

42A09SE0169 63.1379 MUNRO

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REPORT ON GEOPHYSICAL SURVEYS
LITTLE PIKE GROUP OF CLAIMS
MUNRO - GUIBORD - MICHAUD TOWNSHIPS
LANDER LAKE MINING DIVISION
PROVINCE OF ONTARIO.

by

F. J. Ezelegi.

Exploration Dept.,
Canada John-Manville Co. Limited.

December 10th, 1964.
Matheson, Ontario.



42A09SE0169 63.1379 MUNRO

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List of Maps Accompanying Report:

Geo-Magnetic Contour Plans - 1" = 200 feet.

Sheets M-22, 27, 28, 29, 33, 34, 35	- Munro Township
G-1, 2	- Guibord Township
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Electromagnetic Profile Plans - 1" = 200 feet.

Sheets M-22, 27, 28, 29, 33, 34, 35	- Munro Township
G-1, 2	- Guibord Township
M1-1, 2, 7	- Michaud Township

Key Map - 1" = 1000 feet.

Legend Sheet

REPORT ON GEOPHYSICAL SURVEYS
LITTLE PIKE GROUP OF CLAIMS
MUNRO - GUIBORD - MICHAUD TOWNSHIPS
LARDER LAKE MINING DIVISION
PROVINCE OF ONTARIO.

Introduction:

The following report describes the geophysical surveys completed during the winter of 1964 on Canadian Johns-Manville Company Limited claims located in Munro - Guibord - Michaud Townships, Larder Lake Mining Division, Province of Ontario.

Cutting and chaining of picket lines were contracted to J. Alix Company Limited of Val d'Or, Quebec. Picket lines were out at right angles to east - west trending base lines and were established at 300 foot intervals. Pickets were fixed every 50 feet along these offset lines by chainage.

Magnetometer surveying was conducted by R. Haley, geophysical operator with Canadian Johns-Manville Company Limited, using a Jalander type instrument. B. Cudmore and H. Gorges alternated as assistants during the course of this work. Readings were recorded at 25 or 50 foot intervals along the offset lines - spacing was dependent upon the amount of detail required over the magnetic anomalies.

Electromagnetic surveying was carried out by T. Cox, geophysical operator with this Company, using a Ronka Mark IV horizontal loop type unit. D. MacFarlane, H. McDougall, H. Gorges and T. McChristie alternated as assistants during the course of this work. Readings were recorded at 100 foot intervals along the offset lines.

Supervision and interpretation of this work was the responsibility of the writer, Senior Geologist with Canadian Johns-Manville Company Limited.

Property:

The claims surveyed are located in the south part of Munro, northeast part of Guibord and northwest part of Michaud Townships, and are numbered as follows: -

L-78624-25-28-33 to 37 inclusive; 42 to 48 inclusive; 53 to 60 inclusive and 62 to 90 inclusive - Munro Township further described as S1/2 of S1/2 Lot 1, S1/2 of S1/2 and NW 1/4 of S1/2 Lot 2, S1/2 Lot 3 and S1/2 of NE1/2 Lot 3, all Lot 4, all Lot 5, NE1/2 Lot 6 and N 1/2 of S1/2 and SE1/4 of S1/2 Lot 6, NE1/4 of NE1/2 of S1/2 Lot 7, NE1/2 Lot 8 and NW1/4 of S1/2 Lot 8 - all in Concession I SW1/4 of NE1/2 Lot 7, S1/2 of NE1/2 and NE1/4 of S1/2 Lot 8, NE1/2 of NE1/2 and SE1/4 of NE1/2 Lot 9 - all in Concession II.

Property: (cont'd)

L-78622-23-26-27-29-30-31-32-38-39-40-41-49-50-51-52-61 - Guibord Township - further described as N1/2 Lot 1, N1/2 of Lot 2, N1/2 of Lot 3, N1/2 Lot 4 and N1/4 of N1/2 Lot 5 - all in Concession VI.

L-78606 - 21 inclusive - Michaud Township - further described as N1/2 Lot 12, N1/2 and N1/2 of S1/2 Lot 11, S1/2 of N1/2 and S1/2 Lot 10 - all in Concession VI.

These 85 claims comprise approximately 3,400 acres.

Location and Accessibility:

The Canadian Johns-Manville claims group is situated in the south-central and east (Concessions I and II) parts of Munro Township, northeast part (Concession VI) of Guibord Township, and northwest part (Concession VI) of Michaud Township, Larder Lake Mining Division, Province of Ontario.

Ready access by car or truck is provided by Highway #101 (Matheson, Ontario to the Quebec border near Duparquet) which cuts across the central part of the property in Munro and Guibord Townships at a distance of approximately twelve miles east of the Town of Matheson. Bush roads, leading to both the north and south of the highway, make most parts of the claims group accessible by four-wheeled drive vehicle.

Topography:

The eastern portion of the surveyed area - claims in the southeast part of Munro and all claims in Guibord and Michaud Townships - are covered by glaciofluvial deposits with only a few widely scattered bedrock exposures projecting through same. These areas of sand are timbered with jackpine - alders and in some places poplar grow along stream beds. Farther to the west, along the Little Pike River, a broad zone of wet spruce muskeg occurs. This muskeg extends approximately three-quarters of a mile to both the east and west of the river.

Rock exposures cover a large portion of the remainder of the claims in Munro Township. These areas are sparsely timbered with jackpine, poplar and in a few localities birch trees.

Drainage on the claims group is mainly to the south and west by small streams draining into Perry and Barton creeks and the Little Pike River.

Previous Works

Munro Township was mapped in detail by J. Satterly and assistants during the field seasons of 1944 and 1950. A report and geological plan, on a scale of one inch equals 1,000 feet, were published in the Sixtieth Annual Report of the Ontario Department of Mines (Volume LX, Part VIII, 1951). Note that both Quibord and Michaud Townships have been mapped in detail by geologists for the Ontario Department of Mines and the results of same are shown on 1,000 scale maps and described in reports.

Previous work on claims described in this report has been concentrated on exploration for gold with emphasis being given to quartz veins in the volcanic rocks. Consequently, numerous small pits and trenches have been shown on Satterly's map of the Township.

Due to a renewed interest in the ultrabasic intrusives of the Matheson Area and the fact that many of the claims held for gold exploration covering these intrusives has been allowed to lapse, a block of 85 claims was staked by Company personnel and same were recorded and transferred to Canadian Johns-Manville Company Limited in early December 1963. Exploration work, as described in this report, was started immediately after recording of the claims.

Line Cutting and Chaining

A base line was started from the southeast corner of Munro Township and was out and chained to the west along the Quibord - Munro Townships boundary to the mid point of Lot 6. Subsidiary east - west trending base lines have been out in Munro Township to cover the claims to the north of the Township line and to the west of Lot 6. (see accompanying plans). The main base line was out and chained to the east along the McCool - Michaud Townships boundary to the east side of Lot 11. A parallel subsidiary base line was established in Michaud Township to cover the remainder of the claims.

Right-angled offset lines were established at 300 foot intervals along the base lines and were out to the north and south to the claim boundaries. Pickets were

Line Cutting and Chaining: (cont'd)

established, with numbered locations, at 50 foot intervals along the offset lines by chaining. All offset lines were tied in along the north and south claim boundaries by chaining to increase the accuracy of the plans.

Line cutting and chaining were contracted to J. Alix Company Limited of Val d'Or, Quebec and were carried out during the early winter of 1964.

A total of 107.1 miles of picket, base and tie lines was cut and chained during the course of this work.

General Geology:

The geology of Munro Township was mapped by J. Satterly and assistants during the field seasons of 1944 and 1950 and the results are shown on Map No. 1951-5 which accompanies the geological report on the Township issued by the Ontario Department of Mines. In order to show the general geology of the region in this report, the following "Table of Formations" has been included and was taken direct from Volume IX, Part VIII, 1951, entitled "Geology of Munro Township" compiled by J. Satterly and published by the Ontario Department of Mines.

Table of Formations

CENOZOIC

Recent: Windblown sand (dunes), stream deposits, peat.
Pleistocene: Sand, gravel, boulders; boulder clay; varved clay, silt; windblown sand (dunes).

Great Unconformity

PRECAMBRIAN

Keweenaw (?): Quartz diabase.

Intrusive contact

Matachewan (?): Quartz diabase, diabase.

Intrusive contact

Algoman (?): Quartz diorite, feldspar porphyry, felsite, lamprophyre.

Intrusive contact

Basic and Ultrabasic Intrusives: Diorite, diabase, gabbro, peridotite and dunite (serpentinized), pyroxenite.

General Geology (cont'd)

Intrusive contact

Volcanics:

(Rhyolite) rhyolite agglomerate and tuff.
(Andesite, basalt; pillow lava, diabasic lava, spherulitic lava, fragmental lava (flow breccia), talc-chlorite schist, carbonate-chlorite schist; actinolitized and chloritized lavas.

Faulted contact

Sediments:

Greywacke, argillite, arkose, conglomerate.

It should be noted that detailed geological mapping has been carried out in Guibord and Michaud Townships by government geologists and the results have been published in reports and maps by the Ontario Department of Mines. Unfortunately, due to depth of overburden, this information has been of little value in interpreting the geophysical survey results on claims in Munro and Guibord Townships.

The claims group is underlain by volcanic rocks - rhyolite, andesite and basalt - intruded by diorite, gabbro, pyroxenite, serpentinized peridotites, dikes and sills of porphyry and lamprophyre and diabase dikes. A major strike fault, the Munro fault zone, crosses the claims group and is an apparent branch of the strong Dector-Porcupine break. Numerous northerly trending cross structures offset the formations on the property.

The rocks of the area have been intensely altered by carbonatization, consequently there are carbonated volcanics, carbonated peridotites and carbonate rock on the claims group and large areas of carbonate rock are shown on the accompanying plans.

The geology of the surveyed area will be further discussed under the interpretation of the geophysical surveys.

Magnetometer Survey:

A magnetometer survey was conducted over the Little Pike Group of claims by R. Haley, geophysical operator with Canadian Johns-Manville Company Limited. B. Cudmore and H. Gorges alternated as assistants during the course of this work.

Magnetometer Survey (cont'd)

This survey was carried out using a Jalander type instrument having sensitivities or scale constants as shown below: -

Scale #1 - 10 gammas per division

" #2 - 30 " " "

" #3 - 100 " " "

Parts of the survey were checked by R. Kaltwasser, senior fieldman with this Company, using a Sharpe's A-2 type magnetometer (CJM #166) and Jalander readings were corrected to the base as established by the A-2. Note that CJM magnetometer #166 had been previously checked on a base control station at Munro Mine near Matheson. Consequently, on the claims discussed in this report a relative gamma value of 1220 corresponds closely with an absolute value of $57,599 \pm 15$ gammas.

Base control stations were established and given fixed values as shown below: -

L-0+00 - Base Line No. 2 -	1100 gammas
L-186+00W - Base Line on claim L-78680 -	1600 gammas
L-153+00W - Base Line on south part of Sheet No. M-33	1600 gammas
L-99+00W - Main Base Line - Munro Township	1860 gammas
L-99+00W - Main Base Line - Guibord Township	1920 gammas
L-63+00W - 2150 feet north of Main Base Line	1800 gammas
L-42+00W - 2450 feet north of Main Base Line	1700 gammas
L-24+00W - Main Base Line	1800 gammas
L-3+00E - Main Base Line	1400 gammas
L-54+00E - North Base Line	1500 gammas
L-87+00E - North Base Line	1500 gammas

The locations of these base control stations are shown on the accompanying Geo-Magnetic Contour Plans. Readings were recorded on the base control stations at least four times per day as a check on the working condition of the instrument and to determine the daily diurnal variation.

Stations were spaced at 25 or 50 foot intervals along the offset lines - spacing was dependent upon the magnetic intensity of the underlying formations. A total of 10,704 stations was recorded on the Little Pike Group of claims during the course of the magnetometer survey.

Electromagnetic Survey:

An electromagnetic survey was conducted over the claims group by T. Cox, fieldman and geophysical operator with this Company, intermittently during the period January 24th to May 17th, 1964. D. MacFarlane, H. McDeugall, H. Gorges and T. McChristie alternated as assistants during the course of the work. Three men were used throughout this survey in an attempt to cut down lost time due to cable breaks.

Readings were recorded using a Ronka Mark IV Horizontal Loop type unit with coil spacing fixed at 200 feet. This unit had been zeroed, previous to this survey, over the ultrabasic sill at the Beatty Mine of Canadian Johns-Manville Company Limited in Beatty Township.

A total of 4,879 stations, spaced at 100 foot intervals, was recorded during the course of this survey.

Test surveys have been completed with this unit over a graphitic zone, a massive sulphide zone and a disseminated sulphide zone as aids in interpreting the results obtained on unexplored claims groups. The following results were obtained during these tests: -

1. Massive sulphide zone -- a strong positive rise on the in phase followed by an intense negative with a resumption to zero or near zero when the station was off the conductor. The out of phase component remained within ± 5 of zero.
2. Disseminated sulphide zone -- similar to No. 1 but with lower in phase peaks.
3. Graphitic zone -- both the in phase and out of phase components paralleled one another and followed the pattern of No. 1.

It should also be noted that coil spacing (should be exactly 200 feet) and the angle of the coils to the horizontal (each coil should be horizontal) play a large part in this work. Errors in one or both of the above may cause anomalies of sufficient magnitude to indicate the presence of a disseminated sulphide zone. Consequently, topography is an important factor in this type of survey.

The results of the electromagnetic survey are shown on the accompanying

electromagnetic profile plans on a scale of one inch equals 200 feet.

Interpretation of Magnetometer Surveys

The results of the magnetometer survey are depicted on the accompanying "Geo-Magnetic Contour Plans" on a scale of one inch equals 200 feet. Contour lines of equal magnetic intensity have been drawn at 500 gamma intervals from 00 to 4,000 gammas with the interval at 1000 gammas for readings exceeding 4000 in value, to emphasize anomalous zones. Interpretation has been based upon a study of the contoured magnetometer plans, geophysical and geological data previously completed by other interests on these and adjoining claims, and aerial photographs. Maps and reports compiled and published by the Ontario Department of Mines covering the claims discussed in this report, have been used extensively in this interpretation.

The major portion of the surveyed area is underlain by highly altered-carbonatized and chloritized-intermediate to basic volcanic rocks. Magnetic readings over these andesites and basalts range in intensity from slightly less than 1000 gammas to 3000 gammas in magnetite-rich zones. In general, the values range between 1200 and 1800 gammas which is a normal background for this region. Narrow bands of acid volcanics - rhyolite - are shown on the accompanying plans and range in magnetic intensity from 900 to 1,400 gammas. It should be noted that the interpretation of these bands is based primarily on geological data as it is extremely difficult to differentiate same from the intermediate to basic volcanics by use of the magnetic data.

Sediments occur, interbanded with the volcanics, on the property. In general, same are intensely altered by carbonatization and of course magnetically are indistinguishable from the volcanics. Again geological data has been used extensively to delineate the highly carbonated sedimentary - volcanic series. In several places in the map area, magnetic readings are markedly lower over these altered zones than over the surrounding volcanics. In these instances magnetic data has been used to outline the more highly altered zones.

Interpretation of Magnetometer Surveys

The volcanic - sedimentary formations of the area have been intruded by sill-like bodies of basic and ultrabasic rocks. Magnetic readings over the diorite, gabbro and pyroxenite intrusives range in intensity from 1500 to 2500 gammas, however, some are not sharply defined magnetically and consequently geological data forms the basis for part of the interpretation. Values over the ultrabasic intrusives - assumed to be mainly serpentinitized peridotite - range in magnetic intensity from negative values to over 11,000 gammas. However, due to alteration and depth of overburden (in the central and eastern parts of the map area) readings, in general, range in value from 2200 to 4000 gammas. Intense alteration of the serpentinitized peridotite has caused the formation of carbonate rock which encloses many of the ultrabasic intrusives - this alteration is typical of the Munro - Beatty Sill. Magnetic readings over these highly altered areas range in intensity from 2000 to 2200 gammas.

Diabase dikes intrude the aforementioned rock types on the claims group and, in general, are only weakly defined by the magnetic results.

Structurally, the formations strike in a general east to slightly south of east direction and dip vertically to steeply north. The south-easterly extension of the Munro fault zone has been shown in the western part of the map area. This zone is apparently a branch of the major Doster Porcupine fault zone located to the south of the surveyed area. Numerous northeasterly trending cross structures affect the formations on the property. A majority of these faults are defined, geologically, magnetically and topographically. Possibly the strongest of these fault zones is the one shown along the Little Pike River as same has been defined over a considerable distance.

In the central part of the property, the ultrabasic intrusives and the alteration zones surrounding same show evidence of folding. Clear definition of these features has been masked by faulting, alteration and no doubt depth of over-

Interpretation of Magnetometer Survey:

burden, however, further detailed magnetic work will be carried out in this area in an attempt to delineate these structures.

The results of the magnetometer survey indicate the occurrence of a series of sill-like intrusions of ultrabasic rocks striking in a general east-west direction across the claims group. These intrusives are shown to be highly faulted with folding indicated in the central part of the map area. Although the intrusives are relatively narrow and no doubt altered by carbonatization some warrant further exploration work.

Interpretation of Electromagnetic Survey:

The interpretation has been based upon a study of the Electromagnetic Profile Plans and all available geophysical and geological maps and reports. Results of the survey are shown on the accompanying Electromagnetic Profile Plans on a scale of one inch equals 200 feet.

Electromagnetic surveying was carried out on this claims group to check the acid volcanic bands for sulphide mineralization and to check the contacts of the basic and ultrabasic intrusives for a similar purpose. Mineralization occurs in both of the aforementioned nodes in this area.

A large number of extremely weak conductors have been delineated by the electromagnetic survey. In Michaud Township these zones are located in the intermediate to basic volcanics and are defined by weak crossovers or slight in phase peaks of either positive or negative sign. In Guilford Township a moderate to strong conducting zone occurs on claims 78626 - 29 in the intermediate volcanics adjacent to a diabase dike. This zone appears to warrant more detailed work.

Again, weak conductors, conformable with the regional strike of the formations, occur in some profusion on the claims in Munro Township. In general these zones occur in the intermediate volcanics and appear to be of little economic interest. However, one conductor has been delineated in the northwest part of claims L-78672 - 73 having an in phase peak of 40. A similar type zone occurs in the north part of claim

Interpretation of Electromagnetic Survey:

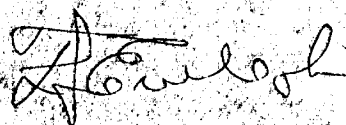
L-78687. Another similar zone occurs in the south part of claim L-78676. These three zones, although not occurring in the most favourable formations, warrant further testing. Note that several of the extremely weak in phase peaks and gently rolling crossovers have been designated on the accompanying plans by a question mark (?). These weak peaks and crossovers hardly merit further exploration work.

The results of the electromagnetic survey failed to reveal any conducting zones of interest in either the acid volcanics or along the basic - ultrabasic contacts. No conducting zones indicative of massive sulphide mineralization were outlined by the survey, however, as mentioned in preceding paragraphs at least three zones, having pronounced "in phase" peaks have been delineated by this survey and warrant further work.

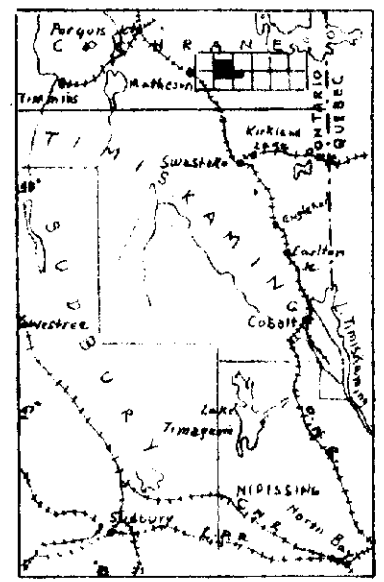
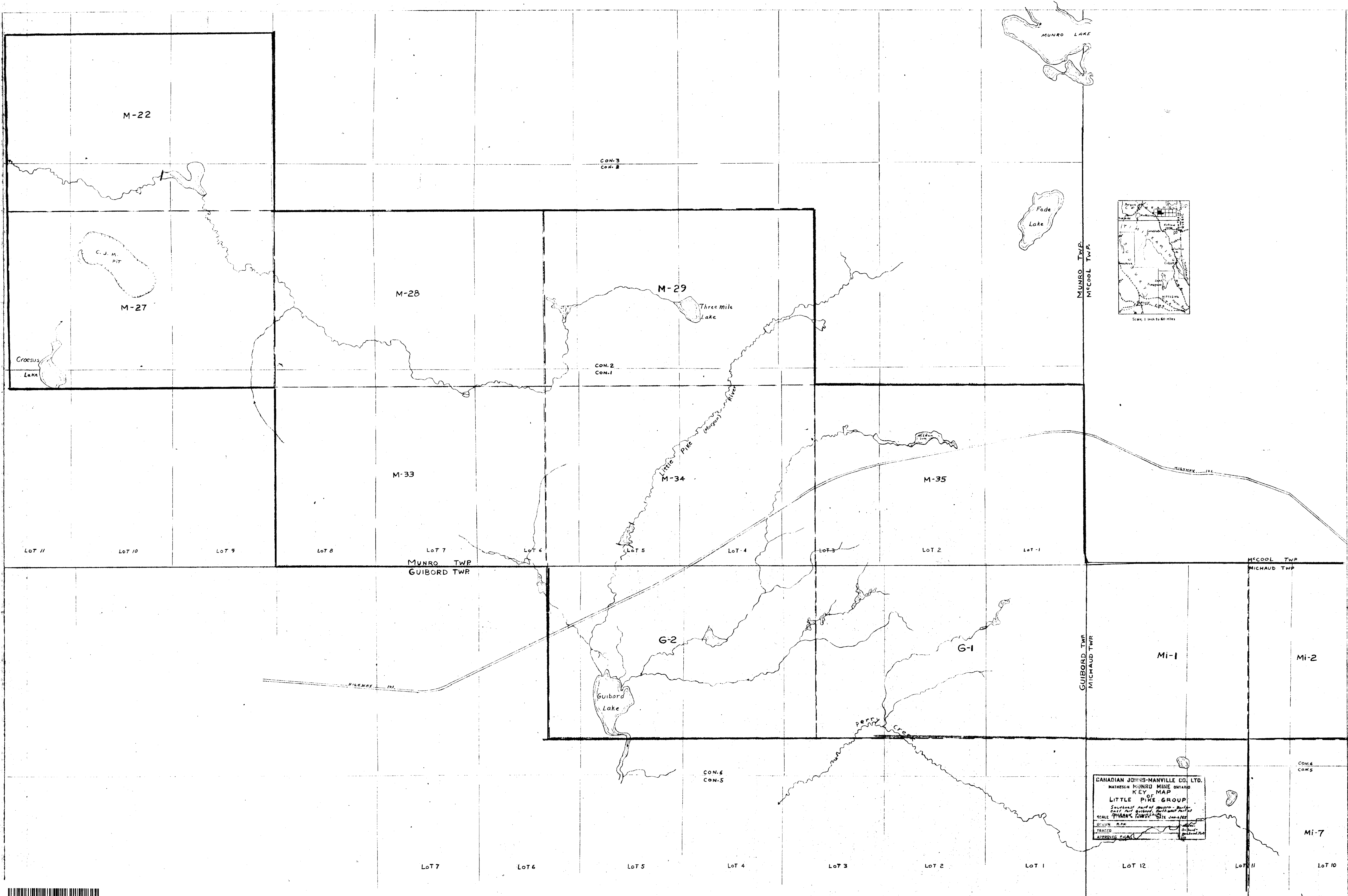
Recommendations:

Detailed prospecting and geological mapping, seismic testing, power stripping and, if warranted, diamond drilling are recommended for this claims group. The program should be started immediately after breakup. Work should be concentrated over conducting zones and ultrabasic intrusives. Sampling and assaying of quartz veins and sulphide showings should be part of the program.

December 10th, 1964.

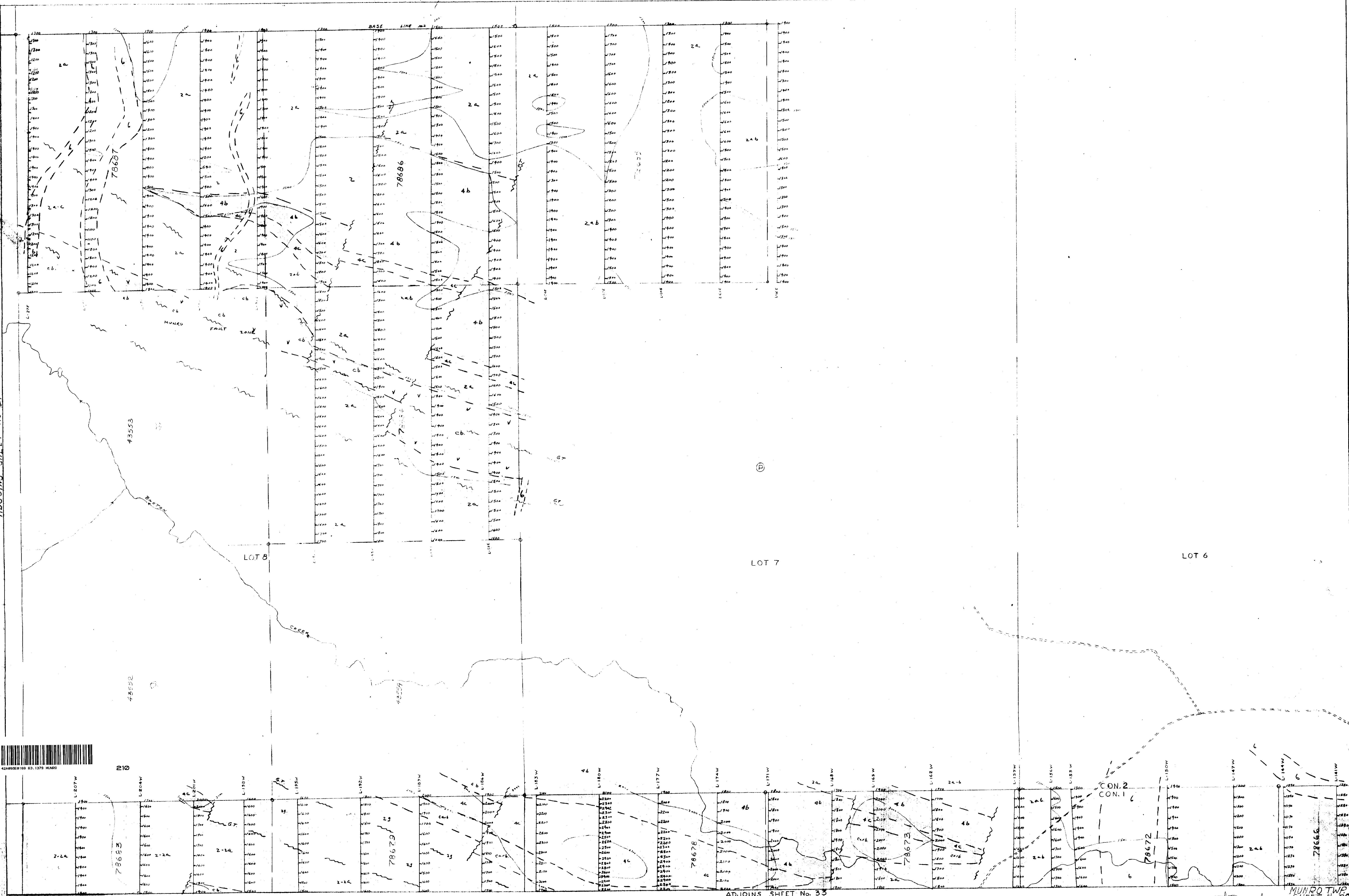


F. J. Eveleigh,
Sr. Geologist.

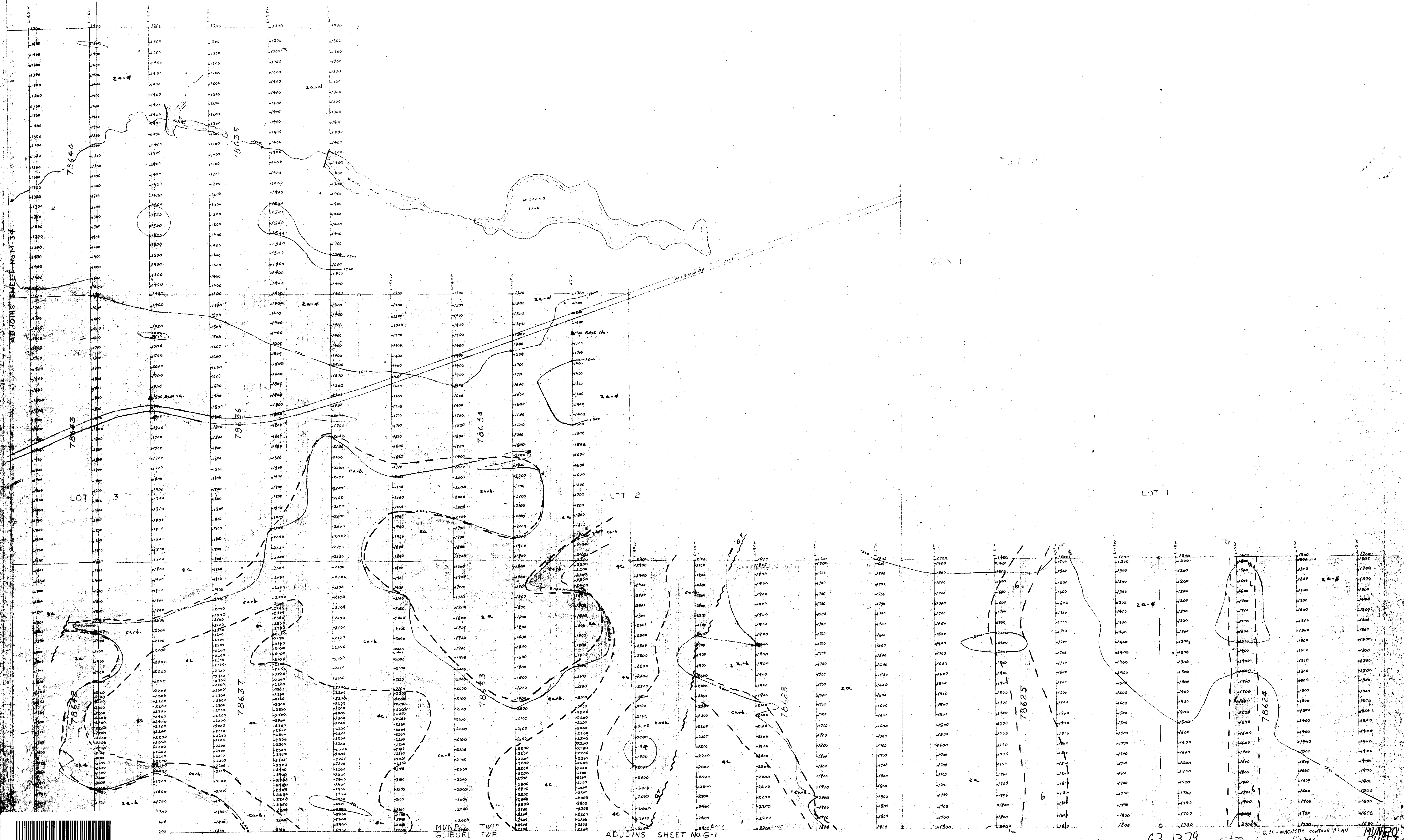


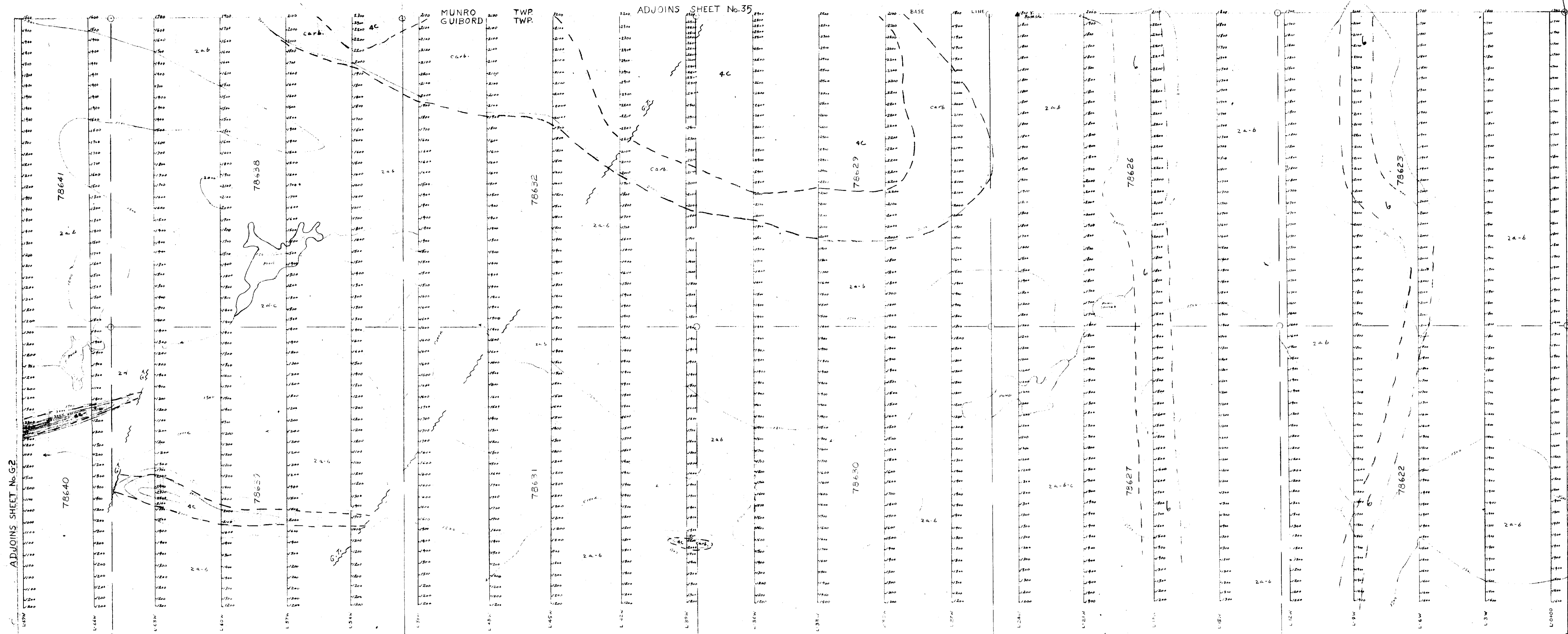
CANADIAN JOHNS-MANVILLE CO. LTD.
 MATHESON MUNRO MINE ONTARIO
 KEY MAP
 LITTLE PIKE GROUP
 Southeast part of Munro, Matheson
 and McCool townships, Ontario
 SCALE: 1" = 60 MILES
 DRAWN: R.P.K. DATE: 1/1/68
 CHECKED: G.W.B. DATE: 1/1/68
 TRACED: G.W.B. DATE: 1/1/68
 APPROVED: G.W.B. DATE: 1/1/68





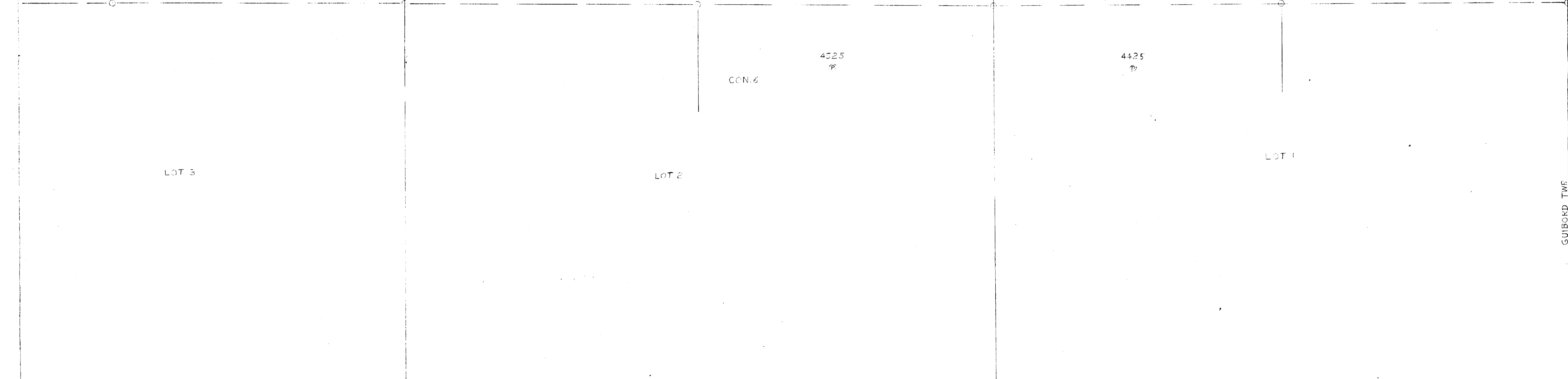
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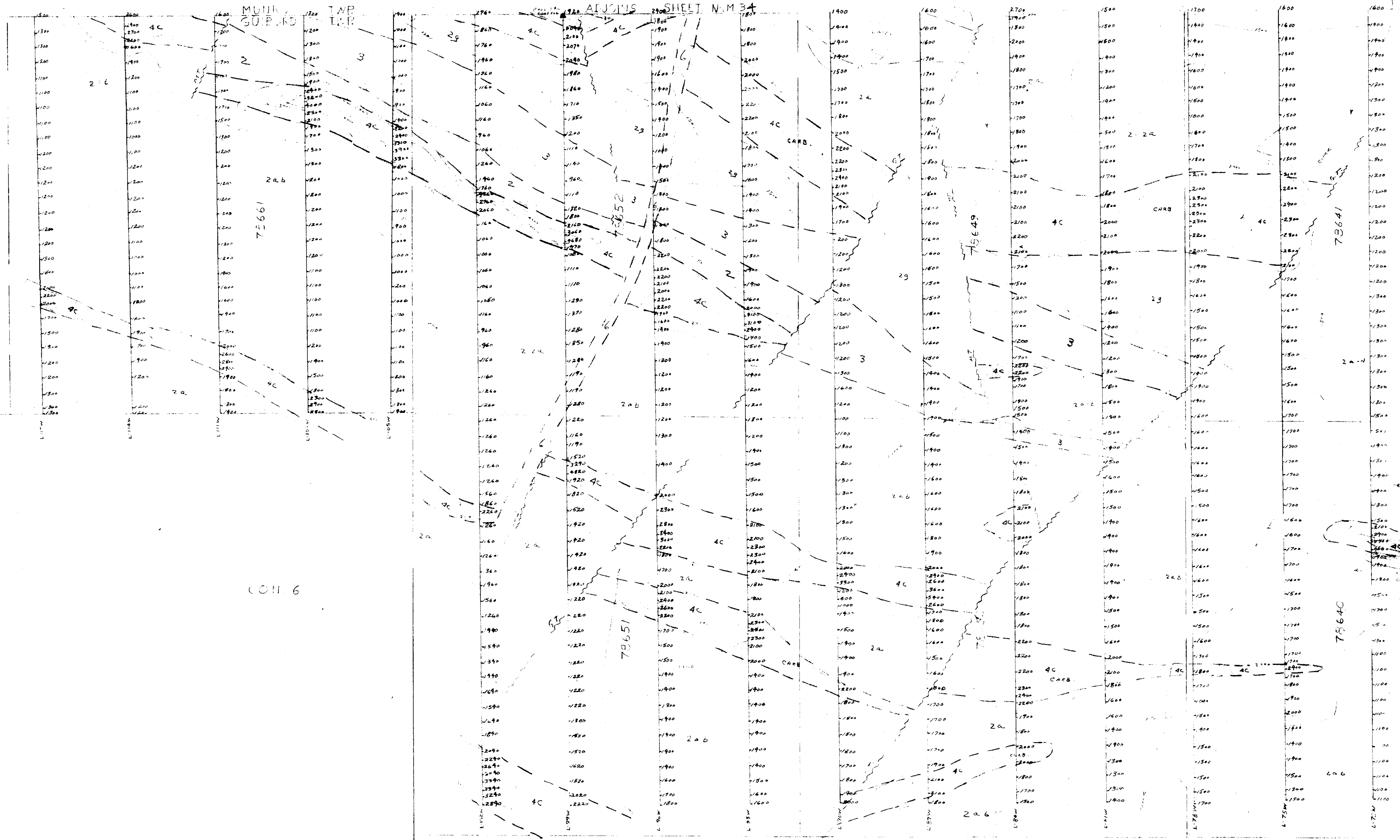
ADJOINS SHEET No. G-2

ADJOINS SHEET No. M-1



BASE LINE

MUNICIPALITY OF GUILFORD TWP. SHEET No. G-1



LOT 6

LOT 5

LOT 4

LOT 3



424852169 63.1375 MUNRO

240

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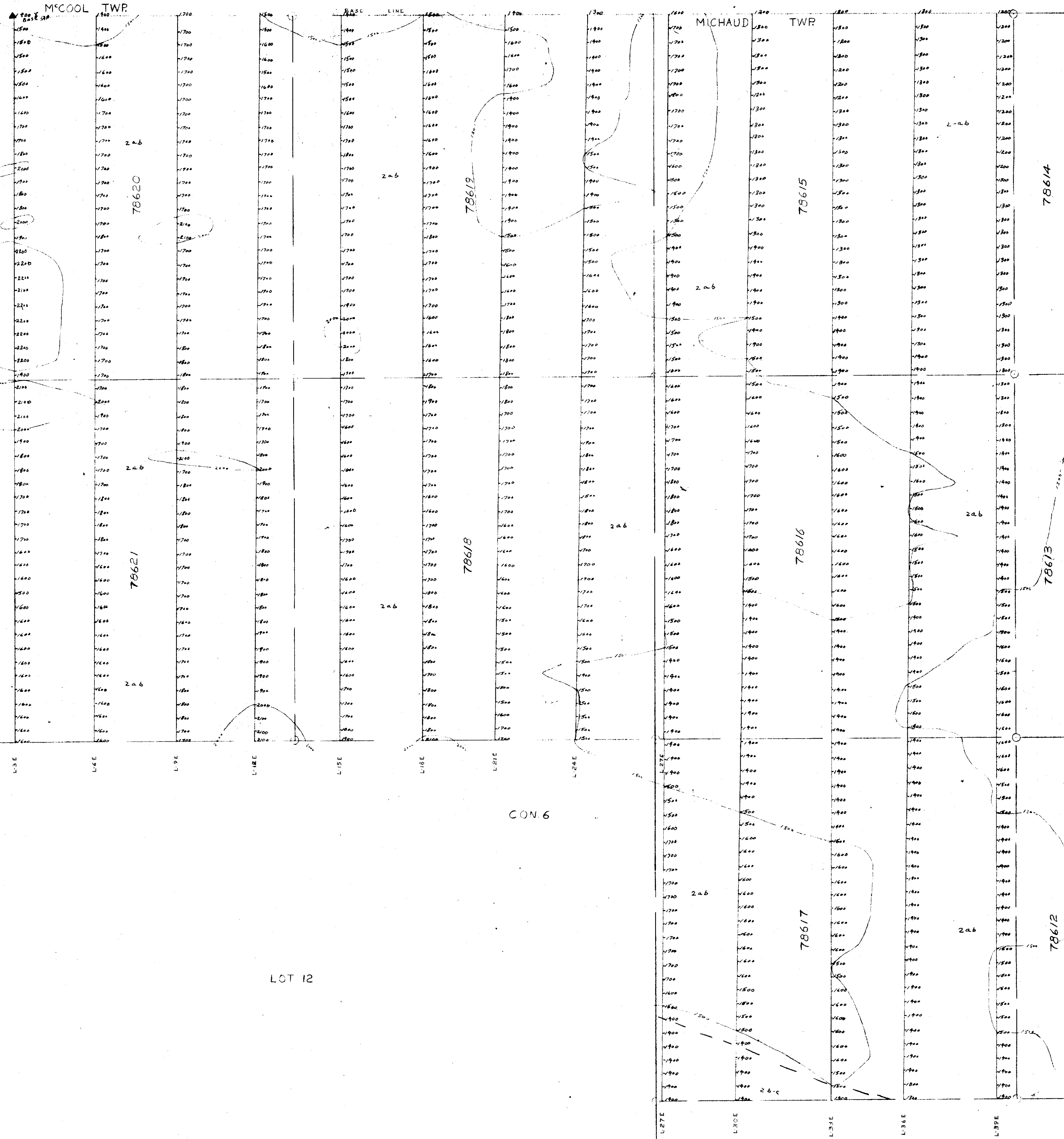
Scale: 1" = 100'

GUILFORD TWP. SHEET No. G-2

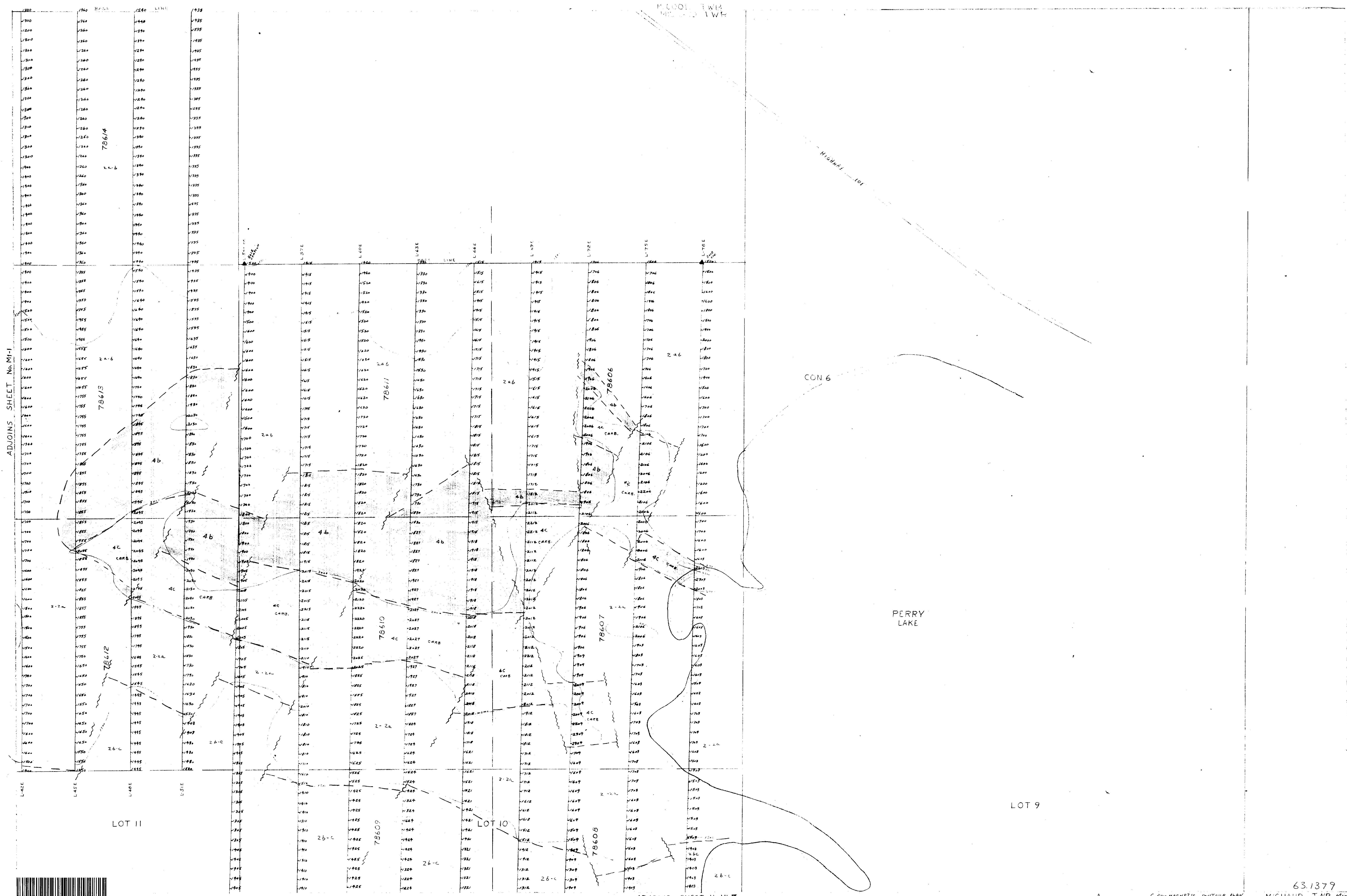


GUIBORD TWP
ADJAINS SHEET No. 6-1

MICHAUD TWP



ADJAINS SHEET No. M1-2



ADJOINS SHEET No. MI-1

MICHIGAN TWP
MICHIGAN TWP

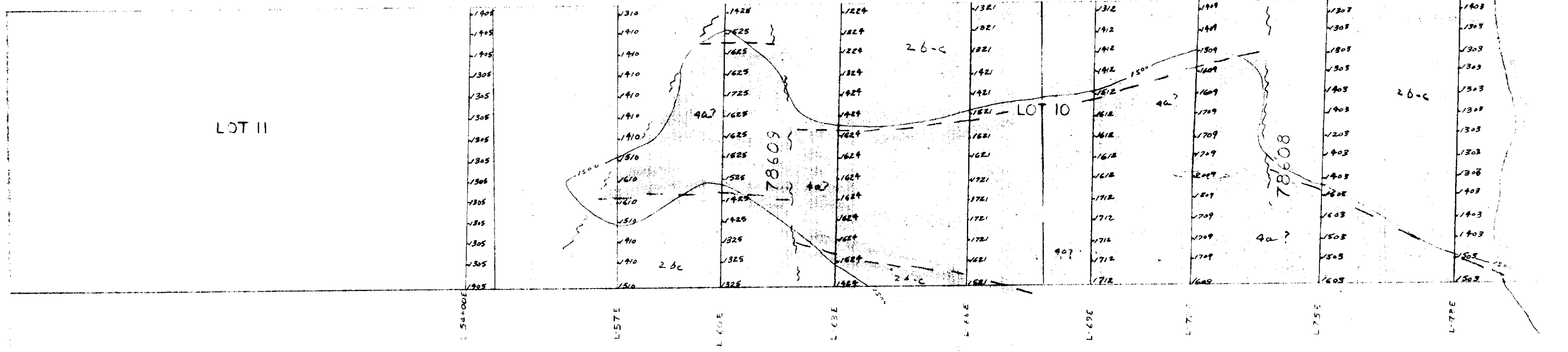


LOT 9

LOT 10

LOT 11

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PERRY LAKE

CON. 6
CON. 5

LOT 9



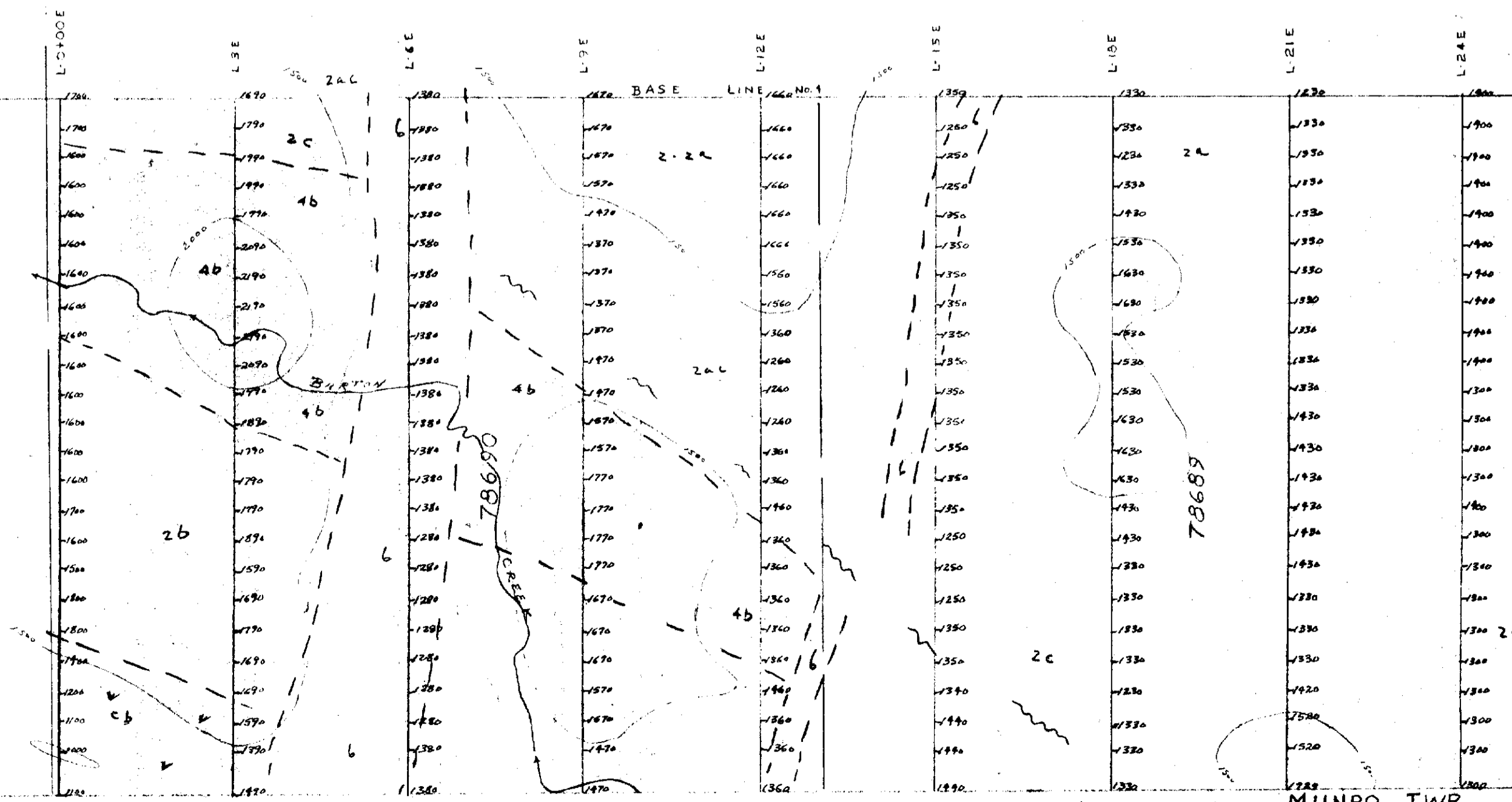
Stowley

LOT 11

LOT 10

LOT 9

CON. 3
CON. 2



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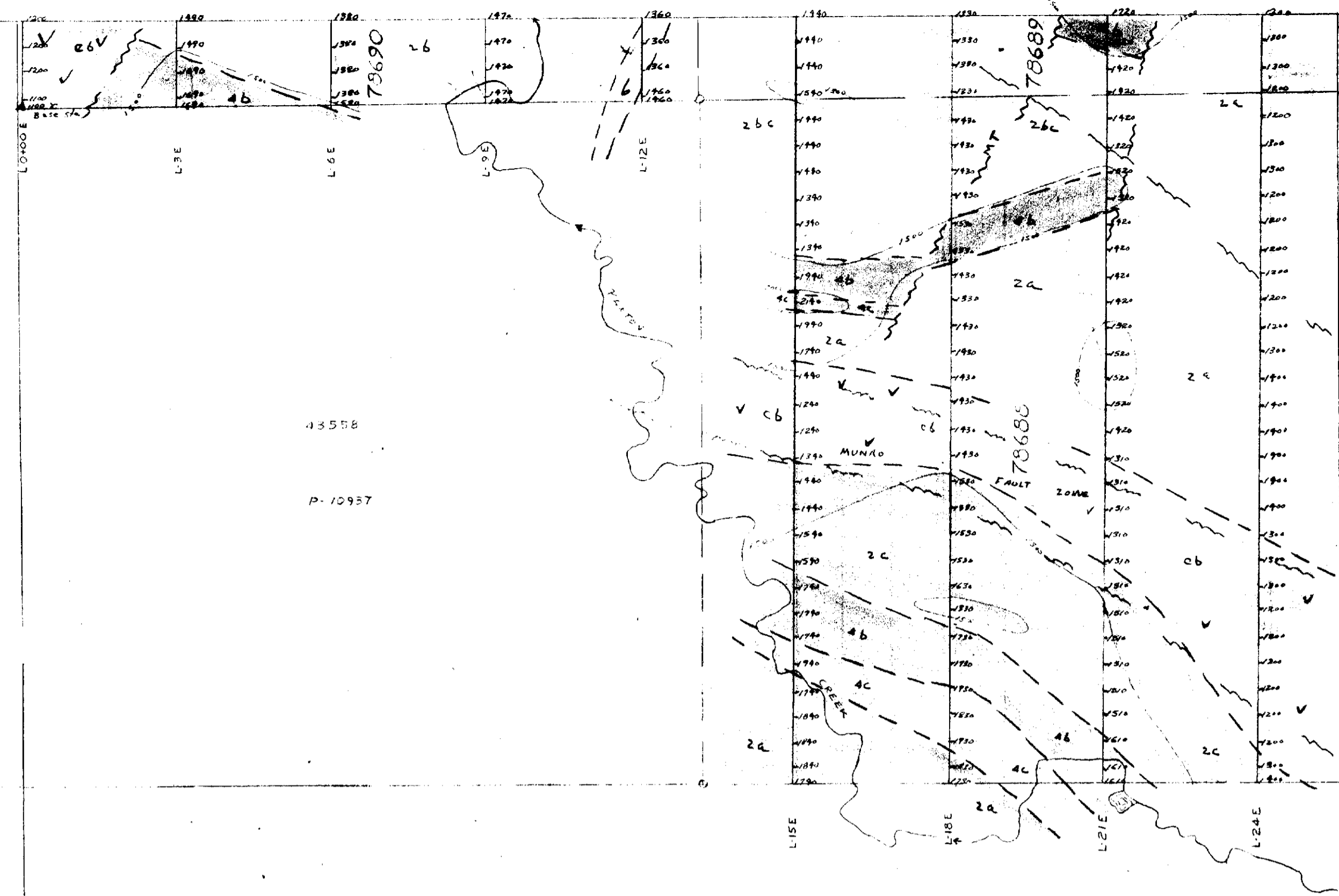
43548
P-10935

43557

P-10938

43558

P-10937



LOT 11

LOT 10

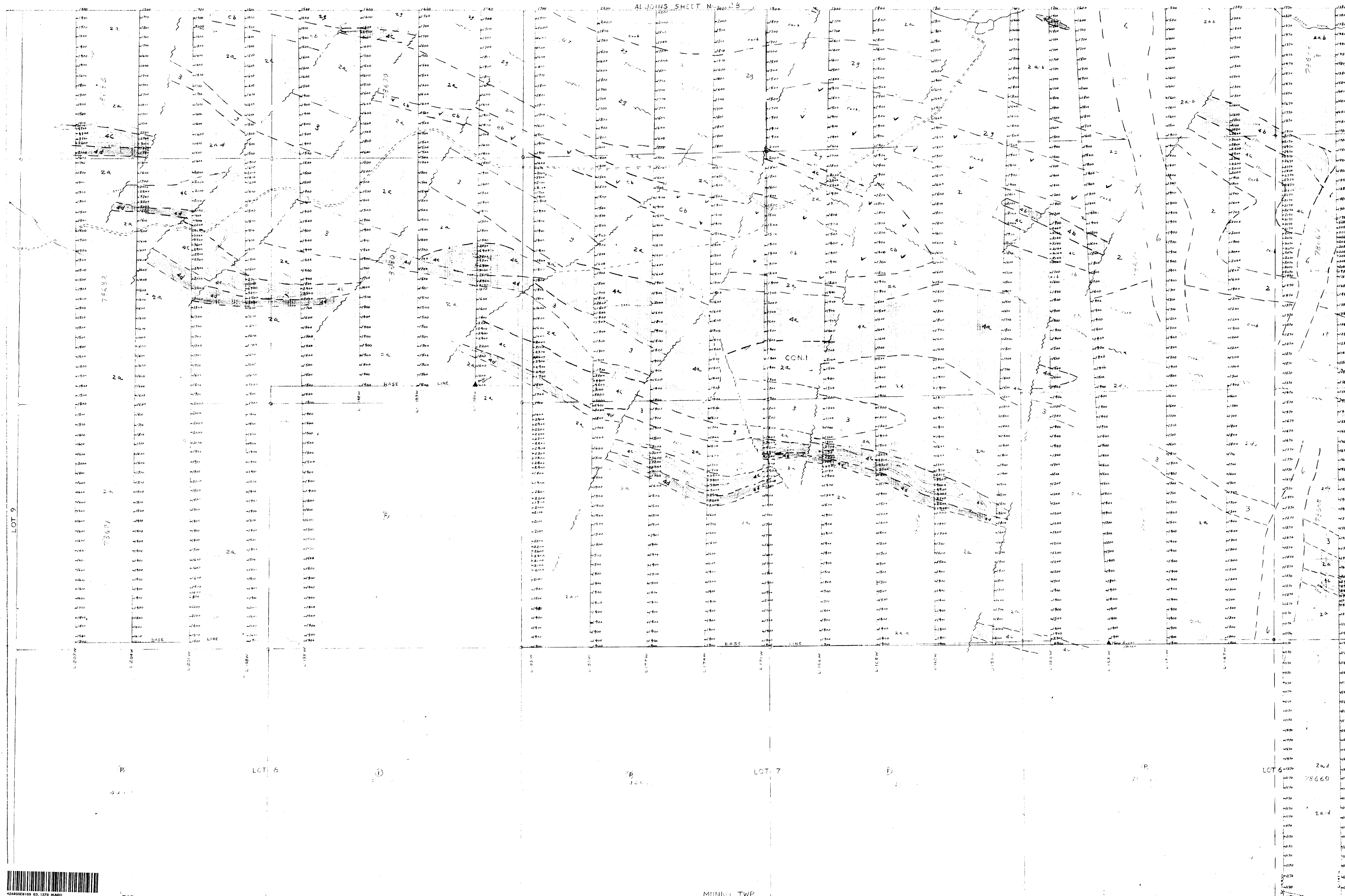
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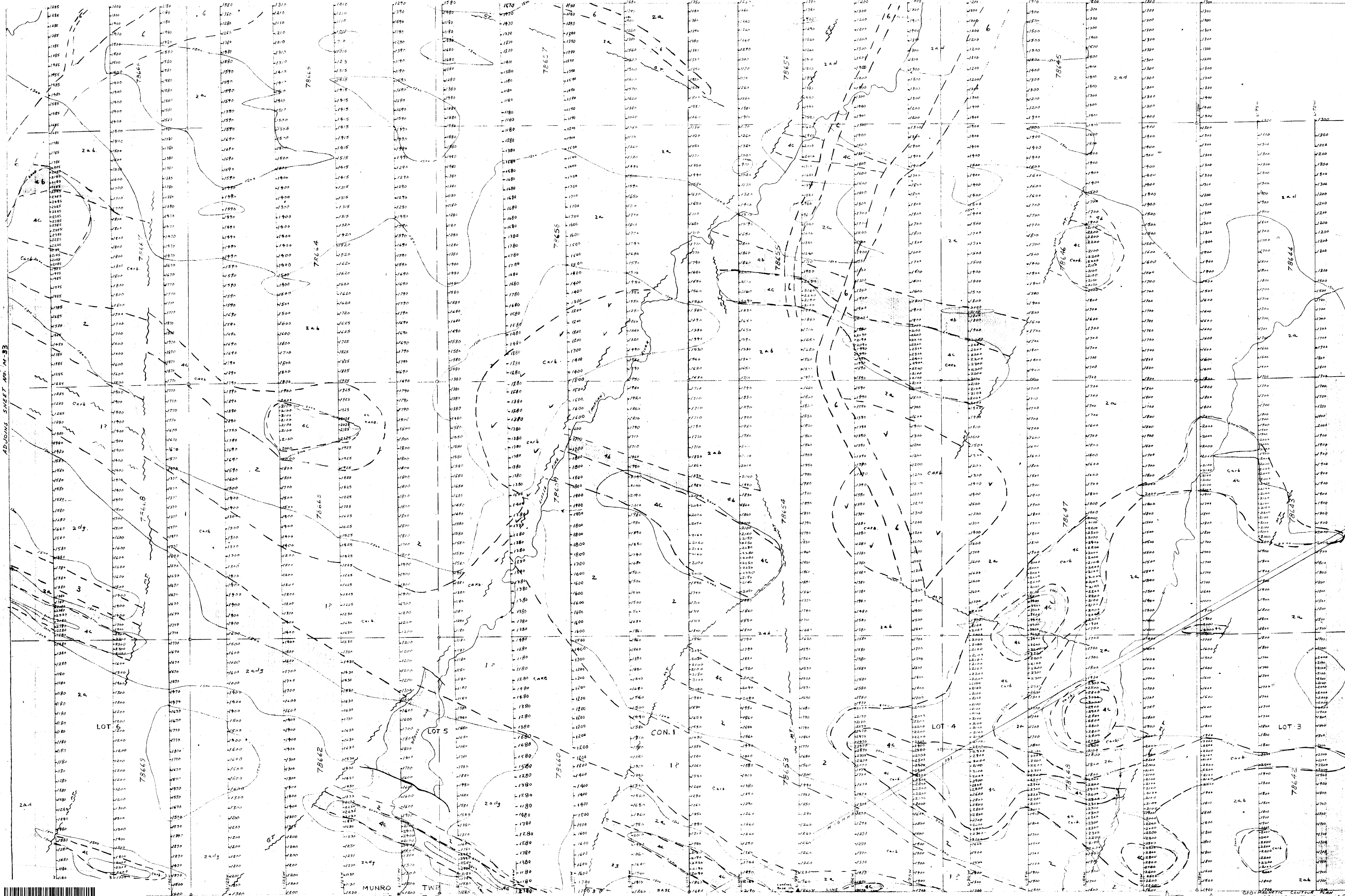
CON. 2
CON. 1



63.1379

Howellish





ADJOINS SHEET No. M-33

ADJOINS SHEET No. M-35



ADJOINS SHEET NO. 1



330

MUNRO
GUIBORD
TWP

ADJOINS SHEET No. M-35

BASE
LINE

78641

78640

78638

78639

78632

78631

78629

78630

78626

78627

78623

78622

LOT 3

LOT 2

LOT 1

CON 6

4525
⊕

4425
⊕

ADJOINS SHEET NO. 1

GUIBORD TWP
MUNRO TWP

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GUIBORD TWP
SHEET NO. 1
ELECTRO MAGNETIC PROBE PLAN

1"=200'

BASE LINE

MUNRO
GOUBRO
TWP

ADJOINS SHEET NO M-34

LOT 6

LOTS

CON 6

LOT 4

LOT 3

78661

78652

78649

7864

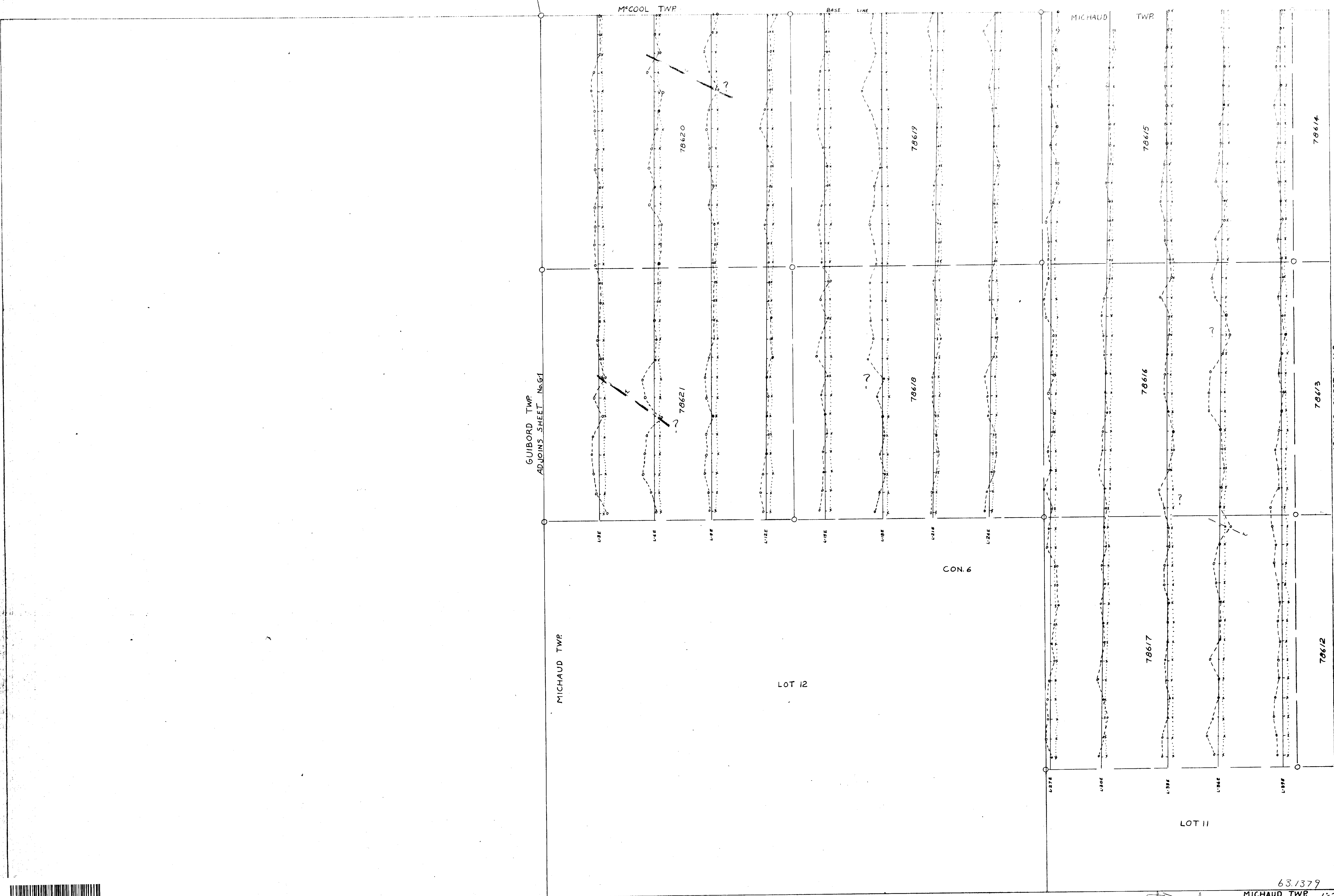
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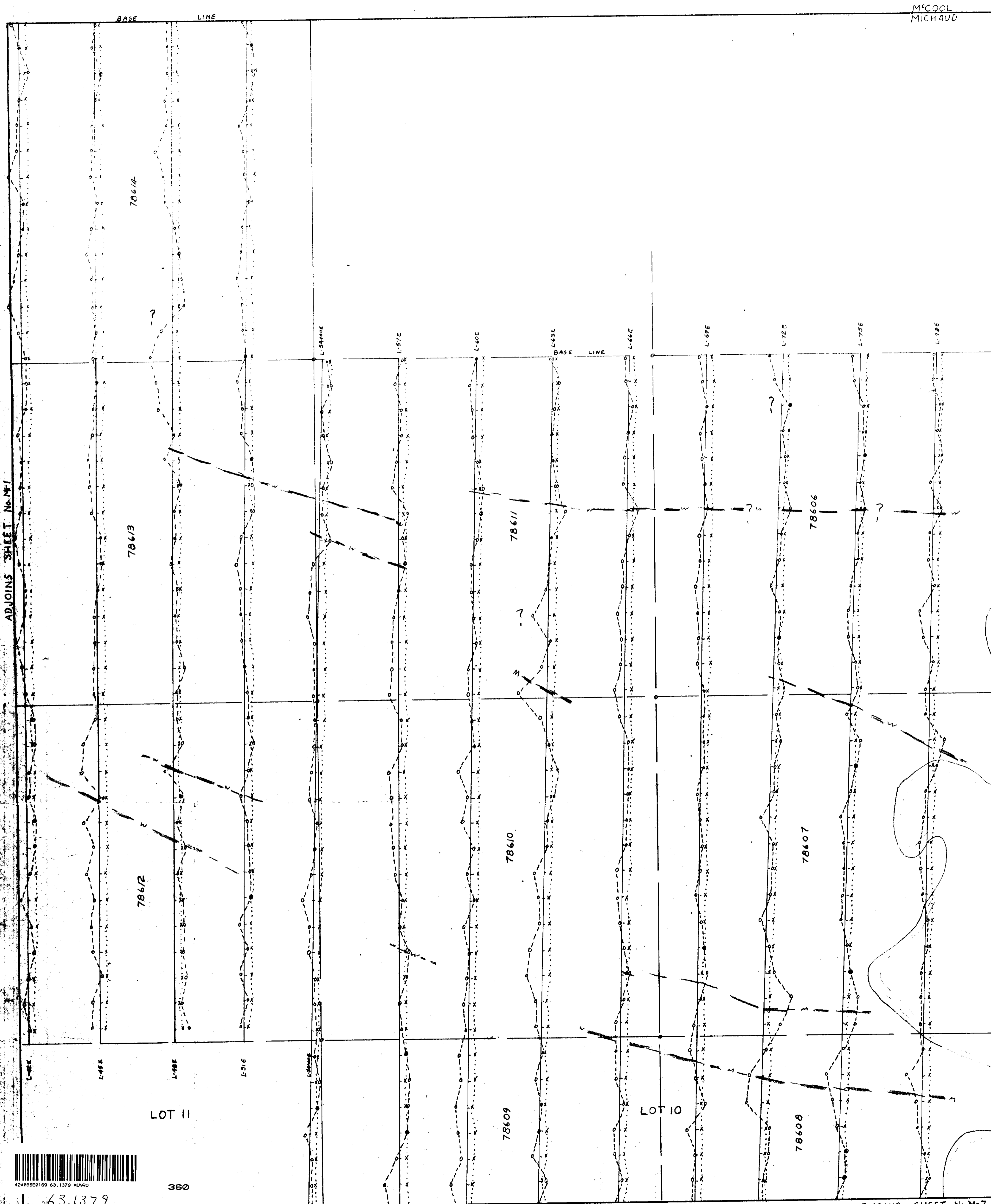
78650

78640



ADJOINS SHEET NO G-1





M'COOL
MICHAUD
TWP
TWP

ADJOINS SHEET No. 7



63.1379

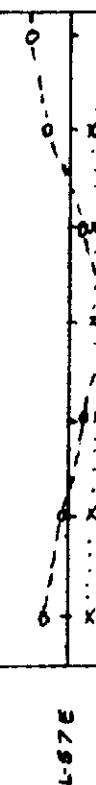
360

ADJOINS SHEET No. 7

St. Germain

MICHAUD TWP
SHEET No. 12 1"=200'
ELECTRO MAGNETIC PROFILE PLAN

LOT 11

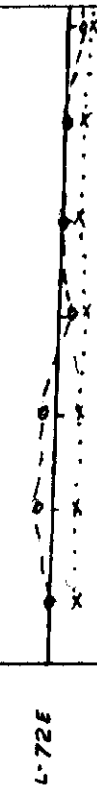


78609



LOT 10

?



78608



LOT 9

CON. 6
CON. 5



4248558169 63 1375 MUNRO

370

370

Handwritten signature

LOT 11

LOT 10

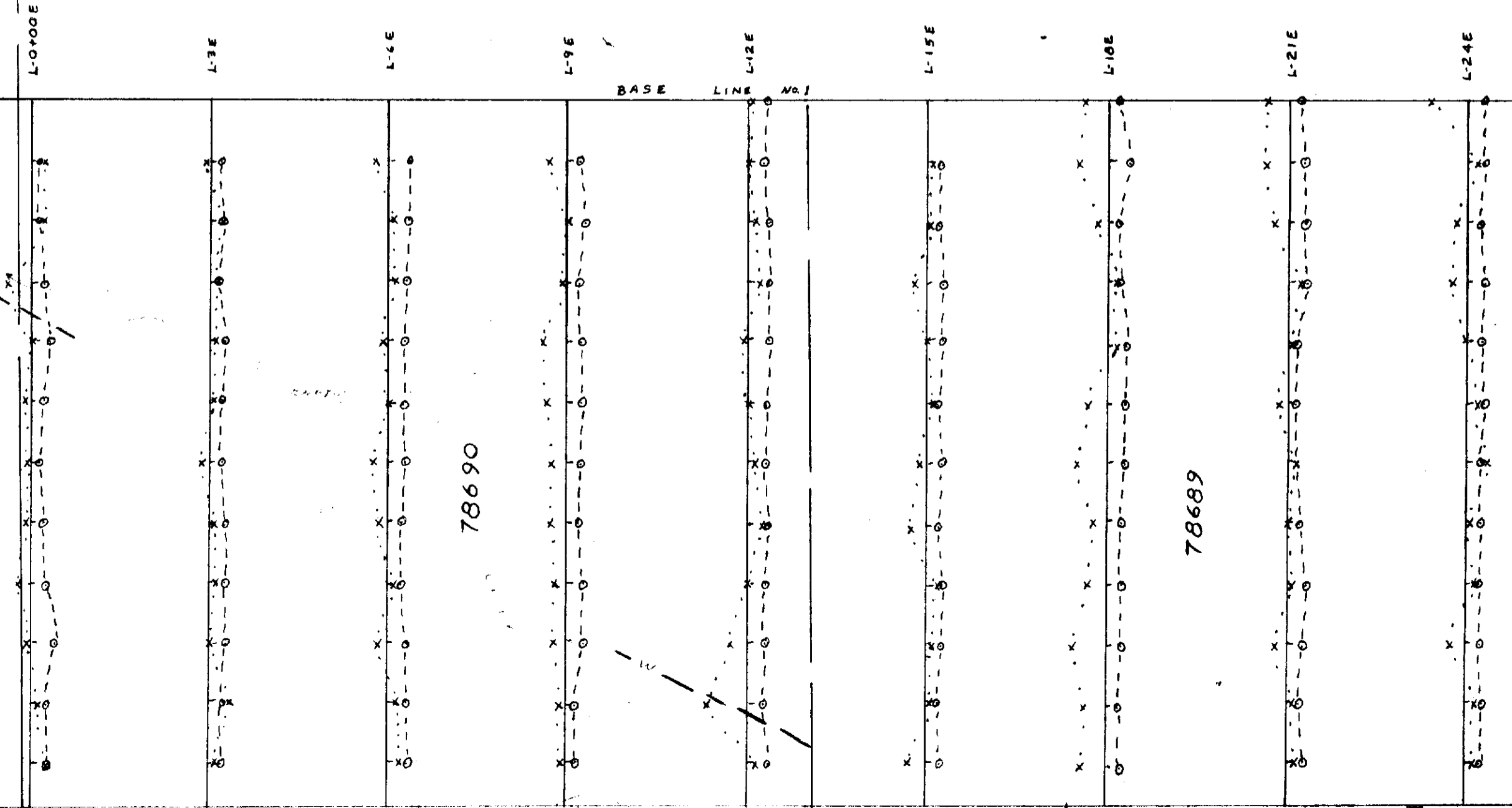
LOT 9

CON. 3
CON. 2

43546
P-10939

78690

78689

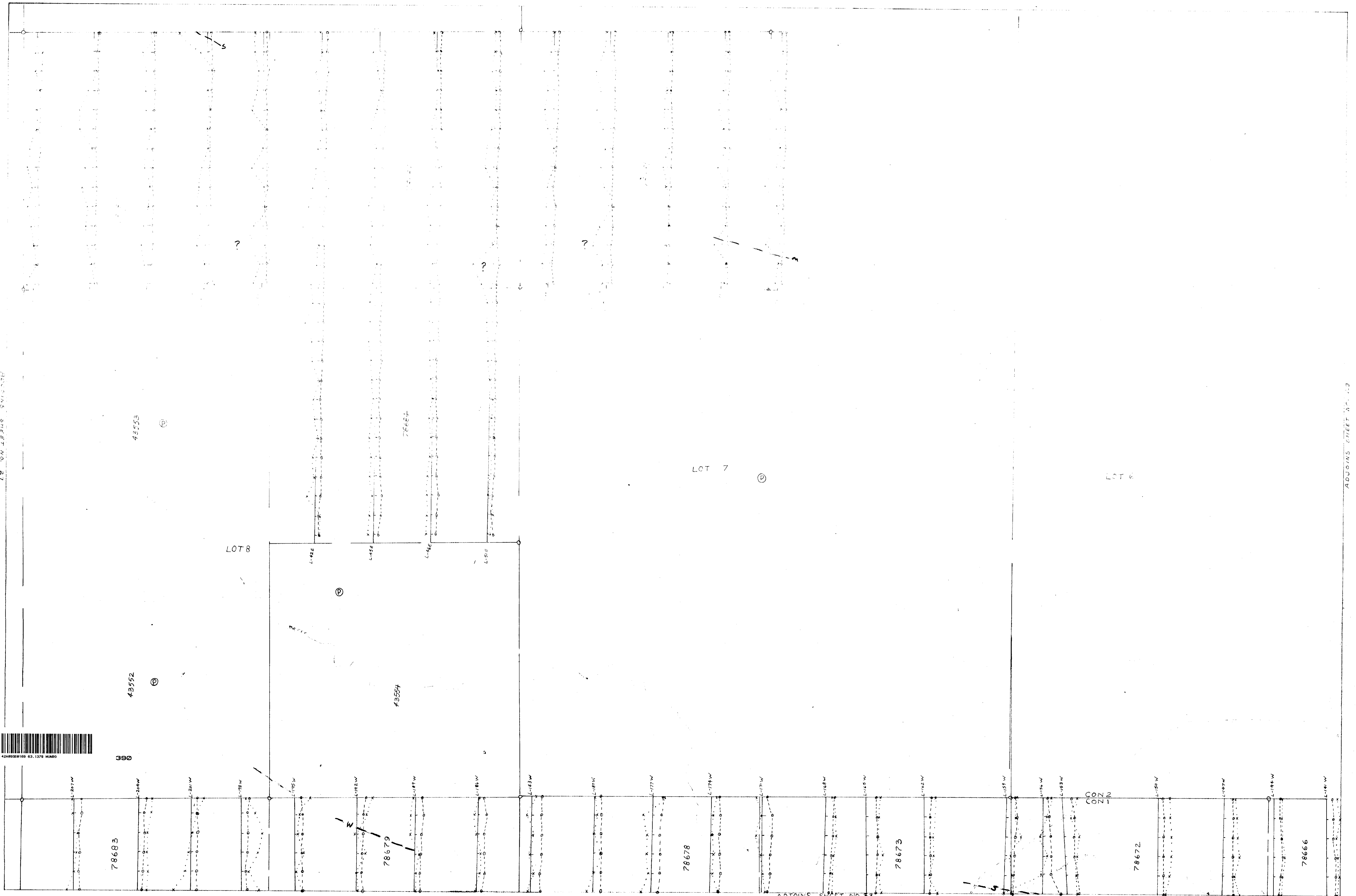


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ADJOINS SHEET No. 33



390



LOT 8

LOT 7

LOT 6

ADJOINS SHEET No. 33

63.1379

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MUNRO TWP 1/2 200
SHEET No. M-28

43548
P-10939

78690

78689

43557

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43558

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78688

LOT 11

LOT 10

LOT 9

CON. 2
CON. 1



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LOT-6

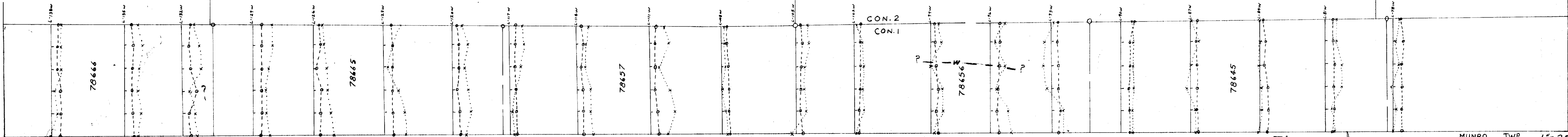
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LOT-4

LOT-3

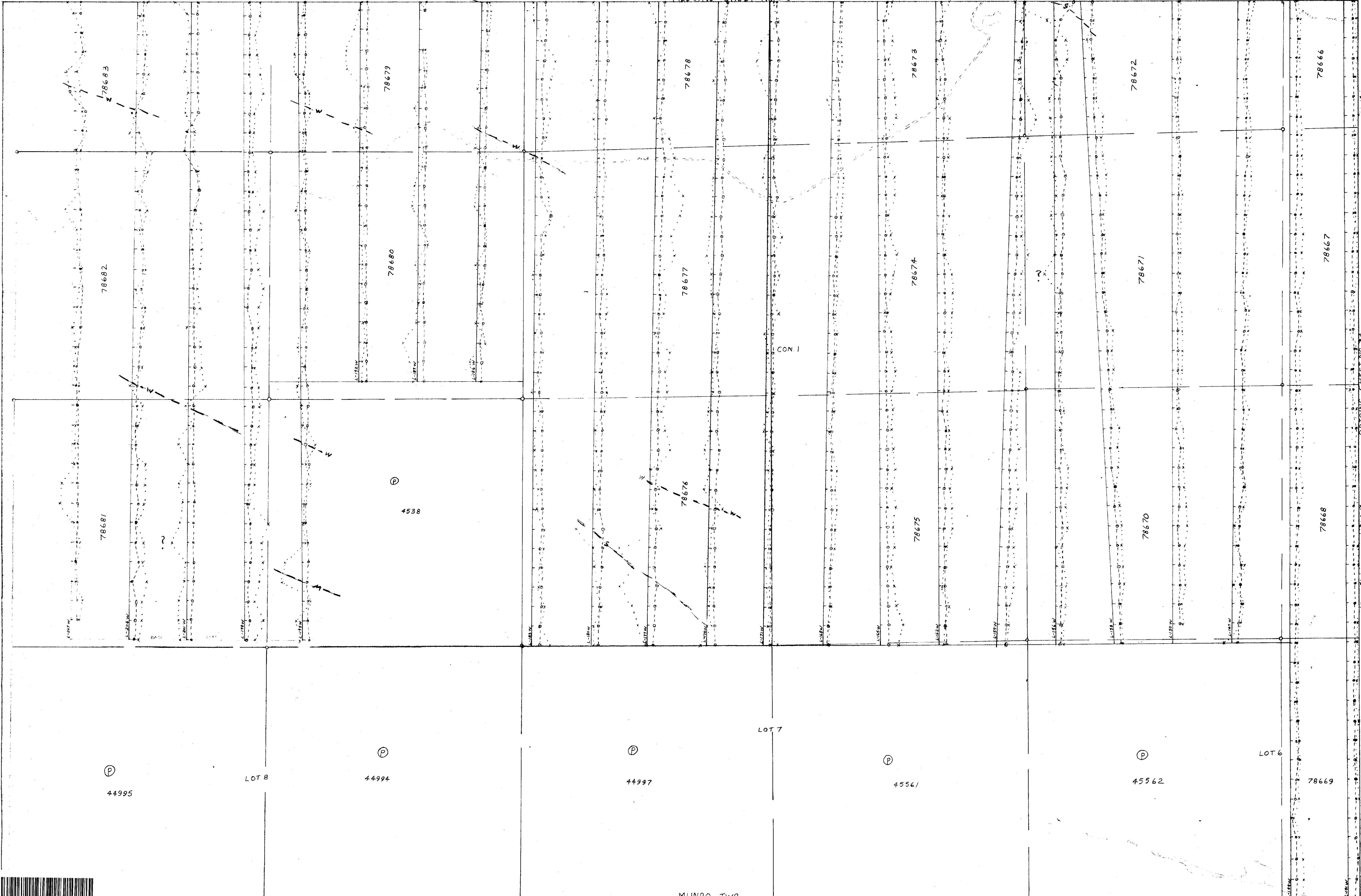


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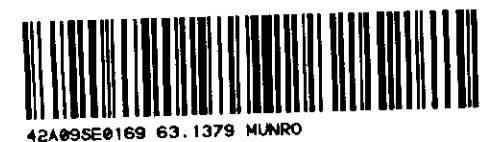
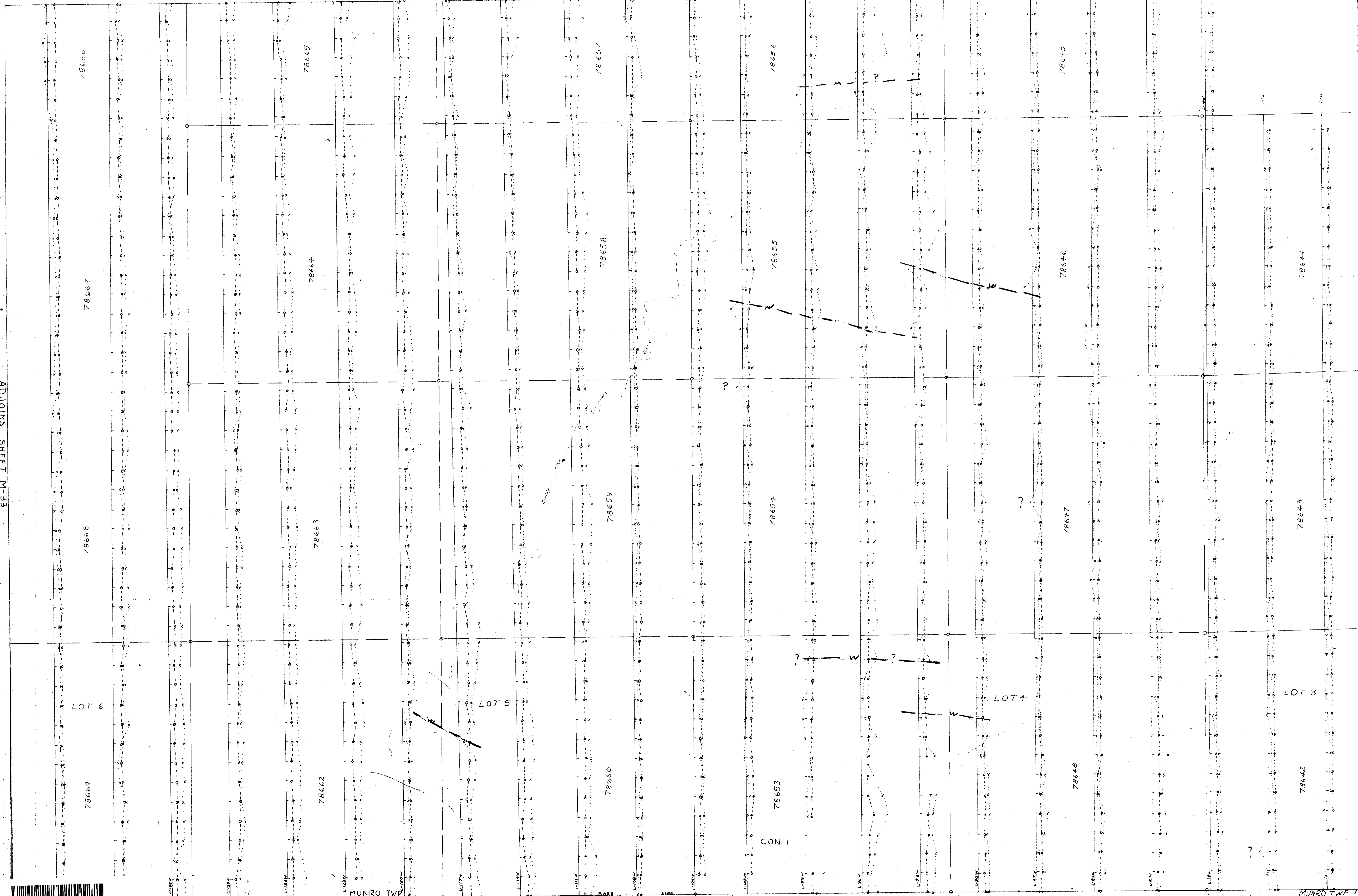
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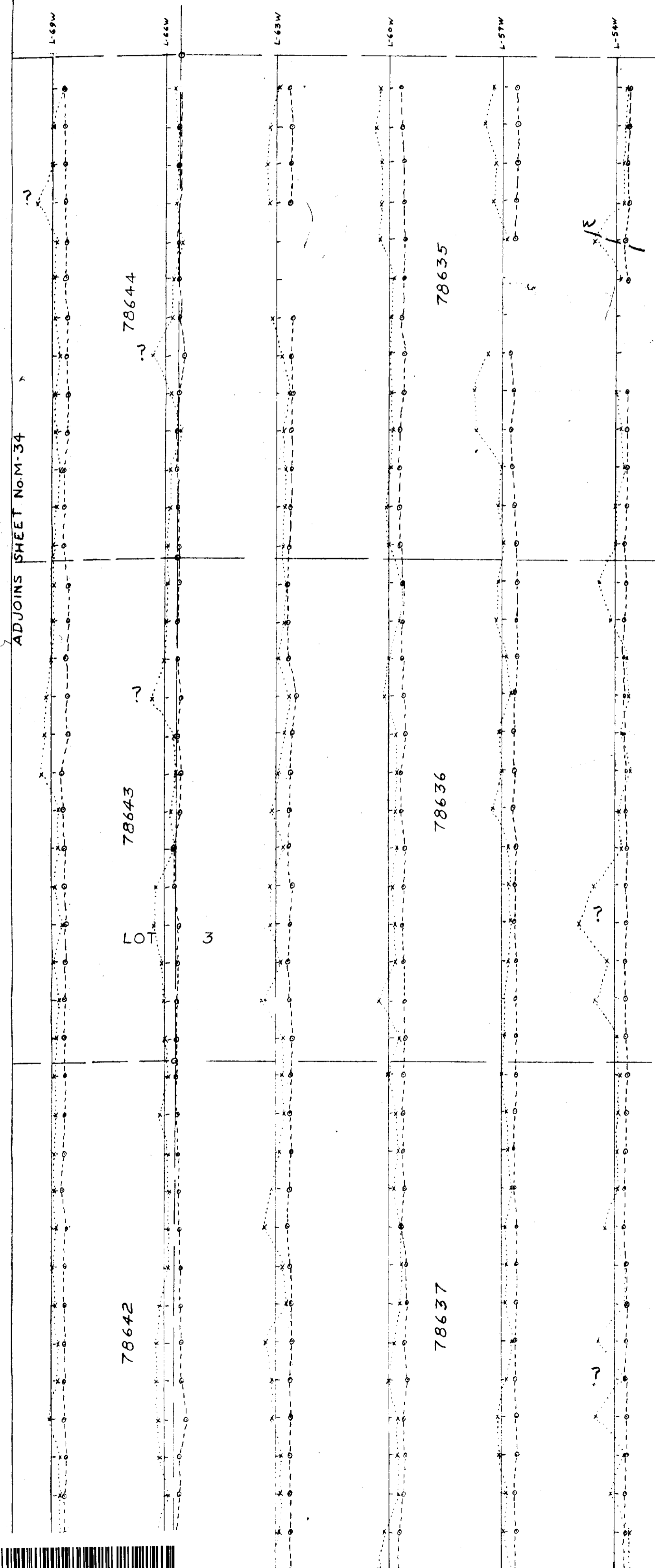


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ADJOINS SHEET No.M-34



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78643

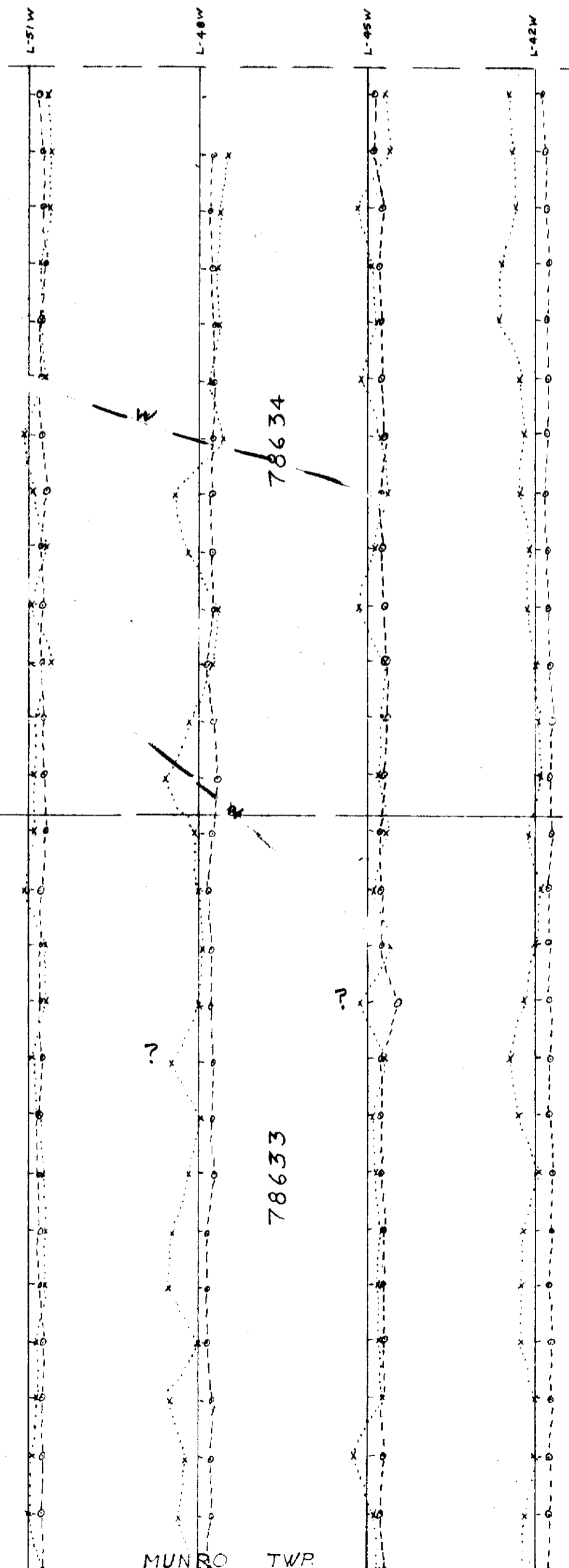
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78636

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LOT 2

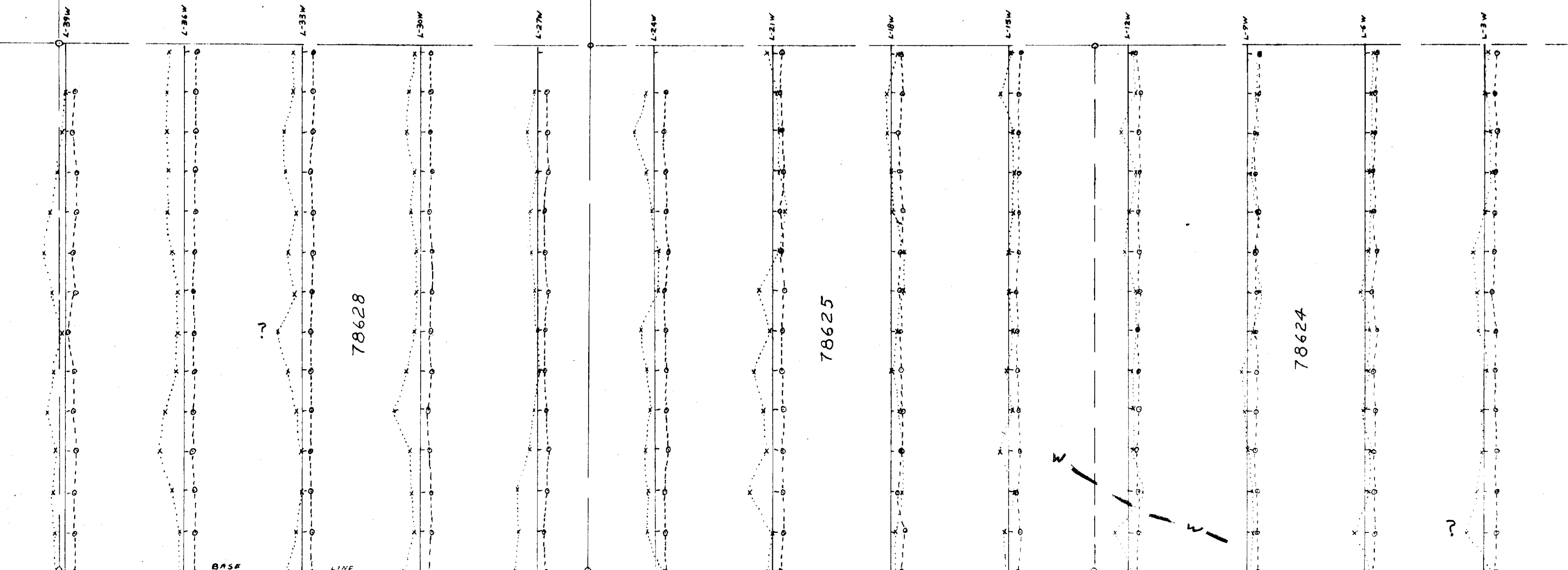


78633

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CON. I

LOT 1



78628

78625

78624



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