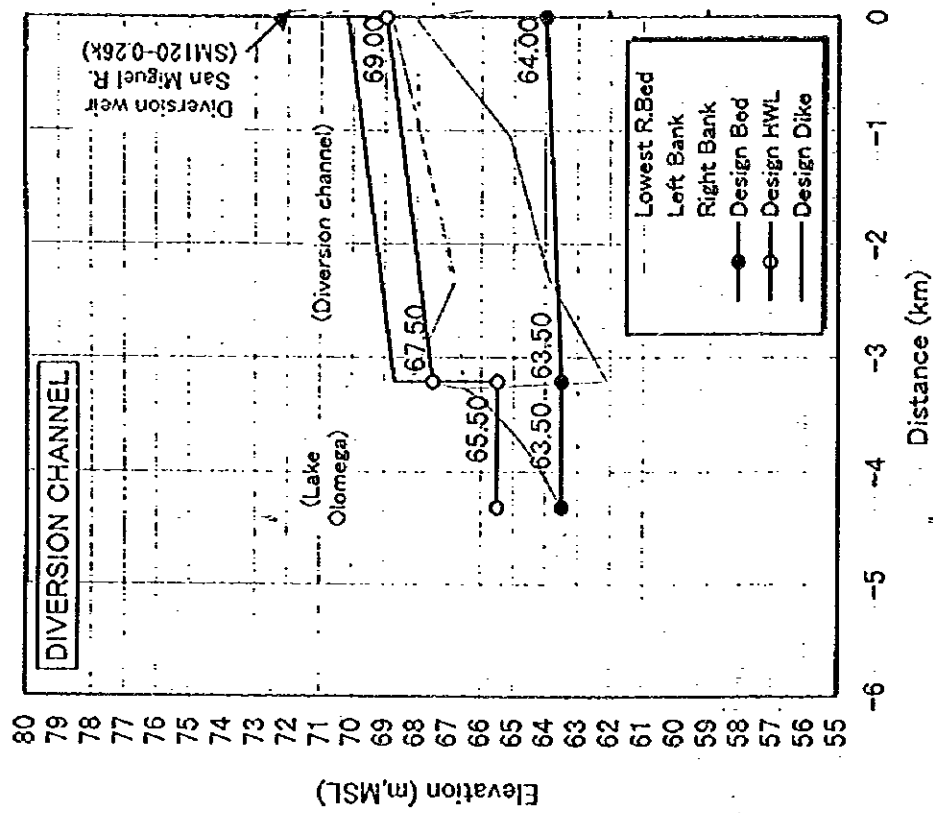


Figura 6.8 (3/3) PERFIL LONGITUDINAL PROPUESTO PARA EL RIO GRANDE DE SAN MIGUEL:
TRAMOS MEDIOS

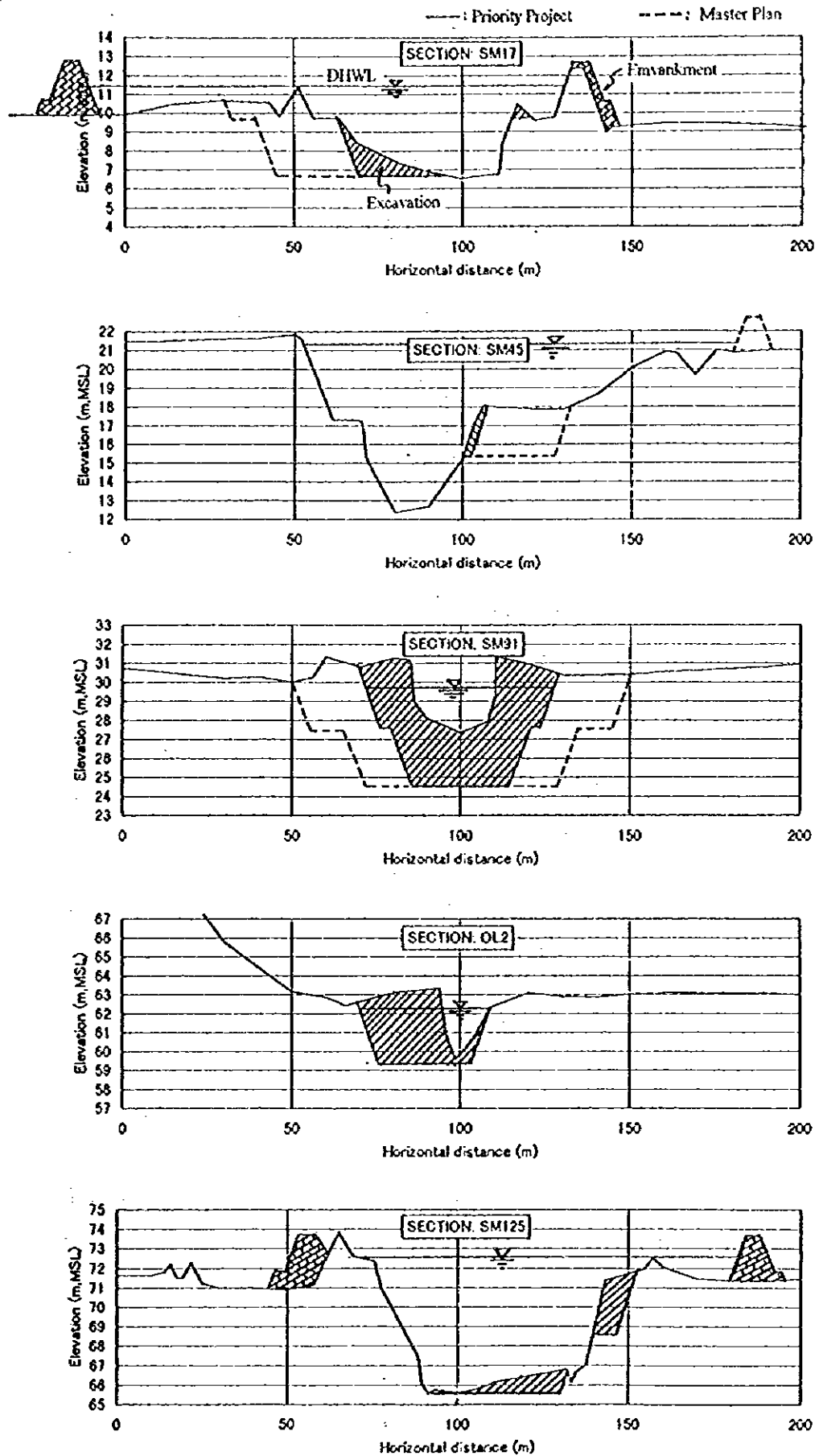


Figura 6.9

SECCIONES REPRESENTATIVAS DEL RÍO GRANDE DE SAN MIGUEL
 PROPUESTO

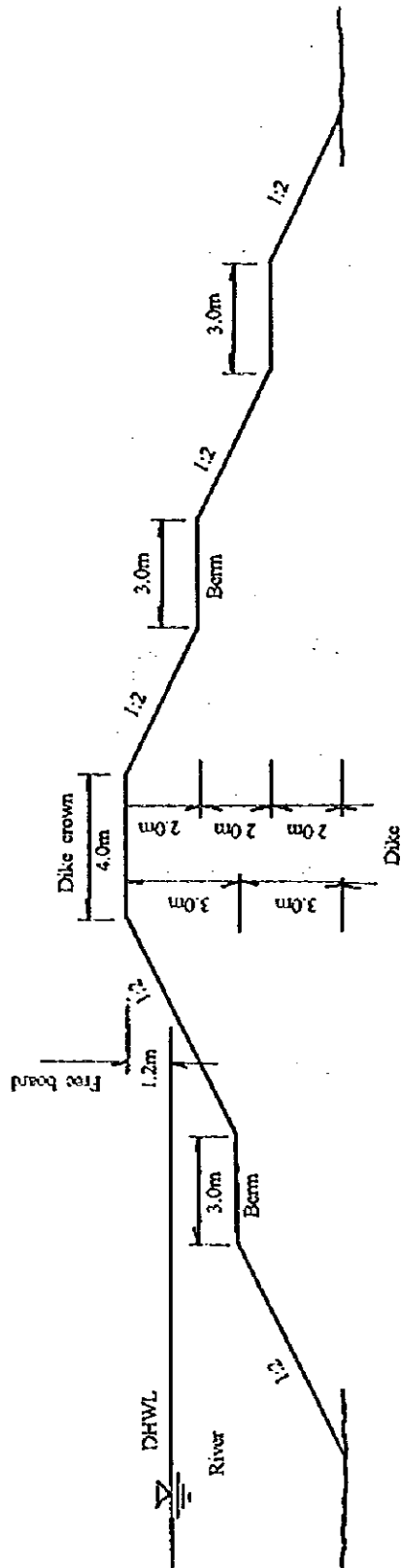
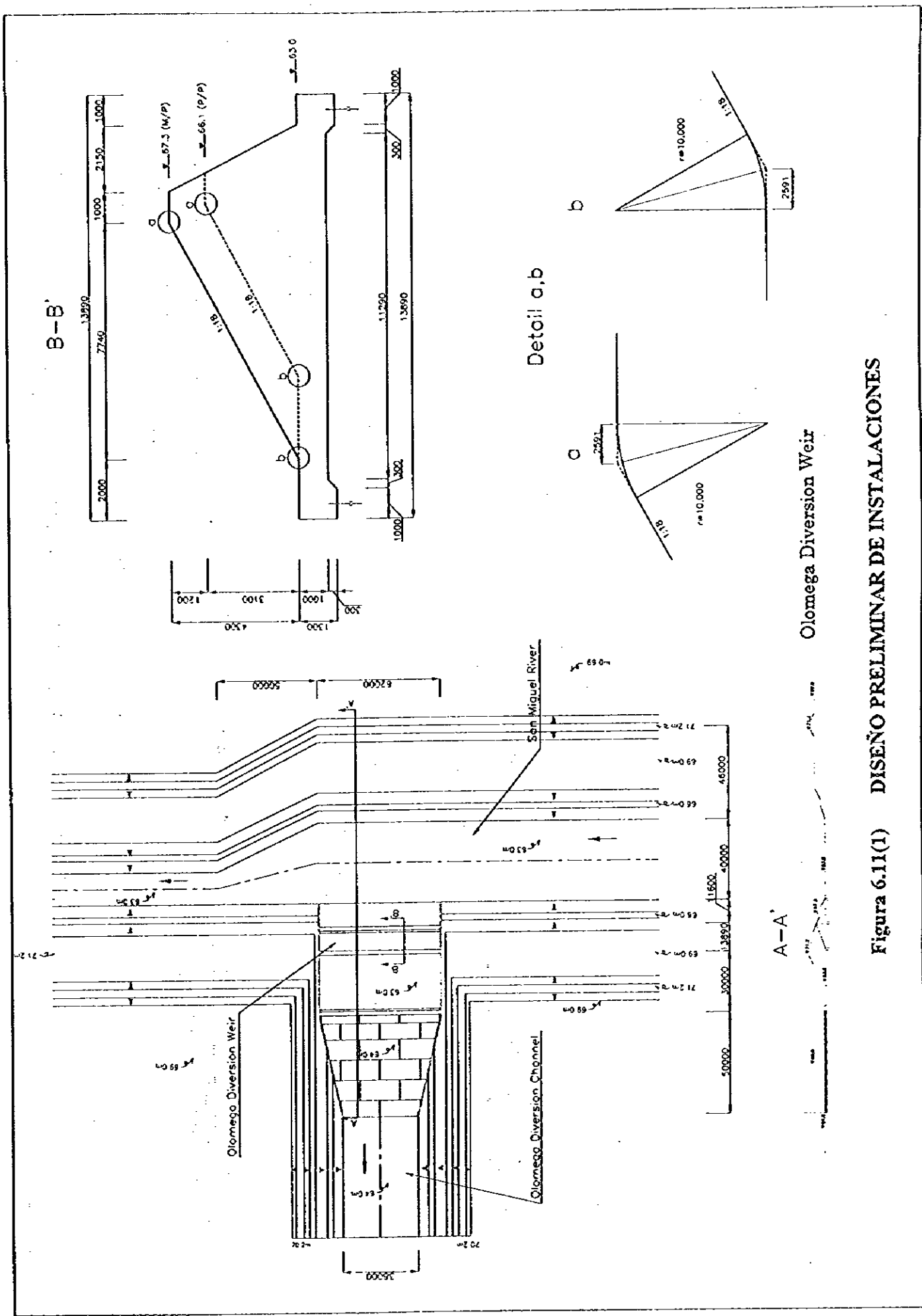


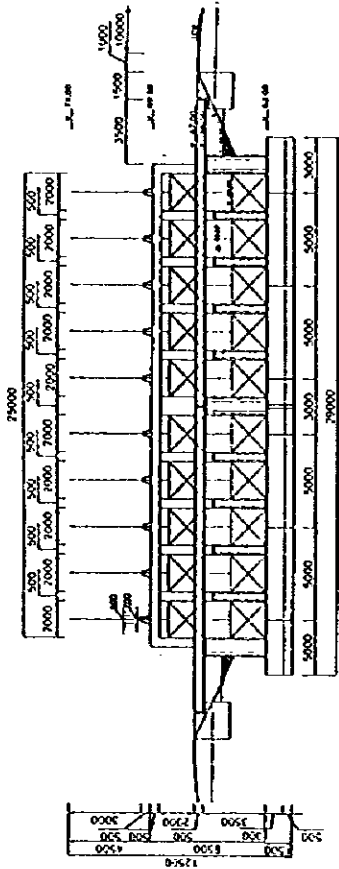
Figura 6.10 SECCIÓN DEL DIQUE DISEÑO ESTÁNDAR



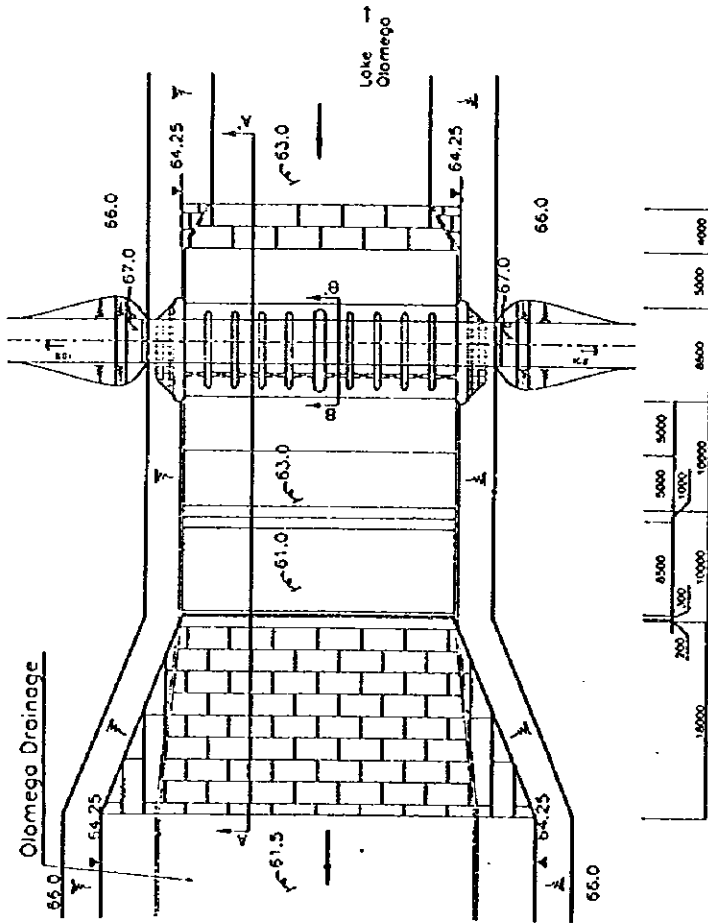
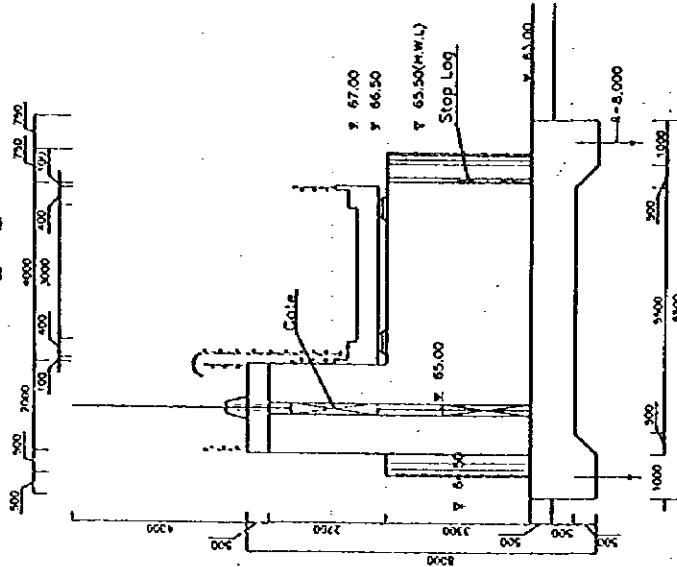
Olomega Diversion Weir

Figura 6.11(1) DISEÑO PRELIMINAR DE INSTALACIONES

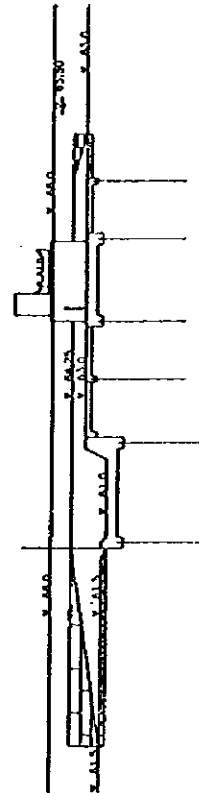
U/S Face



B-B'



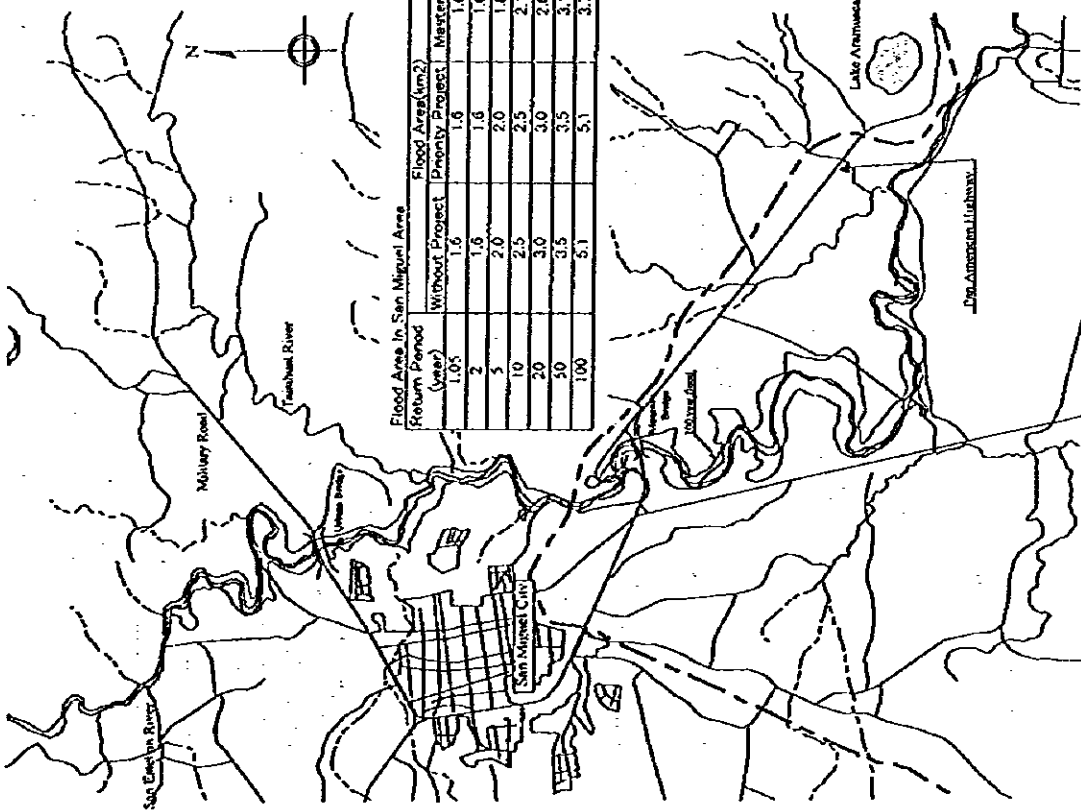
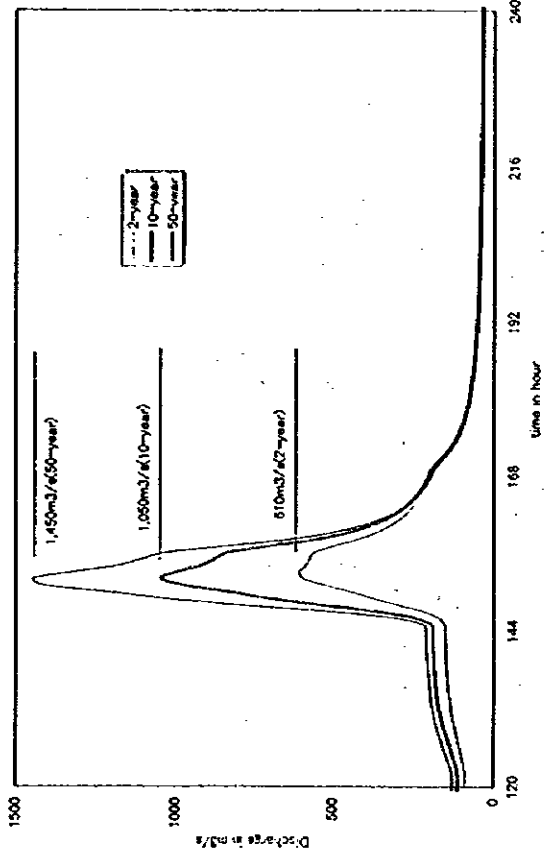
A-A'



Olomega Control Gate

Figura 6.11(2) DISEÑO PRELIMINAR DE INSTALACIONES

HYDROGRAPH AT MOSCOSO



Return Period (Year)	Flood Area (km²)	
	Without Project	With Project
1.05	1.6	1.6
2	1.6	1.6
5	2.0	1.8
10	2.5	2.1
20	3.0	2.6
50	3.5	3.1
100	5.1	3.7

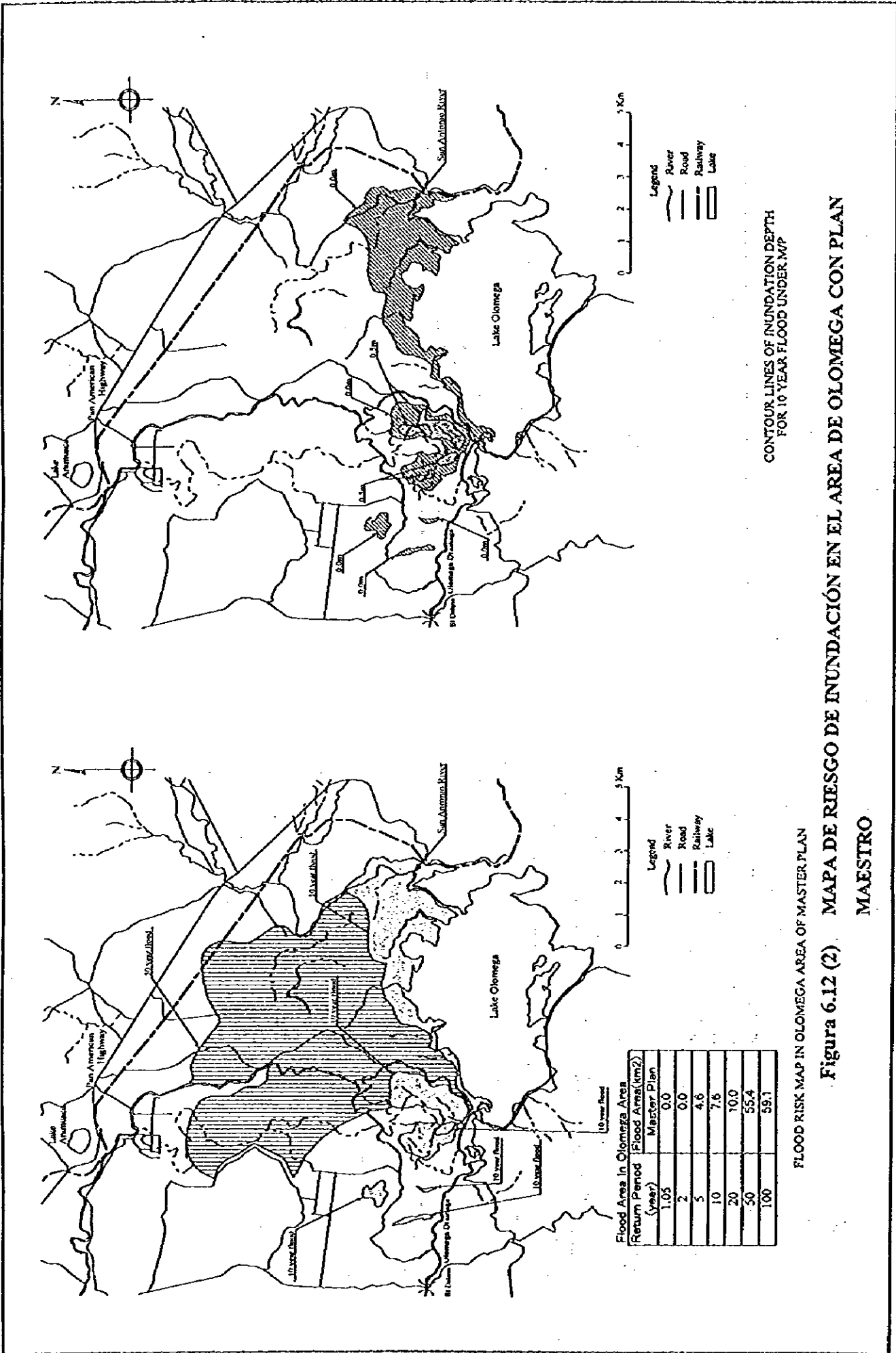
- Legend
- River
 - Road
 - - - Railway
 - ▭ Urban Area

1 Km



Figura 6.12 (1) MAPA DE RIESGO DE INUNDACIÓN EN EL AREA DE SAN MIGUEL

FLOOD RISK MAP IN SAN MIGUEL AREA



CONTOUR LINES OF INUNDATION DEPTH FOR 10 YEAR FLOOD UNDER M/P

FLOOD RISK MAP IN OMEGA AREA OF MASTER PLAN

Figura 6.12 (2) MAPA DE RIESGO DE INUNDACIÓN EN EL AREA DE OMEGA CON PLAN MAESTRO

Flood Area in Olomega Area (km ²)	Return Period (Year)	Master Plan
0.0	1.05	0.0
0.0	2	0.0
4.6	5	4.6
7.6	10	7.6
10.0	20	10.0
55.4	50	55.4
59.1	100	59.1

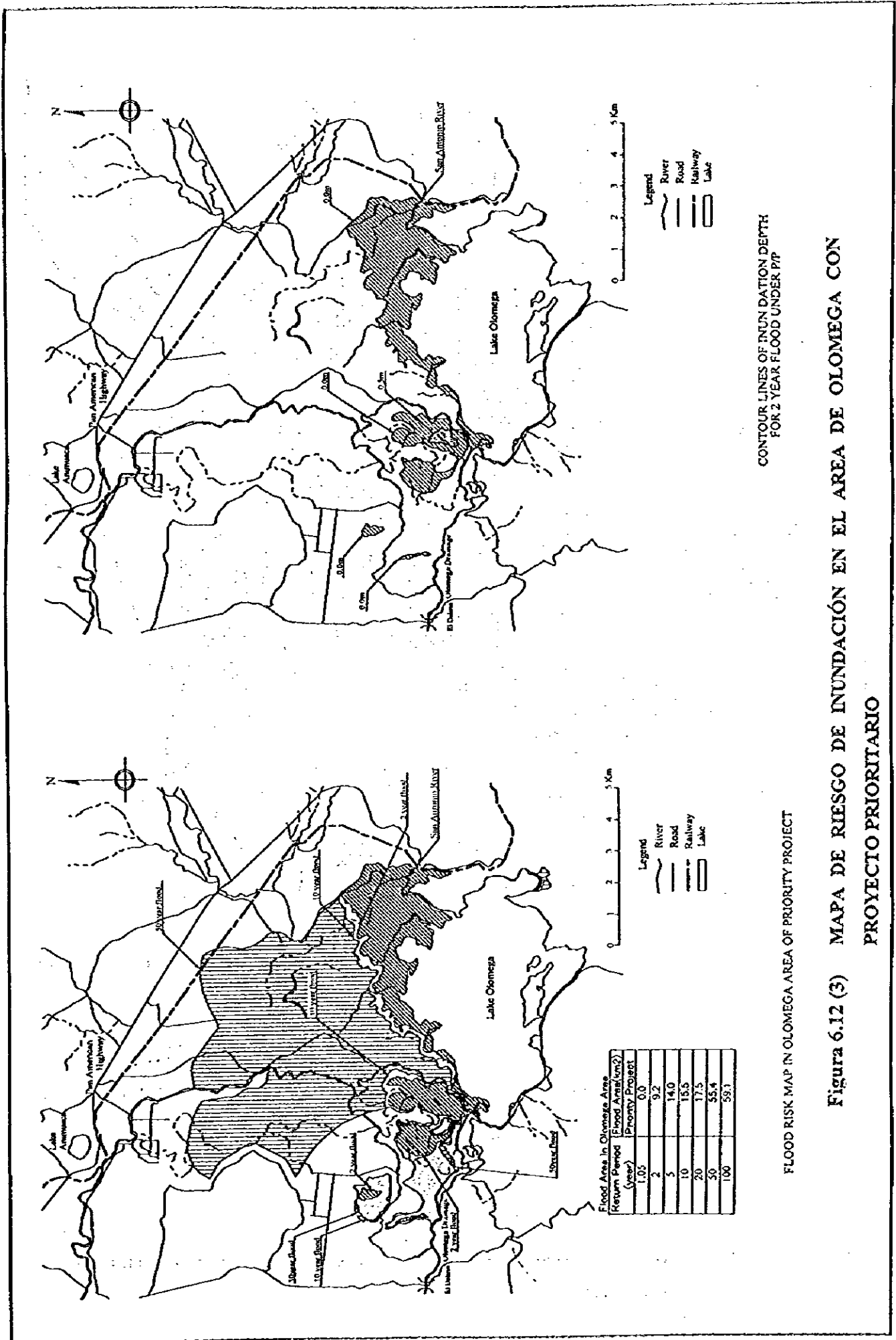
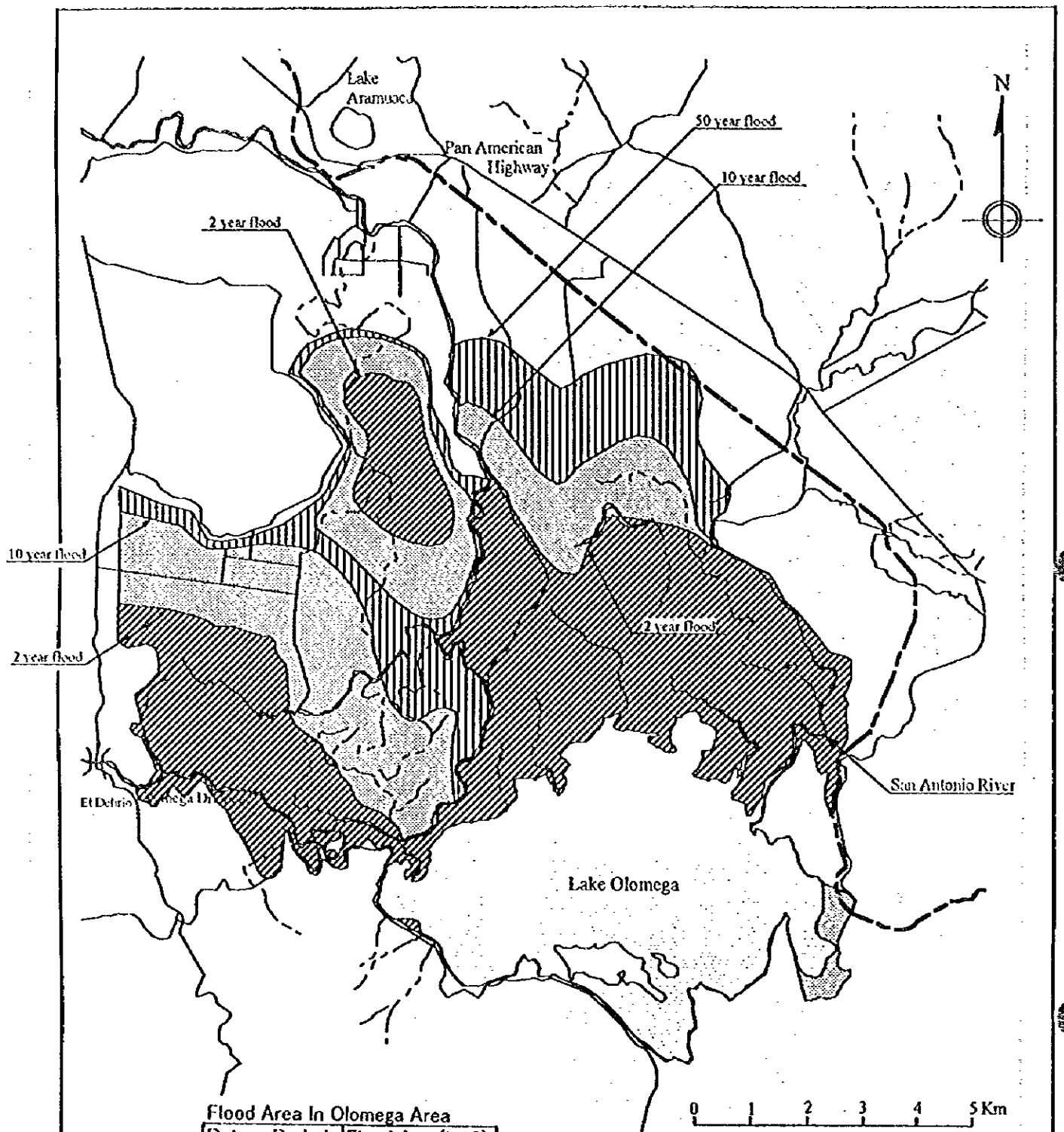


Figura 6.12 (3) MAPA DE RIESGO DE INUNDACIÓN EN EL AREA DE OMEGA CON PROYECTO PRIORITARIO



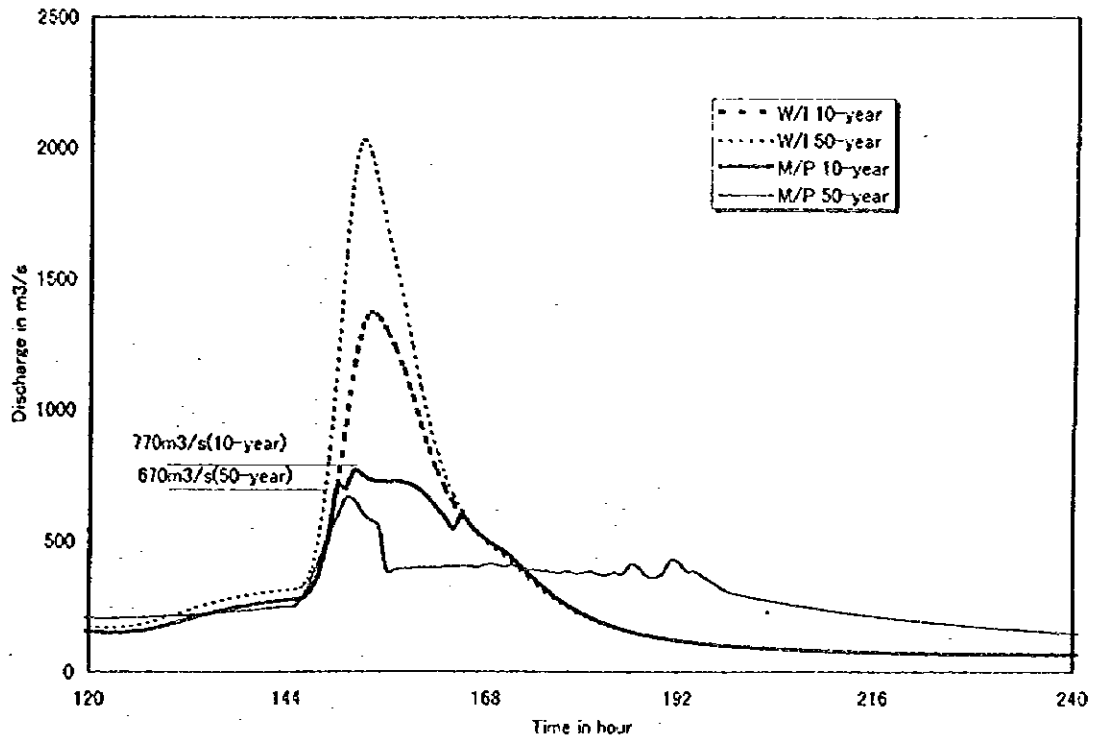
Flood Area In Olomega Area

Return Period (year)	Flood Area(km ²) Without Project
1.05	25.3
2	41.5
5	54.5
10	69.4
20	78.0
50	83.7
100	88.9

- Legend
- River
 - Road
 - Railway
 - Lake

Figura 6.12 (4) MAPA DE RIESGO DE INUNDACIÓN EN EL AREA DE OLOMEGA SIN PROYECTO

HYDROGRAPH AT EL DELIRIO UNDER M/P



HYDROGRAPH AT EL DELIRIO UNDER P/P

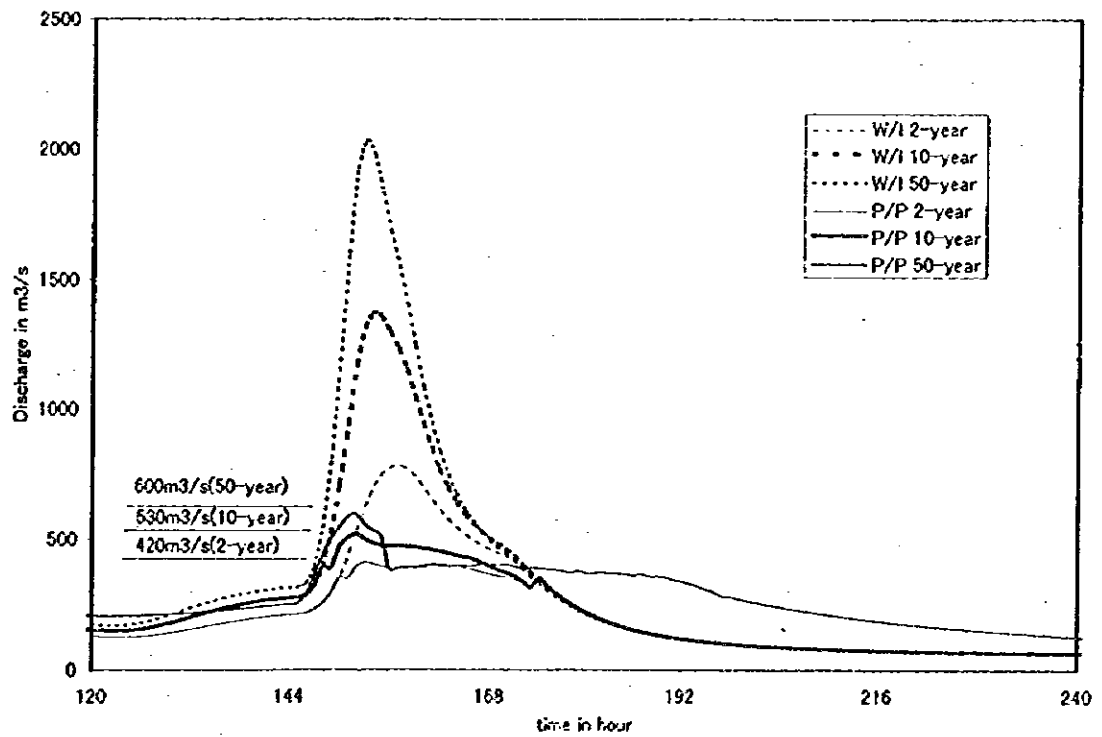
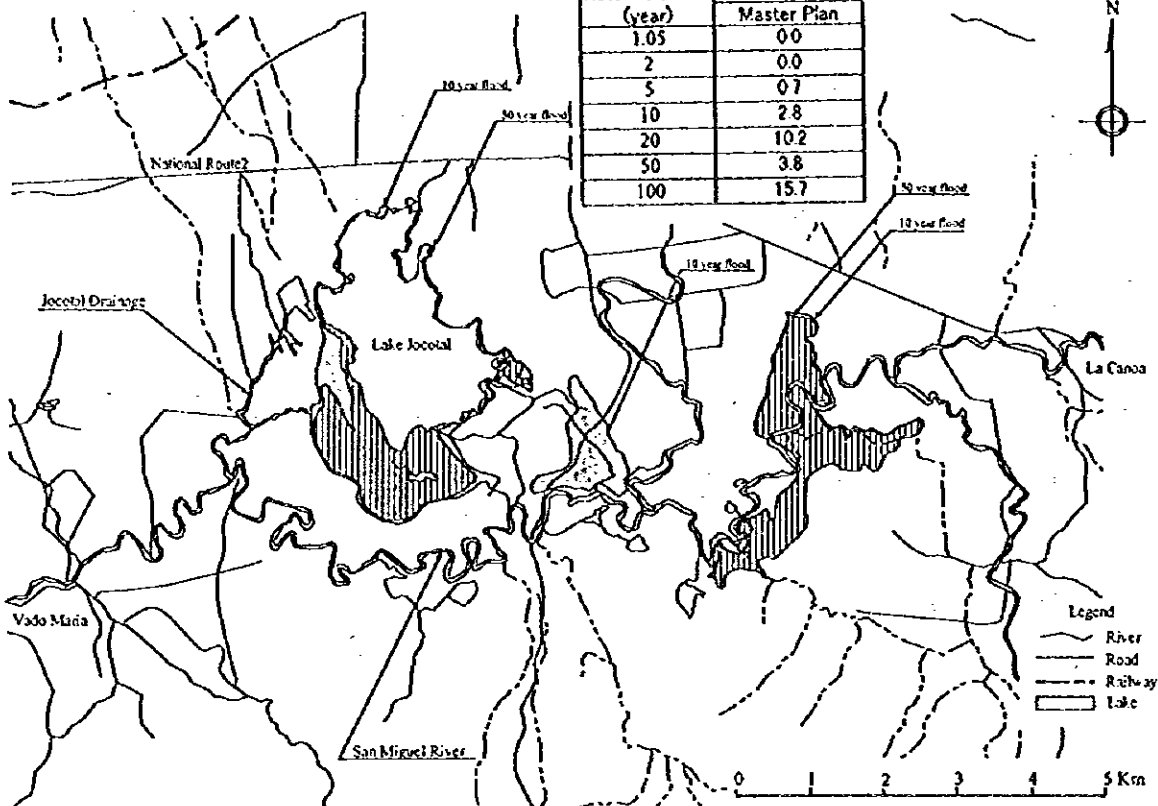


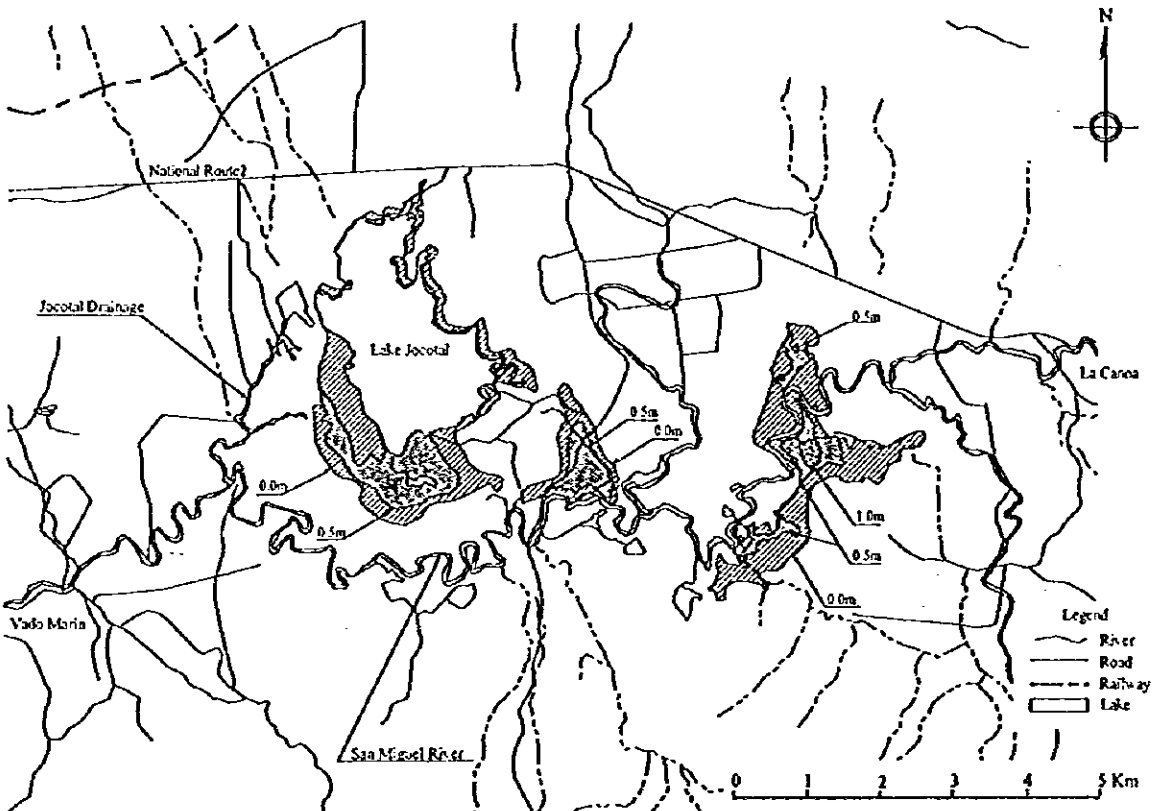
Figura 6.12 (5) HIDROGRAMA EN EL DELIRIO CON P/M Y P/P

Flood Area In Jocotal Area

Return Period (year)	Flood Area(km ²) Master Plan
1.05	0.0
2	0.0
5	0.7
10	2.8
20	10.2
50	3.8
100	15.7

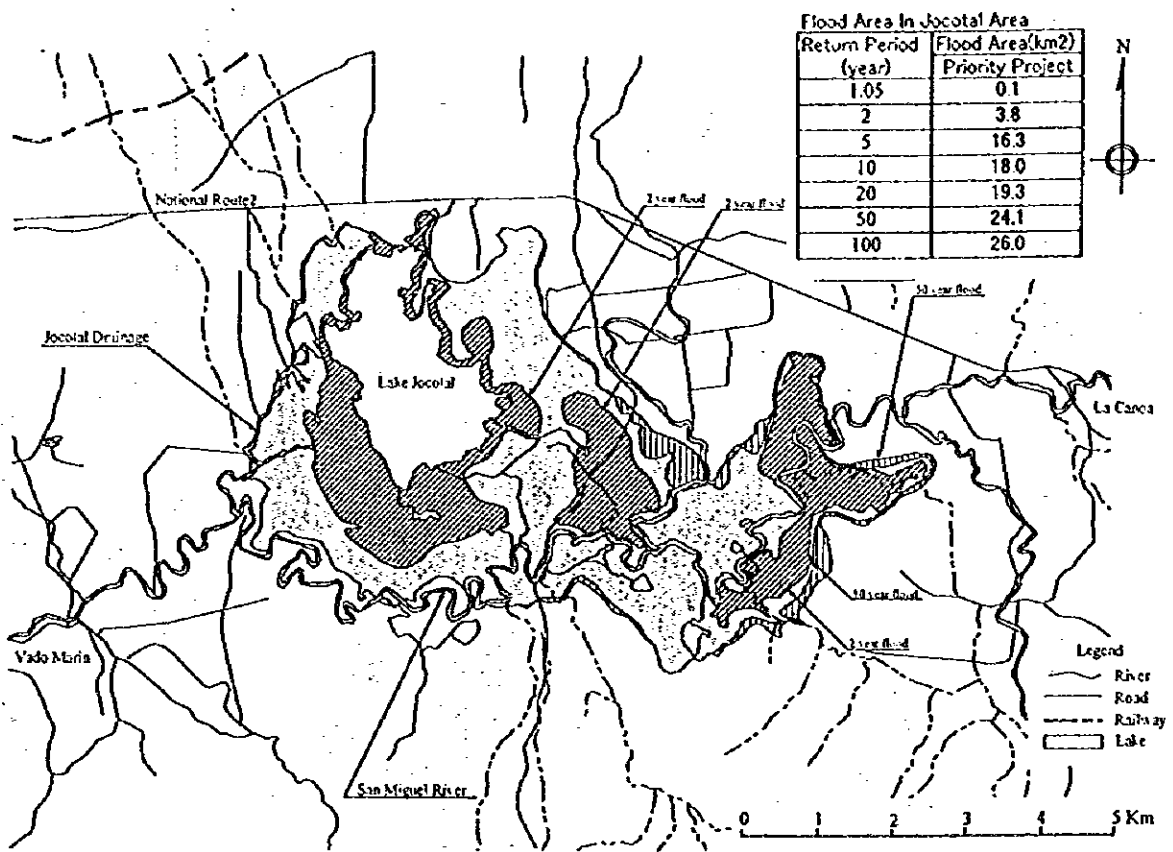


FLOOD RISK MAP IN JOCOTAL AREA OF MASTER PLAN

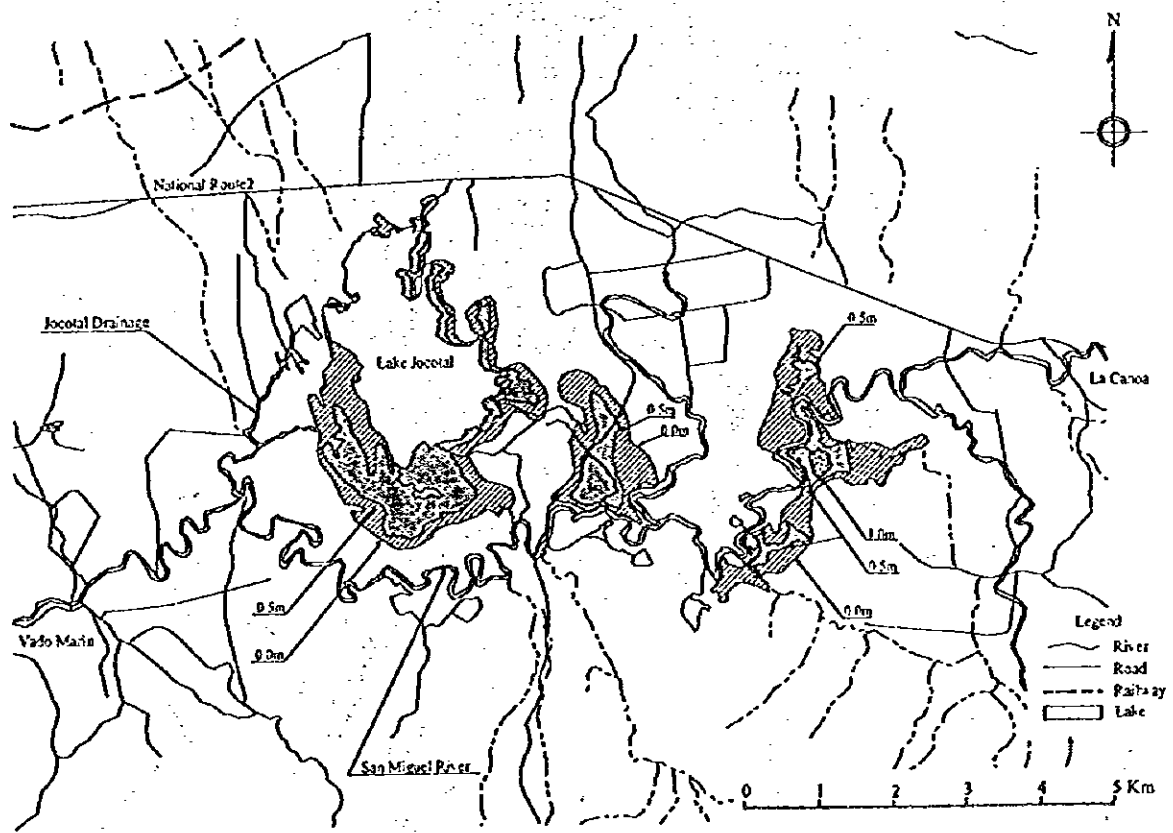


CONTOUR LINES OF INUNDATION DEPTH FOR 10 YEAR FLOOD UNDER MP IN JOCOTAL AREA

Figura 6.12 (6) MAPA DE RIESGO DE INUNDACIÓN EN EL AREA DE EL JOCOTAL CON PLAN MAESTRO



FLOOD RISK MAP IN JOCOTAL AREA OF PRIORITY PROJECT



CONTOUR LINES OF INUNDATION DEPTH FOR 2 YEAR FLOOD UNDER P.P IN JOCOTAL AREA

Figura 6.12 (7) MAPA DE RIESGO DE INUNDACIÓN EN EL AREA DE EL JOCOTAL CON PROYECTO PRIORITARIO

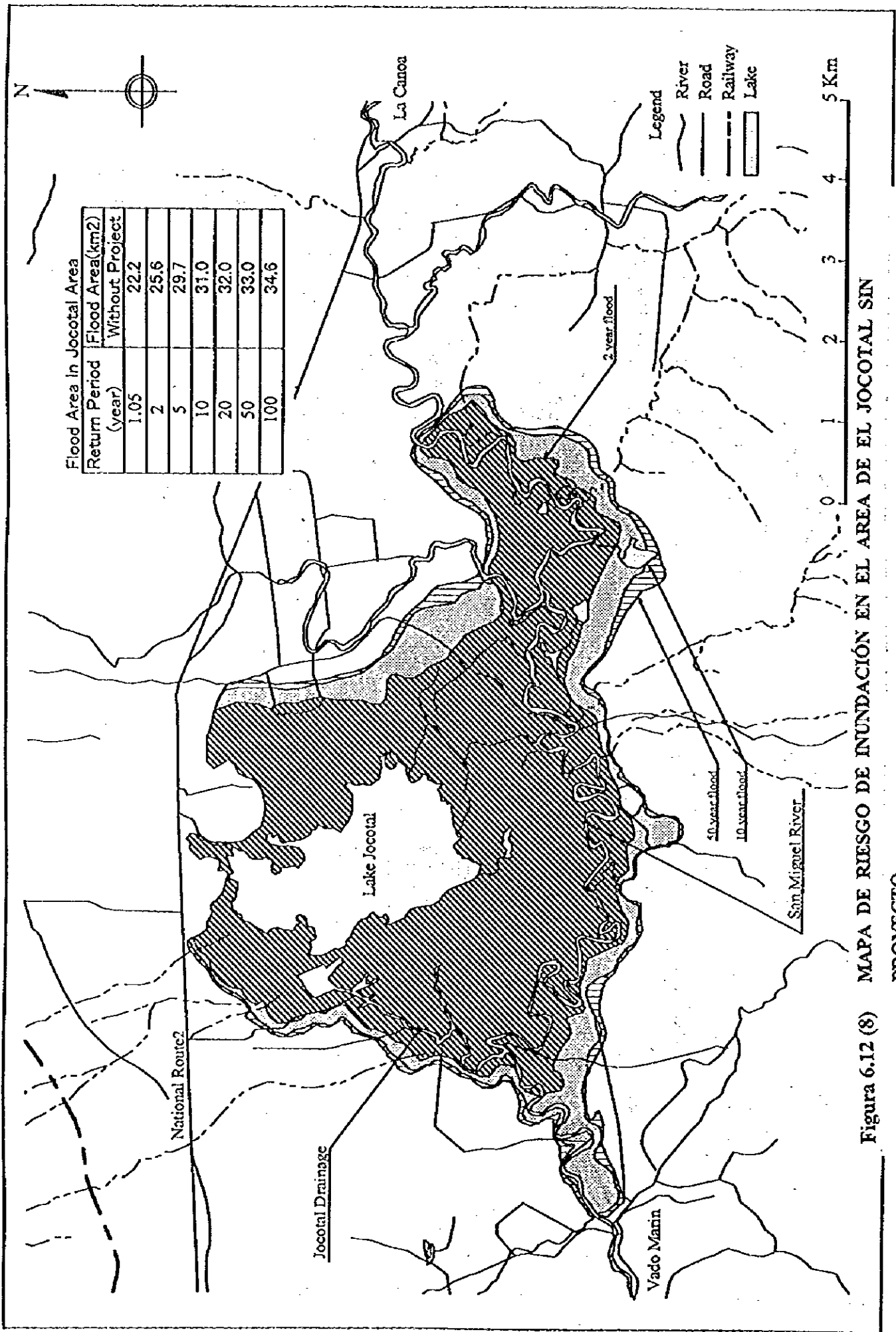
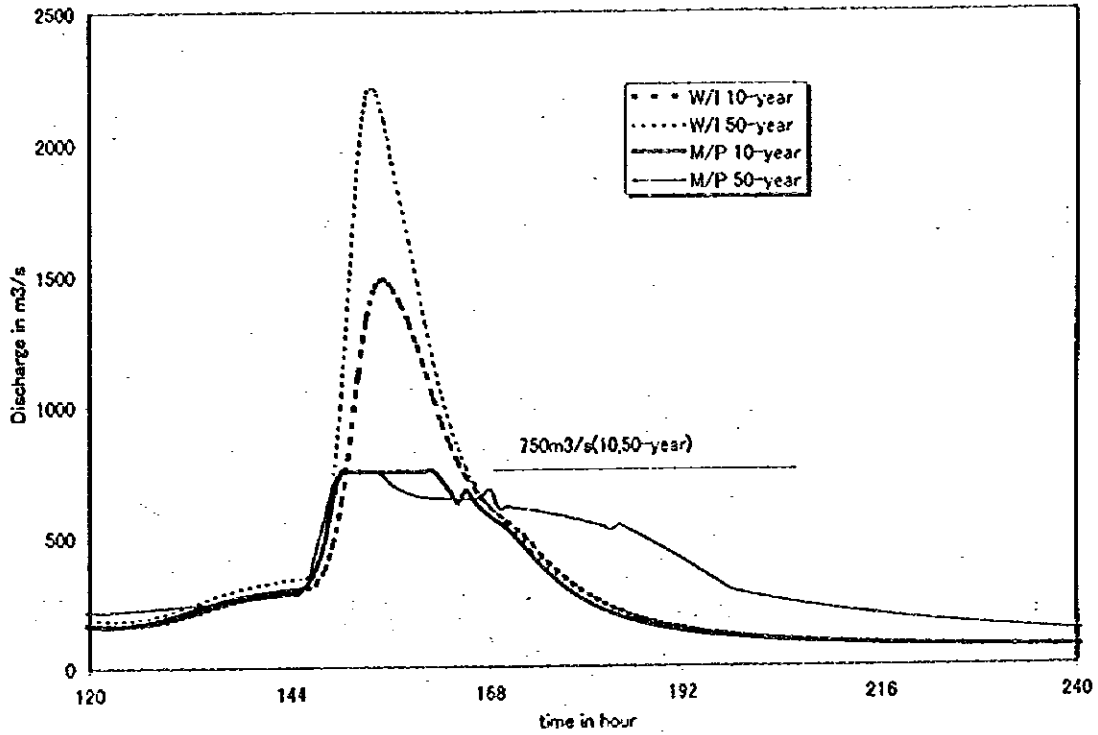


Figura 6.12 (8) MAPA DE RIESGO DE INUNDACIÓN EN EL AREA DE EL JOCOTAL SIN PROYECTO

HYDROGRAPH AT VADO MARIN UNDER M/P



HYDROGRAPH AT VADO MARIN UNDER P/P

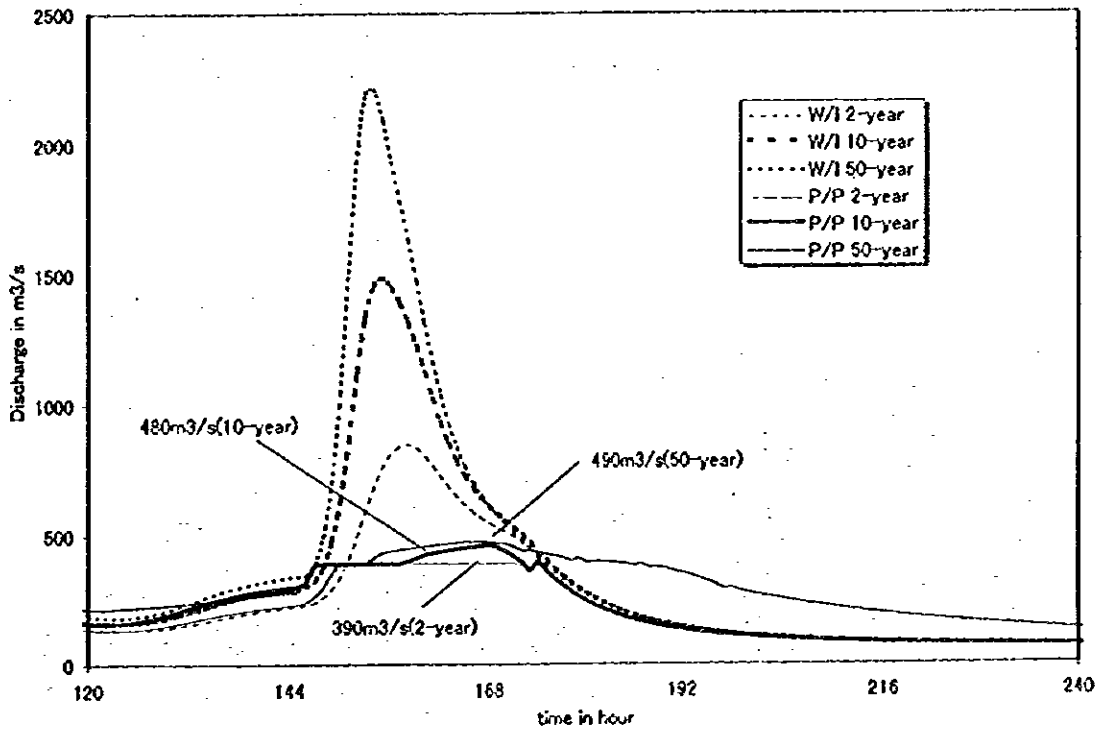
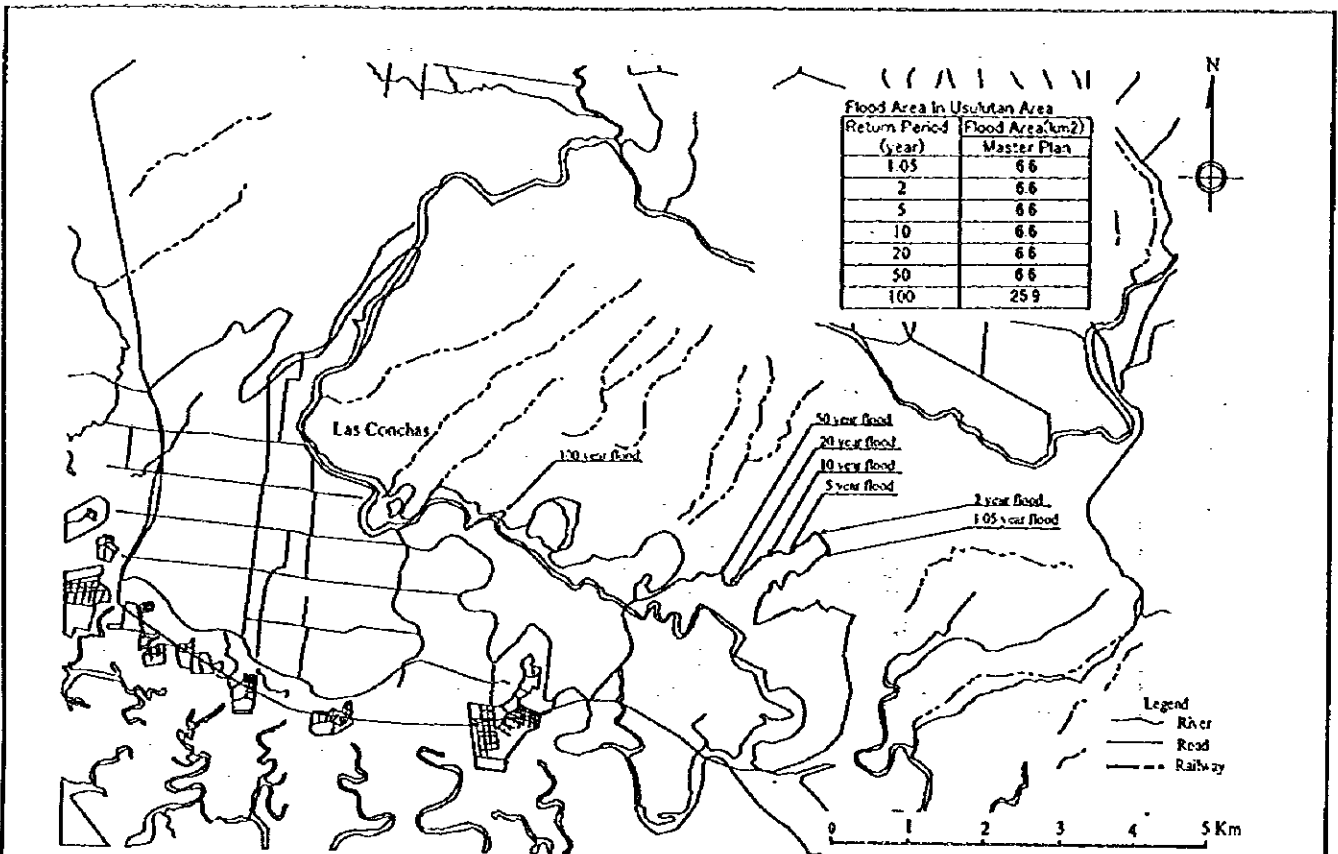
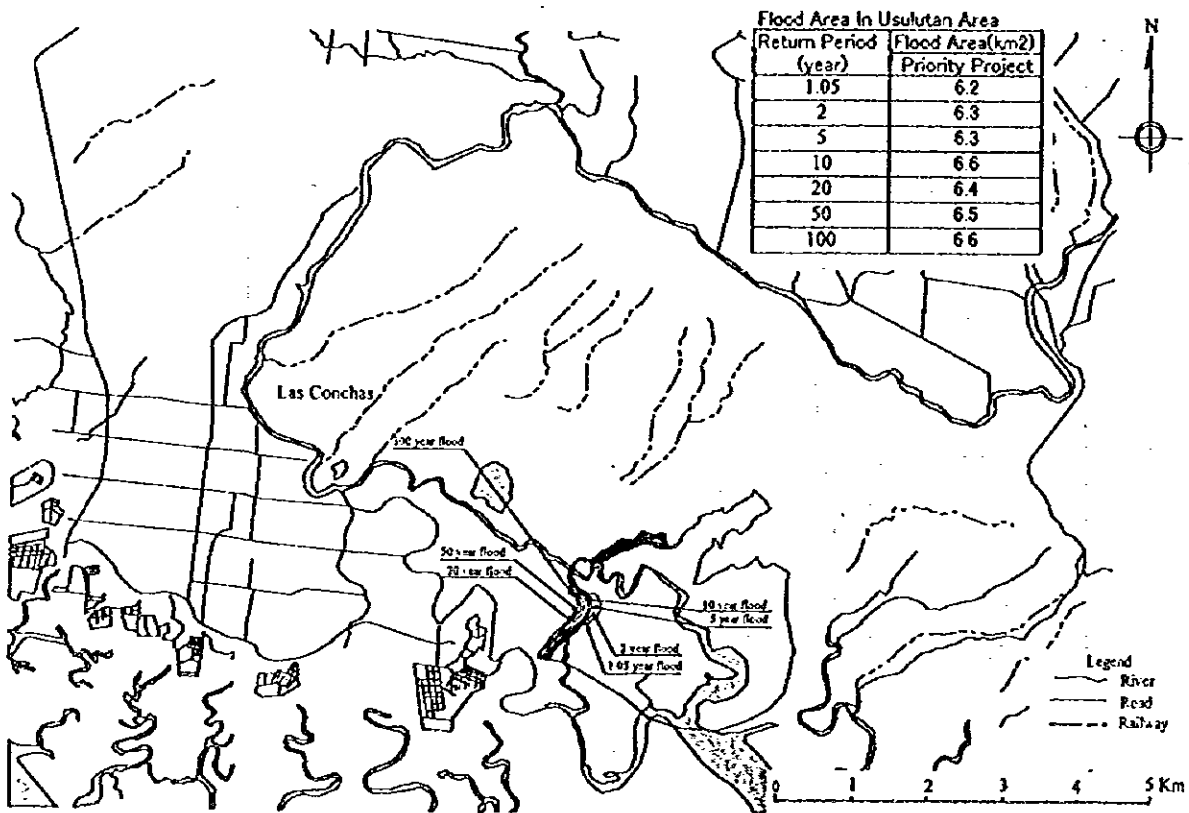


Figura 6.12 (9) HIDROGRAMA EN EL VADO MARIN CON P/M Y P/P



FLOOD RISK MAP IN USULUTÁN AREA OF MASTER PLAN



FLOOD RISK MAP IN USULUTÁN AREA OF PRIORITY PROJECT

Figura 6.12 (10) MAPA DE RIESGO DE INUNDACIÓN EN EL AREA DE USULUTÁN CON P/M Y P/P

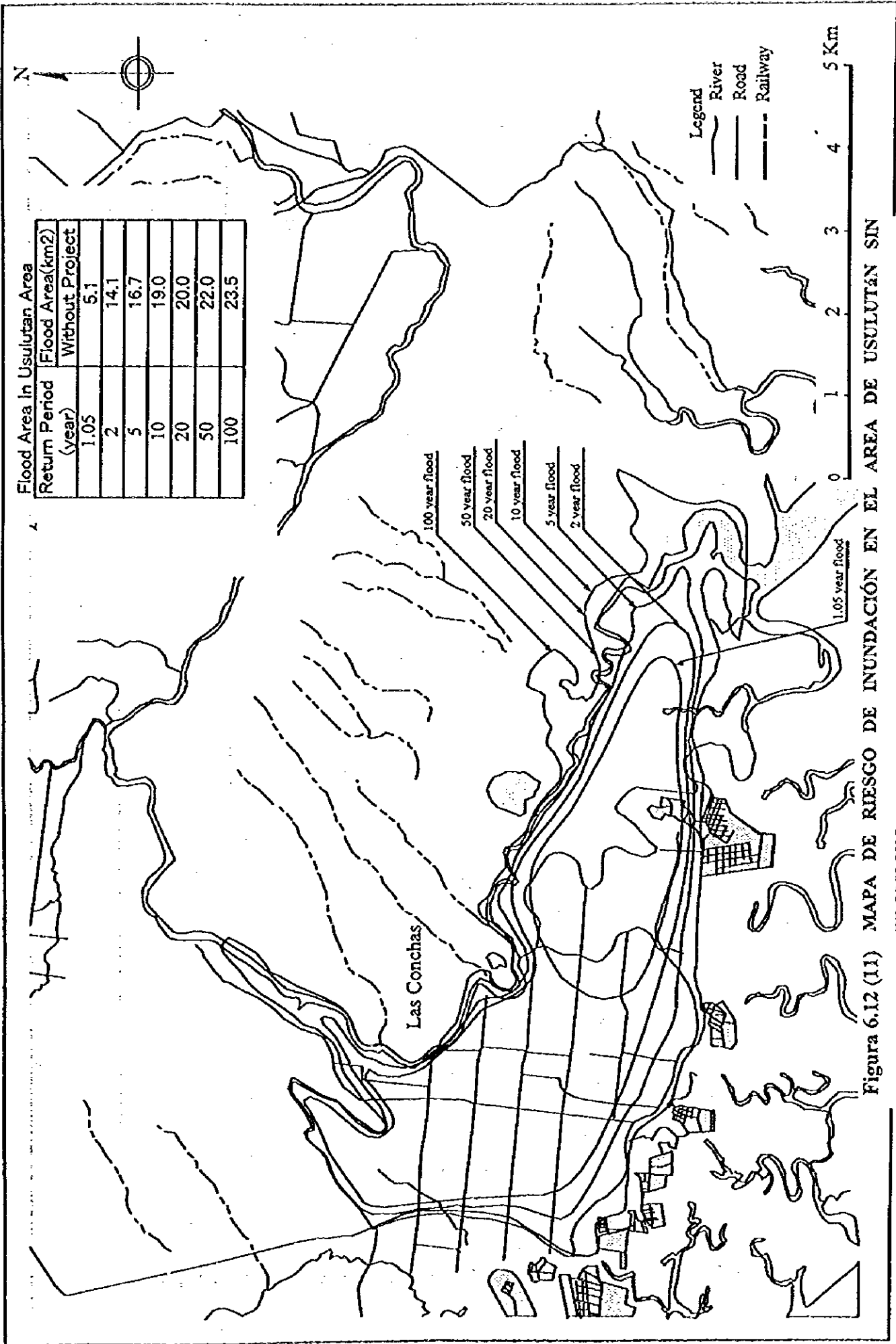
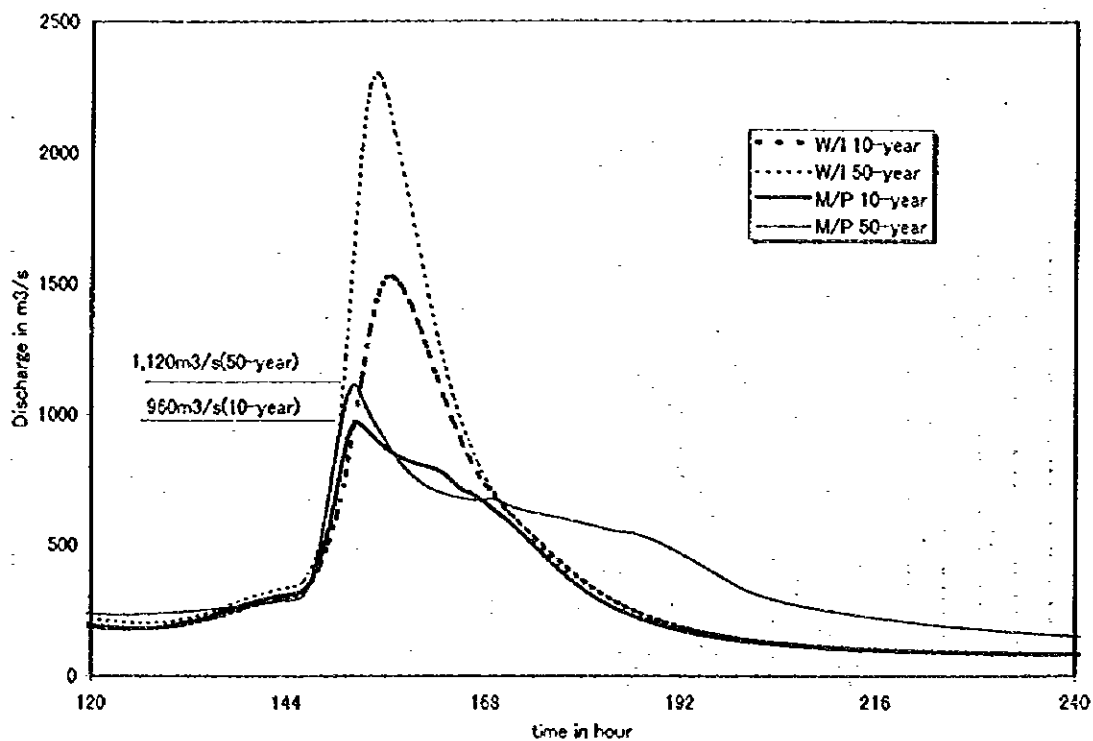


Figura 6.12 (11) MAPA DE RIESGO DE INUNDACIÓN EN EL AREA DE USULUTÁN SIN PROYECTO

HYDROGRAPH AT LAS CONCHAS UNDER M/P



HYDROGRAPH AT LAS CONCHAS UNDER P/P

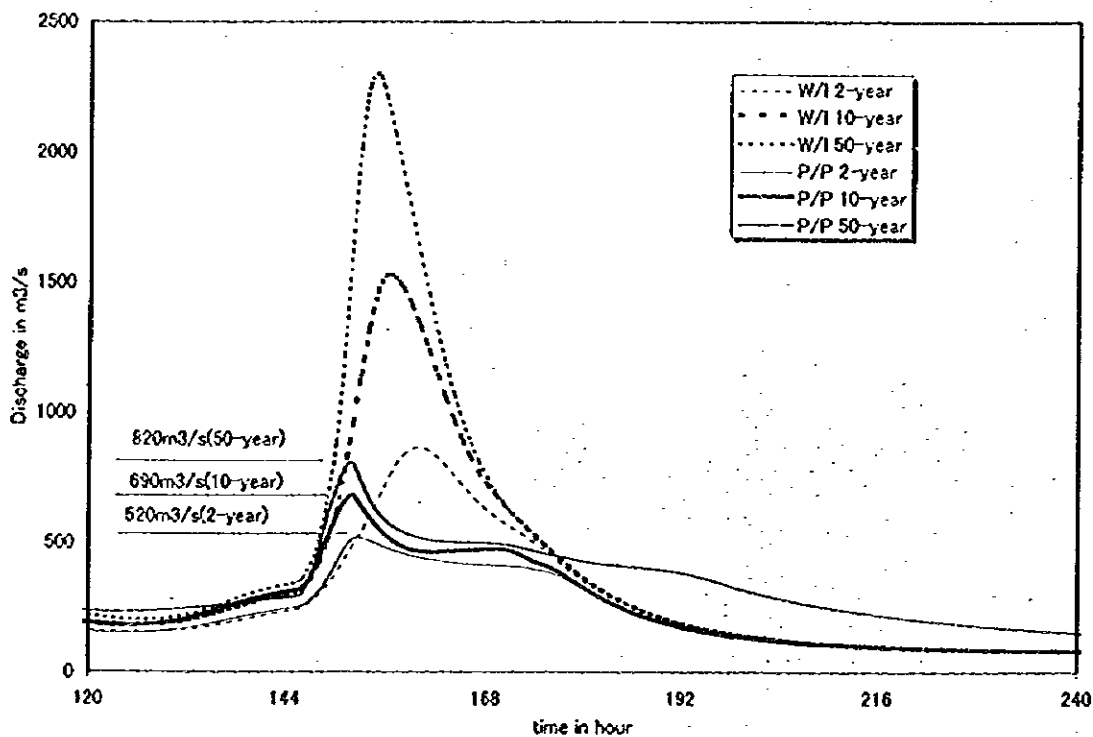
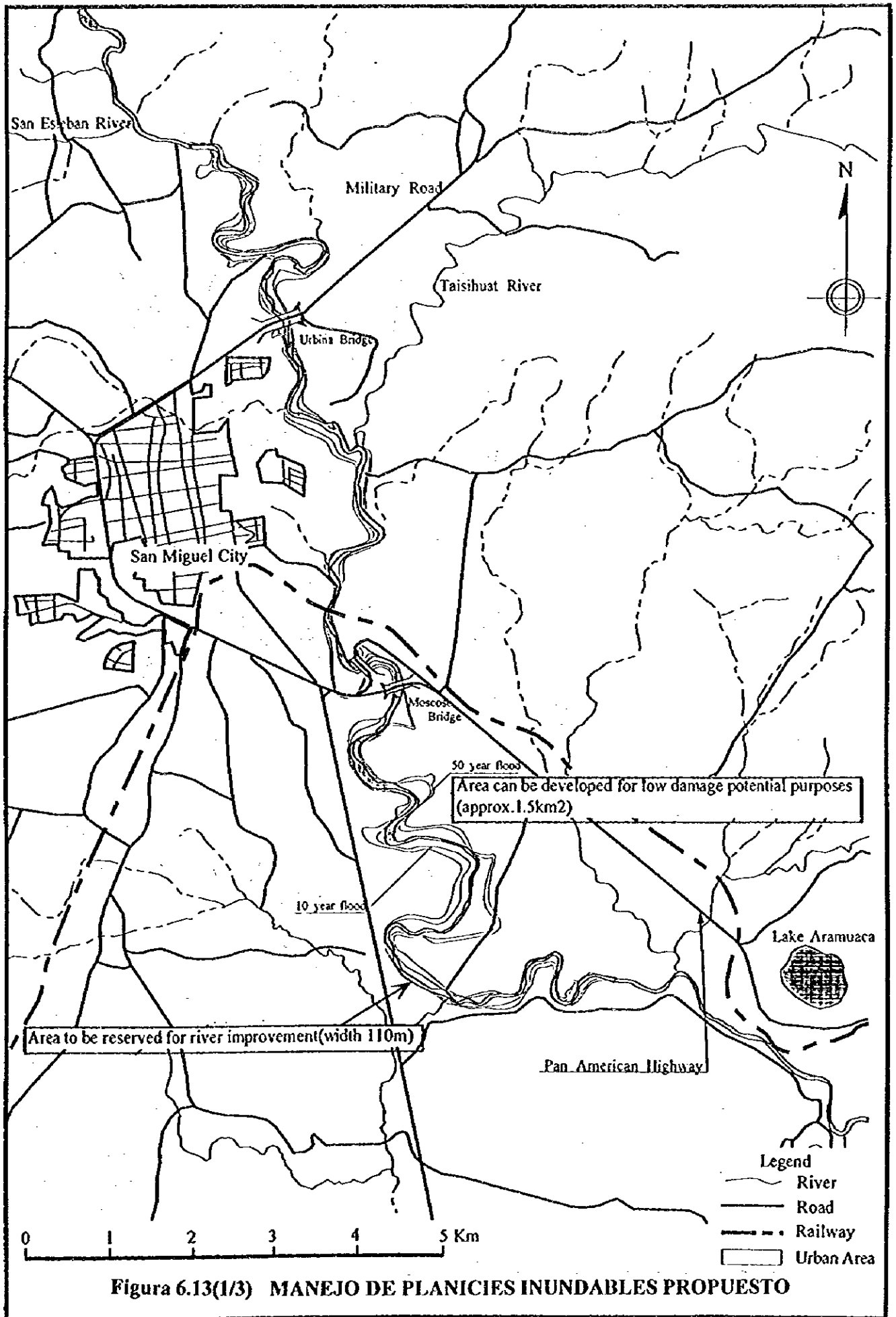
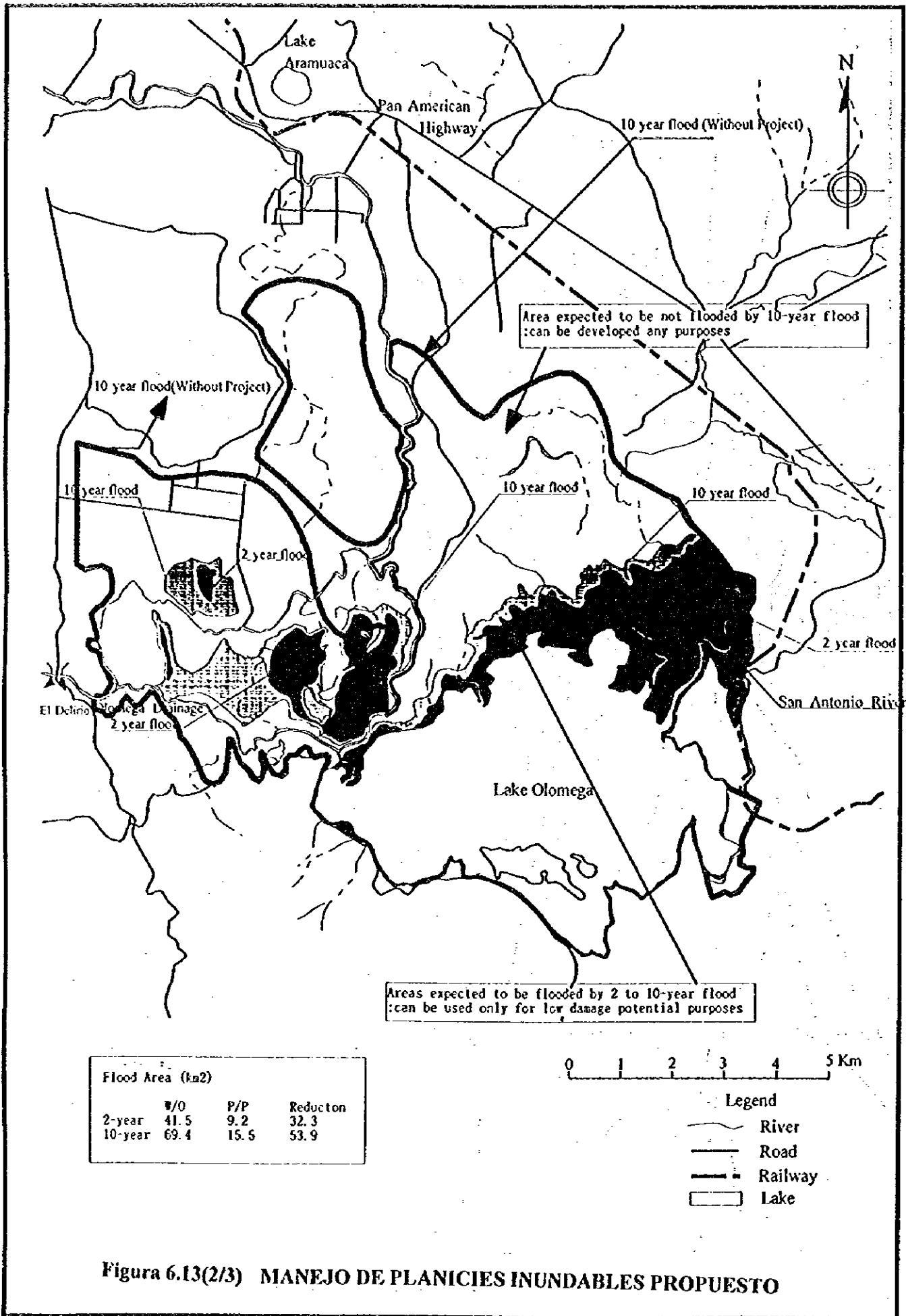
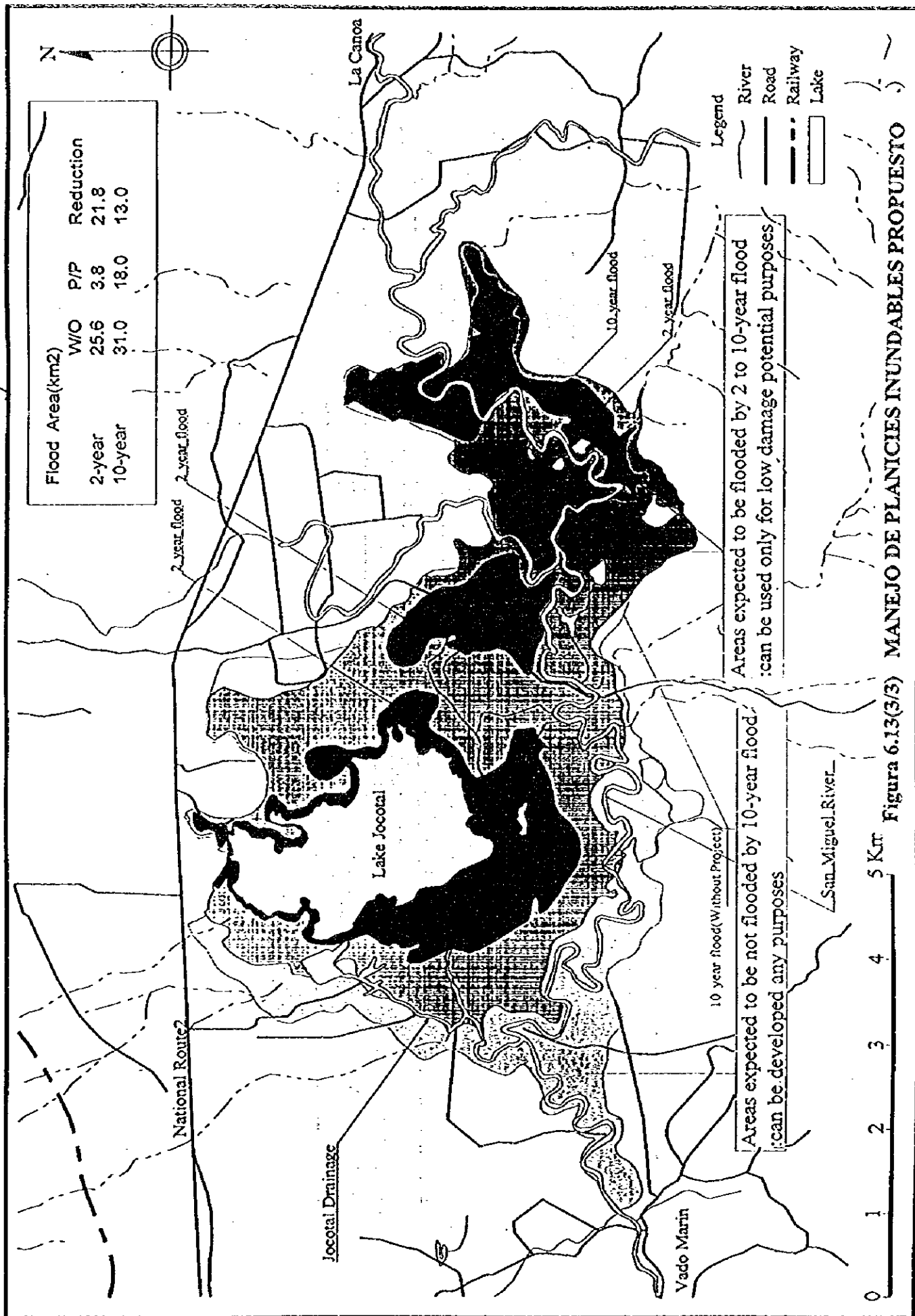


Figura 6.12 (12) HIDROGRAMA EN LAS CONCHAS CON P/M Y P/P





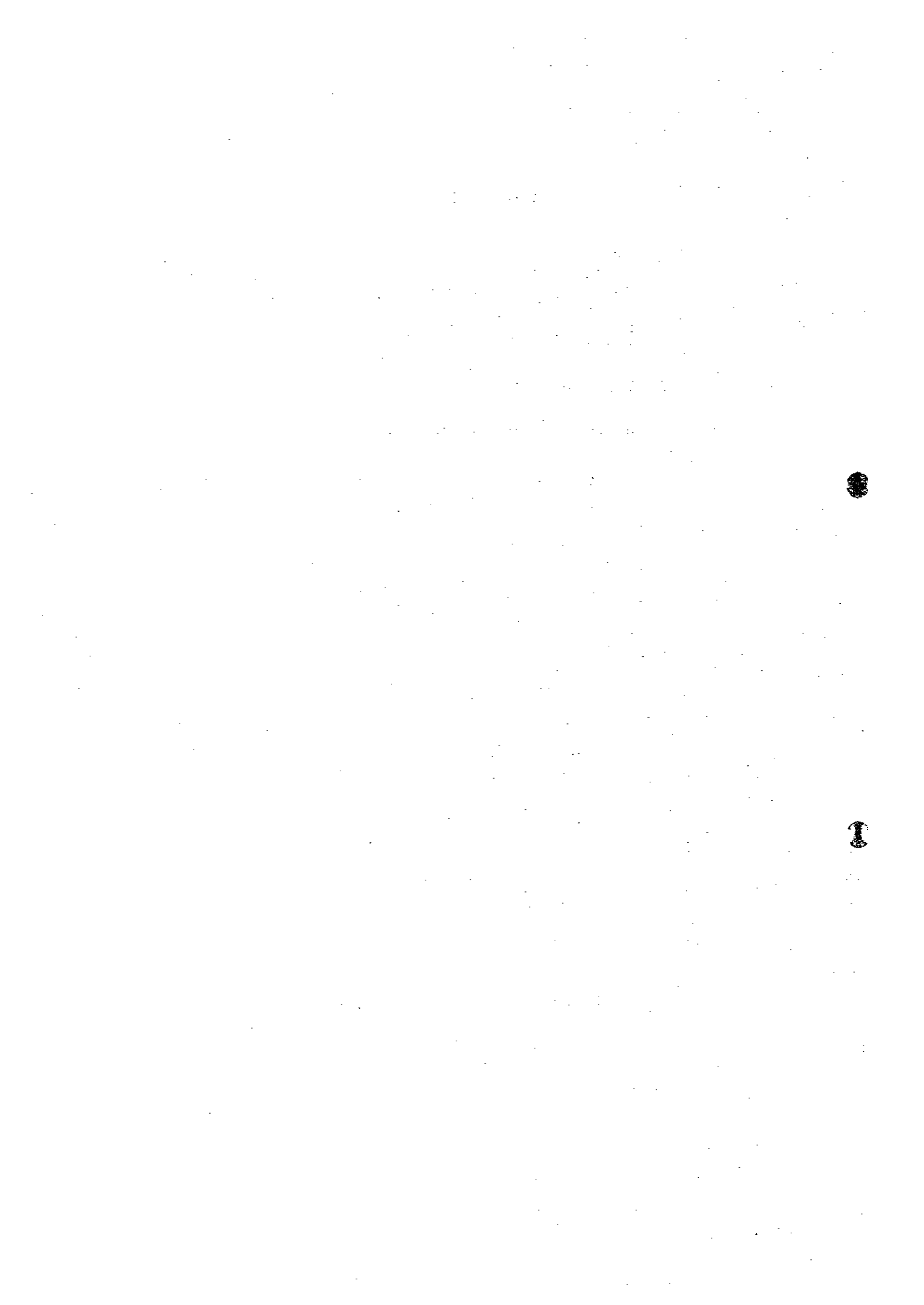


Description		1998	1999	2000	2001	2002	2003	2004	2005
Structural Measures	1. Loan Process	█							
	2. Detailed Design		█						
	3. Land Acquisition			█					
	4. Tendering			█					
	5. Construction to cope with 2-year flood								
Non-structural Measures (Floodplain Management)	Improvement of Lower Reach					█			
	Diversion and Retarding in Lake Olomega					█			
	Improvement of Middle Reach						█		
Non-structural Measures (Floodplain Management)	1. Land Use Regulation/Flood Proofing								
	2. Flood Forecasting/Warning								
	Design and Install of Waterlevel Gauges								
Non-structural Measures (Floodplain Management)	3. Education to the residents								

Figura 6.14 PROGRAMA DE IMPLEMENTACIÓN

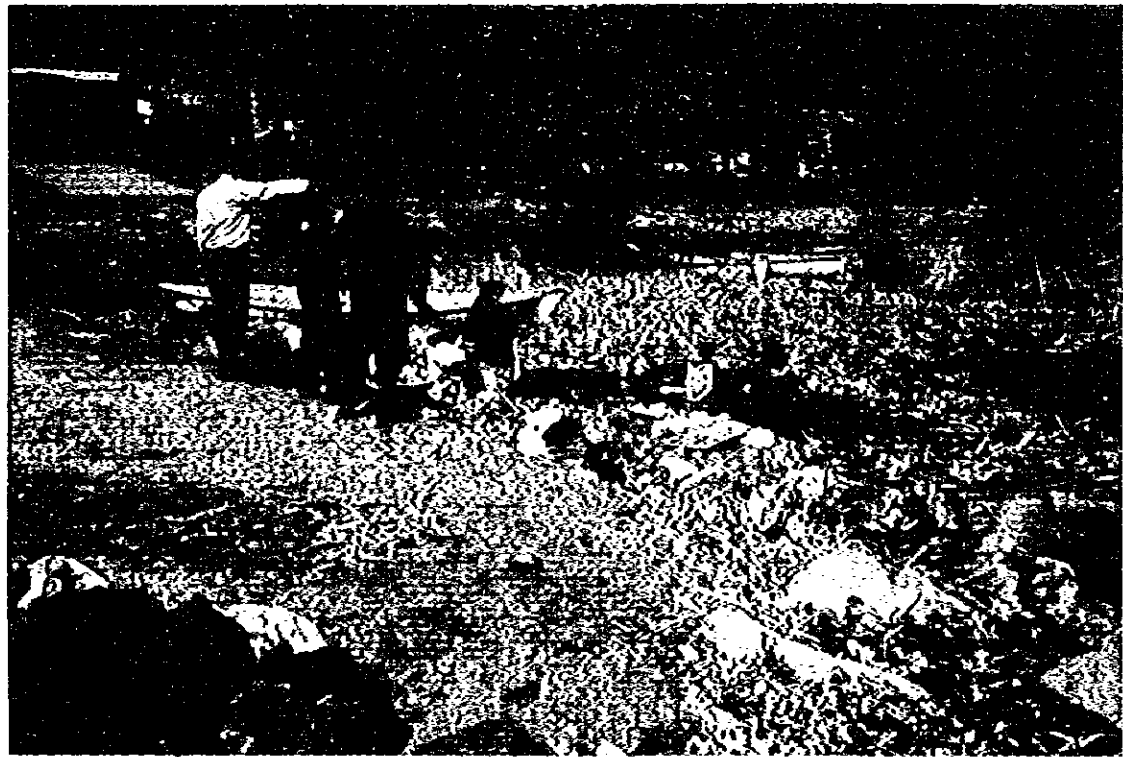
FOTOGRAFIAS

- 1. Río Grande de San Miguel y Laguna El Jocotal**
- 2. Laguna El Jocotal**
- 3. Laguna de Olomega**
- 4. Areas Propensas a Inundaciones**
- 5. Manglares, Erosión en el Arca de Depósito de Flujo de Lodo**





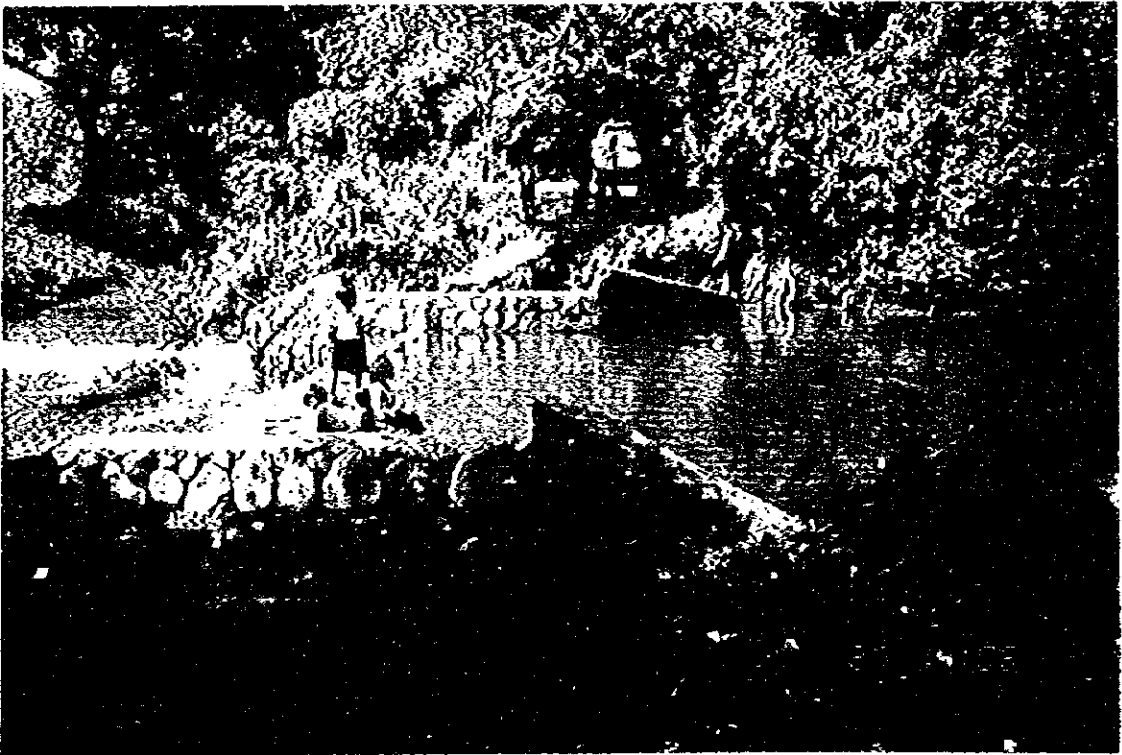
1. San Miguel River and Lake Jocotal



Spring Originated from San Miguel Volcano
2.Lake Jocotal



Southern Part of Lake Olomega



Outlet of Lake Olomega

3.Lake Olomega



Area around Lake Olomega

4.Floodprone Area



Mangrove Forest



Erosion in Mud-flow Deposit Area

5. Mangrove Forest and Erosion in Mud-flow Deposit Area



U

D

