

THE DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
MINISTRY OF POWER AND ENERGY
CEYLON ELECTRICITY BOARD

KUKULE GANGA HYDROPOWER PROJECT
FEASIBILITY STUDY

Volume 2 Drawings

August 1992

Joint Venture Kukule Ganga

Nippon Koei Co., Ltd,
Electrowatt Engineering Services Ltd.
Lahmeyer International GmbH

Counterpart Engineers

Central Engineering Consultancy Bureau
TEAMS & RDC

THE DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA

MINISTRY OF POWER AND ENERGY

CEYLON ELECTRICITY BOARD

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PROJECT**

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Counterpart Engineers

Central Engineering Consultancy Bureau

TEAMS & RDC

**FEASIBILITY STUDY
OF
KUKULE GANGA HYDROPOWER PROJECT**

FEASIBILITY STUDY REPORT

List of Volumes

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	SR3B Resettlement Plan
Volume 4	SR4A Topography
	SR4B Hydrometeorology
	SR4C Hydrometeorological Database Report
Volume 5	SR5A Geology
	SR5B Construction Materials
Volume 6	SR6A Plan Formulation
Volume 7	SR7A Design of Civil Works
	SR7B Access Roads
	SR7C Hydromechanical Works
Volume 8	SR8A Mechanical Works
	SR8B Electrical Works
	SR8C Transmission Line Works
Volume 9	SR9A Construction Planning and Cost Estimates
	SR9B Outputs of EVALS, WASP III and SEXSI

Note: SR3A shows Supporting Report A contained in Volume 3.

**FEASIBILITY STUDY
OF
THE KUKULE GANGA HYDROPOWER PROJECT**

LIST OF DRAWINGS

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8. Plan and Profile of Project Alternative KK-230
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26. Project Access Roads, Sheet 3 (1:10,000)
27. Project Access Roads, Sheet 4 (1:10,000)

KUKULE GANGA HYDROPOWER PROJECT

THE DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
MINISTRY OF POWER AND ENERGY
CEYLON ELECTRICITY BOARD

JOINT VENTURE KUKULE GANGA
NIPPON KOEI Co., Ltd., TOKYO, JAPAN
ELECTROWATT ENGINEERING SERVICES Ltd., ZURICH, SWITZERLAND
LAHMEYER INTERNATIONAL GmbH, FRANKFURT, GERMANY
Assisted by
CENTRAL ENGINEERING CONSULTANCY BUREAU, COLOMBO
TEAMS (Pvt) Ltd. and RDC Ltd., COLOMBO

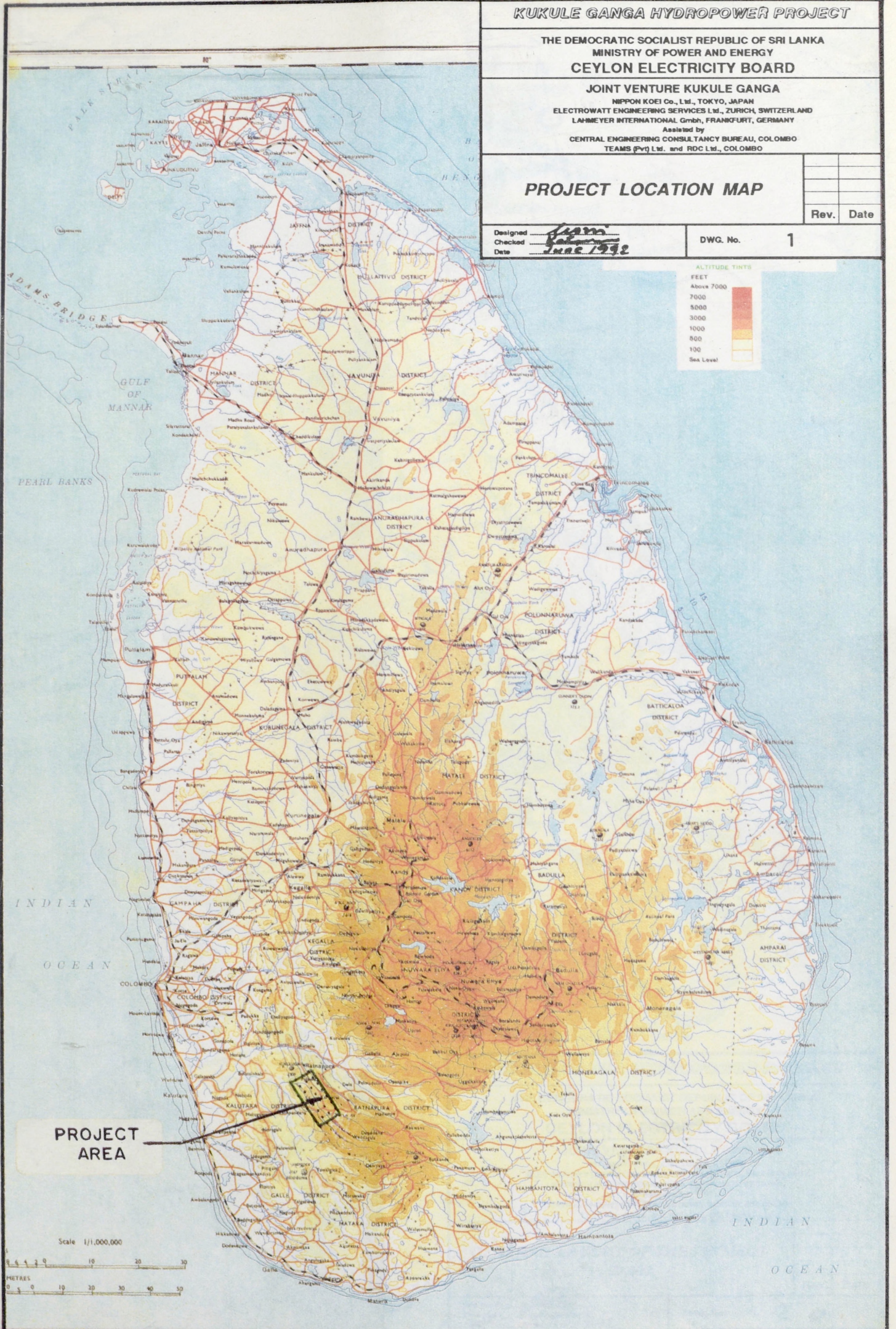
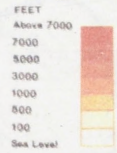
PROJECT LOCATION MAP

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Date JUNE 1992

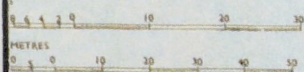
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ALTITUDE TINTS



PROJECT AREA

Scale 1/1,000,000





KUKULIE GANGA HYDROPOWER PROJECT

THE DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
 MINISTRY OF POWER AND ENERGY
CEYLON ELECTRICITY BOARD

JOINT VENTURE KUKULIE GANGA
 JOINT VENTURE CO. LTD., TOKYO, JAPAN
 ELECTROWATT ENGINEERING CO. LTD., ZÜRICH, SWITZERLAND
 LAHMEYER INTERNATIONAL G.M.B.H., FRANKFURT, GERMANY

Assisted by
 CENTRAL ENGINEERING CONSULTANTS, SINGAPORE
 LEWIS COLVILLE, INC., BOCA RATON, FLORIDA, U.S.A.

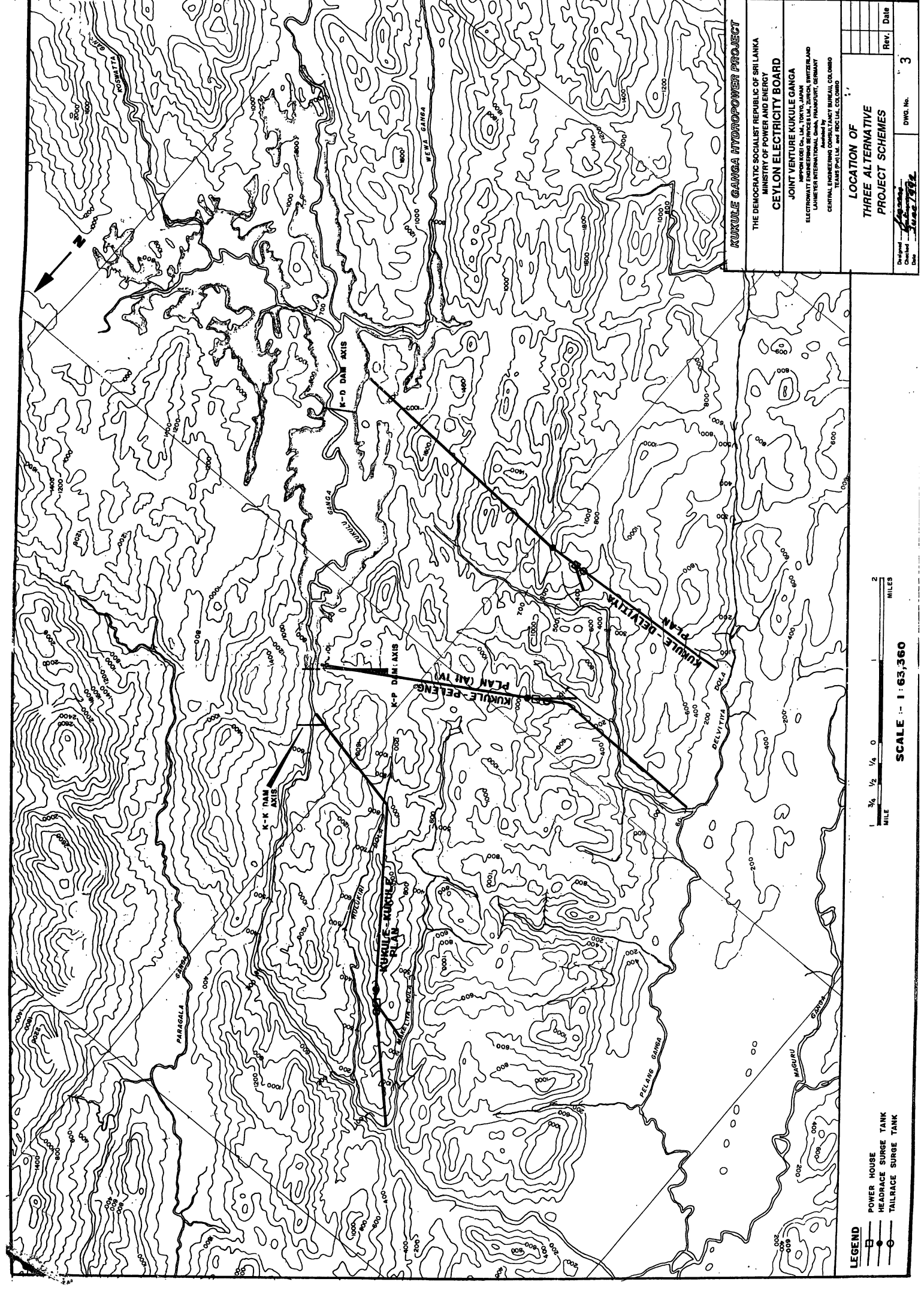
GENERAL LAYOUT OF THE PROJECT
 1 : 50,000

Designed: _____
 Issued: _____
 Date: _____

Rev. Date

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KUKULE GANGA HYDROPOWER PROJECT

THE DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
 MINISTRY OF POWER AND ENERGY

CEYLON ELECTRICITY BOARD

JOINT VENTURE KUKULE GANGA
 NIPPON KOCI CO., LTD., TOKYO, JAPAN
 ELECTROWATT ENGINEERING SERVICES LTD., ZURICH, SWITZERLAND
 LANHETER INTERNATIONAL S.A., WILMANSBURG, GERMANY
 CENTRAL ENGINEERING CONSULTANCY BUREAU, CO. 080
 TEANE (PVT) LTD. and IEC LTD., COLOMBO

LOCATION OF THREE ALTERNATIVE PROJECT SCHEMES

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 Date: **June 1982**

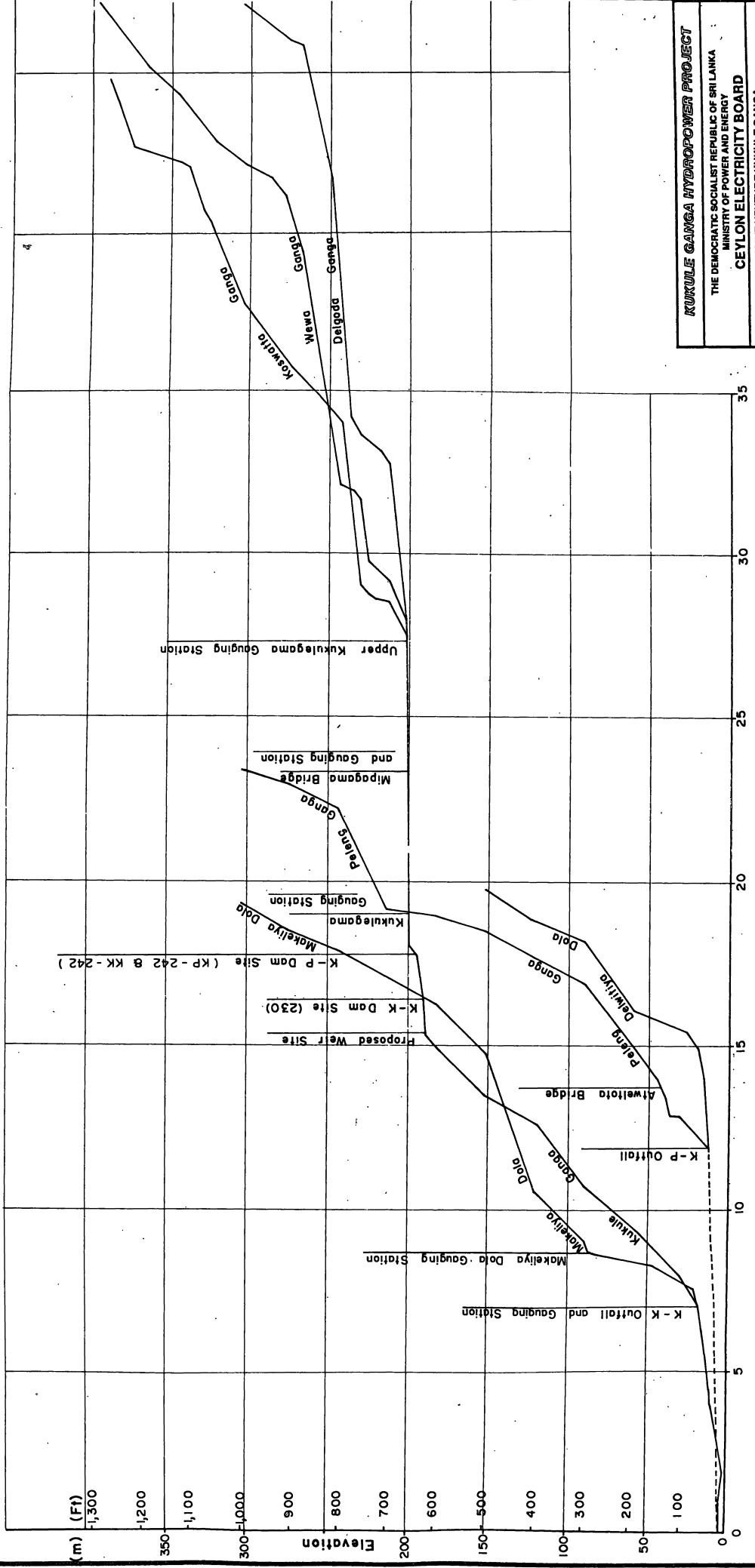
DWG. No. **3**

1/4 1/2 1/4 0 1 2
 MILE MILES

SCALE :- 1 : 63,360

LEGEND

- POWER HOUSE
- ▬ HEADRACE SURGE TANK
- TAILRACE SURGE TANK



Distance from Confluence of Kukule Ganga and Peleng Ganga

KUKULE GANGA HYDROPOWER PROJECT

THE DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
 MINISTRY OF POWER AND ENERGY
CEYLON ELECTRICITY BOARD

JOINT VENTURE KUKULE GANGA
 NIPPON KOGYO CO. LTD., TOKYO, JAPAN
 ELECTROWATT ENGINEERING SERVICES LTD., ZURICH, SWITZERLAND
 LAUBER INTERNATIONAL GMBH, FRANKFURT, GERMANY
 CENTRAL ENGINEERING CONSULTANCY BUREAU/CEC/DMBO
 TEAMS PVT. LTD. and FCC LTD., COLOMBO

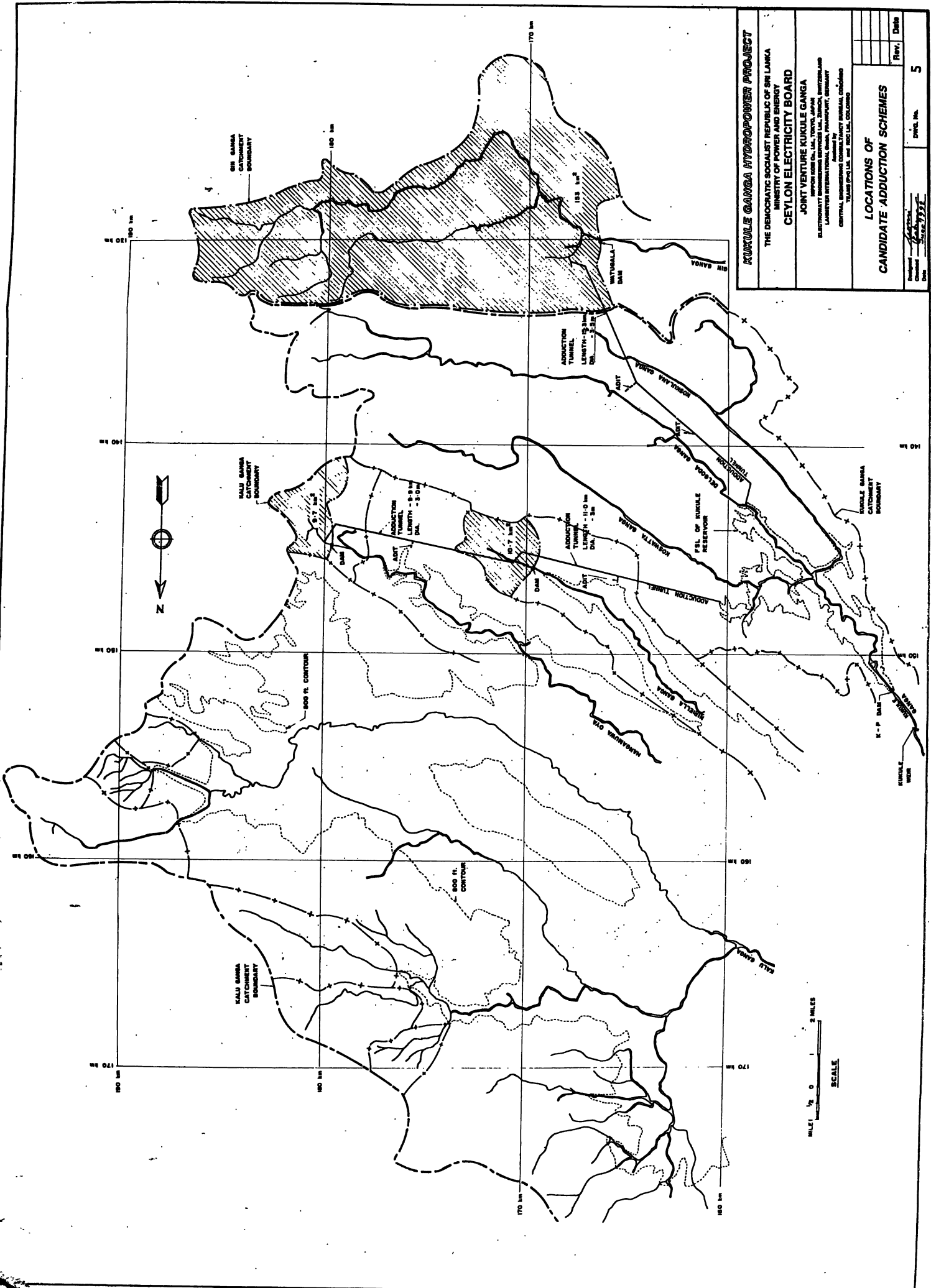
RIVER PROFILES
OF
KUKULE GANGA SYSTEM

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DATE 1992



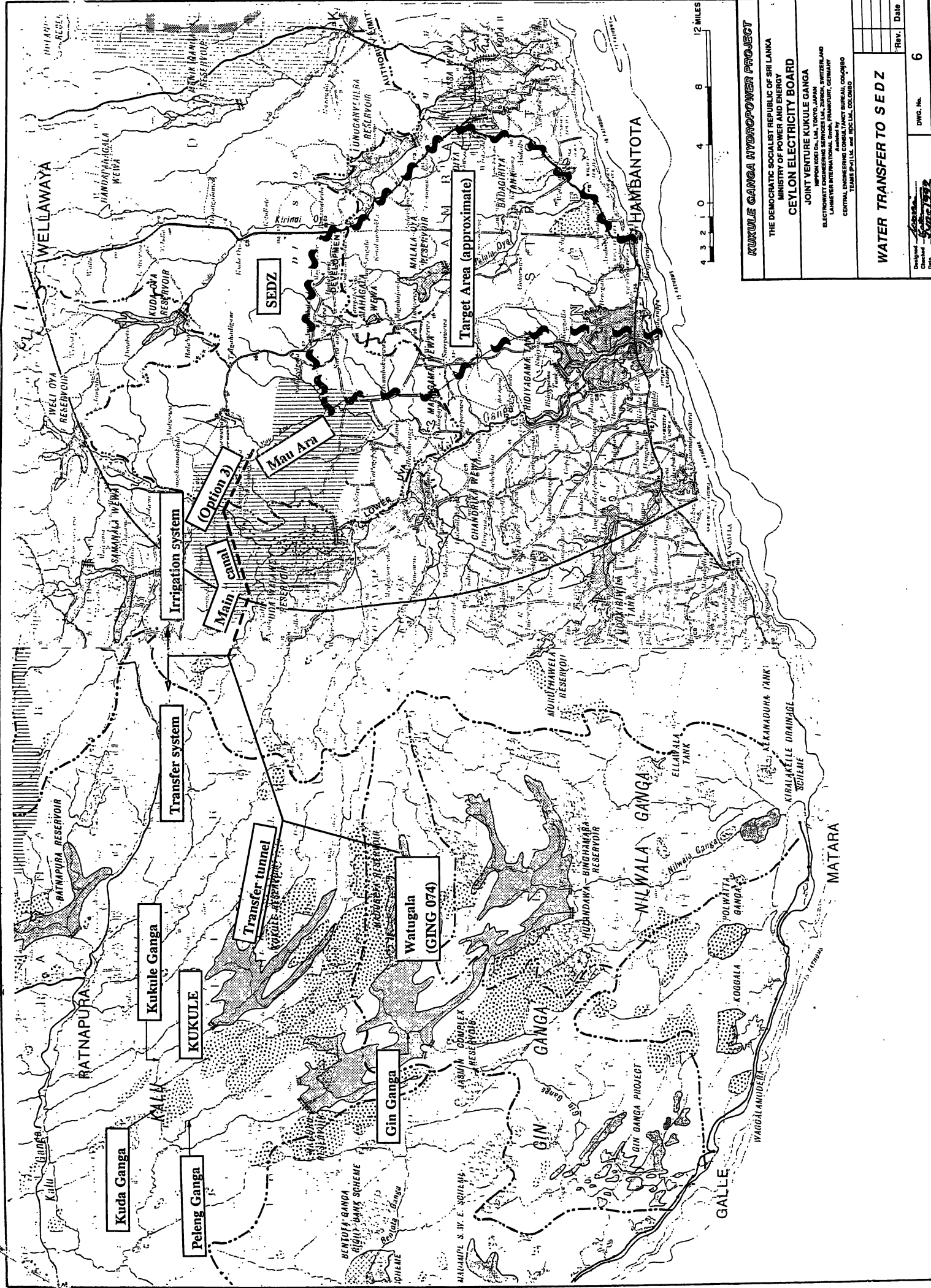
KUKULIE GANGA HYDROPOWER PROJECT
 THE DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
 MINISTRY OF POWER AND ENERGY
CEYLON ELECTRICITY BOARD
 JOINT VENTURE KUKULIE GANGA
 KUKULIE GANGA HYDROPOWER PROJECT
 ELECTRICITY ENGINEERS SRI LANKA, ZENITH ENGINEERING
 LAMBERT INTERNATIONAL, DUBAI, TRINITY, GERMANY
 CONSULTING ENGINEERS
 TRINITY ENGINEERING CONSULTANTS
 TRINITY ENGINEERS AND ARCHITECTS, COLOMBO

**LOCATIONS OF
 CANDIDATE ADDUCTION SCHEMES**

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 Date: *[Date]*

DWG. No. **5**



KUKULE GANGA HYDROPOWER PROJECT

THE DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
 MINISTRY OF POWER AND ENERGY
CEYLON ELECTRICITY BOARD

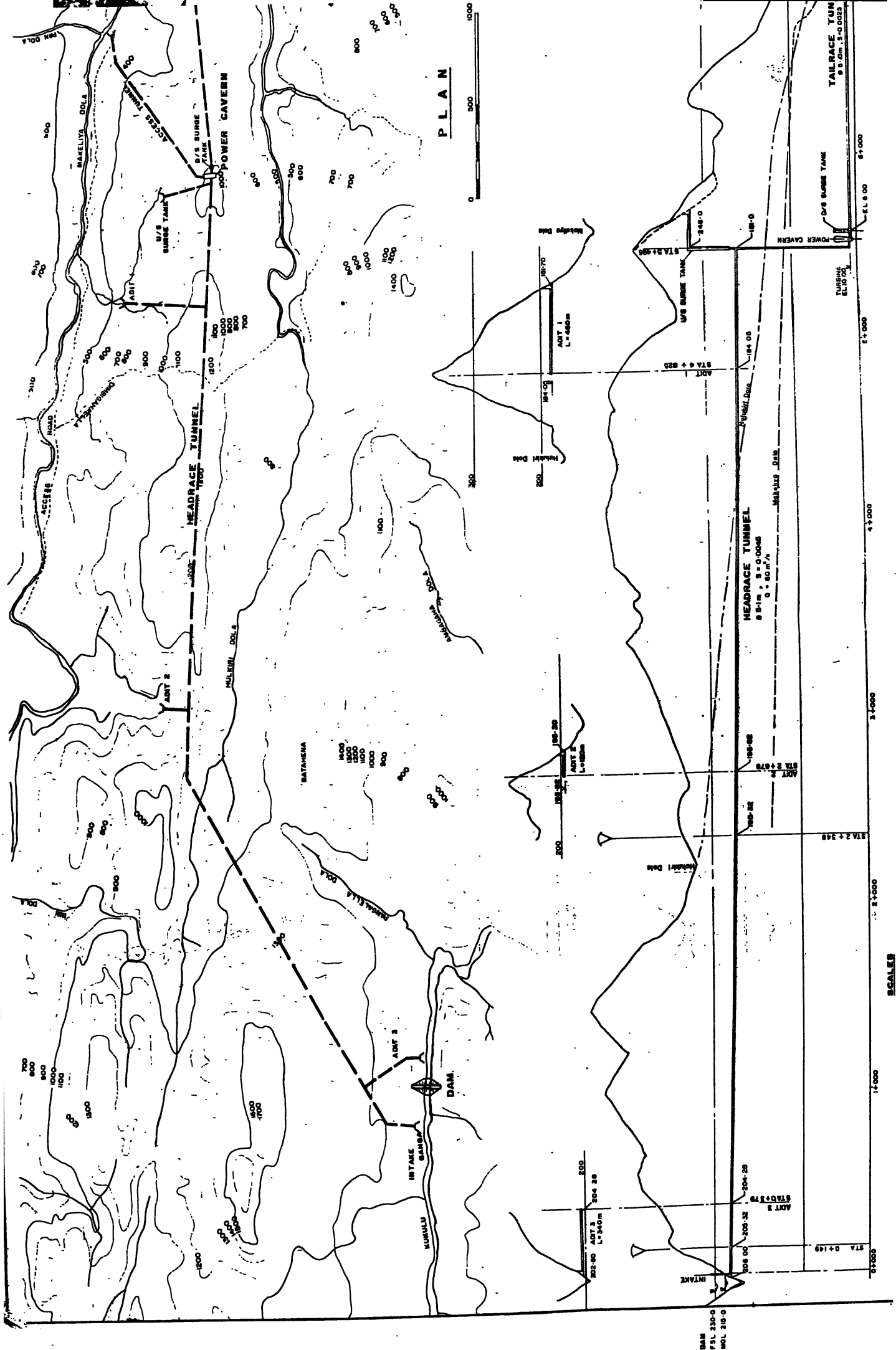
JOINT VENTURE KUKULE GANGA
 NIPPON LDC CO. LIM. TOKYO, JAPAN
 ELECTROWATT ENGINEERING SERVICES LIM. ZURICH, SWITZERLAND
 LAHMEYER INTERNATIONAL GMBH, FRANKFURT, GERMANY
 CENTRAL ENGINEERING CONSULTANTS BUREAU, COLOMBO
 TEAME (PVT) LIM. and BSC (L) COLOMBO

WATER TRANSFER TO SEDZ

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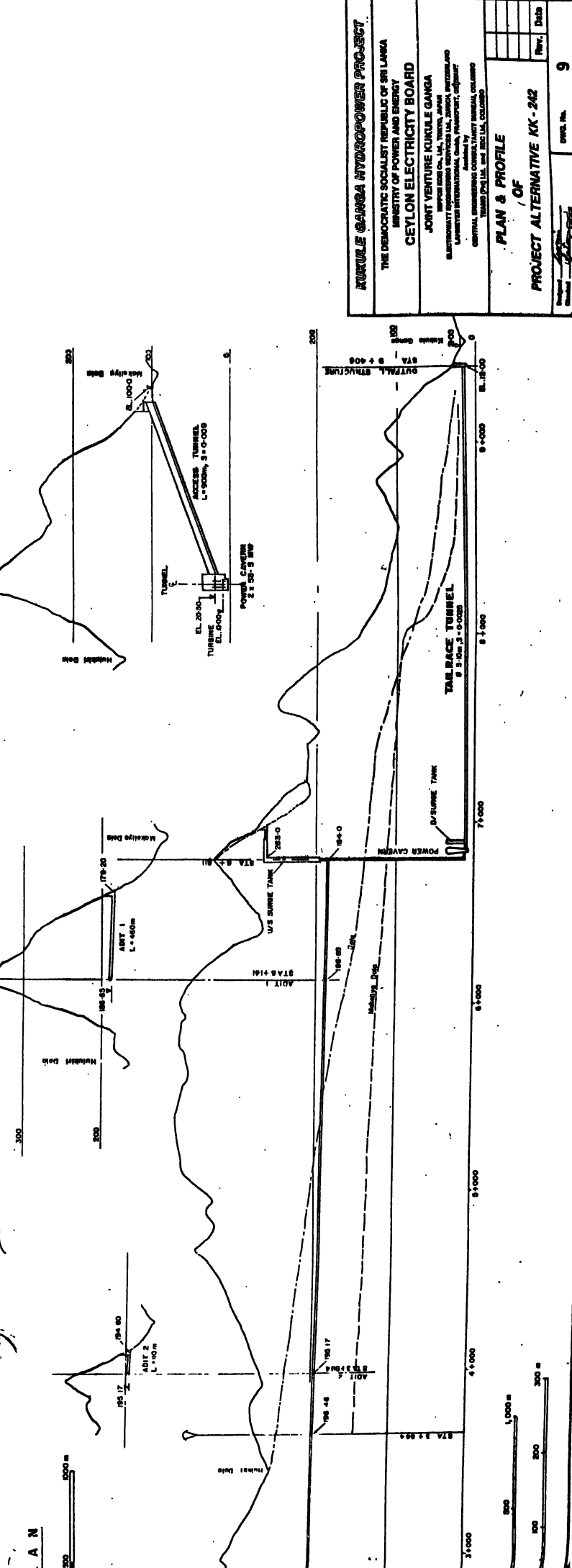
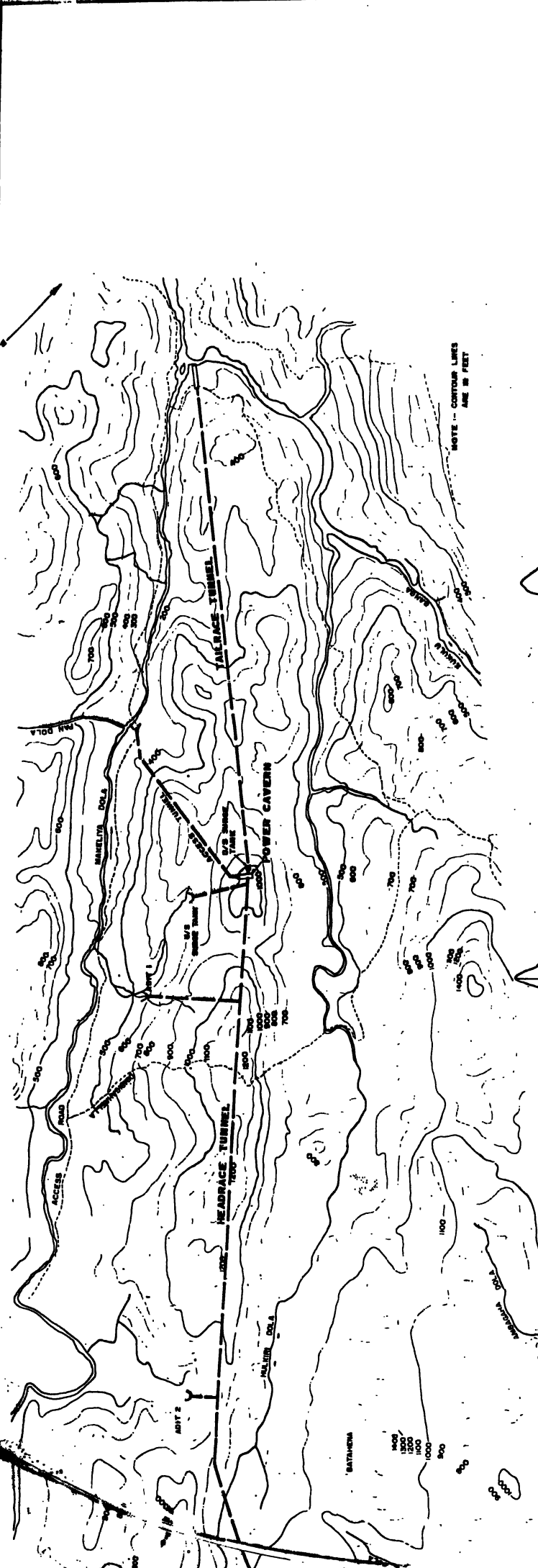
Rev. **6**



DAM
FSL 230.0
MOL 210.0

SCALES
HORIZONTAL 0 500 1,000 m
VERTICAL 0 100 200 300

PLAN



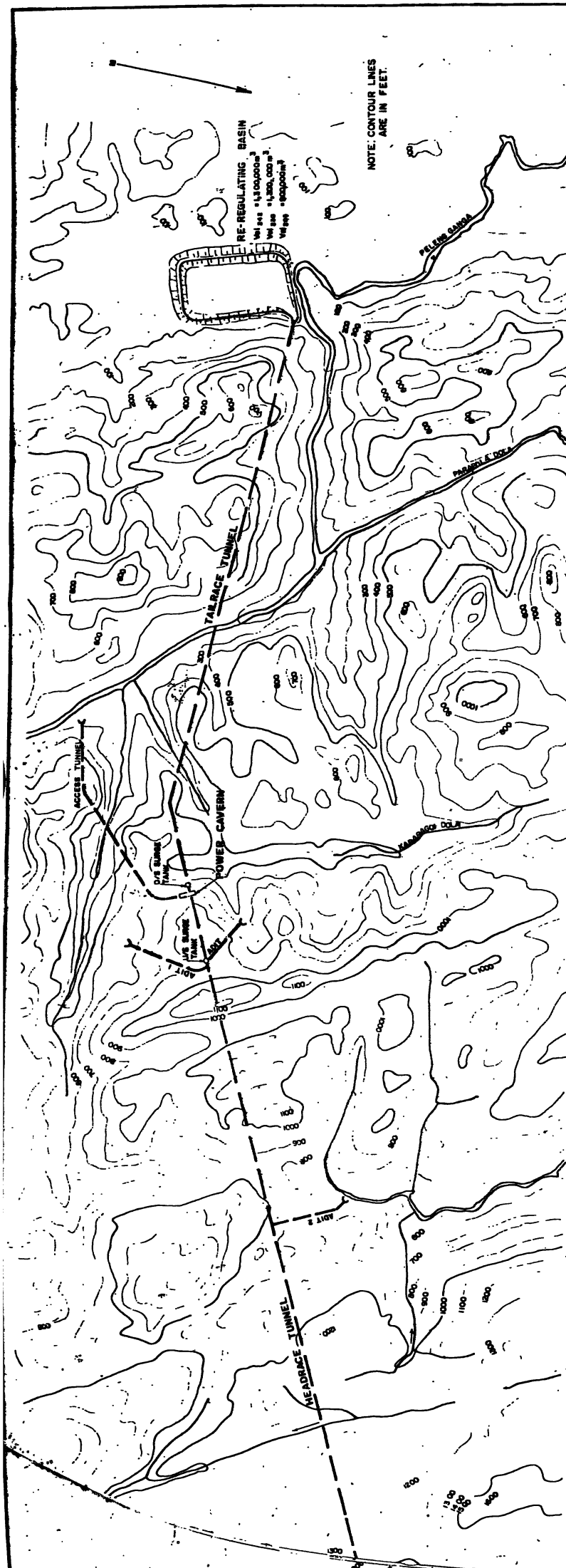
KURULE GANGA HYDROPOWER PROJECT
 THE DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
 MINISTRY OF POWER AND ENERGY
CEYLON ELECTRICITY BOARD
 JOINT VENTURE KURULE GANGA
 IMPROVED RISE CO., LTD., TOKYO, JAPAN
 ELECTRICITY SUPPLY CORPORATION, ZAMBIA, ZAMBIA
 CONSULTANT ENGINEERS: PROJECTS, EQUIPMENT,
 CONTRACT ADMINISTRATION, CONSULTANTS, MALAYA, MALAYSIA
 TANJONG PRAJITIA, AND SINGAPORE

PLAN & PROFILE
 OF
PROJECT ALTERNATIVE KK-242

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 Date: 5/17/79

Draw. No. **9**

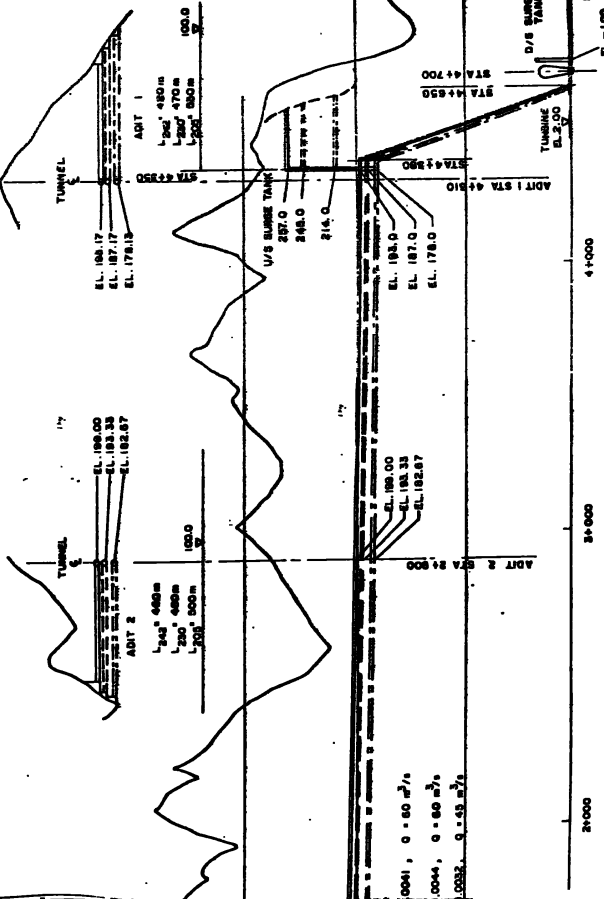
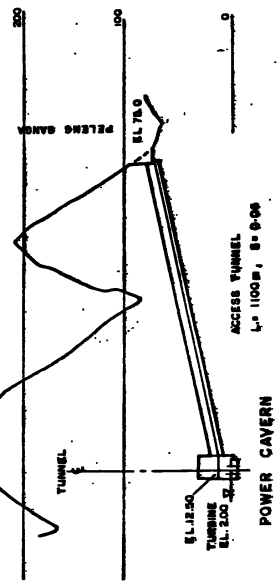
Rev. Date



RE-REGULATING BASIN
 Net area 1,300,000 sq. ft.
 Net area 1,200,000 sq. ft.
 Net area 1,200,000 sq. ft.

NOTE: CONTOUR LINES
 ARE IN FEET.

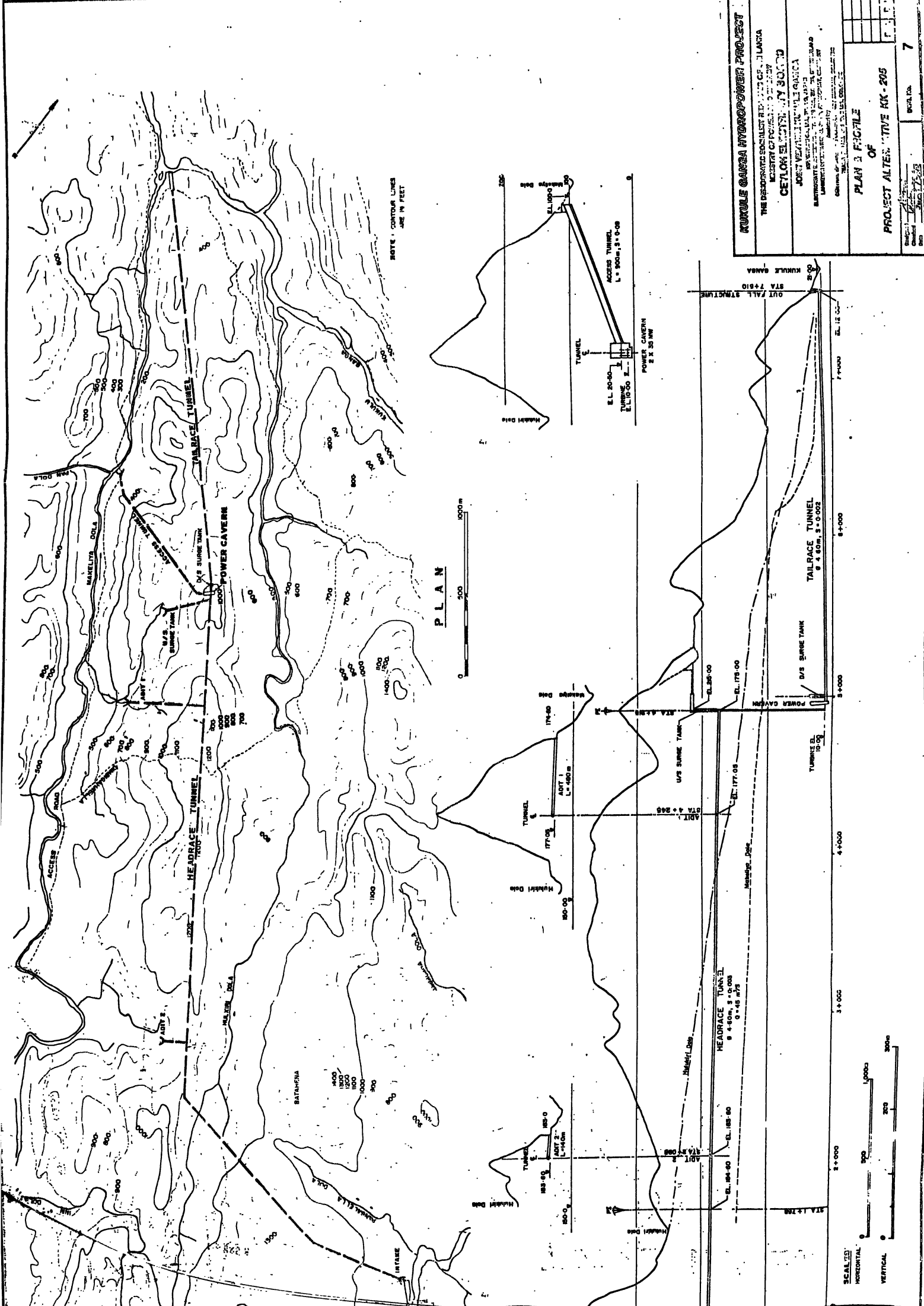
PLAN



0001, 0 - 60 m²/s
 0004, 0 - 60 m²/s
 0002, 0 - 45 m²/s

SCALES:
 HORIZONTAL 1" = 500'
 VERTICAL 1" = 500'

KUKKULE GANGA HYDROPOWER PROJECT THE DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA MINISTRY OF POWER AND ENERGY CEYLON ELECTRICITY BOARD JOINT VENTURE KUKKULE GANGA <small>Government of Sri Lanka, Lanka Power Corporation Ltd., Lanka Hydro Power Corporation Ltd., Lanka Hydro Power Corporation Ltd., Lanka Hydro Power Corporation Ltd., Lanka Hydro Power Corporation Ltd.</small> PROJECT ALTERNATIVES KP - 205, 230, 245		Date: _____ Rev: _____ No. _____
PLAN & PROFILE OF PROJECT ALTERNATIVES KP - 205, 230, 245		Drawn by: _____ Checked by: _____ Date: _____



PLAN

KURULE GARAGA HYDROPOWER PROJECT

THE DEMOCRATIC SOCIALIST REPUBLIC OF GUINEA
 MINISTRY OF POWER AND WATER

CETLON ELECTRICITY BOARD

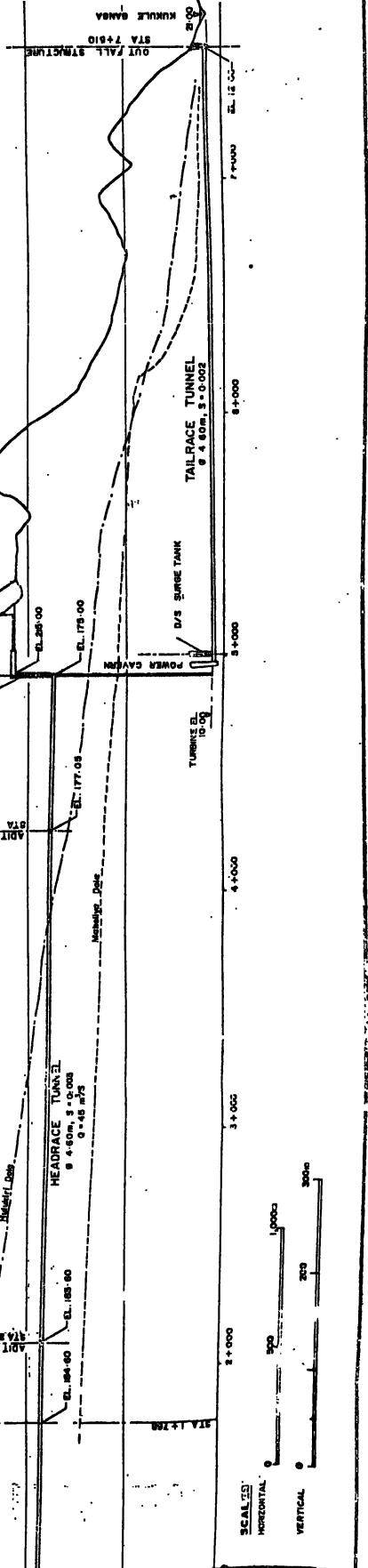
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 HYDROPOWER PROJECT

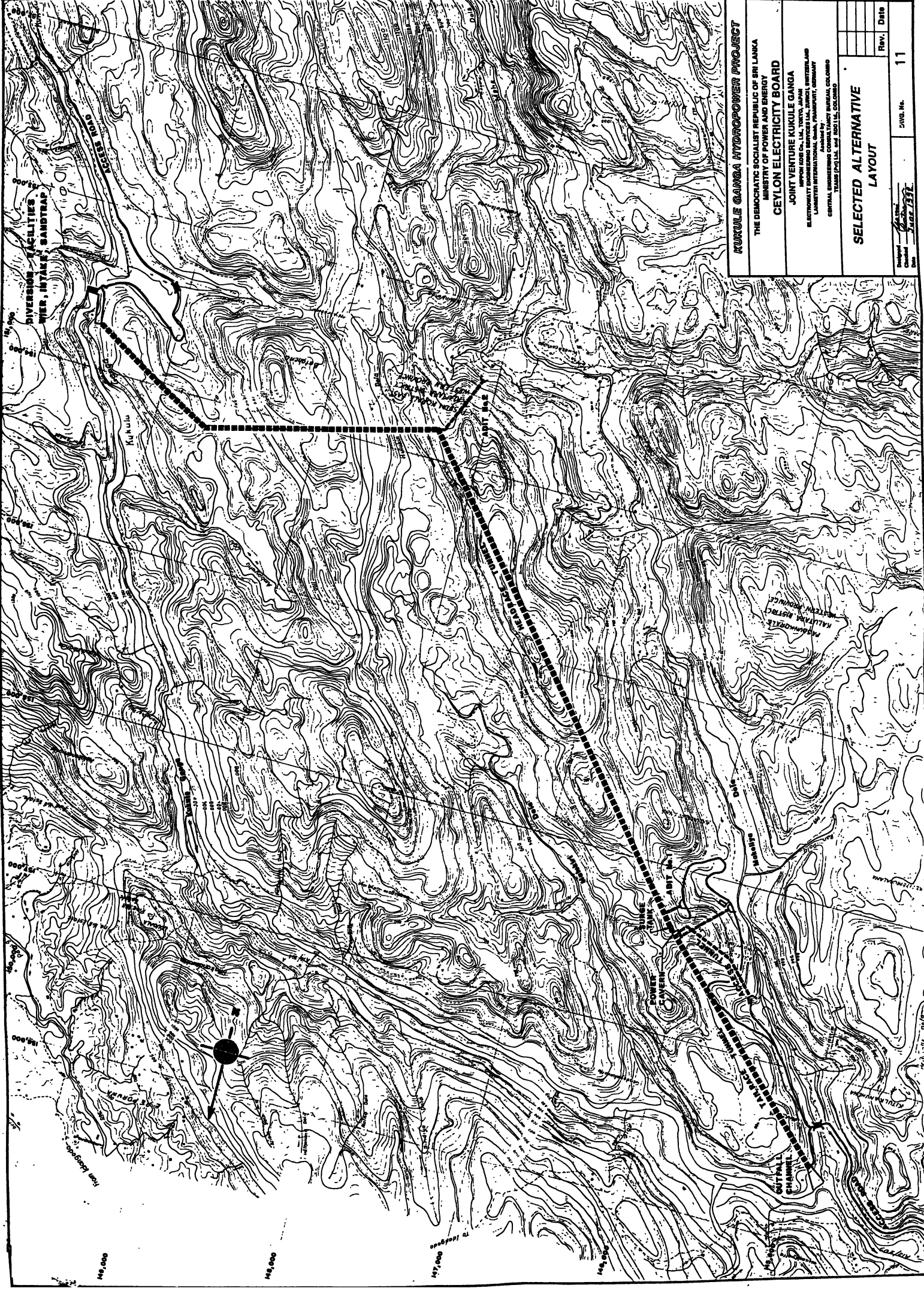
DESIGNED BY: [Name] DRAWN BY: [Name] CHECKED BY: [Name]

PROJECT ALTERNATIVE KK-205

PLAN 3: FIC71E

7





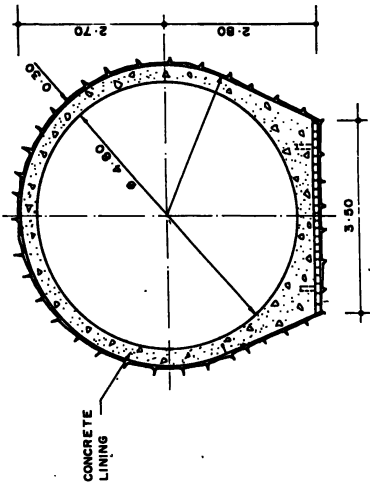
KUKULE GANGA HYDROPOWER PROJECT

THE DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
 MINISTRY OF POWER AND ENERGY
CEYLON ELECTRICITY BOARD

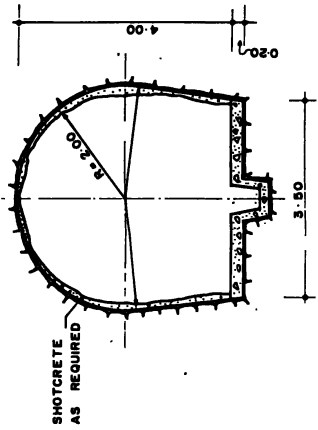
JOINT VENTURE KUKULE GANGA
 INCORPORATED IN SRI LANKA, JOINTLY OWNED BY
 ELECTRICITY BOARD OF SRI LANKA, SRI LANKA POWER CORPORATION
 LIMITED AND INTERNATIONAL POWER CORPORATION LIMITED
 CENTRAL ENGINEERING OFFICE, COLOMBO
 TEL: 011 254 3000 FAX: 011 254 3000

SELECTED ALTERNATIVE LAYOUT

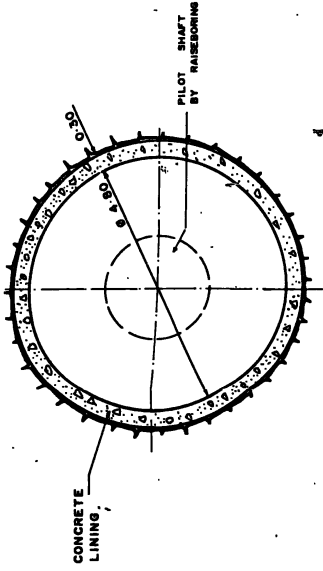
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Page No.	11



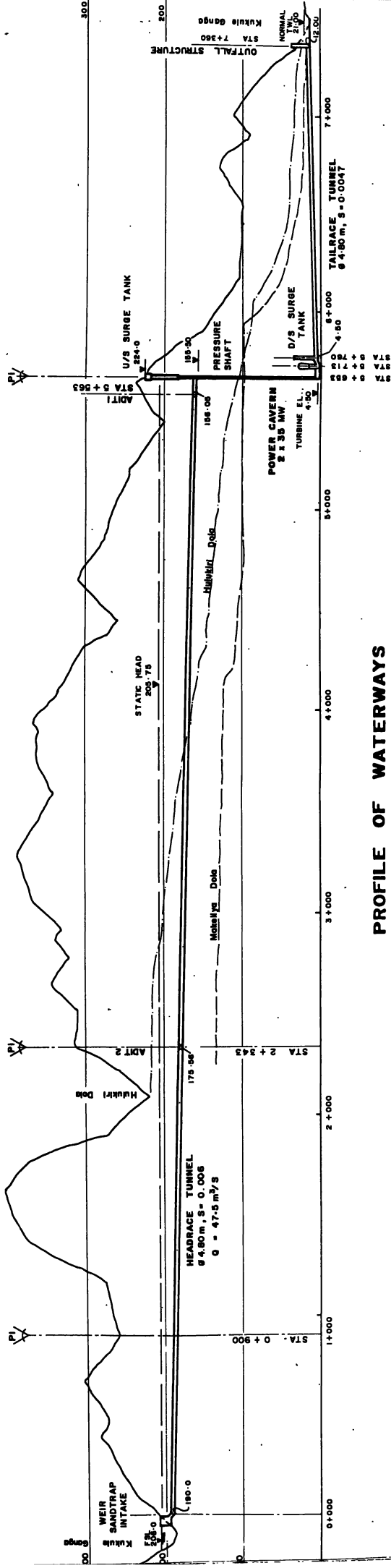
HEADRACE & TAILRACE TUNNELS



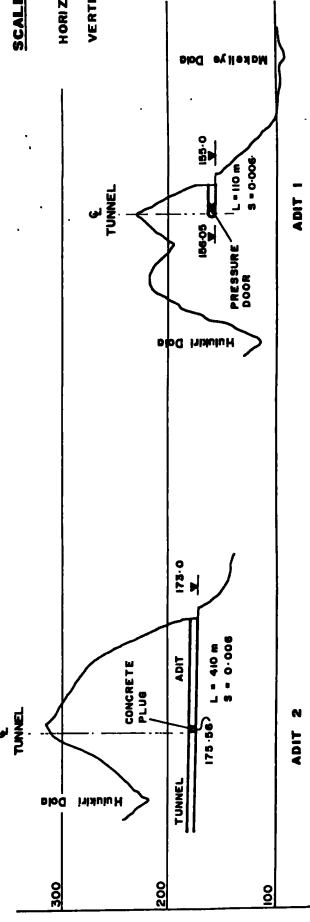
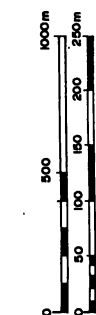
CONSTRUCTION ADITS TYPICAL CROSS SECTIONS



PRESSURE SHAFT



PROFILE OF WATERWAYS

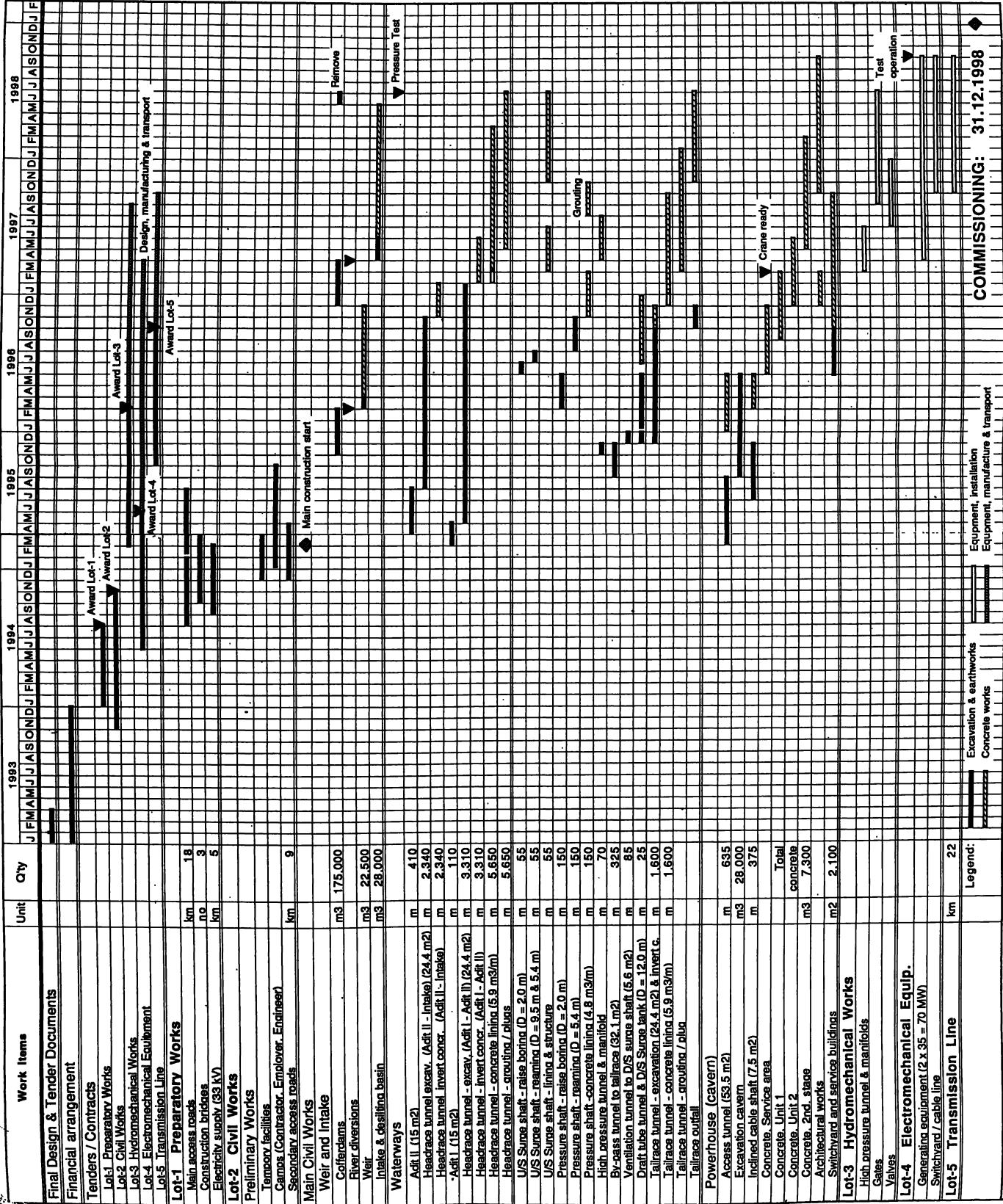


PROFILE OF CONSTRUCTION ADITS

RUKKULA GANGA HYDROPOWER PROJECT	
THE DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA MINISTRY OF POWER AND ENERGY	
CEYLON ELECTRICITY BOARD	
JOINT VENTURE KUKULE GANGA	
HYDROFOR CO., INC., TRINIDAD AND TOBAGO	
ELECTROSTAT CONSULTANTS, ZÜRICH, SWITZERLAND	
LANGMUIR INTERNATIONAL ENGINEERS, FRANKFURT, GERMANY	
Assisted by	
CAPITAL ENGINEERING CONSULTANTS BUREAU, COLOMBO	
TUNNEL ENGINEERING BUREAU, COLOMBO	
Designed	1982
Checked	1982
Date	1982
Rev.	Date
12	

SELECTED ALTERNATIVE PROFILE

DWG. No. 12



COMMISSIONING: 31.12.1998

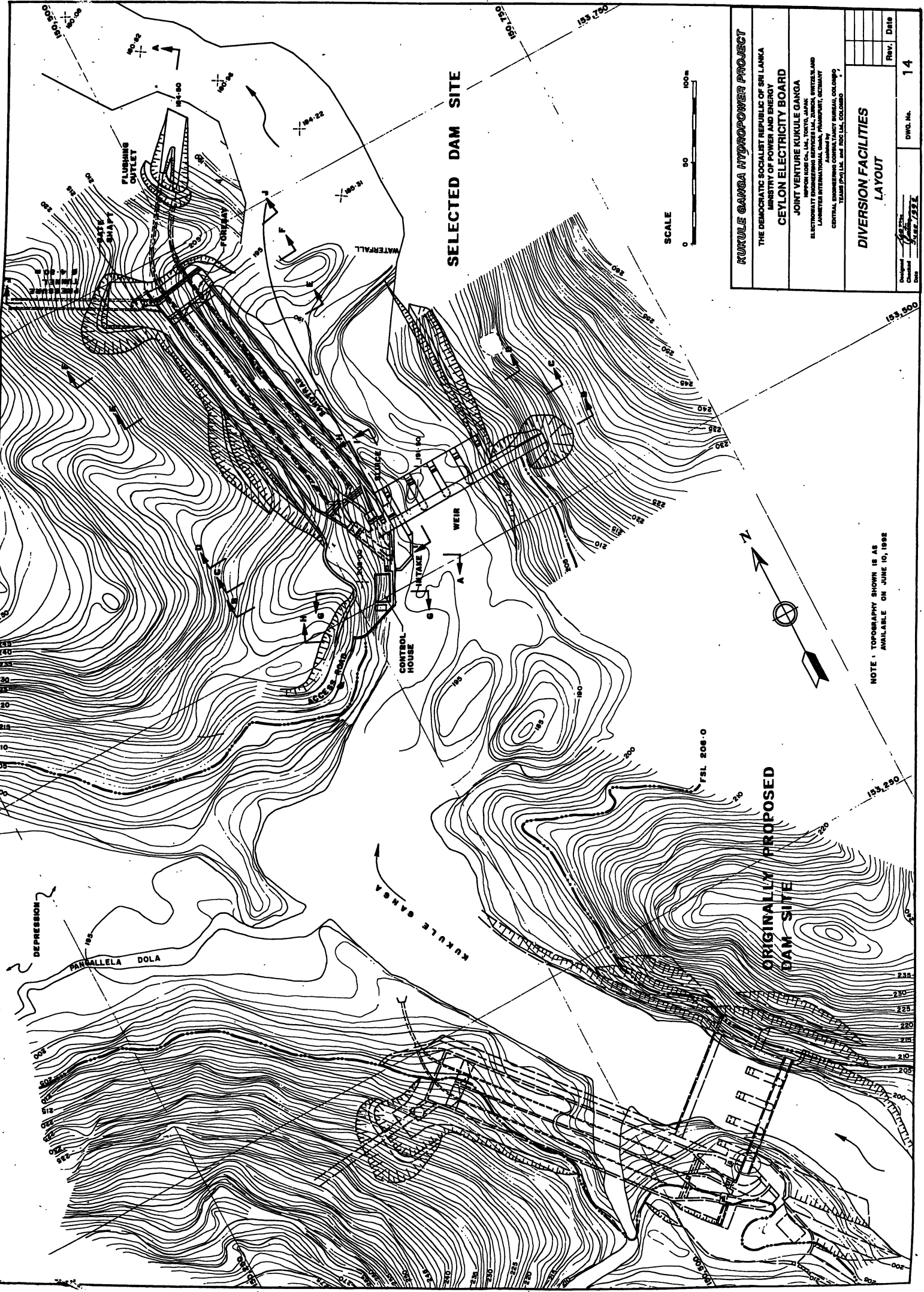
KUKULE GANGA HYDROPOWER PROJECT

THE DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
 MINISTRY OF POWER AND ENERGY
CEYLON ELECTRICITY BOARD

JOINT VENTURE KUKULE GANGA
 M/S. ROSE GALLAGHER ENGINEERING CONSULTANTS, ZURICH, SWITZERLAND
 ELECTROWAY ENGINEERING CONSULTANTS, FRANKFURT, GERMANY
 LANHYER INTERNATIONAL, CHINA, FRANKFURT, GERMANY
 CENTRAL ENGINEERS, ASSISTED BY M/S. BUREAU COLONNE
 TEAMS (PALLILAI AND SOULAI, COLOMBO)

CONSTRUCTION TIME SCHEDULE

Drawn: [Signature] Date: [Date]
 Rev. No. 13



SELECTED DAM SITE

ORIGINALLY PROPOSED DAM SITE

KUKULE GANGA HYDROPOWER PROJECT
 THE DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
 MINISTRY OF POWER AND ENERGY
CEYLON ELECTRICITY BOARD
 JOINT VENTURE KUKULE GANGA
 IMPROM CO. (PVT) LTD., TOKYO, JAPAN
 ELECTROWATT ENGINEERING SERVICES LTD., ZÜRICH, SWITZERLAND
 LAMBERTER INTERNATIONAL ENGINEERING, PLANNING, DESIGN AND
 CONSTRUCTION SERVICES, HAMBURG, GERMANY
 CENTRAL ENGINEERING CONSULTANTS BUREAU, COLOMBO
 TEAMS (PVT) LTD. and IEC LTD., COLOMBO



DIVERSION FACILITIES LAYOUT

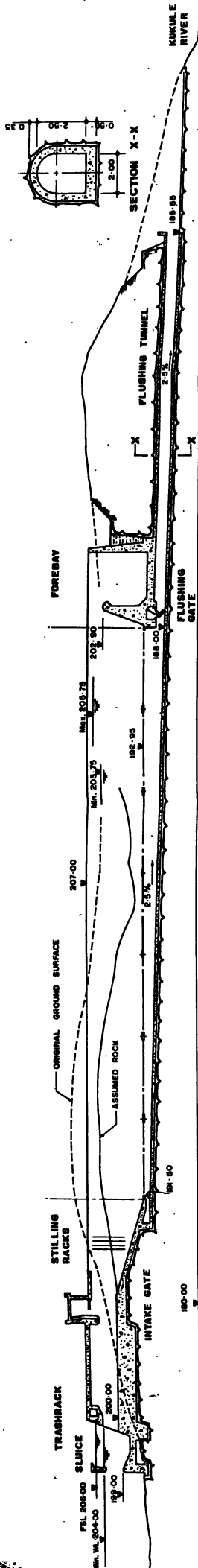
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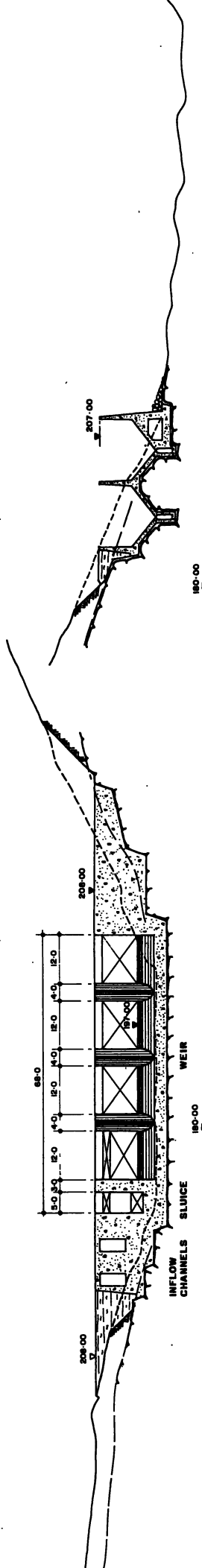
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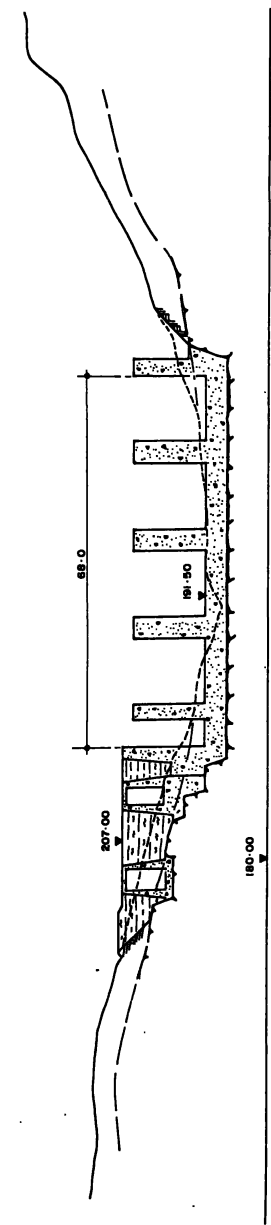
INFLOW CHANNEL



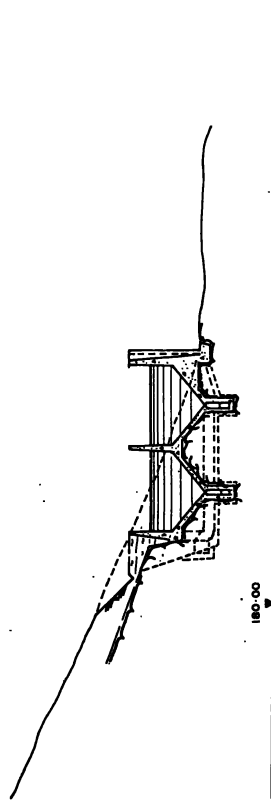
SECTION A-A



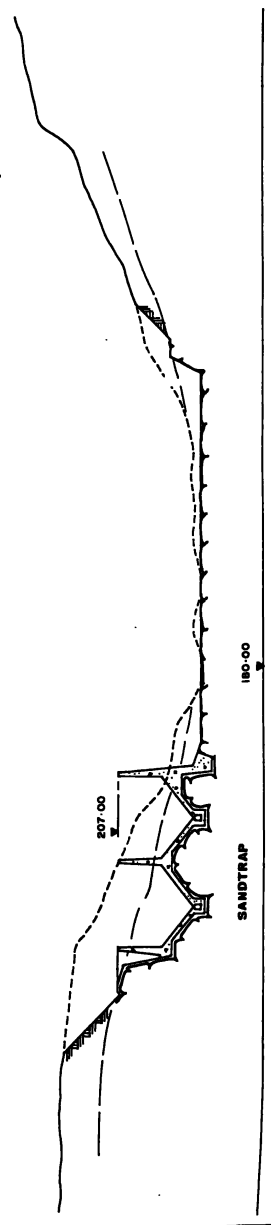
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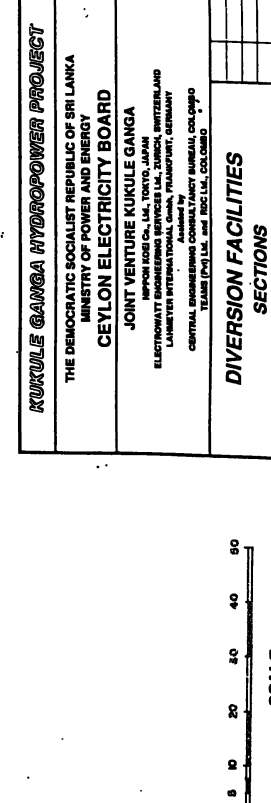
SECTION E-E



SECTION C-C



SECTION F-F

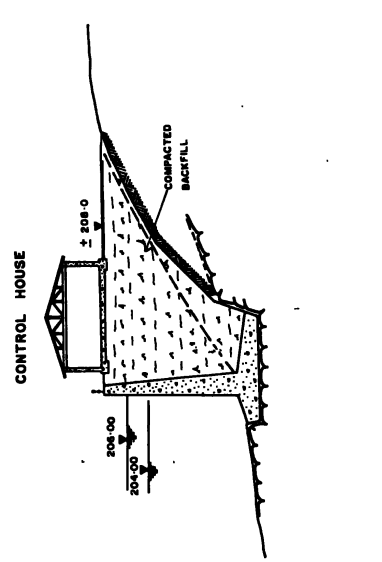


SCALE

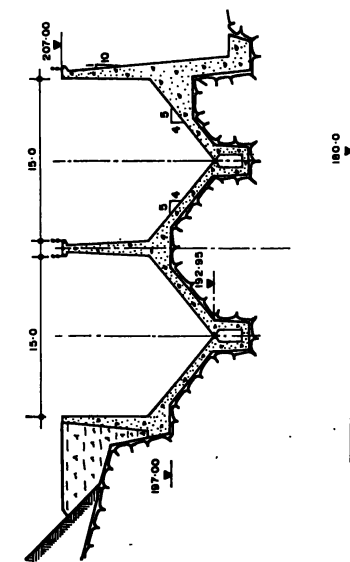
SECTION D-D

SANDTRAP

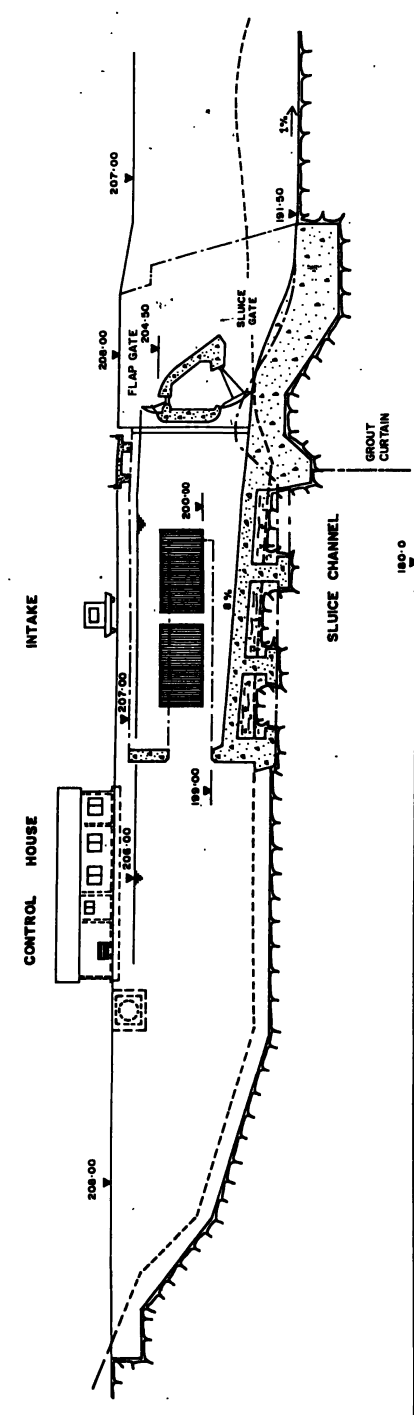
KUKULE GANGA HYDROPOWER PROJECT	
THE DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA MINISTRY OF POWER AND ENERGY CEYLON ELECTRICITY BOARD	
JOINT VENTURE KUKULE GANGA KUKULE PROJECT KUKULE DAM AND POWER HOUSE ELECTROMAT ENGINEERING S.A. ZÜRICH, SWITZERLAND LAWMETER INTERNATIONAL GMBH, FRANKFURT, GERMANY Assisted by CENTRAL ENGINEERING CONSULTANTS BUREAU, COLOMBO TEAM (PVT) LTD. AND REC LTD. COLOMBO	
DIVERSION FACILITIES	
SECTIONS	
Sheet 1	
Checked	Rev.
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SECTION G-G



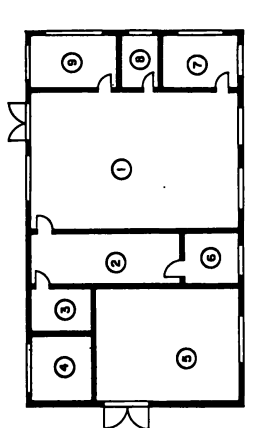
TYPICAL CROSS-SECTION OF DESILTING BASINS



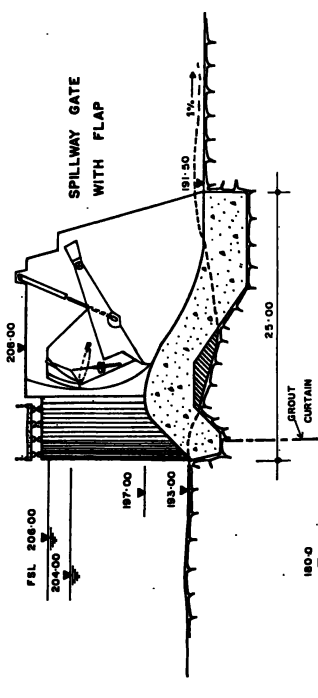
SECTION H-H

LEGEND

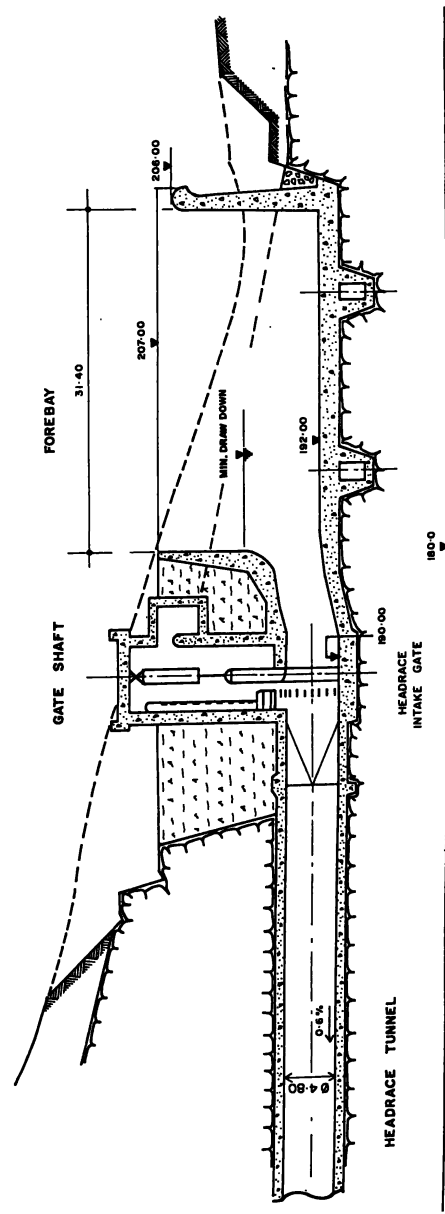
- ① CONTROL ROOM
- ② CONTROL TABLES
- ③ BATTERIES
- ④ TRANSFORMER
- ⑤ DIESEL GROUP
- ⑥ STORE ROOM ELECTRICAL
- ⑦ LIVING ROOM
- ⑧ TOILET
- ⑨ STORE ROOM MECHANICAL



SCALE 0 5 10 M



SECTION I-I



SECTION J-J



KUKULE GANGA HYDROPOWER PROJECT

THE DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
 MINISTRY OF POWER AND ENERGY
CEYLON ELECTRICITY BOARD

JOINT VENTURE KUKULE GANGA
 IMPREGO CORP., LTD. TOKYO, JAPAN
 ELECTRICITY ENGINEERING CONSULTANTS (PVT) LTD. SRI LANKA
 LANCASTER INTERNATIONAL CORP. (PRIVATE) LTD. GERMANY
 A joint venture of
 CENTRAL ENGINEERING CONSULTANTS BUREAU, COLOMBO
 TEMASEK PCL LTD. AND TSC LTD. SINGAPORE.

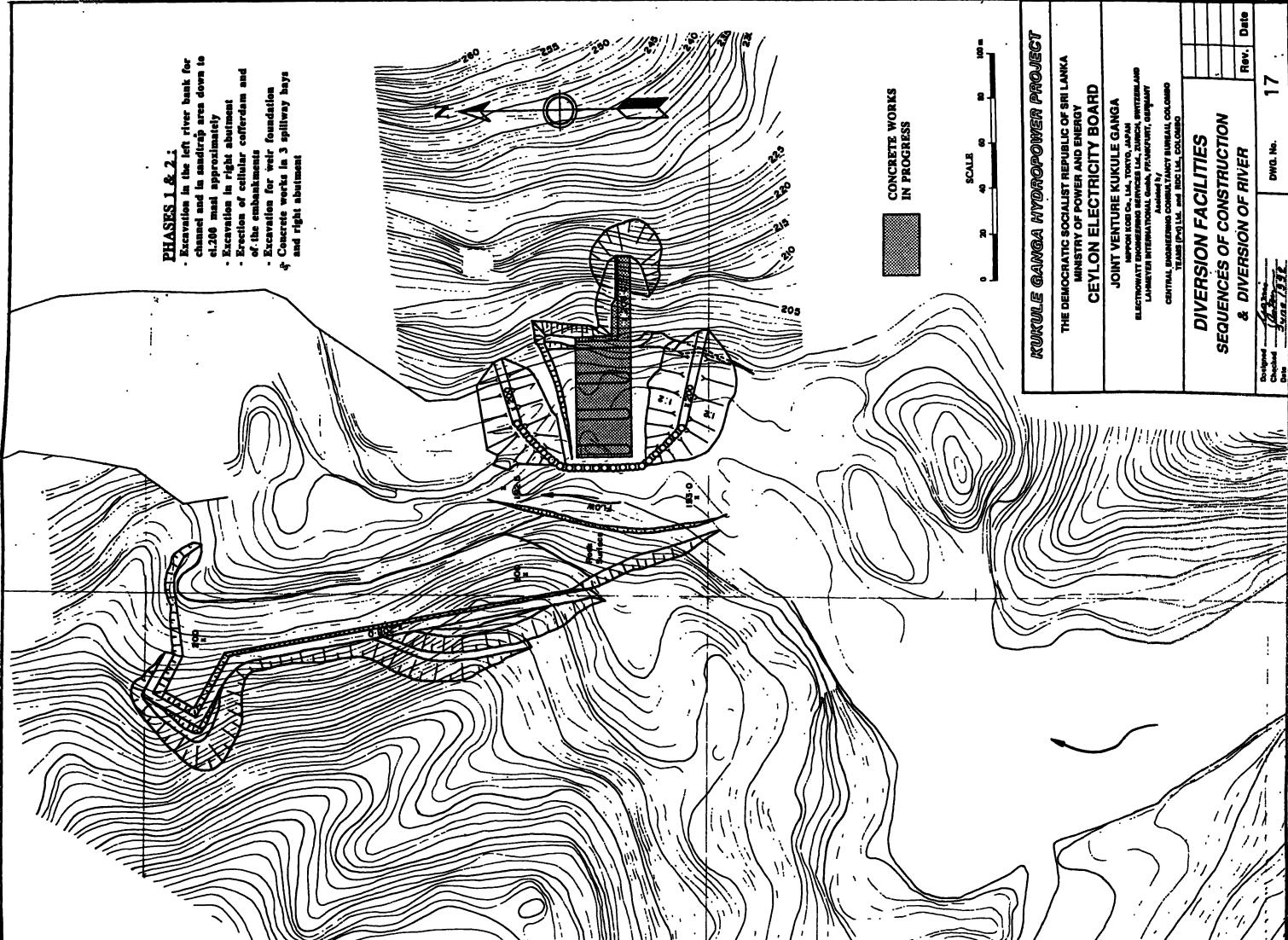
DIVERSION FACILITIES
 SECTIONS
 Sheet 2

Rev.	Date

DWG. No. 16
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 Checker: [Signature]
 Date: 20.07.2012

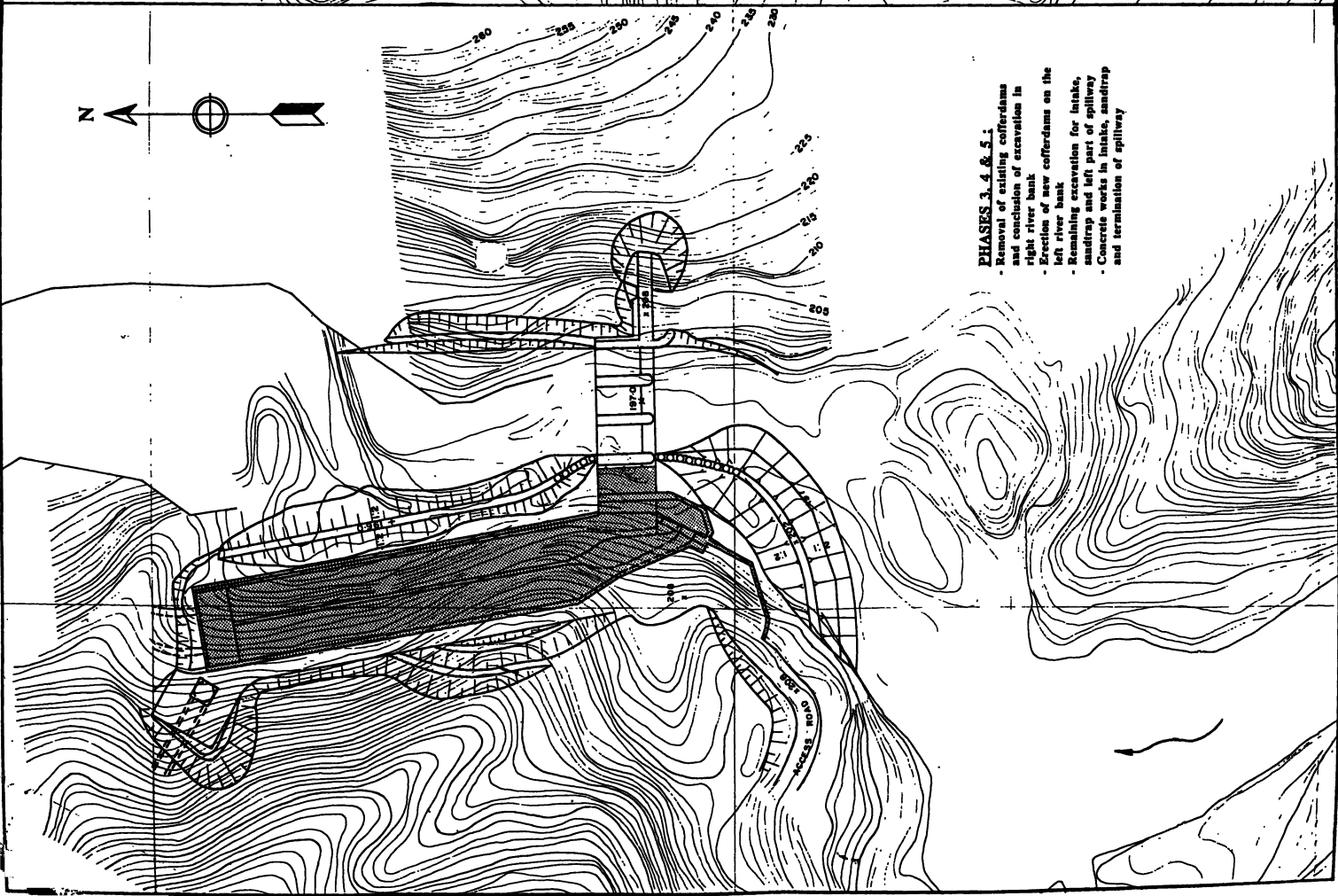
PHASES 1 & 2:

- Excavation in the left river bank for channel and in sandtrap area down to el.200 must approximately
- Excavation in right abutment
- Erection of cellular cofferdam and of the embankments
- Excavation for weir foundation
- Concrete works in 3 spillway bays and right abutment



PHASES 3, 4 & 5:

- Removal of existing cofferdams and conclusion of excavation in right river bank
- Erection of new cofferdams on the left river bank
- Remaining excavation for intake, sandtrap and left part of spillway
- Concrete works in intake, sandtrap and termination of spillway



KUKULE GANGA HYDROPOWER PROJECT

THE DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
 MINISTRY OF POWER AND ENERGY
CEYLON ELECTRICITY BOARD

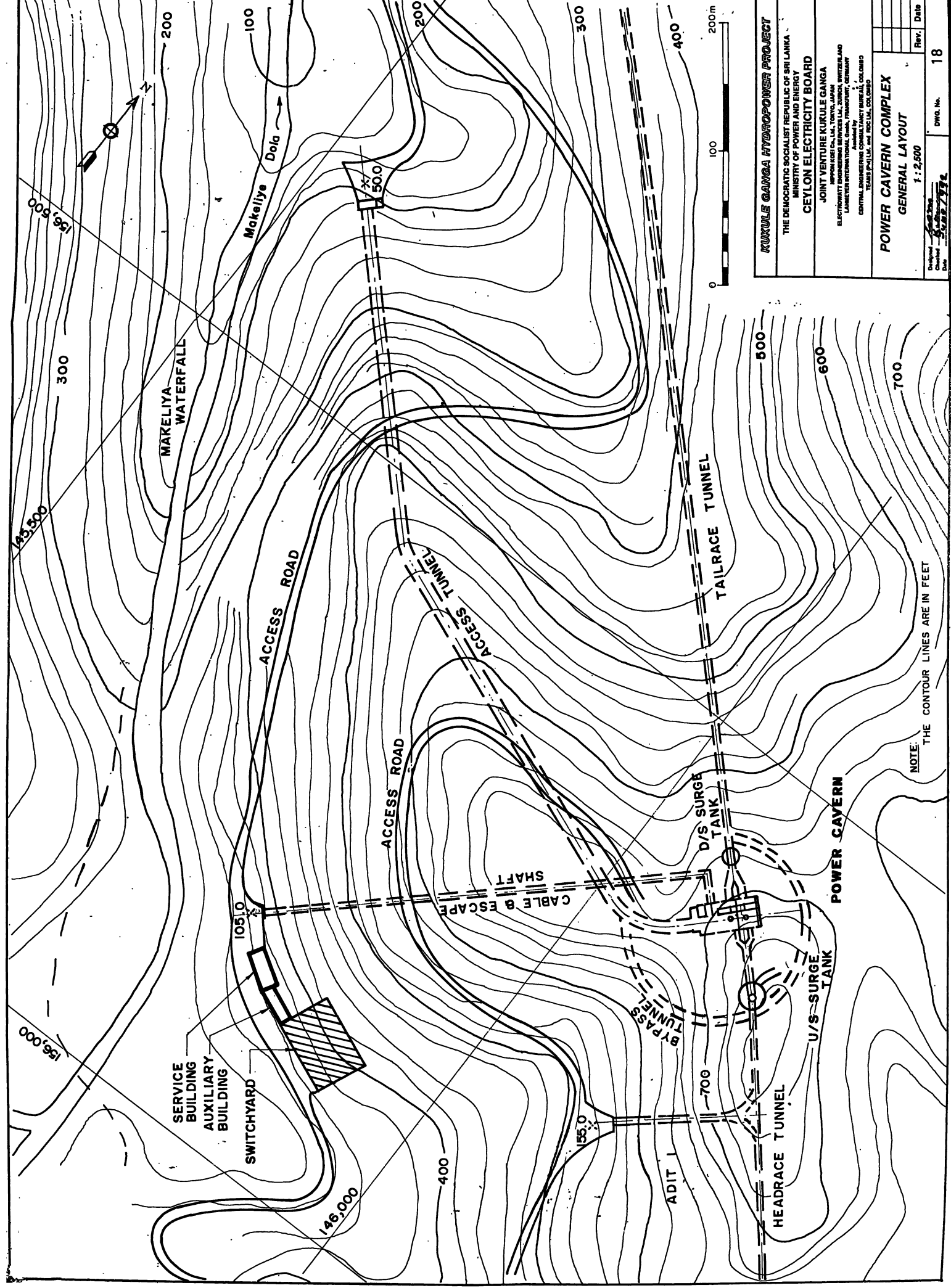
JOINT VENTURE KUKULE GANGA
 NIPPON KOGYO CO. LTD. TOKYO, JAPAN
 ELECTROWATT ENGINEERING SERVICES LTD. ZURICH, SWITZERLAND
 LAMBERT INTERNATIONAL CONSULTANTS, FRANKFURT, GERMANY
 CENTRAL ENGINEERING CONSULTANCY BUREAU, COLOMBO
 TRAMA (PVT) LTD. and BSC LTD. COLOMBO

**DIVERSION FACILITIES
 SEQUENCES OF CONSTRUCTION
 & DIVERSION OF RIVER**

Rev.	Date

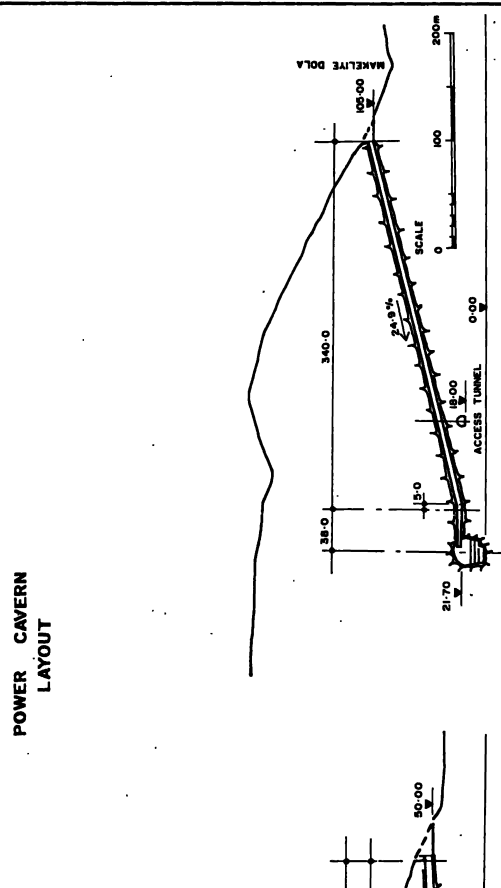
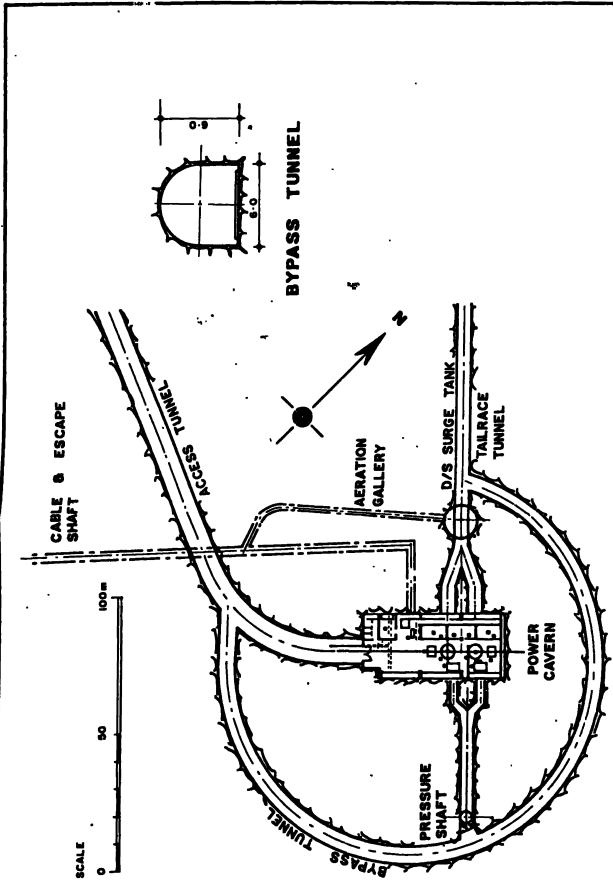
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 Checked by: *[Signature]*
 Date: *[Date]*

DWG. No. **17**

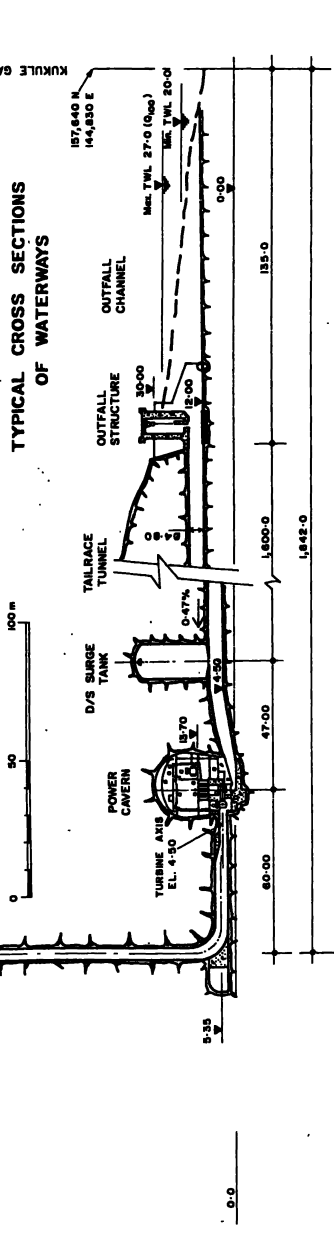
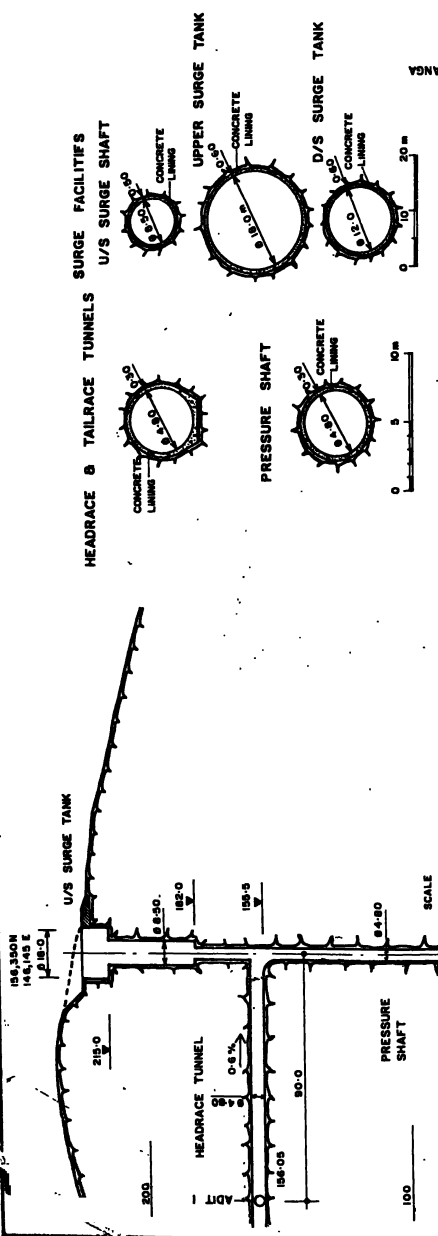


NOTE: THE CONTOUR LINES ARE IN FEET

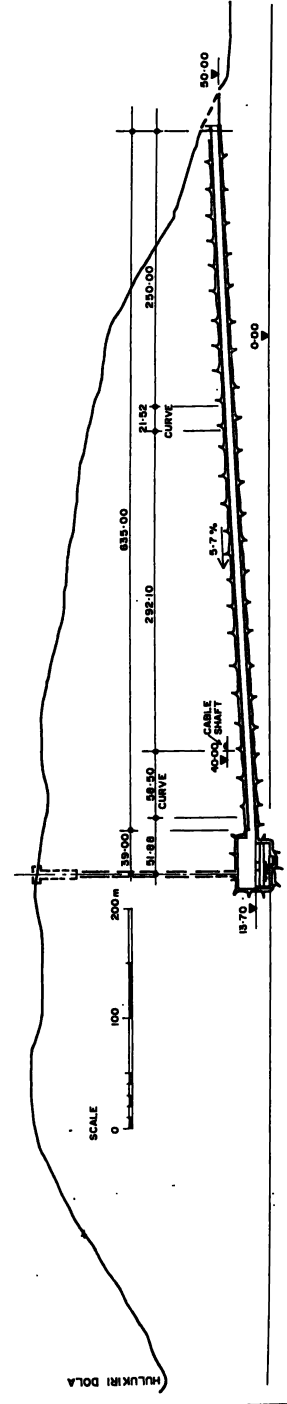
KUKULE GANGA HYDROPOWER PROJECT	
THE DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA MINISTRY OF POWER AND ENERGY	
CEYLON ELECTRICITY BOARD	
JOINT VENTURE KUKULE GANGA NEPOMUKI Co., Ltd., TOKYO, JAPAN ELECTROWATT ENGINEERING SERVICES Ltd., ZÜRICH, SWITZERLAND LAKSHMI ENGINEERING CONSULTANCY PVT. LTD., CHENNAI CENTRAL ENGINEERING CONSULTANCY BUREAU, COLOMBO TELESPIN (P) Ltd. and ISCE (P) Ltd., COLOMBO	
POWER CAVERN COMPLEX GENERAL LAYOUT	
Scale: 1 : 2,500	Rev. Date
Designed by: <i>[Signature]</i>	Checked by: <i>[Signature]</i>
Dwg. No. 04/18/79	18



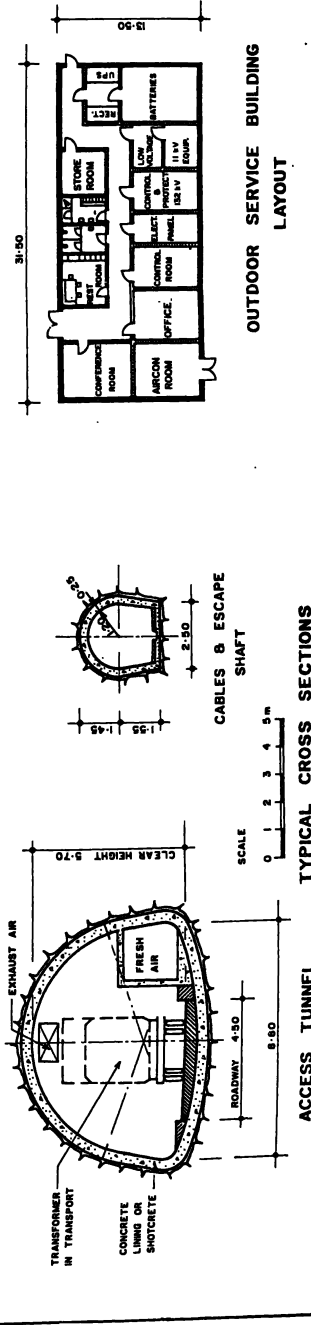
CABLE SHAFT
LONGITUDINAL PROFILE



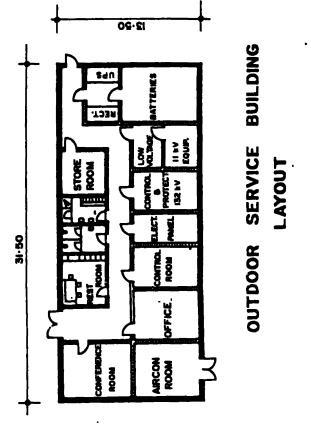
POWER CAVERN - SURGE FACILITIES - TAILRACE
LONGITUDINAL PROFILE



ACCESS TUNNEL
LONGITUDINAL PROFILE

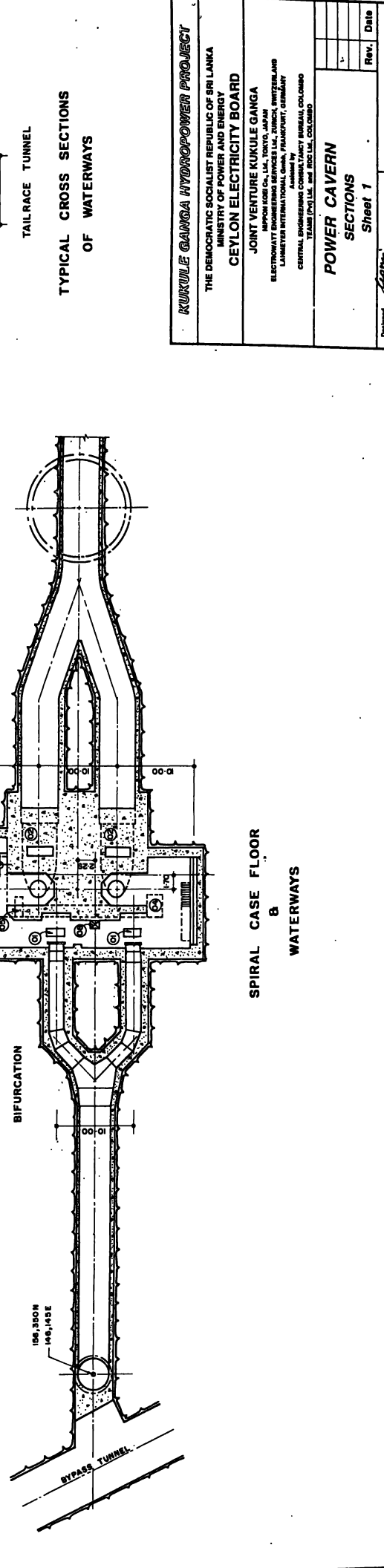
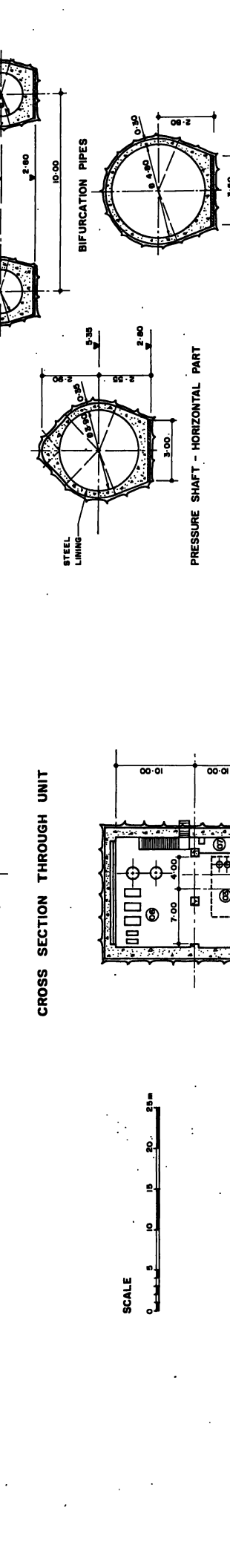
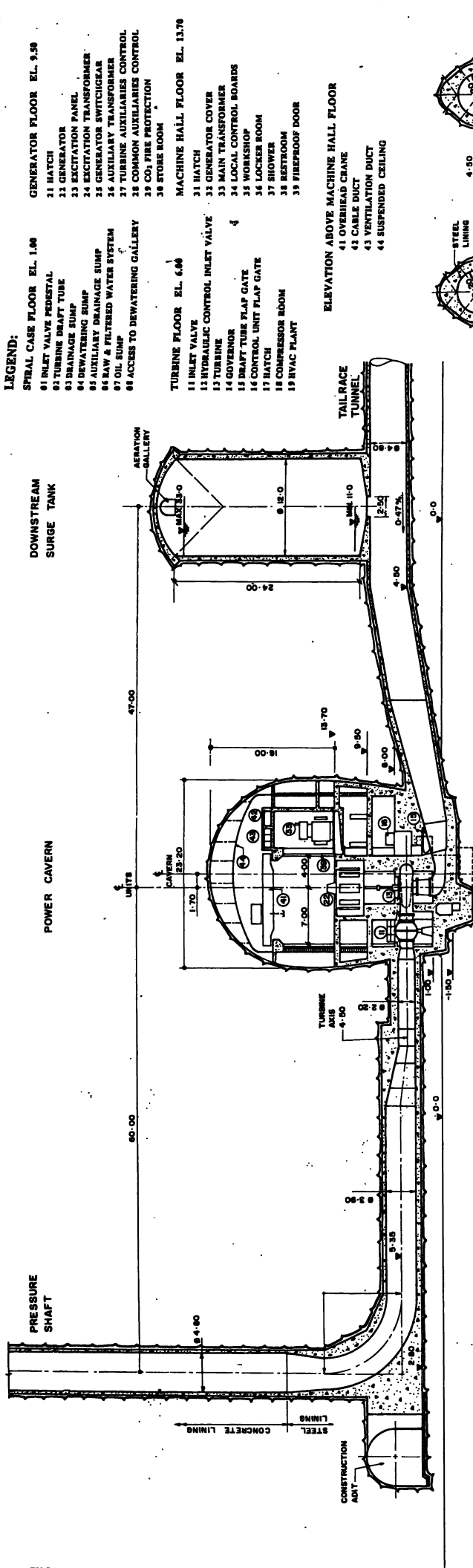


ACCESS TUNNEL
TYPICAL CROSS SECTIONS



OUTDOOR SERVICE BUILDING
LAYOUT

KUKULE GANGA HYDROPOWER PROJECT	
THE DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA MINISTRY OF POWER AND ENERGY CEYLON ELECTRICITY BOARD	
JOINT VENTURE KUKULE GANGA SRI LANKA POWER CORPORATION LTD., SRI LANKA ELECTROWATT ENGINEERING SERVICES INC., ZÜRICH, SWITZERLAND LANHUTER INTERNATIONAL CHINA, FRANKFURT, GERMANY CENTRAL ENGINEERING CONSULTANTS (PVT) LIMITED, COLOMBO TAJAN (PVT) LTD. AND IECZ LTD., COLOMBO	
POWER CAVERN COMPLEX	DWG. No. 19
SURGE FACILITIES,	Rev. DATE
ACCESS & CABLE TUNNELS	Rev. DATE
Designed by J.A.P.P.	Checked by J.A.P.P.
Date 19.12.78	Date 19.12.78



- LEGEND:**
- SPIRAL CASE FLOOR EL. 1.00
 - 21 HATCH
 - 22 GENERATOR
 - 23 EXCITATION PANEL
 - 24 EXCITATION TRANSFORMER
 - 25 GENERATOR SWITCHGEAR
 - 26 AUXILIARY TRANSFORMER
 - 27 TURBINE AUXILIARIES CONTROL
 - 28 COMMON AUXILIARIES CONTROL
 - 29 CO; FIRE PROTECTION
 - 30 STORE ROOM

- 31 HATCH
- 32 GENERATOR COVER
- 33 MAIN TRANSFORMER
- 34 LOCAL CONTROL BOARDS
- 35 WORKSHOP
- 36 LOCKER ROOM
- 37 SHOWER
- 38 RESTROOM
- 39 FIREPROOF DOOR

- 41 OVERHEAD CRANE
- 42 CABLE DUCT
- 43 VENTILATION DUCT
- 44 SUSPENDED CEILING

- TURBINE FLOOR EL. 6.00
- 11 INLET VALVE
- 12 HYDRAULIC CONTROL INLET VALVE
- 13 TURBINE
- 14 GOVERNOR
- 15 DRAFT TUBE FLAP GATE
- 16 CONTROL UNIT FLAP GATE
- 17 HATCH
- 18 COMPRESSOR ROOM
- 19 HVAC PLANT

- GENERATOR FLOOR EL. 9.50
- 01 INLET VALVE PEDESTAL
- 02 TURBINE DRAFT TUBE
- 03 DRAINAGE PUMP
- 04 DEWATERING PUMP
- 05 AUXILIARY DRAINAGE SUMP
- 06 RAW & FILTERED WATER SYSTEM
- 07 OIL SUMP
- 08 ACCESS TO DEWATERING GALLERY

- MACHINE HALL FLOOR EL. 13.70
- 31 HATCH
- 32 GENERATOR COVER
- 33 MAIN TRANSFORMER
- 34 LOCAL CONTROL BOARDS
- 35 WORKSHOP
- 36 LOCKER ROOM
- 37 SHOWER
- 38 RESTROOM
- 39 FIREPROOF DOOR

- ELEVATION ABOVE MACHINE HALL FLOOR
- 41 OVERHEAD CRANE
- 42 CABLE DUCT
- 43 VENTILATION DUCT
- 44 SUSPENDED CEILING

- TURBINE FLOOR EL. 6.00
- 11 INLET VALVE
- 12 HYDRAULIC CONTROL INLET VALVE
- 13 TURBINE
- 14 GOVERNOR
- 15 DRAFT TUBE FLAP GATE
- 16 CONTROL UNIT FLAP GATE
- 17 HATCH
- 18 COMPRESSOR ROOM
- 19 HVAC PLANT

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- 29 CO; FIRE PROTECTION
- 30 STORE ROOM

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- 41 OVERHEAD CRANE
- 42 CABLE DUCT
- 43 VENTILATION DUCT
- 44 SUSPENDED CEILING

KUKULE GANGA HYDROPOWER PROJECT

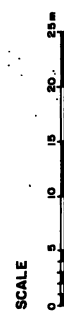
THE DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
 MINISTRY OF POWER AND ENERGY
CEYLON ELECTRICITY BOARD

JOINT VENTURE KUKULE GANGA
 KUKULE GANGA HYDROPOWER PROJECT
 KUKULE GANGA, SRI LANKA
 ELECTROWATT ENGINEERING SERVICES LTD, ZURICH, SWITZERLAND
 LANHUYER INTERNATIONAL GMBH, FRANKFURT, GERMANY
 CENTRAL ENGINEERING, ASSOCIATED BY SINGAPORE
 TRAMEL(PVT)LTD. and IRIDI LTD, COLOMBO

POWER CAVERN SECTIONS
 Sheet 1

Rev.	Date

Designed: *[Signature]* Date: *[Date]*
 Checked: *[Signature]* Date: *[Date]*
 DWG. No. 20



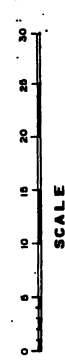
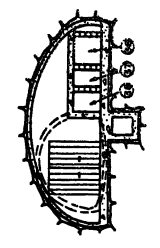
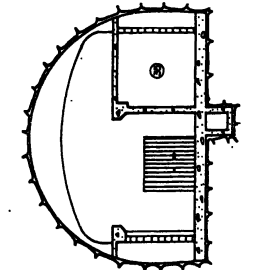
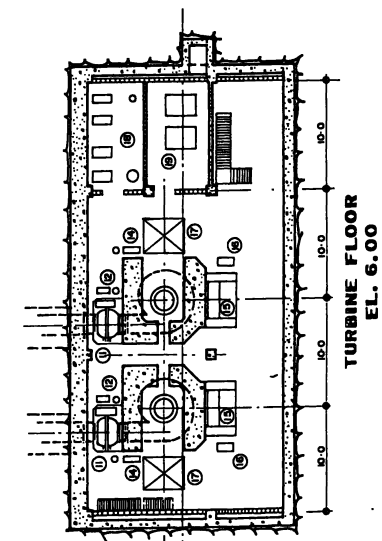
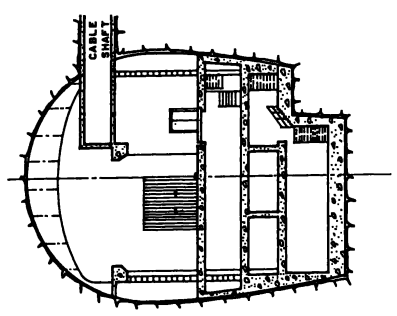
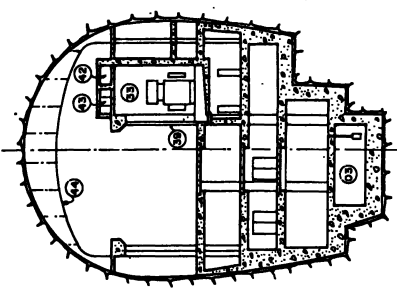
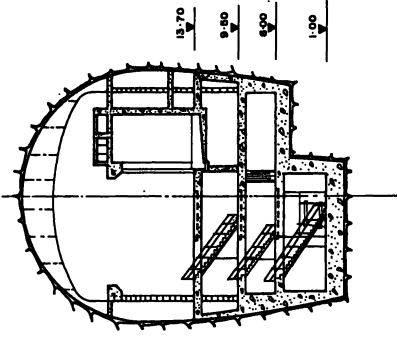
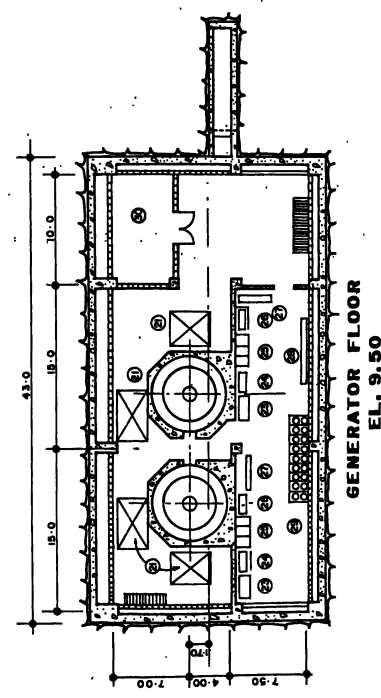
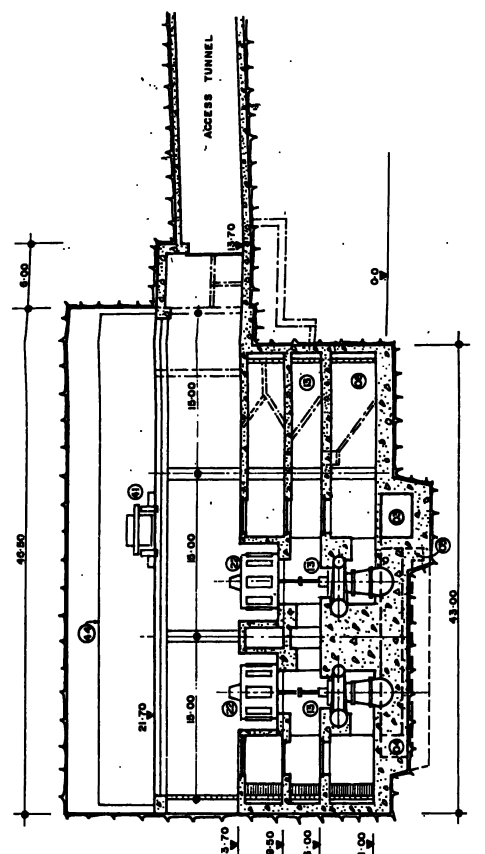
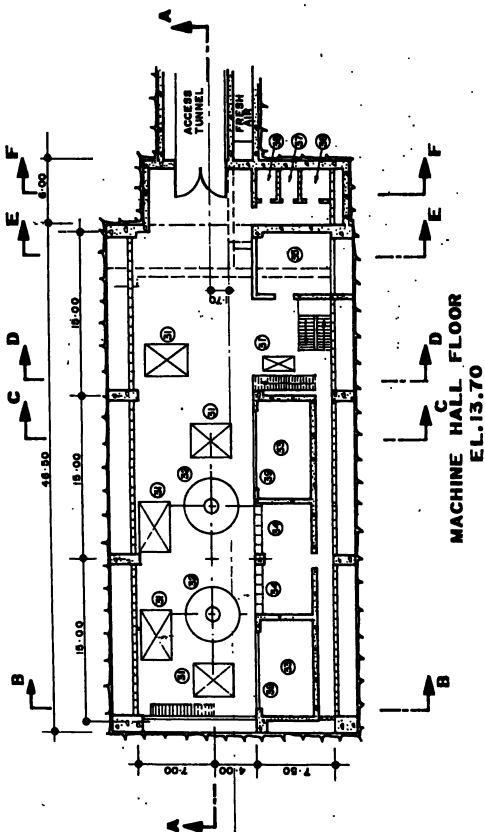
SPIRAL CASE FLOOR WATERWAYS

CROSS SECTION THROUGH UNIT

BIFURCATION

150,000
145,000

BYPASS TUNNEL



KUKULE GANGA HYDROPOWER PROJECT

THE DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
MINISTRY OF POWER AND ENERGY
CEYLON ELECTRICITY BOARD

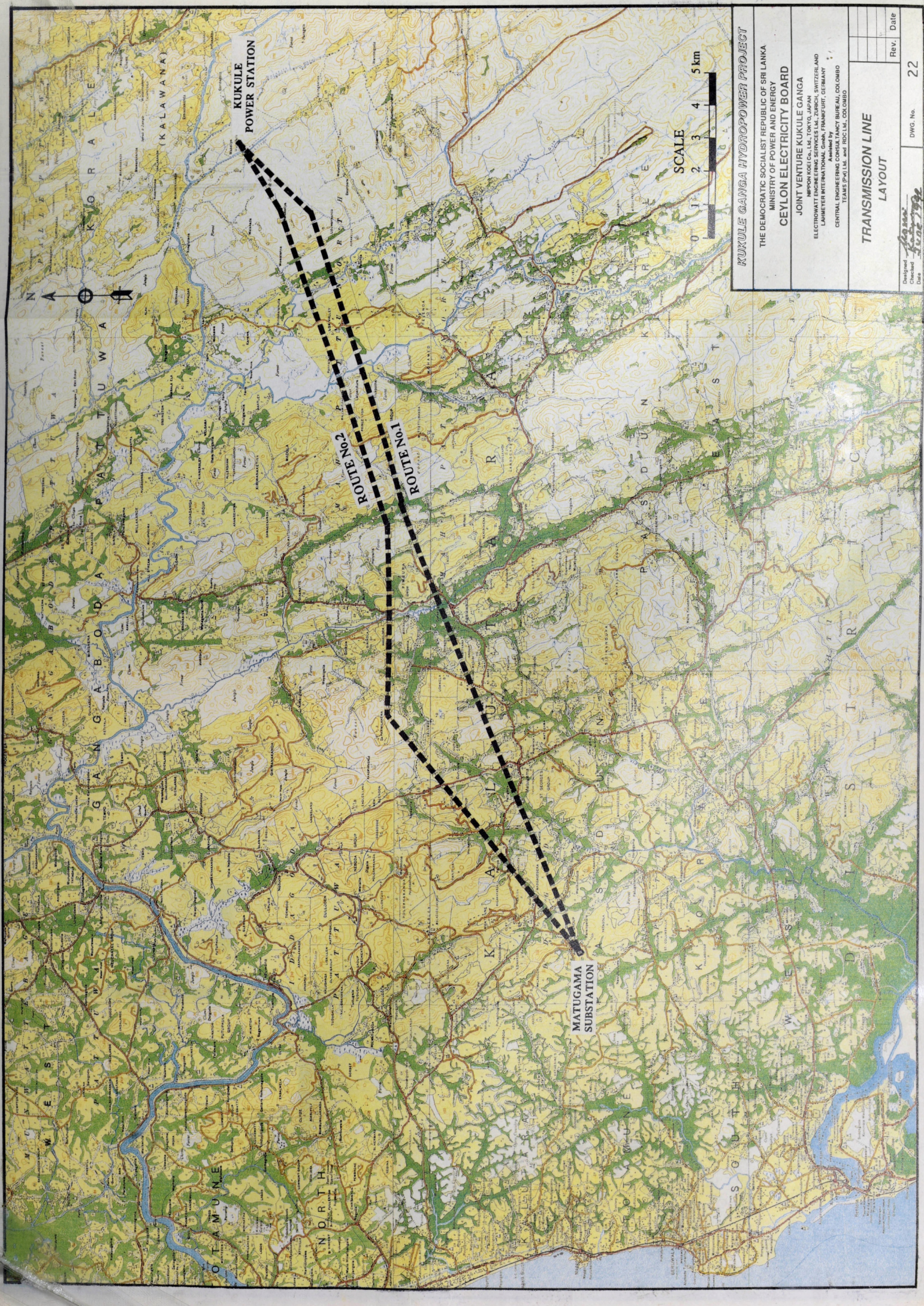
JOINT VENTURE KUKULE GANGA
NIPPON KOKI CO. LIA. TOKYO, JAPAN
ELECTROWATT ENGINEERING SERVICES LIA. ZURICH, SWITZERLAND
LAWREYER INTERNATIONAL GMBH, FRANKFURT, GERMANY
CENTRAL ENGINEERING CONSULTANCY BUREAU (C.E.C.B.)
TRABE (PVT) LIA. and IREC LIA. COLOMBO

POWER CAVERN SECTIONS
Sheet 2

Rev.	Date

Designed: *[Signature]*
Checked: *[Signature]*
Date: *[Signature]*

DWG. No. **21**



KUKULE GANGA HYDROPOWER PROJECT

THE DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
 MINISTRY OF POWER AND ENERGY

CEYLON ELECTRICITY BOARD

JOINT VENTURE KUKULE GANGA
 NEPPON GEE Co., Ltd., TOKYO, JAPAN
 ELECTROWATT ENGINEERING SERVICES Ltd., ZÜRICH, SWITZERLAND
 LAMBERT ENGINEERING CONSULTANTS, COLOMBO
 Assisted by
 CENTRAL ENGINEERING CONSULTANCY BUREAU, COLOMBO
 TEAMS PVT. Ltd. and IDC Ltd., COLOMBO

TRANSMISSION LINE LAYOUT

Rev.	Date

Designed: *[Signature]*
 Checked: *[Signature]*
 Date: 22/02/79

DWG. No. 22

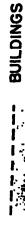
LEGEND



CAVERN



OUTDOOR SWITCHYARD BOUNDARY



BUILDINGS



BUILDINGS

KUKULE GANGA HYDROPOWER PROJECT

THE DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
MINISTRY OF POWER AND ENERGY

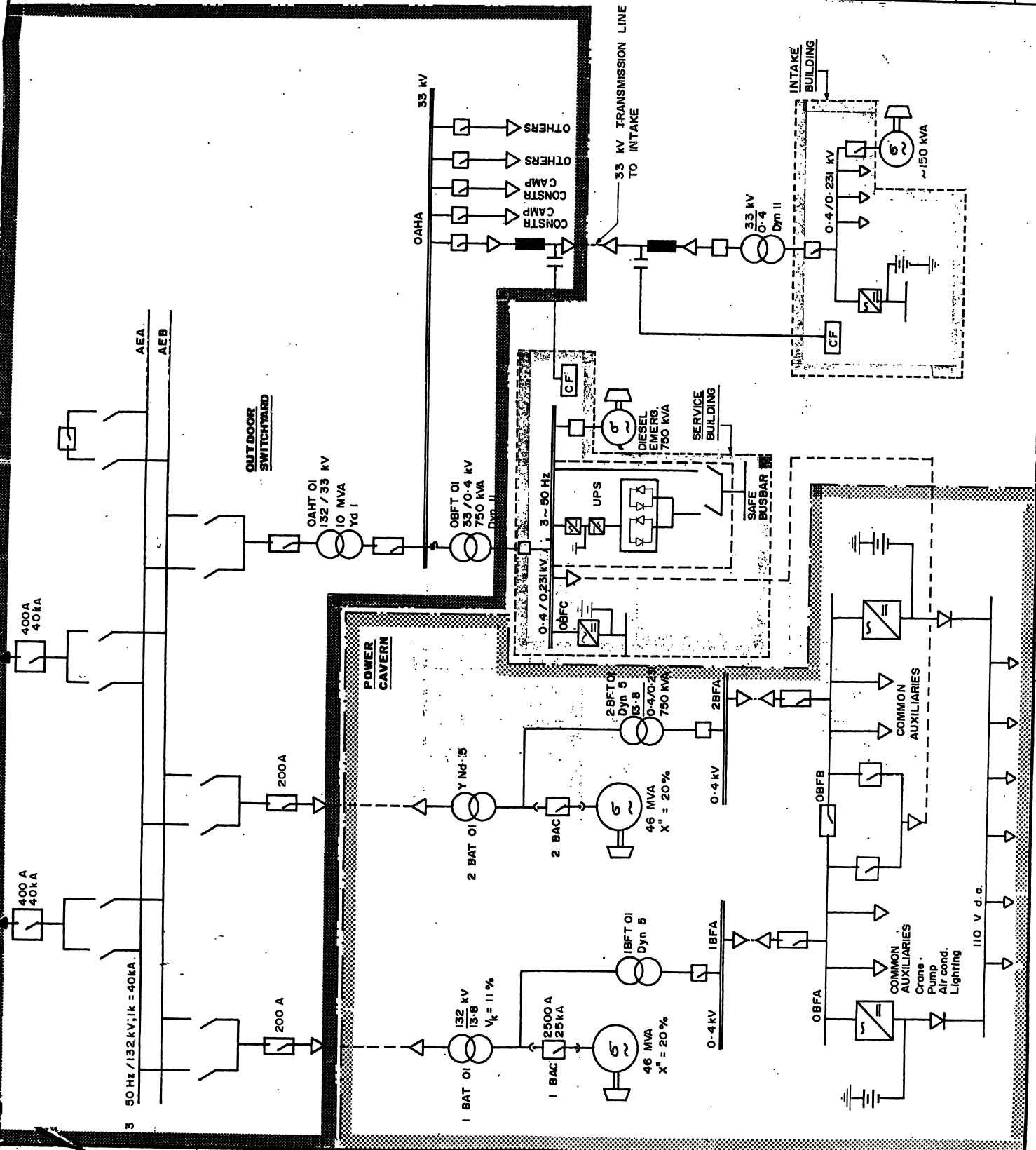
CEYLON ELECTRICITY BOARD

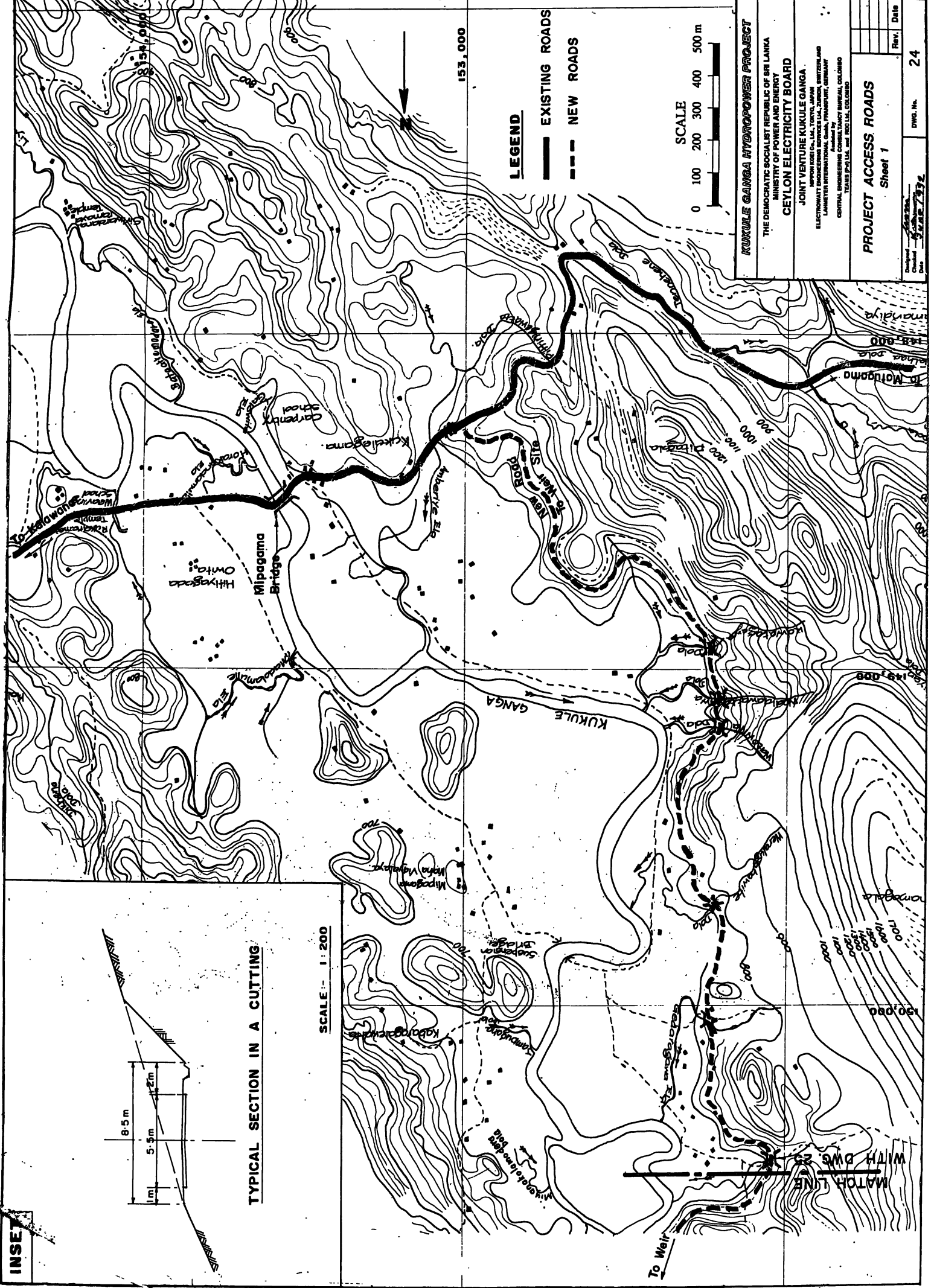
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MYPON ROSE CO., L.M., TOKYO, JAPAN
ELECTROWATT ENGINEERING SERVICES LTD., ZURICH, SWITZERLAND
CONCEPT TECHNOLOGY CORPORATION, CHICAGO, ILLINOIS, U.S.A.
Assisted by
CENTRAL ENGINEERING CONSULTANCY BUREAU, COLOMBO
THANE PRAJULI and IBC, L.M., COLOMBO

SINGLE LINE DIAGRAM

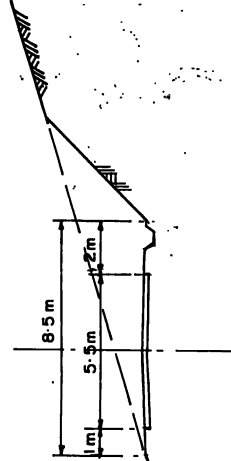
Design No.	1987
Date	1987
Rev.	
Date	

DWG. No. 23





INSET

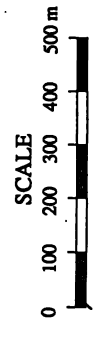


TYPICAL SECTION IN A CUTTING

SCALE: 1:200

LEGEND

- EXISTING ROADS
- - - NEW ROADS



KUKULE GANGA HYDROPOWER PROJECT

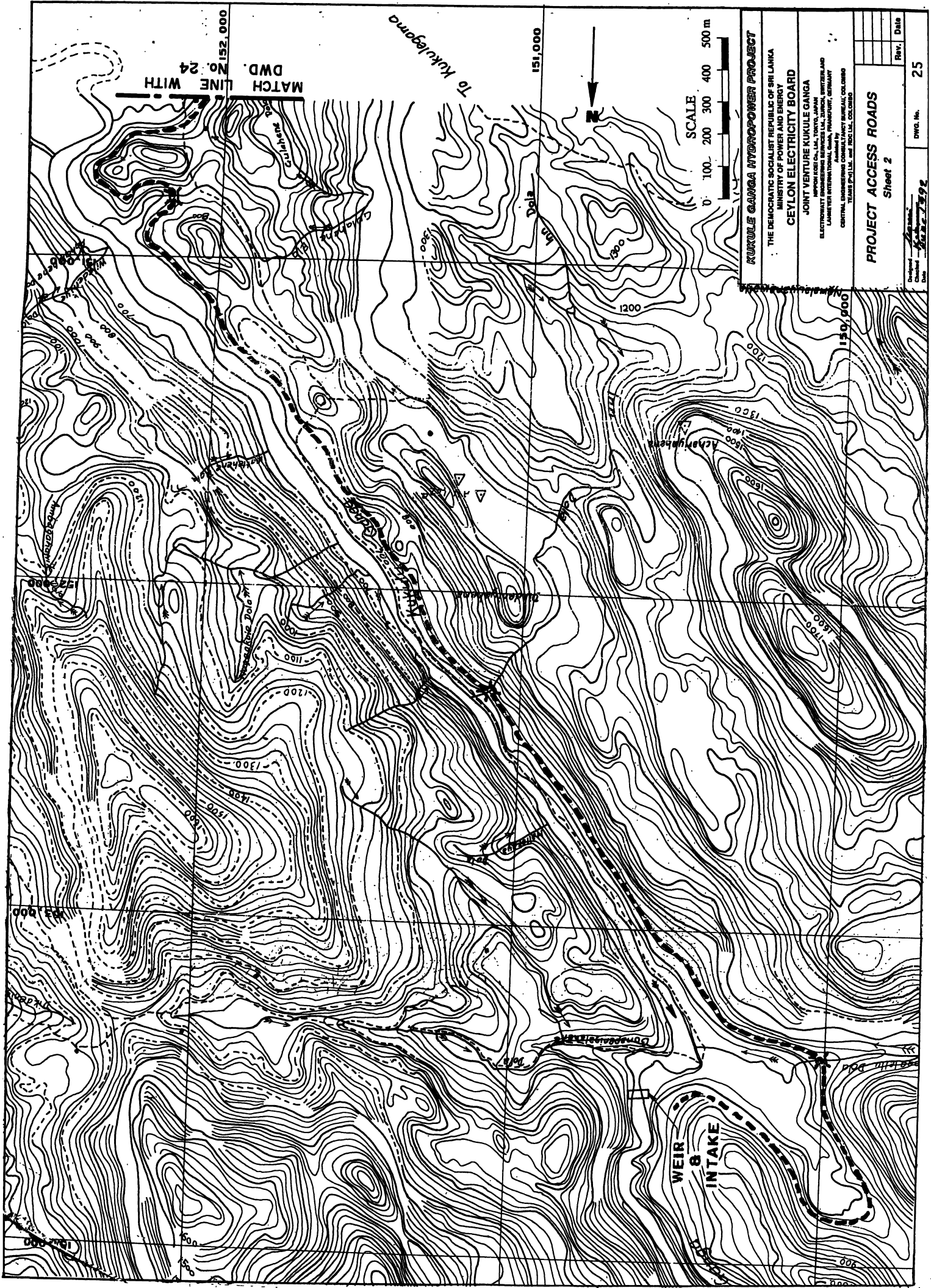
THE DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
 MINISTRY OF POWER AND ENERGY
 CEYLON ELECTRICITY BOARD

JOINT VENTURE KUKULE GANGA
 ELECTROWATT INCORPORATED (SINGAPORE), SRI LANKA, SWITZERLAND
 LANHETER INTERNATIONAL, CANADA, TRANSPORT, GERMANY
 Advised by
 CENTRAL ENGINEERING CONSULTANTS, COLOMBO
 TEASER PAVILIA and INDIA PAVILIA, COLOMBO

PROJECT ACCESS ROADS
 Sheet 1

Rev.	Date

DWG. No. 24
 Date 5/12/72

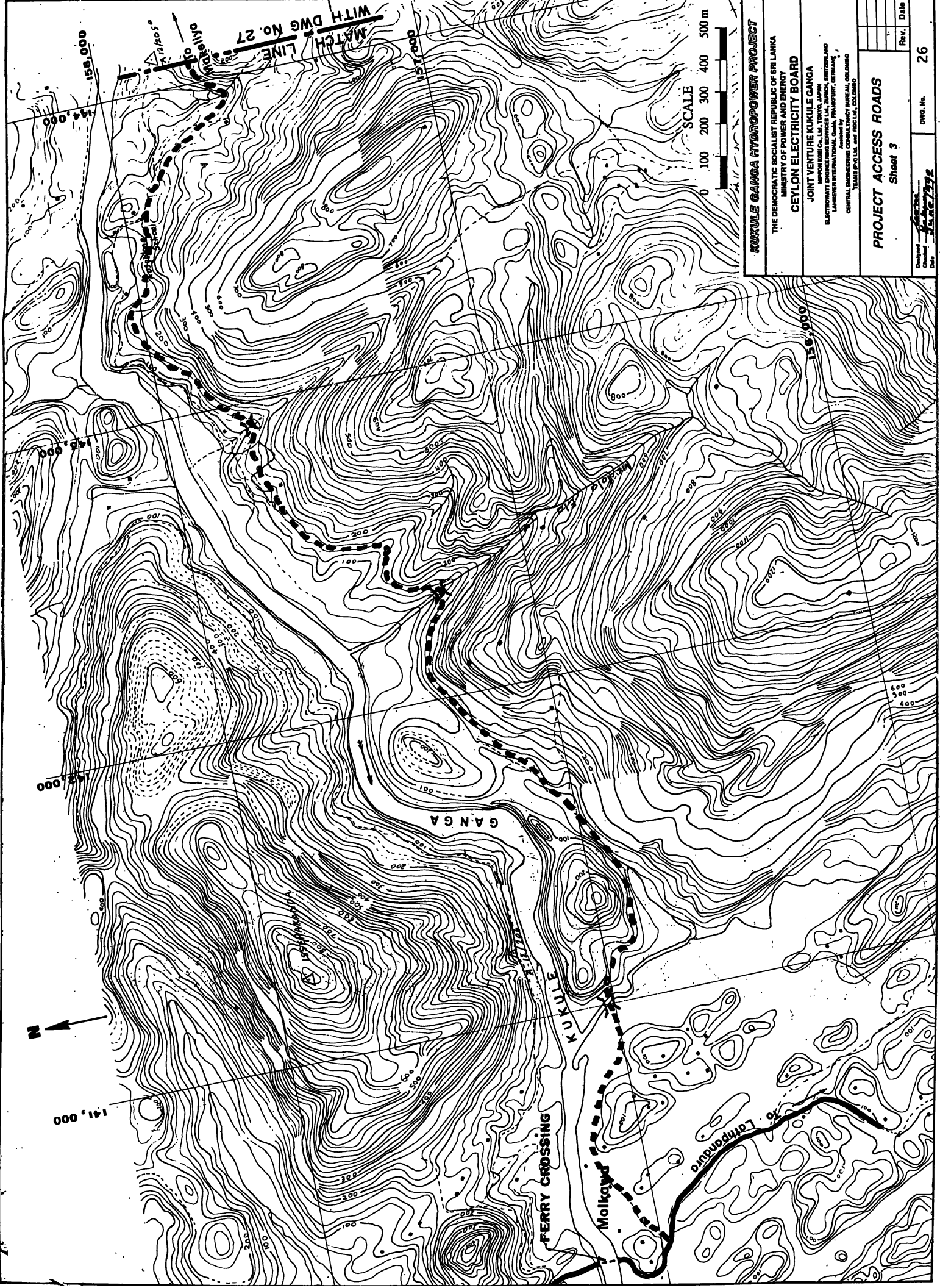


KUKULE GANGA HYDROPOWER PROJECT
 THE DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
 MINISTRY OF POWER AND ENERGY
CEYLON ELECTRICITY BOARD
 JOINT VENTURE KUKULE GANGA
 ELECTROWEST (SRI LANKA) PRIVATE LIMITED, SRI LANKA, SWITZERLAND
 LANHETER INTERNATIONAL (USA), FRANKFURT, GERMANY
 CENTRAL ENGINEERING ADVISORY BUREAU SRI LANKA
 TEHRAN (PA) IRI, and TOKYO (PA) JAPAN

PROJECT ACCESS ROADS
 Sheet 2

Rev.	Date

DWG. No. 25
 Date: 1992



KUKULE GANGA HYDROPOWER PROJECT

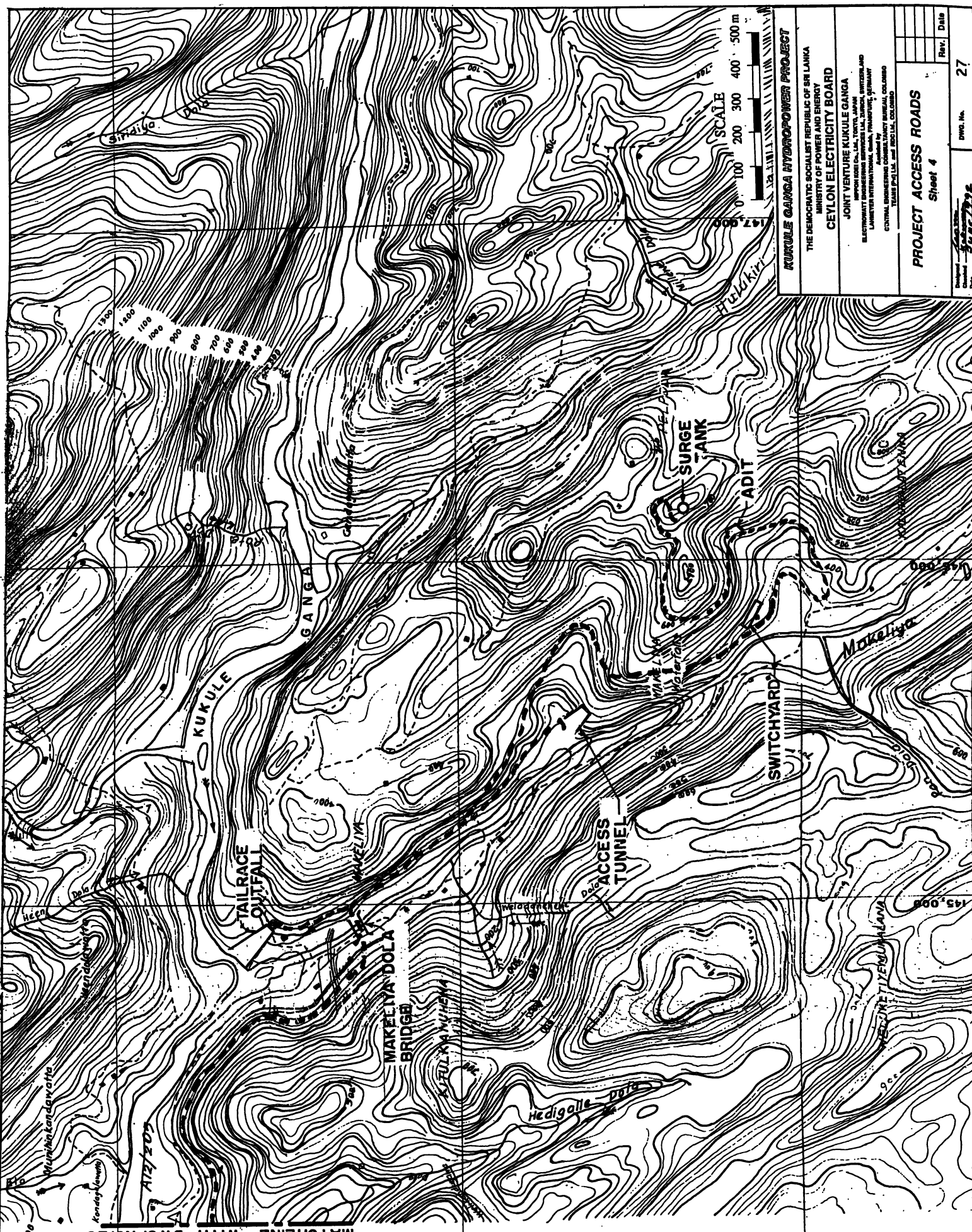
THE DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
 MINISTRY OF POWER AND ENERGY
CEYLON ELECTRICITY BOARD

JOINT VENTURE KUKULE GANGA
 THE SRI LANKAN ELECTRICITY CORPORATION LTD., ZAMBIA, SWITZERLAND
 ELECTROWATT ENGINEERING SERVICES S.A., ZAMBIA, SWITZERLAND
 LAHMEIER INTERNATIONAL G.M.B.H., FRANKFURT, GERMANY
 CONSULTING ENGINEERS
 CENTRAL ENGINEERING BUREAU, COLOMBO
 TEHRAN P.O. I.R.A. AND RIO DE JANEIRO, BRAZIL

PROJECT ACCESS ROADS
 Sheet 3

Rev.	Date

DWG. No. 26
 Date: 14/07/72
 Scale: 1:50,000



MATCHLINE WITH DWG. NO. 26

158,000

From
Mokkawa



157,000

156,000

144,000

KUKULE GANGA HYDROPOWER PROJECT

THE DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
 MINISTRY OF POWER AND ENERGY
CEYLON ELECTRICITY BOARD

JOINT VENTURE KUKULE GANGA
 IMPCON CORP. (USA), TOKYO, JAPAN
 ELECTRICITY ENGINEERING CONSULTANTS (PVT) LTD., COLOMBO
 LIMITED INTERNATIONAL CONSULTANTS (PVT) LTD., COLOMBO
 CENTRAL ENGINEERING CONSULTANTS BUREAU, COLOMBO
 TEAM P42 (USA) AND P42 (SRI LANKA)

PROJECT ACCESS ROADS
 Sheet 4

Drawn by: *[Signature]*
 Checked by: *[Signature]*
 DWG. No. 27

Rev.	Date

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National Science Foundation

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Signature : 

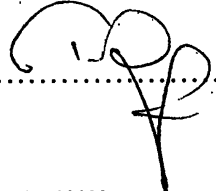
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