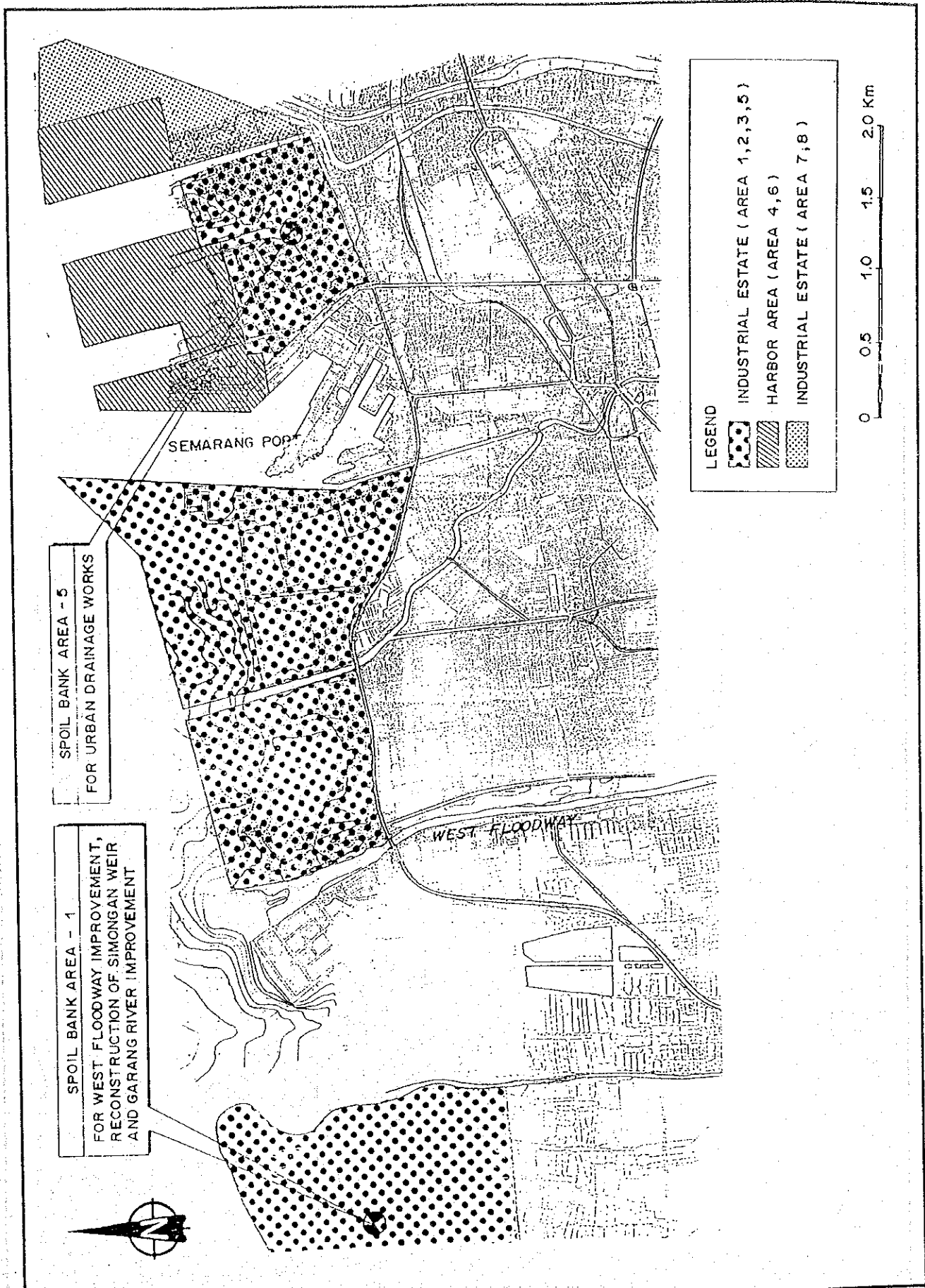


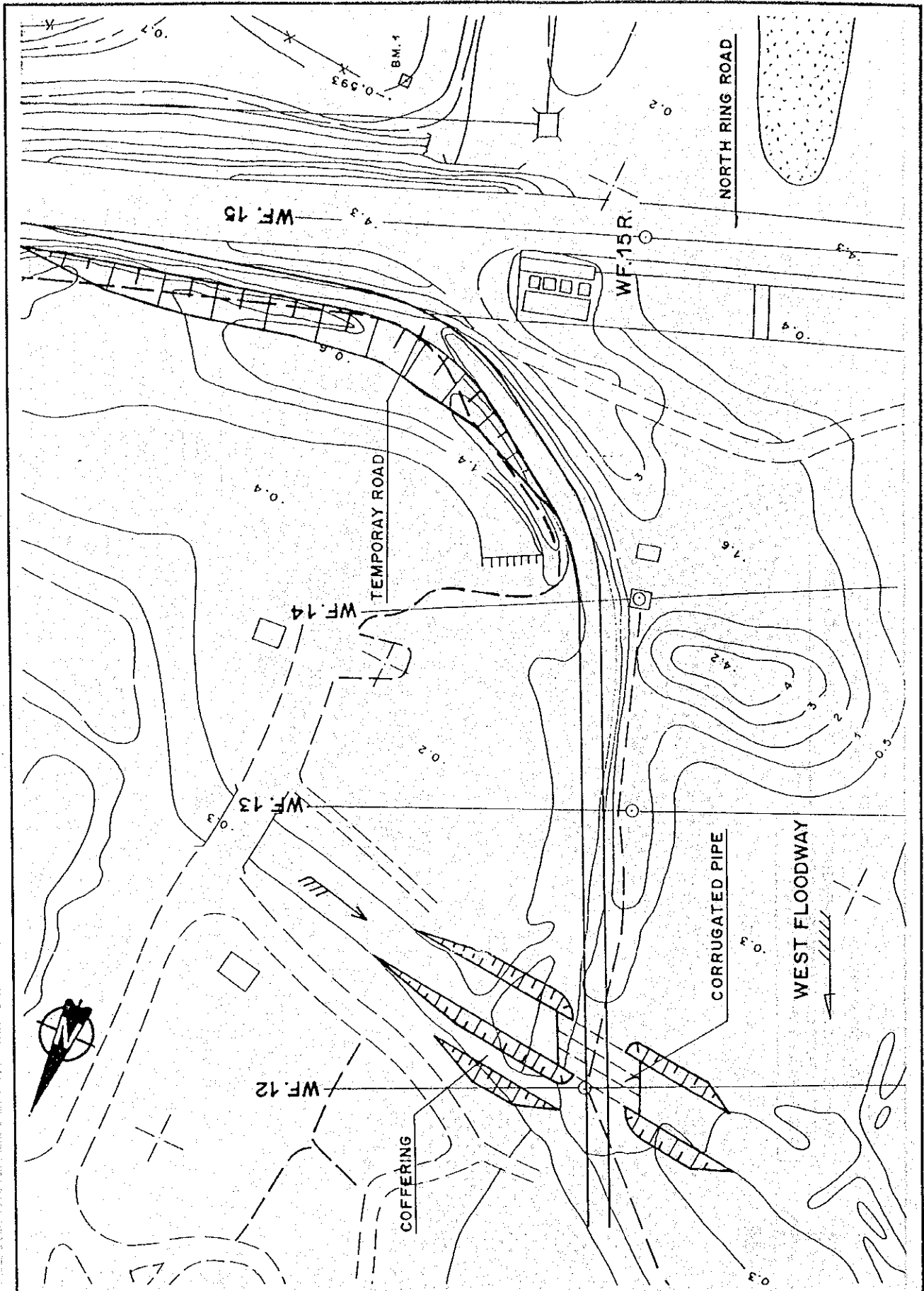
## FIGURES



THE DETAILED DESIGN OF FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA

Fig. 1.2.1  
POSSIBLE SPOIL BANK AREAS

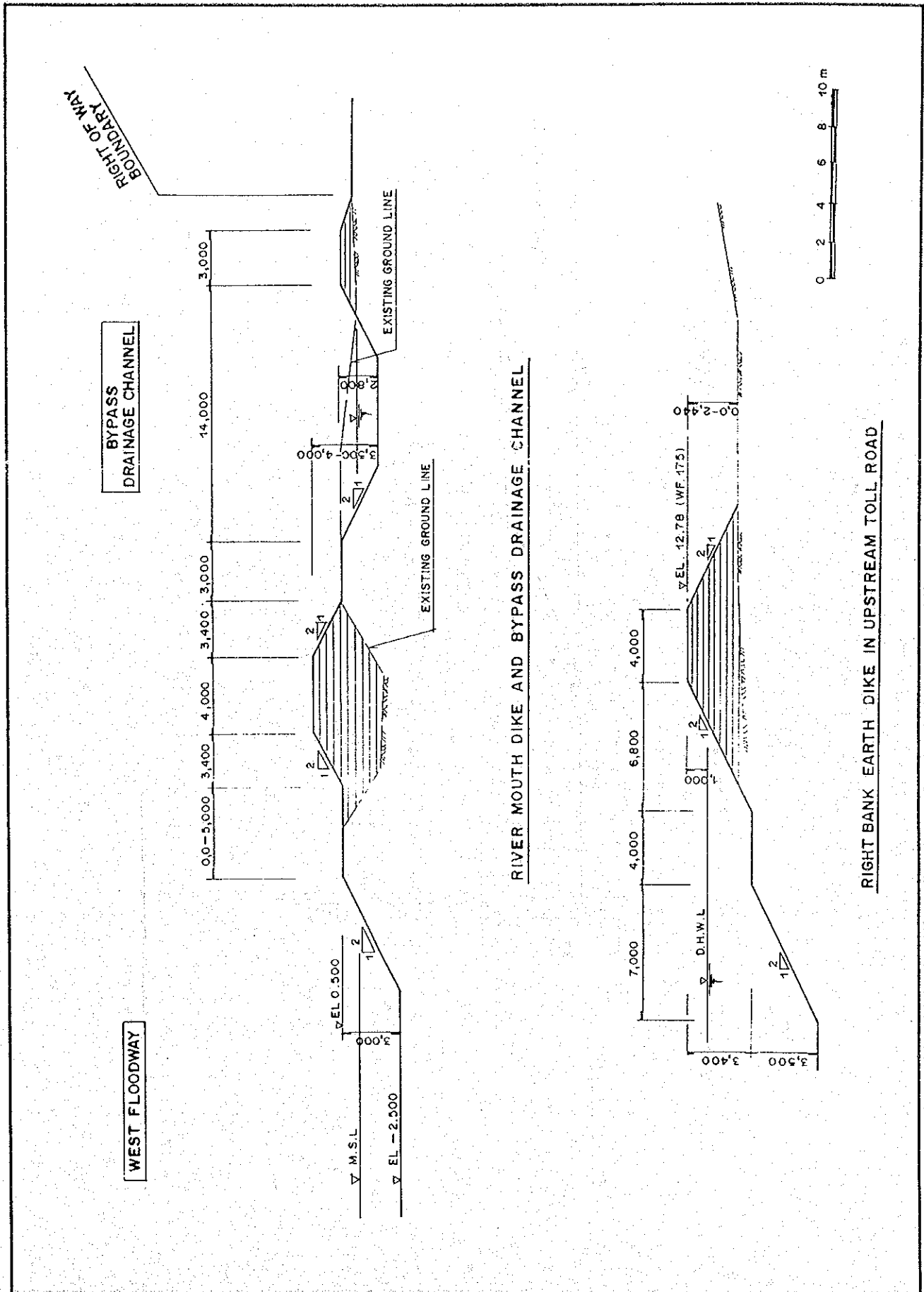
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THE DETAILED DESIGN OF FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA

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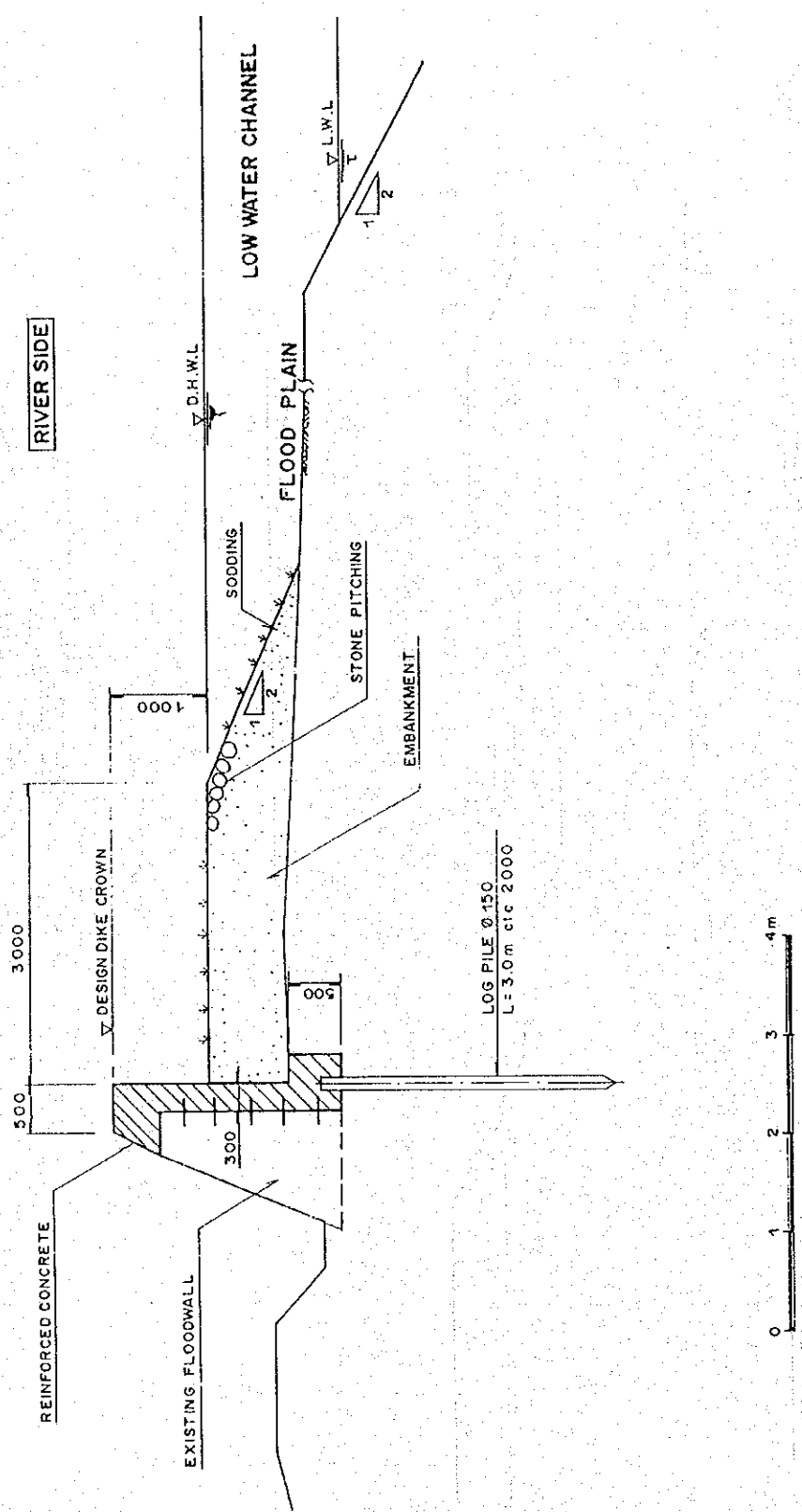
Fig. 2.1.1  
TEMPORARY CONSTRUCTION ROAD AND COFFERING OF RIVER MOUTH



THE DETAILED DESIGN OF FLOOD CONTROL, URBAN DRAINAGE AND WATER-RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA

Fig. 2.2.1  
TYPICAL CROSS SECTION OF PROPOSED EARTH DIKE

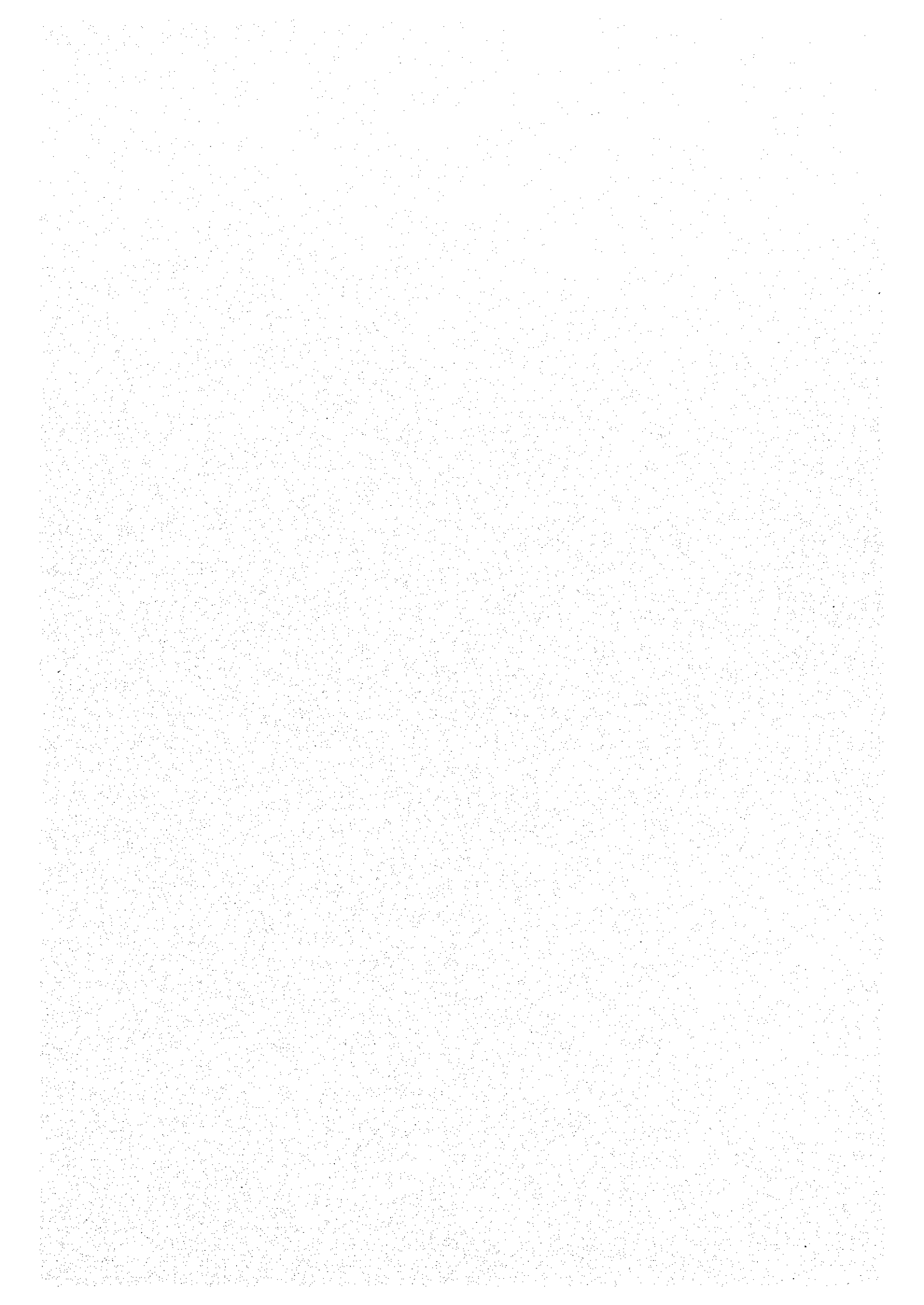
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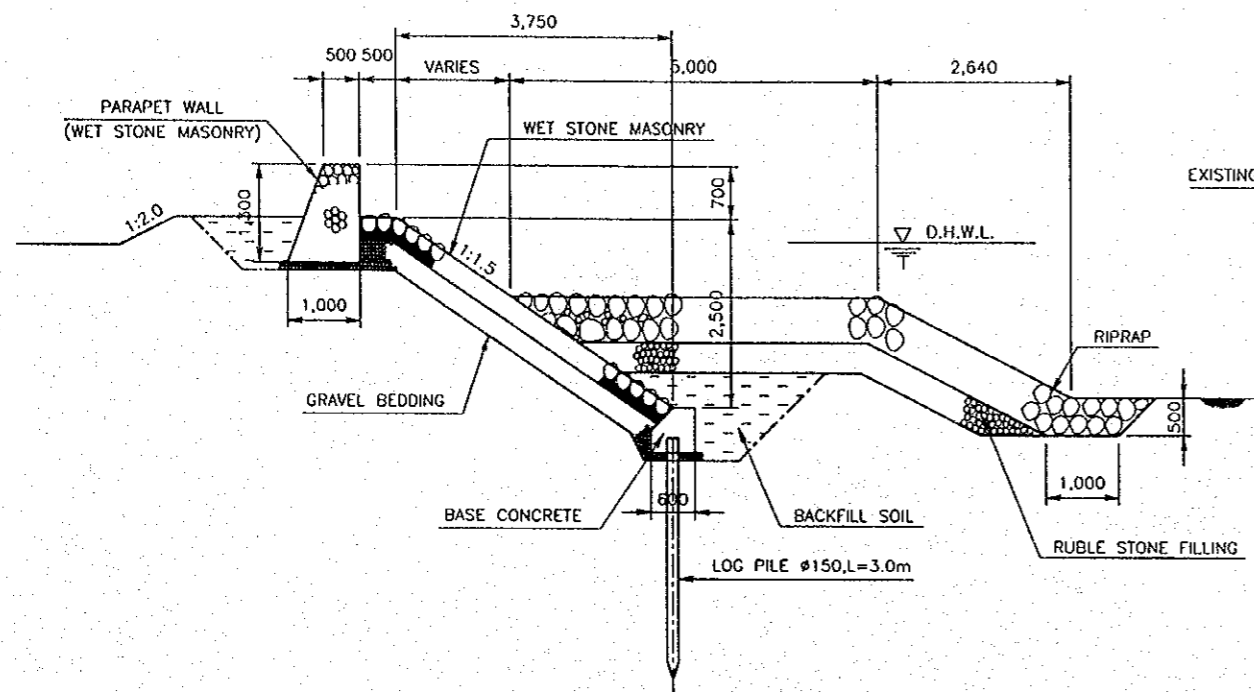


THE DETAILED DESIGN OF FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA

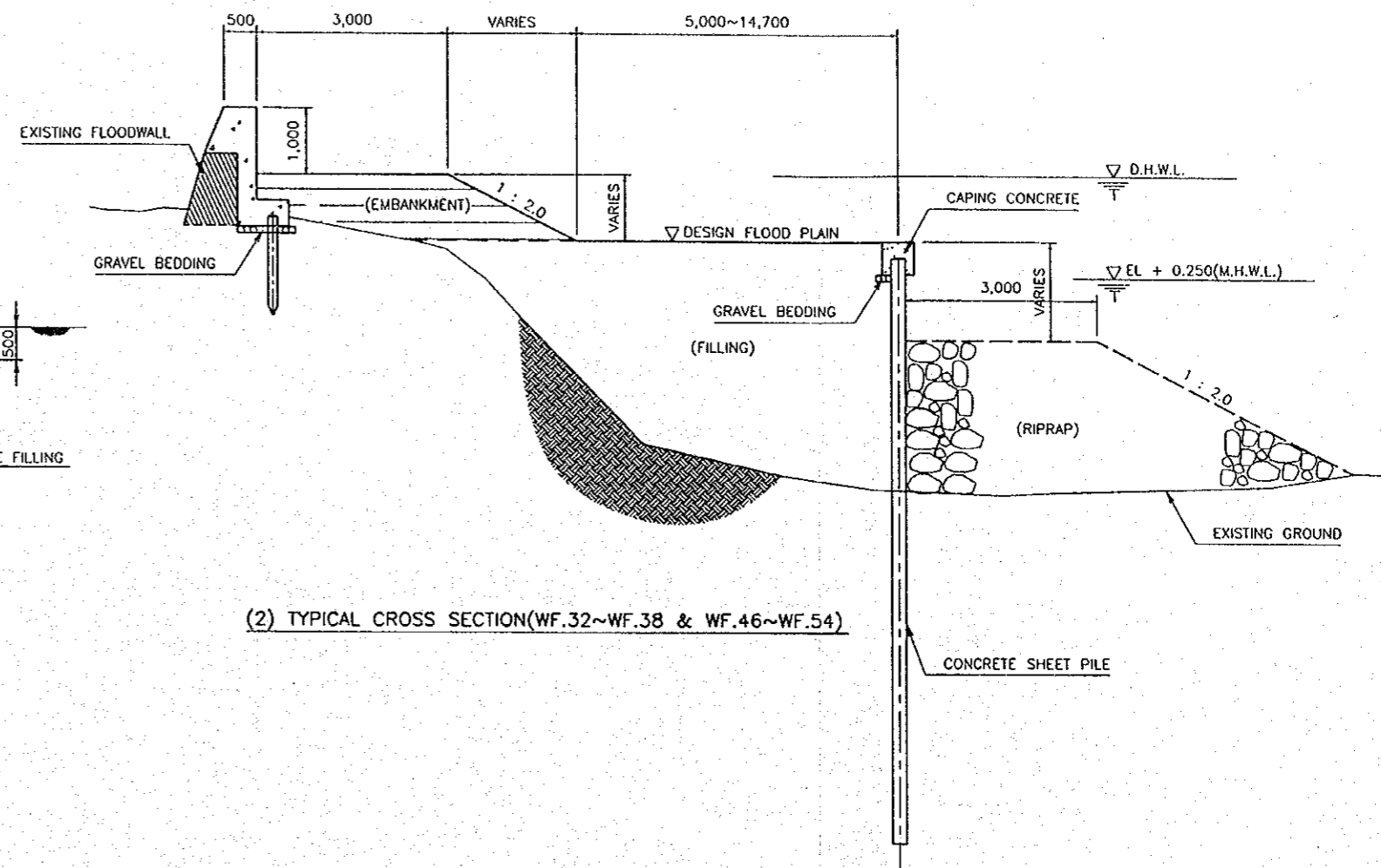
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Fig. 2.3.1  
RAISING OF EXISTING FLOODWALL

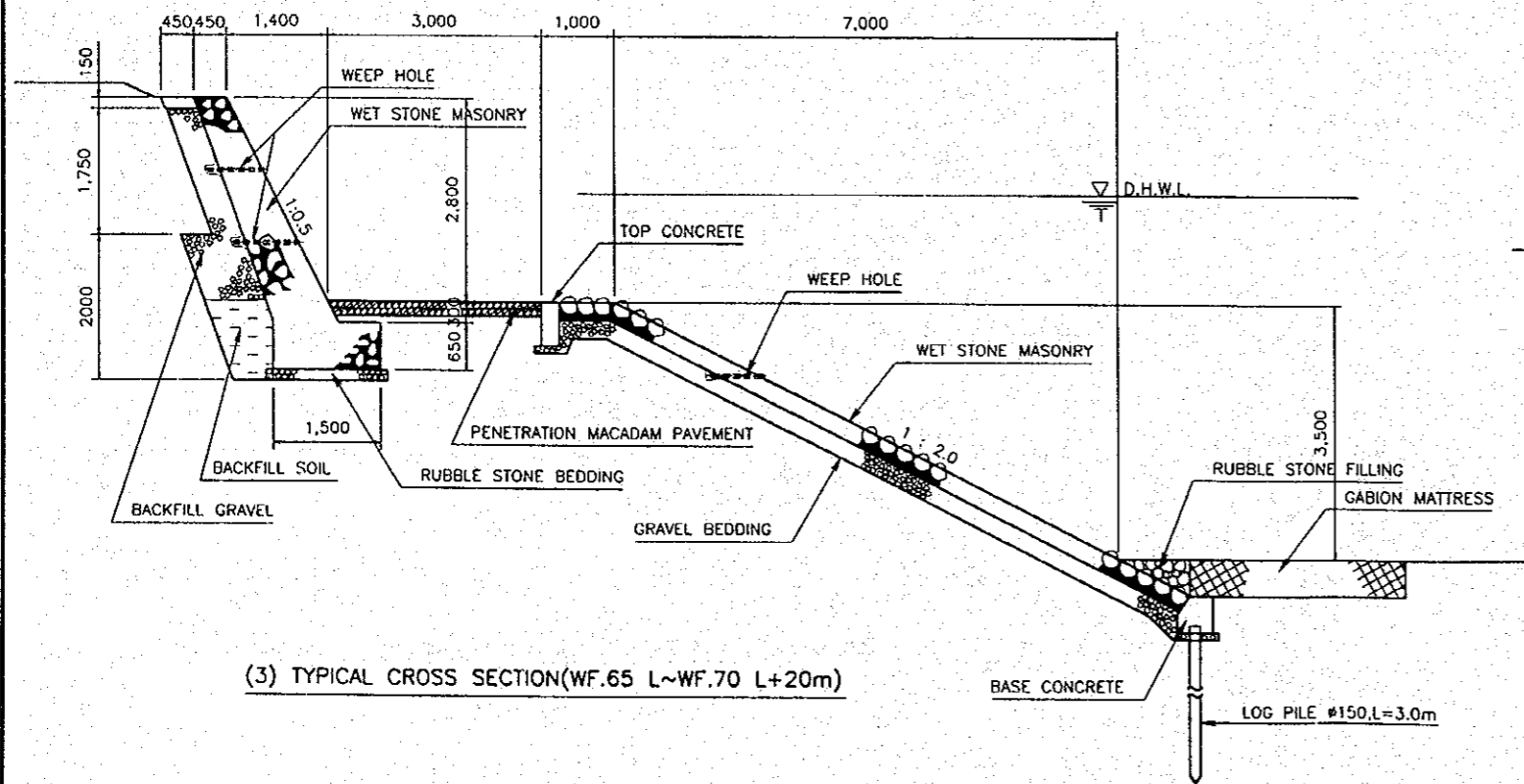




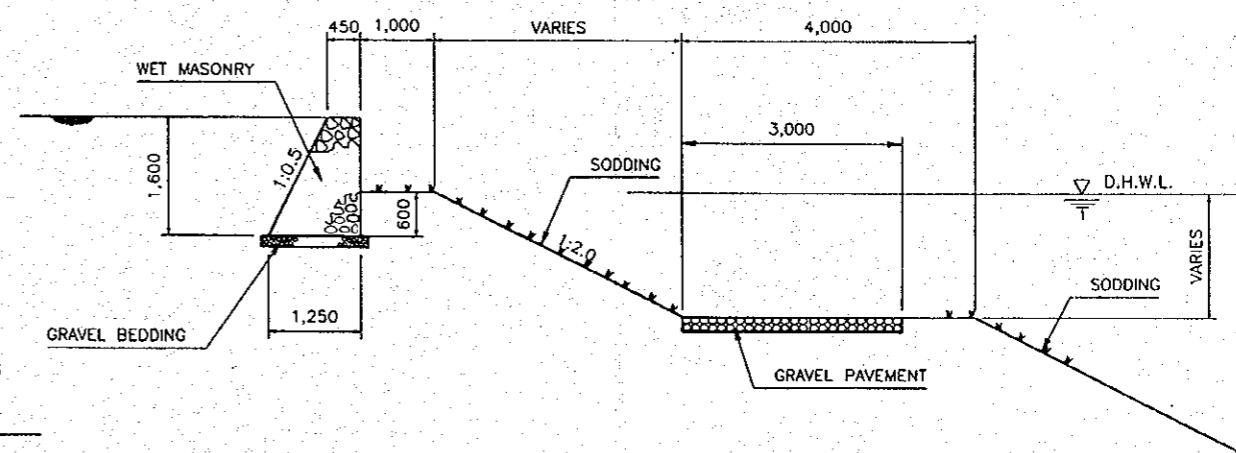
(1) TYPICAL CROSS SECTION(WF.0-9~WF.3)



(2) TYPICAL CROSS SECTION(WF.32~WF.38 & WF.46~WF.54)



(3) TYPICAL CROSS SECTION(WF.65 L~WF.70 L+20m)

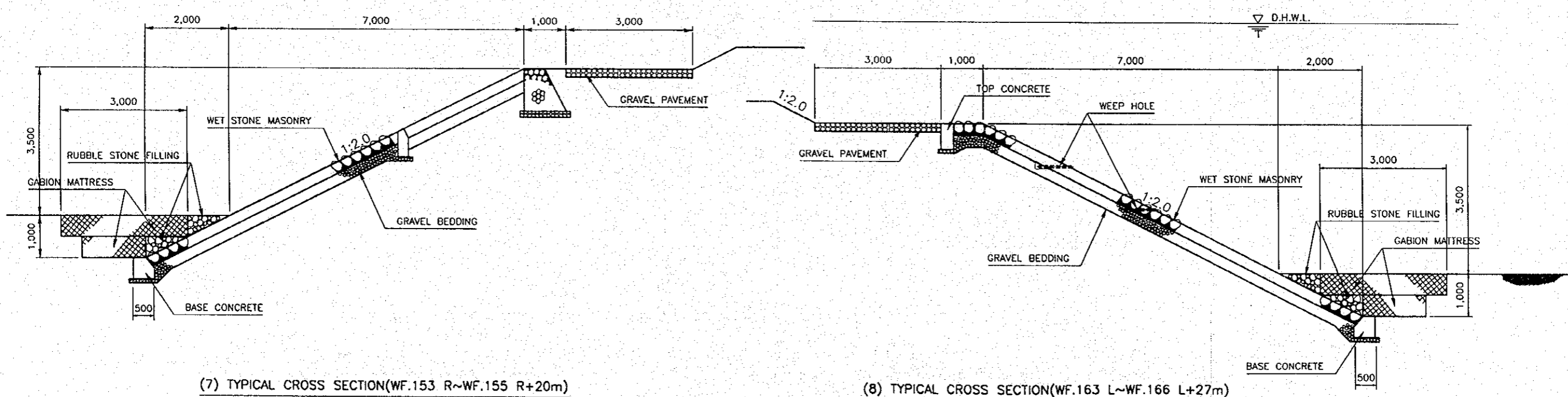
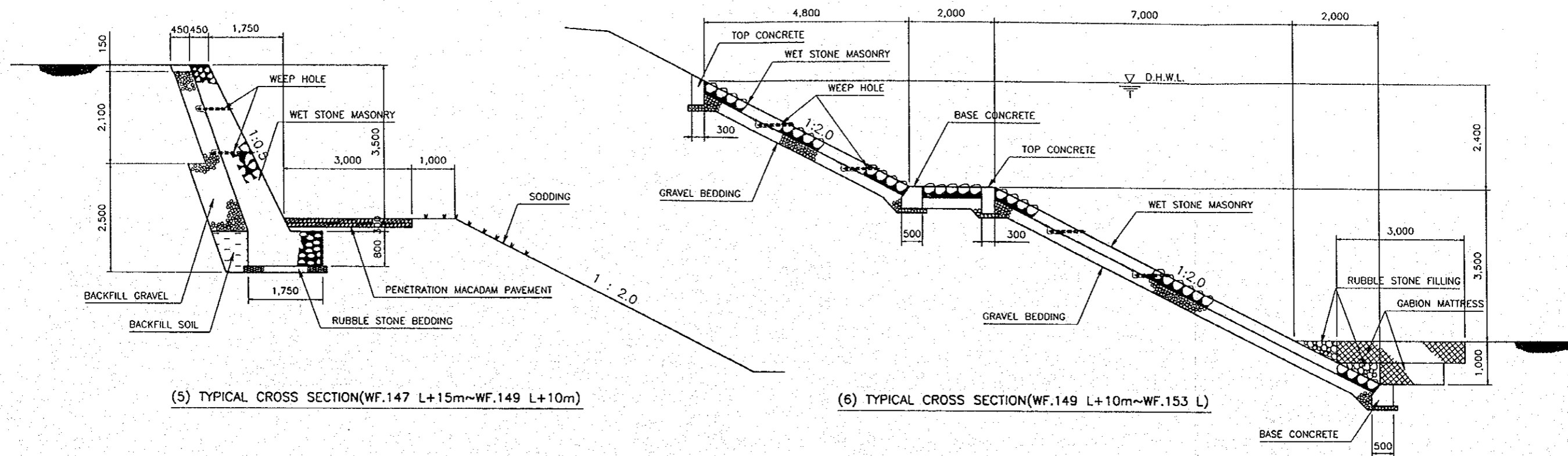


(4) STANDARD CROSS SECTION(WF.75 L-20m~WF.80 L)

THE DETAILED DESIGN OF FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA

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Fig. 2.4.1 (1/2)  
TYPICAL CROSS SECTION OF REVETMENT

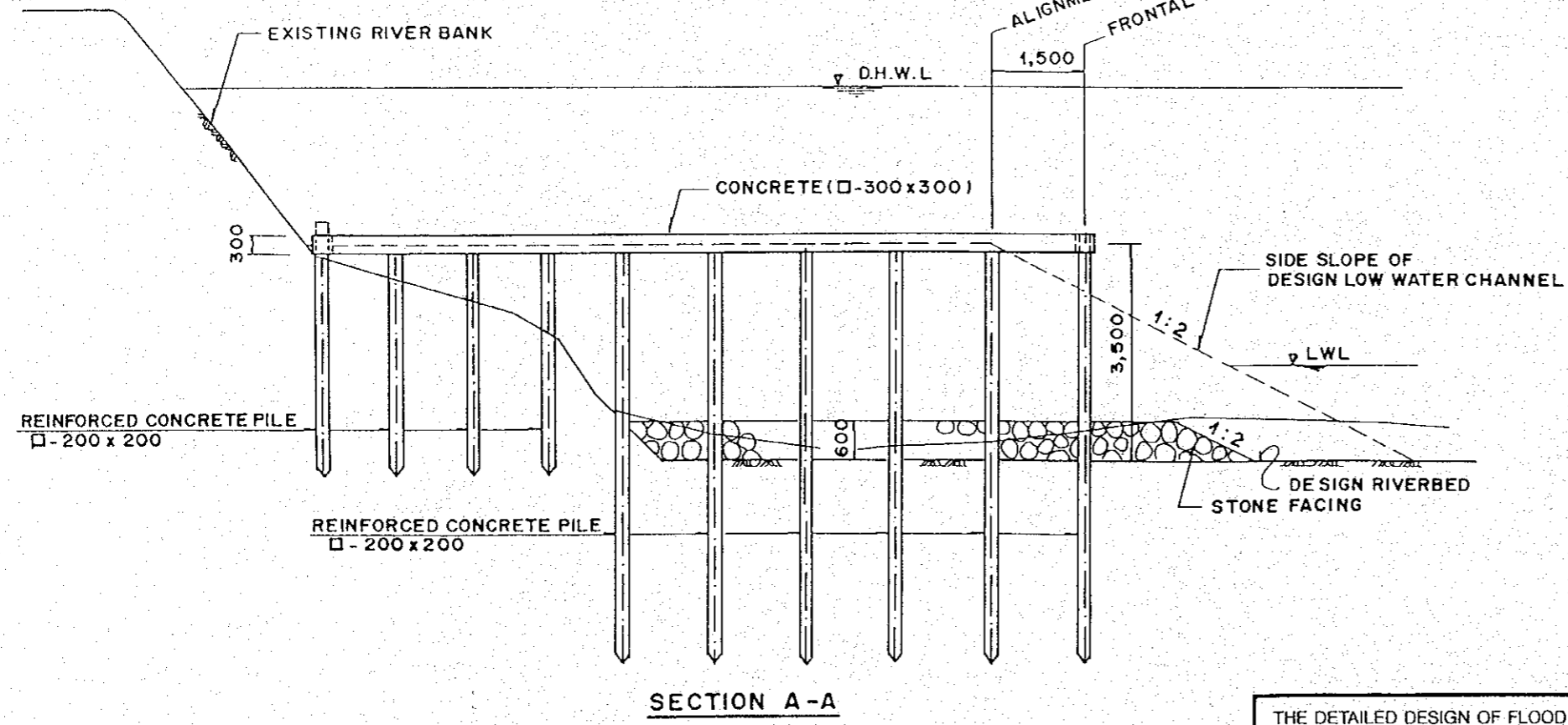
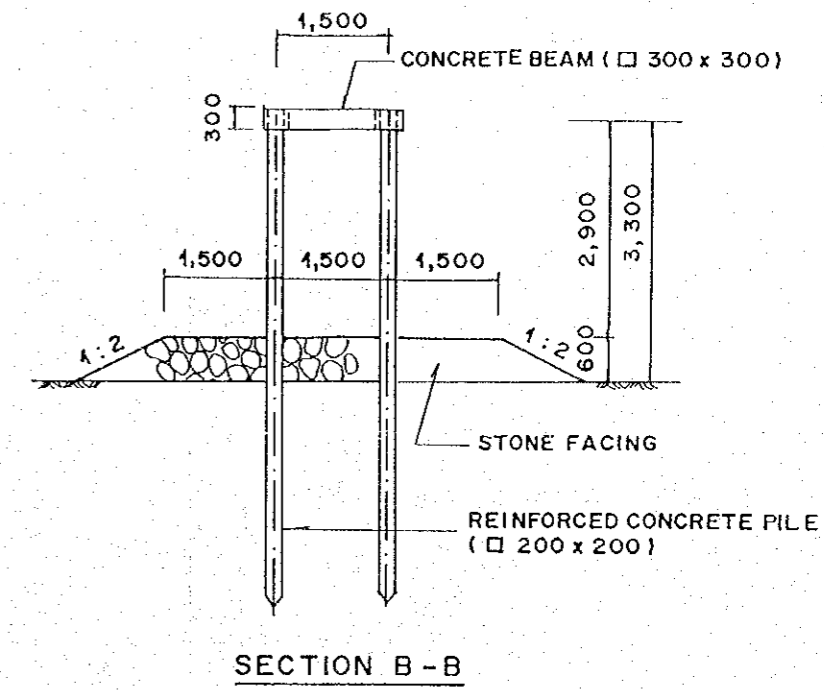
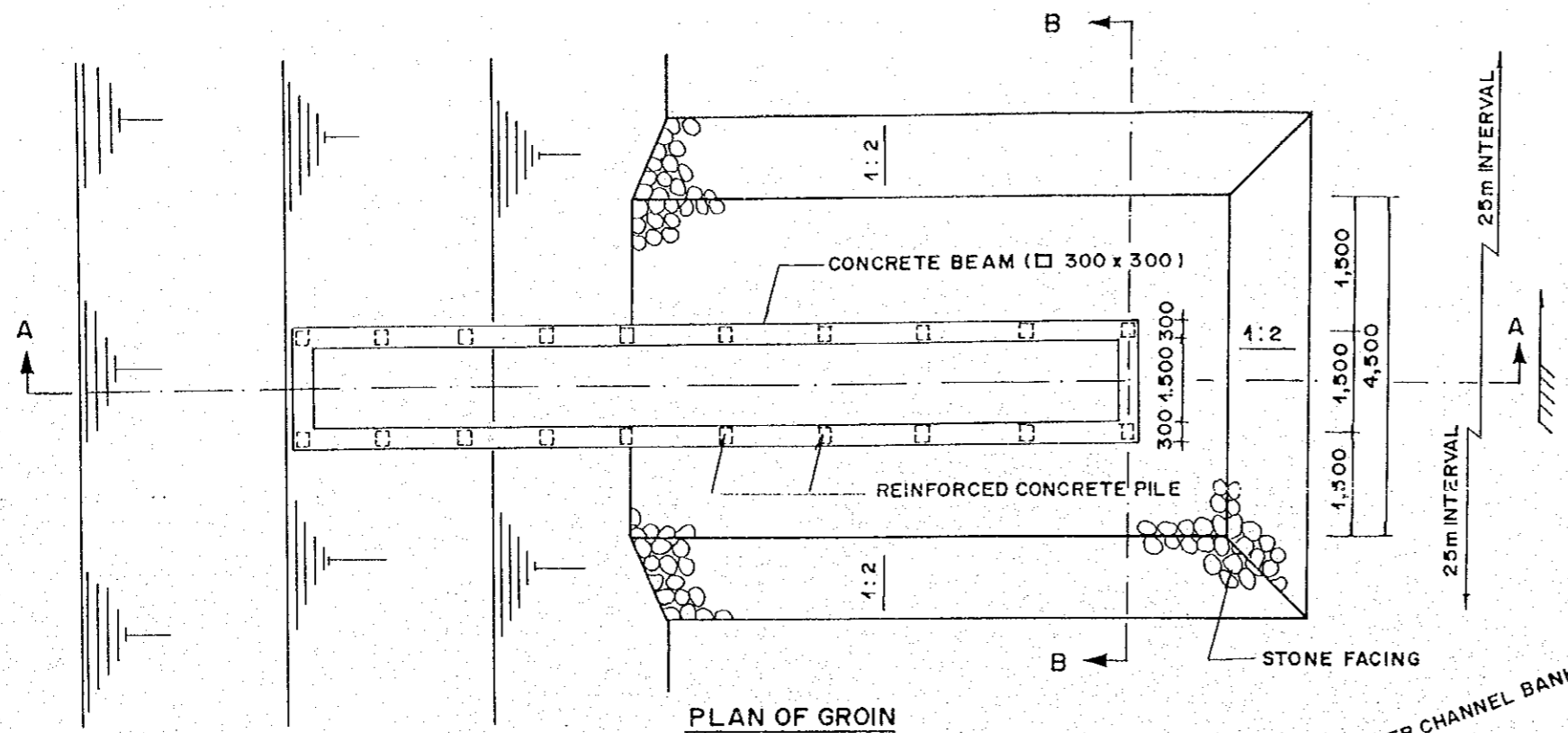


THE DETAILED DESIGN OF FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA

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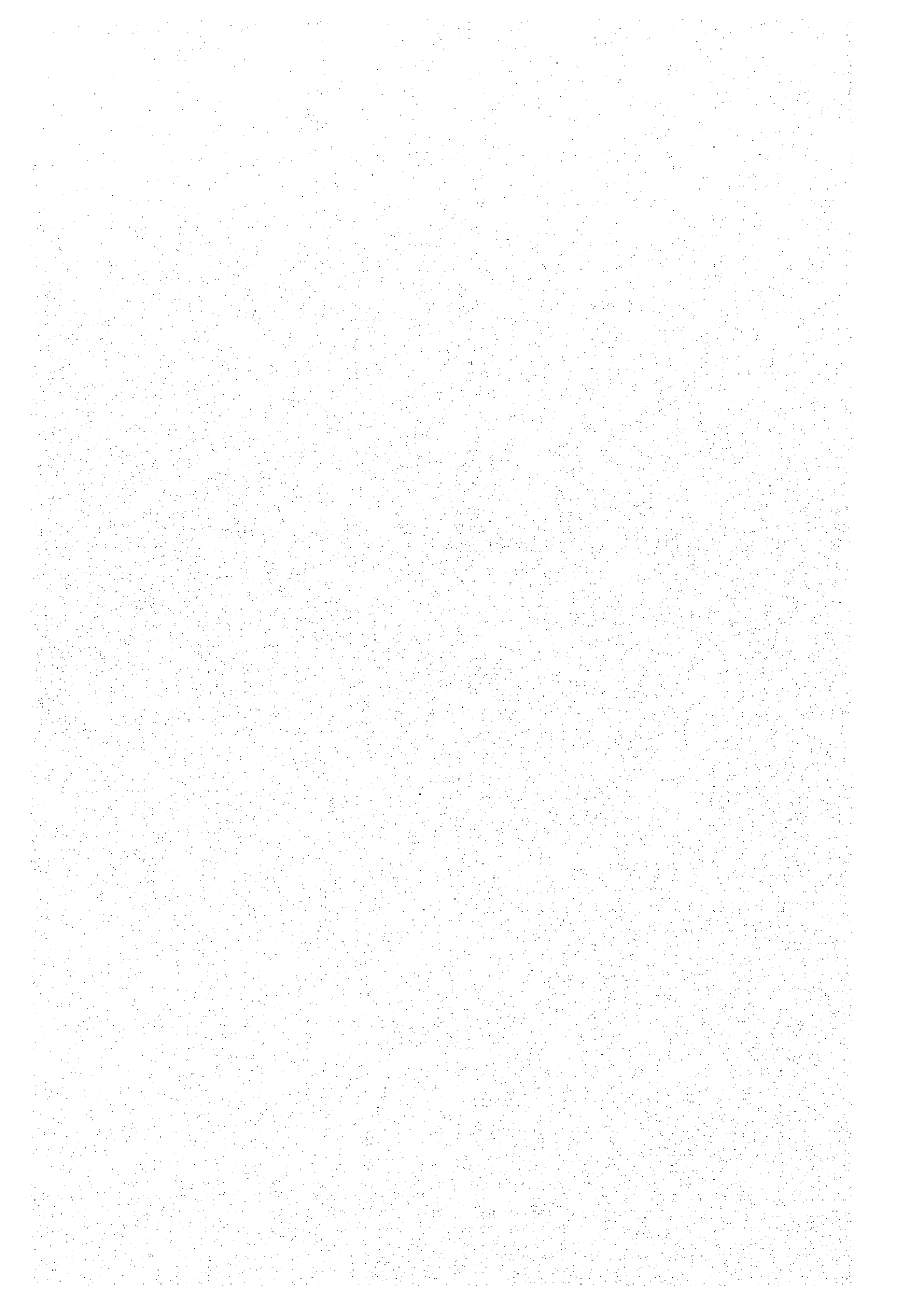
Fig. 2.4.1 (2/2)  
TYPICAL CROSS SECTION OF REVETMENT



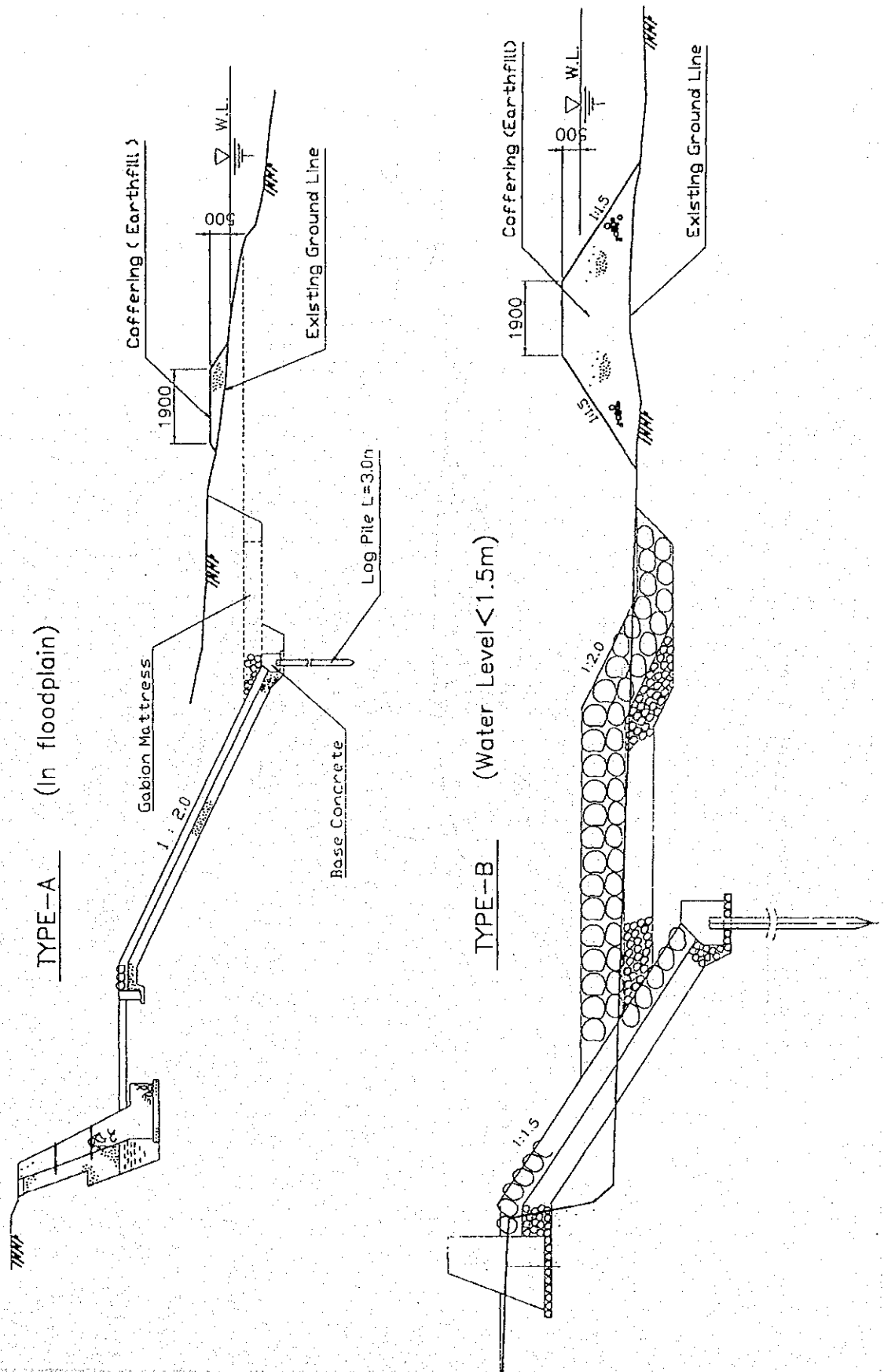


THE DETAILED DESIGN OF FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA  
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Fig. 2.4.2  
 GENERAL FEATURE OF GROIN



STANDARD SECTION OF COFFERING TYPE

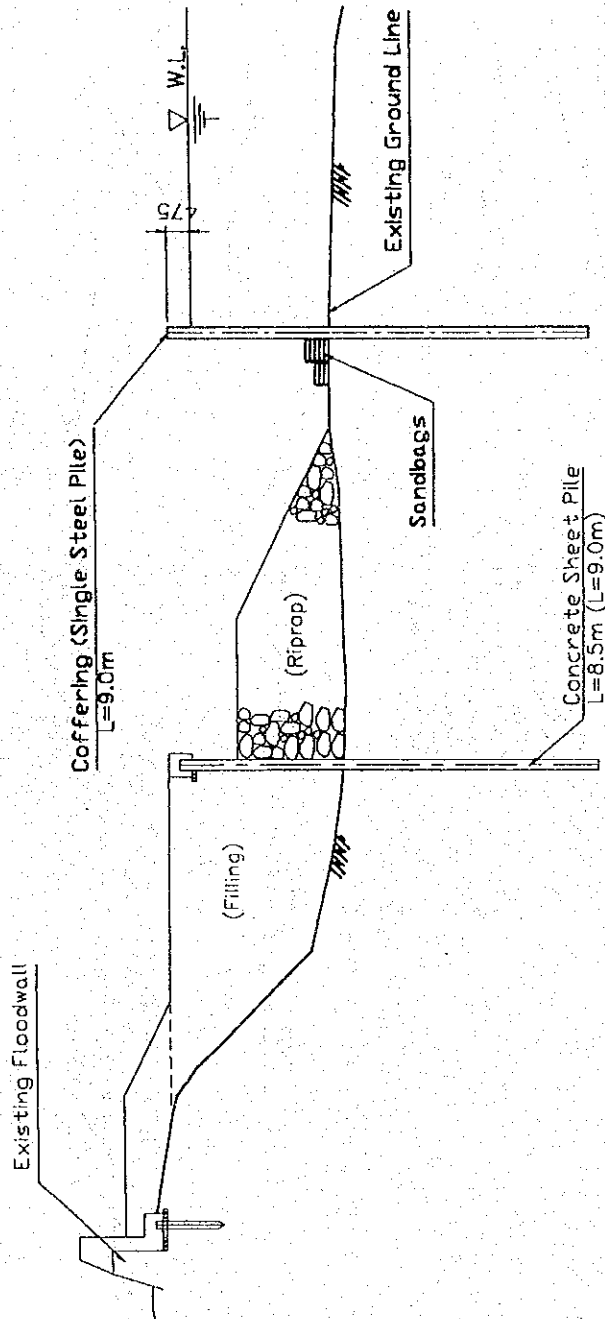


THE DETAILED DESIGN OF FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA

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Fig. 2.4.3 (1/2)  
STANDARD SECTION OF COFFERING TYPES

TYPE-C (Water Level  $\geq 1.5\text{m}$ )



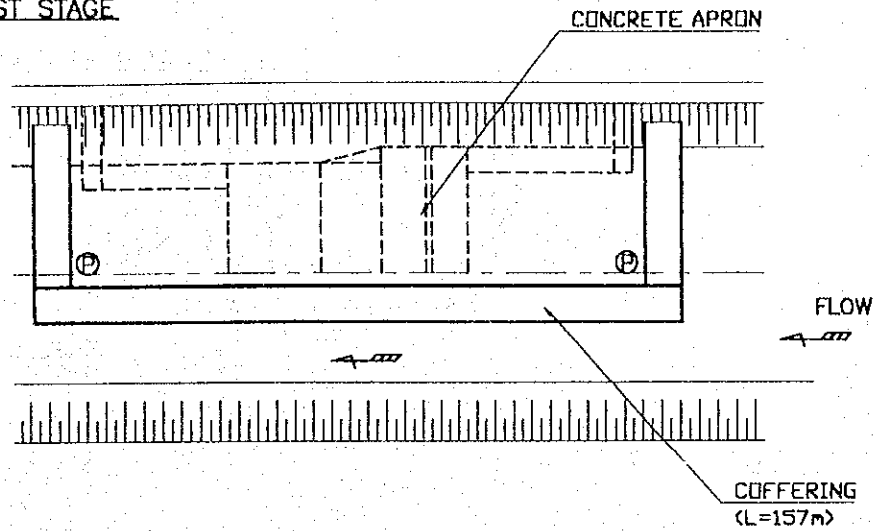
THE DETAILED DESIGN OF FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA

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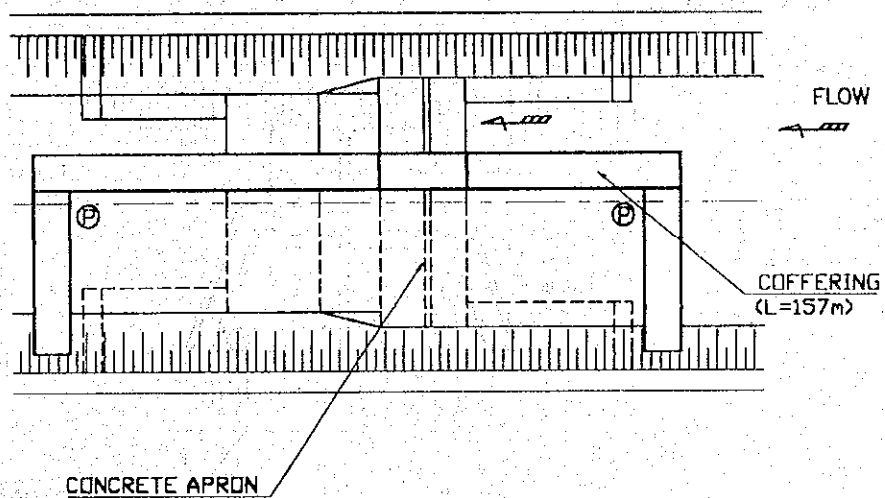
Fig. 2.4.3 (2/2)  
STANDARD SECTION OF COFFERING TYPES

## COFFERING (Ground Sill With Head)

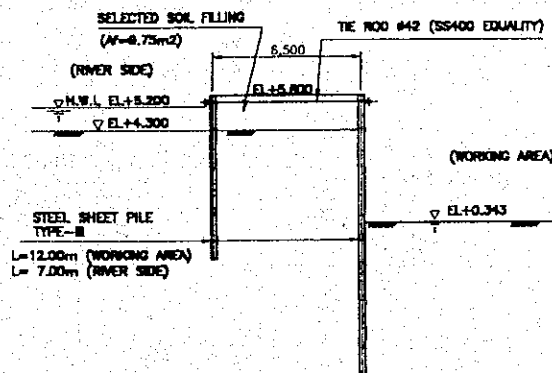
FIRST STAGE



SECOND STAGE



### TYPICAL CROSS SECTION



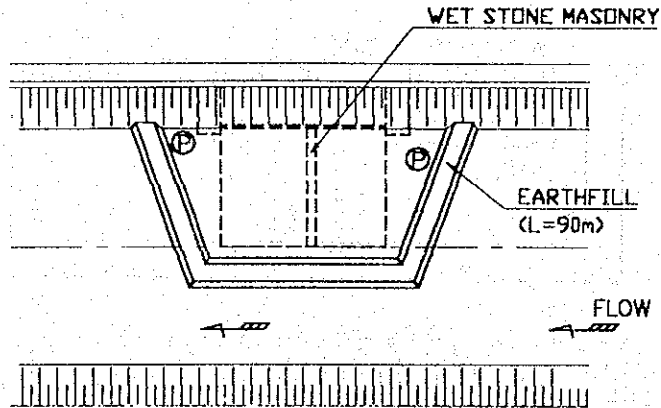
THE DETAILED DESIGN OF FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA

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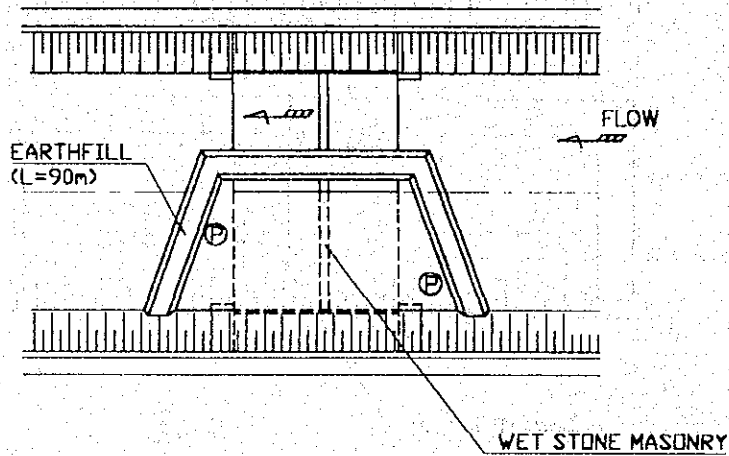
Fig. 2.5.1  
COFFERING (GROUND SILL WITH HEAD)

## COFFERING (Ground Sill Without Head)

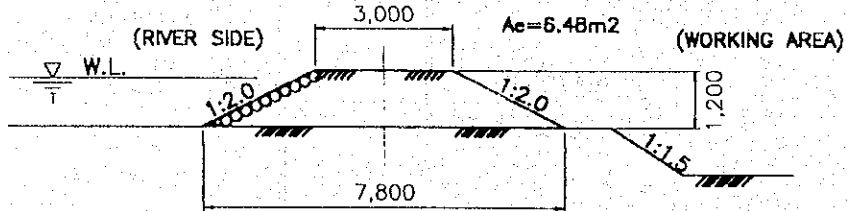
### FIRST STAGE



### SECOND STAGE



### TYPICAL CROSS SECTION



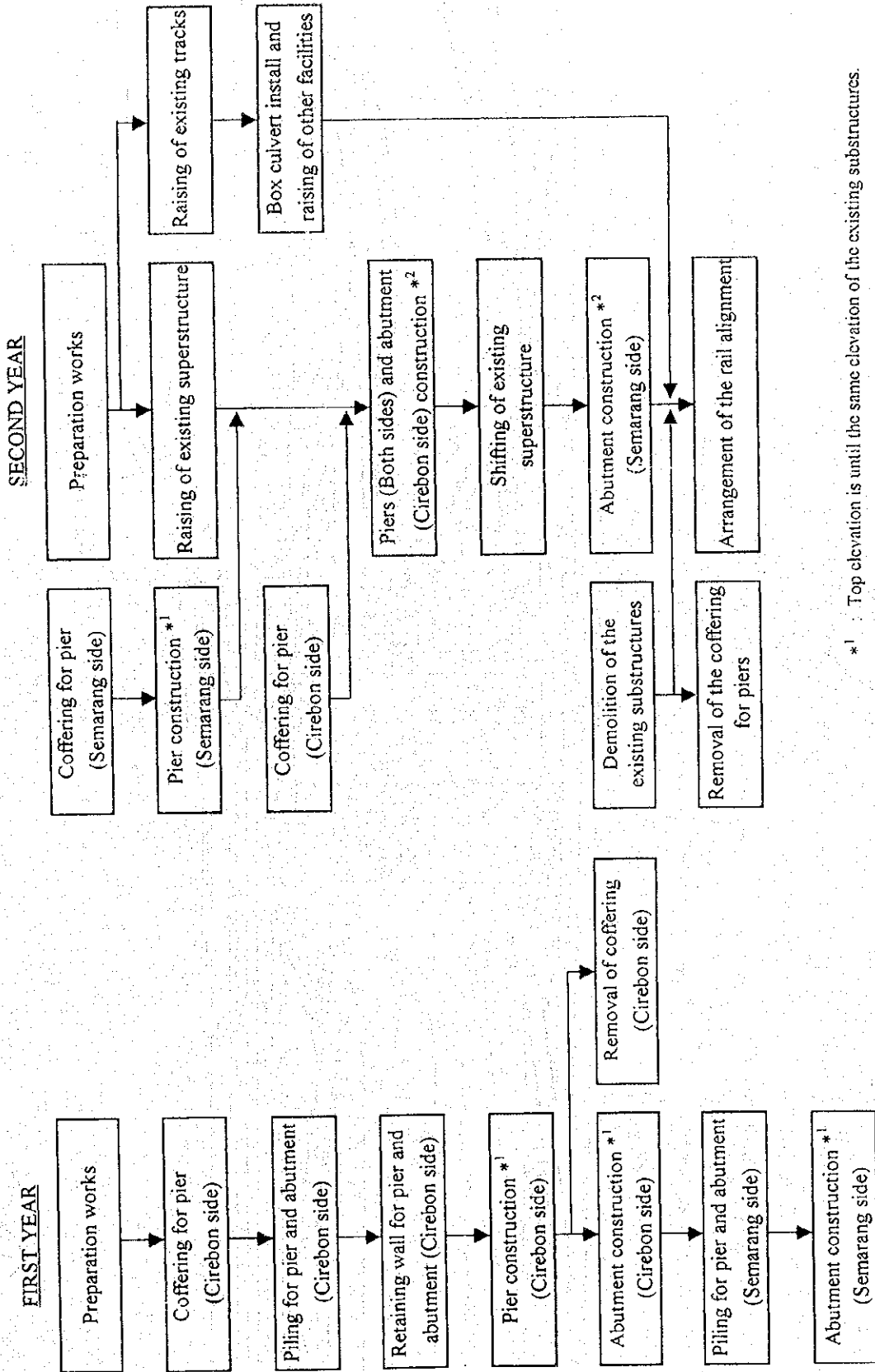
THE DETAILED DESIGN OF FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA

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Fig. 2.5.2

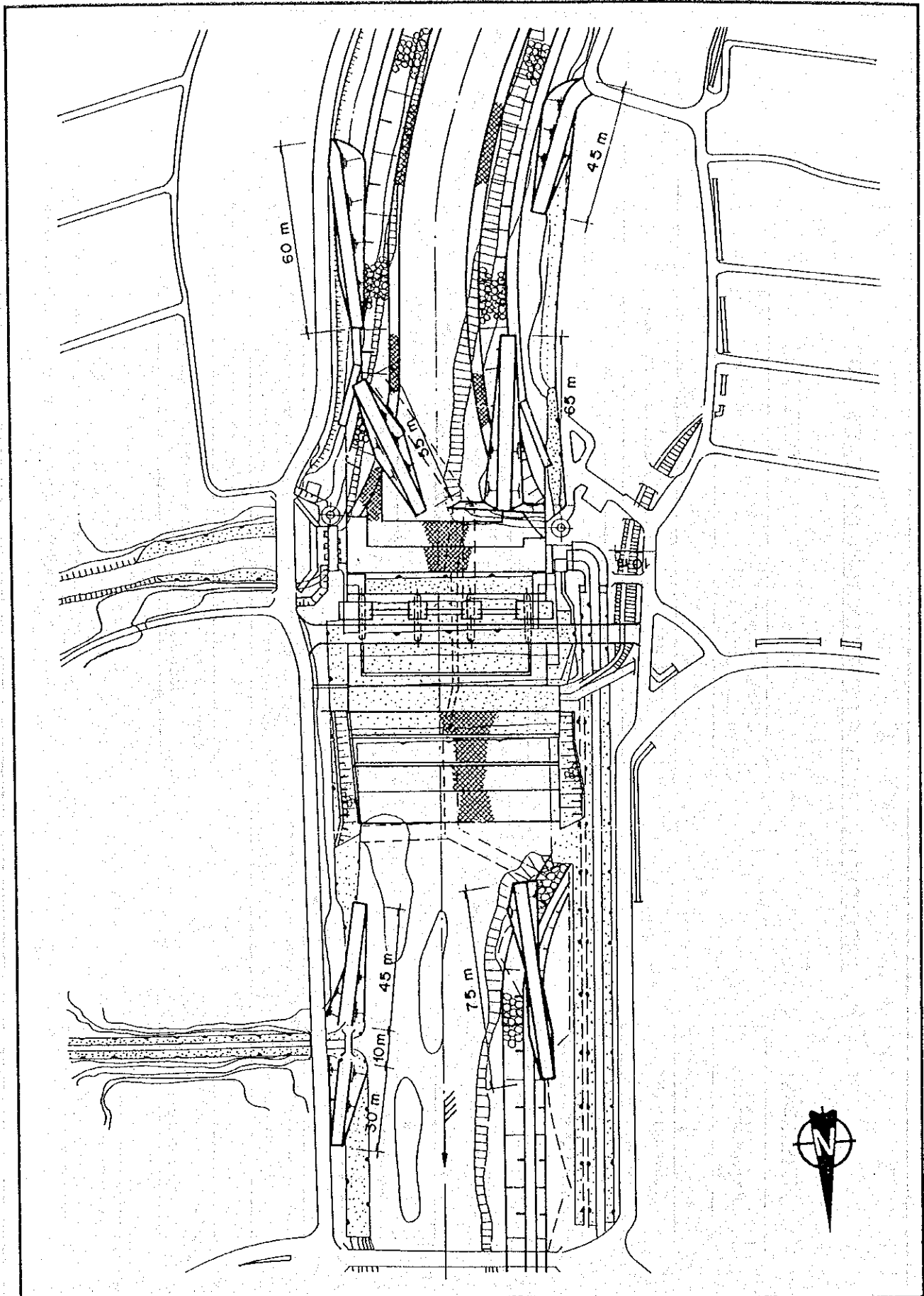
COFFERING (GROUND SILL WITHOUT HEAD)

**PROCEDURE OF RAISING OF THE EXISTING RAILWAY BRIDGE**



\*1 : Top elevation is until the same elevation of the existing substructures.  
 \*2 : Until the designed top elevation of the reconstructed substructures.

Fig. 2.7.1  
 PROCEDURE OF RAISING OF THE EXISTING RAILWAY BRIDGE

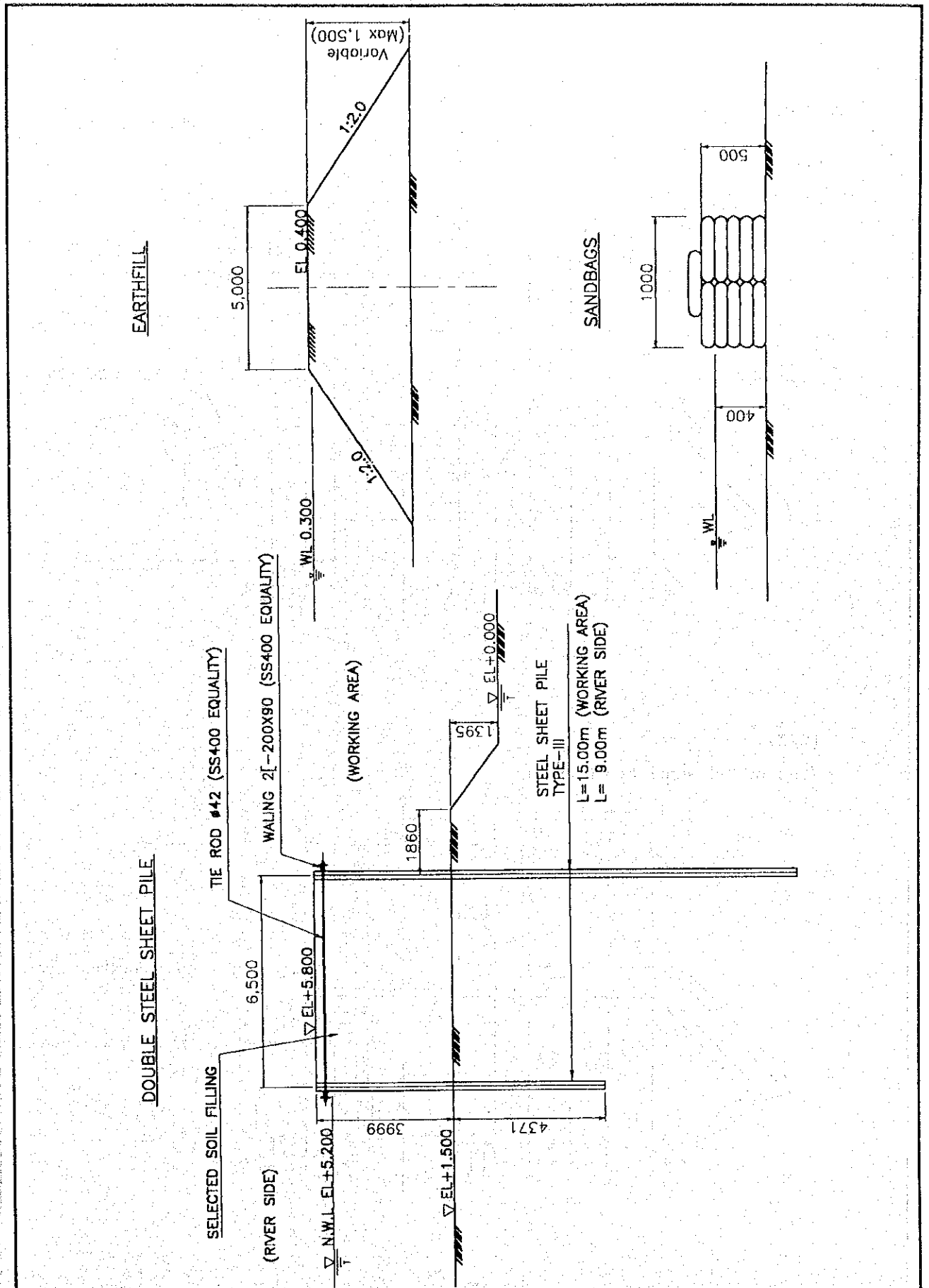


THE DETAILED DESIGN OF FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA

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Fig. 3.3.1  
TEMPORARY CONSTRUCTION ROADS AND BRIDGES





THE DETAILED DESIGN OF FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA

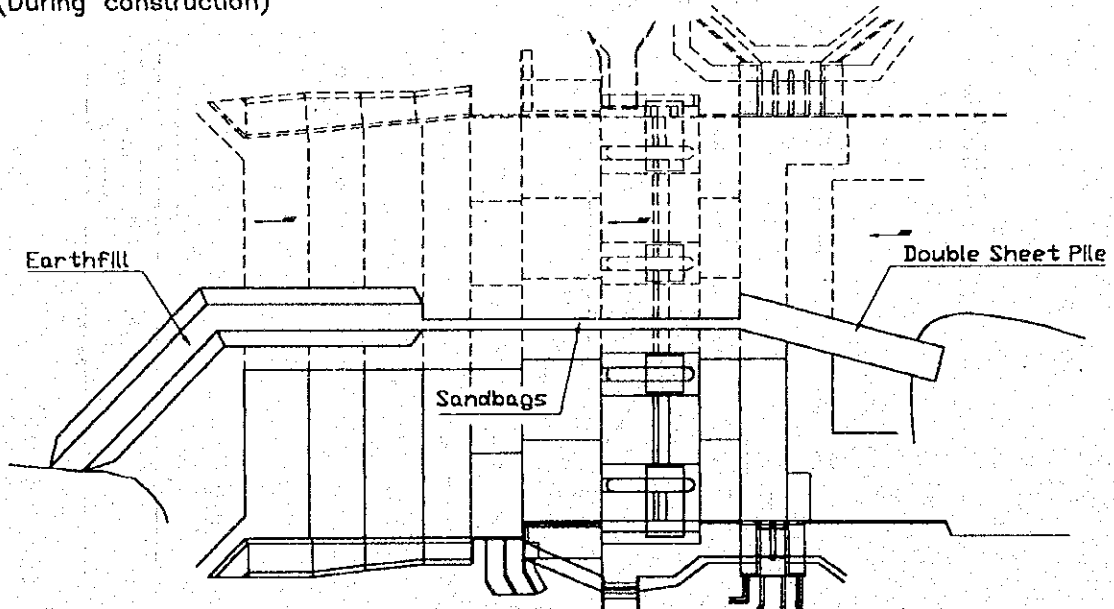
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Fig. 3.4.1  
TYPICAL CROSS SECTION OF EACH TYPE OF COFFERING

FIRST STAGE

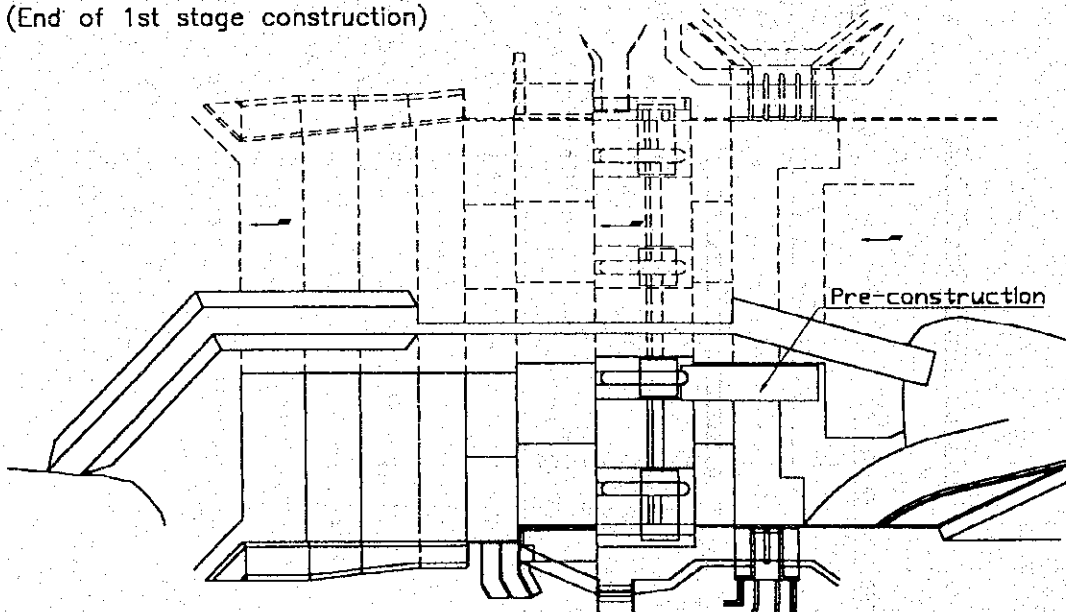
(1/3)

(During construction)



(2/3)

(End of 1st stage construction)



THE DETAILED DESIGN OF FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA

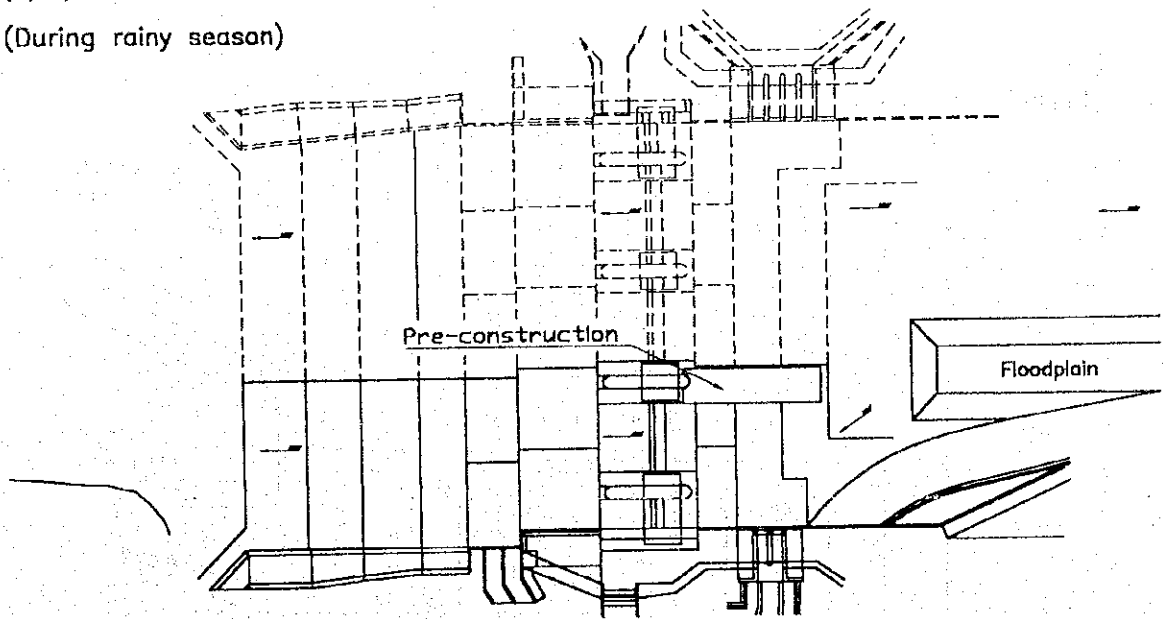
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Fig. 3.4:2 (1/2)

PROCEDURE OF THE FIRST STAGE COFFERING

(3/3)

(During rainy season)



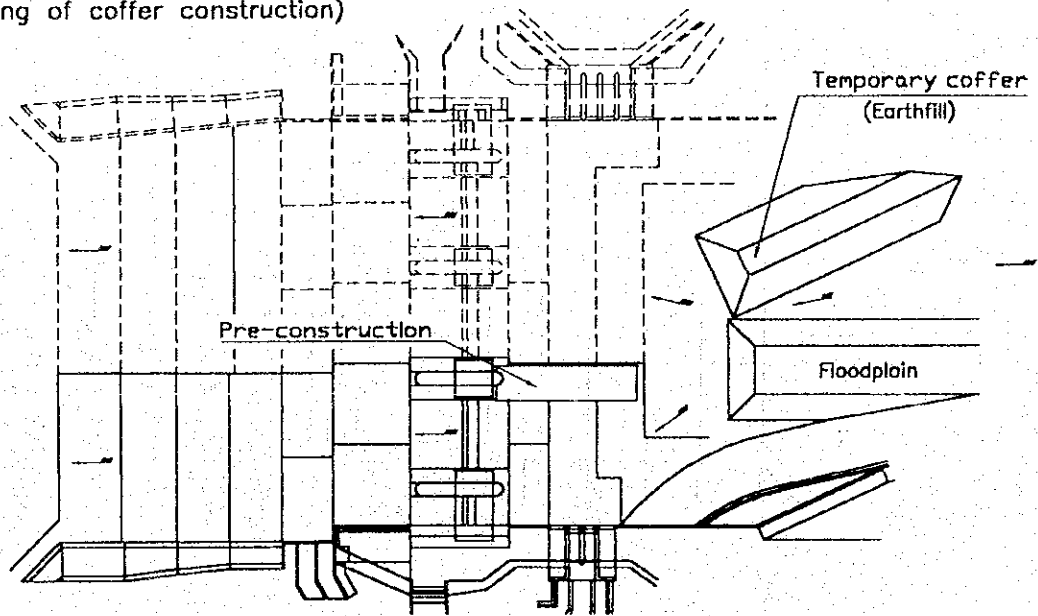
THE DETAILED DESIGN OF FLOOD CONTROL, URBAN  
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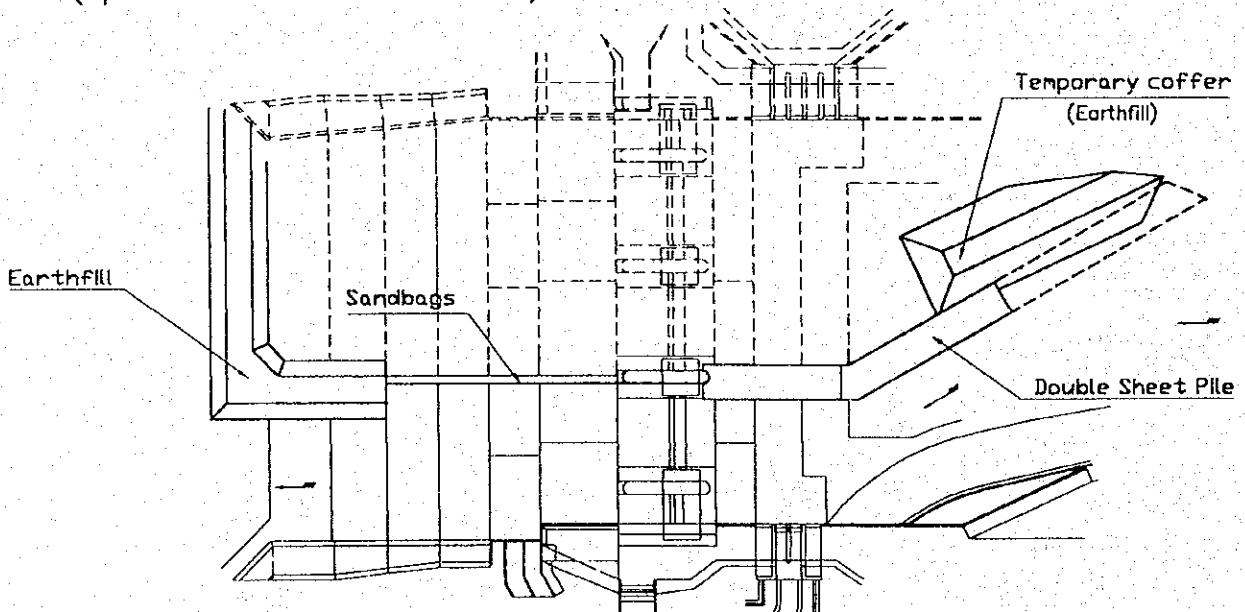
Fig. 3.4.2 (2/2)  
PROCEDURE OF THE FIRST STAGE COFFERING

SECOND STAGE

(1/5)  
(Beginning of coffer construction)



(2/5)  
(Upstream side coffer construction)



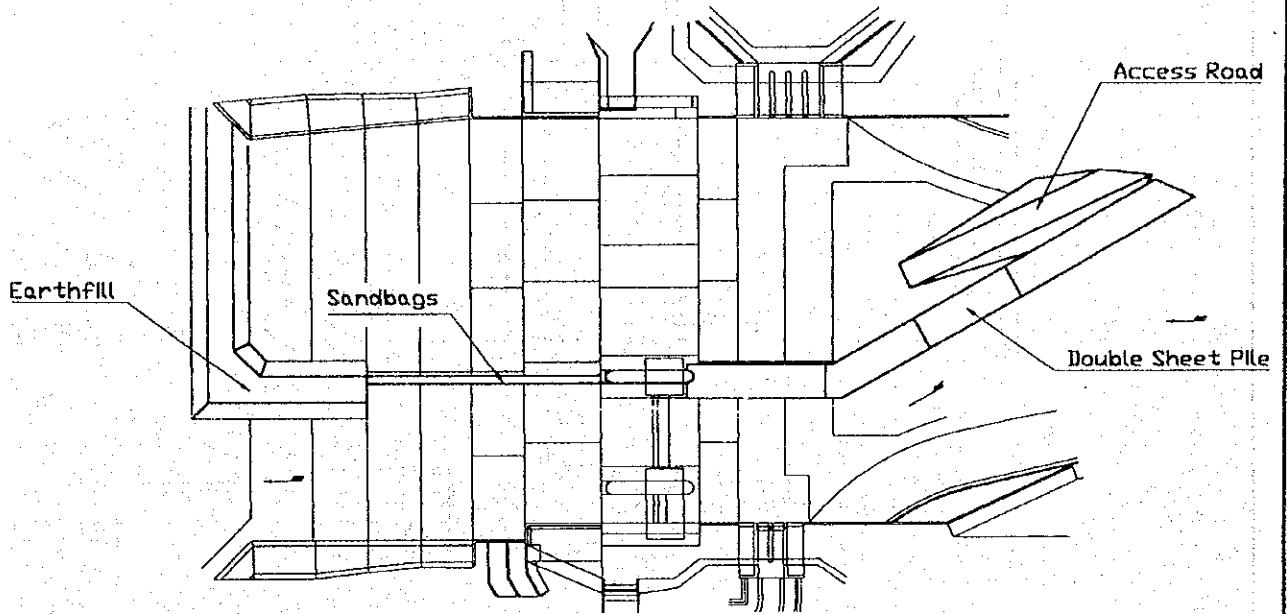
THE DETAILED DESIGN OF FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA

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Fig. 3.4.3 (1/3)  
PROCEDURE OF THE SECOND STAGE  
COFFERING

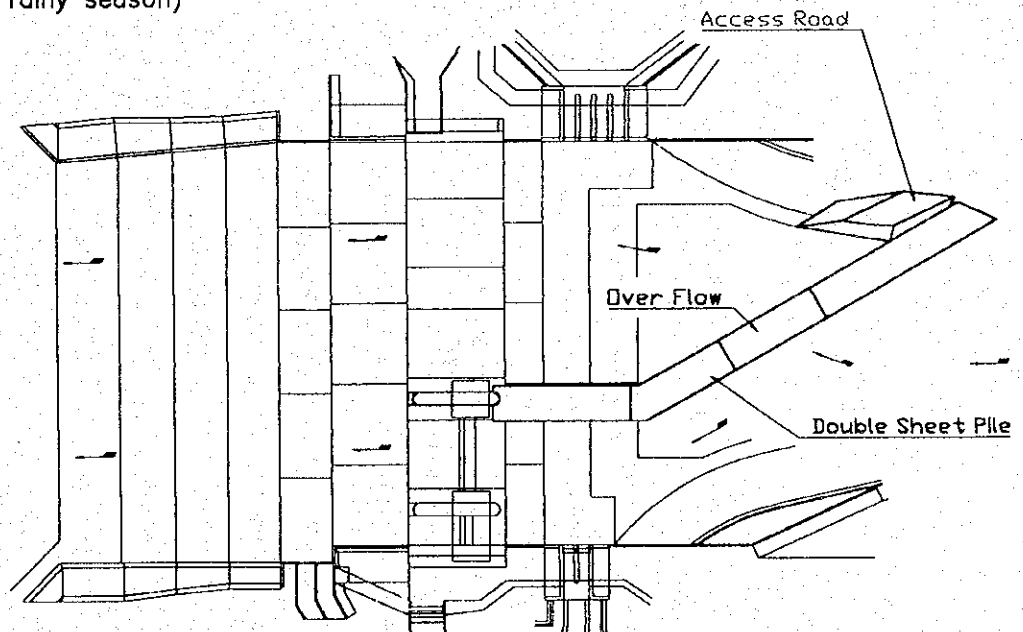
(3/5)

(During construction)



(4/5)

(During rainy season)



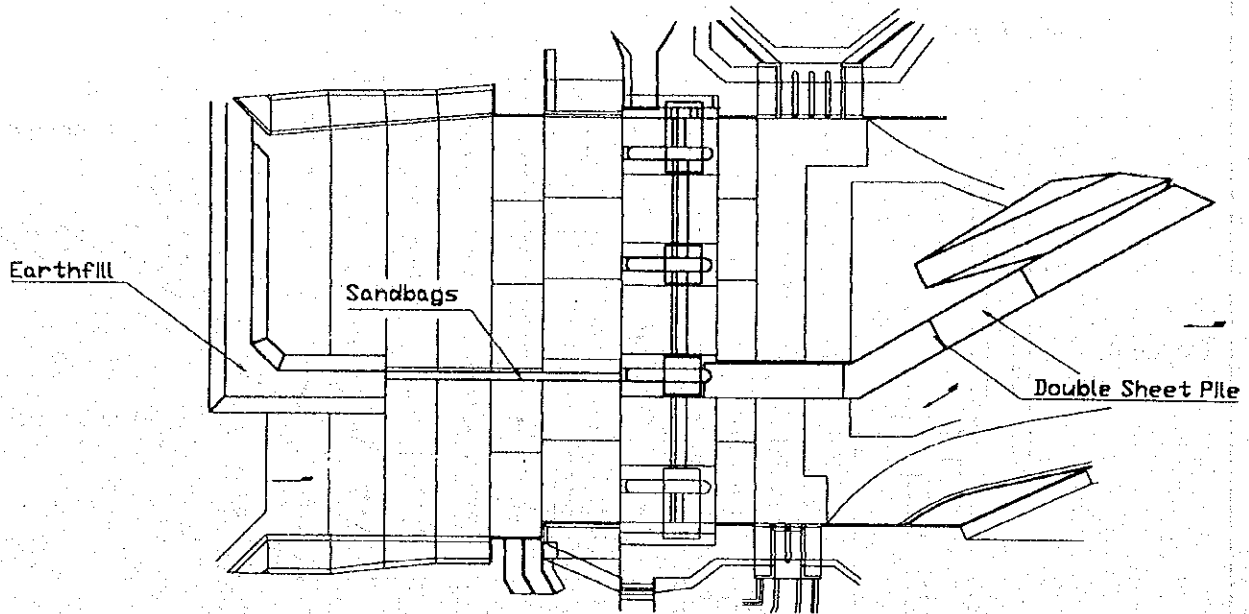
THE DETAILED DESIGN OF FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA

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Fig. 3.4.3 (2/3)  
PROCEDURE OF THE SECOND STAGE COFFERING

(5/5)

(During construction)

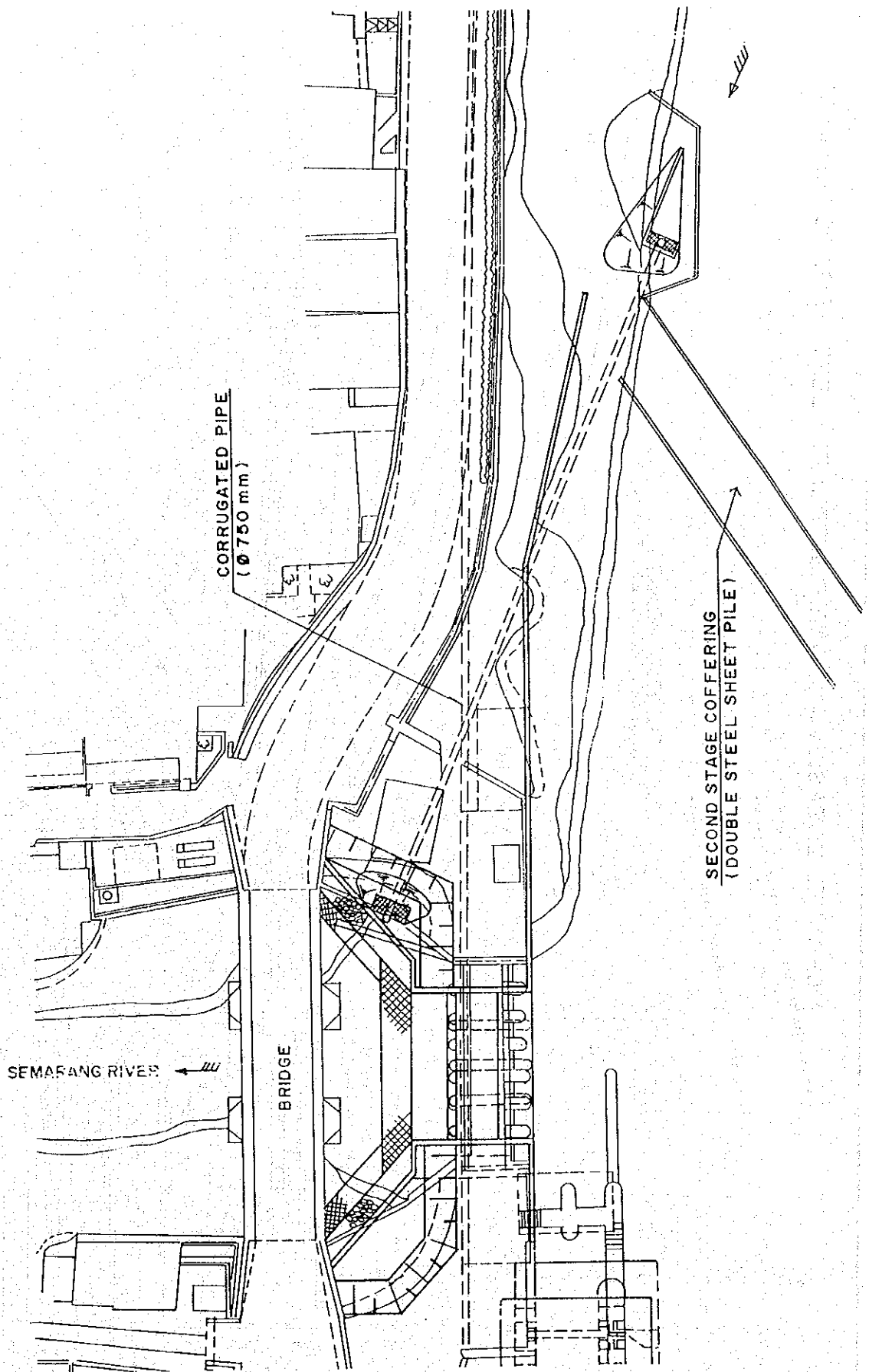


THE DETAILED DESIGN OF FLOOD CONTROL, URBAN  
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Fig. 3.4.3 (3/3)  
PROCEDURE OF THE SECOND STAGE  
COFFERING

CHANNEL DIVERSION AND WATER SUPPLY FOR SEMARANG RIVER



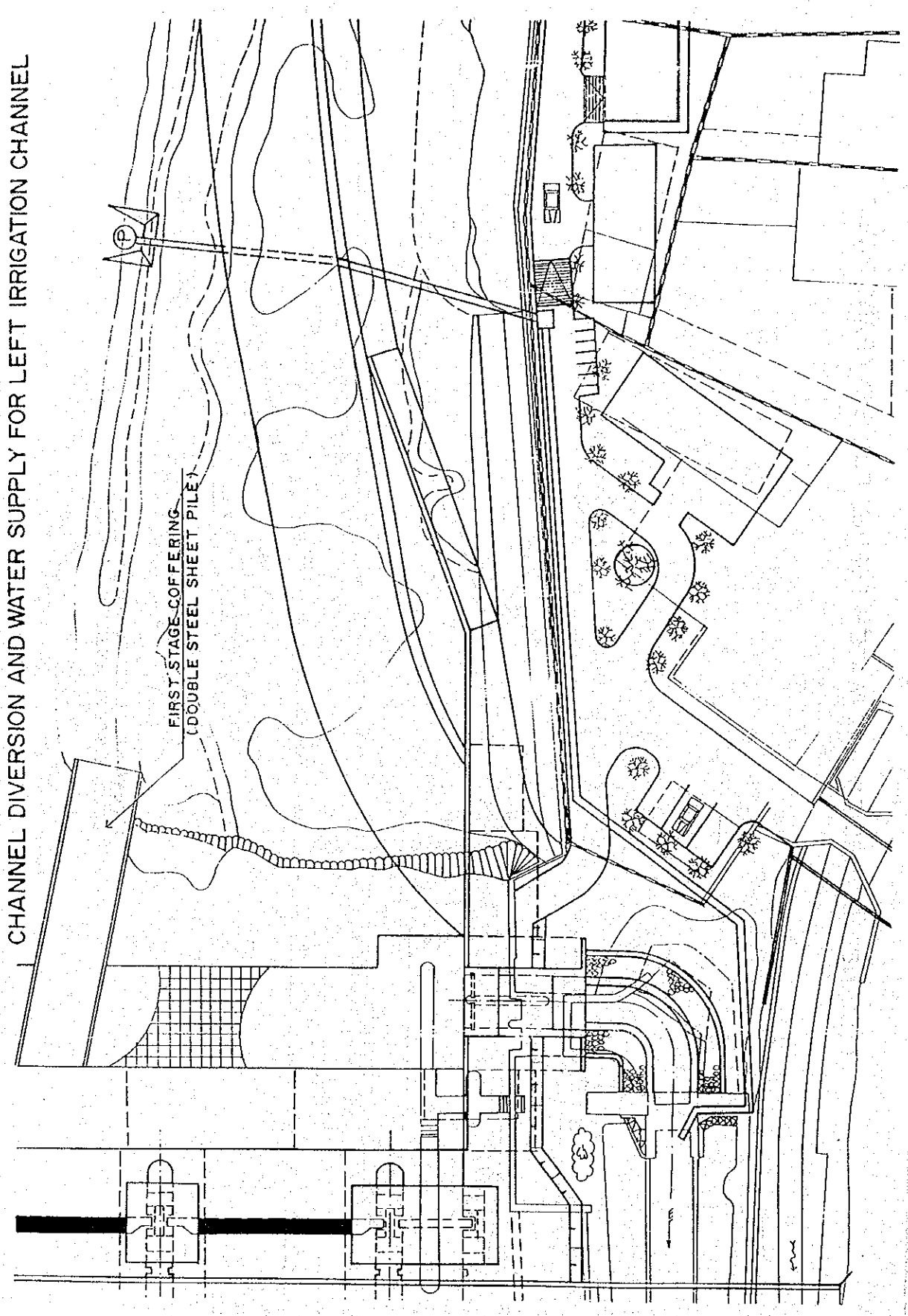
THE DETAILED DESIGN OF FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA

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Fig. 3.5.1

CHANNEL DIVERSION AND WATER SUPPLY FOR SEMARANG RIVER

CHANNEL DIVERSION AND WATER SUPPLY FOR LEFT IRRIGATION CHANNEL

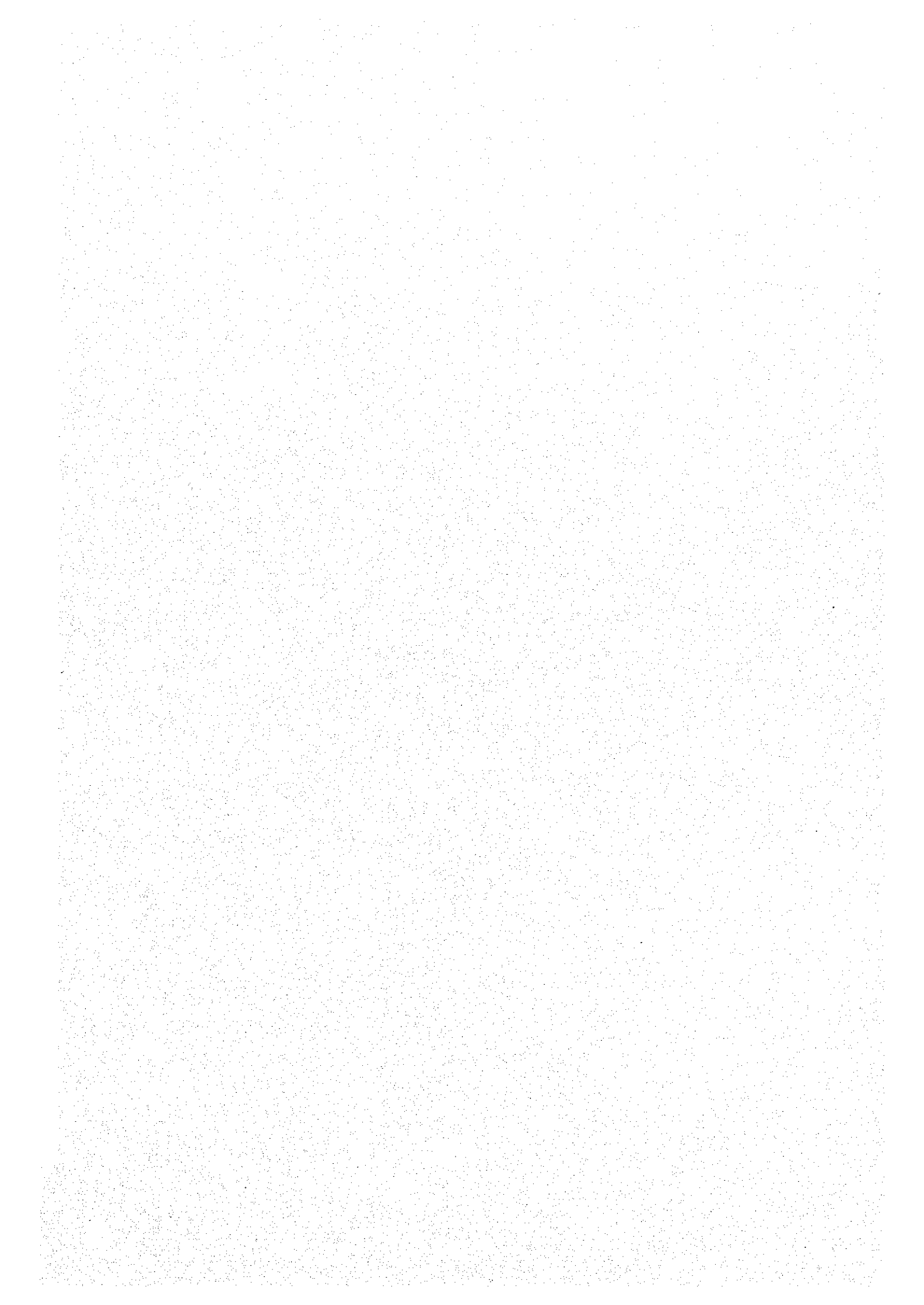


THE DETAILED DESIGN OF FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA

Fig. 3.5.2  
CHANNEL DIVERSION AND WATER SUPPLY FOR LEFT IRRIGATION CHANNEL

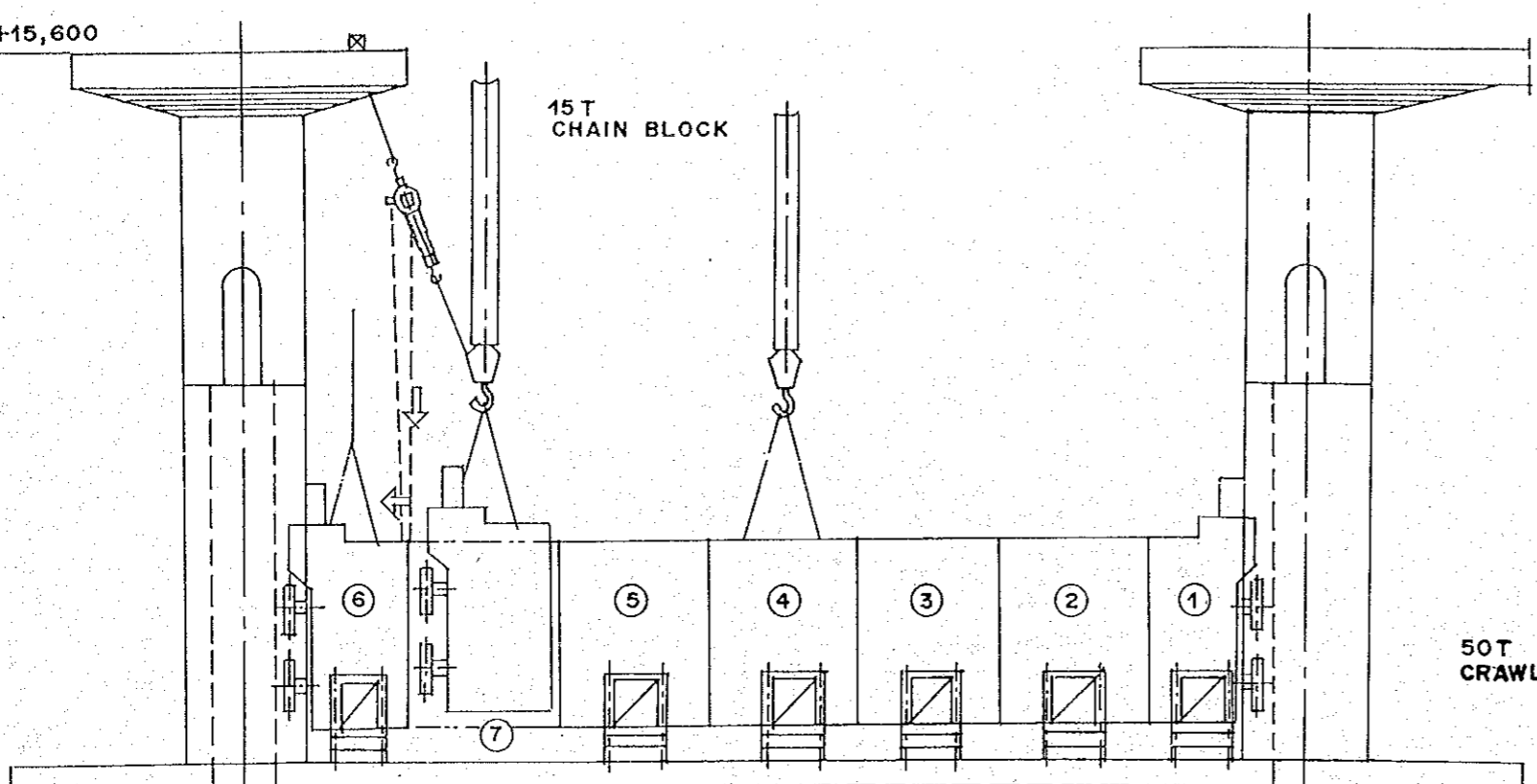
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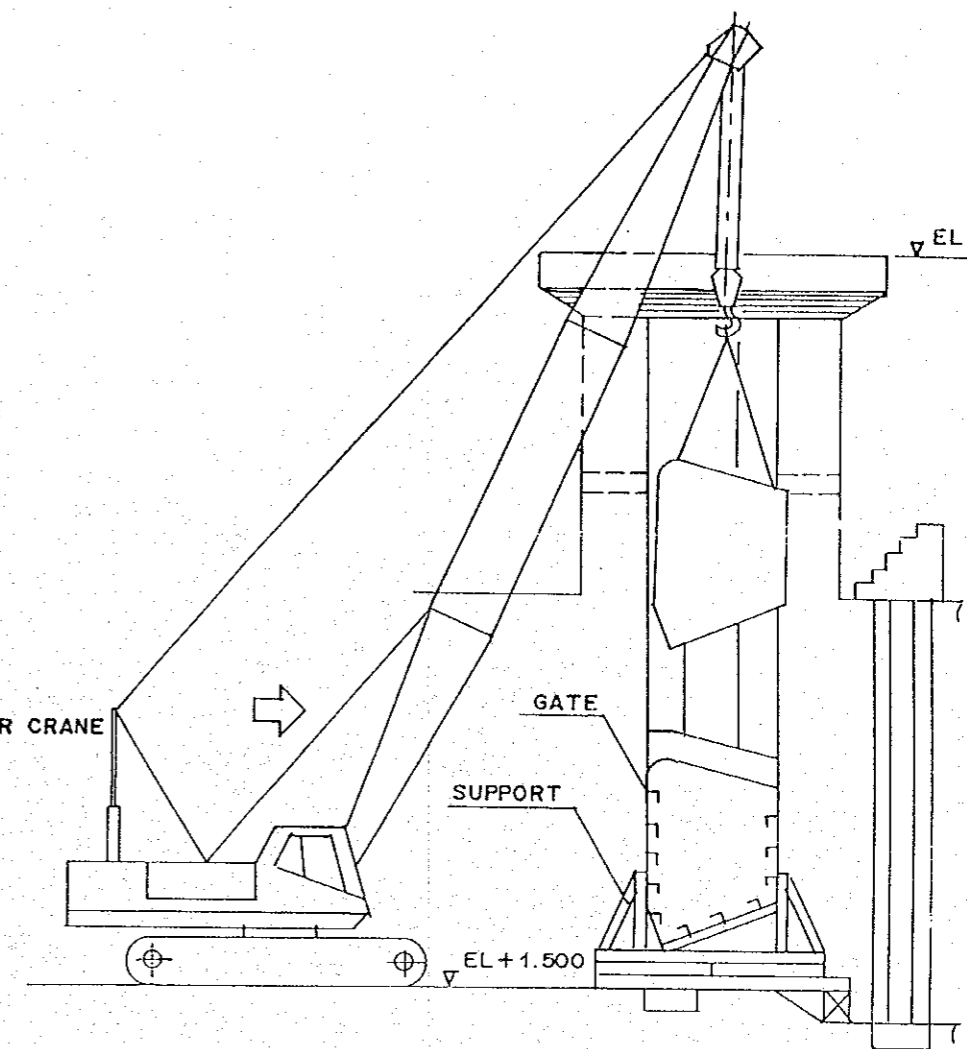
EL +15,600

15 T  
CHAIN BLOCK

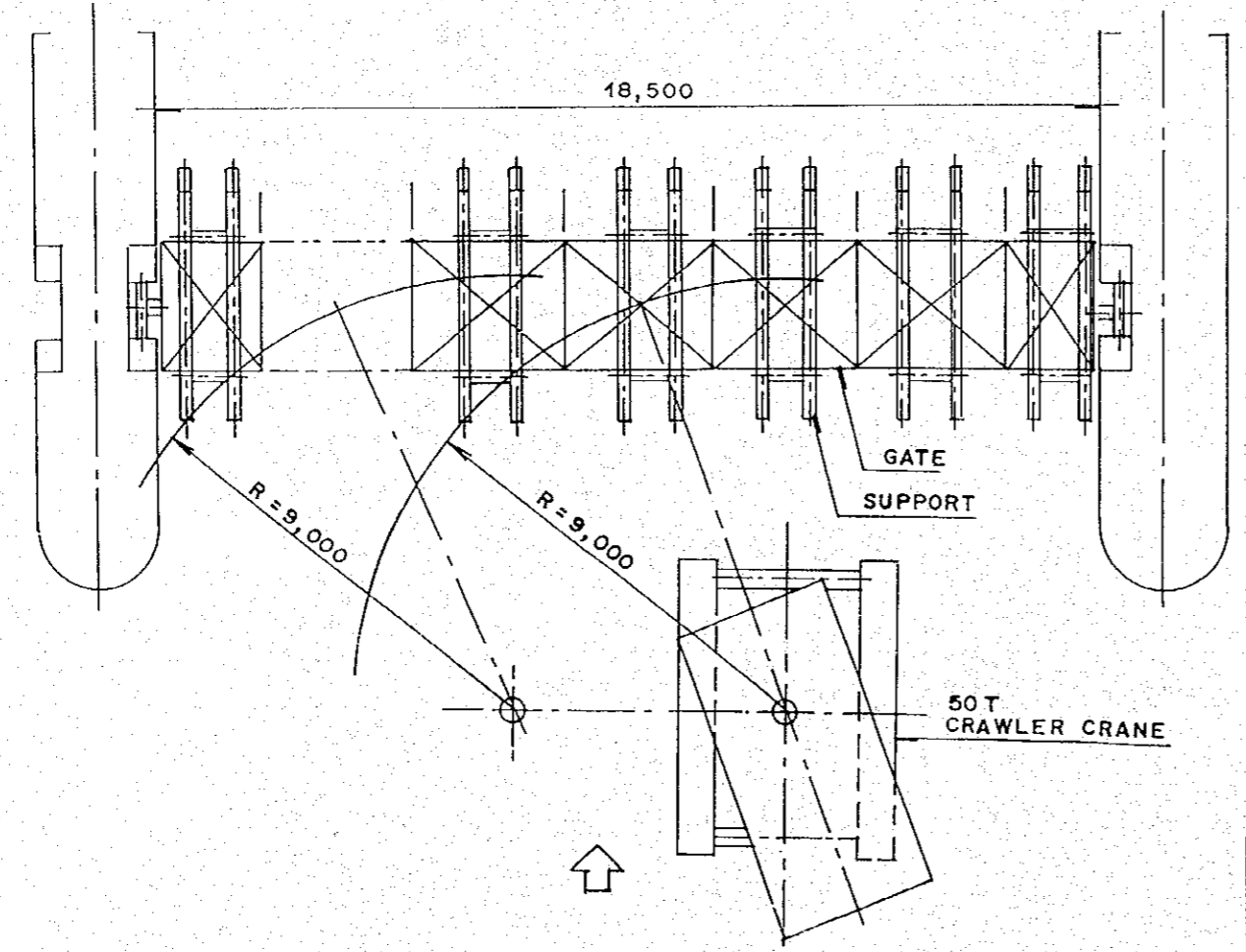


50 T  
CRAWLER CRANE

EL +15,600



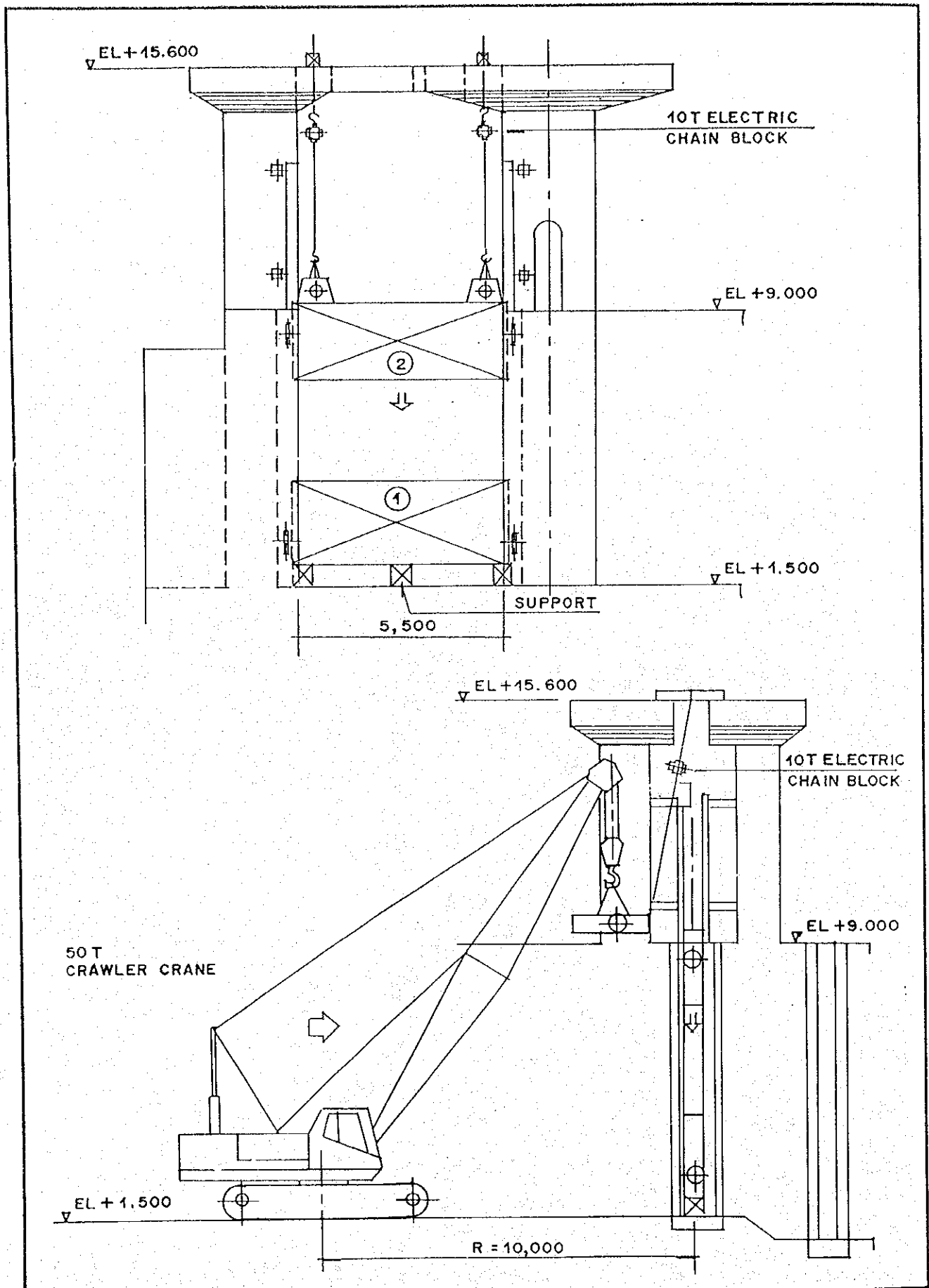
18,500



THE DETAILED DESIGN OF FLOOD CONTROL, URBAN  
DRAINAGE AND WATER RESOURCES DEVELOPMENT  
IN SEMARANG IN THE REPUBLIC OF INDONESIA

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Fig. 3.12.1  
INSTALLATION OF FLOOD DISCHARGE GATE



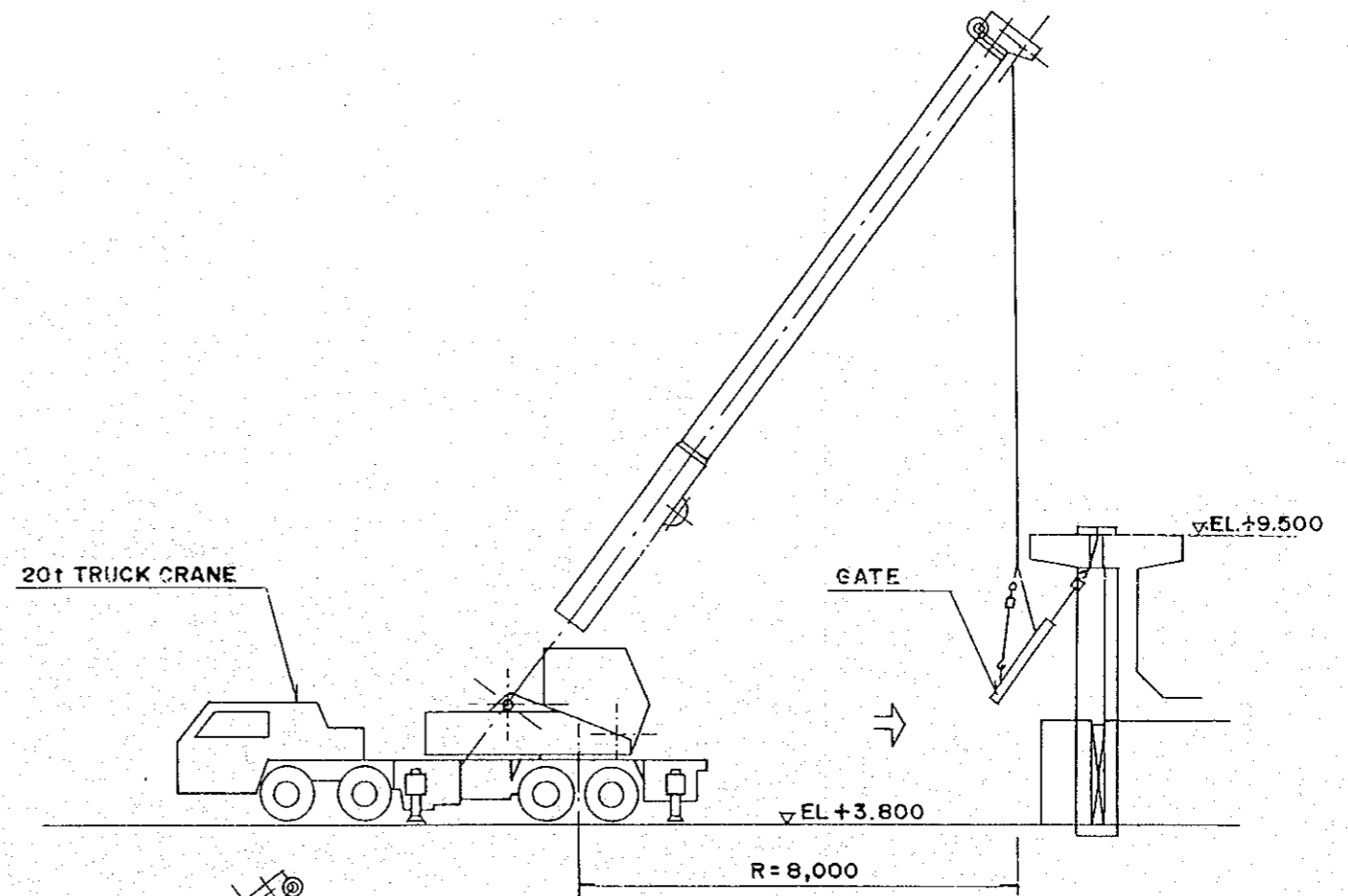
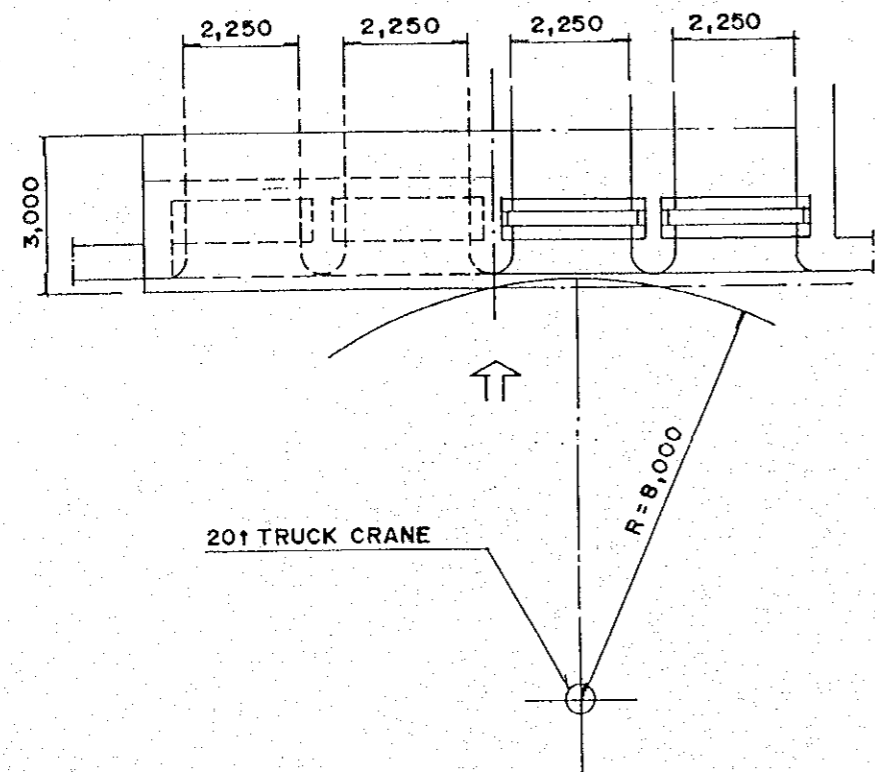
THE DETAILED DESIGN OF FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA

Fig. 3.12.2  
INSTALLATION OF SEDIMENT FLUSHING GATE

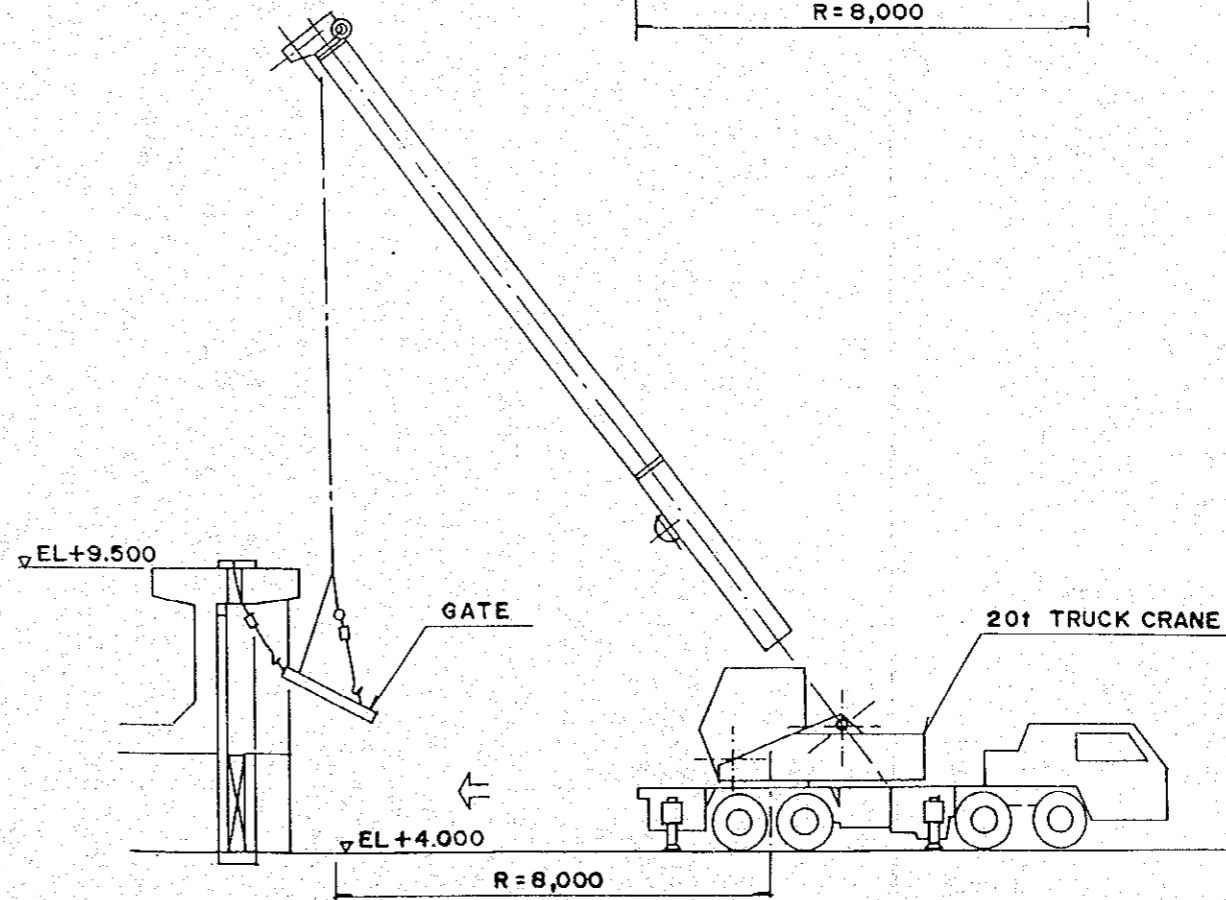
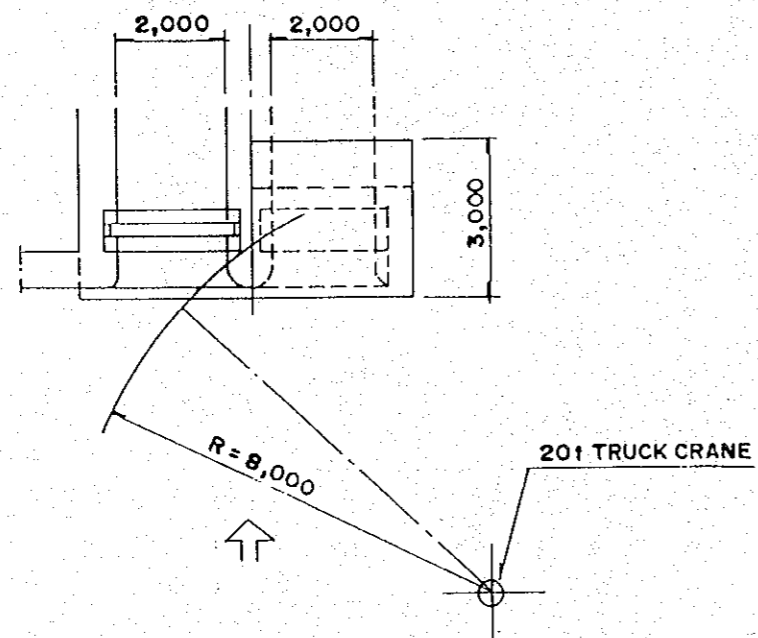
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INTAKE GATE (RIGHT BANK)



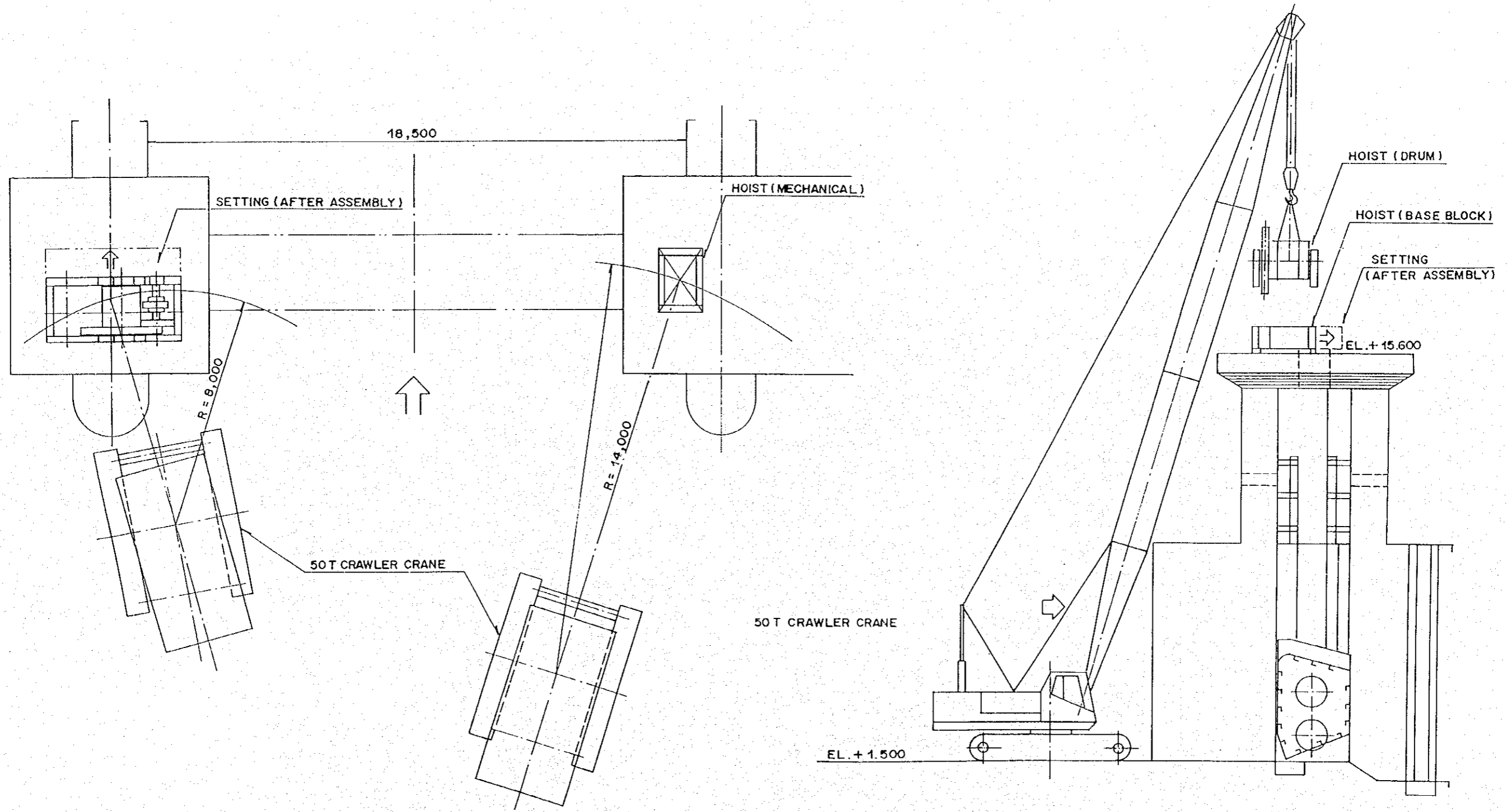
INTAKE GATE (LEFT BANK)



THE DETAILED DESIGN OF FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA

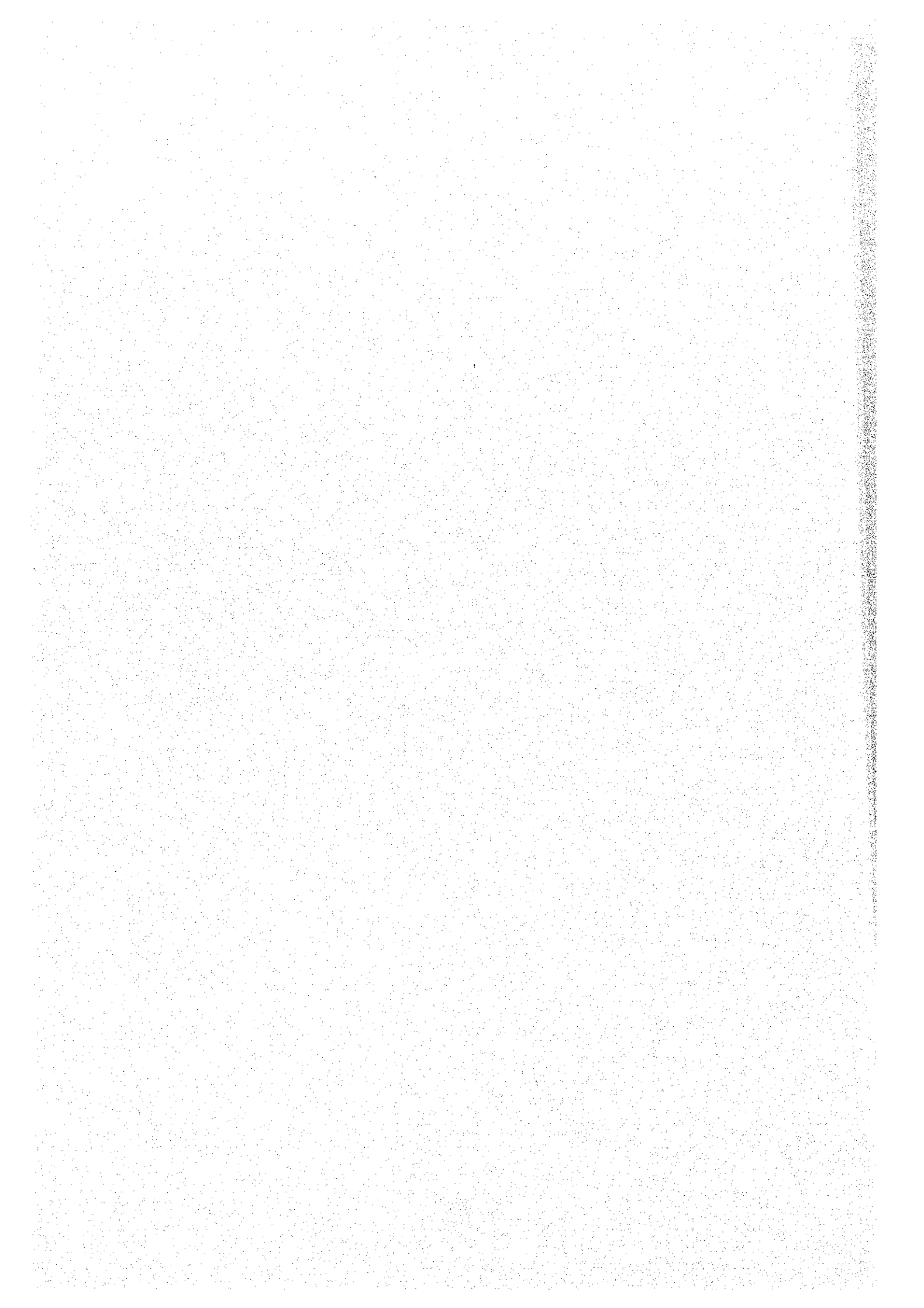
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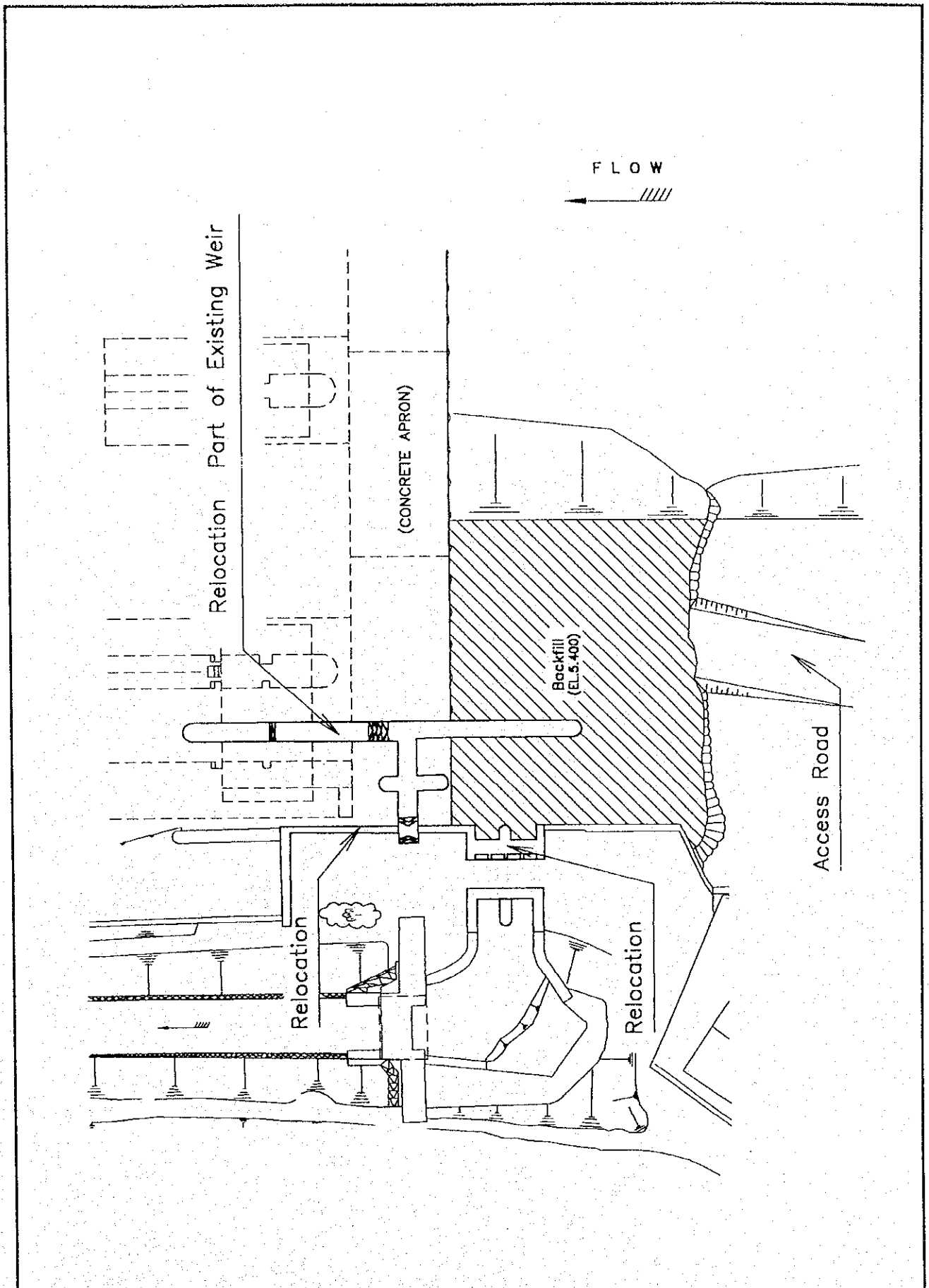
Fig. 3.12.3  
INSTALLATION OF INTAKE GATE



THE DETAILED DESIGN OF FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA  
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Fig. 3.12.4  
 INSTALLATION OF HOIST APPARATUS FOR FLOOD DISCHARGE GATE





THE DETAILED DESIGN OF FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA

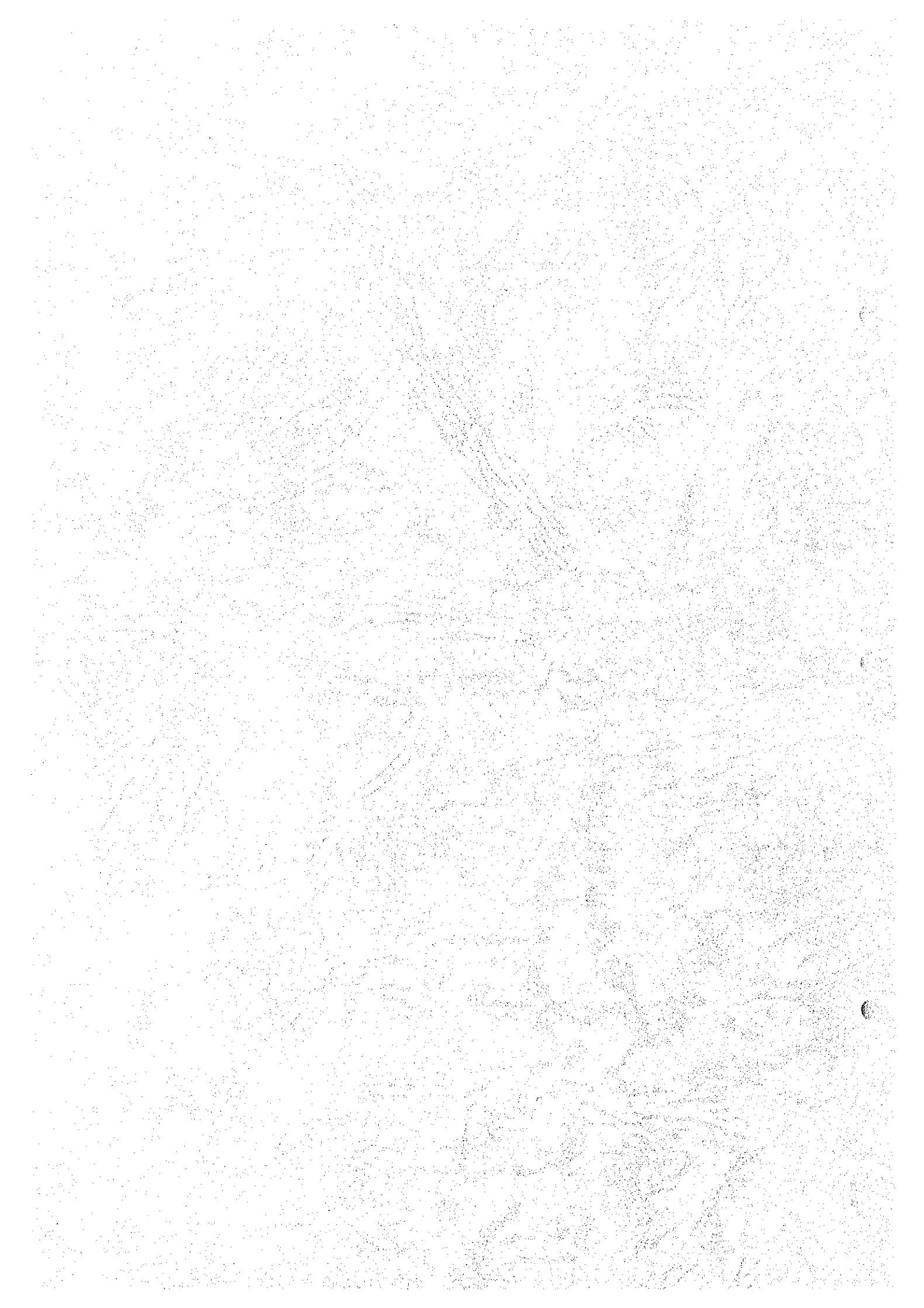
Fig. 3.14.1  
RELOCATION OF PARTS OF EXISTING WEIR

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