

**DRAWING**

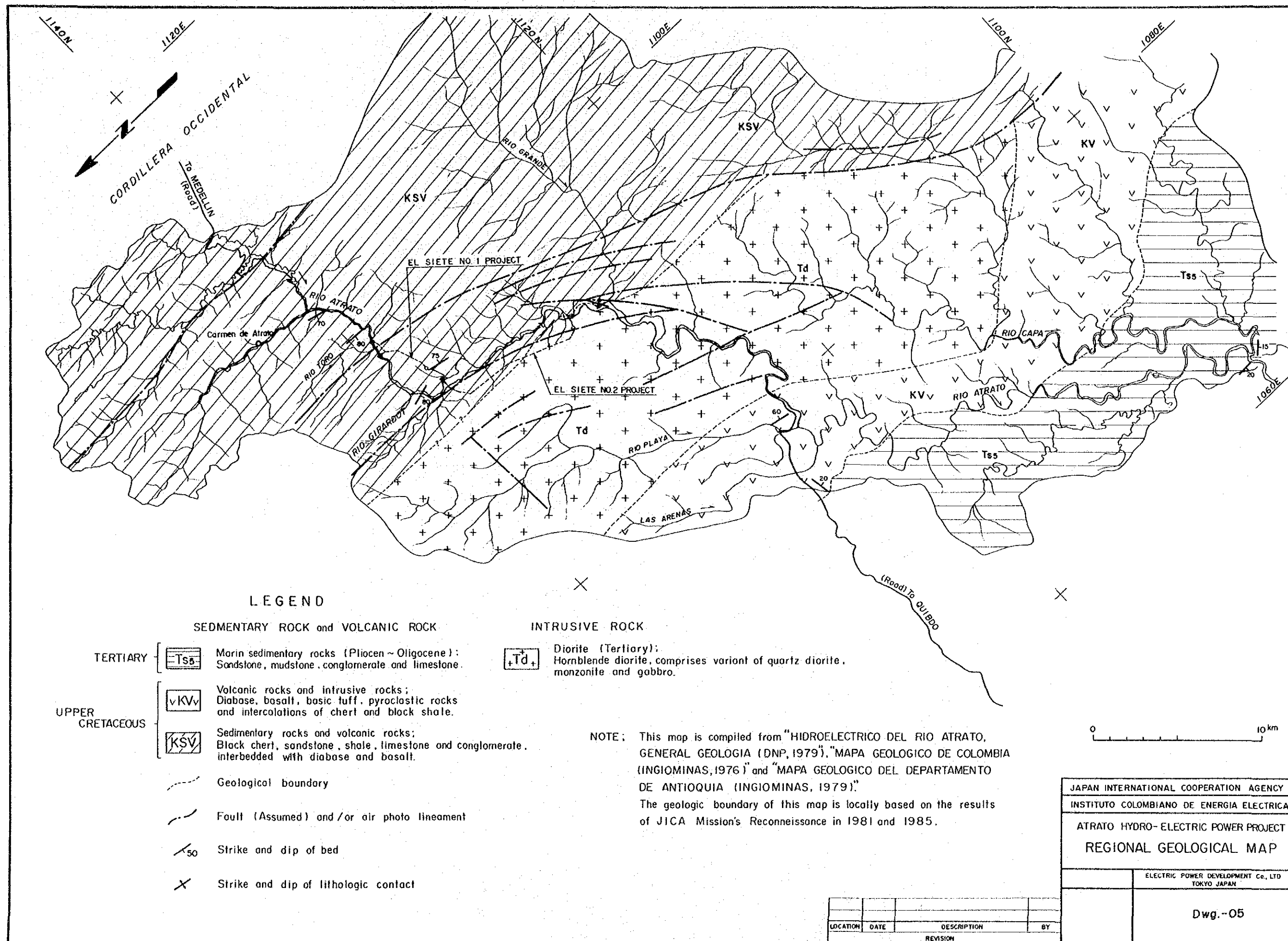


## DRAWING LIST

Dwg. 00	PANORAMA OF PROJECT AREA
01	LOCATION KEY MAP
02	MAP OF CATCHMENT AREA
03	LOCATION AND INTERCONNECTING SYSTEM MAP IN COLUMBIA
04	EL SIETE NO.1 AND NO.2 POWER PROJECT, GENERAL PLAN AND PROFILE
05	REGIONAL GEOLOGICAL MAP
06	GEOLOGICAL PLAN OF PROJECT AREA
07	GEOLOGICAL PROFILES OF EL SIETE NO. 1 AND NO. 2 WATERWAY ALIGNMENT
08	GEOLOGICAL PLAN OF EL SIETE NO. 1 DAM SITE AND RESERVOIR AREA
09	GEOLOGICAL PROFILE OF EL SIETE NO. 1 DAM
10	GEOLOGICAL PROFILE OF EL SIETE NO. 1 AUXILIARY DAM AND NO. 2 INTAKE DAM
11	GEOLOGICAL PLAN OF EL SIETE NO. 1 SURGE TANK, PENSTOCK AND POWERHOUSE
12	GEOLOGICAL PROFILE OF EL SIETE NO. 1 SURGE TANK, PENSTOCK AND POWERHOUSE
13	GEOLOGICAL PLAN OF EL SIETE NO. 2 SURGE TANK, PENSTOCK AND POWERHOUSE
14	GEOLOGICAL PROFILE OF EL SIETE NO. 2 SURGE TANK, PENSTOCK AND POWERHOUSE
15	EL SIETE NO. 1 RESERVOIR GENERAL PLAN
16	EL SIETE NO. 1 RESERVOIR STORAGE CAPACITY AND AREA CURVES
17	EL SIETE NO. 1 DAM PLAN AND PROFILE
18	EL SIETE NO. 1 DAM FRONT VIEW AND PROFILE

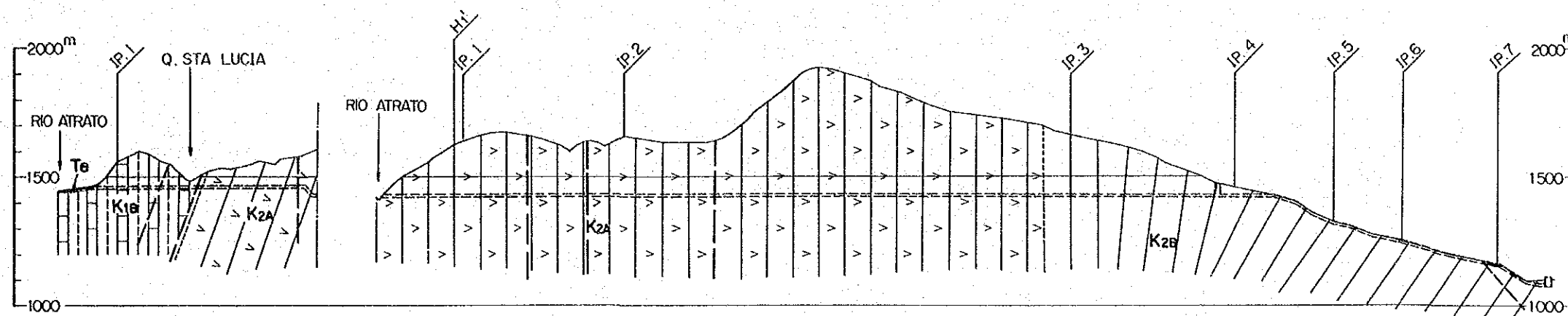
- 19 NO. 1 DAM DIVERSION TUNNEL PLAN,  
PROFILE AND TYPICAL CROSS SECTION
- 20 EL SIETE NO. 1 AUXILIARY DAM PLAN,  
PROFILE AND SECTIONS
- 21 NO. 1 AUXILIARY SEDIMENTATION BASIN  
PROFILE AND SECTIONS
- 22 NO. 1 AUXILIARY SEDIMENTATION BASIN  
PLAN
- 23 AUXILIARY CONNECTION TUNNEL PLAN,  
PROFILE AND SECTION
- 24 EL SIETE NO. 1 INTAKE PLAN, PROFILE  
AND SECTION
- 25 EL SIETE NO. 1 HEADRACE TUNNEL PLAN,  
PROFILE AND SECTION
- 26 EL SIETE NO. 1 SURGE TANK PLAN,  
PROFILE AND SECTION
- 27 EL SIETE NO. 1 PENSTOCK, SURGE TANK,  
POWER STATION PLAN
- 28 EL SIETE NO. 1 PENSTOCK LINE PROFILE  
AND SECTION
- 29 EL SIETE NO. 1 PENSTOCK PRESSURE CURVE
- 30 EL SIETE NO. 1 POWERHOUSE PLAN AND  
SECTION
- 31 EL SIETE NO. 1 POWERHOUSE PLAN AND  
SECTIONS
- 32 EL SIETE NO. 1 TAILRACE TUNNEL PLAN,  
PROFILE AND SECTIONS
- 33 EL SIETE NO. 1 SWITCHYARD PLAN AND  
SECTIONS
- 34 EL SIETE NO. 2 INTAKE DAM PLAN,  
PROFILE AND SECTION
- 35 NO. 2 SEDIMENTATION BASIN PLAN,  
PROFILE AND SECTIONS
- 36 EL SIETE NO. 2 HEADRACE TUNNEL PLAN,  
PROFILE AND SECTION

- 37 EL SIETE NO. 2 SURGE TANK PLAN,  
PROFILE AND SECTIONS
- 38 EL SIETE NO. 2 PENSTOCK, SURGE TANK,  
POWER STATION PLAN
- 39 EL SIETE NO. 2 PENSTOCK PROFILE AND  
SECTIONS
- 40 EL SIETE NO. 2 PENSTOCK PRESSURE CURVE
- 41 EL SIETE NO. 2 POWERHOUSE PLAN
- 42 EL SIETE NO. 2 POWERHOUSE PLAN AND  
SECTIONS
- 43 EL SIETE NO. 2 SWITCHYARD PLAN AND  
SECTIONS
- 44 CONSTRUCTION PLAN
- 45 EL SIETE NO. 1 POWER STATION  
CONSTRUCTION SCHEDULE
- 46 EL SIETE NO. 2 POWER STATION  
CONSTRUCTION SCHEDULE
- 47 ALTERNATIVE PLAN  
EL SIETE NO. 1 CONCRETE FACING DAM
- 48 ALTERNATIVE PLAN  
EL SIETE NO. 1 POWER STATION  
IN UNDERGROUND TYPE
- 49 ALTERNATIVE PLAN  
EL SIETE NO. 2 POWER STATION  
IN UNDERGROUND TYPE





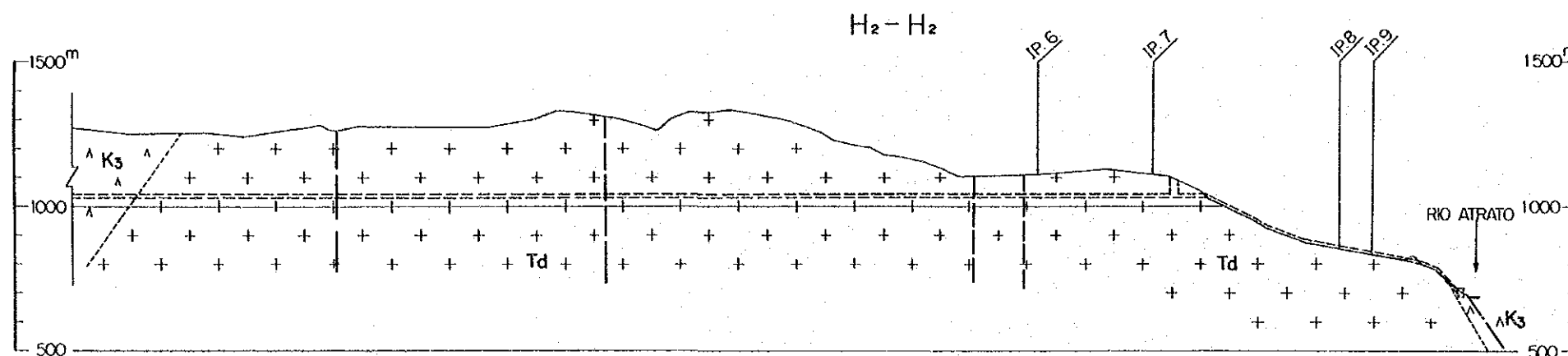
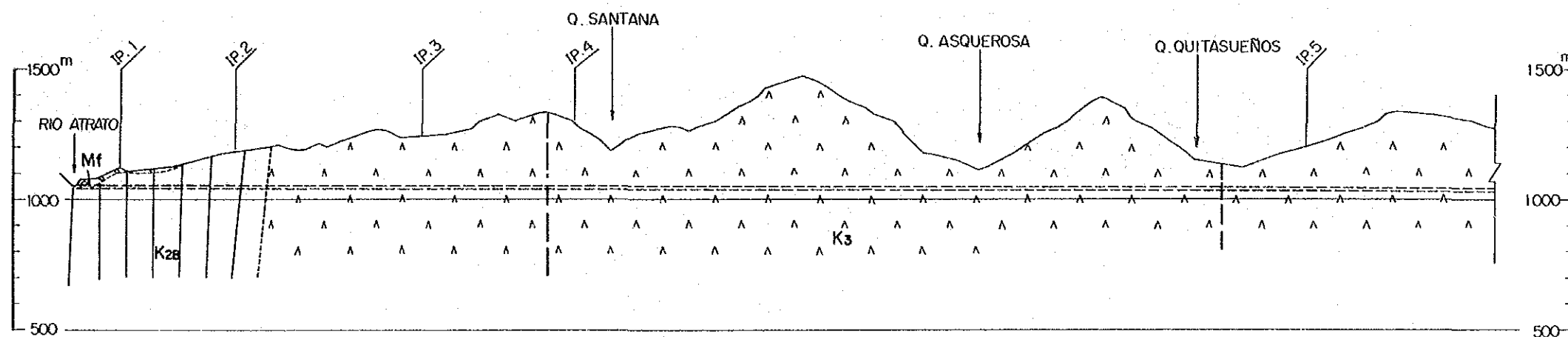
# PROFILE OF EL SIETE NO.1 WATERWAY ALIGNMENT H<sub>1</sub>-H<sub>1</sub>



## LEGEND

- Terrace deposit
- Mudflow deposit
- Diabase
- Diabase (With amphybolite, in local)
- Shale, sandstone and conglomerate (With basaltic rocks, in local)
- Basalt (With basaltic pyroclastic rocks)
- Alternation of chert and limestone and/or calcareous shale
- Geological boundary
- Fault
- Assumed fault

# PROFILE OF EL SIETE NO.2 WATERWAY ALIGNMENT H<sub>2</sub>-H<sub>2</sub>



NOTE:

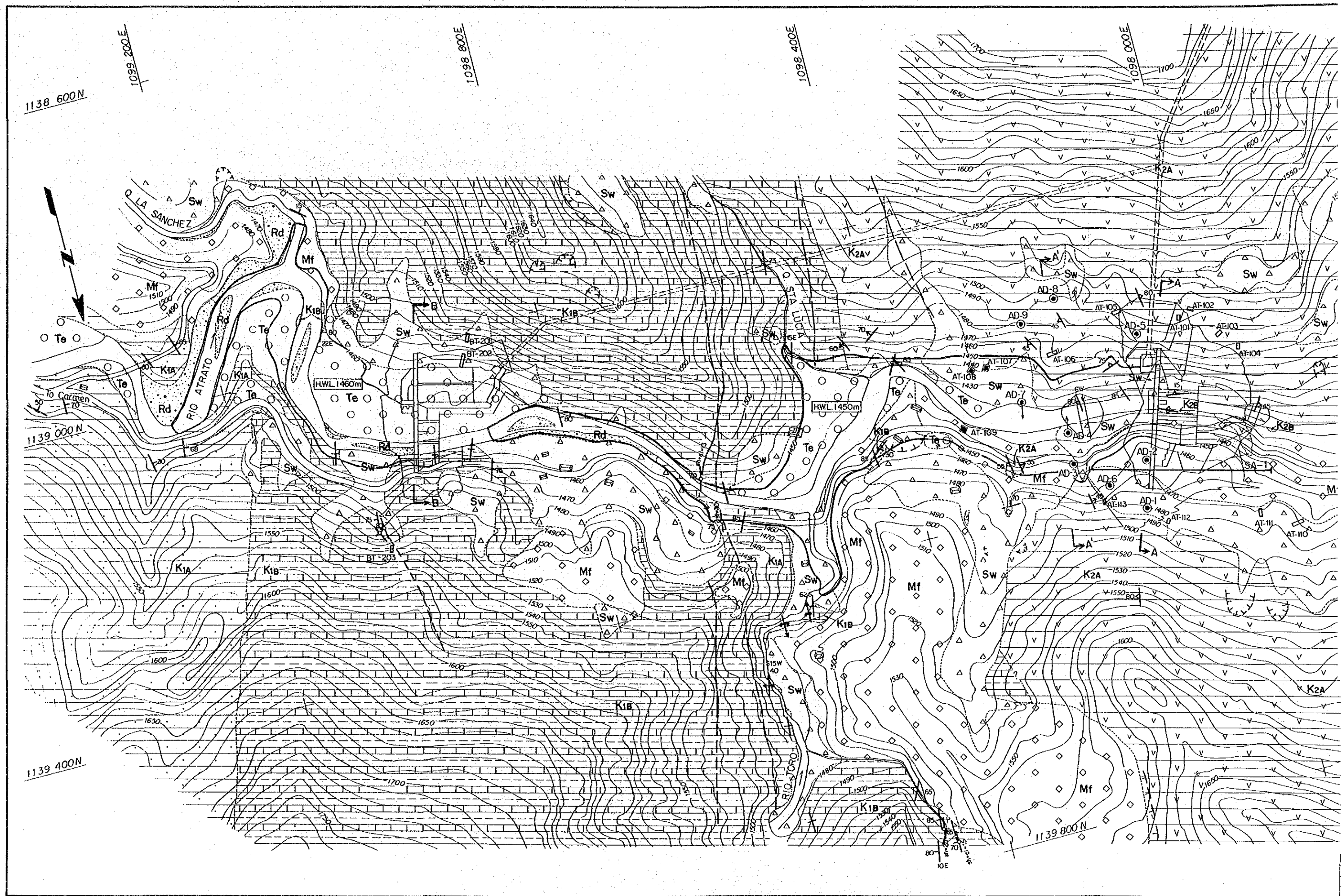
For location of profiles see Dwg.-06

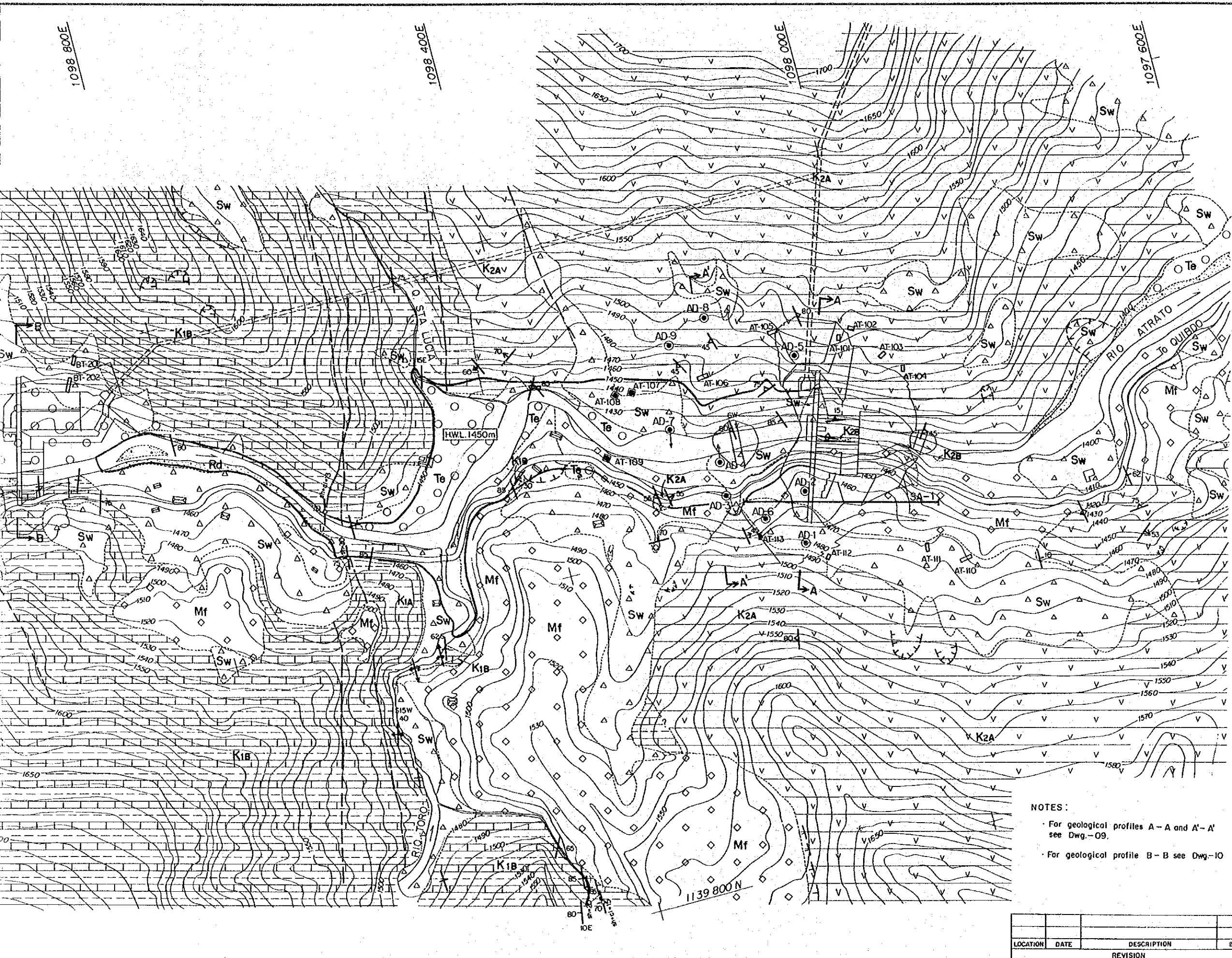
LOCATION	DATE	DESCRIPTION	BY
		REVISION	

0 1000m

JAPAN INTERNATIONAL COOPERATION AGENCY
INSTITUTO COLOMBIANO DE ENERGIA ELECTRICA
ATRATO HYDRO-ELECTRIC POWER PROJECT
GEOLOGICAL PROFILES OF EL SIETE
NO.1 AND NO.2 WATERWAY ALIGNMENT
ELECTRIC POWER DEVELOPMENT CO., LTD
TOKYO JAPAN
Dwg.-07

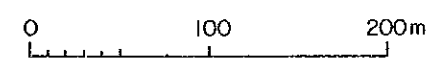






# LEGEND

- Rd River deposit
- Sw Slopewash
- Te Terrace deposit
- Mt Mudflow deposit
- K2A Basalt (Basalt, basaltic tuff breccia and basaltic tuff)
- K1B Alternation of chert and limestone and/or calc. shale
- K1A Alternation of sandstone and shale
- Geological boundary
- $\searrow_{50}$  Strike and dip of bed
- $\searrow_{50}$  Strike and dip of intrusive contact
- $\searrow_{20}$  Minor anticlinal axis and plunging dip
- $\searrow_{10}$  Fault Sh; Width of sheared zone. Cl; Width of fault clay. (in cm)
- Assumed fault
- $\searrow_{50}$  Strike and dip of fault
- $\searrow_{30}$  Strike and dip of joint
- $\searrow$  Slope collapse
- AD- Drillhole  $\bullet$  Inclined drillhole
- AT- Trench  $\blacksquare$  Pit
- SA- Seismic prospecting line

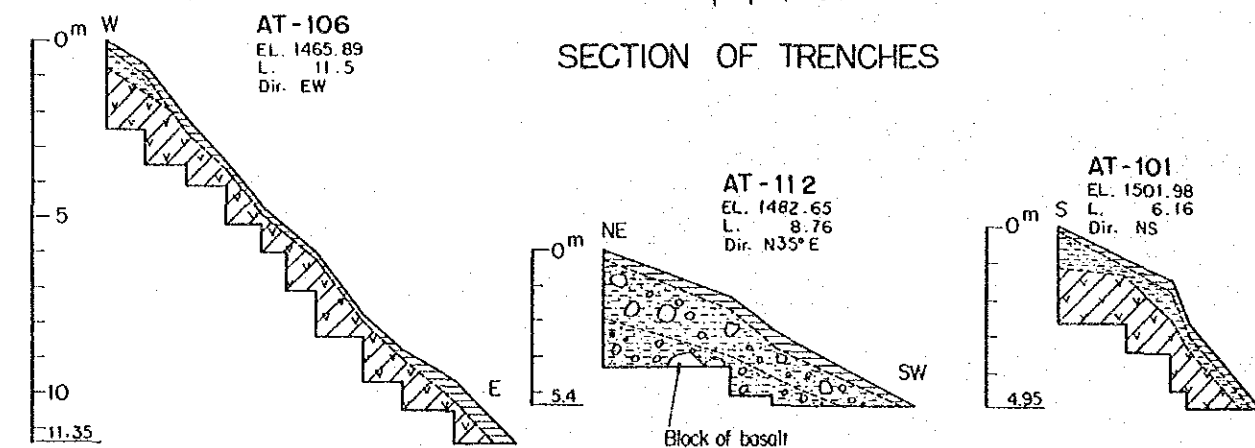
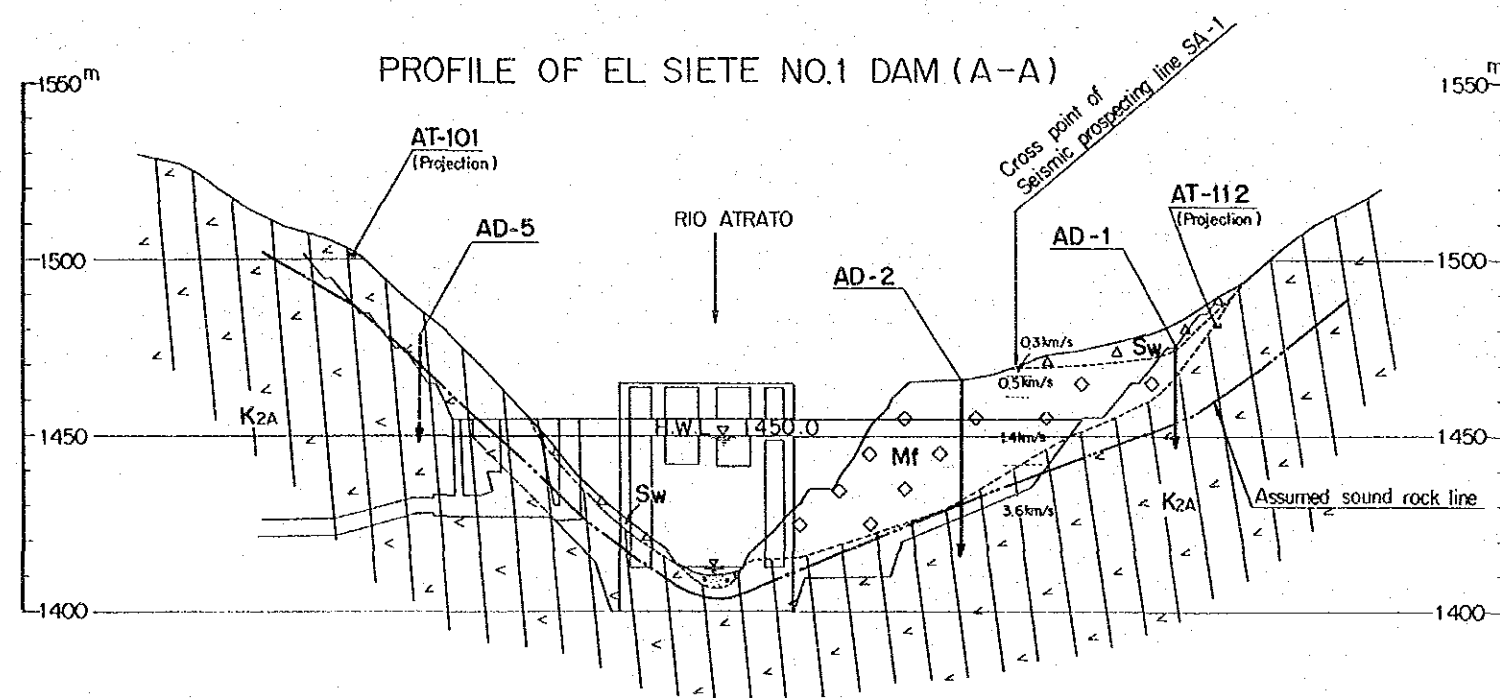
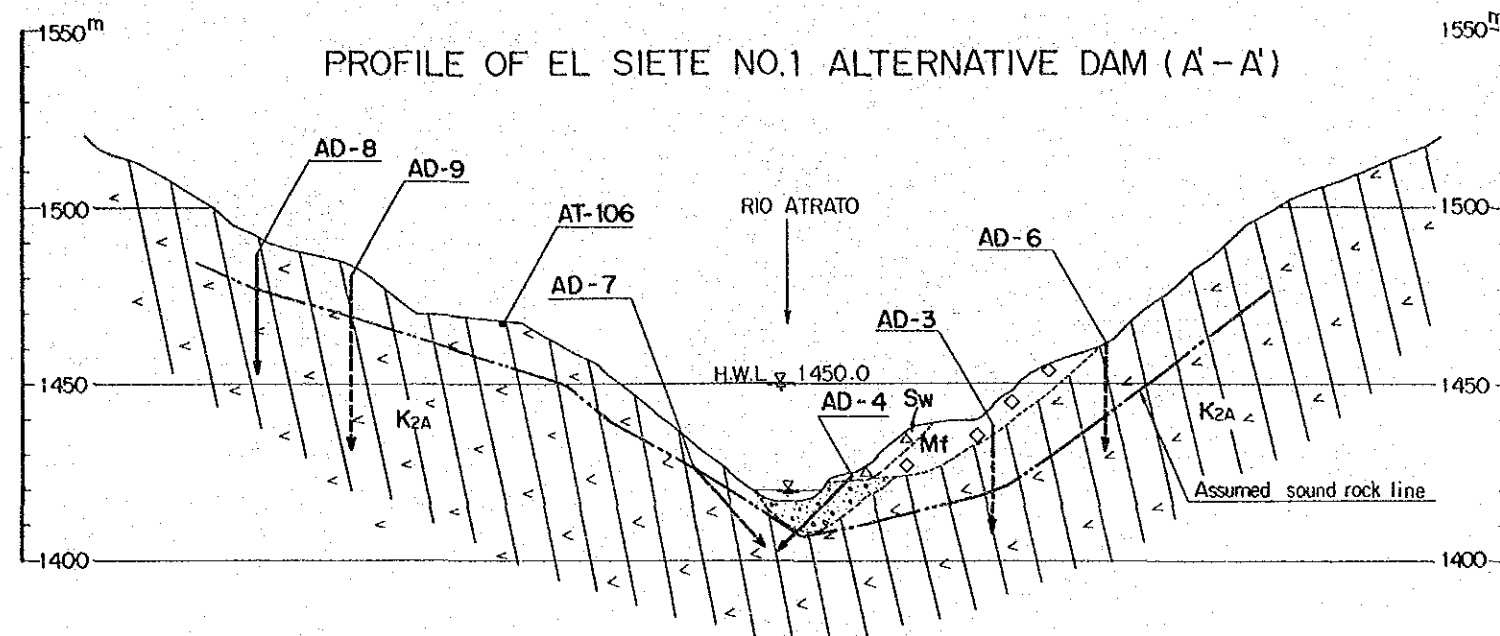


NOTES:

- For geological profiles A-A and A'-A' see Dwg.-09.
- For geological profile B-B see Dwg.-10

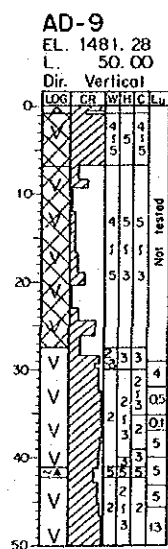
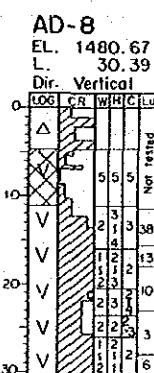
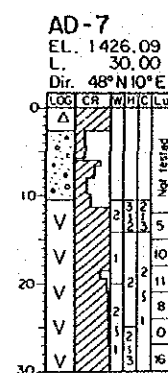
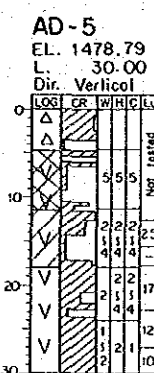
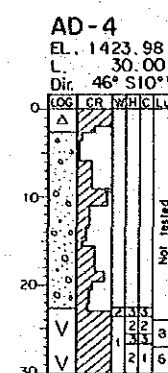
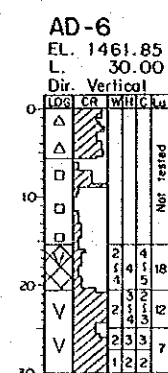
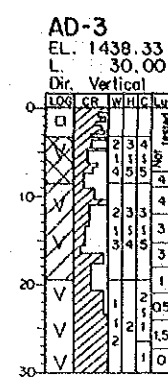
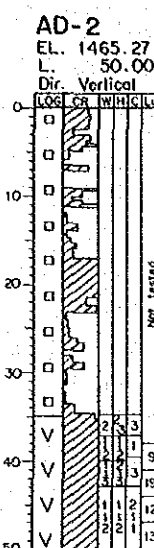
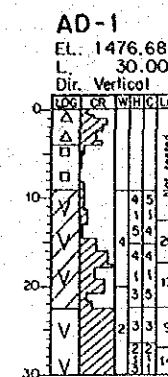
JAPAN INTERNATIONAL COOPERATION AGENCY	
INSTITUTO COLOMBIANO DE ENERGIA ELECTRICA	
ATRATO HYDRO-ELECTRIC POWER PROJECT	
GEOLOGICAL PLAN OF EL SIETE NO.1	
DAMSITE AND RESERVOIR AREA	
ELECTRIC POWER DEVELOPMENT Co., LTD TOKYO JAPAN	
Dwg.-08	

LOCATION	DATE	DESCRIPTION	BY
		REVISION	



#### LEGEND FOR TRENCH

- Topsoil with plant roots
- Sandy silt
- Silty sand with boulder gravel
- Weathered basaltic rock
- Geological boundary



#### LEGEND FOR PROFILE

- River deposit
- Slopewash
- Mudflow deposit
- Basalt (Basalt, basaltic tuff breccia and basaltic tuff.)
- Geological boundary
- Drillhole
- Drillhole (Projection)
- Trench
- 0.3km/s  
1.4 km/s  
Seismic wave velocity and its boundary

#### LEGEND FOR CORE LOG

- Log
- Core recovery
- Core classification
- Lugeon value
- W ; Weathering  
1 ; Fresh  
5 ; Decomposed
- H ; Hardness  
1 ; Hard  
5 ; Soft
- C ; Core cutting  
1 ; Stick  
5 ; Grain
- Slopewash
- River deposit
- Mudflow deposit
- Decomposed weathered and cracky Basalt
- Fresh Basalt
- Fault

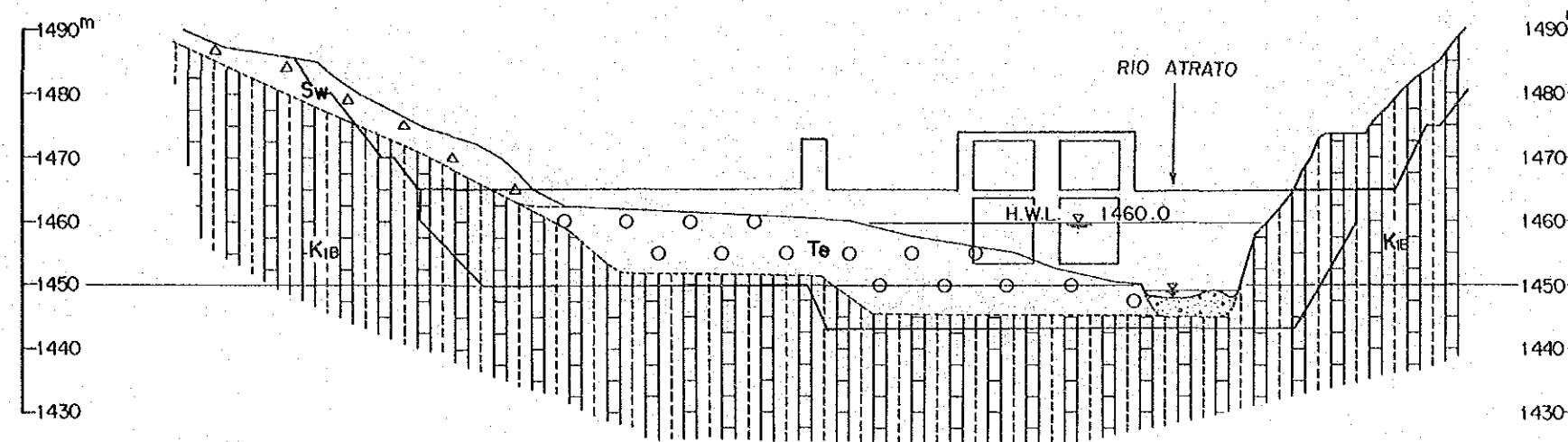
NOTE :  
-For location of sections see Dwg.-08

LOCATION	DATE	DESCRIPTION	BY
		REVISION	

JAPAN INTERNATIONAL COOPERATION AGENCY  
INSTITUTO COLOMBIANO DE ENERGIA ELECTRICA  
ATRATO HYDRO-ELECTRIC POWER PROJECT  
GEOLOGICAL PROFILE OF  
EL SIETE NO.1 DAM  
ELECTRIC POWER DEVELOPMENT Co., LTD  
TOKYO JAPAN

Dwg.-09

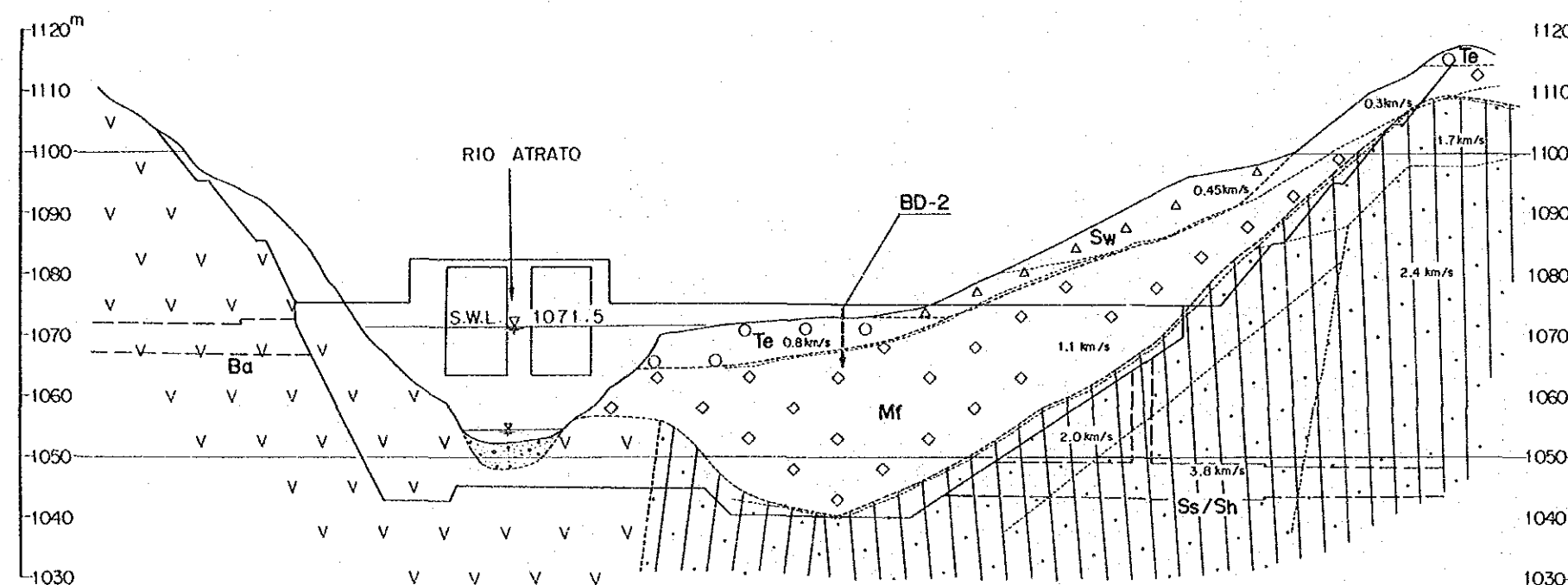
PROFILE OF EL SIETE NO.1 AUXILIARY DAM (B-B)



LEGEND

- River deposit
- Slopewash
- Terrace deposit
- Mudflow deposit
- Alternation of sandstone and shale
- Basalt (Basalt and basaltic tuff breccia)
- Alternation of chert and limestone and/or calc. shale
- Geological boundary
- Drillhole (Projection)
- Seismic wave velocity and its boundary

PROFILE OF EL SIETE NO.2 INTAKE DAM (C-C)



BD-2

EL. 1074.34  
L. 9.5  
Dir. Vertical  
LOG CR

Log  
Core recovery  
0-100%  
LOG CR  
Ground water level

- Slopewash
- Terrace deposit

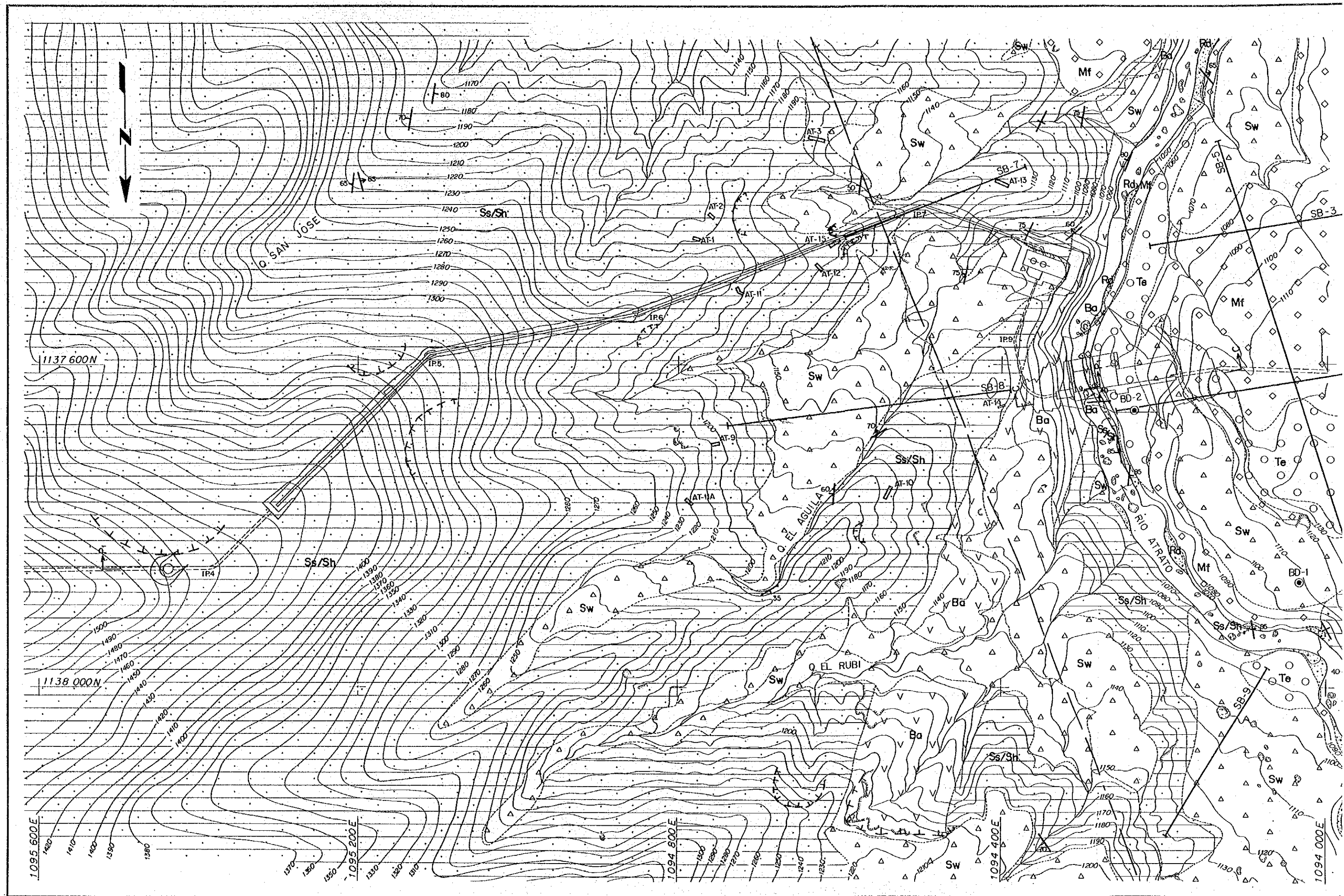
0 50 m

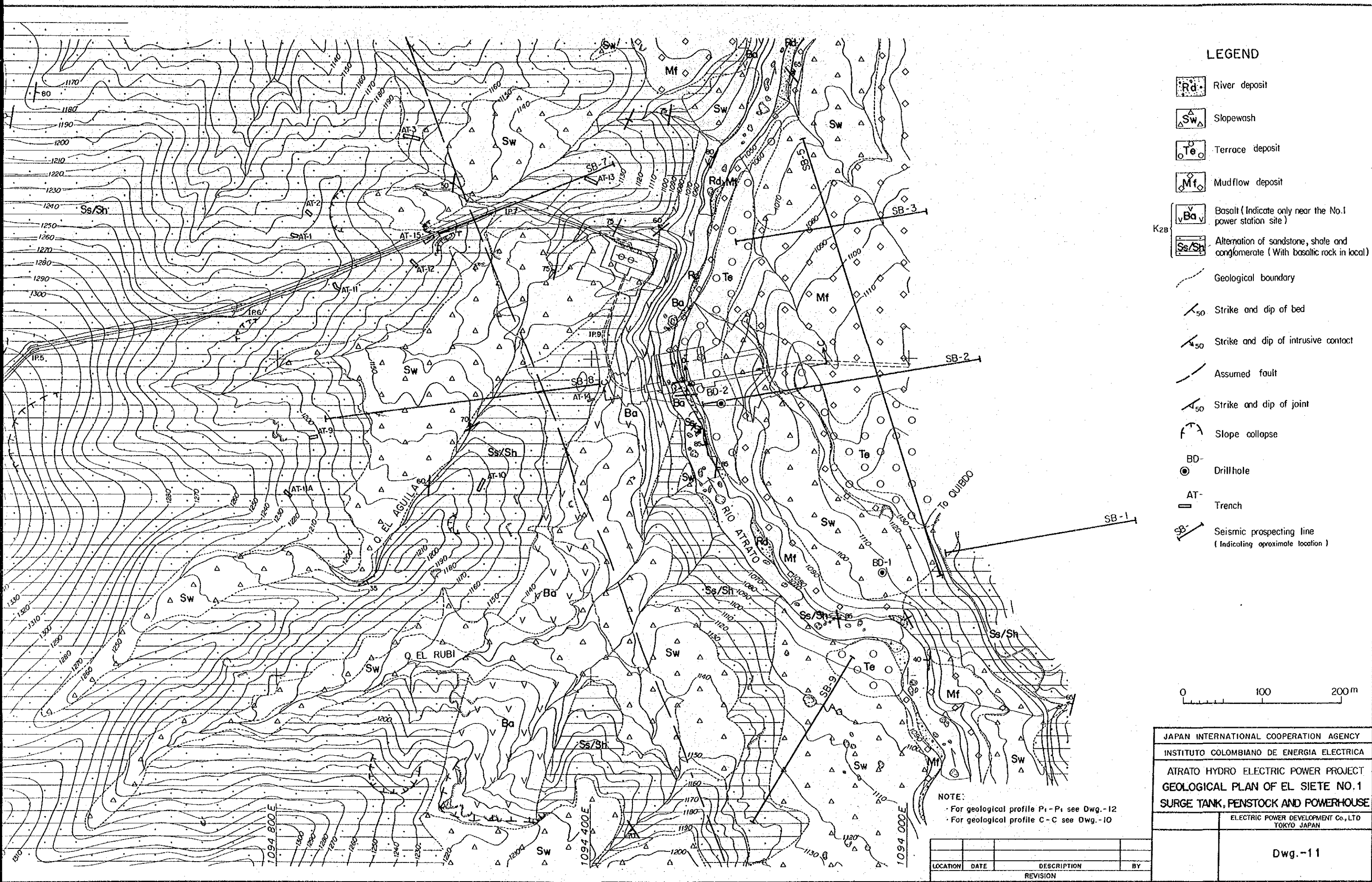
NOTE:  
-For location of profile B-B see Dwg.-08  
-For location of profile C-C see Dwg.-13

LOCATION	DATE	DESCRIPTION	BY
		REVISION	

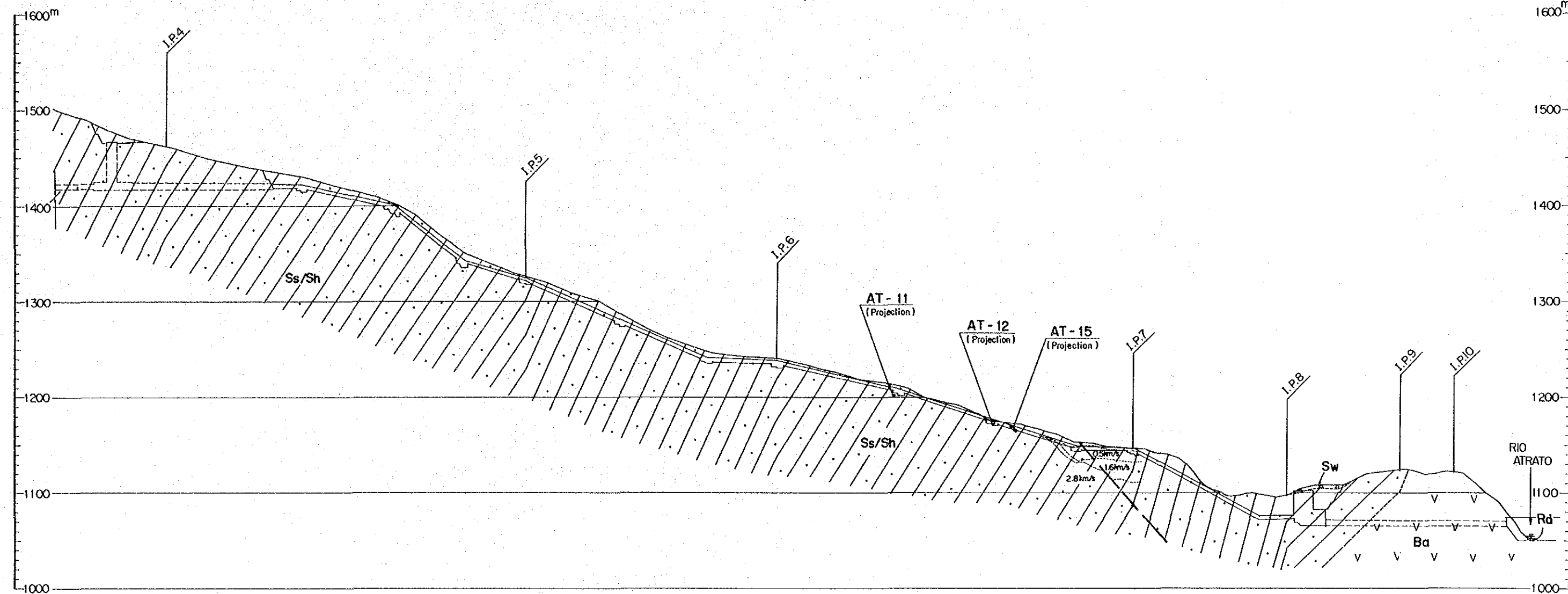
JAPAN INTERNATIONAL COOPERATION AGENCY
INSTITUTO COLOMBIANO DE ENERGIA ELECTRICA
ATRATO HYDRO-ELECTRIC POWER PROJECT
GEOLOGICAL PROFILES OF EL SIETE NO.1 AUXILIARY DAM AND NO.2 INTAKE DAM
ELECTRIC POWER DEVELOPMENT Co., LTD TOKYO JAPAN
Dwg.-10





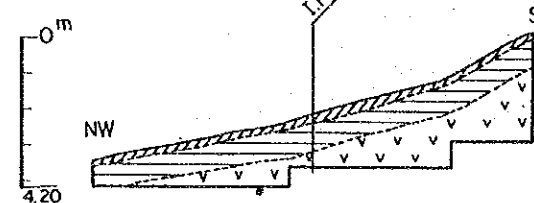


# PROFILE OF EL SIETE NO.1 SURGE TANK, PENSTOCK AND POWERHOUSE (P-R)

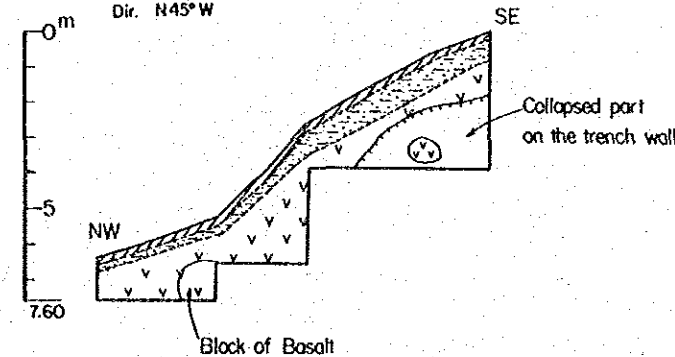


## SECTION OF TRENCHES

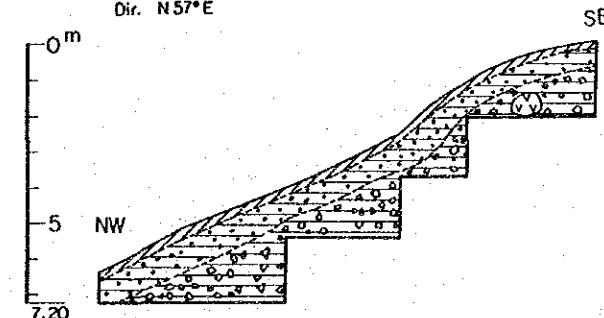
AT - 11  
EL. 1201.65  
L. 13.6  
Dir. N60°W, N28°W



AT - 12  
EL. 1172.17  
L. 10.80  
Dir. N45°W



AT - 15  
EL. 1166.00  
L. 13.70  
Dir. N57°E



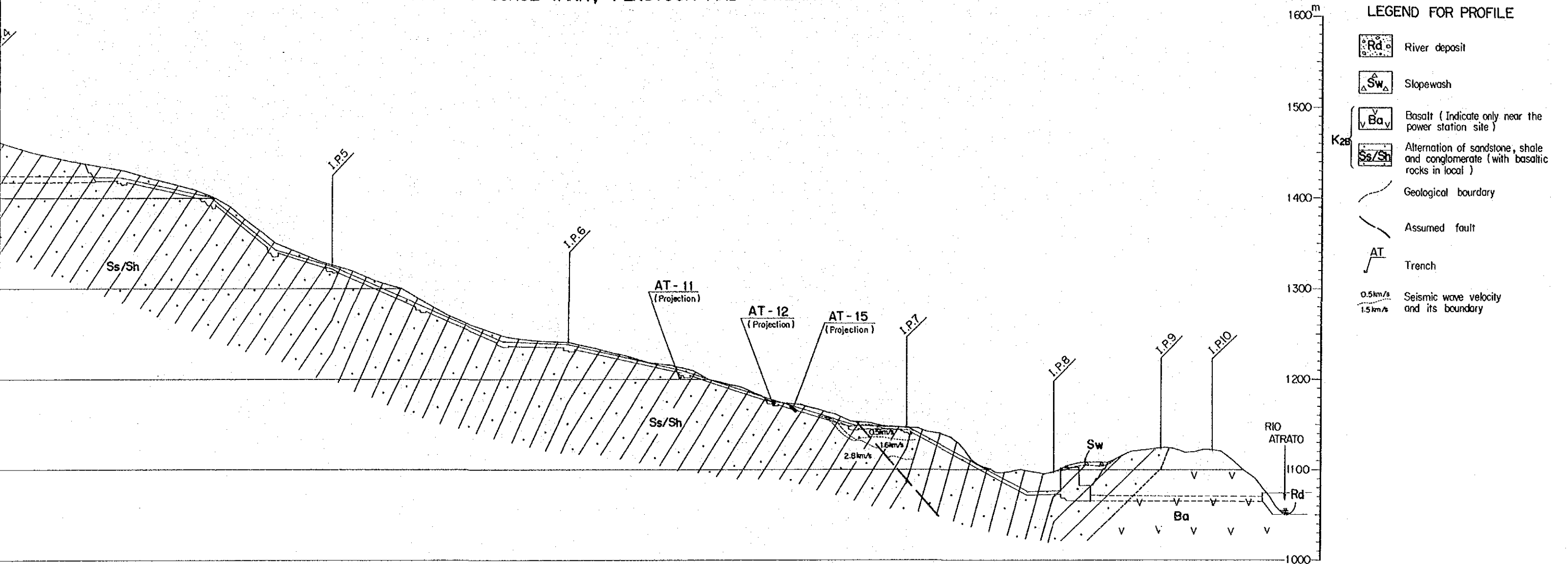
## LEGEND FOR TRENCH

- Topsoil
- Clayey silt
- Sandy silt
- Clay with subrounded fragments of basalt
- Fragments of basalt in clayey silt matrix (Decomposed basaltic rock?)
- Decomposed basaltic rock (Softened)
- Geological boundary

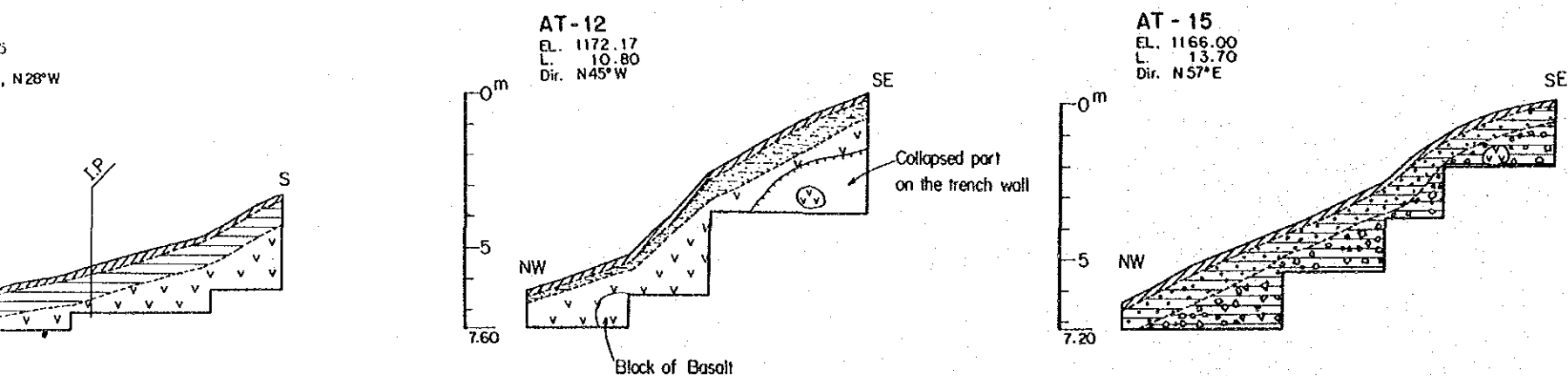
NOTE:  
For location of profile see Dwg. - 11

LOCATION	DATE	DESCRIPTION	BY
		REVISION	

# PROFILE OF EL SIETE NO.1 SURGE TANK, PENSTOCK AND POWERHOUSE (P-P)



## SECTION OF TRENCHES

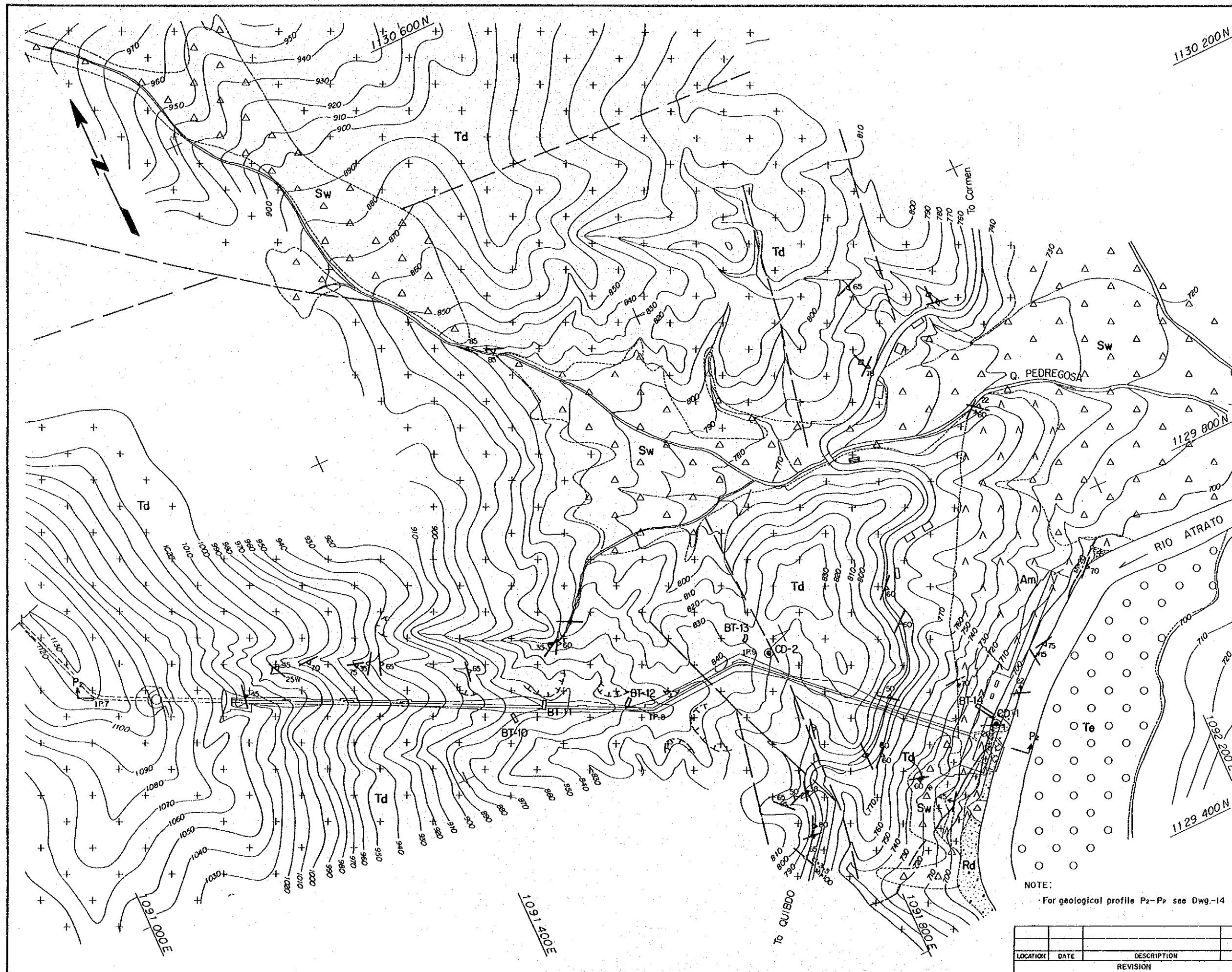


NOTE:  
For location of profile see Dwg.-11

LOCATION	DATE	DESCRIPTION	BY
		REVISION	

JAPAN INTERNATIONAL COOPERATION AGENCY
INSTITUTO COLOMBIANO DE ENERGIA ELECTRICA
ATRATO HYDRO-ELECTRIC POWER PROJECT
GEOLOGICAL PROFILE OF EL SIETE NO.1
SURGE TANK, PENSTOCK AND POWERHOUSE
ELECTRIC POWER DEVELOPMENT CO., LTD TOKYO, JAPAN
Dwg.-12





# LEGEND

- Rd River deposit
- Sw Slopewash
- Te Terrace deposit
- Td Diorite
- Am Amphibolite
- Geological boundary
- $\frac{1}{50}$  Strike and dip of bed
- $\frac{1}{50}$  Strike and dip of intrusive or foliation
- $\frac{1}{50}$  Fault sh : Width of shear cl : Width of fault
- Photolineament
- $\frac{1}{50}$  Strike and dip of fault
- $\frac{1}{30}$  Strike and dip of joint
- $\frac{1}{50}$  Slope collapse
- CD- Drillhole
- BT- Trench

0 100

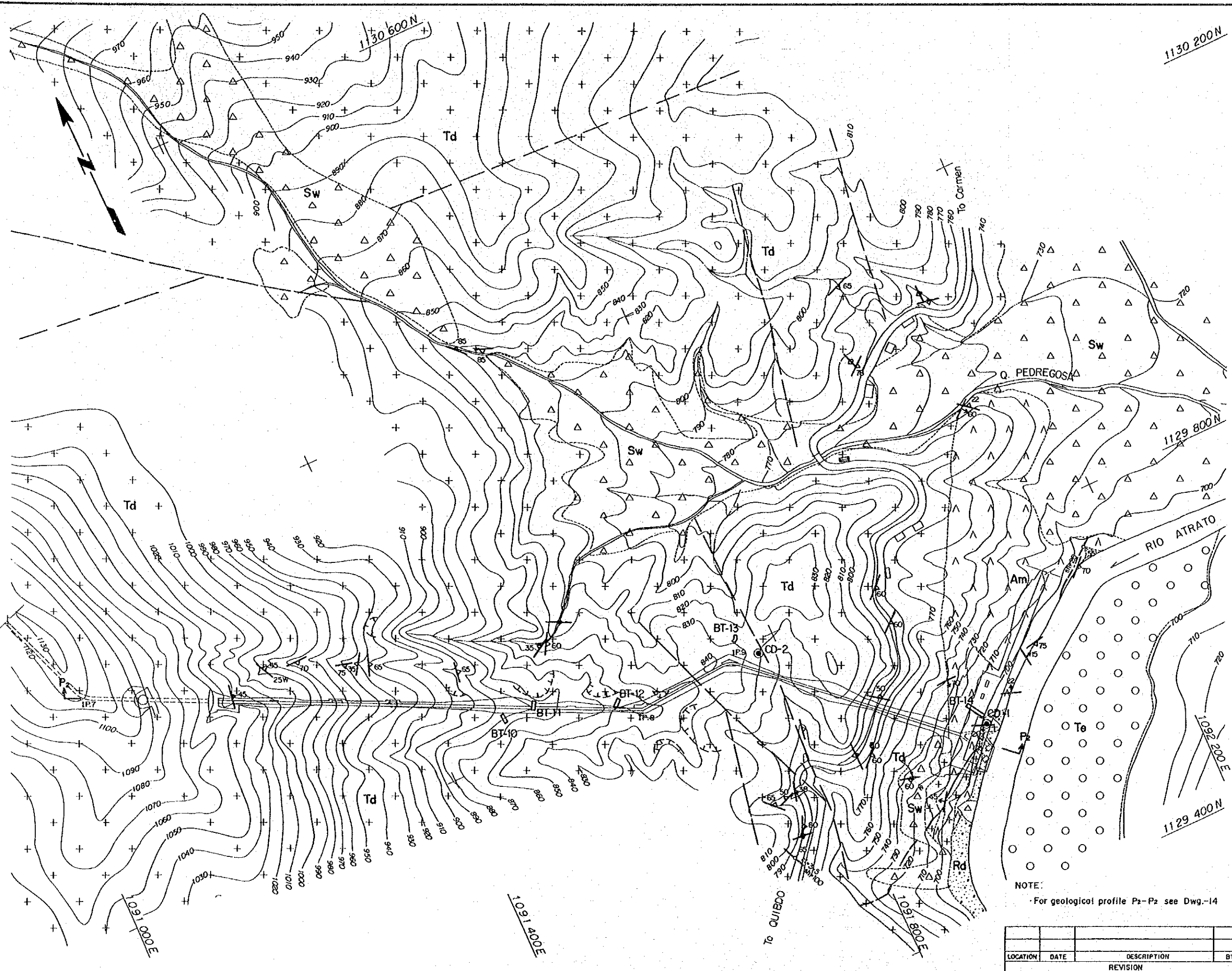
JAPAN INTERNATIONAL COOPERATION  
 INSTITUTO COLOMBIANO DE ENERGIA E  
 ATRATO HYDRO-ELECTRIC POWER  
 GEOLOGICAL PLAN OF EL SIETE  
 SURGE TANK, PENSTOCK AND POWER

ELECTRIC POWER DEVELOPMENT  
 TOKYO JAPAN

Dwg.-13

NOTE:  
 For geological profile Pz-Pz see Dwg.-14

LOCATION	DATE	DESCRIPTION	BY
		REVISION	

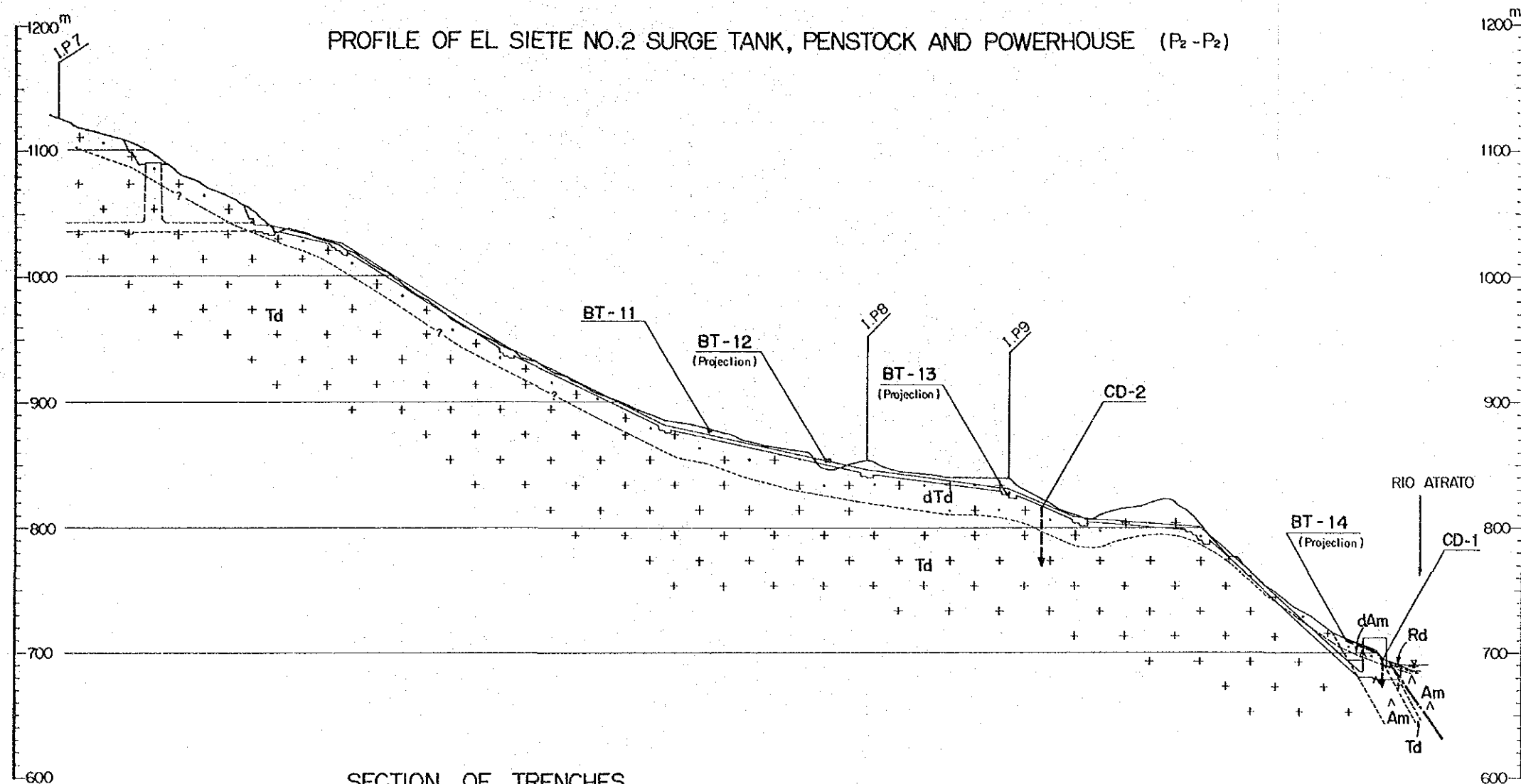


- ### LEGEND
- Rd River deposit
  - Sw Slopewash
  - Te Terrace deposit
  - Td Diorite
  - Ks Am Amphibolite
  - Geological boundary
  - $\searrow_{50}$  Strike and dip of bed
  - $\searrow_{50}$  Strike and dip of intrusive contact or foliation
  - $\searrow_{50}$  Fault sh ; Width of sheared zone.  
cl ; Width of fault clay.  
(1n cm)
  - Photolineament
  - $\searrow_{50}$  Strike and dip of fault
  - $\searrow_{30}$  Strike and dip of joint
  - $\nabla$  Slope collapse
  - $\odot$  Drillhole
  - $\square$  Trench

JAPAN INTERNATIONAL COOPERATION AGENCY			
INSTITUTO COLOMBIANO DE ENERGIA ELECTRICA			
ATRATO HYDRO-ELECTRIC POWER PROJECT			
GEOLOGICAL PLAN OF EL SIETE NO. 2			
SURGE TANK, PENSTOCK AND POWERHOUSE			
ELECTRIC POWER DEVELOPMENT Co., LTD TOKYO JAPAN			
Dwg.-13			

LOCATION	DATE	DESCRIPTION	BY
		REVISION	

# PROFILE OF EL SIETE NO.2 SURGE TANK, PENSTOCK AND POWERHOUSE (P<sub>2</sub>-P<sub>2</sub>)



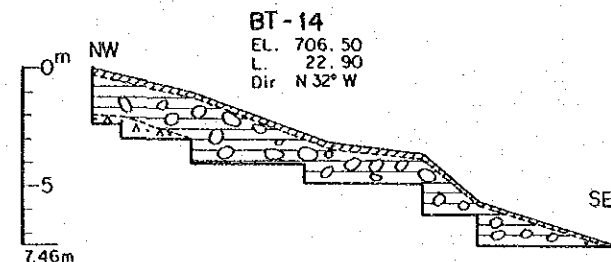
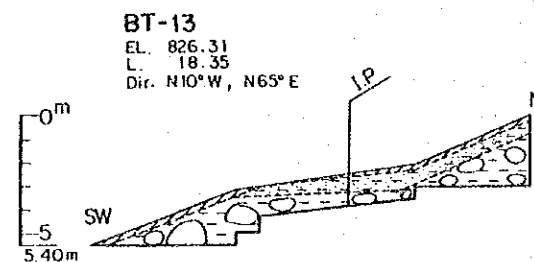
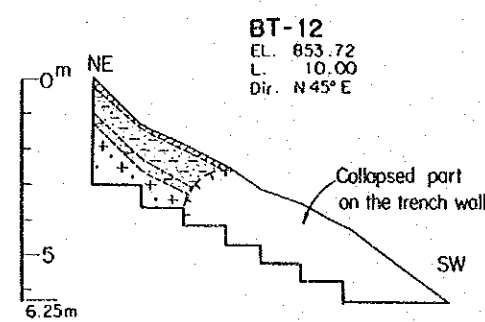
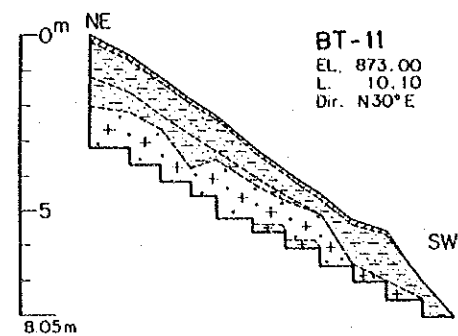
## LEGEND FOR PROFILE

- Rd River deposit
- dTd Decomposed diorite
- Td Diorite
- dAm Decomposed amphibolite
- Am Amphibolite
- Geological boundary
- - - Fault
- CD- Drillhole (Projection)
- BT- Trench

## LEGEND FOR CORE LOG

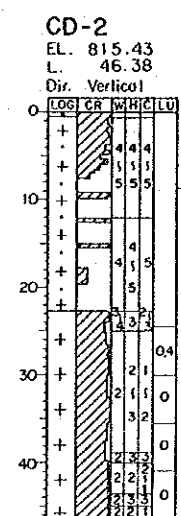
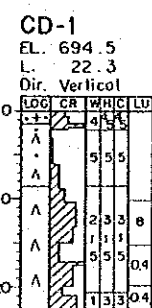
- Log
- Core recovery
- Core classification
- Lugeon value
- W; Weathering
- 1; Fresh
- 5; Decomposed
- H; Hardness
- 1; Hard
- 5; Soft
- C; Core cutting
- 1; Slick
- 5; Grain
- Ground water level
- 0 100%
- LOG CR WHICLU
- 2 2 3 4 1
- △ Residual soil
- ⊕ Decomposed diorite
- ⊕ Diorite
- △ Decomposed amphibolite
- △ Amphibolite

## SECTION OF TRENCHES



## LEGEND FOR TRENCH

- Topsoil
- Sandy silt
- Silty sand
- Pebble or boulder of basalt in clay matrix
- Block of diorite in sandy silt matrix
- Decomposed diorite
- Somewhat fresh diorite
- Weathered amphibolite
- Geological boundary



NOTE:

- For location of profile see Dwg. 13

LOCATION	DATE	DESCRIPTION	BY
		REVISION	

JAPAN INTERNATIONAL COOPERATION AGENCY

INSTITUTO COLOMBIANO DE ENERGIA ELECTRICA

ATRATO HYDRO-ELECTRIC POWER PROJECT

GEOLOGICAL PROFILE OF EL SIETE NO.2

SURGE TANK, PENSTOCK AND POWERHOUSE

ELECTRIC POWER DEVELOPMENT Co., LTD

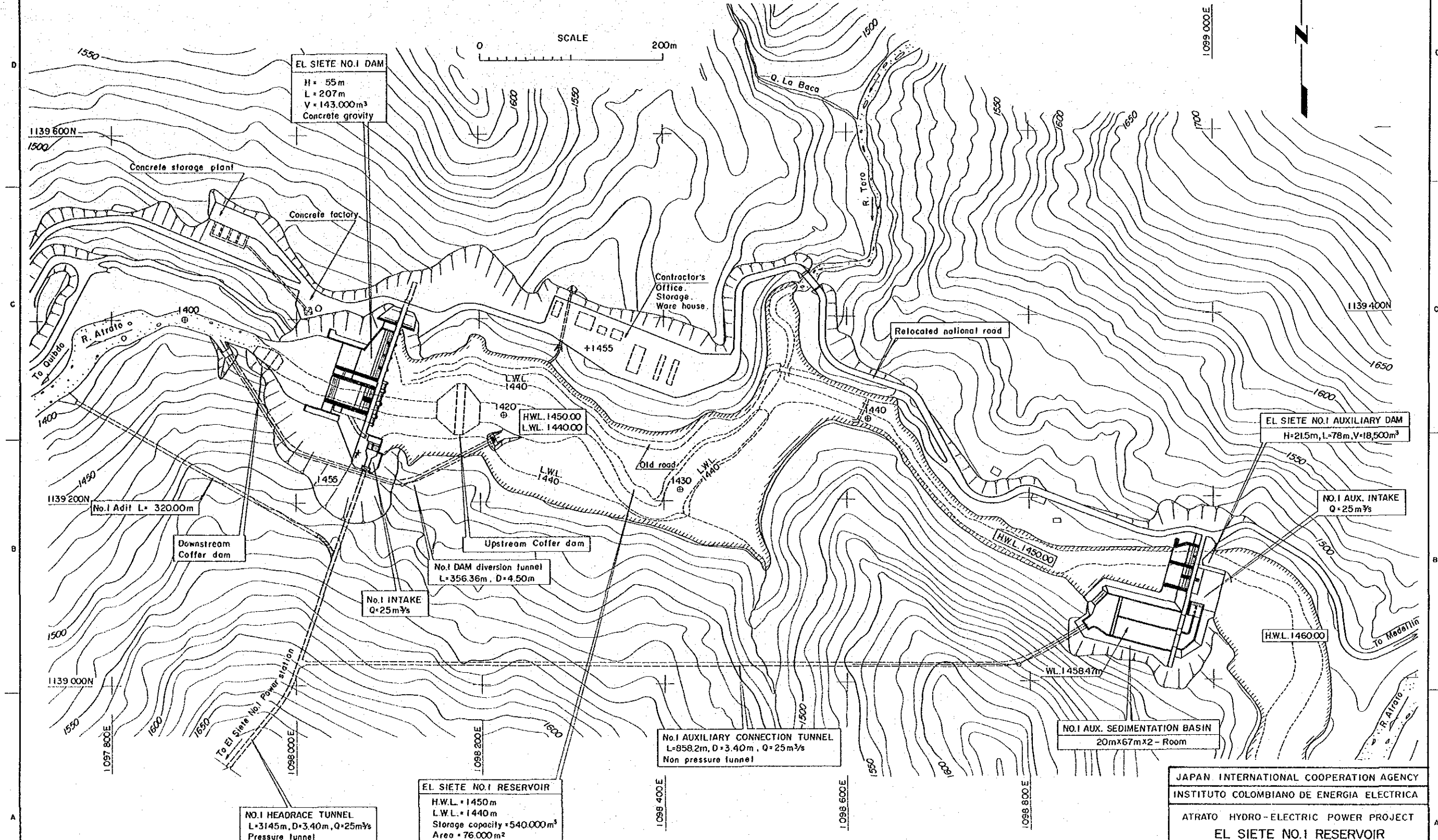
TOKYO JAPAN

Dwg.-14

# GENERAL PLAN OF EL SIETE NO.1 DAM AND EL SIETE NO.1 AUXILIARY DAM

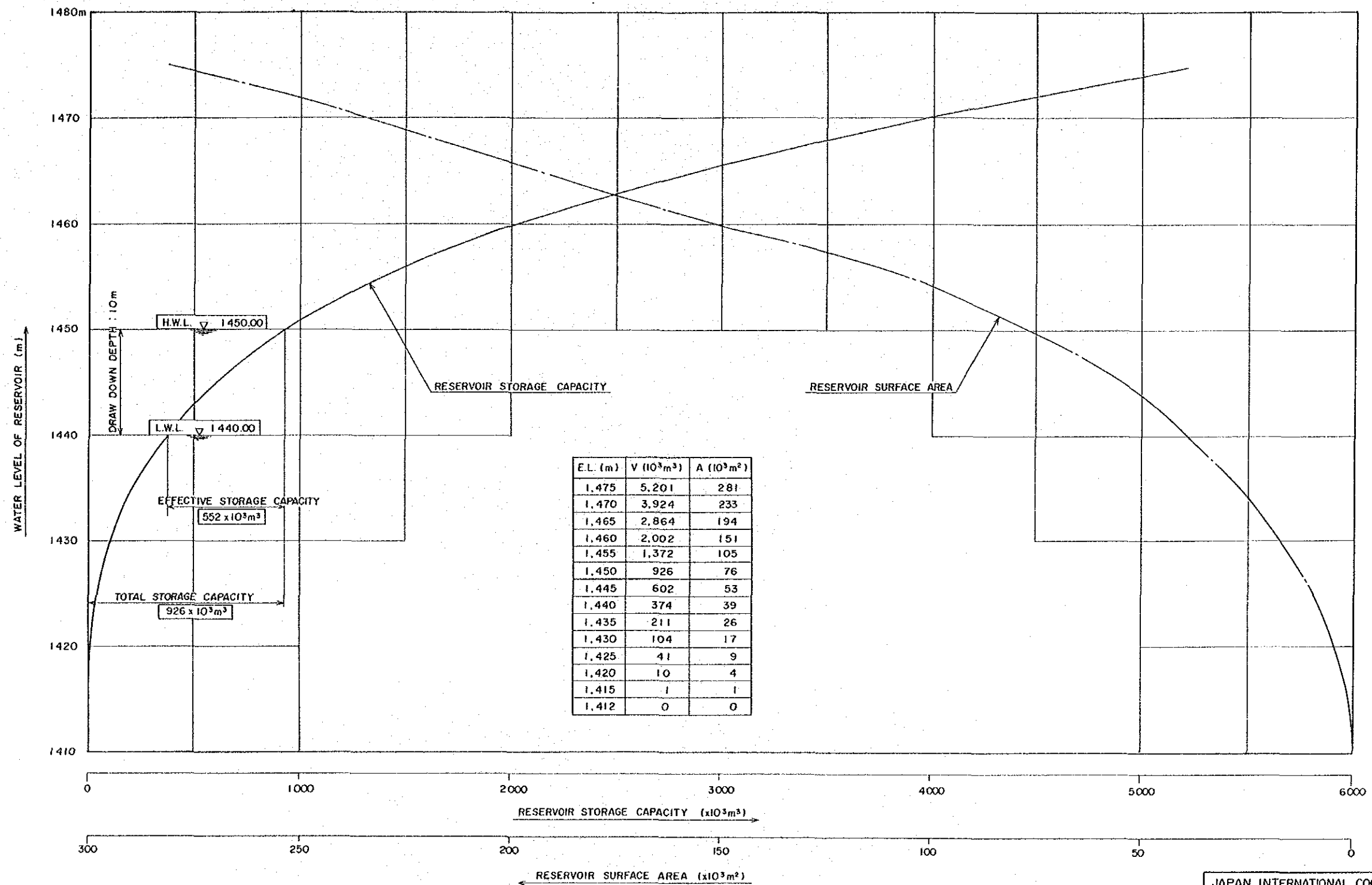
SCALE 0 200m

1099 000 E



JAPAN INTERNATIONAL COOPERATION AGENCY			
INSTITUTO COLOMBIANO DE ENERGIA ELECTRICA			
ATRATO HYDRO-ELECTRIC POWER PROJECT			
EL SIETE NO.1 RESERVOIR			
GENERAL PLAN			
ELECTRIC POWER DEVELOPMENT CO., LTD TOKYO, JAPAN			
Dwg. -15			

LOCATION	DATE	DESCRIPTION	BY
REVISION			

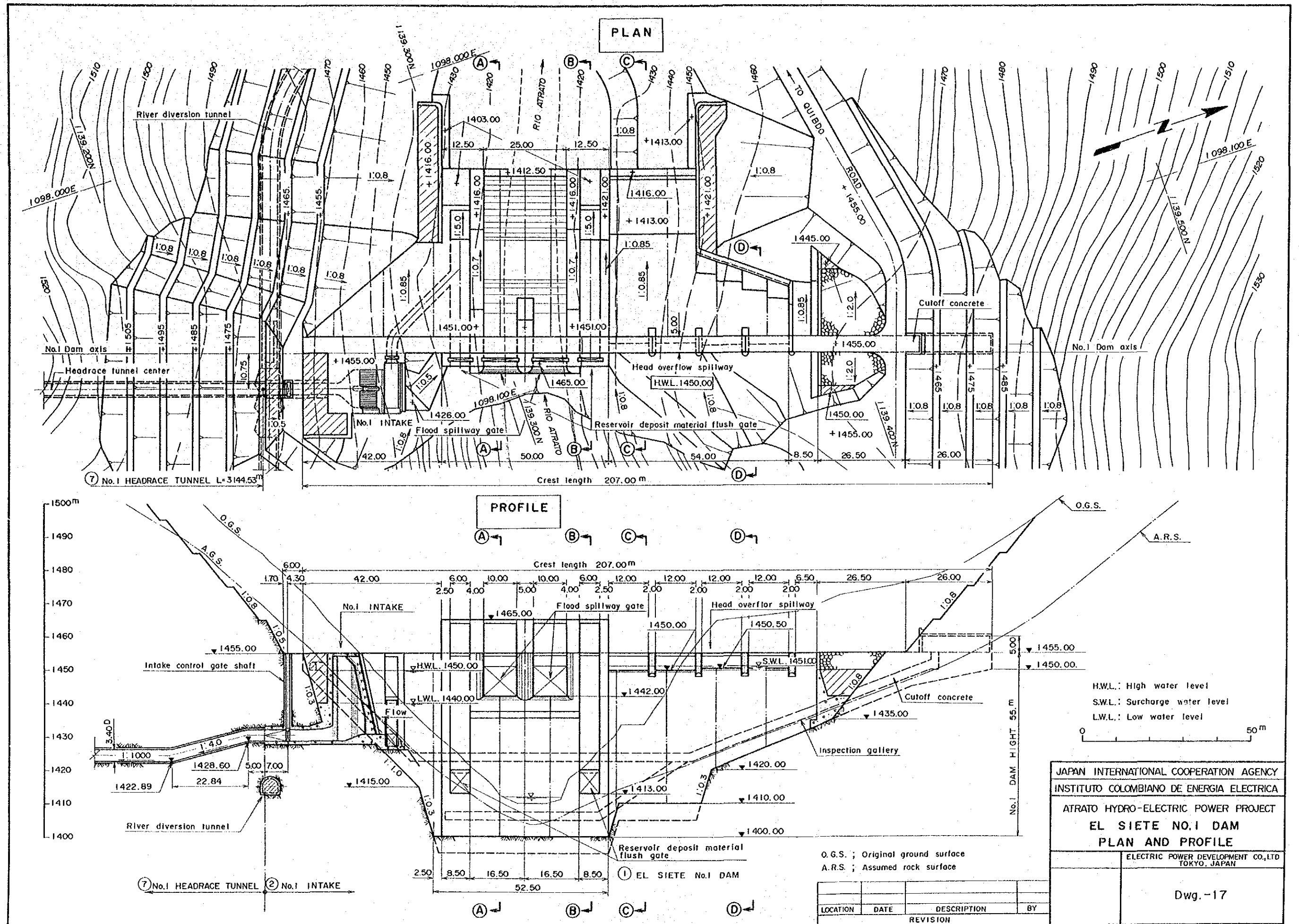


EL SIETE NO.1 REGULATING RESERVOIR

JAPAN INTERNATIONAL COOPERATION AGENCY  
 INSTITUTO COLOMBIANO DE ENERGIA ELECTRICA  
 ATRATO HYDRO-ELECTRIC POWER PROJECT  
 EL SIETE NO.1 RESERVOIR  
 STORAGE CAPACITY AND AREA CURVES  
 ELECTRIC POWER DEVELOPMENT CO., LTD  
 TOKYO, JAPAN

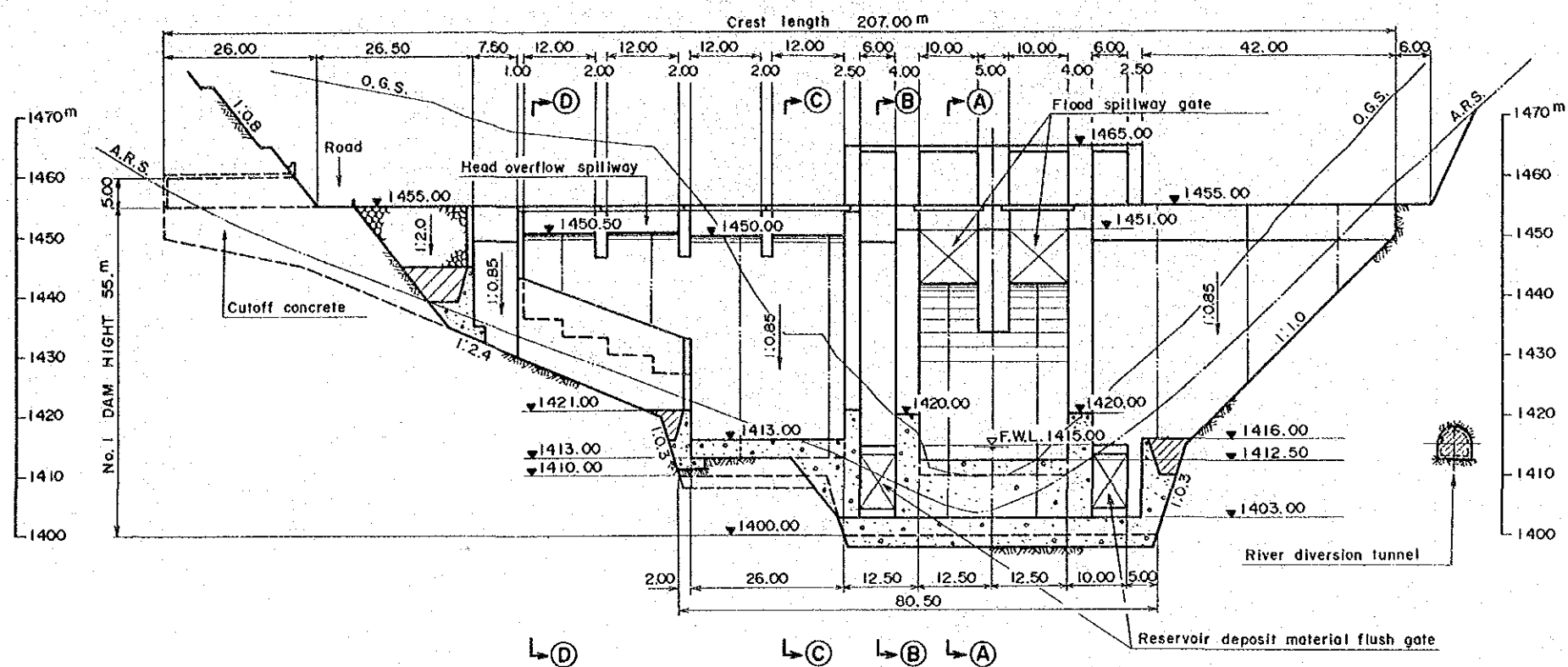
Dwg. -16

LOCATION	DATE	DESCRIPTION	BY
REVISION			

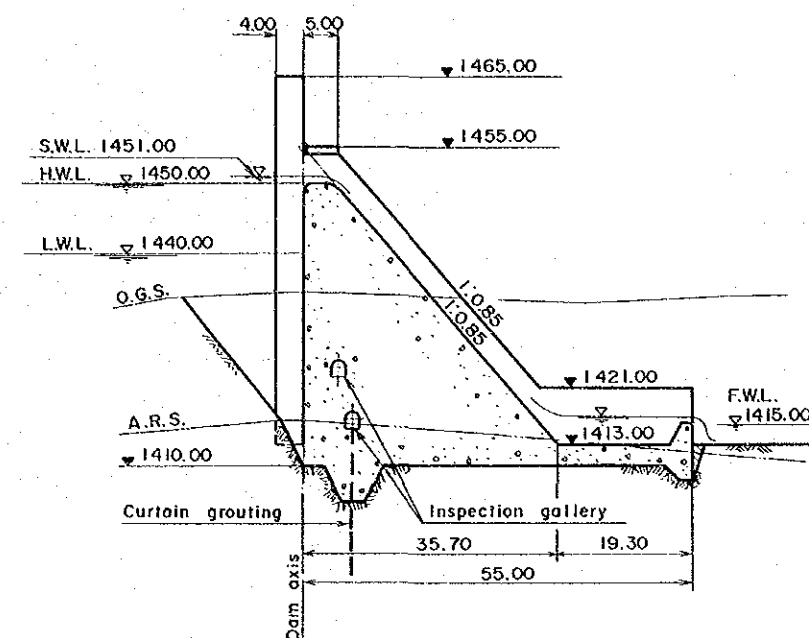




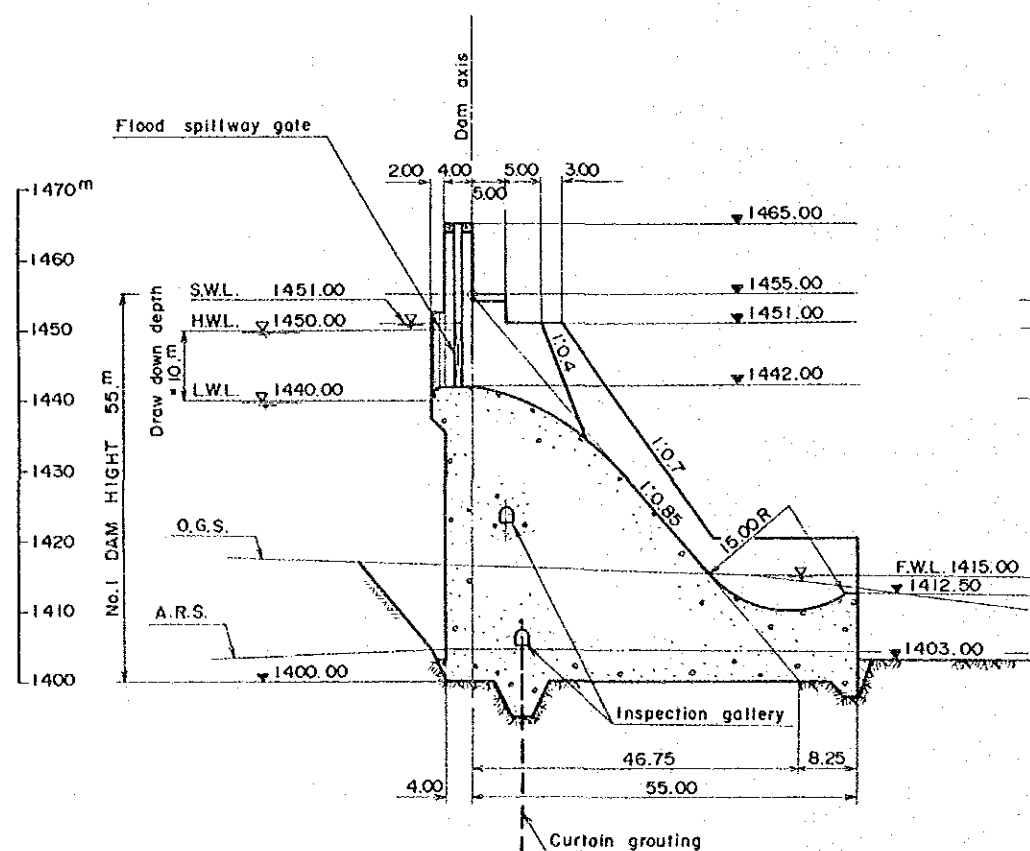
**PROFILE**  
No.1 dam's front view



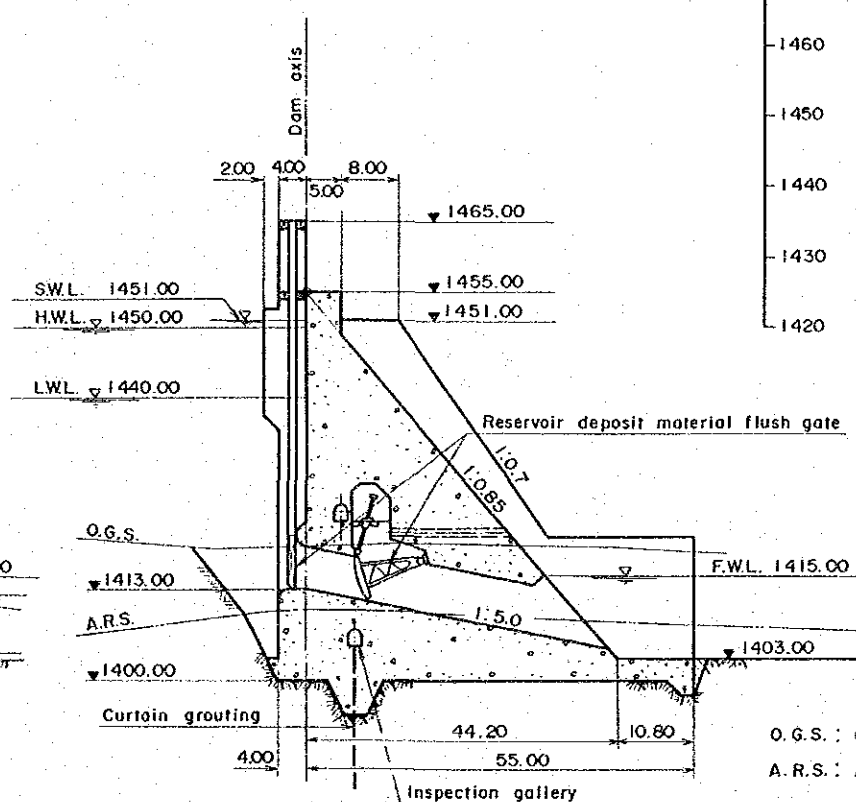
**SECTION C-C**  
Head overflow spillway



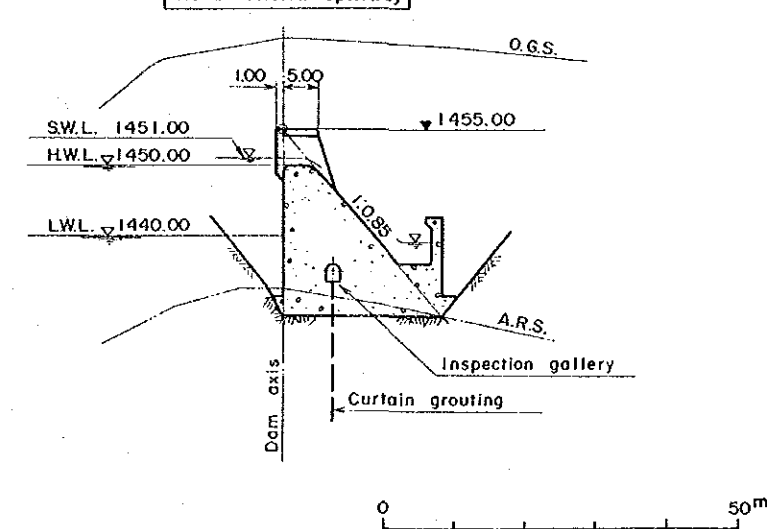
**SECTION A-A**  
Flood spillway



**SECTION B-B**



**SECTION D-D**  
Head overflow spillway



O.G.S.: Original ground surface  
A.R.S.: Assumed rock surface

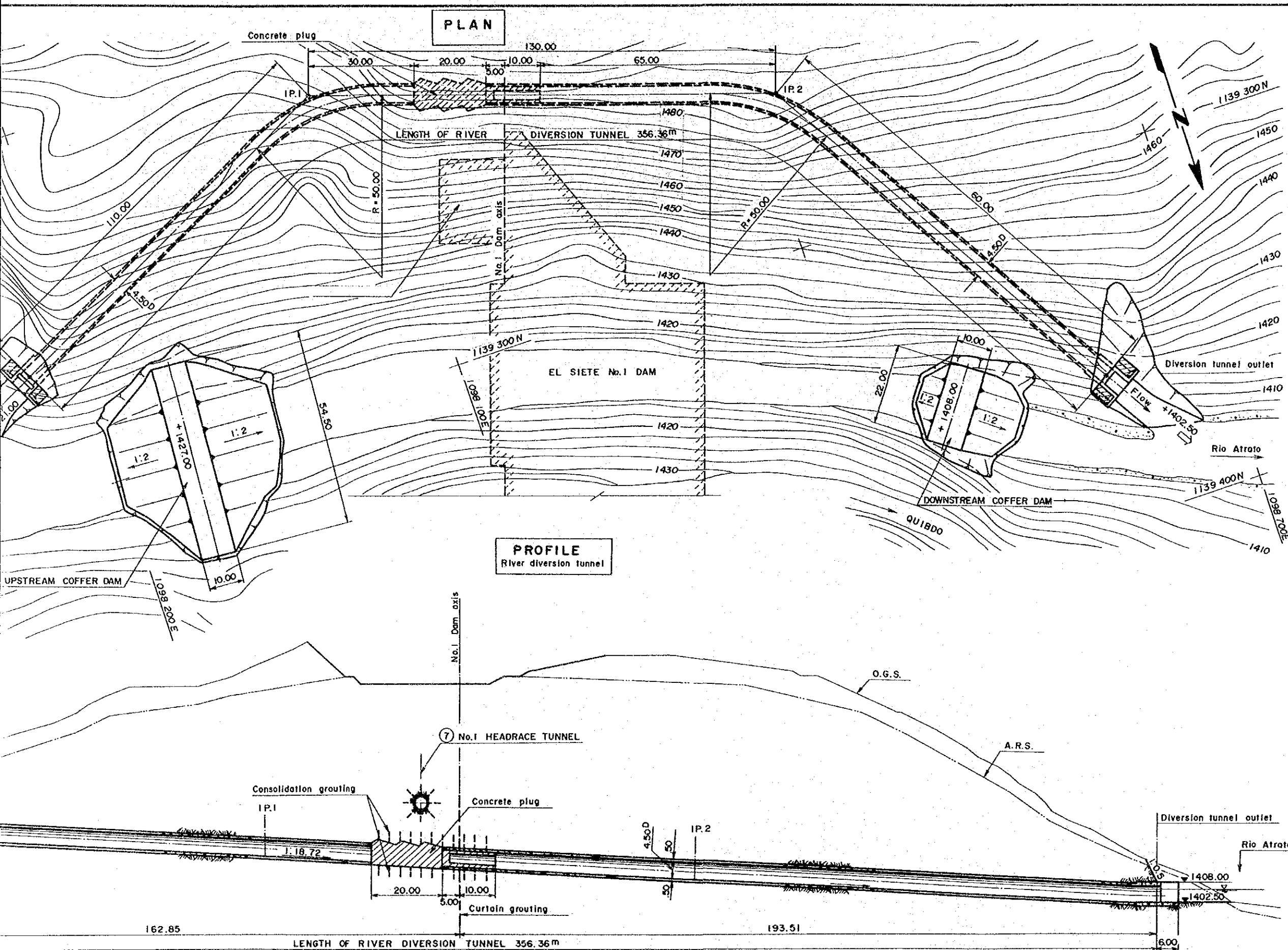
LOCATION	DATE	DESCRIPTION	BY
		REVISION	

JAPAN INTERNATIONAL COOPERATION AGENCY  
INSTITUTO COLOMBIANO DE ENERGIA ELECTRICA  
ATRATO HYDRO-ELECTRIC POWER PROJECT  
**EL SIETE NO.1 DAM**  
**FRONT VIEW AND SECTION**  
ELECTRIC POWER DEVELOPMENT CO., LTD  
TOKYO, JAPAN

Dwg.-18







O.G.S.; Original ground surface  
A.R.S.; Assumed rock surface

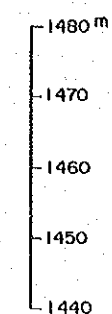
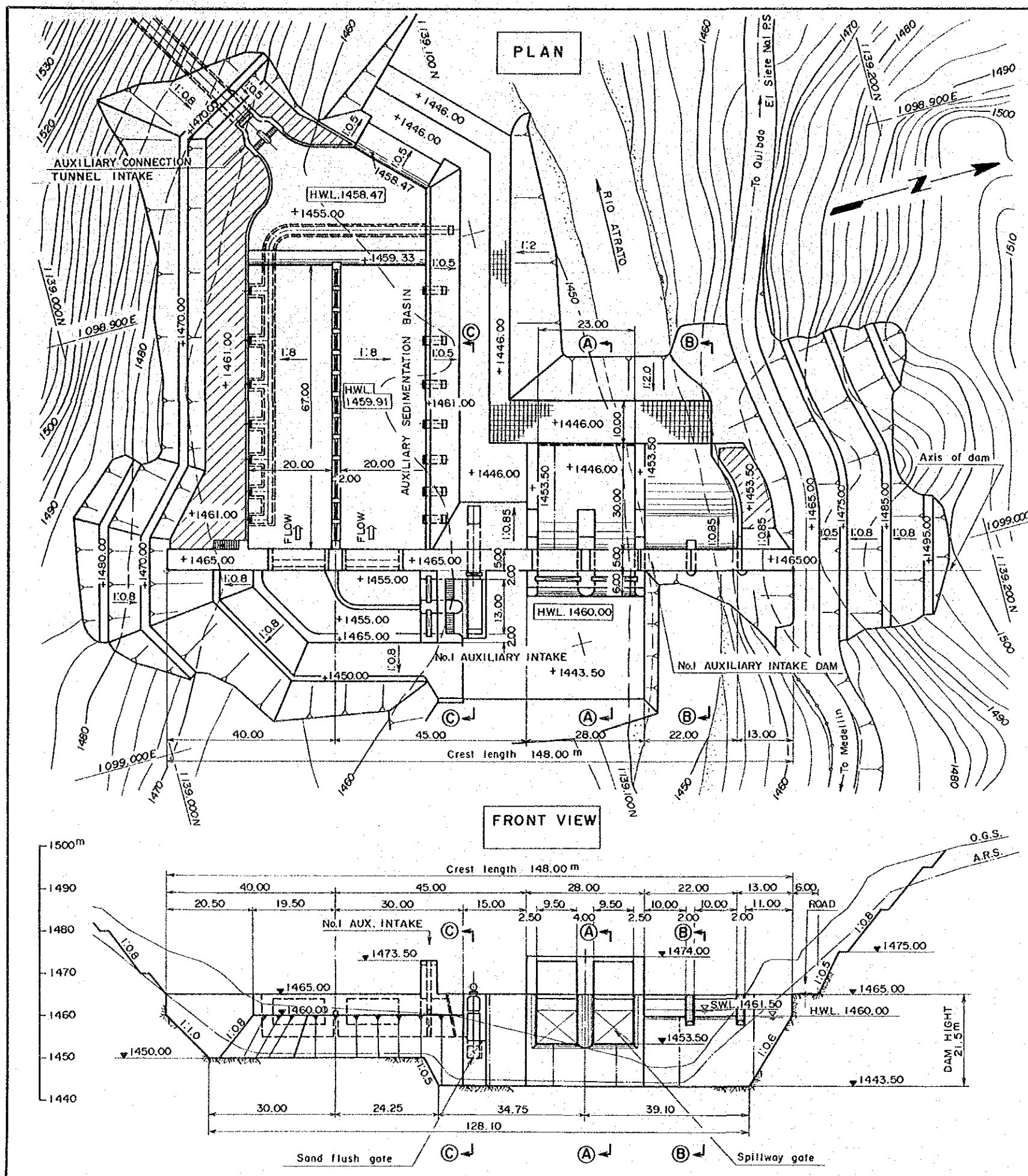
LOCATION	DATE	DESCRIPTION	BY
REVISION			

JAPAN INTERNATIONAL COOPERATION AGENCY  
INSTITUTO COLOMBIANO DE ENERGIA ELECTRICA

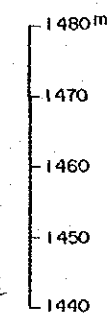
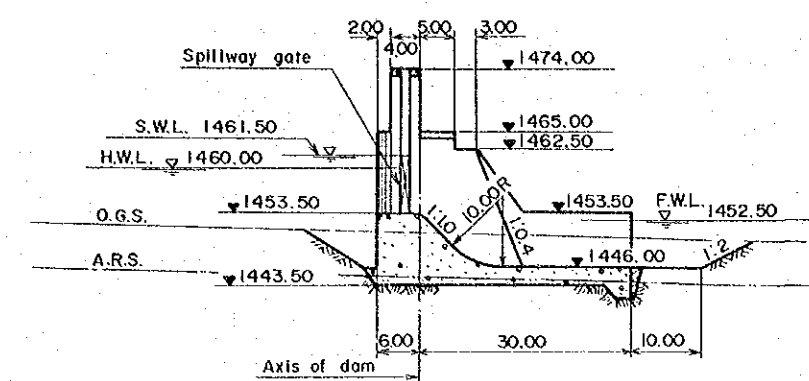
ATRATO HYDRO-ELECTRIC POWER PROJECT  
NO. 1 DAM DIVERSION TUNNEL  
PLAN, PROFILE AND TYPICAL CROSS SECTION

ELECTRIC POWER DEVELOPMENT CO., LTD.  
TOKYO, JAPAN

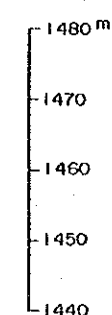
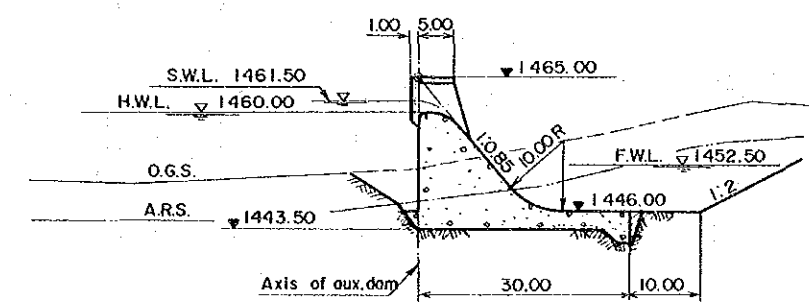
Dwg. -19



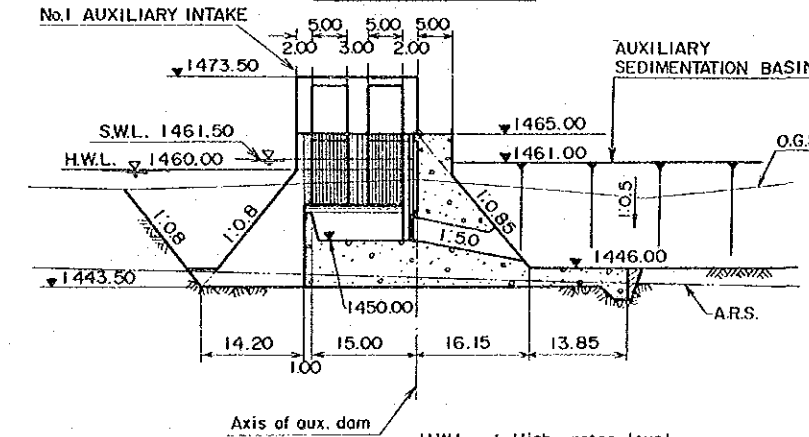
**SECTION A-A**



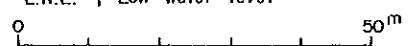
**SECTION B-B**



**SECTION C-C**



H.W.L. ; High water level  
S.W.L. ; Surcharge water level  
L.W.L. ; Low water level



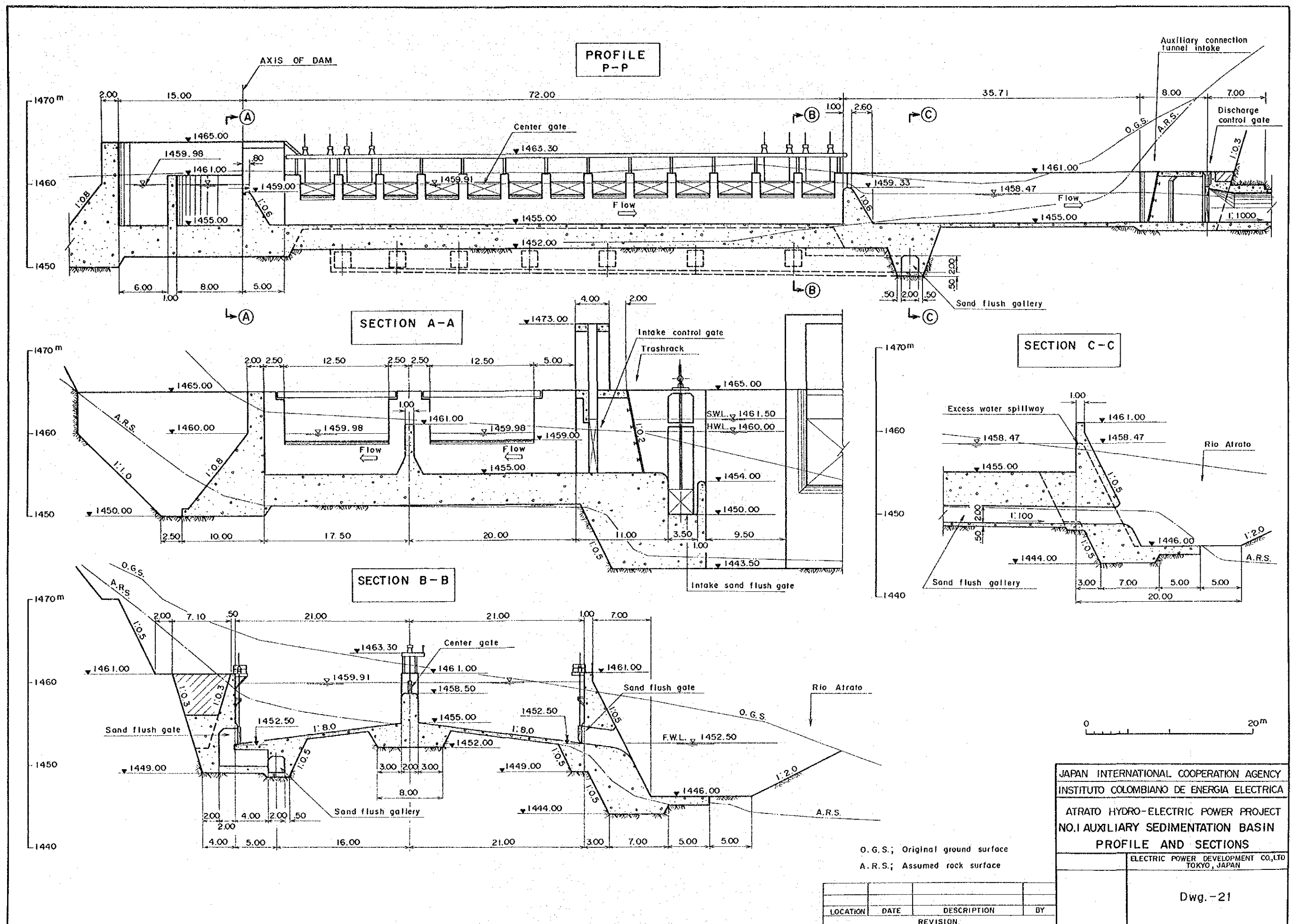
O.G.S. ; Original ground surface  
A.R.S. ; Assumed rock surface

LOCATION	DATE	DESCRIPTION	BY
		REVISION	

JAPAN INTERNATIONAL COOPERATION AGENCY  
INSTITUTO COLOMBIANO DE ENERGIA ELECTRICA  
ATRATO HYDRO-ELECTRIC POWER PROJECT  
EL SIETE NO.1 AUXILIARY DAM  
PLAN, PROFILE AND SECTIONS

ELECTRIC POWER DEVELOPMENT CO., LTD  
TOKYO, JAPAN

Dwg. - 20



JAPAN INTERNATIONAL COOPERATION AGENCY  
INSTITUTO COLOMBIANO DE ENERGIA ELECTRICA

ATRATO HYDRO-ELECTRIC POWER PROJECT  
NO. 1 AUXILIARY SEDIMENTATION BASIN  
PROFILE AND SECTIONS

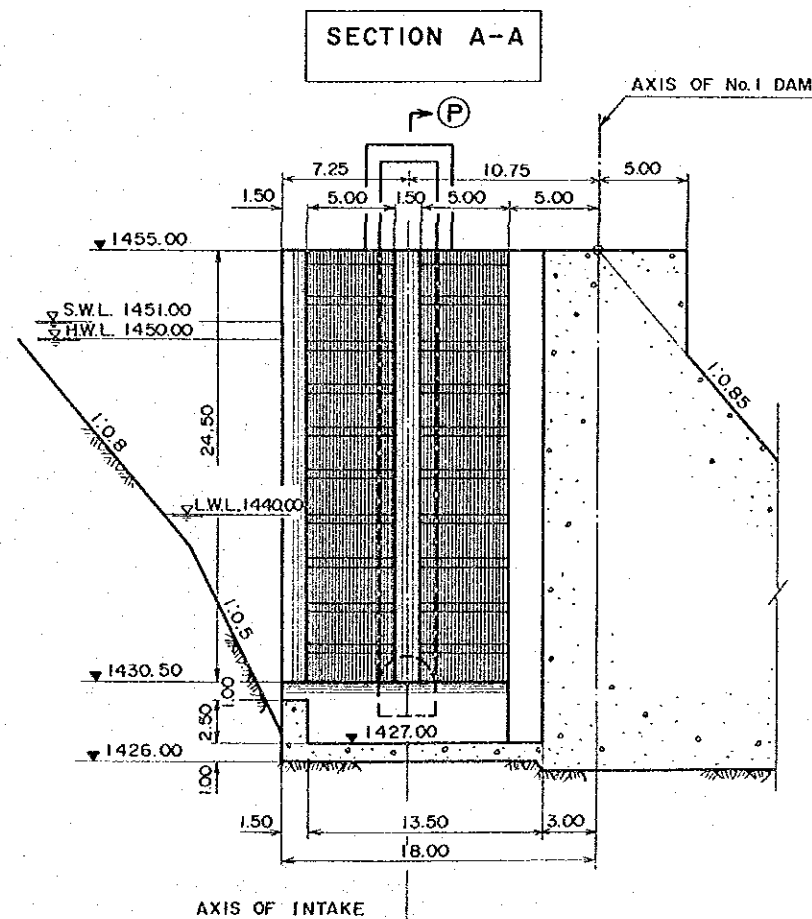
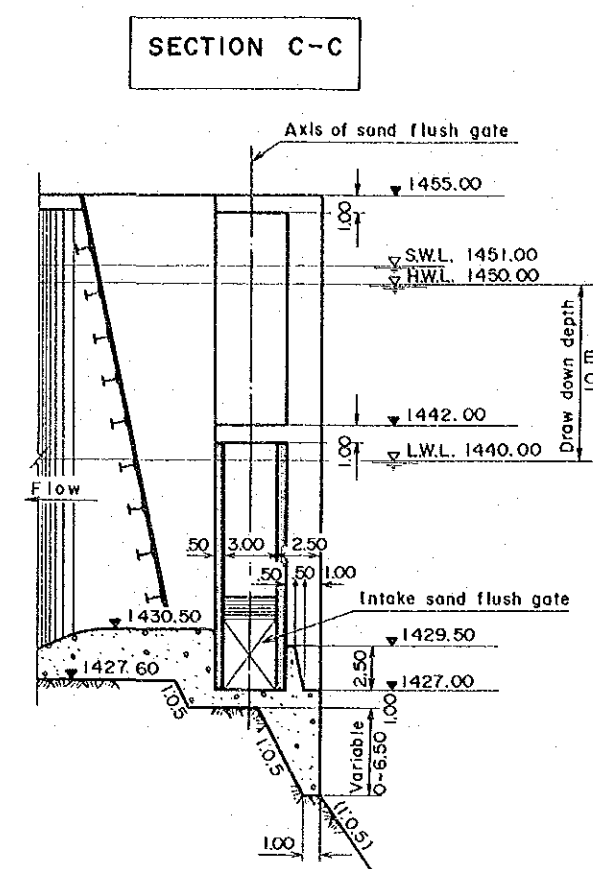
ELECTRIC POWER DEVELOPMENT CO., LTD  
TOKYO, JAPAN

Dwg. - 21



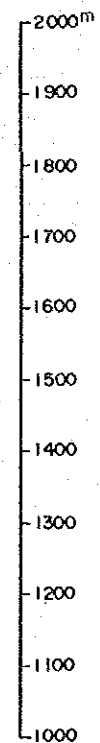
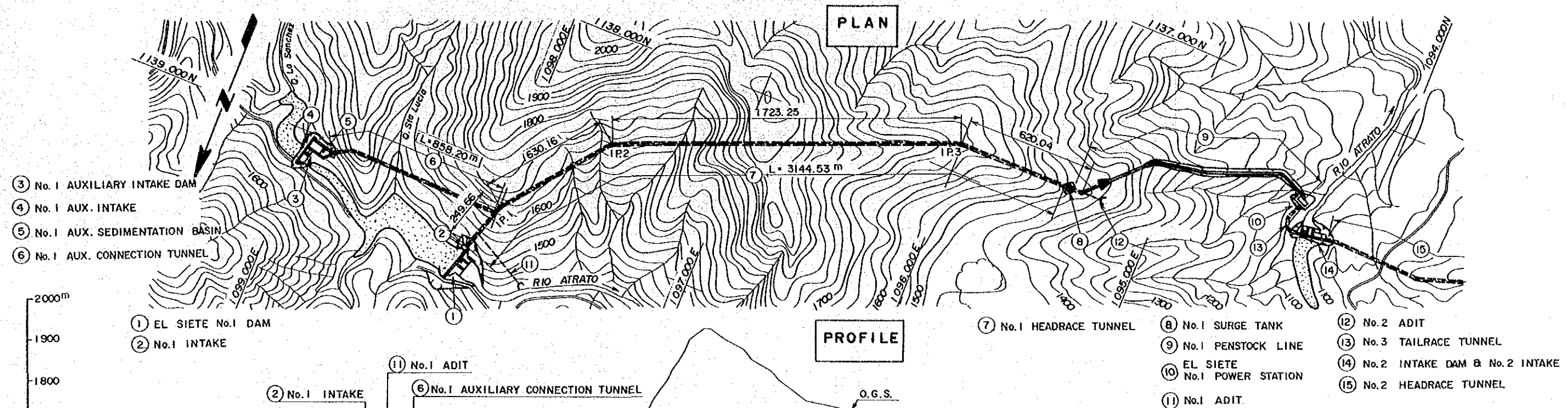




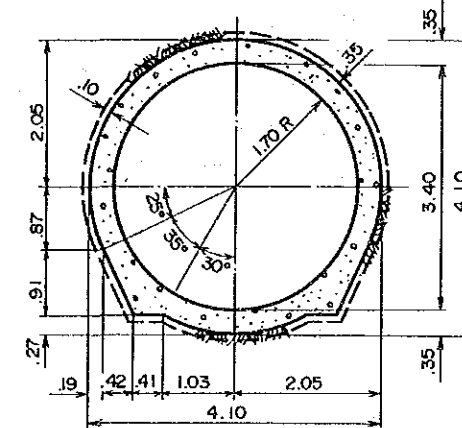


Dwg. - 24

LOCATION	DATE	DESCRIPTION	BY
REVISION			



**SECTION**  
No.1 HEADRACE TUNNEL



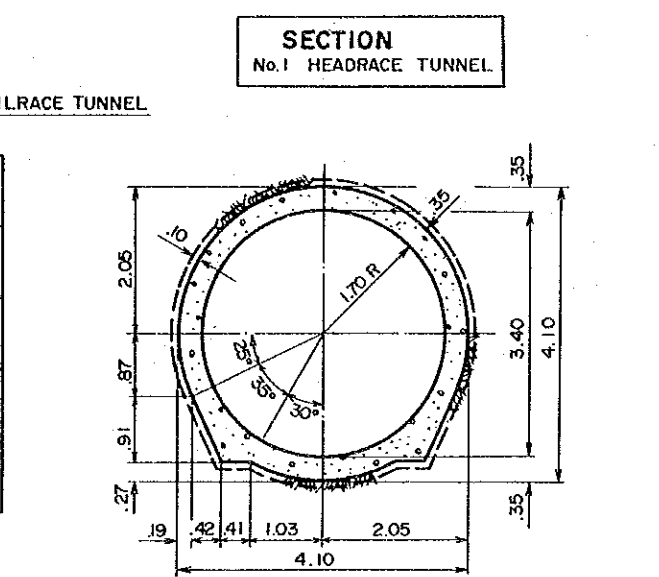
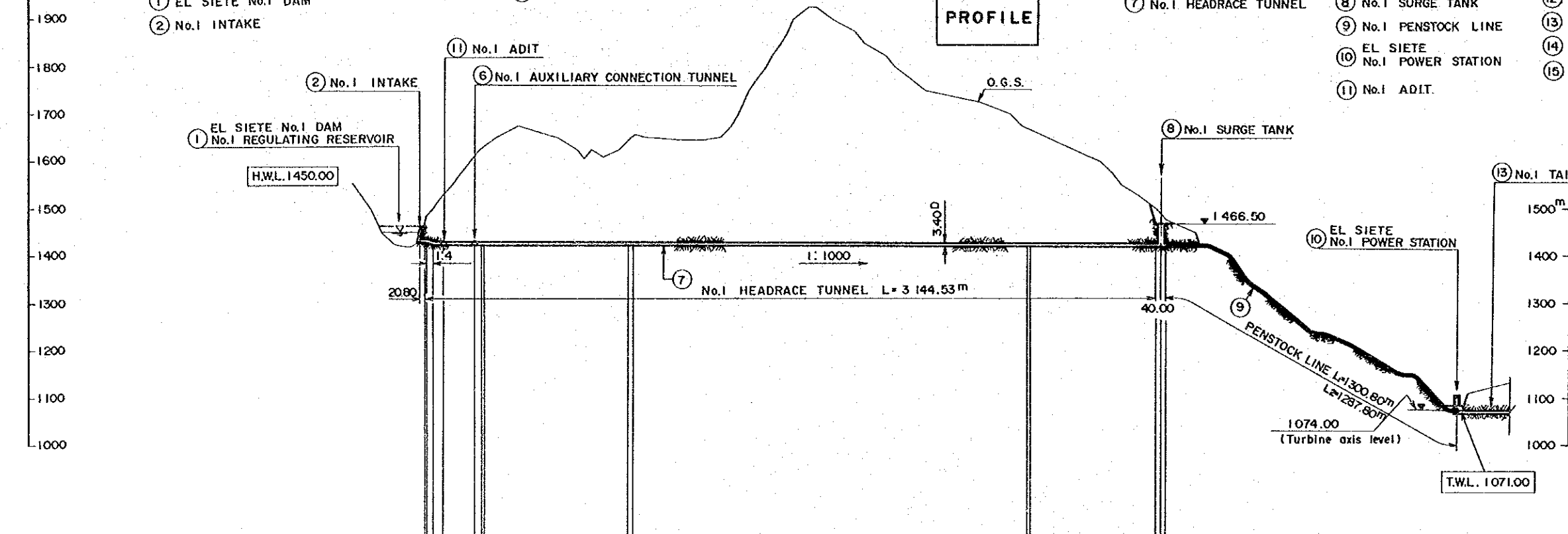
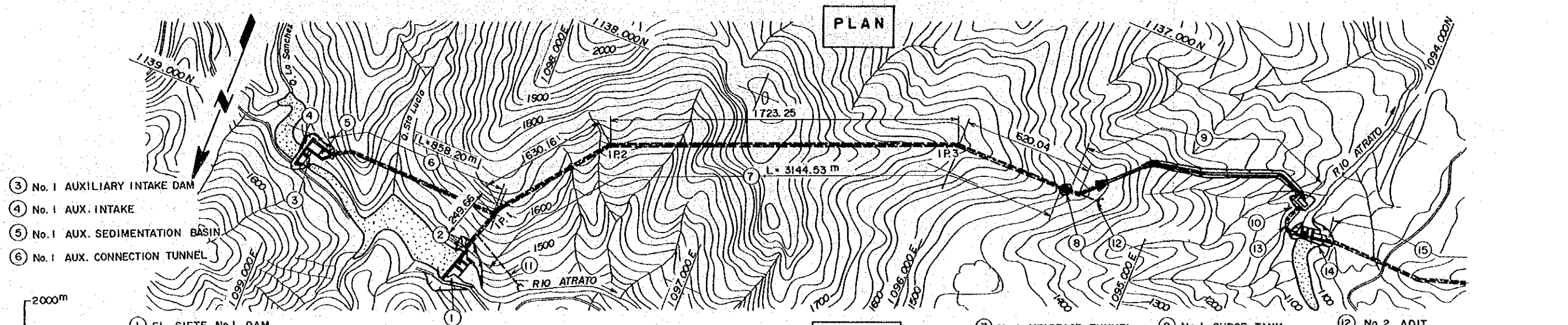
STA	DIS TANCE	TOTAL DIS TANCE	GROUND HEIGHT	FORM ON HEIGHT
0	0.00	0.00	485.00	428.60
BC.1	22.84	22.84	485.00	428.60
EC.1	22.84	22.84	485.00	428.60
BC.2	22.84	45.68	485.00	428.60
EC.2	22.84	45.68	485.00	428.60
BC.3	22.84	68.52	485.00	428.60
EC.3	22.84	68.52	485.00	428.60
S.T.	22.84	91.36	485.00	428.60

O.G.S. ; Original ground surface

LOCATION	DATE	DESCRIPTION	BY
		REVISION	

JAPAN INTERNATIONAL COOPERATION  
INSTITUTO COLOMBIANO DE ENERGIA  
ATRATO HYDRO-ELECTRIC POWER  
EL SIETE NO.1 HEADRACE  
PLAN, PROFILE AND SECTION

ELECTRIC POWER DEVELOPMENT  
TOKYO, JAPAN



STA	DIS TANCE	TOTAL DIS TANCE	GROUND HEIGHT	FORMAT ON HEIGHT
0	0.00	0.00	1435.00	1435.00
BC.1	22.84	22.84	1435.00	1435.00
EC.1	135.00	157.84	1435.00	1435.00
BC.2	617.00	774.84	1435.00	1435.00
EC.2	1547.00	2321.84	1435.00	1435.00
BC.3	709.74	3031.58	1435.00	1435.00
EC.3	11.07	3042.65	1435.00	1435.00
ST	536.44	3579.09	1435.00	1435.00

O.G.S. ; Original ground surface

LOCATION	DATE	DESCRIPTION	BY
		REVISION	

JAPAN INTERNATIONAL COOPERATION AGENCY  
 INSTITUTO COLOMBIANO DE ENERGIA ELECTRICA  
 ATRATO HYDRO-ELECTRIC POWER PROJECT  
 EL SIETE NO.1 HEADRACE TUNNEL  
 PLAN, PROFILE AND SECTION  
 ELECTRIC POWER DEVELOPMENT CO.,LTD  
 TOKYO, JAPAN  
 Dwg. - 25

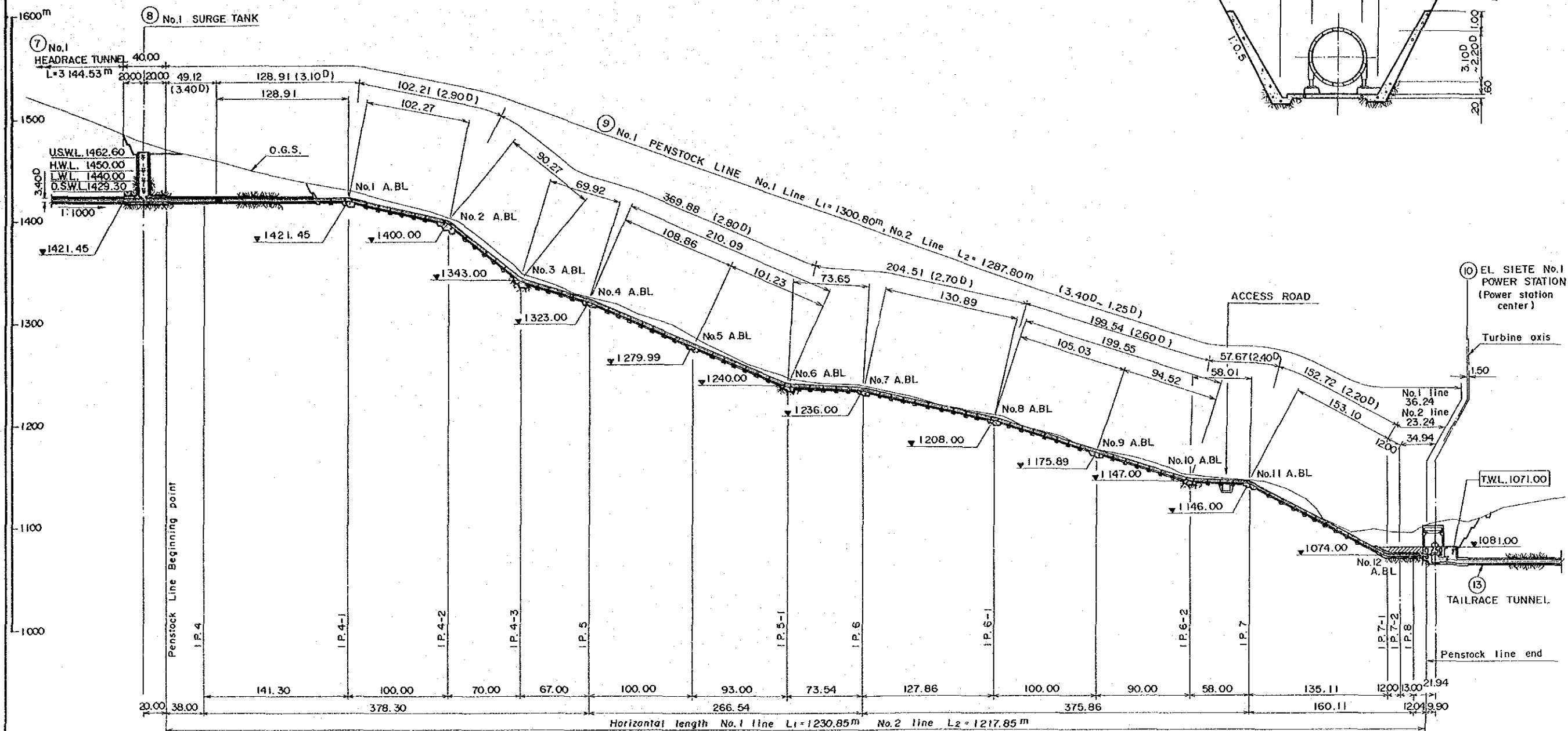




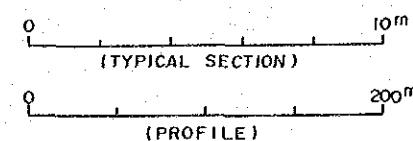


# PROFILE

## TYPICAL SECTION OF NO.1 PENSTOCK LINE



O.G.S.; Original ground surface

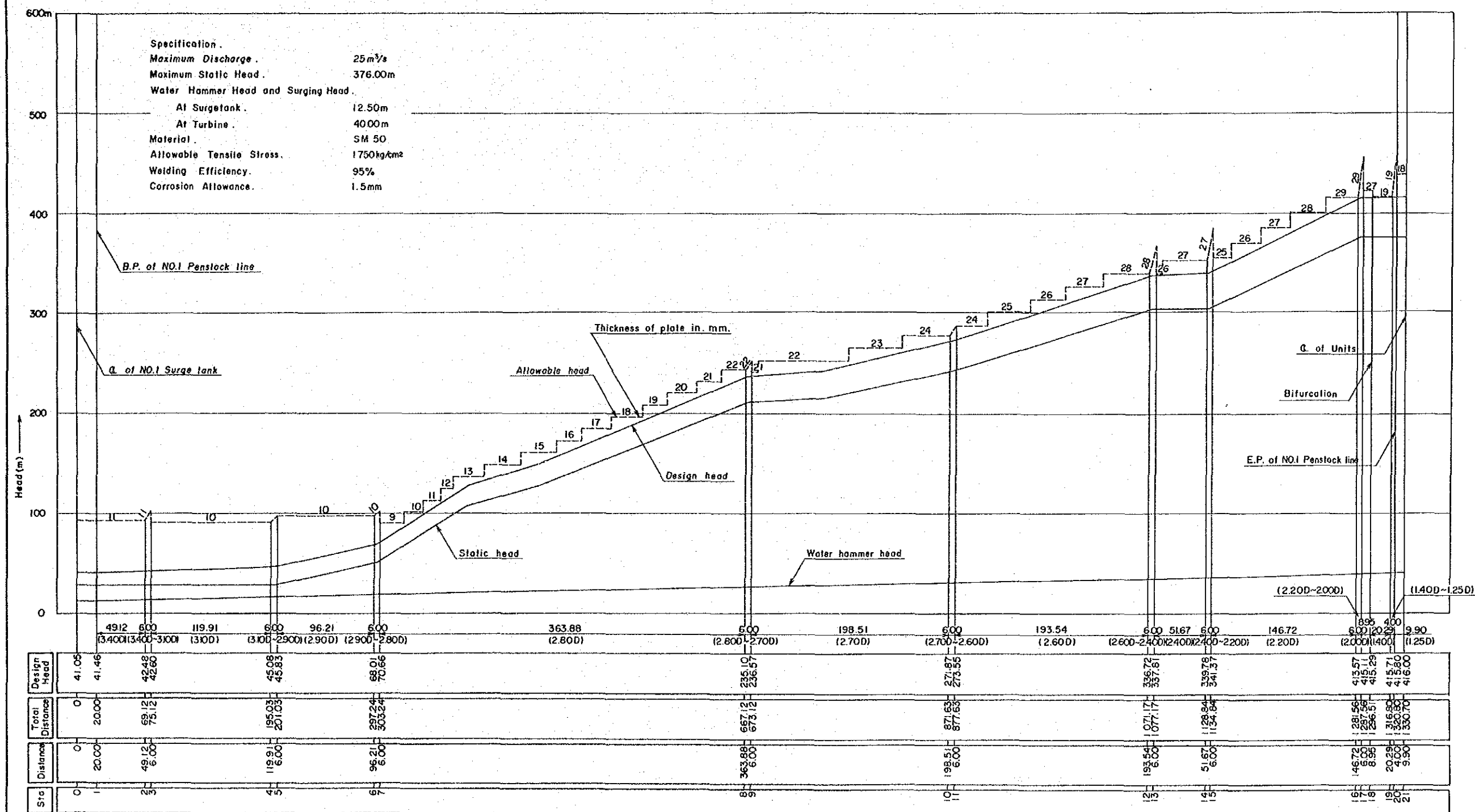


JAPAN INTERNATIONAL COOPERATION AGENCY  
 INSTITUTO COLOMBIANO DE ENERGIA ELECTRICA  
 ATRATO HYDRO-ELECTRIC POWER PROJECT  
 EL SIETE NO.1 PENSTOCK LINE  
 PROFILE AND SECTION

ELECTRIC POWER DEVELOPMENT CO., LTD.  
 TOKYO, JAPAN

Dwg.-28

LOCATION	DATE	DESCRIPTION	BY
		REVISION	



Pressure curve of EL siete NO.1 Penstock line

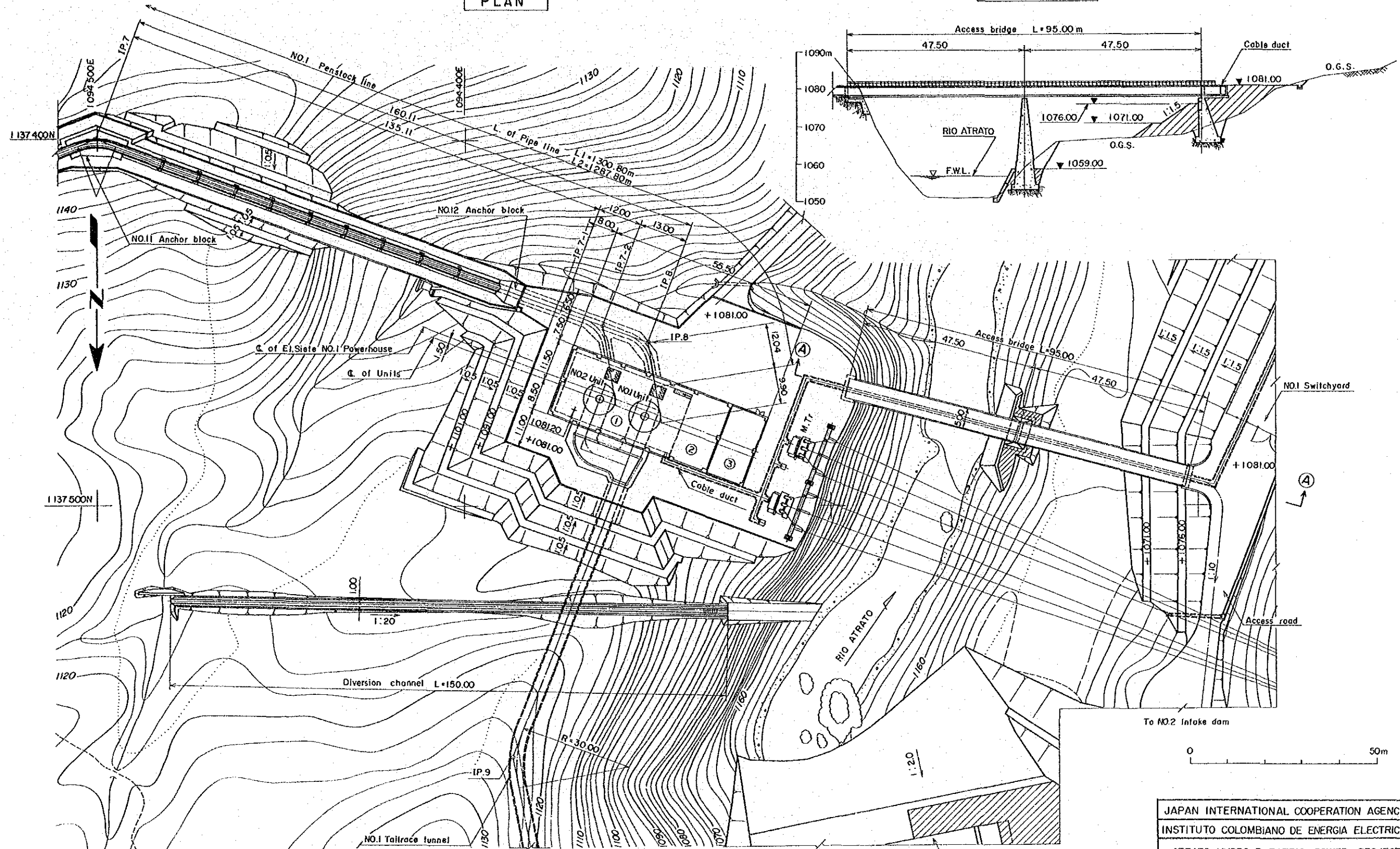
0 200m

LOCATION	DATE	DESCRIPTION	BY
REVISION			

JAPAN INTERNATIONAL COOPERATION AGENCY	
INSTITUTO COLOMBIANO DE ENERGIA ELECTRICA	
ATRATO HYDRO-ELECTRIC POWER PROJECT	
EL SIETE NO.1 PENSTOCK	
PRESSURE CURVE	
ELECTRIC POWER DEVELOPMENT CO., LTD TOKYO, JAPAN	
Dwg.-29	

# PLAN

# SECTION A - A



- ① Generating room
- ② Erection bay
- ③ Office and control room

LOCATION	DATE	DESCRIPTION	BY
		REVISION	

JAPAN INTERNATIONAL COOPERATION AGENCY
INSTITUTO COLOMBIANO DE ENERGIA ELECTRICA
ATRATO HYDRO-ELECTRIC POWER PROJECT
EL SIETA NO.1 POWERHOUSE
PLAN AND SECTION
ELECTRIC POWER DEVELOPMENT CO., LTD
TOKYO, JAPAN
Dwg.-30