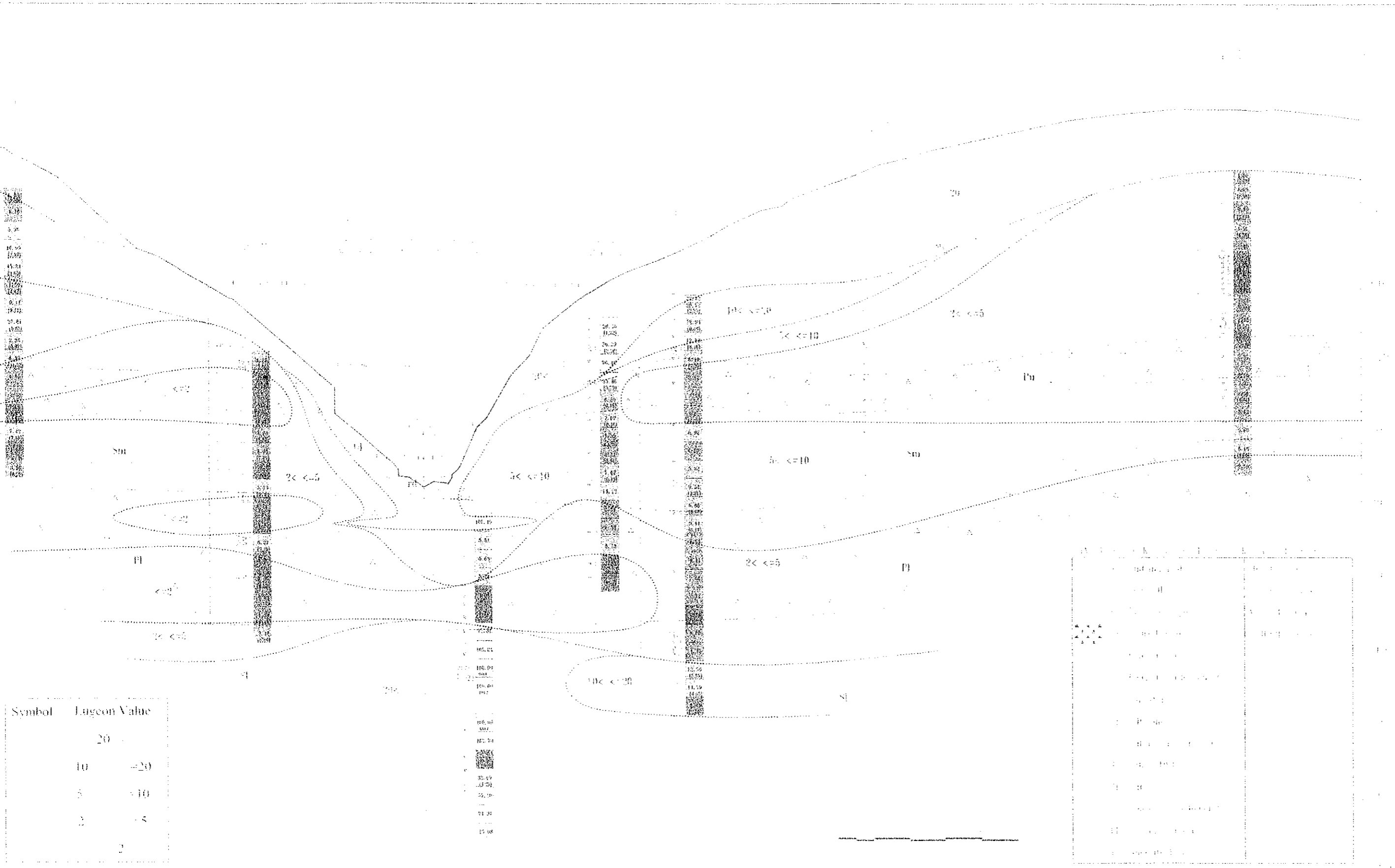


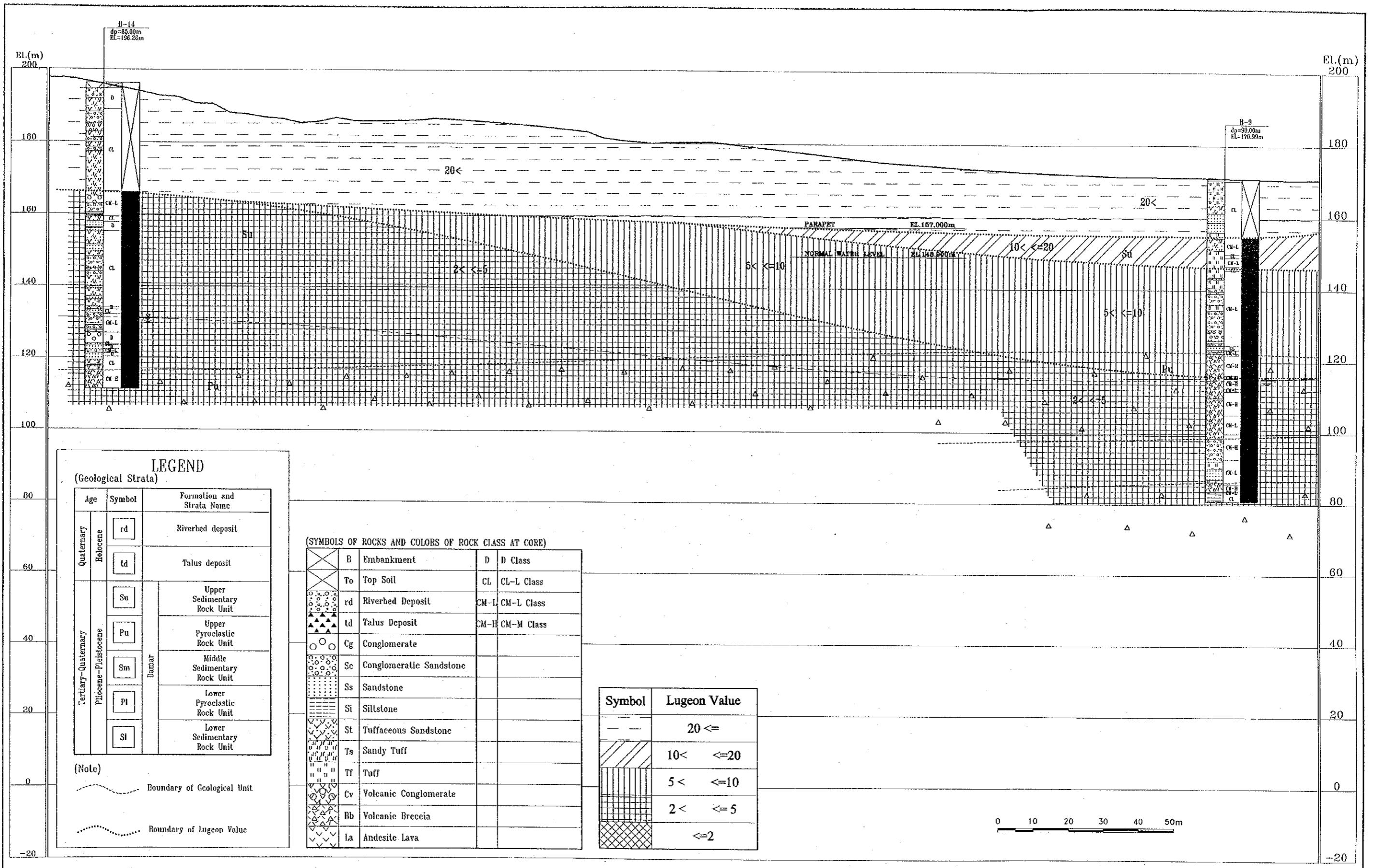
THE DETAILED DESIGN OF FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA
 JAPAN INTERNATIONAL COOPERATION AGENCY

Fig. 5.1.10 (1/2)
 LUGEON MAP ALONG DAM AXIS



THE DETAILED DESIGN OF FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA
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Fig 5.1.10 (1/2)
 LUGEON MAP ALONG DAM A.13.



LEGEND
(Geological Strata)

Age	Symbol	Formation and Strata Name	
Quaternary	Holocene	rd	Riverbed deposit
		td	Talus deposit
Tertiary-Quaternary	Pliocene-Pleistocene	Su	Upper Sedimentary Rock Unit
		Pu	Upper Pyroclastic Rock Unit
		Sm	Middle Sedimentary Rock Unit
		Pl	Lower Pyroclastic Rock Unit
		Sl	Lower Sedimentary Rock Unit

(Note)

--- Boundary of Geological Unit

--- Boundary of lugeon Value

(SYMBOLS OF ROCKS AND COLORS OF ROCK CLASS AT CORE)

Symbol	Rock Name	Class
B	Embankment	D D Class
To	Top Soil	CL CL-L Class
rd	Riverbed Deposit	CM-L CM-L Class
td	Talus Deposit	CM-H CM-M Class
Cg	Conglomerate	
Sc	Conglomeratic Sandstone	
Ss	Sandstone	
Sl	Siltstone	
St	Tuffaceous Sandstone	
Ts	Sandy Tuff	
Tf	Tuff	
Cv	Volcanic Conglomerate	
Bb	Volcanic Breccia	
La	Andesite Lava	

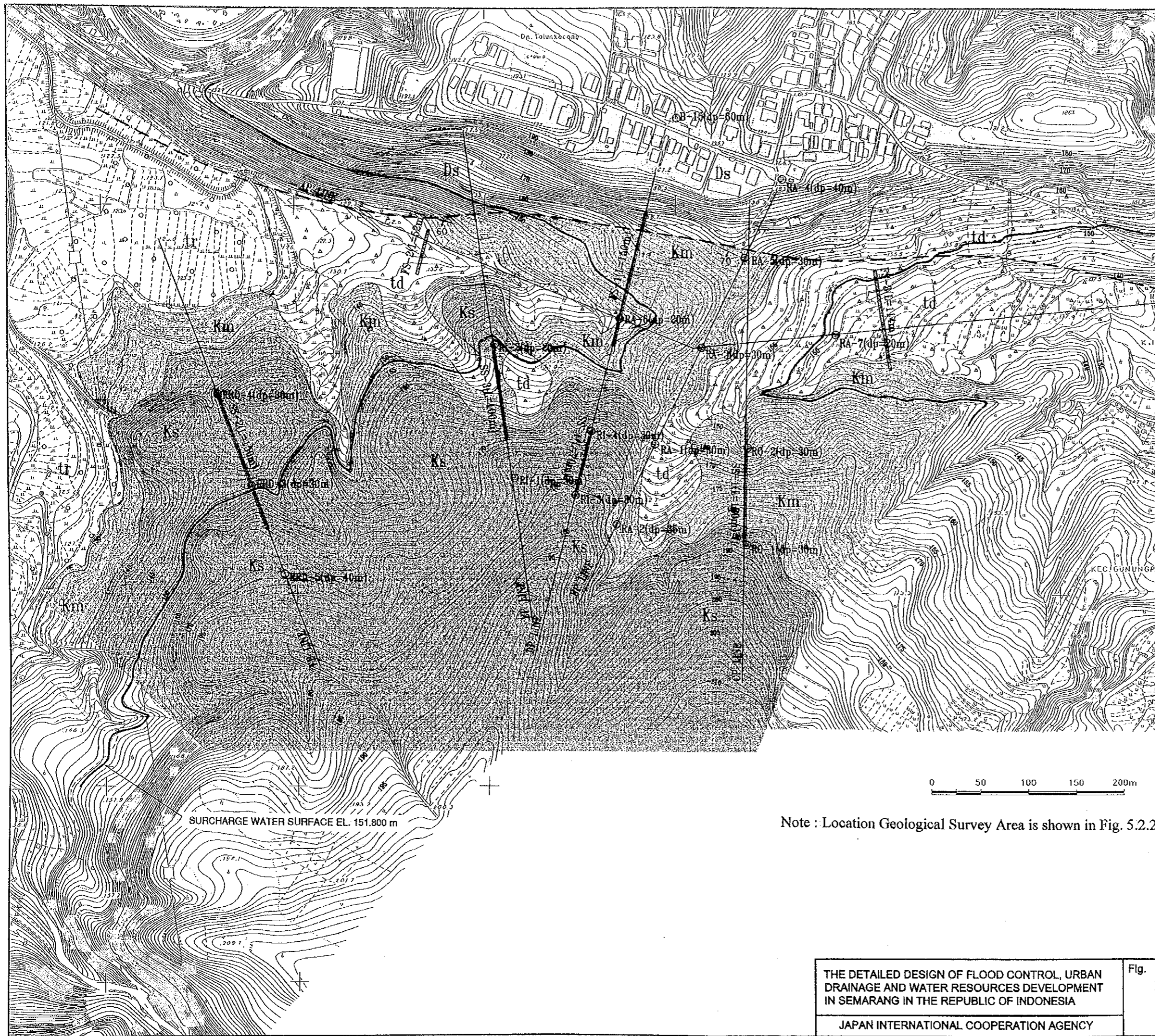
Symbol	Lugeon Value
---	20 <=>
///	10 < <=> 20
	5 < <=> 10
	2 < <=> 5
	<=> 2



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

JAPAN INTERNATIONAL COOPERATION AGENCY

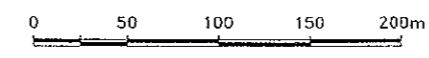
Fig. 5.1.10 (2/2)
LUGEON MAP ALONG DAM AXIS
(LEFT BANK RIDGE)



LEGEND

(Geological Strata)			
Age	Formation and Strata Name	Symbol	Description
Quaternary Holocene	Embankment	B	The embankment is distributed at the pass. It consists of gravel and soil.
	Talus deposit	td	The deposit is distributed at the skirt of the mountainside slope. It consists of failure soil and sand, detritus and fallen rocks.
	Terrace deposit	td	The deposit forms the terrace plain along the riverbed, and the relative height of the plain is less than 3 m from the riverbed. Terrace deposit can be divided into two layers, the upper layer mainly consists of silt, and the lower layer mainly consists of sand and gravel.
Tertiary-Quaternary Pliocene-Pleistocene	Kaligelas Sedimentary Rock Unit	Ks	Kaligelas formation is distributed at the south side of a fault, which located 400m southwest of the damsite. This fault has direction from east to northwest and forms a boundary of Damar formation and Kerek and Kaligelas formations. Sedimentary rock unit is formed by complicated alternation which mainly consists of conglomerate, conglomeratic sandstone, tuffaceous sandstone and sandstone. Cracks hardly develop in the bedrock, and the degree of cementation and the hardness of rock are comparatively low.
	Damar Sedimentary Rock Unit	Ds	Damar formation is distributed at the north side of the above-mentioned fault. Sedimentary rock unit is formed by complicated alternation which mainly consists of tuffaceous sandstone, conglomeratic sandstone and volcanic conglomerate. Cracks hardly develop in the bedrock, and the degree of cementation and the hardness of rock are comparatively low.
Tertiary Miocene-Pliocene	Kerek Sedimentary Rock Unit	Km	Kerek formation is distributed at the south side of the above-mentioned fault. Sedimentary rock unit mainly consists of siltstone whose color is greenish dark gray, and partly contains coral limestone. The hardness of siltstone is comparatively low, and slickenside develops around the fault.

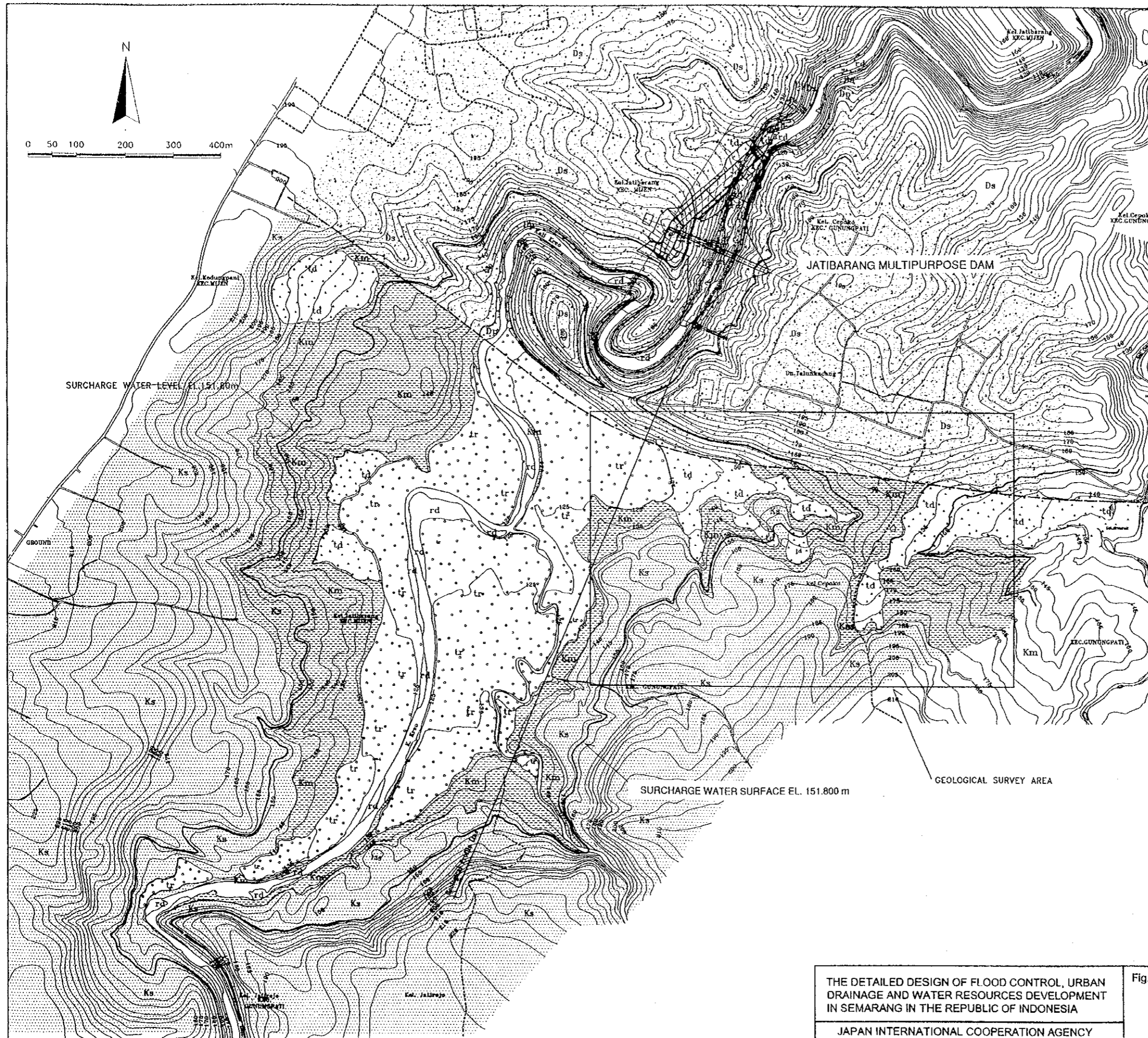
- BOUNDARY OF GEOLOGICAL UNIT AND STRATUM
- FAULT AND DIP/STRIKE
- (LOCATION OF BORING HOLES AND TRENCHES)
- HOLE NUMBER(TOTAL DEPTH)
- TRENCH NUMBER(TOTAL LENGTH)



Note : Location Geological Survey Area is shown in Fig. 5.2.2

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

Fig. 5.2.1
 LOCATION MAP OF BORE HOLES AND TRENCHES AT SADDLE PORTION IN RESERVOIR AREA

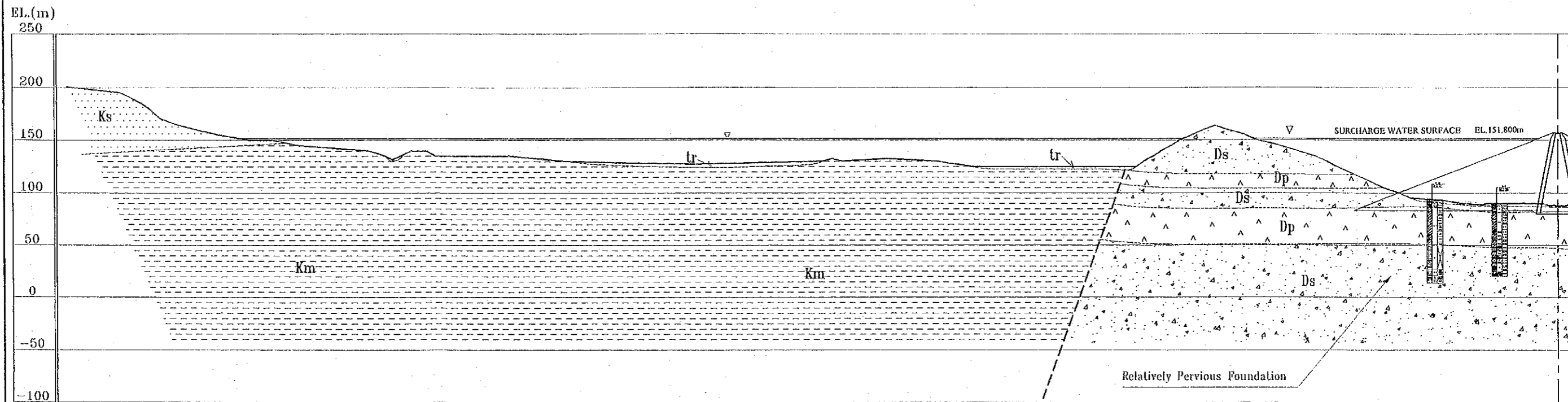


LEGEND			
(Geological Strata)			
Age	Formation and Strata Name	Symbol	Description
Quaternary Holocene	Riverbed deposit	rd	The deposit is distributed at the existing riverbed and the flood plain. It mainly consists of gravel, sand and clay, and it contains the huge fallen rocks in the gorge area, which was formed by Kero river.
	Talus deposit	td	The deposit is distributed at the skirt of the mountainside slope. It consists of failure soil and sand, detritus and fallen rocks.
	Terrace deposit	tr	The deposit forms the terrace plain along the riverbed, and the relative height of the plain is less than 3 m from the riverbed. Terrace deposit can be divided into two layers, the upper layer mainly consists of silt, and the lower layer mainly consists of sand and gravel.
Tertiary-Quaternary Pliocene-Pleistocene	Kaliptas Sedimentary Rock Unit	Ks	Kaliptas formation is distributed at the south side of a fault, which located 100m southwest of the damsite. This fault has direction from east to northwest and forms a boundary of Damar formation and Kerek and Kaliptas formations. Sedimentary rock unit is formed by complicated alteration which mainly consists of conglomerate, conglomeratic sandstone, tuffaceous sandstone and sandstone. Cracks hardly develop in the bedrock, and the degree of cementation and the hardness of rock are comparatively low.
			Damar Sedimentary Rock Unit
	Pyroclastic Rock Unit	Dp	Pyroclastic rock unit mainly consists of volcanic breccia, and partly contains mafic tuff and andesite lava. The volcanic breccia contains fragments of andesite and pumice, and matrix consists of mafic tuff. Cracks hardly develop in the bedrock, but the hardness of rock is comparatively high.
Tertiary Miocene-Pliocene	Kerek Sedimentary Rock Unit	Km	Kerek formation is distributed at the south side of the above-mentioned fault. Sedimentary rock unit mainly consists of siltstone whose color is greenish dark gray, and partly contains coral limestone. The hardness of siltstone is comparatively low, and slickenside develops around the fault.

BOUNDARY OF GEOLOGICAL UNIT AND STRATUM
 FAULT AND DIP/STRIKE

THE DETAILED DESIGN OF FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA
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Fig. 5.2.2
 GEOLOGICAL MAP AT RESERVOIR AREA



LEGEND

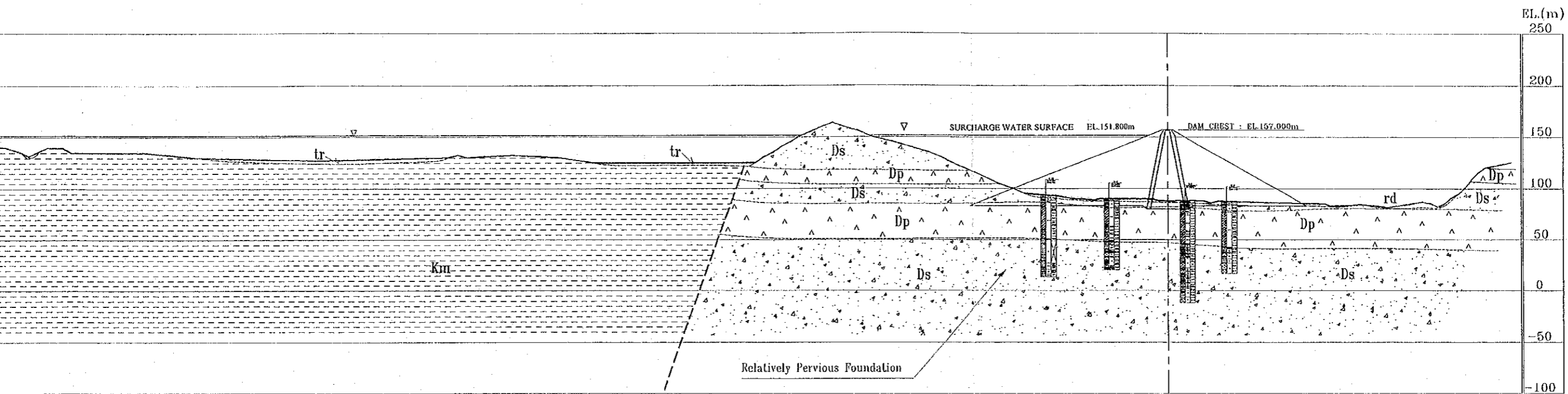
(Geological Strata)		Age	Formation and Strata Name	Symbol	Description
Quaternary	Holocene		Riverbed deposit	rd	The deposit is distributed at the existing riverbed and the flood plain. It mainly consists of gravel, sand and clay, and it contains the huge fallen rocks in the gorge area, which was formed by Kreo River.
			Talus deposit	td	The deposit is distributed at the skirt of the mountainside slope. It consists of failure soil and sand, detritus and fallen rocks.
			Terrace deposit	tr	The deposit forms the terrace plain along the riverbed, and the relative height of the plain is less than 3 m from the riverbed. Terrace deposit can be divided into two layers, the upper layer mainly consists of silt, and the lower layer mainly consists of sand and gravel.
Tertiary-Quaternary	Pliocene-Pleistocene	Kaligatas	Sedimentary Rock Unit	[Symbol]	Kaligatas formation is distributed at the south side of a fault, which located 400m southwest of the damsite. This fault has direction from east to northwest and forms a boundary of Banjar formation and Kerek and Kaligatas formations. Sedimentary rock unit is formed by complicated alternation which mainly consists of conglomerate, conglomeratic sandstone, tuffaceous sandstone and sandstone. Cracks hardly develop in the bedrock, and the degree of cementation and the hardness of rock are comparatively low.
			Damar	Sedimentary Rock Unit	Ds
			Pyroclastic Rock Unit	[Symbol]	Pyroclastic rock unit mainly consists of volcanic breccia, and partly contains mafic tuff and andesite lava. The volcanic breccia contains fragments of andesite and pumice, and matrix consists of mafic tuff. Cracks hardly develop in the bedrock, but the hardness of rock is comparatively high.
		Tertiary	Miocene-Pliocene	Kerek	Sedimentary Rock Unit

— BOUNDARY OF GEOLOGICAL UNIT AND STRATUM
 - - - FAULT

0 50 100



Note : Location

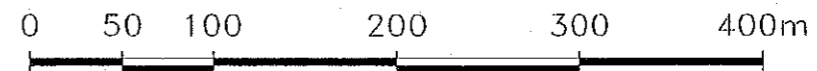
THE DETAILED DESIGN OF FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA
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LEGEND

Description
is distributed at the existing riverbed and the flood plain. It mainly consists of sand and clay, and it contains the huge fallen rocks in the gorge area, which was formed by the Koro River.
is distributed at the skirt of the mountainside slope. It consists of failure soil, siltstone and fallen rocks.
forms the terrace plain along the riverbed, and the relative height of the plain is 3 m from the riverbed. Terrace deposit can be divided into two layers, the upper layer mainly consists of silt, and the lower layer mainly consists of sand and gravel.
formation is distributed at the south side of a fault, which located 400m southwest from the dam. This fault has direction from east to northwest and forms a boundary of Kerek and Kalligetas formations. Sedimentary rock unit is formed by alternation which mainly consists of conglomerate, conglomeratic sandstone, sandstone and sandstone. Cracks hardly develop in the bedrock, and the degree of cementation and the hardness of rock are comparatively low.
formation is distributed at the north side of the above-mentioned fault. The rock unit is formed by complicated alternation which mainly consists of sandstone, conglomeratic sandstone and volcanic conglomerate. Cracks hardly develop in the bedrock, and the degree of cementation and the hardness of rock are comparatively low.
rock unit mainly consists of volcanic breccia, and partly contains mafic tuff and sandstone. The volcanic breccia contains fragments of andesite and pumice, and matrix is mafic tuff. Cracks hardly develop in the bedrock, but the hardness of rock is comparatively high.
formation is distributed at the south side of the above-mentioned fault. Sedimentary rock unit mainly consists of siltstone whose color is greenish dark gray, and partly contains sandstone. The hardness of siltstone is comparatively low, and slickenside develops in the fault.

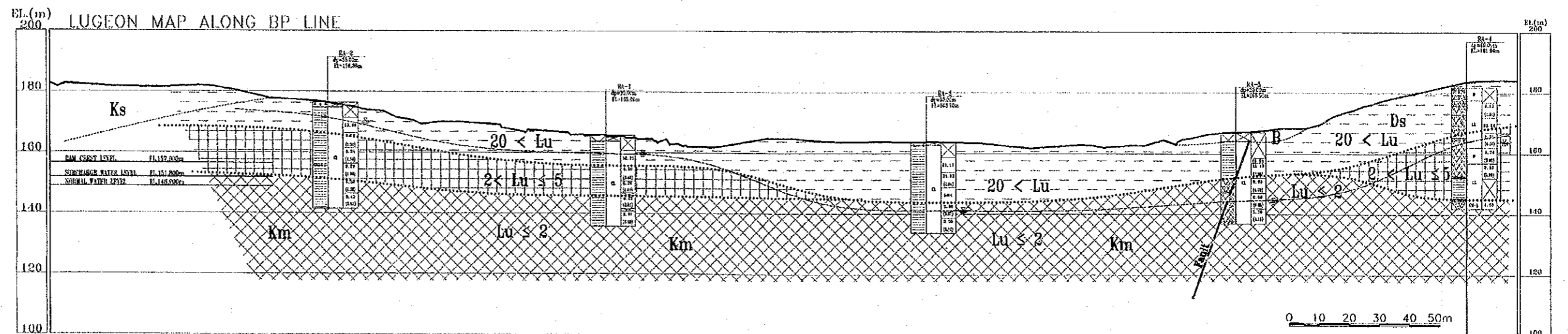
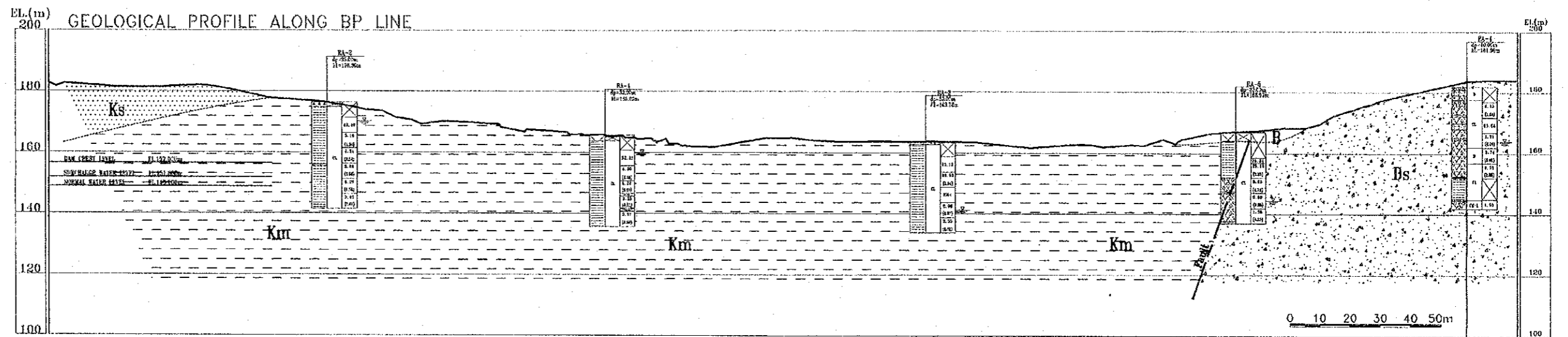
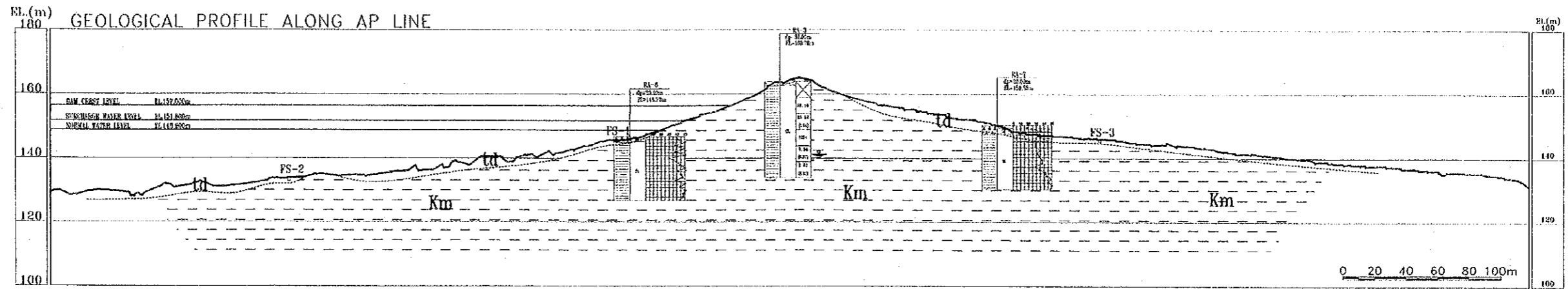
 BOUNDARY OF GEOLOGICAL UNIT AND STRATUM
 FAULT



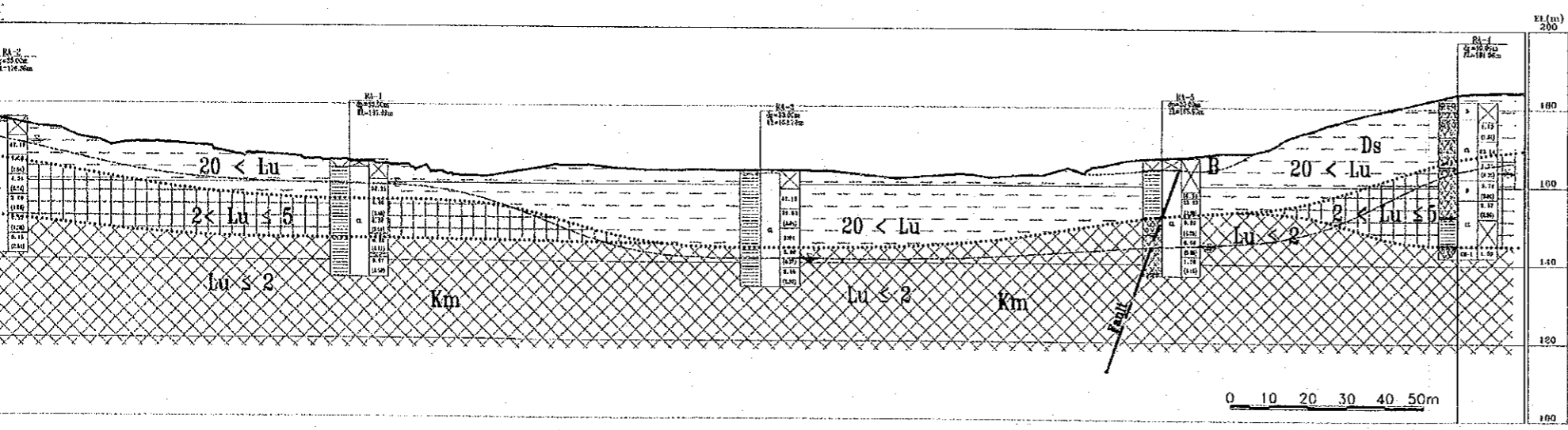
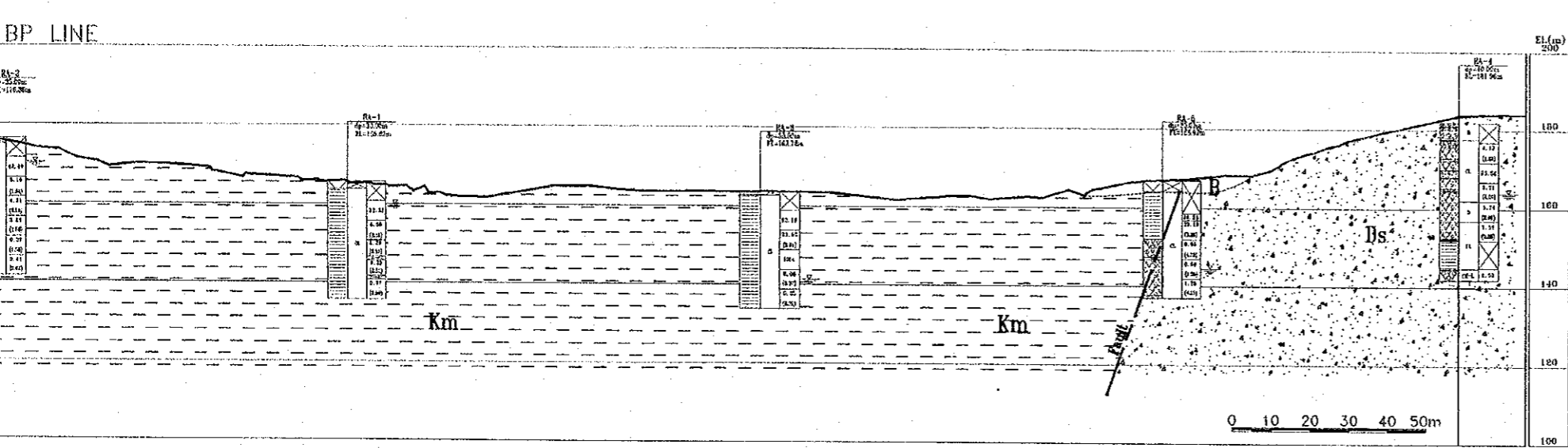
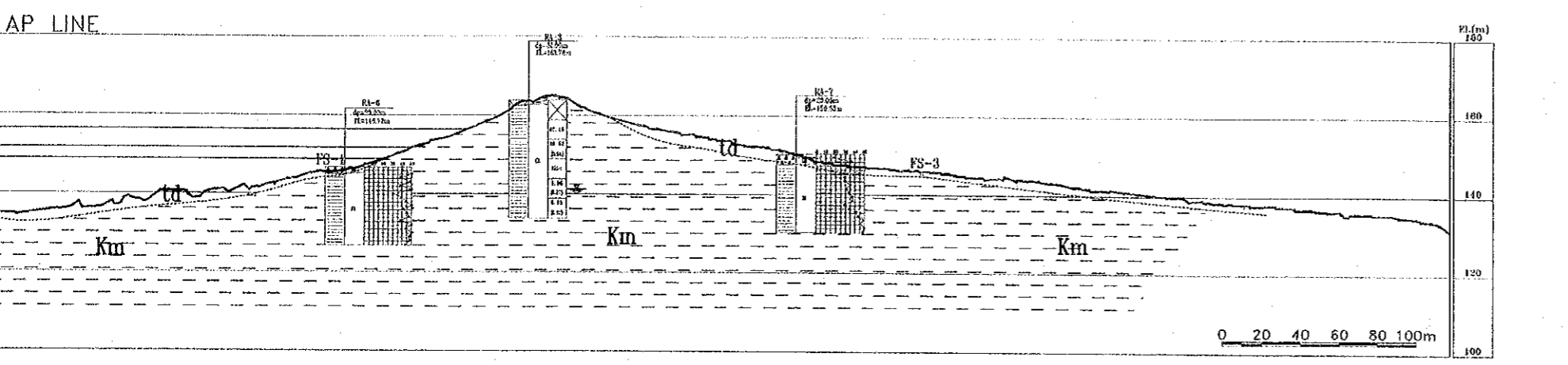
Note : Location of Geological Profile Line is shown in Fig. 5.2.2

THE DETAILED DESIGN OF FLOOD CONTROL, URBAN
 DRAINAGE AND WATER RESOURCES DEVELOPMENT
 IN SEMARANG IN THE REPUBLIC OF INDONESIA
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Fig. 5.2.3
 GEOLOGICAL PROFILE AT RESERVOIR AREA



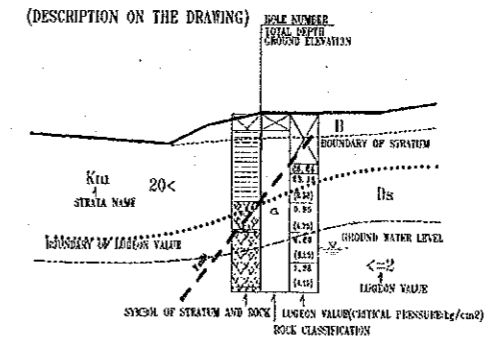
Note : Location of AP LINE and BP LINE are shown in Fig. 5.2.1



Note : Location of AP LINE and BP LINE are shown in Fig. 5.2.1

LEGEND

(Geological Strata)			
Age	Formation and Strata Name	Symbol	Description
Quaternary	Holocene	B	The embankment is distributed at the pass. It consists of gravel and soil.
		td	The deposit is distributed at the skirt of the mountainside slope. It consists of failure soil and sand, detritus and fallen rocks.
		tr	The deposit forms the terrace plain along the riverbed, and the relative height of the plain is less than 3 m from the riverbed. Terrace deposit can be divided into two layers, the upper layer mainly consists of silt, and the lower layer mainly consists of sand and gravel.
Tertiary-Quaternary	Pliocene-Pleistocene	Ks	Kaligetas formation is distributed at the south side of a fault, which located 400m southwest of the damsite. This fault has direction from east to northwest and forms a boundary of Damar formation and Kerek and Kaligetas formations. Sedimentary rock unit is formed by complicated alternation which mainly consists of conglomerate, conglomeratic sandstone, tuffaceous sandstone and sandstone. Cracks hardly develop in the bedrock, and the degree of cementation and the hardness of rock are comparatively low.
		Ds	Damar formation is distributed at the north side of the above-mentioned fault. Sedimentary rock unit is formed by complicated alternation which mainly consists of tuffaceous sandstone, conglomeratic sandstone and volcanic conglomerate. Cracks hardly develop in the bedrock, and the degree of cementation and the hardness of rock are comparatively low.
Tertiary	Miocene-Pliocene	Kk	Kerek formation is distributed at the south side of the above-mentioned fault. Sedimentary rock unit mainly consists of siltstone whose color is greenish dark gray, and partly contains coral limestone. The hardness of siltstone is comparatively low, and slickenside develops around the fault.



(SYMBOLS OF ROCKS AND SOILS AT CORE)

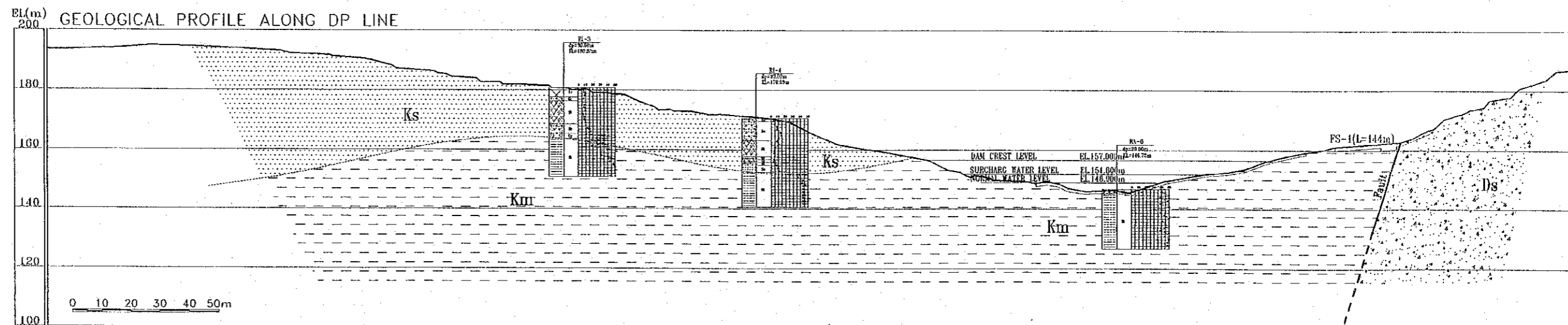
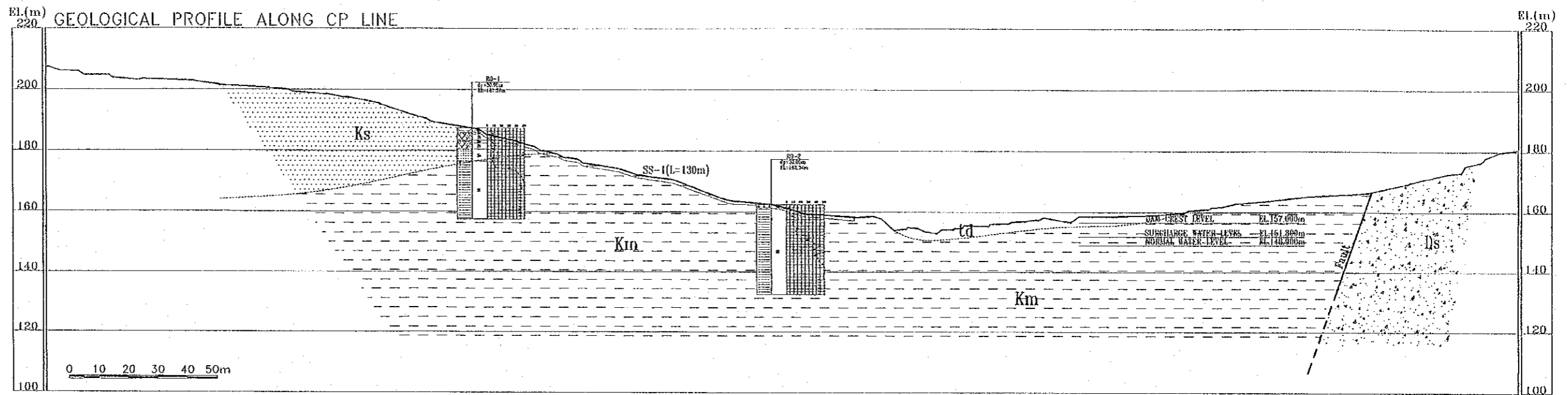
B	Embankment
To	Top Soil
td	Talus deposit
Cg	Conglomerate
So	Conglomeratic Sandstone
Sa	Sandstone
Si	Siltstone
St	Tuffaceous Sandstone
Ts	Sandy Tuff
Tf	Tuff
Cv	Volcanic Conglomerate

Symbol	Lugeon Value
(Symbol for 20 < Lu)	20 < Lu
(Symbol for 10 < Lu ≤ 20)	10 < Lu ≤ 20
(Symbol for 5 < Lu ≤ 10)	5 < Lu ≤ 10
(Symbol for 2 < Lu ≤ 5)	2 < Lu ≤ 5
(Symbol for Lu ≤ 2)	Lu ≤ 2

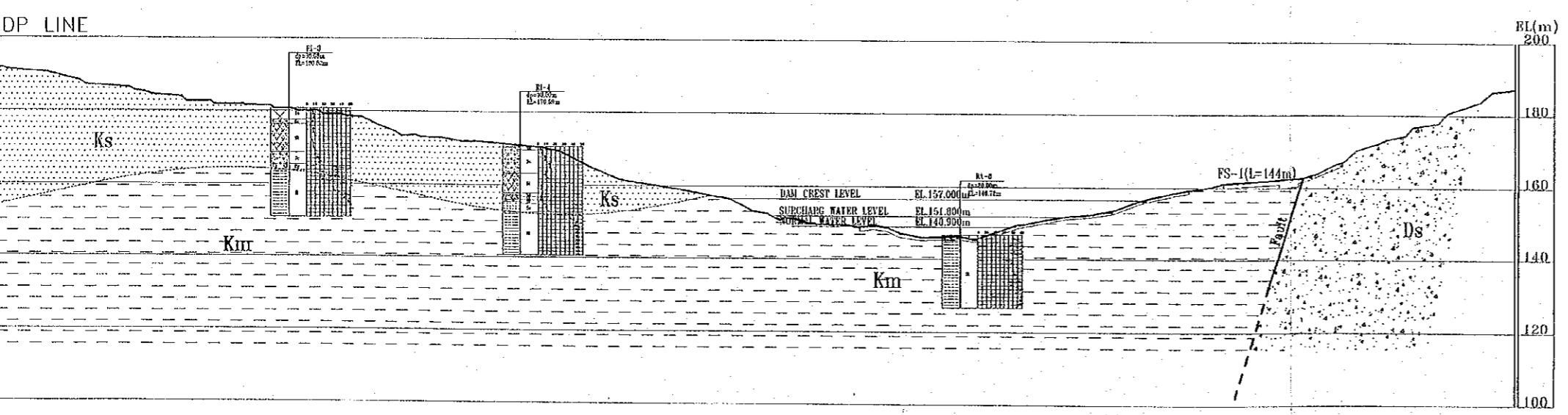
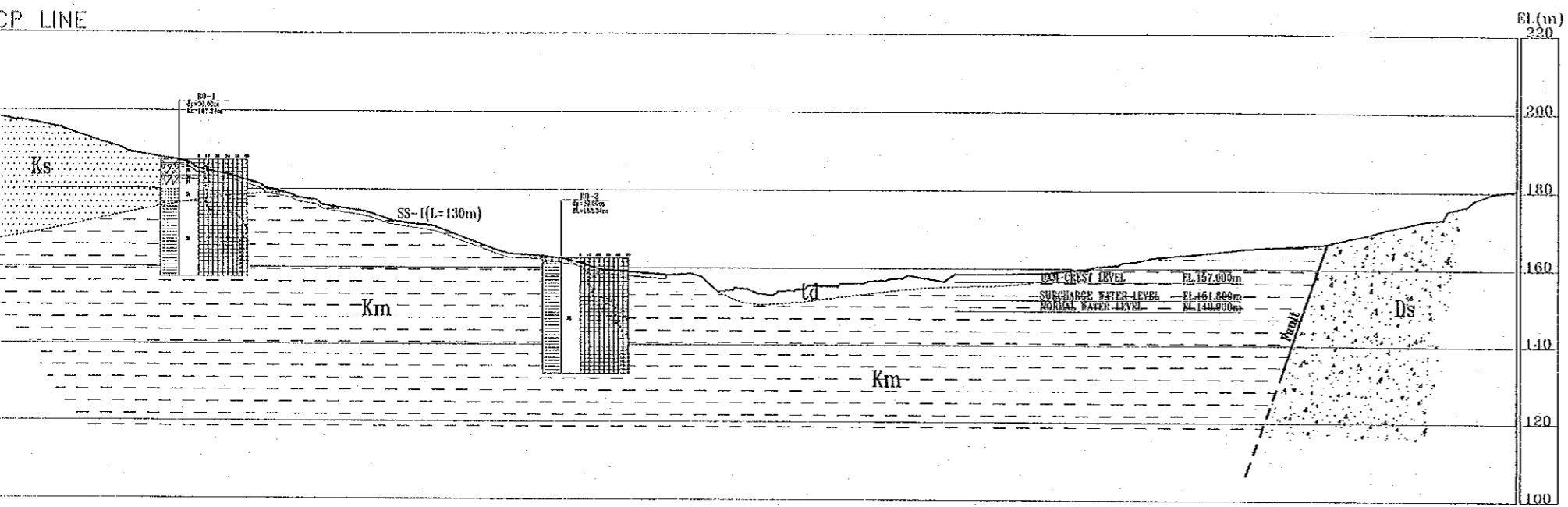
THE DETAILED DESIGN OF FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA

JAPAN INTERNATIONAL COOPERATION AGENCY

Fig. 5.2.4 GEOLOGICAL PROFILE ALONG AP LINE AND BP LINE



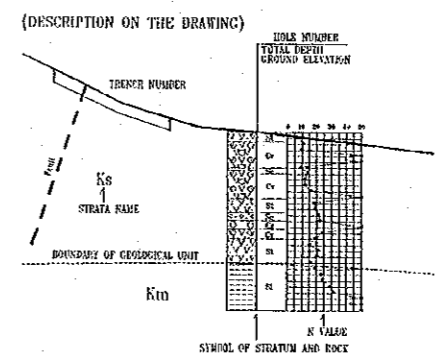
Note : Location of CP LINE and DP LINE are shown in Fig. 5.2.1 .



Note : Location of CP LINE and DP LINE are shown in Fig. 5.2.1 .

LEGEND

(Geological Strata)					
Age	Formation and Strata Name	Symbol	Description		
Quaternary	Holocene	Embankment	B	The embankment is distributed at the pass. It consists of gravel and soil.	
		Talus deposit	Id	The deposit is distributed at the skirt of the mountainside slope. It consists of failure soil and sand, detritus and fallen rocks.	
		Terrace deposit	Tr	The deposit forms the terrace plain along the riverbed, and the relative height of the plain is less than 3 m from the riverbed. Terrace deposit can be divided into two layers, the upper layer mainly consists of silt, and the lower layer mainly consists of sand and gravel.	
Tertiary-Quaternary	Pliocene-Pleistocene	Kaligetas	Sedimentary Rock Unit	Ks	Kaligetas formation is distributed at the south side of the fault, which located 400-m southwest of damsite. This fault has direction from east to northwest and forms the boundary of Damar formation and Kerek, Kaligetas formation. Sedimentary rock unit is formed by complicated alternation which mainly consists of conglomerate, conglomeratic sandstone, tuffaceous sandstone and sandstone. Cracks hardly develop in the bedrock, and the degree of cementation and the hardness of rock are comparatively low.
		Damar	Sedimentary Rock Unit	Ds	Damar formation is distributed at the north side of the above-mentioned fault. Sedimentary rock unit is formed by complicated alternation which mainly consists of tuffaceous sandstone, conglomeratic sandstone and volcanic conglomerate. Cracks hardly develop in the bedrock, and the degree of cementation and the hardness of rock are comparatively low.
Tertiary	Miocene-Pliocene	Kerek	Sedimentary Rock Unit	Km	Kerek formation is distributed at the south side of the above-mentioned fault. Sedimentary rock unit mainly consists of siltstone whose color is greenish dark gray, and partly contains coral limestone. The hardness of siltstone is comparatively low, and slickenside develops around the fault.

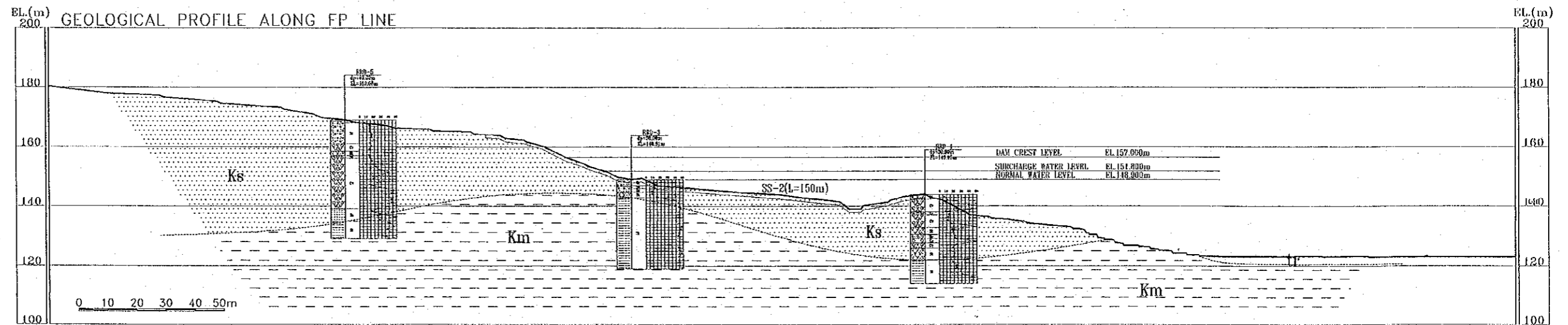
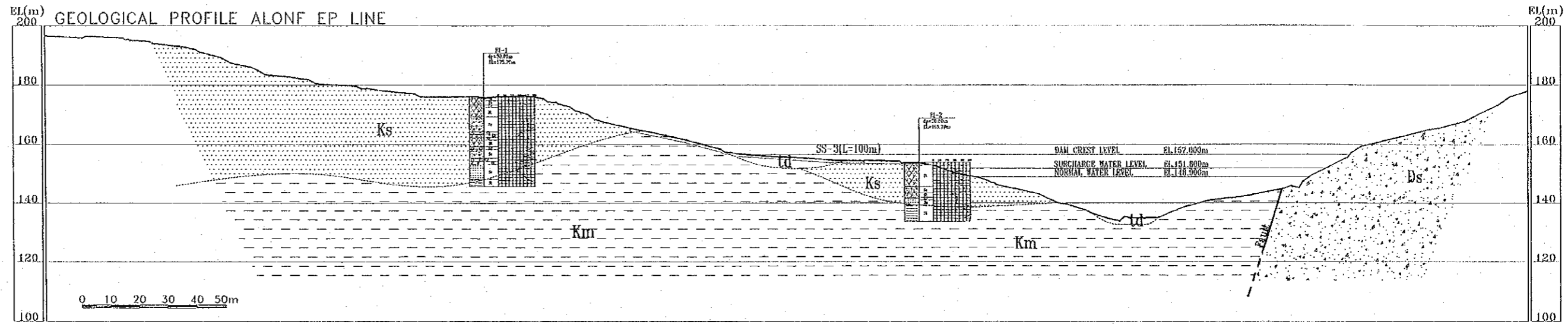


(SYMBOLS OF ROCKS AND SOILS AT CORE)

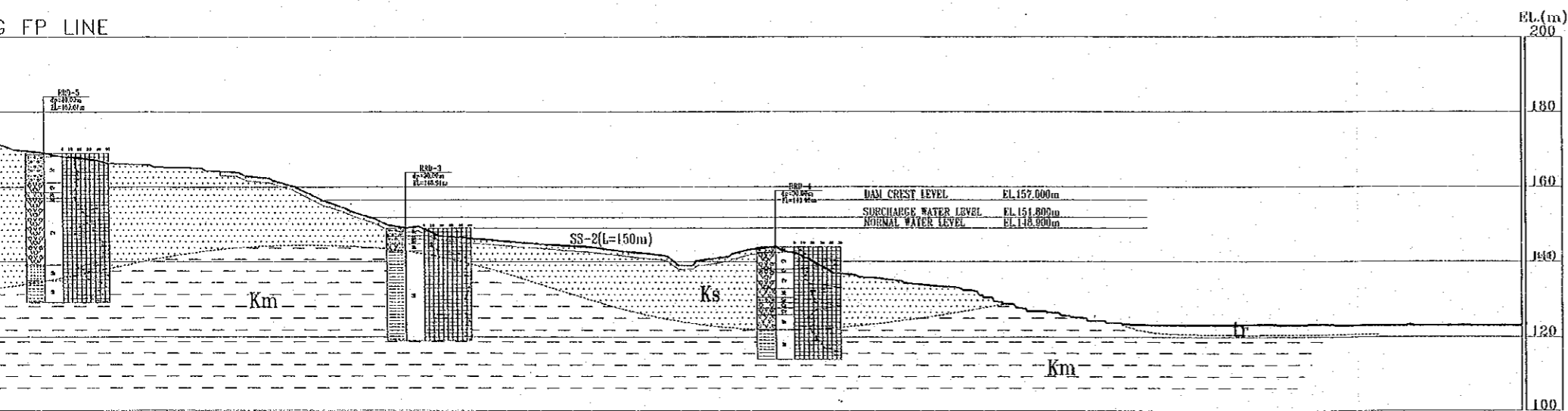
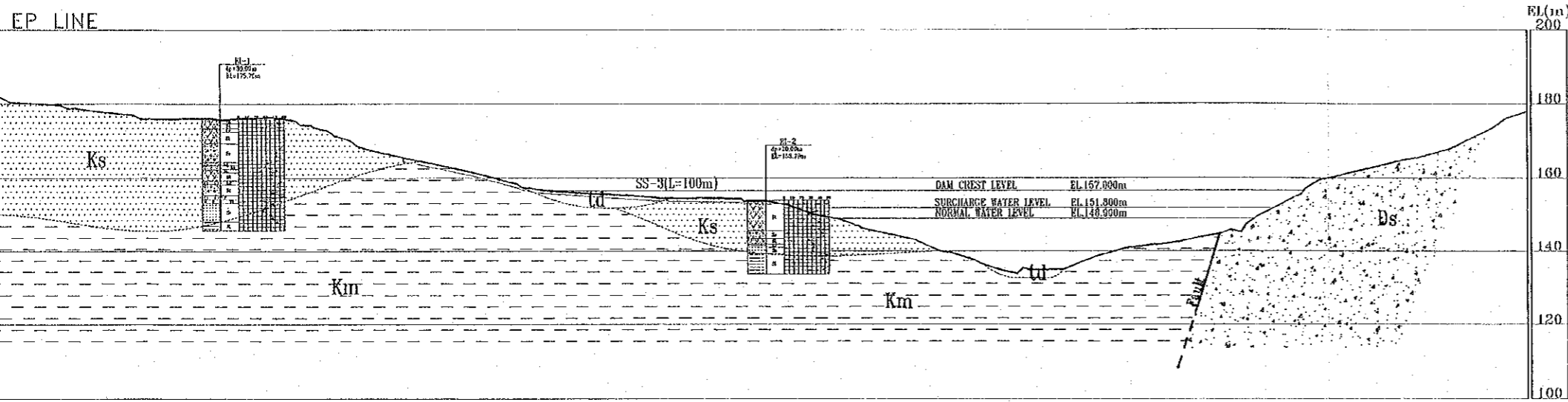
B	Embankment
To	Top Soil
Id	Talus Deposit
Cg	Conglomerate
Sc	Conglomeratic Sandstone
Ss	Sandstone
Sl	Siltstone
St	Tuffaceous Sandstone
Ts	Sandy Tuff
Tt	Tuff
Cr	Volcanic Conglomerate

THE DETAILED DESIGN OF FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA
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Fig. 5.2.5
GEOLOGICAL PROFILE ALONG CP LINE AND DP LINE



Note : Location of EP LINE and FP LINE are shown in Fig. 5.2.1

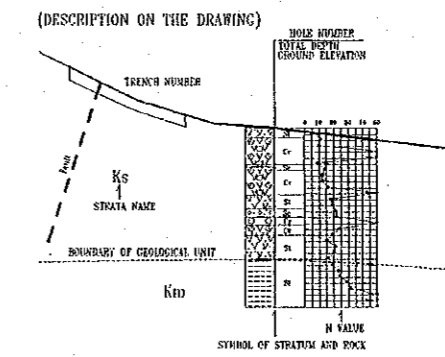


Note : Location of EP LINE and FP LINE are shown in Fig. 5.2.1

LEGEND

(Geological Strata)

Age	Formation and Strata Name	Symbol	Description
Quaternary Holocene	Embankment	B	The embankment is distributed at the pass. It consists of gravel and soil.
	Talus deposit	tl	The deposit is distributed at the skirt of the mountainside slope. It consists of failure soil and sand, detritus and fallen rocks.
	Terrace deposit	tr	The deposit forms the terrace plain along the riverbed, and the relative height of the plain is less than 3 m from the riverbed. Terrace deposit can be divided into two layers, the upper layer mainly consists of silt, and the lower layer mainly consists of sand and gravel.
Tertiary-Quaternary Pliocene-Pleistocene	Kaligetas Sedimentary Rock Unit	Ks	Kaligetas formation is distributed at the south side of a fault, which located 400m southwest of the damsite. This fault has direction from east to northwest and forms a boundary of Damar formation and Kerek and Kaligetas formations. Sedimentary rock unit is formed by complicated alternation which mainly consists of conglomerate, conglomeratic sandstone, tuffaceous sandstone and sandstone. Cracks hardly develop in the bedrock, and the degree of cementation and the hardness of rock are comparatively low.
	Damar Sedimentary Rock Unit	Ds	Damar formation is distributed at the north side of the above-mentioned fault. Sedimentary rock unit is formed by complicated alternation which mainly consists of tuffaceous sandstone, conglomeratic sandstone and volcanic conglomerate. Cracks hardly develop in the bedrock, and the degree of cementation and the hardness of rock are comparatively low.
Tertiary Miocene-Pliocene	Kerek Sedimentary Rock Unit	Kk	Kerek formation is distributed at the south side of the above-mentioned fault. Sedimentary rock unit mainly consists of siltstone whose color is greenish dark gray, and partly contains coral limestone. The hardness of siltstone is comparatively low, and slickenside develops around the fault.



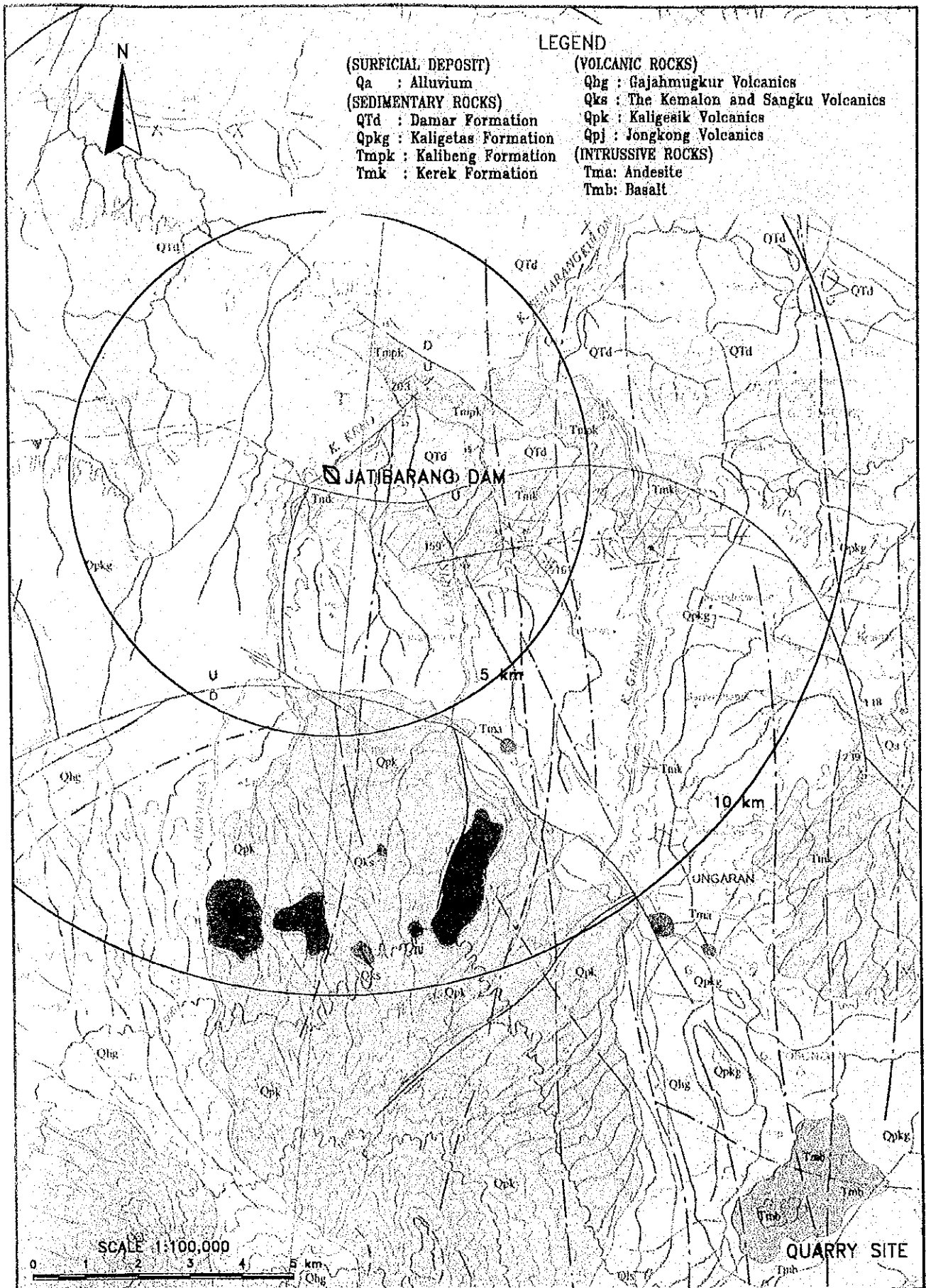
(SYMBOLS OF ROCKS AND SOILS AT CORR)

B	Embankment
Ts	Top Soil
tl	Talus Deposit
Cg	Conglomerate
Sc	Conglomeratic Sandstone
Ss	Sandstone
Sl	Siltstone
St	Tuffaceous Sandstone
Ts	Sandy Tuff
Tf	Tuff
Cv	Volcanic Conglomerate

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

JAPAN INTERNATIONAL COOPERATION AGENCY

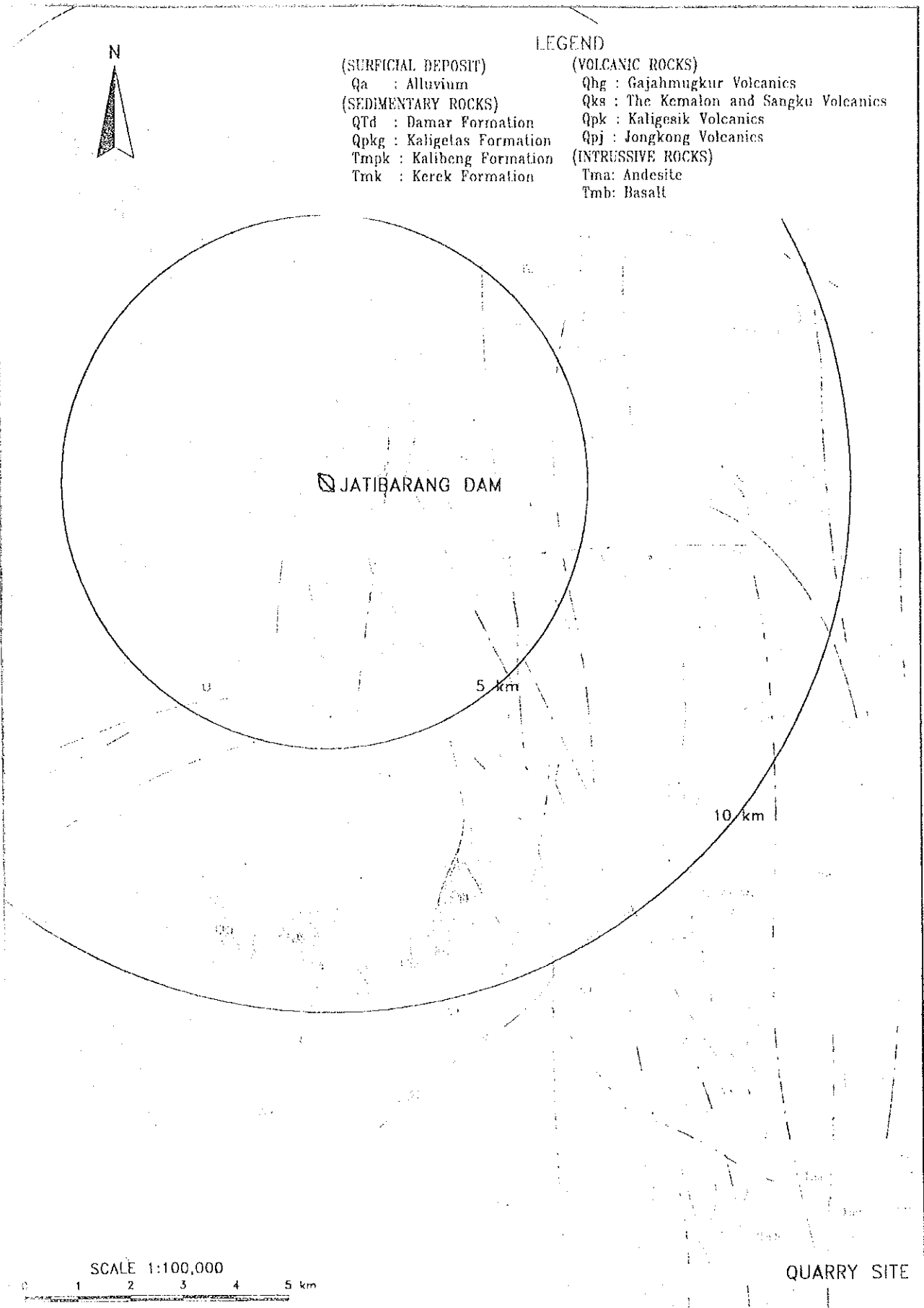
Fig. 5.2.6
GEOLOGICAL PROFILE ALONG EP LINE AND FP LINE



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

JAPAN INTERNATIONAL COOPERATION AGENCY

Fig. 5.3.1 REGIONAL GEOGRAPHICAL MAP AROUND DAMSITE



LEGEND

(SURFICIAL DEPOSIT)

Qa : Alluvium

(SEDIMENTARY ROCKS)

QTd : Damar Formation

Qpkg : Kaligetas Formation

Tmpk : Kalibeng Formation

Trnk : Kerek Formation

(VOLCANIC ROCKS)

Qhg : Gajahmugkur Volcanics

Qks : The Kemalon and Sangku Volcanics

Qpk : Kaligesik Volcanics

Qpj : Jongkong Volcanics

(INTRUSIVE ROCKS)

Tma: Andesite

Tmb: Basalt

SCALE 1:100,000

0 1 2 3 4 5 km

QUARRY SITE

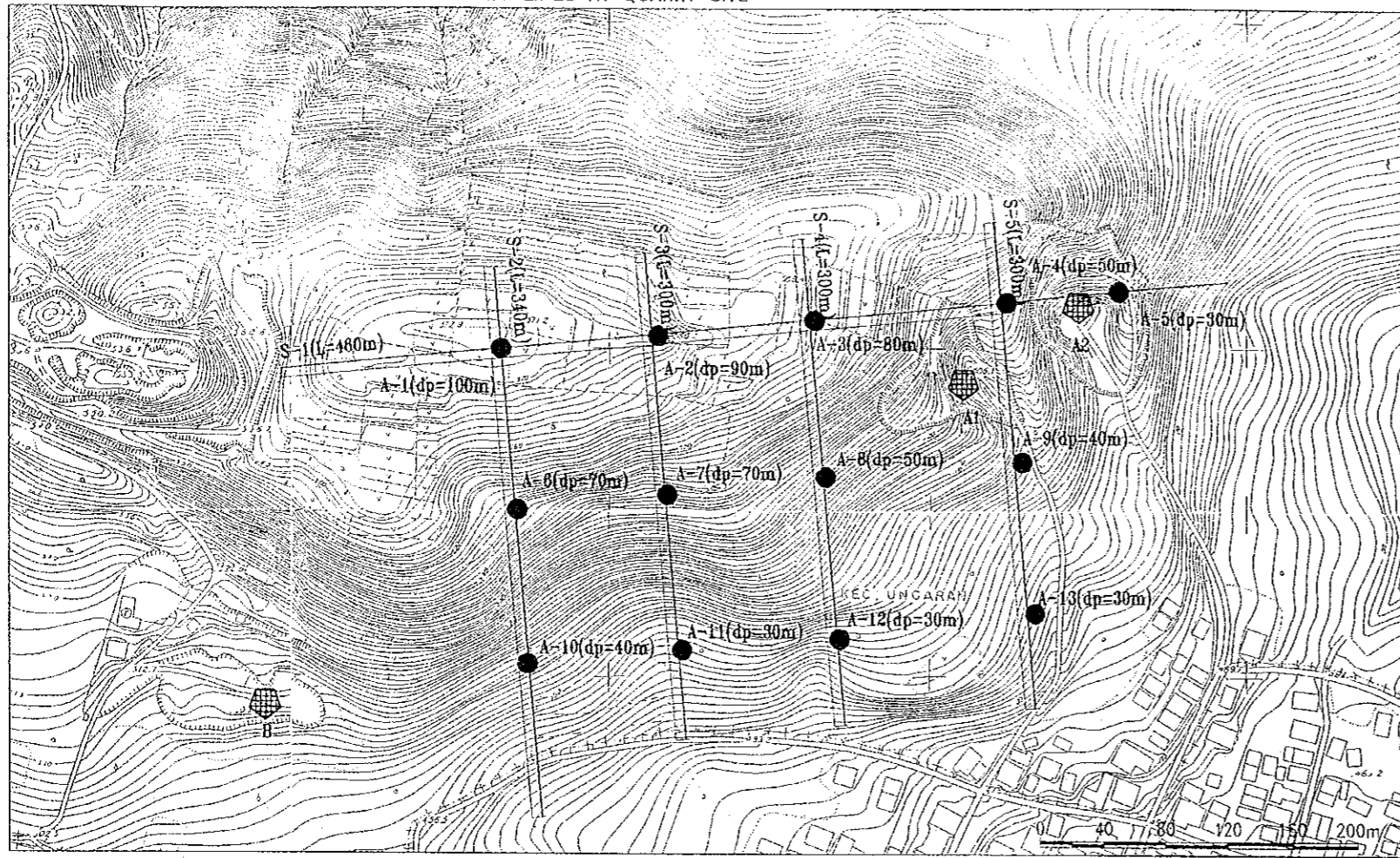
THE DETAILED DESIGN OF FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC INDONESIA

JAPAN INTERNATIONAL COOPERATION AGENCY

Fig. 5.3.1

REGIONAL GEOGRAPHICAL MAP AROUND DAMSITE

LOCATION MAP OF BORE HOLES AND SEISMIC LINES AT QUARRY SITE



LEGEND

(Geological Strata)

Age	Formation and Strata Name	Symbol	Description	
Tertiary-Quaternary	Pliocene-Pleistocene	Andesite	An	Andesite consists of sheet or dike, which is mainly composed Plagioclase, Pyroxene and Ore minerals, and shows dark gray. But it was changed in quality partly by the hydrothermal alteration, and secondary minerals that consists of Chlorite, Mordinite and Illite were formed, and show greenish light gray. The hardness of rock is comparatively high, and the bedrock has cracks with the interval of 10 to 200 cm.
		Pyroclastic Rock	Kp	
	Kaligelas		Pyroclastic rock mainly consists of volcanic breccia and partly contains mafic tuff and andesite lava. Volcanic breccia contains fragments of andesite and pumice, and matrix consists of mafic tuff. Rocks are weathered strongly, so hardness of rocks is very soft. this stratum is covered by andesite sheet.	

(Note)

- Boundary of Geological Strata
- Boundary of Rock Class

(SYMBOLS OF ROCKS AND ROCK CLASS)

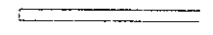
An	Andesite Sheet	D	D Class
Py	Pyroclastic Rock	CL	CL Class
La	Andesite Lava	CM	CM Class
		CH	CH Class

HOLE NUMBER(TOTAL DEPTH)



BORING POINT

LINE NAME(TOTAL LENGTH)



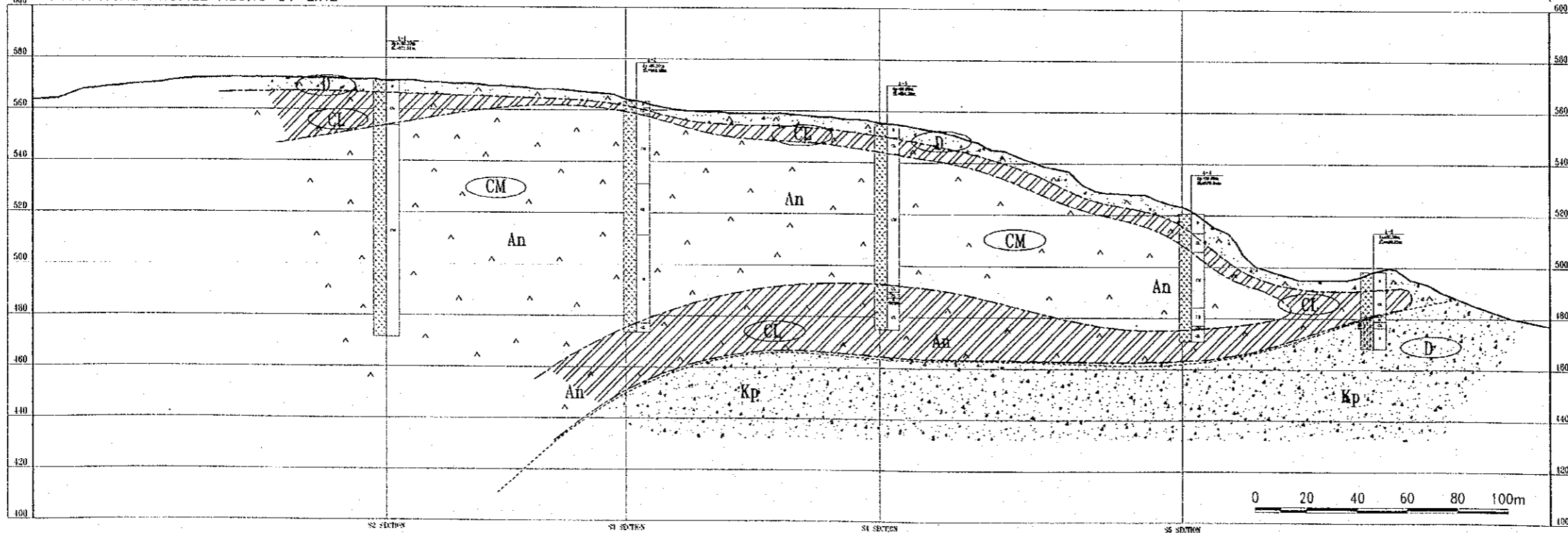
SEISMIC LINE

SAMPLE NUMBER



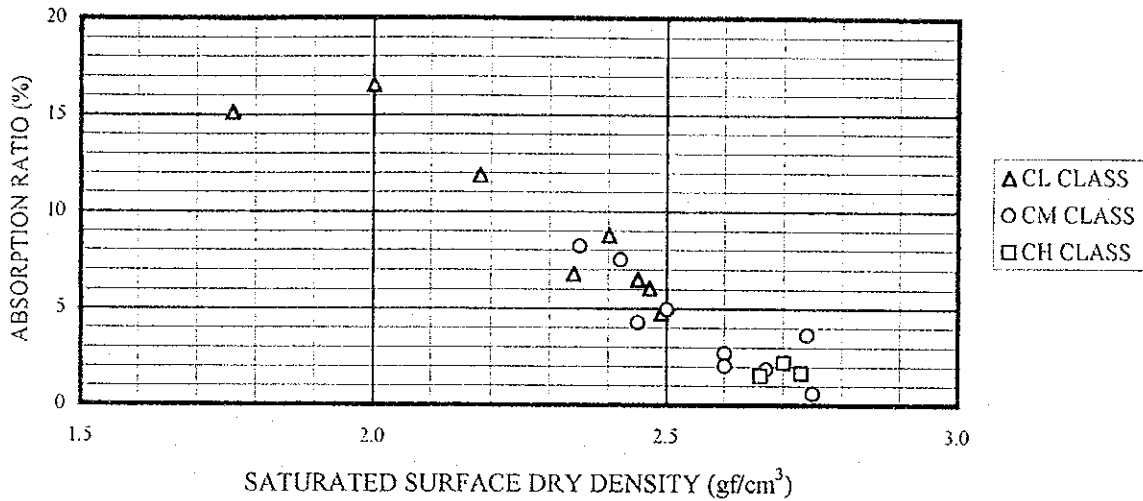
SAMPLING POINT FOR AGGREGATE TESTS

GEOLOGICAL PROFILE ALONG S1 LINE

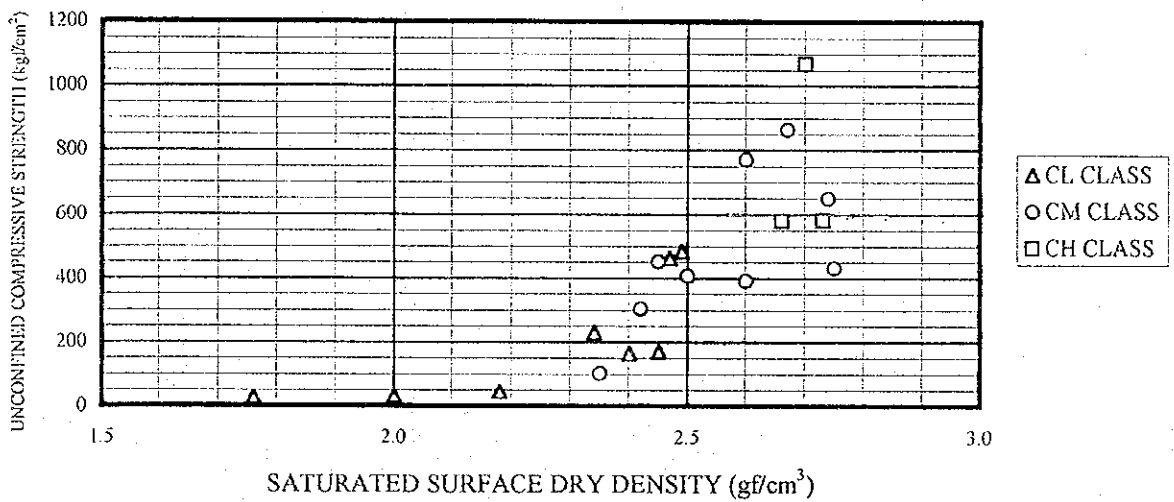


THE DETAILED DESIGN OF FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA
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Fig. 5.3.2
LOCATION MAP AND GEOLOGICAL PROFILE AT QUARRY SITE



RELATIONSHIP BETWEEN SATURATED SURFACE DRY DENSITY AND ABSORPTION RATIO

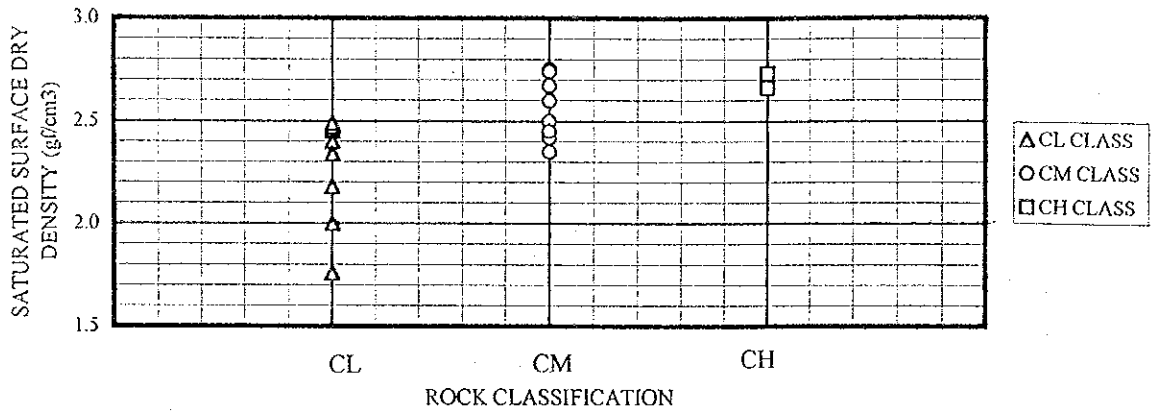


RELATIONSHIP BETWEEN SATURATED SURFACE DRY DENSITY AND UNCONFINED COMPRESSIVE STRENGTH

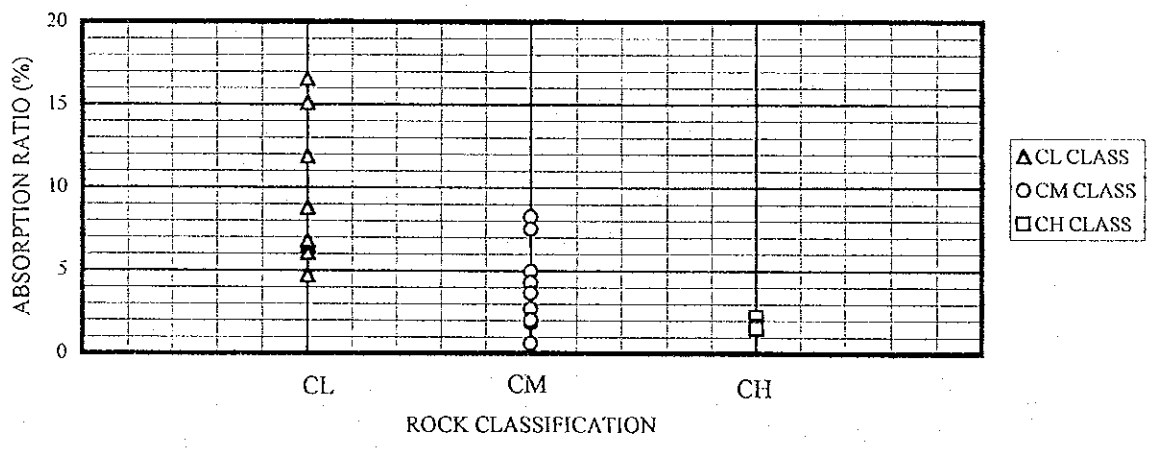
THE DETAILED DESIGN OF FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA

JAPAN INTERNATIONAL COOPERATION AGENCY

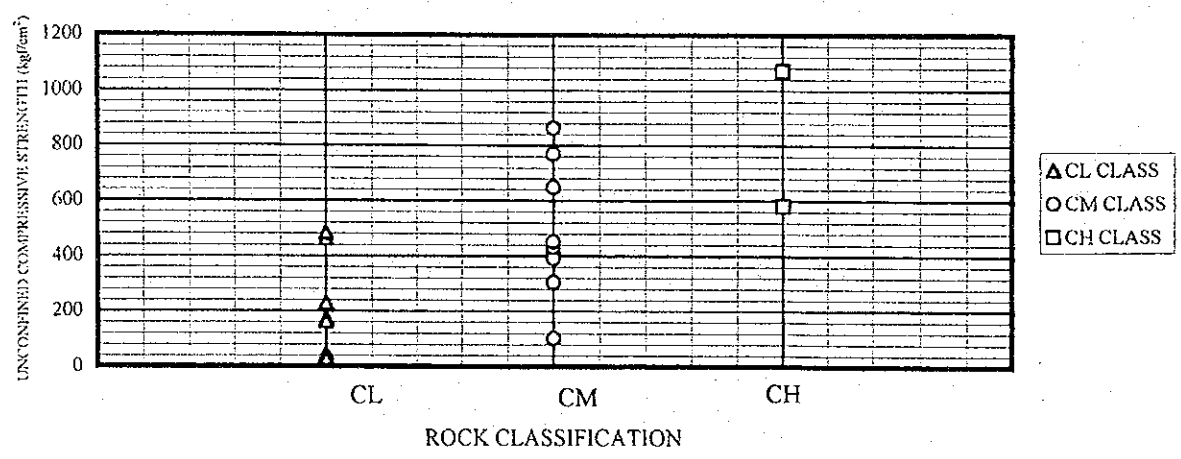
Fig. 5.3.3
RELATIONSHIP BETWEEN SATURATED SURFACE-DRY DENSITY AND OTHER PROPERTIES OF CORE SAMPLES AT QUARRY SITE



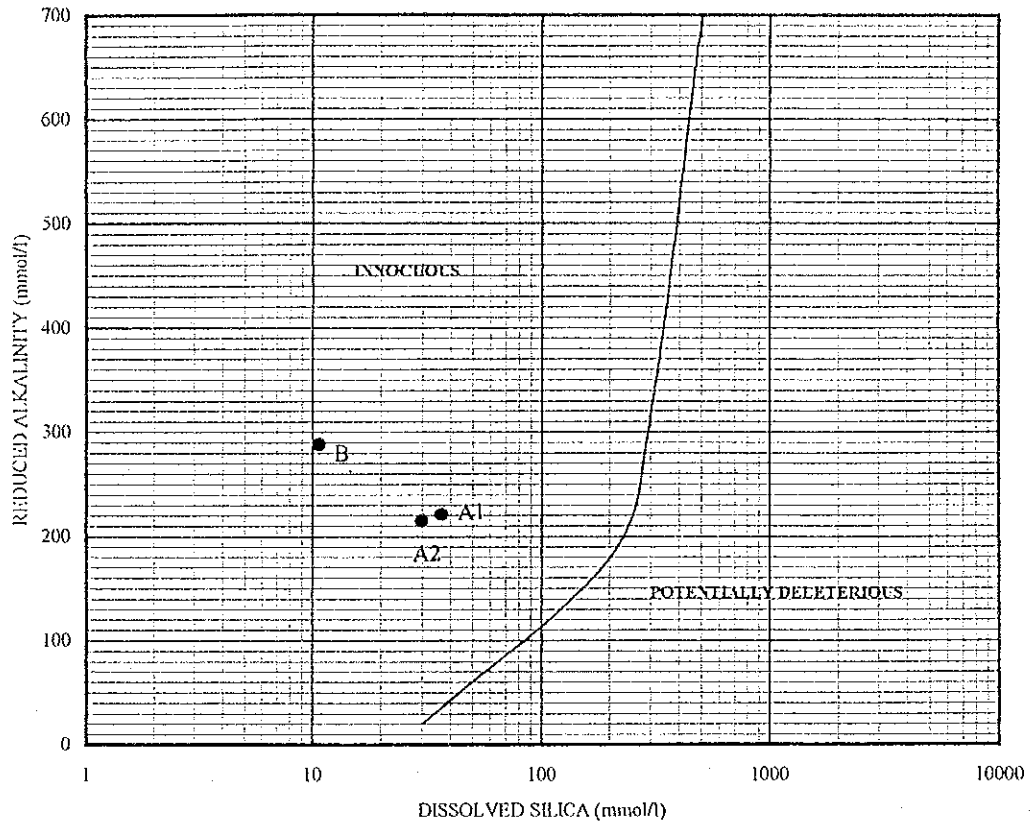
RELATIONSHIP BETWEEN ROCK CLASSIFICATION AND SATURATED SURFACE DRY DENSITY



RELATIONSHIP BETWEEN ROCK CLASSIFICATION AND ABSORPTION RATIO



RELATIONSHIP BETWEEN ROCK CLASSIFICATION AND UNCONFINED COMPRESSIVE STRENGTH



● DATA

— BOUNDARY OF INNOCUOUS ZONE AND POTENTIALLY DELETERIOUS ZONE

Item	Sample No.		
	A1	A2	B
Dissolved Silica	36.3	29.64	10.65
Reduction in Alkalinity	221.12	215.3	288.3

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

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Fig. 5.3.5

REDUCED ALKALINITY AND DISSOLVED SILICA OF CONCRETE AGGREGATE OF SAMPLES AT QUARRY SITE