CONTACT INFORMATION
Mining Records Curator
Arizona Geological Survey
3550 N. Central Ave, 2nd floor
Phoenix, AZ, 85012
602-771-1601
http://www.azgs.az.gov
inquiries@azgs.az.gov

The following file is part of the Grover Heinrichs Mining Collection

ACCESS STATEMENT

These digitized collections are accessible for purposes of education and research. We have indicated what we know about copyright and rights of privacy, publicity, or trademark. Due to the nature of archival collections, we are not always able to identify this information. We are eager to hear from any rights owners, so that we may obtain accurate information. Upon request, we will remove material from public view while we address a rights issue.

CONSTRAINTS STATEMENT

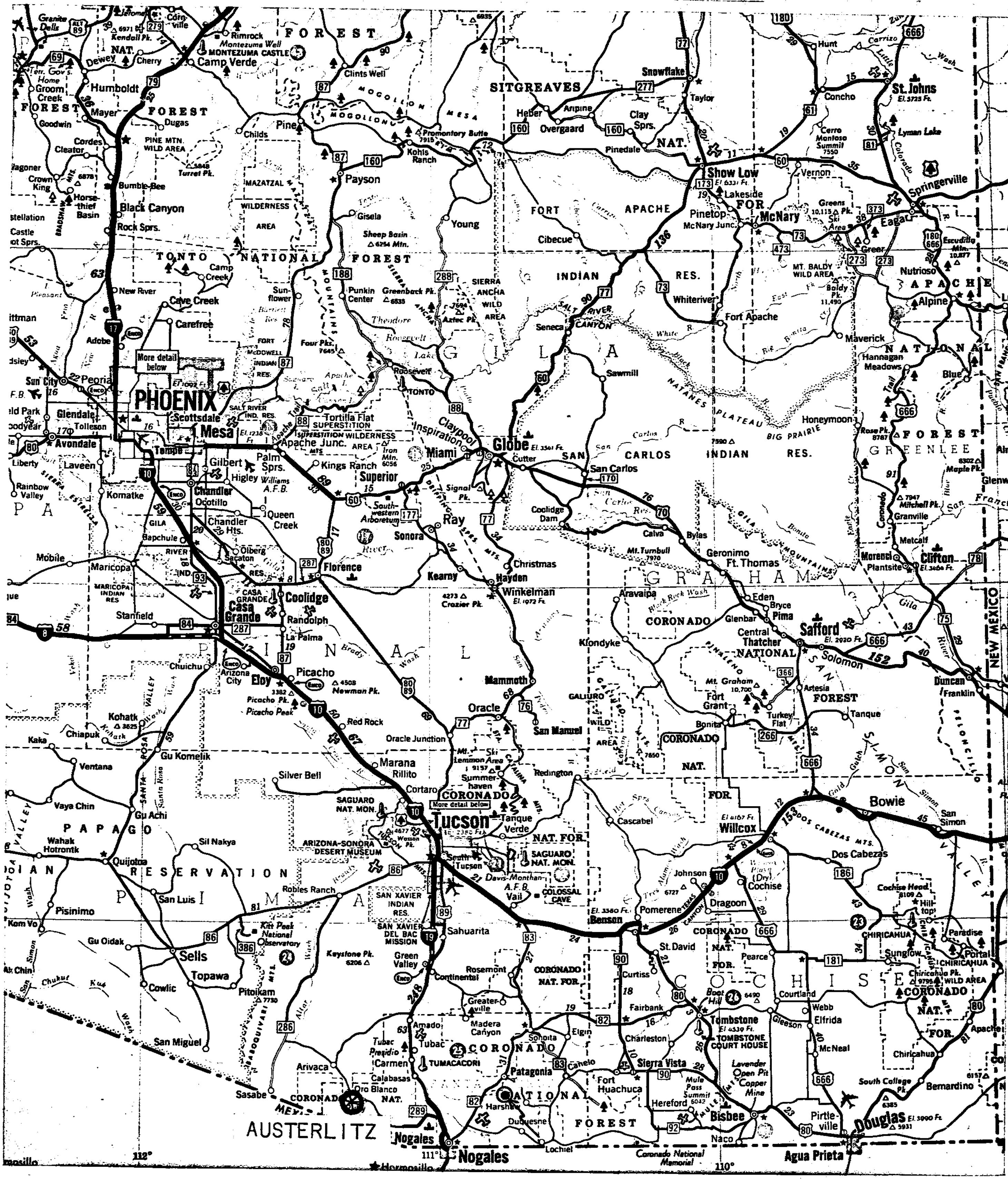
The Arizona Geological Survey does not claim to control all rights for all materials in its collection. These rights include, but are not limited to: copyright, privacy rights, and cultural protection rights. The User hereby assumes all responsibility for obtaining any rights to use the material in excess of "fair use."

The Survey makes no intellectual property claims to the products created by individual authors in the manuscript collections, except when the author deeded those rights to the Survey or when those authors were employed by the State of Arizona and created intellectual products as a function of their official duties. The Survey does maintain property rights to the physical and digital representations of the works.

QUALITY STATEMENT

The Arizona Geological Survey is not responsible for the accuracy of the records, information, or opinions that may be contained in the files. The Survey collects, catalogs, and archives data on mineral properties regardless of its views of the veracity or accuracy of those data.

LOCATION MAP OF AUSTERLITZ PROPERTY



Scale of Miles

10 0 10 20 30 40 50 60 70

Lambert Conformal Projection — ONE INCH EQUALS ABOUT 27 MILES — 1:1,700,000

AUSTERLITZ PROPERTY
SANTA CRUZ CO., ARIZ.

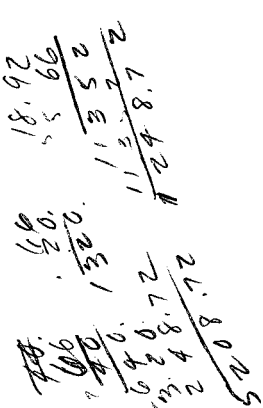
ESSEX

ESSEX INTERNATIONAL, INC.
1704 WEST GRANT RD., TUCSON, ARIZONA 85705
PHONE (602) 624-7421

7998
66
47988
47988 1
5278.68

N END OF
SECT 36

178
66
468
468
51.48



1 rod = 5 1/2 yds.

CHNS

79.84
5 5 66
47904
4 7 9 0 4
4 7 9 6 9.4 4
5 2 7.92
4 25 links
3960
584
198.00" = 1 rod

5.5
.3
16.5
224
66.0

12) 198 (16.5' x 4 rods = 66'
12
78
72
60

12
6
72
= 1 chain

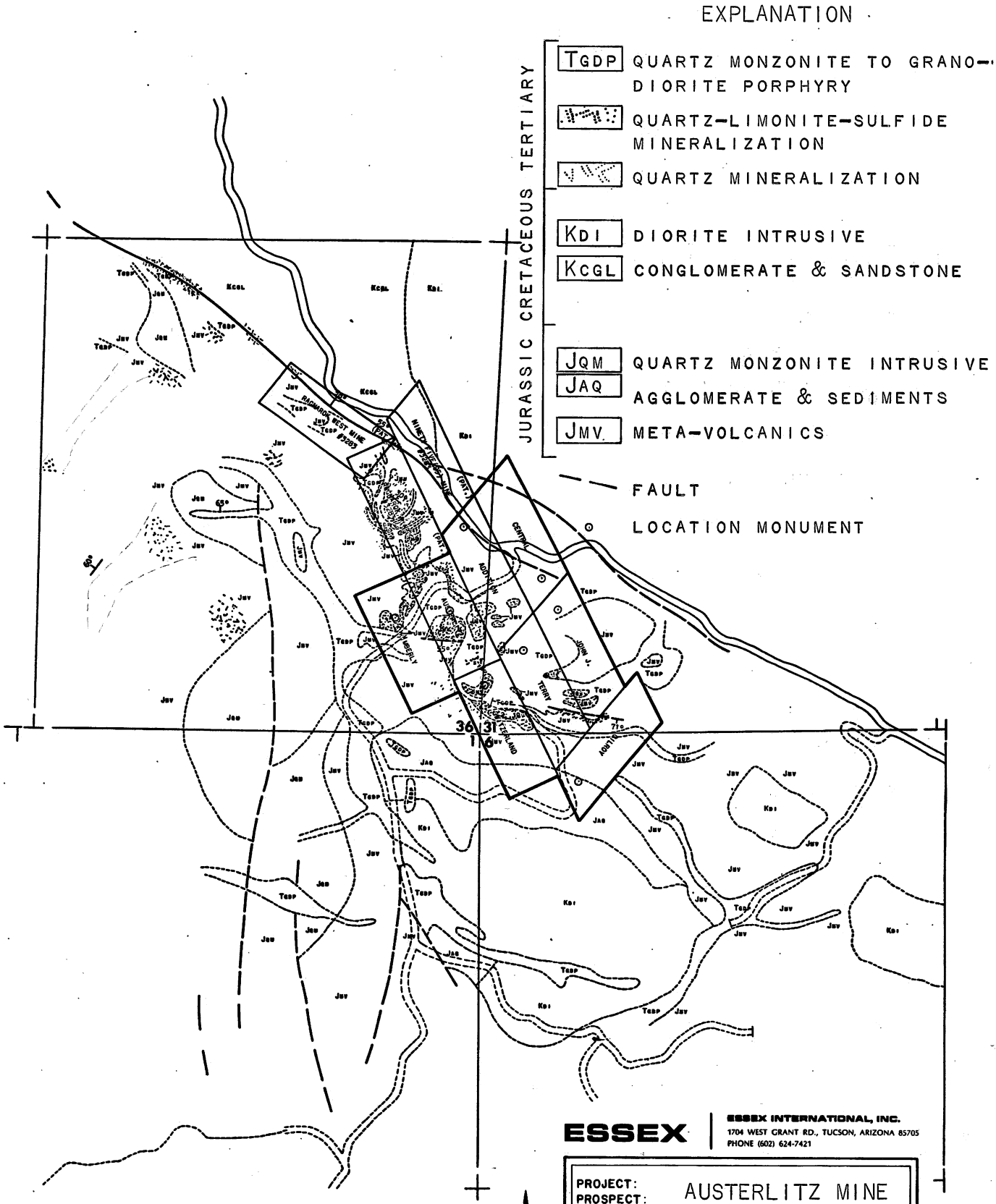
n. end of sect. 1

38.30
4 66
229.80
2298.0
2527.80

39.22
5 66
23532
23532
2588.52
2527.80
5116.32
163.68
5280.00
51.48
5331.48 total distance

2.48
66
14.88
1488
163.68

0.78
66
+51.48



ESSEX

ESSEX INTERNATIONAL, INC.
1704 WEST GRANT RD., TUCSON, ARIZONA 85705
PHONE (602) 624-7421

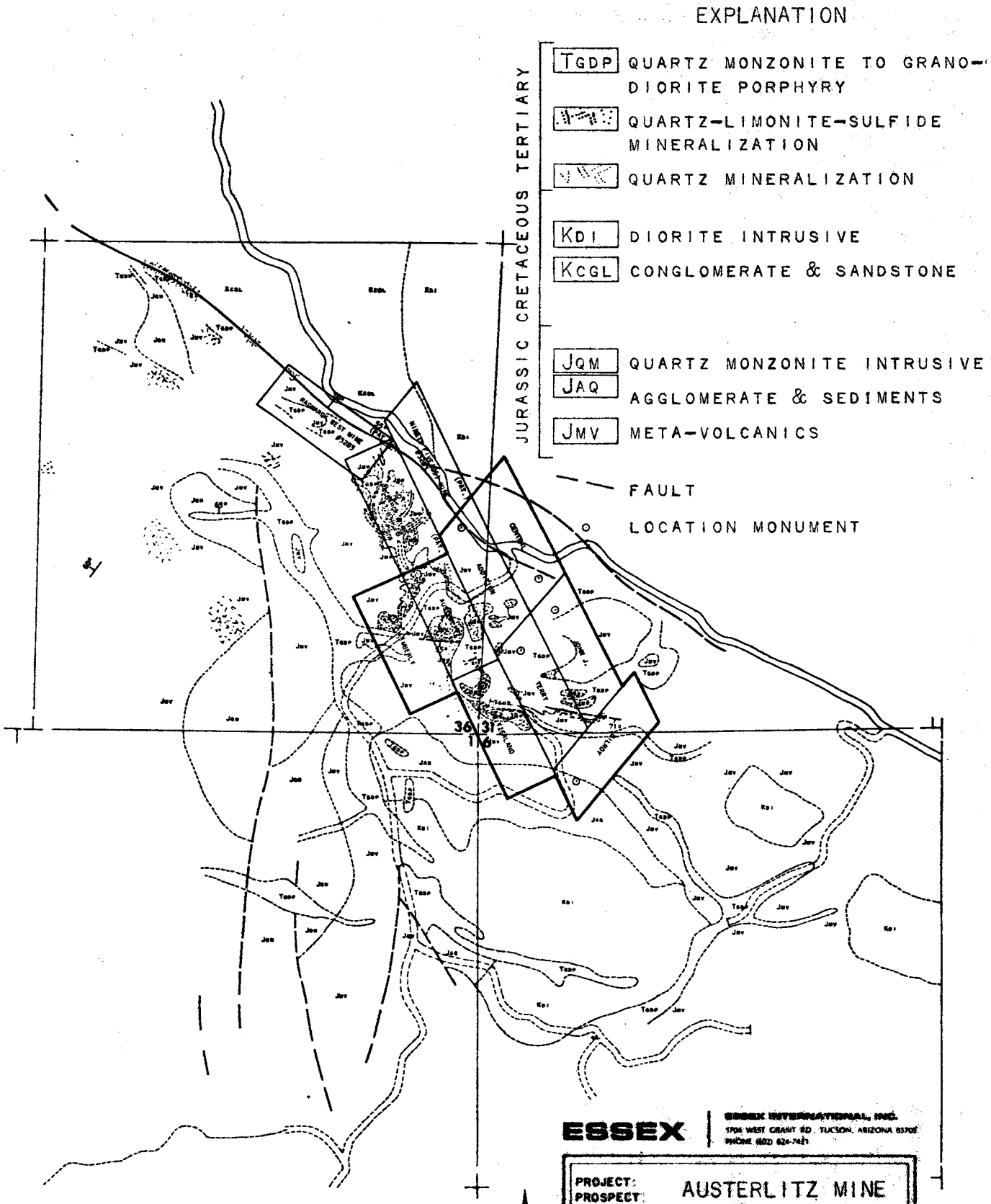
PROJECT:	AUSTERLITZ MINE
PROSPECT:	
NUMBER:	
COUNTY, STATE:	SANTA CRUZ, ARIZ
T., R. & SECTION:	S36, T22S, R10E S31, T22S, R11E S6 , T23S, R11E

CLAIM-GEOLOGY MAP

SCALE:	1" = 1610' APPR.
DATE:	9/5/74
DATA BY:	K. JONES
PREPARED BY:	J. WILSON

N

BOUNDARY OF UNPATENTED CLAIMS & AREA OF GEOLOGIC STUDY FOR ASSESSMENT YEAR 1973-1974



ESSEX

ESSEX INTERNATIONAL, INC.
1706 WEST GRANT RD. TUCSON, ARIZONA 85705
PHONE (602) 624-7421

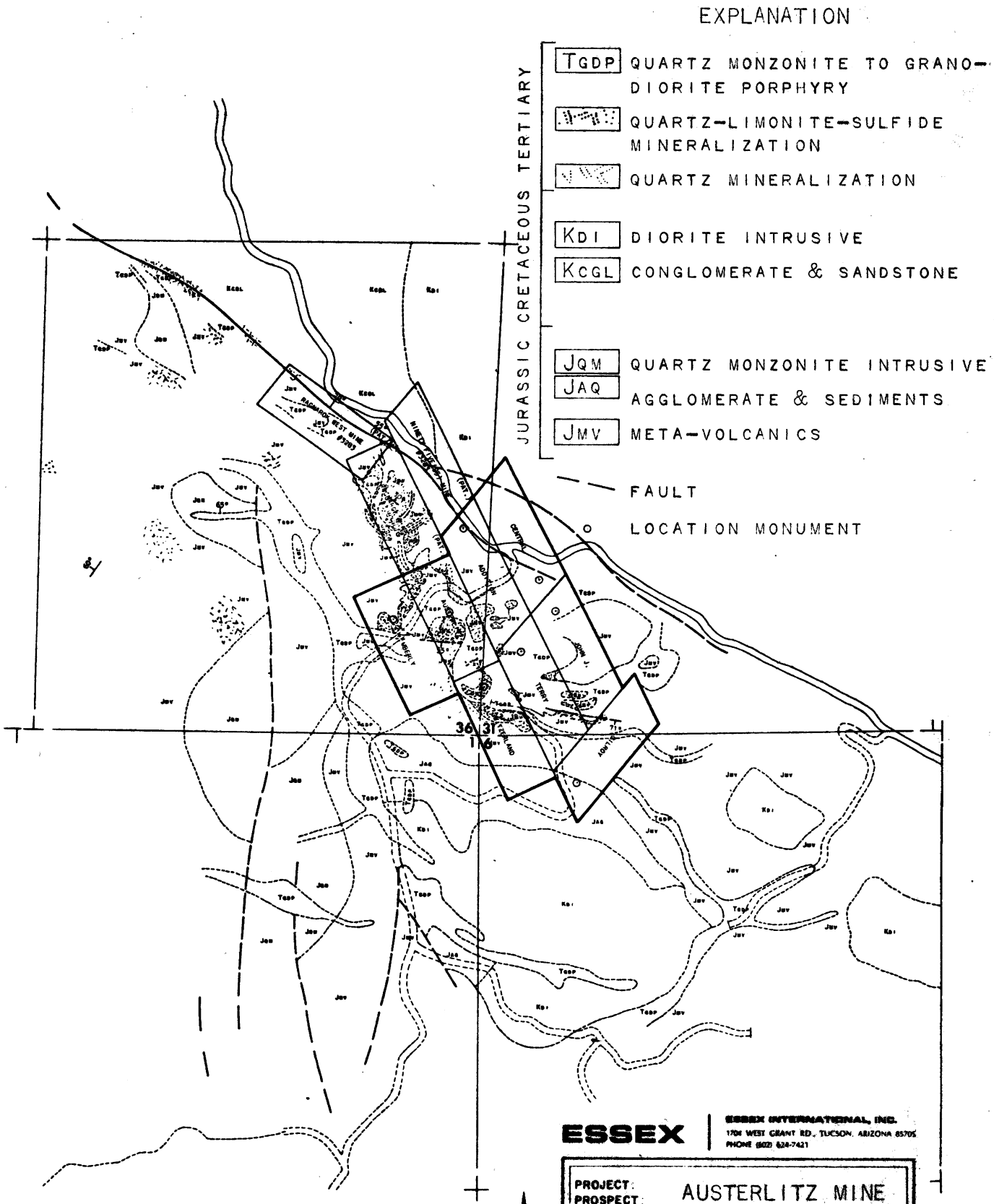
PROJECT:	AUSTERLITZ MINE
PROSPECT:	
NUMBER:	
COUNTY, STATE:	SANTA CRUZ, ARIZ
T.,R. & SECTION:	S36,T22S,R10E S31,T22S,R11E S6 ,T23S,R11E

CLAIM-GEOLOGY MAP

SCALE:	1" = 1610' APPR.
DATE:	9/5/74
DATA BY:	K. JONES
PREPARED BY:	J. WILSON

N

BOUNDARY OF UNPATENTED CLAIMS & AREA OF GEOLOGIC STUDY FOR ASSESSMENT YEAR 1973-1974



ESSEX

ESSEX INTERNATIONAL, INC.
1701 WEST GRANT RD., TUCSON, ARIZONA 85705
PHONE (602) 624-7421

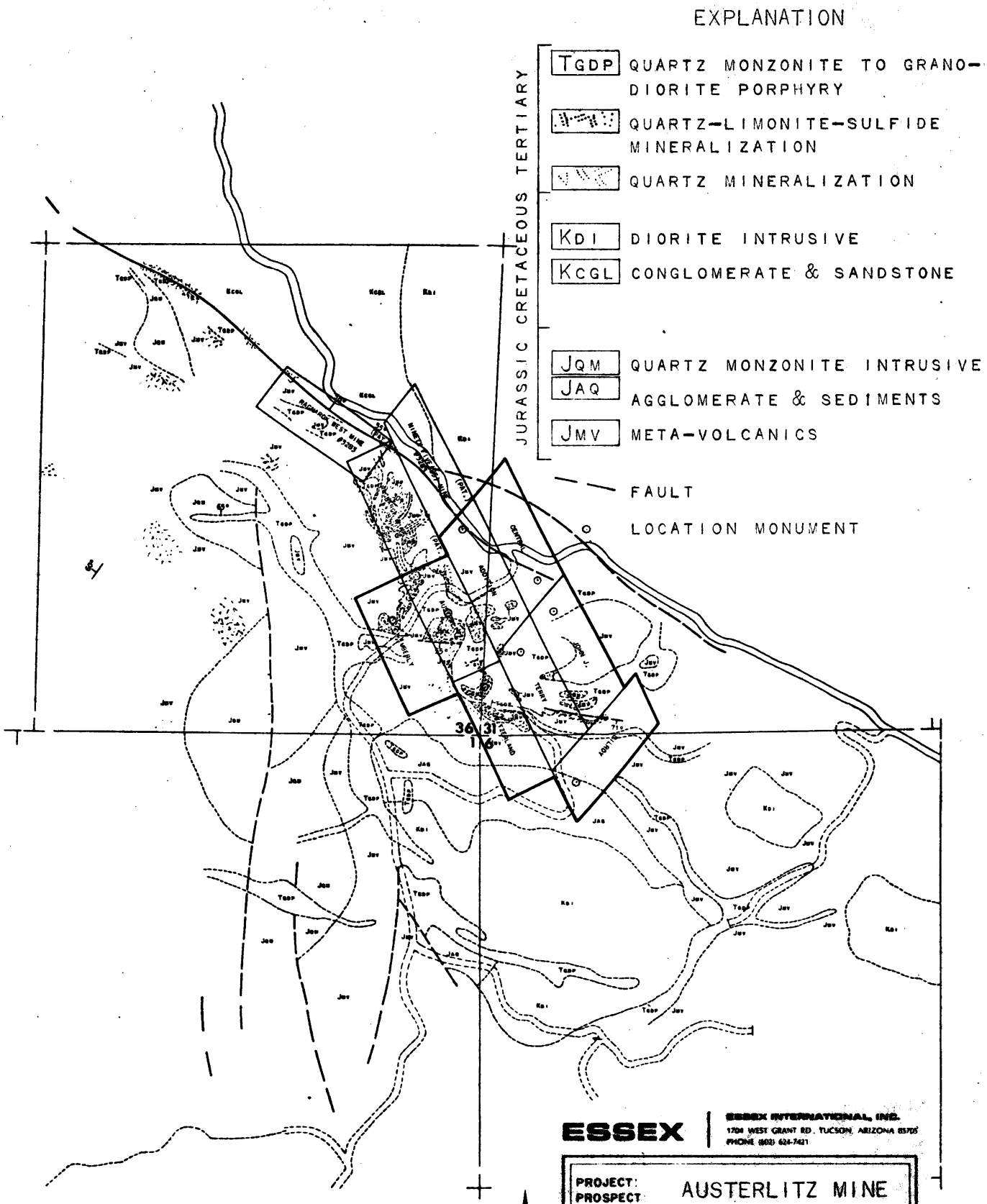
PROJECT:	AUSTERLITZ MINE
PROSPECT:	
NUMBER:	
COUNTY, STATE:	SANTA CRUZ, ARIZ
T., R. & SECTION:	S36,T22S,R10E S31,T22S,R11E S6 ,T23S,R11E

CLAIM-GEOLOGY MAP

SCALE:	1" = 1610' APPR.
DATE:	9/5/74
DATA BY:	K. JONES
PREPARED BY:	J. WILSON

N

BOUNDARY OF UNPATENTED CLAIMS & AREA OF GEOLOGIC STUDY FOR ASSESSMENT YEAR 1973-1974



ESSEX | ESSEX INTERNATIONAL, INC.
1704 WEST GRANT RD. TUCSON, ARIZONA 85705
PHONE (602) 624-7421

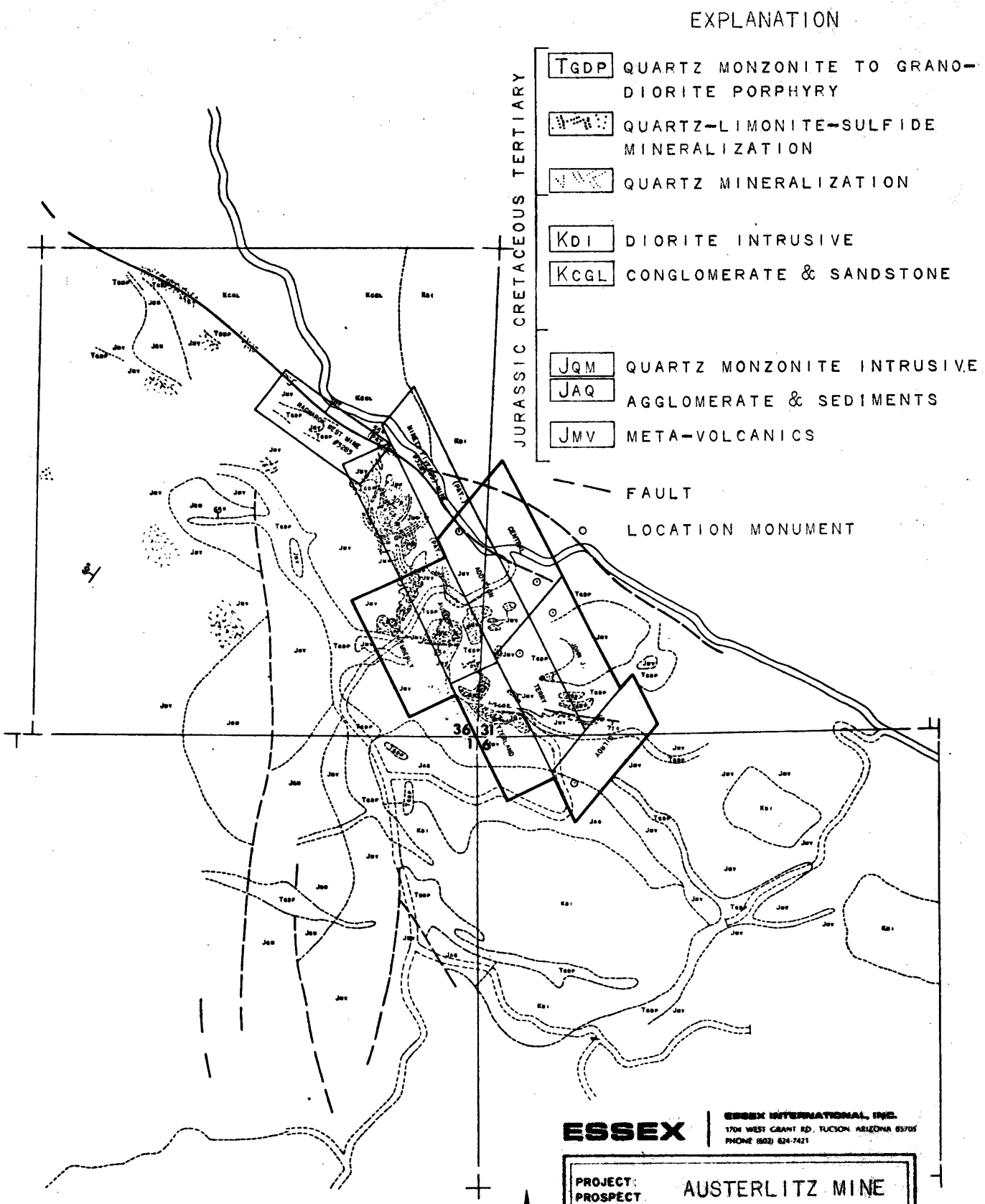
PROJECT:	AUSTERLITZ MINE
PROSPECT NUMBER:	
COUNTY, STATE:	SANTA CRUZ, ARIZ
T. R. & SECTION:	S36, T22S, R10E S31, T22S, R11E S6 , T23S, R11E

CLAIM-GEOLOGY MAP

SCALE:	1" = 1610' APPR.
DATE:	9/5/74
DATA BY:	K. JONES
PREPARED BY:	J. WILSON

N

BOUNDARY OF UNPATENTED CLAIMS & AREA OF GEOLOGIC STUDY FOR ASSESSMENT YEAR 1973-1974



ESSEX

ESSEX INTERNATIONAL, INC.
1706 WEST GRANT RD. TUCSON ARIZONA 85705
PHONE (602) 624-7421

PROJECT:	AUSTERLITZ MINE
PROSPECT NUMBER:	
COUNTY, STATE:	SANTA CRUZ, ARIZ
T.R. & SECTION:	S36, T22S, R10E S31, T22S, R11E S6, T23S, R11E

CLAIM-GEOLOGY MAP

SCALE:	1" = 1610' APPR.
DATE:	9/5/74
DATA BY:	K. JONES
PREPARED BY:	J. WILSON

N

BOUNDARY OF UNPATENTED CLAIMS & AREA OF GEOLOGIC STUDY FOR ASSESSMENT YEAR 1973-1974

1435 S. 10th AVE.

Jacobs Assay Office

Registered Assayers

PHONE 622-0813

Certificate No. 62277

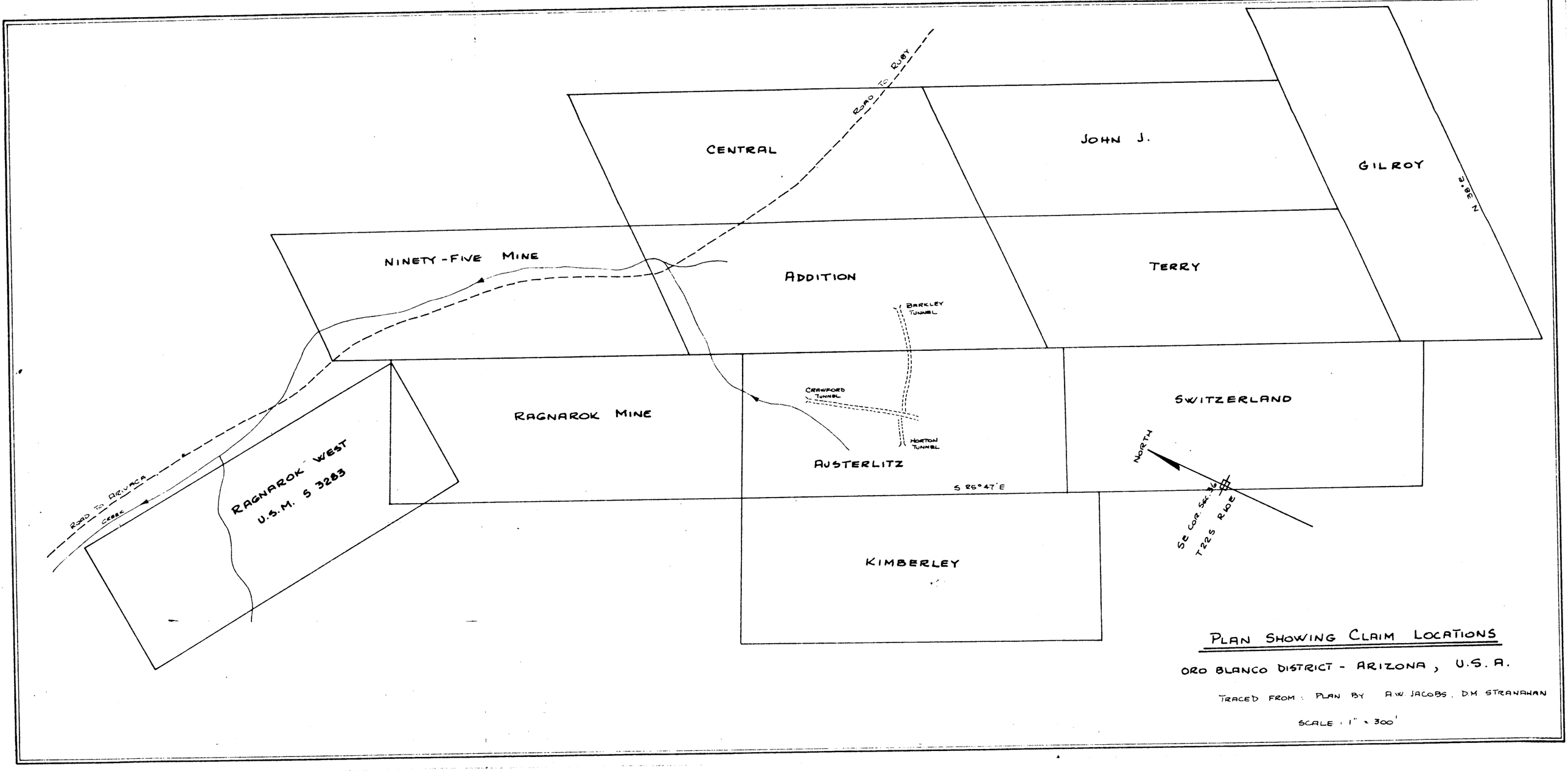
TUCSON, ARIZONA 85713 22 Feb. 1953

Sample Submitted By Mr. Venture Drilling Co.

SAMPLE MARKED	GOLD Ozs. per ton ore	~~GOLD Value per ton ore *~~	SILVER Ozs. per ton ore	~~LEAD Per cent Wet Assay~~	~~COPPER Per cent Wet Assay~~	SiO2 Per cent Wet Assay	~~Per cent Wet Assay~~
		$				Silica	
R-1	0.003	—	0.25	—	—	74.45	
R-2	0.012	—	<0.05	—	—	—	—

Charges $ 23.00

Very respectfully,

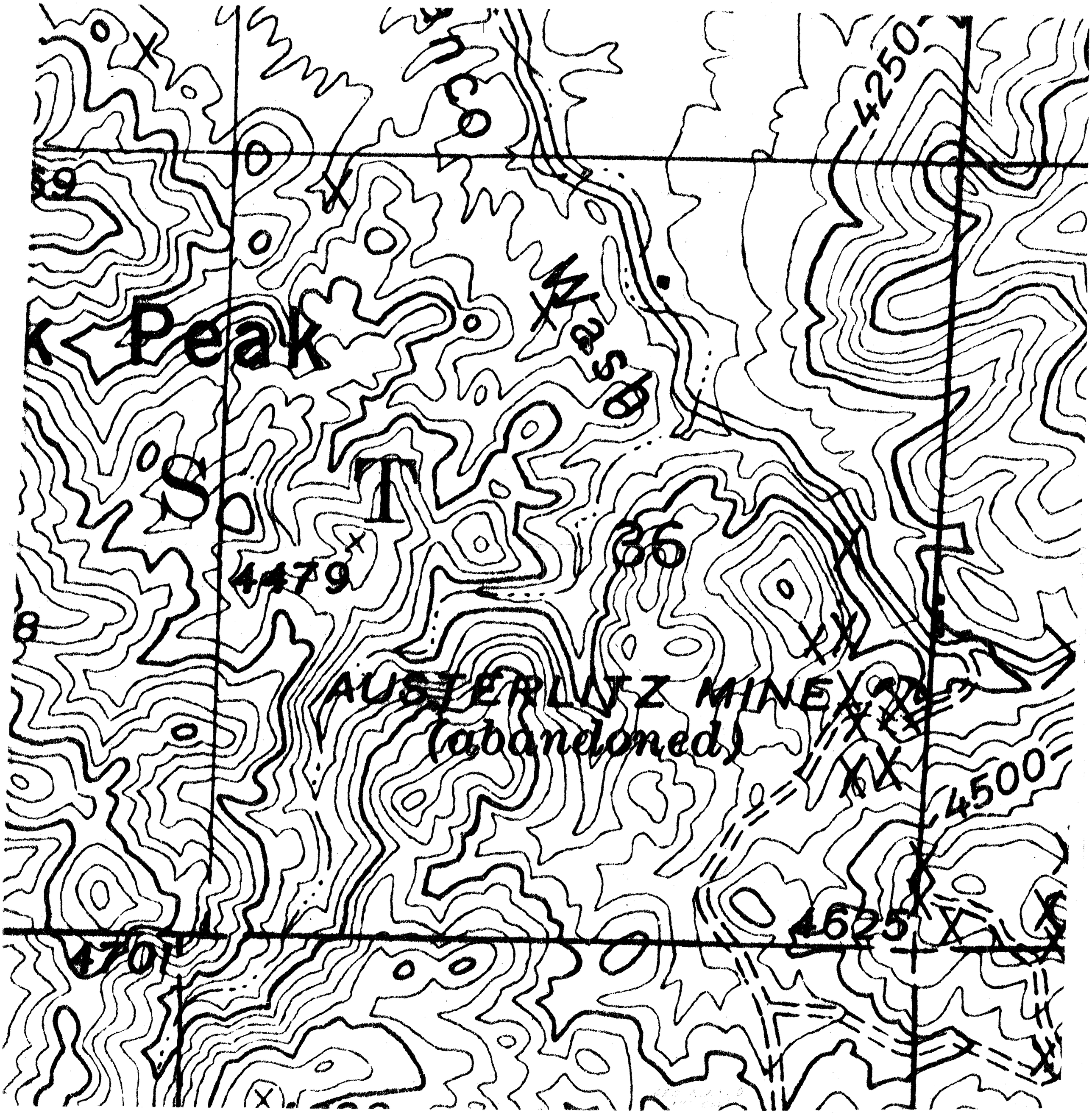


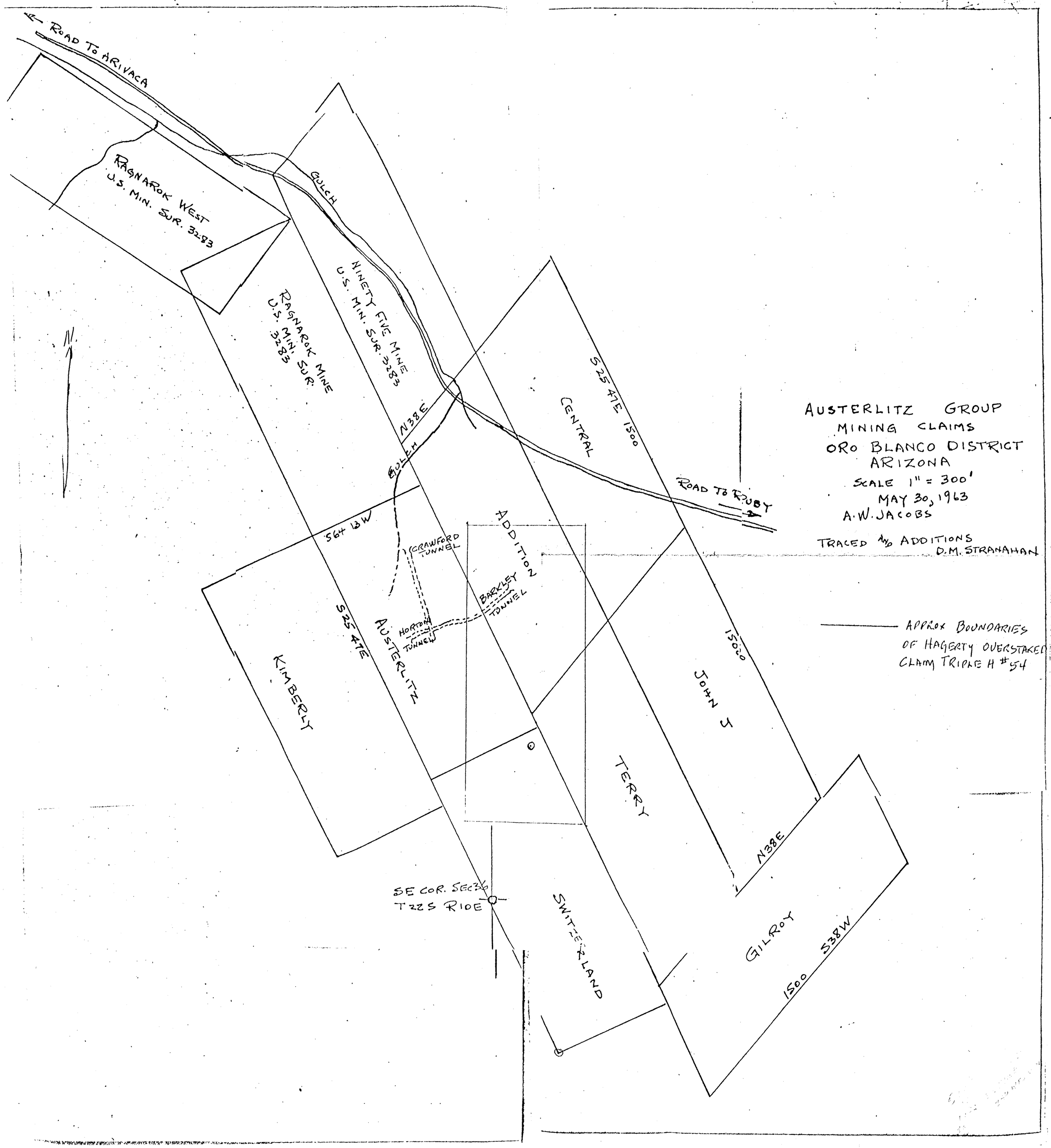
PLAN SHOWING CLAIM LOCATIONS

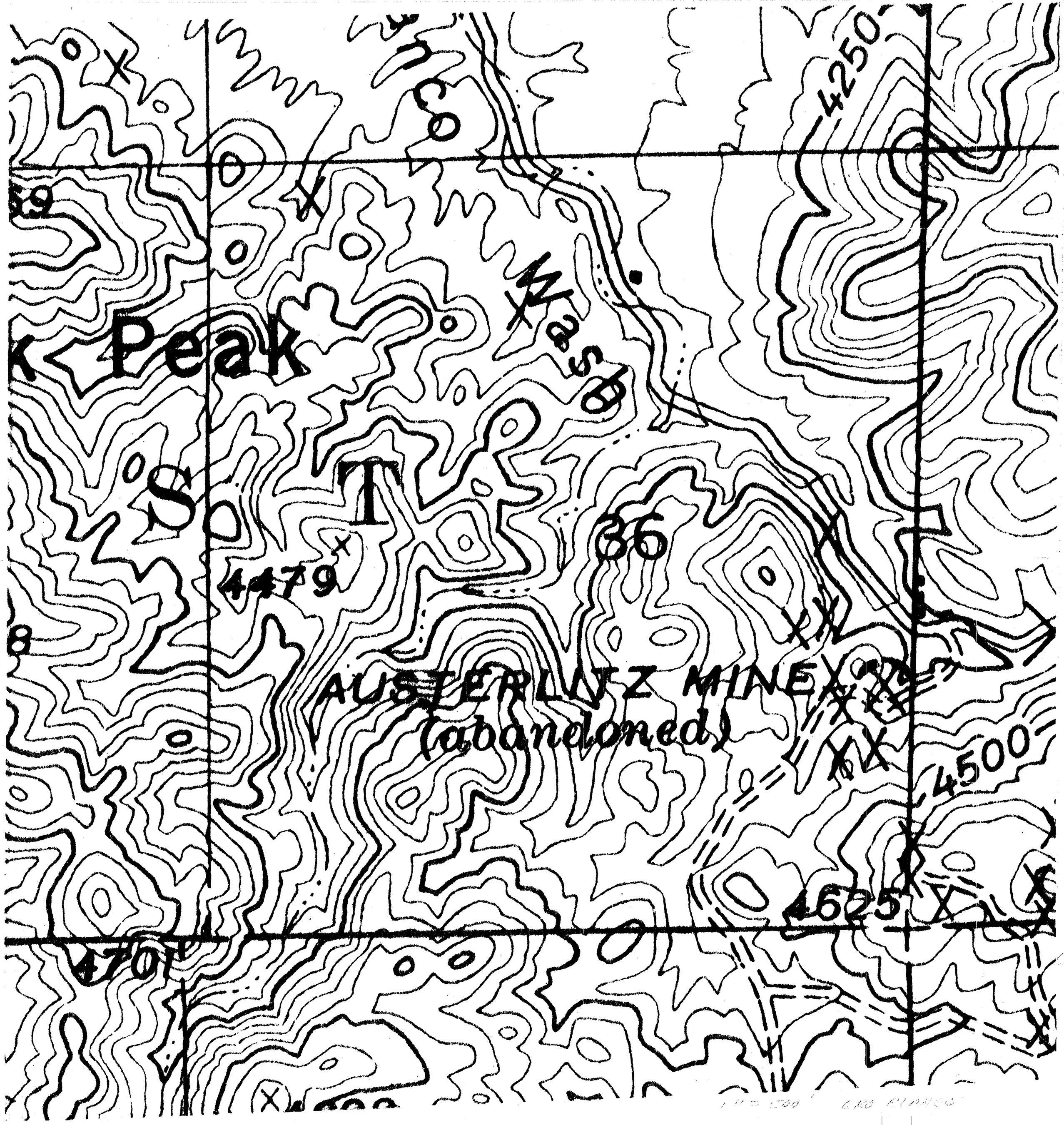
ORO BLANCO DISTRICT - ARIZONA, U.S.A.

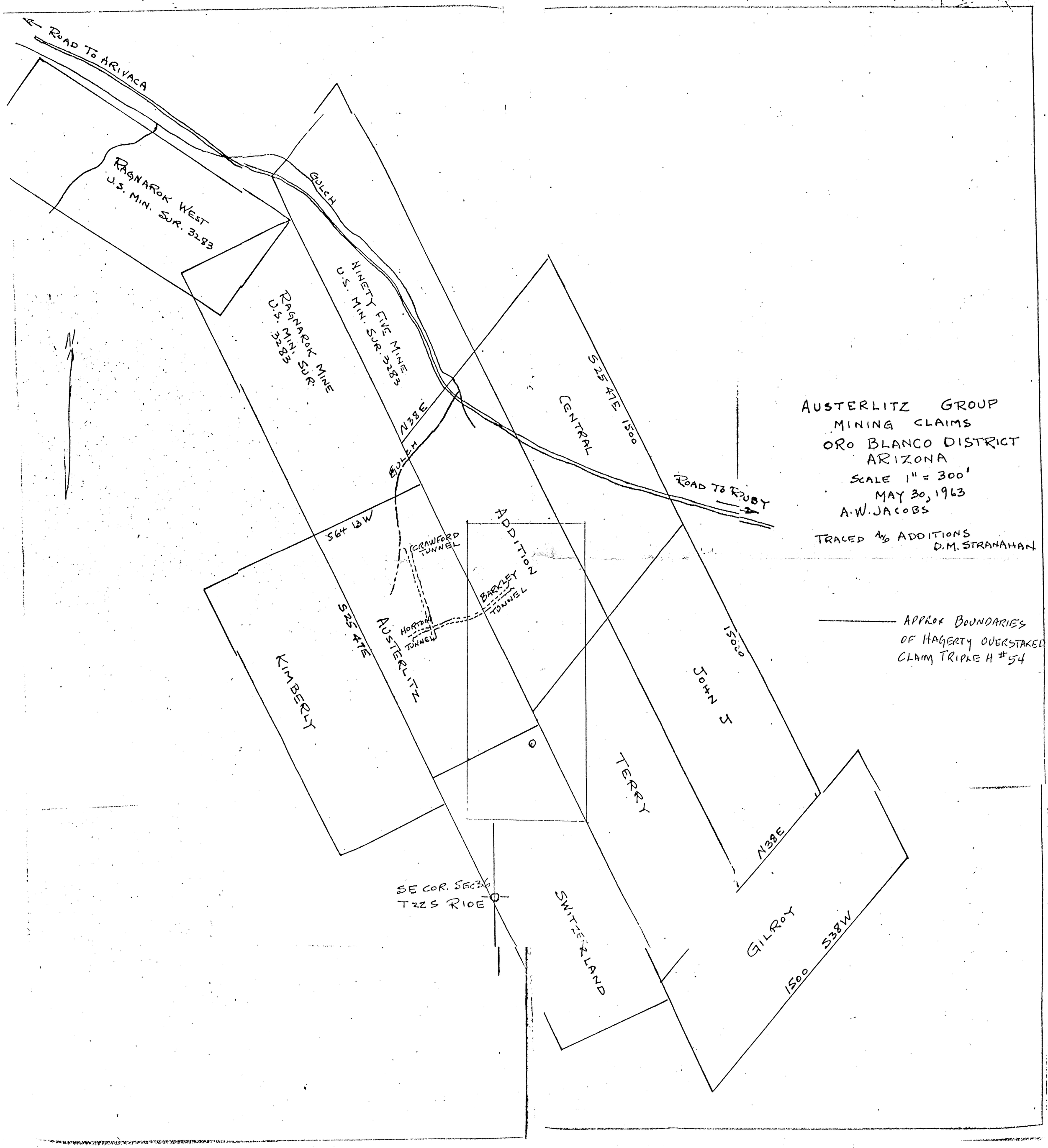
TRACED FROM: PLAN BY A.W. JACOBS, D.M. STRANAHAN

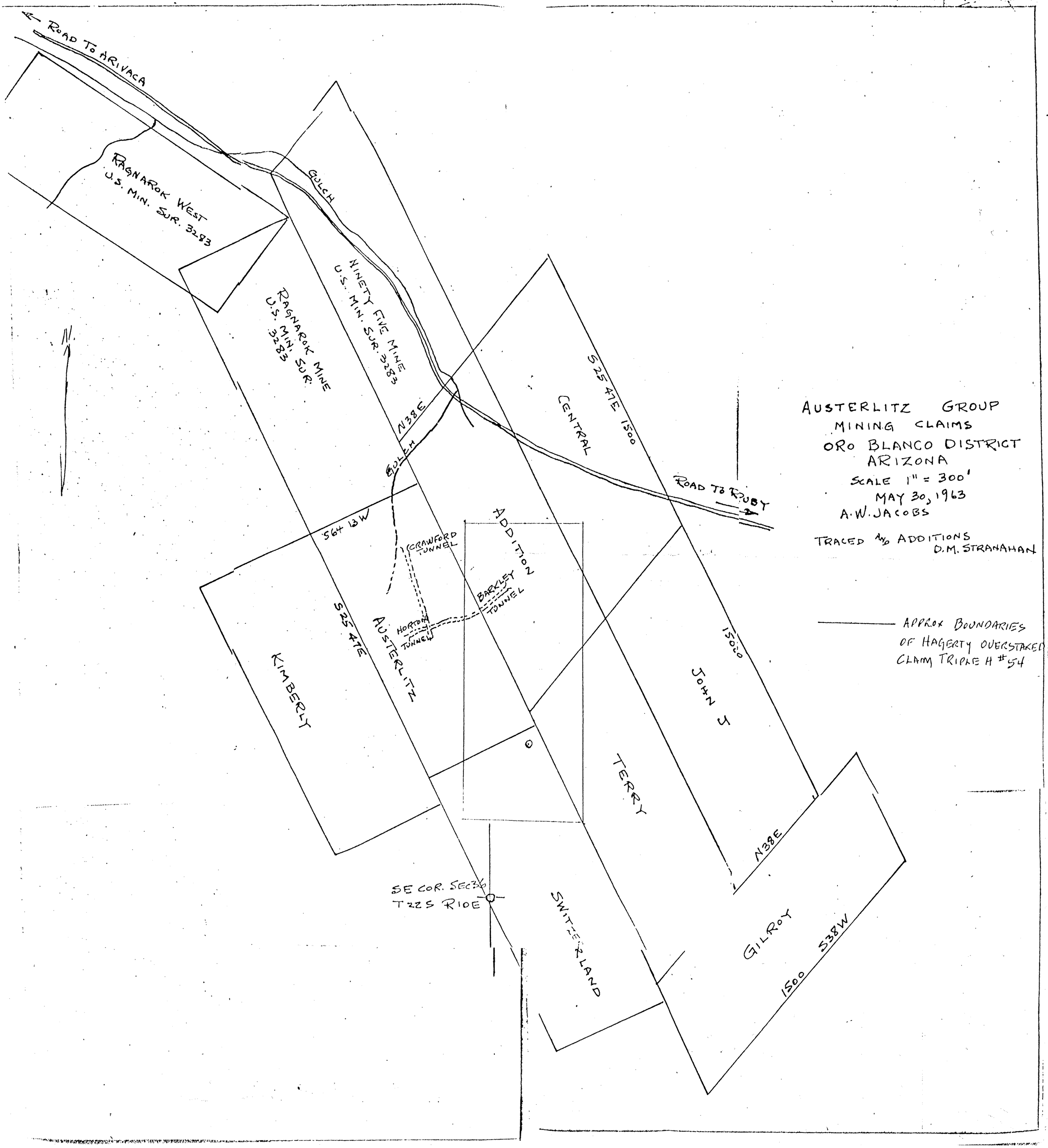
SCALE: 1" = 300'

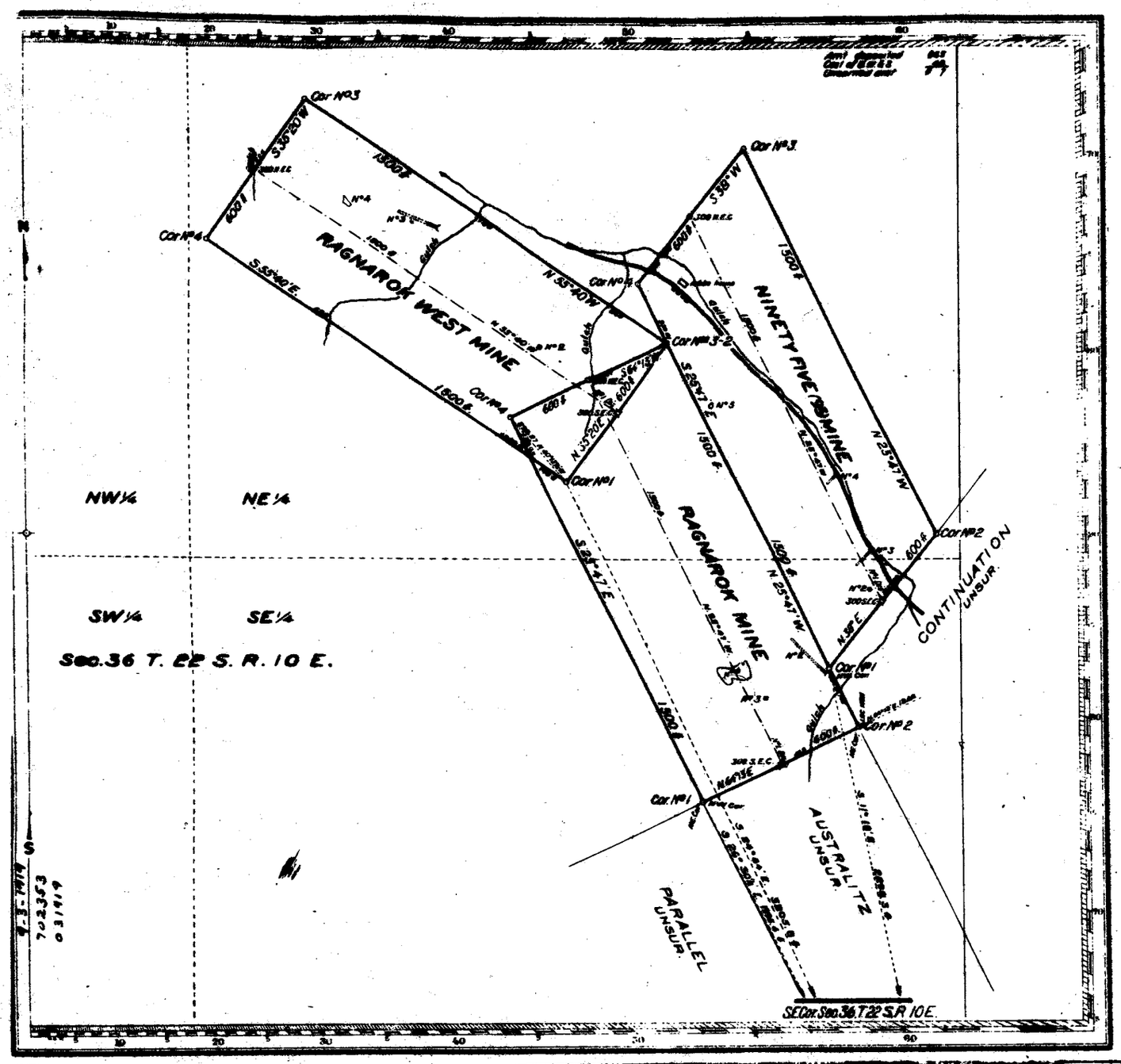

4250
Peak
S
T
4479
66
AUSTERLITZ MINE
(abandoned)
4500
4625
4701


ROAD TO ARIVACA
RAGNAROK WEST
U.S. MIN. SUR. 3283
RAGNAROK MINE
U.S. MIN. SUR. 3283
NINETY FIVE MINE
U.S. MIN. SUR. 3283
GULCH
N38E
GULCH
S25 47E 1500
CENTRAL
ROAD TO RUBY
AUSTERLITZ GROUP
MINING CLAIMS
ORO BLANCO DISTRICT
ARIZONA
SCALE 1" = 300'
MAY 30, 1963
A.W. JACOBS
TRACED AND ADDITIONS
D.M. STRANAHAN
S64 13W
CRAWFORD TUNNEL
ADDITION
BARKLEY TUNNEL
HORTON TUNNEL
AUSTERLITZ
S25 47E
KIMBERLY
APPROX BOUNDARIES
OF HAGERTY OVERSTAKED
CLAIM TRIPLE H #54
1500
JOHN J
TERRY
N38E
SE COR. SEC36
T22S R10E
SWITZERLAND
GILROY
1500 S38W


4250
Peak
S
T
4479
86
AUSTERLITZ MINE
(abandoned)
4500
4625
4701


ROAD TO ARIVACA
RAGNAROK WEST
U.S. MIN. SUR. 3283
RAGNAROK MINE
U.S. MIN. SUR. 3283
NINETY FIVE MINE
U.S. MIN. SUR. 3283
GULCH
N38E
EULEM
S25 47E 1500
CENTRAL
ROAD TO RUBY
S64 13W
CRAWFORD TUNNEL
ADDITION
BARKLEY TUNNEL
HORTON TUNNEL
AUSTERLITZ
S25 47E
KIMBERLY
1500
JOHN J
TERRY
N38E
SE COR. SEC 36
T22S R10E
SWITZERLAND
GILROY
1500
S38W
AUSTERLITZ GROUP
MINING CLAIMS
ORO BLANCO DISTRICT
ARIZONA
SCALE 1" = 300'
MAY 30, 1963
A.W. JACOBS
TRACED AND ADDITIONS
D.M. STRANAHAN
APPROX BOUNDARIES
OF HAGERTY OVERSTAKED
CLAIM TRIPLE H #54


ROAD TO ARIVACA
RAGNAROK WEST
U.S. MIN. SUR. 3283
RAGNAROK MINE
U.S. MIN. SUR. 3283
NINETY FIVE MINE
U.S. MIN. SUR. 3283
GULCH
N38E
GULCH
S25 47E 1500
CENTRAL
ROAD TO RUBY
S64 13W
CRAWFORD TUNNEL
ADDITION
BARKLEY TUNNEL
HORTON TUNNEL
AUSTERLITZ
S25 47E
KIMBERLY
1500
JOHN J
TERRY
N38E
SE COR. SEC 30
T22S R10E
SWITZERLAND
GILROY
1500 S38W
N.
AUSTERLITZ GROUP
MINING CLAIMS
ORO BLANCO DISTRICT
ARIZONA
SCALE 1" = 300'
MAY 30, 1963
A.W. JACOBS
TRACED AND ADDITIONS
D.M. STRANAHAN
APPROX BOUNDARIES
OF HAGERTY OVERSTAKED
CLAIM TRIPLE H #54



Claims Located, Ragnarok Mine, Jan. 1, 1892; Ragnarok West Mine, Jan. 1, 1892; Ninety Five (95) Mine, Jan. 1, 1895

Mineral Survey No. **3283**

Lot No.

Arizona Land District

PLAT

OF THE CLAIM OF

George T. Ballachey

KNOWN AS THE

RAGNAROK MINE, RAGNAROK WEST MINE AND NINETY-FIVE (95) MINE LODES

IN Oro Blanco MINING DISTRICT, Santa Cruz COUNTY, Arizona

Containing an Area of _____ Acres.

Scale of 300 Feet to the inch.

Variation 13°45' E

SURVEYED April 29-May 7 1916 BY Paul E. Fernald, U.S. Deputy Mineral Surveyor.

The Original Field Notes of the Survey of the Mining Claim of George T. Ballachey

Known as the Ragnarok Mine, Ragnarok West Mine and Ninety Five (95) Mine lodes

from which this plat has been made under my direction, have been examined and approved, and are on file in this Office, and I hereby certify that they furnish such an accurate description of said Mining Claim as will, if incorporated into a patent, serve fully to identify the premises, and that such reference is made therein to natural objects or permanent monuments as will perpetuate and fix the locus thereof.

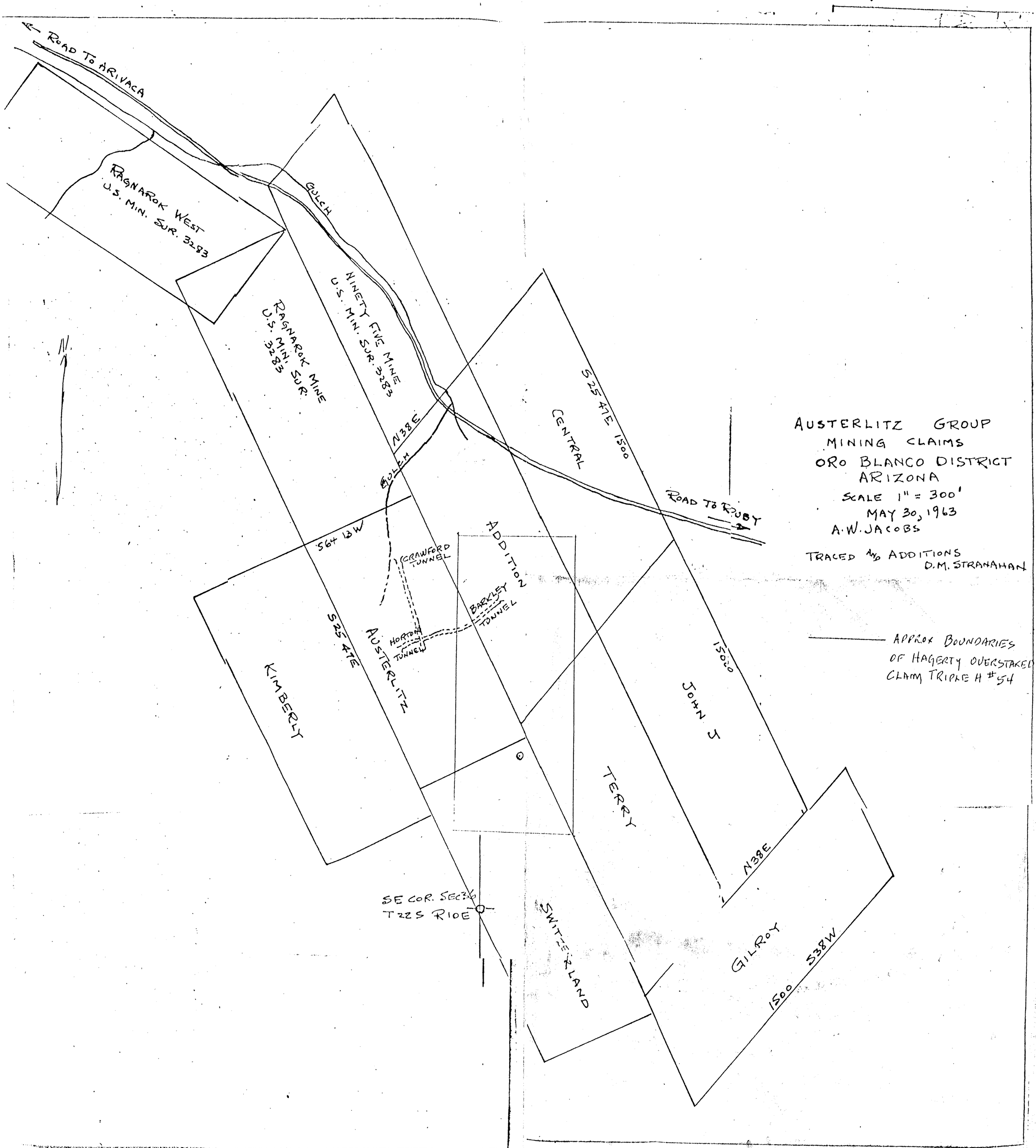
I further certify that Five Hundred Dollars worth of labor has been expended or improvements made upon said Mining Claims by claimant or his grantors and that said improvements consist of 7 cuts, 4 tunnels, 3 shafts and 1 cross-cut. Total value $7520

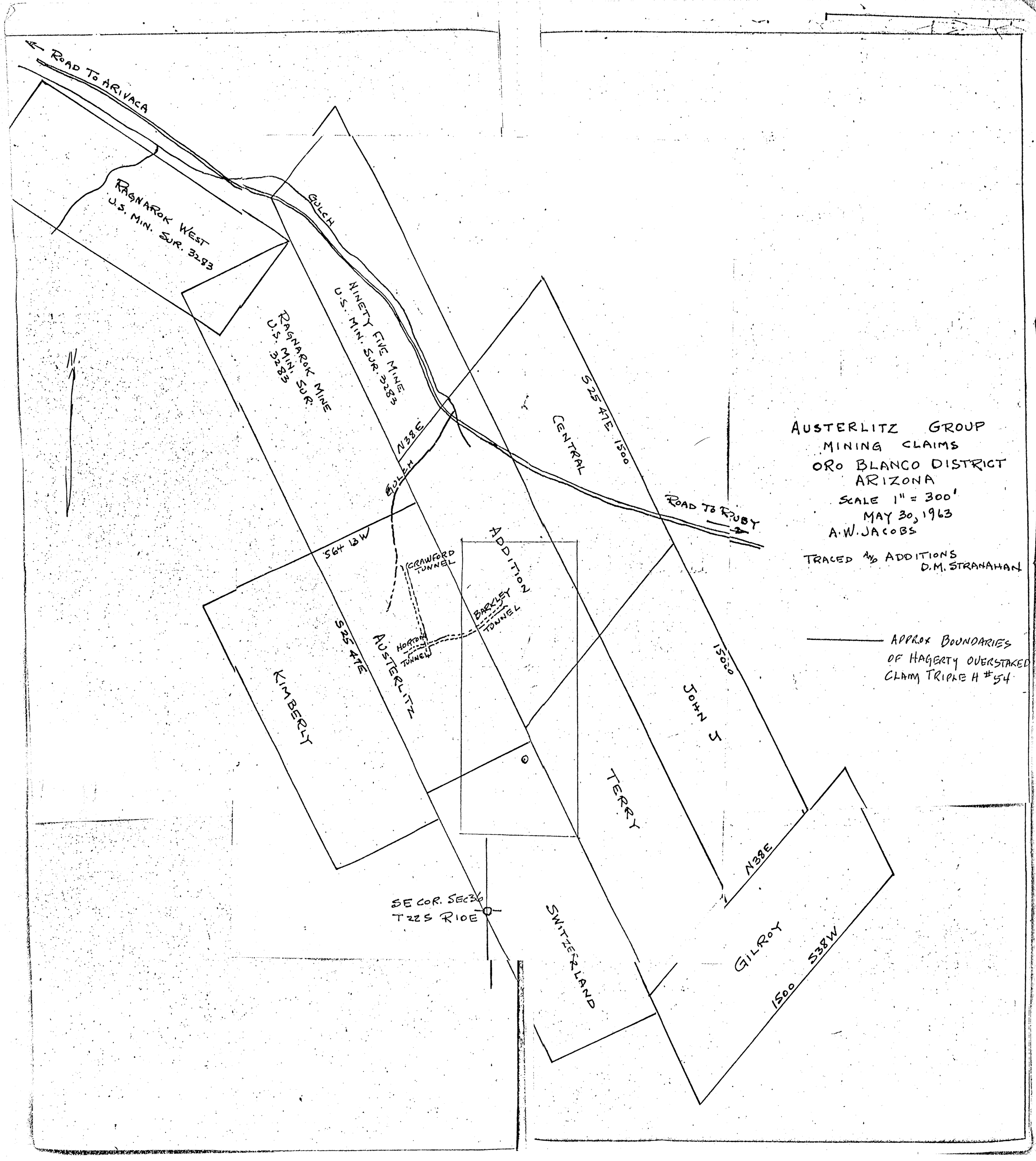
that the location of said improvements is correctly shown upon this plat, and that no portion of said labor or improvements has been included in the estimate of expenditures upon any other claim.

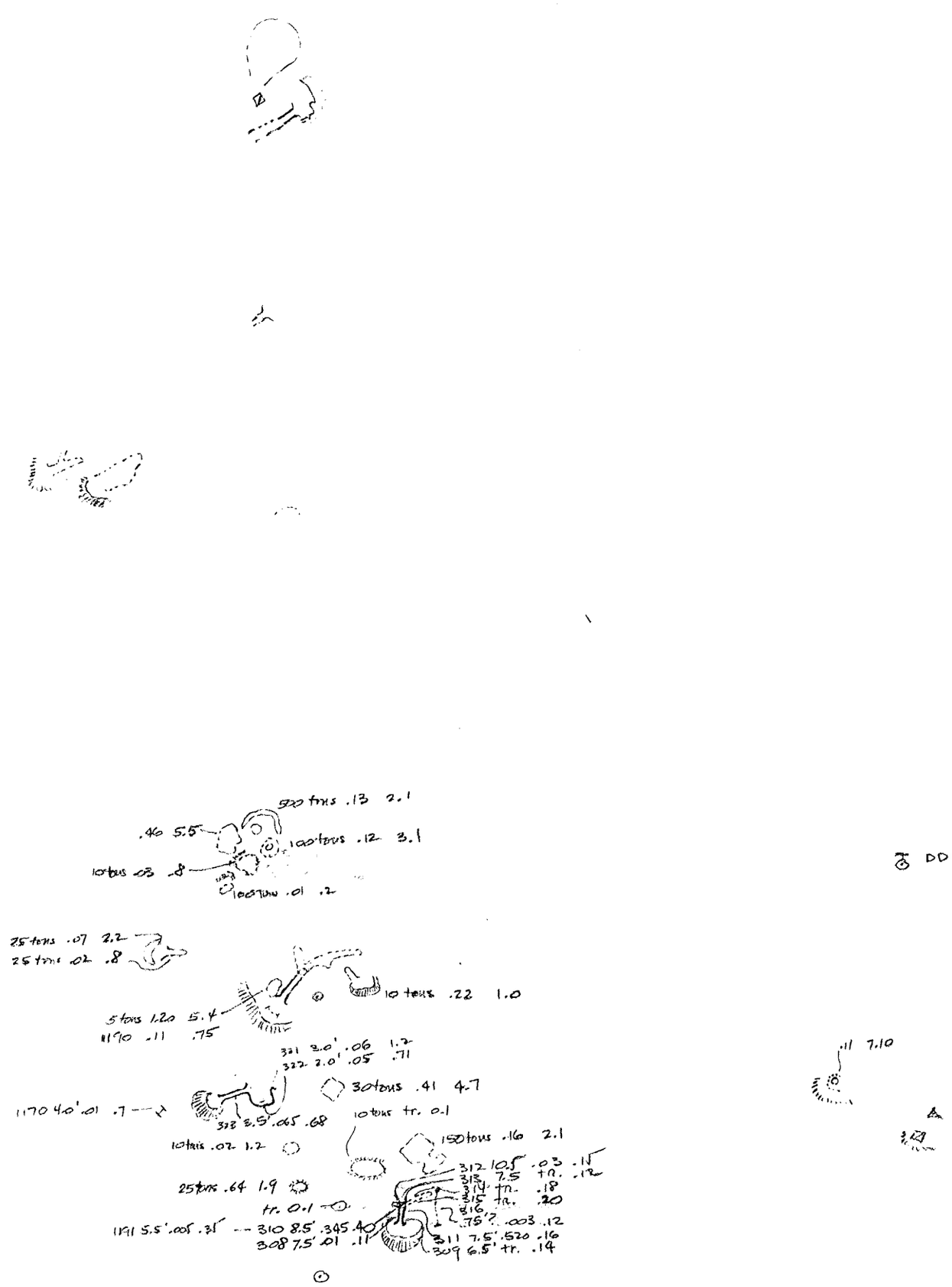
And I further certify that this is a correct plat of said Mining Claim made in conformity with said original field notes of the survey thereof, and the same is hereby approved.

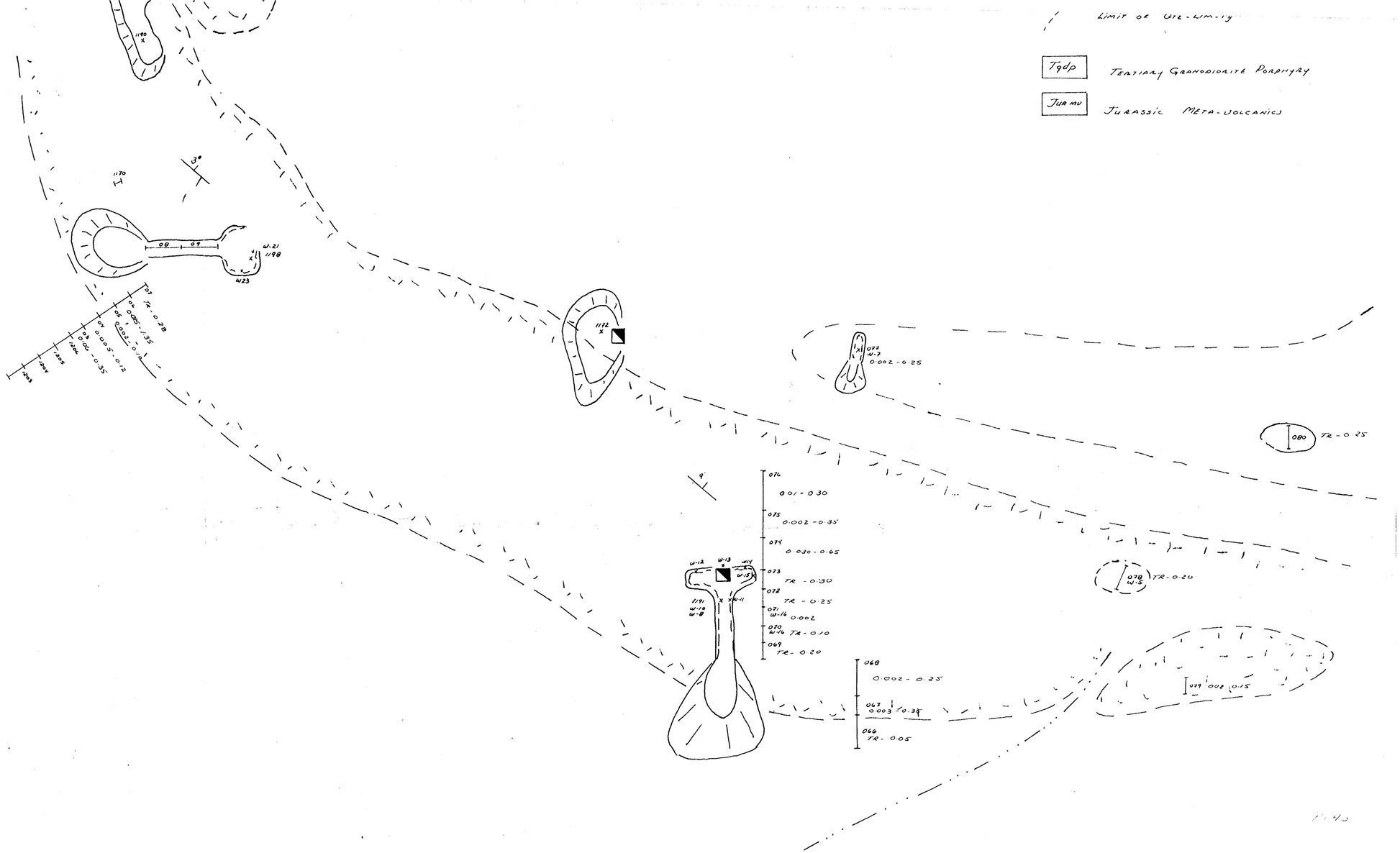
U.S. Surveyor Generals Office, Phoenix, Arizona, October 5, 1916

Frank A. Frost, U.S. Surveyor General for Arizona

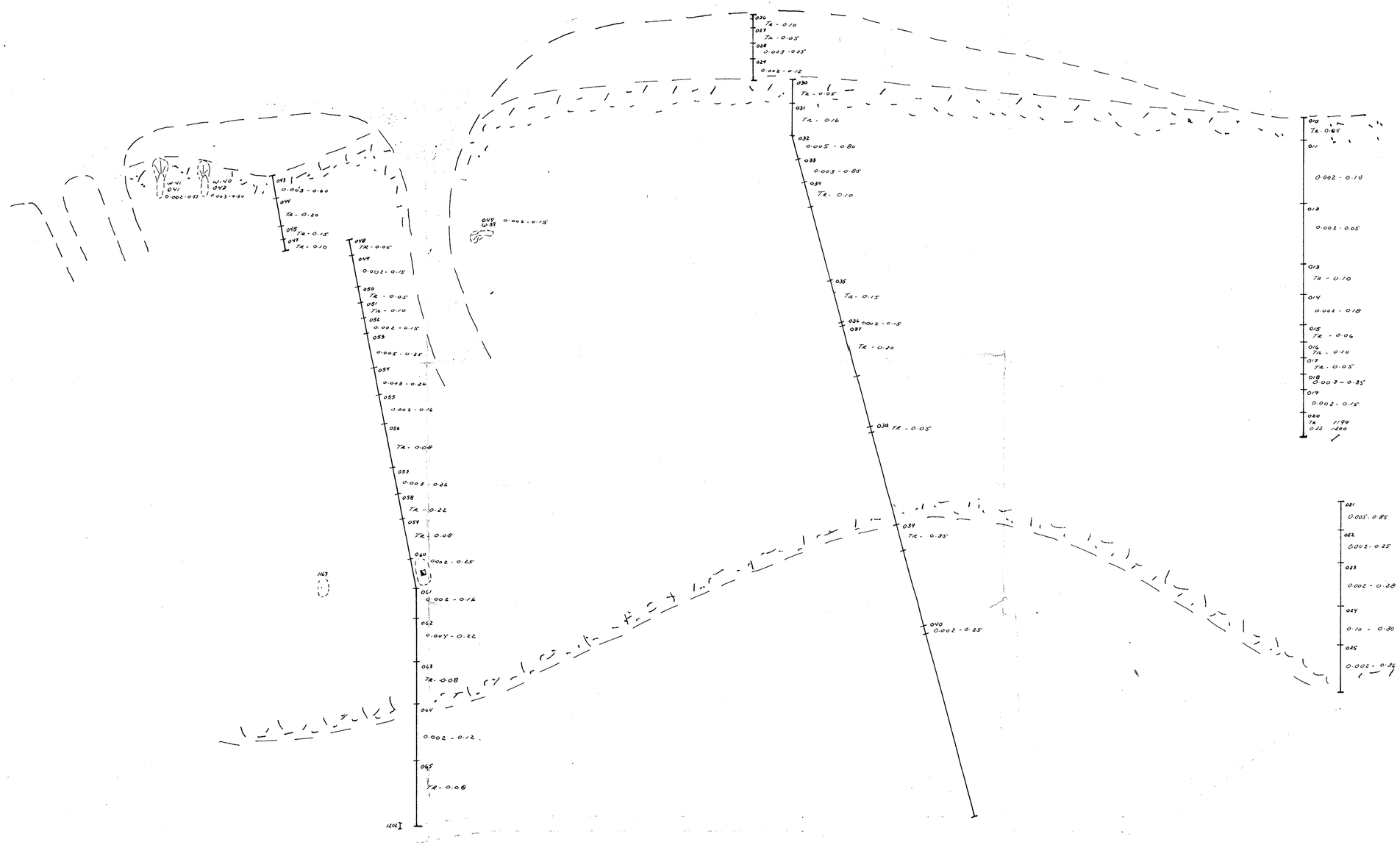

ROAD TO ARIVACA
RAGNAROK WEST
U.S. MIN. SUR. 3283
RAGNAROK MINE
U.S. MIN. SUR. 3283
NINETY FIVE MINE
U.S. MIN. SUR. 3283
GULCH
N38E
GULCH
S25 47E 1500
CENTRAL
ROAD TO RUBY
S64 13W
CRAWFORD TUNNEL
ADDITION
BARKLEY TUNNEL
HORTON TUNNEL
S25 47E
AUSTERLITZ
KIMBERLY
1500
JOHN 5
TERRY
N38E
SE COR. SEC 36
T22S R10E
SWITZERLAND
GILROY
1500 S38W
AUSTERLITZ GROUP
MINING CLAIMS
ORO BLANCO DISTRICT
ARIZONA
SCALE 1" = 300'
MAY 30, 1963
A.W. JACOBS
TRACED AND ADDITIONS
D.M. STRANAHAN
APPROX BOUNDARIES
OF HAGERTY OVERSTAKED
CLAIM TRIPLE H #54


ROAD TO ARIVACA
RAGNAROK WEST
U.S. MIN. SUR. 3283
RAGNAROK MINE
U.S. MIN. SUR. 3283
NINETY FIVE MINE
U.S. MIN. SUR. 3283
GULCH
N38E
GULCH
CENTRAL
S25 47E 1500
ROAD TO RUBY
S64 13W
CRAWFORD TUNNEL
ADDITION
BARKLEY TUNNEL
HORTON TUNNEL
AUSTERLITZ
S25 47E
KIMBERLY
JOHN J
1500
TERRY
N38E
SE COR. SEC36
T22S R10E
SWITZERLAND
GILROY
1500 S38W
AUSTERLITZ GROUP
MINING CLAIMS
ORO BLANCO DISTRICT
ARIZONA
SCALE 1" = 300'
MAY 30, 1963
A.W. JACOBS
TRACED AND ADDITIONS
D.M. STRANAHAN
APPROX BOUNDARIES
OF HAGERTY OVERSTAKED
CLAIM TRIPLE H #54


DDH No. 26
920 tons .13 2.1
.46 5.5
100 tons .12 3.1
10 tons .03 .8
100 tons .01 .2
25 tons .07 2.2
25 tons .02 .8
10 tons .22 1.0
5 tons 1.20 5.4
1190 .11 .75
321 2.0' .06 1.2
322 2.0' .05 .71
30 tons .41 4.7
1170 4.0' .01 .7
323 2.5' .065 .68
10 tons tr. 0.1
10 tons .02 1.2
150 tons .16 2.1
312 10.5 .03 .15
313 7.5 tr. .12
314 tr. .18
315 tr. .20
316
75' ? .003 .12
25 tons .64 1.9
tr. 0.1
1191 5.5' .005 .35
310 8.5' .345 .40
308 7.5' .01 .11
311 7.5' .520 .16
309 6.5' tr. .14
.11 7.10



Limit of Qtz-Lim-Ty
Tgdp
Tertiary Granodiorite Porphyry
Jur mv
Jurassic Meta-Volcanics
1190
1170
3°
08
09
W-21
1198
W23
1172
077
W-7
0.002 - 0.25
080
TR - 0.25
076
0.01 - 0.30
075
0.002 - 0.35
074
0.030 - 0.65
073
TR - 0.30
072
TR - 0.25
071
W-16
0.002
070
W-16
TR - 0.10
069
TR - 0.20
W-12
W-13
W-14
W-15
1191
W-10
W-8
W-11
078
W-5
TR - 0.20
068
0.002 - 0.25
067
0.003 - 0.35
066
TR - 0.05
079
0.002 - 0.15



PLATE

RAGNAROK AREA
1" = 40'

0.005 - 0.28 — ASSAYS OZ AU - OZ AG

LIMIT OF QTZ-LIM-PY (IN REO)

Tgdp	TERTIARY GRANODIORITE PORPHYRY
Jmv	JURASSIC META-VOLCANICS

1973 or 1974?

A REPORT ON THE AUSTERLITZ MINE

Santa Cruz County, Arizona

The Austerlitz property was introduced to the Essex staff by Mr. Lyall Lichty in March of 1974. Lichty had previously, in 1963, sampled the area by taking several 50-ton samples and had obtained fairly persistent gold and silver values. Following Lichty's introduction and a cursory property examination by P.I. Eimon and J.K. Jones, a property option was signed with the owner, Horton Noon. Noon, a local rancher, controlled the heart of the old camp with three patented and eight unpatented mining claims. Following the signing of the property option agreement, an additional 32 claims were staked in the area by Essex personnel (Pl. 1).

A total of 17 man-days were spent in the field by J.K. Jones, W. Brown, and J.R. Wilson, mapping and extensively sampling the area.

Location and Access

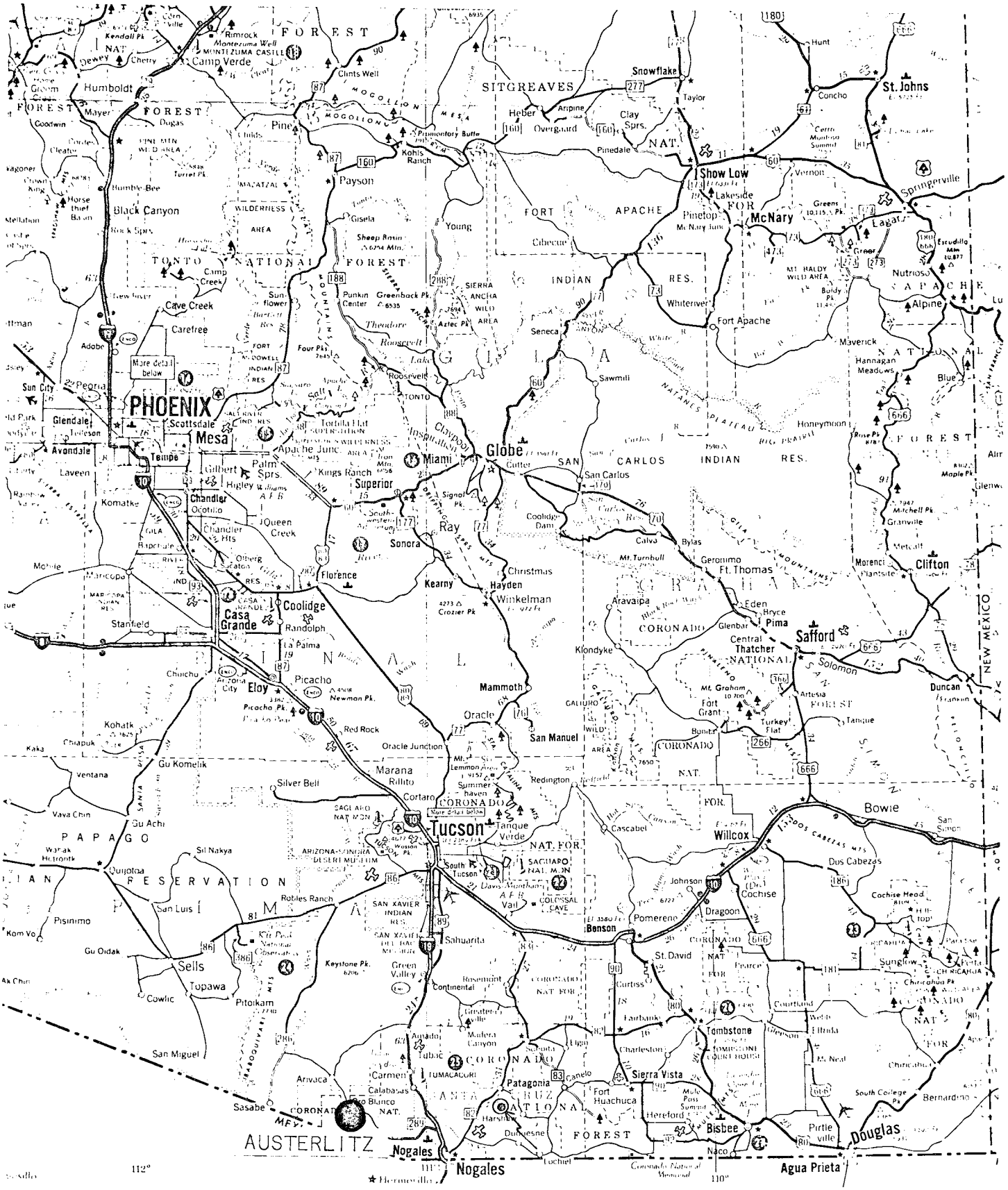
The Austerlitz property is located in southern Santa Cruz County, Arizona approximately five miles north of the Mexican Border (Fig. 1). Access to the property can be obtained by rough, winding roads from either Arivaca, Arizona, 10 miles to the northwest, or Nogales, Arizona, 35 miles to the southeast (Fig. 1).

Past Production

Production records indicate that approximately $90,000 in gold was extracted from the property through 1936. It is quite likely that there was earlier unrecorded production and certainly later unrecorded production.

In 1963 Platero Corporation mined and shipped five 50-ton samples to the ASARCO smelter at Hayden, Arizona. The smelter receipts and assay results are shown on the following page.

LOCATION MAP OF AUSTERLITZ PROPERTY



AUSTERLITZ PROPERTY
SANTA CRUZ CO., ARIZ.

ESSEX

ESSEX INTERNATIONAL, INC.
1704 WEST GRANT RD. TUCSON, ARIZONA 85705
PHONE (602) 624-7421

Number	Gold oz/ton		Silver oz/ton		Copper%	
	Jacobs	ASARCO	Jacobs	ASARCO	Jacobs	ASARCO
1	0.020	0.003	1.05	1.11	0.15	0.09
2	0.015	0.005	1.00	0.91	0.10	0.03
3	0.025	0.045	1.65	1.45	0.26	0.09
4	0.035	0.025	3.15	3.71	1.07	0.90
5	0.030	0.015	1.10	0.82	0.16	0.09
Average:	0.025	0.019	1.59	1.60	0.24	0.24

Although all the values were quite low by 1963 standards, these same assay values, in view of 1974 Ag-Au prices, were what originally interested the Essex staff in the property.

Scope and Purpose

It was the purpose of this investigation to evaluate the potential for the existence of a small to medium sized, open-pit, low grade gold-silver-(copper) deposit. The initial phase of this program consisted of geological mapping on a scale of 1"= 500' and a random geochemical sampling program. As a result of this initial phase, it was concluded that only two areas were sufficiently large enough and continuously mineralized enough to warrant further work. These two areas were then more systematically sampled and more extensively mapped.

Systematic sampling of the two favorable areas consisted of traversing the apparent mineralized zones at several places and channel sampling all outcrop along this traverse. Channel sample cuts ranged from 5 feet to approximately 40 feet in length depending on ourcrop availability. All samples taken weighed between 15 and 20 pounds and were assayed at Jacobs Assay Office in Tucson, on a three assay ton basis.

Geology

The rocks in the vicinity of the Austerlitz Mine consist of Jurassic, Cretaceous and Tertiary intrusive rocks, Jurassic volcanic rocks and Jurassic and Cretaceous sedimentary rocks.

The oldest of the intrusive rocks appears to be the Jurassic(?) quartz monzonite plugs observed in the western portion of the map area. These plugs are generally elongate in a north-south direction and range

in size from approximately 400 feet to 1000 feet in the long dimension and 200 feet to 500 feet in the shorter dimension. The quartz monzonite is generally medium grained and generally shows no more than weak chloritically altered mafic minerals. The next youngest intrusive unit appears to be the Cretaceous(?) diorite. These intrusives are generally in the southeastern and north central portions of the mapped area and generally range in size from less than 200 feet to over 1000 feet in diameter. Alteration is generally quite weakly exhibited in this rock and consists only of local chloritic alteration. The youngest of the intrusive rocks observed in the area are the Tertiary(?) quartz monzonite porphyry to granodiorite porphyry dikes. These dikes generally strike northwesterly and are always in close spatial relationship to the observed gold-silver mineralization. These dikes are probably also genetically related to mineralization.

The oldest of the rocks in the area appear to be the Jurassic(?) Cobre Ridge tuff. These rocks in general strike northwesterly and gently to the northeast. The Cobre Ridge tuff is actually a welded rhyolitic to dacitic tuff and is the sole host for all the mineralization observed in the area.

In general, the sedimentary rocks occupy only a small percentage of the mapped area and are of very little importance in the overall geologic picture. Rock types vary from conglomerate to sandstones mixed with agglomerates.

Structurally, the area is marked by an extremely strong northwest trending, northeast dipping fault. This fault in general separates the intrusives and mineralized volcanics on the southwest from the unmineralized intrusives and sedimentary rocks on the northeast. In addition to this major structure, several near east-west trending, north dipping faults were also observed in the area.

Mineralization

Mineralization in the vicinity of the Austerlitz Mine is wholly contained within the Jurassic(?) Cobre Ridge tuff and is basically of two types; quartz veins and relatively thin silicified zones. Of the two types of mineral occurrence, the silicified zones have accounted for the majority of the district's production and offer the only real potential for an economically viable operation.

The silicified zones are quite variable in thickness, ranging from upwards of 40 feet to less than 5 feet, and appear to be either root pendants engulfed in granodiorite porphyry or thin, gently dipping,

"stratabound" units contained within unmineralized and altered volcanics. Silicification within the volcanics appears to take the form of either intense silica flooding or micro-veining or both. In all cases, the silicified zones are found in close spatial relationship to the granodiorite-quartz monzonite porphyry dikes.

Locally within the silicified zones can be found areas of abundant pyrite or limonite. These areas in general were found to carry the highest gold and silver values and were locally observed to contain both chalcopyrite and galena.

As is evidenced by the included geological map, numerous areas of silica-pyrite-limonite were found throughout the area (Pl. 4). Of these numerous zones, only two were of sufficient size to be considered as possible targets. These two, the Switzerland and Ragnarok areas, constitute what was previously described as "stratabound" type mineralization.

The Switzerland area is located approximately 1000 feet south of the old Austerlitz Mine and comprises an area of approximately 600 feet x 100 feet in size (Pl. 2). This zone appears to be approximately 20 feet in thickness and is characterized as being a strongly silicified, locally pyritic-limonitic tablet adjacent to a granodiorite porphyry dike. This unit generally strikes N50W and dips at approximately 10° to the northeast.

The Ragnarok area is located about 1000 feet north of the old Austerlitz Mine and comprises an area of approximately 1000 feet by 500 feet in size (Pl. 3). The thickness of this zone varies from approximately 40 feet at its southern end to approximately 10 feet at its northern end. This zone, like the Switzerland zone, is characterized as being a strongly silicified, locally pyritic-limonitic tablet adjacent to a granodiorite porphyry dike. This unit generally strikes NNW and dips northeasterly at between 10° and 30°.

All other exposed mineralized zones were found to be either very small roof pendants in granodiorite porphyry or so obviously discontinuously mineralized "stratabound" units as to discount their importance.

Conclusions and Recommendations

Following the initial stage of this investigation, it was concluded that only the Ragnarok and Switzerland areas offered the potential for finding a small open-pit gold-silver-(copper) deposit. All other zones were shown to be too limited in tonnage potential or too sporadically mineralized to be economically viable.

Subsequent work has shown that the combined tonnage potential of the Ragnorok-Switzerland areas is probably no more than 1.2 million tons. In addition to relatively small projected tonnages in these area, systematic sampling has indicated that mineralization is much too sporadic and low grade to be considered economic at this time (Pl. 2 & 3).

At no time during the project was any lead to blind mineralization observed and it must be concluded that none exist.

It is concluded that, although numerous, small, near ore grade zones of gold-silver-(copper) mineralization occur throughout the area, their occurrence is much too sporadic and discontinuous to warrant further work. It is recommended that no further work be done on this prospect and that the property option be terminated.

1161 El Oro Mine Au .6 Ag 0.6
1155 Photo Anon S. of Austerlitz

Sample Number	Description	Oz. Gold	Oz. Silver	% Copper	Value per ton gold @ $150	Value per ton silver @ $5	Gross Value	Comment
1	50 ton bulk sample	0.020	1.05	0.15	$ 3.00	$ 5.25	$ 8.25	
2	" " " "	0.015	1.00	0.10	2.25	5.00	7.25	Samples taken by Platoro Corp. in 1963
3	" " " "	0.025	1.65	0.26	3.75	8.25	12.00	and shipped to ASARCO's Hayden smelter.
4	" " " "	0.035	3.15	1.07	5.25	15.75	21.00	
5	" " " "	0.030	1.10	0.16	4.50	5.50	10.00	
1151	Specimens from small stockpile	0.59	5.0		88.50	25.00	113.50	High grade ore on dump of Horton Tunnel.
1153	Chip sample of small outcrop	trace	0.1		-0-	0.50	0.50	Weak manganese stain.
1154	5.0 ft chip of outcrop	0.17	0.7		25.50	3.50	29.00	Good iron oxide.
1155	Grab	0.06	0.6	0.02	9.00	3.00	12.00	Altered volcanics north of stock
1156	"	0.03	0.5	0.02	4.50	2.50	7.00	" " " " "
1157	"	0.03	0.5	0.09	4.50	2.50	7.00	Iron stained mine dump, some pyrite, & copper oxide.
1163	Chip of 10 ft square outcrop	0.02	0.7		3.00	3.50	6.50	Weak quartz veinlets and iron oxides.
1164	Chip of 3 ft square outcrop	0.02	0.5		3.00	2.50	5.50	" " " " " "
1165	3.0 ft chip of outcrop	0.005	0.8		0.75	4.00	4.75	Fair quartz veinlets, weak iron oxides.
1166	5.0 ft " " "	0.01	1.0		1.50	5.00	6.50	Represents at least 100 ft. width.
1167	Chip of 2 ft by 3 ft outcrop	0.02	1.4		3.00	7.00	10.00	
1168	Grab of est. 5 ton stockpile	0.22	7.3		33.00	36.50	69.50	Breccia, abundant iron oxide and spongy quartz.
1169	Grab of est. 25 ton stockpile	0.02	1.4		3.00	7.00	10.00	Massive white quartz, some iron oxide & pyrite.
1170	4.0 ft vertical chip of outcrop	0.01	0.7		1.50	3.50	5.00	May represent 50 to 100 ft. thickness.
1171	Grab of outcrop	0.01	0.8		1.50	4.00	5.50	Abundant quartz veinlets, little iron oxide.
1172	Grab of dump of shaft	0.01	3.2		1.50	16.00	17.50	Very weak quartz and pyrite.
1173	Grab of outcrop in gulch	trace	0.25		-0-	1.25	1.25	Moderate iron oxides.
1174	" " " " "	0.005	0.15		0.75	0.75	1.50	Altered volcanics, fair iron oxides.
1175	5.0 ft chip sample	0.005	0.35		0.75	1.75	2.50	Iron stained bank exposed in canyon
1176	4.0 ft chip sample	trace	0.20		-0-	1.00	1.00	Fair iron oxides and quartz veinlets.
1177	7.0 ft chip sample	0.05	5.35		7.50	26.75	34.25	South wall of bulk sample locality No.
1178	5.0 ft chip sample of outcrop	trace	0.15		-0-	0.75	0.75	Strong quartz veinlets, very weak iron oxide.
1179	Grab of dump of tunnel	trace	0.30		-0-	1.50	1.50	Minor quartz veinlets and pyrite.
1180	7.0 ft horizontal chip sample	0.005	0.35		0.75	1.75	2.50	Good iron oxides, traces copper oxides.
1181	5.0 ft chip sample of outcrop	0.005	0.15		0.75	0.75	1.50	Broken, weak iron oxides.
1182	3.5 ft vertical chip	0.03	0.20		4.50	1.00	5.50	Good quartz veinlets and iron oxides.
1183	4.0 ft vertical chip	0.01	0.15		1.50	0.75	2.25	Moderate quartz, iron oxides, black veinlets.
1184	6.0 ft vertical chip of outcrop	trace	0.10		-0-	0.50	0.50	Weak to moderate iron oxides.
1185	Grab of 6 ft high outcrop	trace	0.15		-0-	0.75	0.75	Weak quartz and iron oxides.
1186	4.5 ft chip of outcrop	0.005	0.20		0.75	1.00	1.75	Iron stained, dark colored outcrop.