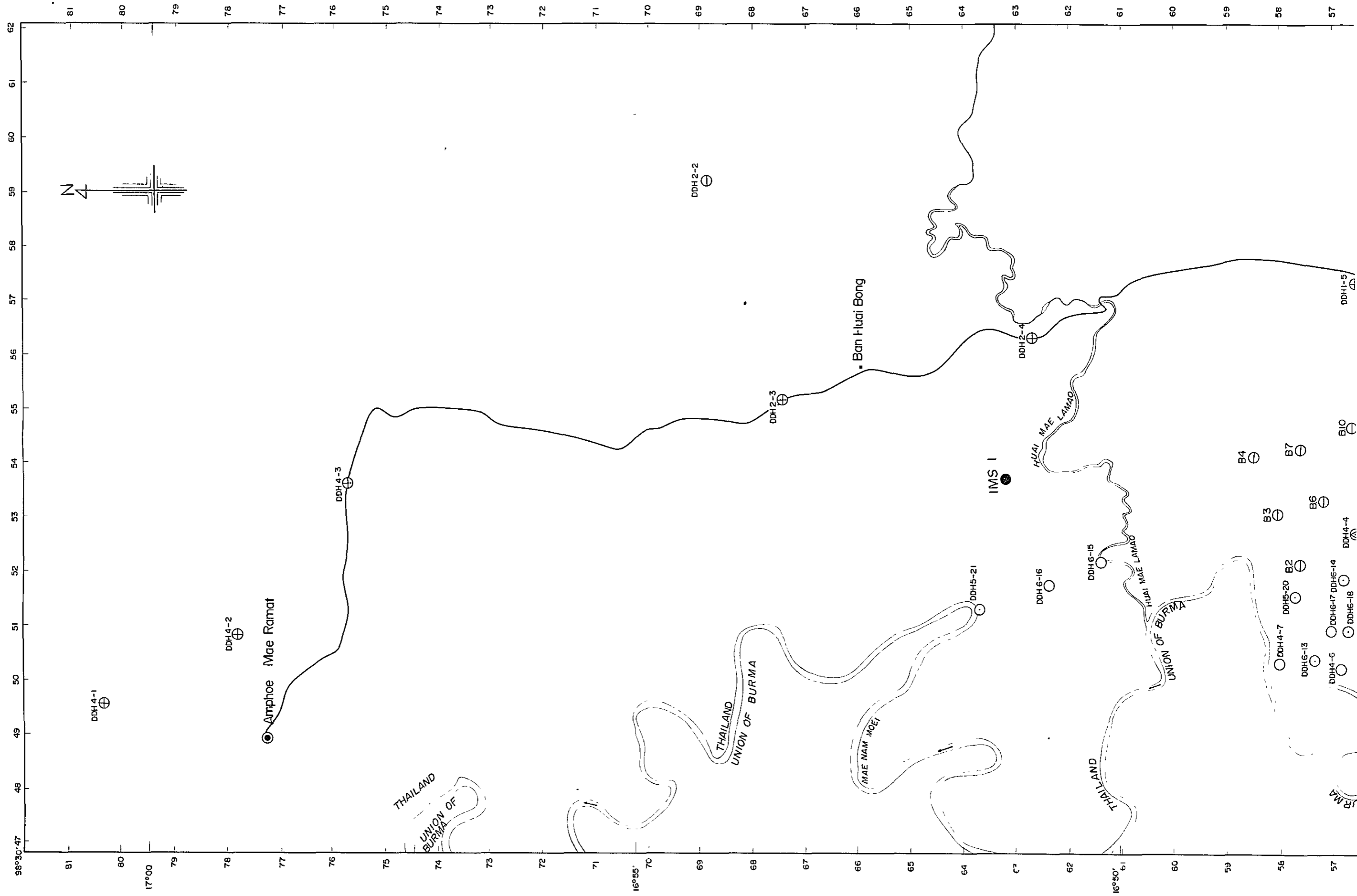
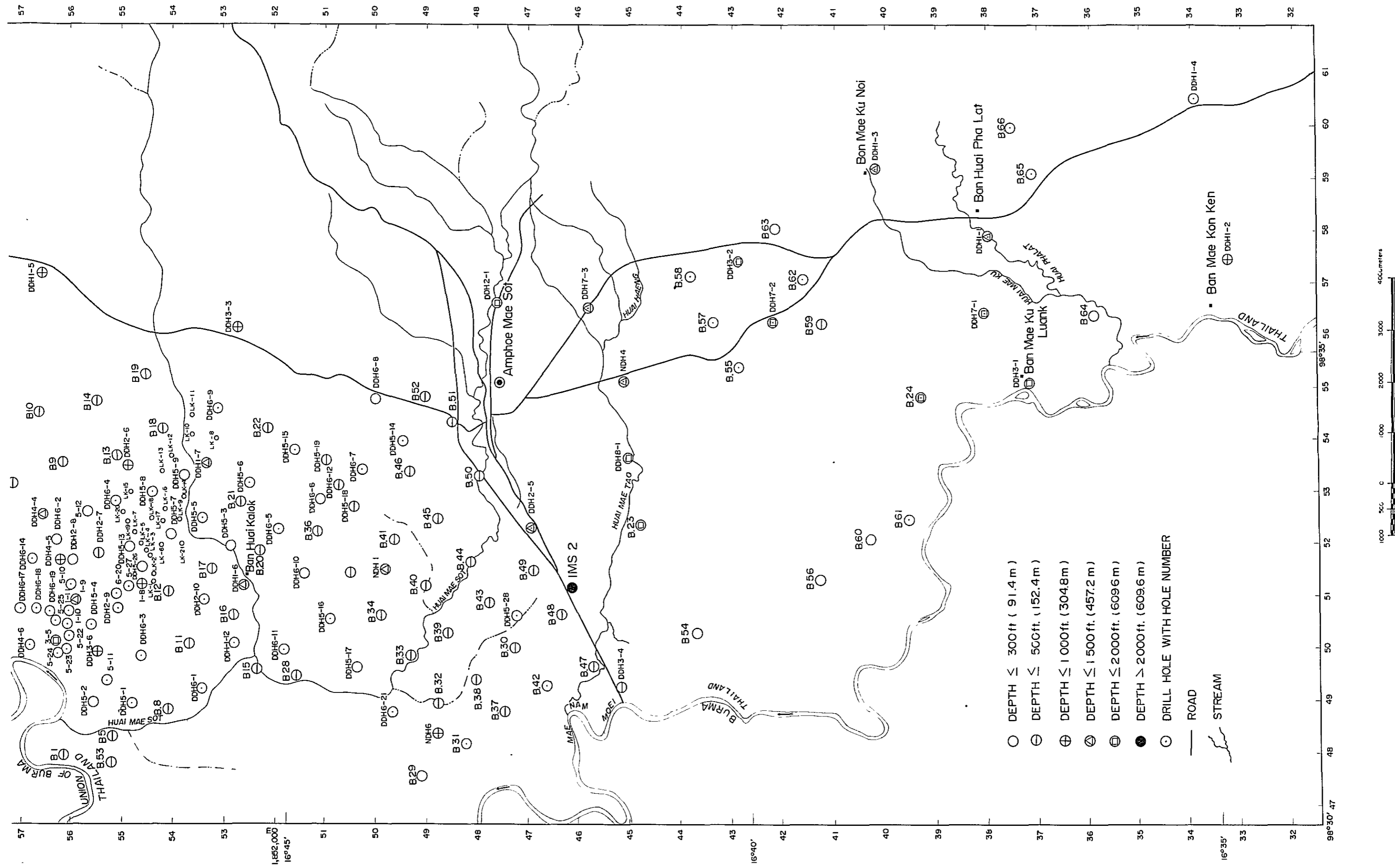
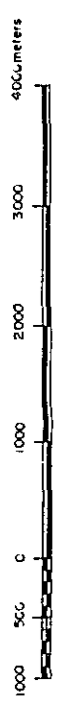


LOCATION MAP OF DRILLING POINTS ON OIL SHALE DEPOSIT G-08





- DEPTH ≤ 300ft ( 91.4 m )
- ⊖ DEPTH ≤ 500ft. ( 152.4 m )
- ⊕ DEPTH ≤ 1 000ft. ( 304.8 m )
- ⊗ DEPTH ≤ 1 500ft. ( 457.2 m )
- ⊙ DEPTH ≤ 2 000ft. ( 609.6 m )
- DEPTH > 2 000ft. ( 609.6 m )
- DRILL HOLE WITH HOLE NUMBER
- ROAD
- ~ STREAM



4515000

GRID NORTH  
▲  
MAGNETIC NORTH  
▼  
TRUE NORTH  
★

DDH 5-27  
○

DDH 1-8  
○

• 205

204

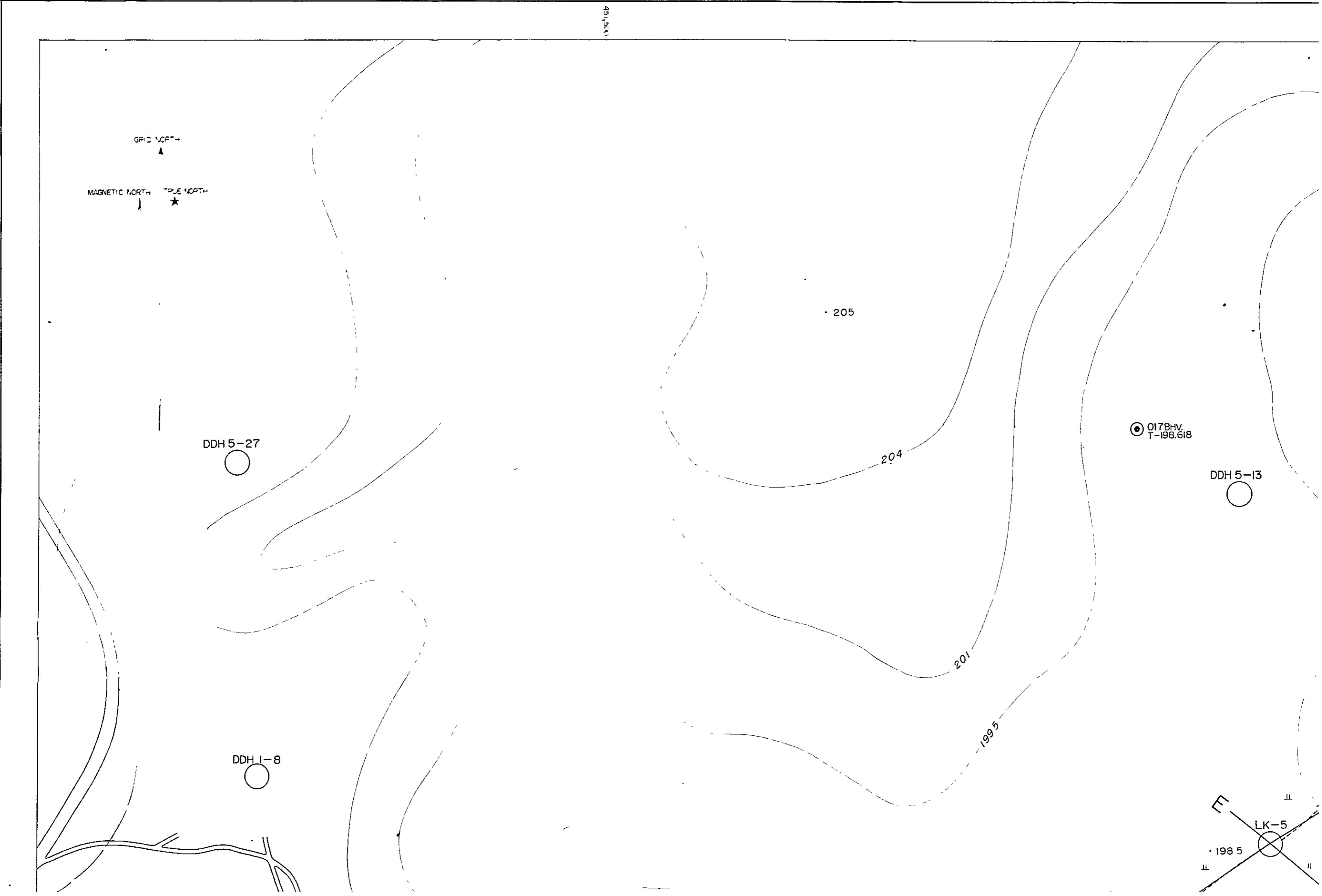
201

1995

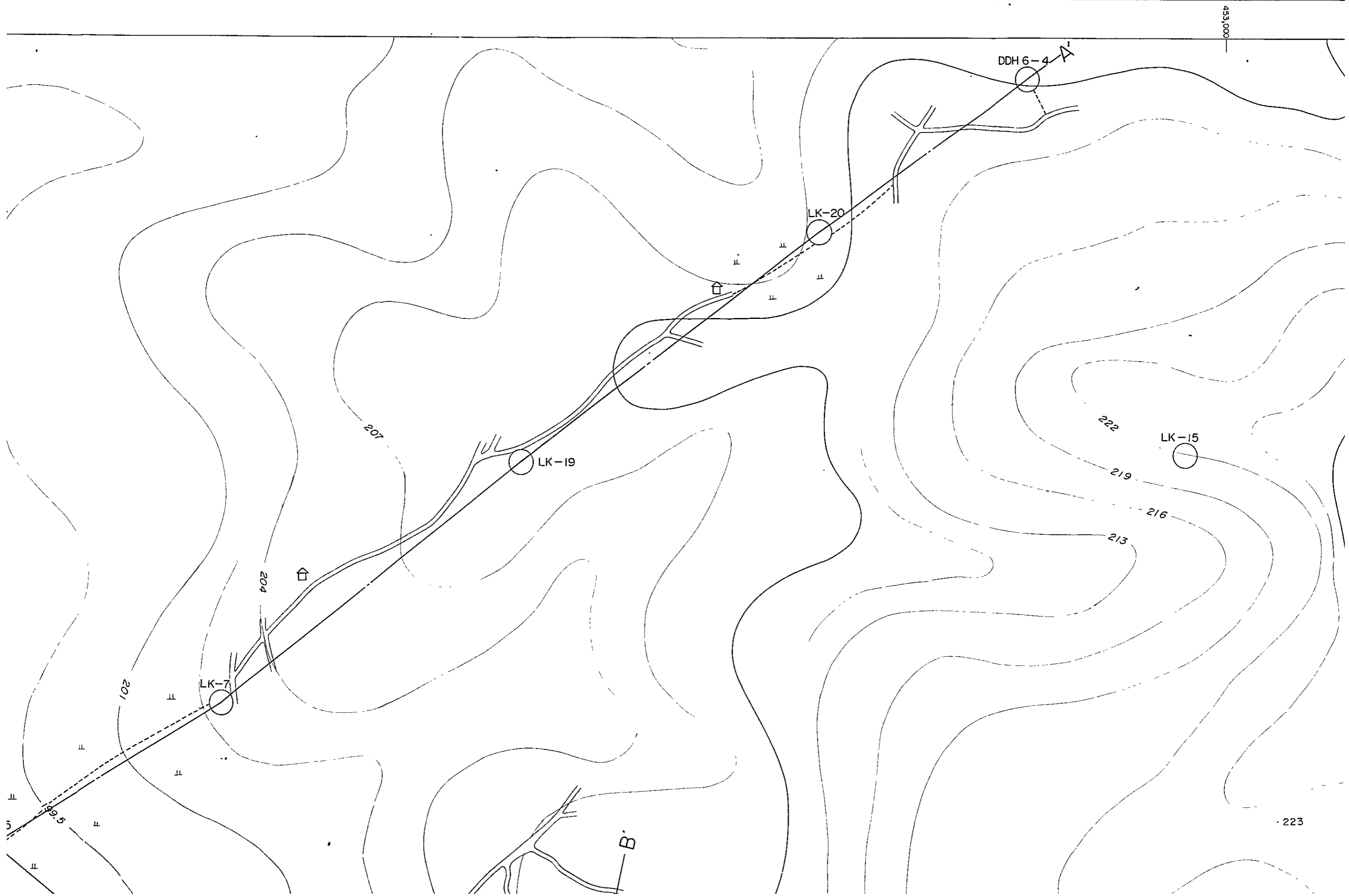
○ 017 BHV  
T-198.618

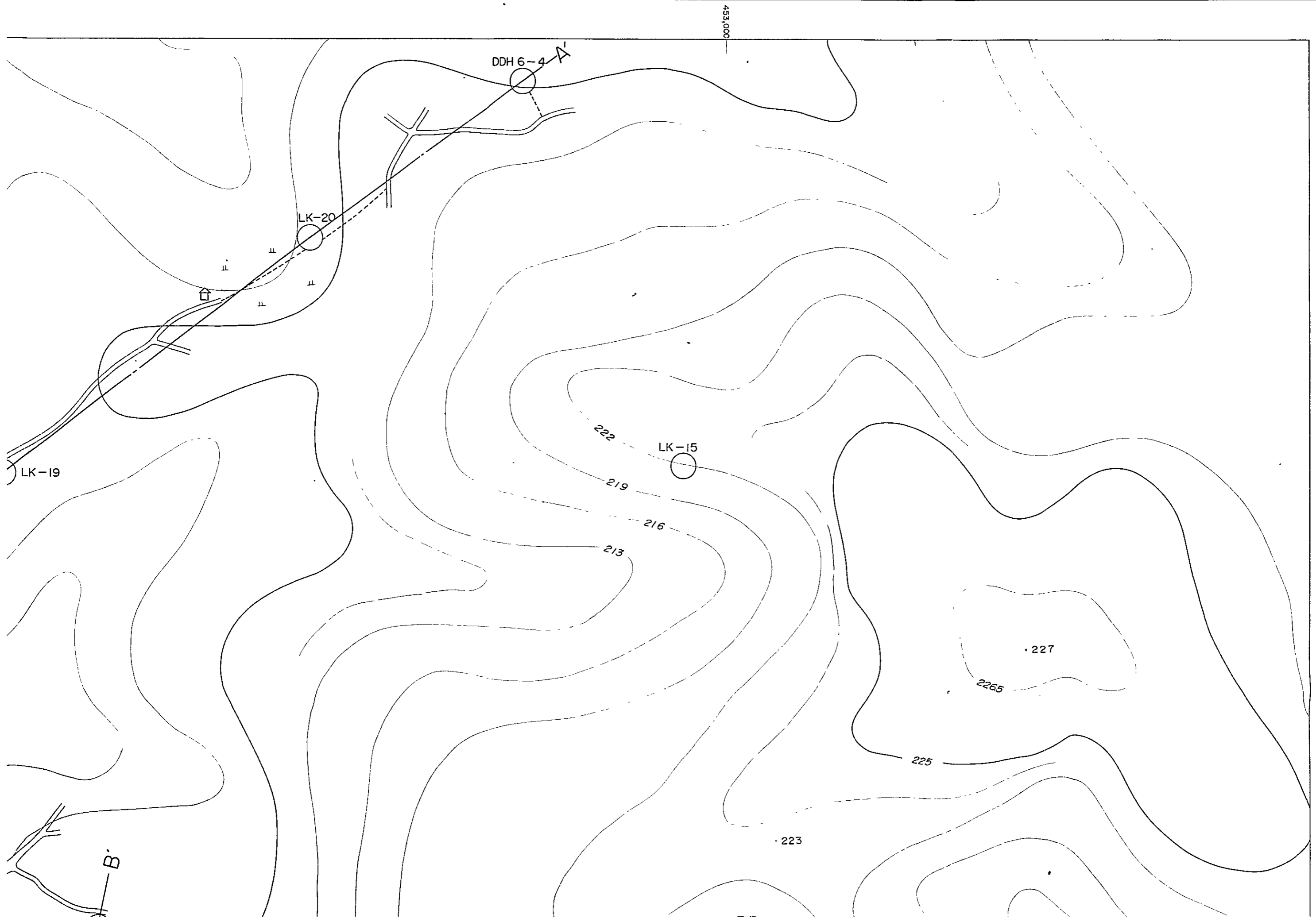
DDH 5-13  
○

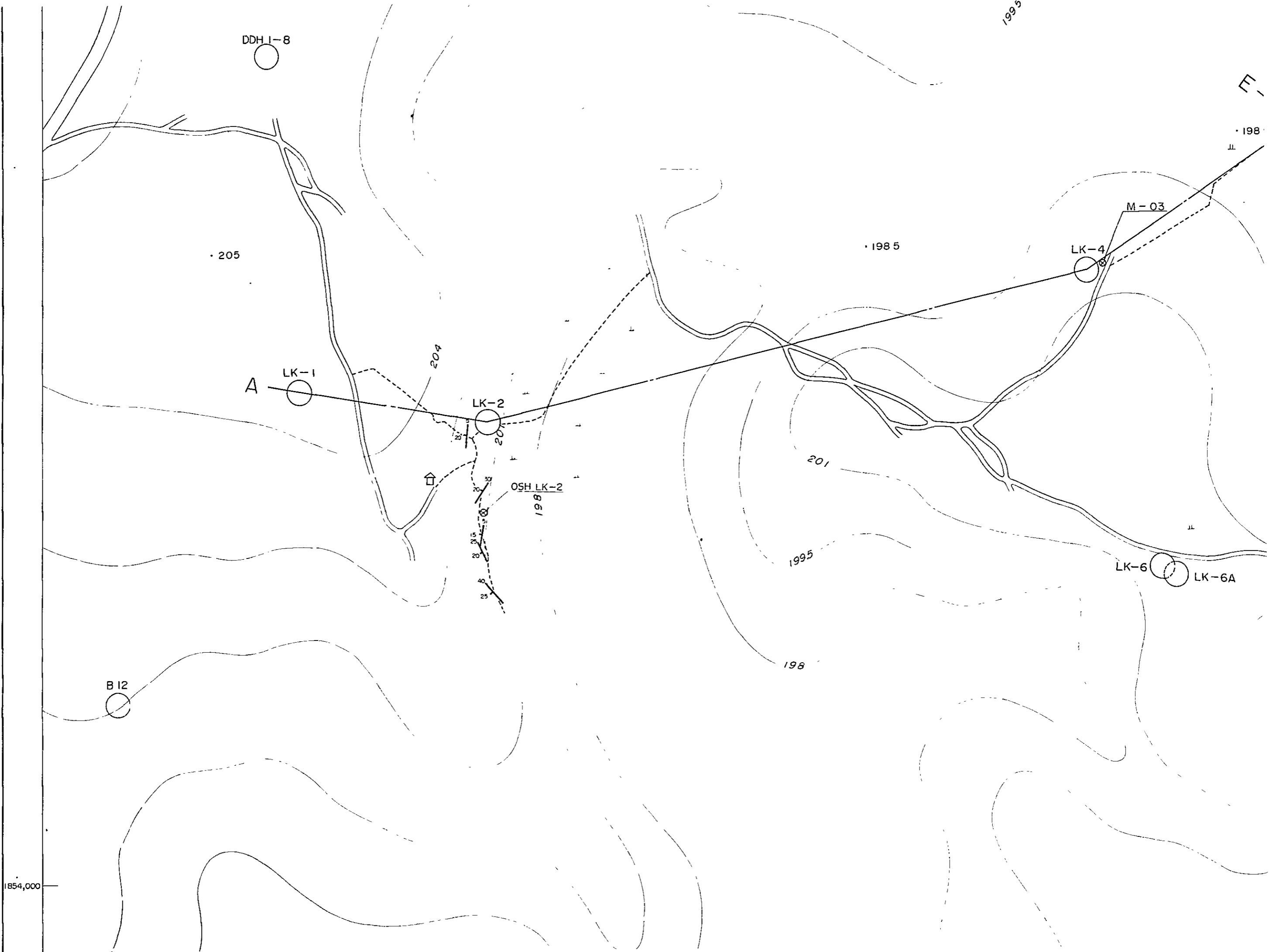
1985  
LK-5  
E



# MAP OF THE PROPOSED OIL SHALE QUARRY







DDH 1-8

205

A LK-1

204

LK-2

OSH LK-2

198

198.5

LK-4

M-03

198

201

LK-6

LK-6A

B 12

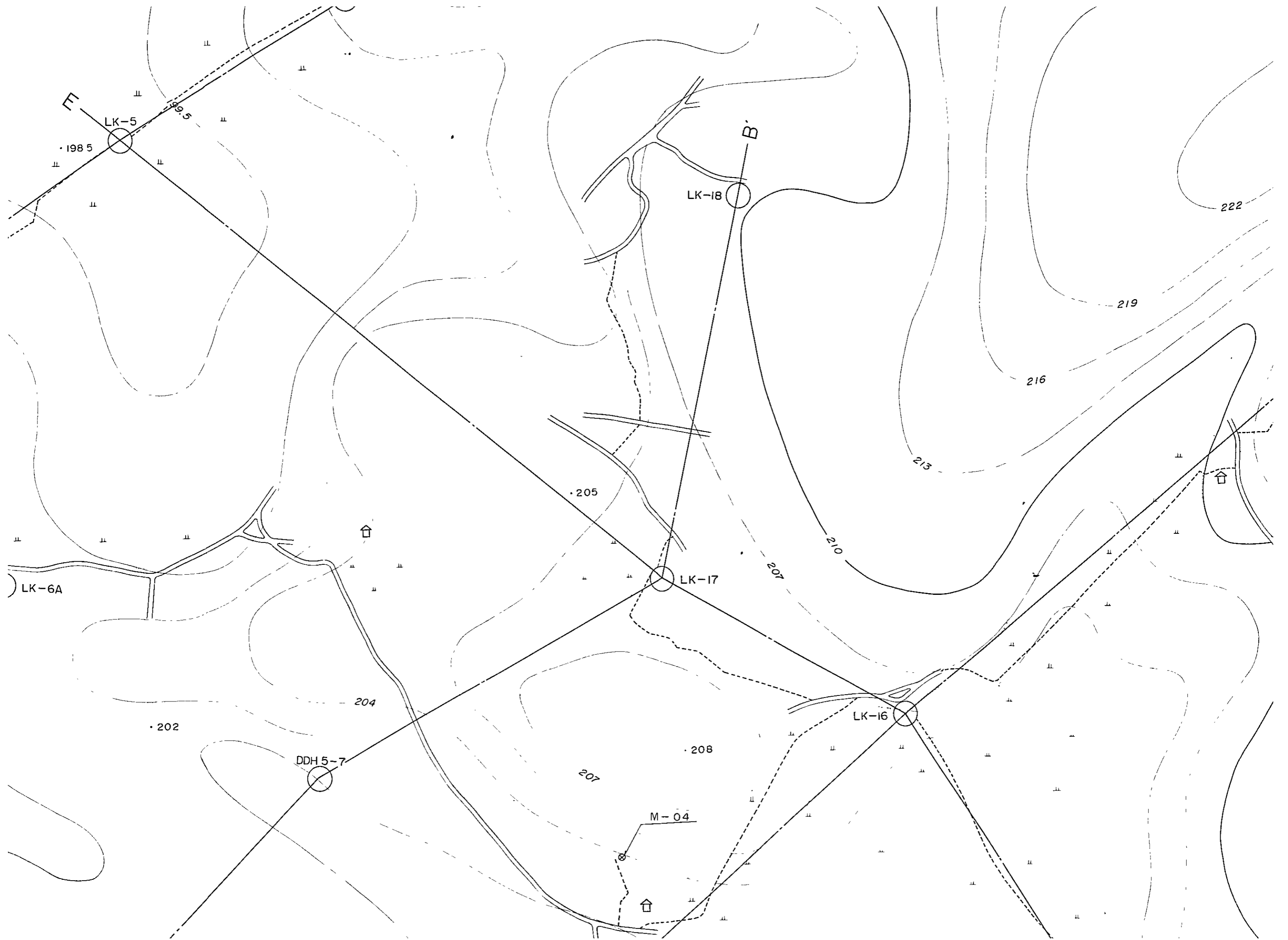
199.5

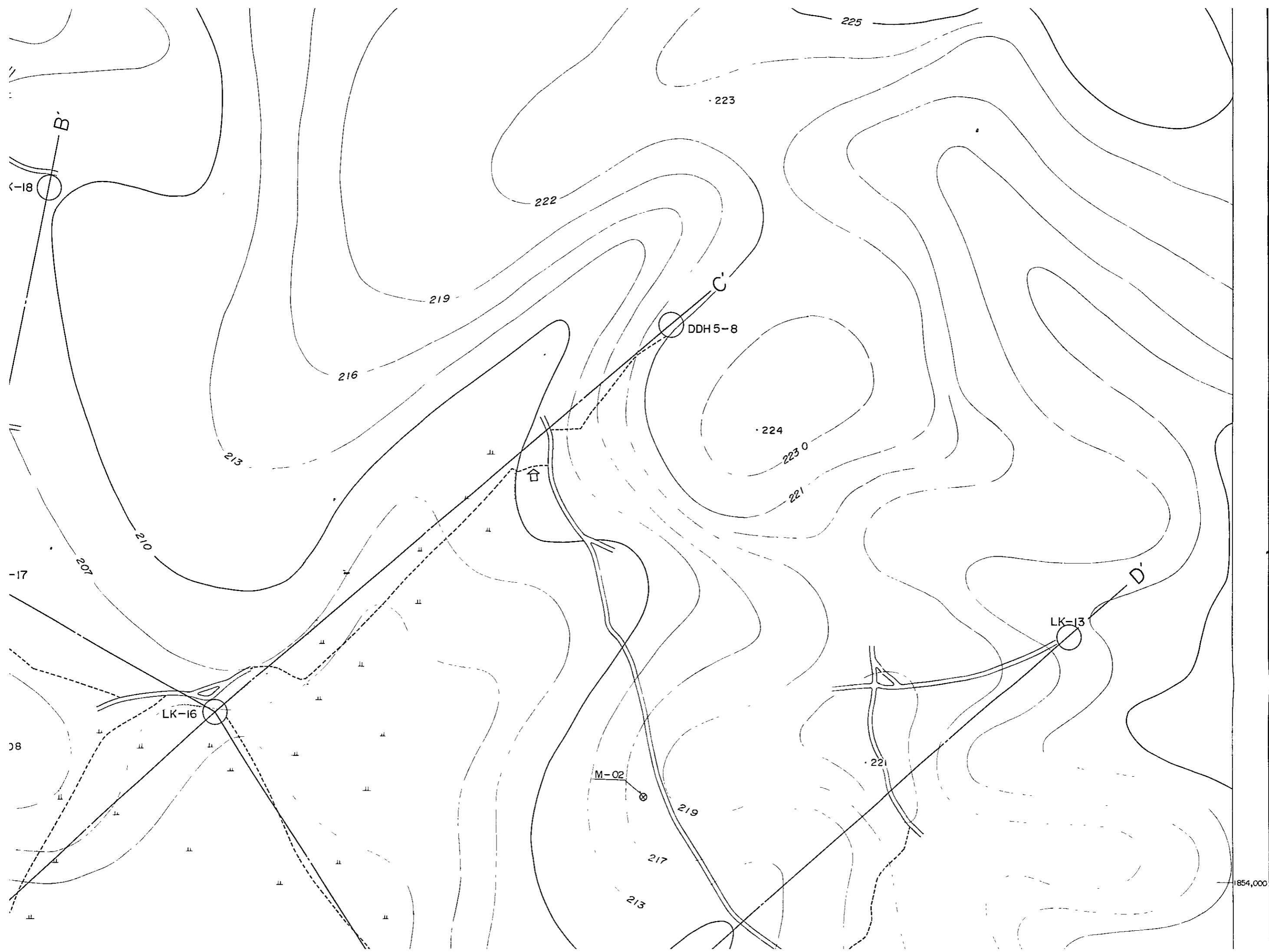
198

1854,000

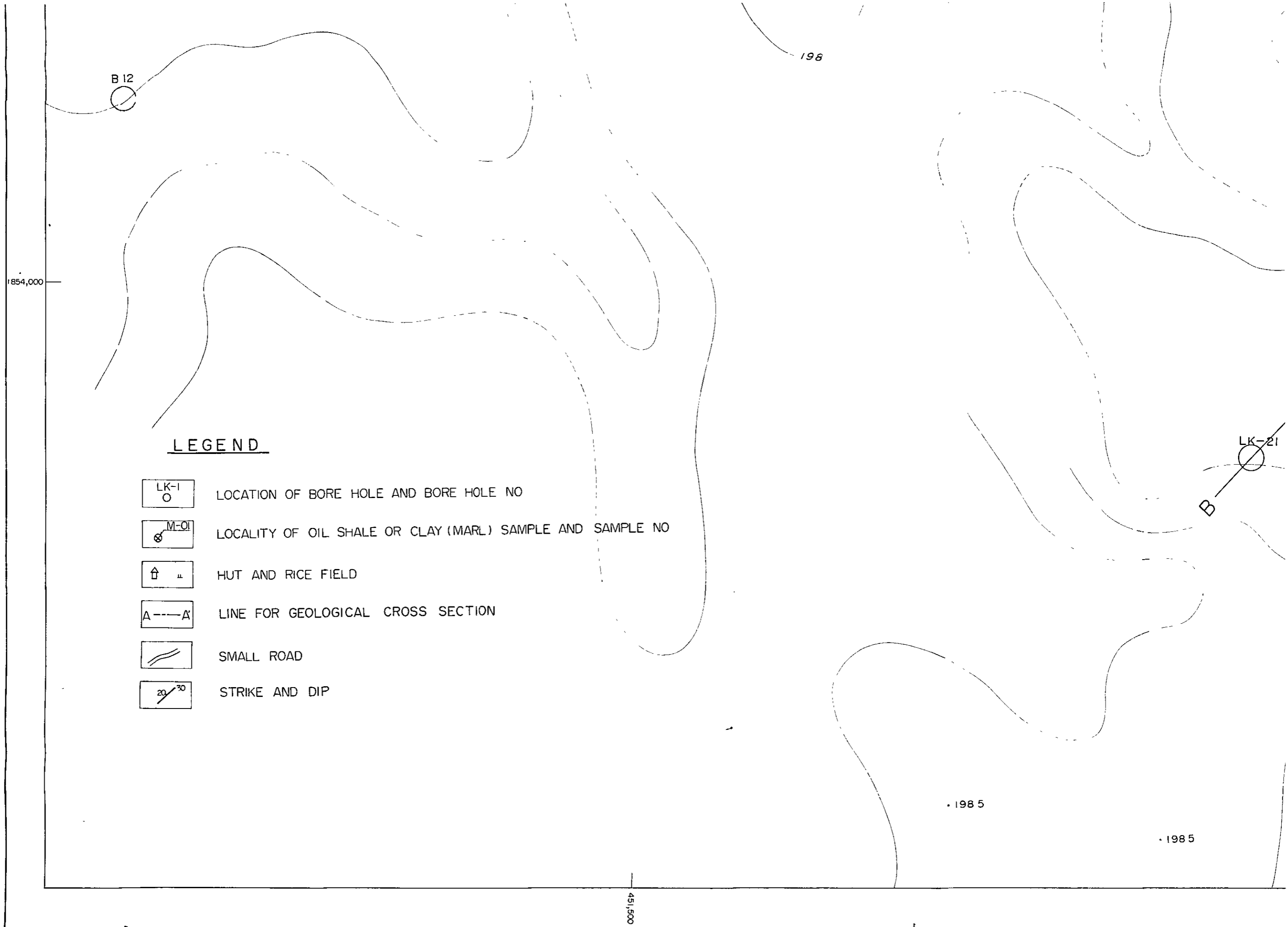
199.5

E









LEGEND

- LK-1  
 ○
 
 LOCATION OF BORE HOLE AND BORE HOLE NO
- M-01  
 ⊗
 
 LOCALITY OF OIL SHALE OR CLAY (MARL) SAMPLE AND SAMPLE NO
- ⚡
 
 HUT AND RICE FIELD
- A---A'
 
 LINE FOR GEOLOGICAL CROSS SECTION
- SMALL ROAD
- STRIKE AND DIP

198

1854,000

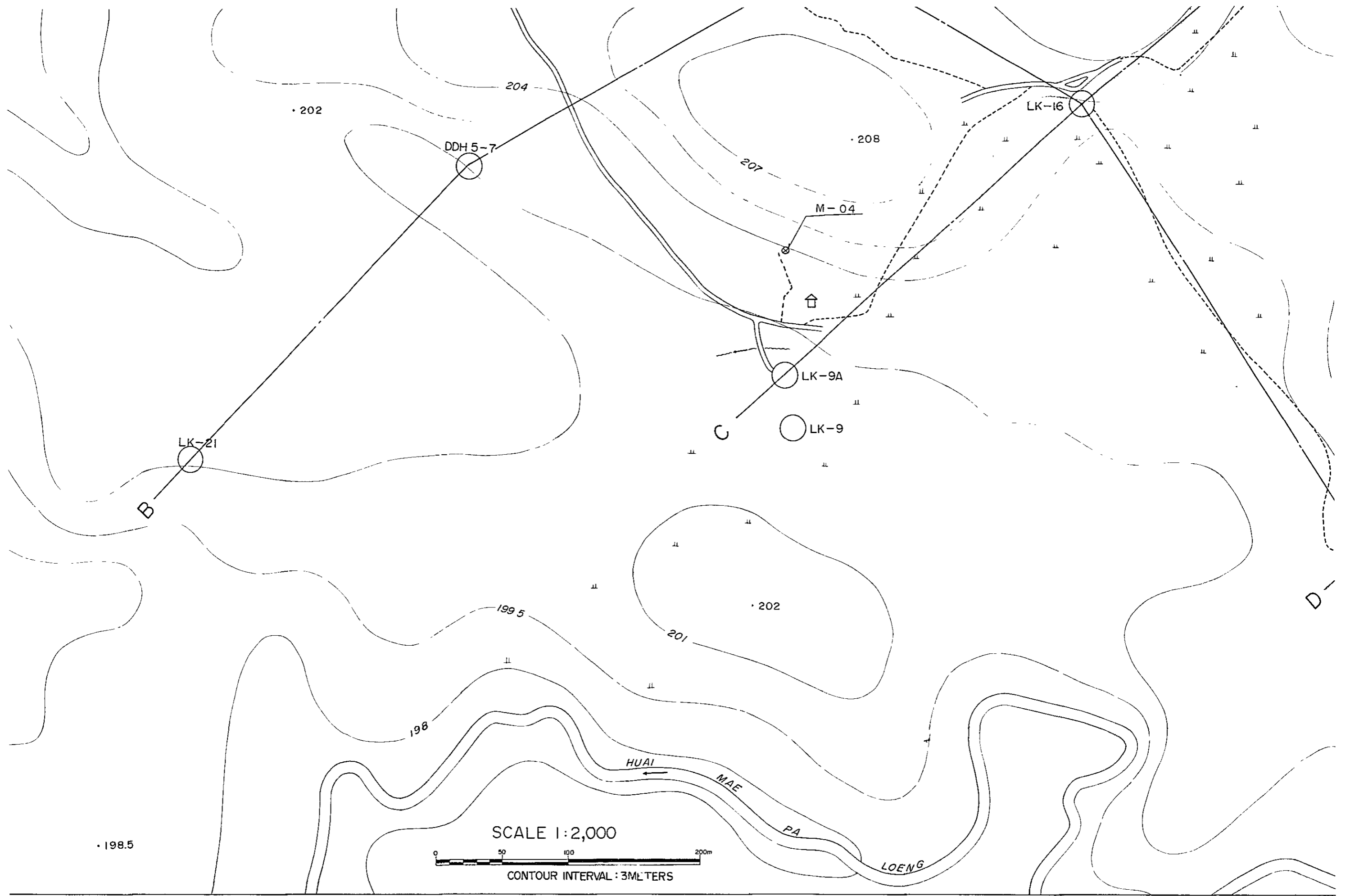
LK-21

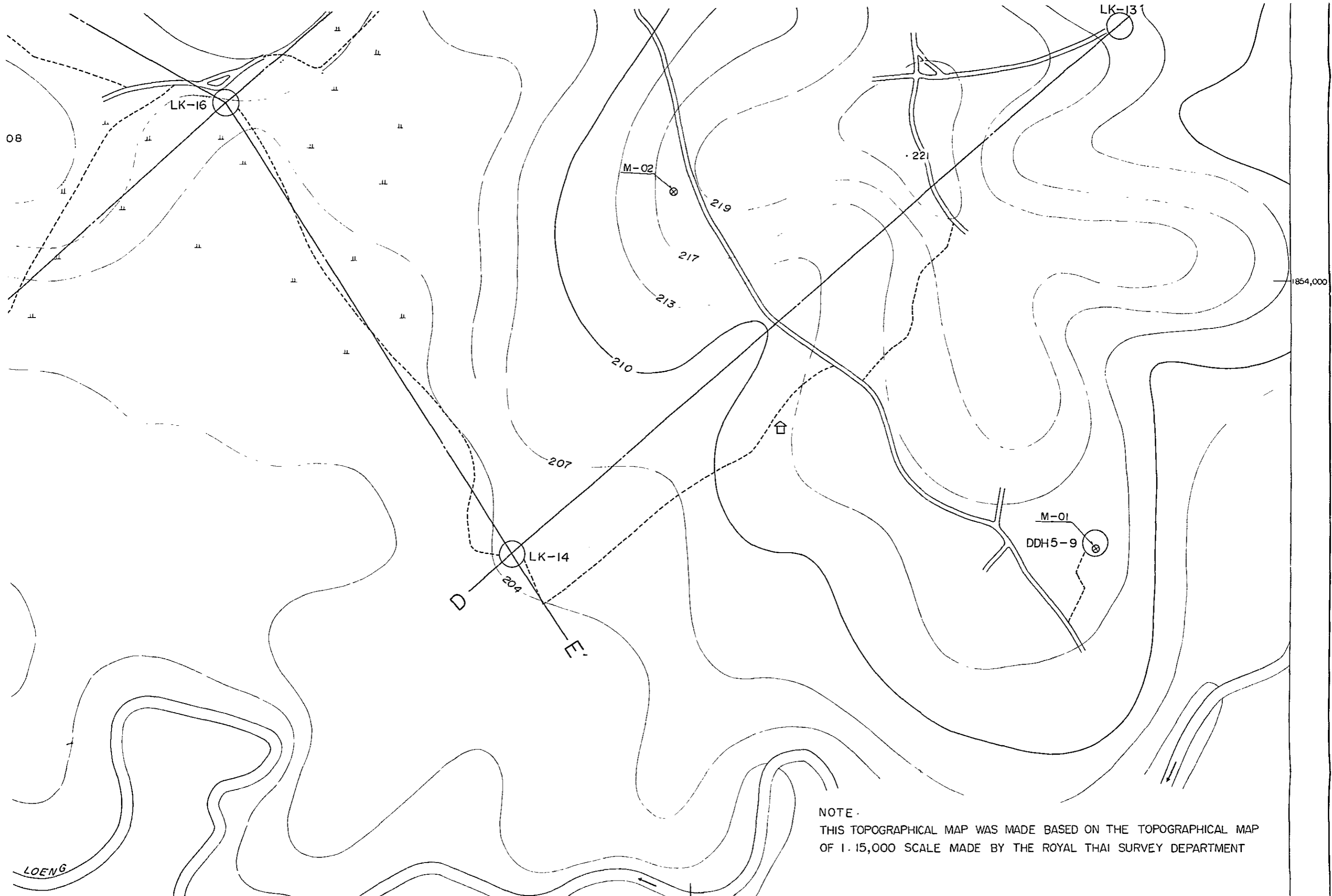
B

• 1985

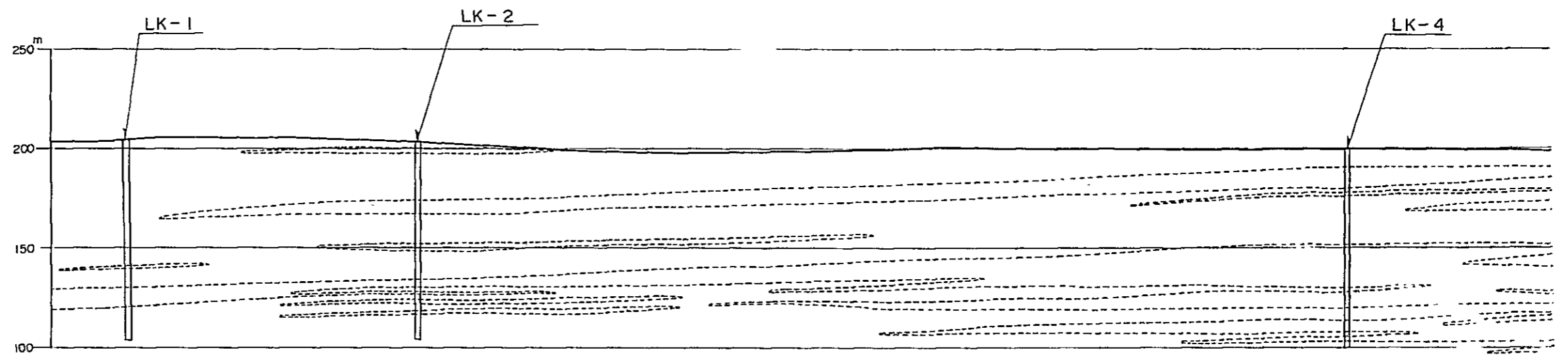
• 1985

451,500

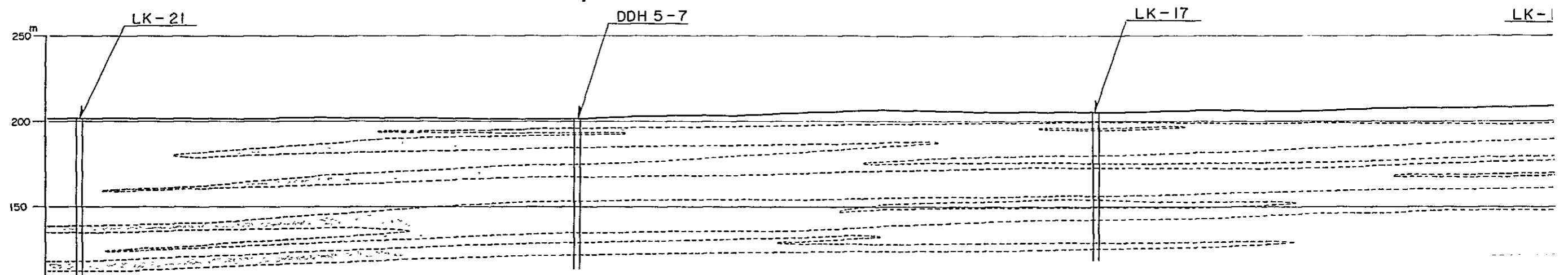




NOTE.  
THIS TOPOGRAPHICAL MAP WAS MADE BASED ON THE TOPOGRAPHICAL MAP  
OF 1:15,000 SCALE MADE BY THE ROYAL THAI SURVEY DEPARTMENT

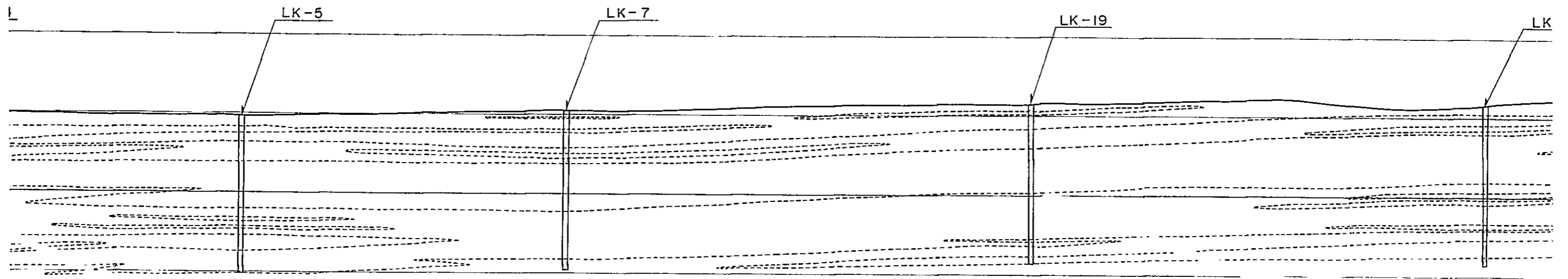


Sec. B - B'

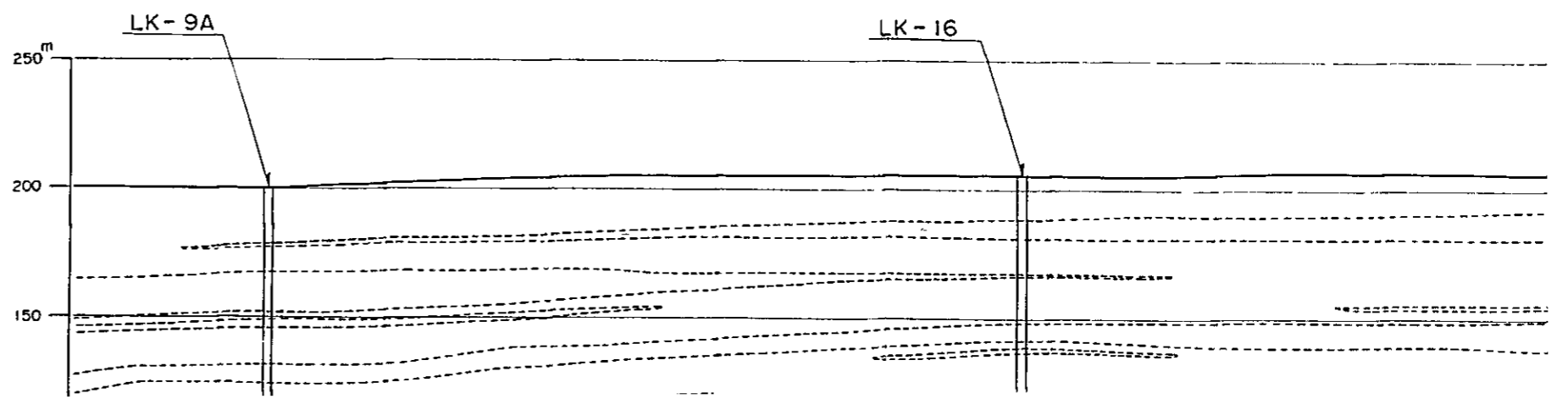
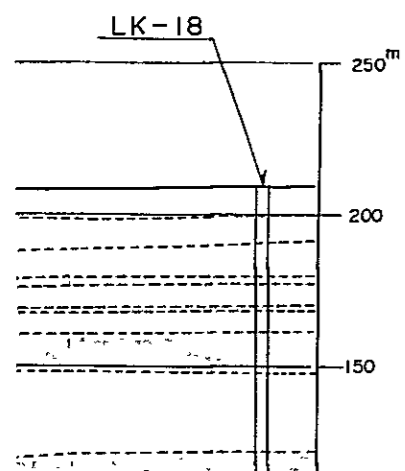


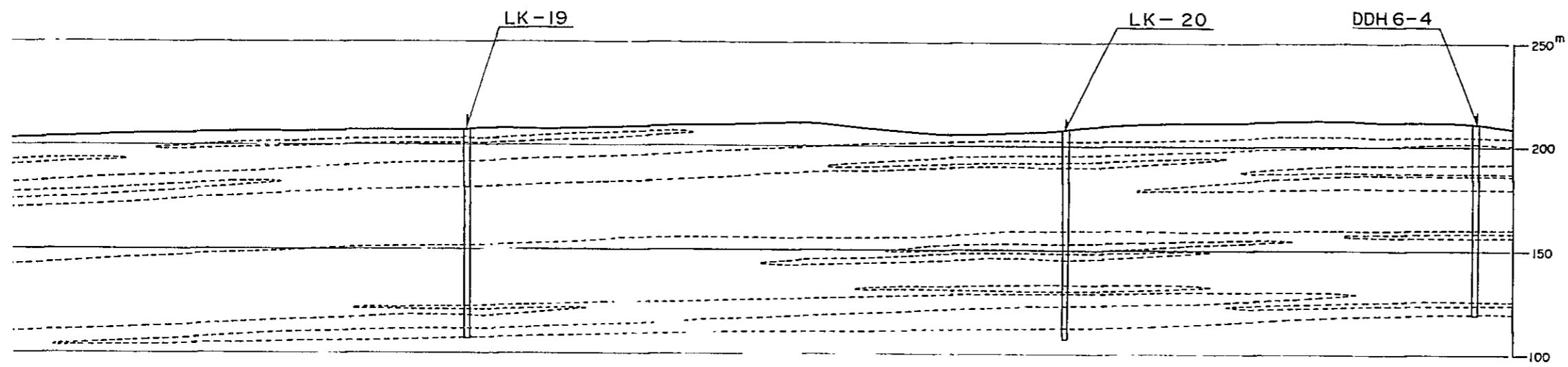
# AL CROSS SECTION OF THE PROPOSED OIL SHALE QUARRY

Sec. A - A'

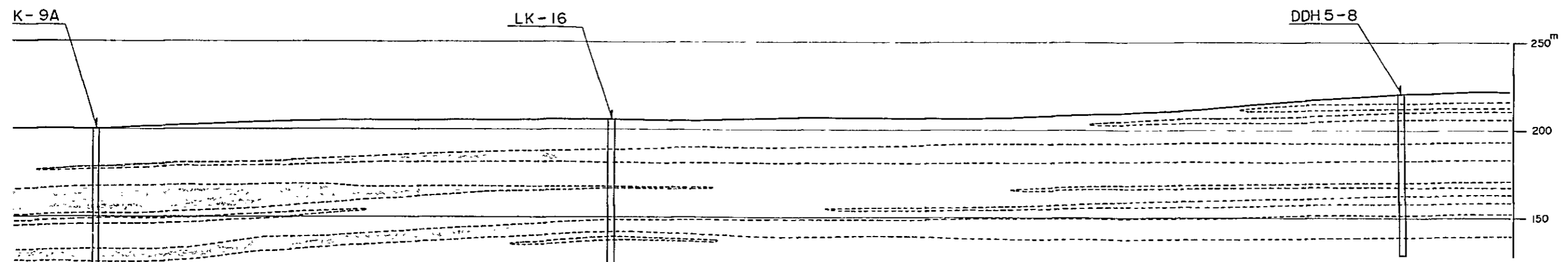


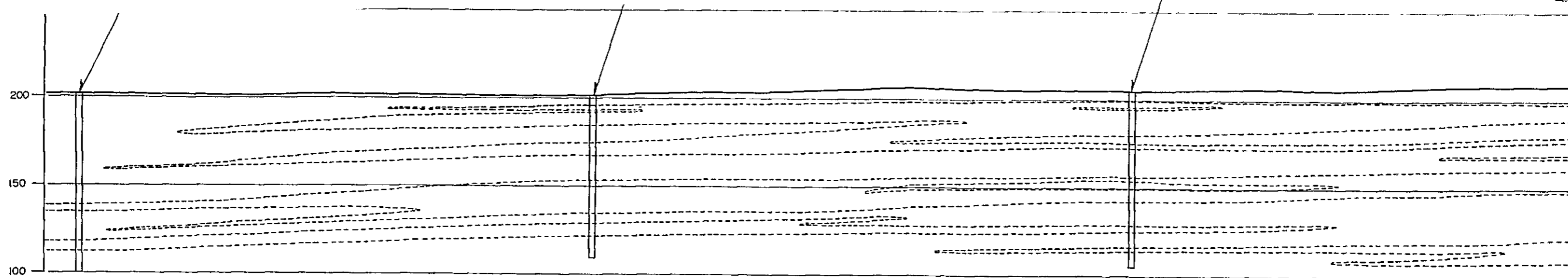
Sec. C - C'



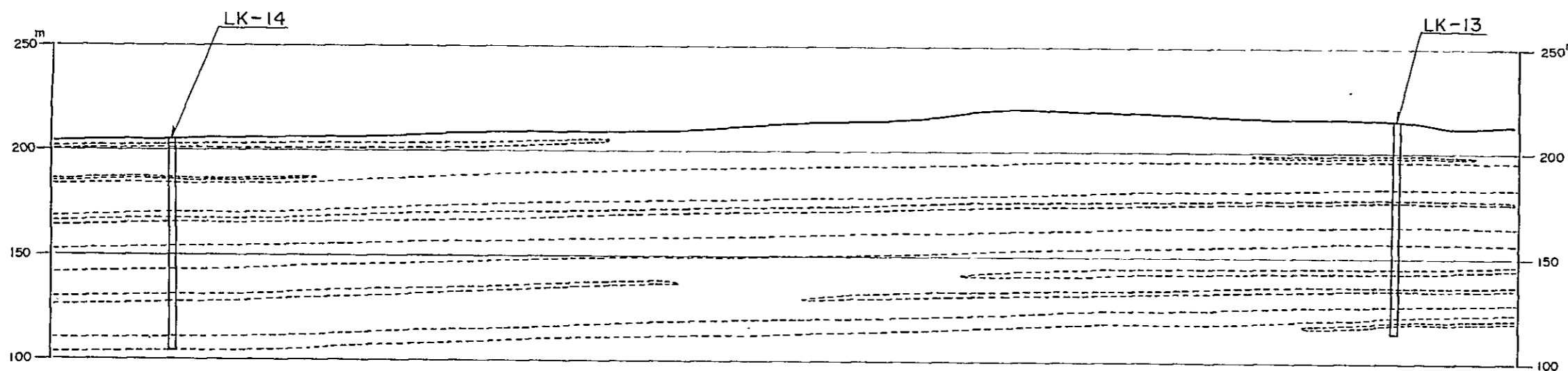


Sec. C - C'

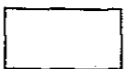



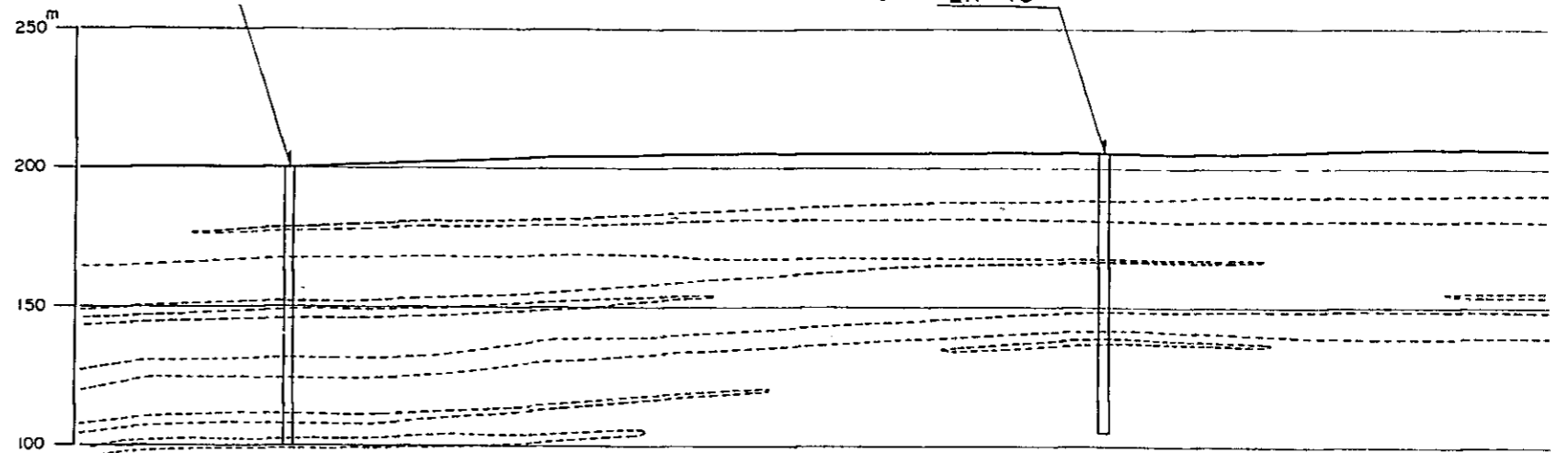
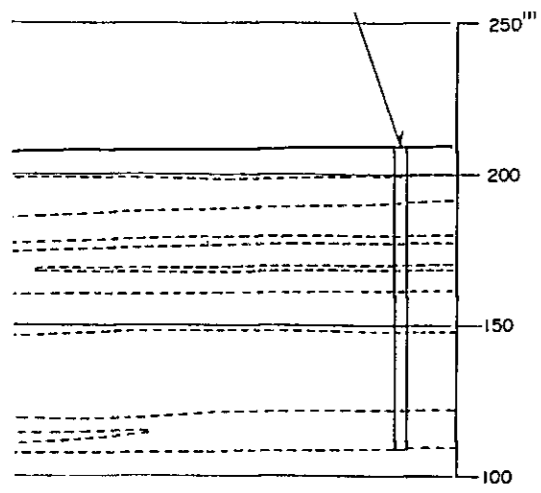


Sec. D - D'

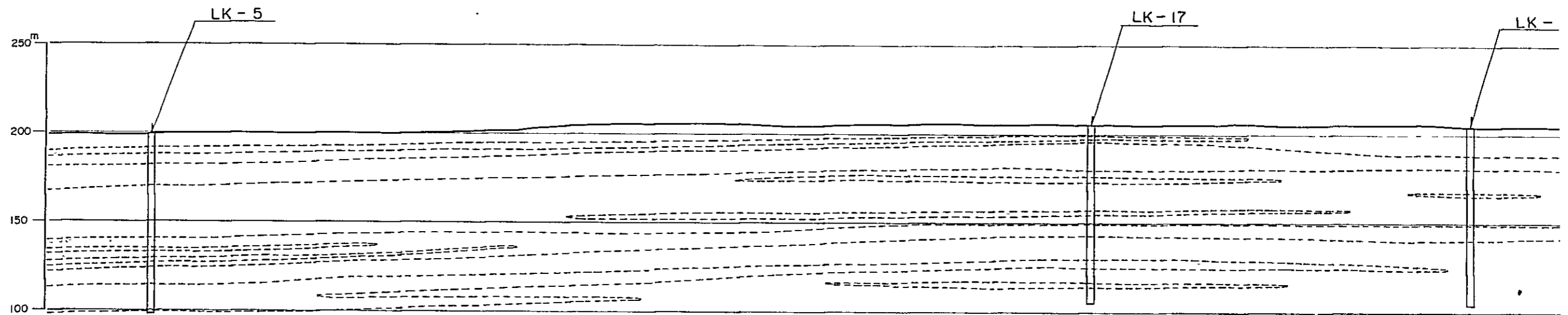


LEGEND

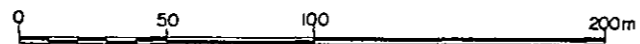
-  OIL SHALE (HIGH, MEDIUM, AND LOW GRADE)
-  MARLSTONE, SANDSTONE, CLAYSTONE etc.



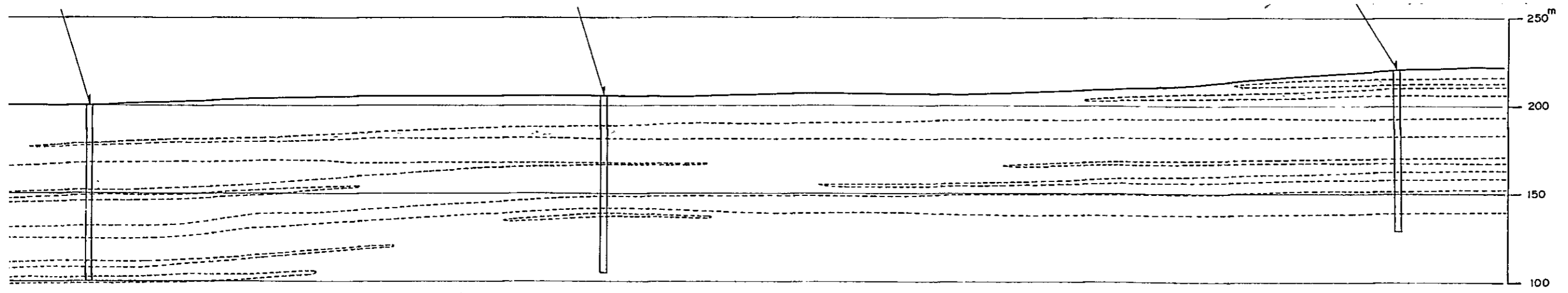
Sec. E - E'



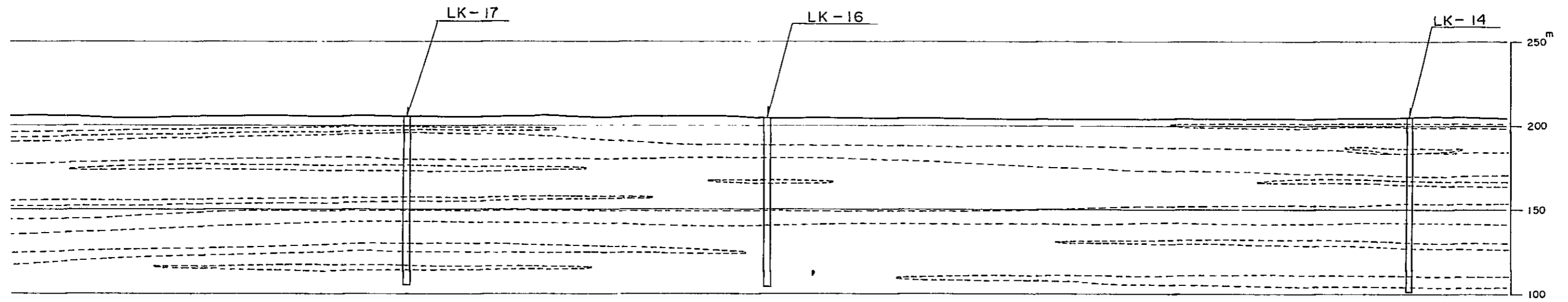
SCALE 1 : 2,000







Sec. E - E'

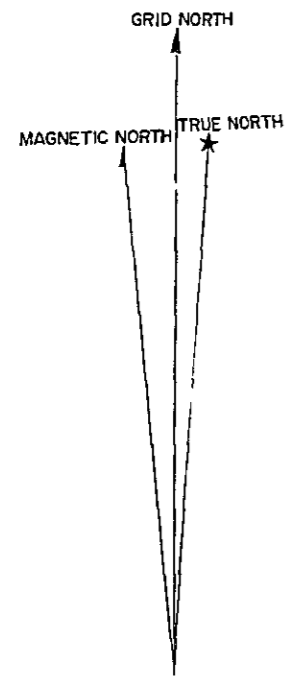


NOTES

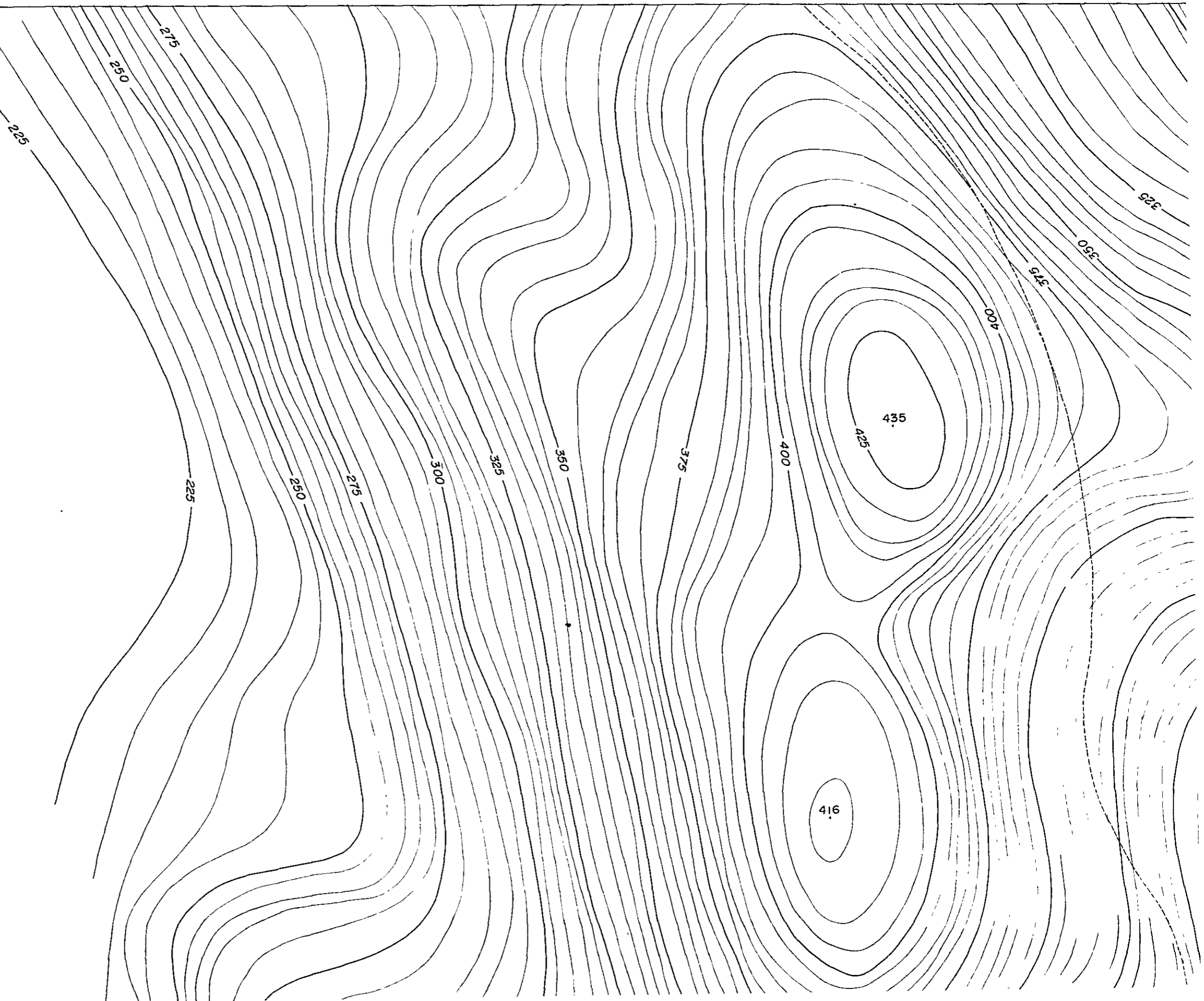
1. THIS TENTATIVE GEOLOGICAL CROSS SECTIONS WERE MADE BASED ON DRAWING G-09, USING BORING LOGS MADE BY DMR.
2. GEOLOGICAL BOUNDARY LINES BETWEEN BORE HOLES WERE DRAWN BY PRESUMING. SUPPLEMENTARY BORING AND TRENCHING ARE REQUIRED FOR EXACT CORRELATION OF OIL SHALE

# LIMESTONE QUARRY DEVELOPMENT PLAN

1,852,500



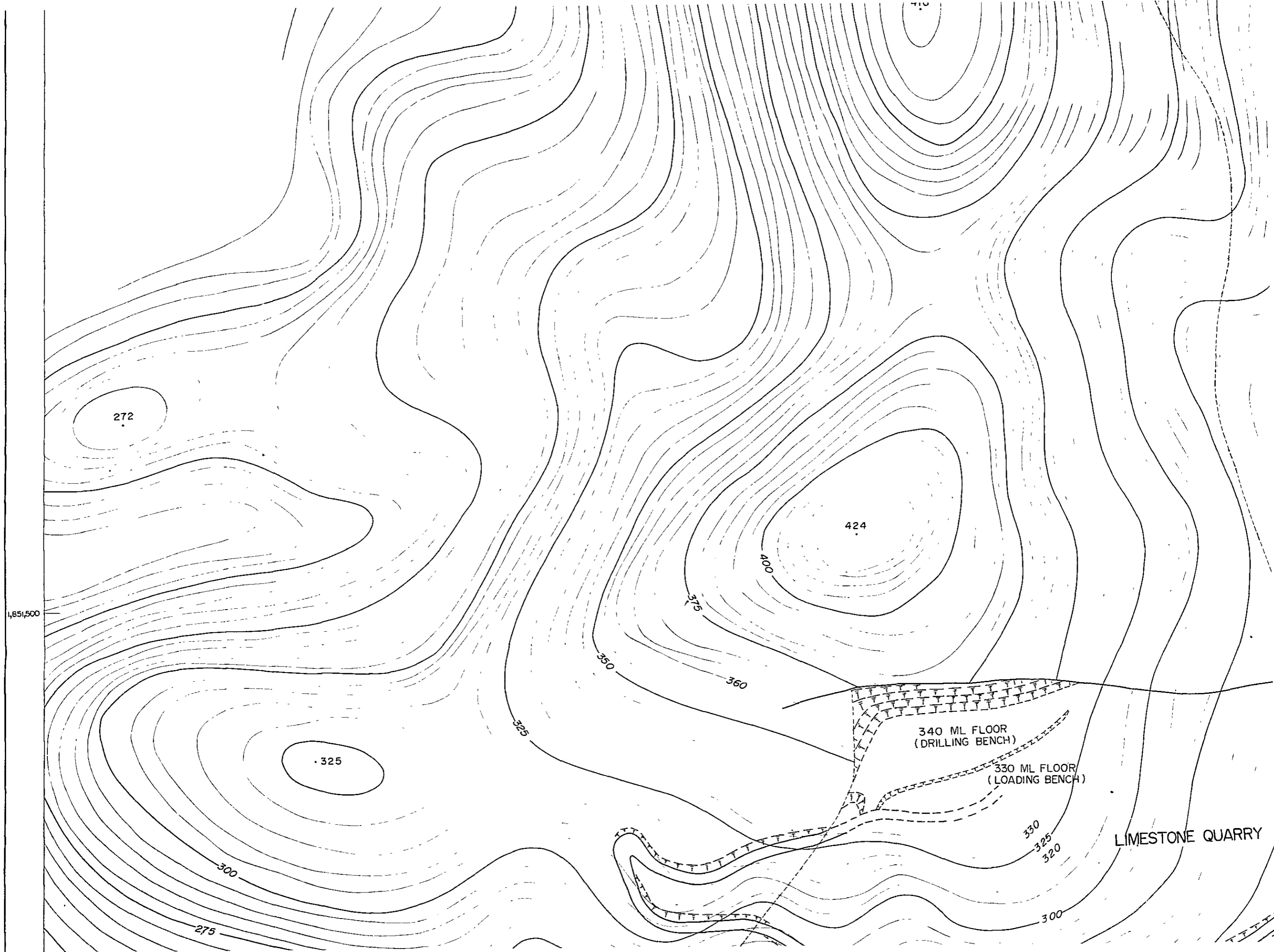
1,852,000



# NE QUARRY DEVELOPMENT PLAN

M - 01





272

424

400

375

350

360

325

325

300

275

340 ML FLOOR  
(DRILLING BENCH)

330 ML FLOOR  
(LOADING BENCH)

330

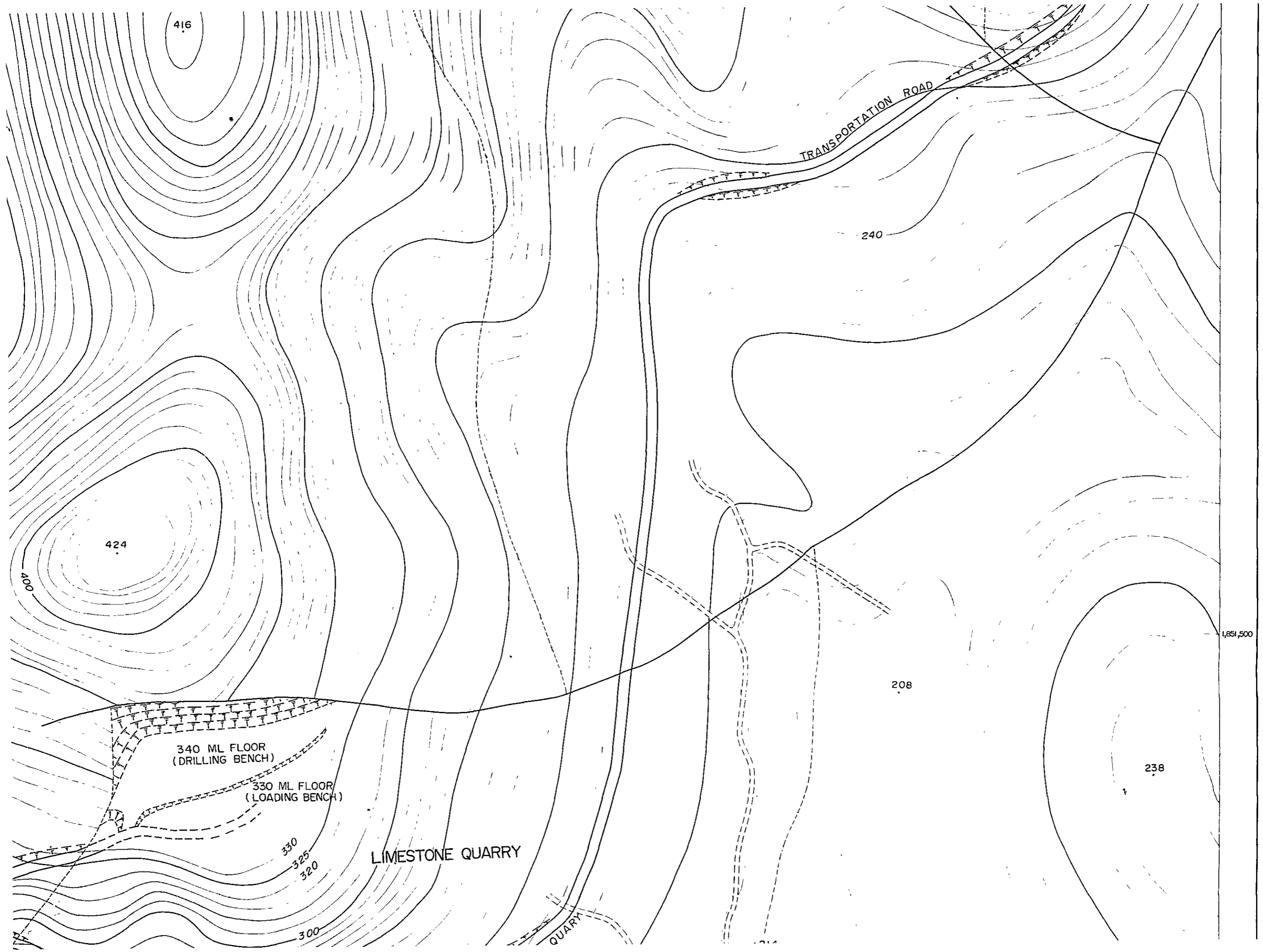
325

320

300

LIMESTONE QUARRY

1,651,500



416

424

400

340 ML FLOOR  
(DRILLING BENCH)

330 ML FLOOR  
(LOADING BENCH)

330

325

320

300

LIMESTONE QUARRY

QUARRY

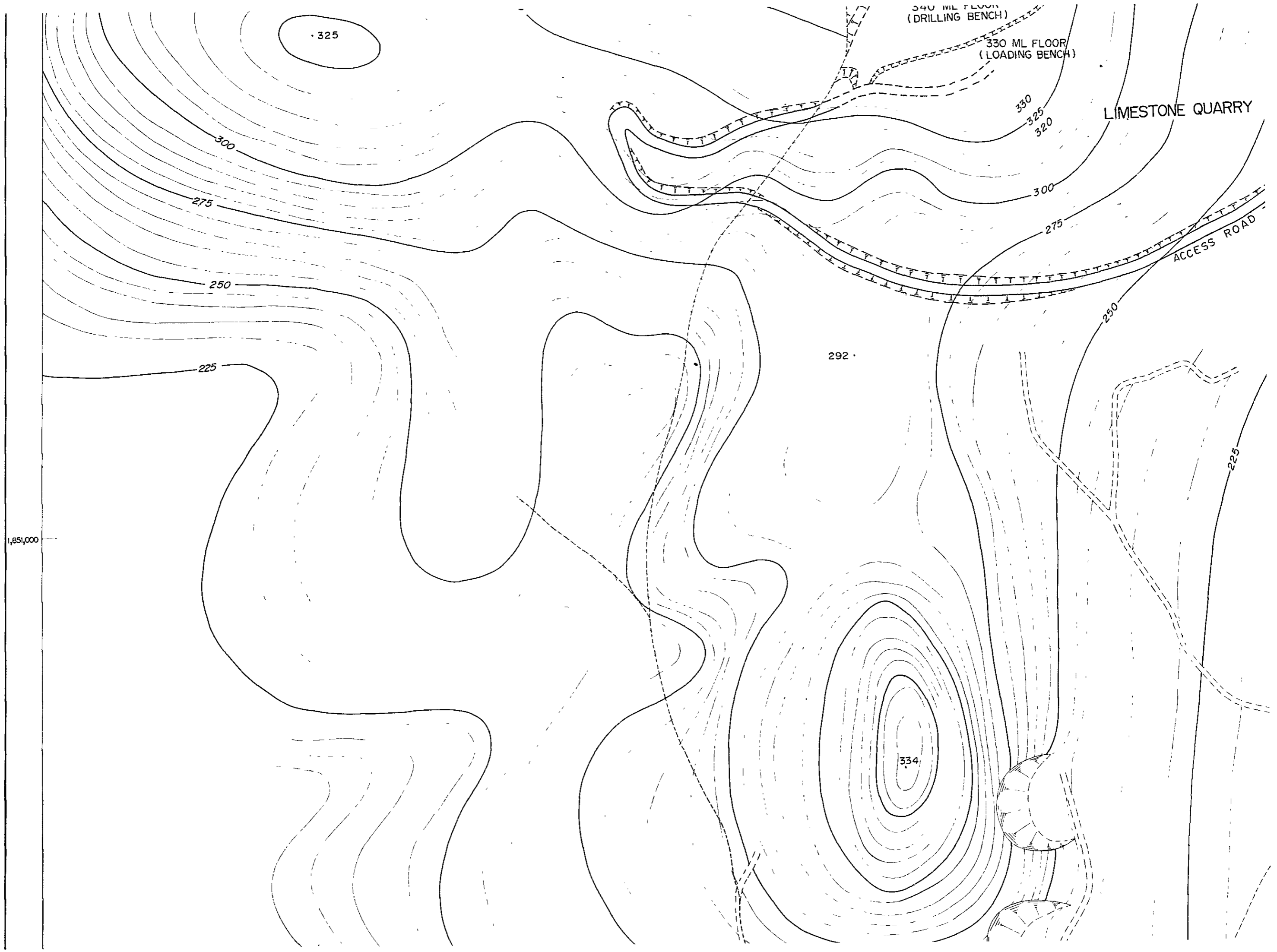
TRANSPORTATION ROAD

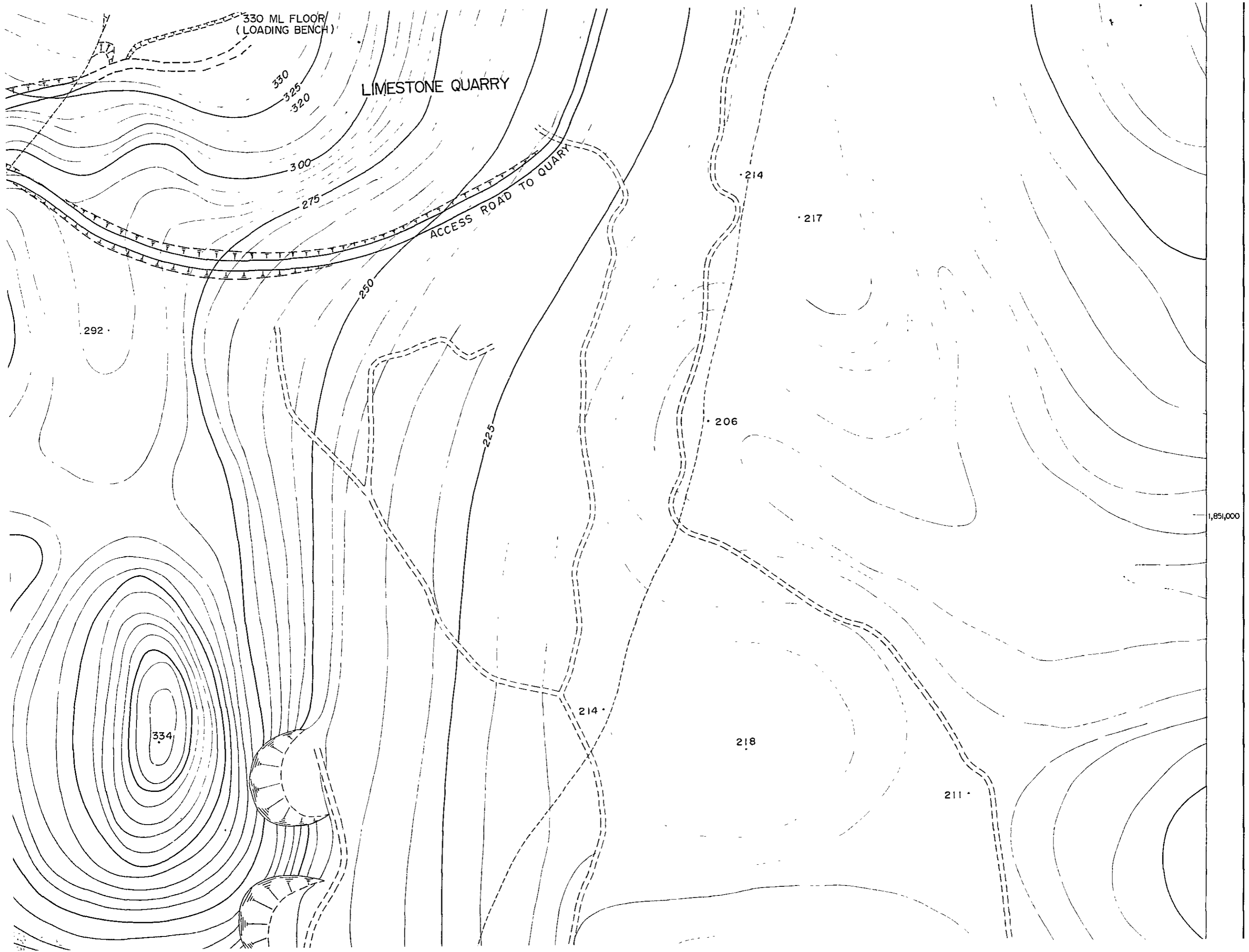
240

208

238

1,651,500





330 ML FLOOR  
(LOADING BENCH)

LIMESTONE QUARRY

ACCESS ROAD TO QUARRY

292

214

217

206

1,851,000

334

214

218

211

330  
325  
320



300

275

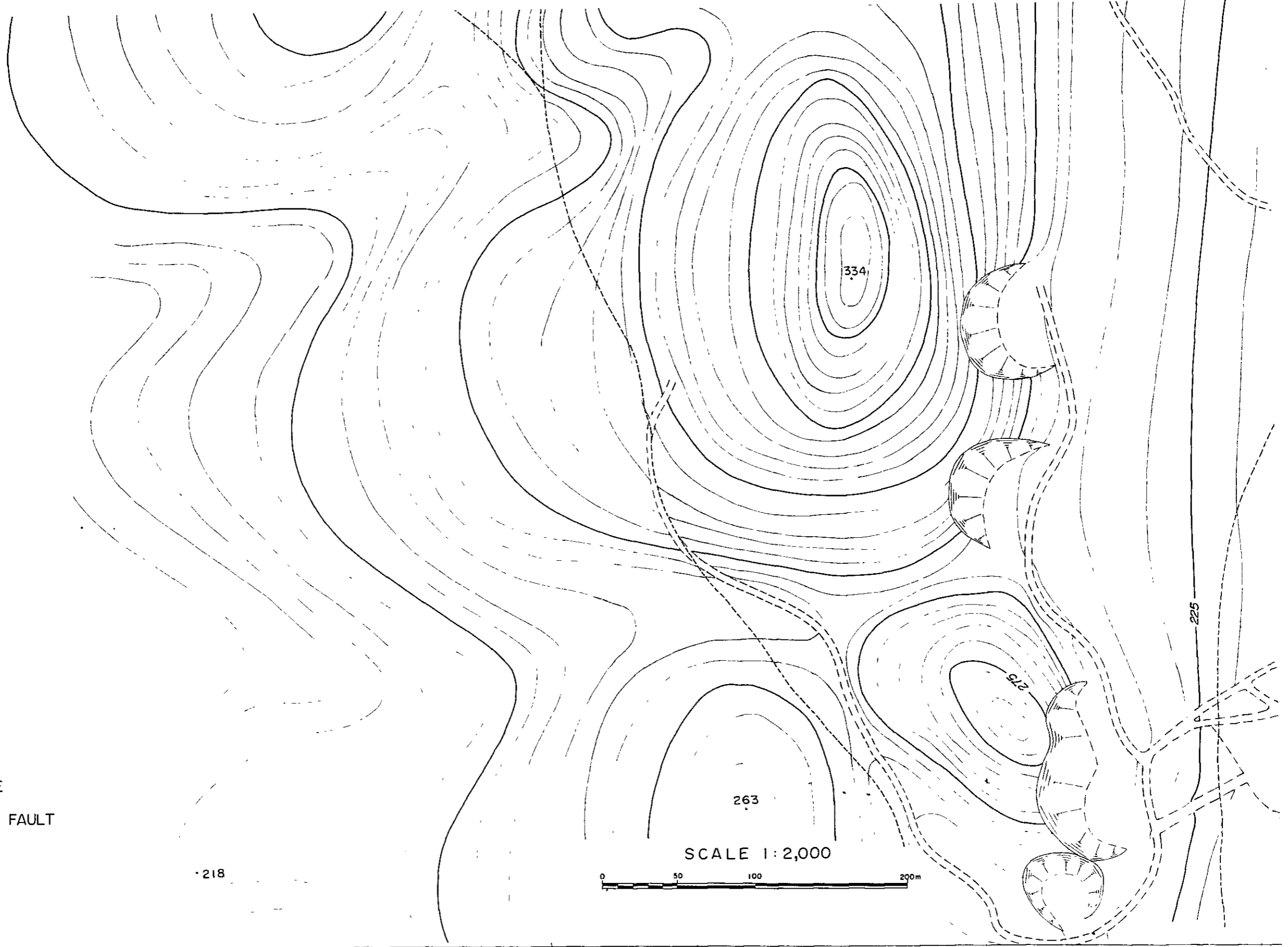
250

225

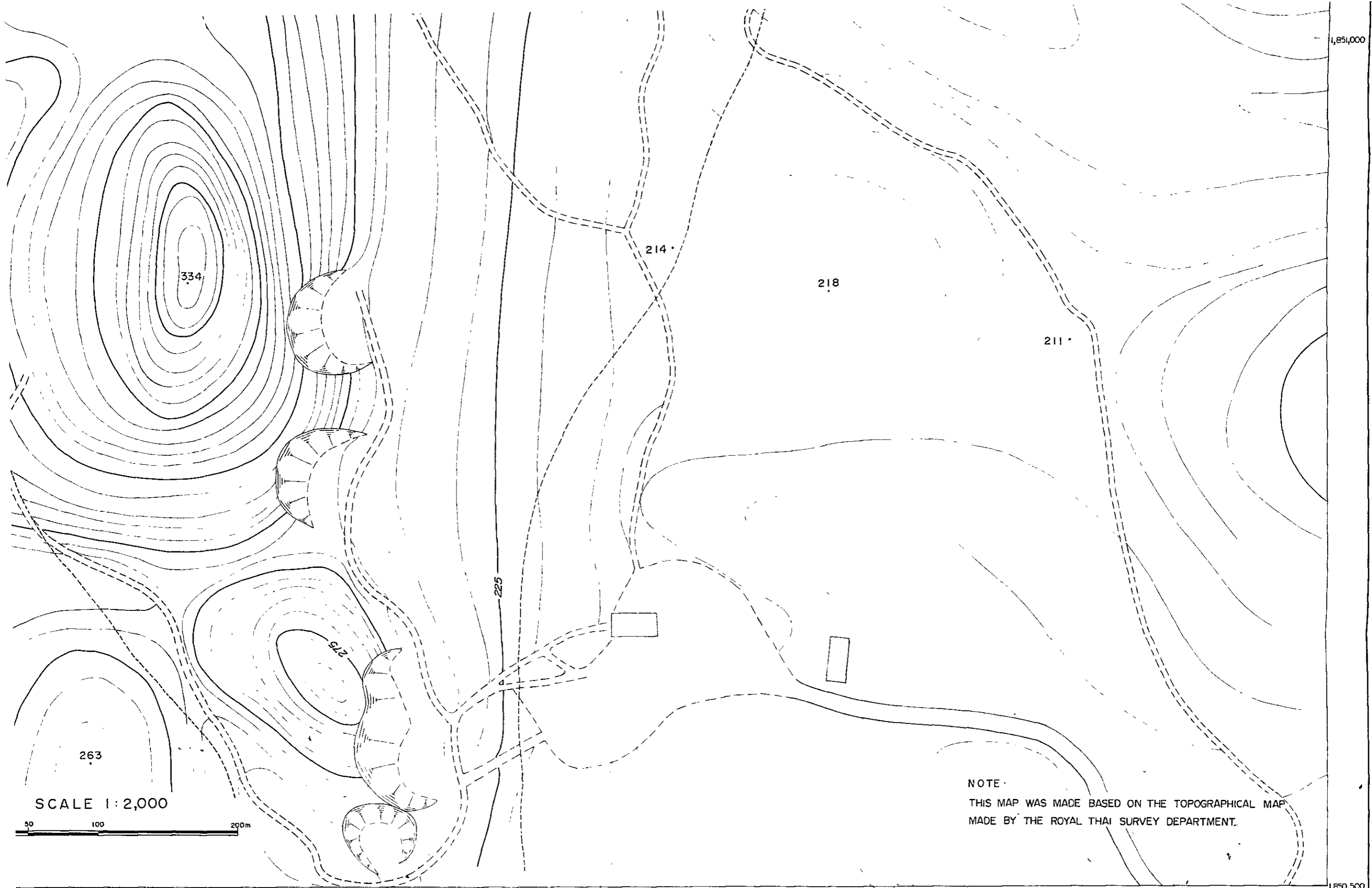
LEGEND

-  LIMESTONE
-  PROBABLE FAULT

1,850,500

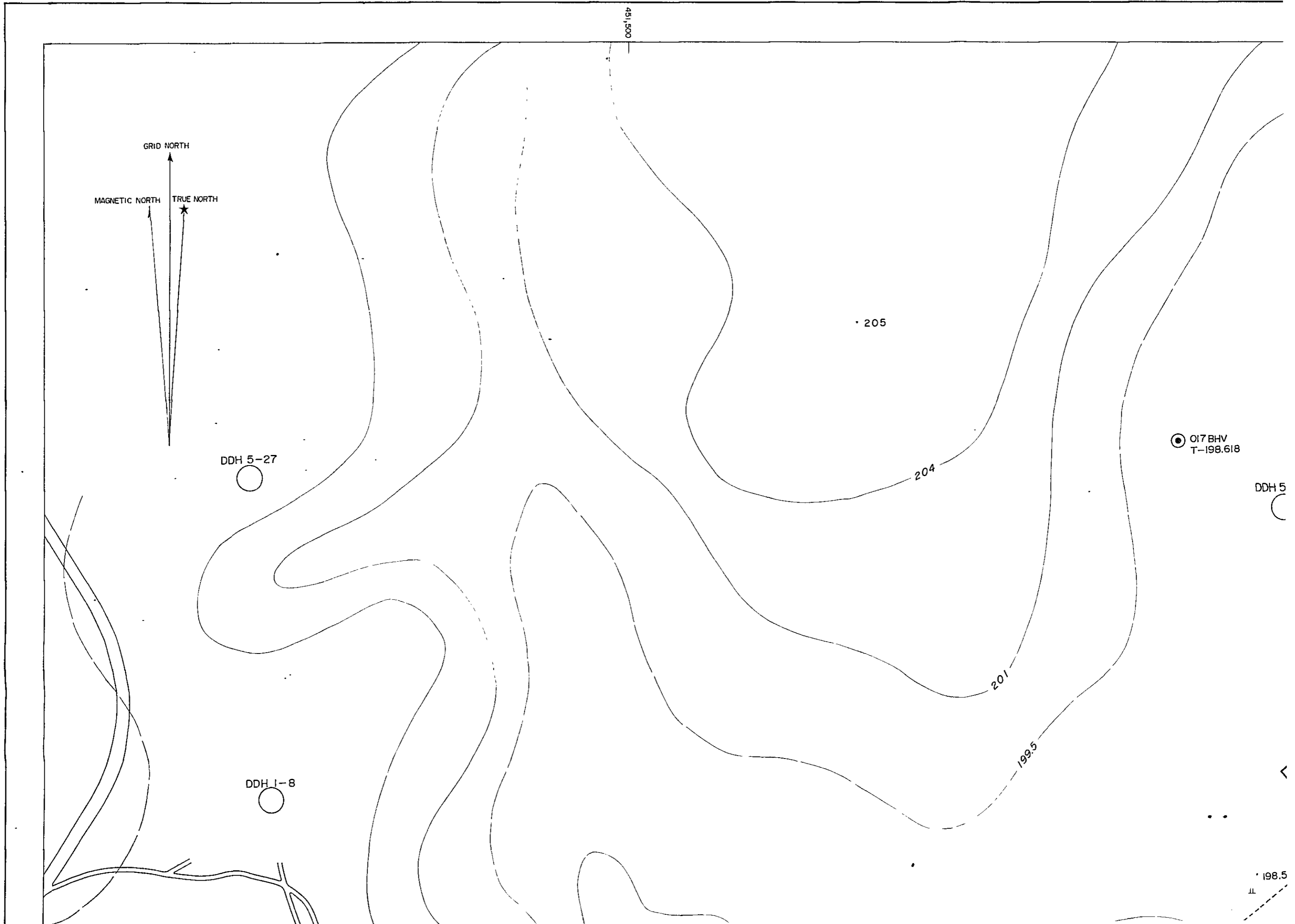




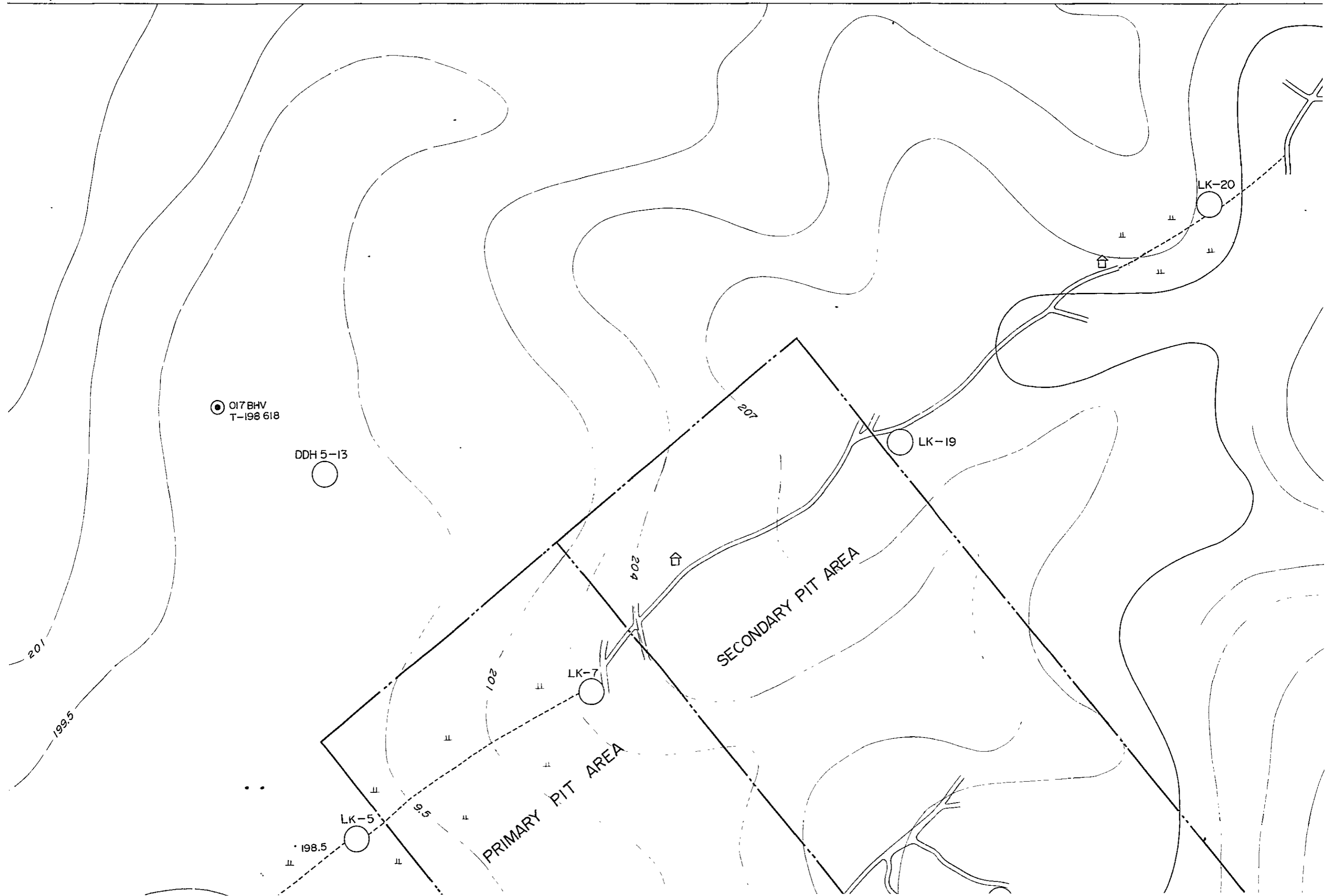


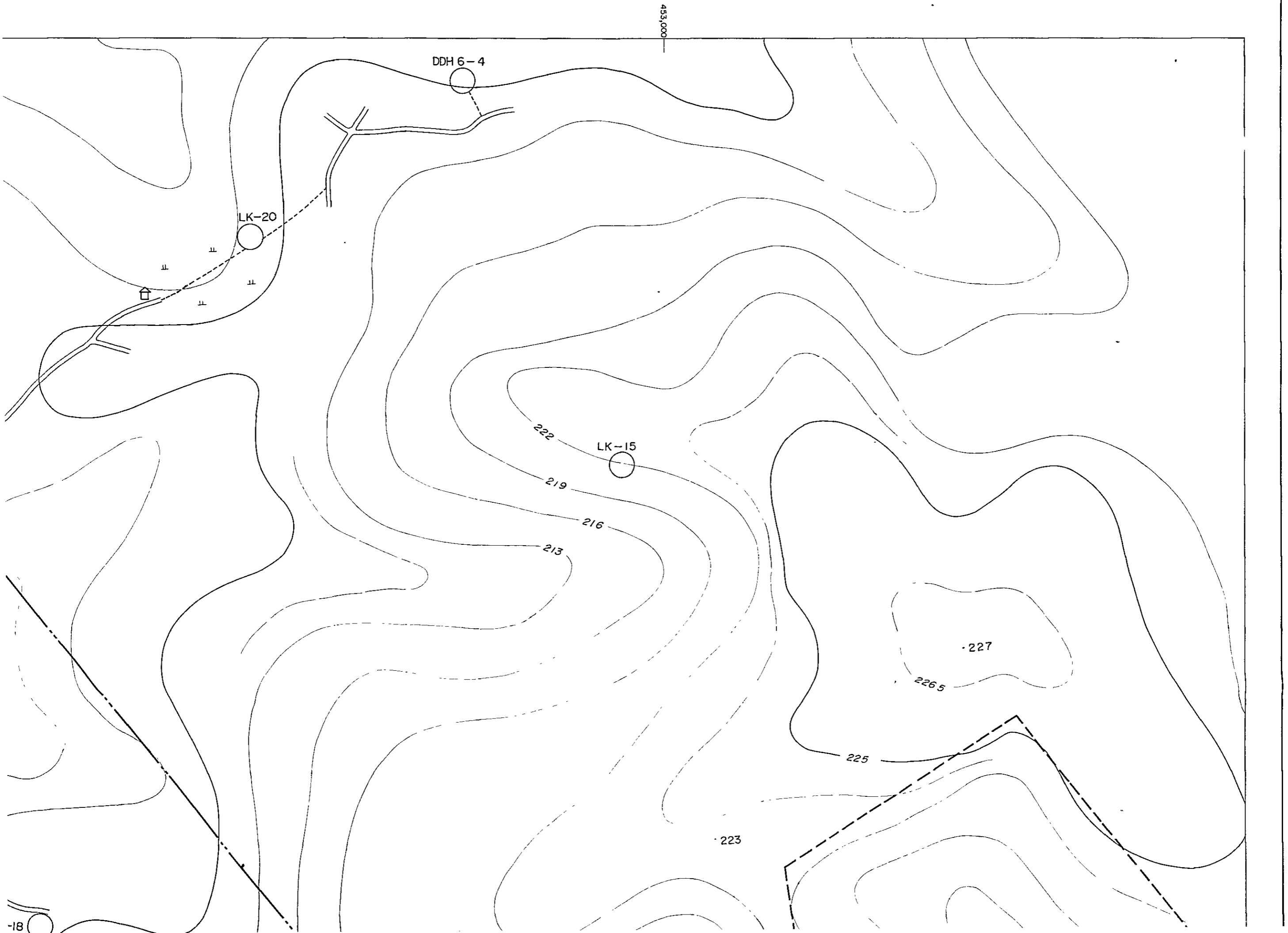
NOTE  
THIS MAP WAS MADE BASED ON THE TOPOGRAPHICAL MAP  
MADE BY THE ROYAL THAI SURVEY DEPARTMENT.

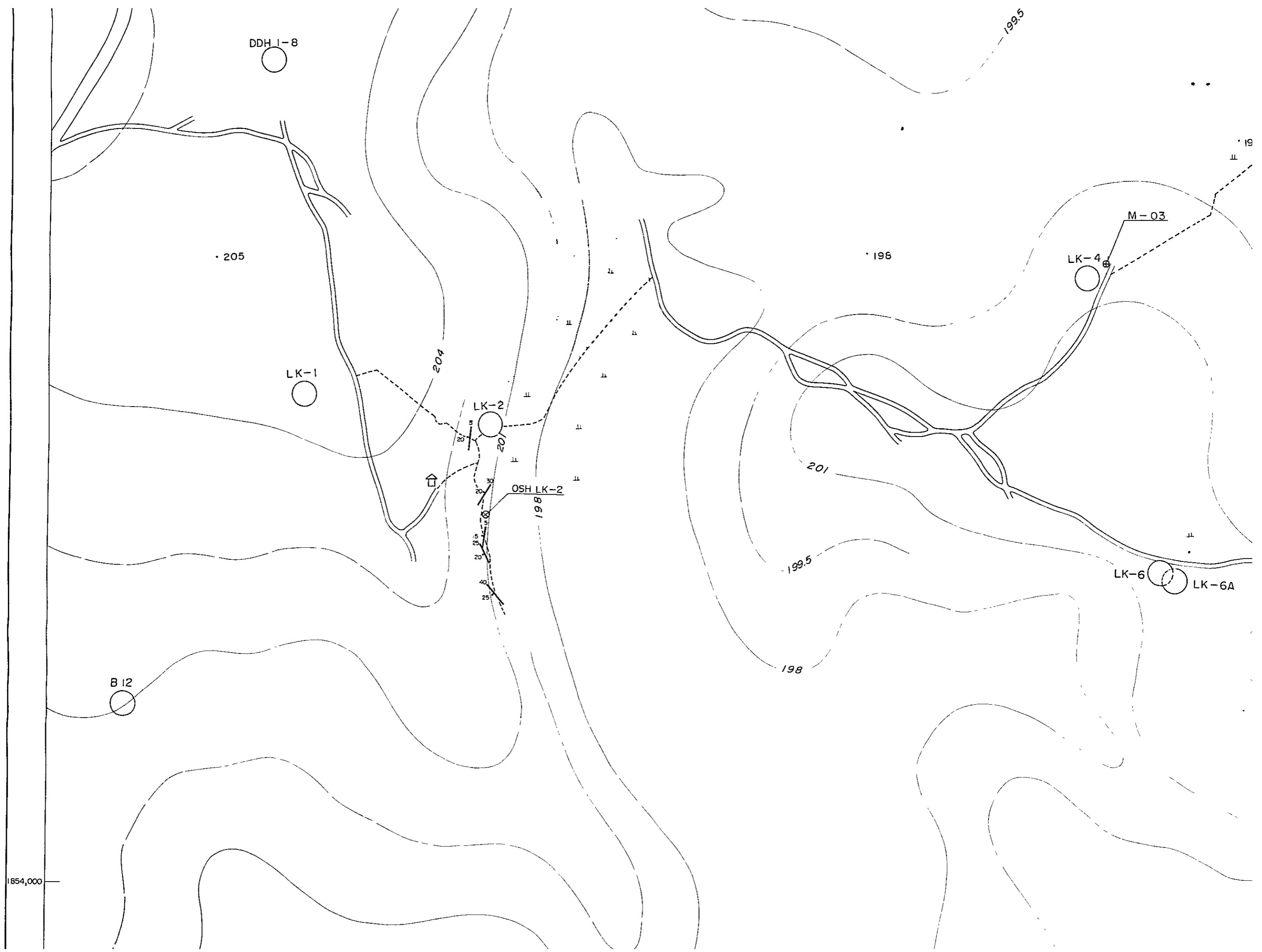
# PIT DESIGN

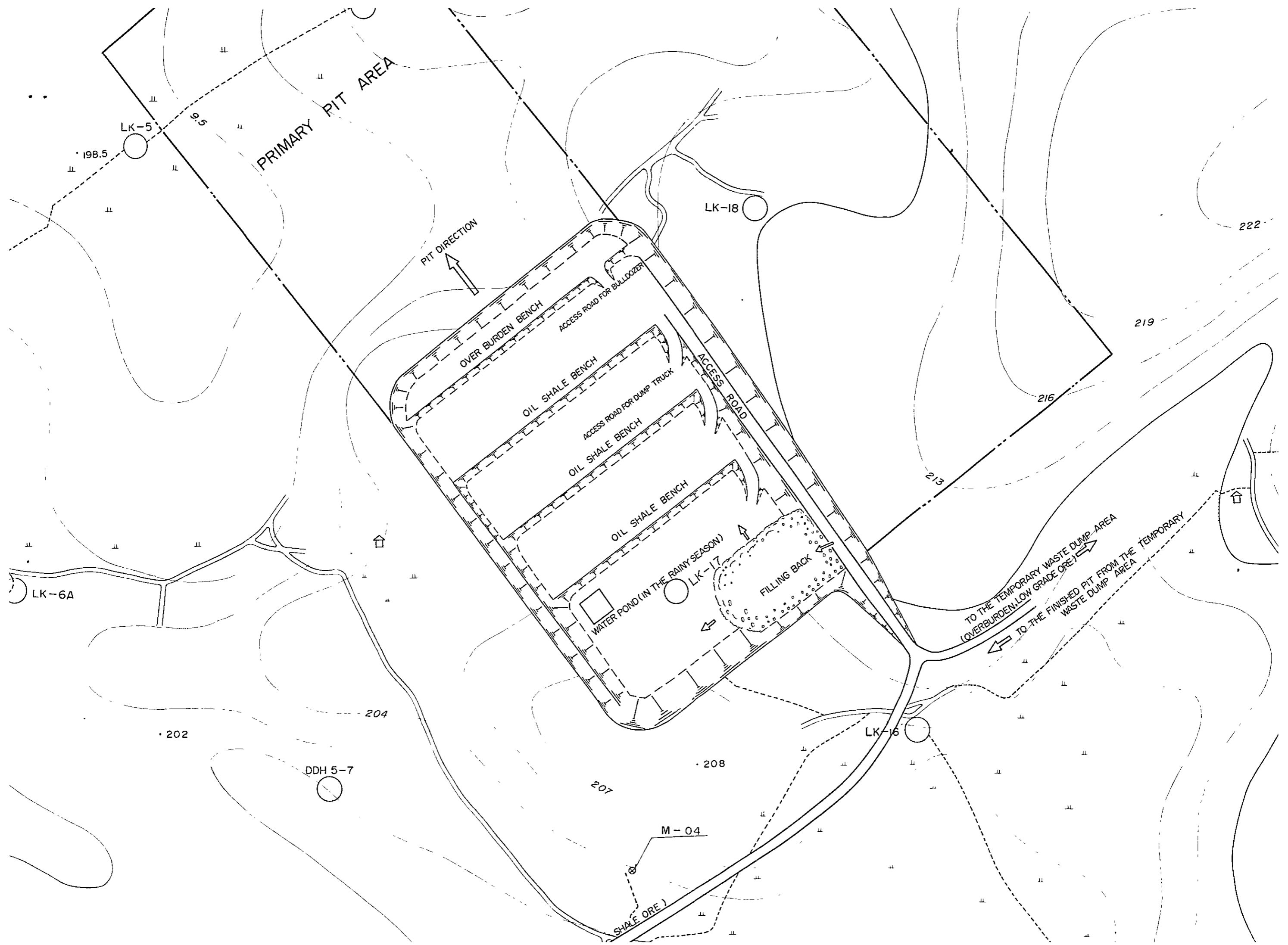


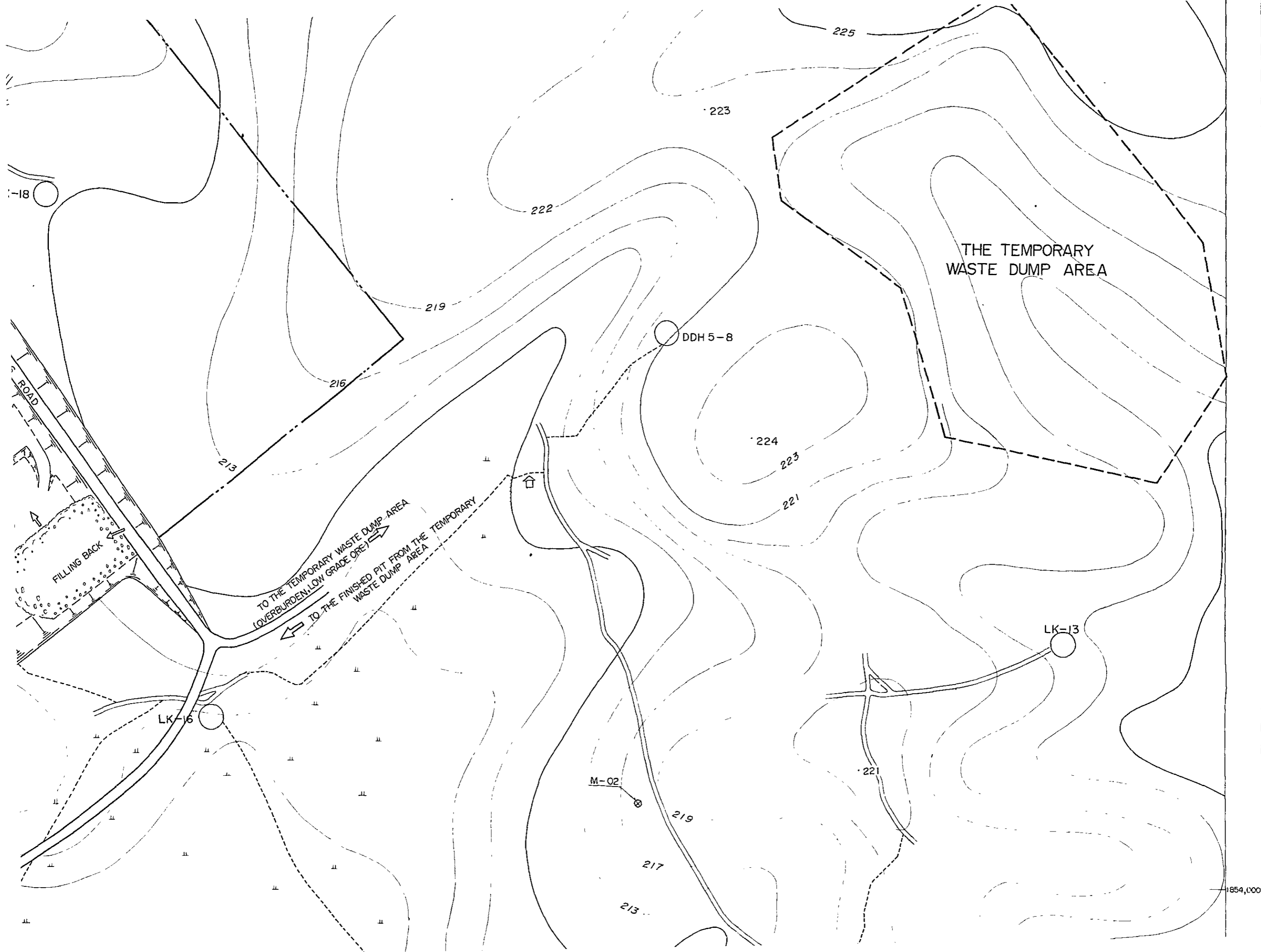
# PIT DESIGN OF OIL SHALE QUARRY











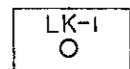
B 12



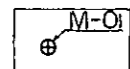
198

1854,000

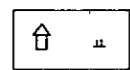
LEGEND



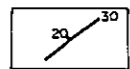
LOCATION OF BORE HOLE AND BORE HOLE NO



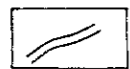
LOCALITY OF OIL SHALE OR CLAY MARL SAMPLE AND SAMPLE NO.



HUT AND RICE FIELD



STRIKE AND DIP



SMALL ROAD

LK-21



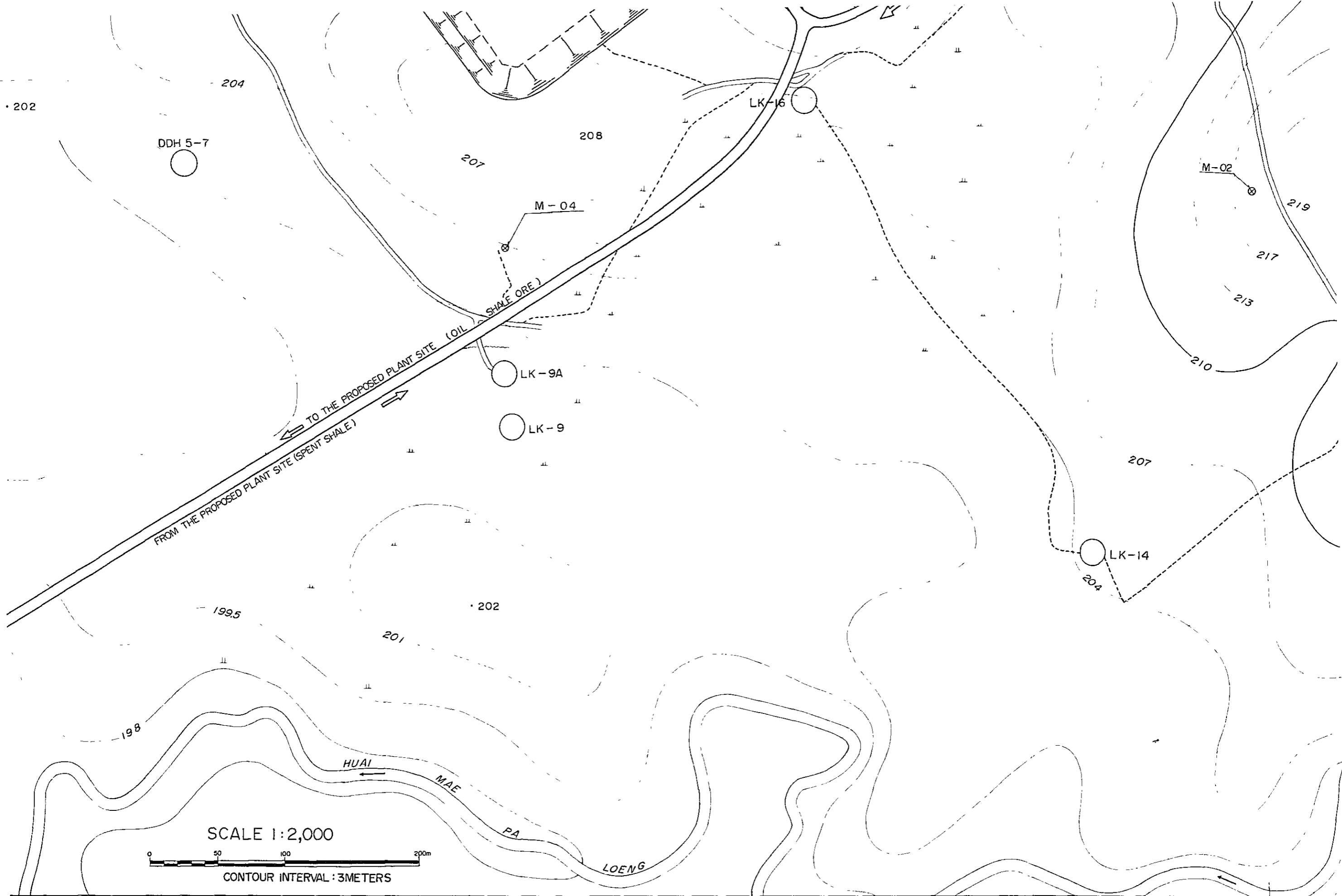
THE PROPOSED PLANT SITE

• 1985

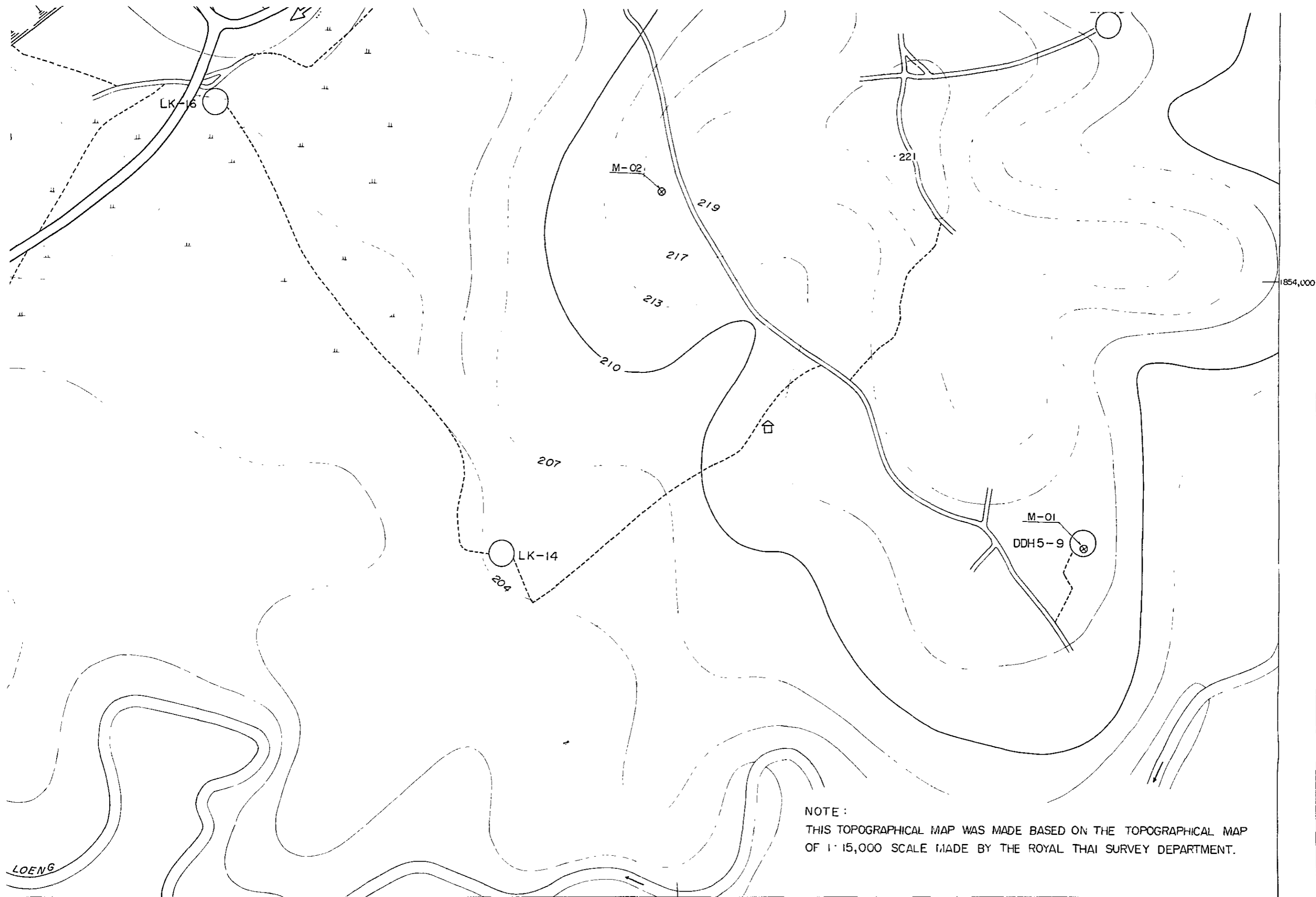
1985

451,500

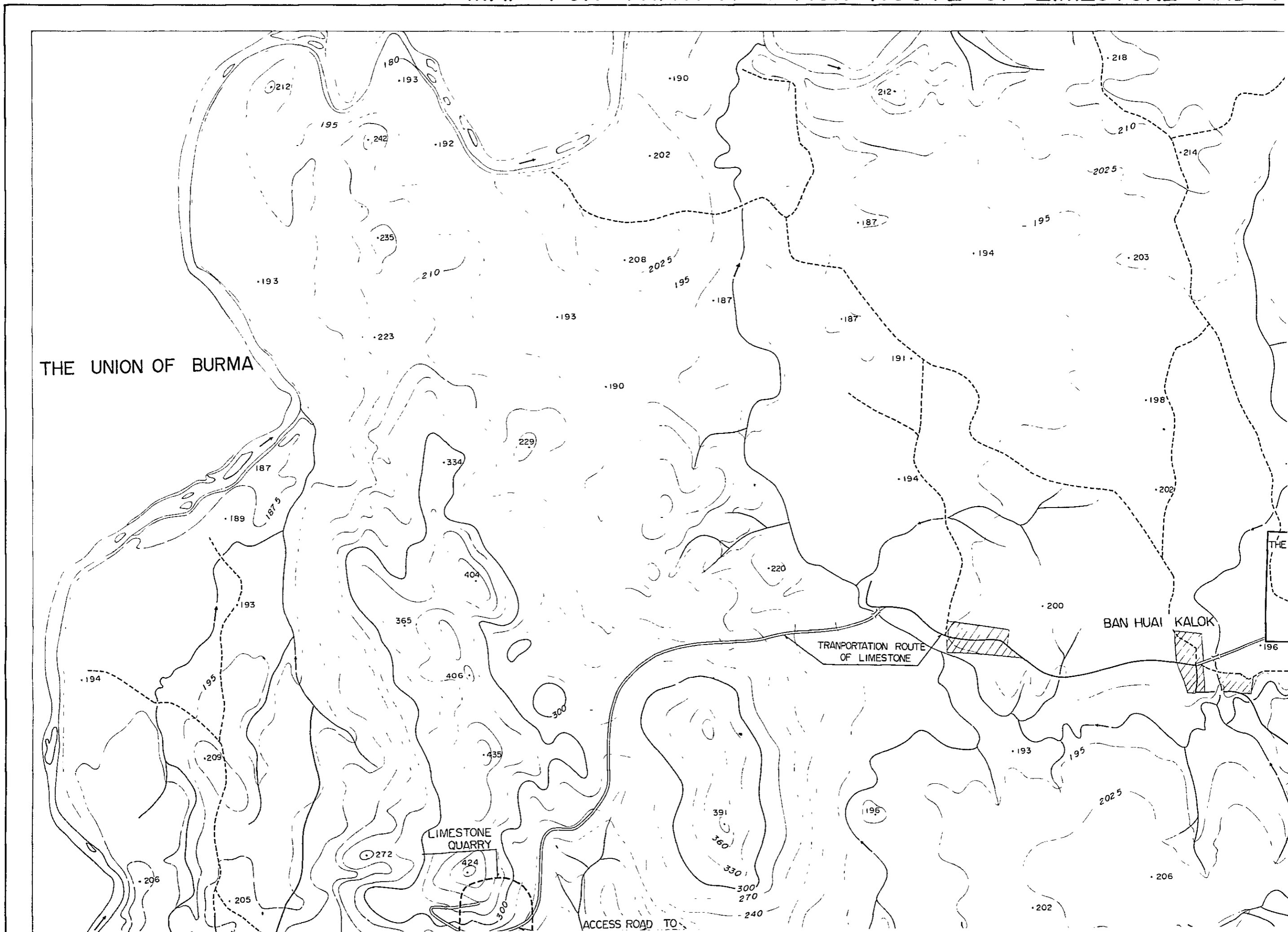




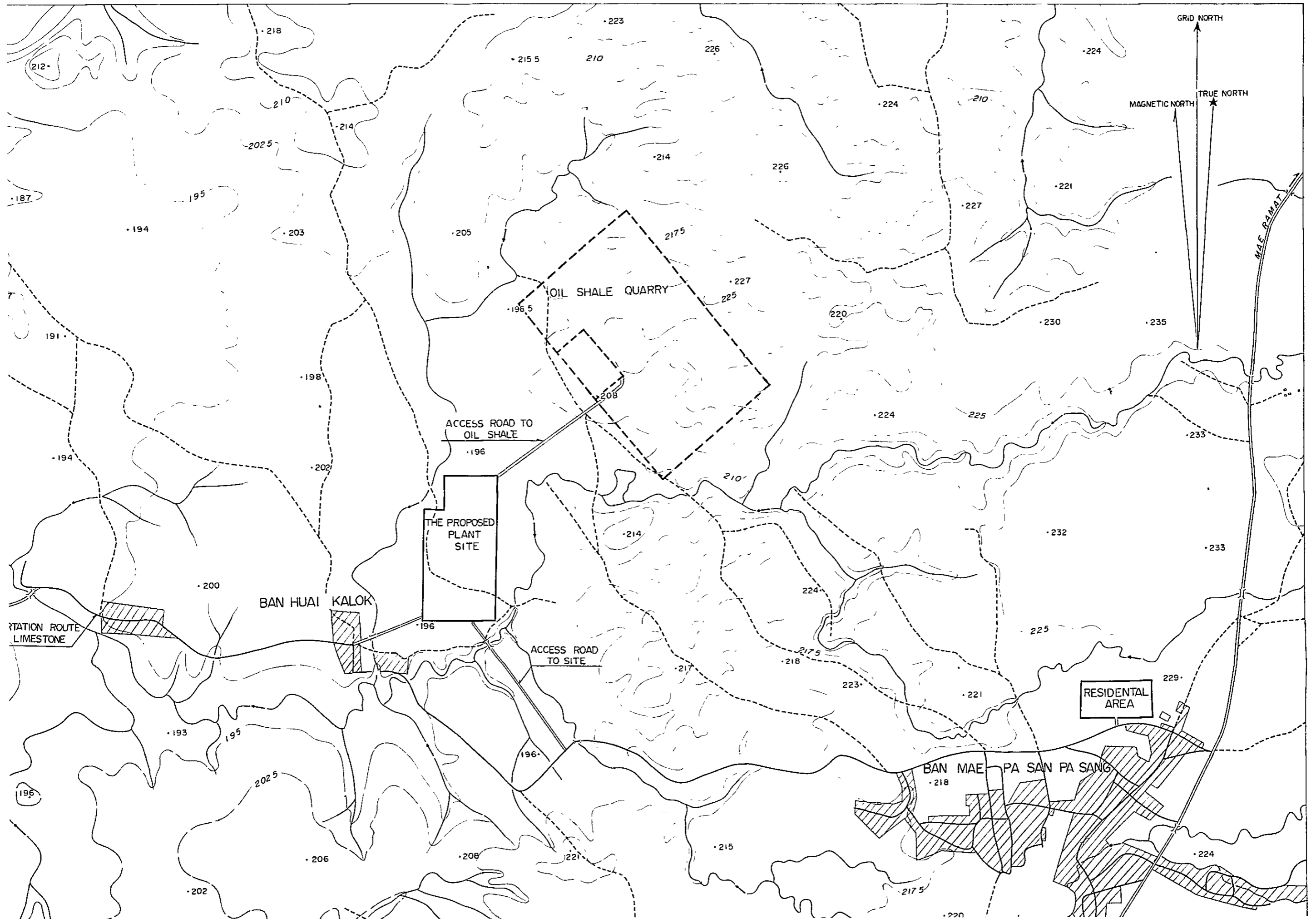
453,000

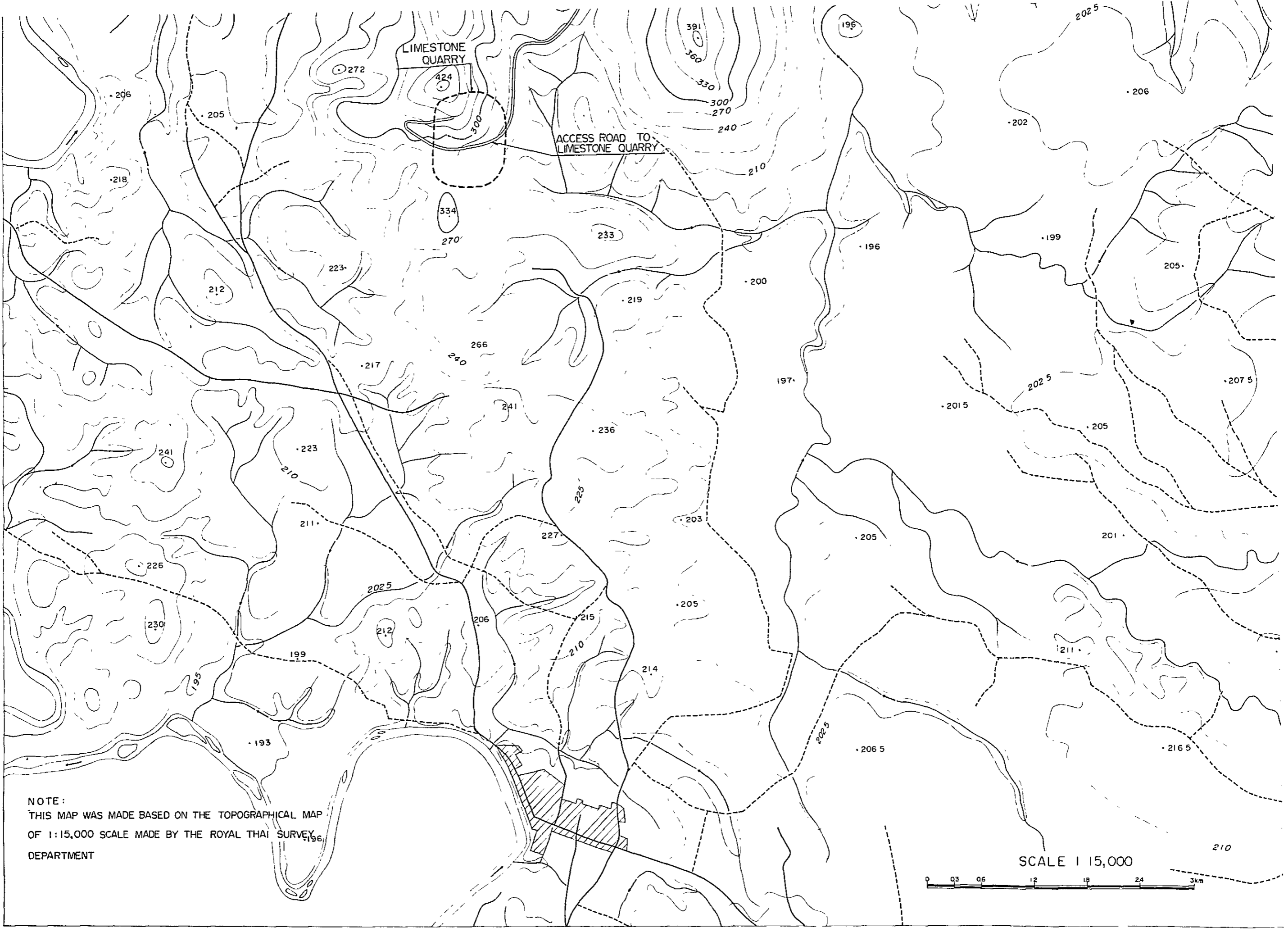


# MAP FOR TRANSPORTATION ROUTE OF LIMESTONE AND O



# ROUTE OF LIMESTONE AND OIL SHALE MATERIALS





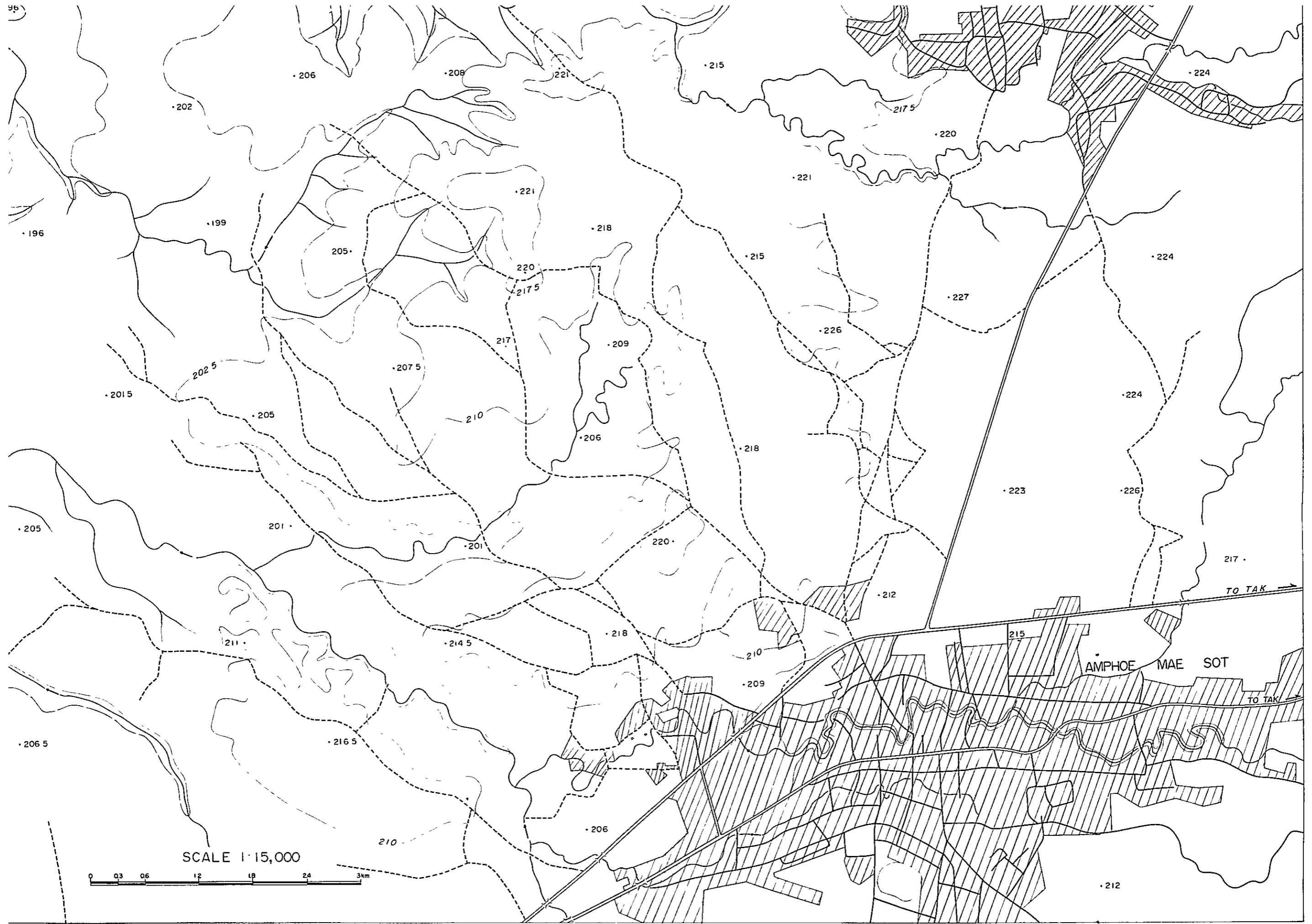
LIMESTONE QUARRY

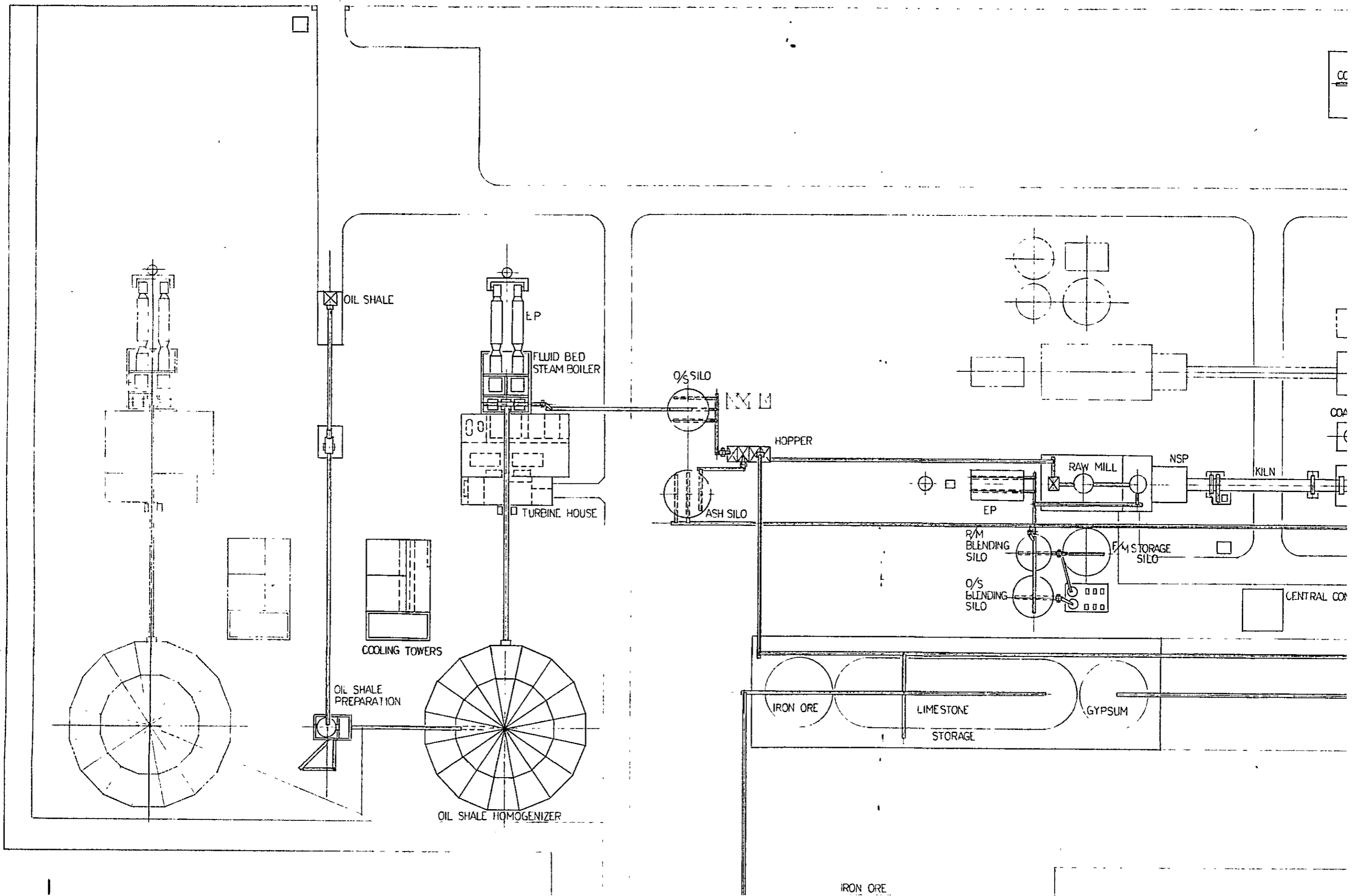
ACCESS ROAD TO LIMESTONE QUARRY

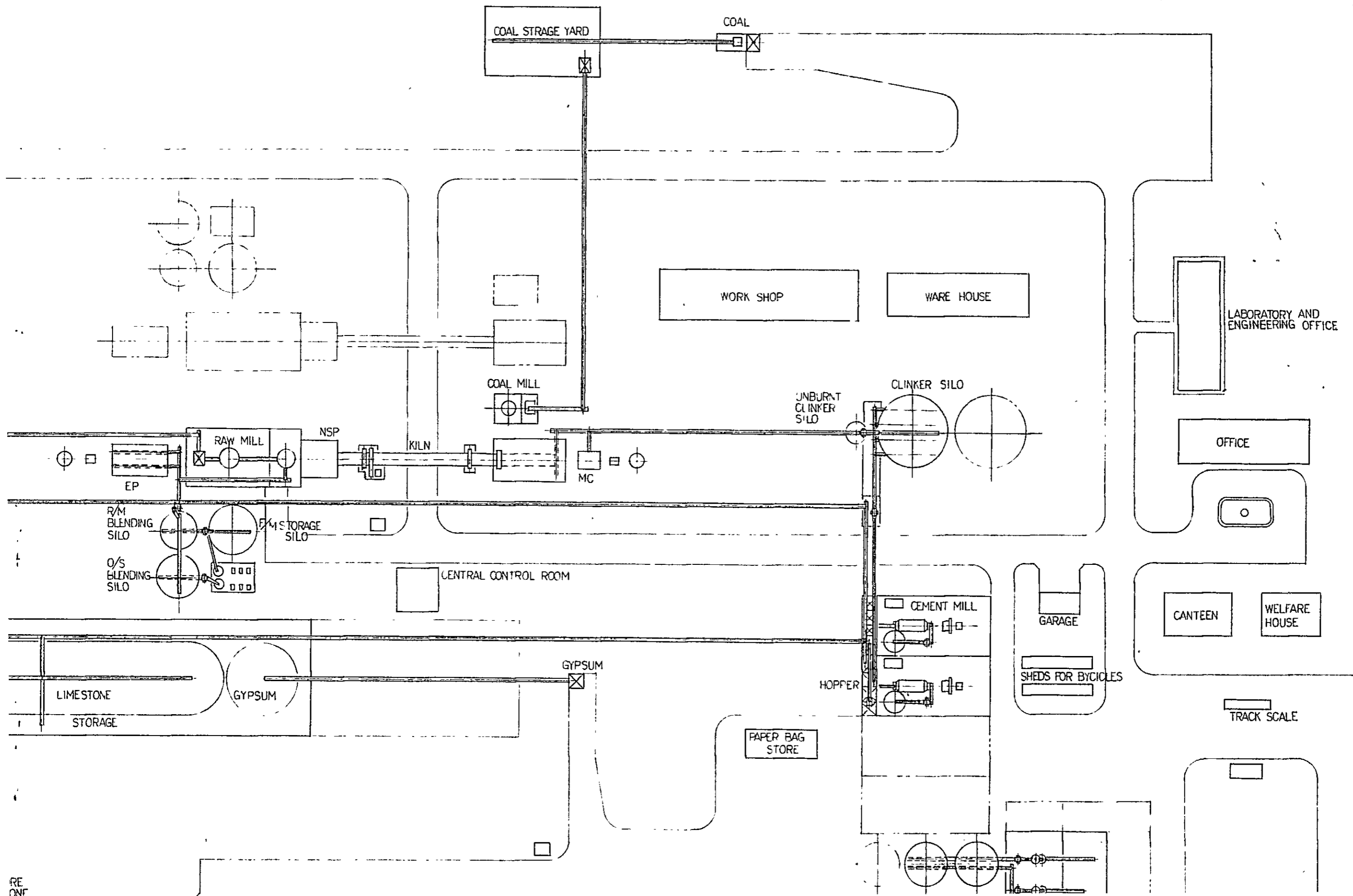
NOTE :  
THIS MAP WAS MADE BASED ON THE TOPOGRAPHICAL MAP  
OF 1:15,000 SCALE MADE BY THE ROYAL THAI SURVEY,  
DEPARTMENT

SCALE 1 15,000

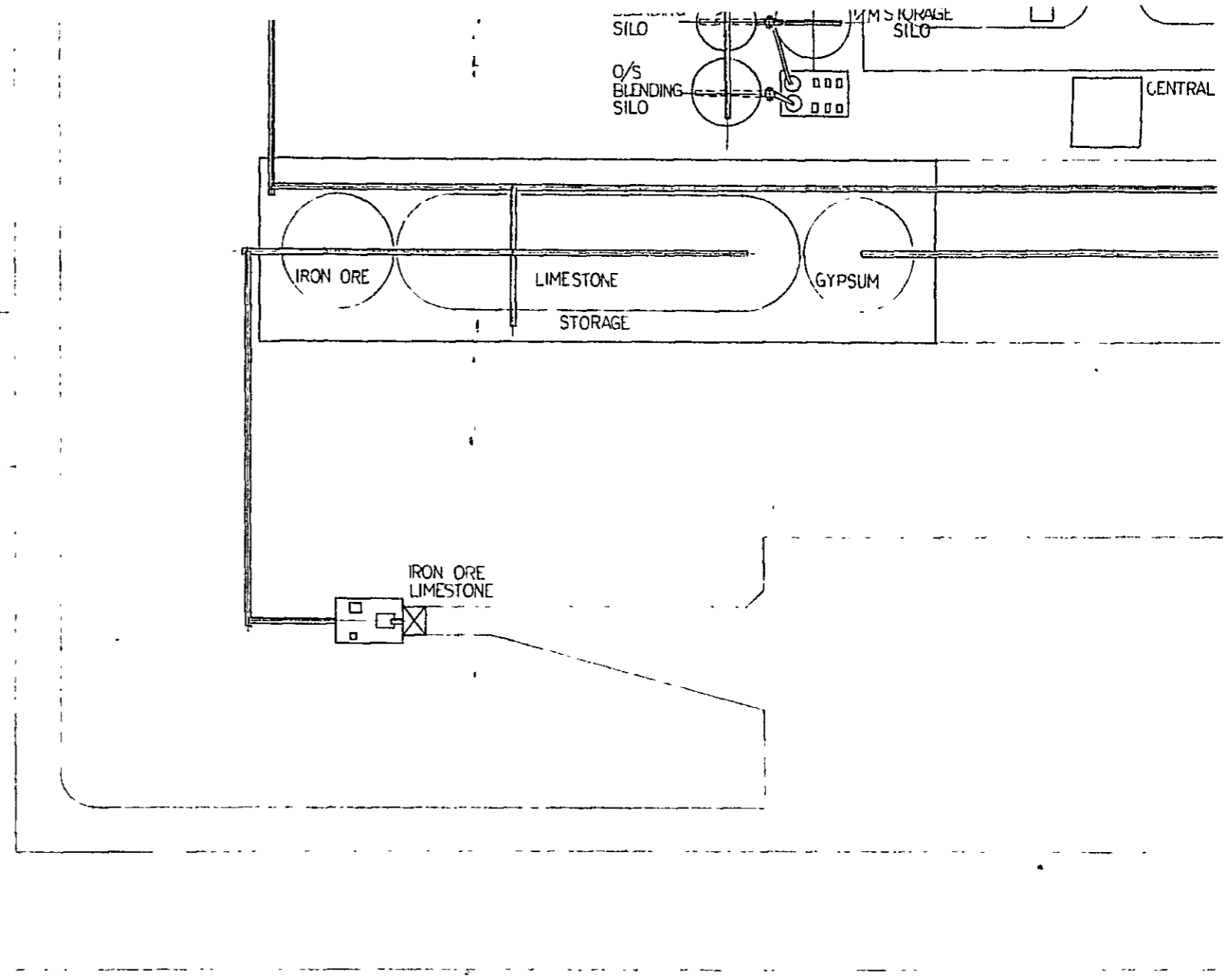
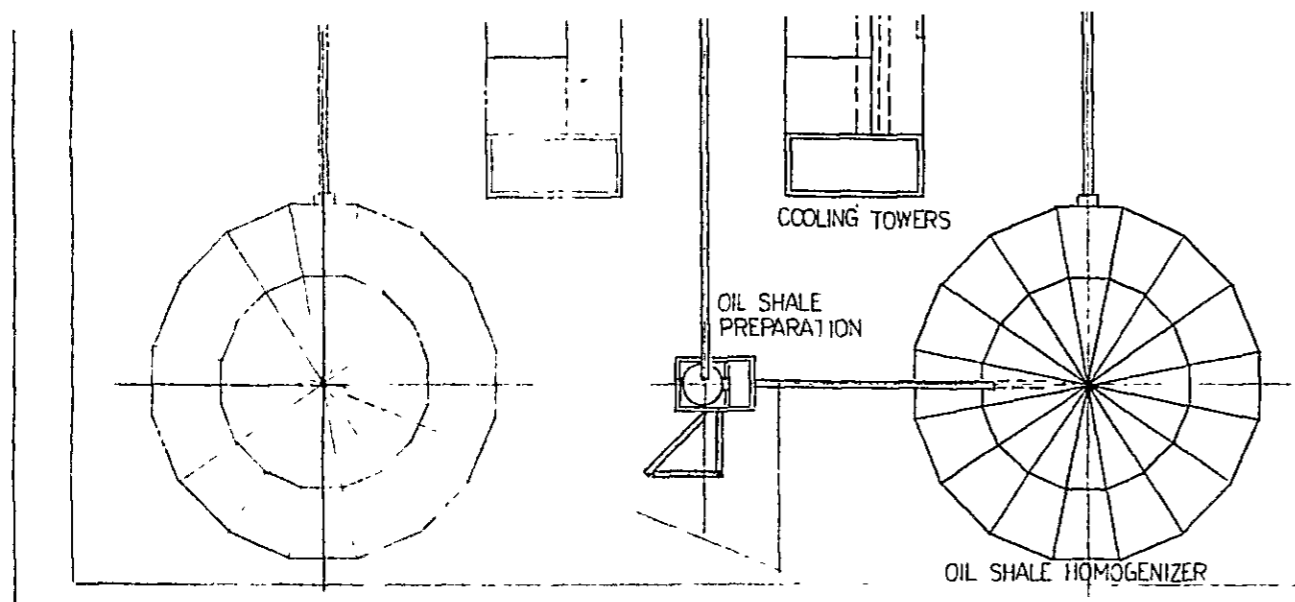


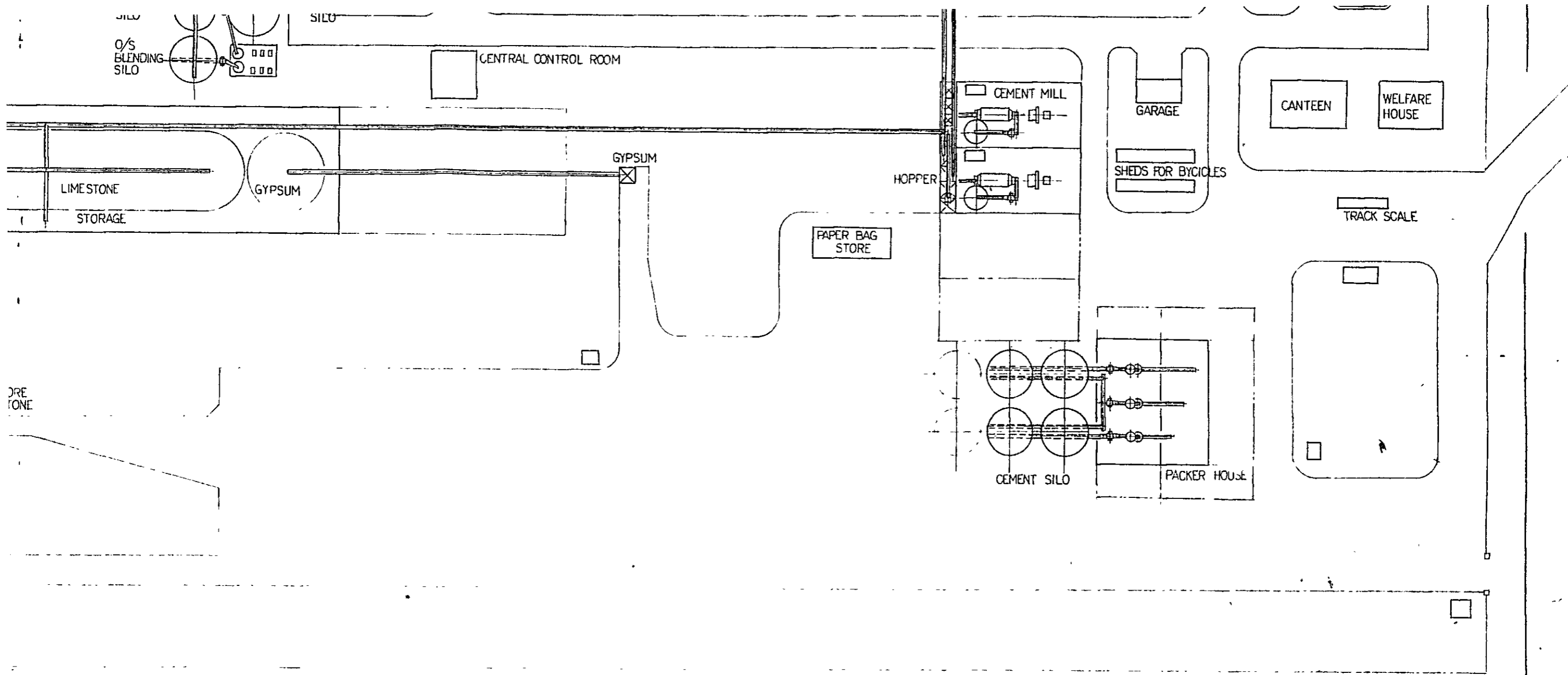






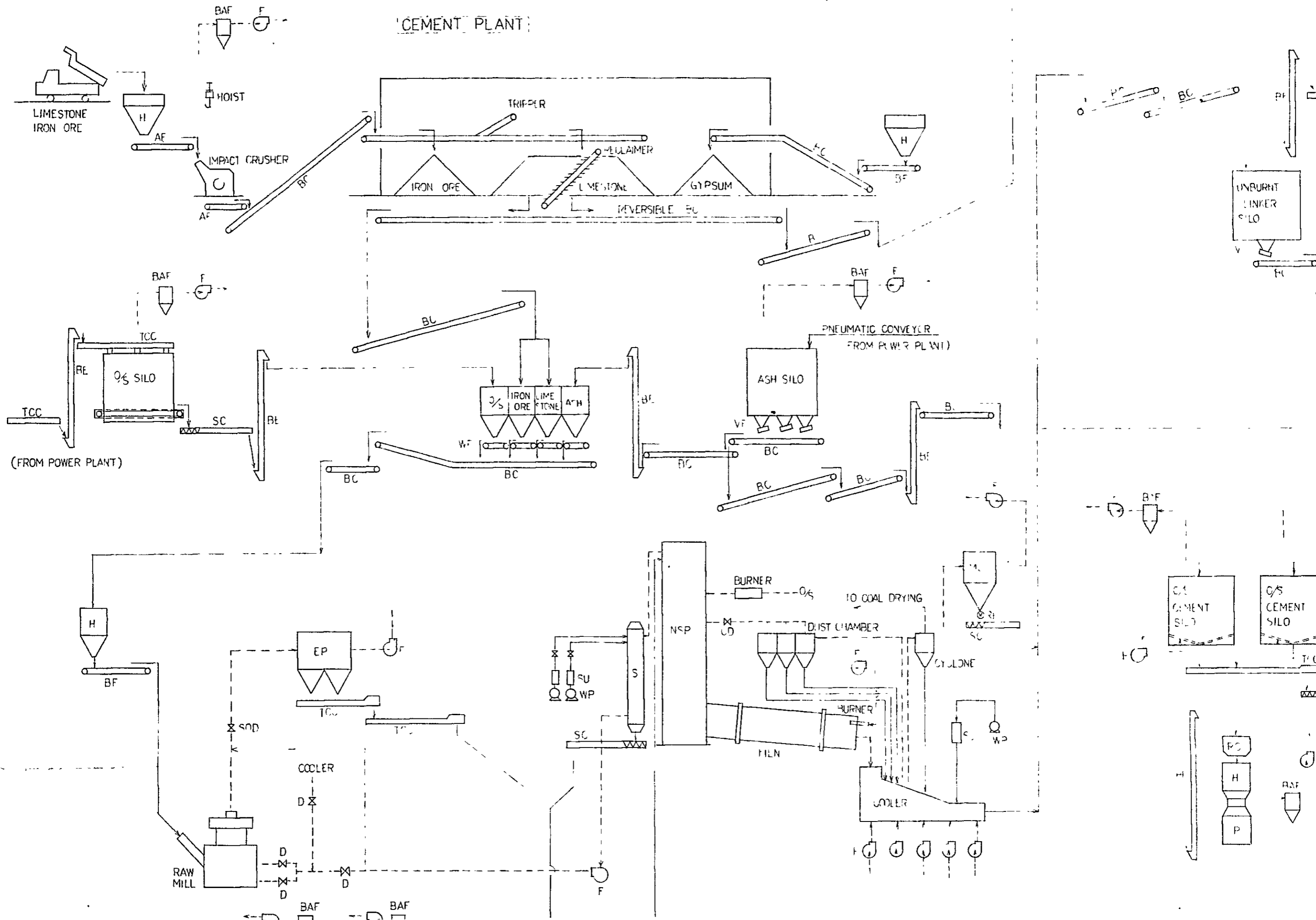


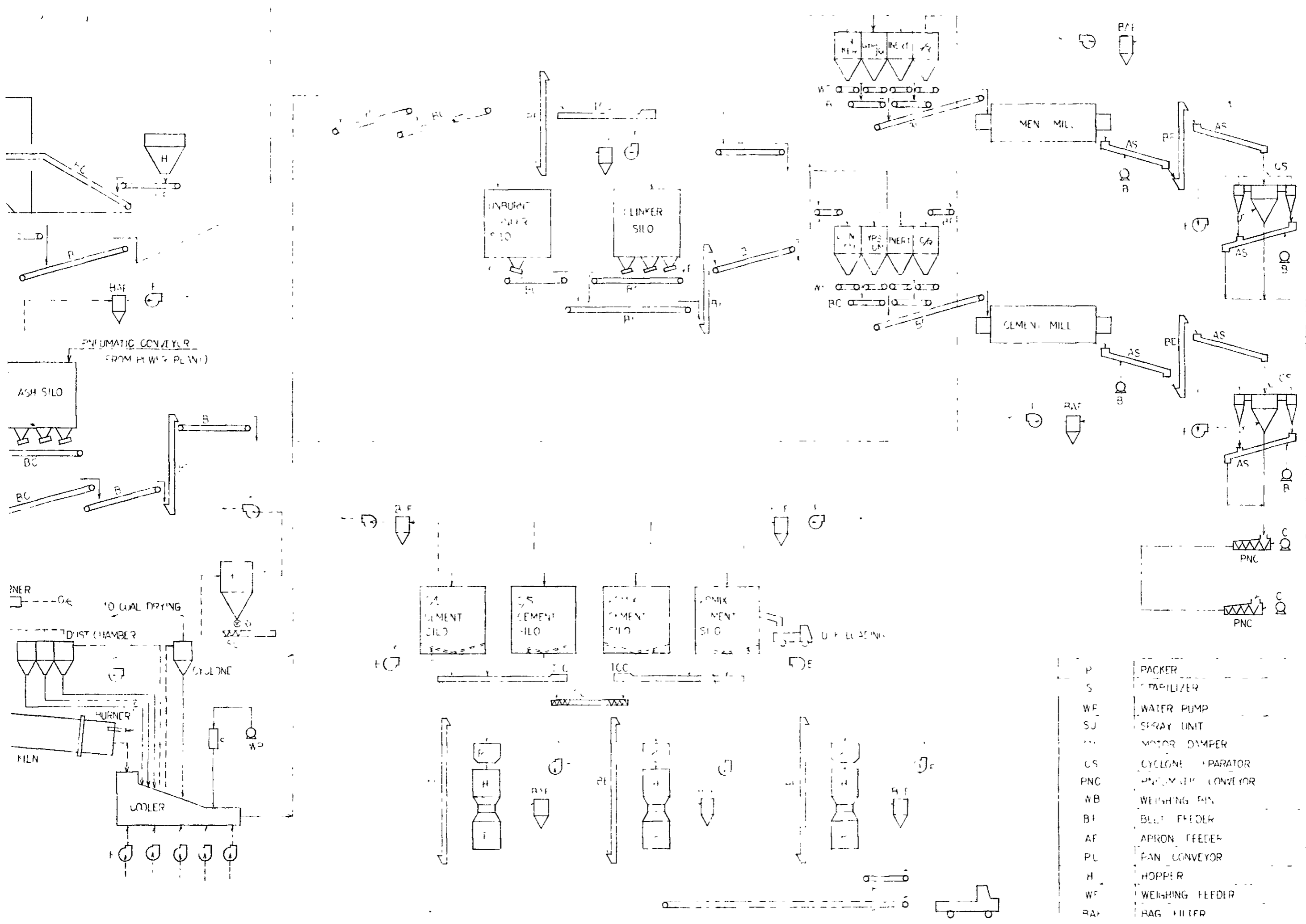




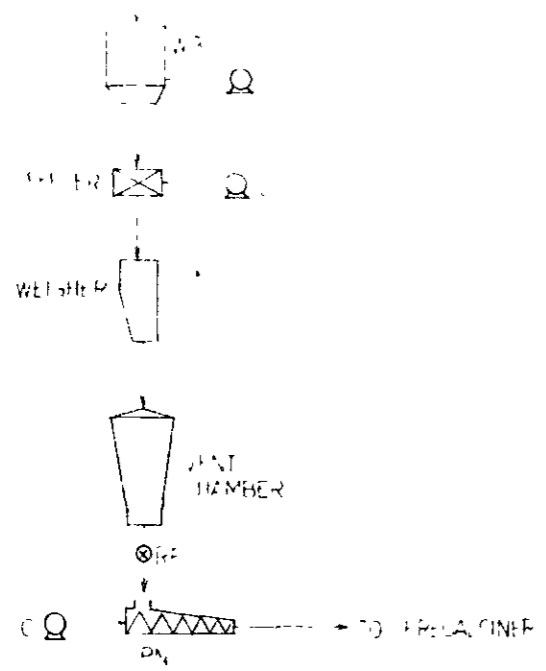
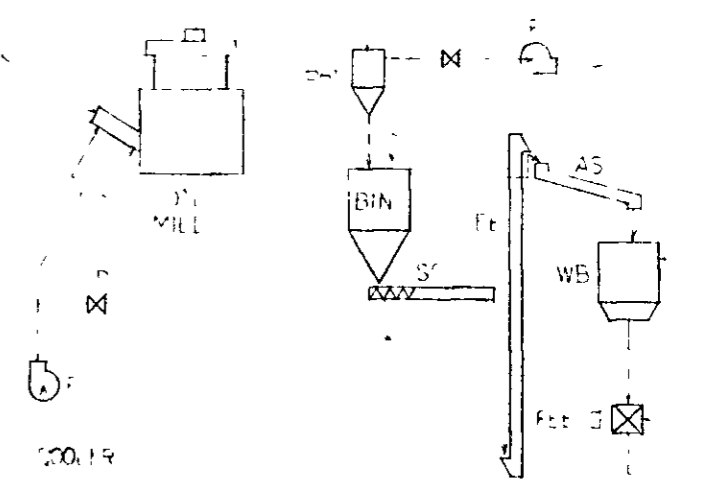
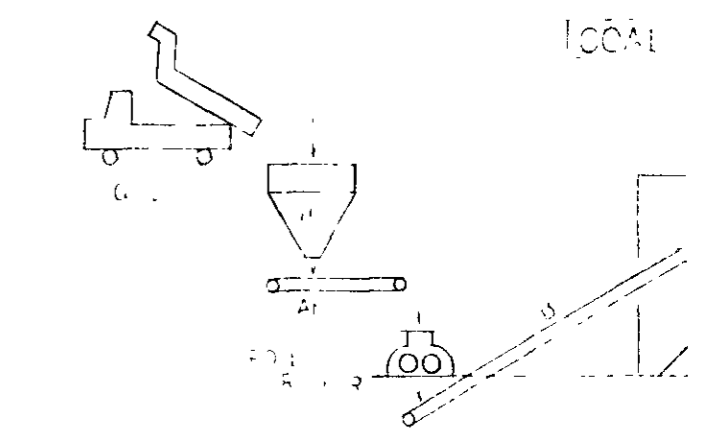
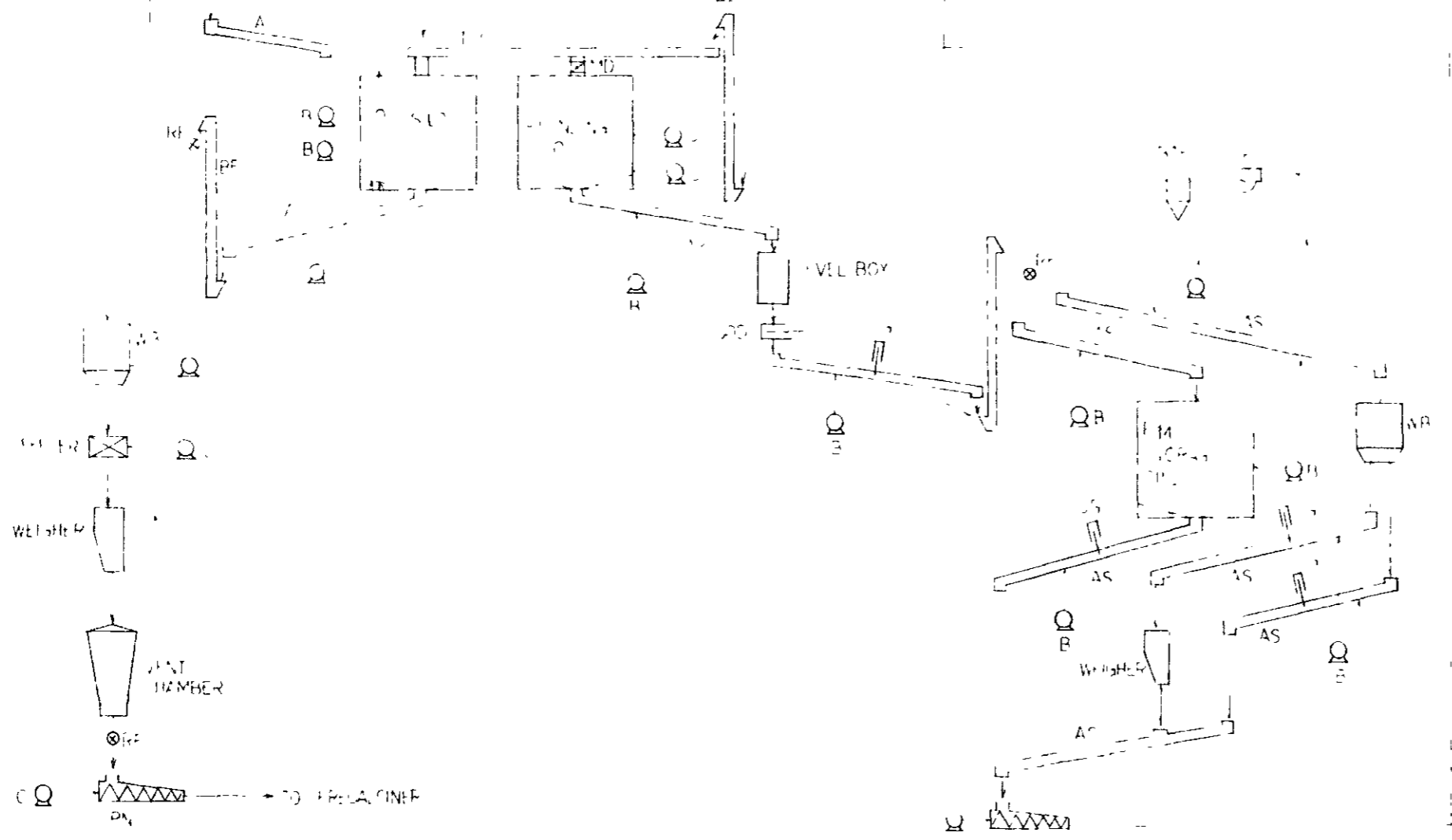
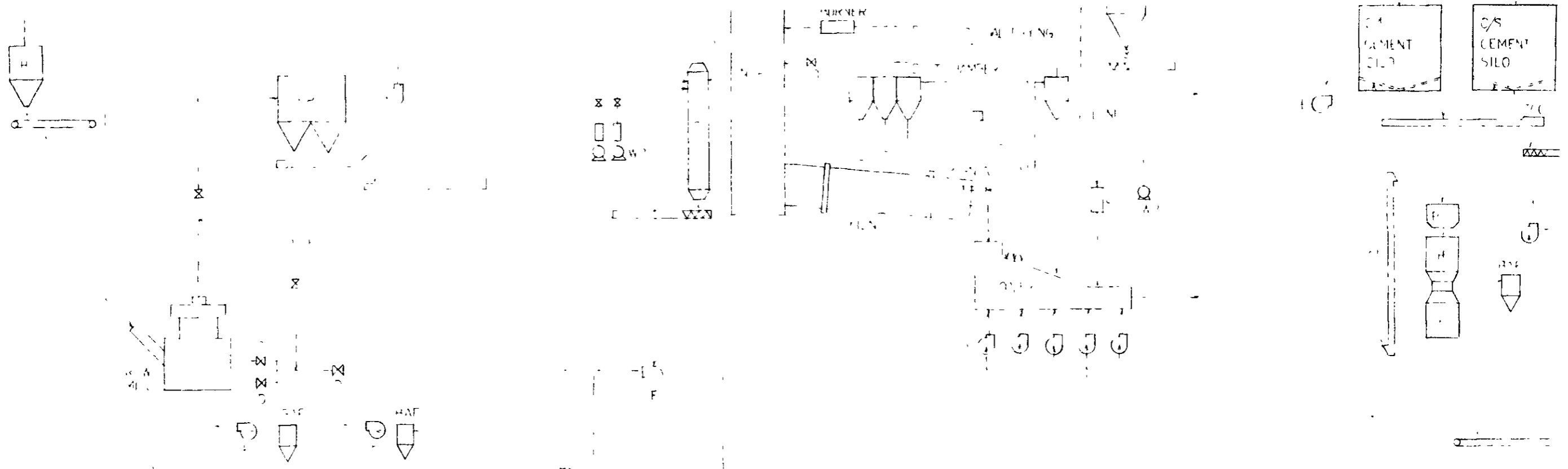
JAPAN INTERNATIONAL COOPERATION AGENCY			THE INTEGRATED POWER AND CEMENT PLANT PROJECT MAE SOT, KINGDOM OF THAILAND  LAY OUT OF CEMENT PLANT			
APPROVED	CHECKED	DESIGNED DRAWN	SCALE	DATE	DWG. NO.	FILE NO.
<i>P. Ojabe</i>	<i>Kondo</i>	<i>M. Kaori</i>	1/1000	26 APR '83	P-01	

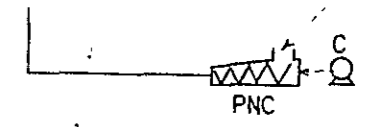
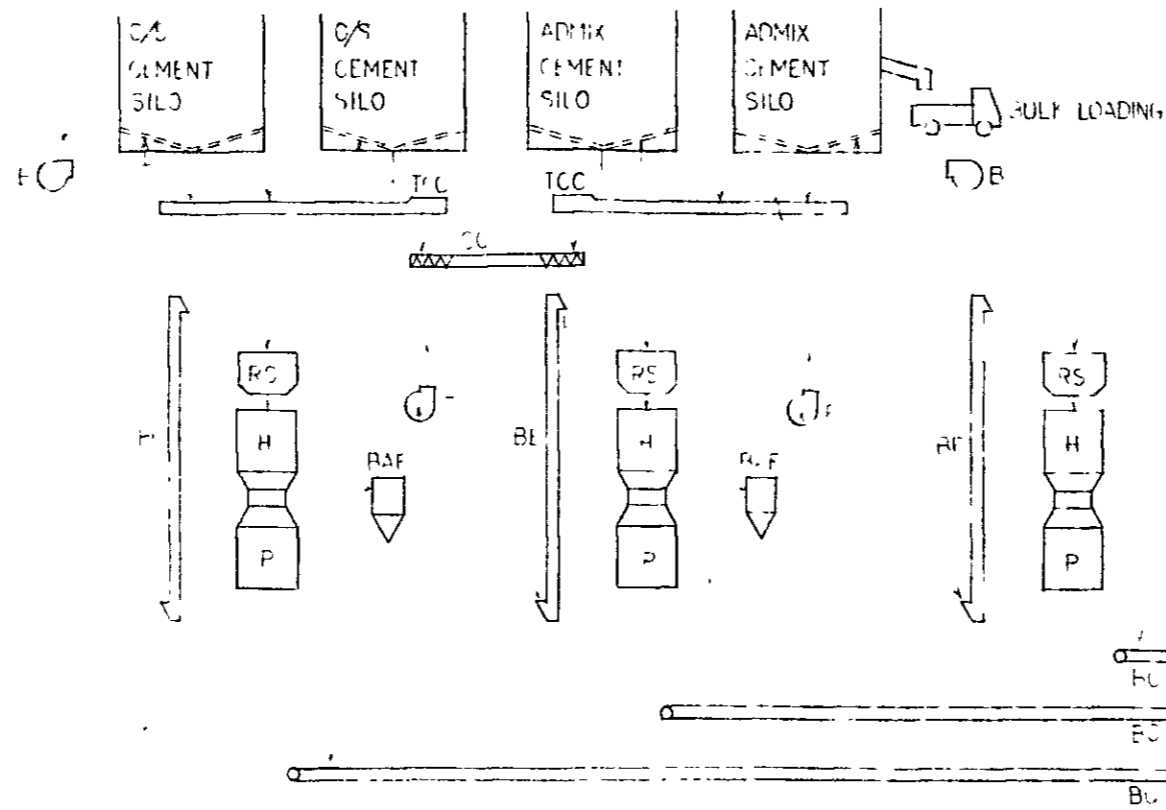
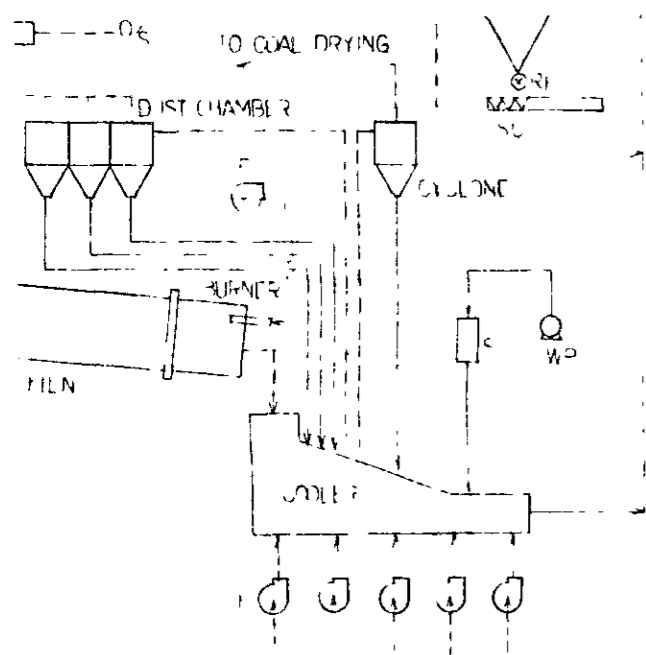
# CEMENT PLANT





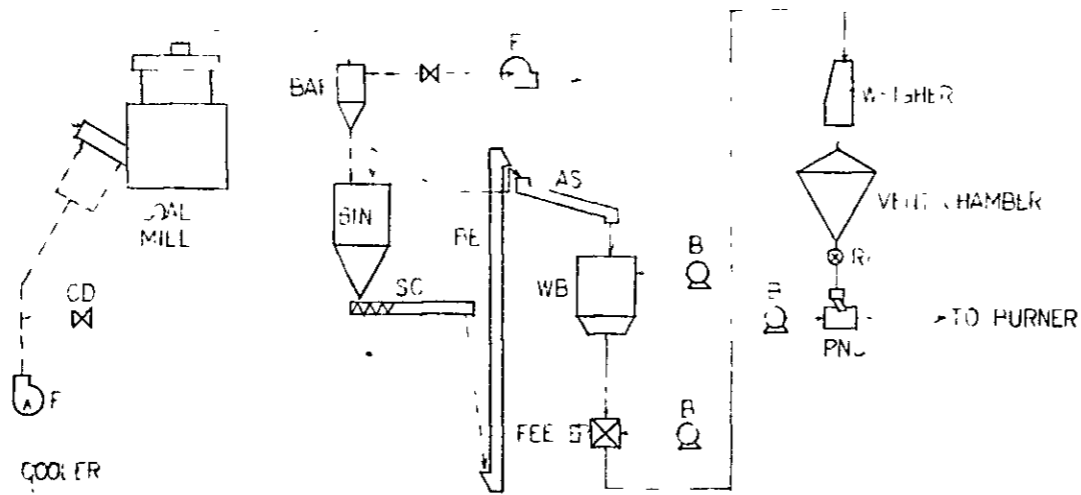
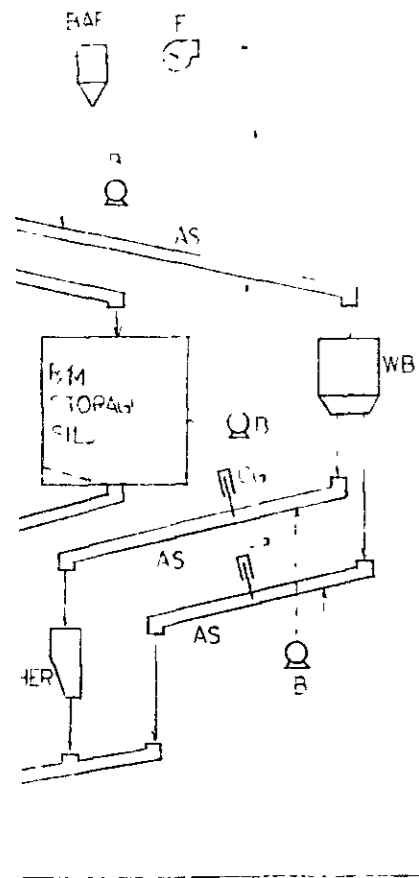
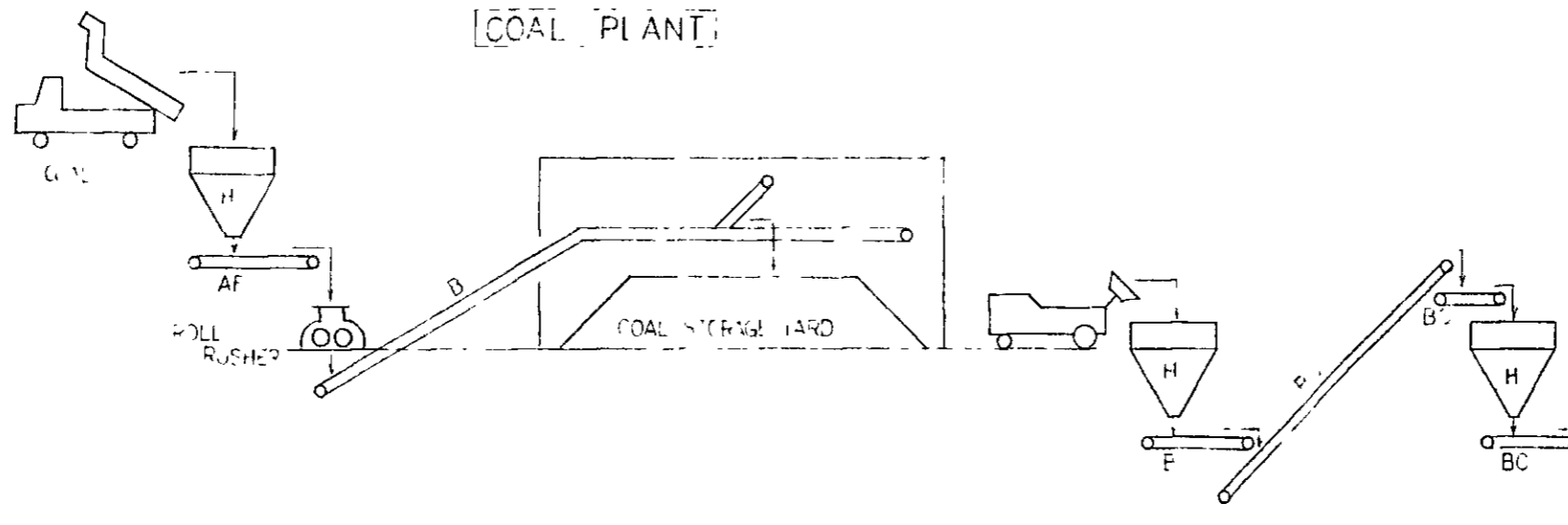
- P PACKER
- S STABILIZER
- WF WATER PUMP
- SU SPRAY UNIT
- ... MOTOR DAMPER
- CS CYCLONE SEPARATOR
- PNC PACKING CONVEYOR
- WB WEIGHING BIN
- BF BELT FEEDER
- AF APRON FEEDER
- PL PAN CONVEYOR
- H HOPPER
- WF WEIGHING FEEDER
- RAW BAG FILTER



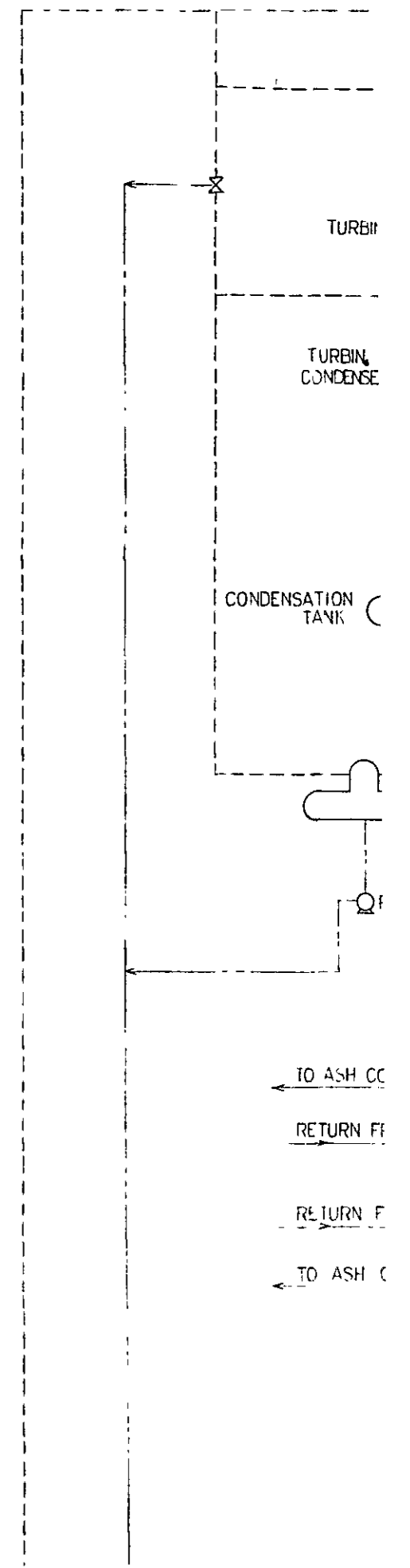
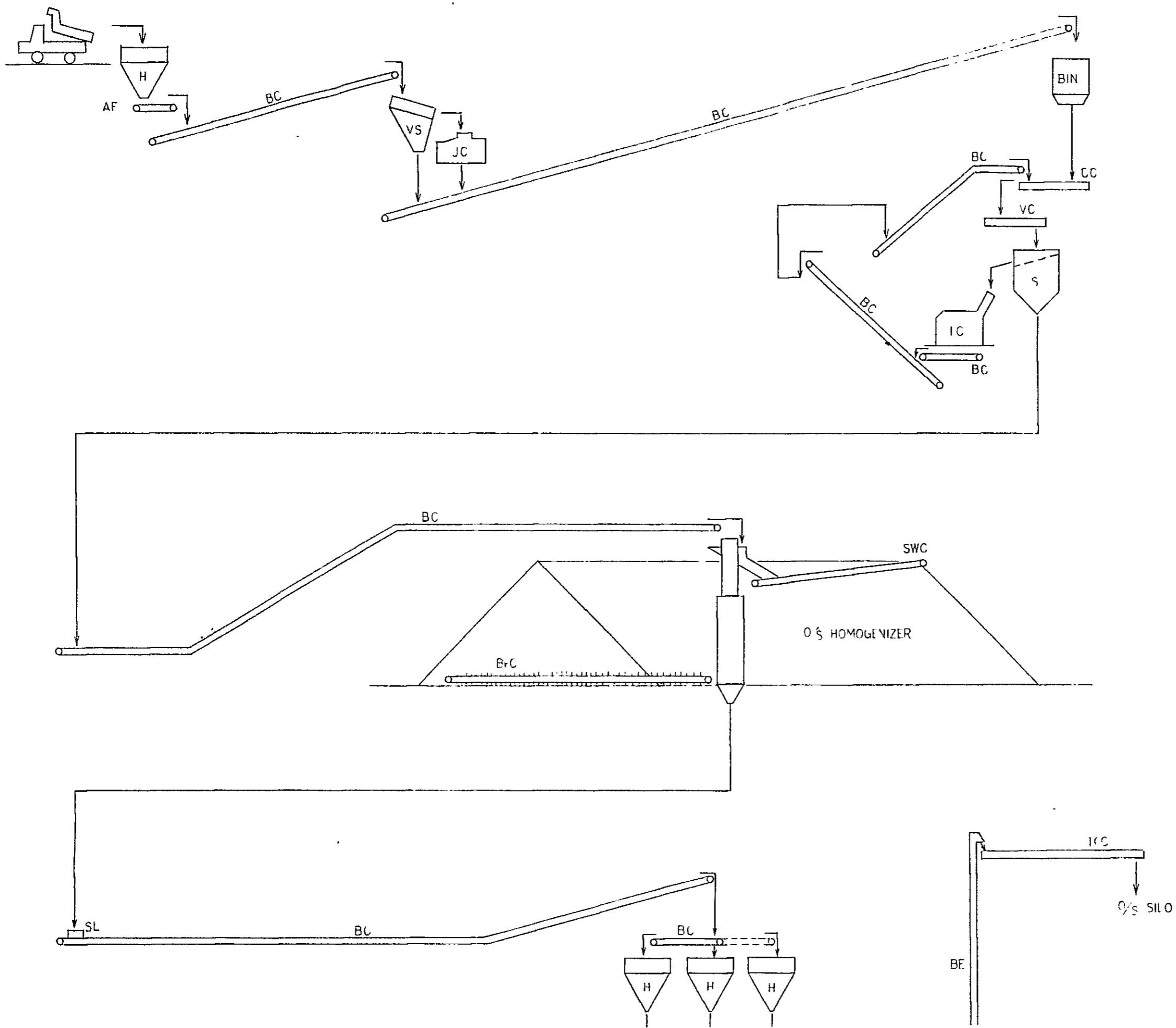


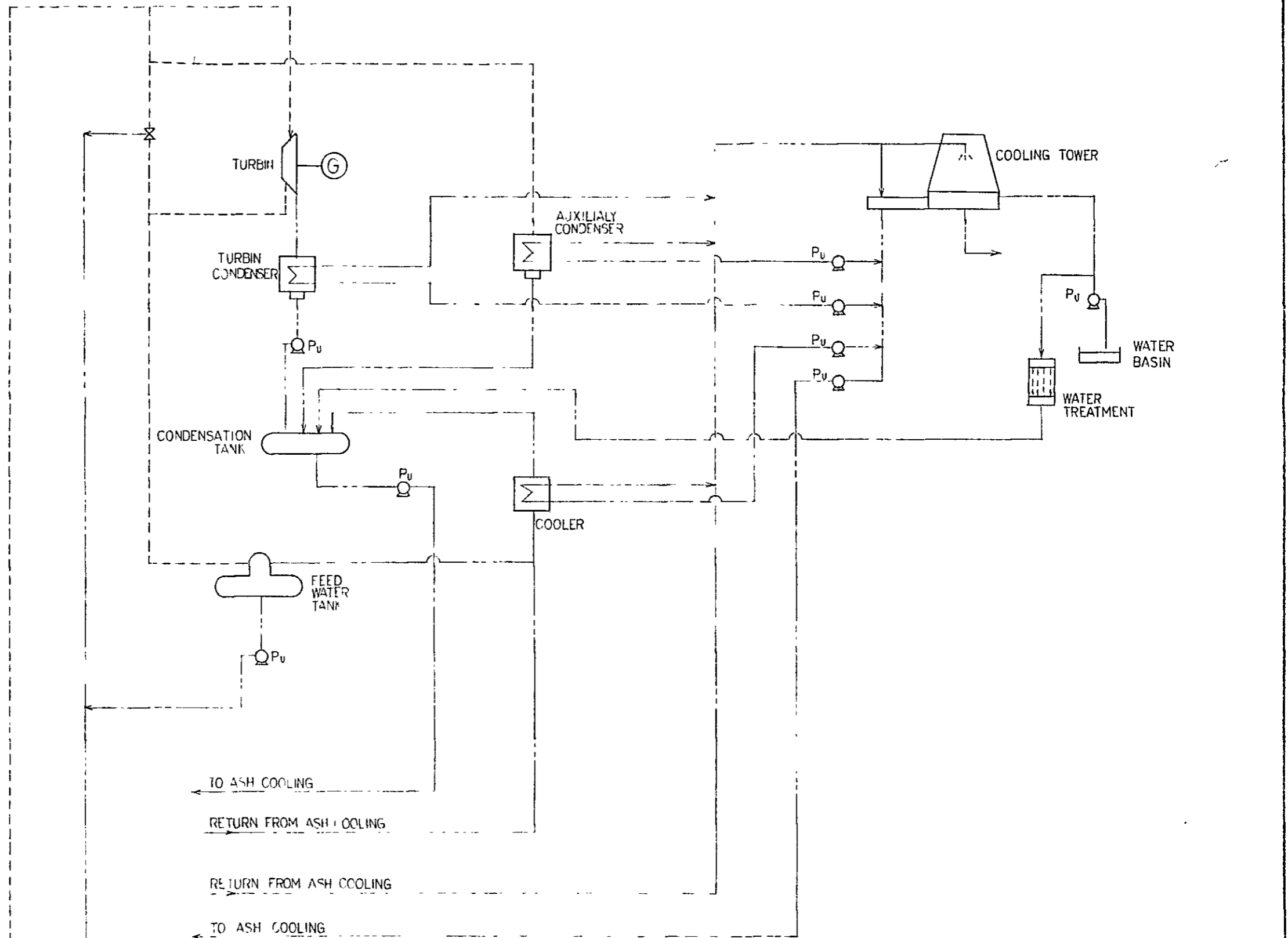
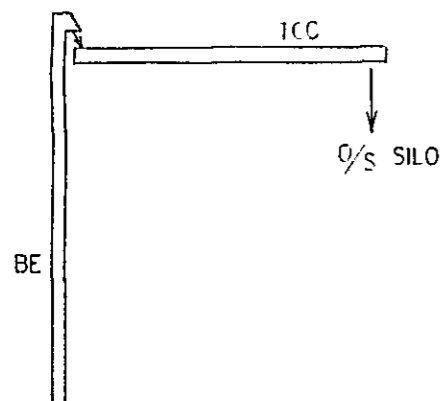
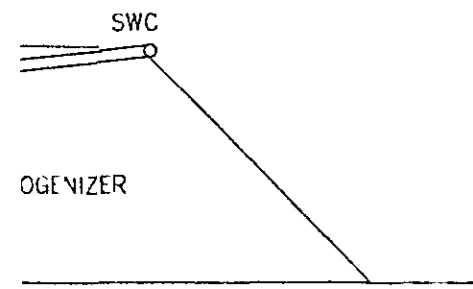
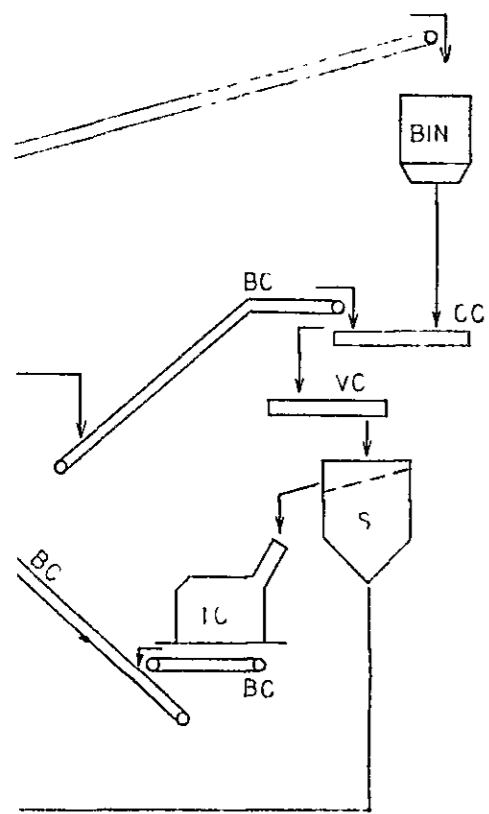
P	PACKER
S	STABILIZER
WP	WATER PUMP
SU	SPRAY UNIT
MD	MOTOR DAMPER
CS	CYCLONE SEPARATOR
PNC	PNEUMATIC CONVEYOR
WB	WEIGHING BIN
BF	BELT FEEDER
AF	APRON FEEDER
PC	PAN CONVEYOR
H	HOPPER
WF	WEIGHING FEEDER
BAF	BAG FILTER
SOD	SHUT OFF DAMPER
VF	VIBRATING FEEDER
EP	ELECTRIC STATIC PRECIPITATOR
D	DAMPER
TCC	TRAM CHAIN CONVEYOR
C	COMPRESSOR
RF	ROTARY FEEDER
BE	BUCKET ELEVATOR
B	BLOWER
CG	CONTROL GATE
CD	CONTROL DAMPER
AS	AIR SLIDE CONVEYOR
BC	BELT CONVEYOR
SC	SCREW CONVEYOR
PS	ROTARY SCREEN
F	FAN
MC	MULTI CYCLONE
SYMBOL	MACHINE

[COAL PLANT]



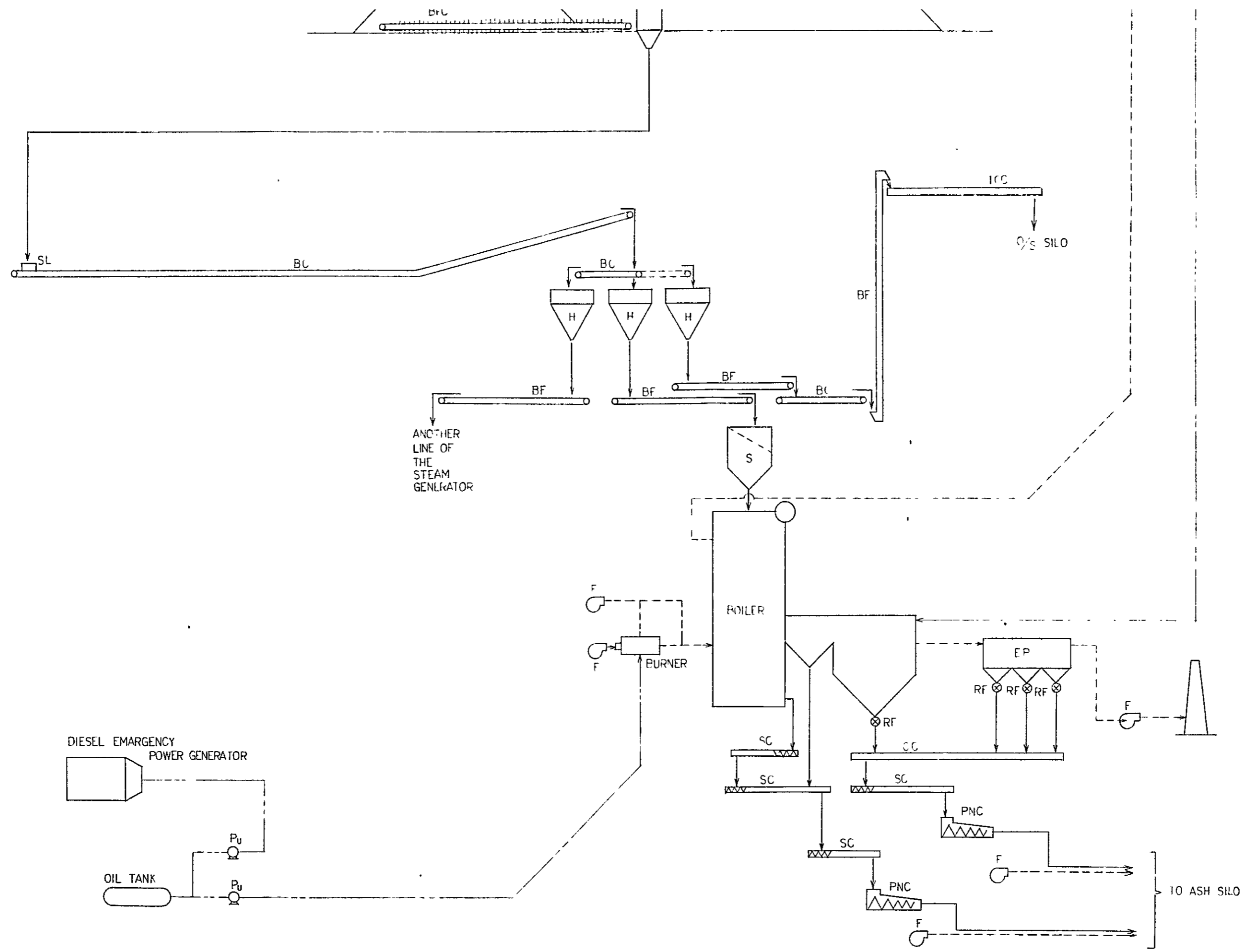
JAPAN INTERNATIONAL COOPERATION AGENCY		THE INTEGRATED POWER AND CEMENT PLANT PROJECT		MAE SOT, KINGDOM OF THAILAND	
		FLOW SHEET OF CEMENT PLANT(1)			
APPROVED <i>[Signature]</i>	CHECKED <i>Kondo</i>	DESIGNED DRAWN <i>M. Kaori</i>	SCALE	DATE 26, MAR '83	DWG. NO. P-02
					FILE NO.



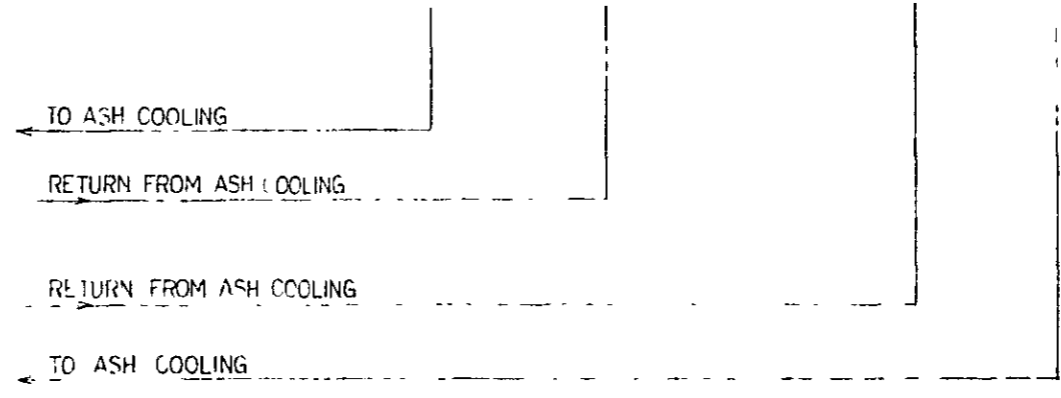
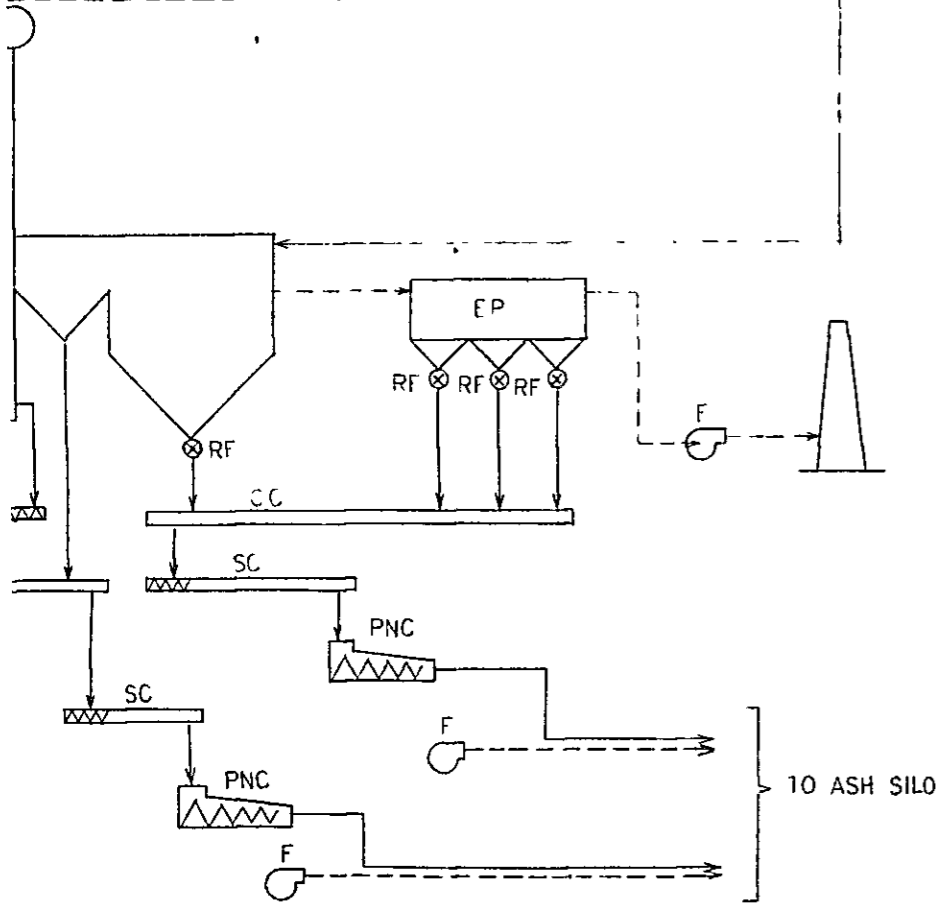
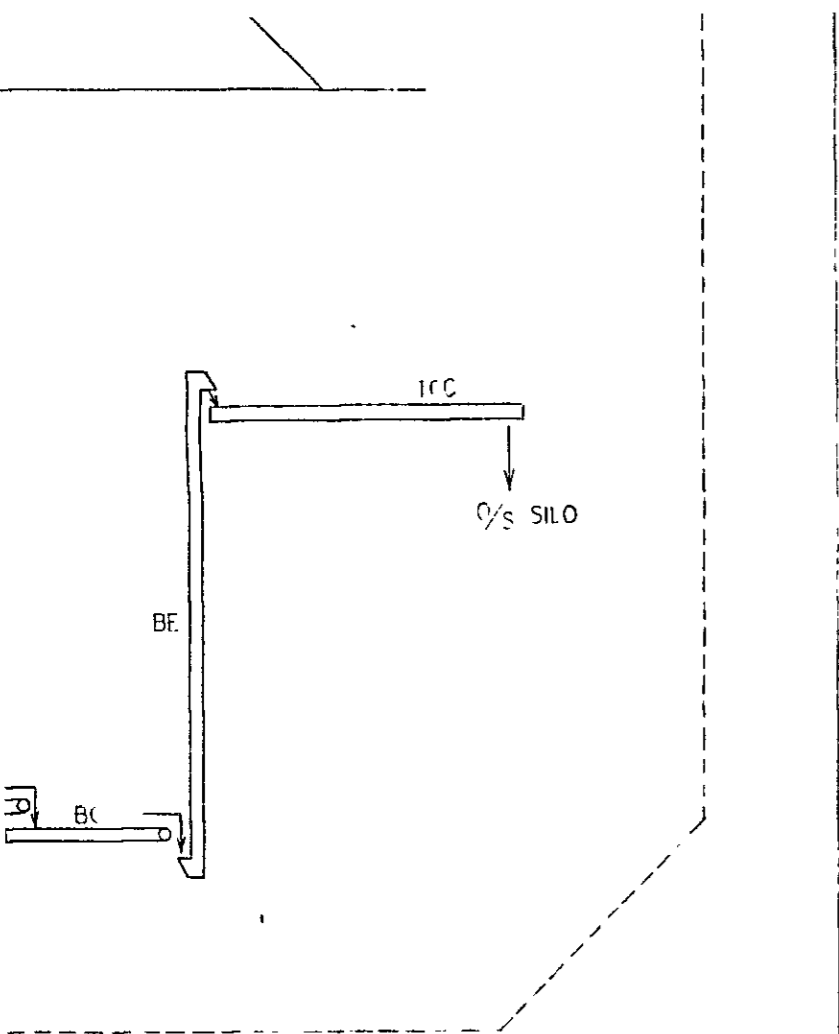


F	FAN
PNC	PNEUMATIC CONVEYOR
RF	ROTARY FEEDER
SC	SCREW CONVEYOR





← TO ASH CC  
 RETURN FF  
 RETURN FI  
 ← TO ASH C

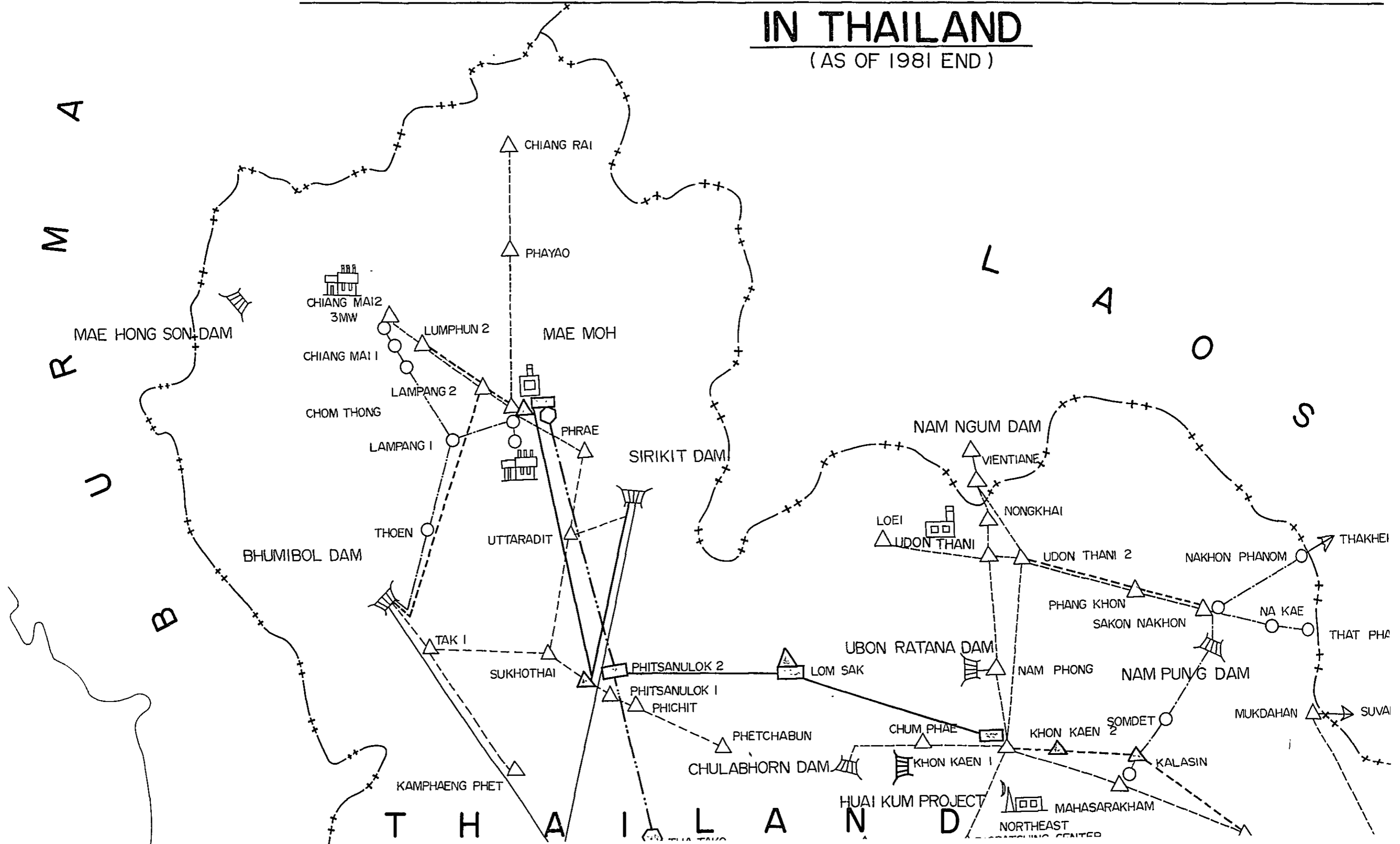


F	FAN
PNC	PNEUMATIC CONVEYOR
RF	ROTARY FEEDER
SC	SCREW CONVEYOR
Pu	PUMP
G	GENERATOR
BF	BELT FEEDER
TCC	TROUGH CHAIN CONVEYOR
SL	SHAKER LOADER
SWC	SWINGABLE CONVEYOR
CC	CHAIN CONVEYOR
BrC	BROACHING CONVEYOR
IC	IMPACT CRUSHER
S	SCREEN
VC	VIBRATOR CONVEYOR
EP	ELECTROSTATIC PRECIPITATOR
JC	JAW CRUSHER
VS	VIBRATING SCREEN
BC	BELT CONVEYOR
AF	APRON FEEDER
H	HOPPER
SYMBOL	

JAPAN INTERNATIONAL COOPERATION AGENCY			THE INTEGRATED POWER AND CEMENT PLANT PROJECT MAE SOT, KINGDOM OF THAILAND  FLOW SHEET OF CEMENT PLANT(2) (POWER PLANT)			
APPROVED	CHECKED	DESIGNED DRAWN	SCALE	DATE	DWG. NO.	FILE NO.
<i>P. Yano</i>	<i>Yendo</i>	<i>M. Kaori</i>		31, MAY '83	P-03	

# MAP OF MAIN POWER STATIONS AND TRANSMISSION LINES IN THAILAND

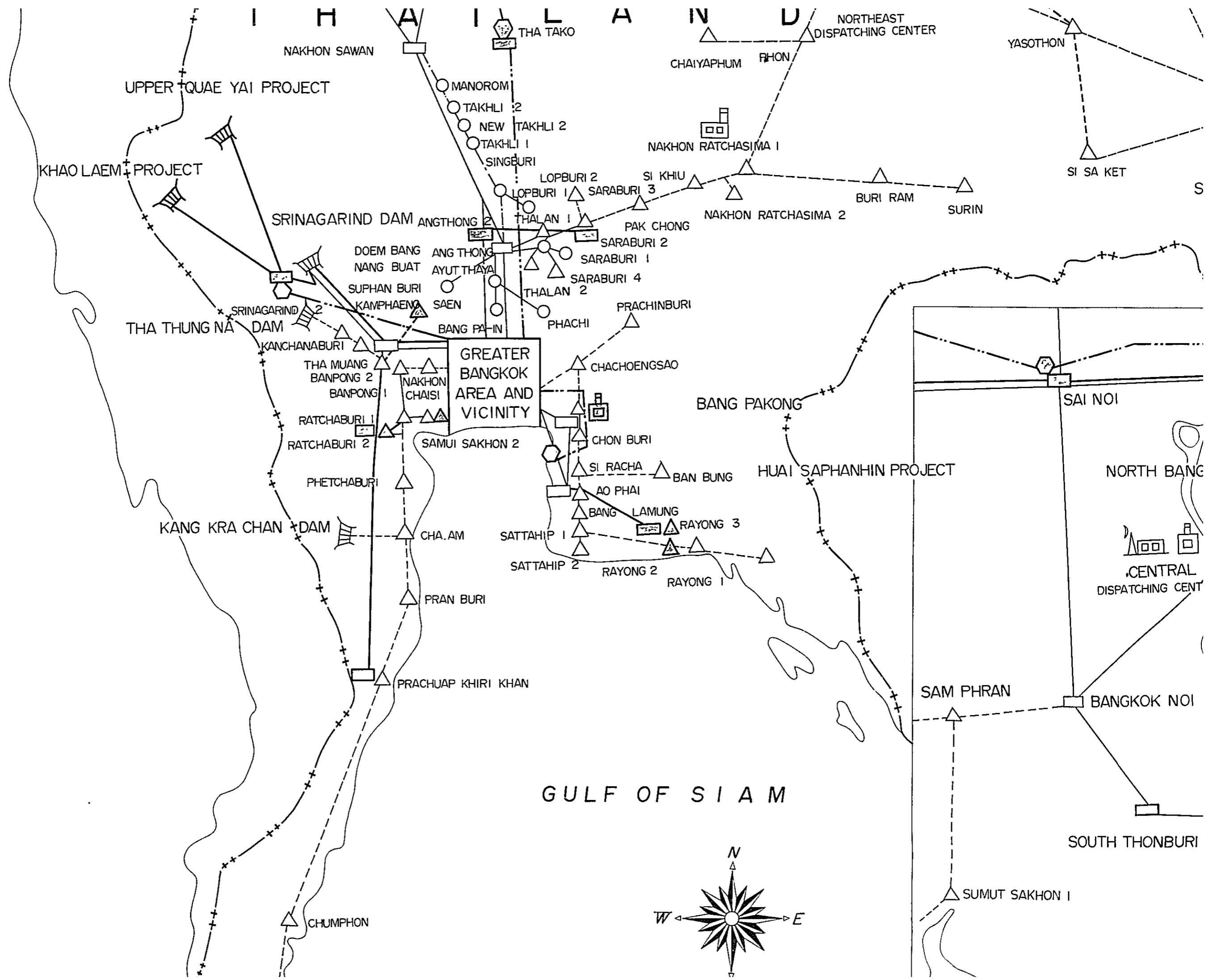
(AS OF 1981 END)



# MAP OF MAIN POWER STATIONS AND TRANSMISSION LINES IN THAILAND

(AS OF 1981 END)





# I H A

NAKHON SAWAN

THA TAKO

NORTHEAST DISPATCHING CENTER

YASOTHON

UPPER QUAE YAI PROJECT

KHAO LAEM PROJECT

SRINAGARIND DAM

DOEM BANG

NANG BUAT

SUPHAN BURI

THA THUNG NA DAM

KANCHANABURI

THA MUANG

BANPONG 2

BANPONG 1

RATCHABURI 1

RATCHABURI 2

PHETCHABURI

KANG KRA CHAN DAM

CHA AM

PRAN BURI

PRACHUAP KHIRI KHAN

CHUMPHON

GREATER BANGKOK AREA AND VICINITY

SAMUI SAKHON 2

CHON BURI

SI RACHA

AO PHAI

BANG LAMUNG

SATTAHIP 1

SATTAHIP 2

RAYONG 2

RAYONG 1

TAKHLI 2

NEW TAKHLI 2

TAKHLI 1

SINGBURI

LOPBURI 2

LOPBURI 1

THALAN 1

ANG THONG 2

AYUTTHAYA

THALAN 2

PHACHI

BANG PA-IN

CHACHOENGSAO

CHON BURI

SI RACHA

AO PHAI

BANG LAMUNG

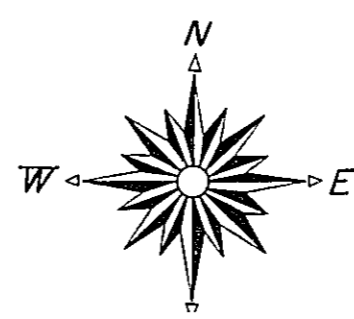
SATTAHIP 1

SATTAHIP 2

RAYONG 2

RAYONG 1

GULF OF SIAM



CHAIYAPHUM

PHON

NAKHON RATCHASIMA 1

SI KHIU

LOPBURI 2

LOPBURI 1

THALAN 1

ANG THONG 2

AYUTTHAYA

THALAN 2

PHACHI

CHACHOENGSAO

CHON BURI

SI RACHA

AO PHAI

BANG LAMUNG

SATTAHIP 1

SATTAHIP 2

RAYONG 2

RAYONG 1

PAK CHONG

SARABURI 2

SARABURI 1

SARABURI 4

THALAN 2

PHACHI

CHACHOENGSAO

CHON BURI

SI RACHA

AO PHAI

BANG LAMUNG

SATTAHIP 1

SATTAHIP 2

RAYONG 2

RAYONG 1

RAYONG 3

RAYONG 2

RAYONG 1

RAYONG 1

RAYONG 2

RAYONG 3

RAYONG 2

RAYONG 1

RAYONG 3

RAYONG 2

RAYONG 1

RAYONG 3

RAYONG 2

RAYONG 1

RAYONG 3

RAYONG 2

RAYONG 1

RAYONG 3

RAYONG 2

RAYONG 1

RAYONG 3

RAYONG 2

RAYONG 1

BURI RAM

NAKHON RATCHASIMA 2

PAK CHONG

SARABURI 2

SARABURI 1

SARABURI 4

THALAN 2

PHACHI

CHACHOENGSAO

CHON BURI

SI RACHA

AO PHAI

BANG LAMUNG

SATTAHIP 1

SATTAHIP 2

RAYONG 2

RAYONG 1

RAYONG 3

RAYONG 2

RAYONG 1

RAYONG 3

RAYONG 2

RAYONG 1

RAYONG 3

RAYONG 2

RAYONG 1

RAYONG 3

RAYONG 2

RAYONG 1

RAYONG 3

RAYONG 2

RAYONG 1

RAYONG 3

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RAYONG 3

RAYONG 2

RAYONG 1

RAYONG 3

RAYONG 2

RAYONG 1

SI SA KET

SAI NOI

NORTH BANG

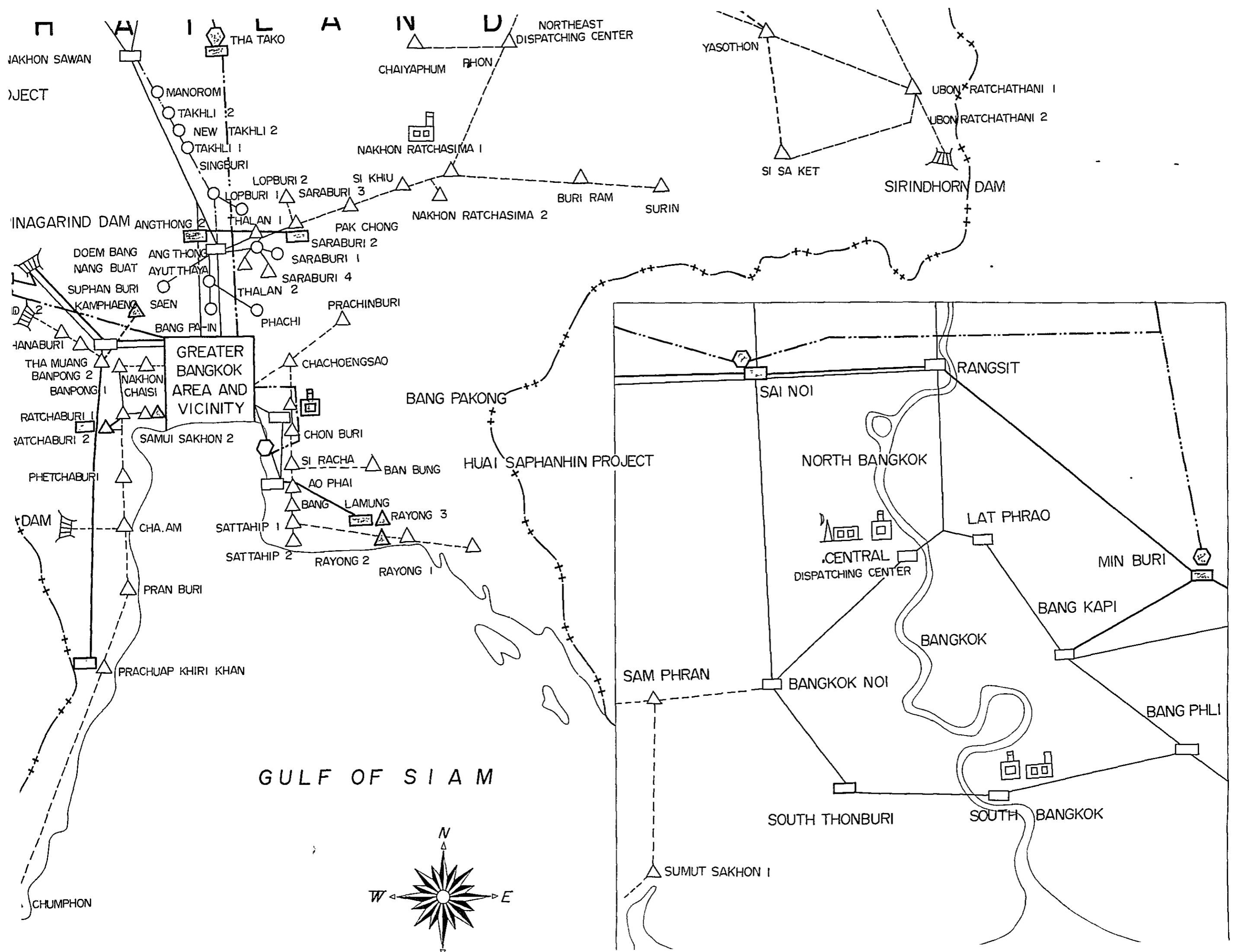
CENTRAL DISPATCHING CENT

SAM PHRAN

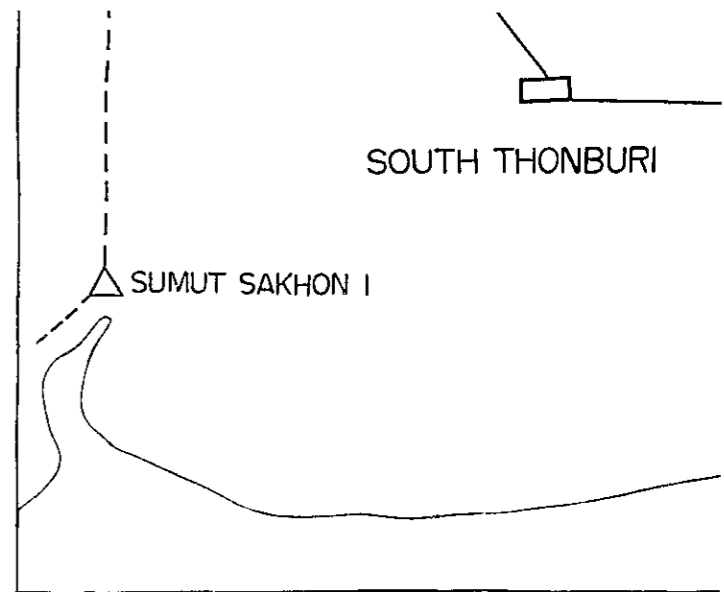
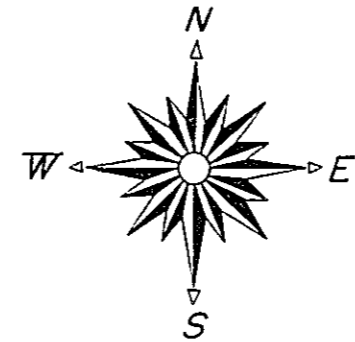
BANGKOK NOI

SOUTH THONBURI

SUMUT SAKHON 1



GULF OF SIAM



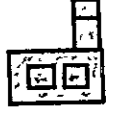
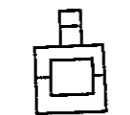
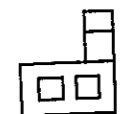
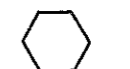
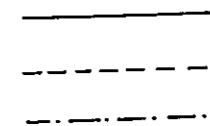
SOUTH THONBURI

SUMUT SAKHON I

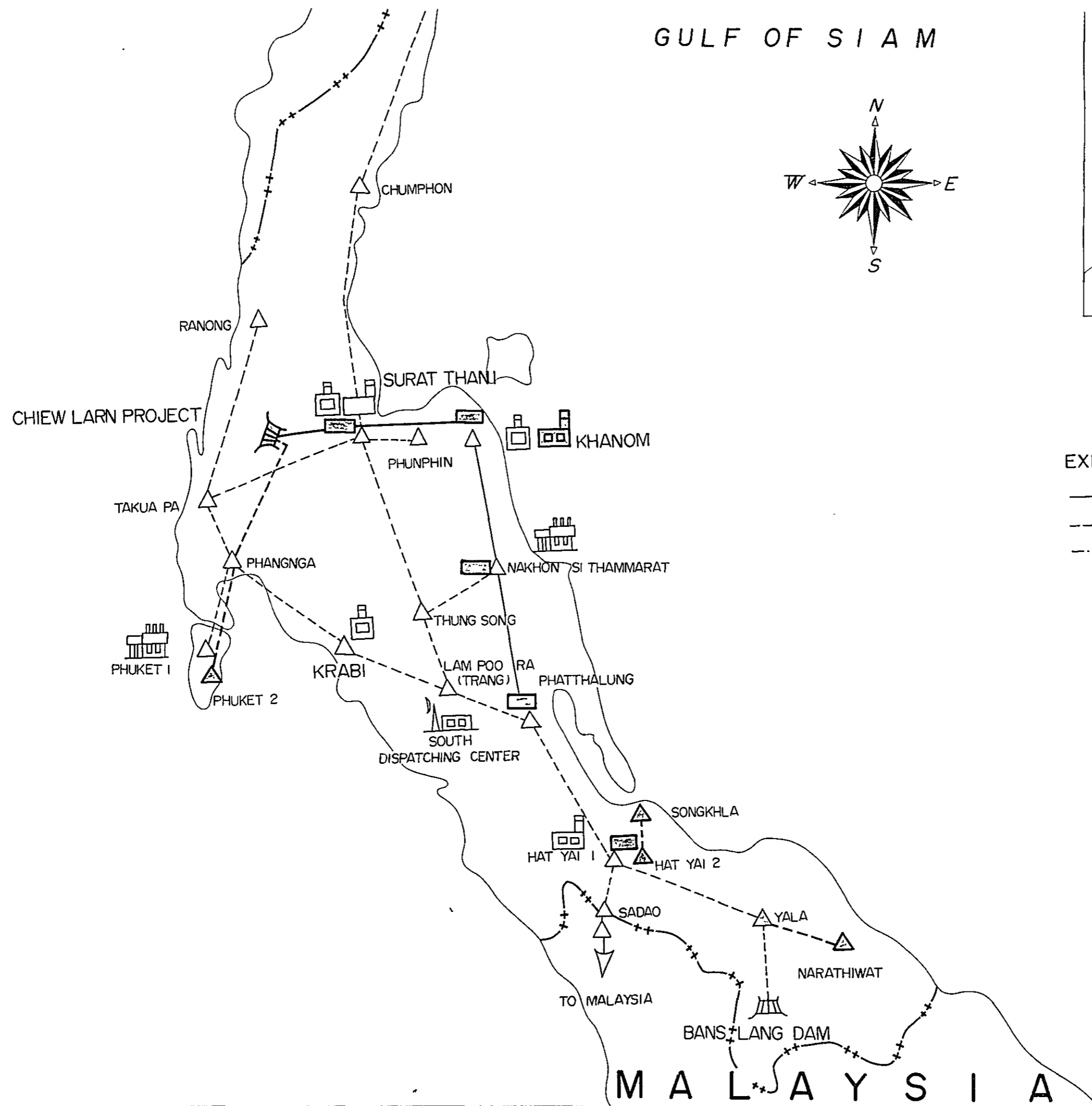
GREATER BANGKOK

UNDER IMPLEMENTATION

EXISTING

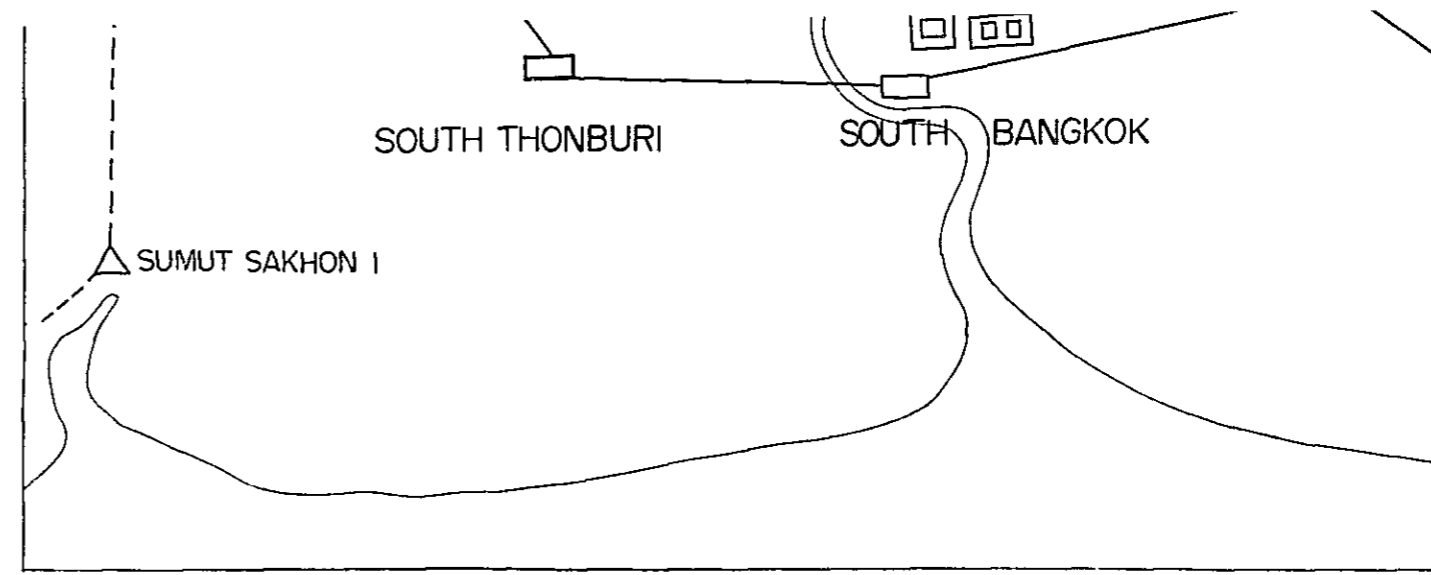
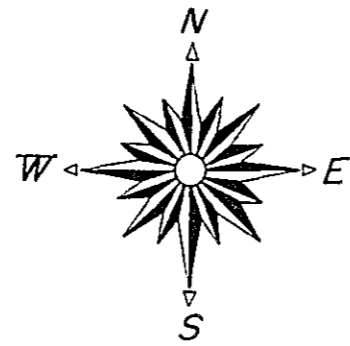
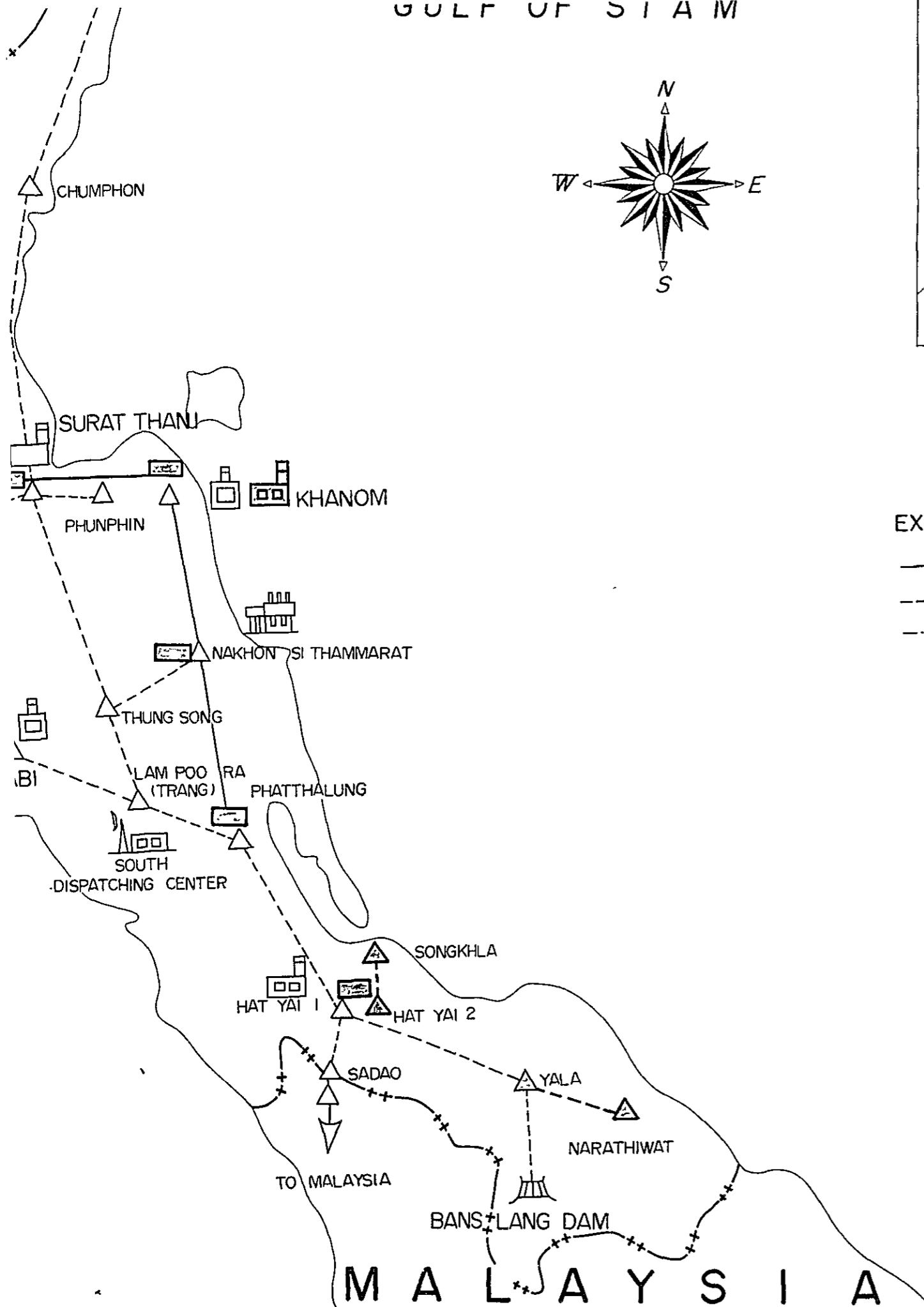


—++— INTERNATIONAL BOL



MALAYSIA

GULF OF SIAM

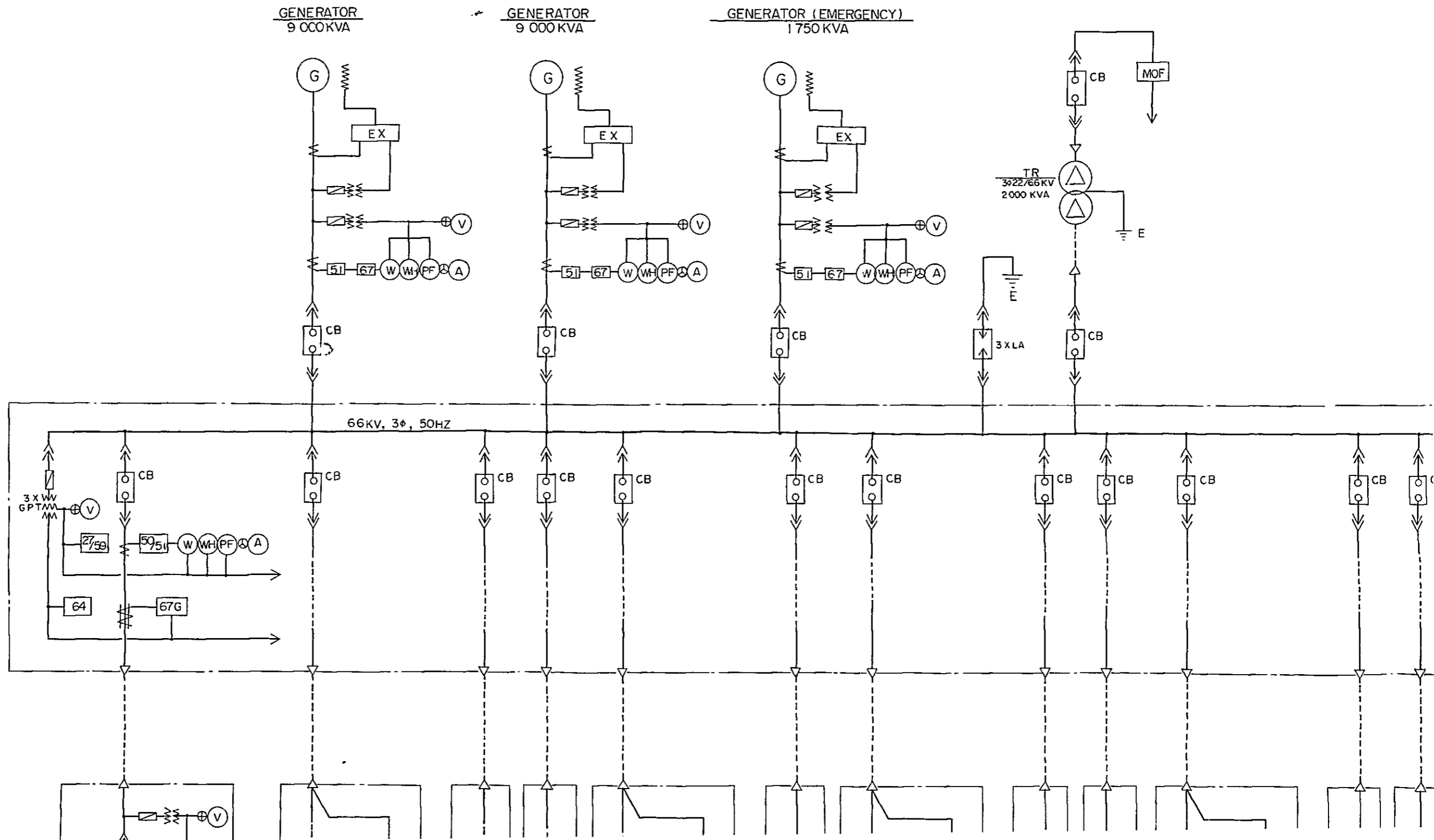


GREATER BANGKOK AREA AND VICINITY

EXISTING		UNDER IMPLEMENTATION	
	500kV TRANSMISSION LINE		500kV TRANSMISSION LINE
	230kV TRANSMISSION LINE		230kV TRANSMISSION LINE
	115kV TRANSMISSION LINE		115kV TRANSMISSION LINE
	69kV TRANSMISSION LINE		500kV SUBSTATION
	500kV SUBSTATION		230kV SUBSTATION
	230kV SUBSTATION		115kV SUBSTATION
	115kV SUBSTATION		69kV SUBSTATION
	69kV SUBSTATION		DIESEL POWER PLANT
	DIESEL POWER PLANT		GAS TURBINE POWER PLANT
	GAS TURBINE POWER PLANT		THERMAL POWER PLANT
	THERMAL POWER PLANT		HYDRO POWER PLANT
	HYDRO POWER PLANT		
		INTERNATIONAL BOUNDARY	



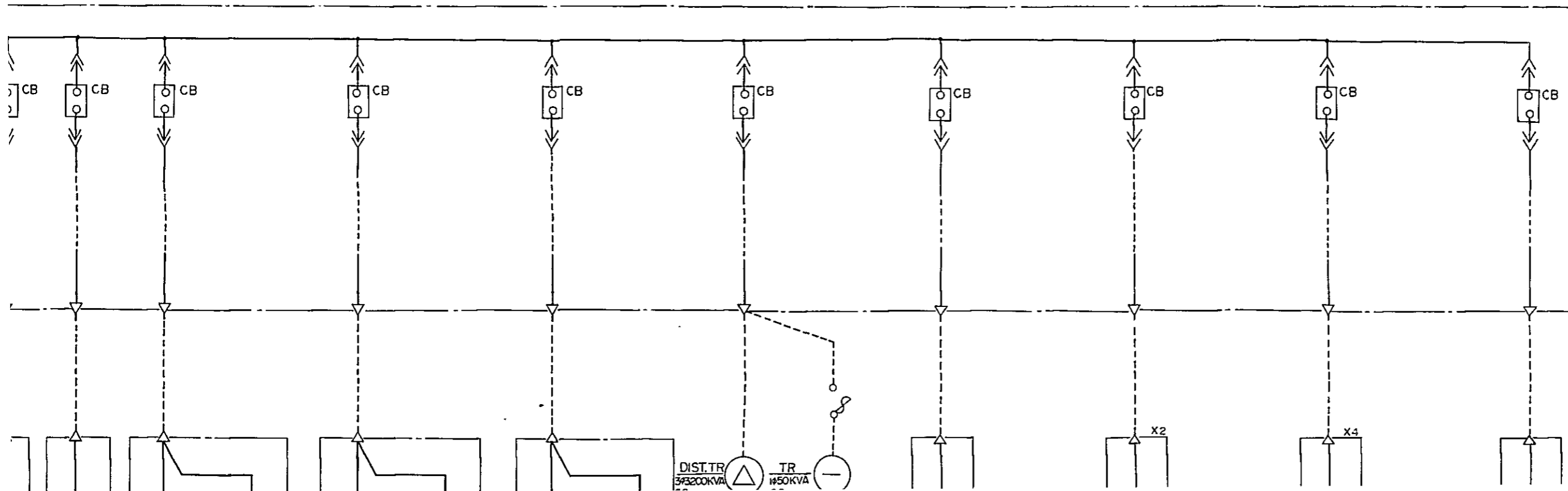
# SINGLE LINE DIAGRAM FOR THE INTEGRATED POWER STATION AND CEMENT MAE SOT, THAILAND.

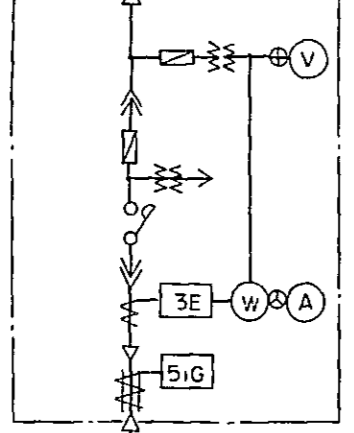
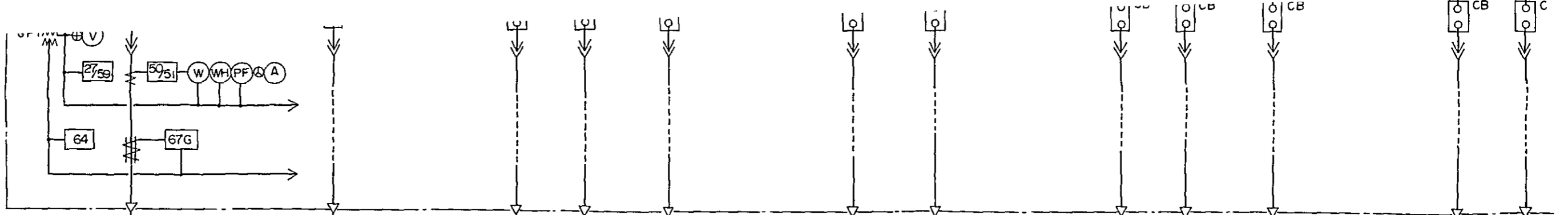


# MENT PLANT PROJECT

## SYMBOL

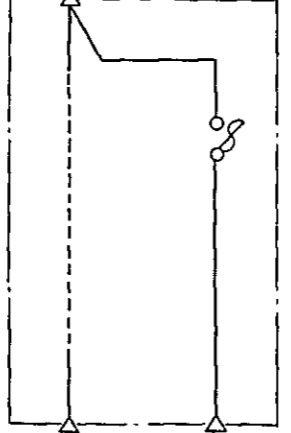
51	OVER CURRENT RELAY
51G	GROUNDING OVER CURRENT RELAY
27/59	UNDER-OVER VOLTAGE RELAY
50/51	OVER CURRENT RELAY WITH INSTANTANEOUS ELEMENT
67G	DIRECTIONAL GROUNDING OVER CURRENT RELAY
64	GROUNDING OVER VOLTAGE RELAY FOR FEEDER
3E	OVER CURRENT, PHASE REVERSAL, PHASE FAILURE
PT	POTENTIAL TRANSFORMER
CT	CURRENT TRANSFORMER
67	REVERSE POWER RELAY
W	INDICATING WATTMETER
WH	INDICATING WATT - HOURMETER
PF	POWER FACTOR METER
EX	EXCITER



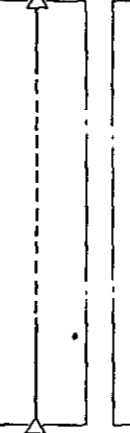


CRUSHER 500 KW

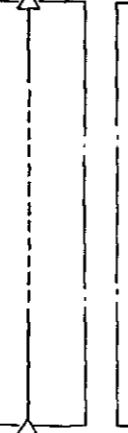
DIST TR.  
 3#400 KVA  
 66/0.415 KV



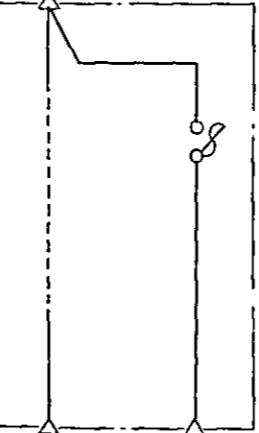
L.T. DISTRIBUTION PANEL  
 FOR RAW MATERIAL  
 TRANSPORT DEP.  
 LIGHTING PANEL  
 FOR RAW MATERIAL  
 TRANSPORT DEP.



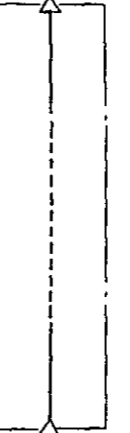
RAW MEAL MILL 1400 KW



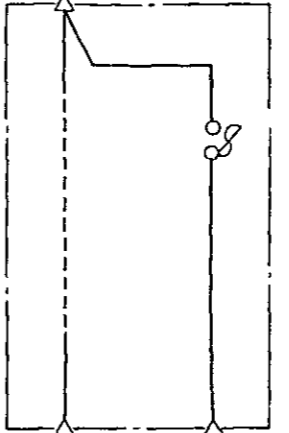
FAN FOR MILL 400 KW



L.T. DISTRIBUTION PANEL  
 FOR RAW MATERIAL  
 GRINDING DEP.  
 LIGHTING PANEL  
 FOR RAW MATERIAL  
 GRINDING DEP.



COAL MILL 500 KW



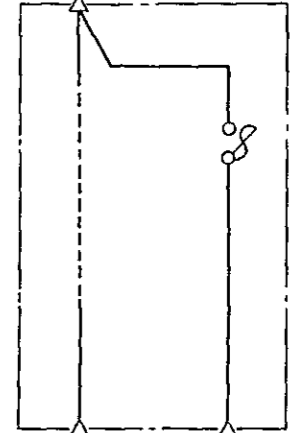
L.T. DISTRIBUTION PANEL  
 FOR COAL GRINDING DEP.  
 LIGHTING PANEL  
 FOR COAL GRINDING DEP.



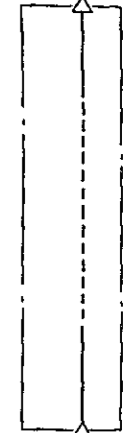
RSP FAN 750 KW



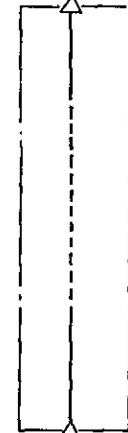
E P FAN 1300 KW



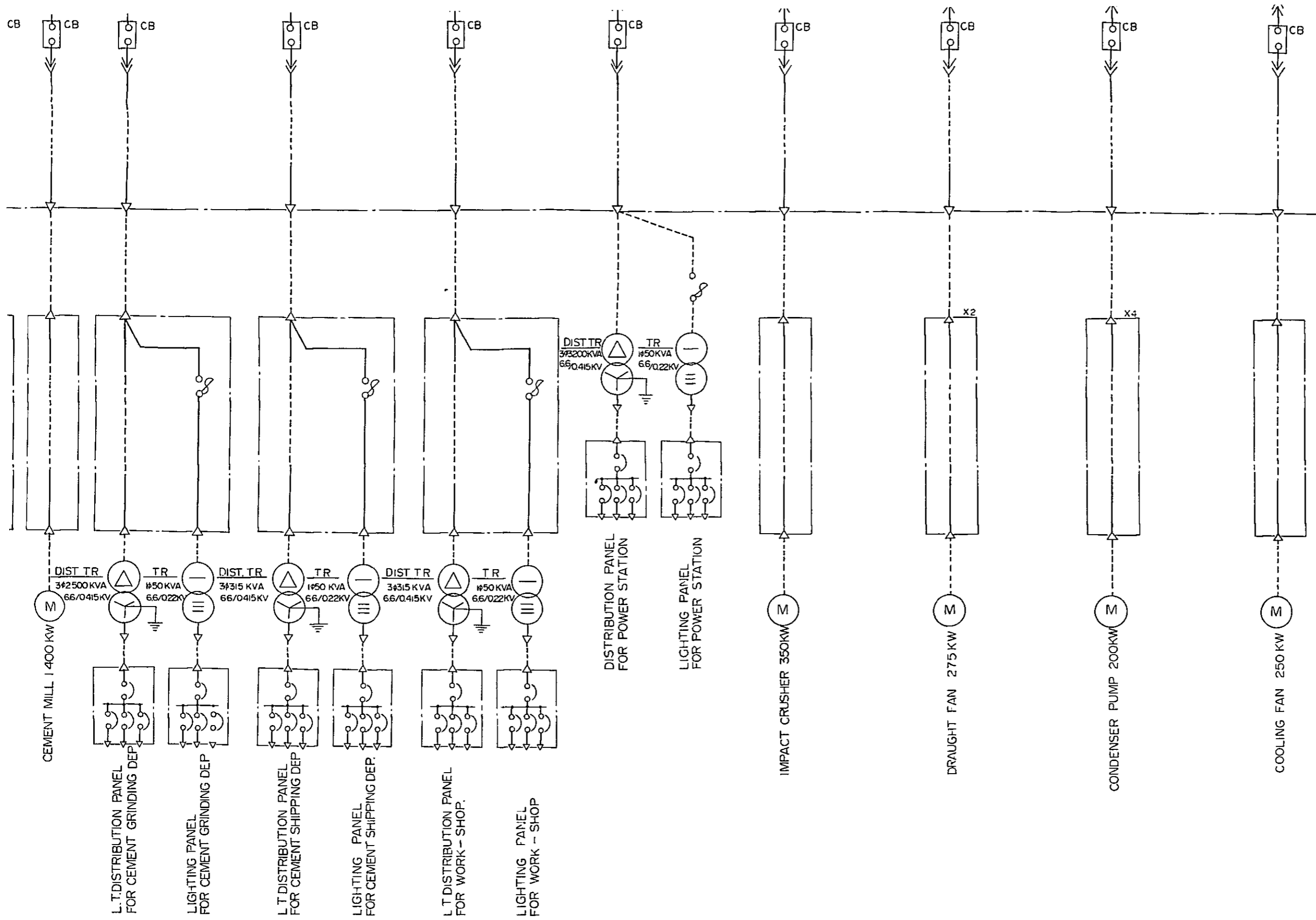
L.T. DISTRIBUTION PANEL  
 FOR KILN DEP.  
 LIGHTING PANEL  
 FOR KILN DEP.



CEMENT MILL 1400 KW



CEMENT MILL 1400 KW





THE KINGDOM OF THAILAND

JICA

K-52