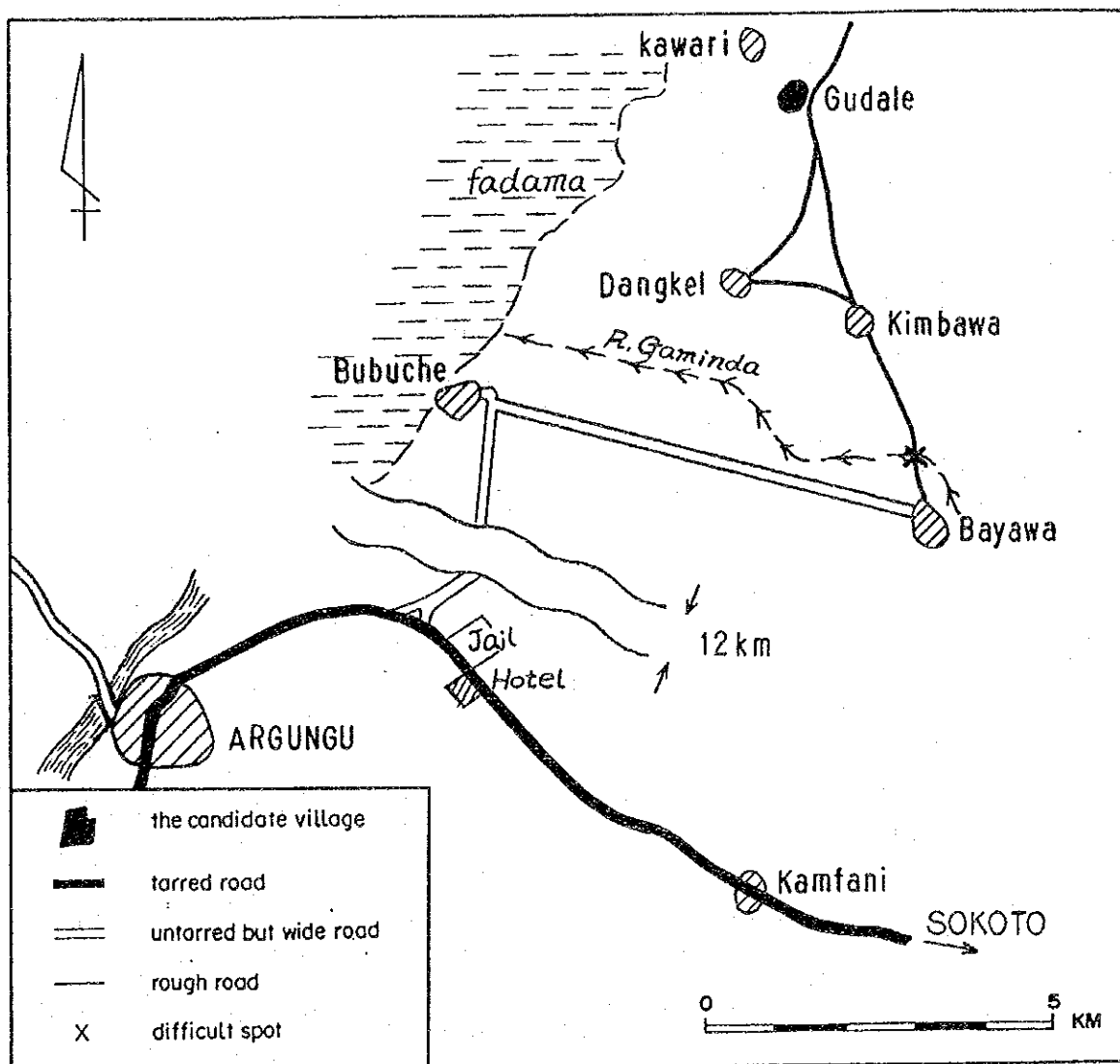


The Study for Groundwater Development in Sokoto State

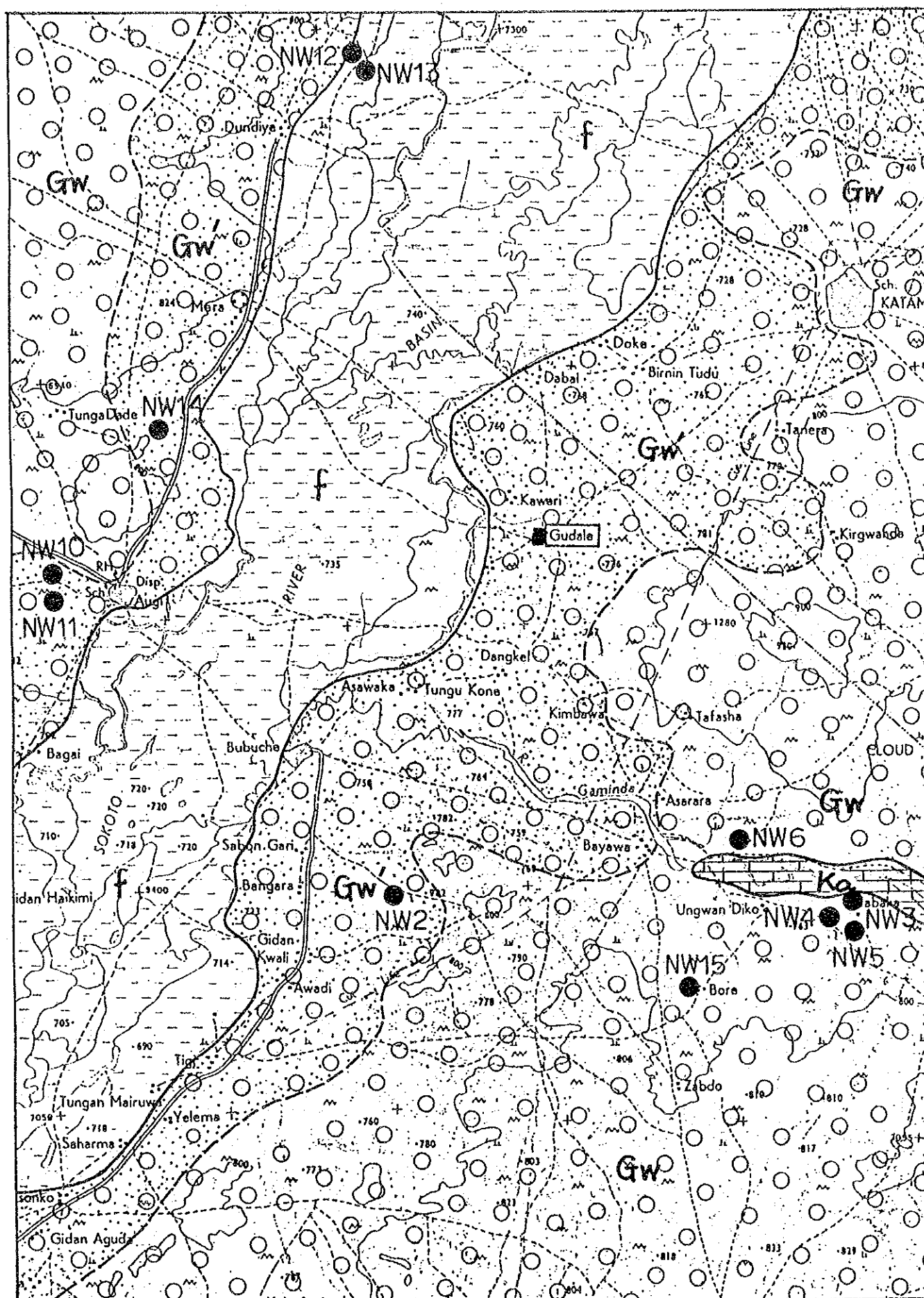
VILLAGE : Gudale

Village No. 25



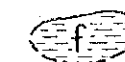
LOCATION MAP

(1/100,000 Sheet 28)

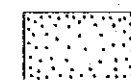


GEOLOGICAL MAP

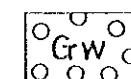
Gudale



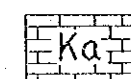
Fadama



Eroded and
Recovered with Sand



Gwandu Formation



Kalambaina Formation



SW 16

Existing Boreholes

DATA OF EXISTING BOREHOLES

Borehole No.	Depth(m)	SWL(m)	SC.(m ³ /d/m)
NW 2	60.0	11.30	130.91
NW 3	26.0	6.43	205.71
NW 4	23.0	7.56	216.00
NW 5	24.0	10.67	211.83
NW 6	36.0	4.65	64.48
NW 10	40.0	13.60	10.68
NW 11	42.0	15.15	19.64
NW 12	66.0	9.65	0.31
NW 13	36.0	19.01	15.39
NW 14	70.0	2.15	138.08
NW 15	40.0	8.24	72.00

SWL : Static Water Level

SC : Specific Capacity

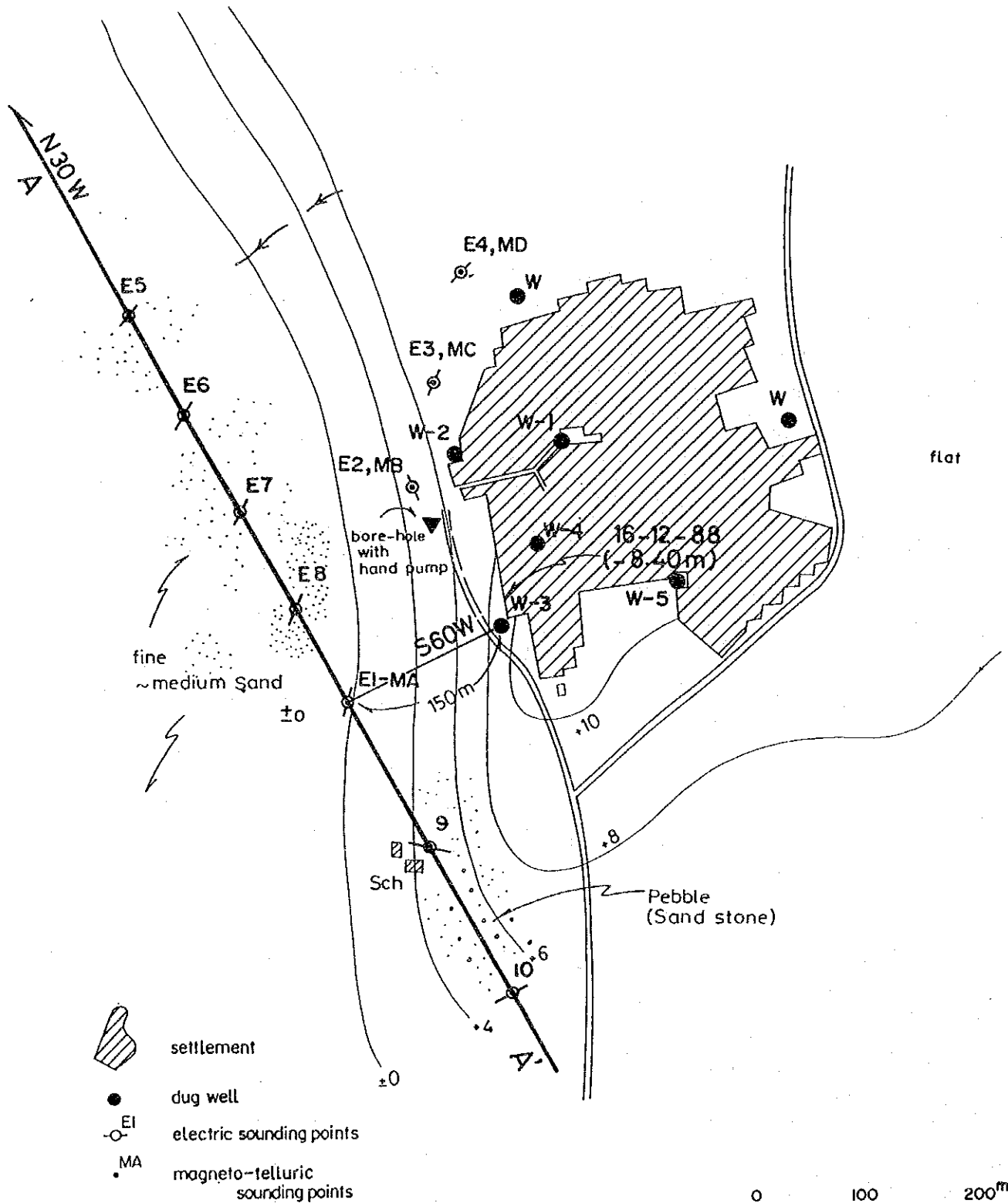
1/100,000

0 50 km

THE LOCATIONS OF INVESTIGATION AND THE TOPOGRAPHICAL FEATURE

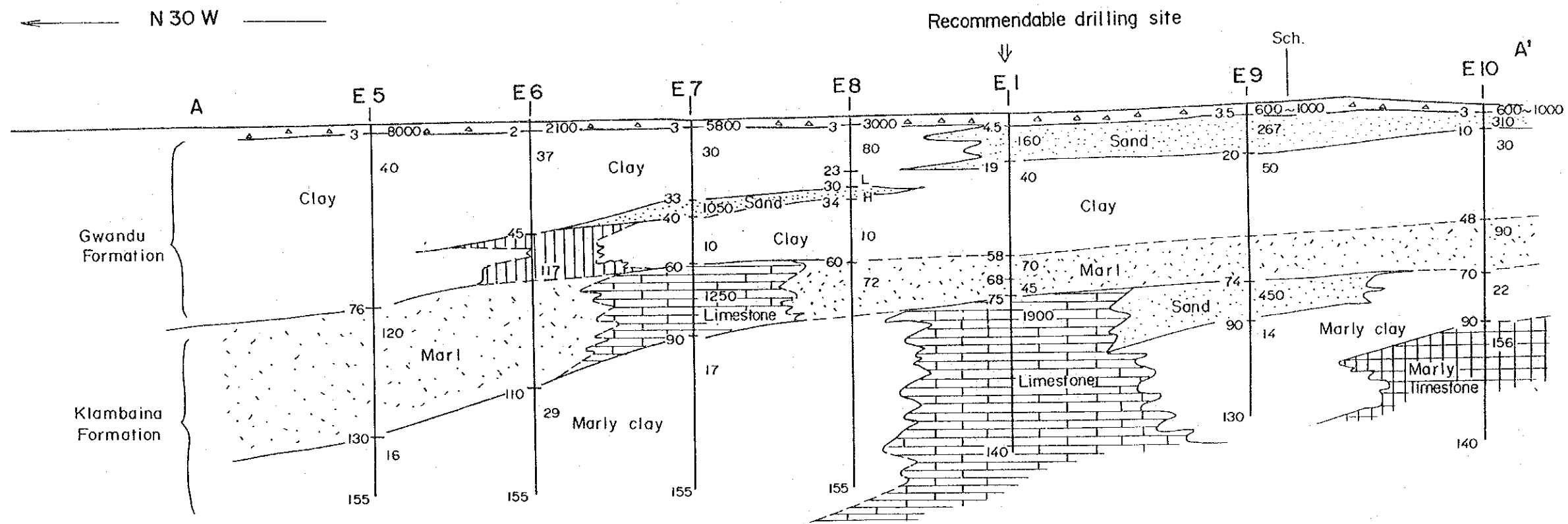
No.25

Gudale



Hydrogeological Section of Gudale Area

(Map showing resistivity profile & estimated lithologic distribution)

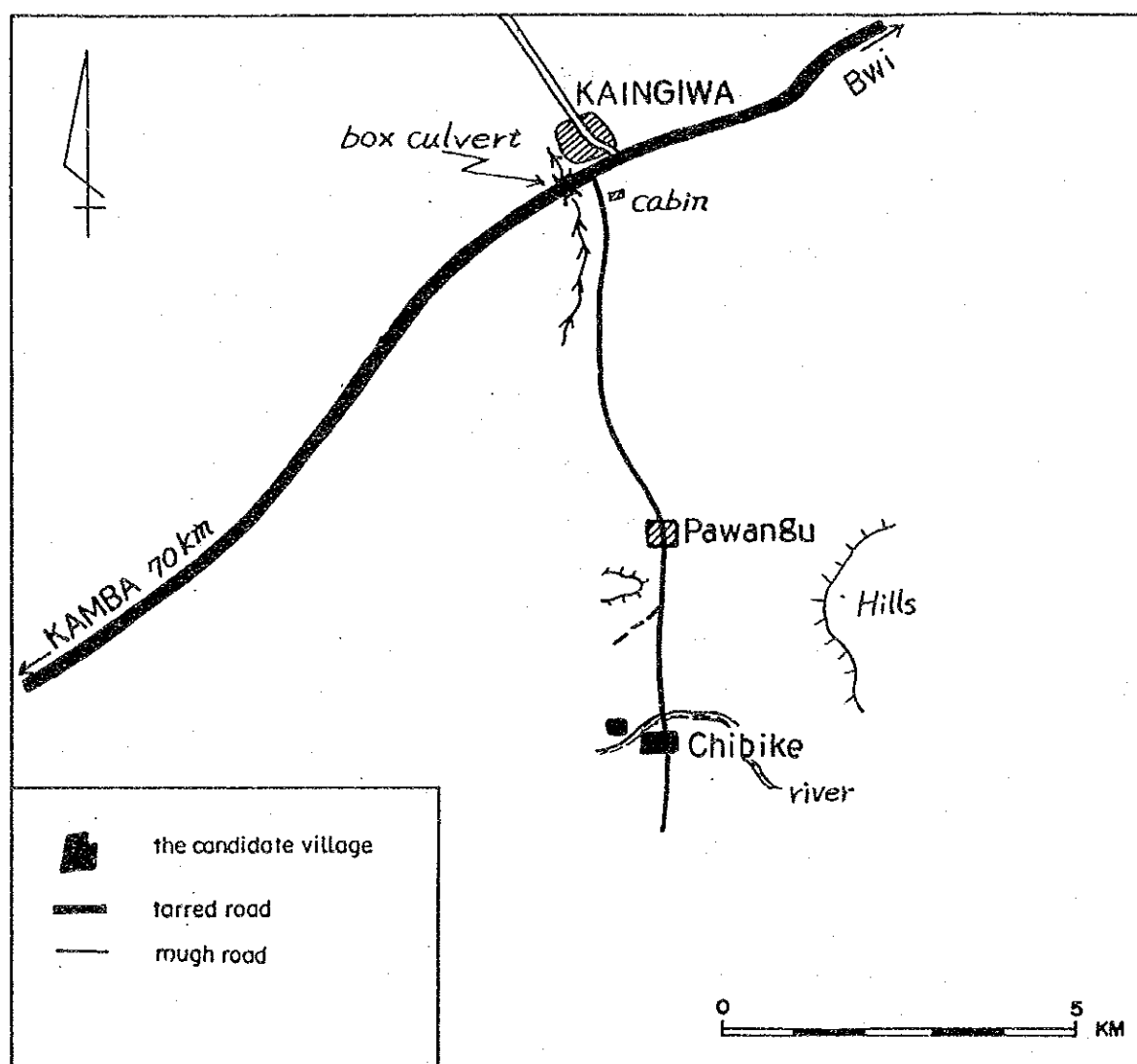


— Results of resistivity sounding —

The Study for Groundwater Development in Sokoto State

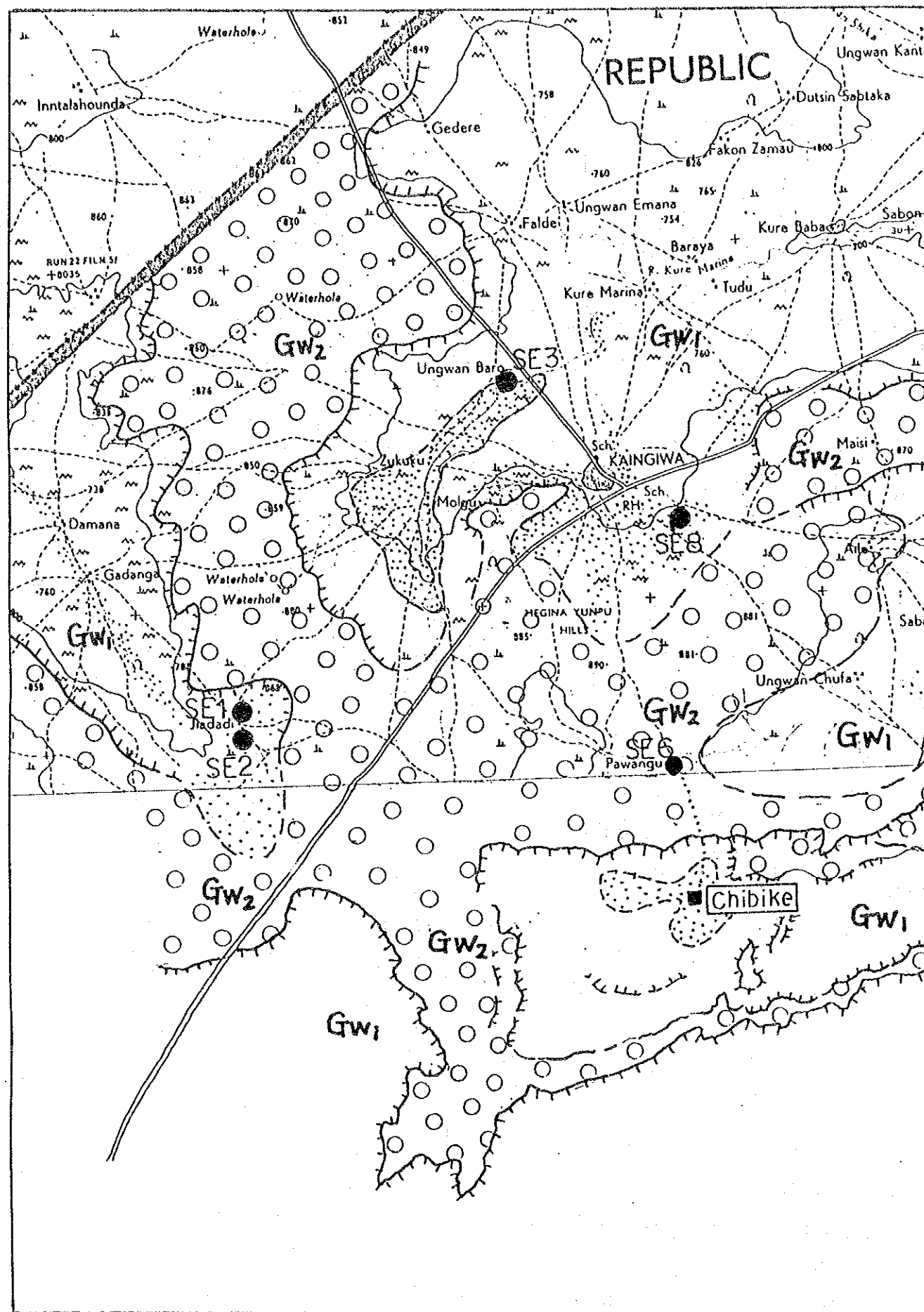
VILLAGE : Chibike

Village No. 26



LOCATION MAP

(1/100,000 Sheet 48)



GEOLOGICAL MAP

Chibike

- Eroded and Recovered with Sand
 Escarpment
 upper
 middle lower
 } Gwandu Formation
 SW16
 Existing Boreholes

DATA OF EXISTING BOREHOLES

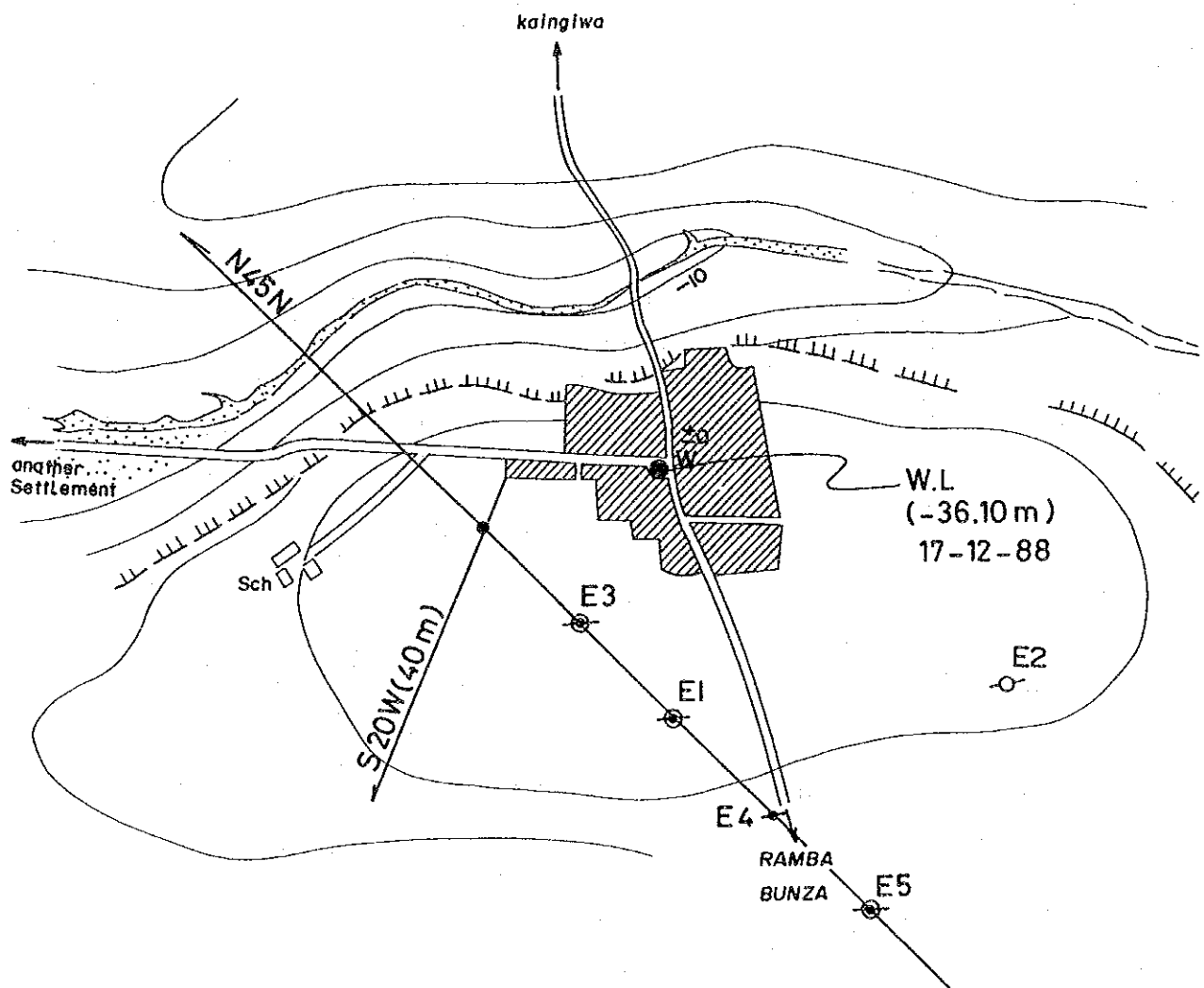
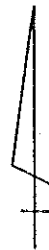
Borehole No.	Depth(m)	SWL(m)	S.C.(m ³ /d/m)
SE 1	180.0	54.00	24.32
SE 2	84.0	57.95	7.74
SE 3	66.0	32.00	1.08
SE 6	97.0	58.54	0.49
SE 8	140.0	44.42	0.84

SWL.: Static Water Level
SC : Specific Capacity

THE LOCATIONS OF INVESTIGATION AND THE TOPOGRAPHICAL FEATURE

No.26

Chibike



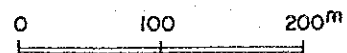
settlement



dug well

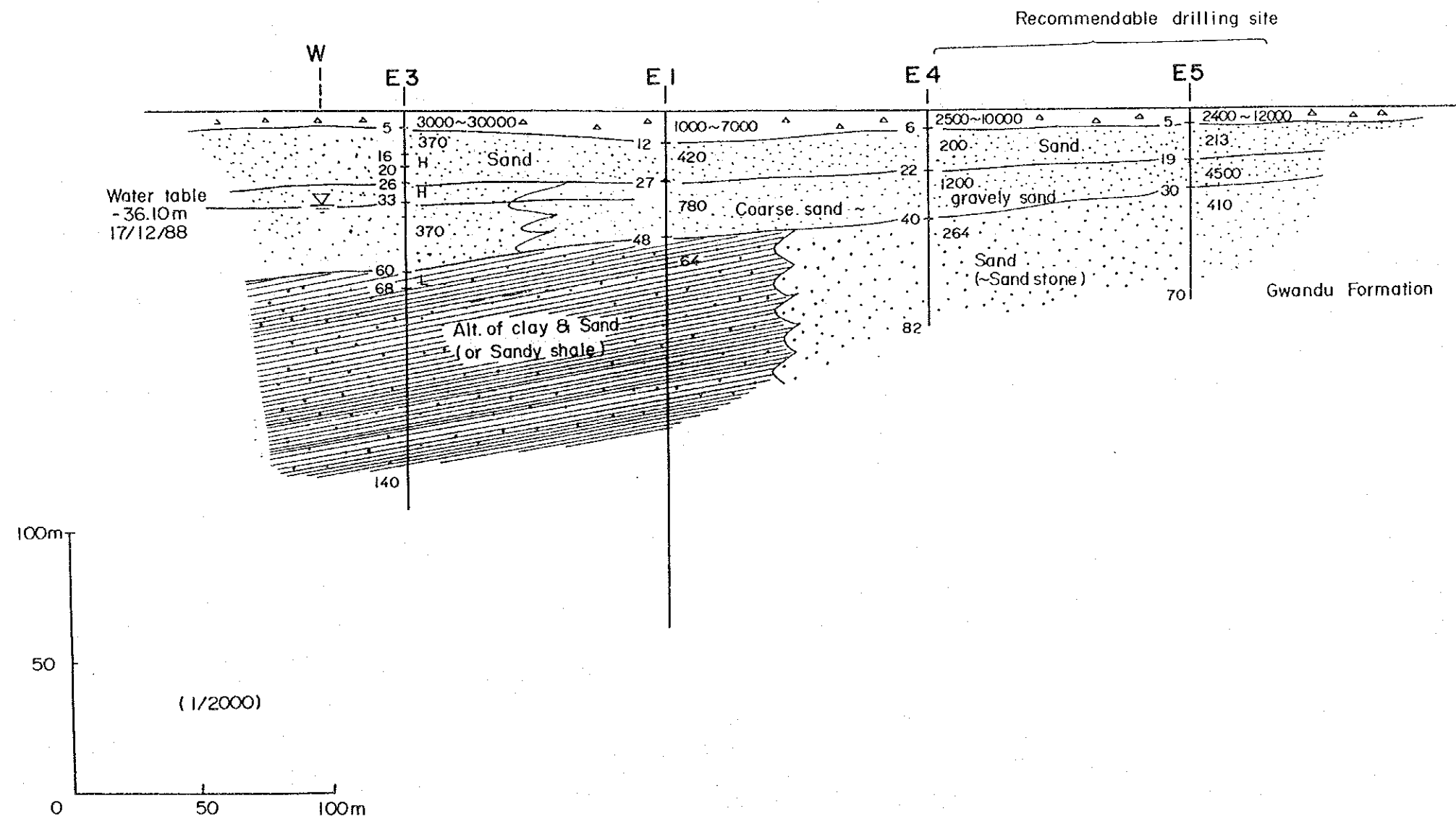


electric sounding points



Hydrogeological Section of Chibike Area

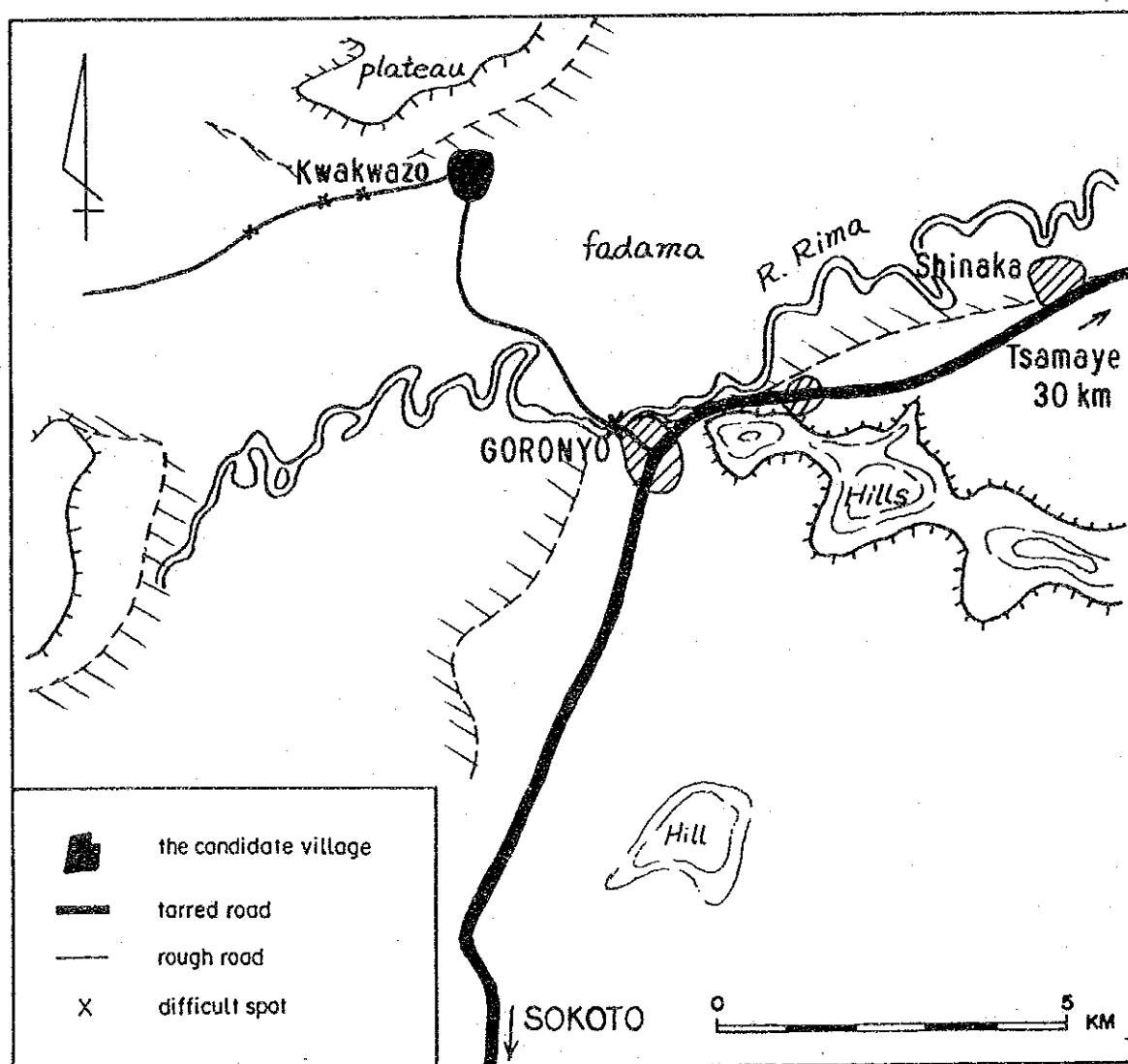
(Map showing resistivity profile & estimated lithologic distribution)



The Study for Groundwater Development in Sokoto State

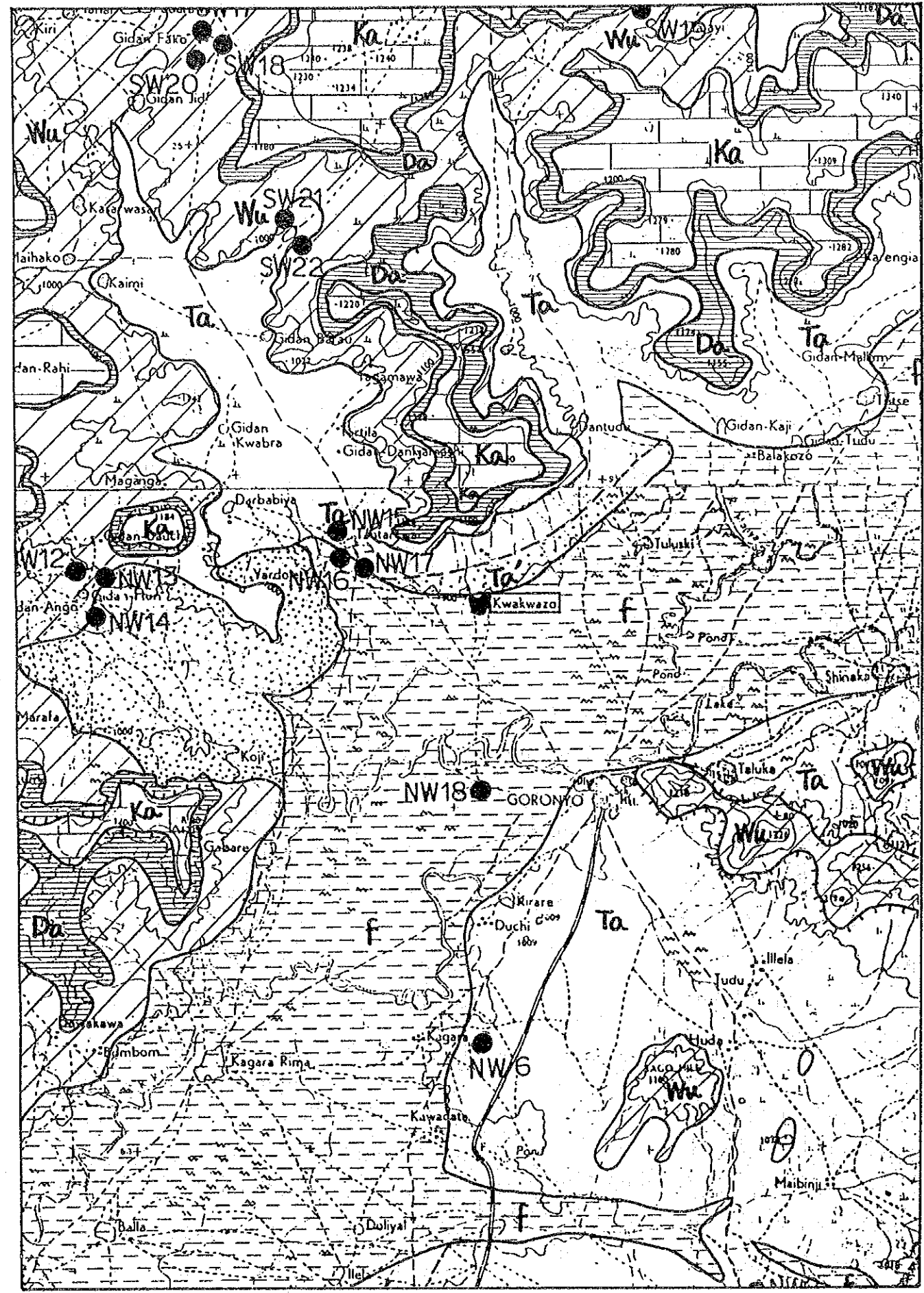
VILLAGE : Kwakwazo

Village No. 27



LOCATION MAP

(1/100,000 Sheet II)



GEOLOGICAL MAP

Kwakwazo

- Fadama
- Eroded and Recovered with Sand
- Escarpment
- Ka Kalambaina Formation
- Da Dange Formation
- Wu Wurno Formation
- Ta Taloka Formation

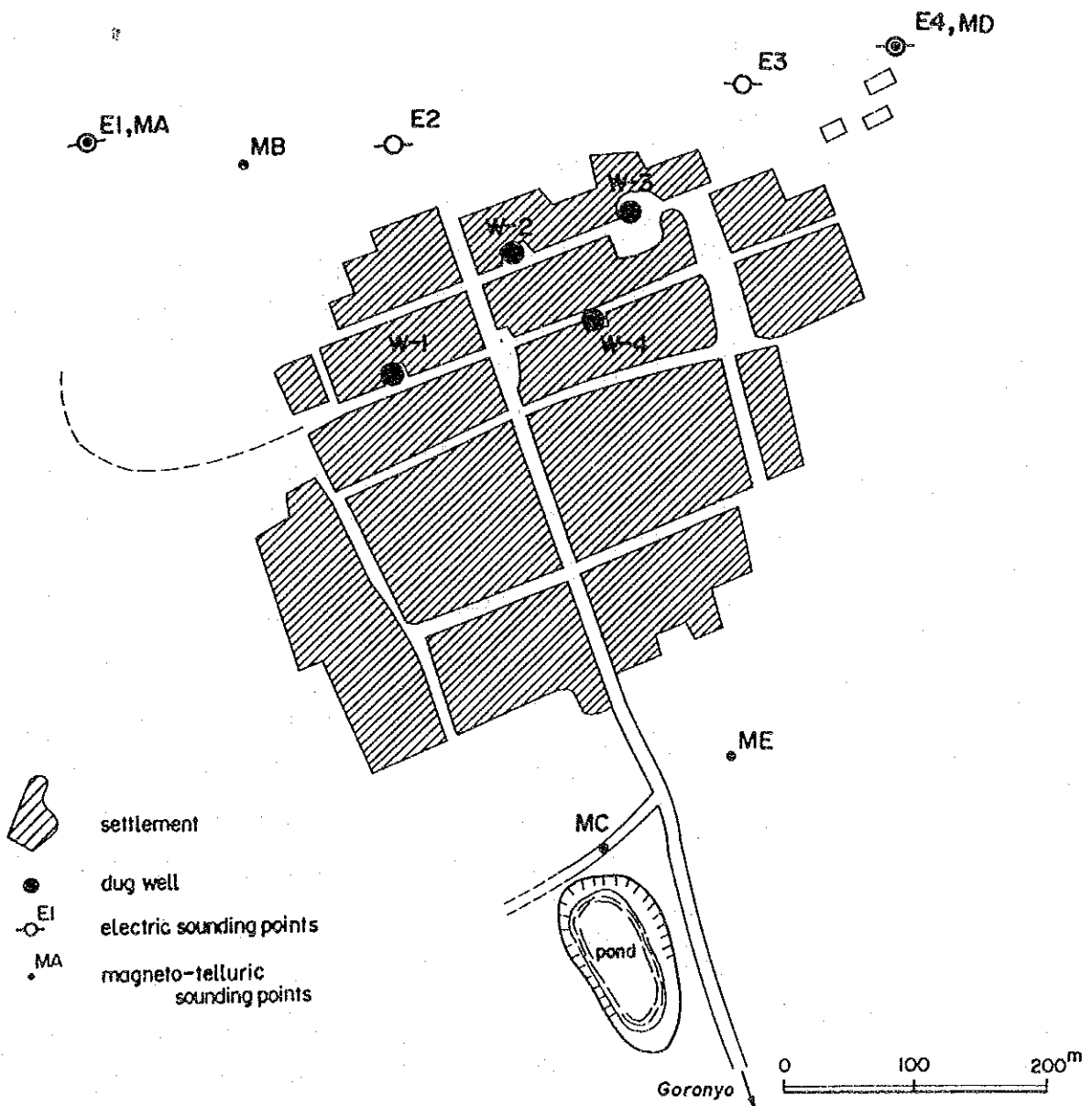
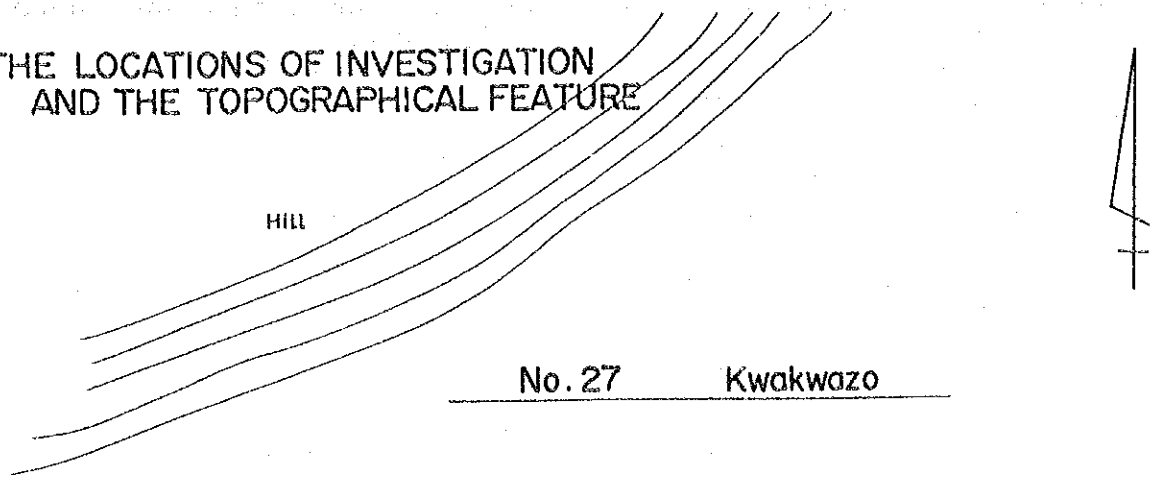
SW 16
Existing Boreholes

DATA OF EXISTING BOREHOLES

Borehole No.	Depth(m)	SWL(m)	SC.(m ³ /d/m)
NW 12	66.0	20.25	1.13
NW 13	64.0	22.85	0.60
NW 14	66.0	18.05	1.18
NW 15	127.0	15.94	10.01
NW 16	140.0	16.04	5.82
NW 17	136.0	13.24	11.26
NW 18	18.0	5.83	108.68

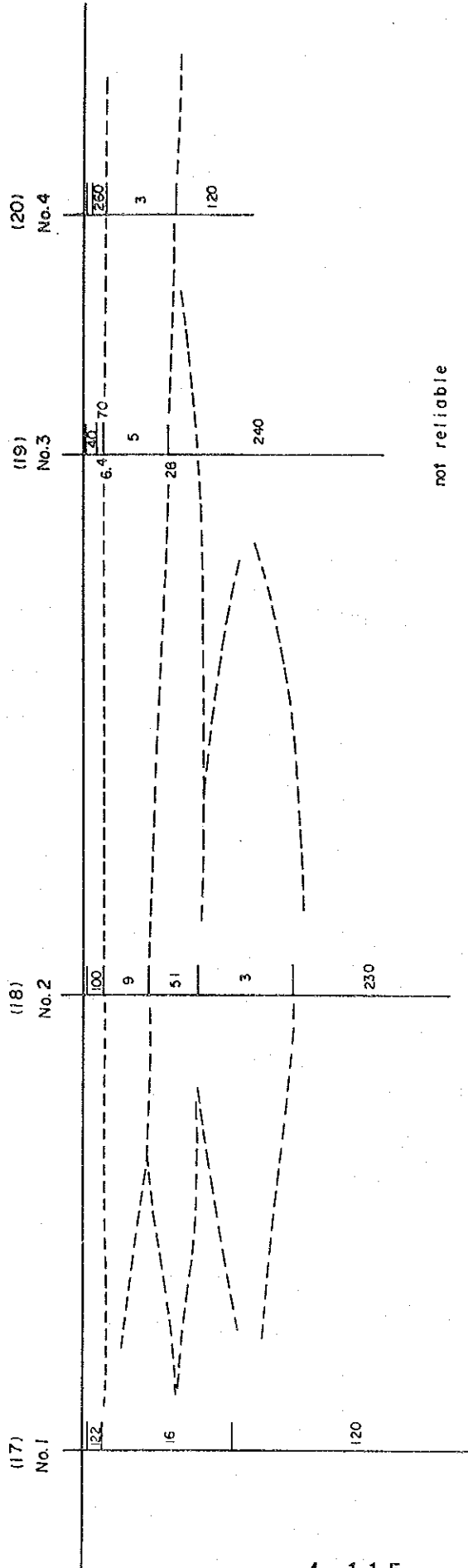
SWL.: Static Water Level
SC : Specific Capacity

THE LOCATIONS OF INVESTIGATION AND THE TOPOGRAPHICAL FEATURE



RESISTIVITY PROFILE

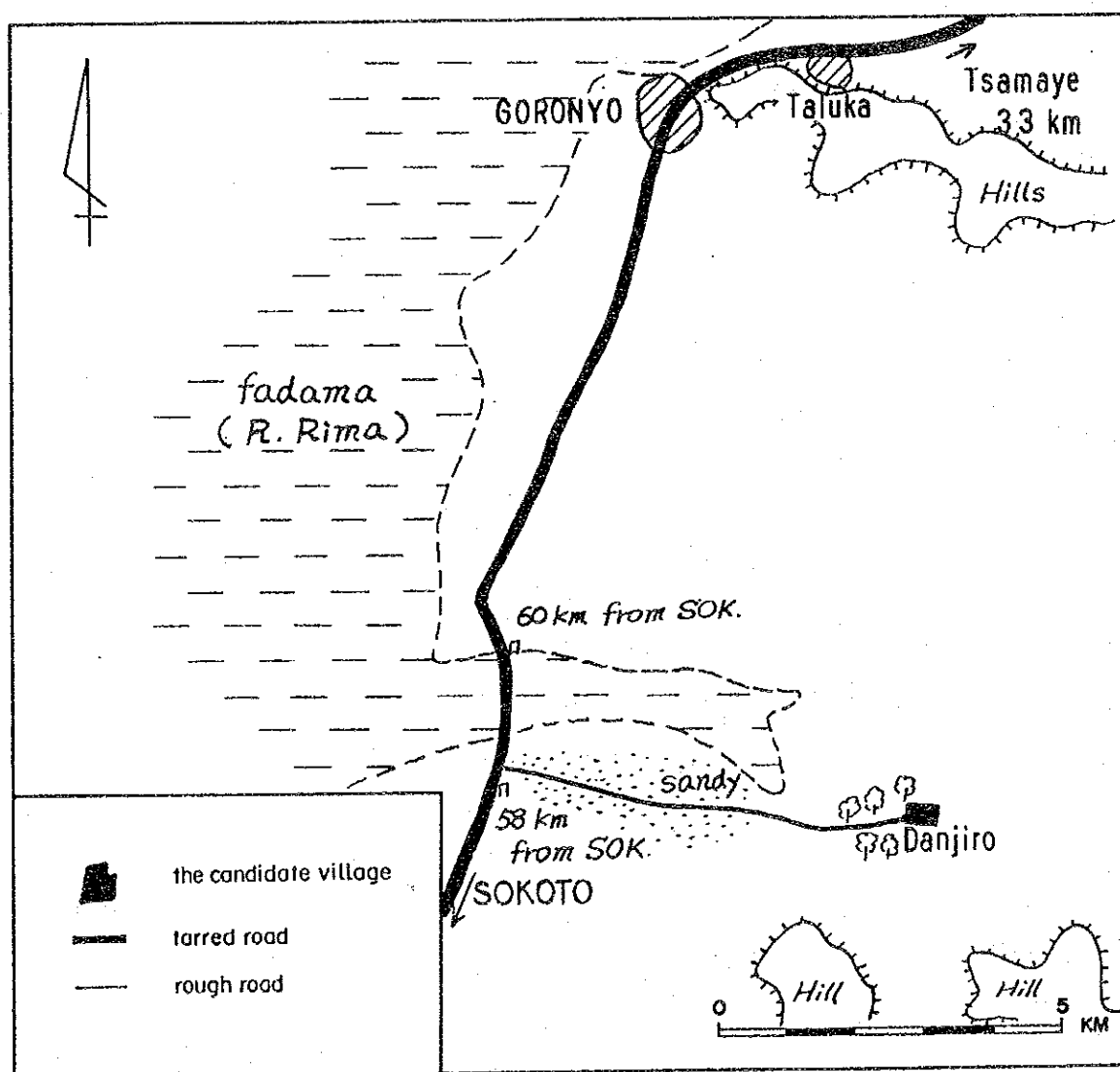
No. 27 Kwakwazo



The Study for Groundwater Development in Sokoto State

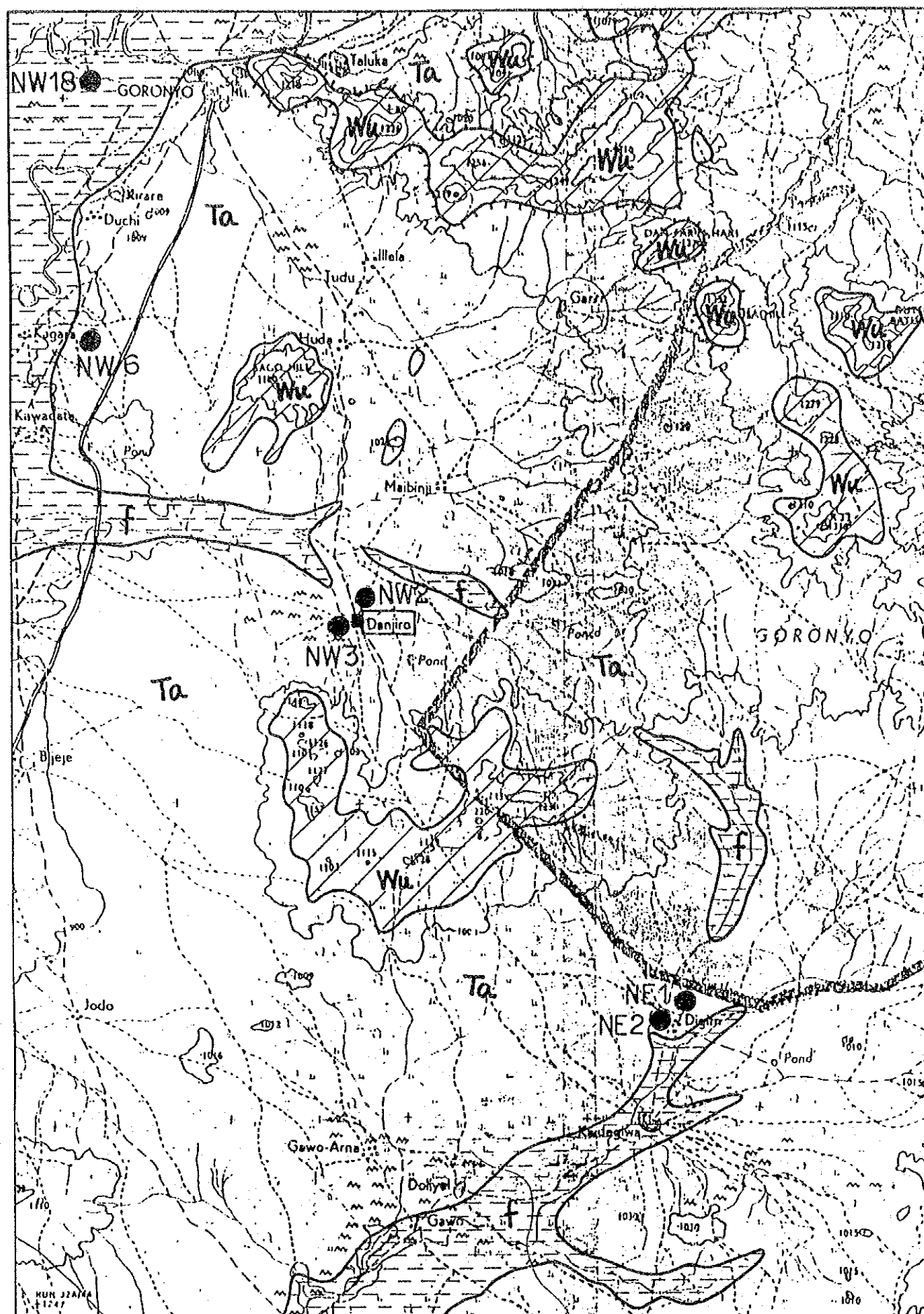
VILLAGE : Danjiro

Village No. 28



LOCATION MAP

(1/100,000 Sheet 11)



GEOLOGICAL MAP

Danjaro

-  Fadama
-  Escarpment
-  Wurno Formation
-  Taloka Formation
-  Existing Boreholes

DATA OF EXISTING BOREHOLES

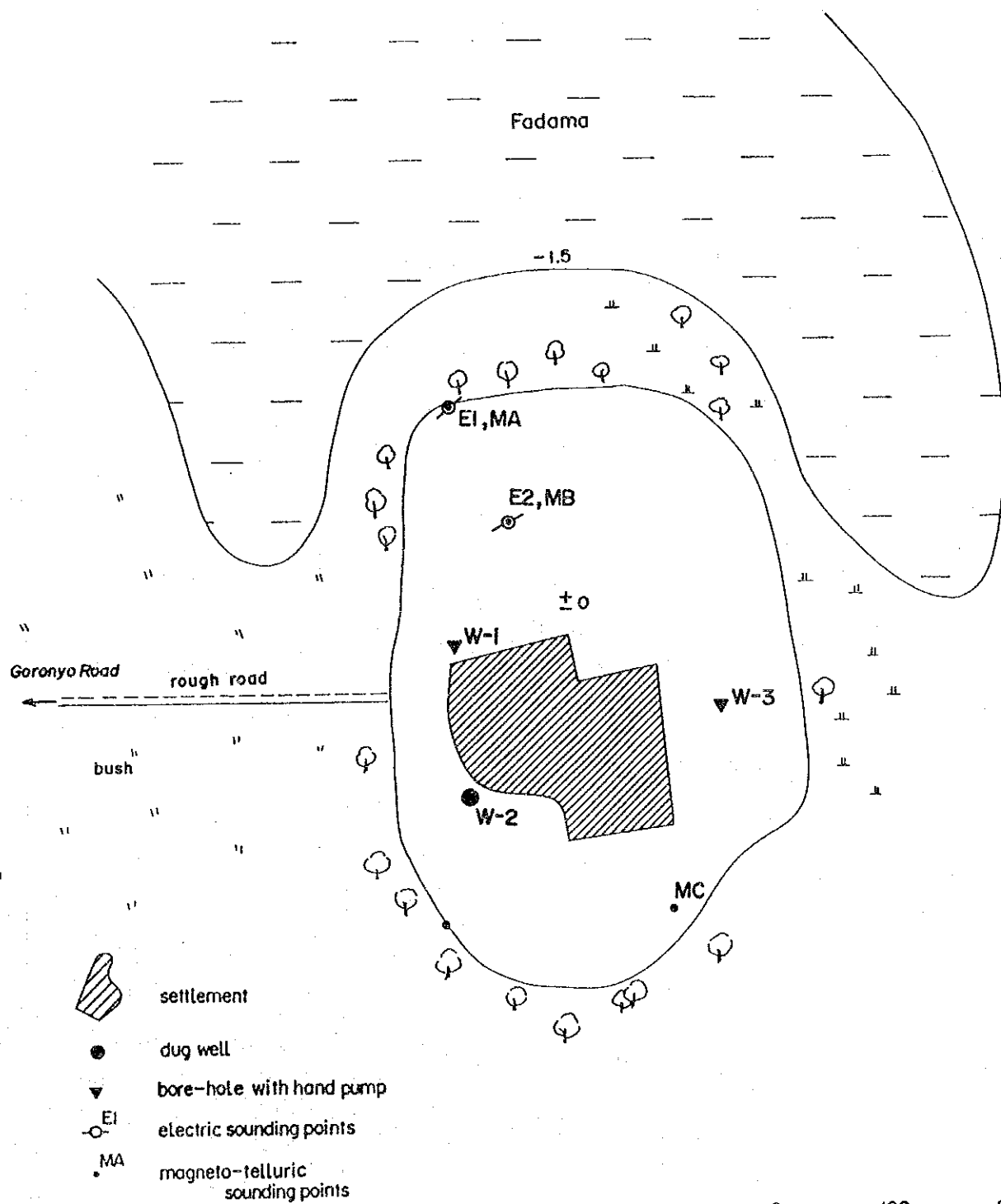
Borehole No.	Depth(m)	SWL(m)	S.C.(m ³ /d/m)
NW 2	97.0	18.92	1.80
NW 3	115.0	21.04	0.46
NW 6	101.0	8.20	2.04
NE 1	55.0	14.87	21.51

SWL : Static Water Level
SC : Specific Capacity

THE LOCATIONS OF INVESTIGATION AND THE TOPOGRAPHICAL FEATURE

No. 28

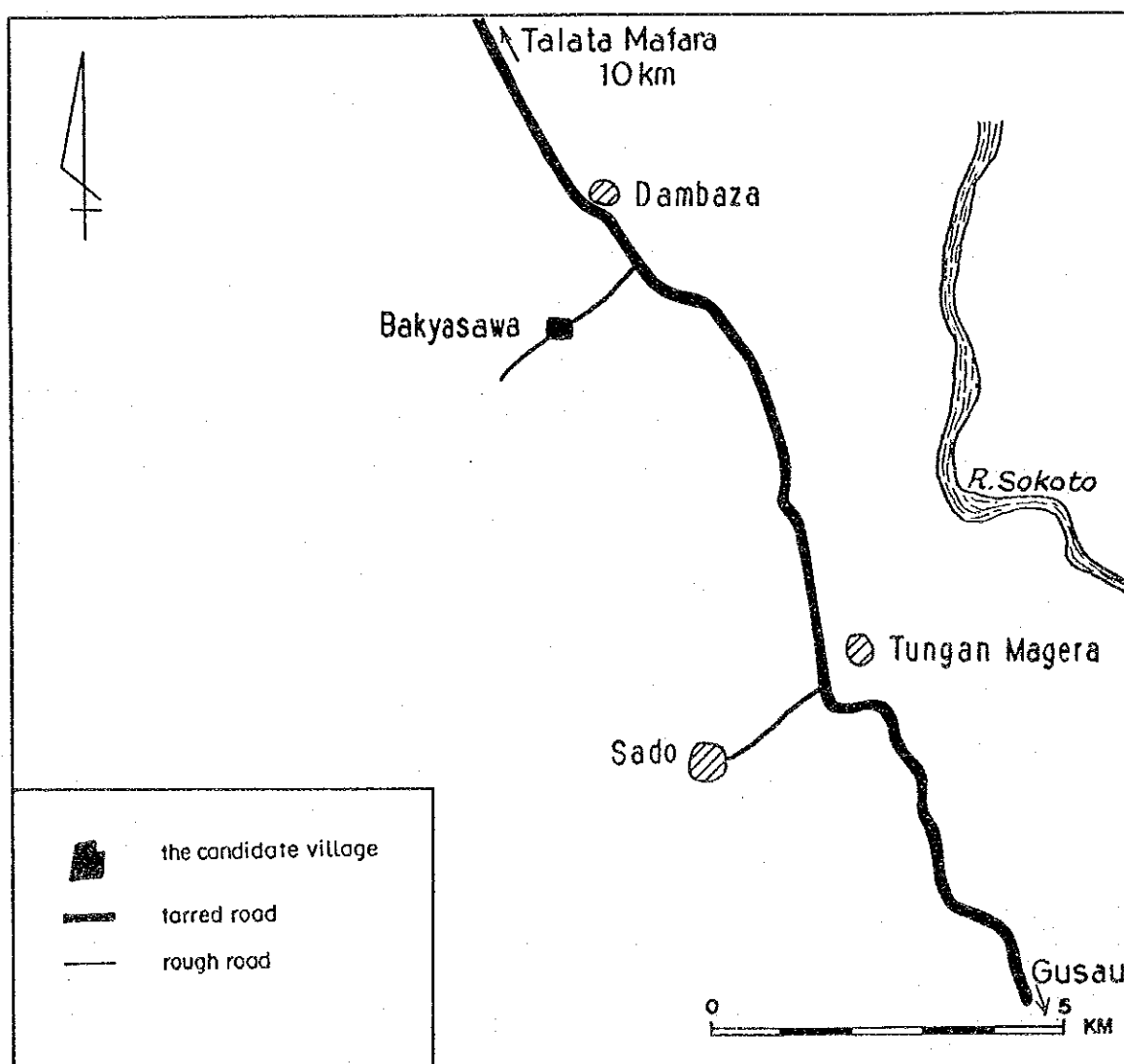
Danjiro



The Study for Groundwater Development in Sokoto State

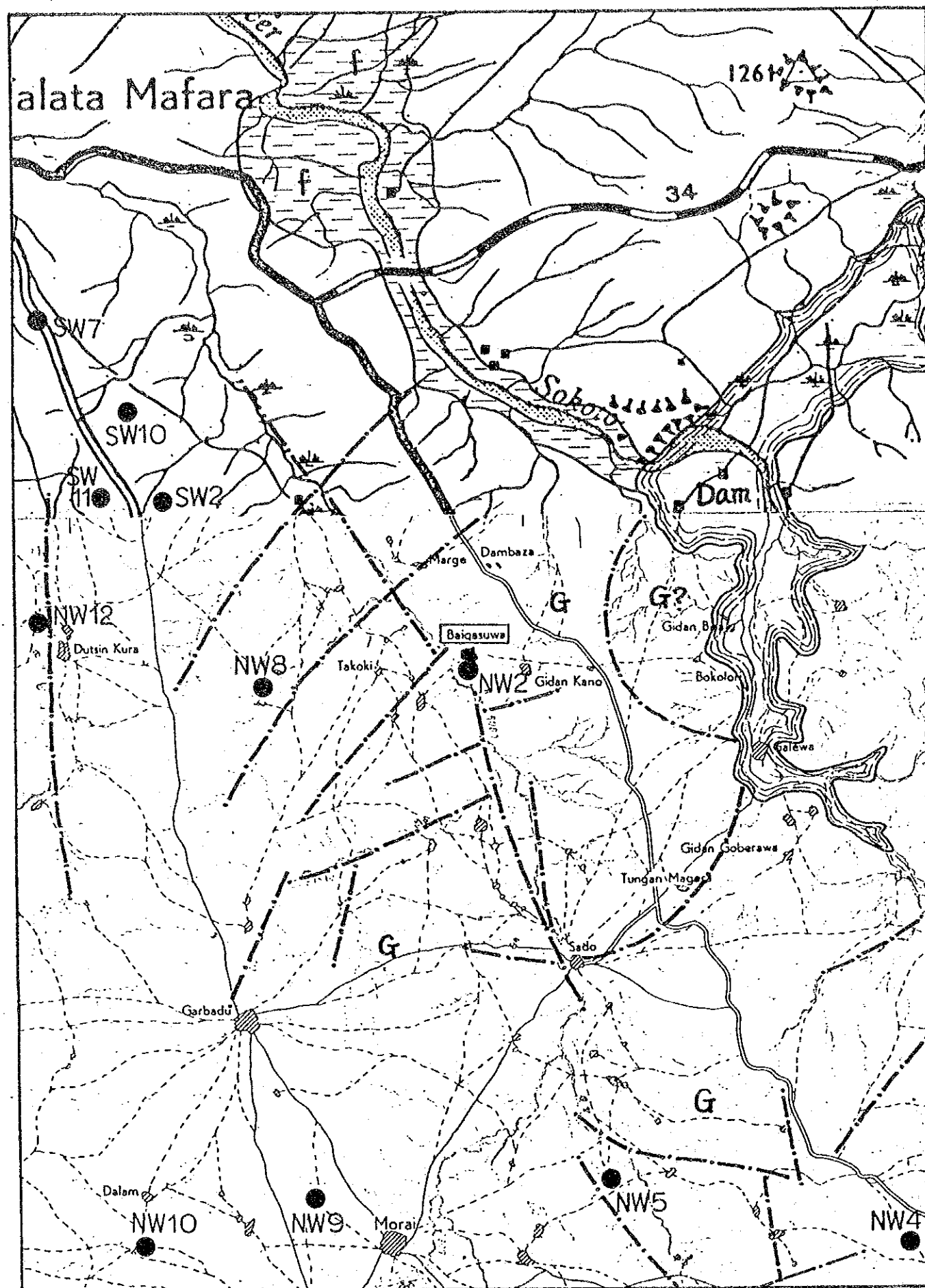
VILLAGE : Bakuyasuwa

Village No. 29



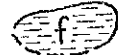
LOCATION MAP

(1/100,000 Sheet 53)



GEOLOGICAL MAP

Bakuyasuwa

-  Lake, Pond
-  River
-  Fadama
-  Older Granite
-  Lineament
-  Existing Boreholes

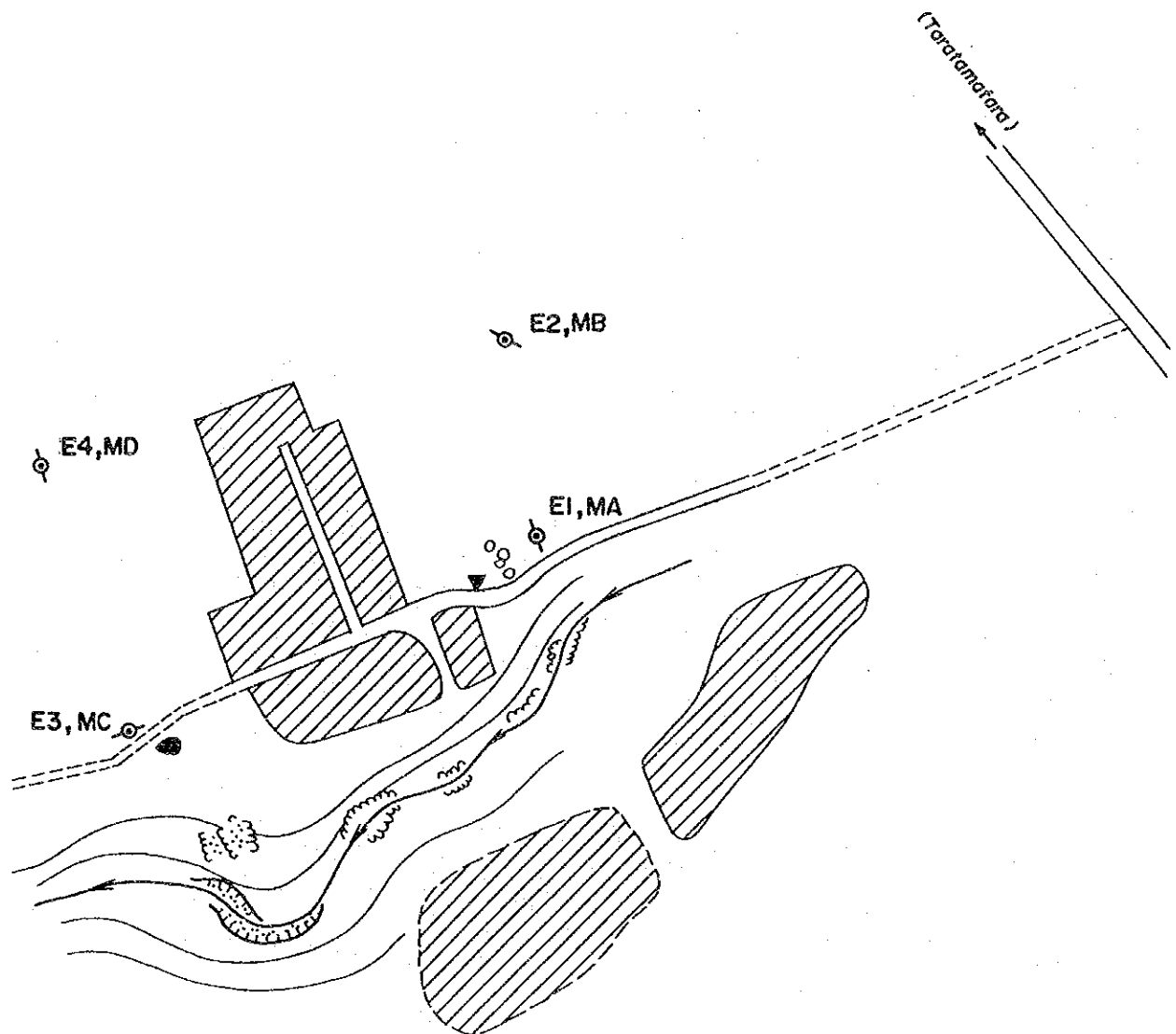
DATA OF EXISTING BOREHOLES

Borehole No.	Depth(m)	SWL.(m)	SC.(m ³ /d/m)
SW 2	31.0	23.41	24.83
SW 7	31.0	10.46	2.17
SW 10	31.0	17.24	21.70
SW 11	31.0	23.12	960.00
NW 2	42.0	17.37	2.19
NW 4	49.0	12.82	1.64
NW 5	24.0	13.13	15.61
NW 8	35.0	23.05	20.87
NW 9	35.0	18.96	40.86
NW 10	35.0	18.17	44.59
NW 12	37.0	19.03	1.75

SWL.: Static Water Level
SC : Specific Capacity

THE LOCATIONS OF INVESTIGATION AND THE TOPOGRAPHICAL FEATURE

No.29 Bakuyasuwa

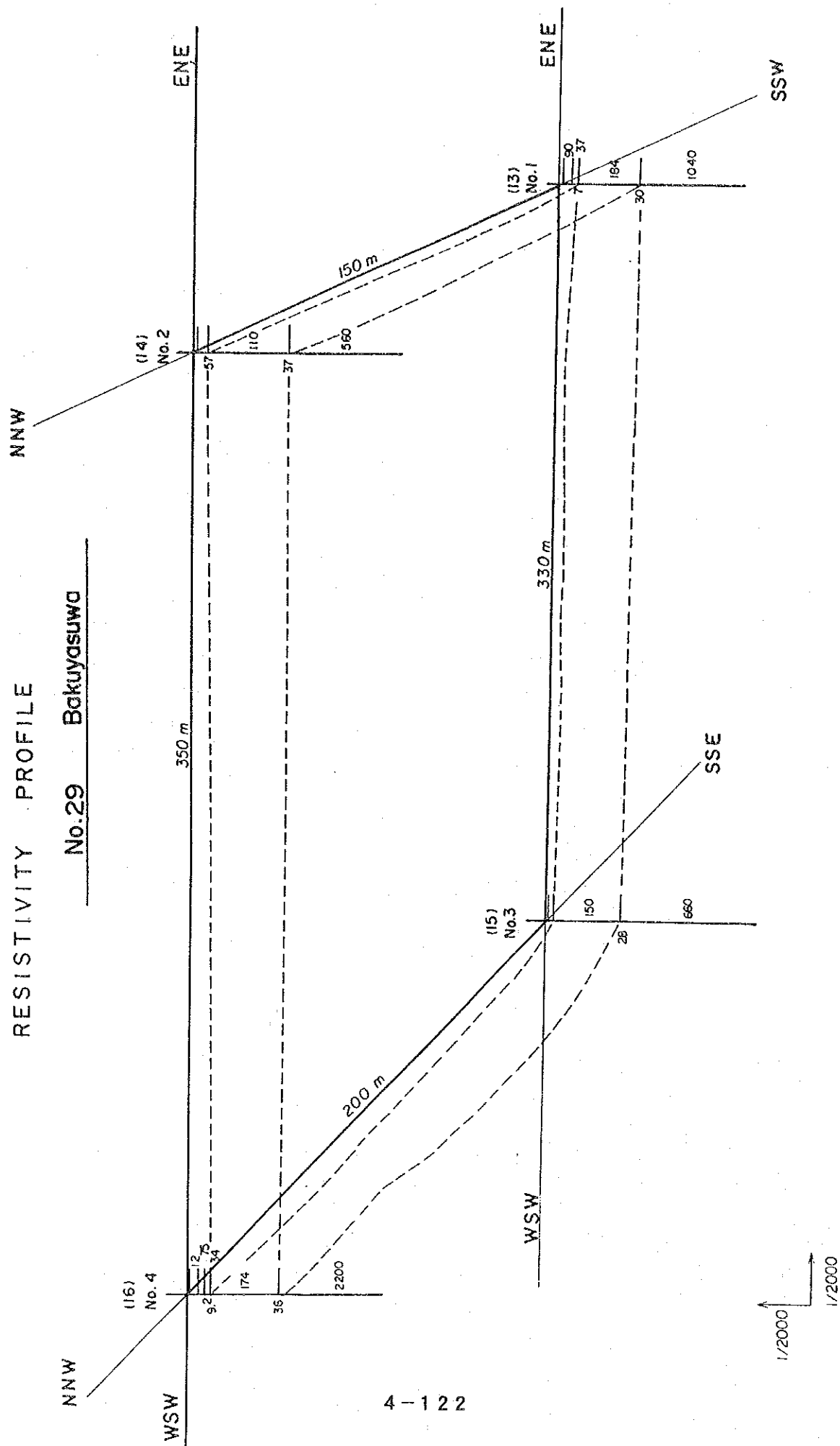


-  settlement
-  bore-hole with hand pump
-  electric sounding points
-  magneto-telluric sounding points
-  pond

0 100 200m

RESISTIVITY PROFILE

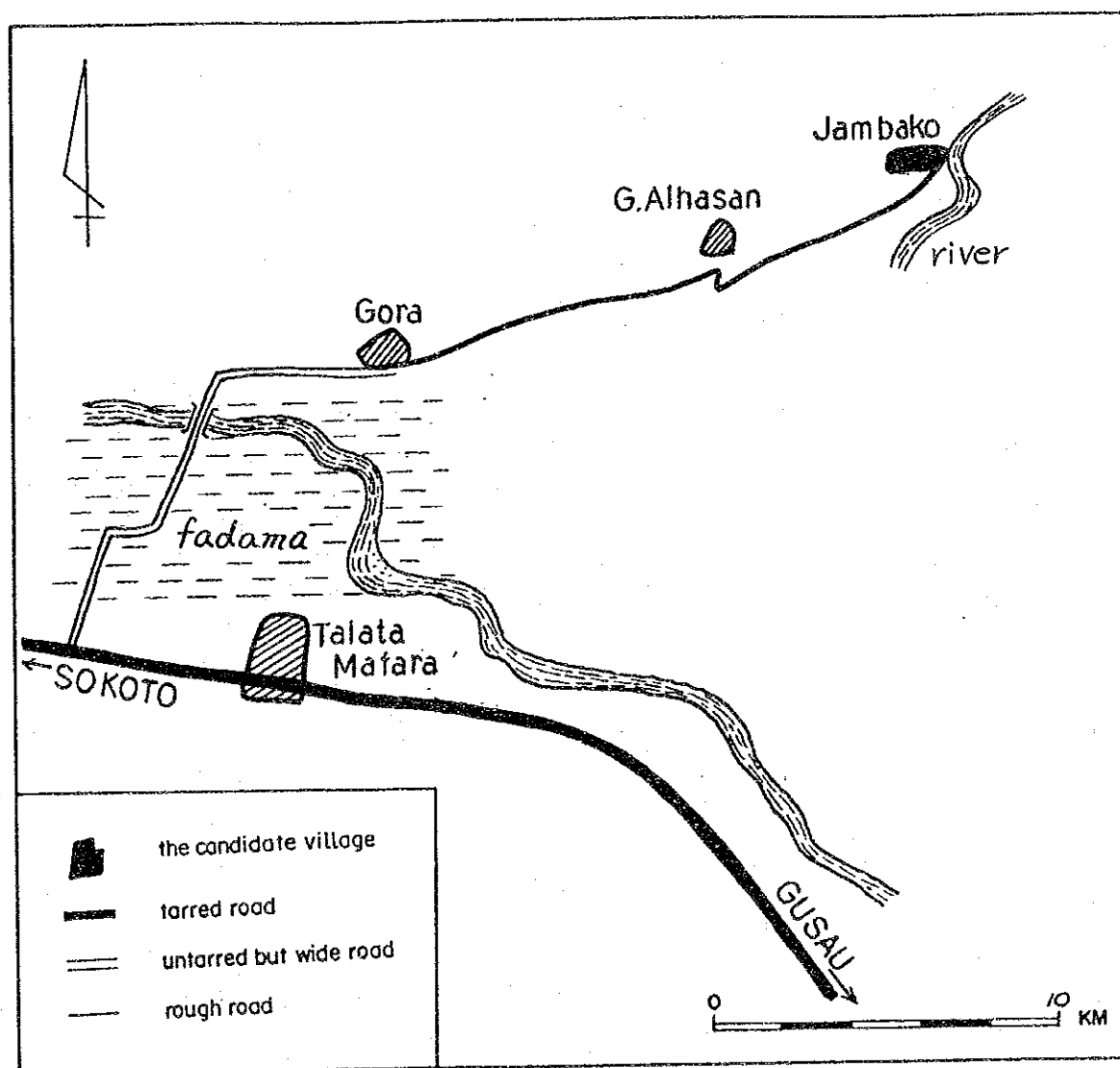
No.29 Bakuyasuwa



The Study for Groundwater Development in Sokoto State

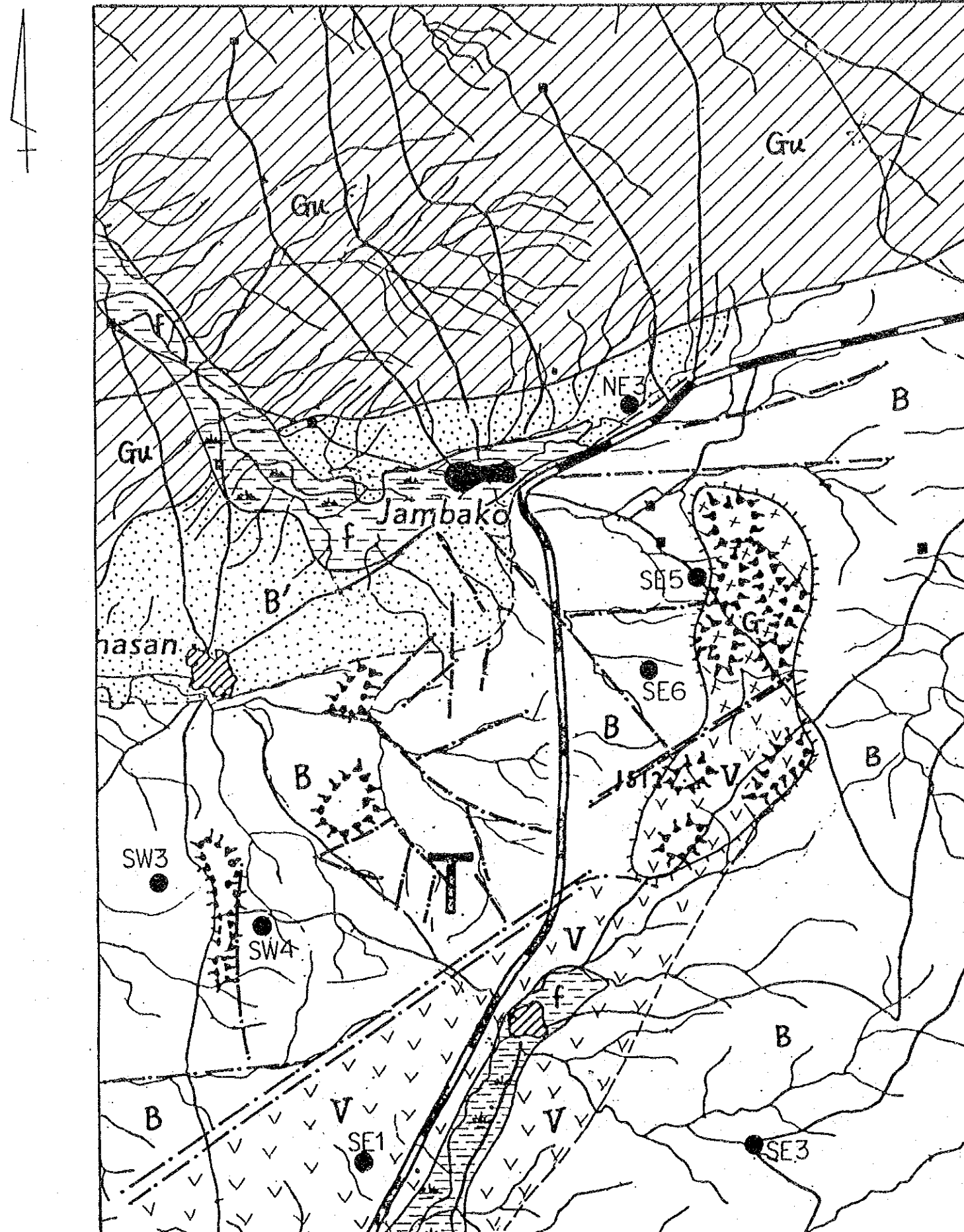
VILLAGE : Jambako

Village No. 30



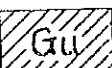
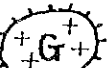
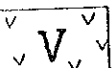
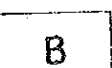
LOCATION MAP

(1/100,000 Sheet 31)



GEOLOGICAL MAP

Jambako

-  Fadama
-  Eroded and Recovered with Sand
-  Escarpment
-  Lineament
-  Gundumi Formation
-  Granite Dome
-  Volcanics
-  Basement Complex

● SW 16
Existing Boreholes

DATA OF EXISTING BOREHOLES

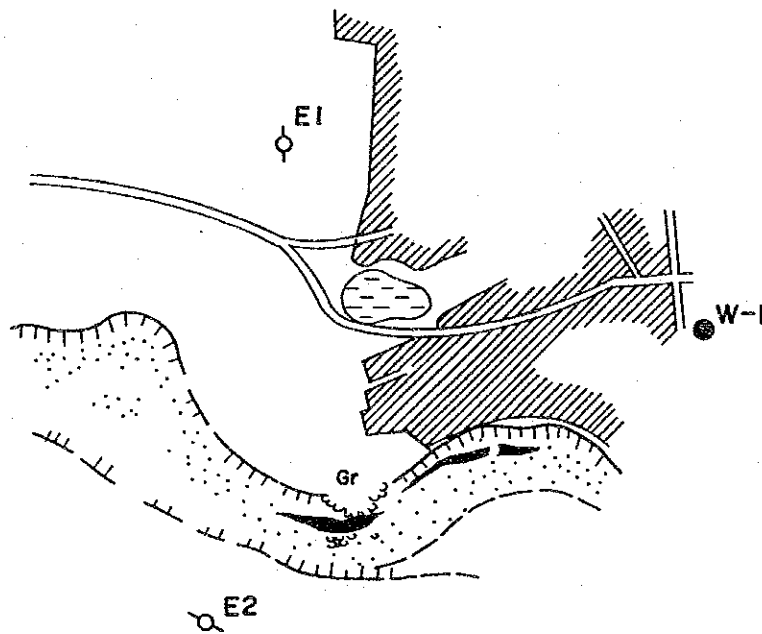
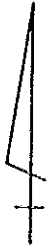
Borehole No.	Depth(m)	SWL(m)	S.C.(m ³ /d/m)
NE 3	31.0	14.70	0.83
SE 1	32.0	10.62	0.74
SE 3	27.0	21.30	10.78
SE 5	43.0	19.09	1.57
SE 6	37.0	18.76	3.17
SW 3	23.0	16.82	40.40
SW 4	43.0	19.80	5.45

SWL.: Static Water Level
SC : Specific Capacity

THE LOCATIONS OF INVESTIGATION. AND THE TOPOGRAPHICAL FEATURE

No. 30

Jambako



settlement



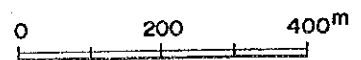
dug well



electric sounding points

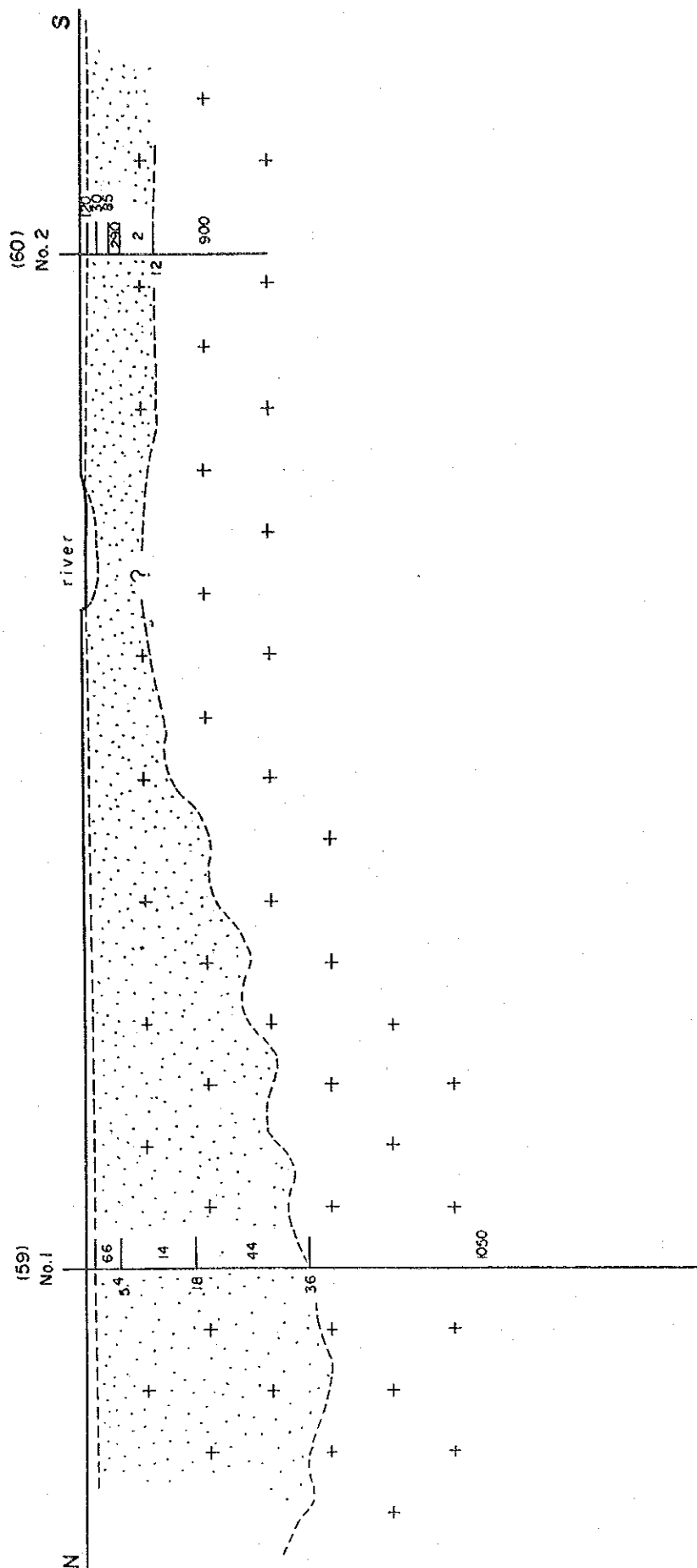


pond



RESISTIVITY PROFILE

No. 30 Jambako

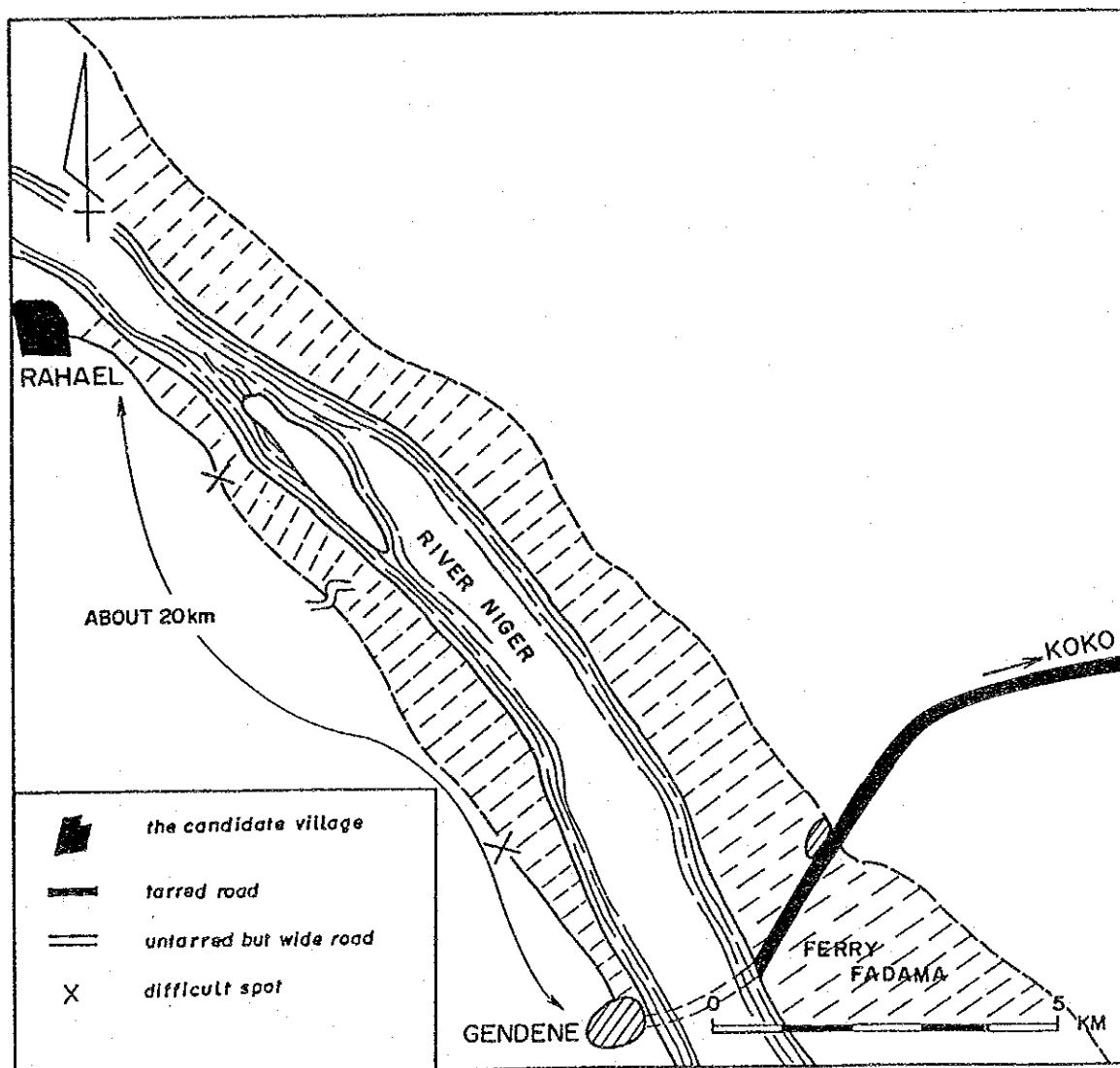


4-126

The Study for Groundwater Development in Sokoto State

VILLAGE : Rahayel

Village No. 31

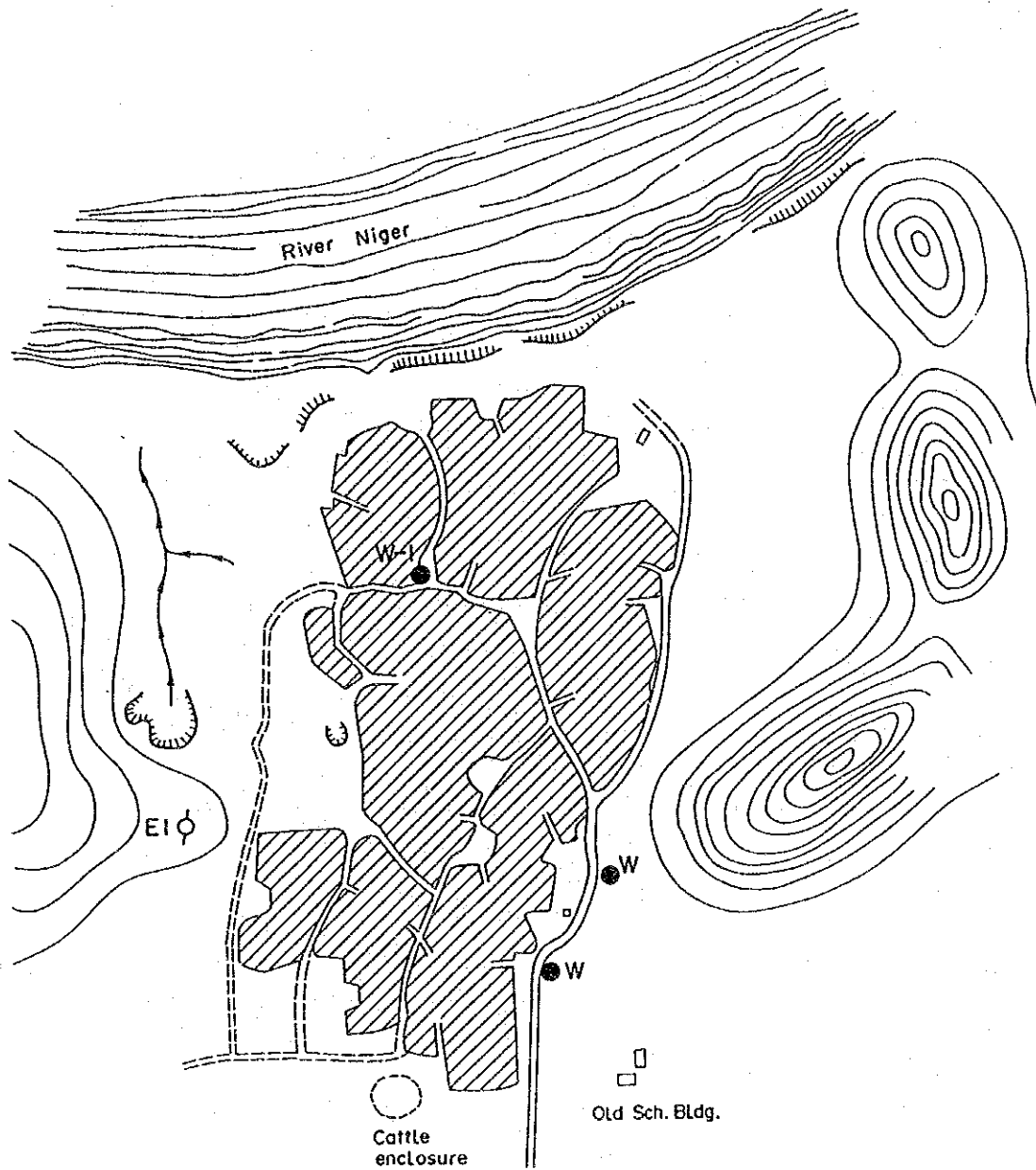
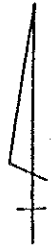


LOCATION MAP

(1/100,000 Sheet _____)

No.31

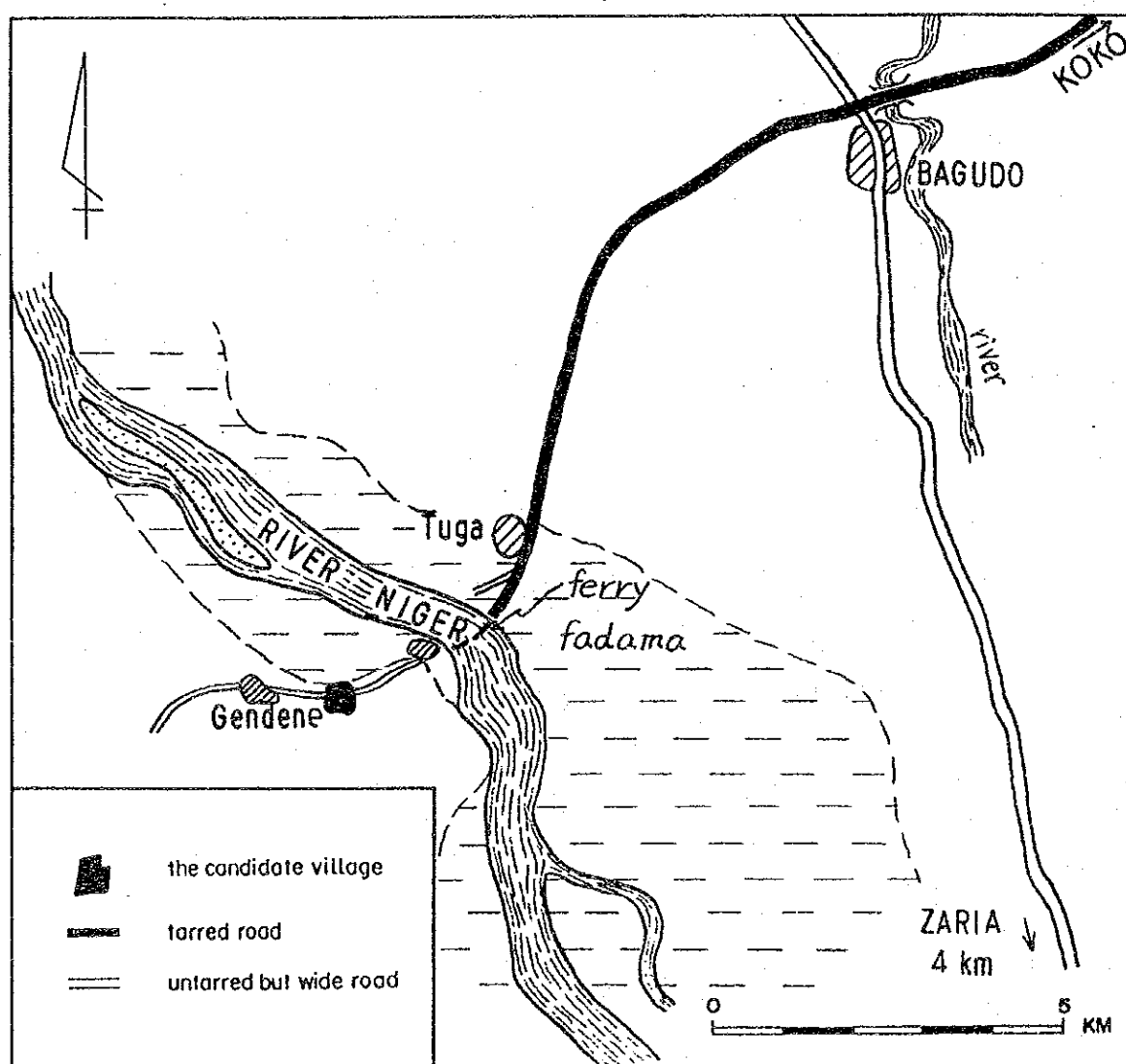
Rahayel



The Study for Groundwater Development in Sokoto State

VILLAGE : Gendene

Village No. 32

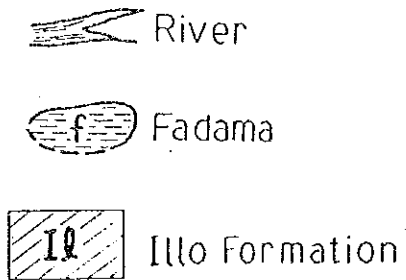


LOCATION MAP

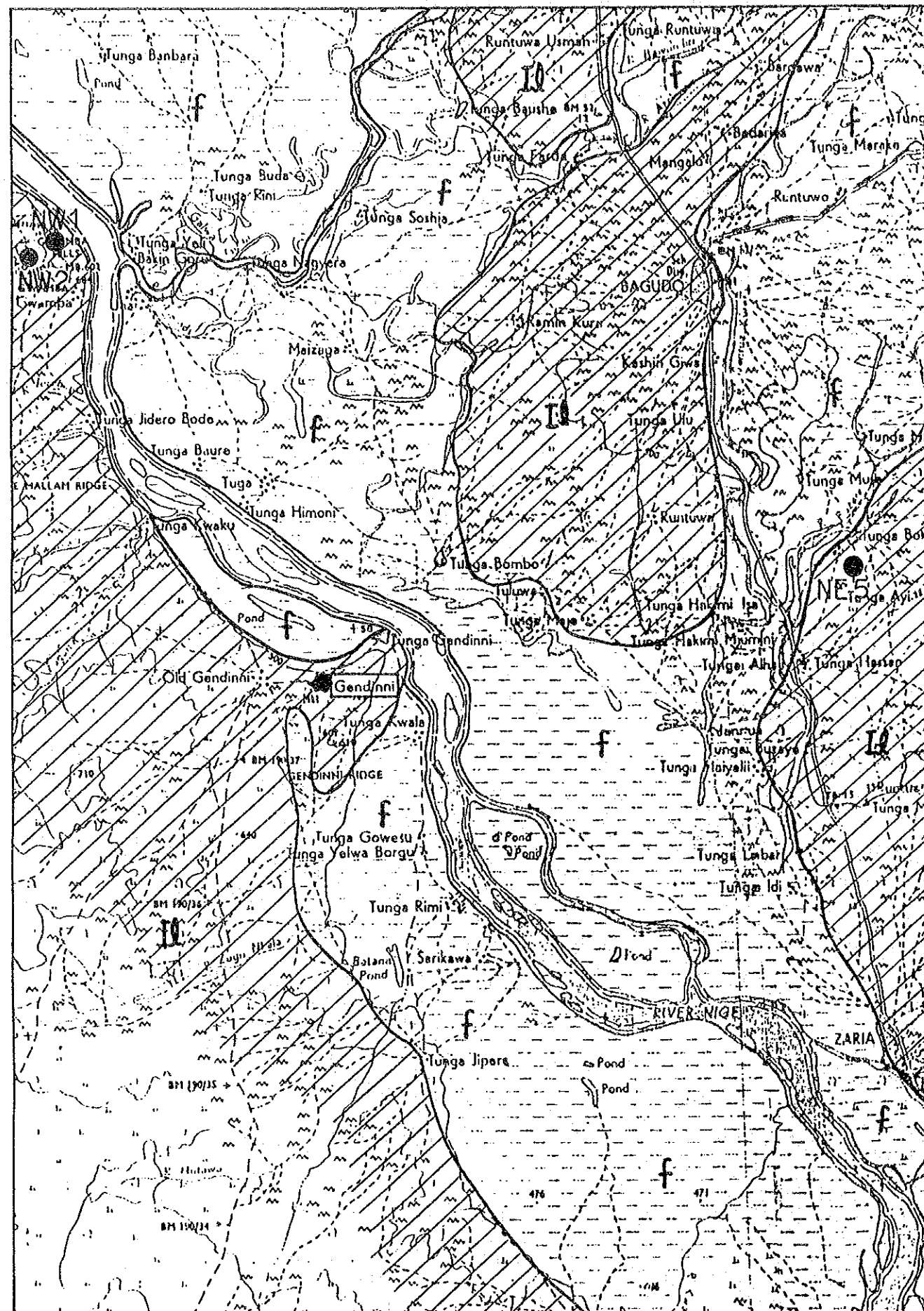
(1/100,000 Sheet 95)

GEOLOGICAL MAP

Gendene



SW 16
Existing Boreholes



DATA OF EXISTING BOREHOLES

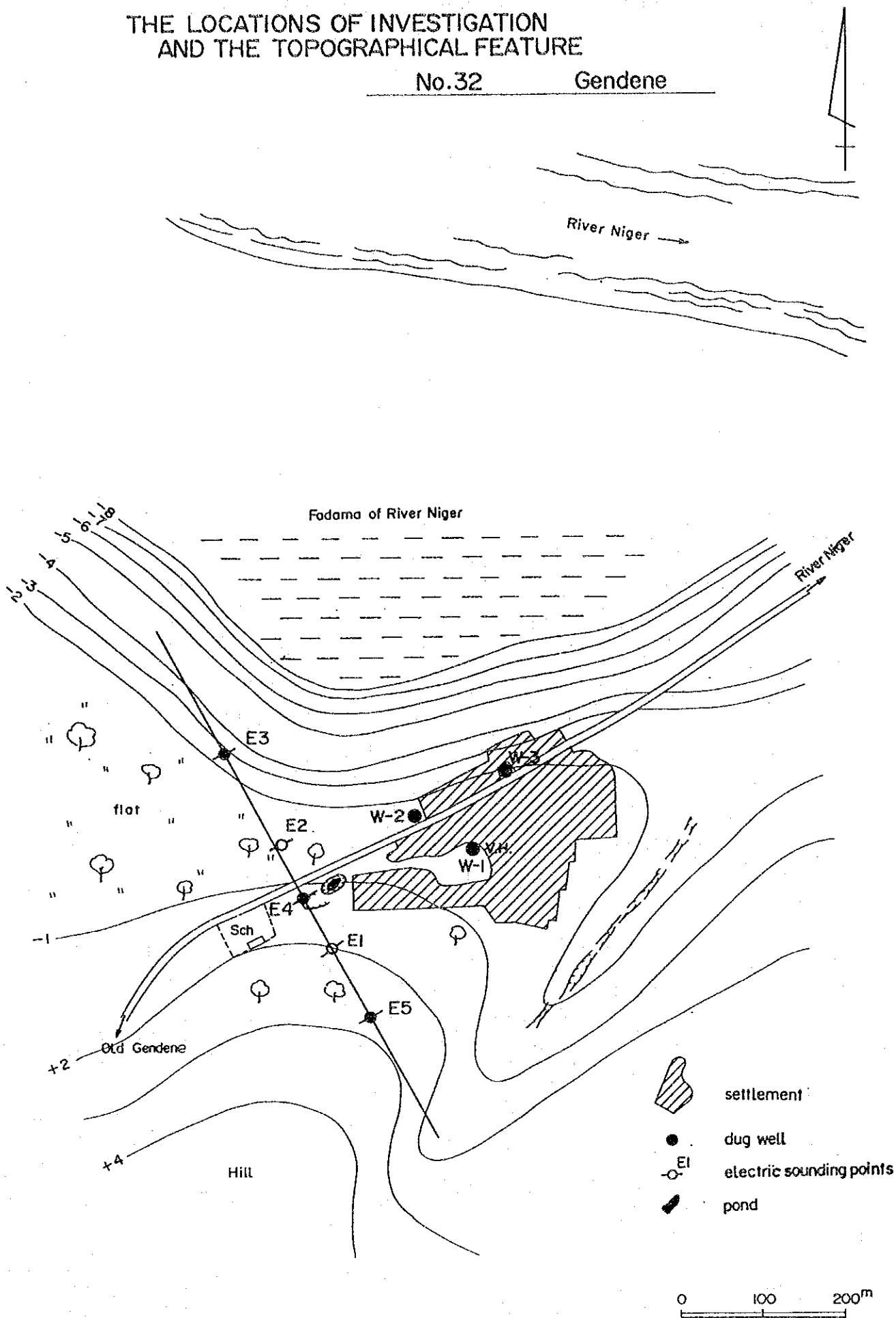
Borehole No.	Depth(m)	S.W.L.(m)	S.C.(m ³ /d/m)
NW 1	42.0	11.82	42.60
NW 2	31.0	11.12	1.82
NE 5	30.0	3.76	53.17

SWL: Static Water Level
SC : Specific Capacity

THE LOCATIONS OF INVESTIGATION AND THE TOPOGRAPHICAL FEATURE

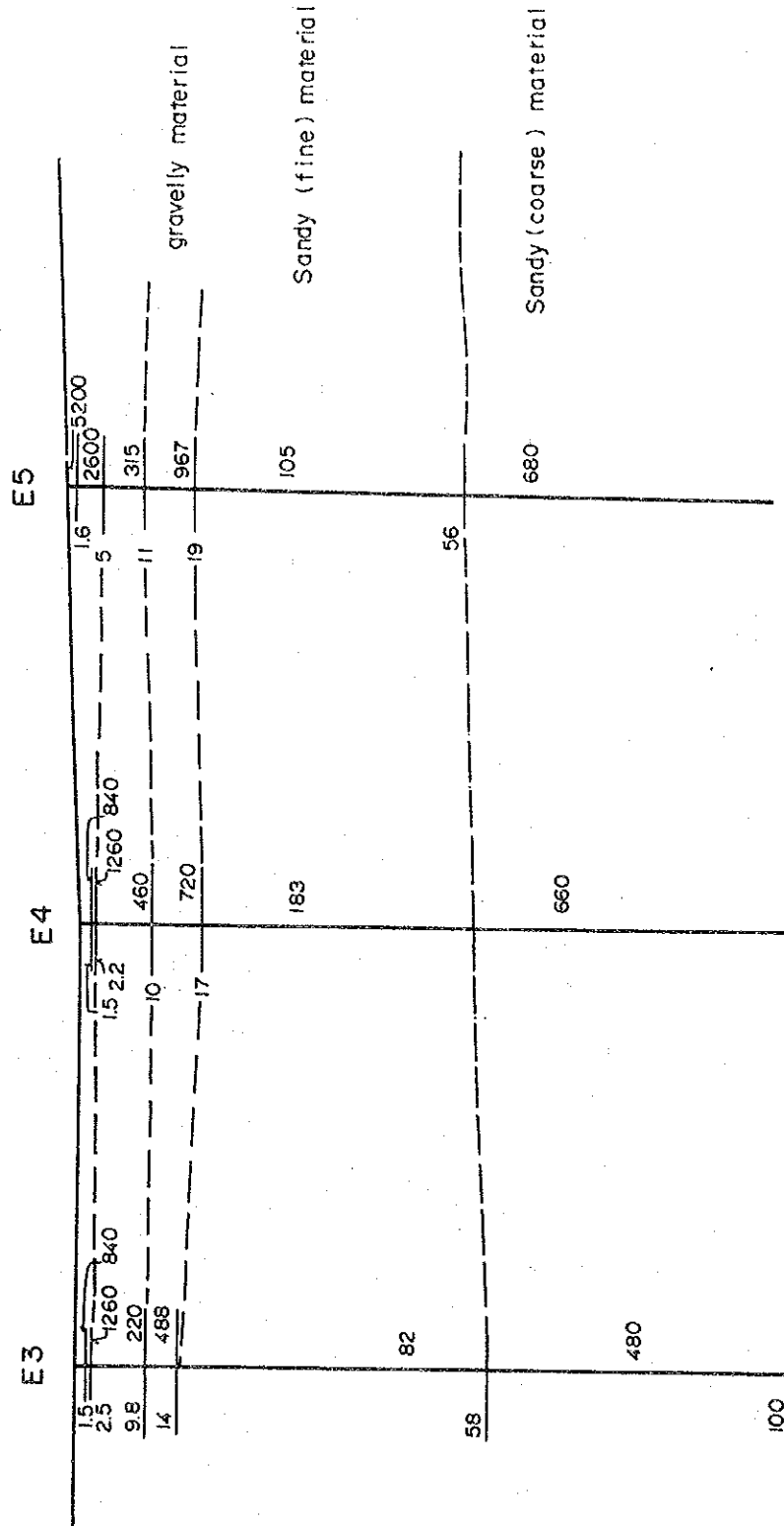
No.32

Gendene



Resistivity Profile of GENDENE NO 32

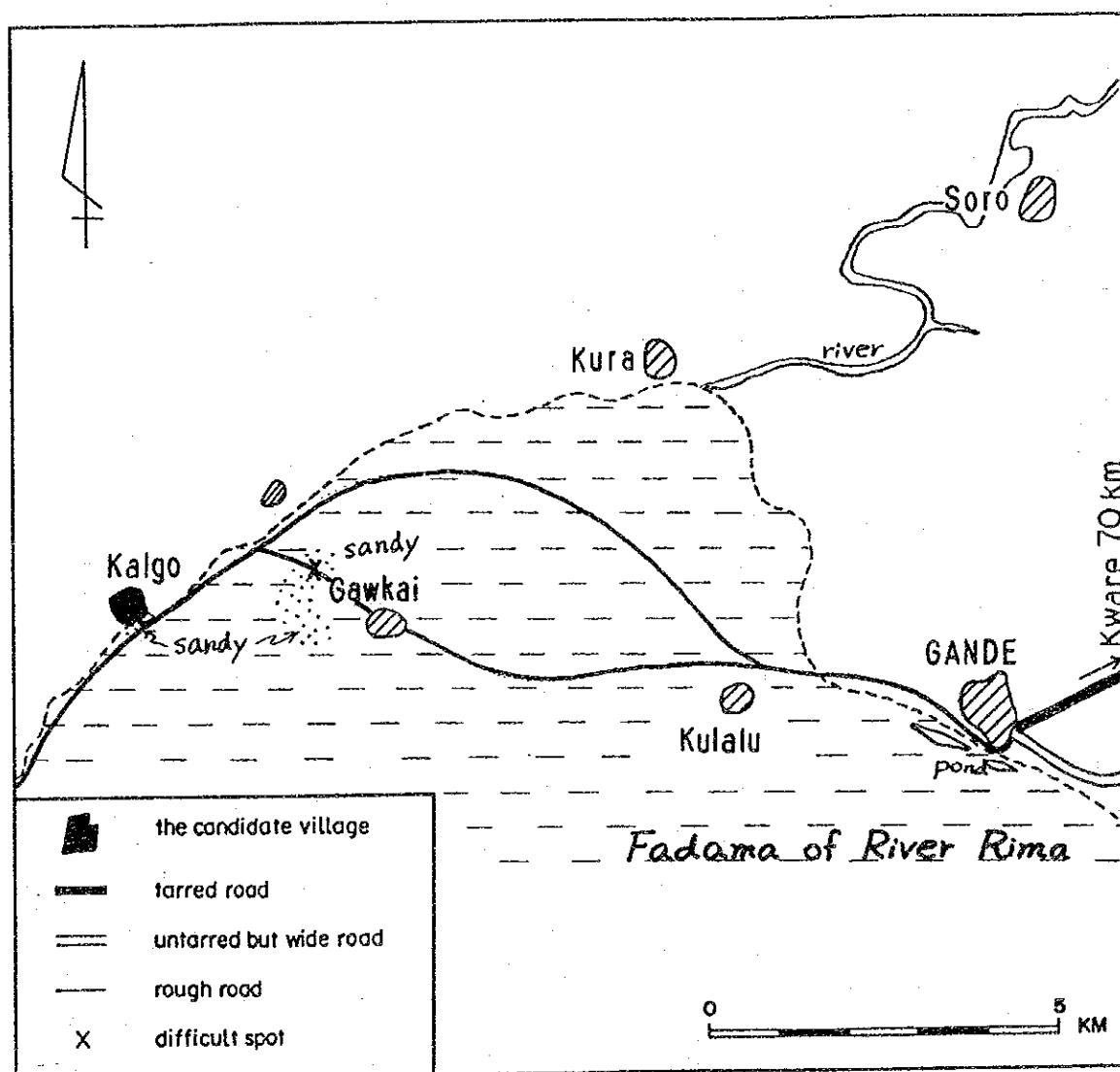
1/1000
1/2500



The Study for Groundwater Development in Sokoto State

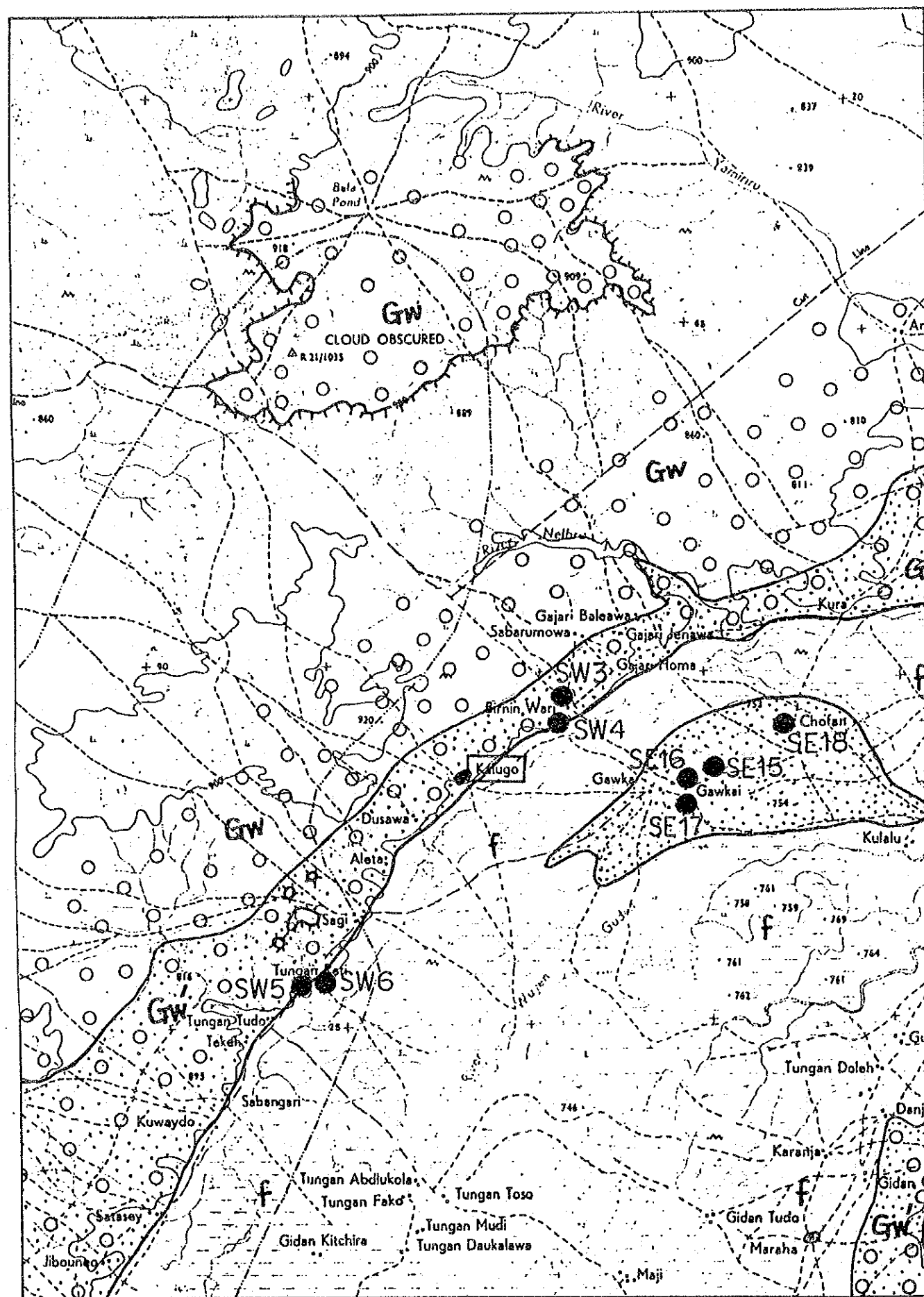
VILLAGE : Kalugo

Village No. 33



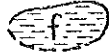
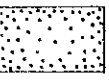
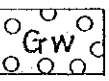
LOCATION MAP

(1/100,000 Sheet 9)



GEOLOGICAL MAP

Kalugo

-  Fadama
-  Eroded and Recovered with Sand
-  Escarpment
-  Gwandu Formation

-  SW 16
- Existing Boreholes

DATA OF EXISTING BOREHOLES

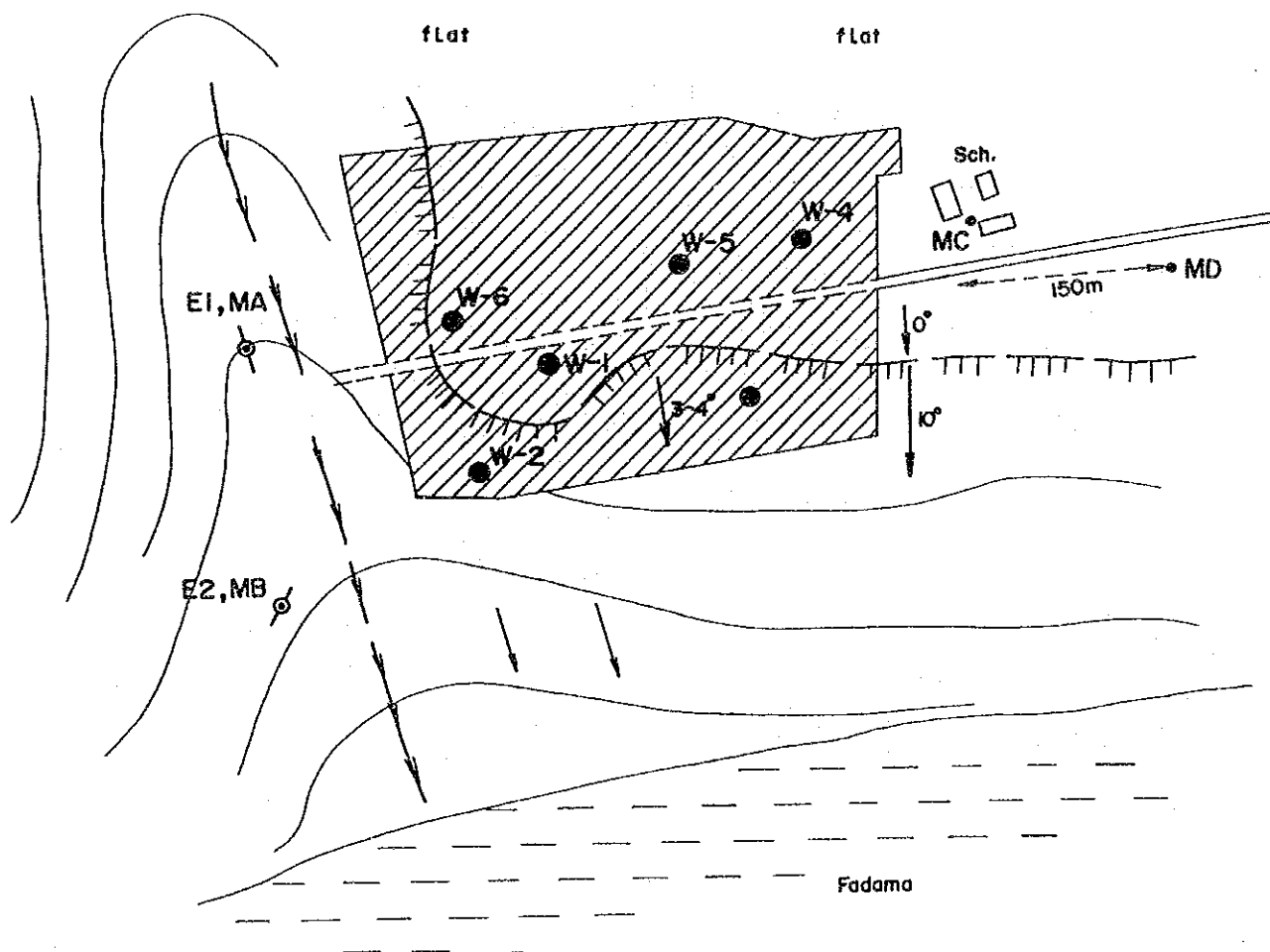
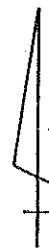
Borehole No.	Depth(m)	S.W.L.(m)	S.C.(m ³ /d/m)
SW 3	78.0	6.98	13.32
SW 4	80.0	14.43	0.69
SW 5	78.0	10.82	3.26
SW 6	36.0	19.65	2.09
SE 15	66.0	A.G.L.	—
SE 16	66.0	A.G.L.	—
SE 17	66.0	A.G.L.	—
SE 18	48.0	0.00	1.41

S.W.L.: Static Water Level
S.C. : Specific Capacity

THE LOCATIONS OF INVESTIGATION AND THE TOPOGRAPHICAL FEATURE

No. 33

Kalugo



settlement



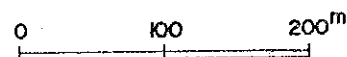
dug well



electric sounding points

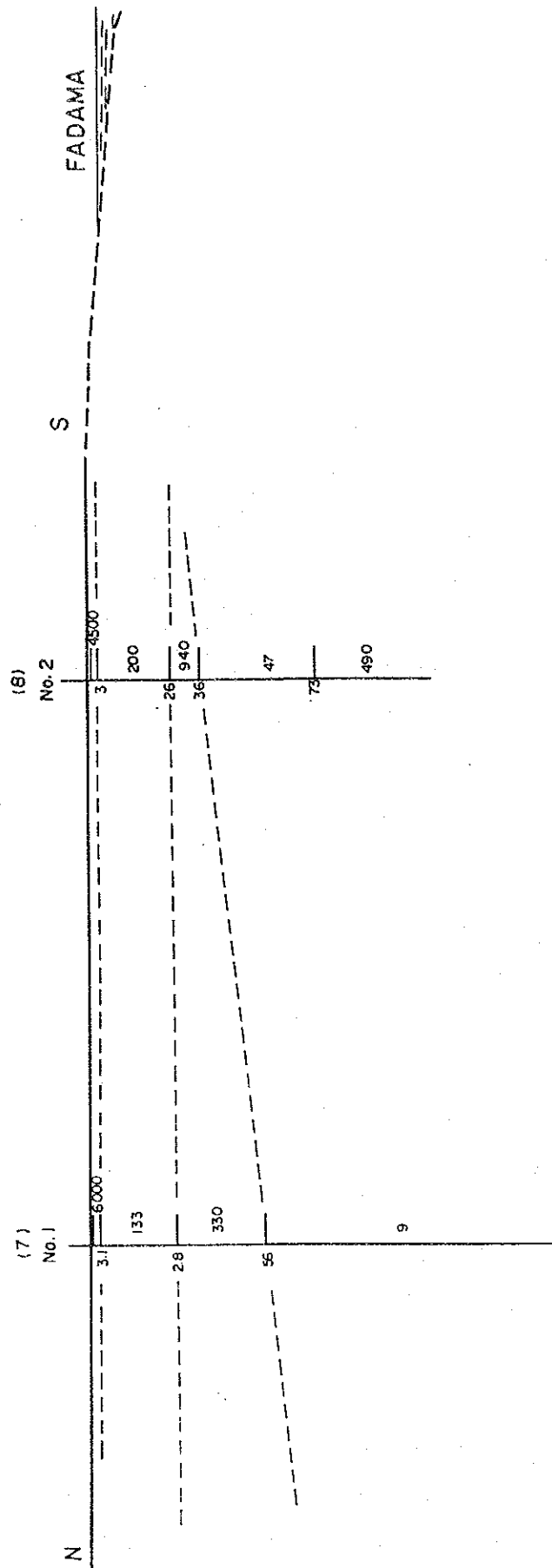


magneto-telluric
sounding points



RESISTIVITY PROFILE

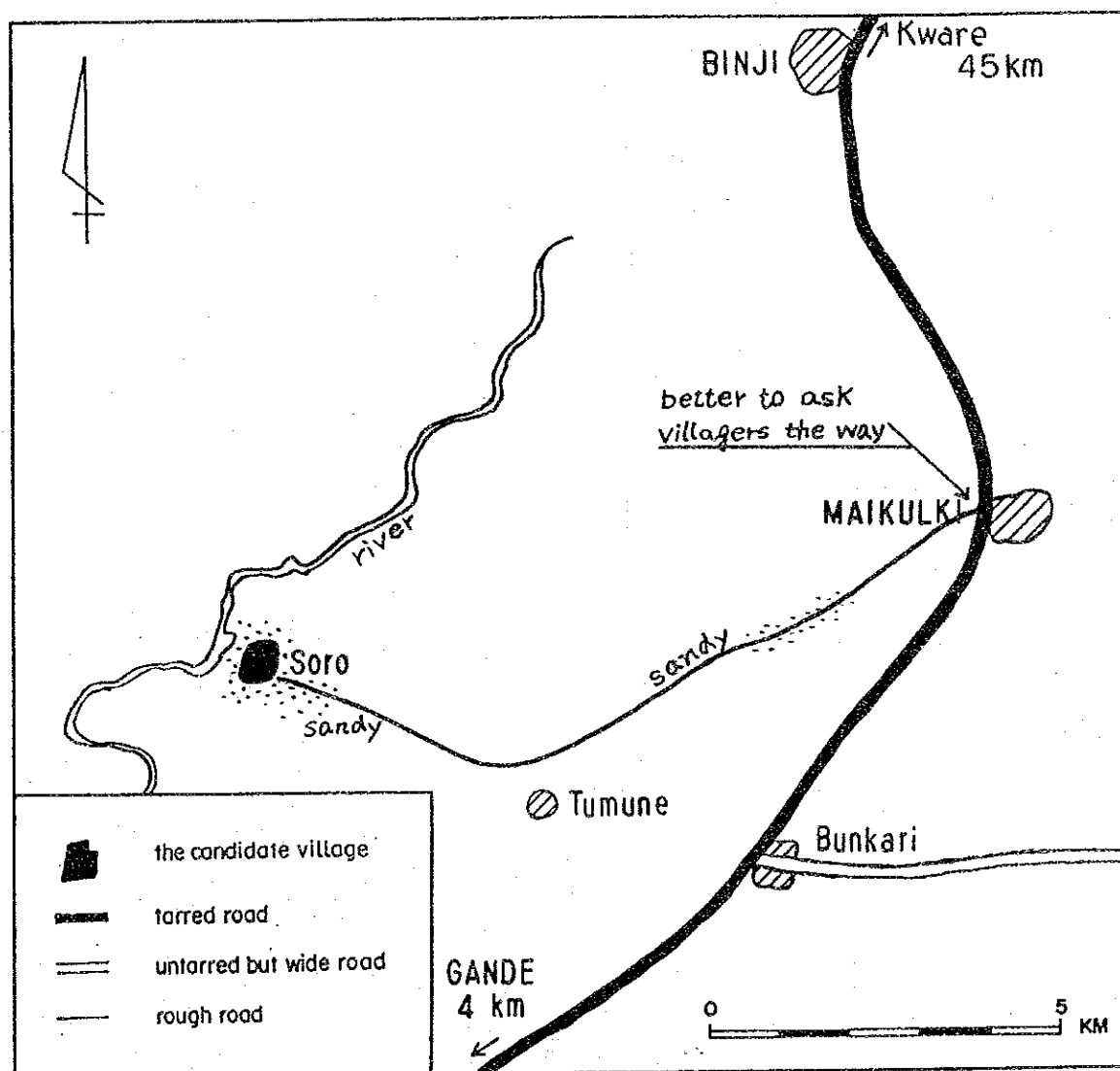
No. 33 Kalugo



The Study for Groundwater Development in Sokoto State

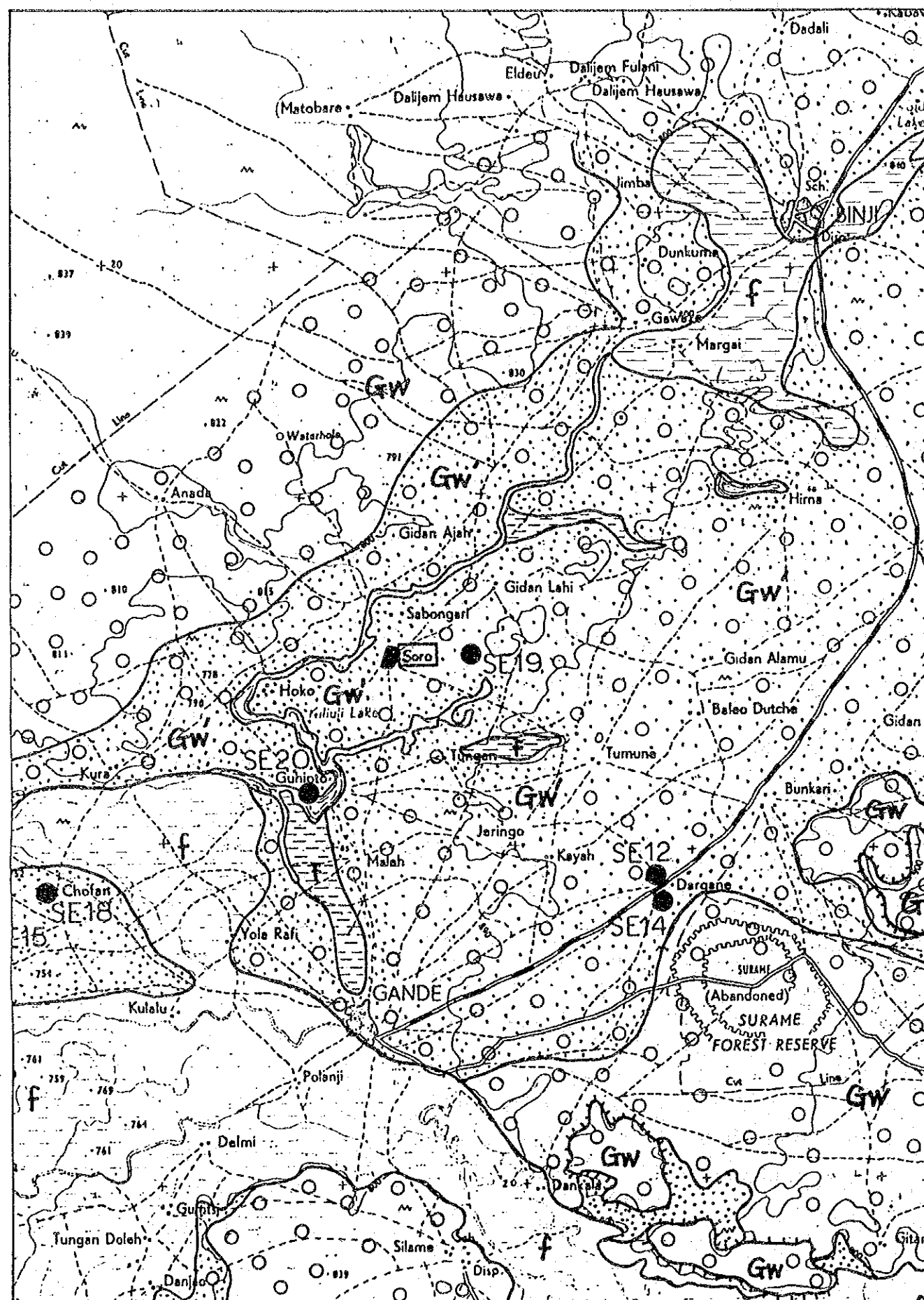
VILLAGE : Soro

Village No. 34



LOCATION MAP

(1/100,000 Sheet 9)



GEOLOGICAL MAP

Soro

- Lake, Pond
- River
- Fadama
- Eroded and Recovered with Sand
- Escarpment
- Gwandu Formation

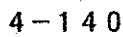
● SW 16
Existing Boreholes

DATA OF EXISTING BOREHOLES

Borehole No.	Depth(m)	SWL(m)	S.C.(m ³ /d/m)
SE12	68.0	14.38	6.82
SE14	64.0	18.05	59.00
SE18	48.0	0.00	1.41
SE19	67.0	2.57	12.10
SE20	73.0	1.00	47.55

SWL.: Static Water Level
S.C. : Specific Capacity

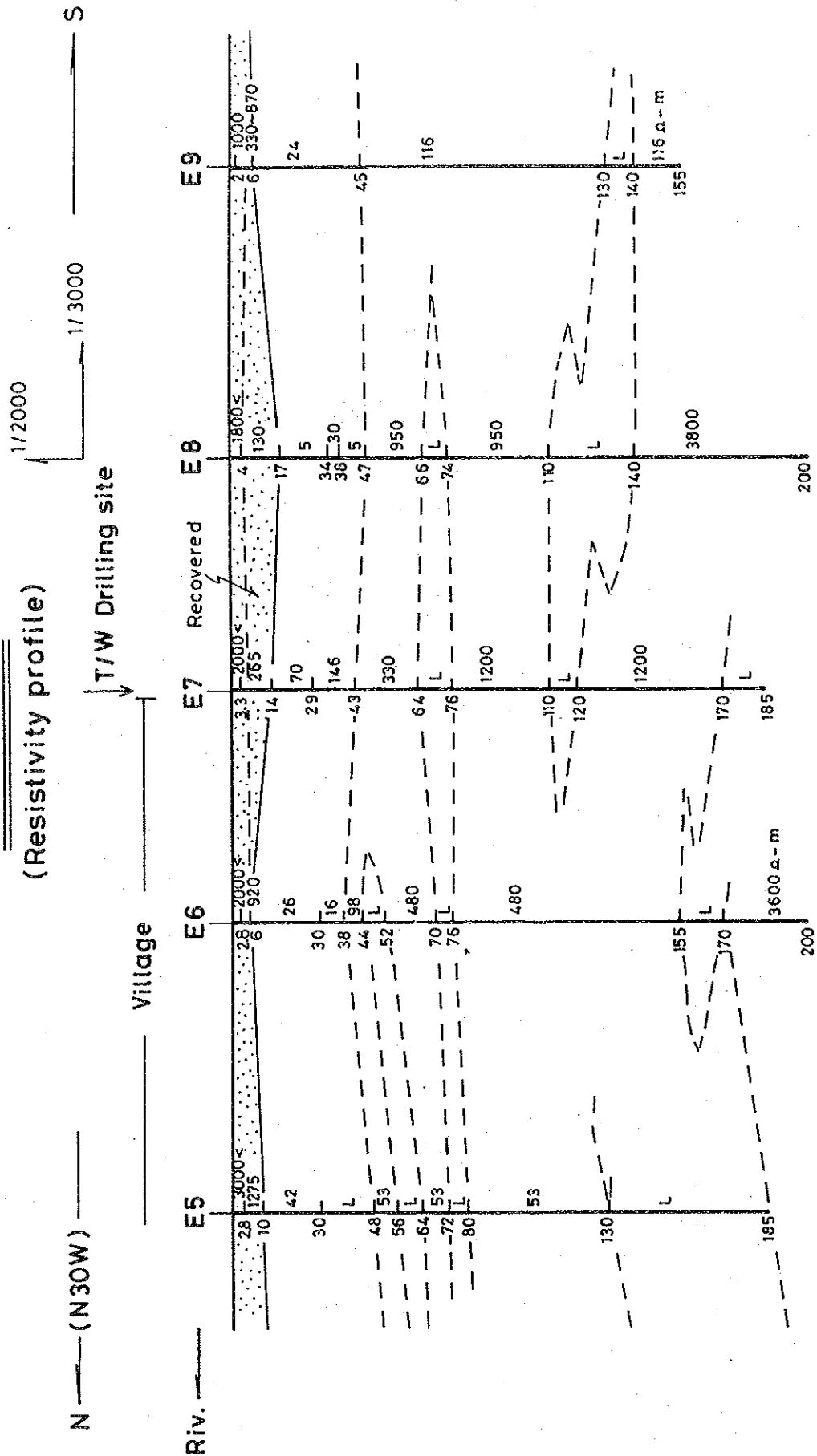
1/100,000 0 50 km

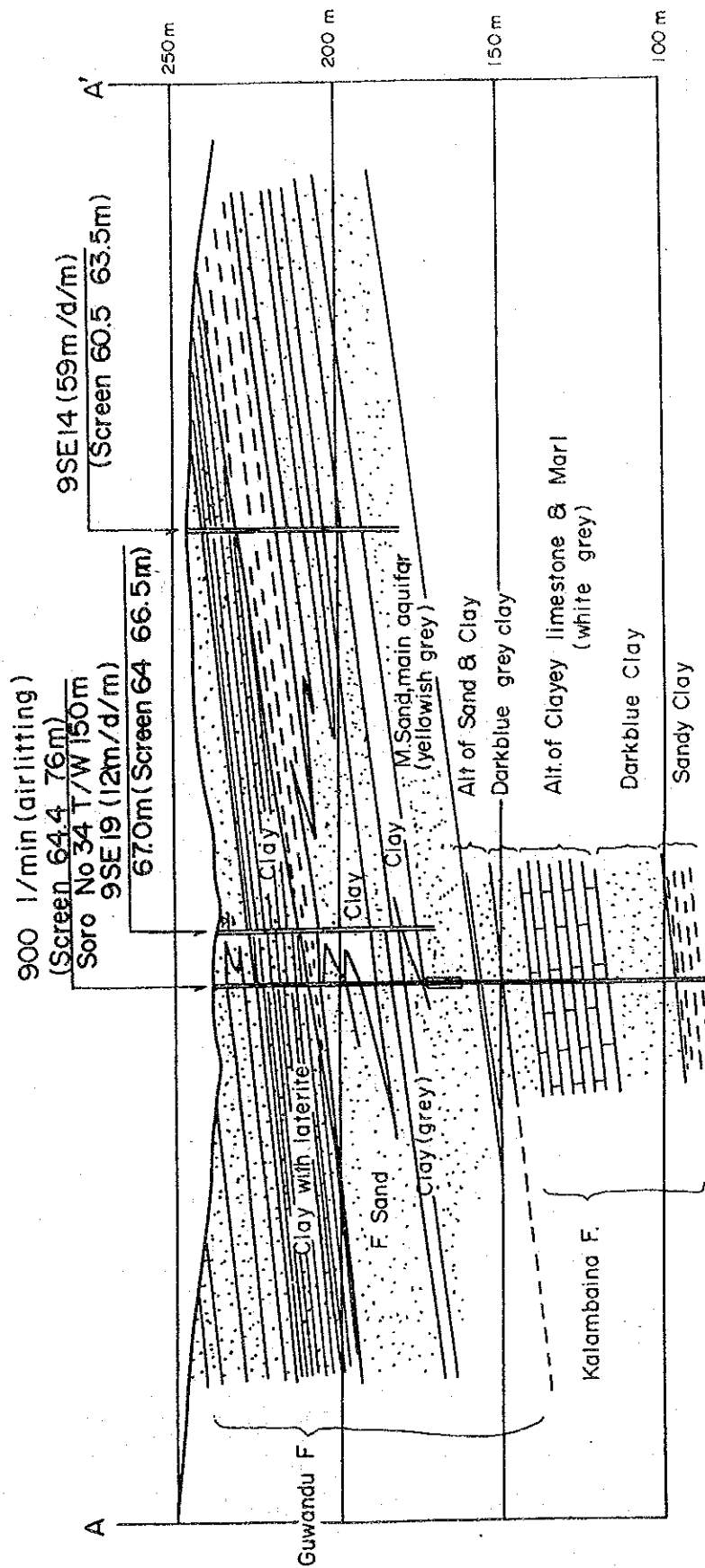


THE LOCATIONS OF INVESTIGATION AND THE TOPOGRAPHICAL FEATURE

No.34:Soro

(Resistivity profile)



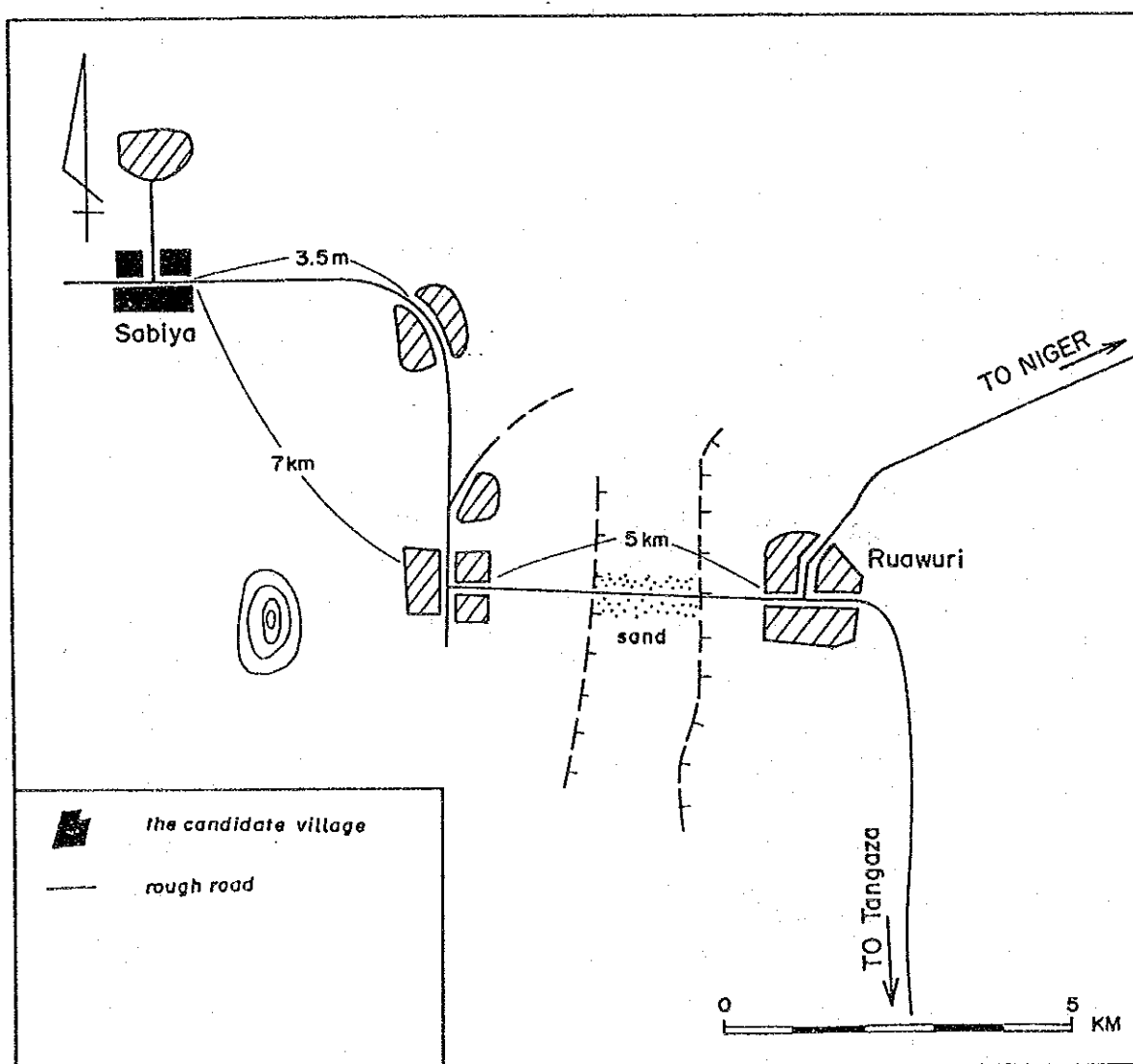


Hydrogeological Cross Section of Soro Area

The Study for Groundwater Development in Sokoto State

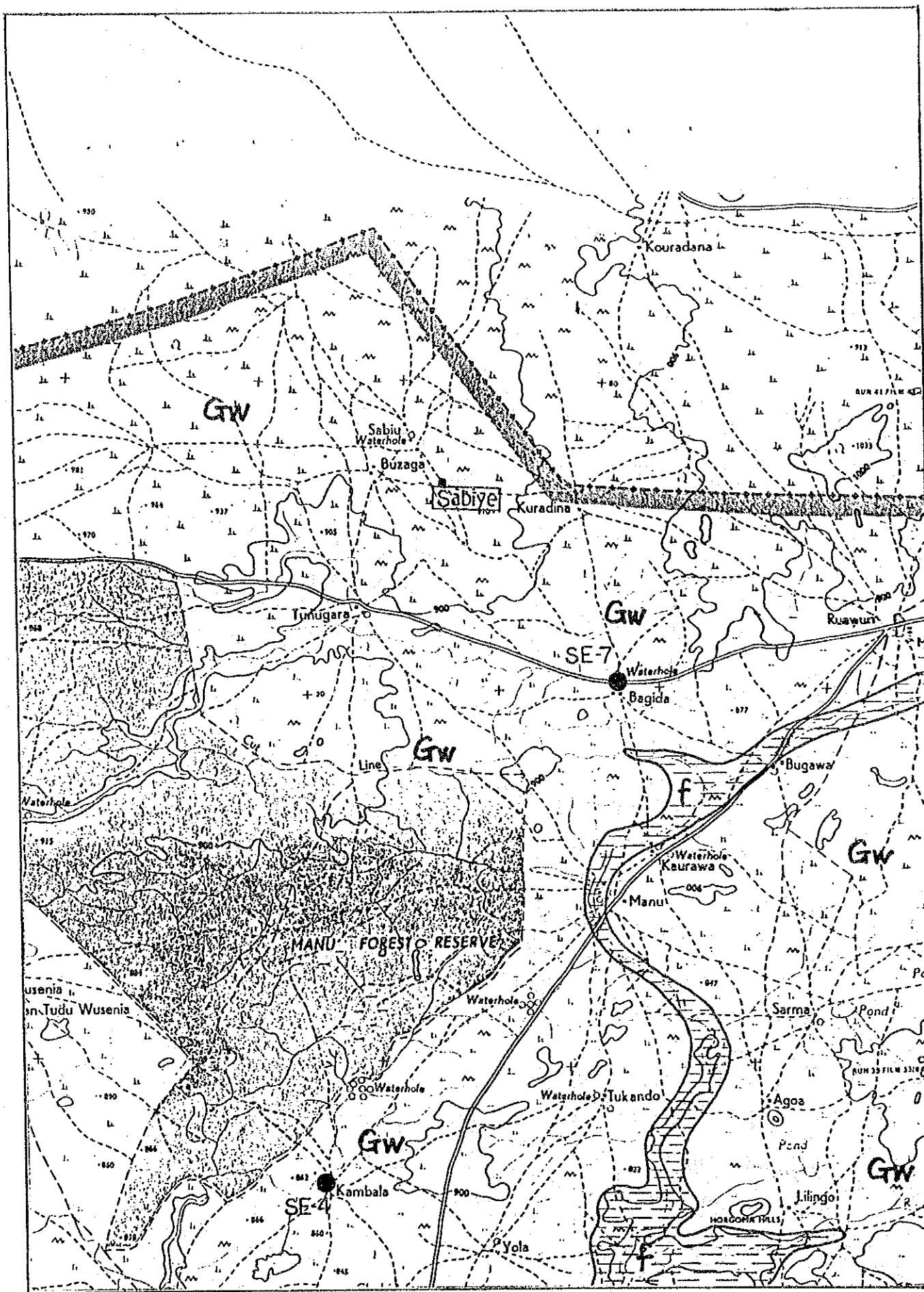
VILLAGE : Sabiye

Village No. 35



LOCATION MAP

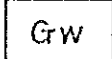
(1/100,000 Sheet _____)



GEOLOGICAL MAP

Sabiye

 Fadama

 Gwandu Formation

 SW 16
Existing Boreholes

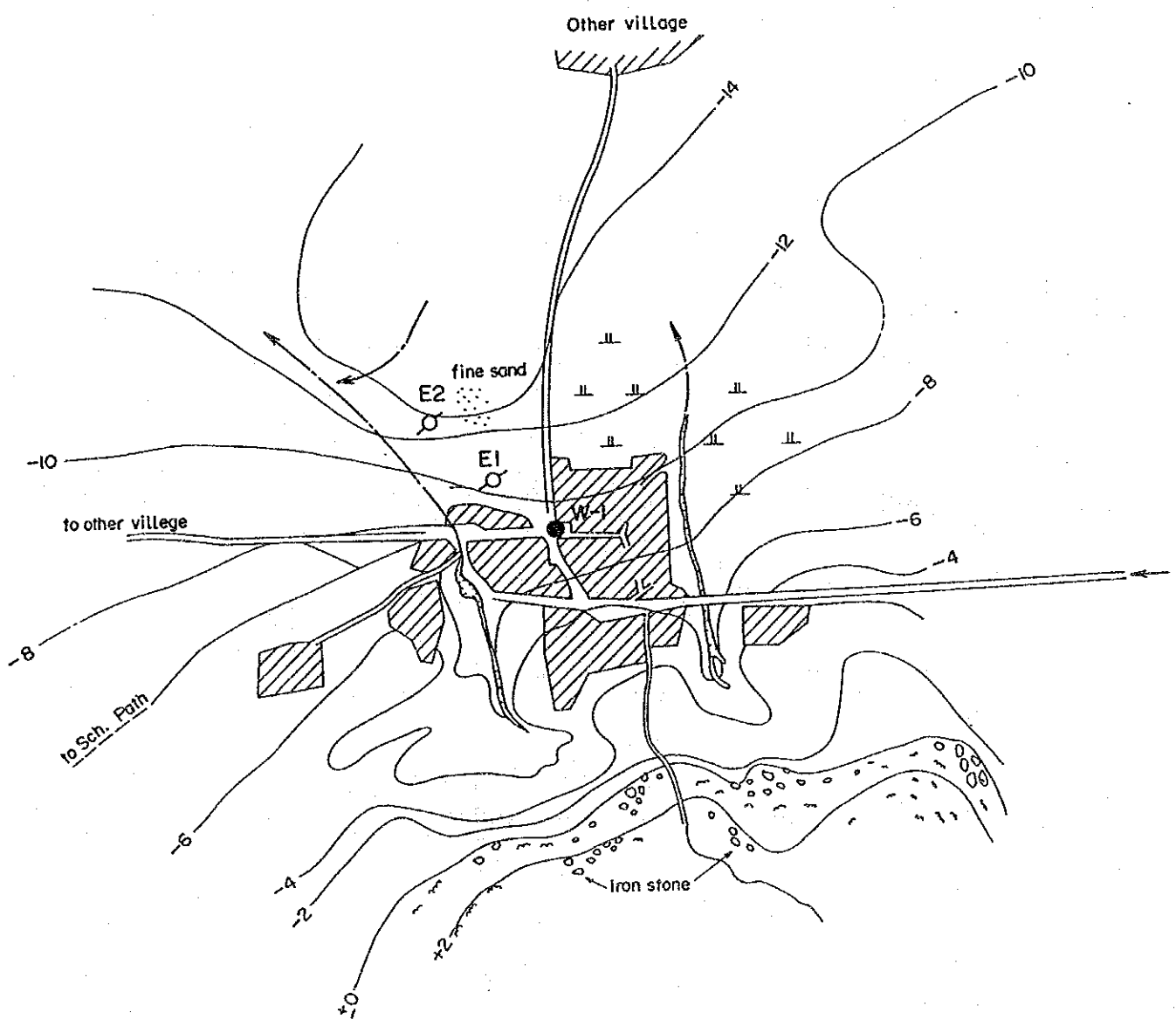
DATA OF EXISTING BOREHOLES

Borehole No.	Depth(m)	S.W.L.(m)	S.C.(m ³ /d/m)
SE-4	49.0	28.33	37.00
SE-7	48.0	9.88	26.48

SWL.: Static Water Level
SC : Specific Capacity

No. 35

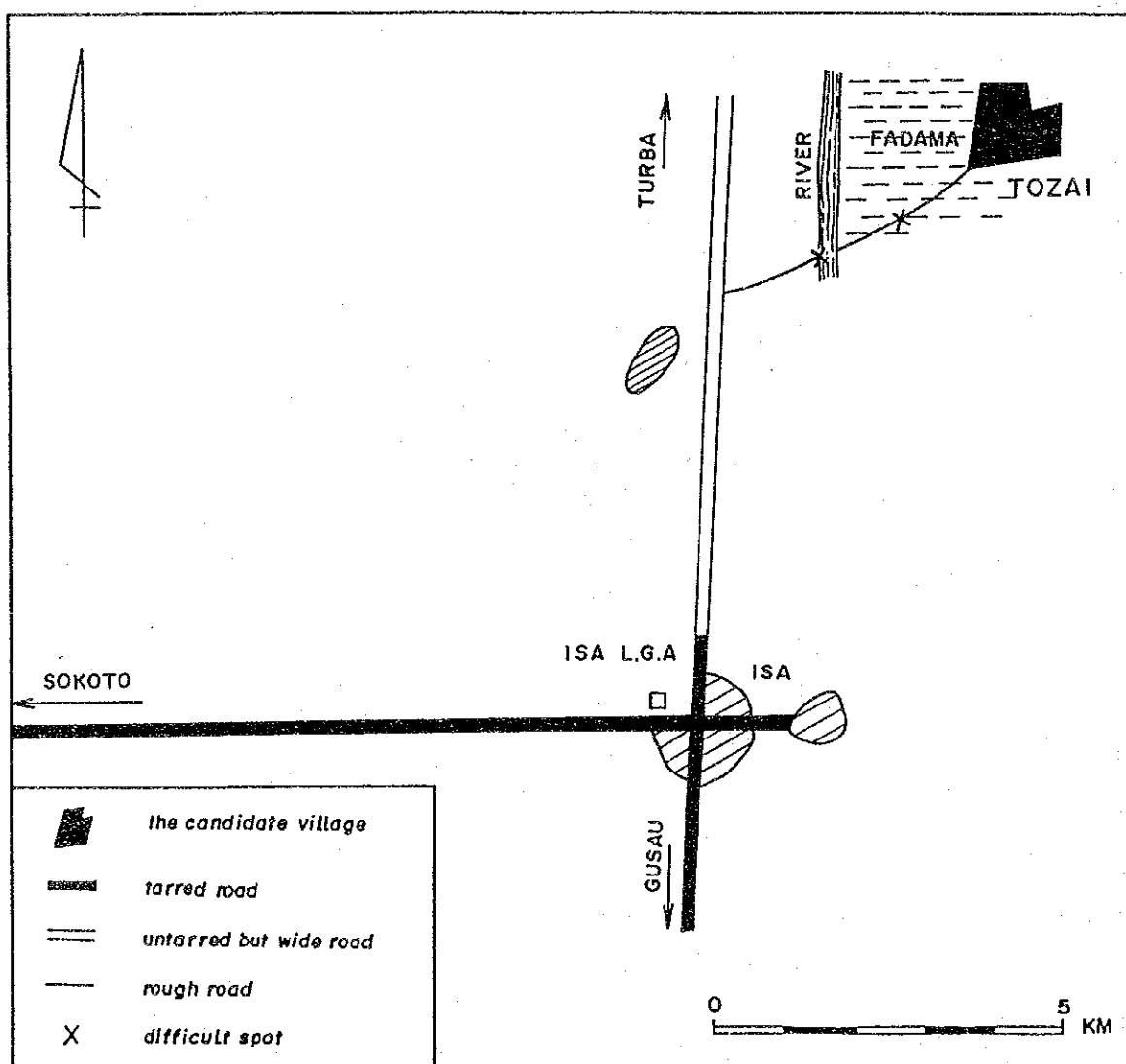
Sabiye



The Study for Groundwater Development in Sokoto State

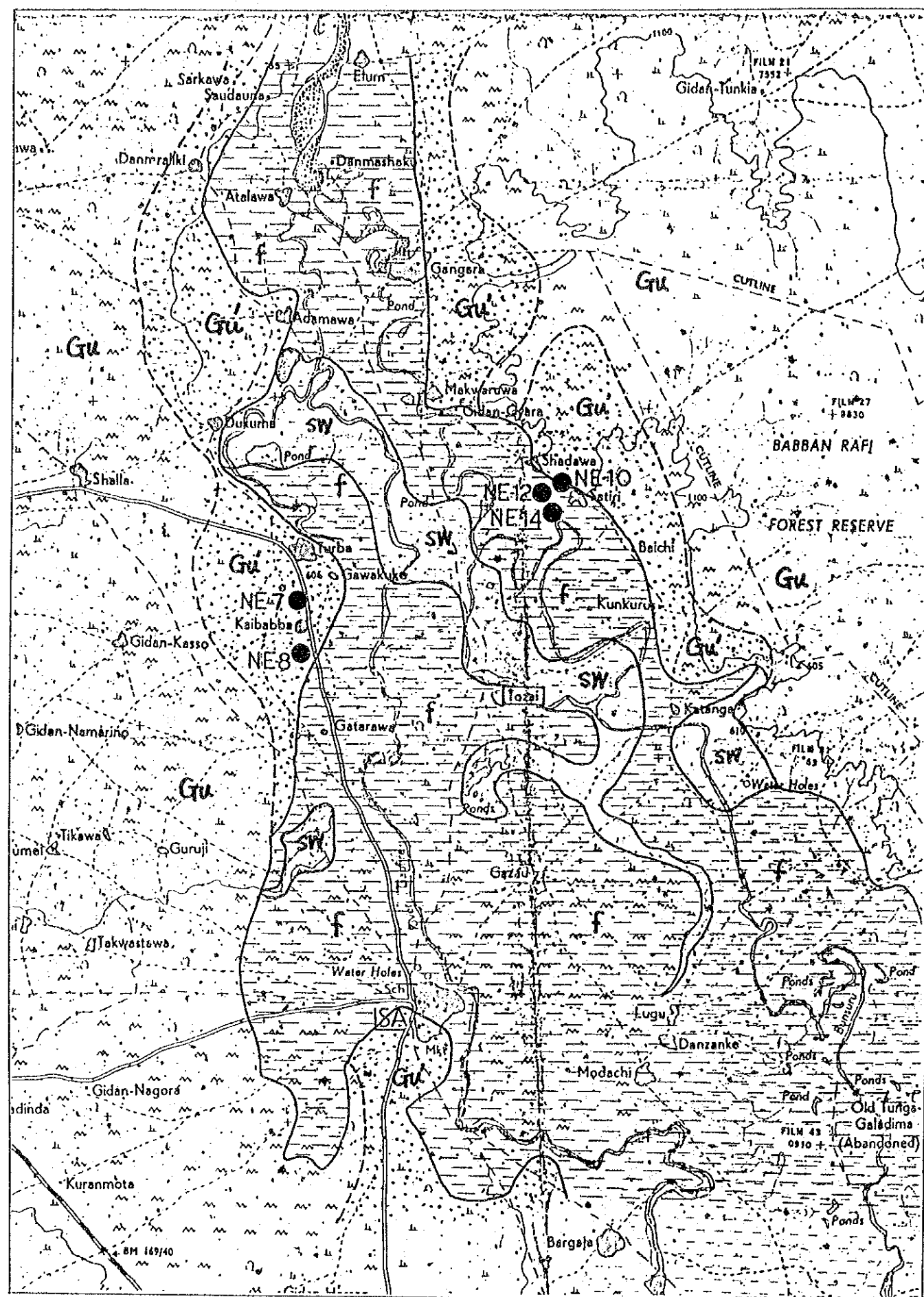
VILLAGE : Tozai

Village No. 36



LOCATION MAP

(1/100,000 Sheet _____)



GEOLOGICAL MAP

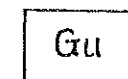
Tozai



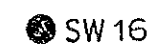
Fadama



Eroded and
Recovered with Sand



Gundumi Formation

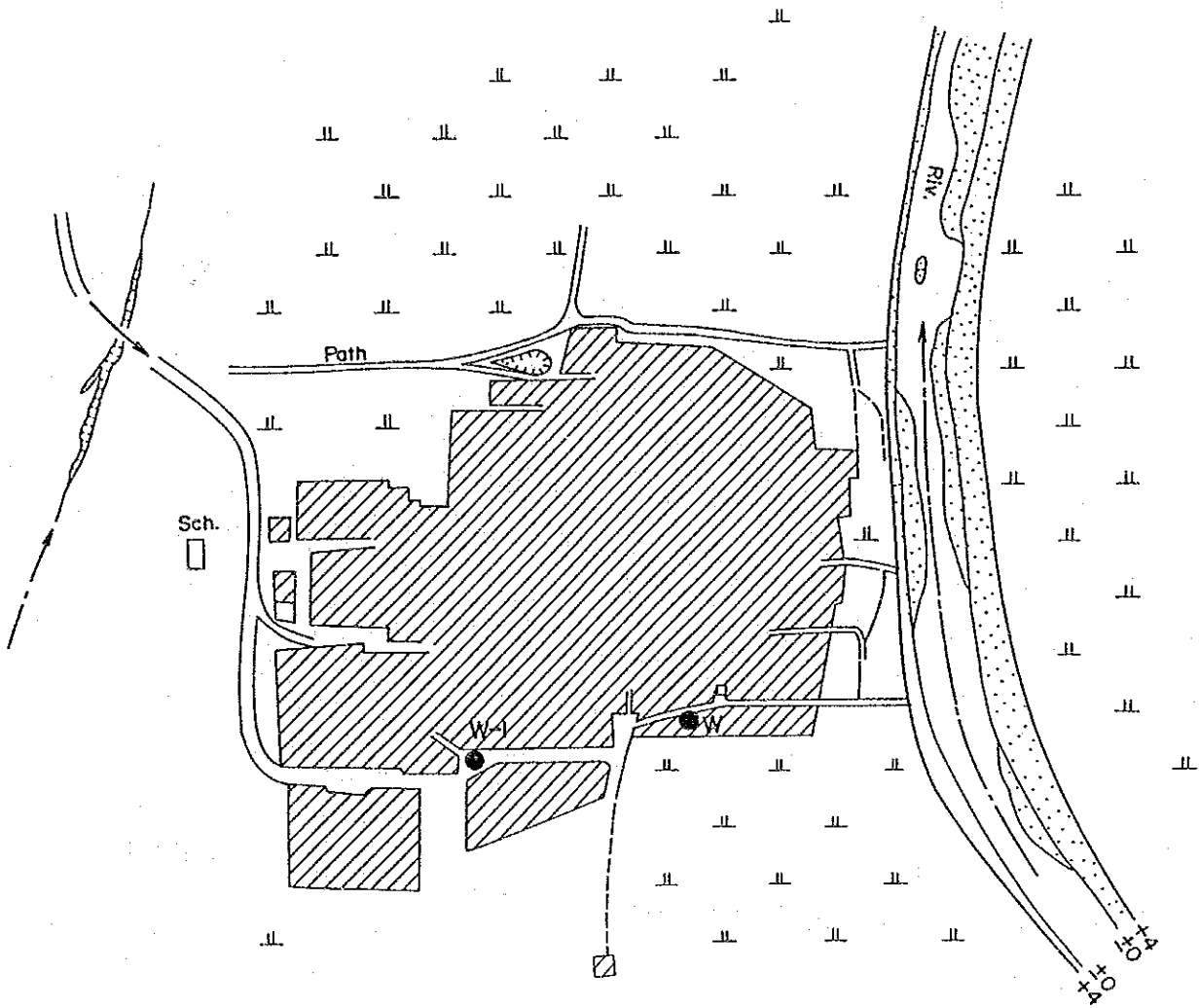


Existing Boreholes

DATA OF EXISTING BOREHOLES

Borehole No.	Depth(m)	SWL(m)	S.C.(m ³ /d/m)
NE-7	54.0	9.52	17.11
NE-8	54.0	11.59	3.75
NE-10	50.0	10.10	10.06
NE-12	48.0	7.86	34.26
NE-14	46.0	8.08	26.67

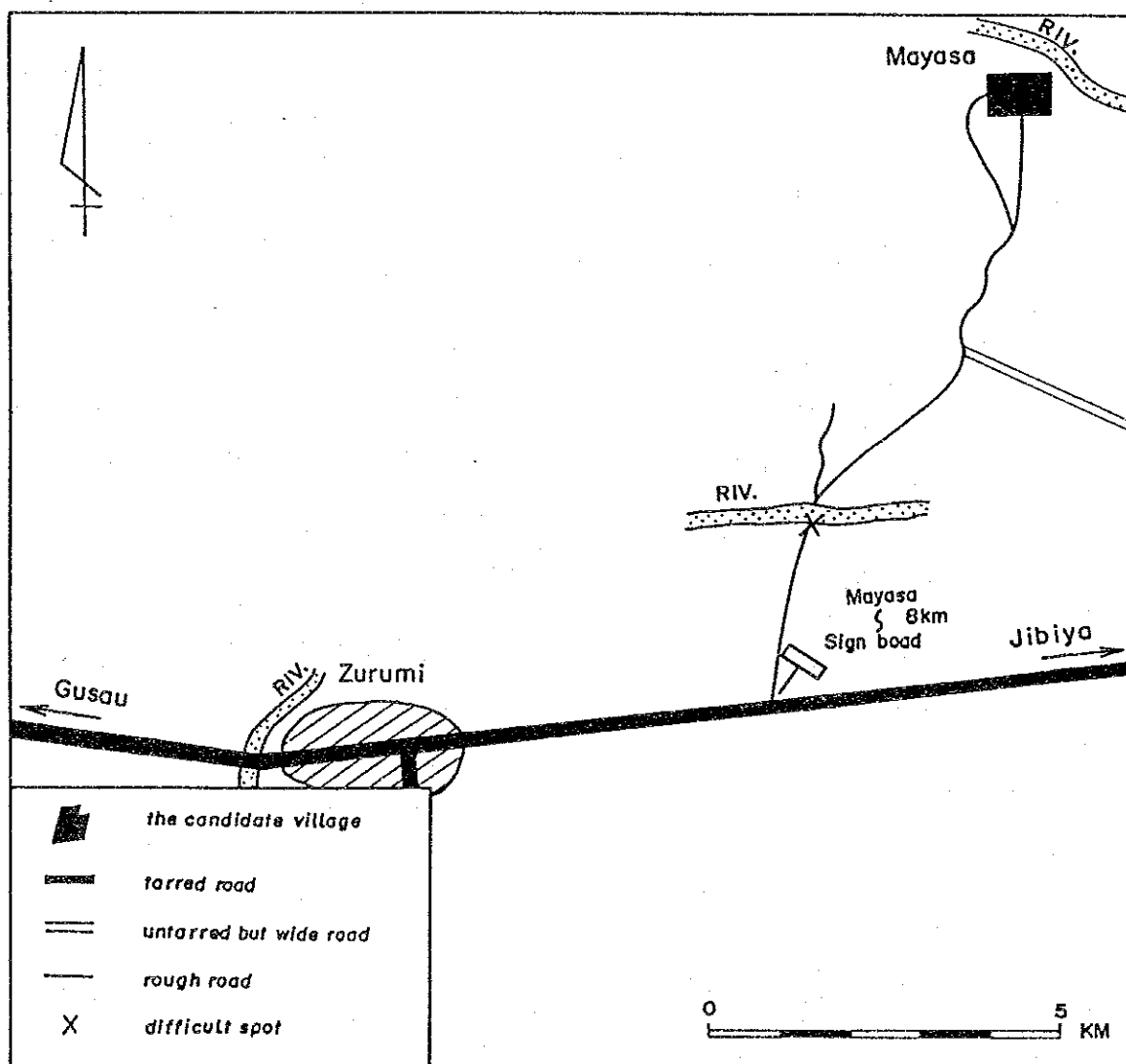
SWL.: Static Water Level
SC : Specific Capacity



The Study for Groundwater Development in Sokoto State

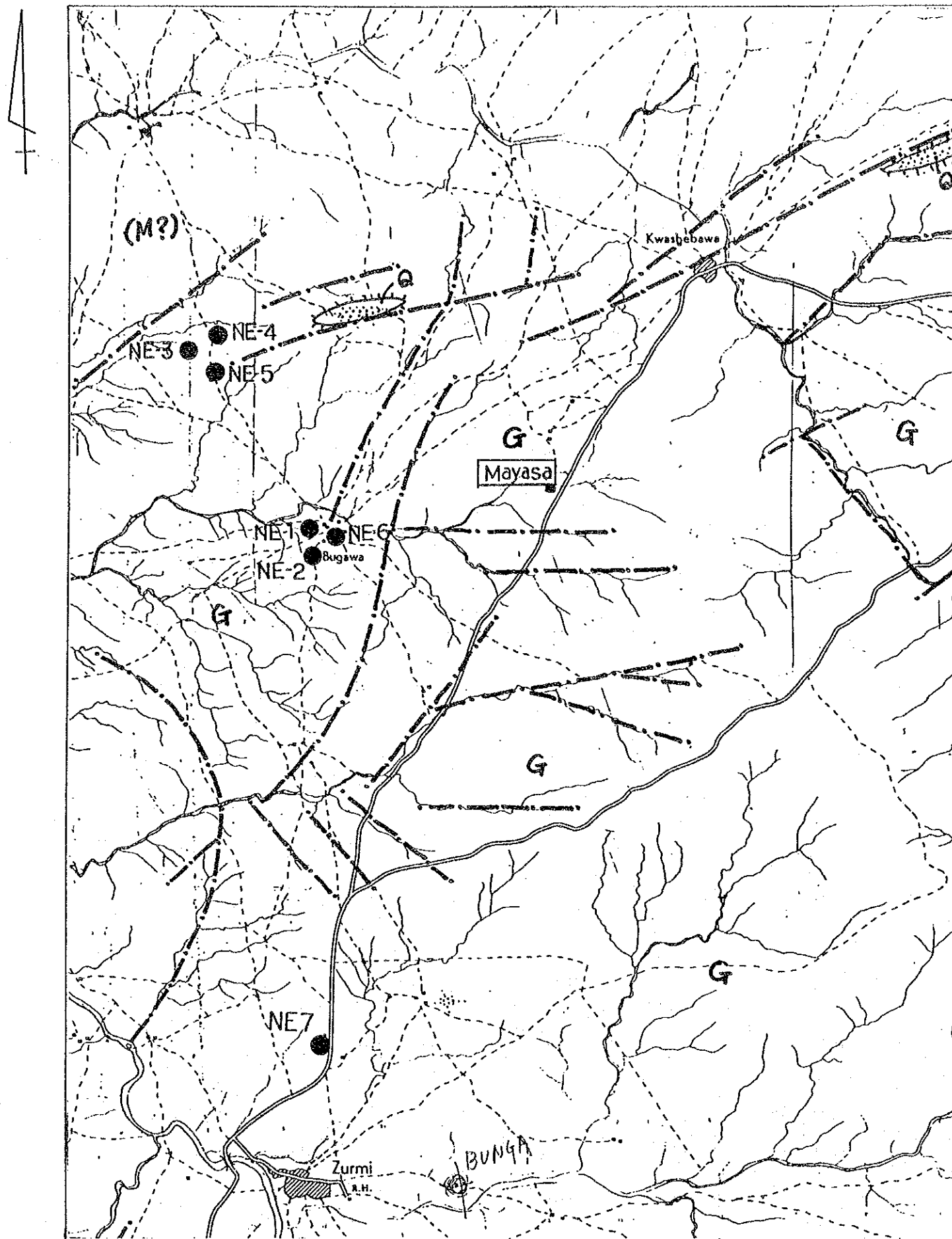
VILLAGE : Mayasa

Village No. 37



LOCATION MAP

(1/100,000 Sheet _____)



GEOLOGICAL MAP

Mayasa

- G Older Granite
- M Meta-sediments
- Q Quartzite

--- Lineament

● SW 16
Existing Boreholes

DATA OF EXISTING BOREHOLES

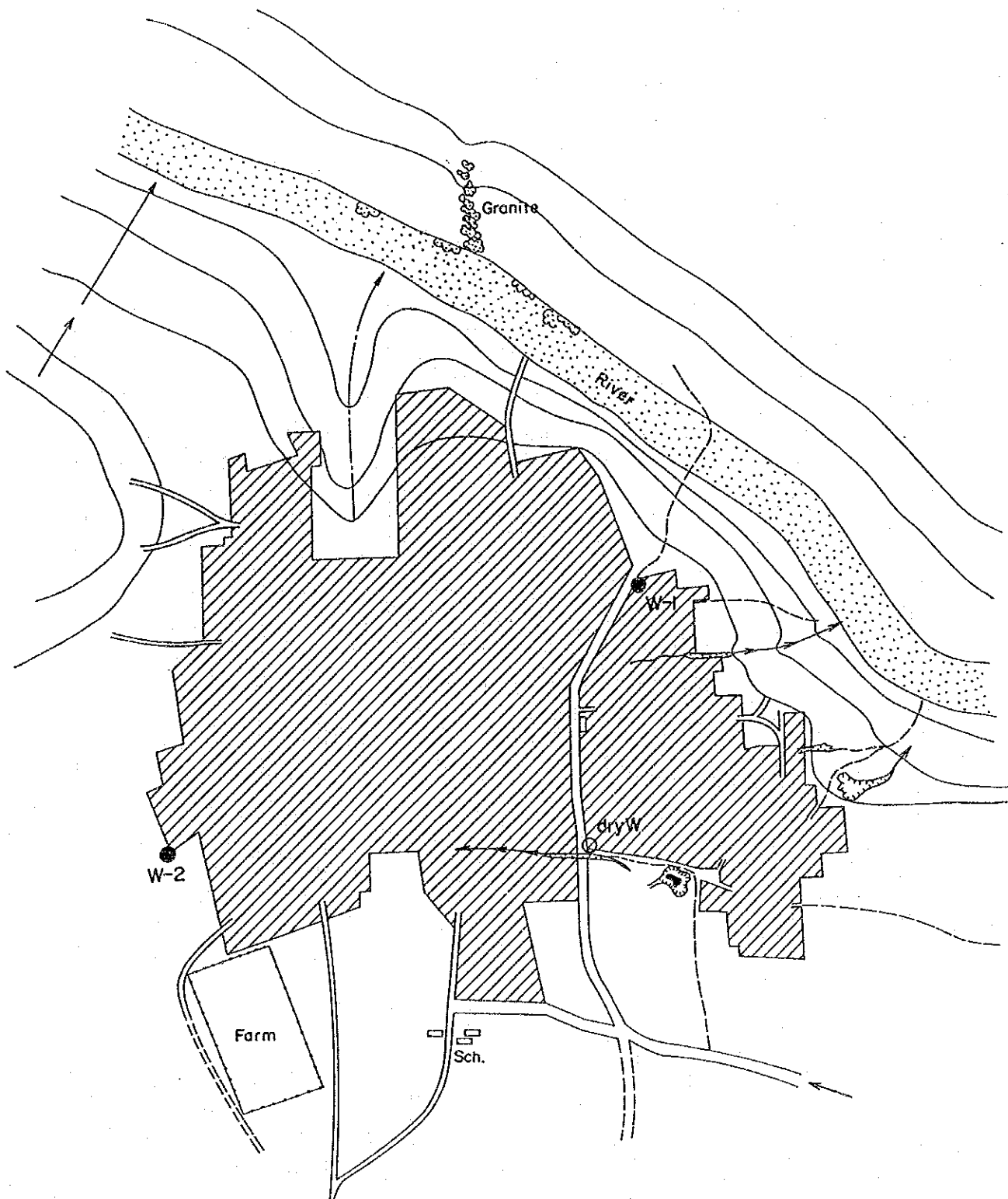
Borehole No.	Depth(m)	SWL.(m)	S.C.(m ³ /d/m)
NE-1	31.5	15.17	30.24
NE-2	43.0	11.81	0.01
NE-3	31.0	20.58	159.16
NE-4	37.0	20.05	214.47
NE-5	37.0	19.73	245.85

SWL.: Static Water Level
SC : Specific Capacity

1/100,000 0 5 km

No.37

Mayasa

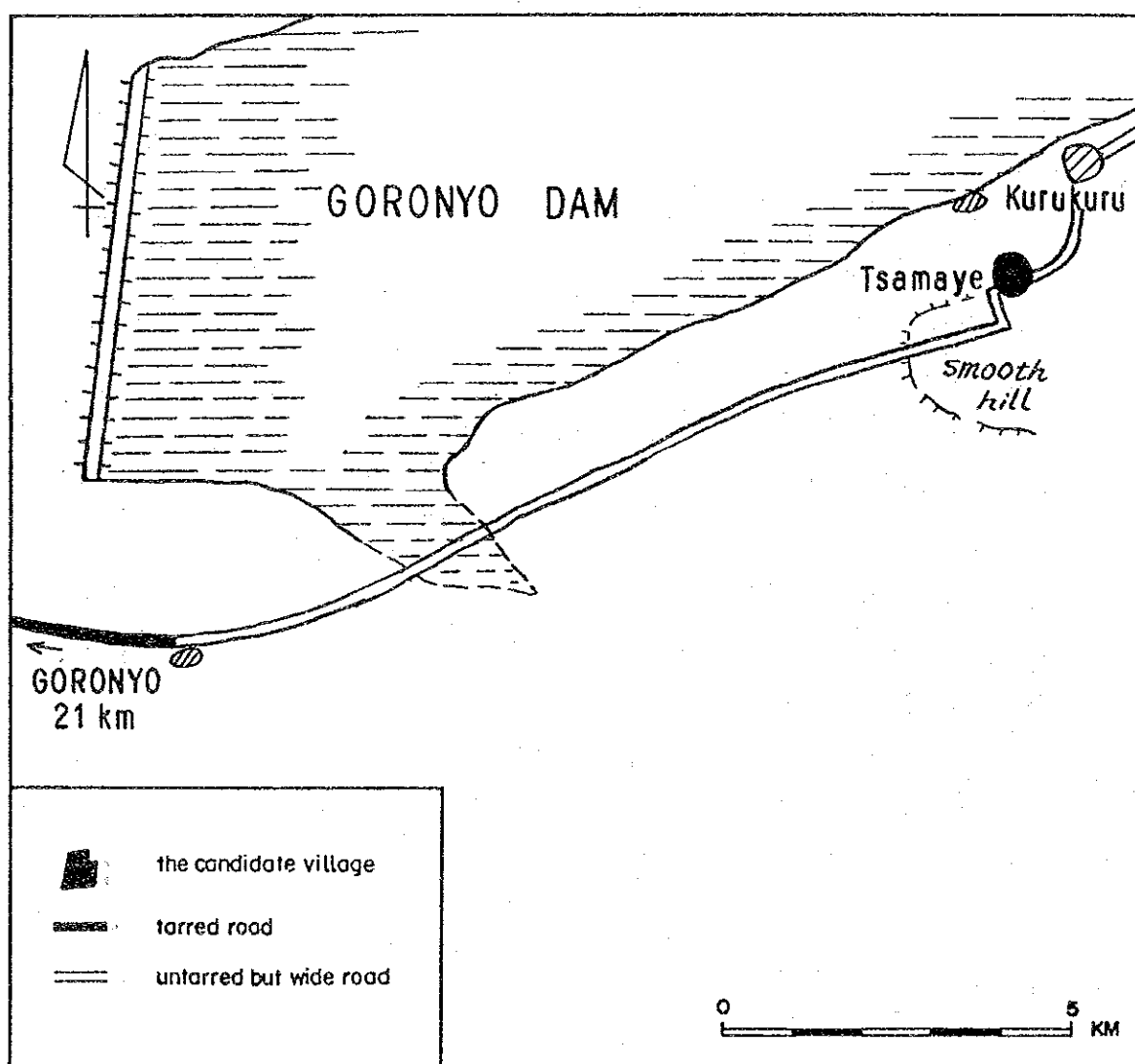


0 100 200m

The Study for Groundwater Development in Sokoto State

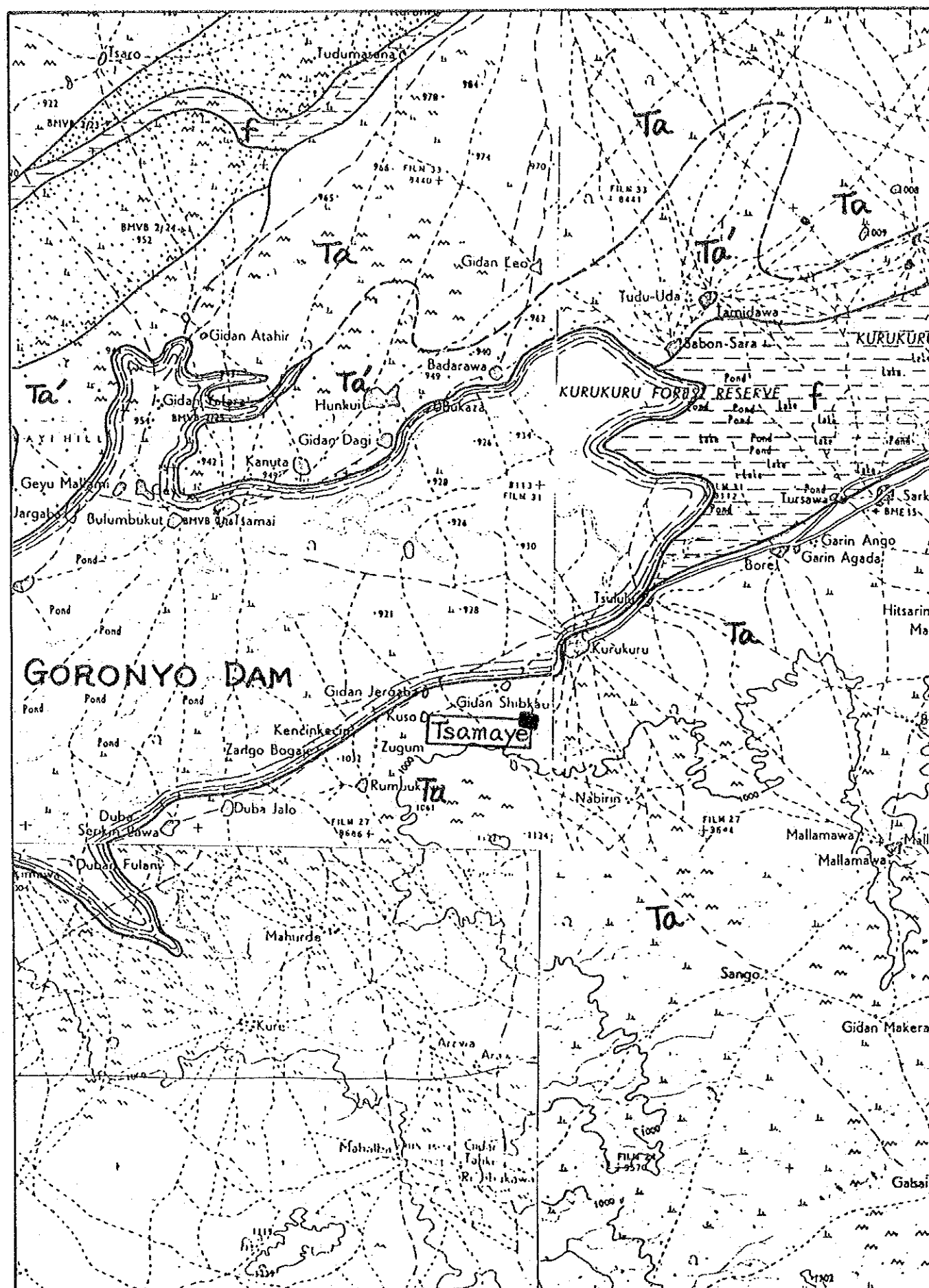
VILLAGE : Tsamaye

Village No. 38



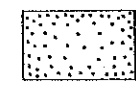
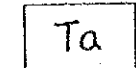
LOCATION MAP

(1/100,000 Sheet 4)



GEOLOGICAL MAP

Tsamaye

-  Lake, Pond
-  Fadama
-  Eroded and Recovered with Sand
-  Ta Taloka Formation

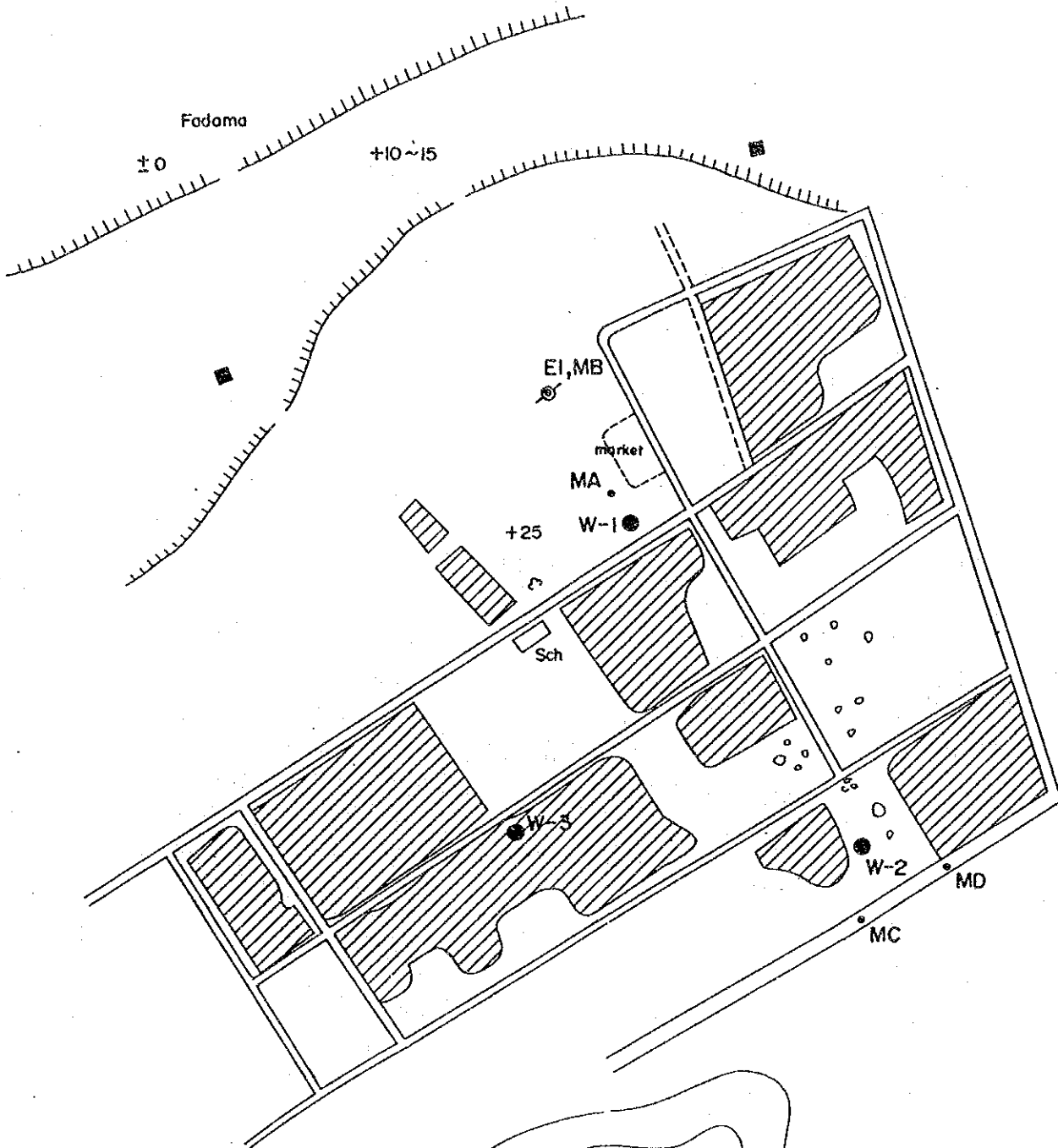
1/100,000

0 50 km

THE LOCATIONS OF INVESTIGATION AND THE TOPOGRAPHICAL FEATURE

No.38

Tsarnaye



settlement



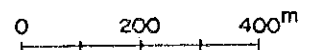
dug well



bore-hole with water tank

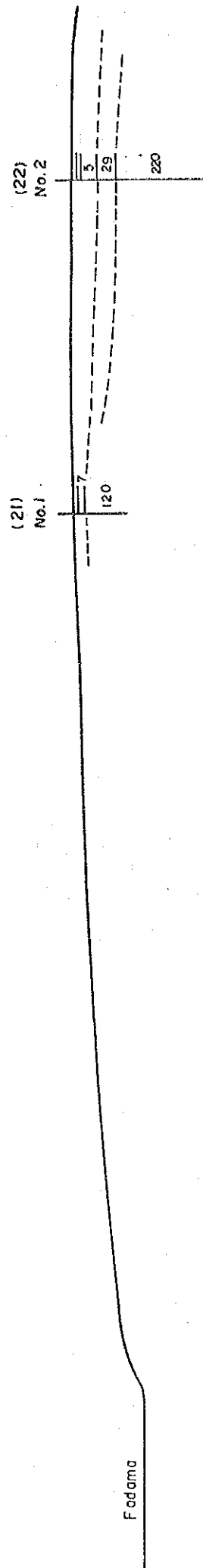


magneto-telluric
sounding points



RESISTIVITY PROFILE

No.38 Tsamaye

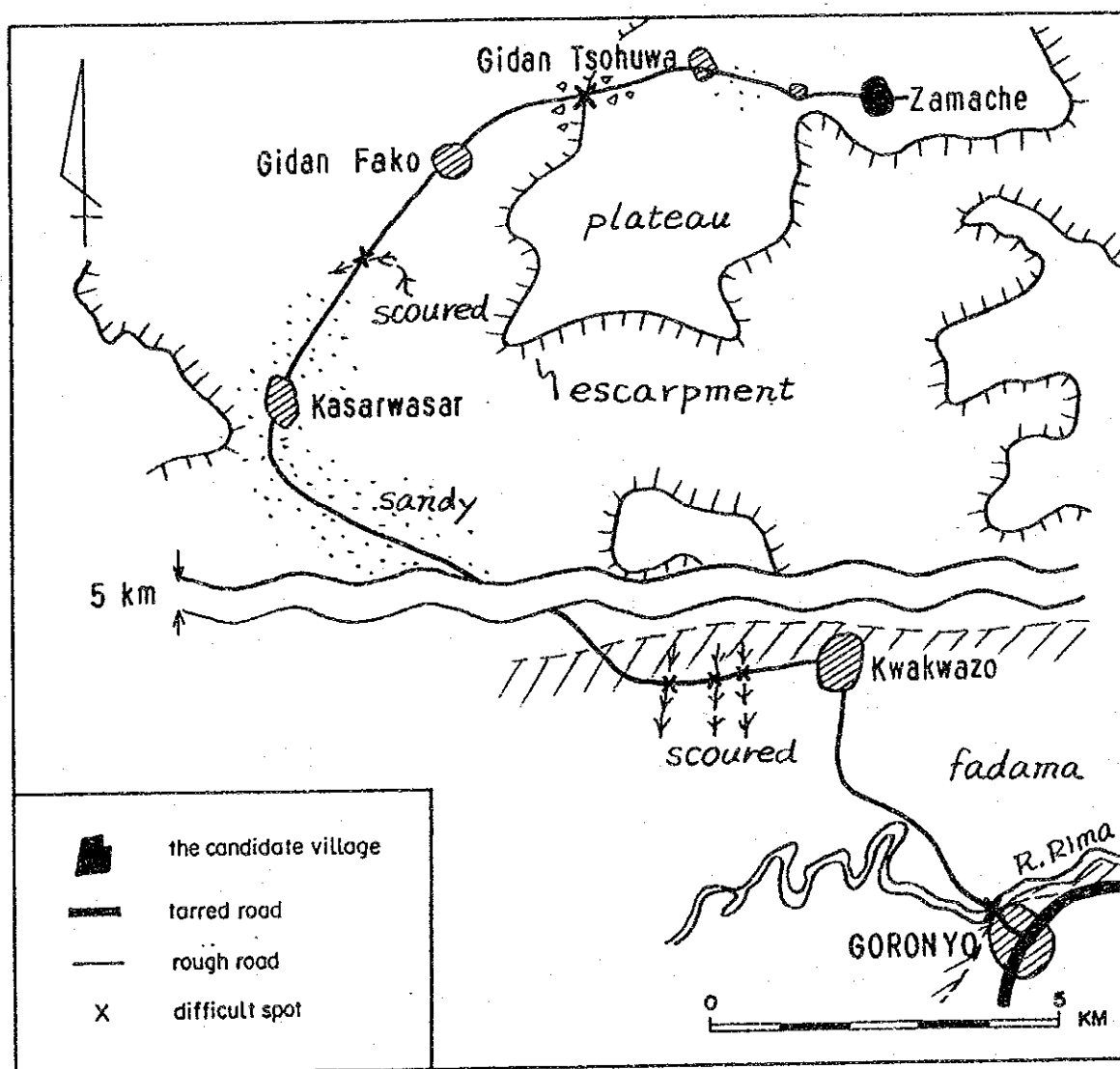


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The Study for Groundwater Development in Sokoto State

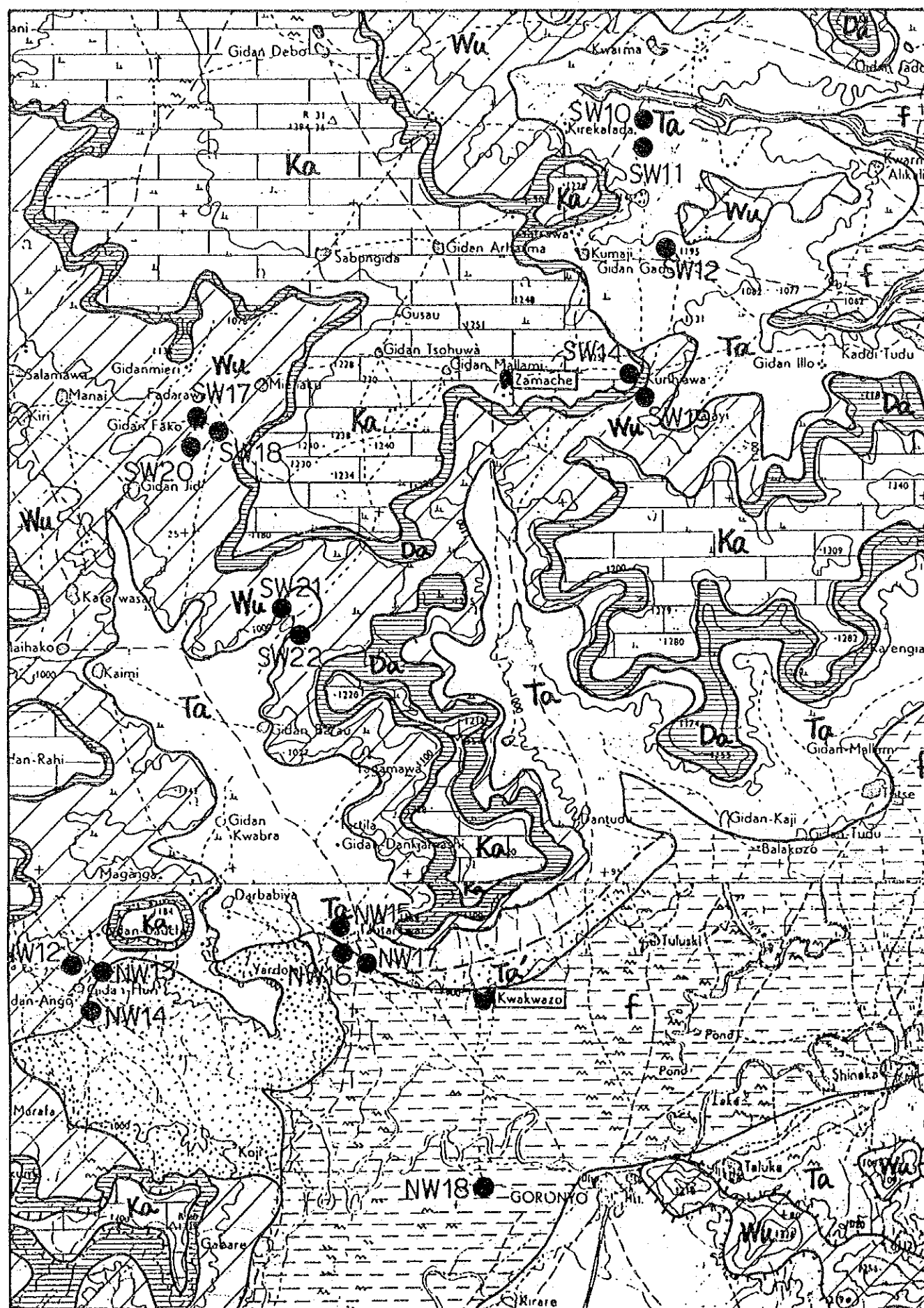
VILLAGE : Zamache

Village No. 39



LOCATION MAP

(1/100,000 Sheet 4)



GEOLOGICAL MAP

Zamache

- River
- Fadama
- Eroded and Recovered with Sand
- Escarpment
- Kalambaina Formation
- Dange Formation
- Wurno Formation
- Taloka Formation

● SW 16

Existing Boreholes

DATA OF EXISTING BOREHOLES

Borehole No.	Depth(m)	SWL(m)	SC.(m ³ /d/m)
SW 10	45.0	19.72	2.57
SW 11	36.0	17.50	1.41
SW 12	62.0	45.16	2.15
SW 14	91.0	58.45	1.22
SW 17	60.0	31.64	1.09
SW 18	72.0	30.95	0.65
SW 19	91.0	61.91	0.56
SW 20	72.0	34.02	1.21
SW 21	84.0	27.01	0.95
SW 22	66.0	23.07	0.49

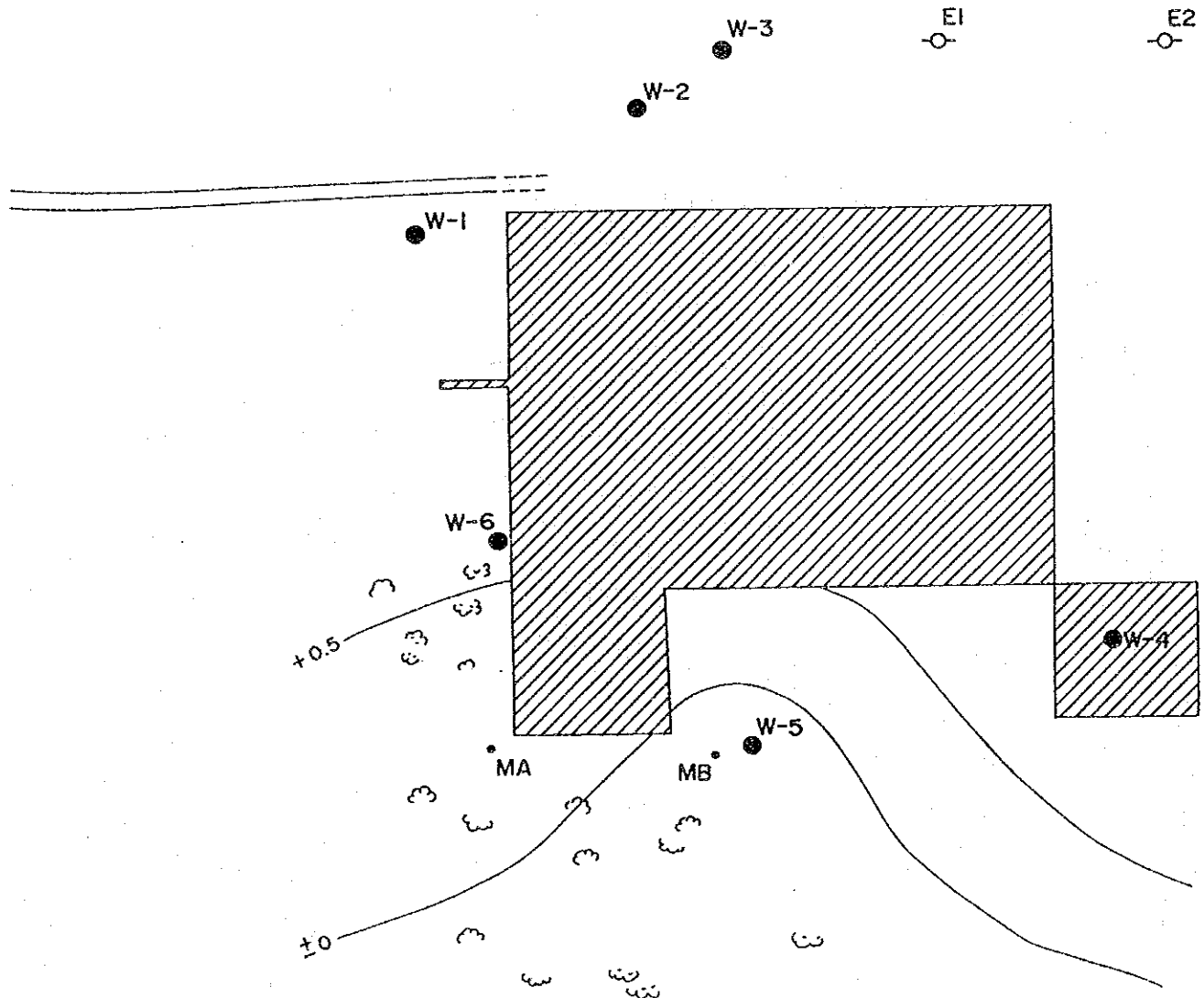
SWL.: Static Water Level

SC : Specific Capacity

THE LOCATIONS OF INVESTIGATION AND THE TOPOGRAPHICAL FEATURE

No.39

Zamache



settlement



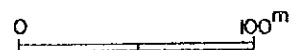
dug well



electric sounding points



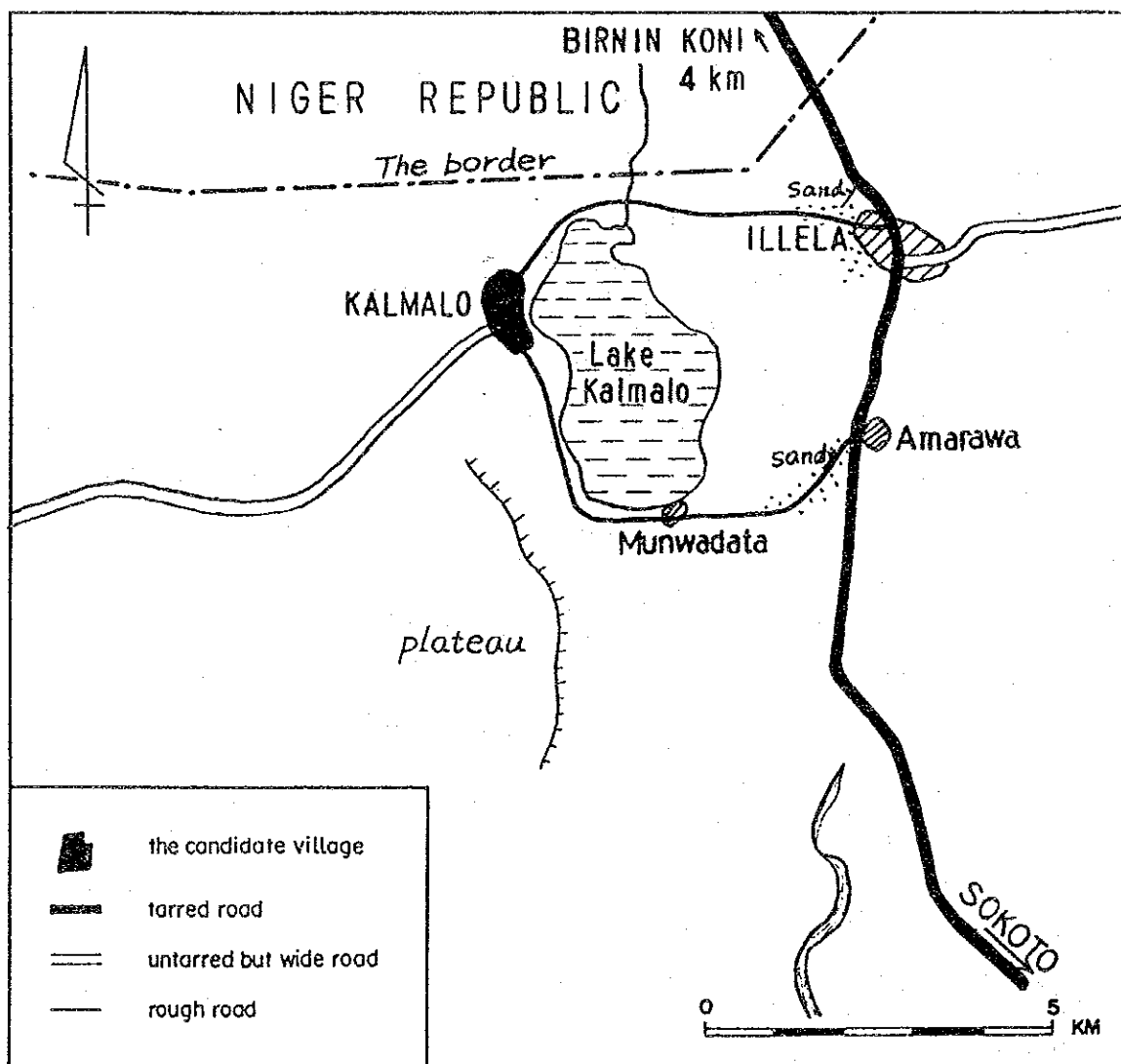
magneto-telluric
sounding points



The Study for Groundwater Development in Sokoto State

VILLAGE : Kalmalo

Village No. 40

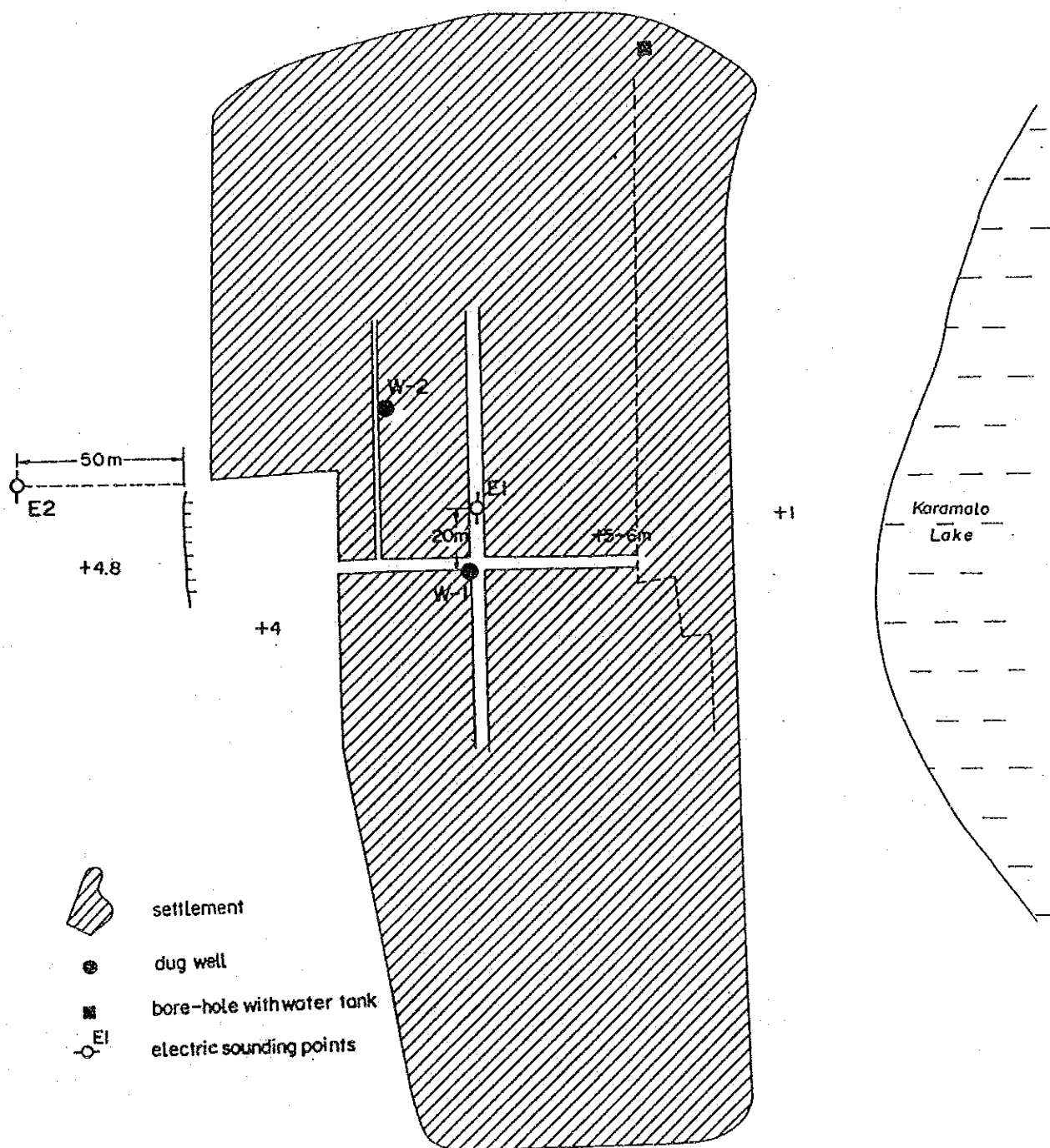


LOCATION MAP

(1/100,000 Sheet 3)

THE LOCATIONS OF INVESTIGATION AND THE TOPOGRAPHICAL FEATURE

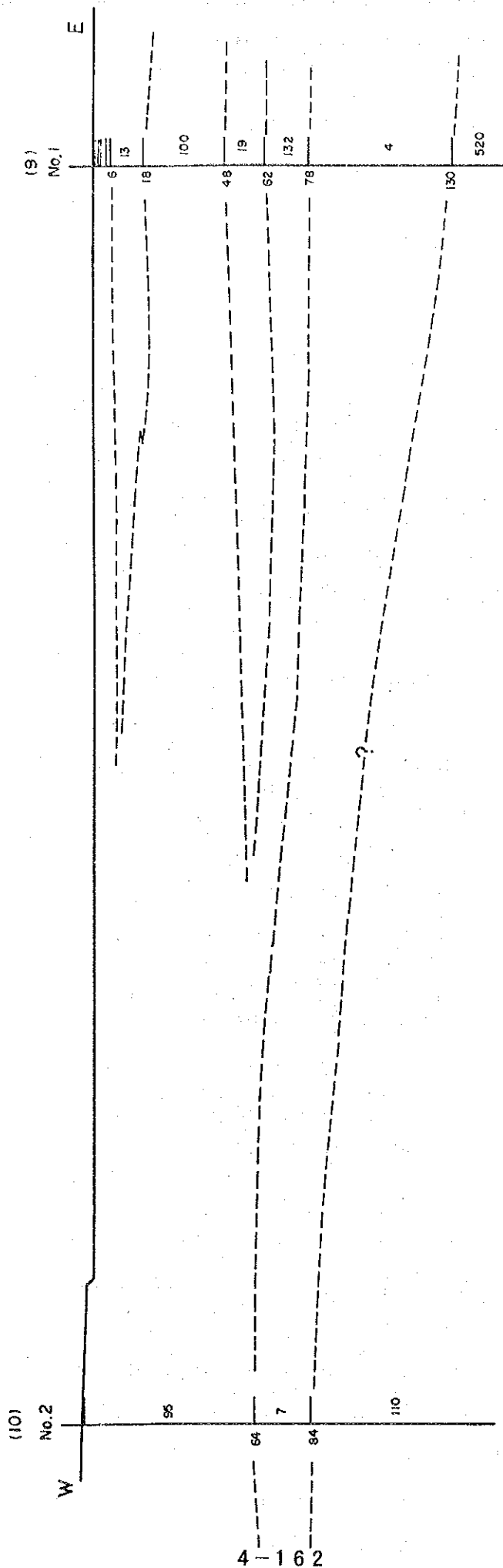
No.40 Kal.malo



0 100 200m

RESISTIVITY PROFILE

No. 40 Kal. malo

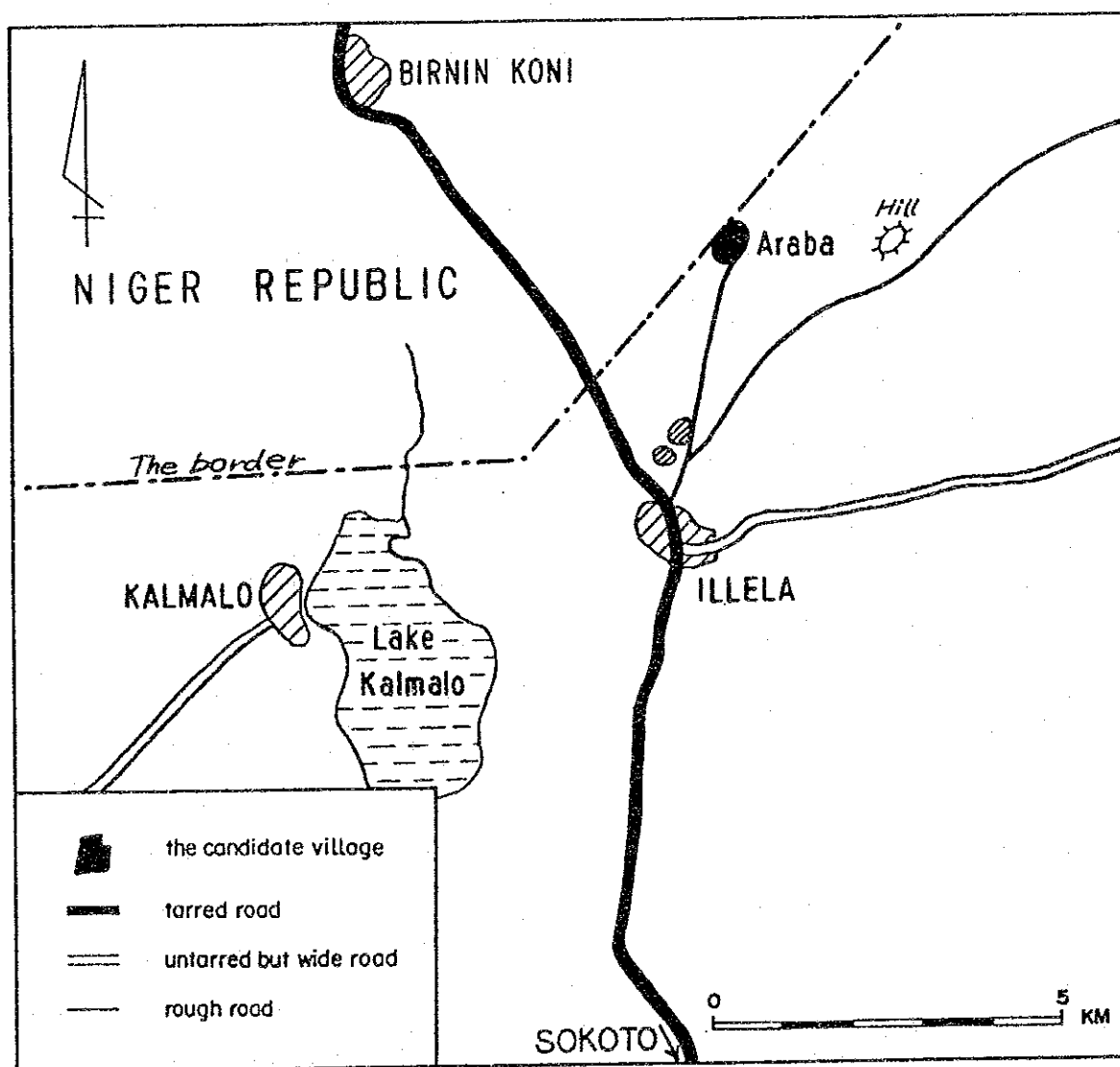


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The Study for Groundwater Development in Sokoto State

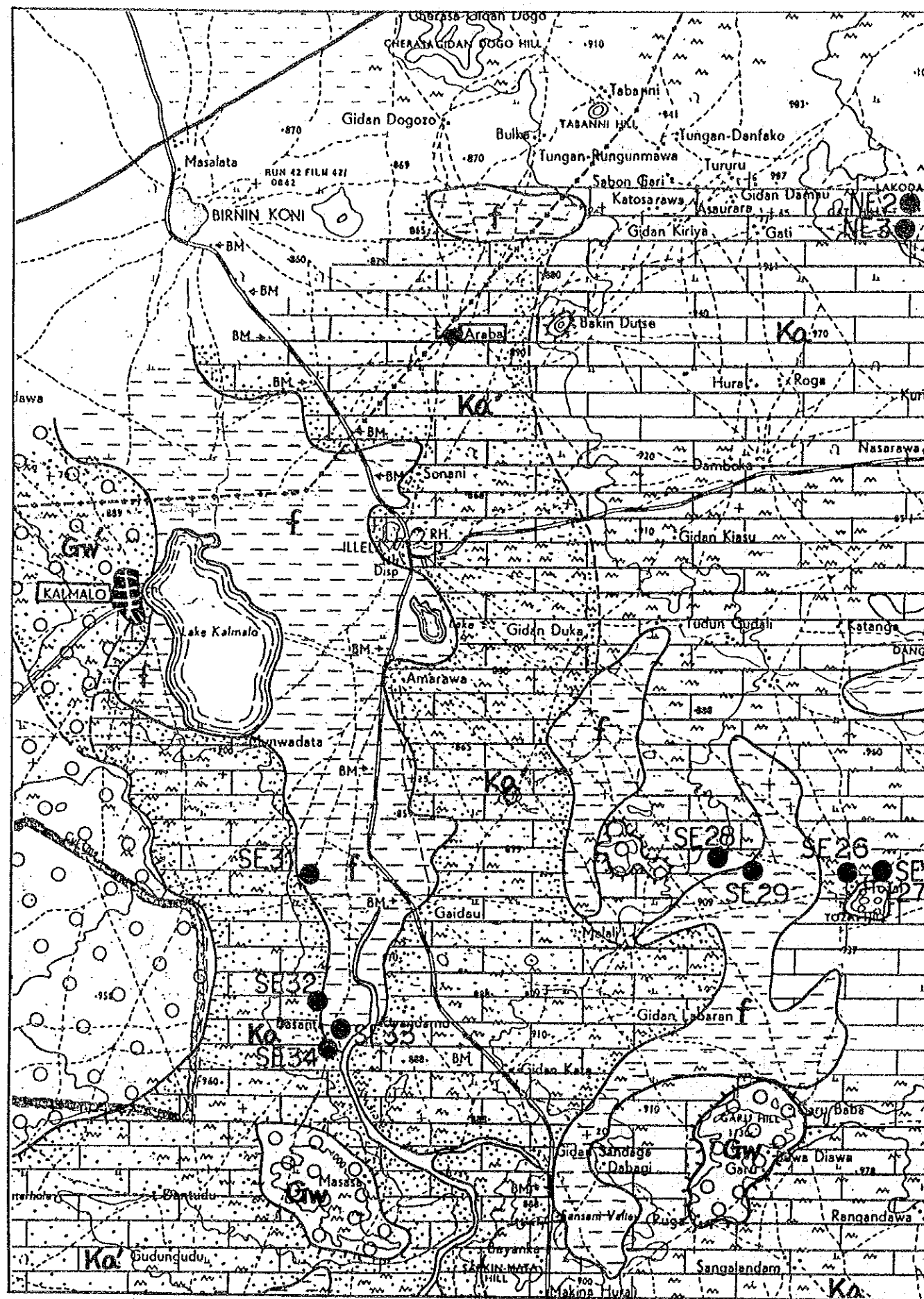
VILLAGE : Araba

Village No. 41



LOCATION MAP

(1/100,000 Sheet 3)



GEOLOGICAL MAP

Araba

- Lake, Pond
- River
- Fadama
- Eroded and Recovered with Sand
- Escarpment
- Gwandu Formation
- Kalambaina Formation

● SW 16
Existing Boreholes

DATA OF EXISTING BOREHOLES

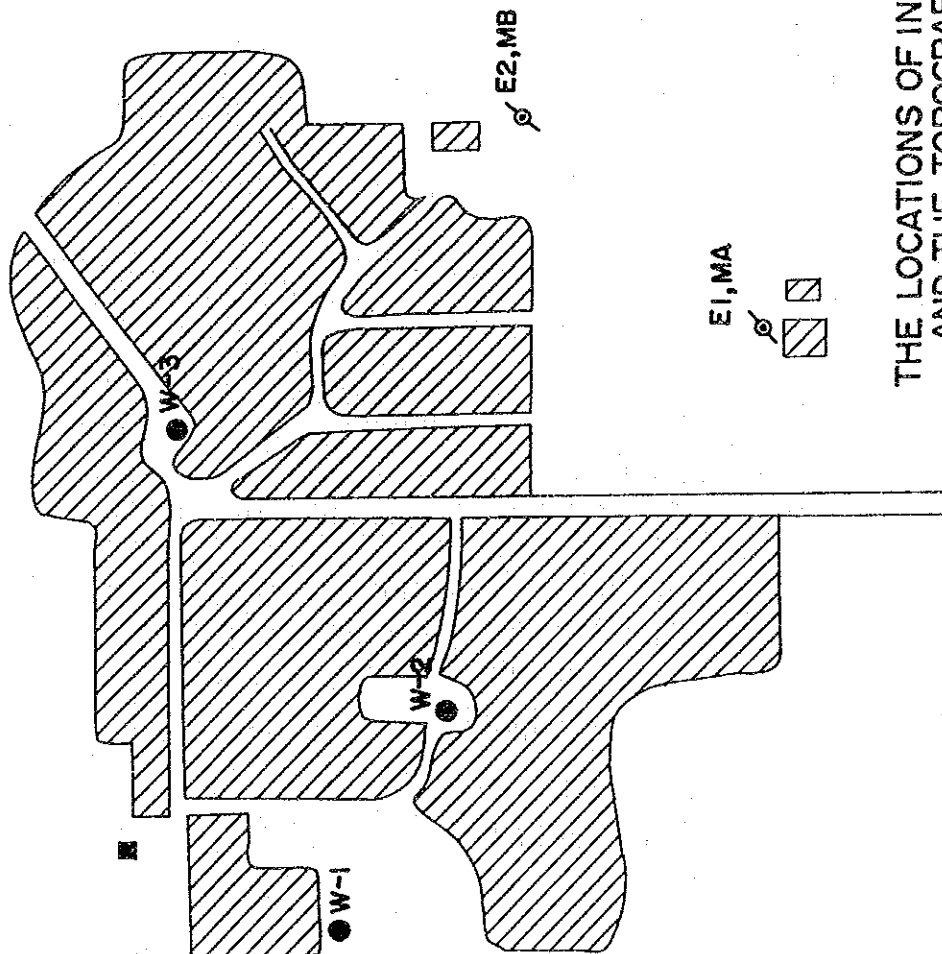
Borehole No.	Depth(m)	SWL(m)	S.C.(m ³ /d/m)
NE 2	164.0	72.17	9.69
NE 3	160.0	69.11	0.93
SE 26	109.0	51.10	0.75
SE 27	106.0	51.32	2.97
SE 28	109.0	43.75	0.68
SE 29	109.0	36.83	2.01
SE 31	133.0	30.95	0.37
SE 32	126.0	29.46	0.42
SE 33	128.0	30.40	1.89
SE 34	140.0	30.01	0.29

SWL.: Static Water Level
S.C. : Specific Capacity

1/100,000 0 50 km



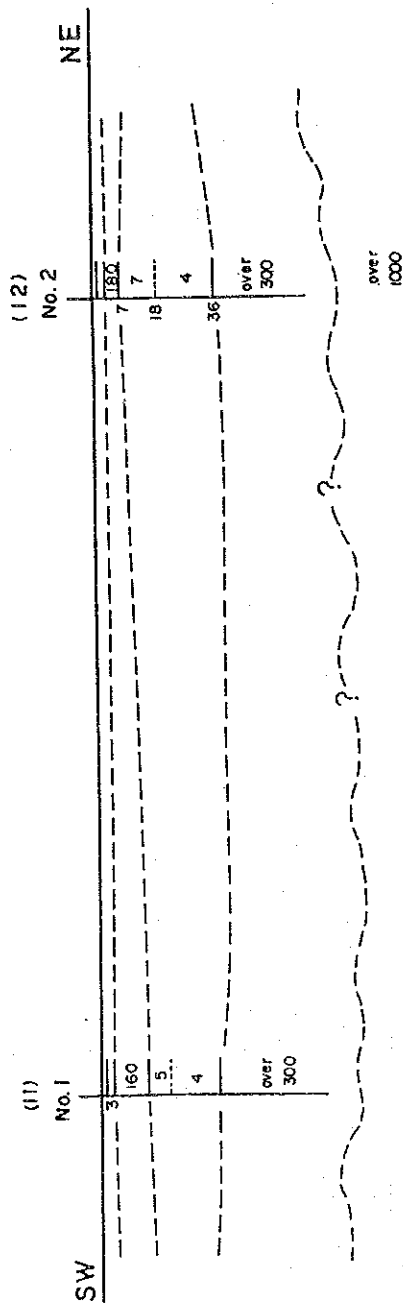
- settlement
- dug well
- electric sounding points
- magneto-telluric sounding points
- bore-hole with water tank



THE LOCATIONS OF INVESTIGATION
AND THE TOPOGRAPHICAL FEATURE

RESISTIVITY PROFILE

No. 41 Araba



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