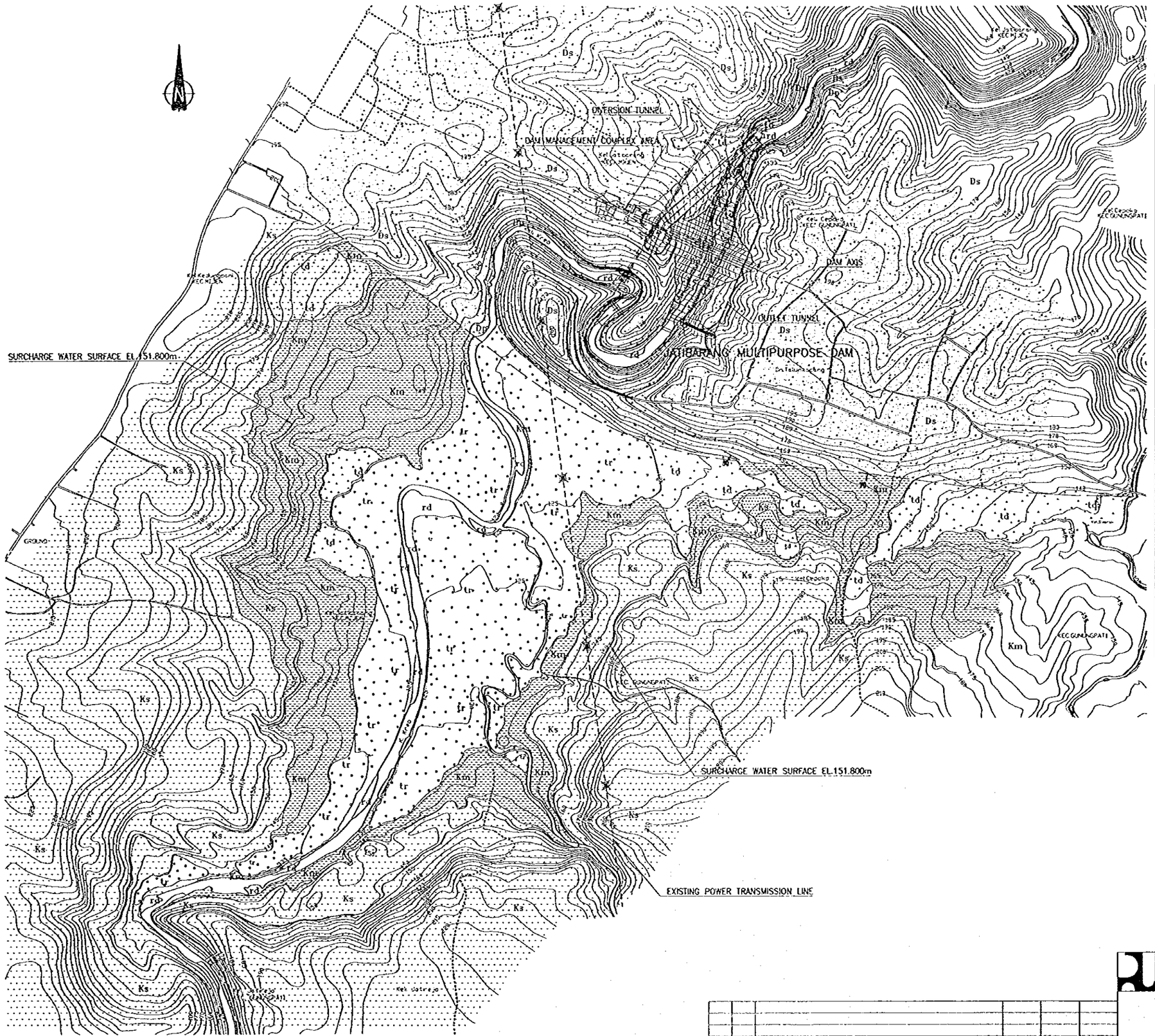



## LEGEND

(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, Kaligetas | Sedimentary Rock Unit | Ks | Kaligetas formation is distributed at the south side of a fault, which located 400 m 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. |
| | Pliocene–Pleistocene, 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. |
| | | 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

NOTE : THIS GEOLOGICAL MAP IS ONLY FOR REFERENCE.

SCALE 0 100 200 300 400m

| NO. | DATE | REVISIONS | ORIGINATED | DESIGNED | APPROVED |
|---|---|---|---|---|---|
| | | | | | |

THE REPUBLIC OF INDONESIA
MINISTRY OF PUBLIC WORKS
DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT AND DIRECTORATE GENERAL OF HUMAN SETTLEMENT

JRATUNSELUNA FLOOD CONTROL PROJECT
COMPONENT : JATIBARANG DAM CONSTRUCTION

GEOLOGY
RESERVOIR AND REGIONAL GEOLOGY

JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING CO., LTD in association with PACIFIC CONSULTANTS INTERNATIONAL, PADCO INTERNATIONAL INC.

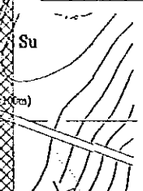
| | |
|---|---|
| DESIGNED | |
| CHECKED | |
| APPROVED | CHIEF OF PLANNING AND DESIGN |
| | PROJECT MANAGER |

| | |
|---|---|
| PROVINCE | CENTRAL JAVA |
| PROJECT NAME | FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA |
| DISTRICT | SEMARANG CITY |
| DRAWING NO. | JD-P1-GE-P1-1 |
| SHEET NO. | 5 |
| DATE | CONTRACT NO. |


# LEGEND

(Geological Strata)

| Age | | Formation and Strata Name | | Symbol | Description |
|---|---|---|---|---|---|
| Quaternary | Holocene | Riverbed deposit | | rd | riverbed deposit consists of Gravel, sand and clay. It contains the huge fallen rocks in the gorge area, which was made by Kreo river. |
| Quaternary | Holocene | Talus deposit | | td | Talus deposit consists of collapse soil and sand, detritus, fallen rocks. It is accumulated on the foot of mountainside slope and cliff. |
| Tertiary-Quaternary | Pliocene-Pleistocene | Damar | Upper Sedimentary Rock Unit | Su | The unit mainly consists of alternation of conglomerate, conglomeratic sandstone, tuffaceous sandstone and sandstone, and partly contains mafic tuff and volcanic conglomerate. The change of grain size of sandstone is big, and lamina is formed partly. The matrix of conglomerate consists of same material of sandstone, and gravel consists of andesite and pumice, and diameter of gravel is smaller than 50 cm. Cracks hardly develop in the bedrock, and the degree of cementation of conglomerate, tuffaceous sandstone, sandstone and tuff are comparatively low, and lower cementation layer is formed partly in sandstone and conglomerate. |
| Tertiary-Quaternary | Pliocene-Pleistocene | Damar | Upper Pyroclastic Rock Unit | Pu | The 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, and the hardness of rock is comparatively high. |
| Tertiary-Quaternary | Pliocene-Pleistocene | Damar | Middle Sedimentary Rock Unit | Sm1 | The unit mainly consists of alternation of conglomerate, conglomeratic sandstone, sandstone and tuffaceous sandstone, and partly contains mafic tuff. The facies of each rock and conditions of bedrock are almost same as the upper sedimentary rock unit. |




NOTE : THIS GEOLOGICAL MAP IS ONLY FOR REFERENCE.

BOUNDARY OF GEOLOGICAL UNIT AND STRATUM

(LOCATION OF BORE HOLES AND ADITS AT THE PHASE 1 INVESTIGATION)

: BORE HOLE (NUMBER, TOTAL DEPTH)

: ADIT (NUMBER, TOTAL LENGTH)

(LOCATUON OF BORING HOLES AND TEST PITS AT THE PHASE 2 INVESTIGATION)

: BORE HOLE (NUMBER, TOTAL DEPTH)

: TEST PIT (NUMBER)

SCALE 0 20 40 60 80 100m

| NO. | DATE | REVISIONS | ORIGINATED | DESIGNED | APPROVED |
|---|---|---|---|---|---|
| | | | | | |

THE REPUBLIC OF INDONESIA
MINISTRY OF PUBLIC WORKS
DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT AND DIRECTORATE GENERAL OF HUMAN SETTLEMENT

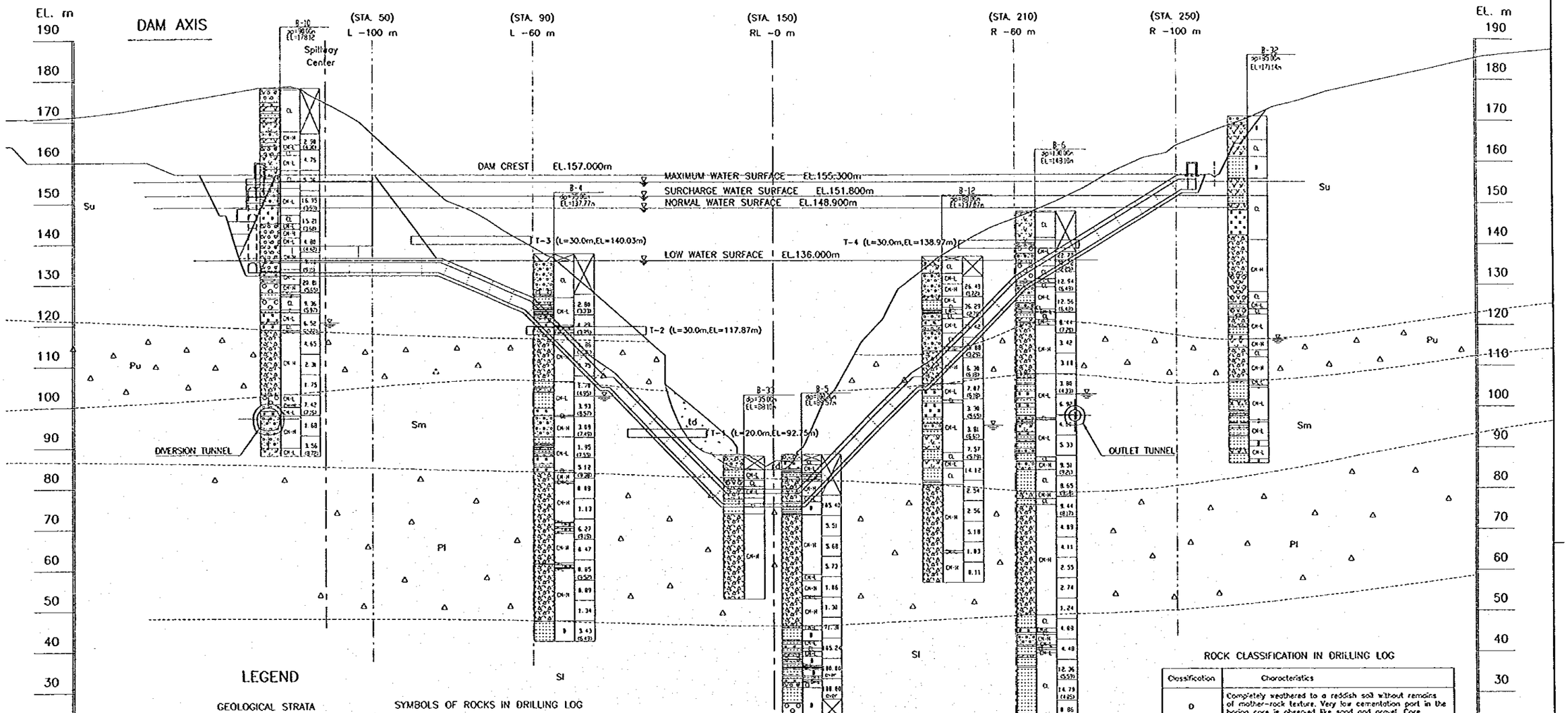
JRATUNSELUNA FLOOD CONTROL PROJECT
COMPONENT : JATIBARANG DAM CONSTRUCTION

GEOLOGY
GEOLOGICAL MAP AT DAMSITE

JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING CO., LTD IN ASSOCIATION WITH
PACIFIC CONSULTANTS INTERNATIONAL
PASCO INTERNATIONAL INC.

| | |
|---|---|
| DESIGNED | |
| CHECKED | |
| APPROVED | CHIEF OF PLANNING AND DESIGN |
| | PROJECT MANAGER |

| | |
|---|---|
| PROVINCE | CENTRAL JAVA |
| PROJECT NAME | FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA |
| DISTRICT | SEMARANG CITY |
| DRAWING NO. | JD-PI-GE-PI-2 |
| SHEET NO. | 6 |
| DATE | CONTRACT NO. |




## LEGEND

GEOLOGICAL STRATA

| Age | | Symbol | Formation and Strata Name |
|---|---|---|---|
| Quaternary | Holocene | | Riverbed deposit |
| | | | 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 |

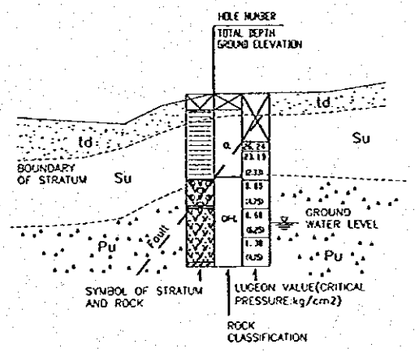
SYMBOLS OF ROCKS IN DRILLING LOG

| | | |
|---|---|---|
| Embankment | D | D Class |
| Top Soil | CL | CL-L Class |
| Riverbed Deposit | CM-L | CM-L Class |
| Talus Deposit | CM-H | CM-M Class |
| Conglomerate | | |
| Conglomeratic Sandstone | | |
| Sandstone | | |
| Siltstone | | |
| Tuffaceous Sandstone | | |
| Sandy Tuff | | |
| Tuff | | |
| Volcanic Conglomerate | | |
| Volcanic Breccia | | |
| Andesite Lava | | |

ROCK CLASSIFICATION IN DRILLING LOG

| Classification | Characteristics |
|---|---|
| D | Completely weathered to a reddish soil without remains of mother-rock texture. Very low cementation part in the boring core is observed like sand and gravel. Core recovery ratio ranges from 0 % to 50 %. |
| CL | Moderately to highly weathered to a brown soil although remains of mother-rock texture. The mineral grains are not decomposed. Low cementation part in a boring core is observed like sand and gravel. Core recovery ratio is more than 70 %. Unconfined compressive strength is less than 10 kgf/cm2. |
| CM-L | Slightly weathered to fresh rock that consists of mainly tuff, tuffaceous sandstone, sandstone and conglomerate. Rock fragment is slightly soft. This class with moderate degree of cementation contains the fresh part and the relatively weathered part, but they have the almost same hardness. Unconfined compressive strength ranges between 10 and 65 kgf/cm2. |
| CM-H | Slightly weathered to fresh rock that consists of mainly volcanic breccia, conglomeratic sandstone and volcanic conglomerate. Rock fragment is relatively hard. This class with high degree of cementation contains the fresh part and the relatively weathered part, but they have the almost same hardness. Unconfined compressive strength ranges between 22 and 92 kgf/cm2. |

DESCRIPTION ON THE DRAWING




SCALE 0 10 20 30 40 50m

NOTE

1. THIS GEOLOGICAL PROFILE IS ONLY FOR REFERENCE.

REFERENCE DRAWINGS

| | |
|---|---|
| JD-P1-GE-P1-2 | GEOLOGICAL MAP AT DAMSITE |
| JD-P1-GE-Pr-1 | GEOLOGICAL PROFILE ALONG DAM AXIS |

| NO. | DATE | REVISIONS | ORIGINATED | DESIGNED | APPROVED |
|---|---|---|---|---|---|
| | | | | | |

THE REPUBLIC OF INDONESIA
MINISTRY OF PUBLIC WORKS
DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT AND DIRECTORATE GENERAL OF HUMAN SETTLEMENT

JRATUNSELUNA FLOOD CONTROL PROJECT
COMPONENT : JATIBARANG DAM CONSTRUCTION

GEOLOGY
GEOLOGICAL PROFILE ALONG DAM AXIS

JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING CO., LTD IN ASSOCIATION WITH PACIFIC CONSULTANTS INTERNATIONAL, PASCO INTERNATIONAL INC.

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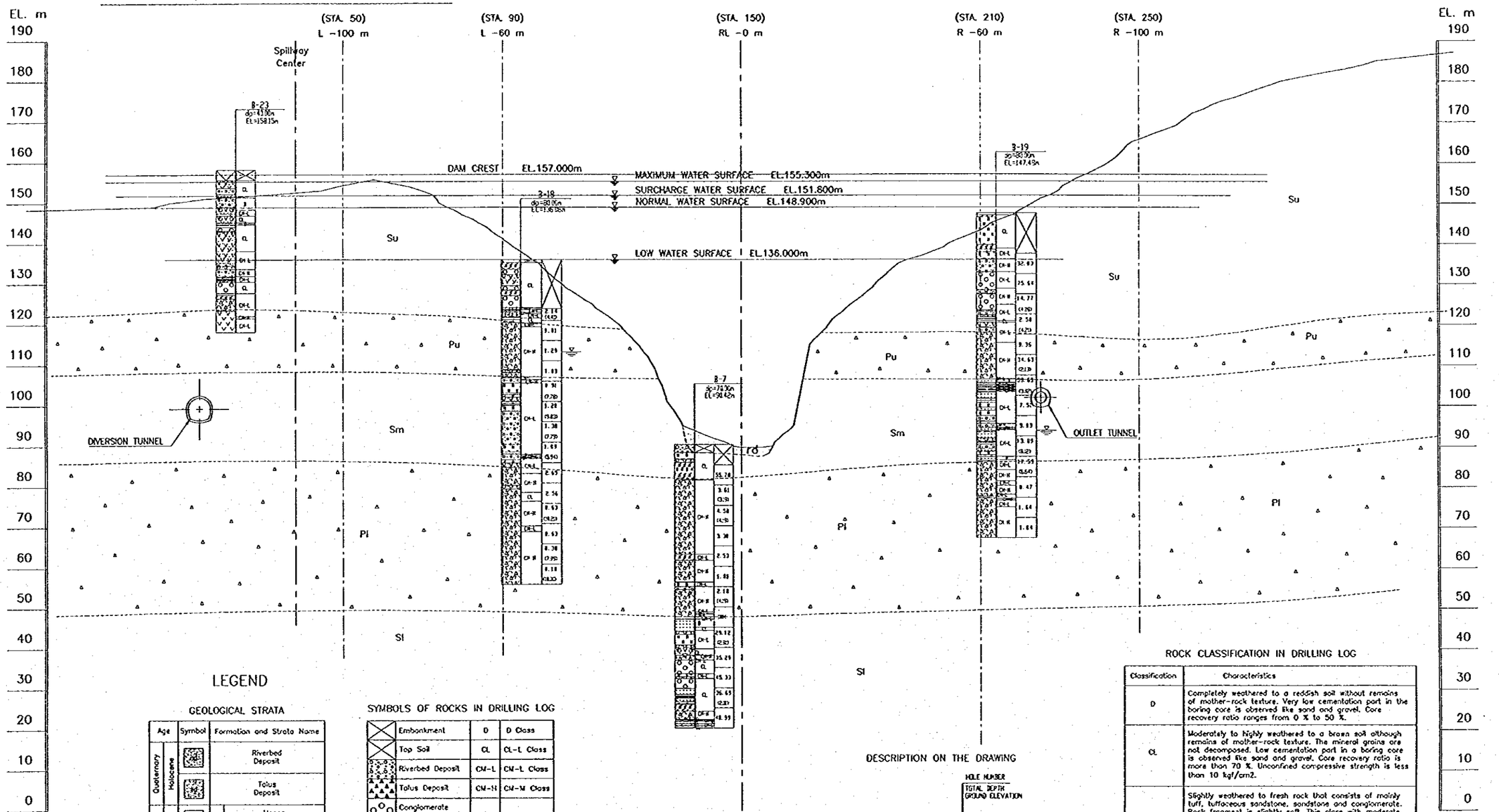
| DESIGNED | |
| CHECKED | |
| CHIEF OF PLANNING AND DESIGN | |
| APPROVED / PROJECT MANAGER | |

PROVINCE: CENTRAL JAVA
PROJECT NAME: FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA
DISTRICT: SEMARANG CITY
DRAWING NO. JD-P1-GE-Pr-1
SHEET NO. 7
DATE / CONTRACT NO.

## A–A LINE (60 m UPSTREAM OF DAM AXIS)




## LEGEND

### GEOLOGICAL STRATA

| Age | | Symbol | Formation and Strata Name |
|---|---|---|---|
| Quaternary | Holocene | | Riverbed Deposit |
| | | | Talus Deposit |
| Tertiary–Quaternary | Pliocene–Pleistocene | Su | Upper Sedimentary Rock Unit (Domar) |
| | | Pu | Upper Pyroclastic Rock Unit (Domar) |
| | | Sm | Middle Sedimentary Rock Unit (Domar) |
| | | Pl | Lower Pyroclastic Rock Unit (Domar) |
| | | Si | Lower Sedimentary Rock Unit (Domar) |

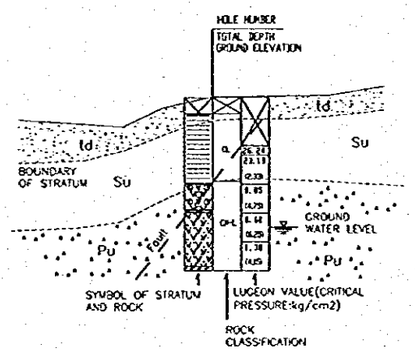
### SYMBOLS OF ROCKS IN DRILLING LOG

| | | D | D Class |
|---|---|---|---|
| | Embankment | | |
| | Top Soil | CL | CL-L Class |
| | Riverbed Deposit | CM-L | CM-L Class |
| | Talus Deposit | CM-H | CM-M Class |
| | Conglomerate | | |
| | Conglomeratic Sandstone | | |
| | Sandstone | | |
| | Siltstone | | |
| | Tuffaceous Sandstone | | |
| | Sandy Tuff | | |
| | Tuff | | |
| | Volcanic Conglomerate | | |
| | Volcanic Breccia | | |
| | Andesite Lava | | |

### ROCK CLASSIFICATION IN DRILLING LOG

| Classification | Characteristics |
|---|---|
| D | Completely weathered to a reddish soil without remains of mother-rock texture. Very low cementation part in the boring core is observed like sand and gravel. Core recovery ratio ranges from 0 % to 50 %. |
| CL | Moderately to highly weathered to a brown soil although remains of mother-rock texture. The mineral grains are not decomposed. Low cementation part in a boring core is observed like sand and gravel. Core recovery ratio is more than 70 %. Unconfined compressive strength is less than 10 kgf/cm2. |
| CM-L | Slightly weathered to fresh rock that consists of mainly tuff, tuffaceous sandstone, sandstone and conglomerate. Rock fragment is slightly soft. This class with moderate degree of cementation contains the fresh part and the relatively weathered part, but they have the almost same hardness. Unconfined compressive strength ranges between 10 and 65 kgf/cm2. |
| CM-H | Slightly weathered to fresh rock that consists of mainly volcanic breccia, conglomeratic sandstone and volcanic conglomerate. Rock fragment is relatively hard. This class with high degree of cementation contains the fresh part and the relatively weathered part, but they have the almost same hardness. Unconfined compressive strength ranges between 22 and 92 kgf/cm2. |

### DESCRIPTION ON THE DRAWING




SCALE 0 10 20 30 40 50m

### NOTES

1. A–A LINE IS REFERRED FROM DRAWING NO. JD–P1–GE–Pl–2.
2. THIS GEOLOGICAL PROFILE IS ONLY FOR REFERENCE.

### REFERENCE DRAWINGS

| | |
|---|---|
| JD–P1–GE–Pl–2 | GEOLOGICAL MAP AT DAMSITE |
| JD–P1–GE–Pr–1 | GEOLOGICAL PROFILE ALONG DAM AXIS |

| NO. | DATE | REVISIONS | ORIGINATED | DESIGNED | APPROVED |
|---|---|---|---|---|---|
| | | | | | |

THE REPUBLIC OF INDONESIA
MINISTRY OF PUBLIC WORKS
DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT AND DIRECTORATE GENERAL OF HUMAN SETTLEMENT

JRATUNSELUNA FLOOD CONTROL PROJECT
COMPONENT : JATIBARANG DAM CONSTRUCTION

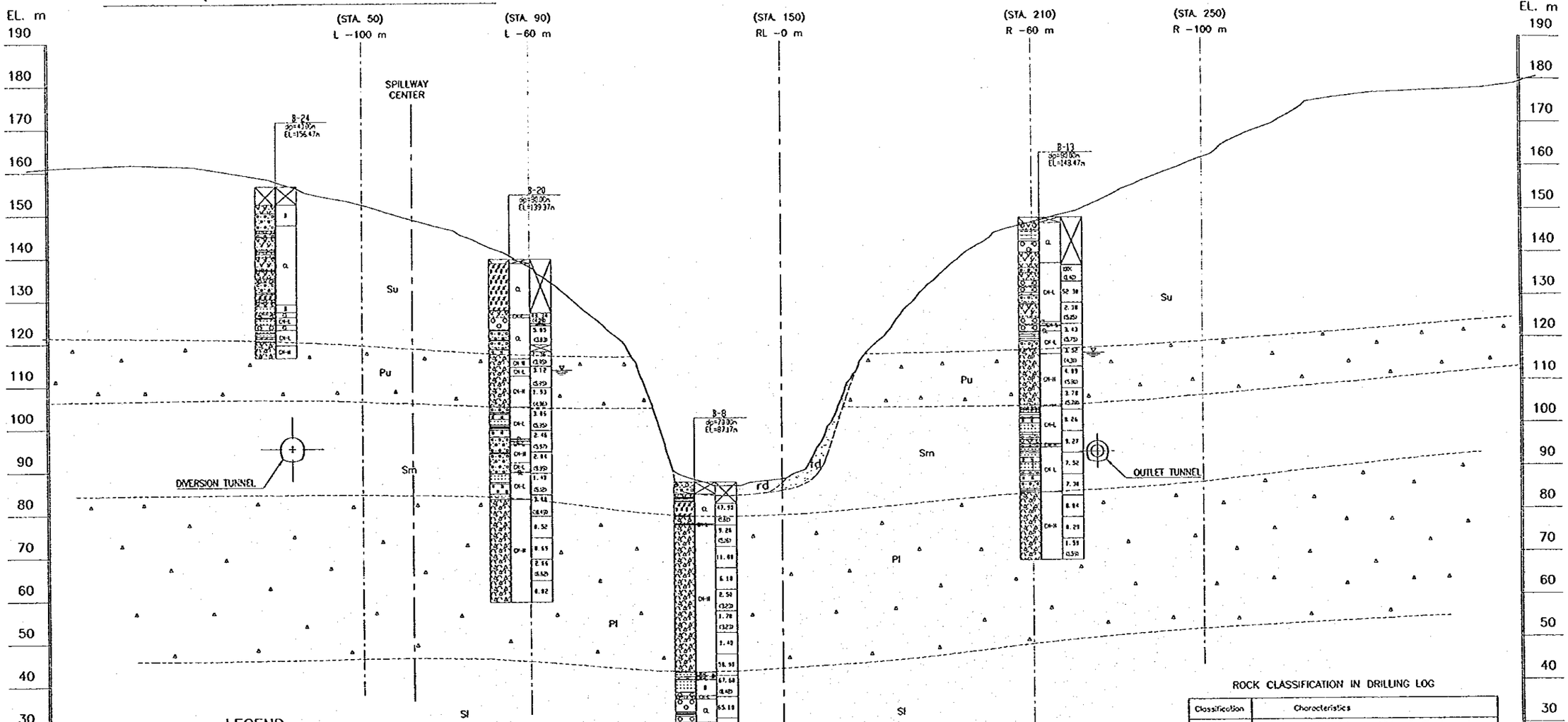
GEOLOGY
GEOLOGICAL PROFILE ALONG A–A LINE

JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING CO., LTD in association with PACIFIC CONSULTANTS INTERNATIONAL, PASCO INTERNATIONAL INC

DESIGNED | CHECKED | APPROVED | CHIEF OF PLANNING AND DESIGN | PROJECT MANAGER

PROVINCE: CENTRAL JAVA
PROJECT NAME: FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA
DISTRICT: SEMARANG CITY
DRAWING NO. JD–P1–GE–Pr–2
SHEET NO. 8
DATE | CONTRACT NO.

# B--B LINE (60 m DOWNSTREAM OF DAM AXIS)




## 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 |

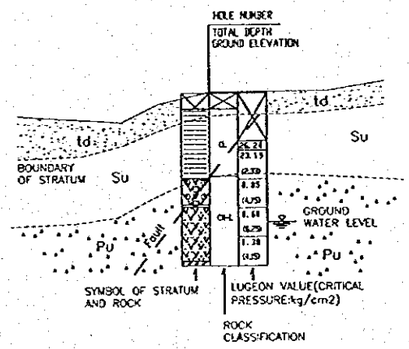
SYMBOLS OF ROCKS IN DRILLING LOG

| | D | D Class |
|---|---|---|
| Embankment | | |
| Top Soil | CL | CL-L Class |
| Riverbed Deposit | CM-L | CM-L Class |
| Talus Deposit | CM-H | CM-M Class |
| Conglomerate | | |
| Conglomeratic Sandstone | | |
| Sandstone | | |
| Siltstone | | |
| Tuffaceous Sandstone | | |
| Sandy Tuff | | |
| Tuff | | |
| Volcanic Conglomerate | | |
| Volcanic Breccia | | |
| Andesite Lava | | |

ROCK CLASSIFICATION IN DRILLING LOG

| Classification | Characteristics |
|---|---|
| D | Completely weathered to a reddish soil without remains of mother-rock texture. Very low cementation part in the boring core is observed like sand and gravel. Core recovery ratio ranges from 0 % to 50 %. |
| CL | Moderately to highly weathered to a brown soil although remains of mother-rock texture. The mineral grains are not decomposed. Low cementation part in a boring core is observed like sand and gravel. Core recovery ratio is more than 70 %. Unconfined compressive strength is less than 10 kgf/cm2. |
| CM-L | Slightly weathered to fresh rock that consists of mainly tuff, tuffaceous sandstone, sandstone and conglomerate. Rock fragment is slightly soft. This class with moderate degree of cementation contains the fresh part and the relatively weathered part, but they have the almost same hardness. Unconfined compressive strength ranges between 10 and 65 kgf/cm2. |
| CM-H | Slightly weathered to fresh rock that consists of mainly volcanic breccia, conglomeratic sandstone and volcanic conglomerate. Rock fragment is relatively hard. This class with high degree of cementation contains the fresh part and the relatively weathered part, but they have the almost same hardness. Unconfined compressive strength ranges between 22 and 92 kgf/cm2. |

DESCRIPTION ON THE DRAWING




SCALE 0 10 20 30 40 50m

## NOTES

1. B-B LINE IS REFERRED FROM DRAWING NO. JD-P1-GE-P1-2.
2. THIS GEOLOGICAL PROFILE IS ONLY FOR REFERENCE.

## REFERENCE DRAWINGS

JD-P1-GE-P1-2 GEOLOGICAL MAP AT DAMSITE
JD-P1-GE-Pr-1 GEOLOGICAL PROFILE ALONG DAM AXIS

| NO. | DATE | REVISIONS | ORIGINATED | DESIGNED | APPROVED |
|---|---|---|---|---|---|
| | | | | | |

THE REPUBLIC OF INDONESIA
MINISTRY OF PUBLIC WORKS
DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT AND DIRECTORATE GENERAL OF HUMAN SETTLEMENT

JRATUNSELUNA FLOOD CONTROL PROJECT
COMPONENT : JATIBARANG DAM CONSTRUCTION

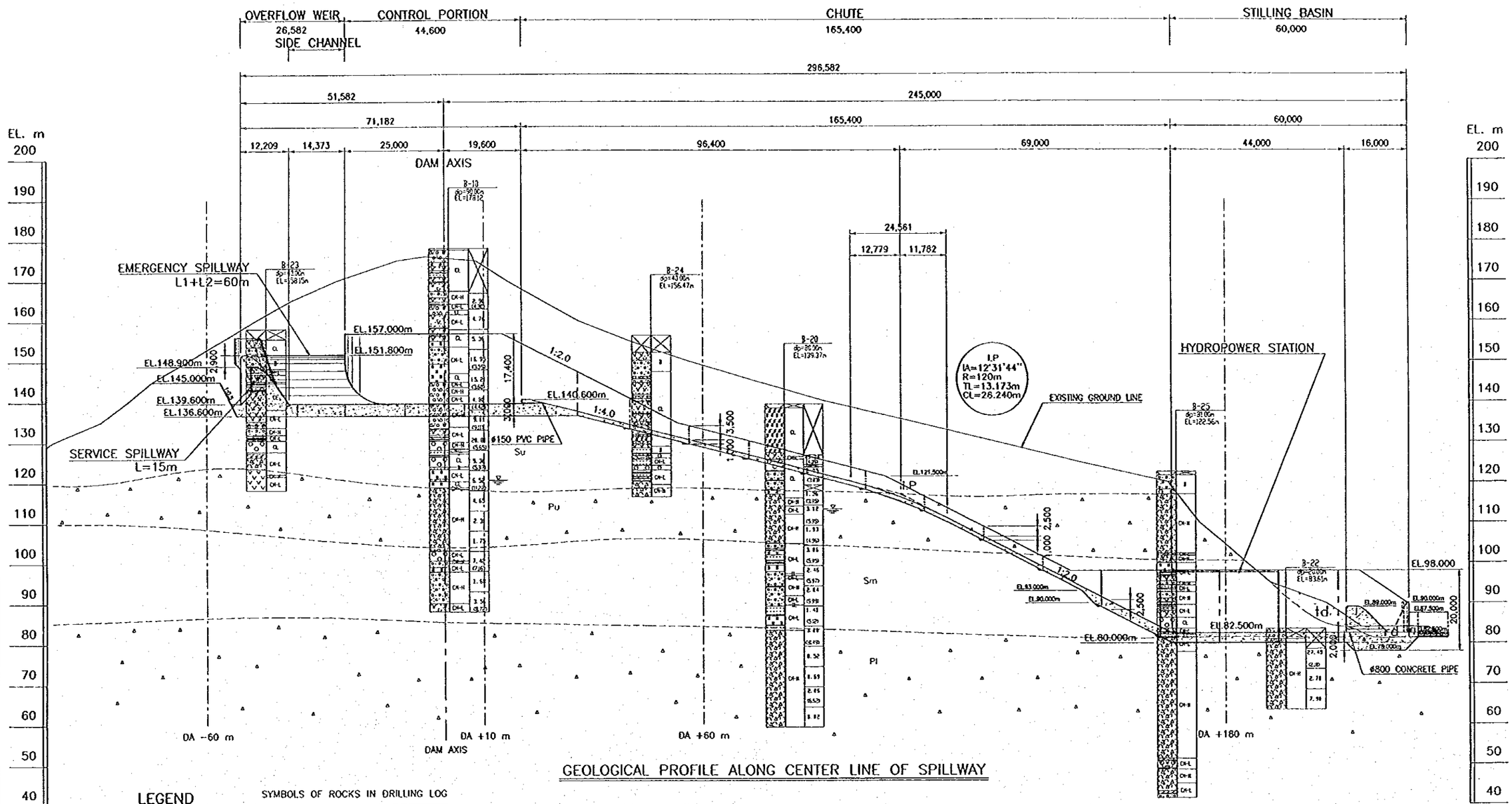
GEOLOGY
GEOLOGICAL PROFILE ALONG B-B LINE

JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING CO., LTD
PACIFIC CONSULTANTS INTERNATIONAL
PASCO INTERNATIONAL INC.

DESIGNED | CHECKED | APPROVED

CHIEF OF PLANNING AND DESIGN
PROJECT MANAGER

PROVINCE: CENTRAL JAVA
PROJECT NAME: FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA
DISTRICT: SEMARANG CITY
DRAWING NO. JD-P1-GE-Pr-3
SHEET NO. 9
DATE | CONTRACT NO.




## GEOLOGICAL PROFILE ALONG CENTER LINE OF SPILLWAY

### LEGEND

GEOLOGICAL STRATA

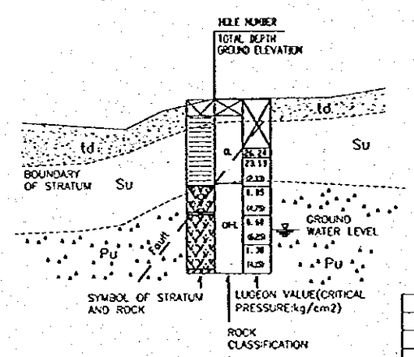
| Age | | Symbol | Formation and Strata Name |
|---|---|---|---|
| Quaternary | Holocene | | Riverbed Deposit |
| | | td | Talus Deposit |
| Tertiary~Quaternary | Pliocene~Pleistocene | Su | Upper Sedimentary Rock Unit |
| | | Pu | Upper Pyroclastic Rock Unit |
| | | Sm | Middle Sedimentary Rock Unit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

Damar

SYMBOLS OF ROCKS IN DRILLING LOG

| | | | |
|---|---|---|---|
| | Embankment | D | D Class |
| | Top Soil | CL | CL-L Class |
| | Riverbed Deposit | CM-L | CM-L Class |
| | Talus Deposit | CM-H | CM-M Class |
| | Conglomerate | | |
| | Conglomeratic Sandstone | | |
| | Sandstone | | |
| | Siltstone | | |
| | Tuffaceous Sandstone | | |
| | Sandy Tuff | | |
| | Tuff | | |
| | Volcanic Conglomerate | | |
| | Volcanic Breccia | | |
| | Andesite Lava | | |

DESCRIPTION ON THE DRAWING




### NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS, UNLESS OTHERWISE NOTED.
2. FOR SYMBOLS OF ROCKS AND ROCK CLASSIFICATION IN DRILLING LOG, SEE DRAWING NO. JD-P1-GE-Pr-1.
3. THIS GEOLOGICAL PROFILE IS ONLY FOR REFERENCE.

### REFERENCE DRAWINGS

JD-P1-GE-Pl-2 GEOLOGICAL MAP AT DAMSITE
JD-P1-GE-Pr-1 GEOLOGICAL PROFILE ALONG DAM AXIS

SCALE 0 25 50m

| NO. | DATE | REVISIONS | ORIGINATED | DESIGNED | APPROVED |
|---|---|---|---|---|---|
| | | | | | |

THE REPUBLIC OF INDONESIA
MINISTRY OF PUBLIC WORKS
DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT AND DIRECTORATE GENERAL OF HUMAN SETTLEMENT

IRATUNSELUNA FLOOD CONTROL PROJECT
COMPONENT : JATIBARANG DAM CONSTRUCTION

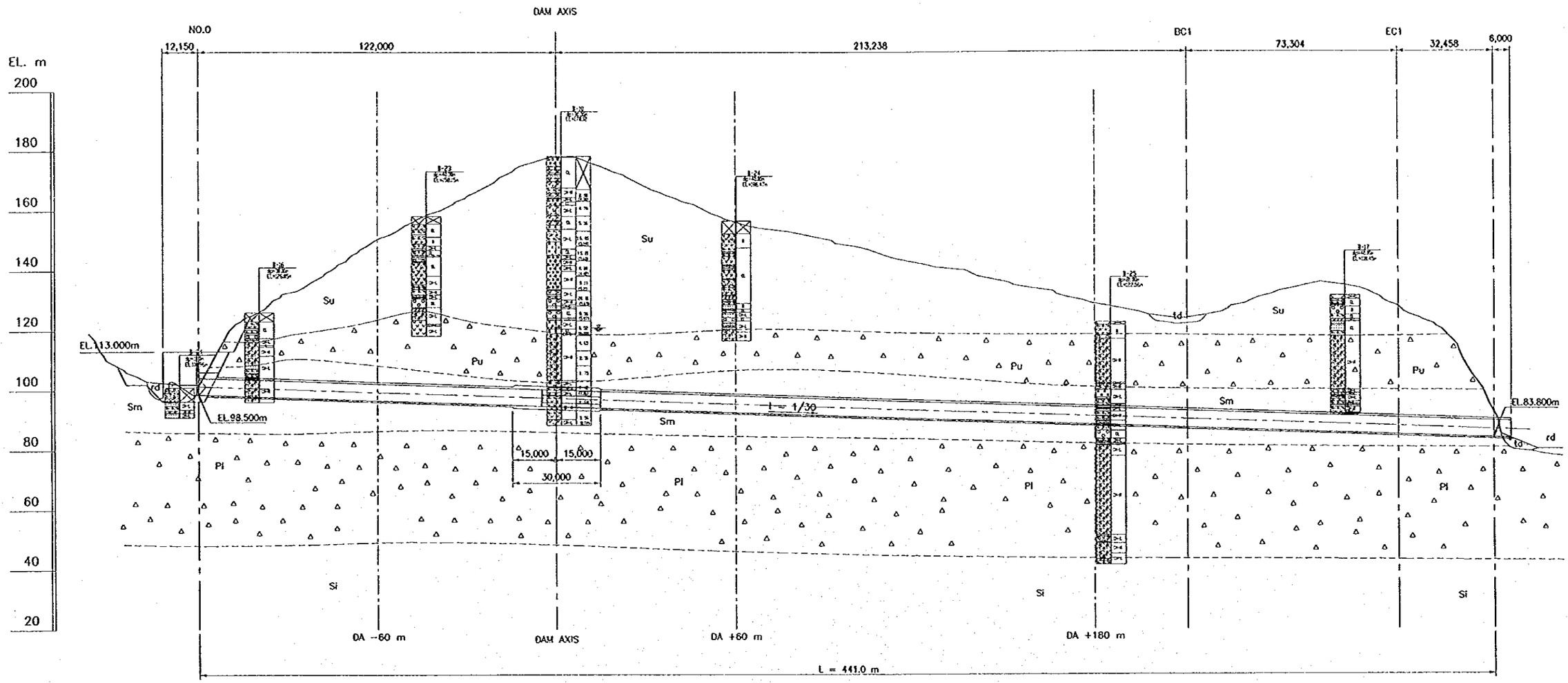
GEOLOGY

GEOLOGICAL PROFILE ALONG CENTER LINE OF SPILLWAY

JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING CO., LTD in association with
PACIFIC CONSULTANTS INTERNATIONAL
PASCO INTERNATIONAL INC

DESIGNED | CHECKED | APPROVED | CHIEF OF PLANNING AND DESIGN | PROJECT MANAGER

PROVINCE: CENTRAL JAVA
PROJECT NAME: FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA
DISTRICT: SEMARANG CITY
DRAWING NO. JD-P1-GE-Pr-4
SHEET NO. 10
DATE | CONTRACT NO.




# GEOLOGICAL PROFILE ALONG CENTER LINE OF DIVERSION TUNNEL

## LEGEND

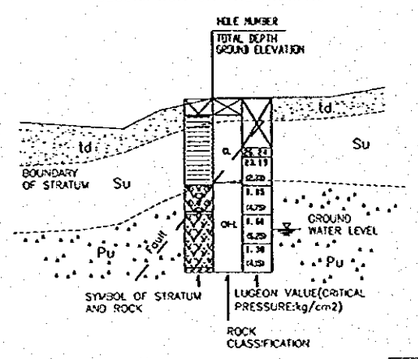
GEOLOGICAL STRATA

| Age | | Symbol | Formation and Strata Name |
|---|---|---|---|
| Quaternary | Holocene | | Riverbed Deposit |
| | | Td | Talus Deposit |
| Tertiary–Quaternary | Pliocene–Pleistocene | Su | Upper Sedimentary Rock Unit (Damar) |
| | | Pu | Upper Pyroclastic Rock Unit (Damar) |
| | | Sm | Middle Sedimentary Rock Unit (Damar) |
| | | Pl | Lower Pyroclastic Rock Unit (Damar) |
| | | Si | Lower Sedimentary Rock Unit (Damar) |

SYMBOLS OF ROCKS IN DRILLING LOG

| | | | |
|---|---|---|---|
| | Embankment | D | D Class |
| | Top Soil | CL | CL-L Class |
| | Riverbed Deposit | CM-L | CM-L Class |
| | Talus Deposit | CM-H | CM-M Class |
| | Conglomerate | | |
| | Conglomeratic Sandstone | | |
| | Sandstone | | |
| | Siltstone | | |
| | Tuffaceous Sandstone | | |
| | Sandy Tuff | | |
| | Tuff | | |
| | Volcanic Conglomerate | | |
| | Volcanic Breccia | | |
| | Andesite Lava | | |

DESCRIPTION ON THE DRAWING




## NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS, UNLESS OTHERWISE NOTED.
2. FOR SYMBOLS OF ROCKS AND ROCK CLASSIFICATION IN DRILLING LOG, SEE DRAWING NO. JD-P1-GE-Pr-1.
3. THIS GEOLOGICAL PROFILE IS ONLY FOR REFERENCE.

## REFERENCE DRAWINGS

JD-P1-GE-Pl-2 GEOLOGICAL MAP AT DAMSITE
JD-P1-GE-Pr-1 GEOLOGICAL PROFILE ALONG DAM AXIS

SCALE 0 20 40 60 80m

| NO. | DATE | REVISIONS | ORIGINATED | DESIGNED | APPROVED |
|---|---|---|---|---|---|
| | | | | | |

THE REPUBLIC OF INDONESIA
MINISTRY OF PUBLIC WORKS
DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT AND DIRECTORATE GENERAL OF HUMAN SETTLEMENT

JRATUNSELUNA FLOOD CONTROL PROJECT
COMPONENT : JATIBARANG DAM CONSTRUCTION

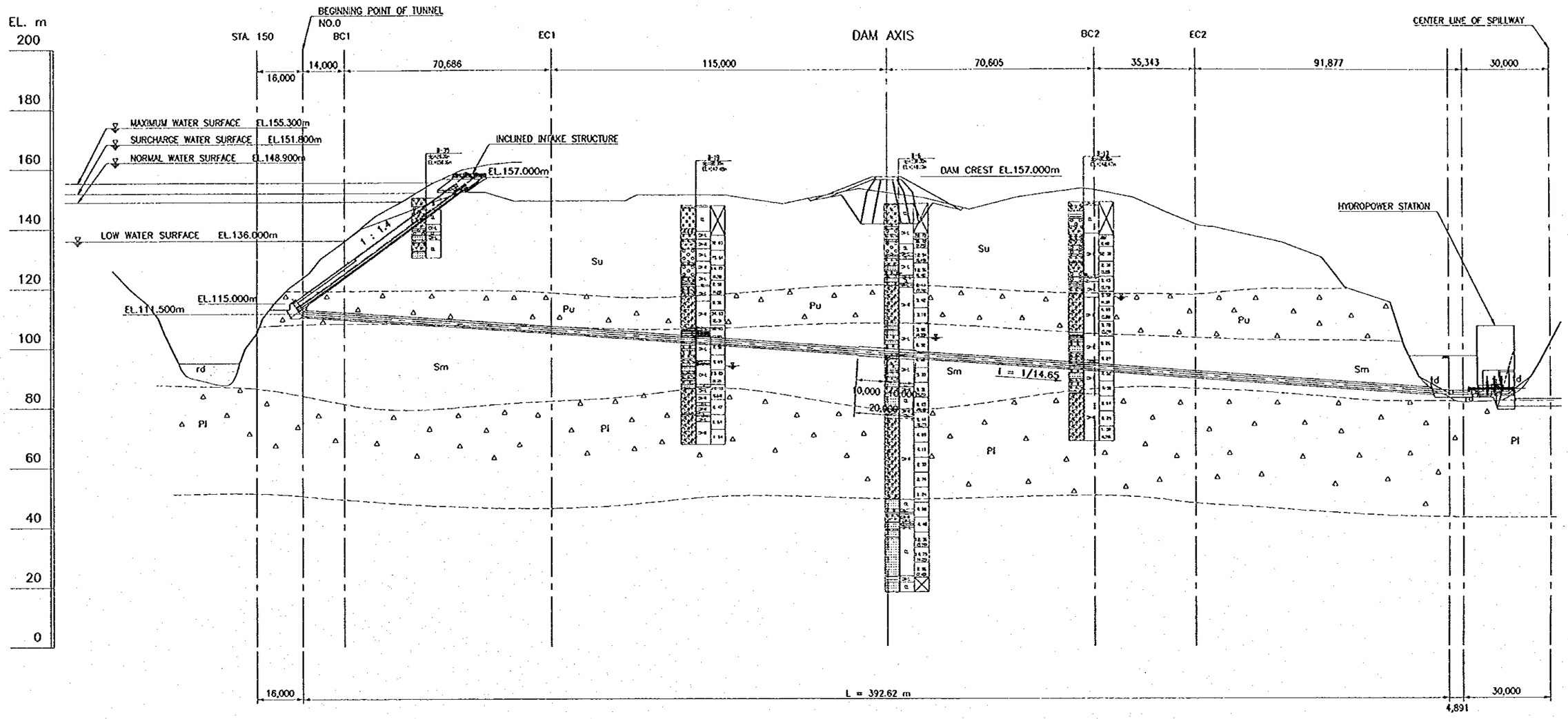
GEOLOGY

GEOLOGICAL PROFILE ALONG CENTER LINE OF DIVERSION TUNNEL

JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING CO., LTD in association with PACIFIC CONSULTANTS INTERNATIONAL, PADCO INTERNATIONAL INC.

DESIGNED
CHECKED
APPROVED
CHIEF OF PLANNING AND DESIGN
PROJECT MANAGER

PROVINCE: CENTRAL JAVA
PROJECT NAME: FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA
DISTRICT: SEMARANG CITY
DRAWING NO. JD-P1-GE-Pr-5
SHEET NO. 11
DATE
CONTRACT NO.




# GEOLOGICAL PROFILE ALONG CENTER LINE OF OUTLET TUNNEL

## LEGEND

GEOLOGICAL STRATA

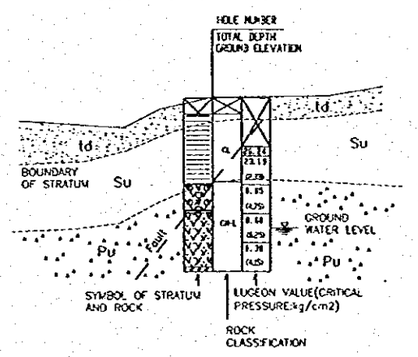
| Age | | Symbol | Formation and Strata Name |
|---|---|---|---|
| Quaternary | Holocene | rd | Riverbed Deposit |
| | | td | Talus Deposit |
| Tertiary–Quaternary | Pliocene–Pleistocene | Su | Upper Sedimentary Rock Unit |
| | | Pu | Upper Pyroclastic Rock Unit |
| | | Sm | Middle Sedimentary Rock Unit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

Damar

SYMBOLS OF ROCKS IN DRILLING LOG

| | | | |
|---|---|---|---|
| | Embankment | D | D Class |
| | Top Soil | CL | CL-L Class |
| | Riverbed Deposit | CM-L | CM-L Class |
| | Talus Deposit | CM-H | CM-M Class |
| | Conglomerate | | |
| | Conglomeratic Sandstone | | |
| | Sandstone | | |
| | Siltstone | | |
| | Tuffaceous Sandstone | | |
| | Sandy Tuff | | |
| | Tuff | | |
| | Volcanic Conglomerate | | |
| | Volcanic Breccia | | |
| | Andesite Lava | | |

DESCRIPTION ON THE DRAWING




## NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE NOTED.
2. FOR SYMBOLS OF ROCKS AND ROCK CLASSIFICATION IN DRILLING LOG, SEE DRAWING NO. JD-P1-GE-Pr-1.
3. THIS GEOLOGICAL PROFILE IS ONLY FOR REFERENCE.

## REFERENCE DRAWINGS

JD-P1-GE-Pl-2 GEOLOGICAL MAP AT DAMSITE
JD-P1-GE-Pr-1 GEOLOGICAL PROFILE ALONG DAM AXIS

SCALE 0 20 40 60 80m

THE REPUBLIC OF INDONESIA
MINISTRY OF PUBLIC WORKS
DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT AND DIRECTORATE GENERAL OF HUMAN SETTLEMENT

JRATUNSELUNA FLOOD CONTROL PROJECT
COMPONENT : JATIBARANG DAM CONSTRUCTION

GEOLOGY

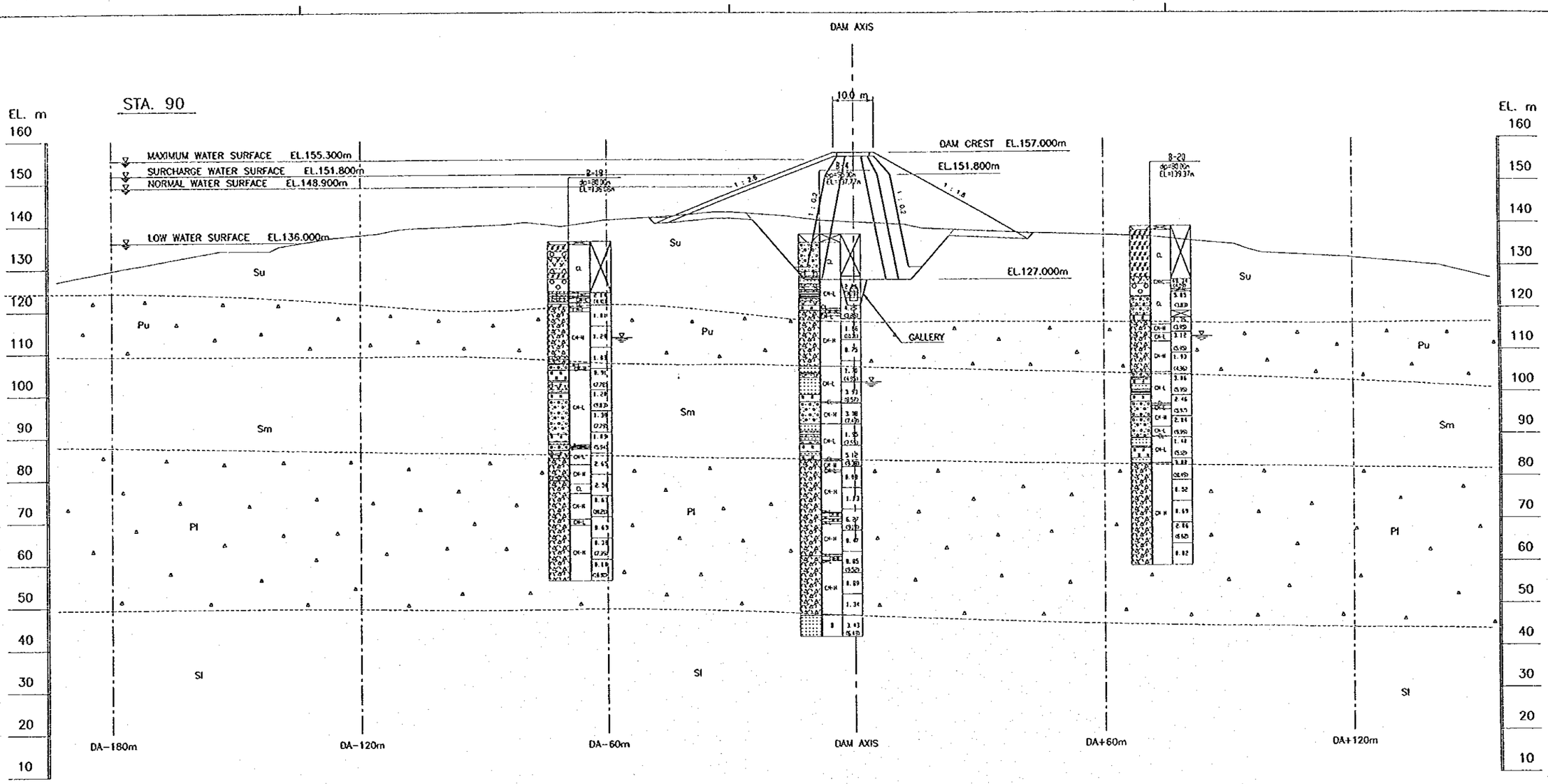
GEOLOGICAL PROFILE ALONG CENTER LINE OF OUTLET TUNNEL

JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING CO., LTD in ASSOCIATION WITH PACIFIC CONSULTANTS INTERNATIONAL, PASCO INTERNATIONAL INC.

DESIGNED | CHECKED | APPROVED | CHIEF OF PLANNING AND DESIGN | PROJECT MANAGER

PROVINCE: CENTRAL JAVA
PROJECT NAME: FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA
DISTRICT: SEMARANG CITY
DRAWING NO. JD-P1-GE-Pr-6
SHEET NO. 12
DATE | CONTRACT NO.

| NO. | DATE | REVISIONS | ORIGINATED | DESIGNED | APPROVED |
|---|---|---|---|---|---|




## LEGEND

GEOLOGICAL STRATA

| Age | | Symbol | Formation and Strata Name |
|---|---|---|---|
| Quaternary | Holocene | | Riverbed Deposit |
| | | | 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 |

Damar

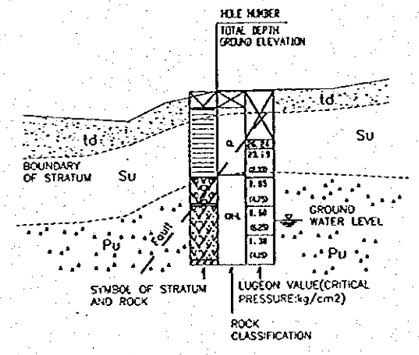
SYMBOLS OF ROCKS IN DRILLING LOG

| | | |
|---|---|---|
| Embankment | D | D Class |
| Top Soil | CL | CL-L Class |
| Riverbed Deposit | CM-L | CM-L Class |
| Talus Deposit | CM-H | CM-M Class |
| Conglomerate | | |
| Conglomeratic Sandstone | | |
| Sandstone | | |
| Siltstone | | |
| Tuffaceous Sandstone | | |
| Sandy Tuff | | |
| Tuff | | |
| Volcanic Conglomerate | | |
| Volcanic Breccia | | |
| Andesite Lava | | |

ROCK CLASSIFICATION IN DRILLING LOG

| Classification | Characteristics |
|---|---|
| D | Completely weathered to a reddish soil without remains of mother-rock texture. Very low cementation part in the boring core is observed like sand and gravel. Core recovery ratio ranges from 0 % to 50 %. |
| CL | Moderately to highly weathered to a brown soil although remains of mother-rock texture. The mineral grains are not decomposed. Low cementation part in a boring core is observed like sand and gravel. Core recovery ratio is more than 70 %. Unconfined compressive strength is less than 10 kgf/cm2. |
| CM-L | Slightly weathered to fresh rock that consists of mainly tuff, tuffaceous sandstone, sandstone and conglomerate. Rock fragment is slightly soft. This class with moderate degree of cementation contains the fresh part and the relatively weathered part, but they have the almost same hardness. Unconfined compressive strength ranges between 10 and 65 kgf/cm2. |
| CM-H | Slightly weathered to fresh rock that consists of mainly volcanic breccia, conglomeratic sandstone and volcanic conglomerate. Rock fragment is relatively hard. This class with high degree of cementation contains the fresh part and the relatively weathered part, but they have the almost same hardness. Unconfined compressive strength ranges between 22 and 92 kgf/cm2. |

DESCRIPTION ON THE DRAWING




NOTES

1. STA. 90 IS REFERRED FROM DRAWING NO. JD-P1-GE-P1-2.
2. THIS GEOLOGICAL SECTION IS ONLY FOR REFERENCE.

REFERENCE DRAWINGS

| | |
|---|---|
| JD-P1-GE-P1-2 | GEOLOGICAL MAP AT DAMSITE |
| JD-P1-GE-Pr-1 | GEOLOGICAL PROFILE ALONG DAM AXIS |

SCALE 0 10 20 30 40 50m

| NO. | DATE | REVISIONS | ORIGINATED | DESIGNED | APPROVED |
|---|---|---|---|---|---|
| | | | | | |

THE REPUBLIC OF INDONESIA
MINISTRY OF PUBLIC WORKS
DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT AND DIRECTORATE GENERAL OF HUMAN SETTLEMENT

JRATUNSELUNA FLOOD CONTROL PROJECT
COMPONENT : JATIBARANG DAM CONSTRUCTION

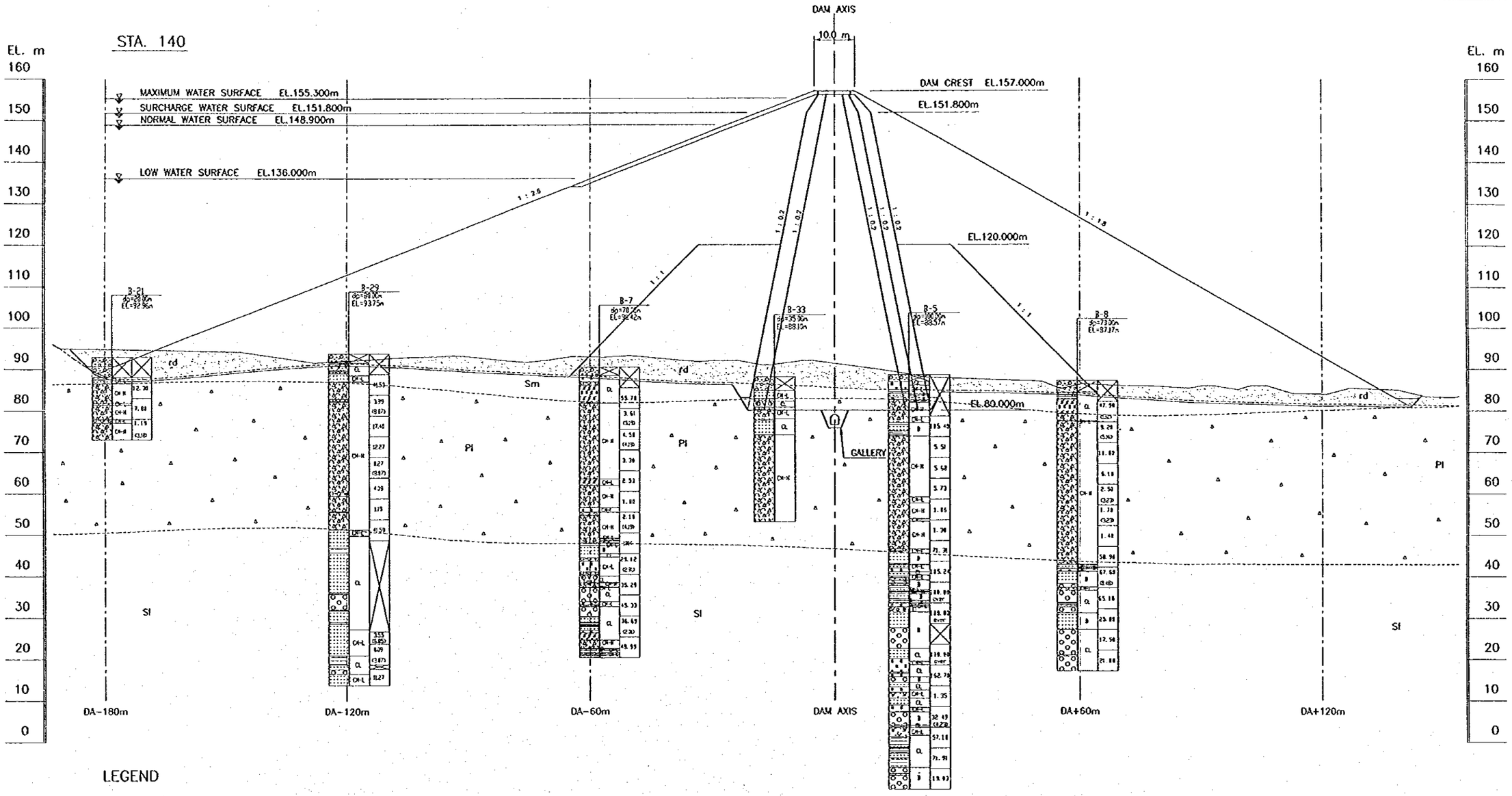
GEOLOGY
GEOLOGICAL CROSS SECTION (STA. 90)

JAYAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING CO., LTD in ASSOCIATION WITH PACIFIC CONSULTANTS INTERNATIONAL FARCO INTERNATIONAL INC

DESIGNED
CHECKED
APPROVED
CHIEF OF PLANNING AND DESIGN
PROJECT MANAGER

PROVINCE: CENTRAL JAVA
PROJECT NAME: FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA
DISTRICT: SEMARANG CITY
DRAWING NO. JD-P1-GE-Cr-1
SHEET NO. 13
DATE
CONTRACT NO.

# STA. 140




## 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 | Dormer |
| | | Pu | Upper Pyroclastic Rock Unit | |
| | | Sm | Middle Sedimentary Rock Unit | |
| | | Pl | Lower Pyroclastic Rock Unit | |
| | | Sl | Lower Sedimentary Rock Unit | |

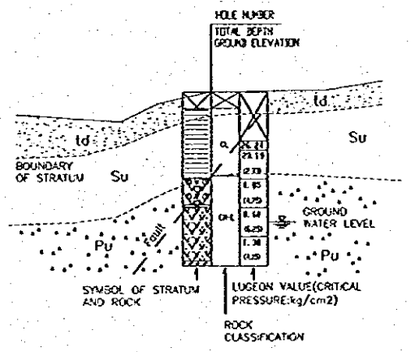
SYMBOLS OF ROCKS IN DRILLING LOG

| | | | |
|---|---|---|---|
| | Embankment | D | D Class |
| | Top Soil | CL | CL-L Class |
| | Riverbed Deposit | CM-L | CM-L Class |
| | Talus Deposit | CM-H | CM-M Class |
| | Conglomerate | | |
| | Conglomeratic Sandstone | | |
| | Sandstone | | |
| | Siltstone | | |
| | Tuffaceous Sandstone | | |
| | Sandy Tuff | | |
| | Tuff | | |
| | Volcanic Conglomerate | | |
| | Volcanic Breccia | | |
| | Andesite Lava | | |

ROCK CLASSIFICATION IN DRILLING LOG

| Classification | Characteristics |
|---|---|
| D | Completely weathered to a reddish soil without remains of mother-rock texture. Very low cementation part in the boring core is observed like sand and gravel. Core recovery ratio ranges from 0 % to 50 %. |
| CL | Moderately to highly weathered to a brown soil although remains of mother-rock texture. The mineral grains are not decomposed. Low cementation part in a boring core is observed like sand and gravel. Core recovery ratio is more than 70 %. Unconfined compressive strength is less than 10 kgf/cm2. |
| CM-L | Slightly weathered to fresh rock that consists of mainly tuff, tuffaceous sandstone, sandstone and conglomerate. Rock fragment is slightly soft. This class with moderate degree of cementation contains the fresh part and the relatively weathered part, but they have the almost same hardness. Unconfined compressive strength ranges between 10 and 65 kgf/cm2. |
| CM-H | Slightly weathered to fresh rock that consists of mainly volcanic breccia, conglomeratic sandstone and volcanic conglomerate. Rock fragment is relatively hard. This class with high degree of cementation contains the fresh part and the relatively weathered part, but they have the almost same hardness. Unconfined compressive strength ranges between 22 and 92 kgf/cm2. |

DESCRIPTION ON THE DRAWING




## NOTES

1. STA. 140 IS REFERRED FROM DRAWING NO. JD--P1--GE--Pl--2.
2. THIS GEOLOGICAL SECTION IS ONLY FOR REFERENCE.

## REFERENCE DRAWINGS

| | |
|---|---|
| JD--P1--GE--Pl--2 | GEOLOGICAL MAP AT DAMSITE |
| JD--P1--GE--Pr--1 | GEOLOGICAL PROFILE ALONG DAM AXIS |

SCALE 0 10 20 30 40 50m

| NO. | DATE | REVISIONS | ORIGINATED | DESIGNED | APPROVED |
|---|---|---|---|---|---|
| | | | | | |

THE REPUBLIC OF INDONESIA
MINISTRY OF PUBLIC WORKS
DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT
AND DIRECTORATE GENERAL OF HUMAN SETTLEMENT

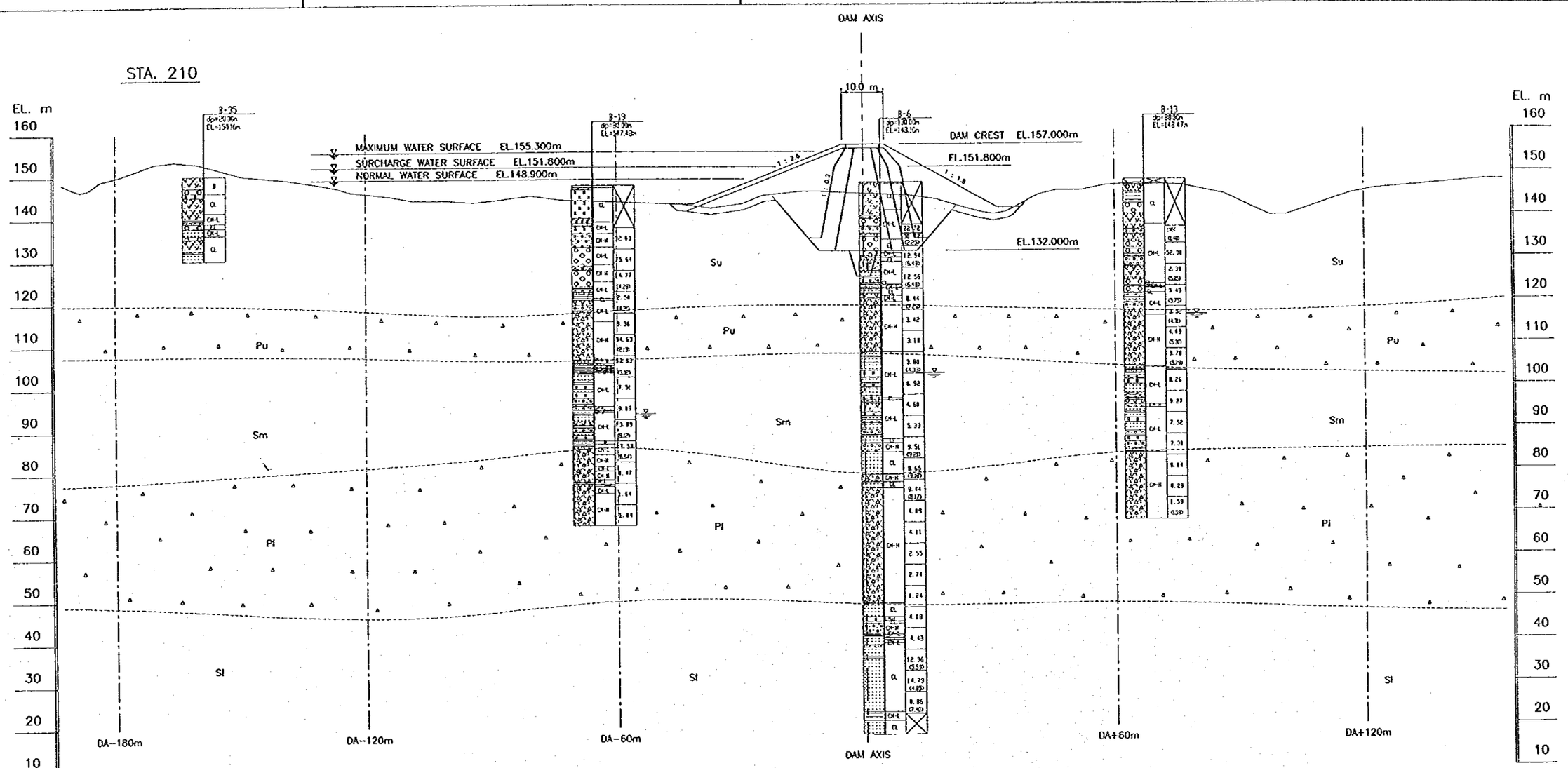
JRATUNSELUNA FLOOD CONTROL PROJECT
COMPONENT : JATIBARANG DAM CONSTRUCTION

GEOLOGY
GEOLOGICAL CROSS SECTION (STA. 140)

JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING CO., LTD
PACIFIC CONSULTANTS INTERNATIONAL
PASCO INTERNATIONAL INC.

DESIGNED
CHECKED
APPROVED
CHIEF OF PLANNING AND DESIGN
PROJECT MANAGER

PROVINCE: CENTRAL JAVA
PROJECT NAME: FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA
DISTRICT: SEMARANG CITY
DRAWING NO. JD--P1--GE--Cr--2
SHEET NO. 14
DATE
CONTRACT NO.




## LEGEND

GEOLOGICAL STRATA

| Age | | Symbol | Formation and Strata Name | |
|---|---|---|---|---|
| Quaternary | Holocene | | Riverbed Deposit | |
| | | | Talus Deposit | |
| Tertiary–Quaternary | Pliocene–Pleistocene | Su | Upper Sedimentary Rock Unit | Damar |
| | | Pu | Upper Pyroclastic Rock Unit | |
| | | Sm | Middle Sedimentary Rock Unit | |
| | | Pl | Lower Pyroclastic Rock Unit | |
| | | Sl | Lower Sedimentary Rock Unit | |

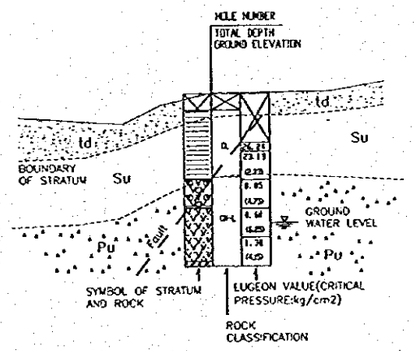
SYMBOLS OF ROCKS IN DRILLING LOG

| | | | |
|---|---|---|---|
| | Embankment | D | D Class |
| | Top Soil | CL | CL-L Class |
| | Riverbed Deposit | CM-L | CM-L Class |
| | Talus Deposit | CM-H | CM-H Class |
| | Conglomerate | | |
| | Conglomeratic Sandstone | | |
| | Sandstone | | |
| | Siltstone | | |
| | Tuffaceous Sandstone | | |
| | Sandy Tuff | | |
| | Tuff | | |
| | Volcanic Conglomerate | | |
| | Volcanic Breccia | | |
| | Andesite Lava | | |

ROCK CLASSIFICATION IN DRILLING LOG

| Classification | Characteristics |
|---|---|
| D | Completely weathered to a reddish soil without remains of mother-rock texture. Very low cementation part in the boring core is observed like sand and gravel. Core recovery ratio ranges from 0 % to 50 %. |
| CL | Moderately to highly weathered to a brown soil although remains of mother-rock texture. The mineral grains are not decomposed. Low cementation part in a boring core is observed like sand and gravel. Core recovery ratio is more than 70 %. Unconfined compressive strength is less than 10 kgf/cm2. |
| CM-L | Slightly weathered to fresh rock that consists of mainly tuff, tuffaceous sandstone, sandstone and conglomerate. Rock fragment is slightly soft. This class with moderate degree of cementation contains the fresh part and the relatively weathered part, but they have the almost same hardness. Unconfined compressive strength ranges between 10 and 65 kgf/cm2. |
| CM-H | Slightly weathered to fresh rock that consists of mainly volcanic breccia, conglomeratic sandstone and volcanic conglomerate. Rock fragment is relatively hard. This class with high degree of cementation contains the fresh part and the relatively weathered part, but they have the almost same hardness. Unconfined compressive strength ranges between 22 and 92 kgf/cm2. |

DESCRIPTION ON THE DRAWING




NOTES

1. STA. 210 IS REFERRED FROM DRAWING JD-P1-GE-PI-2.
2. THIS GEOLOGICAL SECTION IS ONLY FOR REFERENCE.

REFERENCE DRAWINGS

| | |
|---|---|
| JD-P1-GE-PI-2 | GEOLOGICAL MAP AT DAMSITE |
| JD-P1-GE-Pr-1 | GEOLOGICAL PROFILE ALONG DAM AXIS |

SCALE 0 10 20 30 40 50m

| NO. | DATE | REVISIONS | ORIGINATED | DESIGNED | APPROVED |
|---|---|---|---|---|---|
| | | | | | |

THE REPUBLIC OF INDONESIA
MINISTRY OF PUBLIC WORKS
DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT AND DIRECTORATE GENERAL OF HUMAN SETTLEMENT

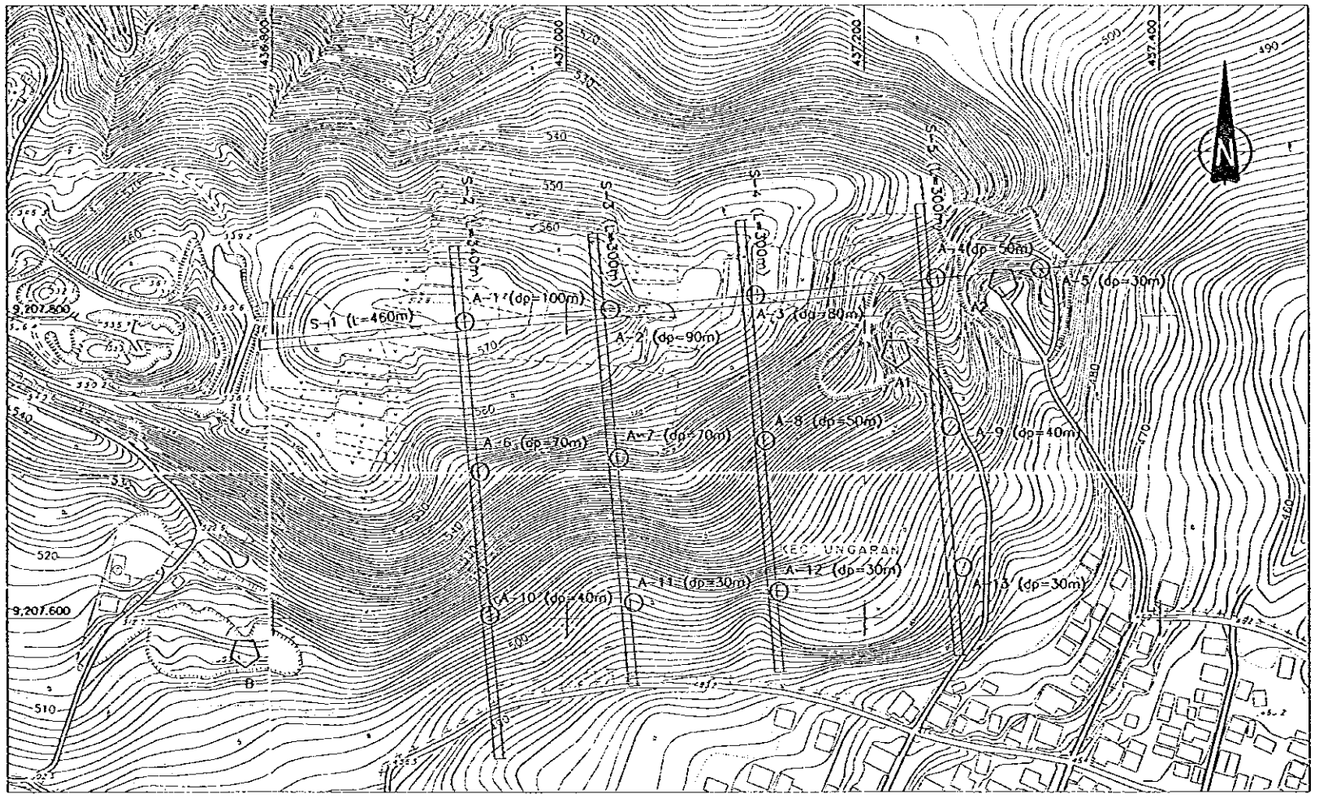
JRATUNSELUNA FLOOD CONTROL PROJECT
COMPONENT : JATIBARANG DAM CONSTRUCTION

GEOLOGY
GEOLOGICAL CROSS SECTION (STA. 210)

JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING CO., LTD. in association with PACIFIC CONSULTANTS INTERNATIONAL, PADCO INTERNATIONAL INC.

DESIGNED | CHECKED | CHIEF OF PLANNING AND DESIGN | APPROVED | PROJECT MANAGER

PROVINCE: CENTRAL JAVA
PROJECT NAME: FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA
DISTRICT: SEMARANG CITY
DRAWING NO. JD-P1-GE-Cr-3
SHEET NO. 15
DATE | CONTRACT NO.




## LOCATION MAP OF BORE HOLES AND SEISMIC LINES AT QUARRY SITE

SCALE A

## 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. |
| | Kaligetas | Pyroclastic Rock | Kp | 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. |

HOLE NUMBER (TOTAL DEPTH)

○ BORING POINT

LINE NAME (TOTAL LENGTH)

SEISMIC LINE

SAMPLE NUMBER

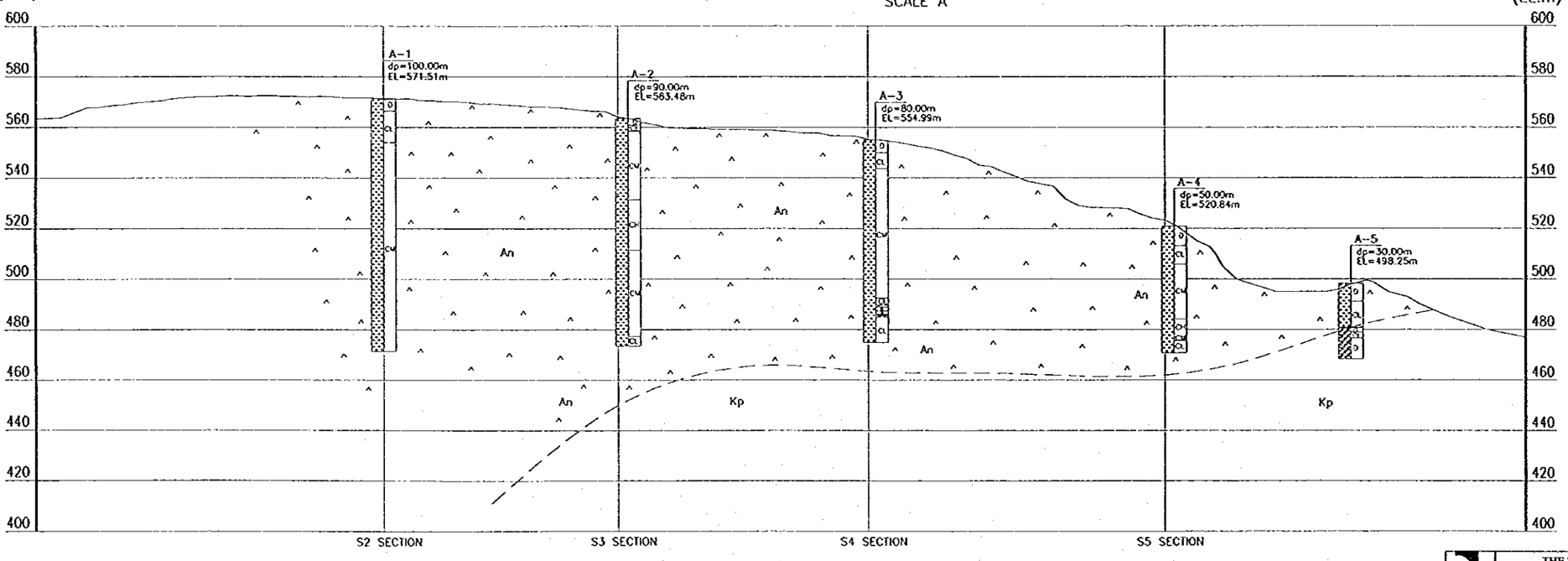
⬠ SAMPLING POINT FOR AGGREGATE TESTS

### SYMBOLS OF ROCKS IN DRILLING LOG

| | | |
|---|---|---|
| An | Andesite Sheet | |
| Kp | Pyroclastic Rock | |
| La | Andesite Lava | |

### ROCK CLASSIFICATION IN DRILLING LOG

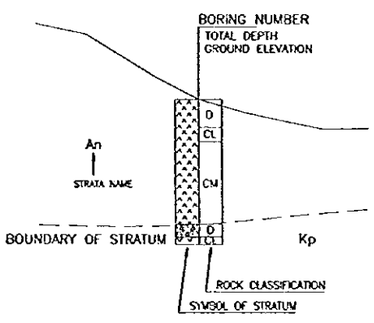
| Classification | Characteristics |
|---|---|
| D | Completely weathered and very soft. Discrimination of cracks is impossible. |
| CL | Drilling cores are deeply weathered, discolored to brown or reddish brown. Saturated surface–dry density shows around 2.2 g/cm3. |
| CM | Almost of cores are fresh and hard. Saturated surface–dry density shows around 2.6 g/cm3. |
| CH | Almost of cores are fresh and hard. Rocks are composed of finer grain mineral than CM class. Saturated surface–dry density shows around 2.7 g/cm3. |




## GEOLOGICAL PROFILE ALONG S1 LINE

SCALE B

### DESCRIPTION ON THE DRAWING




SCALE A

0 40 80 120 160 200m

SCALE B

0 20 40 60 80 100m

### NOTES

1. THIS GEOLOGICAL PROFILE IS ONLY FOR REFERENCE.

### REFERENCE DRAWINGS

JD-P1-GD-PI-5 QUARRY AREA MAP
JD-P1-GE-Qu-2 GEOLOGICAL PROFILE AT QUARRY

| NO. | DATE | REVISIONS | ORIGINATED | DESIGNED | APPROVED |
|---|---|---|---|---|---|
| | | | | | |

THE REPUBLIC OF INDONESIA
MINISTRY OF PUBLIC WORKS
DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT AND DIRECTORATE GENERAL OF HUMAN SETTLEMENT

JRATUNSELUNA FLOOD CONTROL PROJECT
COMPONENT : JATIBARANG DAM CONSTRUCTION

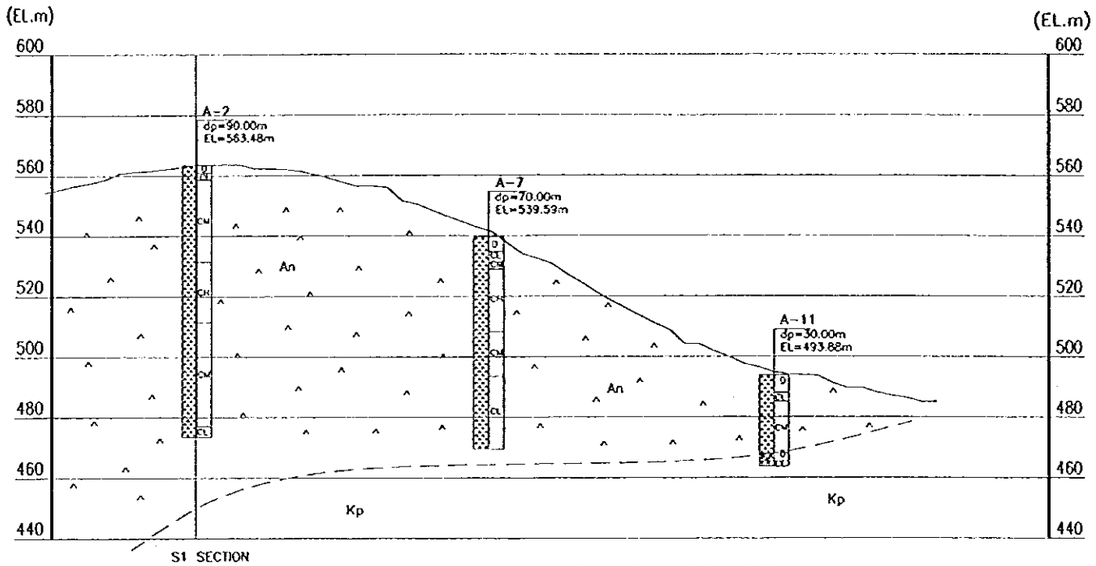
GEOLOGY

LOCATION MAP OF DRILLINGS AND GEOLOGICAL PROFILE AT QUARRY

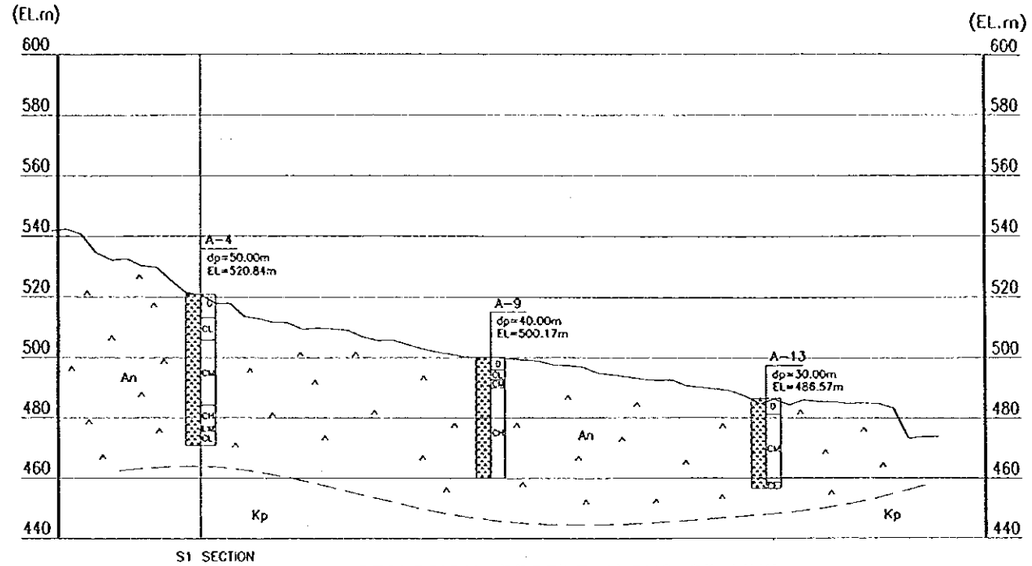
JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING CO., LTD IN ASSOCIATION WITH PACIFIC CONSULTANTS INTERNATIONAL FASCO INTERNATIONAL INC

DESIGNED | CHECKED | APPROVED | CHIEF OF PLANNING AND DESIGN | PROJECT MANAGER

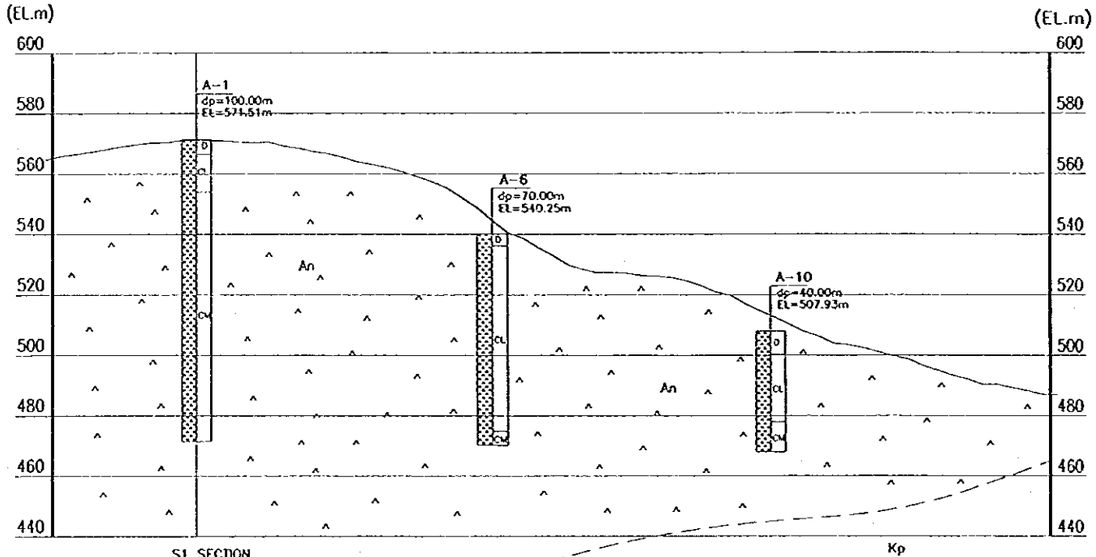
PROVINCE: CENTRAL JAVA
PROJECT NAME: FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA
DISTRICT: SEMARANG CITY
DRAWING NO. JD-P1-GE-Qu-1
SHEET NO. 15
DATE | CONTRACT NO.



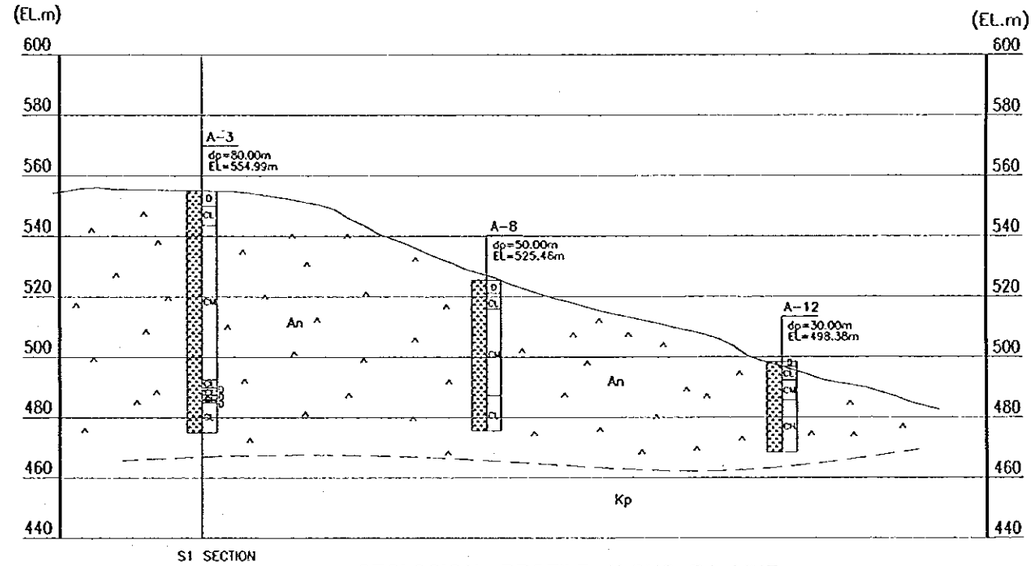

GEOLOGICAL PROFILE ALONG S3 LINE




GEOLOGICAL PROFILE ALONG S5 LINE

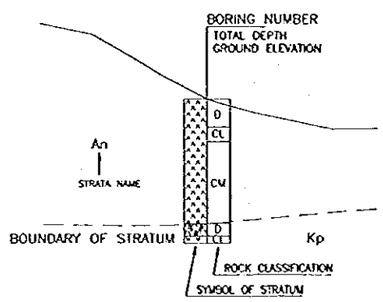



GEOLOGICAL PROFILE ALONG S2 LINE




GEOLOGICAL PROFILE ALONG S4 LINE

DESCRIPTION ON THE DRAWING




SYMBOLS OF ROCKS IN DRILLING LOG

| | | |
|---|---|---|
| | An | Andesite Sheet |
| | Kp | Pyroclastic Rock |
| | Lo | Andesite Lava |

ROCK CLASSIFICATION IN DRILLING LOG

| Classification | Characteristics |
|---|---|
| D | Completely weathered and very soft. Discrimination of crocks is impossible. |
| CL | Drilling cores are deeply weathered, discolored to brown or reddish brown. Saturated surface-dry density shows around 2.2 g/cm3. |
| CM | Almost of cores are fresh and hard. Saturated surface-dry density shows around 2.6 g/cm3. |
| CH | Almost of cores are fresh and hard. Rocks are composed of finer grain mineral than CM class. Saturated surface-dry density shows around 2.7 g/cm3. |

NOTES

1. LINES ARE REFFERED FROM DRAWING NO. JD-P1-GE-Qu-1.
2. THE GEOLOGICAL PROFILES ARE ONLY FOR REFERENCE.

REFERENCE DRAWINGS

JD-P1-GD-P1-5 QUARRY AREA MAP
JD-P1-GE-Qu-1 LOCATION MAP OF DRILLINGS AND GEOLOGICAL PROFILE AT QUARRY

SCALE 0 20 40 60 80 100m

| NO. | DATE | REVISIONS | ORIGINATED | DESIGNED | APPROVED |
|---|---|---|---|---|---|
| | | | | | |

THE REPUBLIC OF INDONESIA
MINISTRY OF PUBLIC WORKS
DIRECTORATE GENERAL OF WATER RESOURCES DEVELOPMENT AND DIRECTORATE GENERAL OF HUMAN SETTLEMENT

JRATUNSELUNA FLOOD CONTROL PROJECT
COMPONENT : JATIBARANG DAM CONSTRUCTION

GEOLOGY

GEOLOGICAL PROFILE AT QUARRY

JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING CO., LTD. IN ASSOCIATION WITH PACIFIC CONSULTANTS INTERNATIONAL, PASCO INTERNATIONAL INC.

DESIGNED
CHECKED
APPROVED
CHIEF OF PLANNING AND DESIGN
PROJECT MANAGER

PROVINCE: CENTRAL JAVA
PROJECT NAME: FLOOD CONTROL, URBAN DRAINAGE AND WATER RESOURCES DEVELOPMENT IN SEMARANG IN THE REPUBLIC OF INDONESIA
DISTRICT: SEMARANG CITY
DRAWING NO. JD-P1-GE-Qu-2
SHEET NO. 16-2
DATE
CONTRACT NO.