

4085

COMINCO LTD.

EXPLORATION
92 H/4 W

WESTERN DISTRICT
December 14th, 1972

GEOLOGICAL AND GEOCHEMICAL REPORT ON THE SO 1, SO 3, SO 7,
SO 8, SO 9 FR., AX 1 - AX 4, AX 6, TAN 20, TAN 22 - TAN 24,
TAN 27 - TAN 29, TAN 31 - TAN 34, TAN 36, TAN 39 - TAN 50 CLAIMS

Situated in the Tamihi Creek Area, New Westminster Mining Division

Latitude $49^{\circ}01' N$

Longitude $121^{\circ}48' W$

Report by
F. D. Gill, Project Geologist

Supervised by
D. W. Heddle, P. Eng.

Department of Mines and Petroleum Resources	
ASSESSMENT REPORT	
NO. 4085	MAP.....

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ATTACHMENTS

#1	Location Map	approx. 1" = 110 miles
#2	TN - 1 Stream Silt Geochemistry and Location of Soil Guides	1" = 500'
#3	TN - 2 Geology	1" = 500'
TN - 4	a, b, c Soil Grid 1	Cu, Pb, Zn #4A, 4B, 4C 1" = 200'
TN - 5	a, b, c Soil Grid 2	Cu, Pb, Zn #5A, 5B, 5C 1" = 200'
TN - 6	a, b, c Soil Grid 3	Cu, Pb, Zn #6A, 6B, 6C 1" = 200'
TN - 7	a, b, c Soil Grid 4	Cu, Pb, Zn #7A, 7B, 7C 1" = 200'
TN - 8	a, b, c Soil Grid 5	Cu, Pb, Zn #8A, 8B, 8C 1" = 200'
TN - 9	a, b, c Soil Grid 6	Cu, Pb, Zn #9A, 9B, 9C 1" = 200'
TN - 10	a, b, c Soil Grid 7	Cu, Pb, Zn #10A, 10B, 10C 1" = 200'
TN - 11	a, b, c Soil Grid 8	Cu, Pb, Zn #11A, 11B, 11C 1" = 200'
TN - 12	a, b, c Soil Grid 9	Cu, Pb, Zn #12A, 12B, 12C 1" = 200'

Statement of Expenditures

Statutory Declaration of Expenditures

Statement of Qualifications

COMINCO LTD.

EXPLORATION
92 H/ 4 W
Latitude 49° 01' N

WESTERN DISTRICT
December 14th, 1972
Longitude 121° 48' W

GEOLOGICAL AND GEOCHEMICAL REPORT ON THE SO 1, SO 3, SO 7, 3

SO 8, SO 9 FR., AX 1 - AX 4, AX 6, TAN 20, TAN 22 - TAN 24, 10

TAN 27 - TAN 29, TAN 31 - TAN 34, TAN 36, TAN 39 - TAN 50 CLAIMS 10

Situated in the Tamihi Creek Area, New Westminster Mining Division

1. INTRODUCTION

Geological mapping, and soil and stream silt geochemistry were carried out during August - November, 1972, in an attempt to locate Cu/Zn mineralization on the property.

The work was done under the supervision of D. W. Heddle, P. Eng., and the geochemical data was interpreted by N. L. Szabo.

The Tan, SO, and AX claims are located in the New Westminster Mining Division, at latitude 49° 01' N and longitude 121° 48' W. The claims cover the upper reaches of the Tamihi Creek valley adjacent to the International Boundary, some ten miles south-southeast of Chilliwack. Topography is typical of the Coast Mountains, with elevations ranging from 1,400 feet to over 4,000 feet.

Access is by road from Vedder Crossing, a distance of approximately 11 miles.

2. HISTORY

As far as is known, no work has been performed on the property prior to 1972, although one of the showings has been known for approximately nine years. In 1972, the owners did some stripping and trenching in two areas of known mineralization.

3. GEOLOGY

See Plate TN - 2.

STRATIGRAPHY AND LITHOLOGY:

A belt of Chilliwack Group volcanics, Pennsylvanian to Permian in age, extends southerly from Chilliwack to the International Boundary and beyond. The Tan property lies within a bulbous southerly portion of this belt. In this area, the Chilliwack volcanics are bounded by two south-easterly-dipping thrust faults and are about 3,000 feet thick. The volcanics are thrust over Upper Triassic sediments, known as the Cultus formation, which outcrop in the northwest part of the property.

Mapping was confined largely to the lower slopes of the Tamihi Creek valley where it can be shown that the volcanics can be divided into a lower acid series and an upper series of mixed andesites, dacites, and minor acid volcanics.

The lower acid series consists of a sequence of porphyritic rhyolitic rocks intercalated with acid pyroclastics at least 800 feet thick which outcrop along the lower slopes of the Tamihi Creek valley. Outcrop is limited, particularly on the south side of the creek. Most outcrop is found in the creeks and along road cuts.

Porphyritic rhyolites are the predominant rock types in the lower acid series. These rocks are dense, compact, and fine-grained, usually pale green in colour, and invariably porphyritic. Small subhedral plagioclase phenocrysts are almost always present, and small glassy quartz eyes are equally common. Mafic phenocrysts are rare. Columnar jointing, well developed in some of these porphyritic acid rocks, probably represents high level intrusives associated with the acid volcanics.

Fine-grained and coarse-grained acid fragmentals make up a significant percentage of the acid pile and show good development in several areas on the north side of Tamihi Creek, where sections up to 300 feet thick have been mapped. They comprise angular to subrounded acid porphyry fragments, up to 2.5 inches in the breccia units, set in a finer ash matrix of the same composition. The ratio of fragments to matrix is roughly 1:1. In the northwest part of the property, the coarser acid fragmentals show, in places, chloritic, sericitic, and occasionally talcose alteration. In the same area, the top of the acid sequence is marked by the local development of cherts and thin bedded acid tuffs, and, in one locality, by a coarsely crystalline dark limestone unit about five feet thick. The upper part of the acid sequence in the extreme northwest is distinctly limy.

The upper series comprises a sequence of andesites, dacites, and minor acid volcanics upwards of 1,500 feet in thickness.

The andesites, which make up the bulk of the upper series, are typically fine-grained, red and green mottled rocks in which pillow structures and quartz-filled and chlorite-filled vesicles are relatively rare. In one area on the north side of Tamihi Creek, coarse andesitic breccias have been mapped. The andesites often grade into dacites, which are pale-coloured, fine-grained rocks in which small chloritic spots, possibly amygdules, are typical.

The acid volcanics in the upper series are, in contrast to those of the lower series, black and/or purplish in colour, and extremely siliceous. They are mostly porphyritic with phenocrysts of white euhedral feldspars and quartz. Acid intrusives characterized by columnar jointing also cut the upper series.

A feature common to both upper and lower series is an extremely fine-grained black alteration product which fills fine fractures and occurs as diffuse masses. It is of widespread occurrence on the property, but is most profoundly developed to the northwest.

STRUCTURE:

Mapping has shown that the volcanic stratigraphy is subhorizontal with a generally northwest trend and shallow dips to the southwest and northeast. The contact between the acid and intermediate has been traced a distance of roughly 10,000 feet with only minor disruptions (inferred as faults) on both sides of Tamihi Creek valley. To the northwest, the stratigraphy is terminated by the lower of the two major southeast-dipping thrusts. To the southeast, the contact appears to cross the International Boundary.

MINERALIZATION:

Fine-grained disseminated pyrite mineralization occurs in both the lower acid series and the upper intermediate series, but is far more widespread in the lower acid series. Minor disseminations of sphalerite and

chalcopyrite are locally associated with pyritic zones in the acid foot-wall rocks (Plate TN - 2). Chalcopyrite and sphalerite also occur as narrow veins, up to six inches wide in one locality, on the north side of Tamihi Creek.

4. GEOCHEMICAL SURVEYS

See Plates TN - 1 and TN - 4 to TN - 12.

INTRODUCTION:

Soil geochemistry was carried out on nine grids to cover roughly 90% of the projected trace of the compositional contact. Samples (total 689) were taken along lines spaced at 400-foot intervals, with the samples taken every 100 feet along the lines. Both the baselines and the cross-lines were put in by chain and compass. Where possible, samples were collected from the B₁ horizon.

Silt samples, totalling 43, were taken at regular intervals from all the important creeks on the property.

SAMPLE PREPARATION AND ANALYSIS:

All samples were dried and then sieved. The -80 mesh fraction was analyzed for hxCu, hxPb, and hxZn. Analysis was by atomic absorption, using a hot nitric acid attack to bring ions into solution. Statistical analysis gave the threshold values ($\bar{x} + 2s$) as: Cu_t = 115 ppm, Pb_t = 28 ppm, and Zn_t = 195 ppm. The number of stream samples taken was not sufficient for statistical analysis.

RESULTS:

The stream sediment survey gave no definitely anomalous results. Some of the zinc values are high, but not really high enough to be classified as definitely anomalous. (See Plate TN - 1).

a. Grid 1; Plates TN - 4a, TN - 4b, TN - 4c:

A concurrent copper and zinc anomaly occurs in the central portion of the grid. The zinc anomaly is 1,400 feet by 200 feet, and the copper anomaly is somewhat smaller. The magnitude of the anomalies is small.

b. Grid 2; Plates TN - 5a, TN - 5b, TN - 5c:

A narrow zinc anomaly spreads from line 7 N to line 00+00. Small anomalies of probably little significance are outlined in copper and lead also.

c. Grid 3; Plates TN - 6a, TN - 6b, TN - 6c:

A high zinc anomaly with concurrent copper and lead values occurs on line 12+00 N.

d. Grid 4; Plates TN - 7a, TN - 7b, TN - 7c:

Zinc anomalies of low magnitude and small size occur on lines 00+00 and 4+00 N. A lead anomaly of probably little significance occurs on lines 16+00 N and 12+00 N.

e. Grid 5; Plates TN - 8a, TN - 8b, TN - 8c:

There are one single sample copper anomaly and one single sample

lead anomaly on this grid. Two small zinc anomalies are on lines 00+00 to 4+00 E and on 16+00 E. All anomalies are probably of little significance.

f. Grid 6; Plates TN - 9a, TN - 9b, TN - 9c:

Anomalous zinc values extend from line 20+00 W to line 12+00 W on this grid. Scattered single sample copper and lead anomalies also occur, but they are probably of little significance.

g. Grid 7; Plates TN - 10a, TN - 10b, TN - 10c:

A large zinc anomaly extends from 4+00 E to 12+00 E. The anomaly is open downslope. The scattered single sample copper and lead anomalies are of little significance.

h. Grid 8; Plates TN - 11a, TN - 11b, TN - 11c:

No anomalies were found on Grid 8.

i. Grid 9; Plates TN - 12a, TN - 12b, TN - 12c:

Five small lead anomalies are present on this grid. These anomalies are barely over threshold and are probably of no significance.

5. CONCLUSIONS

No economically significant Cu/Zn mineralization was found on the claim group.

The soil sampling outlined a number of anomalous zones but, because of the steep slopes and variable overburden thickness, the magnitude and size of the anomalies cannot be reliably used to rate the anomalies. This suggests that these anomalies should only be used to narrow down the target size.

Report by:

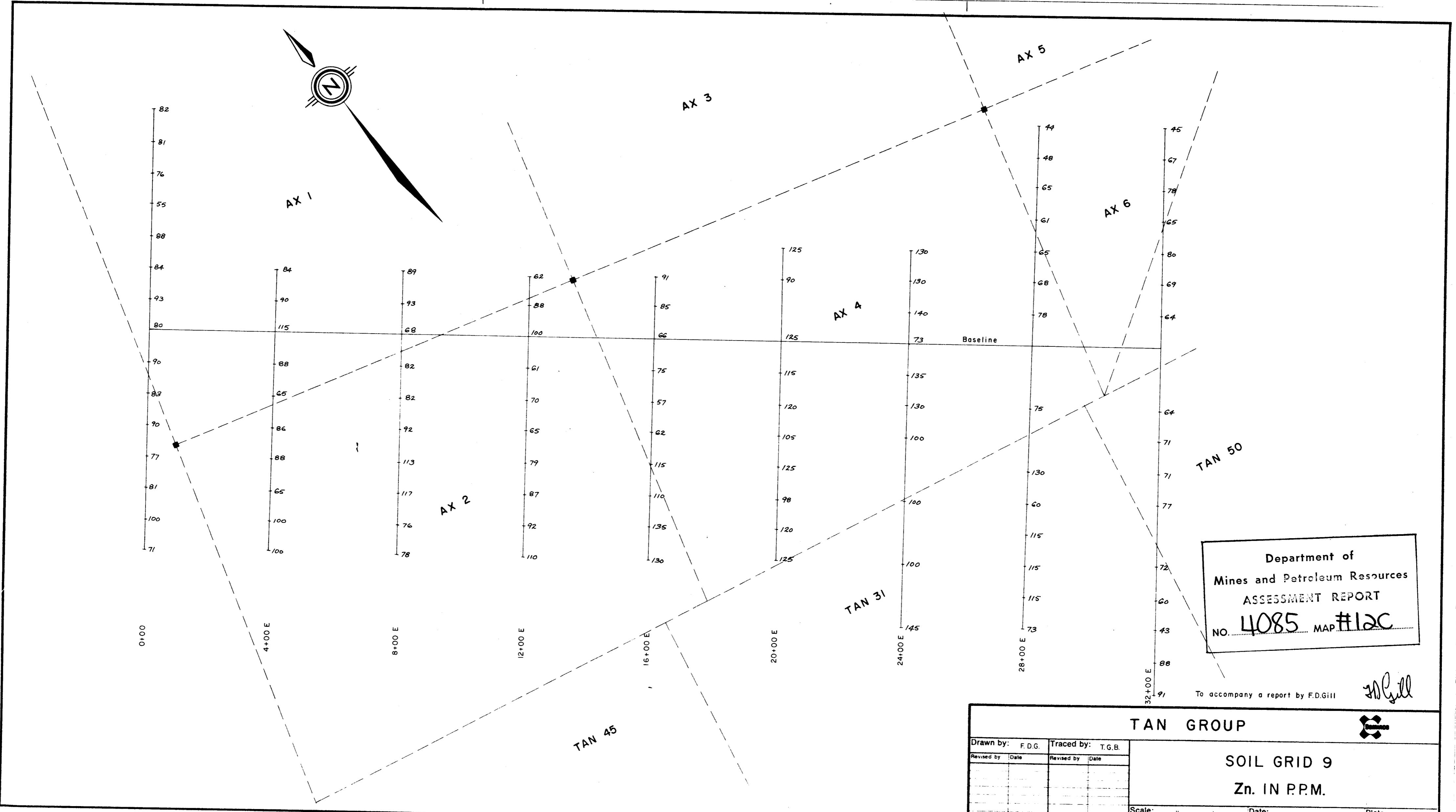
F. D. Gill
F. D. Gill
Project Geologist

Endorsed
by:

D. W. Heddle
D. W. Heddle, P. Eng.
Chief Geologist
Exploration
Western District

Approved
for Re-
lease by:

W. T. Irvine
W. T. Irvine, P. Eng.
Manager, Exploration
Western District



Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO 4085 Map #3

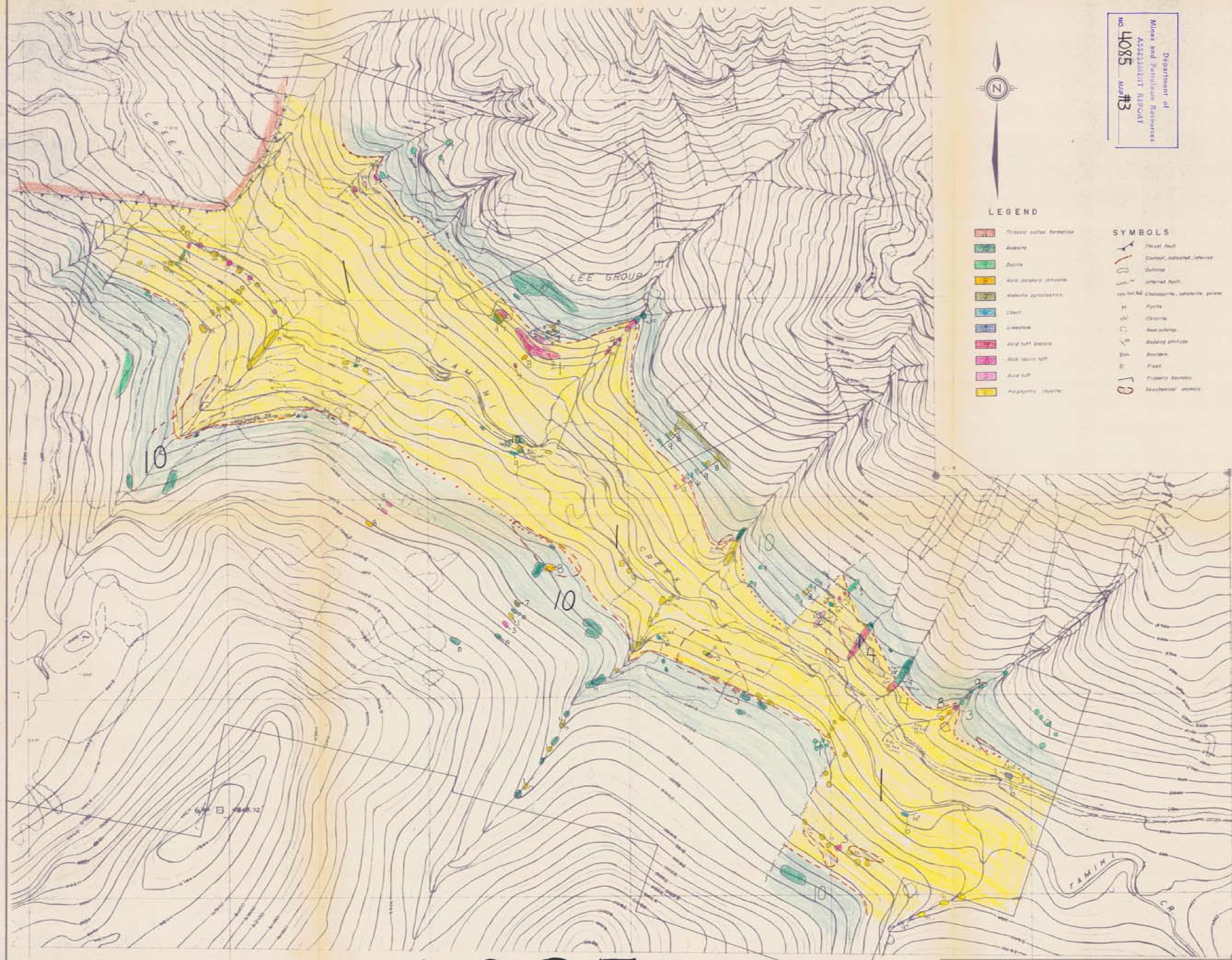


LEGEND

- Thick salt formation
- Anhydrite
- Dolomite
- Acid volcanic rocks
- Anhydrite dissolution
- Clay
- Limestone
- Acid tuff, breccia
- Acid tuff, tuff
- Acid tuff
- Polymerite, pyrite

SYMBOLS

- Pointed hill
- Contour, indicated, inferred
- Section
- Inferred fault
- Special: Chalcocite, galena, pyrite
- Pyrite
- Congl.
- New section
- Bedding attitude
- Boulders
- Fault
- Property boundary
- Geological contacts



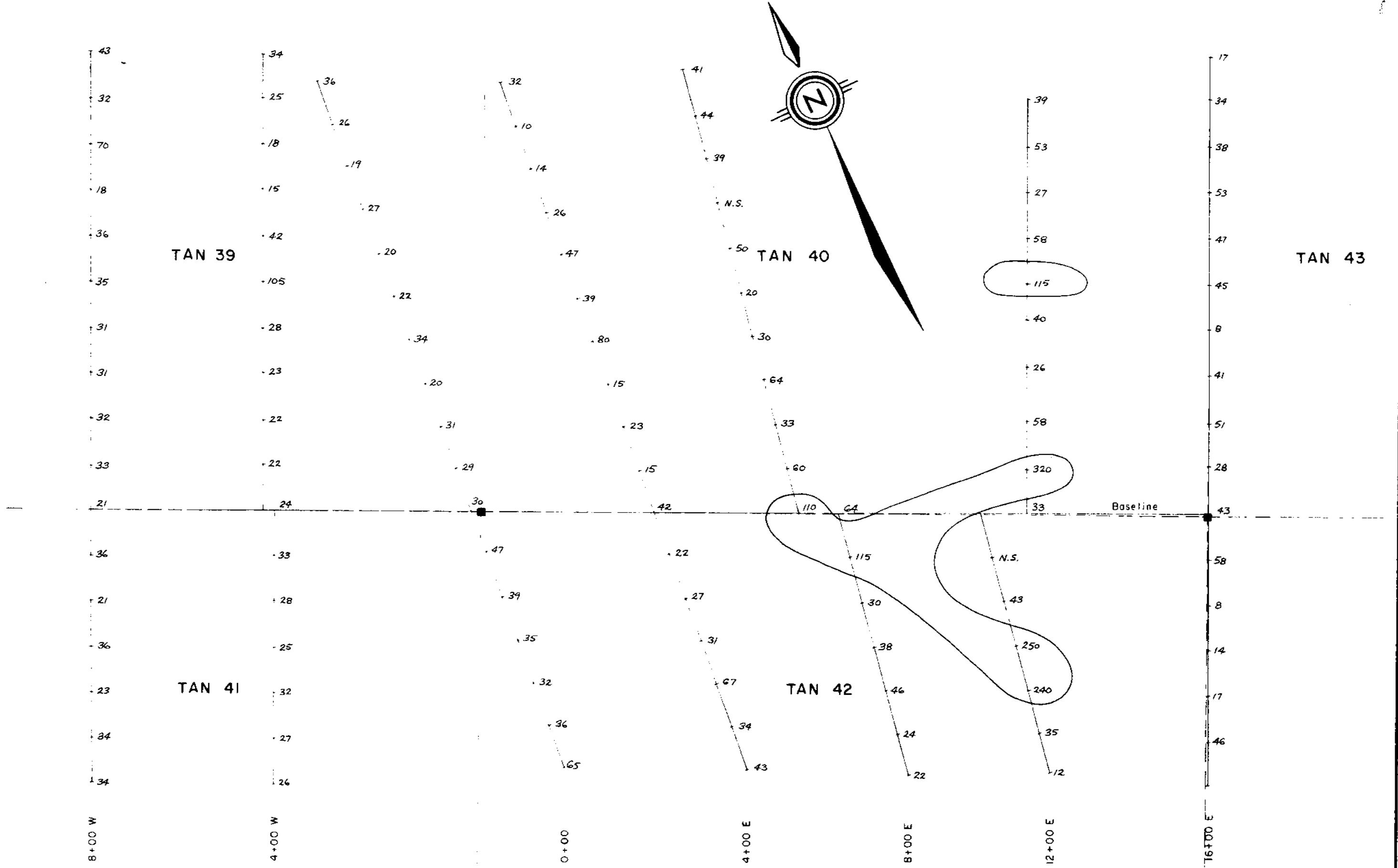
4085 M-3

Assessment Report by P.D. Ginn
GDP-11

TAN GROUP

GEOLOGY

Drawn by	Checked by	Date	Page
		NOVEMBER 17, 1972	1



To accompany a report by F.D. Gill

F.D. Gill

TAN GROUP



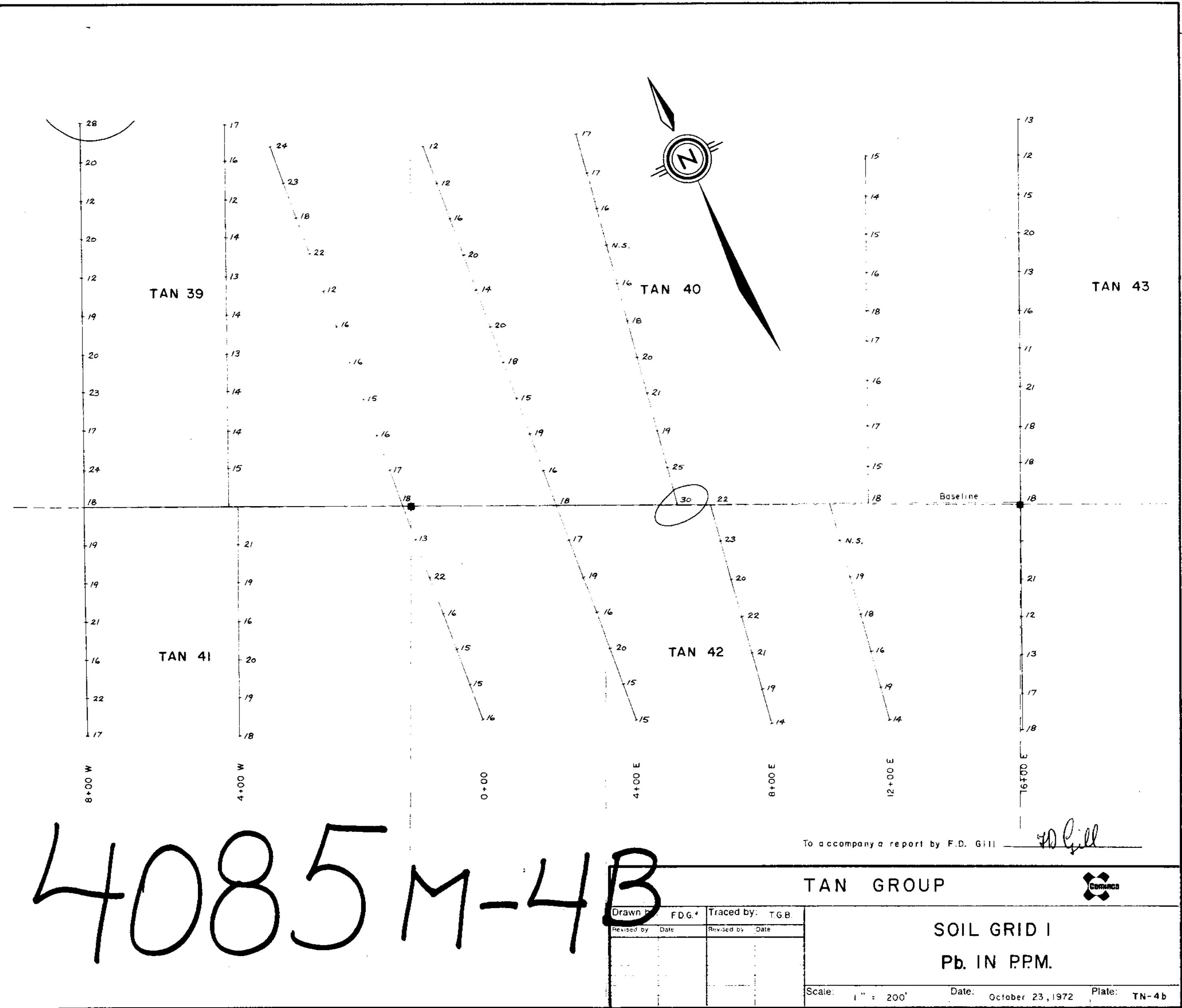
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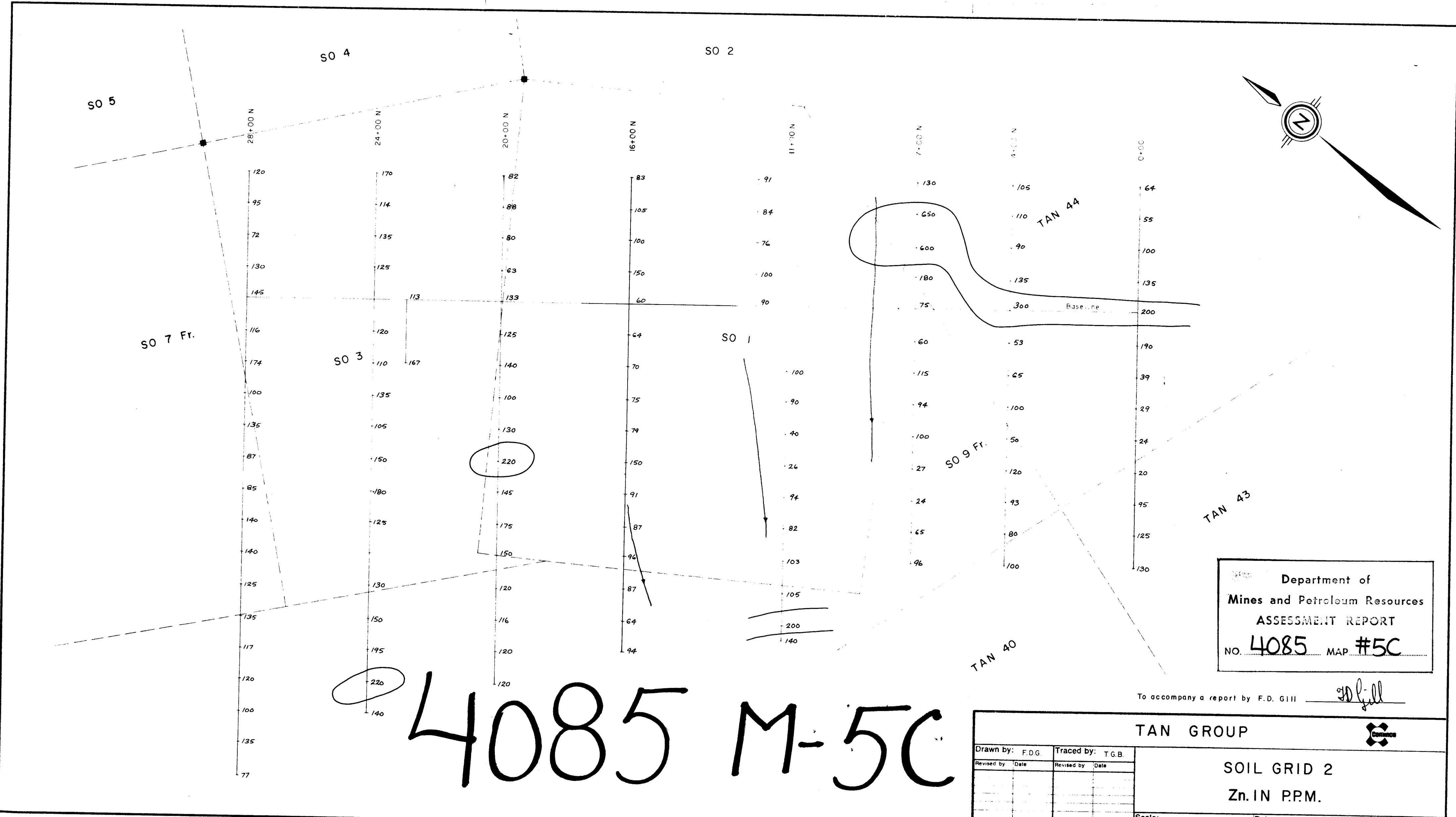
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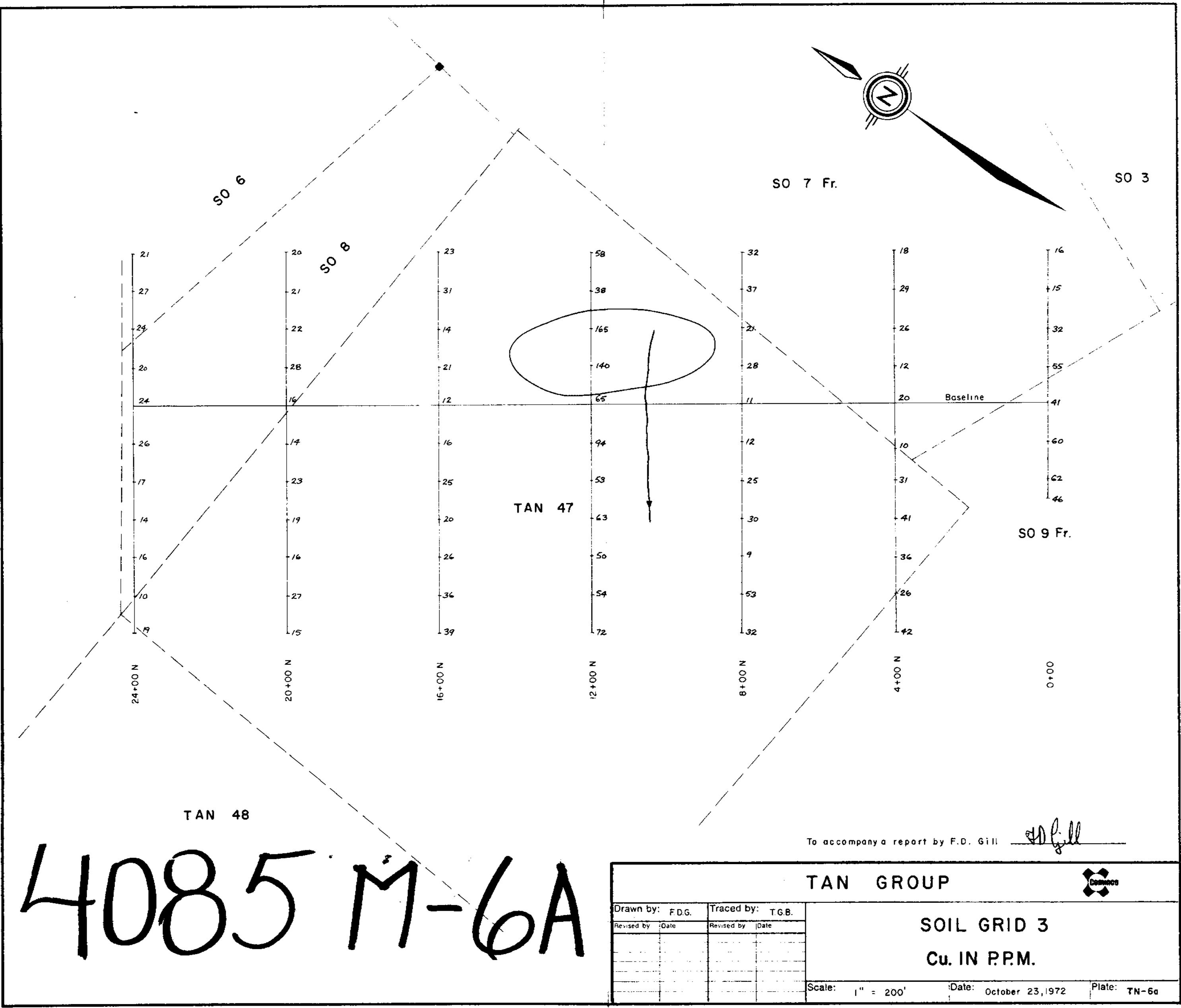
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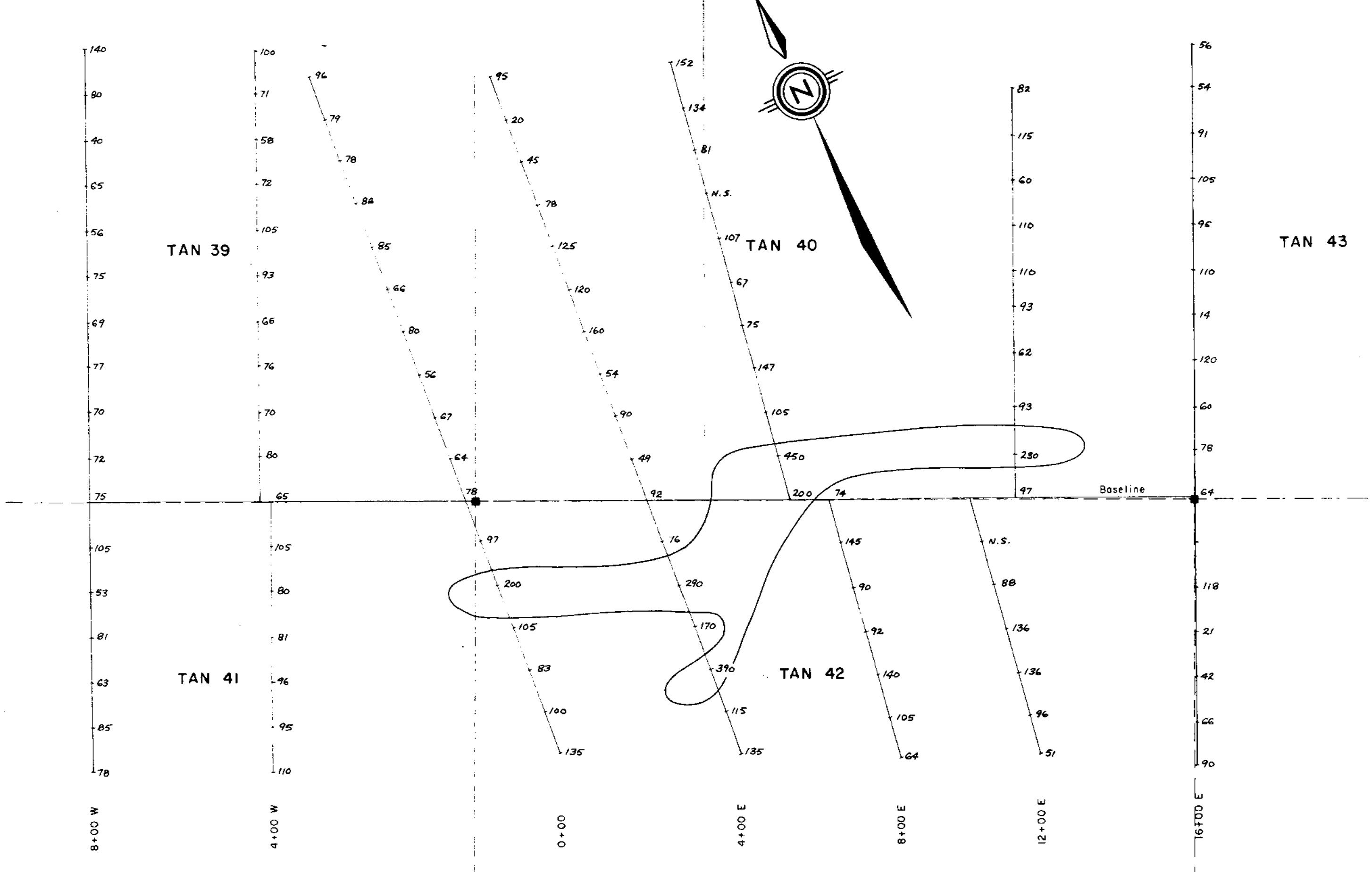
Scale: 1" = 200' Date: October 23, 1972 Plate: TN-4a

4085 M-L-H-A









To accompany a report by F.D. Gill

F.D. Gill

TAN GROUP

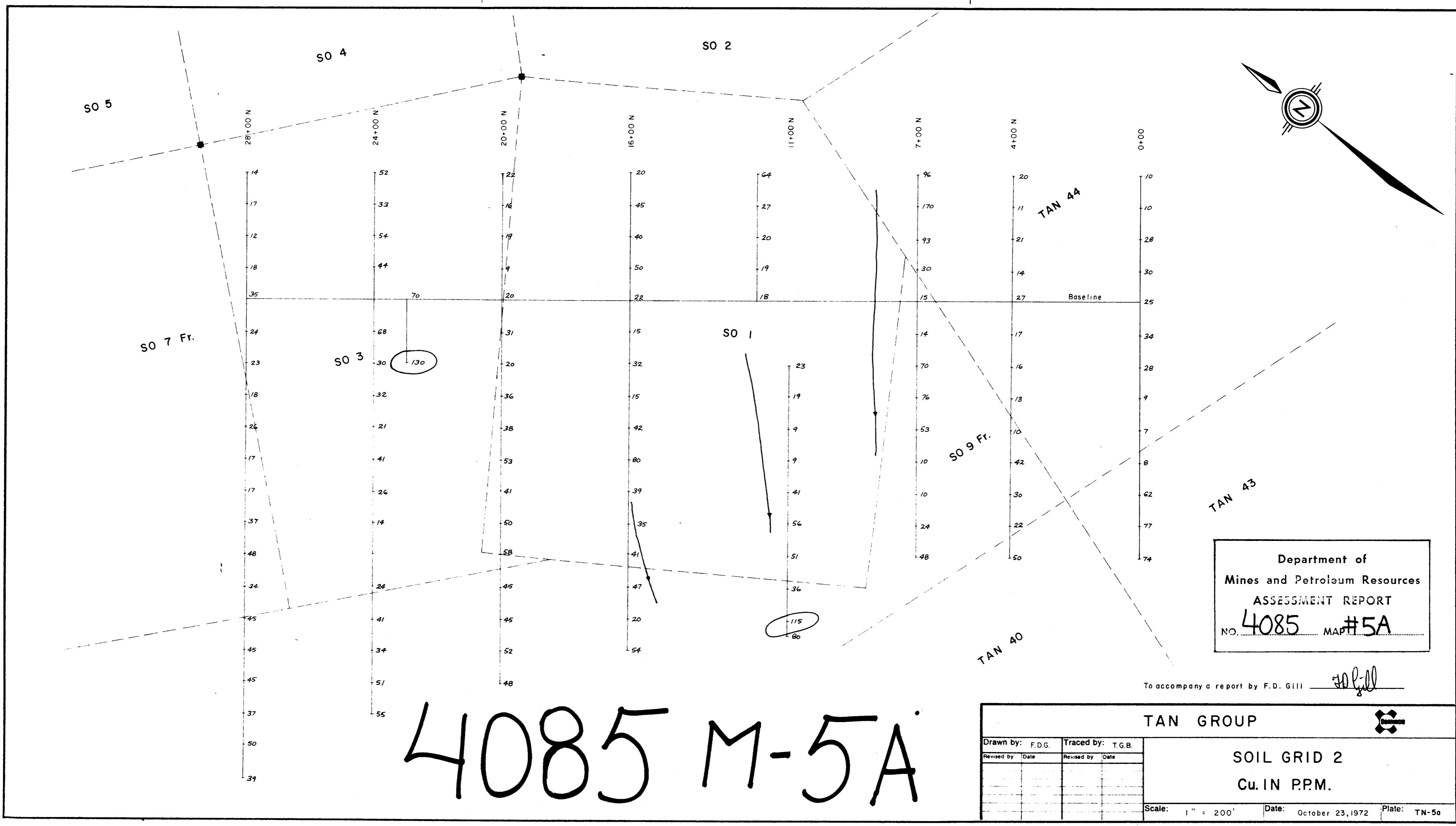


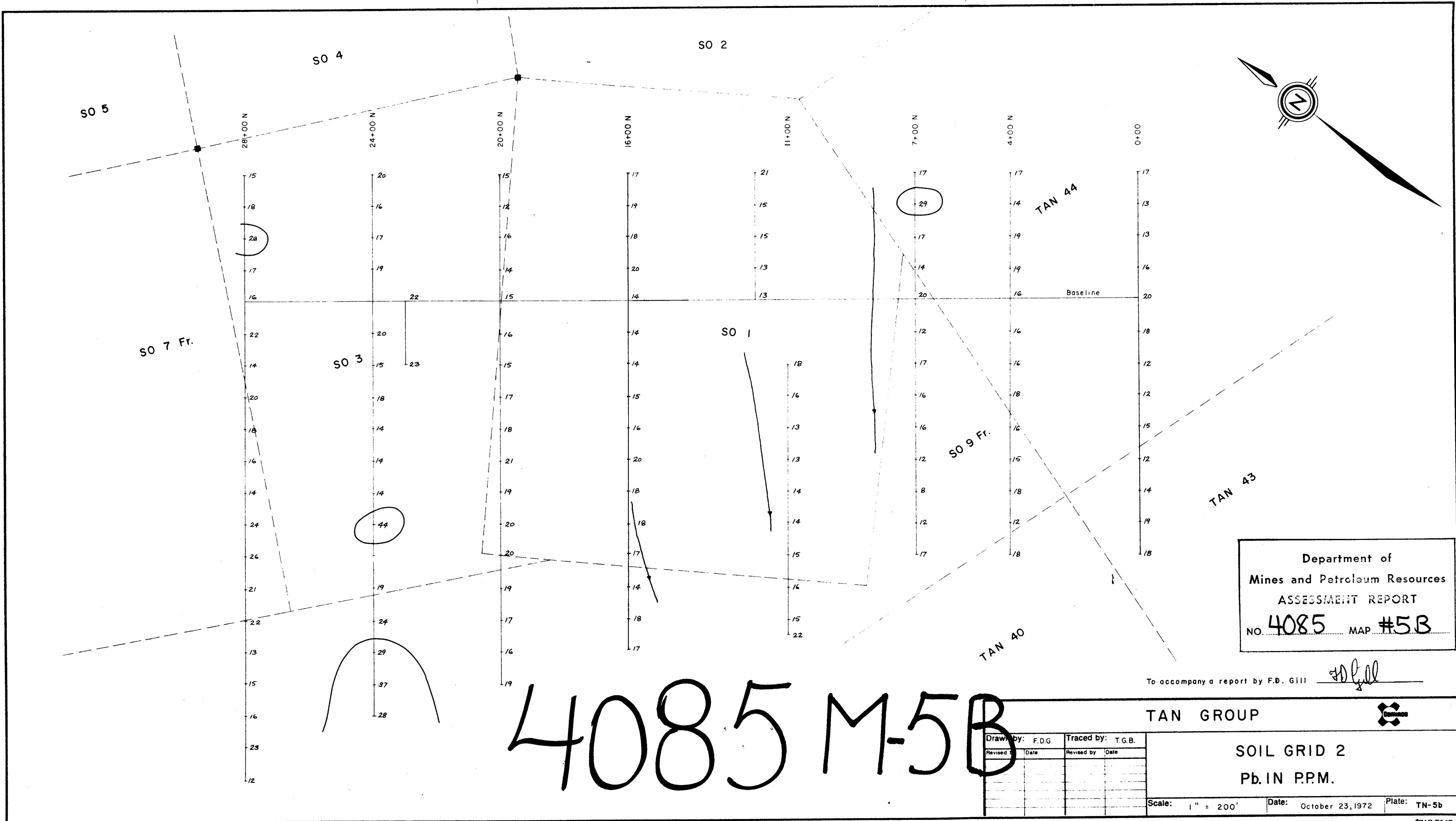
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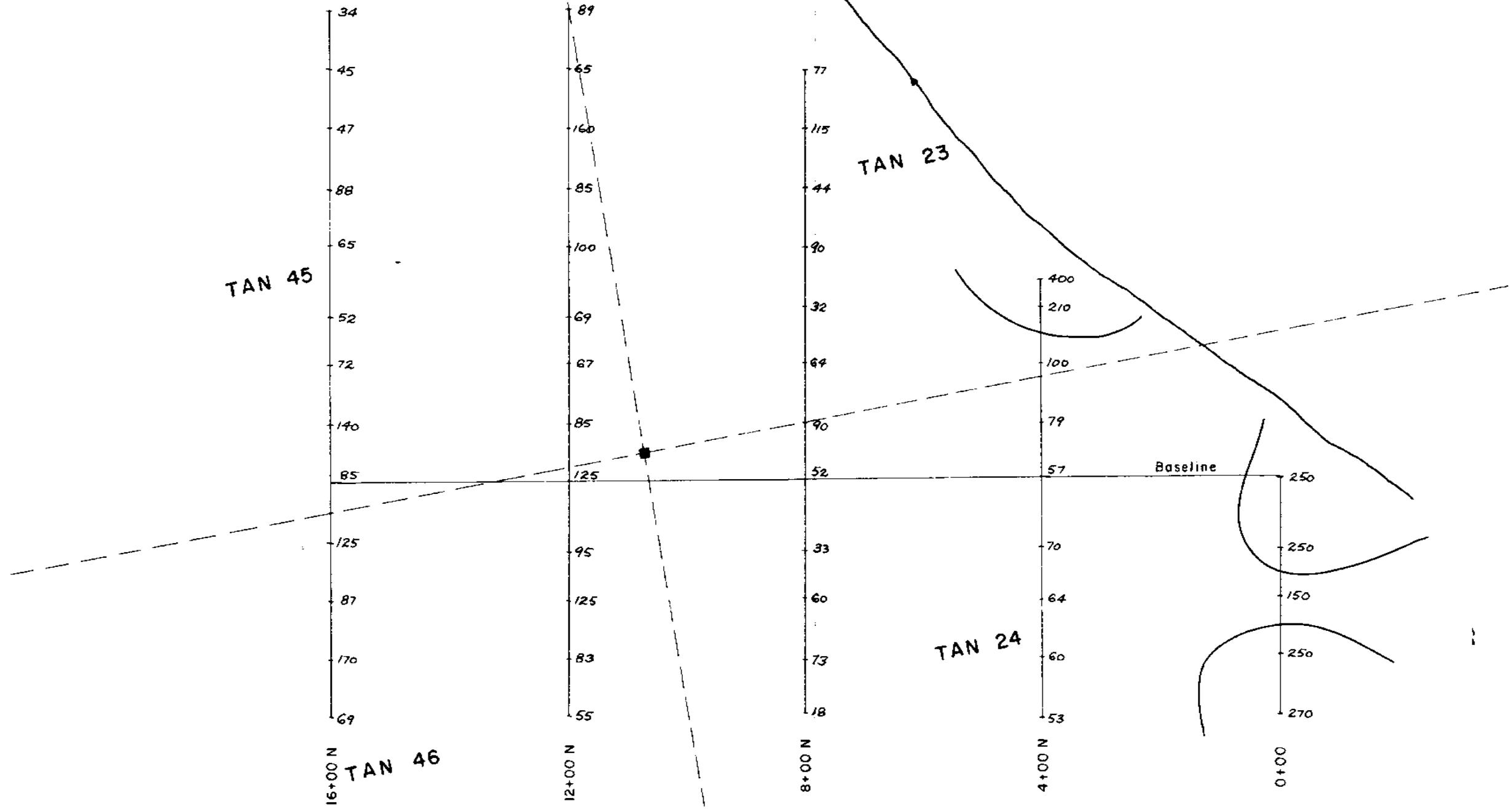
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4085 M-4C







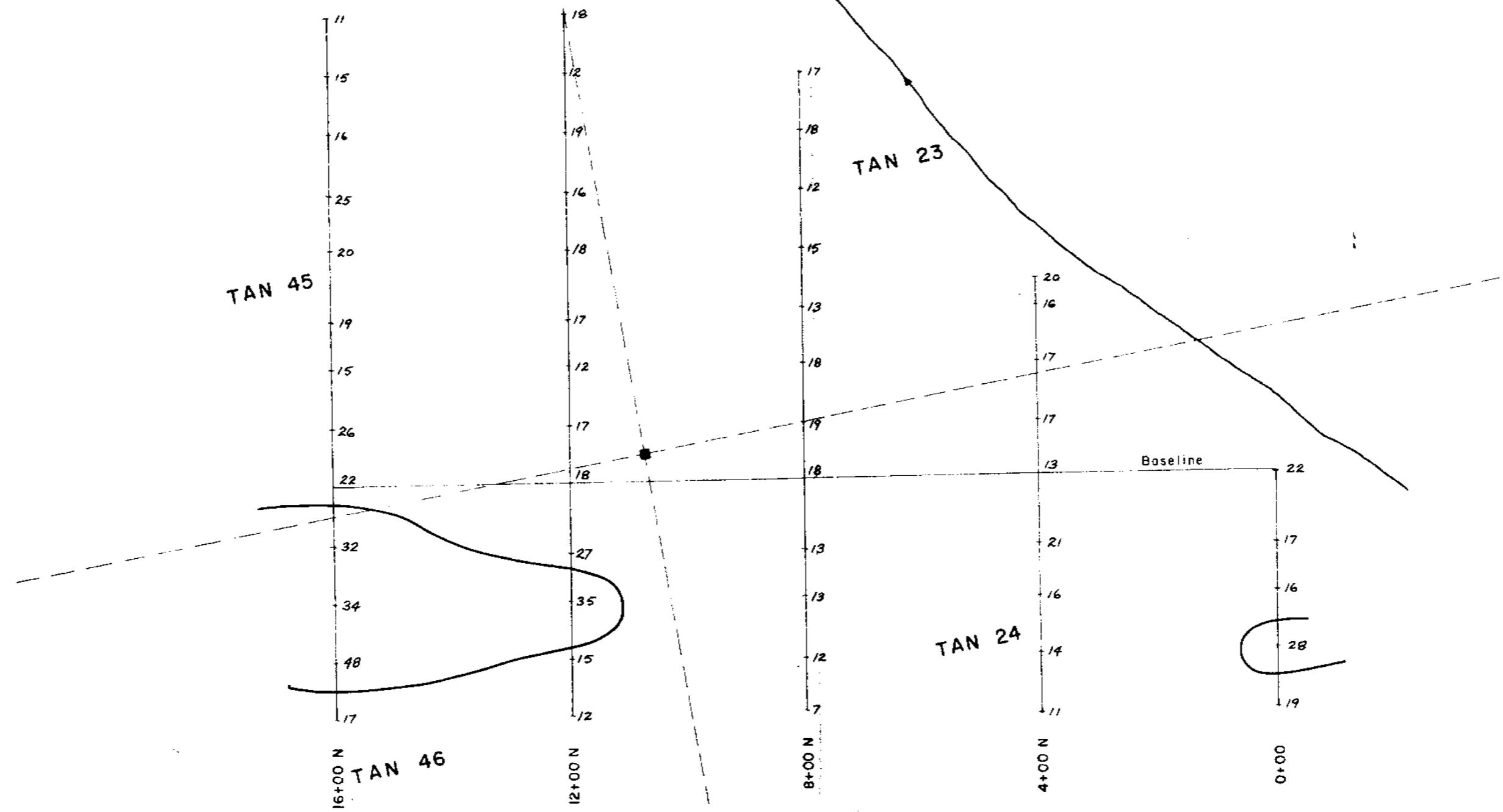
4085 M-7C

To accompany a report by F.D. Gill

Hill

TAN GROUP				SOIL GRID 4	
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Revised by	Date	Revised by	Date	Scale: 1" = 200'	Date: October 23, 1972
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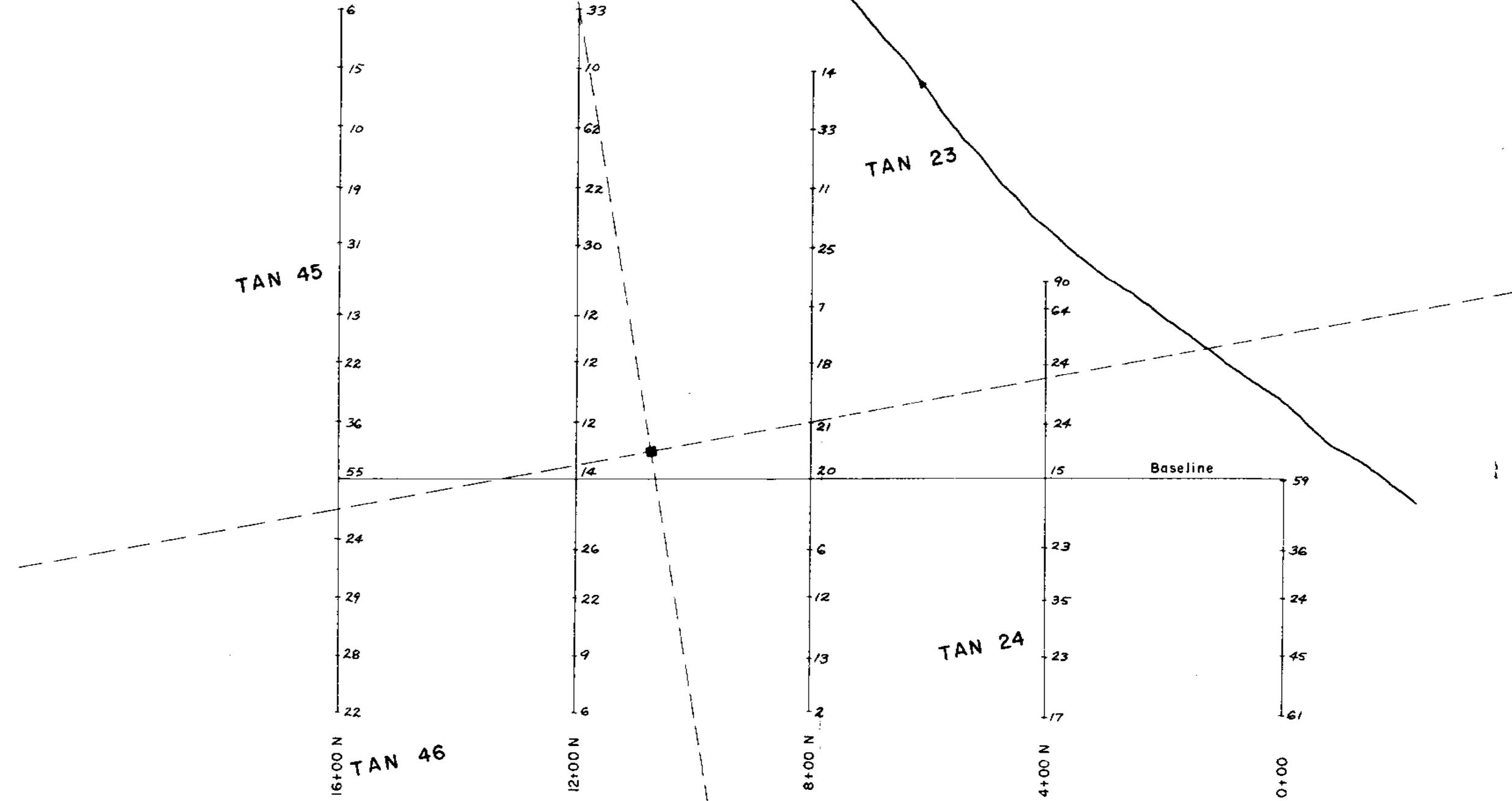
W Z



4085 M-7B

To accompany a report by F.D. Gill *SD Gill*

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Revised by: _____	Date: _____	Revised by: _____	Date: _____
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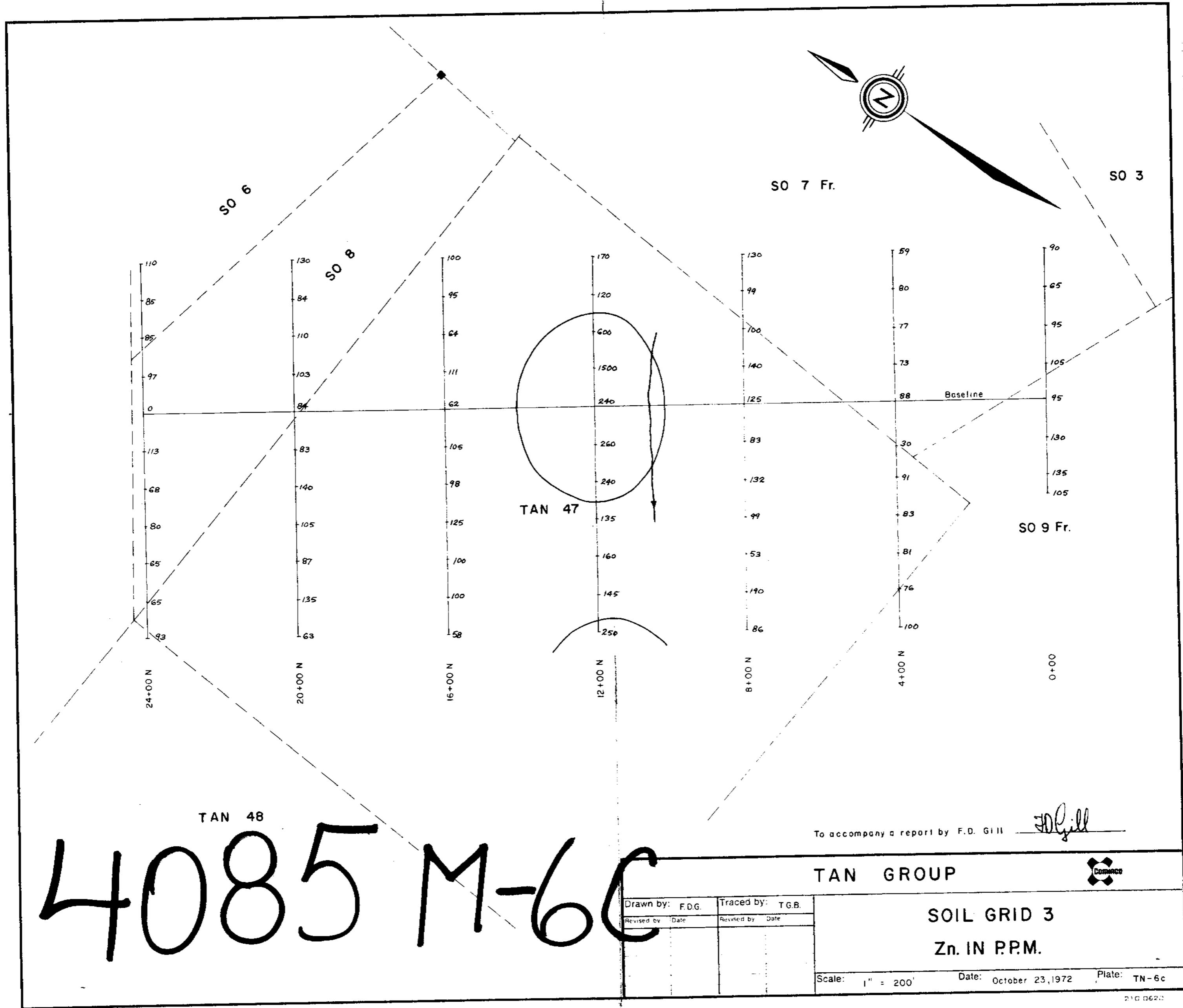


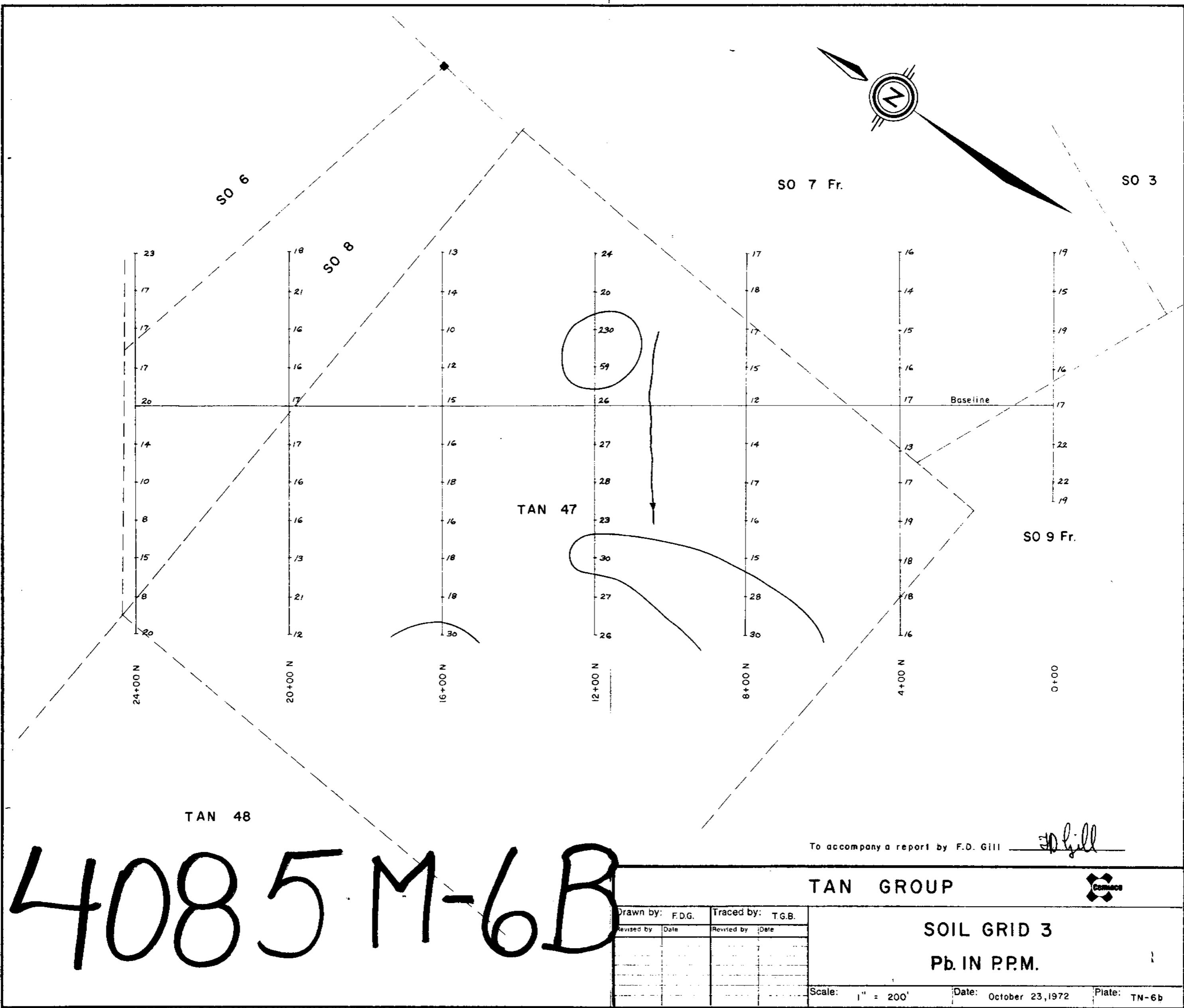
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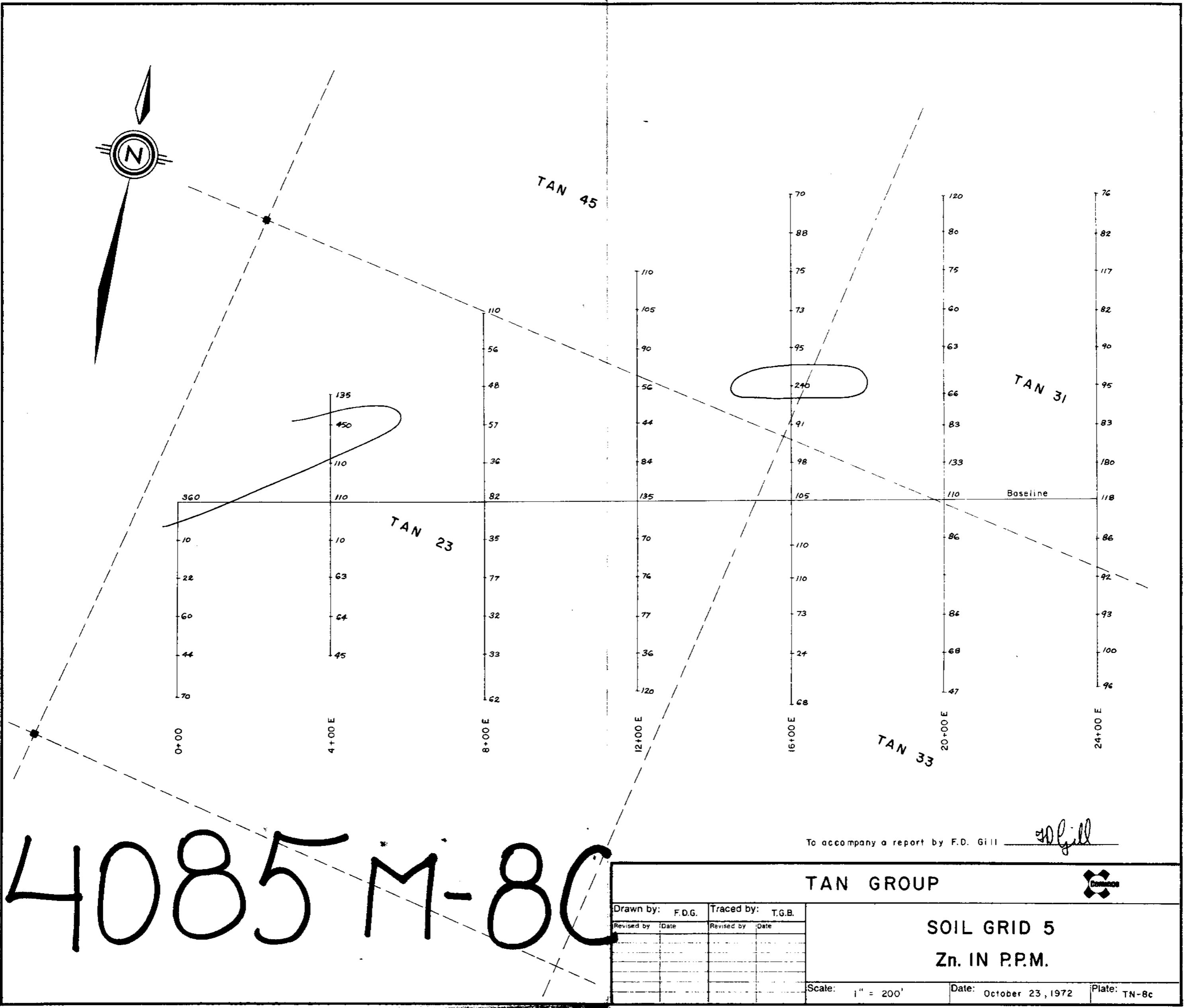
To accompany a report by F.D. Gill

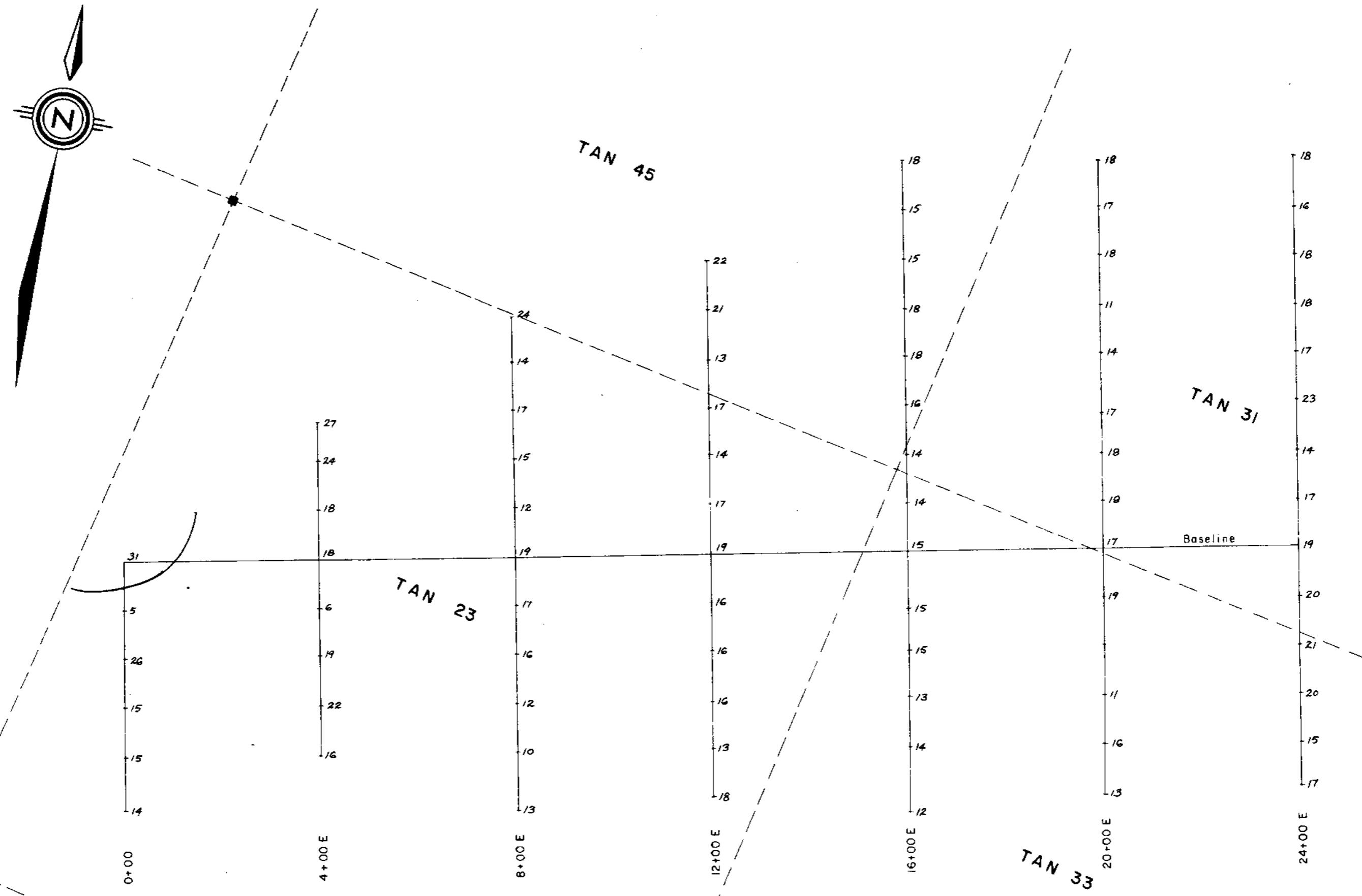
Hollill

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Revised by	Date	Revised by	Date		
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To accompany a report by F.D. Gill

10/23/72

4085 M-8B

TAN GROUP

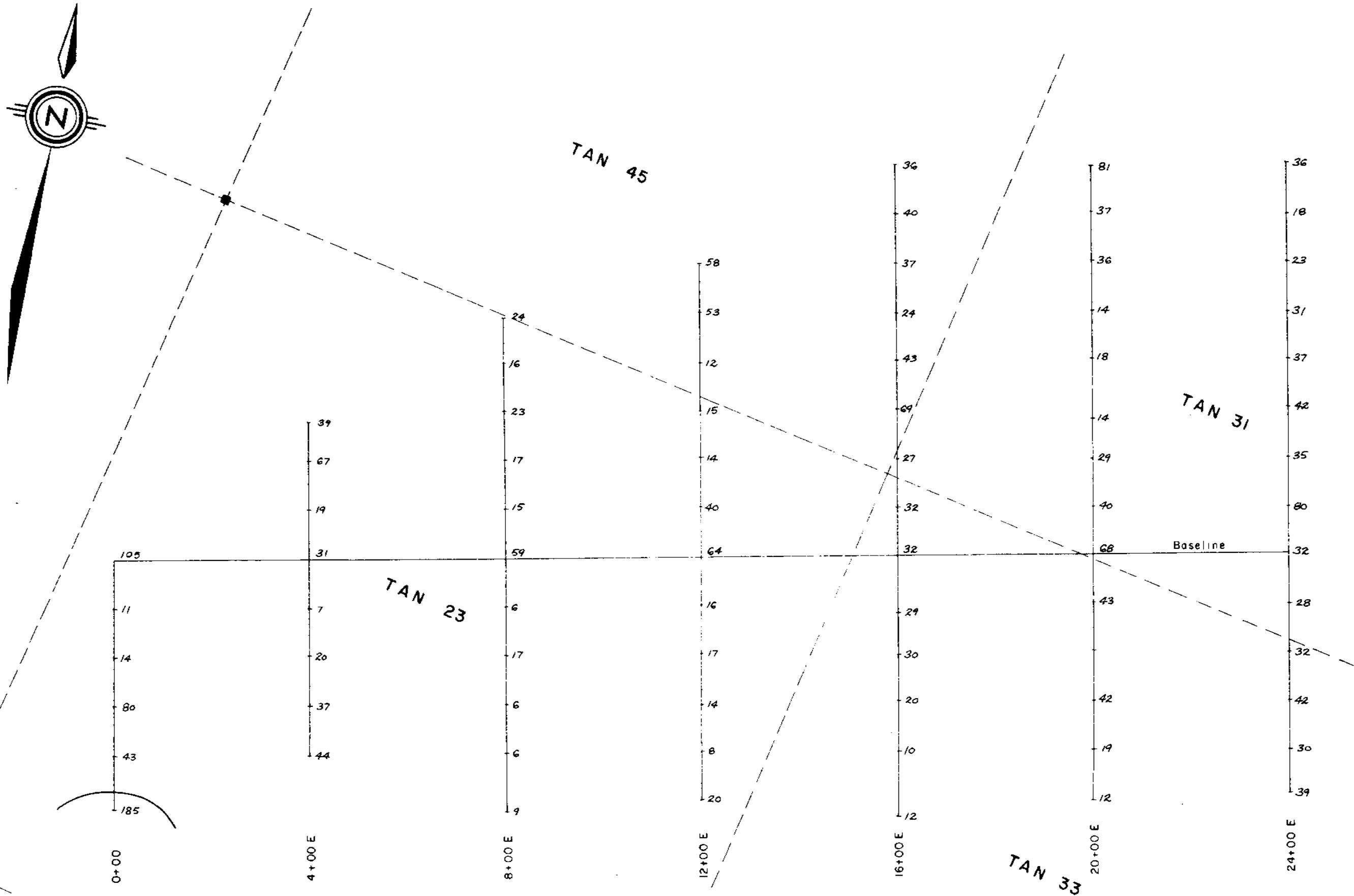


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Drawn by	Date	Revised by	Date

Scale: 1" = 200' Date: October 23, 1972 Plate: TN-8b

210-0620



4085 M-8A

To accompany a report by F.D. Gill

F.D. Gill

TAN GROUP



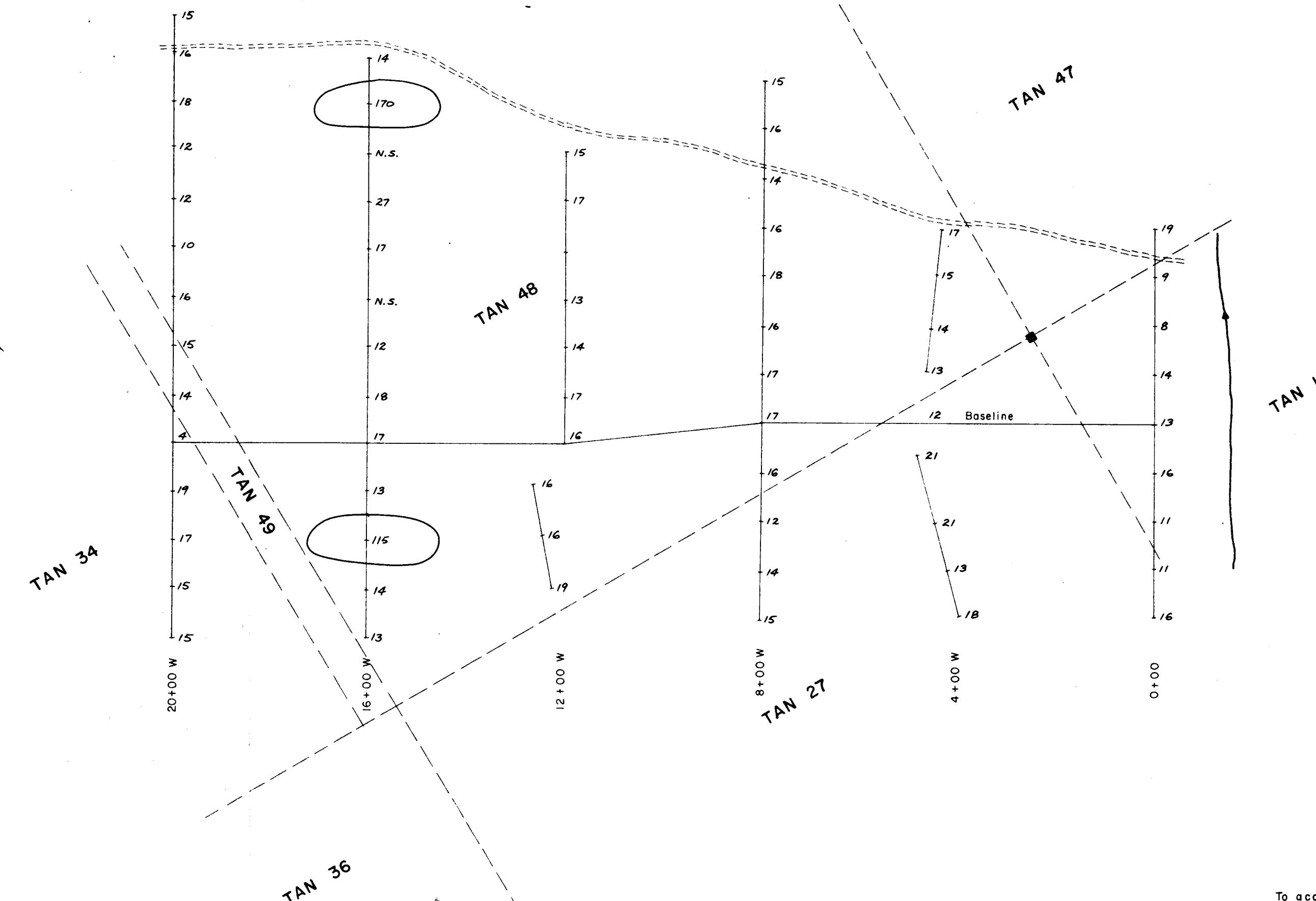
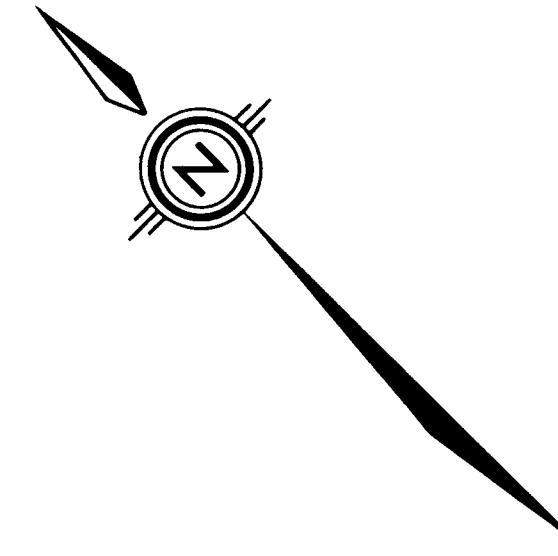
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Revised by	Date	Revised by	Date

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210-0620

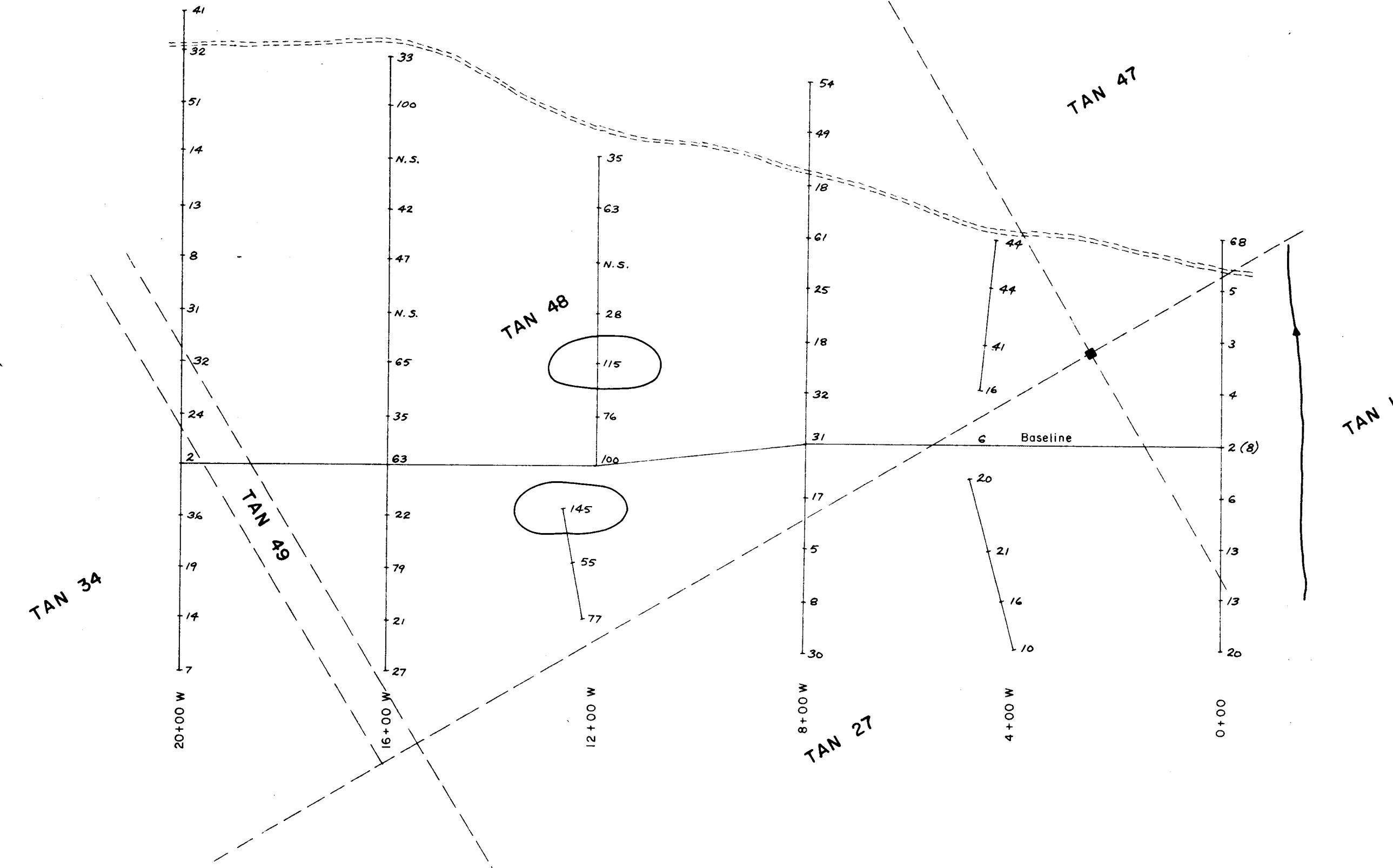
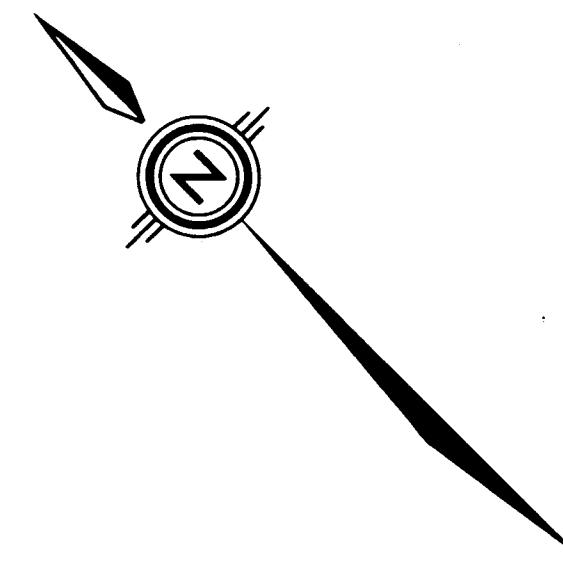


4085 M-9B

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 4085 MAP #9B

To accompany a report by F.D. Gill *FD Gill*

TAN GROUP		SOIL GRID 6	
Pb. IN P.P.M.			
Drawn by:	F.D.G.	Traced by:	T.G.B.
Revised by	Date	Revised by	Date
Scale: 1" = 200' Date: October 23, 1972 Plate TN-9b			



4085 TAN 36 M-9A

To accompany a report by F.D. Gill

10/22/72

TAN GROUP

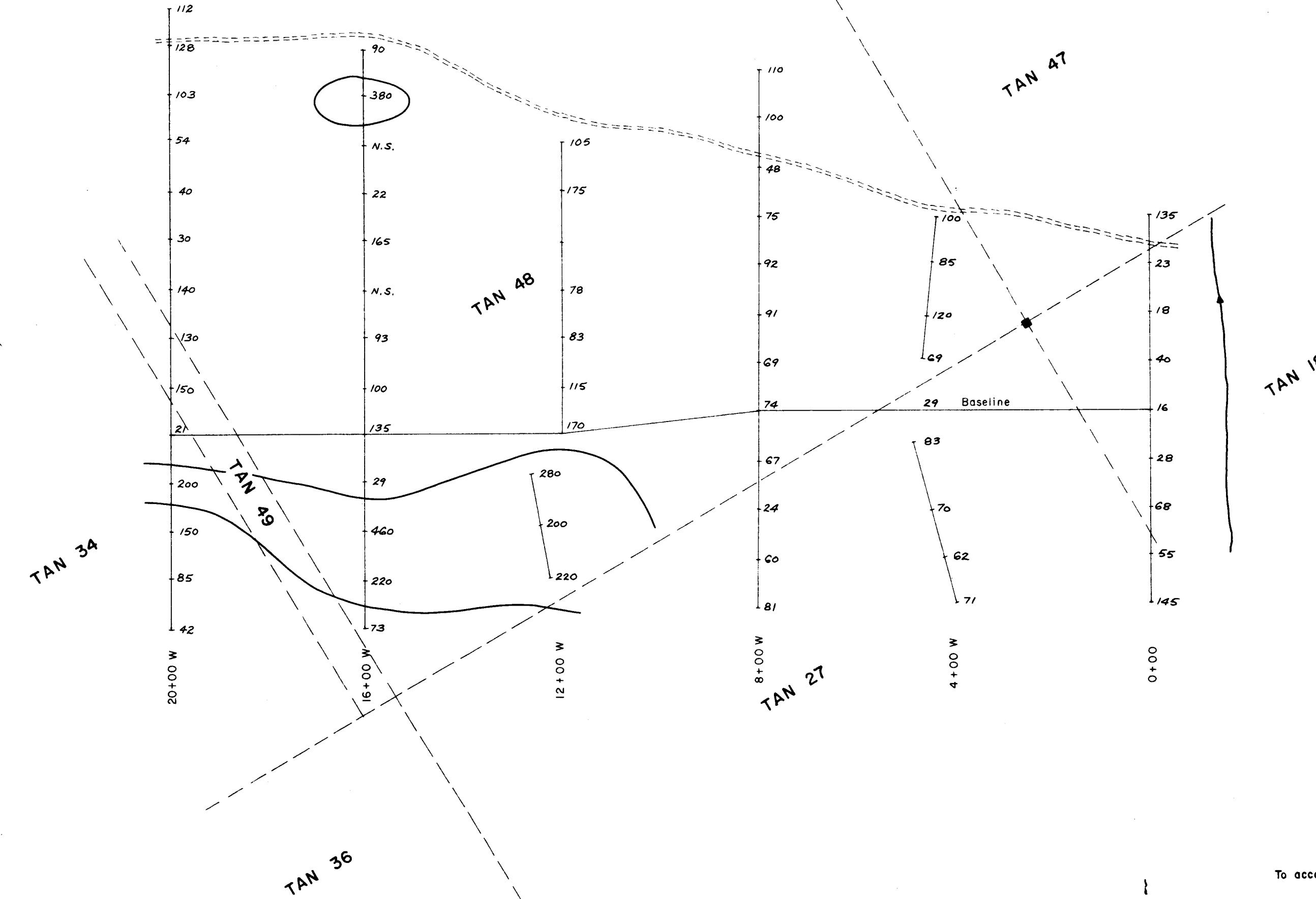
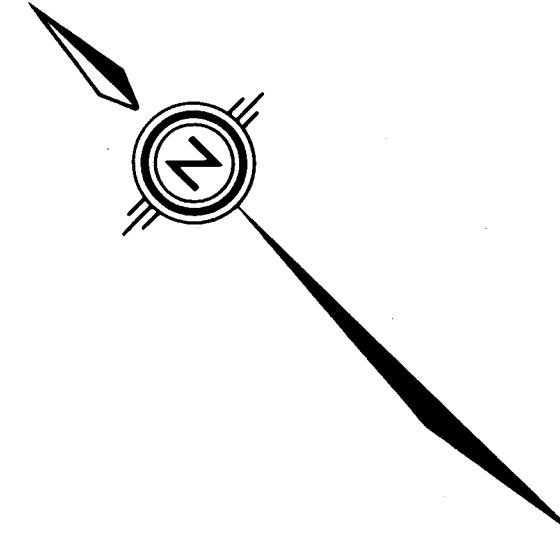
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Revised by	Date	Revised by	Date

SOIL GRID 6

Cu. IN P.P.M.

Scale: 1" = 200' Date: October 23, 1972 Plate: TN-9a

Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 4085 MAP #9A



4085 M-9C

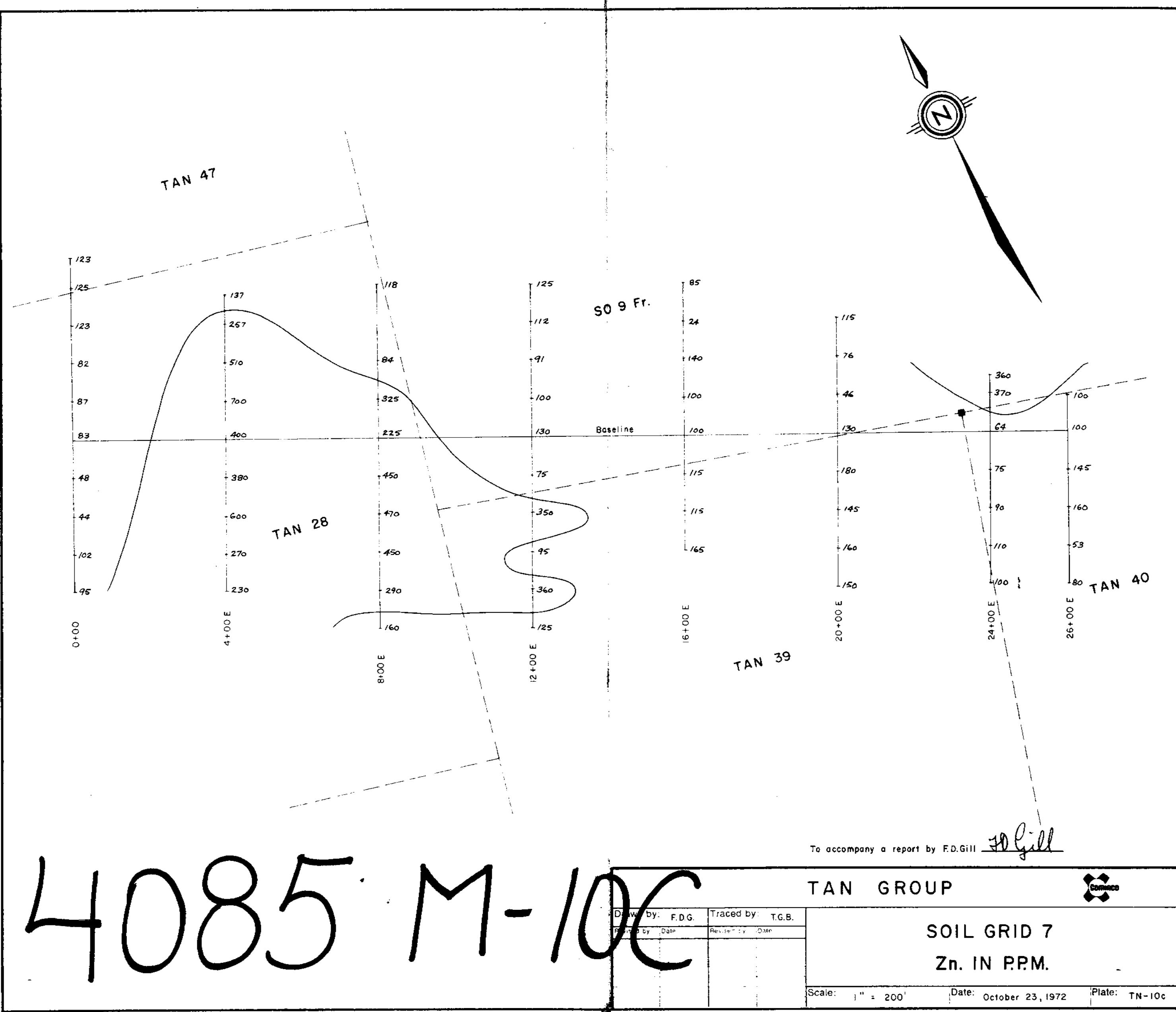
Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 4085 MAP #9C

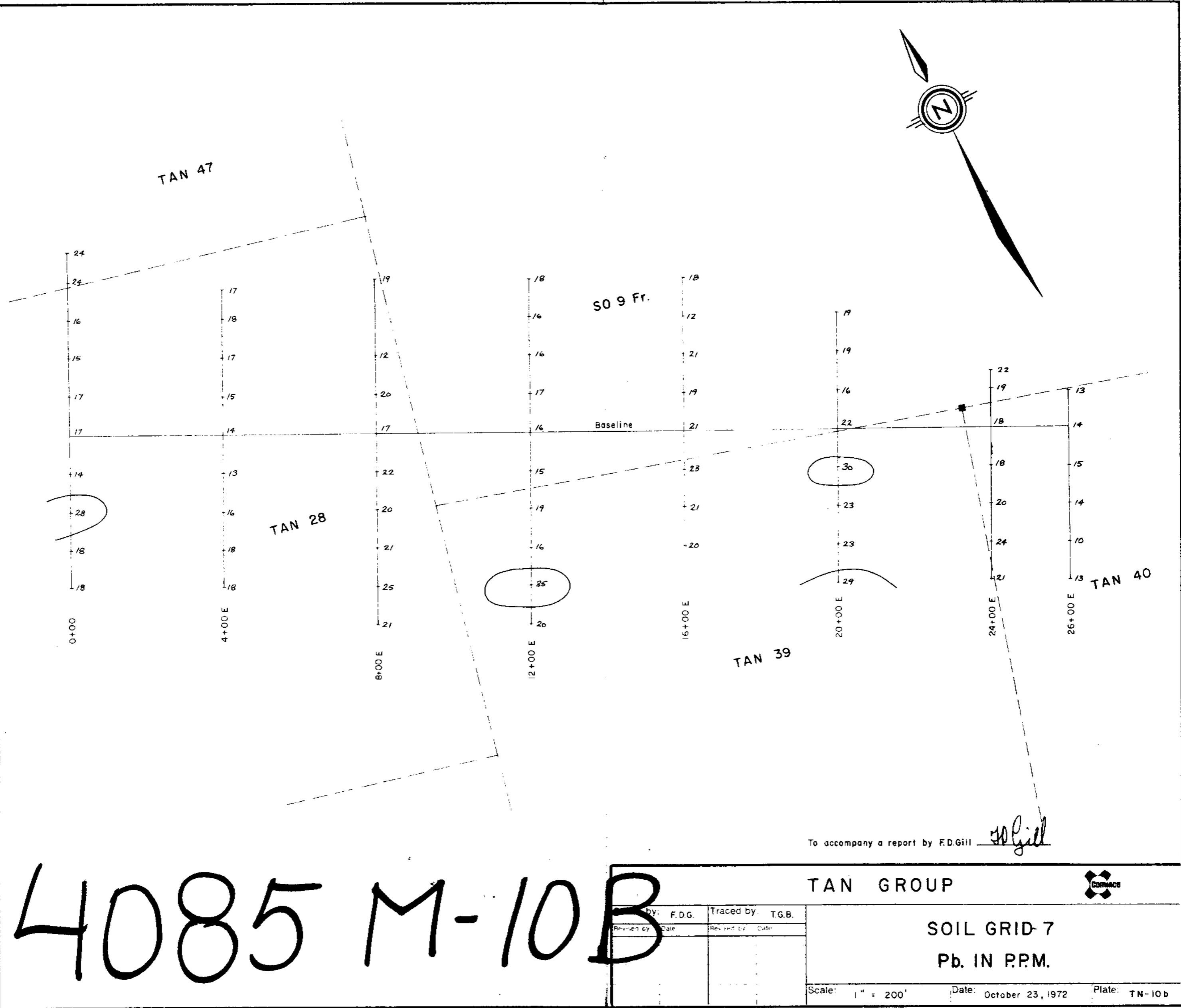
To accompany a report by F.D.Gill

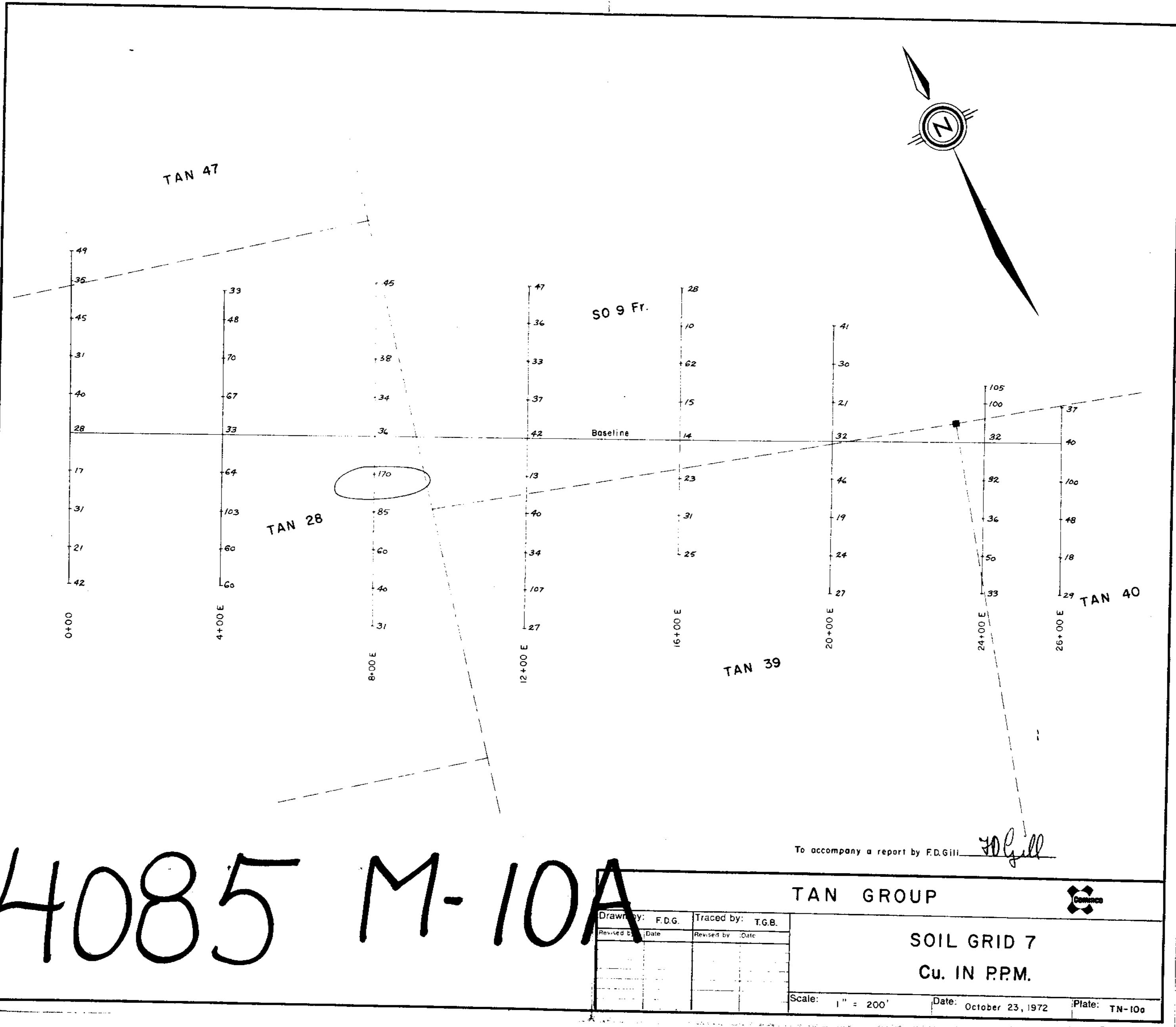


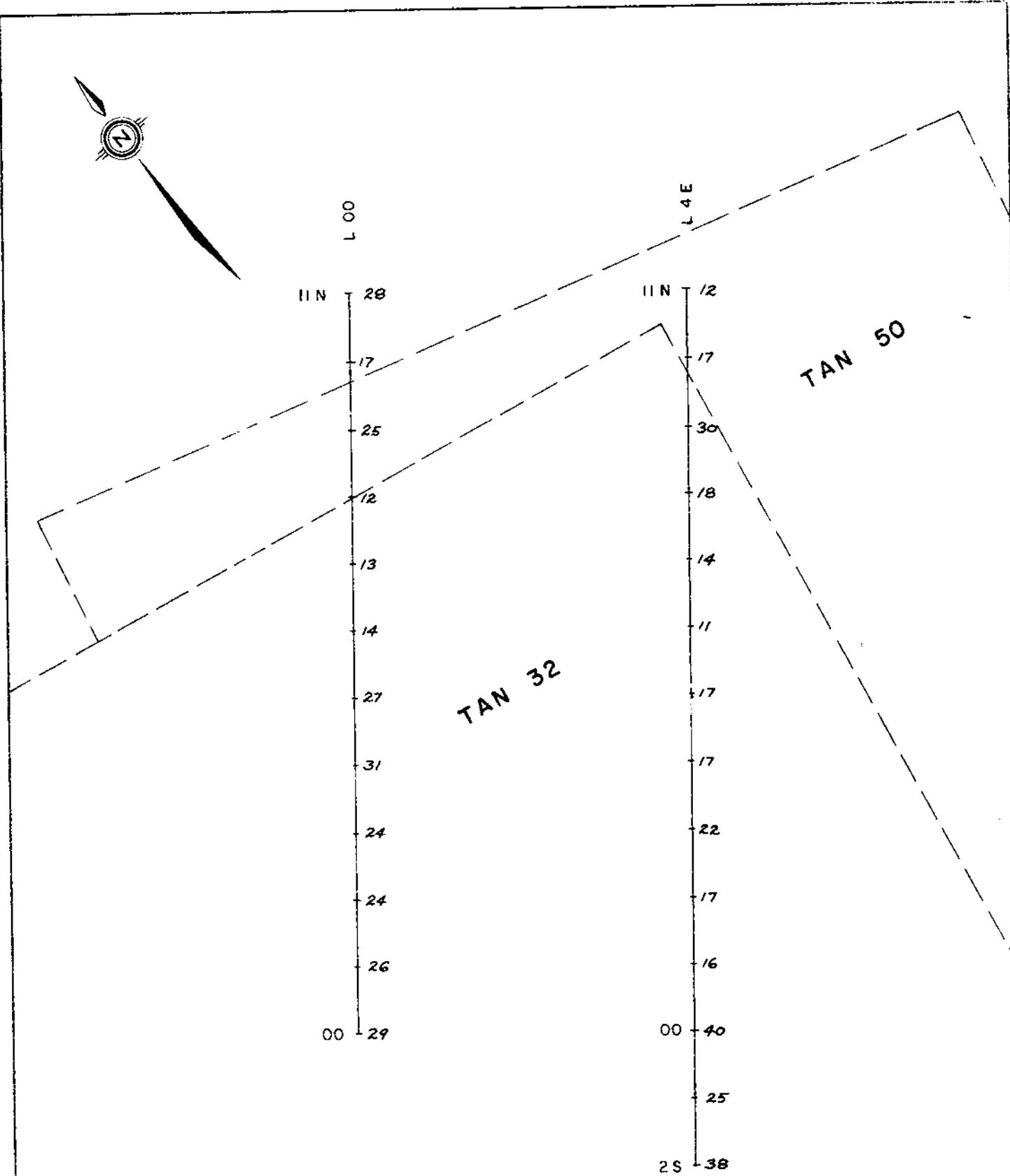
F.D.Gill

TAN GROUP		SOIL GRID 6	
		Zn. IN P.P.M.	
Drawn by: F.D.G.	Traced by: T.G.B.		
Revised by _____	Date _____	Revised by _____	Date _____
		Scale: 1" = 200'	Date: October 23, 1972
		Plate: TN-9c	









Department of
Mines and Petroleum Resources
ASSESSMENT REPORT
NO. 4085 MAP #11A

To accompany a report by F.D.Gill

J. Gill



TAN GROUP

Drawn by: F.D.G.

Traced by: T.G.B.

Revised by _____ Date _____

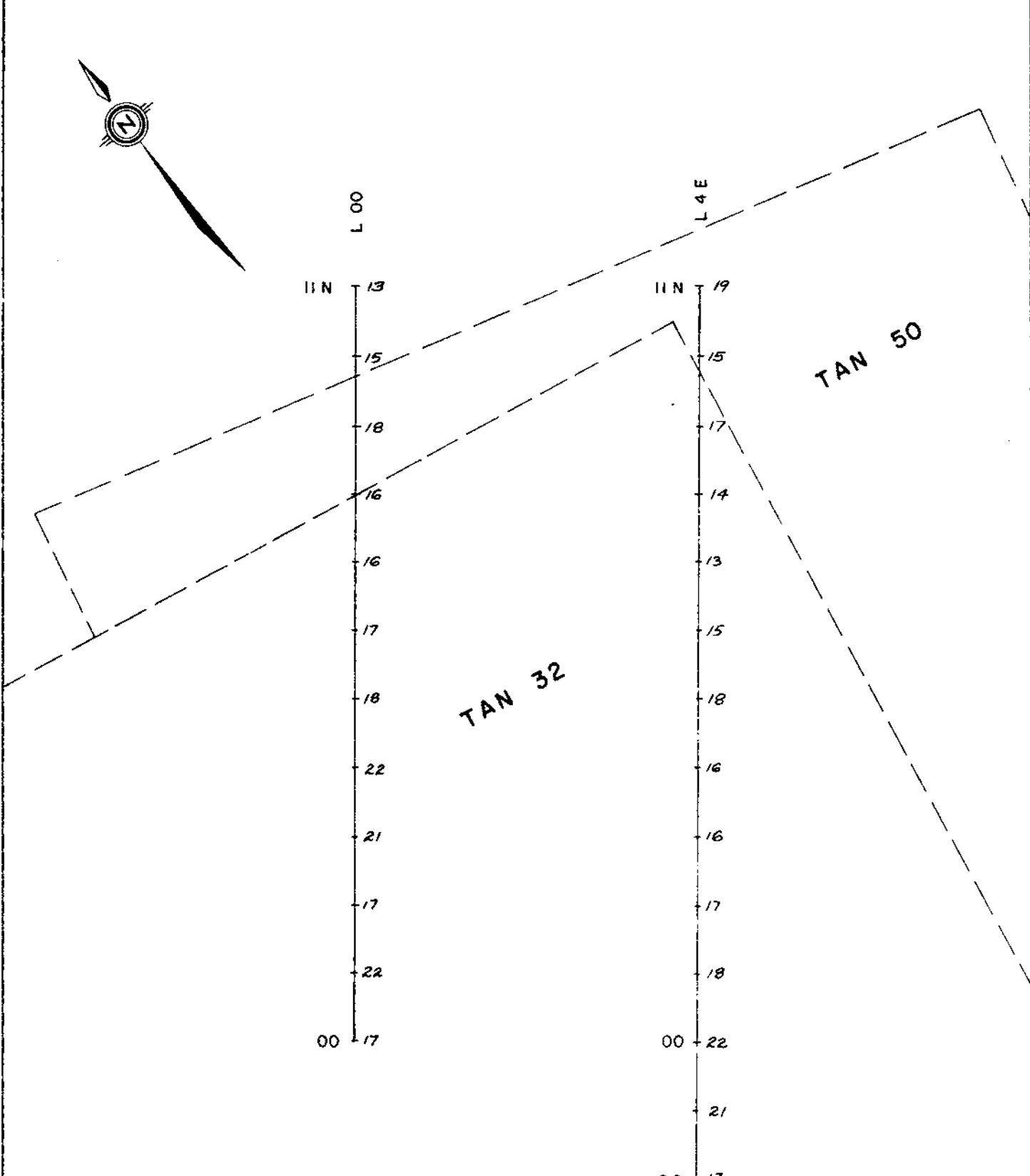
Revised by _____ Date _____

SOIL GRID 8

Cu. IN P.P.M.

Scale: 1" = 200' Date: October 23, 1972 Plate: TN-11a

210-0610



Department of
Mines and Petroleum Resources
ASSESSMENT REPORT

NO. 4085 MAP #11B

To accompany a report by F.D.Gill

F.D.Gill

TAN GROUP

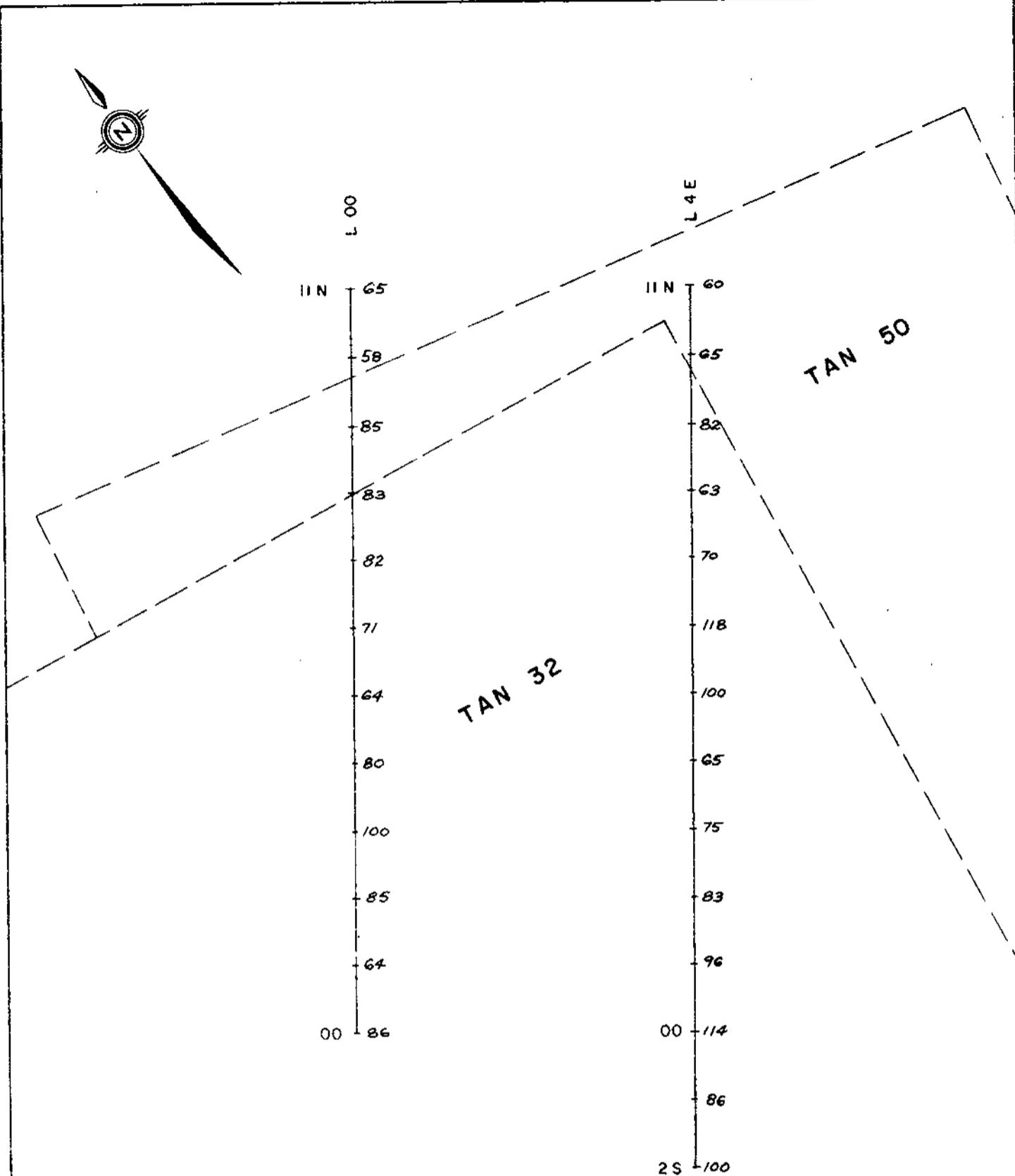


Drawn by:	F.D.G.	Traced by:	T.G.B.
Revised by	Date	Revised by	Date

SOIL GRID 8

Pb. IN PPM.

Scale: 1" = 200'	Date: October 23, 1972	Plate: TN-11b
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Department of
Mines and Petroleum Resources
ASSESSMENT REPORT

NO. 4085 MAP #11C

To accompany a report by F.D.Gill



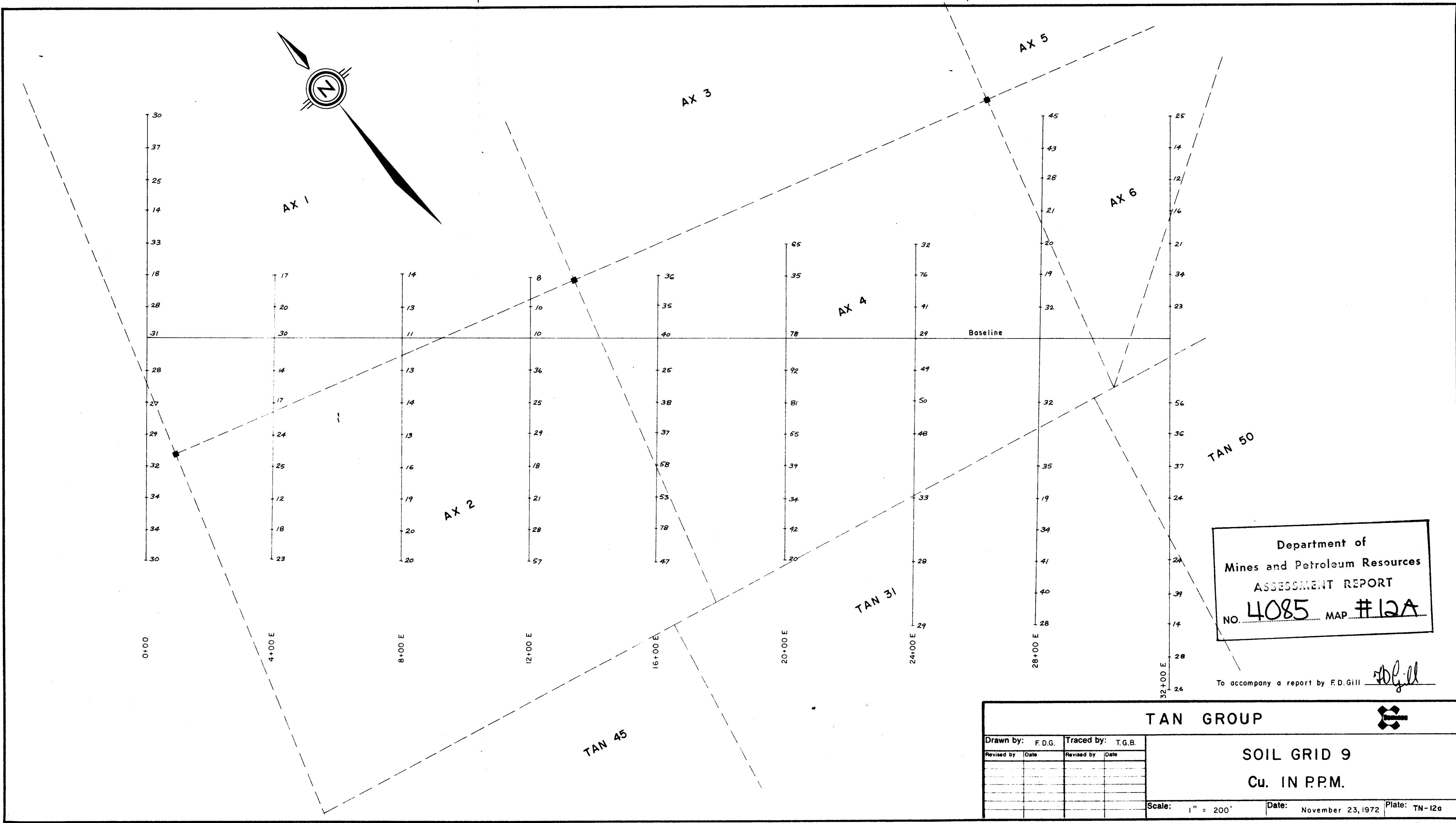
TAN GROUP

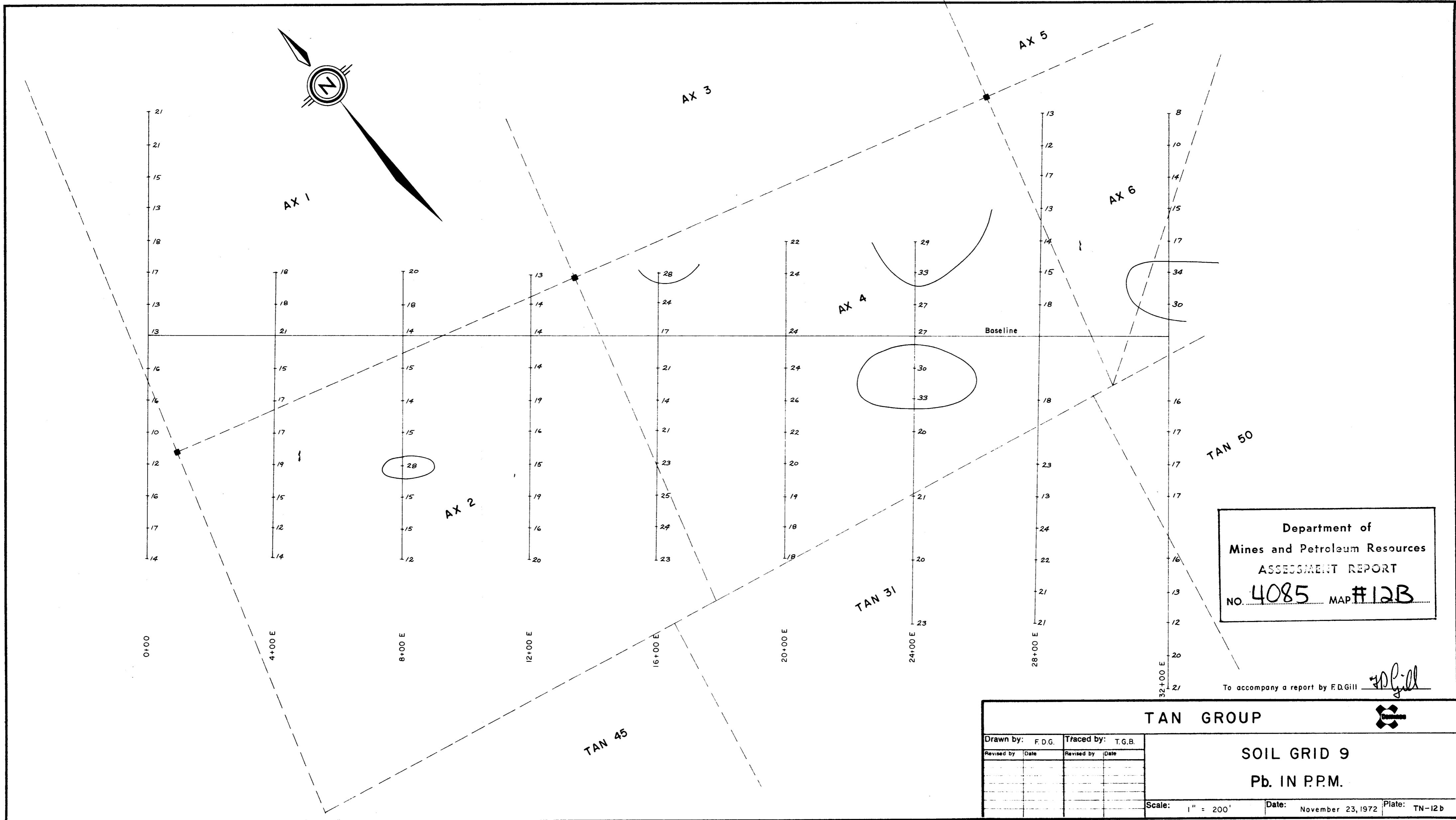
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Revised by	Date

SOIL GRID 8

Zn. IN PPM.

Scale: 1" = 200'	Date: October 23, 1972	Plate: TN-11c
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Department of
Mines and Petroleum Resources
Assessment Report
No. 4085
Map #2



4085 M-2

COMINCO LTD.

EXPLORATION
92 H/ 4 WWESTERN DISTRICT
December 14th, 1972

COST OF GEOCHEMICAL AND GEOLOGICAL SURVEYS ON THE
SO 1, SO 3, SO 7, SO 8, SO 9 FR., AX 1 - AX 4, AX 6,
TAN 20, TAN 22 - TAN 24, TAN 27 - TAN 29, TAN 31 - TAN 34,
TAN 36, TAN 39 - TAN 50 CLAIMS

Situated in the Tamihi Creek Area, New Westminster Mining DivisionBritish Columbia

A. GEOLOGICAL SURVEY AND STREAM SILT SURVEY:

1. Geological Salaries:

F. D. Gill, Project Geologist 231 days @ \$102/day	\$ 2,346
R. Y. Watanabe, Project Geologist 13 days @ \$102/day	1,326
R. G. Bagshaw, Geologist 5 days @ \$ 67/day	335
R. A. Gannicott, Student Geologist 15 days @ \$ 52/day	780
R. J. Beaty, Student Geologist 13 days @ \$ 48/day	624 \$ 5,401
2. <u>Analyses:</u> 42 stream silts @ \$1.60/sample	68
3. <u>Room and Board:</u> geology	761
4. <u>Transportation:</u> geology	753
5. <u>Topographic Map:</u> prepared by McElhanney Surveys Ltd	1,270 \$ 8,253

B. GEOCHEMICAL SURVEY:

1. Geochemical Salaries:

L. Sostad, Technician 25 days @ \$ 48/day	\$ 1,200
G. Mattson, Technician 12 days @ \$ 38/day	456
G. Keller, Technician 18 days @ \$ 38/day	684
R. J. Beaty, Student Geologist 6 days @ \$ 48/day	240 \$ 2,580

2. <u>Analyses:</u> 706 soil & silt for Cu, Pb, Zn @ \$1.60/sample	1,130
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3. <u>Room and Board:</u>	838
4. <u>Transportation:</u>	489 \$ 5,037
Total geological and geochemical surveys	\$ 13,290

This work was performed during the period August 21st - November 3rd, 1972.

Signed: F. D. Gill

F. D. Gill, Project Geologist

This is Exhibit "A" to the Statutory Declaration of F. D. Gill declared before me this 21 day of December, 1972, A. D.

(See following page)

DOMINION OF CANADA:
PROVINCE OF BRITISH COLUMBIA.
To Wit:

In the Matter of

Statutory Declaration Relating
to Expenditures on a Geologi-
cal and Geochemical Survey of
the SO 1, SO 3, SO 7, SO 8,
SO 9 Fr., AX 1 - AX 4, AX 6,
Tan 20, Tan 22 - Tan 24, Tan
27 - Tan 29, Tan 31 - Tan 34,
Tan 36, Tan 39 - Tan 40 miner-
al claims, New Westminster
Mining Division

I, F. D. Gill

of the City of Vancouver

in the Province of British Columbia, do solemnly declare that

1. I personally, with the assistance of others names in this report, performed the surveys and prepared the accompanying geological and geochemical report on certain mineral claims situated in the New Westminster Mining Division.
2. Attached hereto, and marked with the letter "A" upon which I have signed my name at the time of declaring hereof, is a statement of expenditures incurred in connection with the geological - geochemical survey of the said claims, showing in addition the period in which the said survey was carried out.

And I make this solemn declaration conscientiously believing it to be true, and knowing that it is of the same force and effect as if made under oath and by virtue of the "Canada Evidence Act."

Declared before me at the City
of Vancouver , in the
Province of British Columbia, this 21
day of December 1972 , A.D.]

F D Gill

L. Jannette
A Commissioner for taking Affidavits within British Columbia or
A Notary Public in and for the Province of British Columbia.

SUPER AUTOMATIC RECORDER

In the Matter of

=====

Statutory Declaration
(CANADA EVIDENCE ACT)

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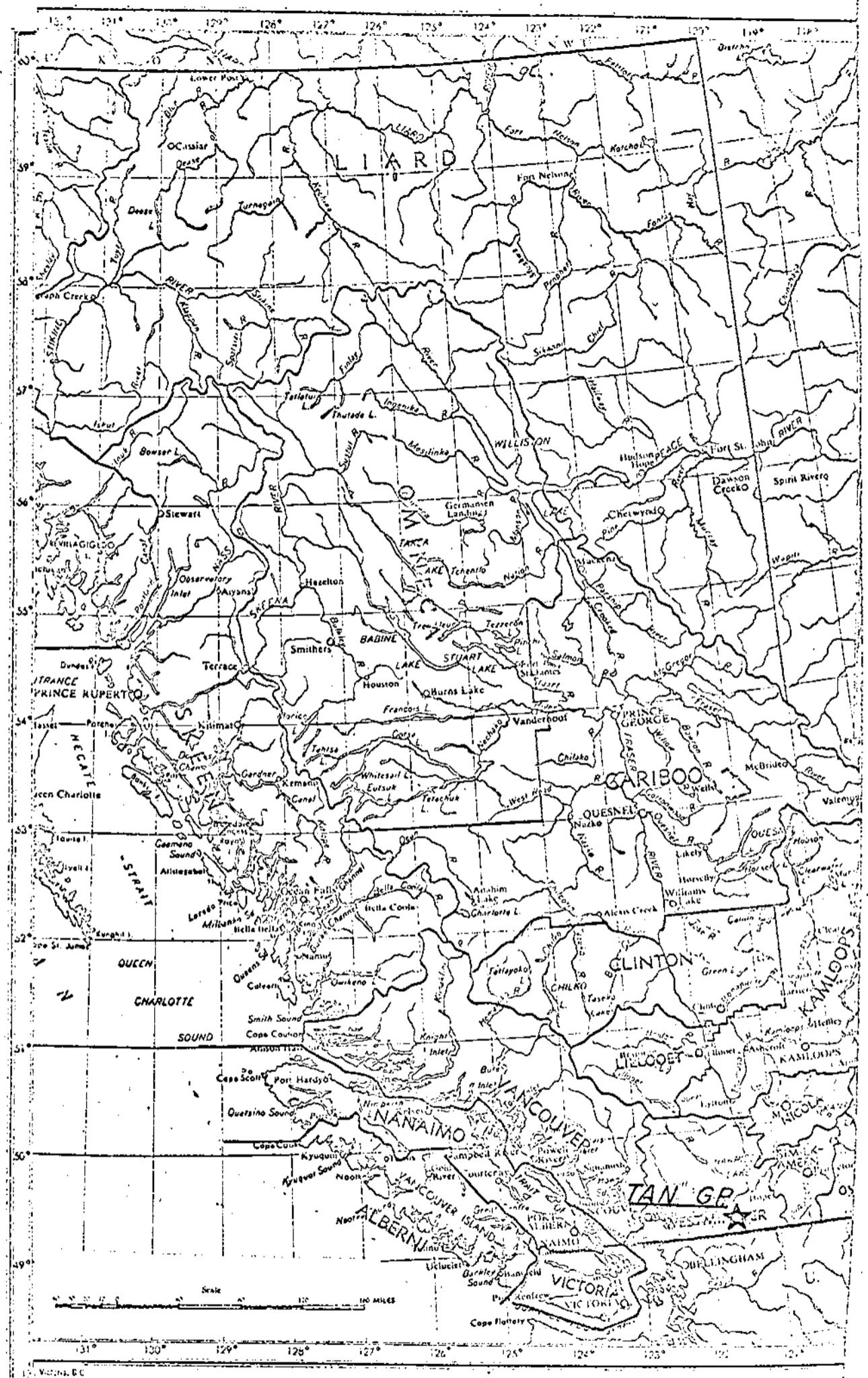
STATEMENT OF QUALIFICATIONS

F. D. Gill was responsible for carrying out the geological and geochemical surveys on the SO, AX, and Tan claims, and for the preparation of this report. Mr. Gill graduated as a Bachelor of Science from the University of Durham, United Kingdom, in Honours Geology in 1957. He obtained his M.A. degree from the University of Toronto in 1966, and has been working in a responsible capacity for Cominco Ltd. since July, 1957.

I consider him to be a capable and experienced geologist.

D.W. Heddle

D. W. Heddle, P. Eng.
Chief Geologist, Exploration
Western District



4085

TAN PROPERTY



Drawn by:

Traced by: WRS

Revised by: _____

Revised by: _____

M-1

LOCATION MAP

Scale: as shown

Date: NOVEMBER /72

Department of
Mines and Petroleum Resources

ASSESSMENT REPORT

NO. 4085 MAP #1

1-M

2804