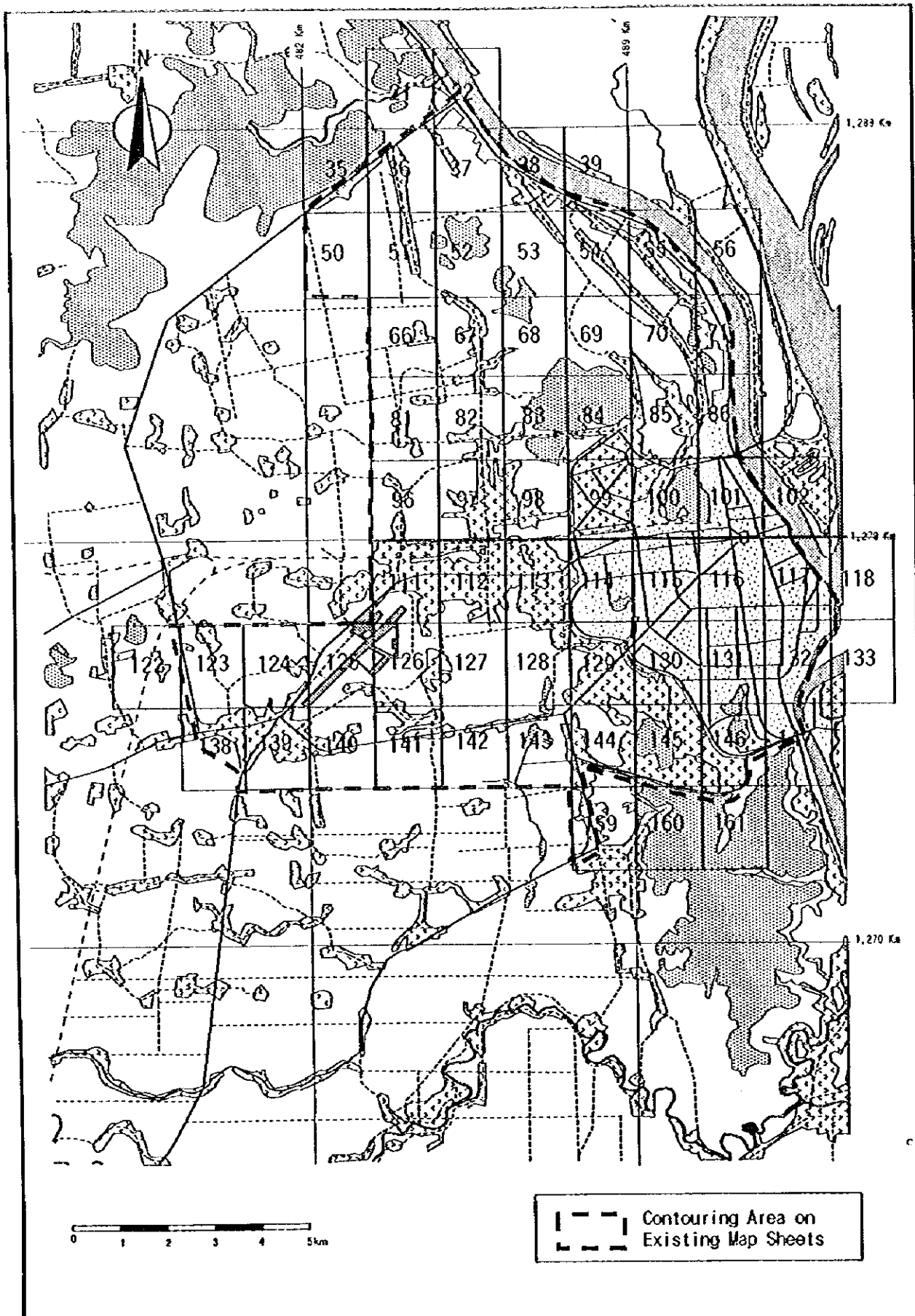


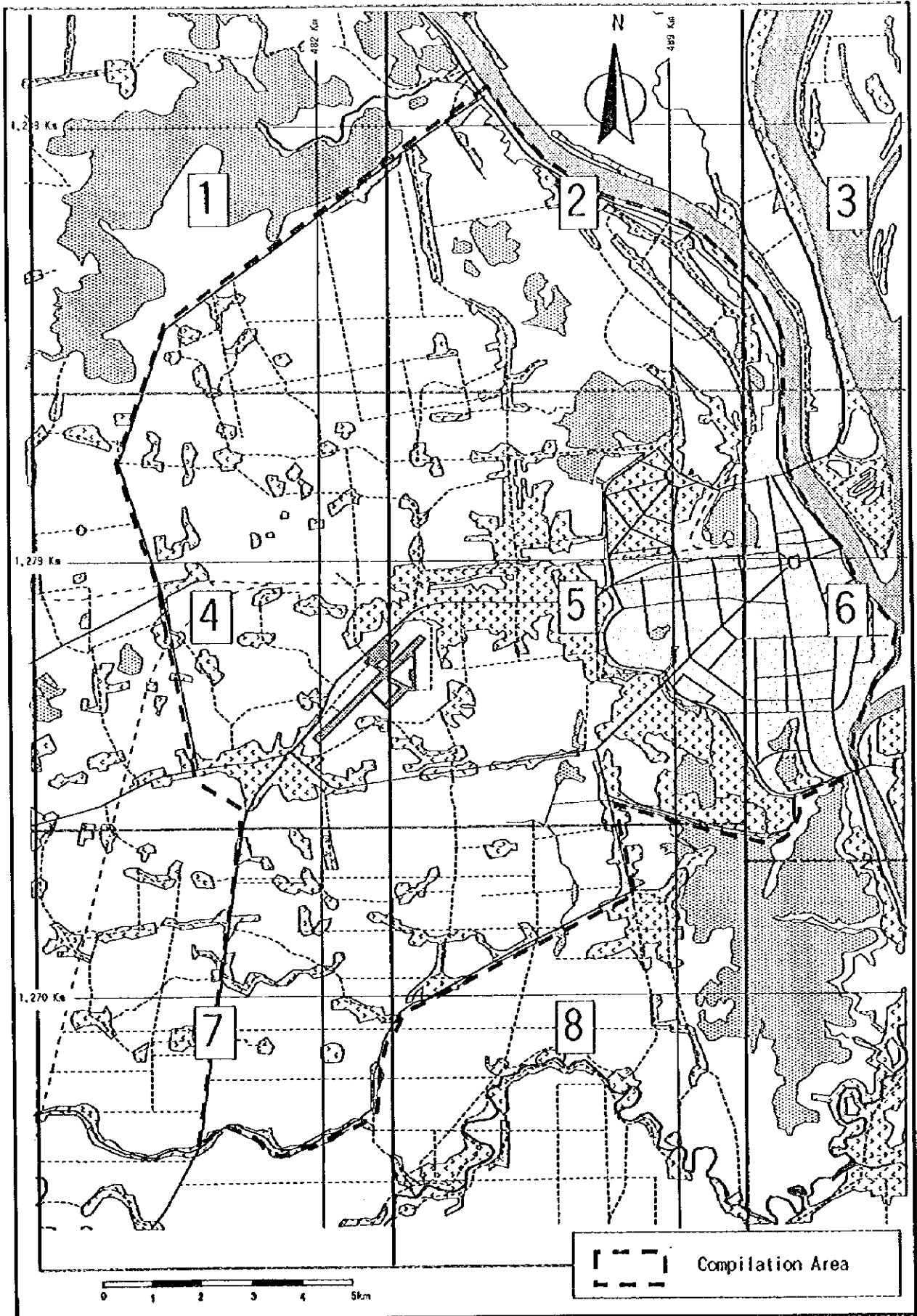
The Study on Drainage Improvement and Flood Control  
 in the Municipality of Phnom Penh  
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Figure 12-25  
 Digital Mapping Sheet Index



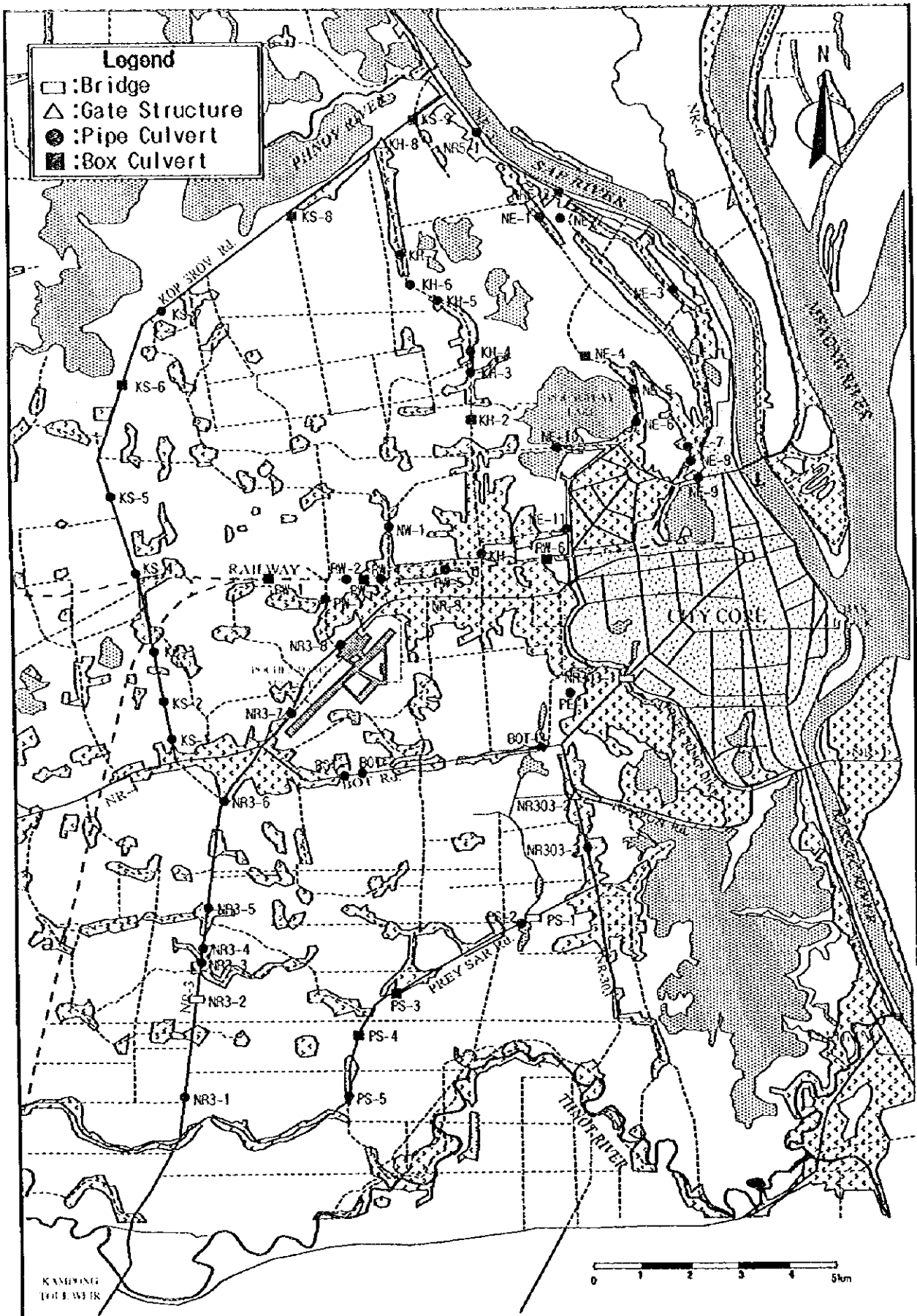
The Study on Drainage Improvement and Flood Control  
in the Municipality of Phnom Penh  
JICA - CTIE International Co., Ltd. - Nippon Koei Co., Ltd.

Figure 12-26  
Contour Line Map Sheet Index on Existing Map



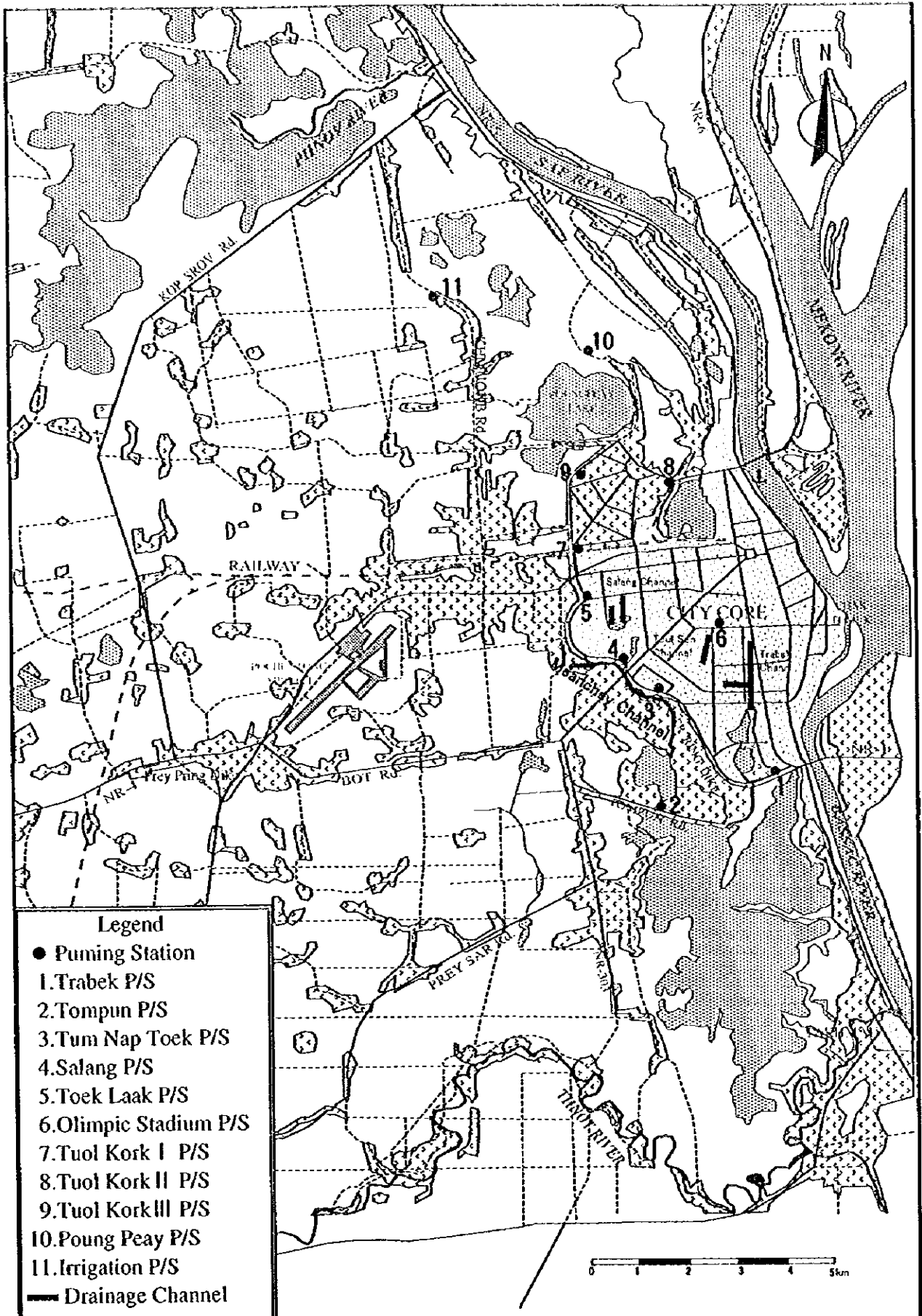
The Study on Drainage Improvement and Flood Control  
 in the Municipality of Phnom Penh  
 JICA - CTIE International Co., Ltd. - Nippon Koei Co., Ltd.

Figure 12-27  
 1/10,000 Compilation Map Sheet Index



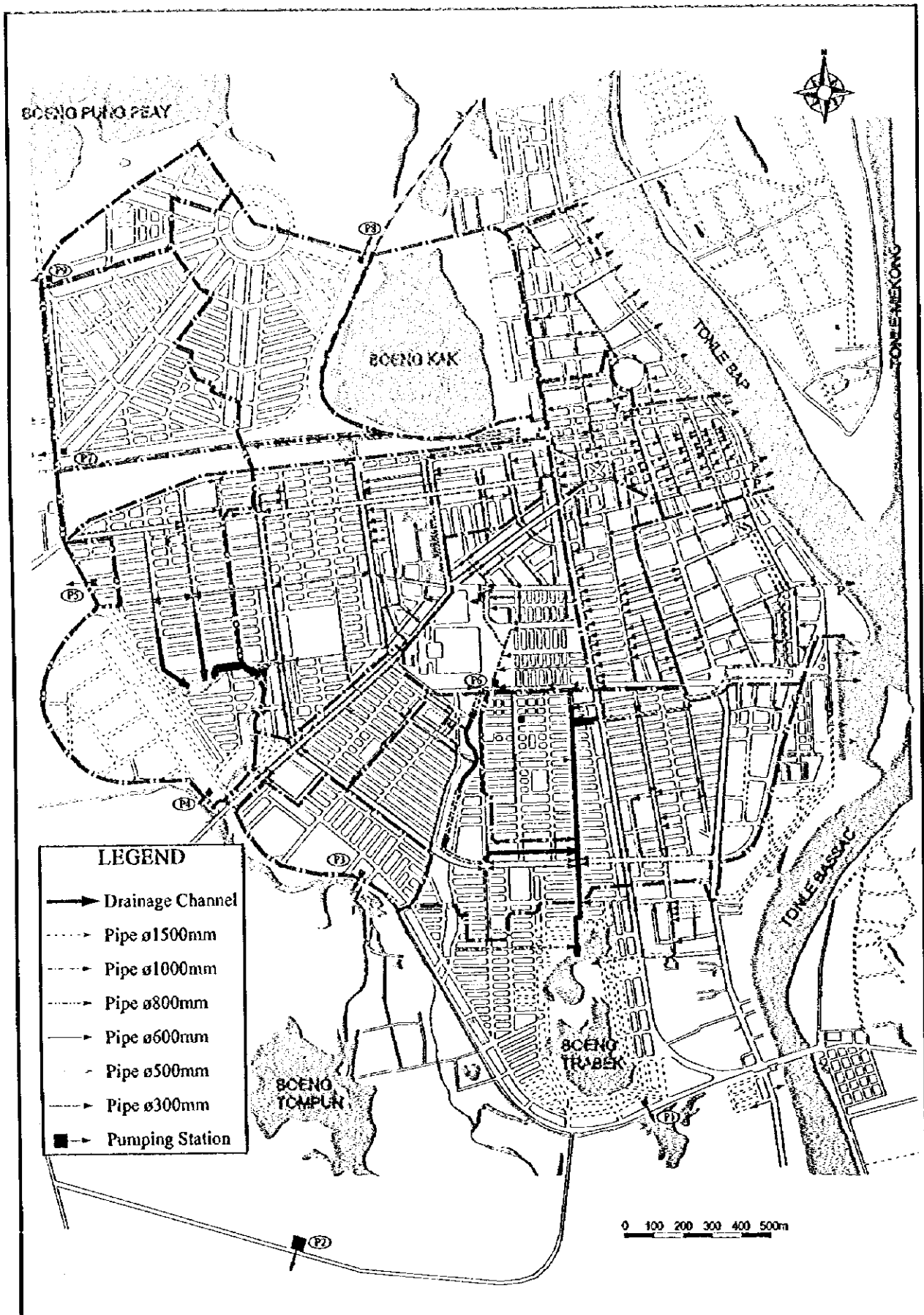
The Study on Drainage Improvement and Flood Control  
 in the Municipality of Phnom Penh  
 JICA - CTIE International Co., Ltd. - Nippon Koei Co., Ltd.

Figure 12-28  
 Ring Dikes, Roads and Crossings



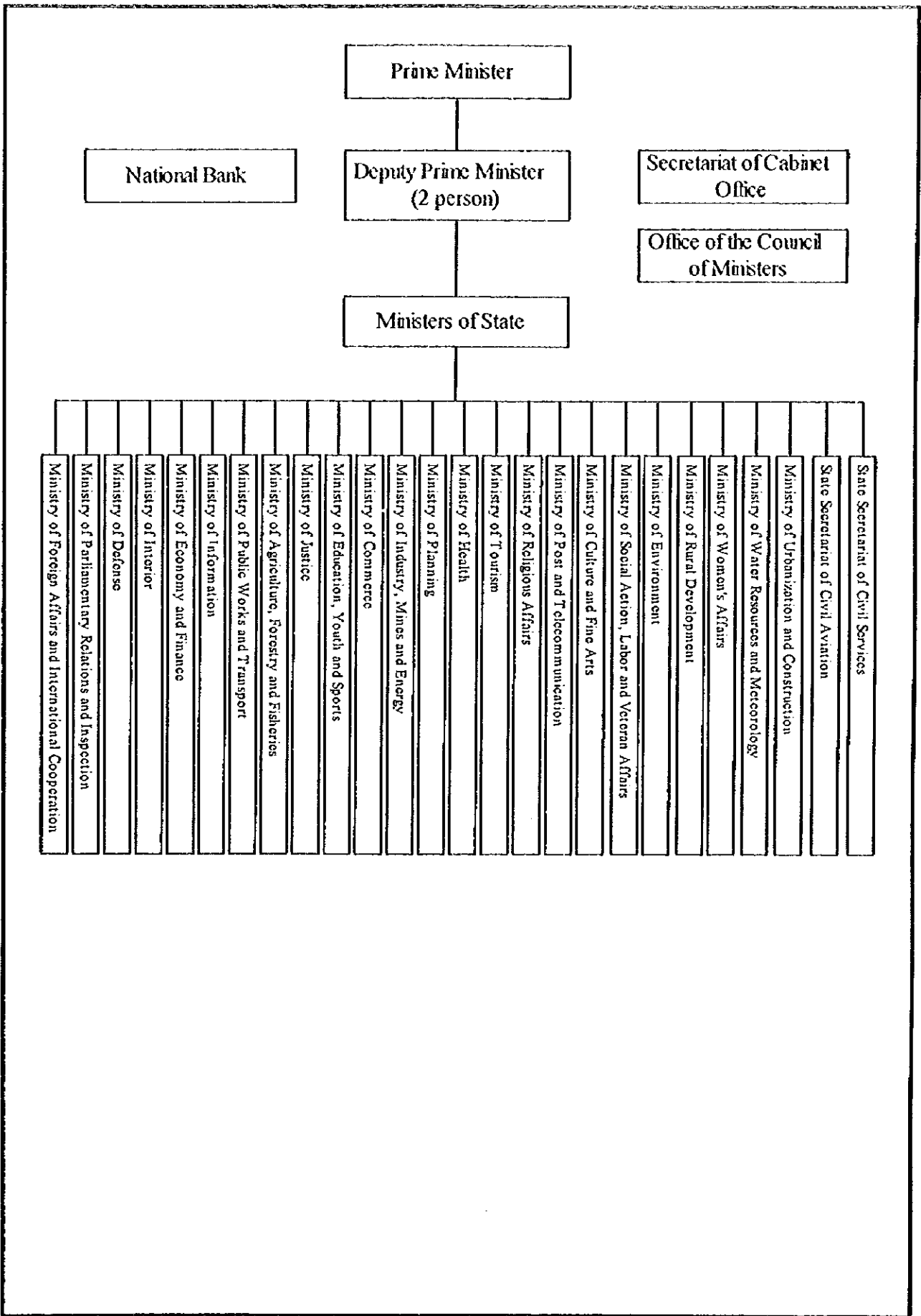
The Study on Drainage Improvement and Flood Control  
 in the Municipality of Phnom Penh  
 JICA - CHIE International Co., Ltd. - Nippon Koei Co., Ltd.

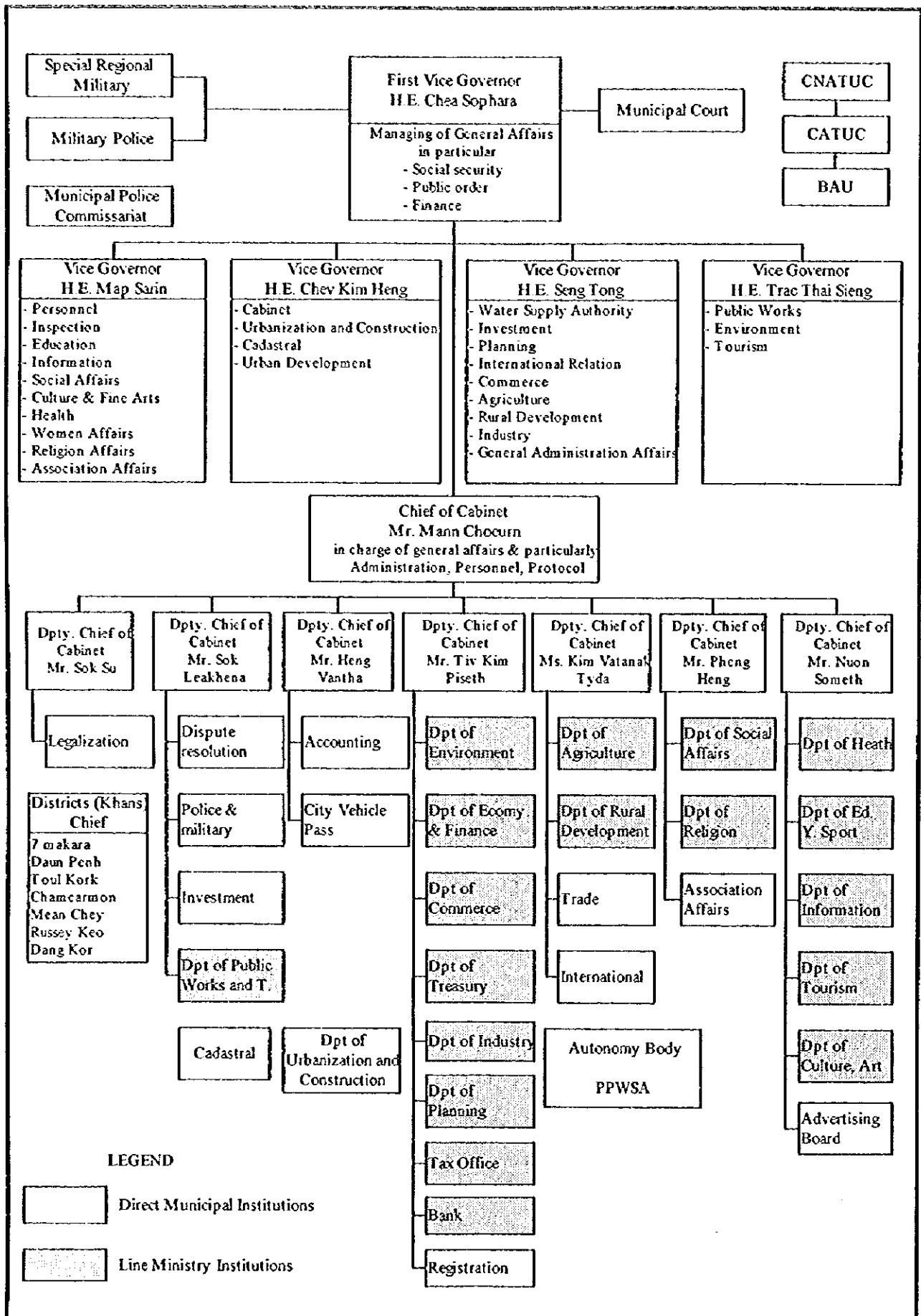
Figure 12-29  
 Pumping Stations and Drainage Channels



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 in the Municipality of Phnom Penh  
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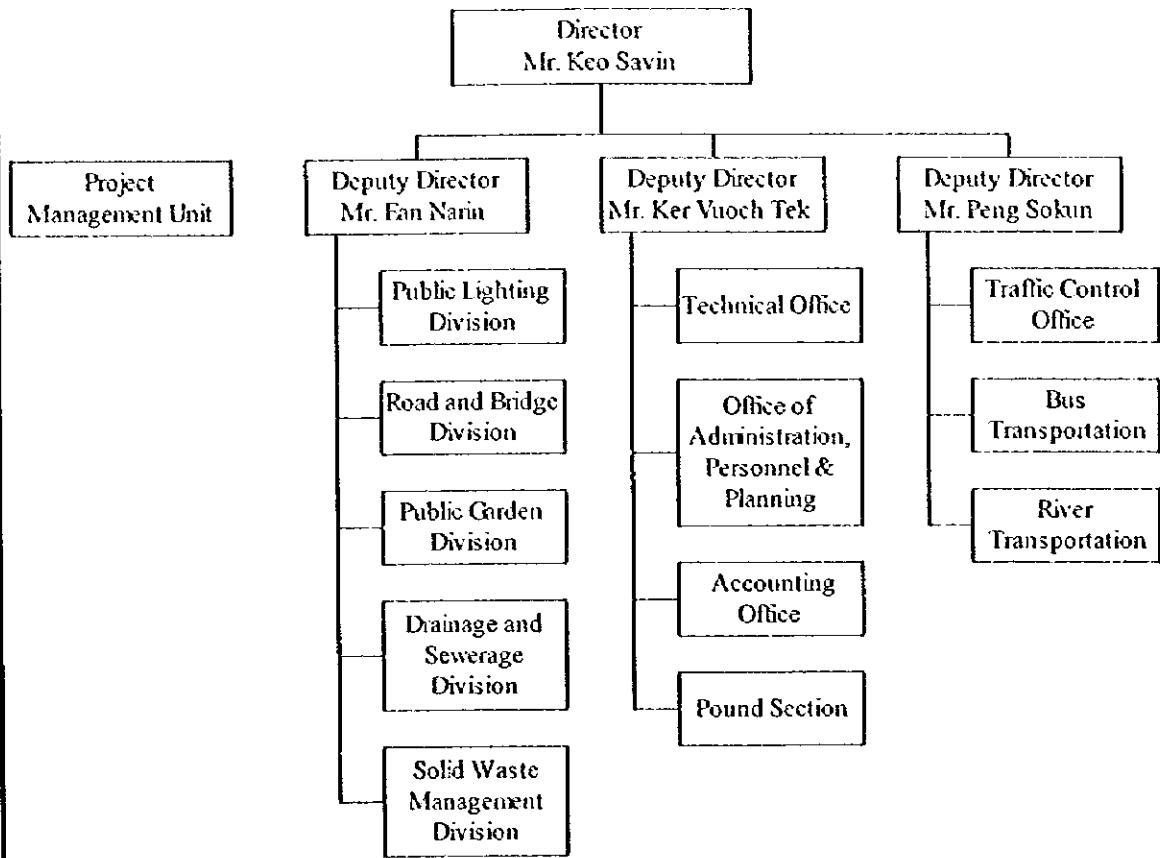
Figure 12-30  
 Existing Sewer Network



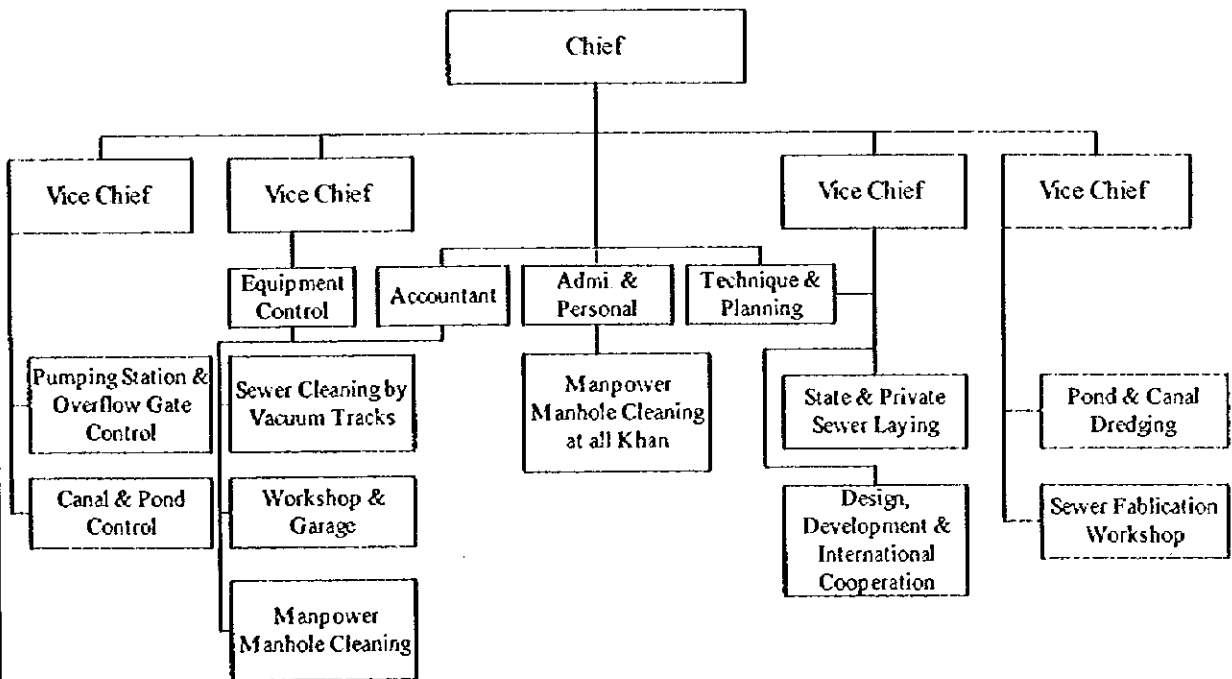




## Organizational Structure of Department of Public Works and Transport

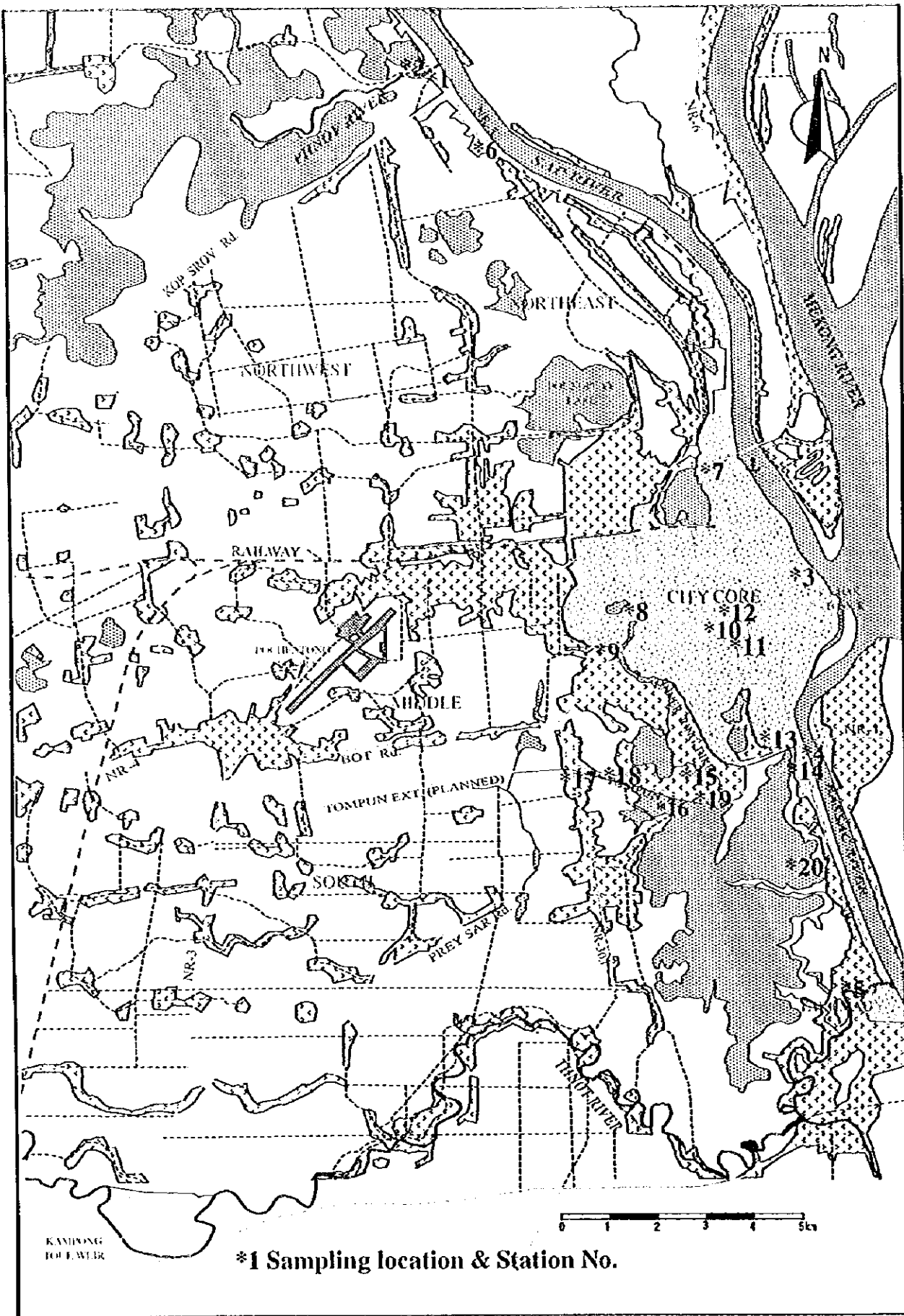


## Organizational Structure of Drainage and Sewage Division



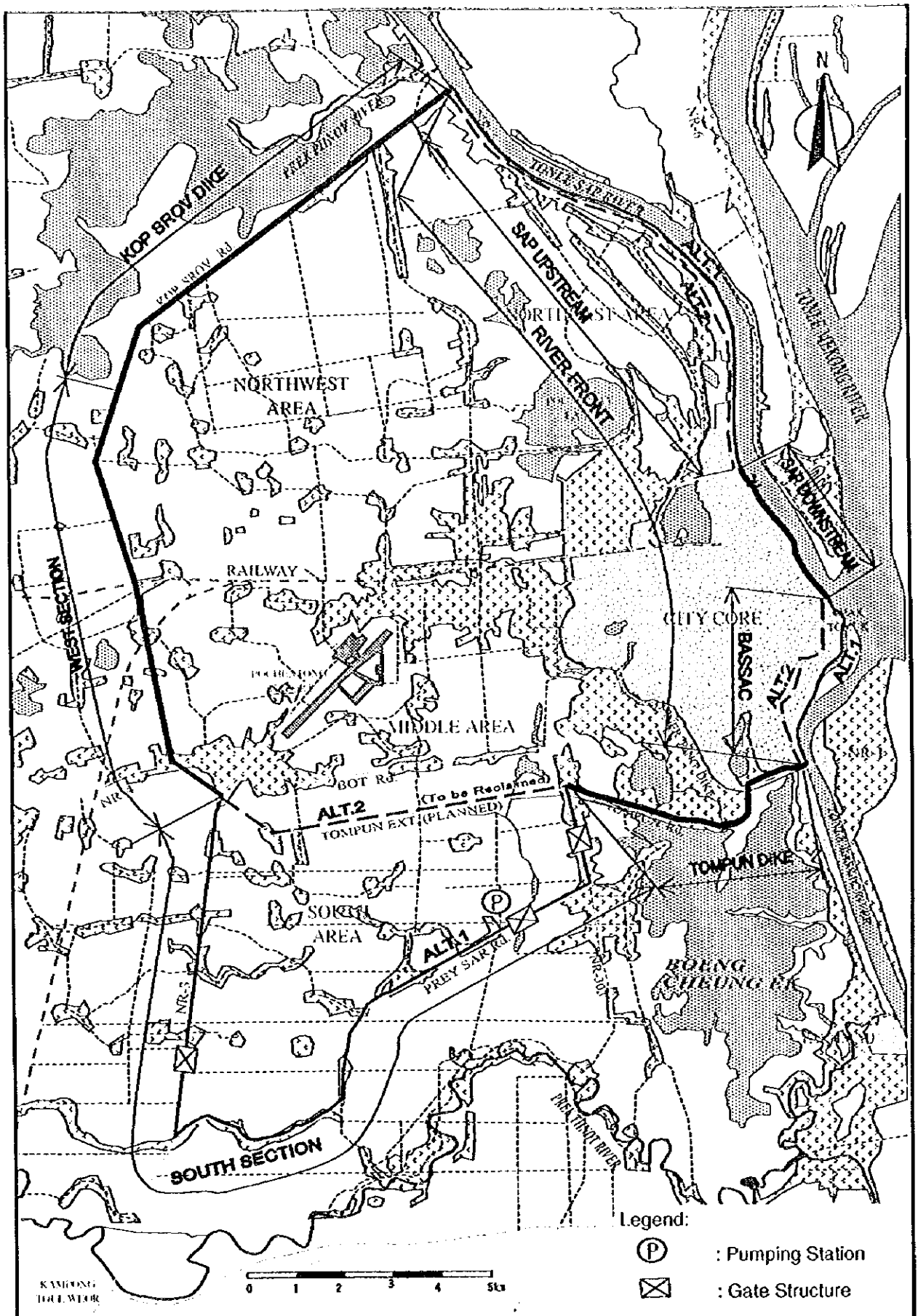
The Study on Drainage Improvement and Flood Control  
in the Municipality of Phnom Penh  
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Figure 12-33  
Organizational Chart of Department of Public Works and  
Transport (DPWT) and Drainage and Sewage Division (DSD)



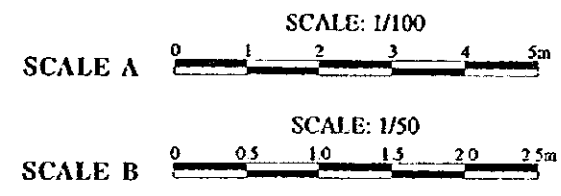
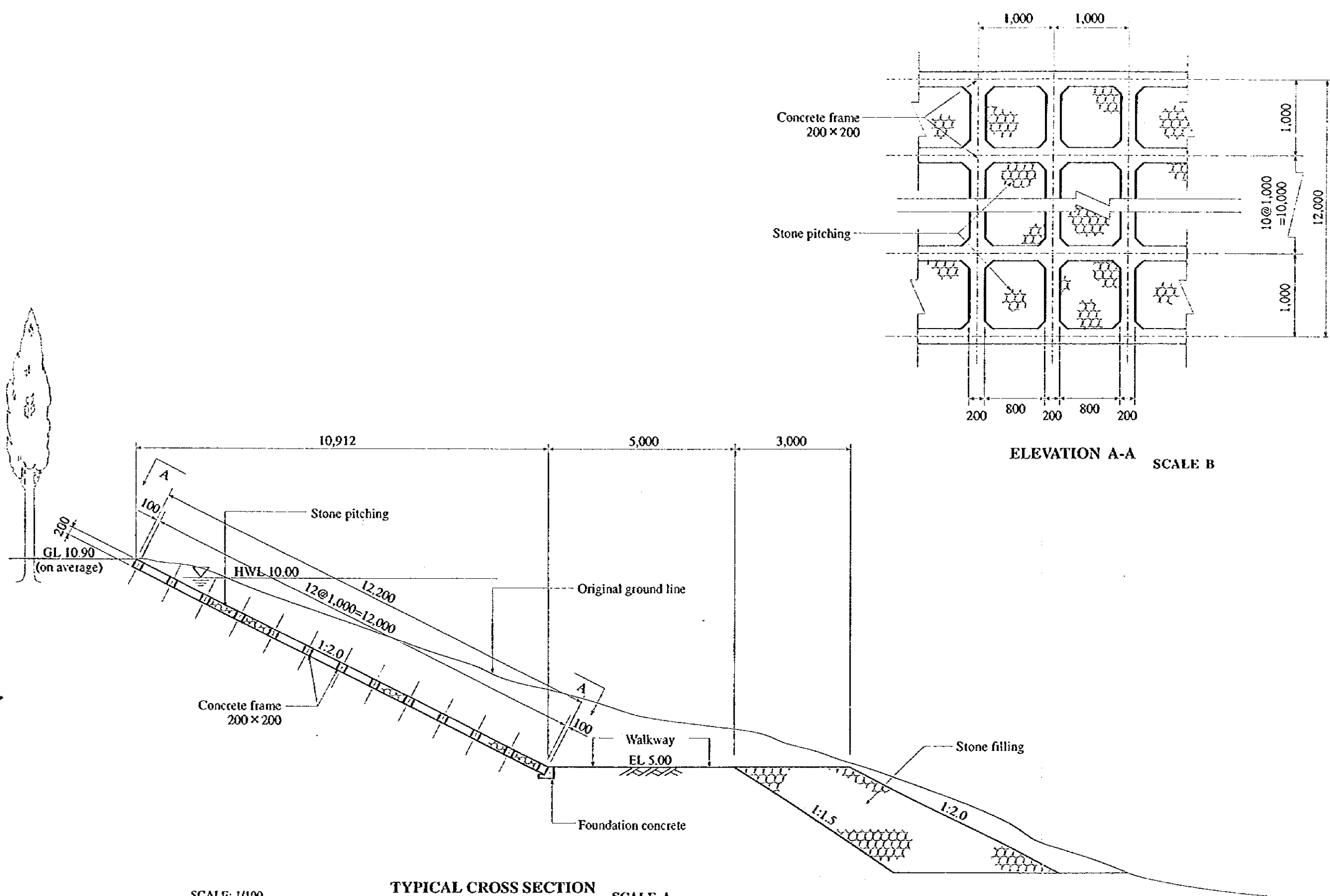
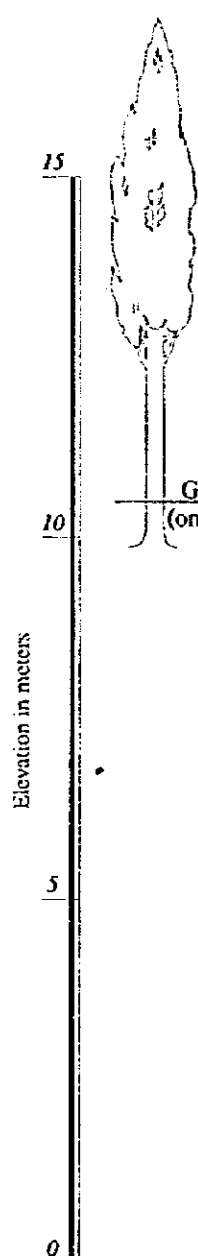
The Study on Drainage Improvement and Flood Control  
 in the Municipality of Phnom Penh  
 JICA-CTIE International Co., Ltd. -Nippon Koei Co., Ltd.

Figure I2-34  
 Location of Water Quality and Benthic Material Quality  
 Sampling



The Study on Drainage Improvement and Flood Control  
 in the Municipality of Phnom Penh  
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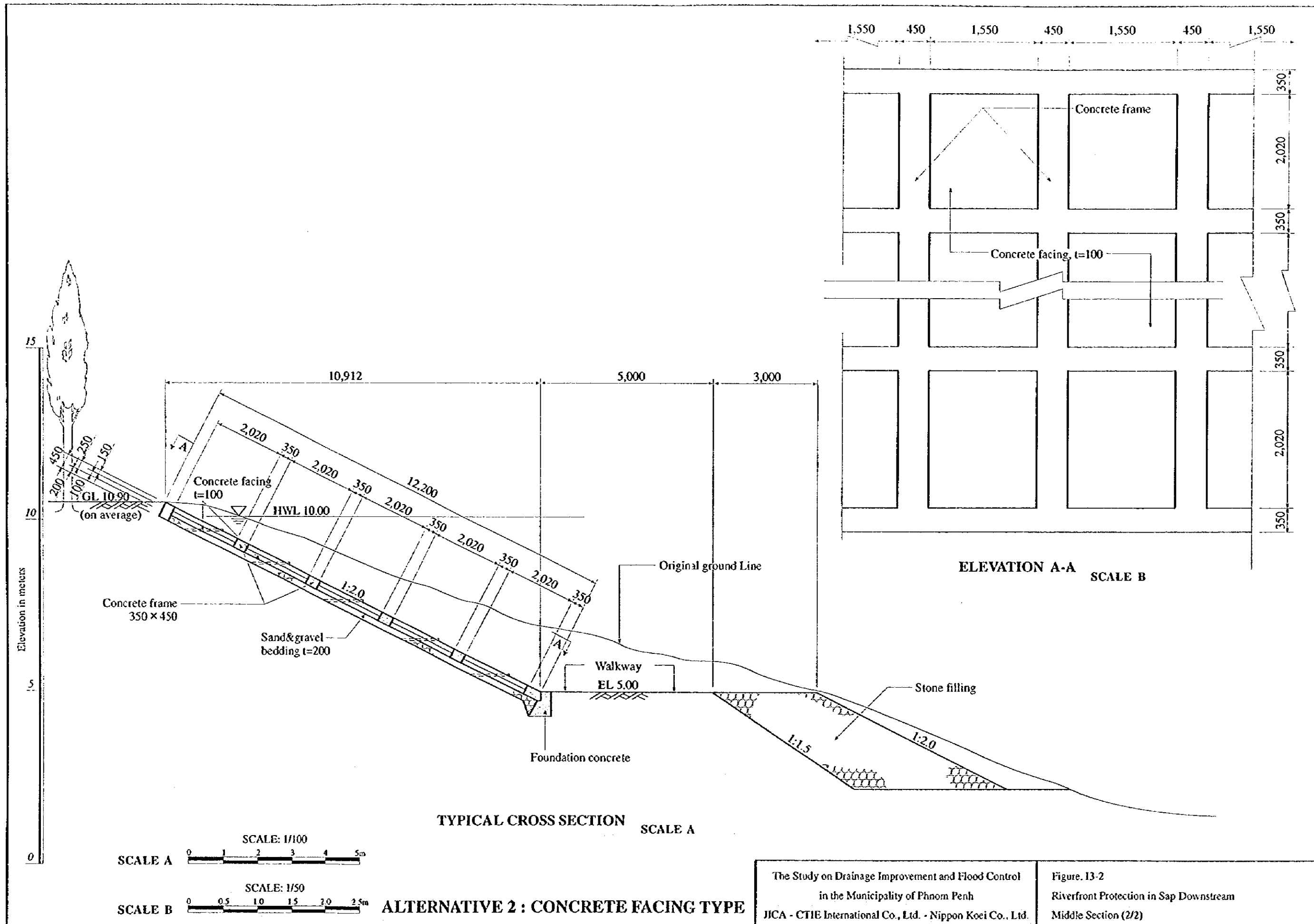
Figure I3-1  
 Protection Line against Flood



**TYPICAL CROSS SECTION** SCALE A  
**ALTERNATIVE 1 : STONE PITCHING TYPE**

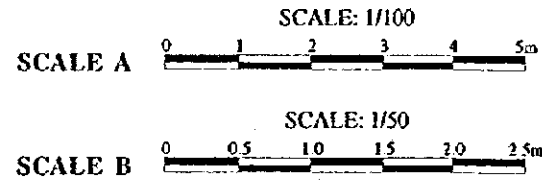
The Study on Drainage Improvement and Flood Control  
 in the Municipality of Phnom Penh  
 JICA - CTIE International Co., Ltd. - Nippon Koei Co., Ltd.

Figure. I3-2  
 Riverfront Protection in Sap Downstream  
 Middle Section (1/2)



TYPICAL CROSS SECTION SCALE A

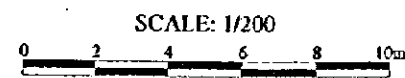
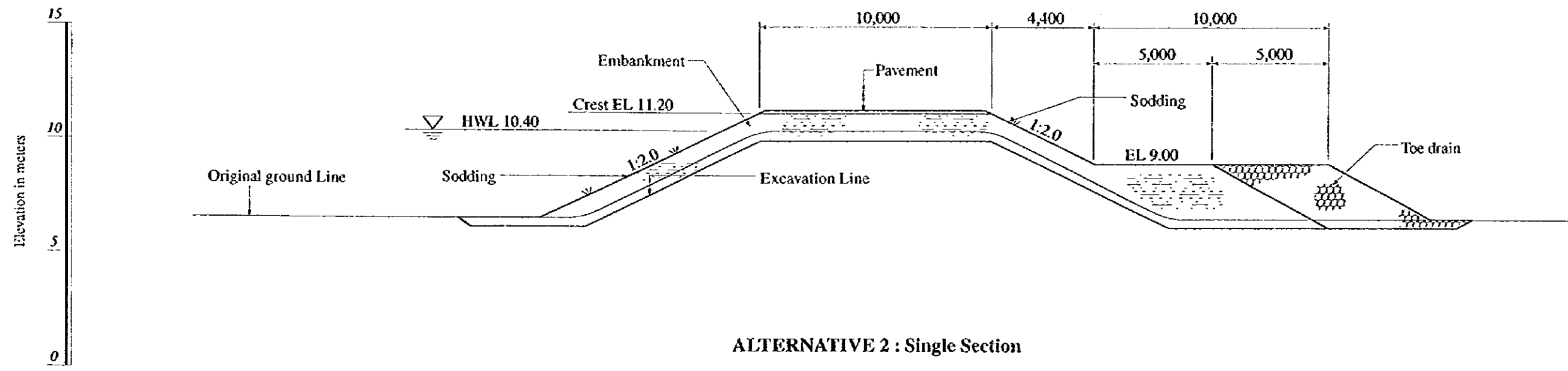
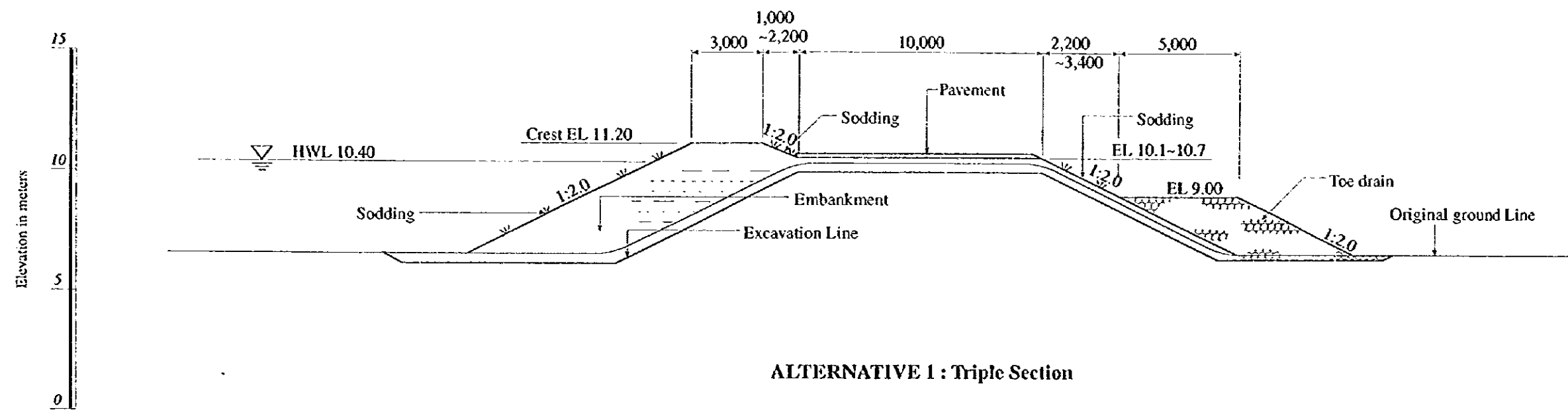
ELEVATION A-A SCALE B



ALTERNATIVE 2 : CONCRETE FACING TYPE

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 in the Municipality of Phnom Penh  
 JICA - CTIE International Co., Ltd. - Nippon Koei Co., Ltd.

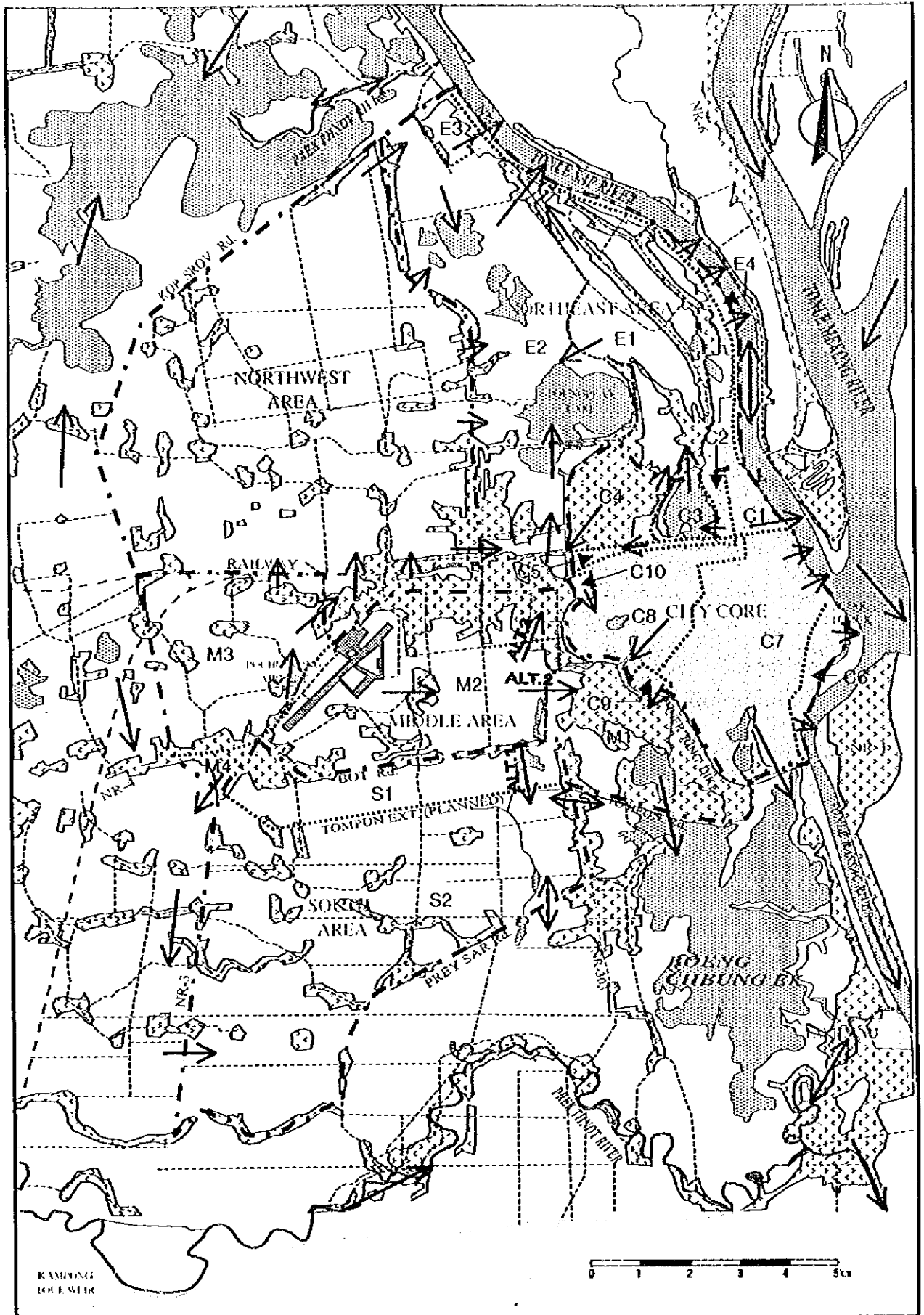
Figure. 13-2  
 Riverfront Protection in Sap Downstream  
 Middle Section (2/2)



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Figure. 13-3  
 Reinforcement of Kop Srov Dike

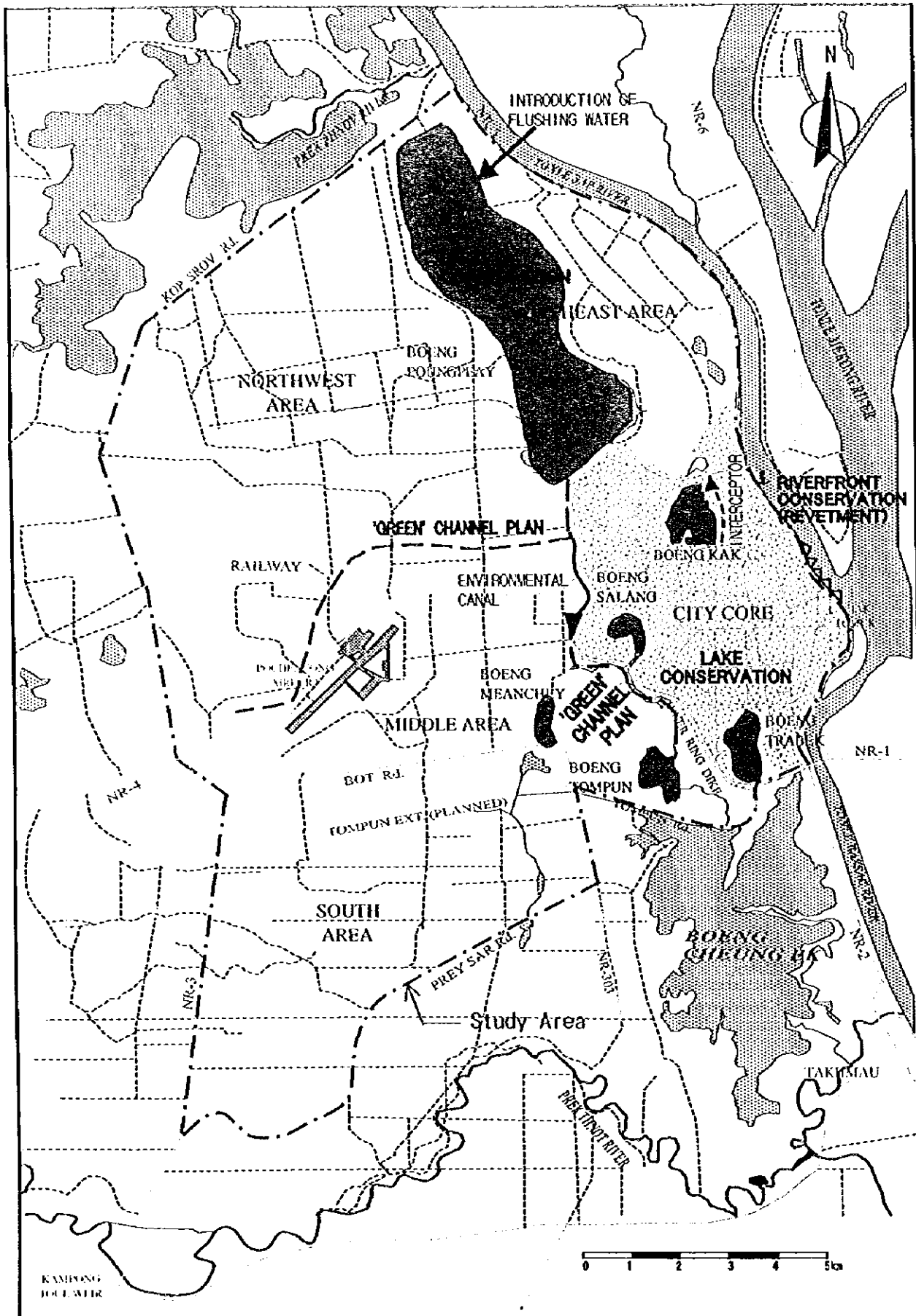




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 in the Municipality of Phnom Penh  
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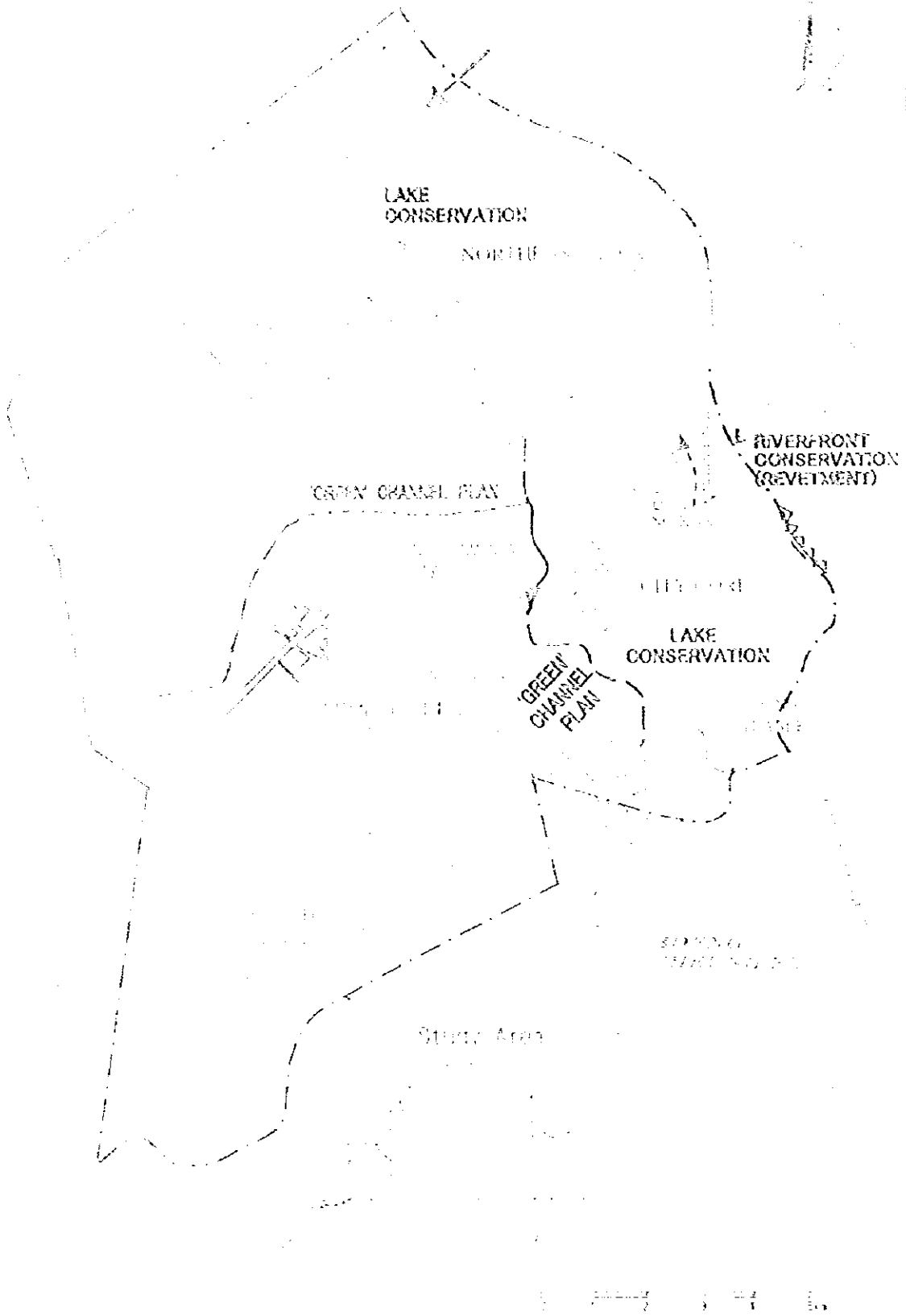
Figure B-4  
 Drainage Direction of Each Basin





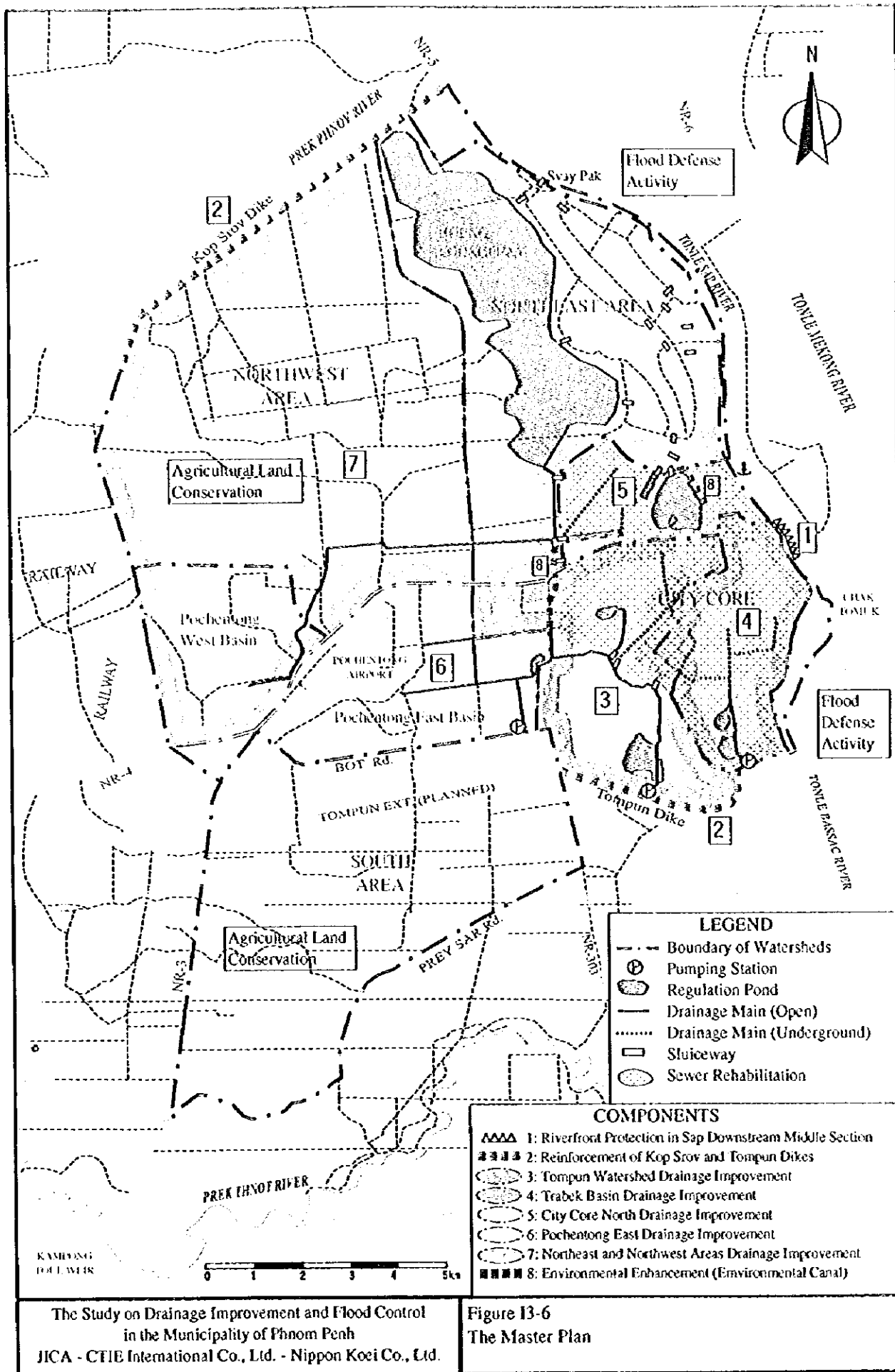
The Study on Drainage Improvement and Flood Control  
 in the Municipality of Phnom Penh  
 JICA - CTIB International Co., Ltd. - Nippon Koei Co., Ltd.

Figure 13-5  
 Environmental Enhancement



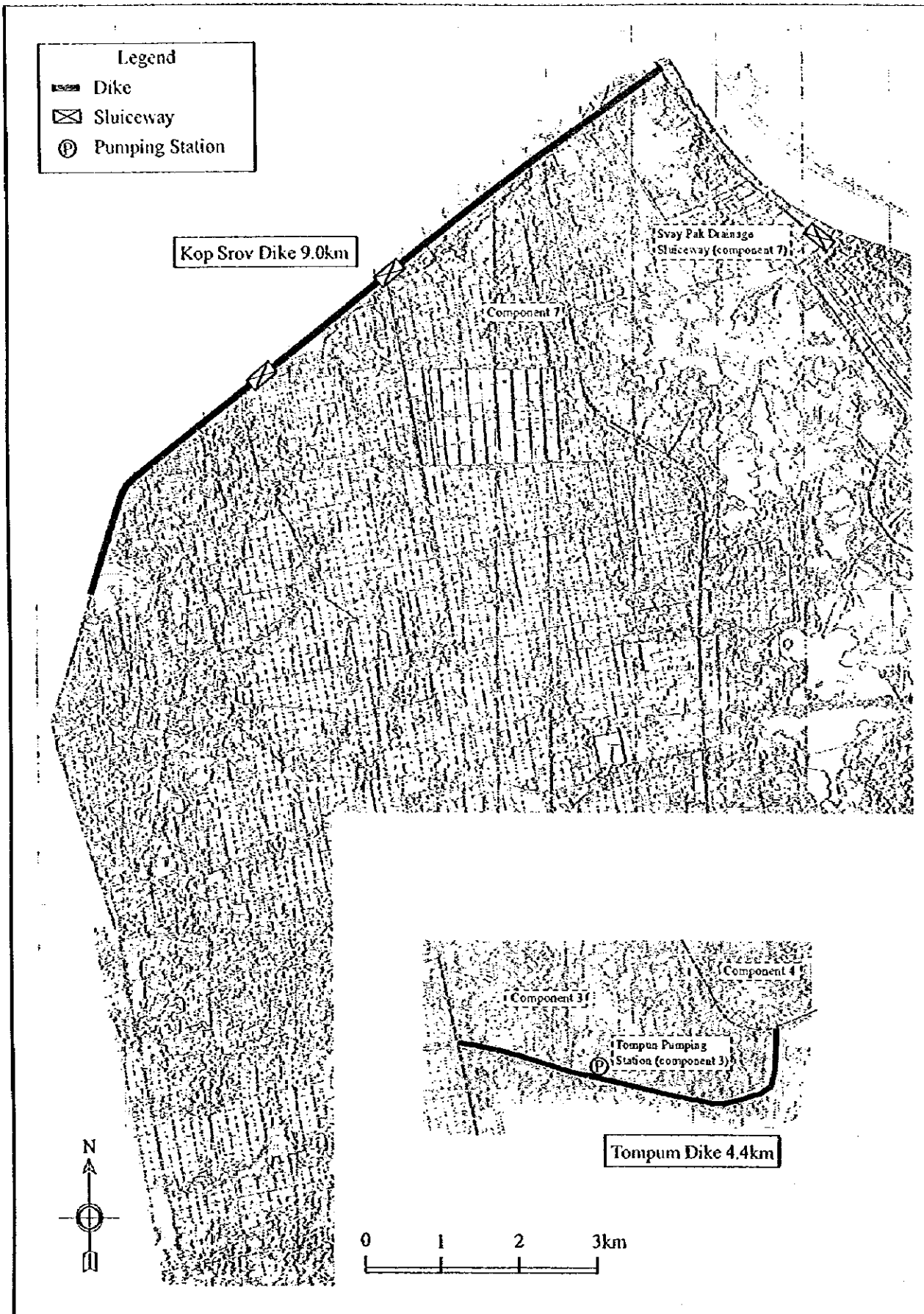
City of...  
 Municipal...  
 North...

Figure 1.5  
 Environmental Enhancement



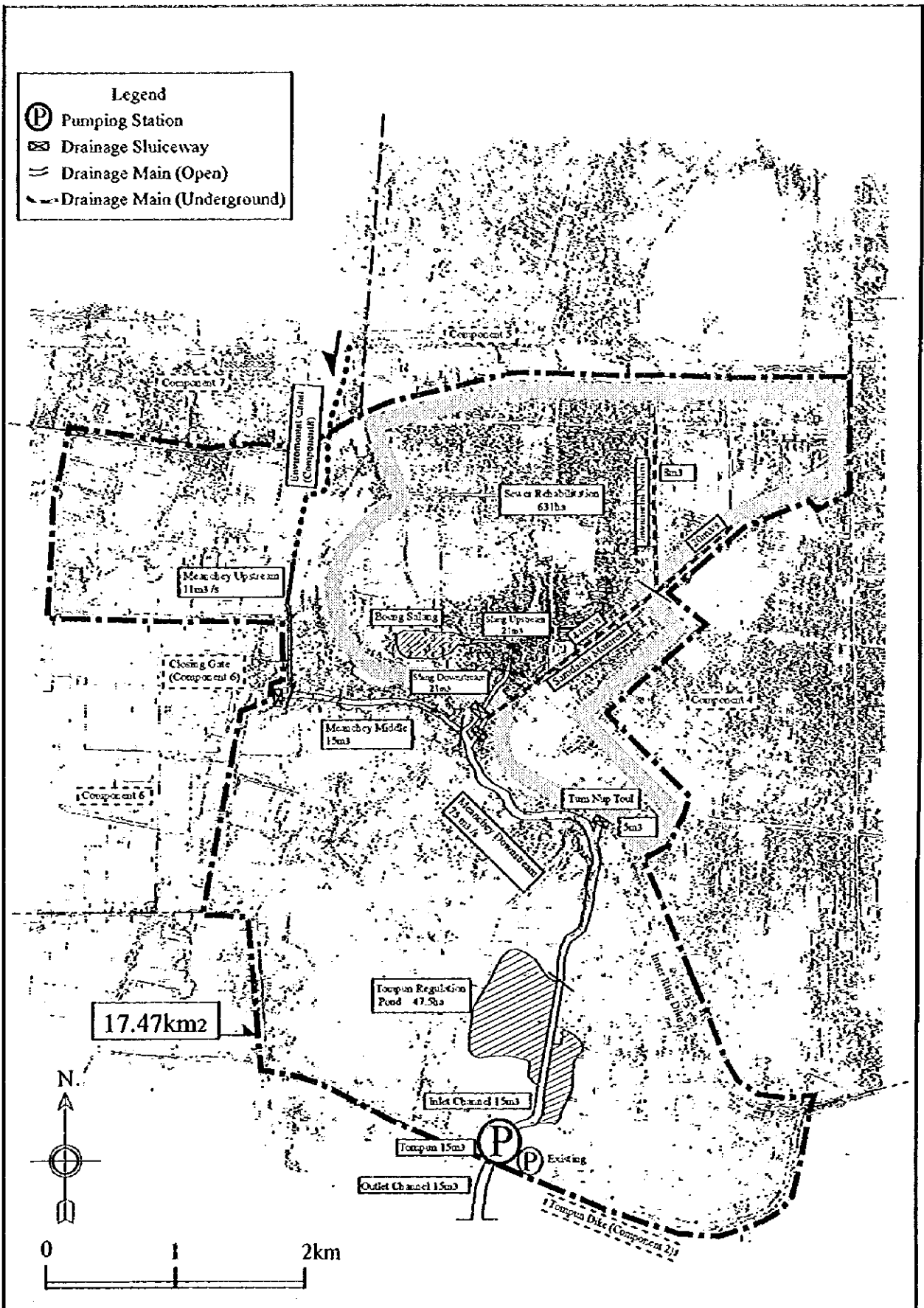
The Study on Drainage Improvement and Flood Control  
in the Municipality of Phnom Penh  
JICA - CTIE International Co., Ltd. - Nippon Koei Co., Ltd.

Figure 13-6  
The Master Plan



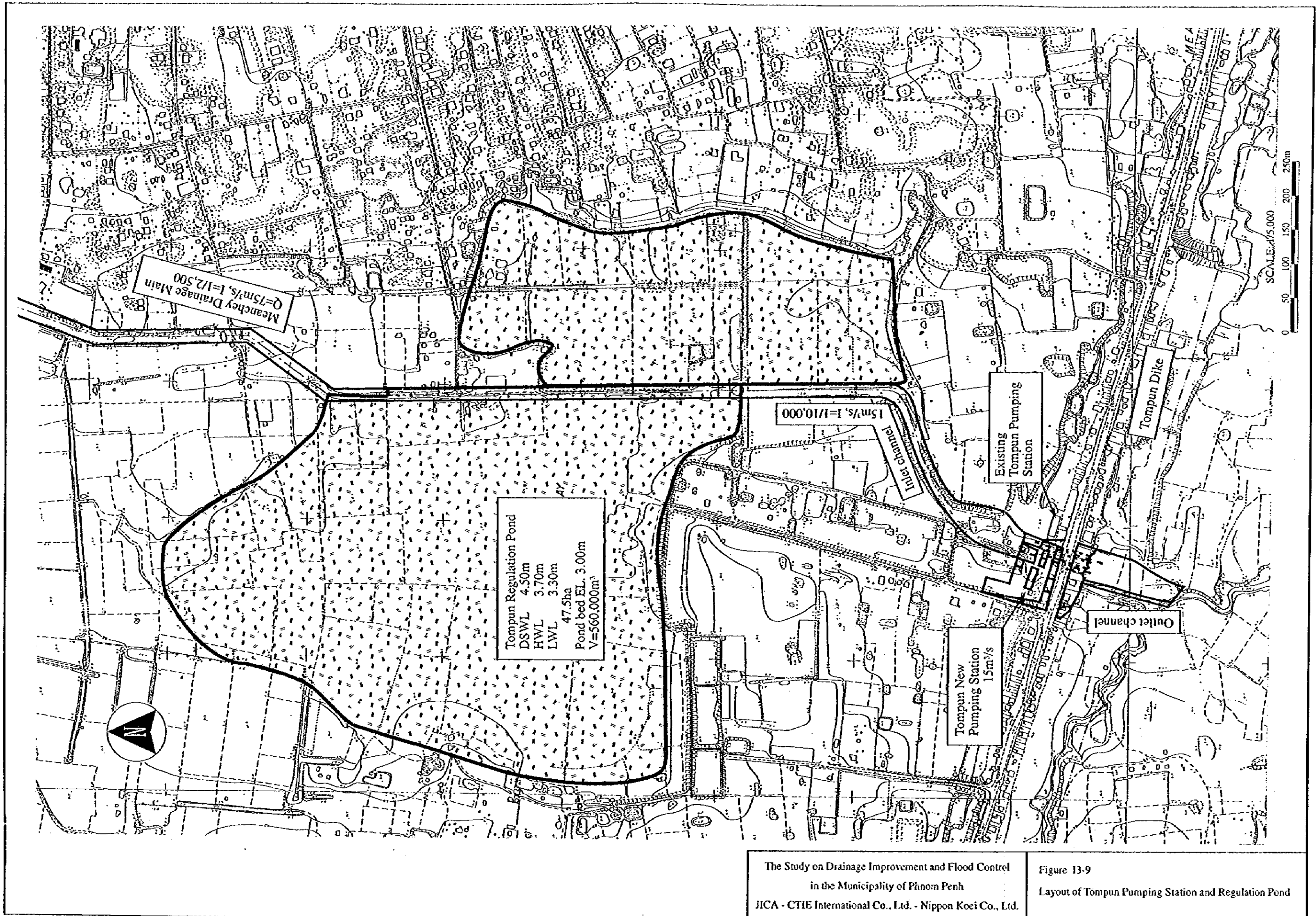
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 in the Municipality of Phnom Penh  
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Figure 13-7  
 Facility Layout for Component 2: Reinforcement of  
 Kop Srov and Tompum Dikes

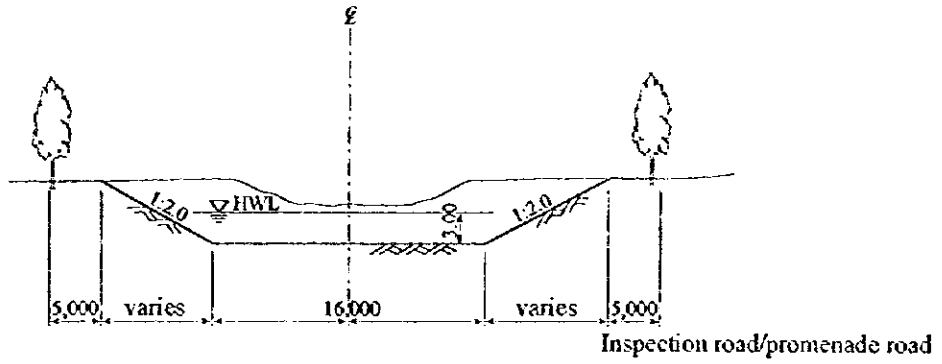


The Study on Drainage Improvement and Flood Control  
 in the Municipality of Phnom Penh  
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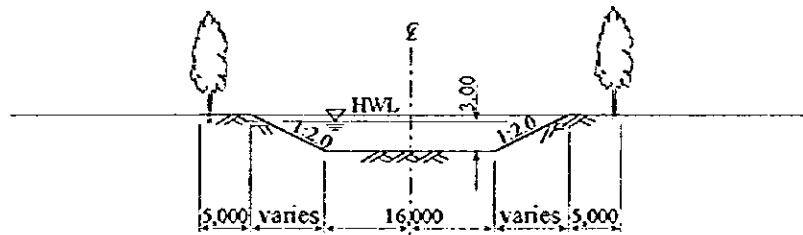
Figure 13-8  
 Facility Layout for Component 3: Tompun  
 Watershed Drainage Improvement



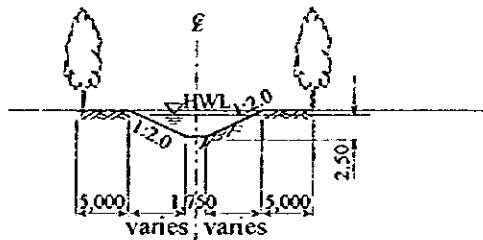




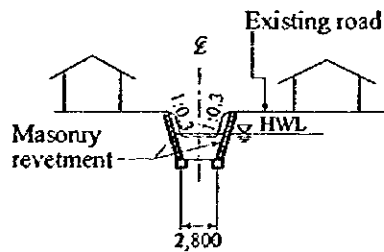
Sta. 30 ~ Sta. 60



Sta. 120 ~ Sta. 275



Sta. 275+10.0 ~ Sta. 395+5.0



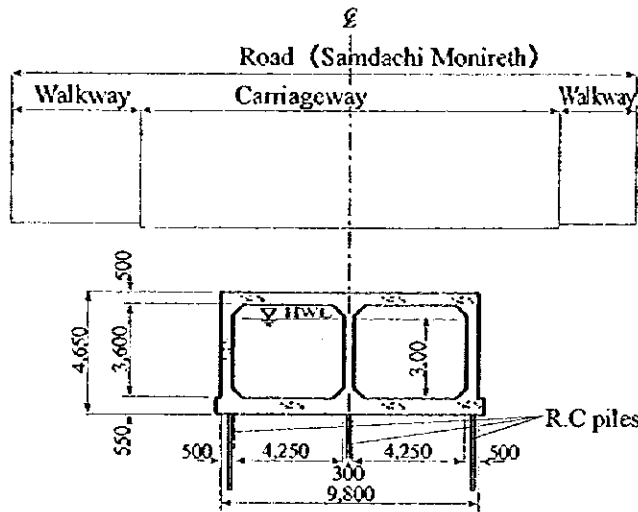
Sta. 395+5.0 ~ Sta. 420



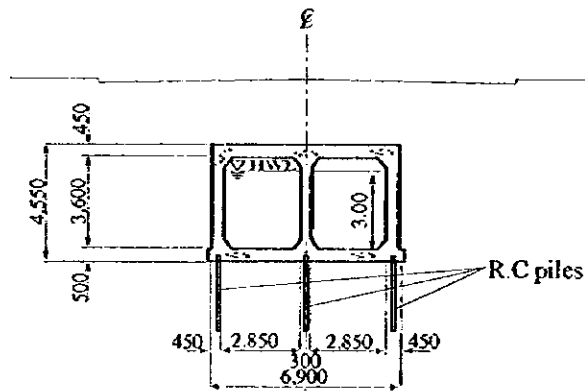
The Study on Drainage Improvement and Flood Control  
in the Municipality of Phnom Penh  
JICA - CTIE International Co., Ltd. - Nippon Koei Co., Ltd.

Figure I3-10  
Standard Cross-sections of Meanchey Drainage Main

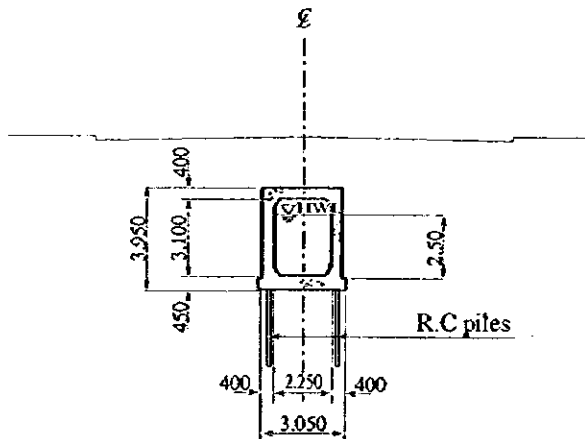




Sandachi Monireth-1&2(Sta.0 ~ Sta.145+15.0)



Sandachi Monireth-3(Sta.145+15.0 ~ Sta.210+40.0)

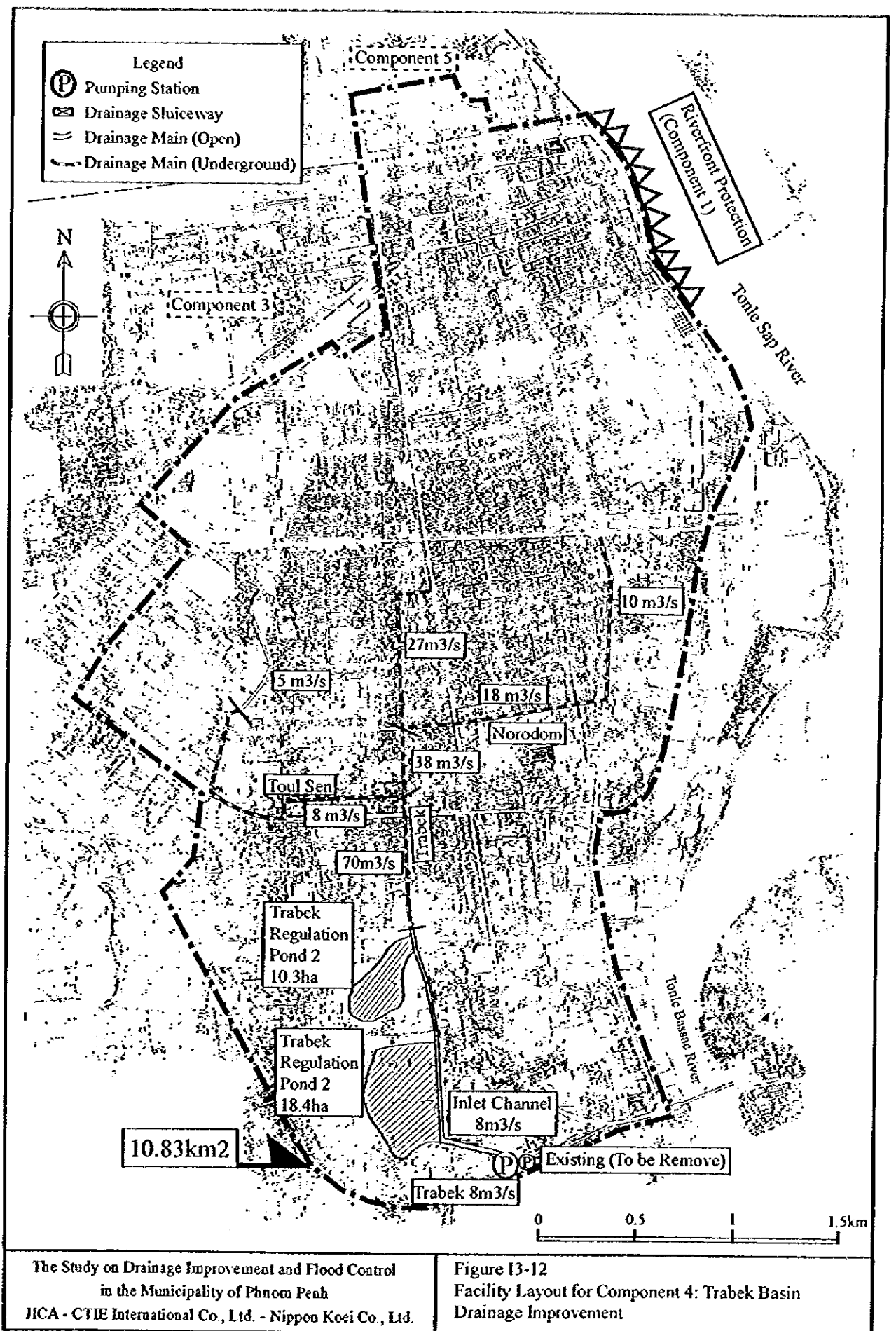


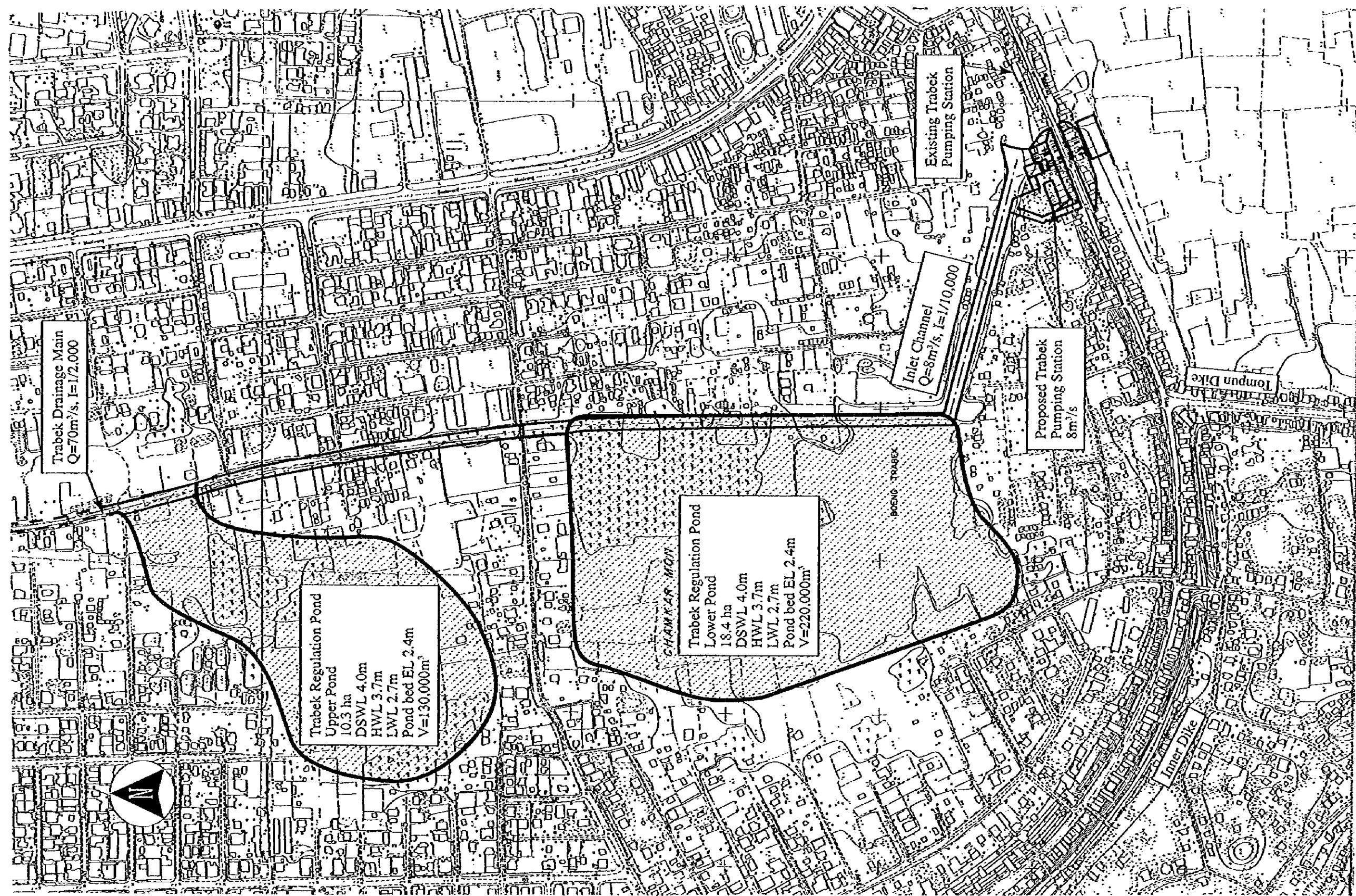
Jawaharlal Nehru Drainage Main



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in the Municipality of Phnom Penh  
JICA - CTIE International Co., Ltd. - Nippon Koei Co., Ltd.

Figure I3-11  
Standard Cross-sections of Sandachi Monireth and  
Jawaharlal Nehru Drainage Mains

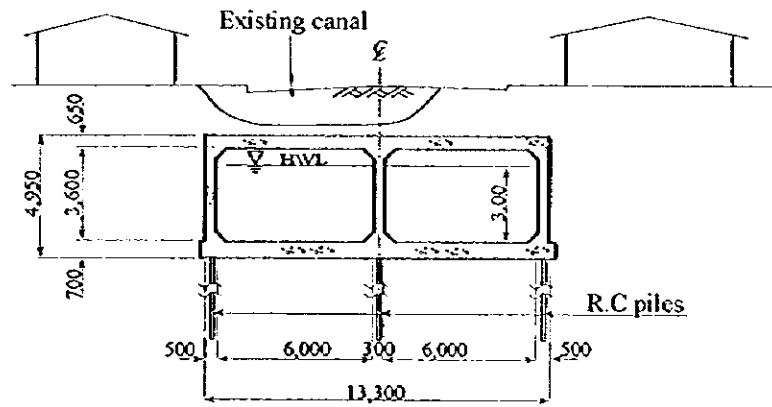




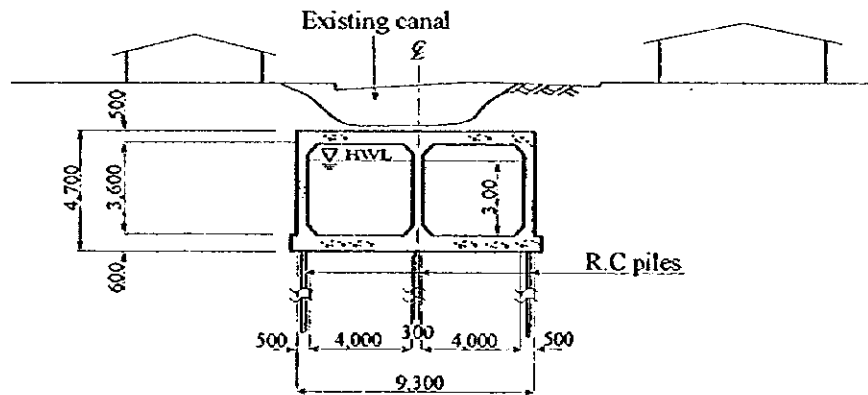
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 in the Municipality of Phnom Penh  
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Figure 13-13  
 Layout of Trabek Pumping Station and Regulation Pond

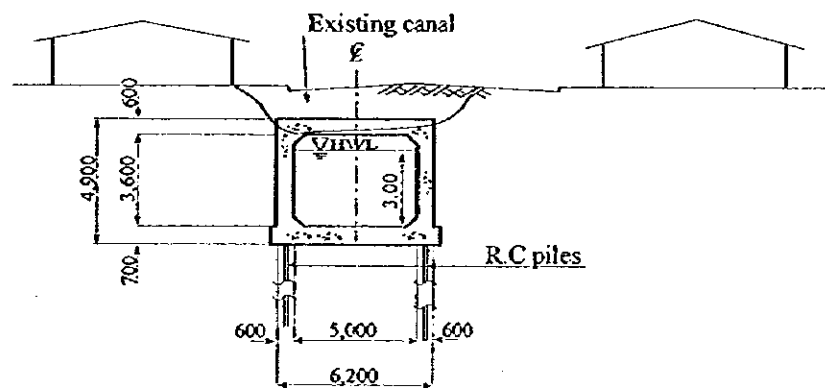




Trabek-1 Sta.0 ~ Sta.65+20.0

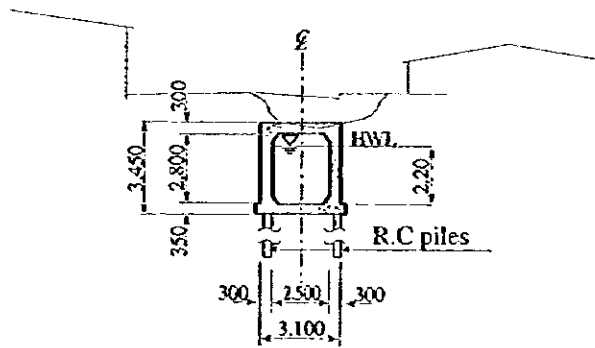


Trabek-2 Sta.65+20.0 ~ Sta.100+11.0

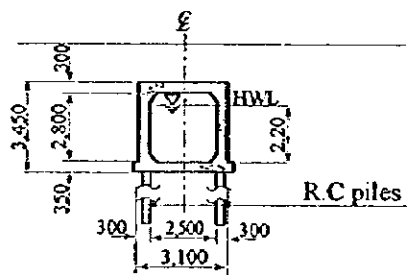


Trabek-3 Sta.100+11.0 ~ Sta.160+4.0

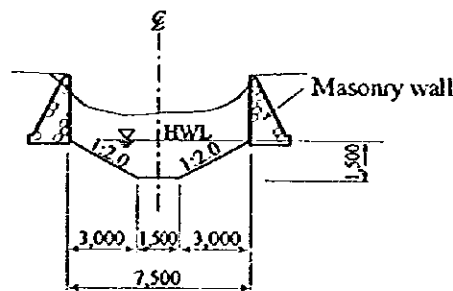




Toul Sen-1 Sta.0 ~ Sta.60



Toul Sen-2 Sta.60 ~ Sta.145+40

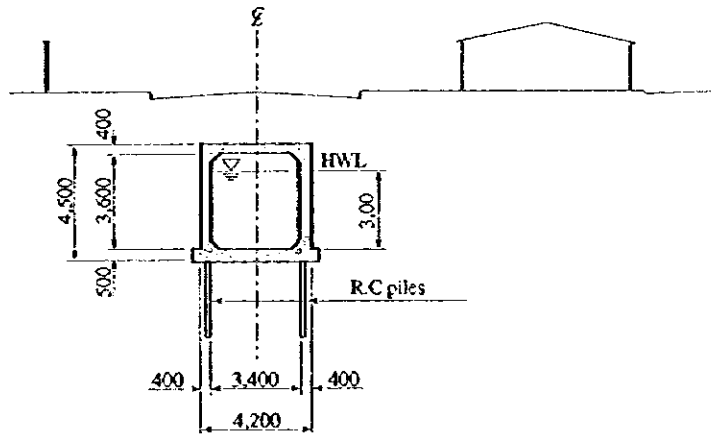


Toul Sen-3 Sta.145+40.0 ~ Sta.205

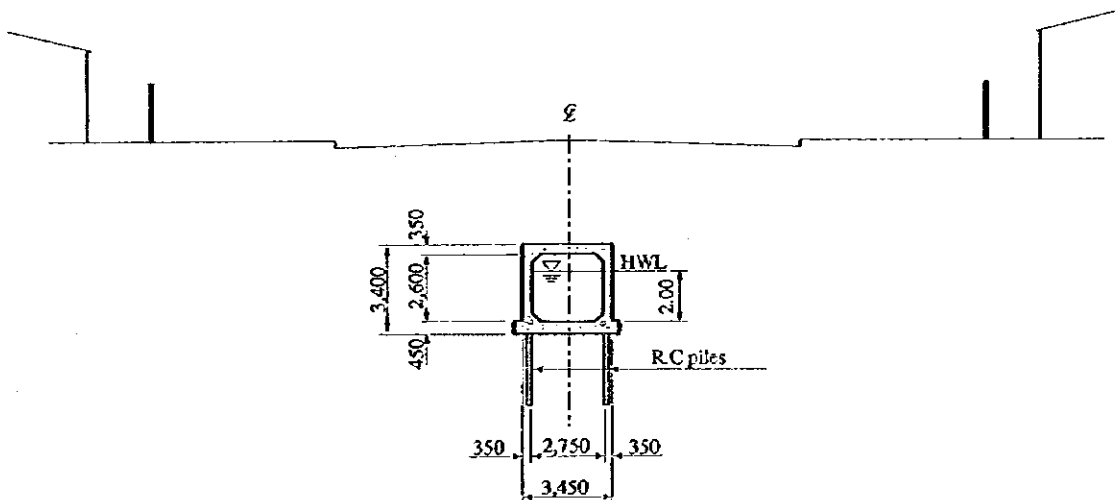


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Figure 13-15  
Standard Cross-sections of Toul Sen Drainage Main

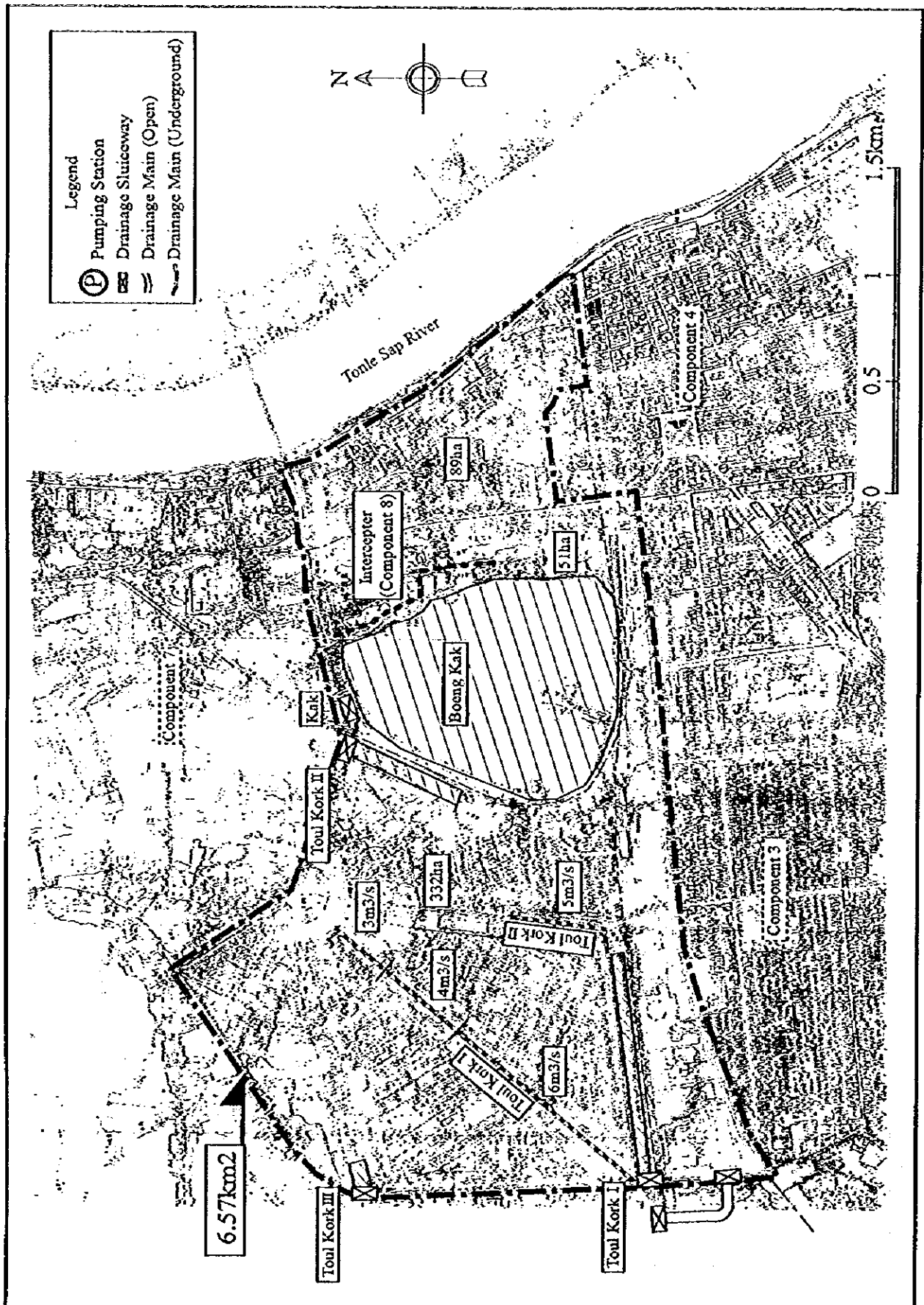


Norodom-1 Sta.0~Sta.85+3.0



Norodom-2 Sta.85+3.0~Sta.175+18.0

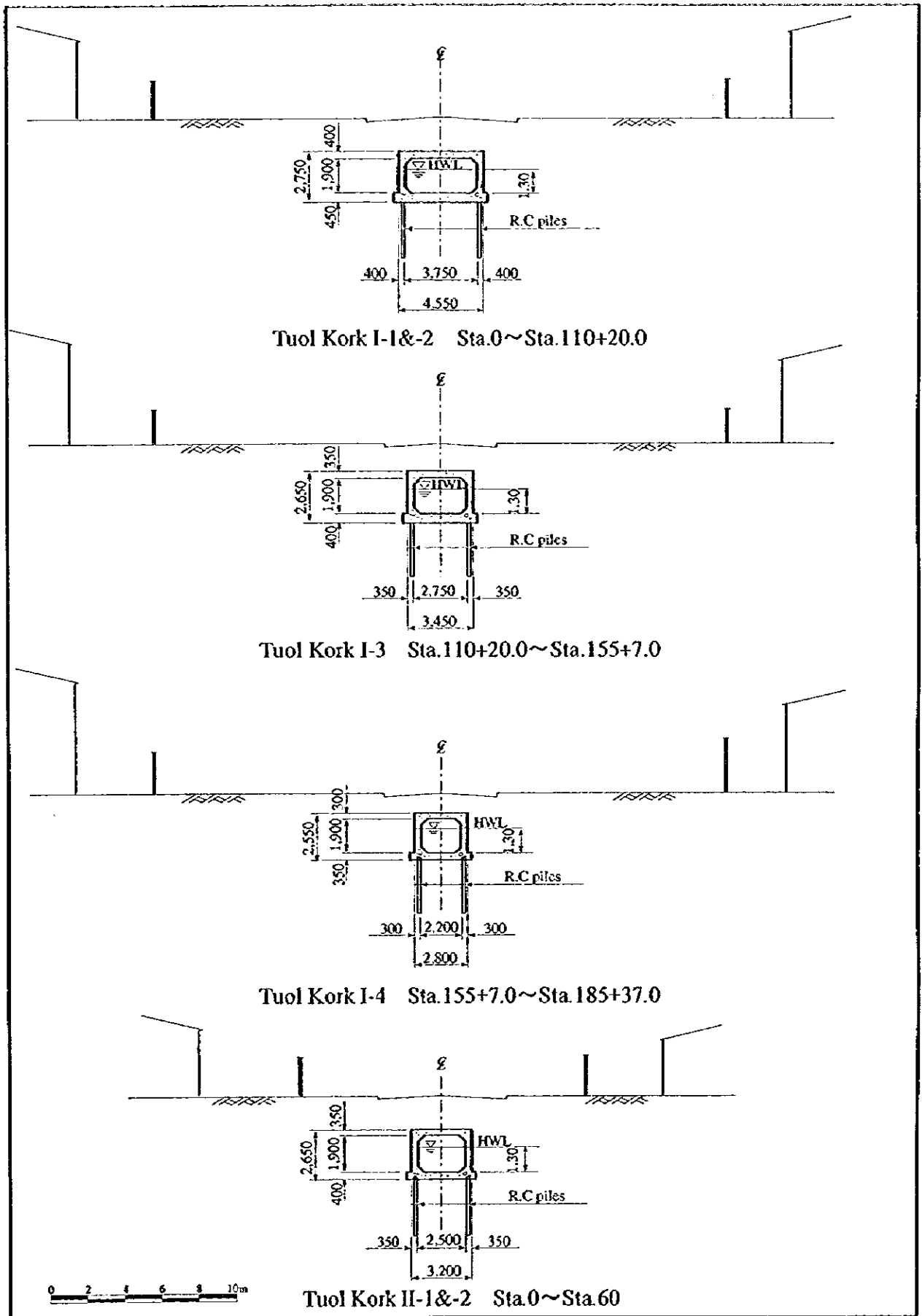




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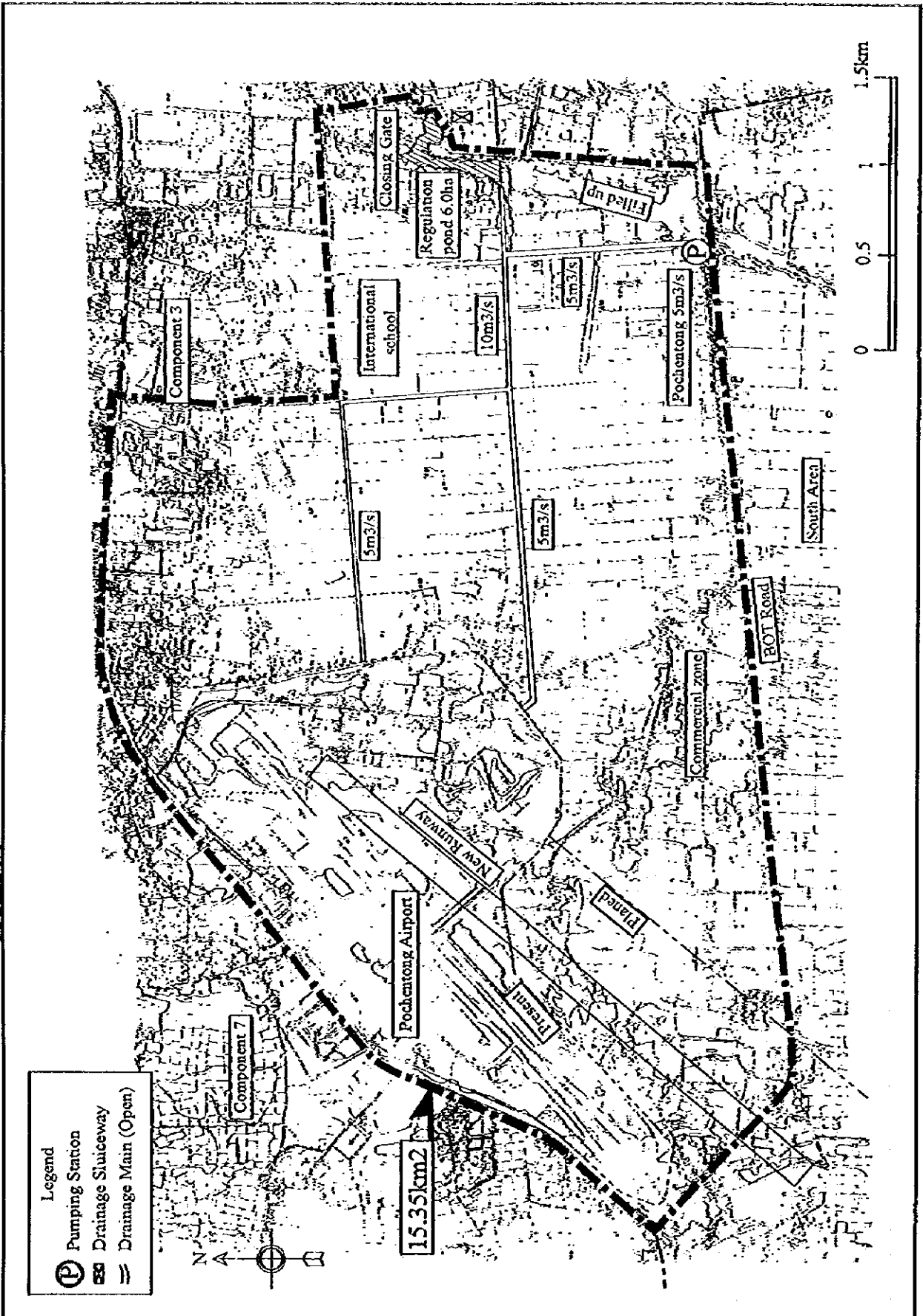
Figure 13-17  
 Facility Layout for Components 5: City Core North  
 Area Drainage Improvement





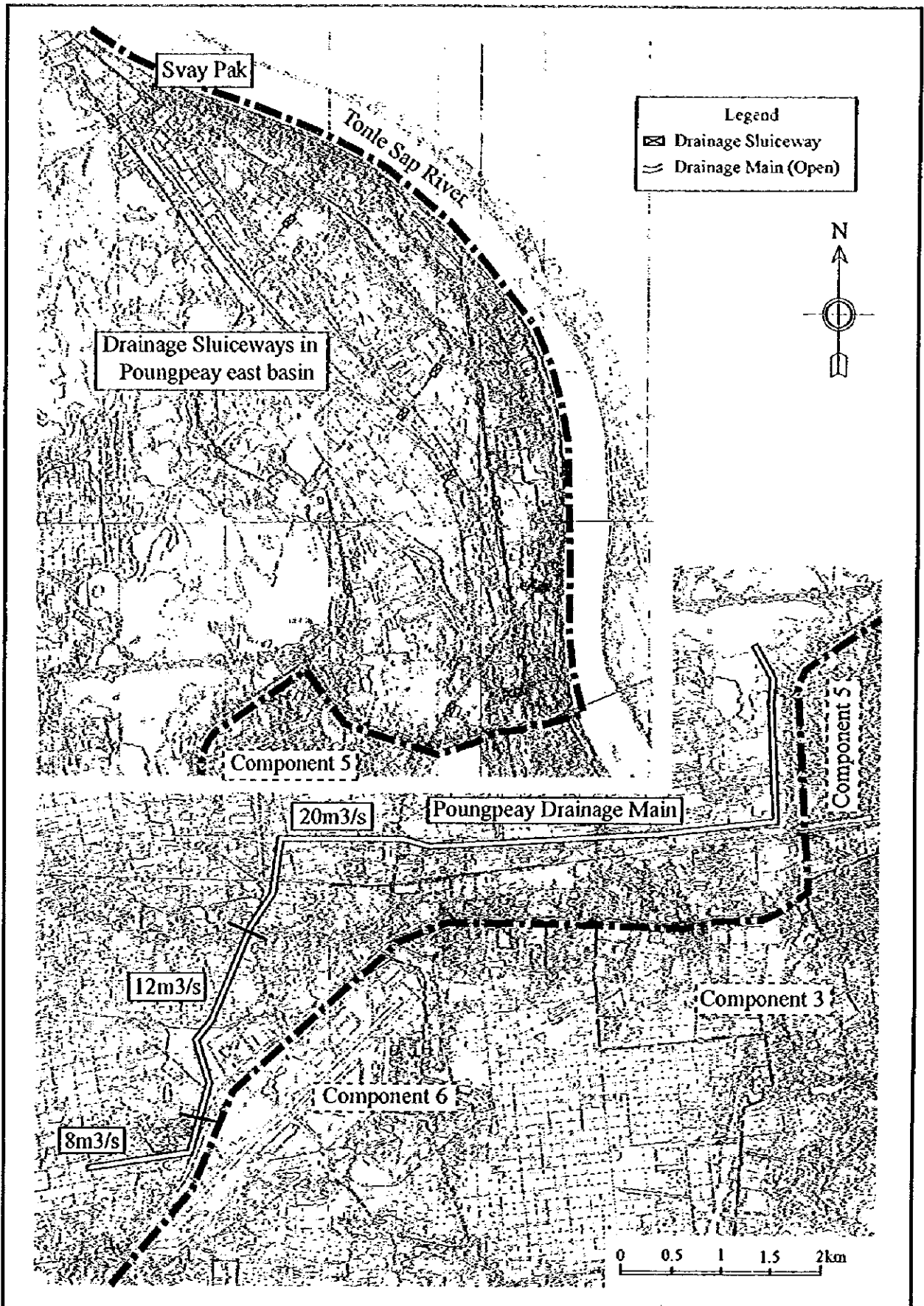
The Study on Drainage Improvement and Flood Control  
in the Municipality of Phnom Penh  
JICA - CTIE International Co., Ltd. - Nippon Koei Co., Ltd.

Figure 13-18  
Standard Cross-sections of Tuol Kork Drainage Mains



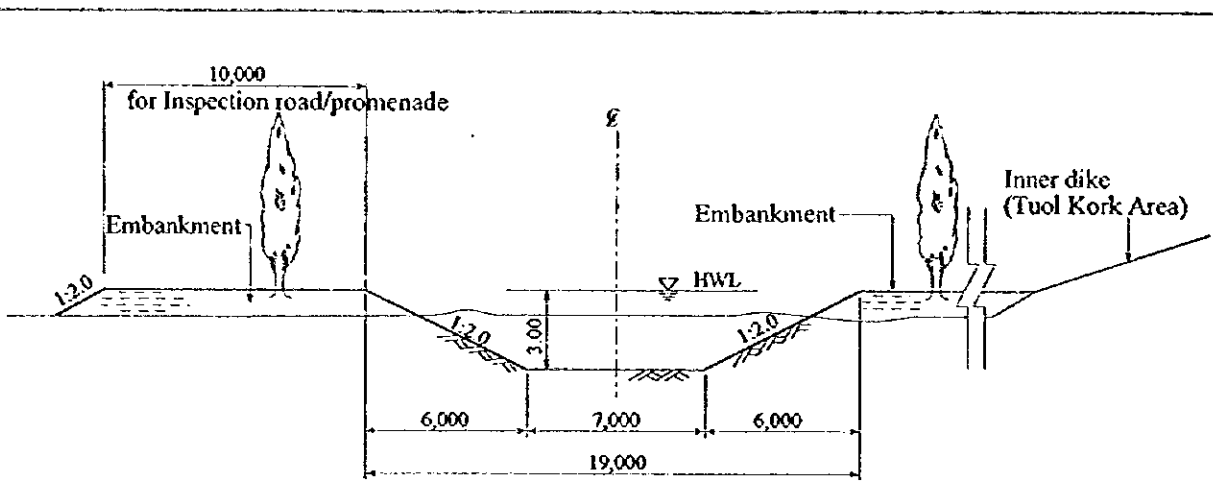
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 in the Municipality of Phnom Penh  
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Figure I3-19  
 Facility Layout for Component 6: Pochentong  
 East Basin Drainage Improvement

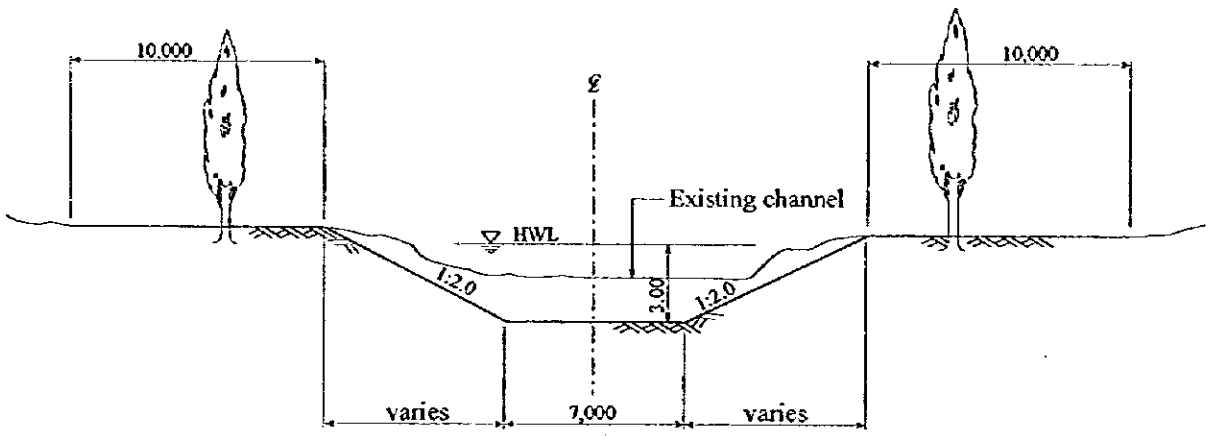


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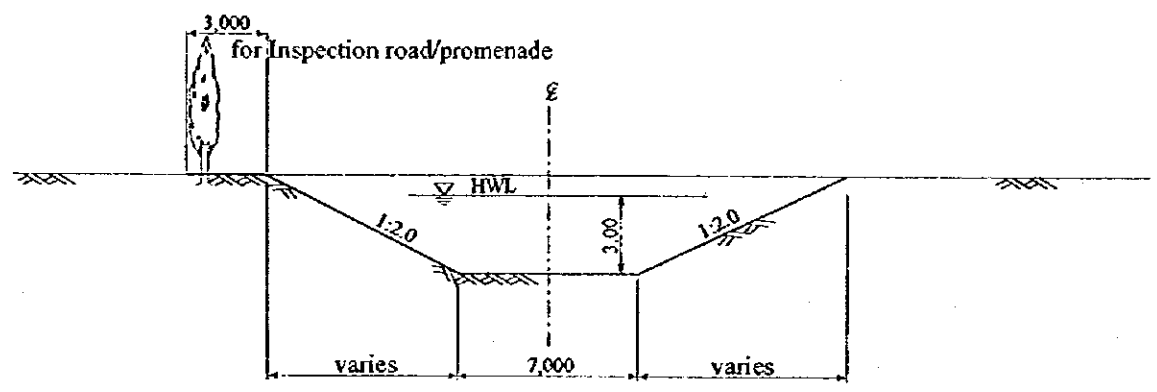
Figure 13-20  
 Facility Layout for Component 7: Northeast and  
 Northwest areas Drainage Improvement



Sta. 13 ~ Sta. 20



Sta. 37 ~ Sta. 45

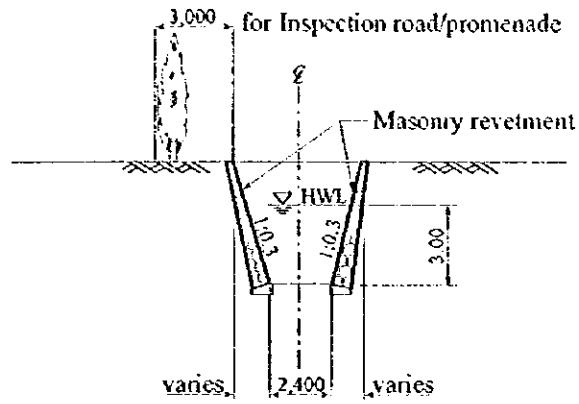


Sta. 53 ~ Sta. 80

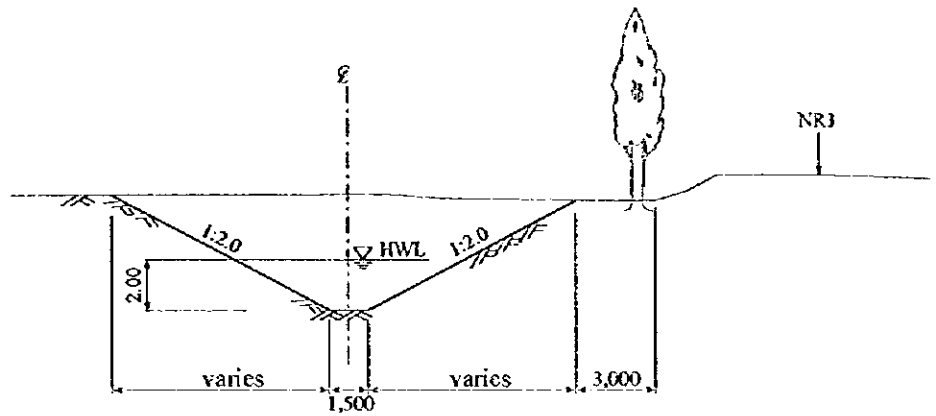


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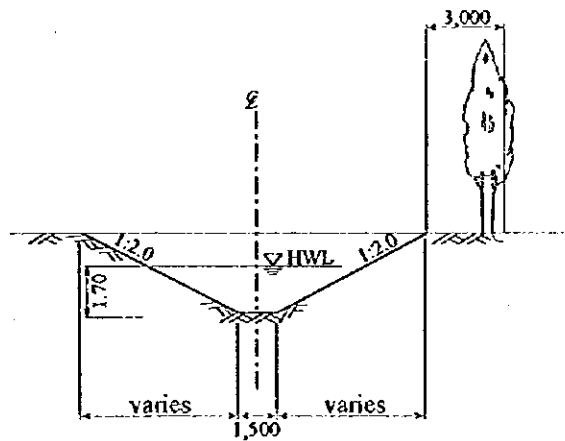
Figure. 13-21  
Standard Cross-sections of Pongpeay Drainage Main (1/2)



Sta. 80 ~ Sta. 97



Sta. 97 ~ Sta. 104+17.0



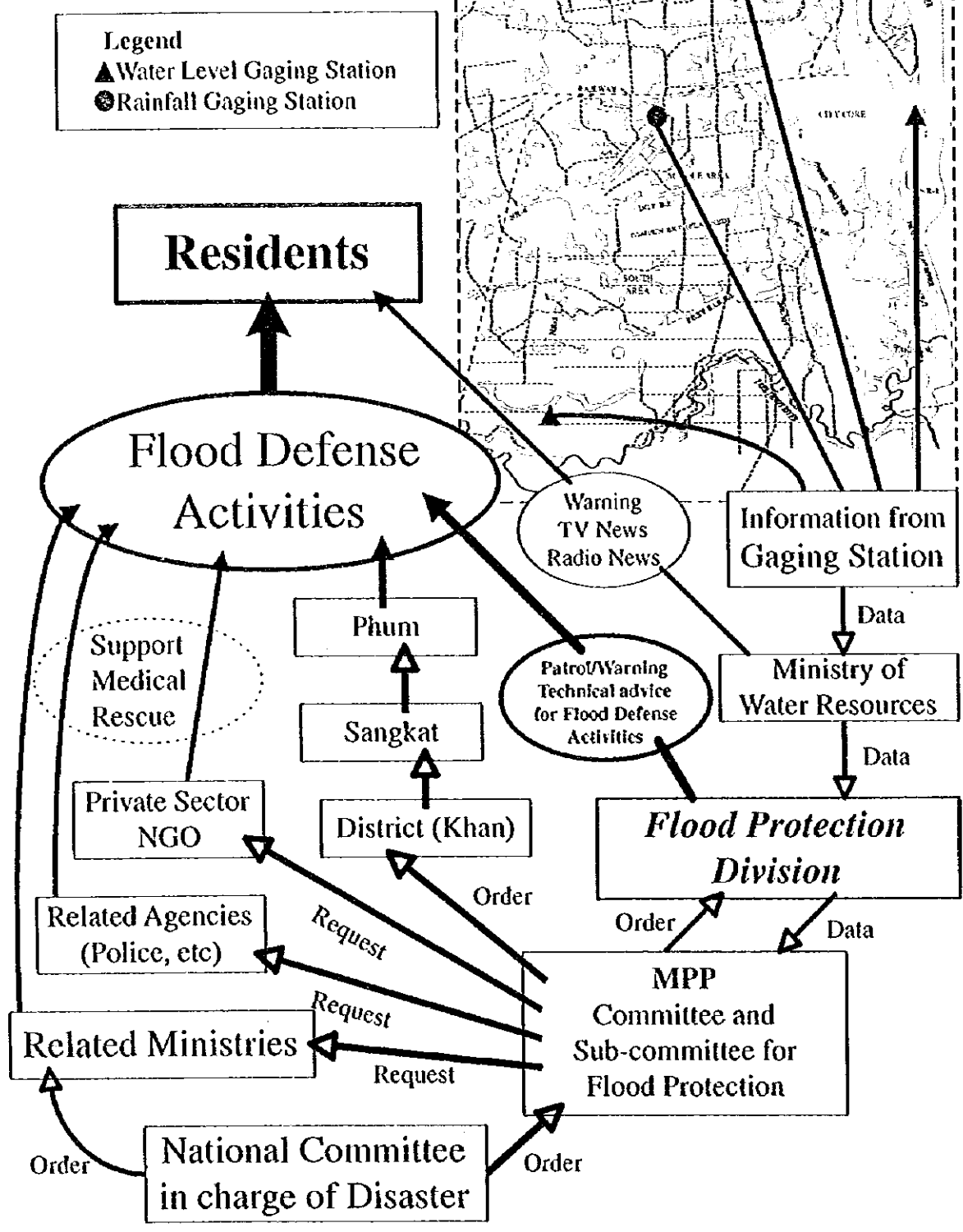
Sta. 104+17.0 ~ Sta. 119+20.0



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Figure I3-21  
Standard Cross-sections of Pongpeay Drainage Main (2/2)

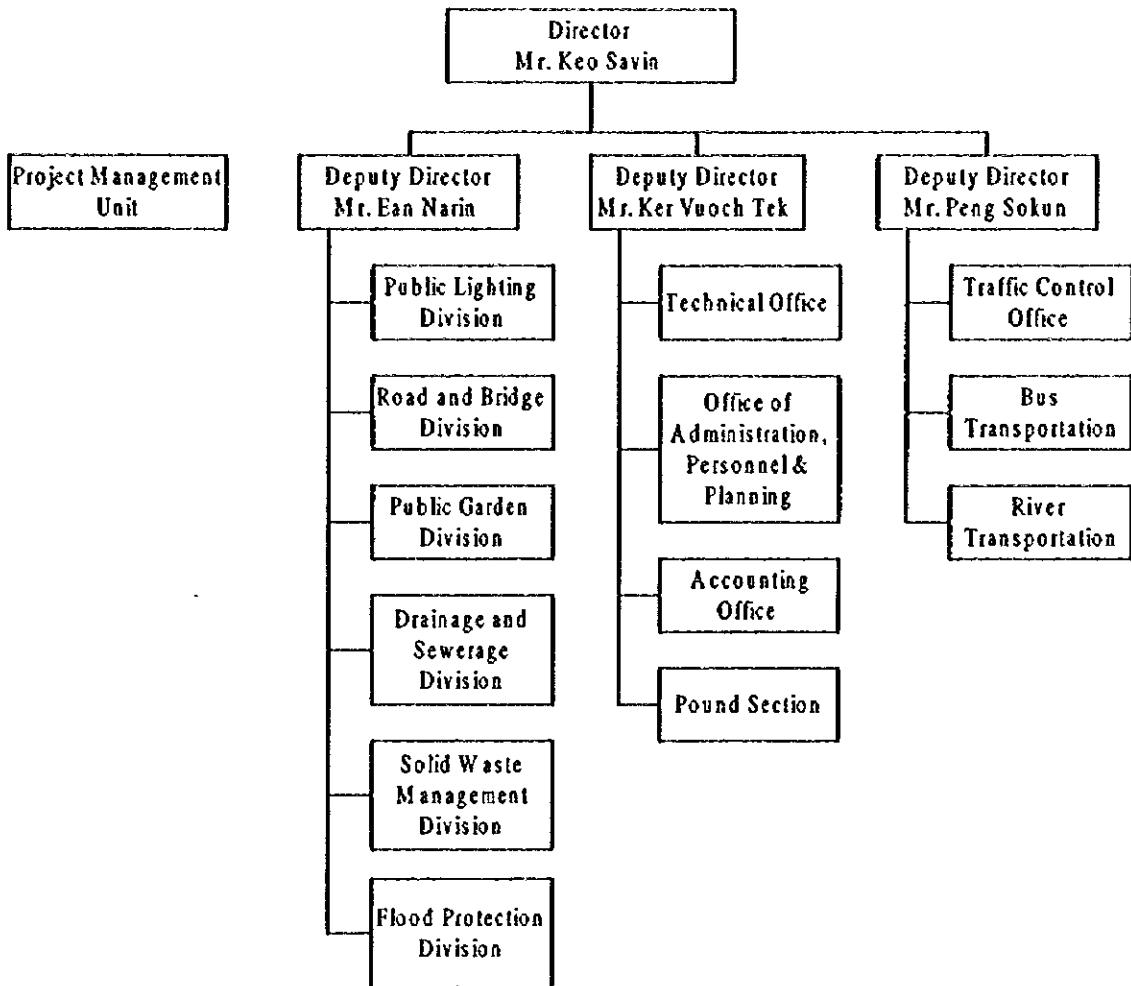
# Flood Defense Activities



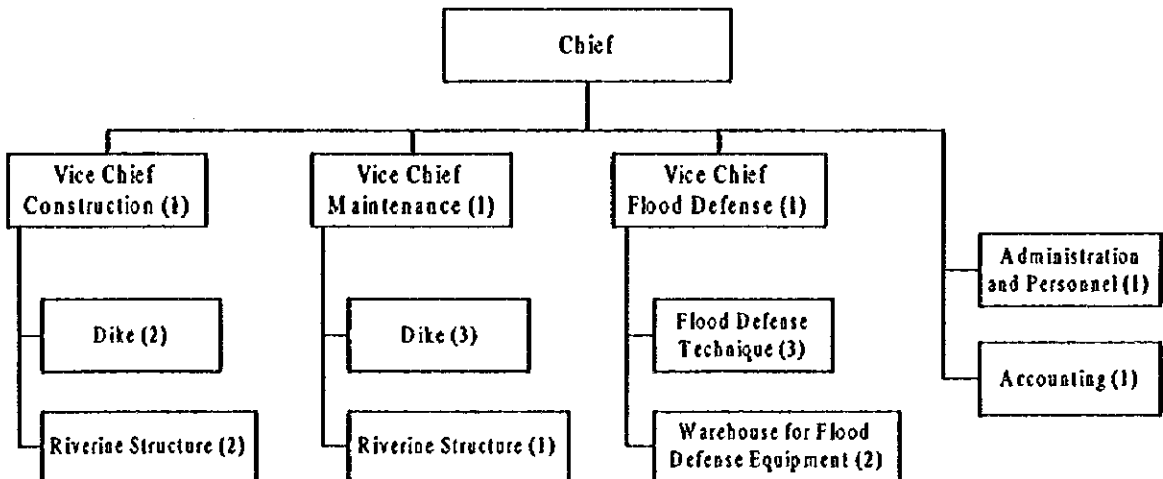
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 in the Municipality of Phnom Penh  
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Figure 13-22  
 Flow of Flood Defense Activity

## Organizational Structure of Department of Public Works and Transport



## Organizational Structure of Flood Protection Division



The Study on Drainage Improvement and Flood Control  
in the Municipality of Phnom Penh  
JICA-CTIE International Co., Ltd. - Nippon Koei Co., Ltd.

Figure I3-23  
Proposed Organizational Chart of Department of Public Works  
and Transport (DPWT) and Flood Protection Division