

Figure 1-20 Location Map of Kanakantapa Damsite (No.15)

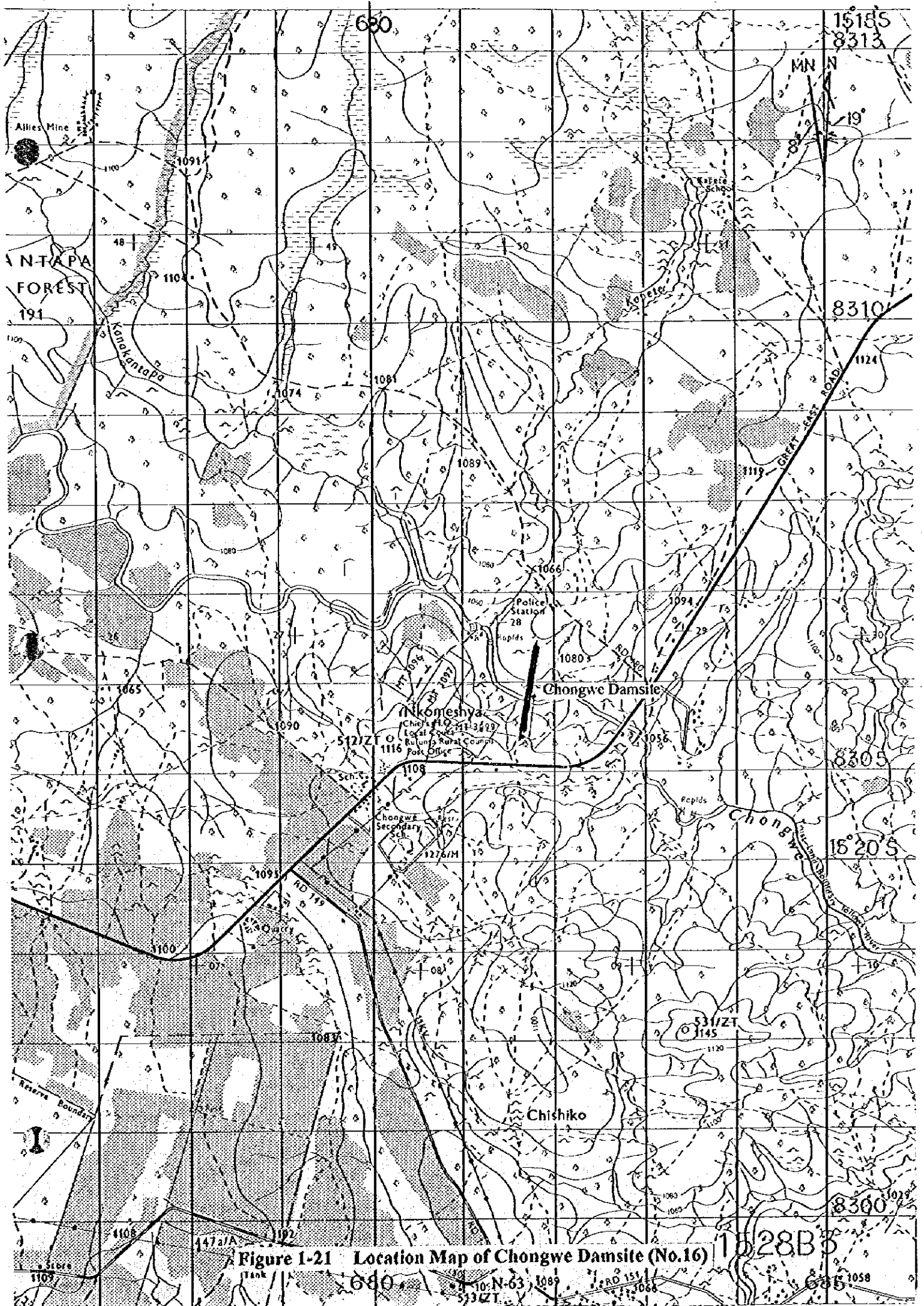
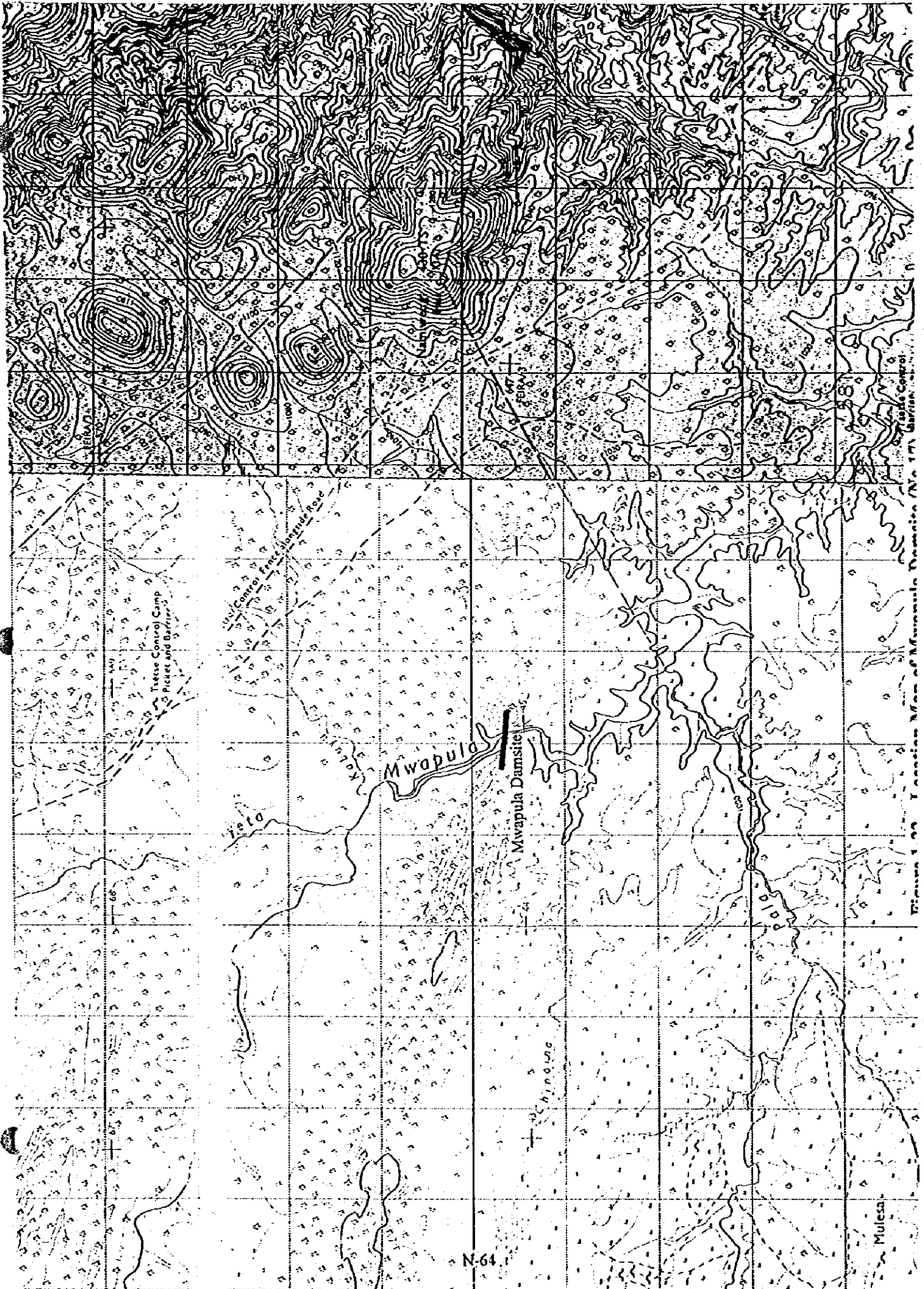


Figure 1-21 Location Map of Chongwe Damsite (No.16)



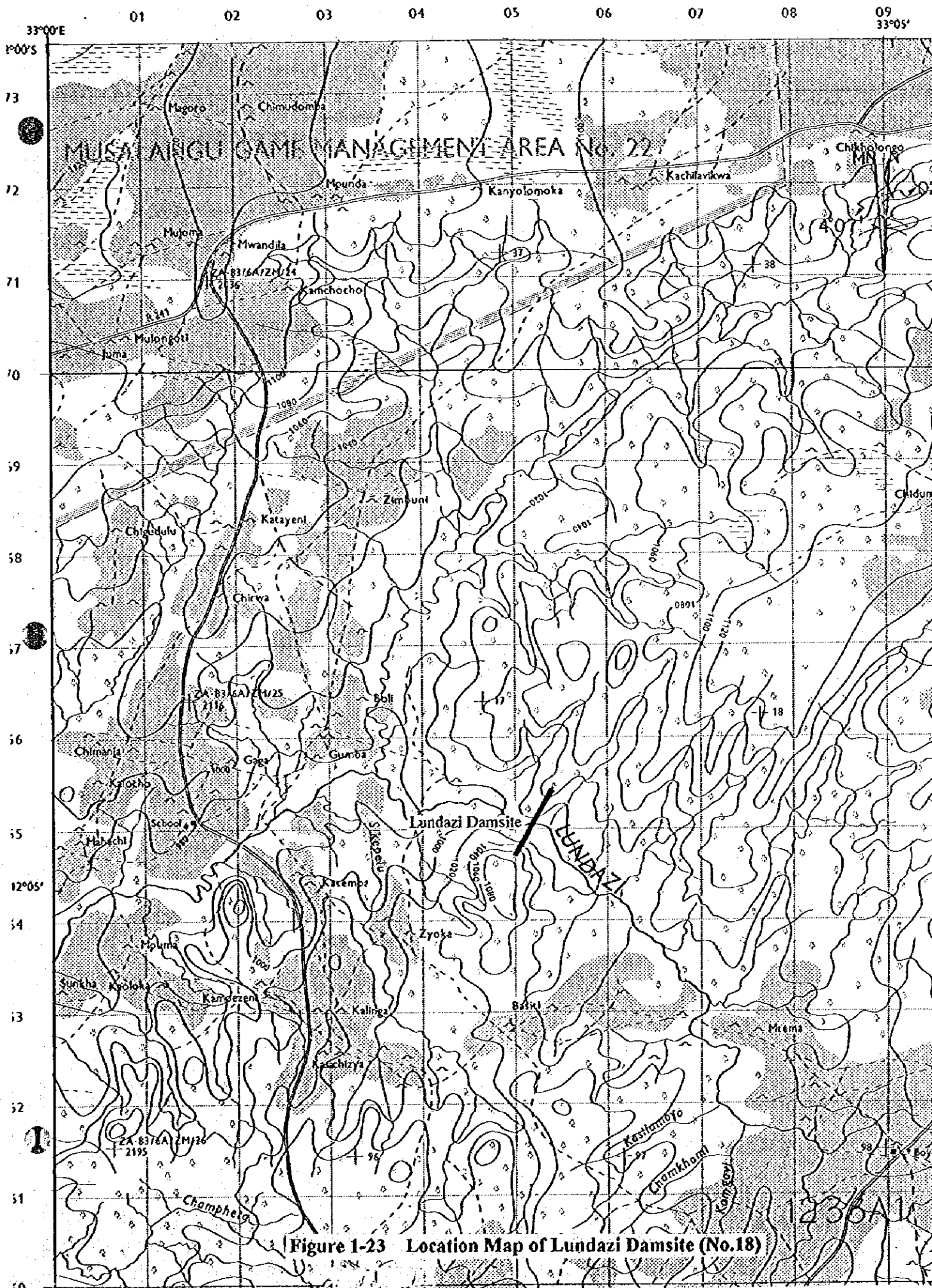


Figure 1-23 Location Map of Lundazi Damsite (No.18)

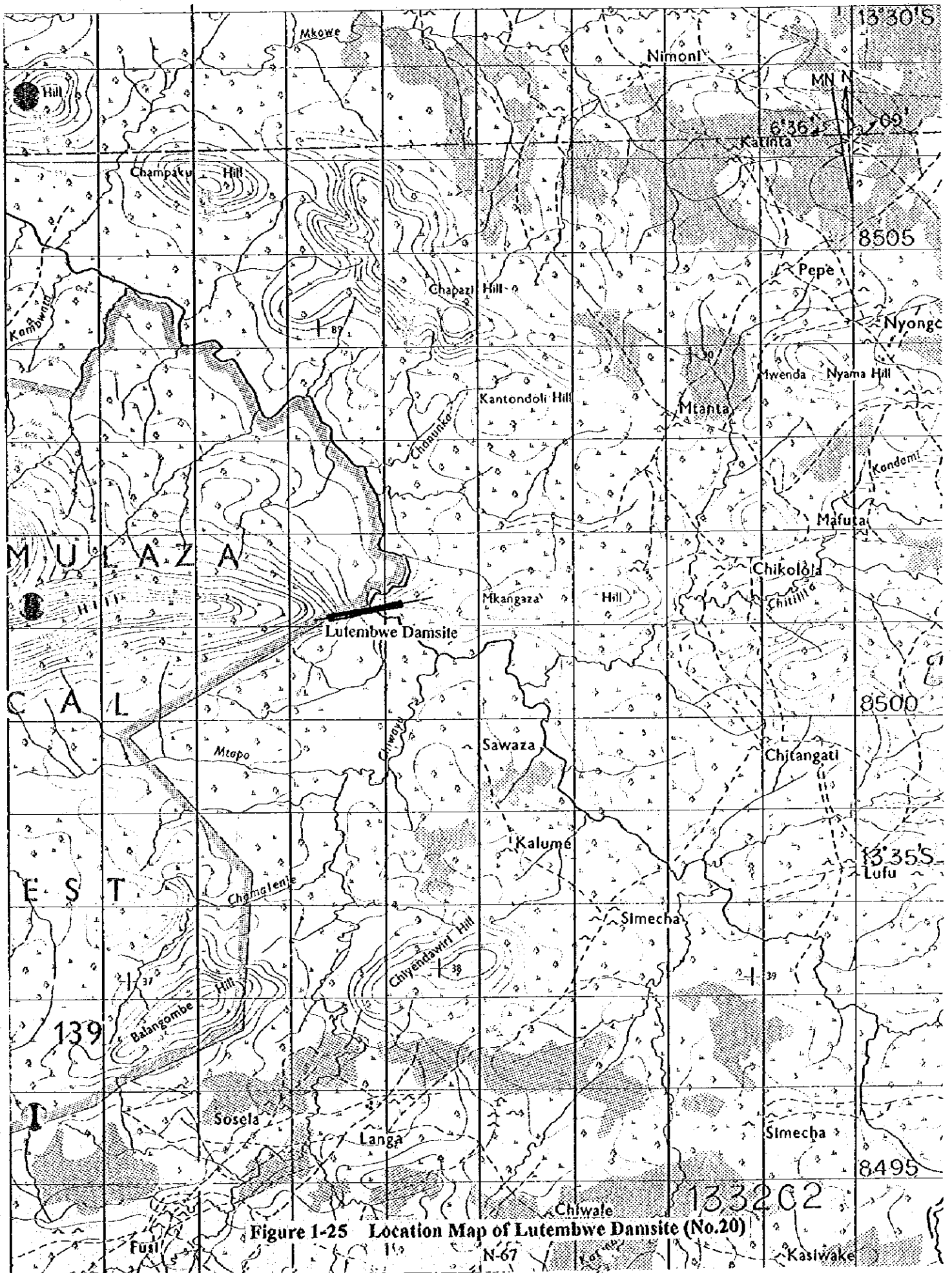


Figure 1-25 Location Map of Lutembwe Damsite (No.20)

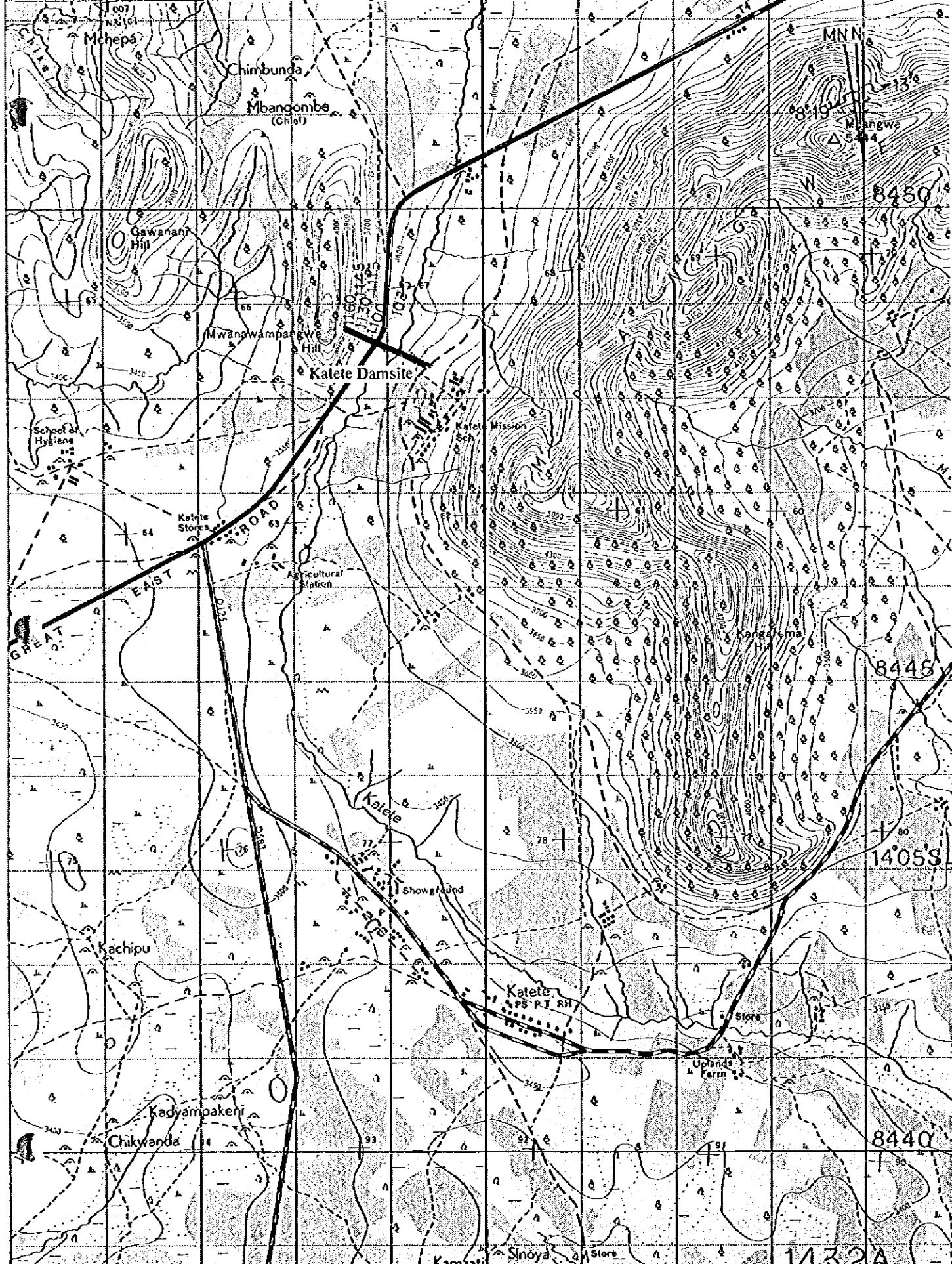


Figure 1-26 Location Map of Katete Damsite (No.21)

1432A

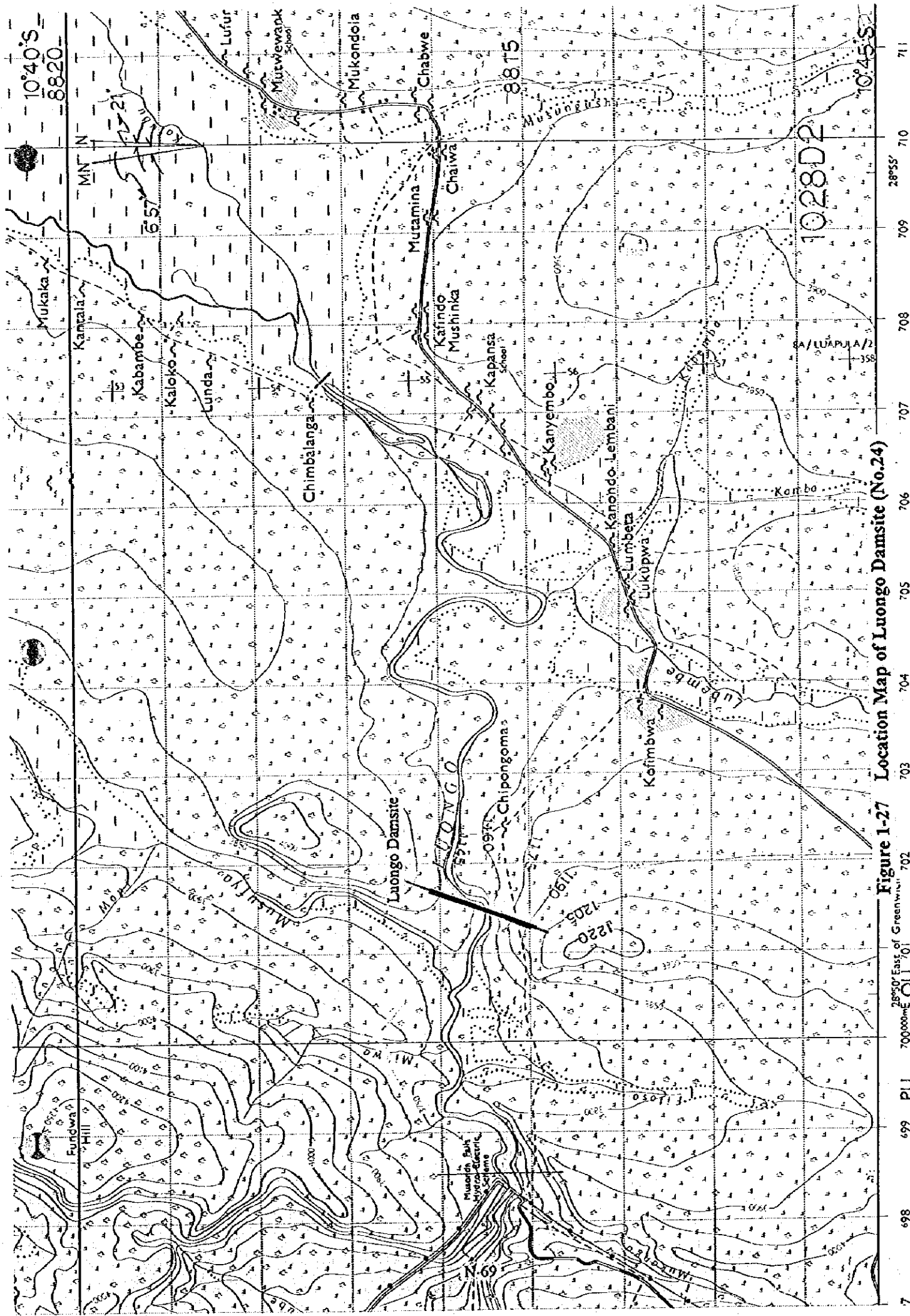


Figure 1-27 Location Map of Luongo Damsite (No. 24)

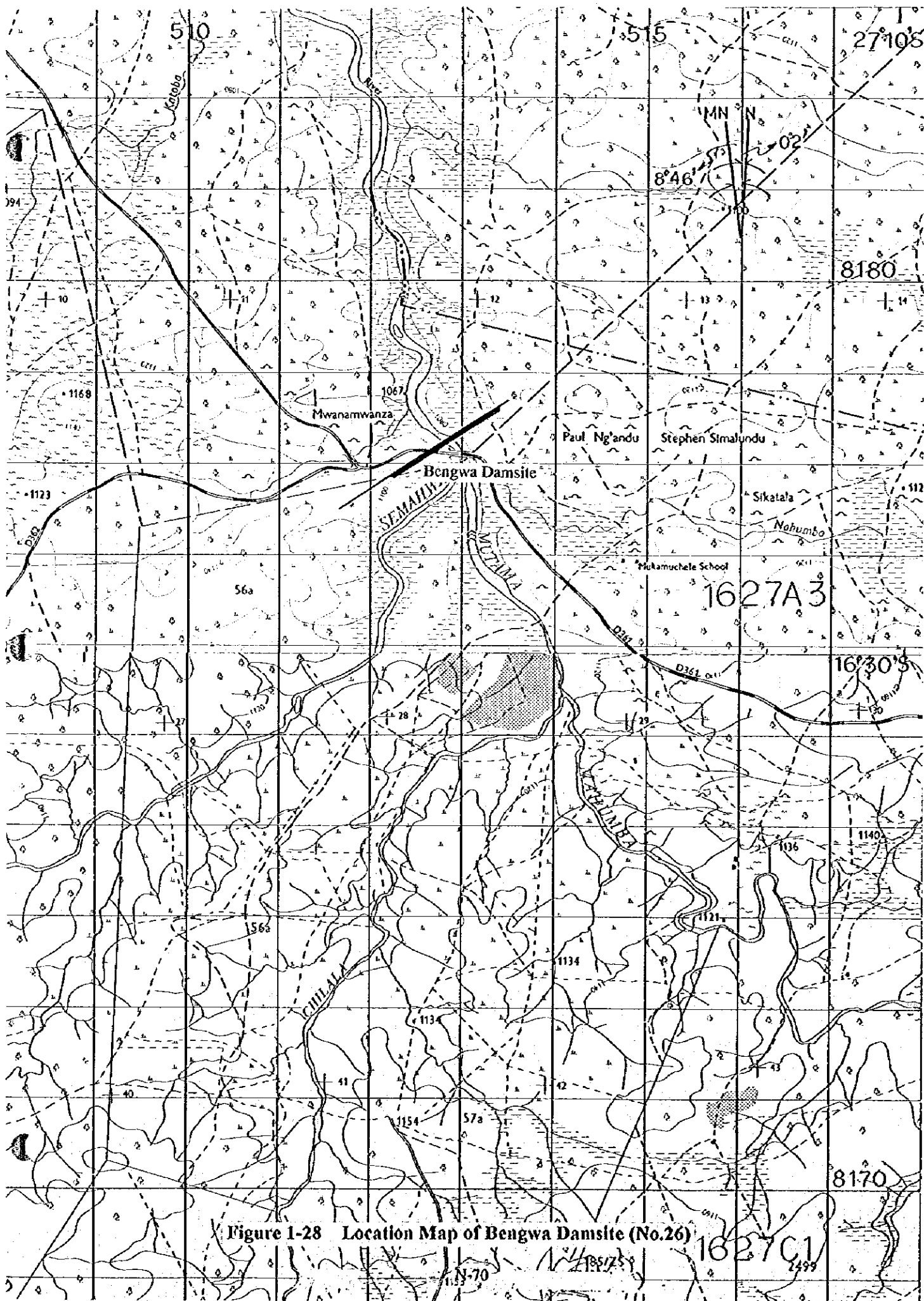


Figure 1-28 Location Map of Bengwa Dam site (No.26)

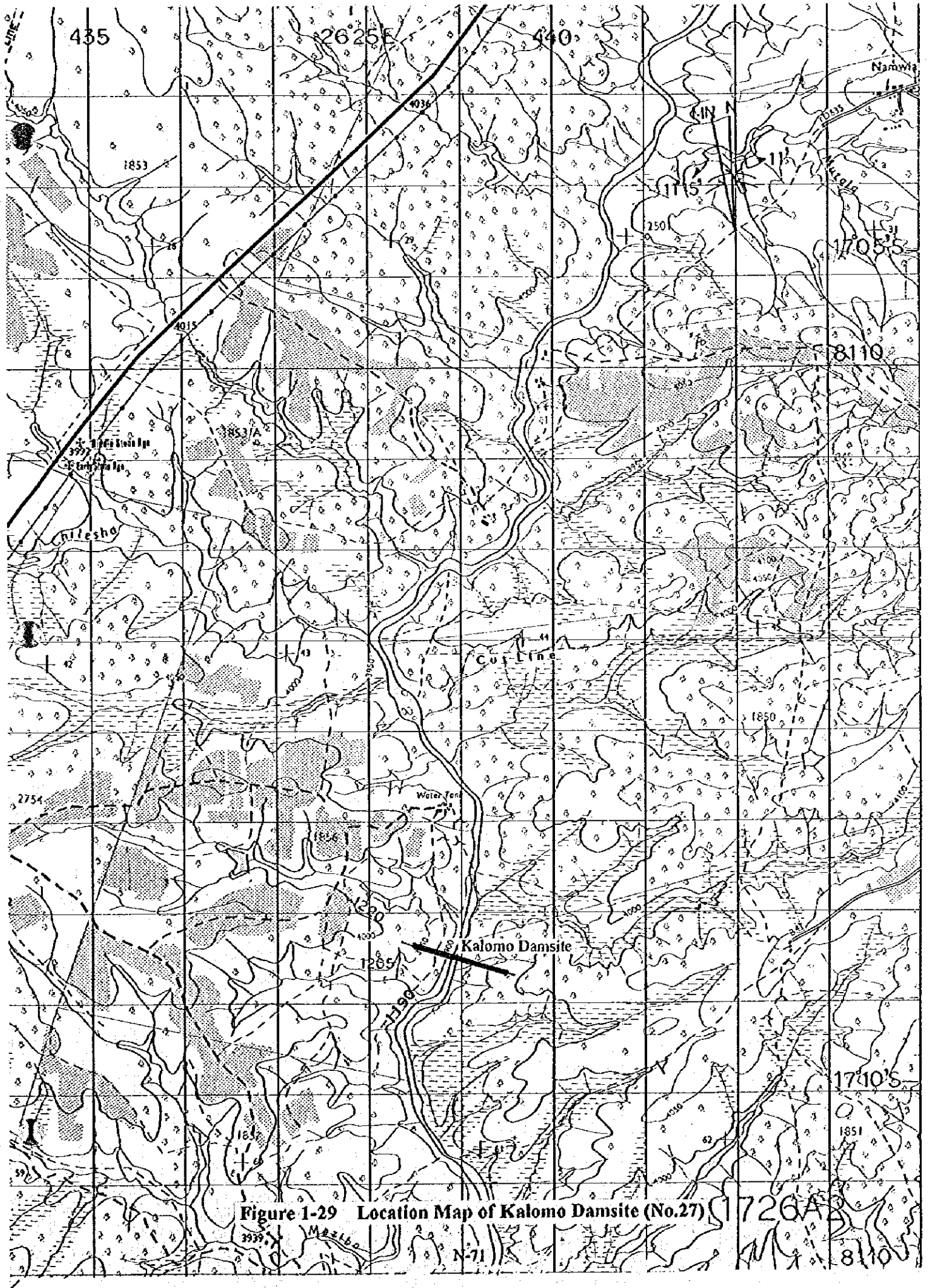


Figure 1-29 Location Map of Kalomo Damsite (No.27)

- LEGEND**
- Quaternary
 - Rd River deposits
 - Alluvium
 - Basement Complex
 - Quartzite } Rufusa Quartzite
 - Mica schist }
 - Biotite Granitic Gneiss } Gneiss Group
 - Igneous Rocks
 - Meta diabase dike
 - Foliation
 - Joint
 - Outcrops of Quartzite
 - Outcrops of Schist
 - Outcrops of Gneiss
 - Outcrops of Meta diabase

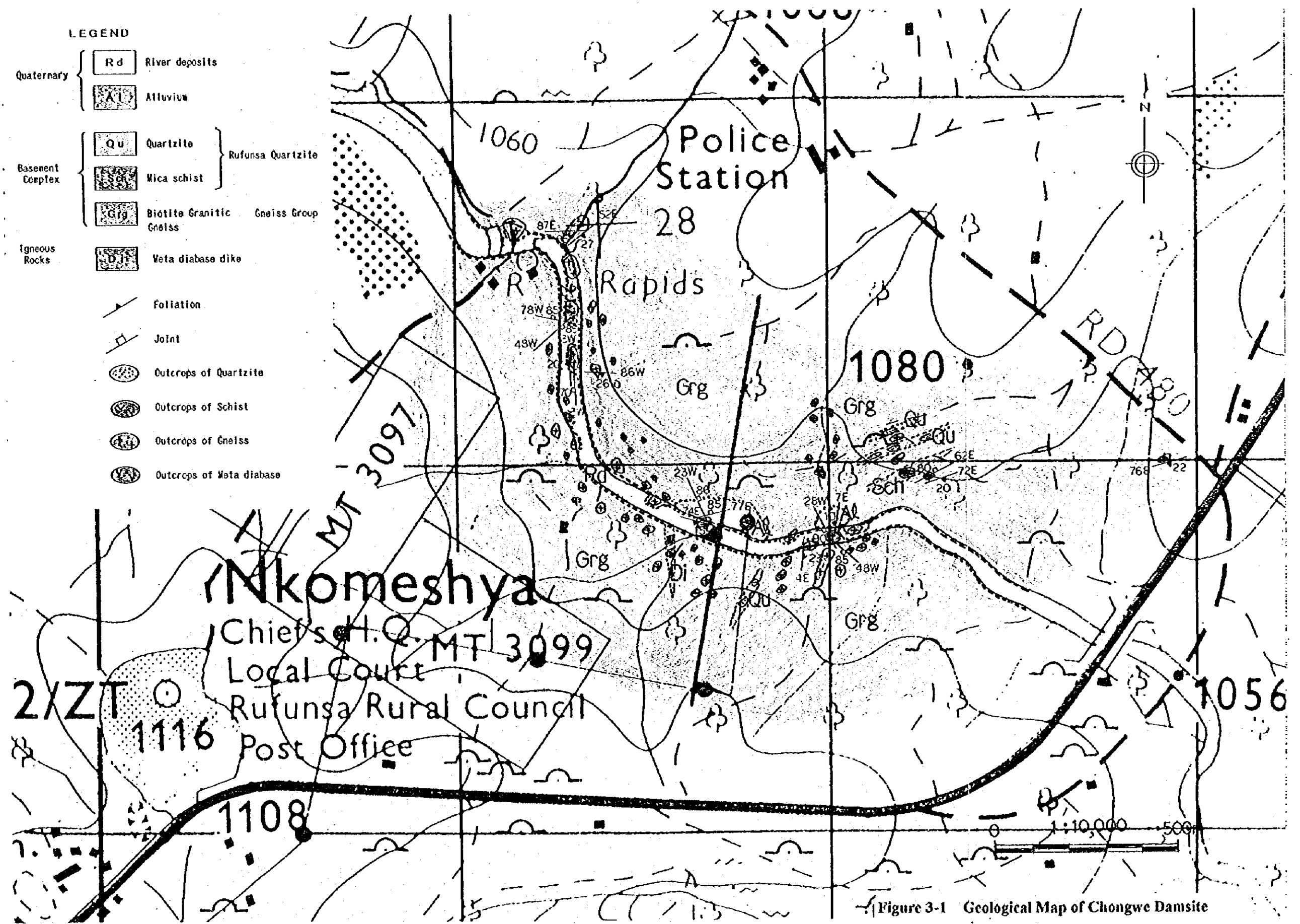
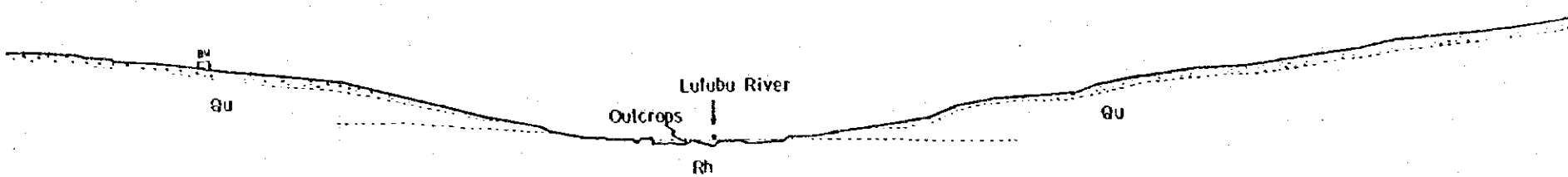


Figure 3-1 Geological Map of Chongwe Damsite

EL(m)

1370
1360
1350
1340
1330
1320
1310
1290
1280
1270
1260
1250
1240

LUFUBU DAMSITE (NO.1)



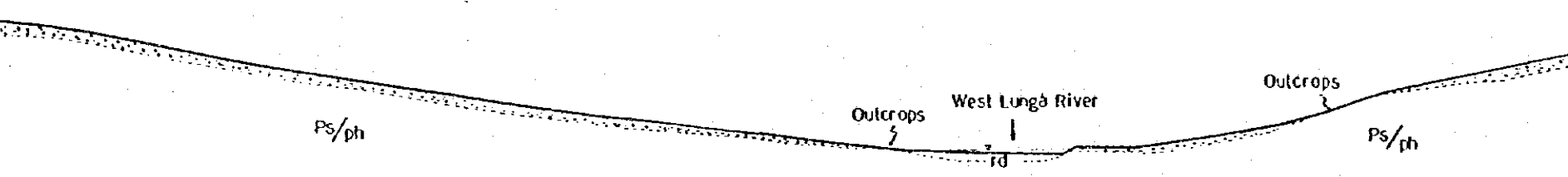
LEGEND

- Muva Super Group Qu Quartzite
- Basement Complex Rh Rhyolitic lava
- Weathered rocks

EL (m)

1400
1390
1380
1370
1360
1350
1340
1330
1320
1310
1300
1290
1280

WEST LUNGA DAMSITE (NO.2)



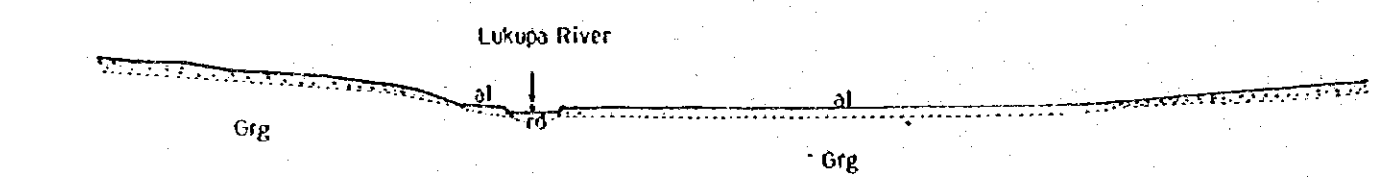
LEGEND

- Quaternary rd River deposite
- Kundelungu Group (Katanga Super Group) Ps/Ph Psammitic schist & Phyllite
- Weathered rocks

EL (m)

1310
1300
1290
1280
1270
1260
1250
1240
1230
1220
1210
1200
1190
1180

LUKUPA DAMSITE (NO.3)



LEGEND

- Quaternary rd River deposite
- Quaternary al Alluvium
- Basement Complex Grg Granitic gneiss
- Weathered rocks

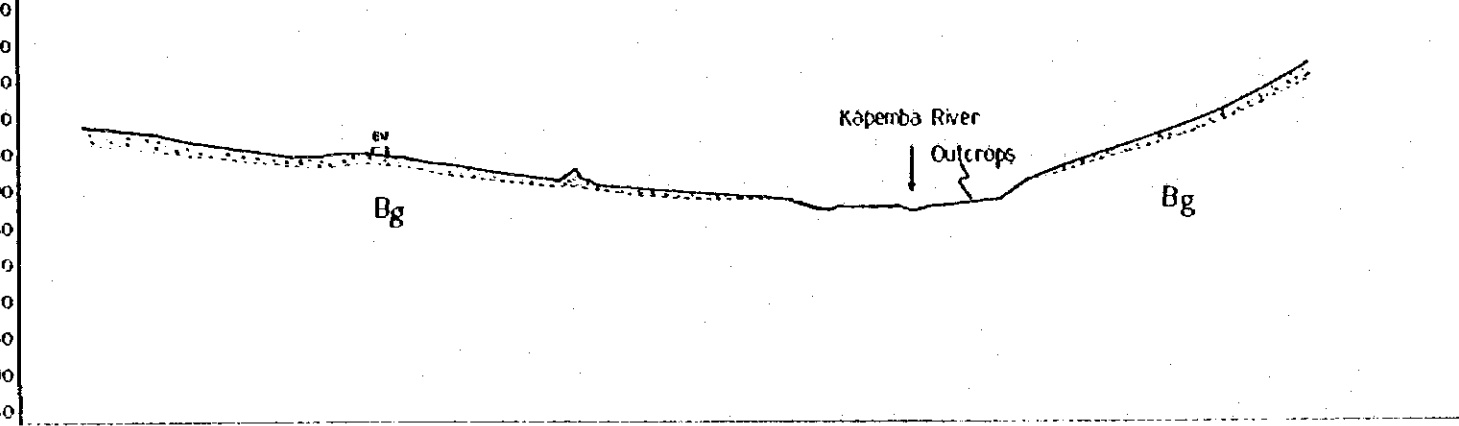


Figure 3-2 Geological Profiles of Lufubu (No.1), West Lunga (No.2), and Lukupa (No.3) Damsites

21

EL (m)
860
850
840
830
820
810
800
790
780
770
760
750
740
730

KAPEMBA DAMSITE (No.4)

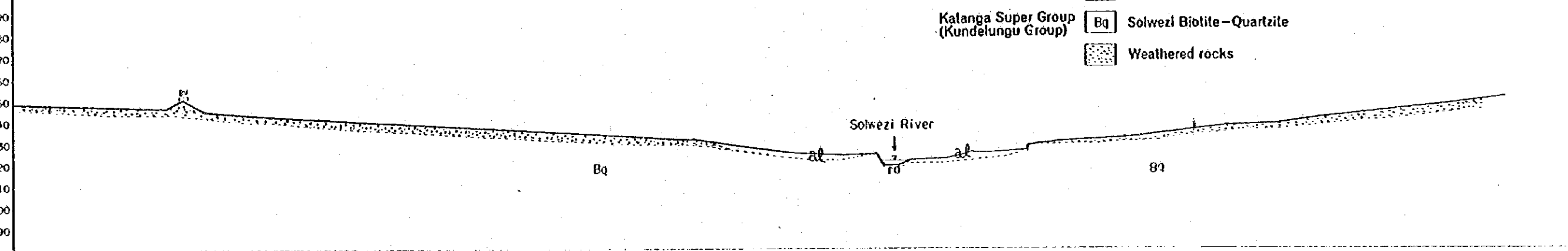


LEGEND

- Basement Complex (Kapemba Group)
- Bg Biotite gneiss
 - Weathered rocks Weathered rocks

EL (m)
1410
1400
1390
1380
1370
1360
1350
1340
1330
1320
1310
1300
1290

SOLWEZI DAMSITE (No.5-1)

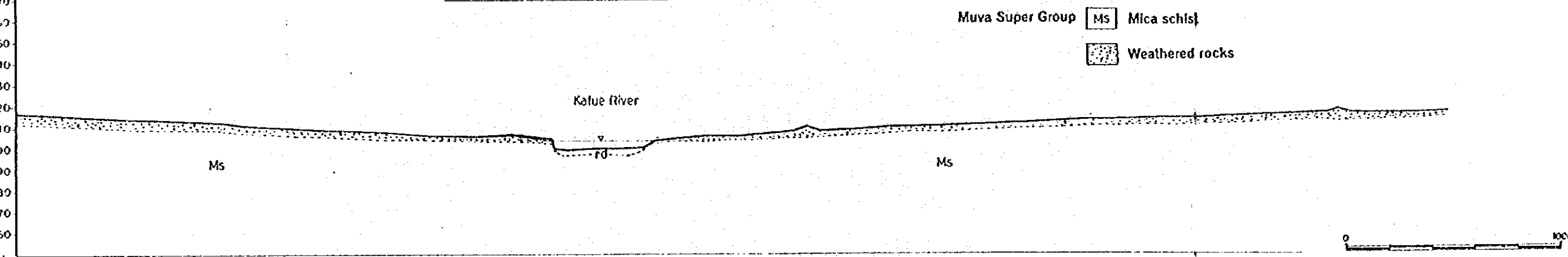


LEGEND

- Quaternary
- rd River deposit
 - al Alluvium
- Kalanga Super Group (Kundelungu Group)
- Bq Solwezi Biotite-Quartzite
 - Weathered rocks Weathered rocks

EL (m)
1180
1170
1160
1150
1140
1130
1120
1110
1100
1090
1080
1070
1060

KAFUE DAMSITE (No.6)



LEGEND

- Quaternary
- rd River deposit
- Muva Super Group
- Ms Mica schist
 - Weathered rocks Weathered rocks

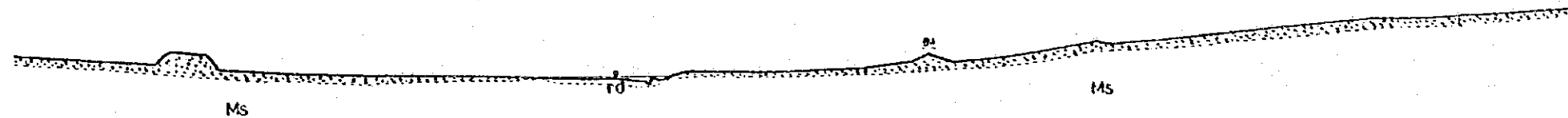


Figure 3-3 Geological Profiles of Kapemba (No.4), Solwezi (No.5-1), and Kafue (No.6) Damsites

78

EL (m)
1250
1240
1230
1220
1210
1200
1190
1180
1170
1160
1150
1140
1130

MUTUNDU DAMSITE (No.7)

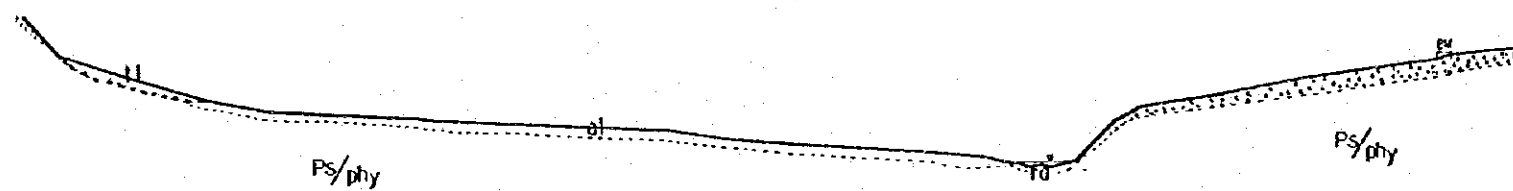


LEGEND

- Quaternary rd River deposit
- Muva Super Group Ms Mica schist
- [stippled] Weathered rocks

EL (m)
1270
1260
1250
1240
1230
1220
1210
1200
1190
1180
1170
1160
1150

LUFUPA [DOWNSTREAM] DAMSITE (No.9-1)

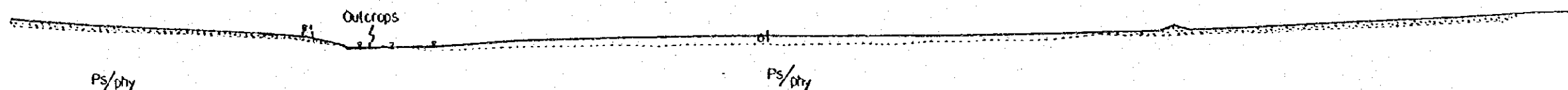


LEGEND

- Quaternary rd River deposit
- Quaternary al Alluvium
- Katanga Super Group (Kundelungu Group) [diagonal lines] Psammilic schist & Phyllite
- [stippled] Weathered rocks

EL (m)
1270
1260
1250
1240
1230
1220
1210
1200
1090
1080
1070
1060
1050

LUFUPA [UPSTREAM] DAMSITE (No.9-2)



LEGEND

- Quaternary al Alluvium
- Katanga Super Group (Kundelungu Group) [diagonal lines] Psammilic schist & Phyllite
- [stippled] Weathered rocks



Figure 3-4 Geological Profiles of Mutundu (No.7), Lufupa [Downstream] (No.9-1), and Lufupa [Upstream] (No.9-2) Damsites

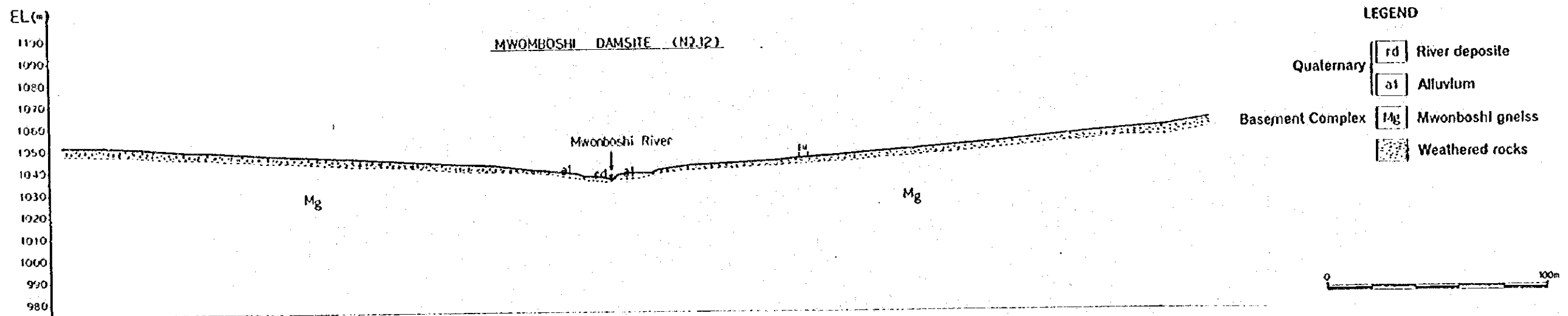
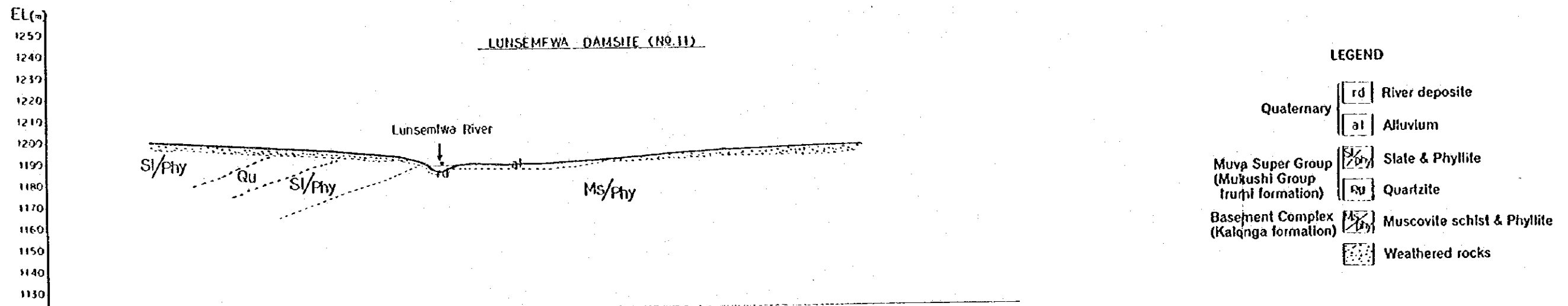
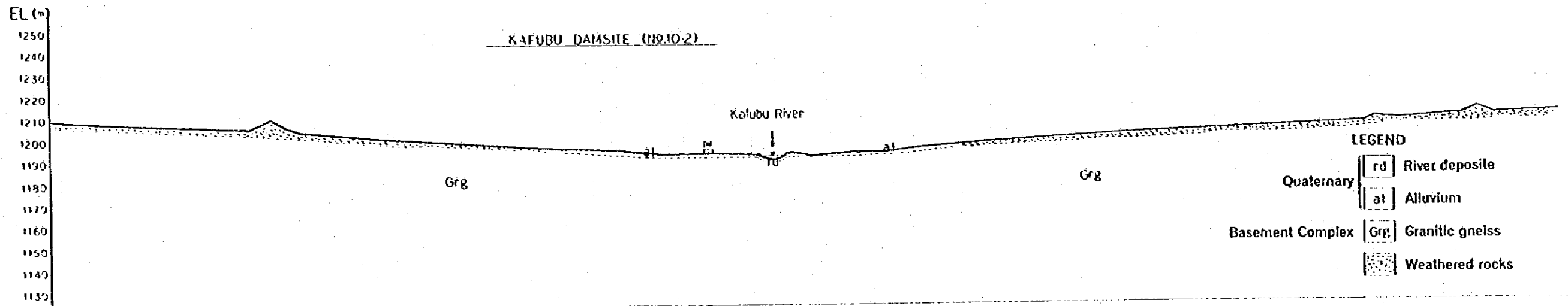


Figure 3-5 Geological Profiles of Kafubu (No.10-2), Lunsemfwa (No.11), and Mwomboshi (No.12) Damsites

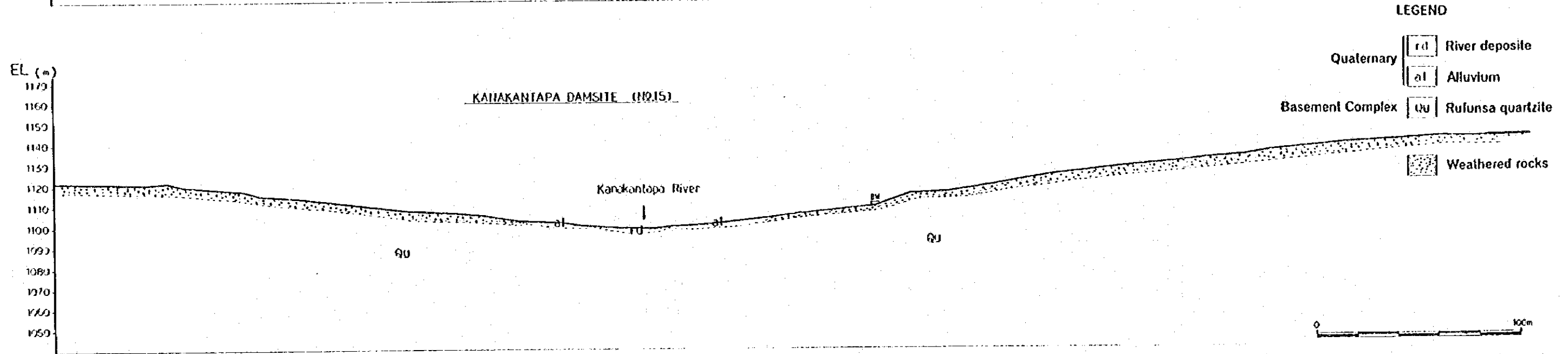
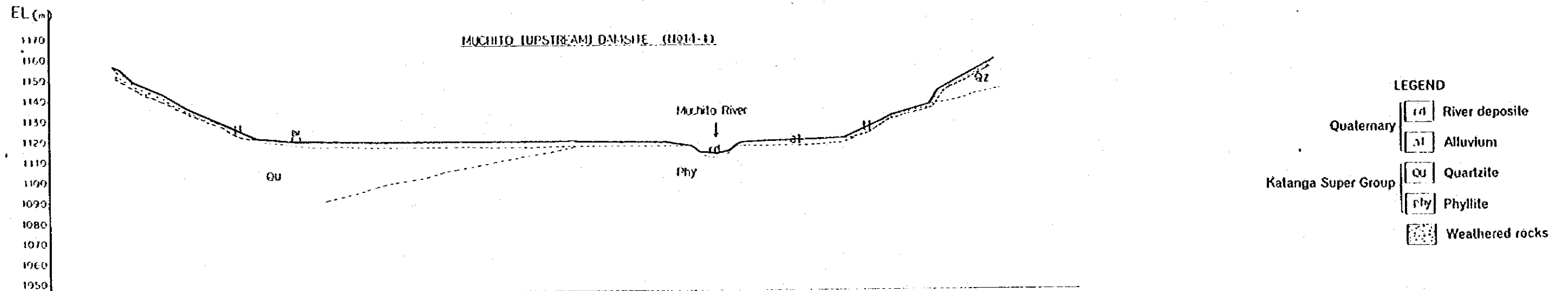
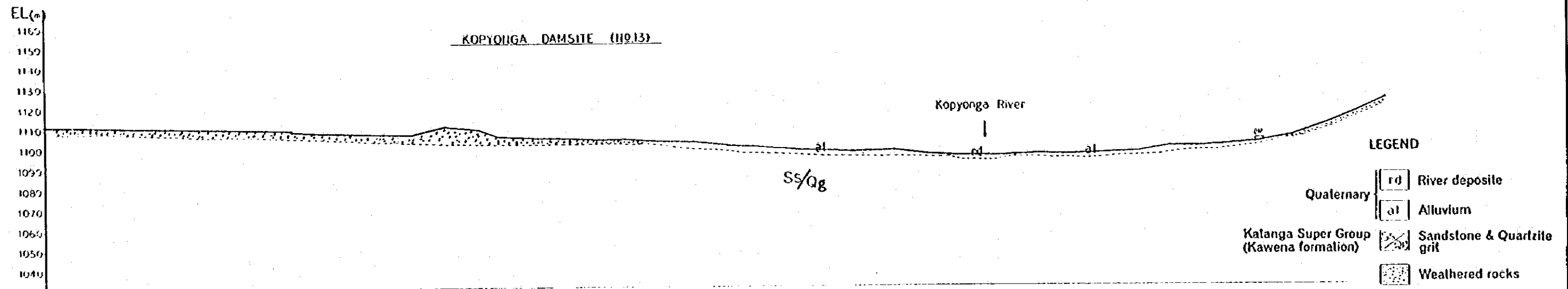


Figure 3-6 Geological Profiles of Kopyonga (No.13), Muchito [Upstream] (No.14-1), and Kanakantapa (No.15) Damsites

EL (m)

1110
1100
1090
1080
1070
1060
1050
1040
1030
1020
1010
1000
990

CHONGWE DAMSITE (No.16)

Chongwe River

Grg

Grg

LEGEND

- Quaternary
 - rd River deposit
 - al Alluvium
- Basement Complex
 - Grg Biotite Granitic gneiss
 - Weathered rocks

EL (m)

1070
1060
1050
1040
1030
1020
1010
1000
990
980
970
960
950

MWAPULA DAMSITE (No.17)

Mwapula River

Outcrops

Outcrops

qu

qu

LEGEND

- Basement Complex
 - qu Rufunsa quartzite
 - Weathered rocks

EL (m)

1380
1370
1360
1350
1340
1330
1320
1310
1300
1290
1280
1270
1260

LUNDAZI DAMSITE (No.18)

Lundazi River

Outcrops

Grg

Grg

LEGEND

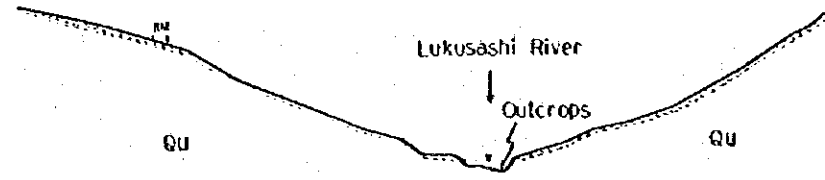
- Basement Complex
 - Grg Granitic gneiss
 - Weathered rocks

0 100m

Figure 3-7 Geological Profiles of Chongwe (No.16), Mwapula (No.17), and Lundazi (No.18) Damsites

EL (m)
1320
1310
1290
1277
1260
1250
1240
1230
1220
1210
1200

LUKUSASHI DAMSITE (No.19)



LEGEND

- Basement Complex
- QU Quartzite
 - Weathered rocks

EL (m)
920
890
880
870
860
840
830
820
810
800
790

LULEMBWE DAMSITE (No.20)

Lulembwe River

QU

QU

LEGEND

- Basement Complex
- QU Quartzite
 - Weathered rocks
- Quaternary
- rd River deposit
 - al Alluvium
 - tr Terrace deposit

EL (m)
1170
1160
1150
1140
1130
1120
1110
1100
1090
1080
1150

KATELE DAMSITE (No.21)

Katete River

QU

Gn

LEGEND

- Quaternary
- rd River deposit
- Basement Complex
- QU Quartzite
 - Gn Gneiss
 - Weathered rocks



Figure 3-8 Geological Profiles of Lukusashi (No.19), Lutembwe (No.20), and Katete (No.21) Damsites

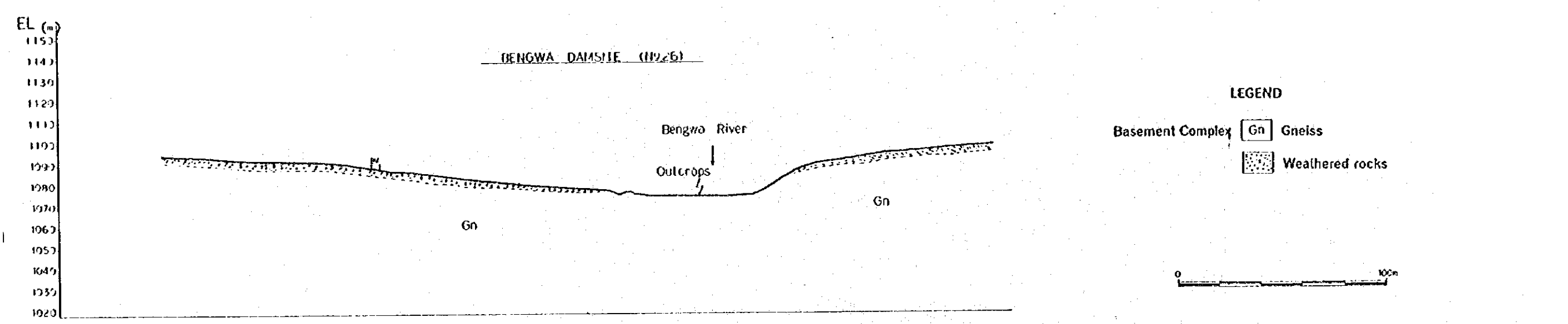
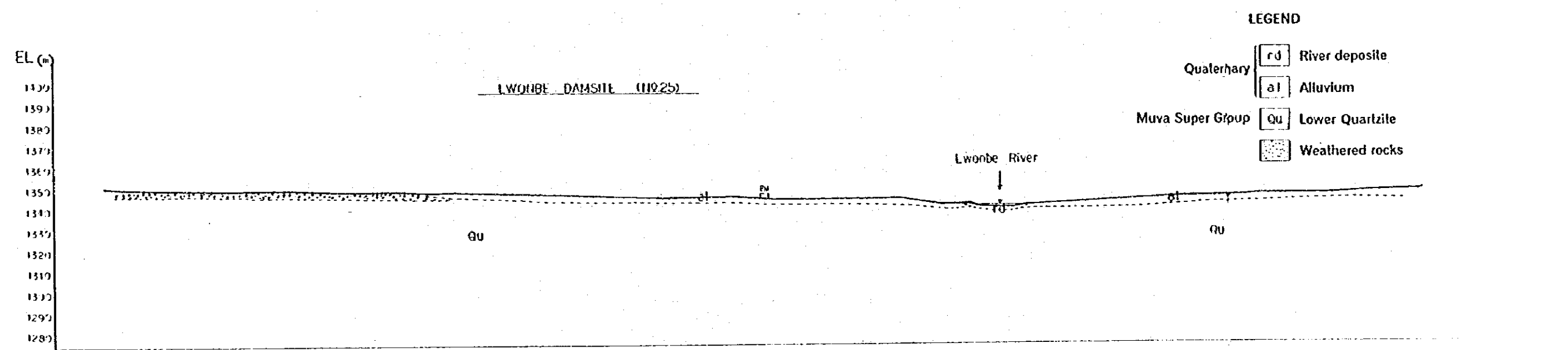
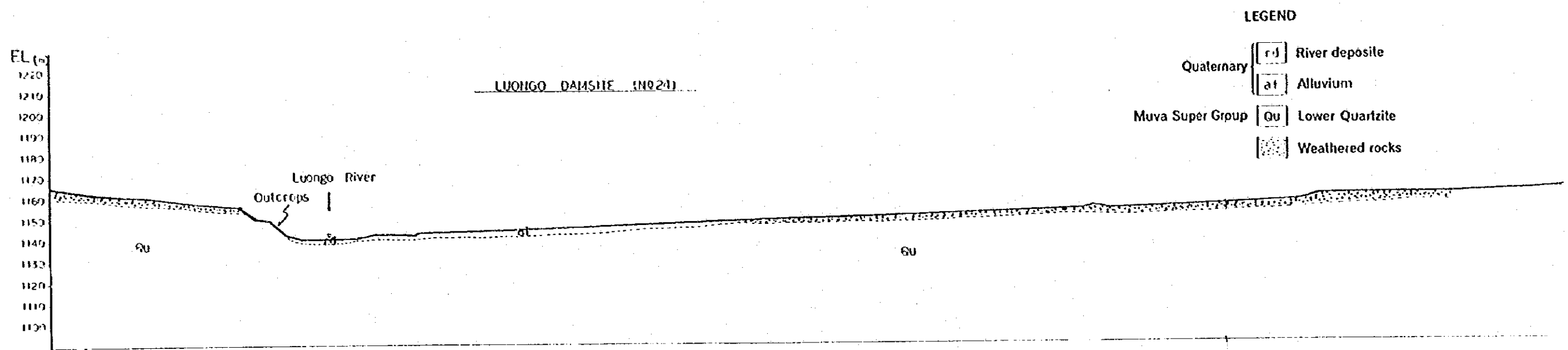


Figure 3-9 Geological Profiles of Luongo (No.24), Lwombe (No.25), and Bengwa (No.26) Damsites

EL (m)
1250
1240
1230
1220
1210
1200
1190
1180
1170
1160
1150
1140
1130

KALOMO DAMSITE (N927)

Kalomo River
↓
Outcrops

Gn

Gn

LEGEND

Basement Complex

Gn

Gneiss

Weathered rocks

0 100m

Figure 3-10 Geological Profiles of Kalomo Damsite (No.27)

57

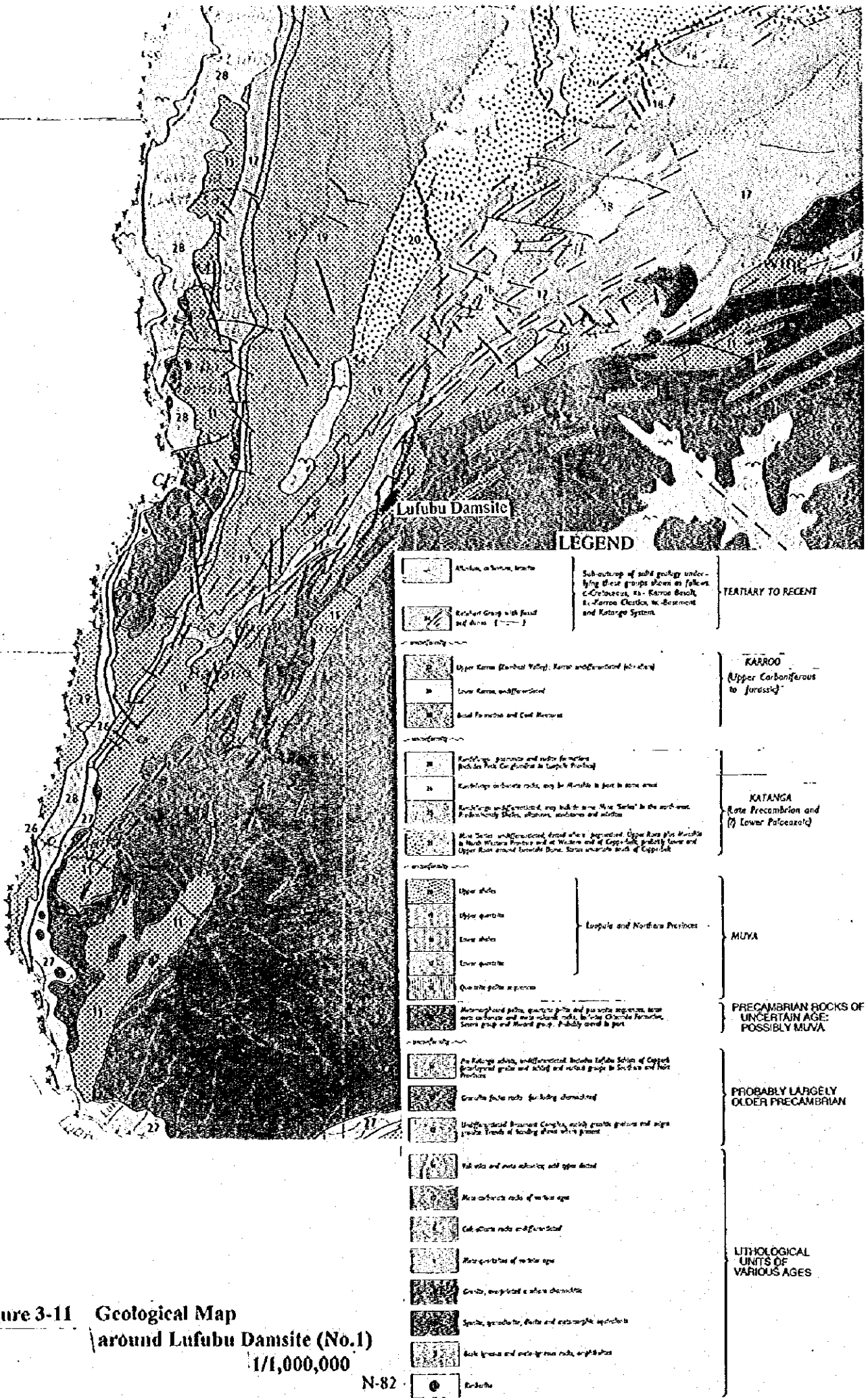


Figure 3-11 Geological Map around Lufubu Dam site (No. 1) 1/1,000,000

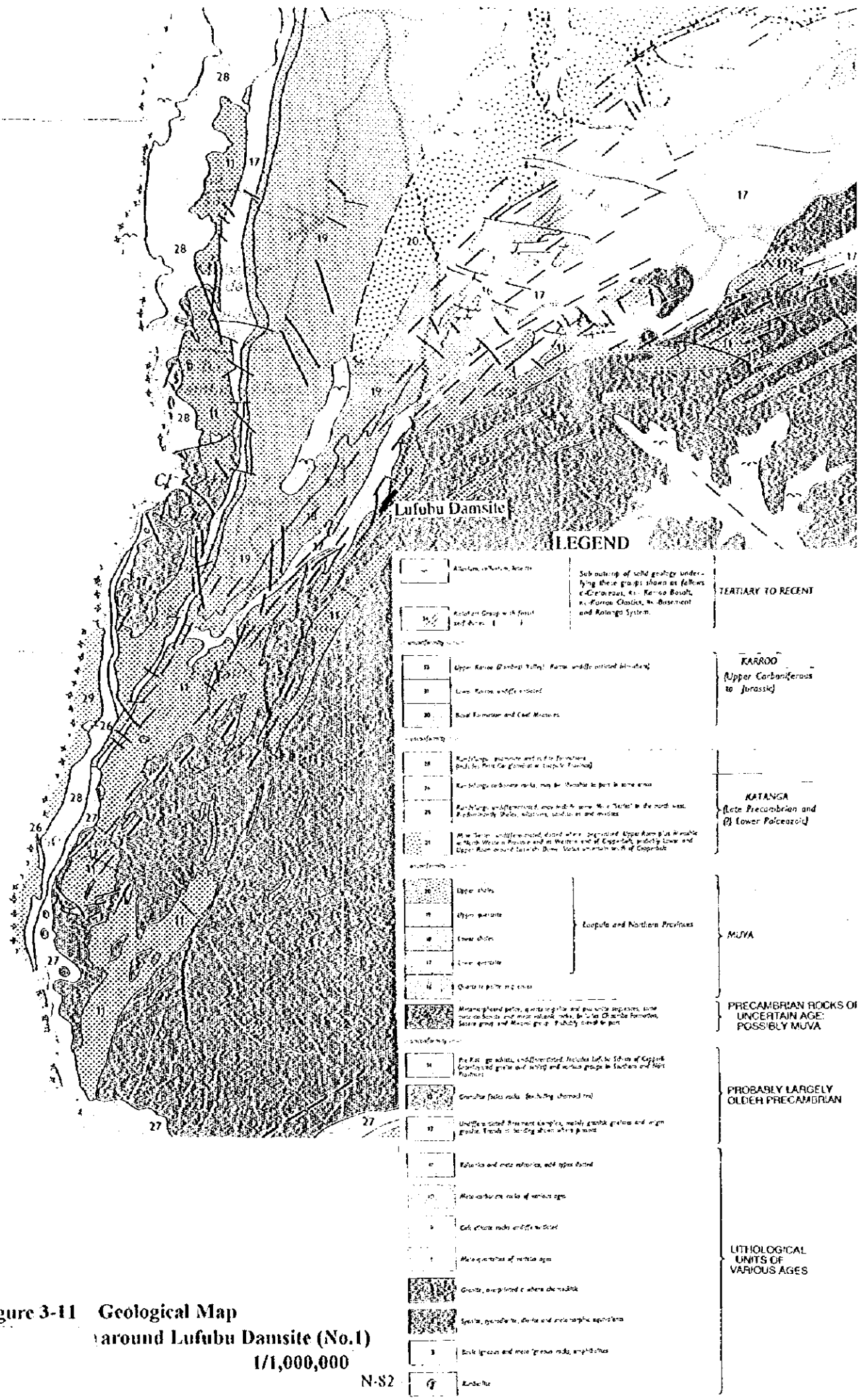


Figure 3-11 Geological Map around Lufubu Damsite (No.1) 1/1,000,000

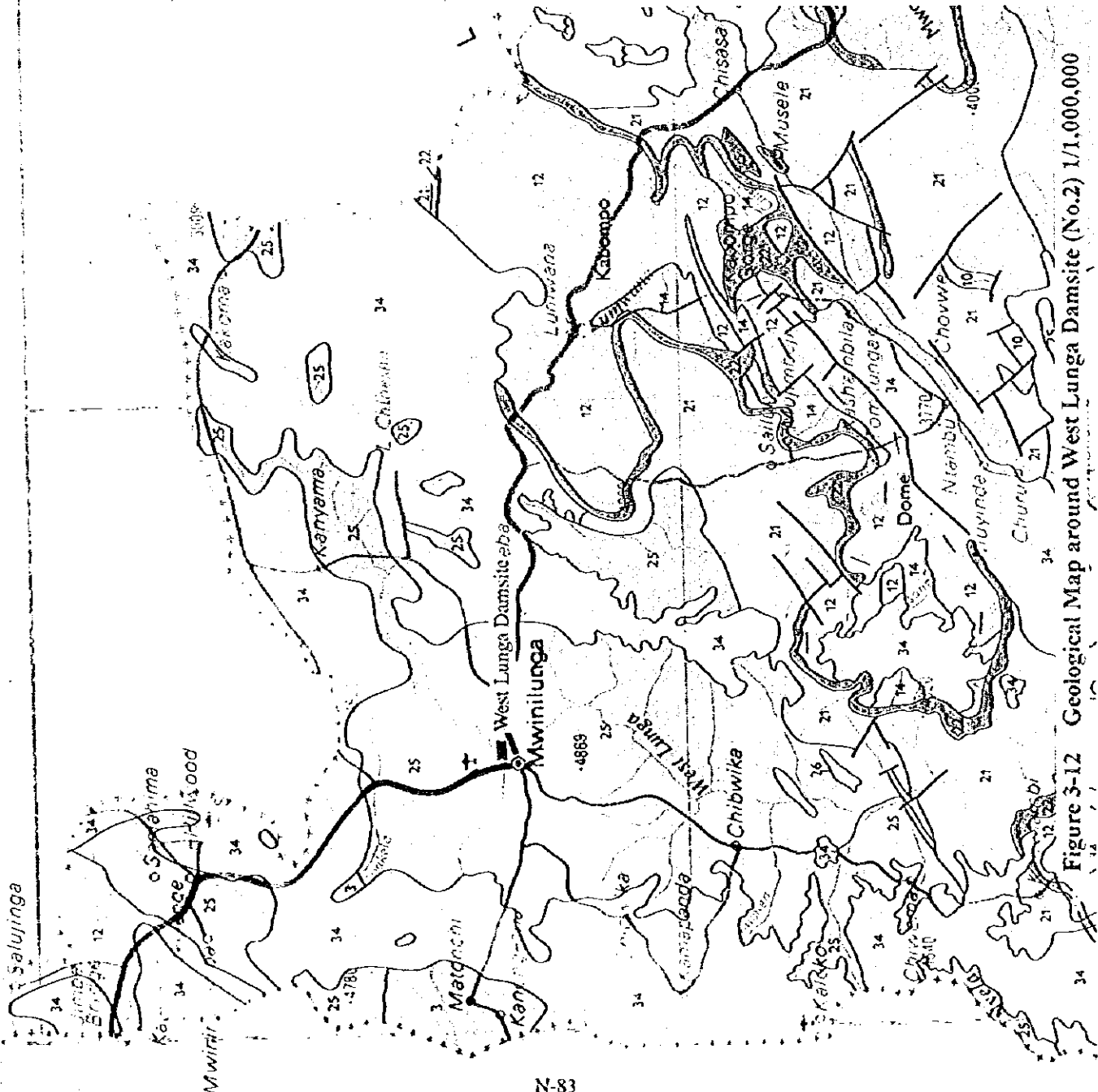


Figure 3-12 Geological Map around West Lunga Damsite (No.2) 1/1,000,000

LEGEND

17	Upper Karoo (Fynbos Valley, Karoo sandstone) (numbers)	Upper Karoo (Fynbos Valley, Karoo sandstone) (numbers)	Subdivision of soil geology underlying these groups shown as follows: C-Cretaceous, K-Karoo Basalt, K-Karoo Quartzite, W-Waamant and Komoje System.
11	Lower Karoo, sandstone	Lower Karoo, sandstone	
10	Old Fynbos and Coal Measures	Old Fynbos and Coal Measures	
18	Quaternary deposits and soils (numbers) (numbers for composition in upper Karoo)	Quaternary deposits and soils (numbers) (numbers for composition in upper Karoo)	
14	Karoo quartzite rocks, may be missing in part in some areas	Karoo quartzite rocks, may be missing in part in some areas	
12	Pre-Karoo sandstone, may include some also 'lower' in the Karoo	Pre-Karoo sandstone, may include some also 'lower' in the Karoo	
19	Upper Karoo sandstone, may include some also 'lower' in the Karoo	Upper Karoo sandstone, may include some also 'lower' in the Karoo	
21	Upper Karoo sandstone, may include some also 'lower' in the Karoo	Upper Karoo sandstone, may include some also 'lower' in the Karoo	
12	Upper Karoo sandstone, may include some also 'lower' in the Karoo	Upper Karoo sandstone, may include some also 'lower' in the Karoo	
14	Upper Karoo sandstone, may include some also 'lower' in the Karoo	Upper Karoo sandstone, may include some also 'lower' in the Karoo	
17	Upper Karoo sandstone, may include some also 'lower' in the Karoo	Upper Karoo sandstone, may include some also 'lower' in the Karoo	
18	Upper Karoo sandstone, may include some also 'lower' in the Karoo	Upper Karoo sandstone, may include some also 'lower' in the Karoo	
19	Upper Karoo sandstone, may include some also 'lower' in the Karoo	Upper Karoo sandstone, may include some also 'lower' in the Karoo	
21	Upper Karoo sandstone, may include some also 'lower' in the Karoo	Upper Karoo sandstone, may include some also 'lower' in the Karoo	
25	Upper Karoo sandstone, may include some also 'lower' in the Karoo	Upper Karoo sandstone, may include some also 'lower' in the Karoo	
34	Upper Karoo sandstone, may include some also 'lower' in the Karoo	Upper Karoo sandstone, may include some also 'lower' in the Karoo	

TERTIARY TO RECENT

KAROO
(Upper Carboniferous to Jurassic)

KATANGA
(Late Precambrian and (?) Lower Palaeozoic)

MUYA

PRECAMBRIAN ROCKS OF UNCERTAIN AGE: POSSIBLY MUYA

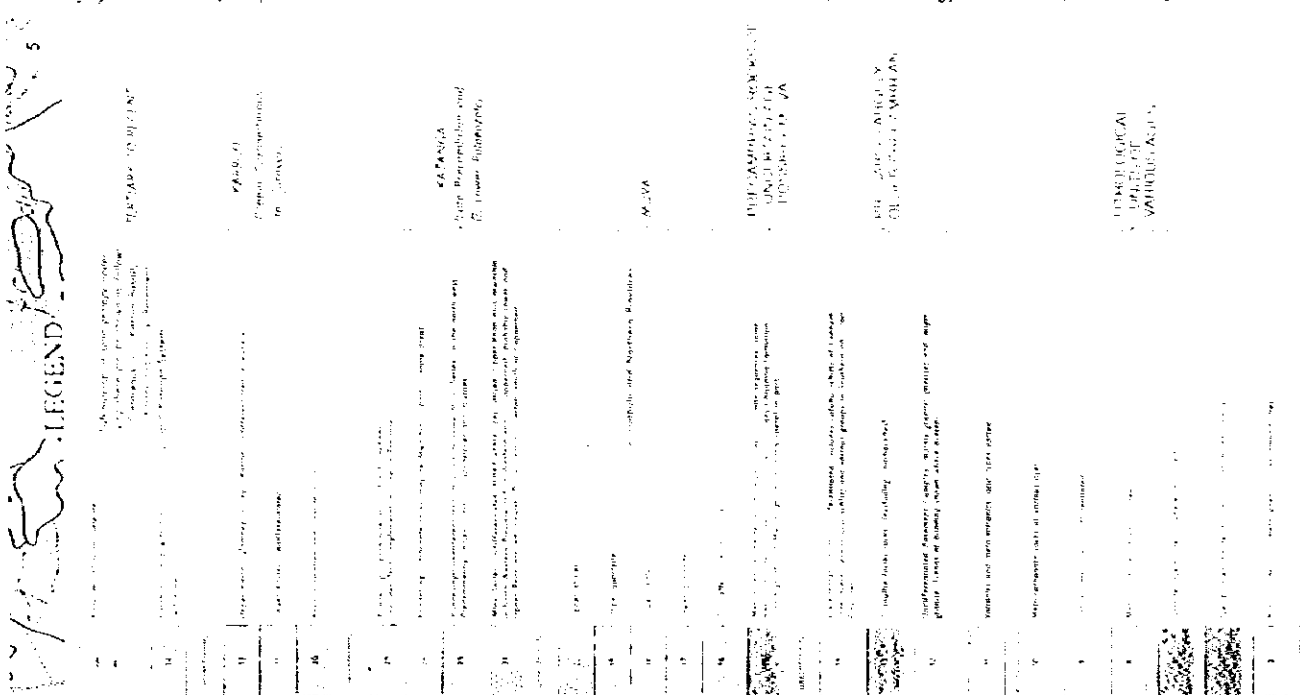
PROBABLY LARGELY OLDER PRECAMBRIAN

LITHOLOGICAL UNITS OF VARIOUS AGES



Figure 3-13 Geological Map around Lukupa Damsite (No.3) and Lwombe Damsite (No.25)

1/1,000,000



N

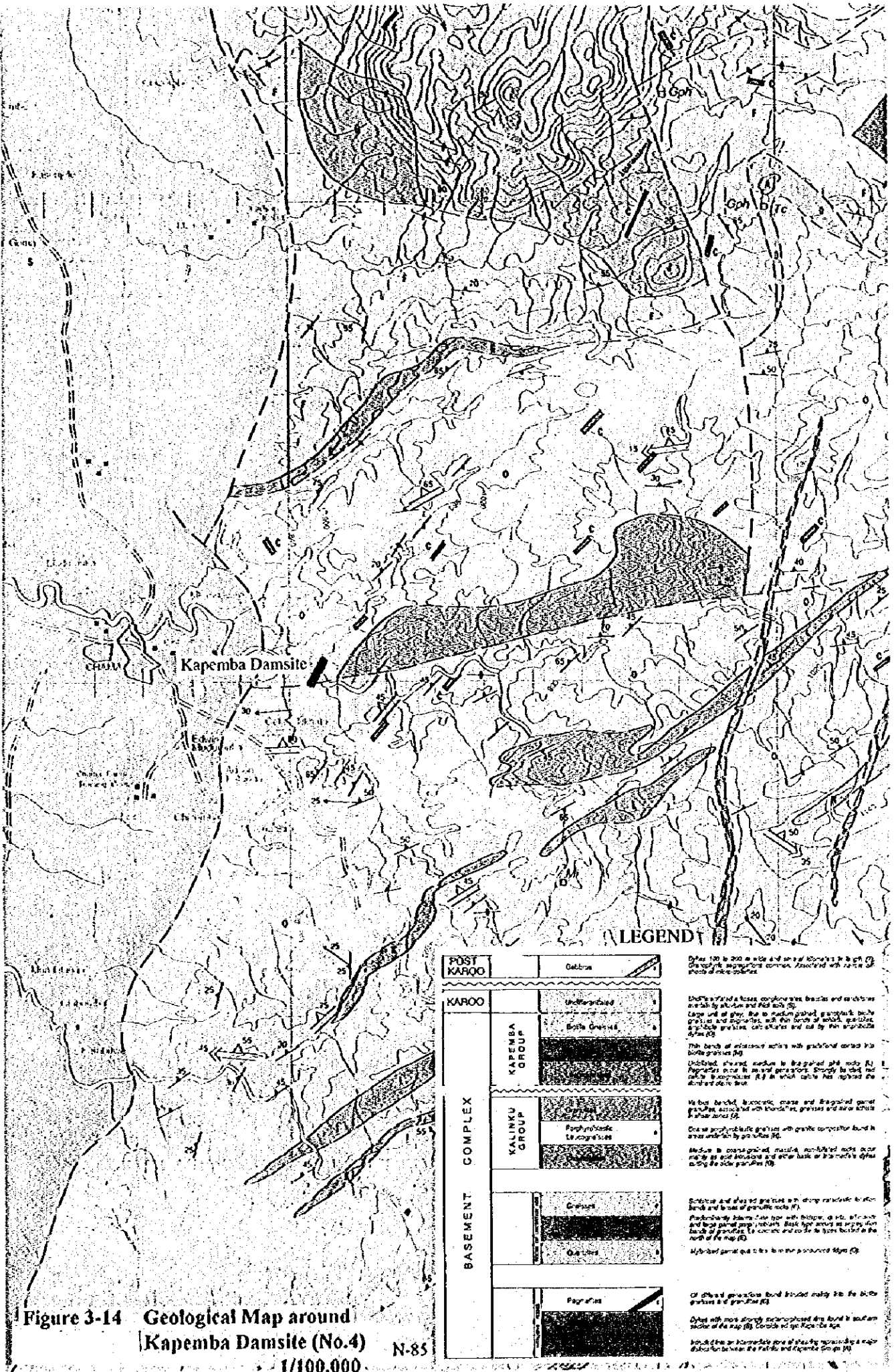


Figure 3-14 Geological Map around Kapemba Damsite (No. 4) 1/100,000

N-85

BASEMENT COMPLEX	POST KAROO	Gabbro	Diabase 100 to 200 m wide and one of 100m's in length. Gabbroic megacrysts common. Associated with rare 50 m wide dykes.
	KAROO	Kapekape	Diabase and a lesser conglomerate breccias and sandstones overlain by siltstone and fine sand (1).
		Botha Group	Large unit of grey, fine to medium grained, granitic, basic gneisses and amphibolites. Fine beds of quartz, gneisses, amphibole gneisses, calc-silicates and cut by thin amphibole dykes (2).
	KALINKU GROUP	Amphibolite	This band of amphibolite occurs with gabbro and is cut by both gneisses (3).
		Porphyroblastic gneiss	Unfoliated, coarse, medium to large grained gabbro (4). Porphyroblasts in several generations. Strongly leached and calcite inclusions (5) in which calcite has replaced the amphibolite (6).
	BASEMENT COMPLEX	Gabbro	Medium to coarse grained, massive, non-foliated rocks occur mainly as size anomalies and other blocks in the matrix of dykes cutting the older gneisses (7).
		Granite	Schistose and shaly gneisses with strong metamorphic textures and bands of granitic rocks (8).
		Quartzite	Preferentially tabular, fine to medium grained, siliceous and locally porous rocks. Basic dykes occur in large numbers of granites. The contact and coe de type faulted in the north of the map (9).
		Pegmatite	Hydrothermal pegmatite veins in the gabbro (10).
			Pegmatite
			Dikes with more strongly metamorphosed fine grained and coarse grained (12). Contact with the Karoo (13).
			Isolated fine to medium grained gneisses and amphibolite dykes (14).

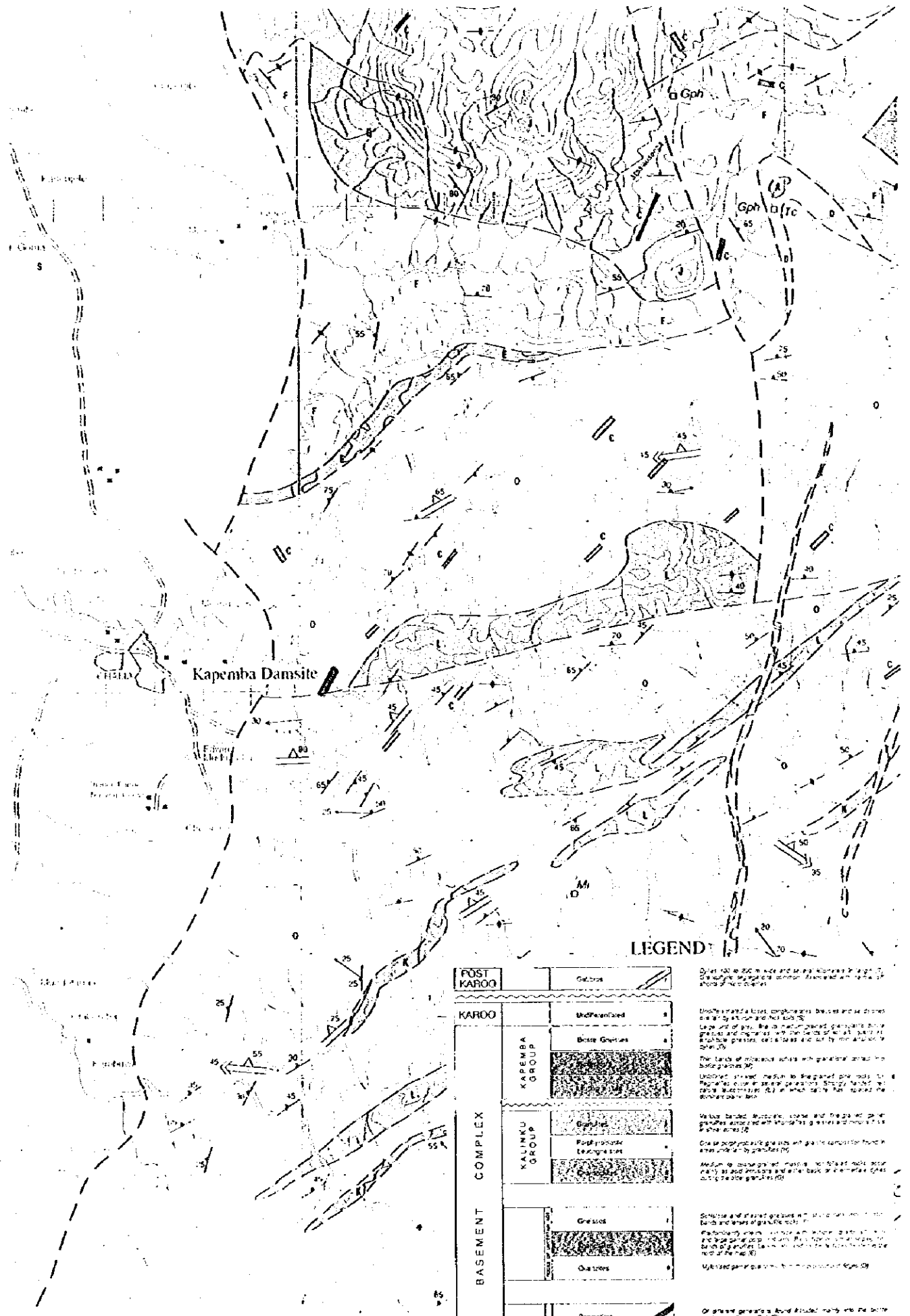


Figure 3-14 Geological Map around Kapemba Damsite (No.4)
 1/100,000

N-85

BASEMENT COMPLEX	POST KAROO	Caliche	
	KAROO	Unconsolidated	3
		Besse Gneiss	4
	KAPEMBA GROUP	Gneiss	5
		Granulites	6
	KALINJU GROUP	Granulites	7
		Gneiss	8
		Gneiss	9
		Quartzites	10
		Pegmatites	11

LEGEND

Over 100 to 200 m wide and local exposure in high ground, mostly in the northern sector, bounded on the N and E by the Karoo.

These are a few conglomerates, boulders and clasts of granite and gneiss, with thin layers of sandstone and shale. They are not consolidated, and are not cemented.

The beds of Besse gneiss with granitic veins and dykes, and are not consolidated. They are not cemented, and are not consolidated.

Vertical banded, massive, coarse and fine grained, granitic gneiss, with thin layers of sandstone and shale. They are not consolidated, and are not cemented.

One or two thin layers of sandstone, with granitic veins and dykes, and are not consolidated.

Medium to coarse grained, massive, ortho- and para- gneiss, with thin layers of sandstone and shale. They are not consolidated, and are not cemented.

Some are a few thin layers of sandstone, with thin layers of sandstone and shale. They are not consolidated, and are not cemented.

The boundary between the Besse gneiss and the Kalinju gneiss is marked by a thin layer of sandstone, with thin layers of sandstone and shale. They are not consolidated, and are not cemented.

Unconsolidated granitic gneiss, with thin layers of sandstone and shale. They are not consolidated, and are not cemented.

Of these granitic gneiss, some are a few thin layers of sandstone, with thin layers of sandstone and shale. They are not consolidated, and are not cemented.

Dikes with fine grained, ortho- and para- gneiss, with thin layers of sandstone and shale. They are not consolidated, and are not cemented.

Some are a few thin layers of sandstone, with thin layers of sandstone and shale. They are not consolidated, and are not cemented.

