5370 0024

165
182
ITEM 24

August 18, 1966

Mr. E. M. Howard, Manager,
The Ken R. White Company,
Nevada Engineering Consultants Division,
888 East Williams,
Carson City, Nevada.

Re: Progress to date:
Appraisal Contact Group,
Cambridge District, Lyon
County, Nevada.

Dear Skip:

To bring you and your associates up to date, the following comments are provided:

Field Mapping:

With the assistance of Mr. Rink, the area of concern and its projection, north and south, was mapped from August 12 into the morning of August 15. Representative samples were cut. Indicated is a rock distribution associated with a regional line of overthrust faulting, with about a 9° inclination to the west; beneath the thrust is massive granite; a crushed zone plus fresh rhyolite volcanic flows, dominate the hanging wall area.

The fault plane will limit downward continuation to an average of about 150 feet. Until assays (reported by others) can be verified, no ore exists. Tonnage of rock per 1000 square feet approaches 10,000,000 tons.

Sample Preparation:

The seven samples, through the courtesy of Mr. Budd F. Rude, were crushed to an approximate 5/8" size on August 16, in the presence of the writer. Using better equipment, at the laboratory of the Nevada Bureau of Mines in Reno, the writer further reduced all material to ¼ to 3/8" size on August 18. Material is, therefore, now of size which will permit perfect mixing and average material per sample, using a Jones splitter and before final fine grinding to minus 200 mesh

Testing Plans:

On the night of August 17 we were, finally, able to reach Mr. Waldemar Fenn Dietrich, a mining and metallurgical engineer of excellent reputation, experienced in the metallurgical treatment of ores and the analysis of precious metals, especially via cyanide treatment and precise fire assaying. Mr. Dietrich, retiring from his position as Chief of the Division of Mineral Resources, U. S. Bureau of Mines, Region II, San Francisco, in 1965, has, since then, been associated with the Morse Testing Laboratory of Sacramento, consulting on a part time basis.

Mr. Dietrich, who has for the last two weeks been appearing as an expert witness in a Southern California hearing, returns to Sacramento today. An appointment has been made to deliver samples and discuss our program, itemized below, at 10 AM of August 22.

Mr. Dietrich's professional record is summarized as follows:

(1) A graduate of Stanford University with a degree in geology in 1913, and an engineer's degrees in mining and metallurgy in 1914.

(2) Copper experience in Arizona, 1914 through 1916, as mining engineer with the old Copper Queen at Bisbee, and later with the Consolidated Arizona Smelting Company at Humboldt.

(3) A faculty member in Mining and Metallurgy at Stanford University, 1916 through 1930, resigning from a full professorship.

(4) During this same period, extra-curricular work as Chief Efficiency Engineer at Pachuca, Mexico (silver), part time association with the California Division of Mines, and Director of Research for the Pac-Tome Company of San Francisco.

(5) In the mid-30's he did work for the U. S. Bureau of Mines as Associate Metallurgist at Rolla, Missouri (a zinc and lead district).

(6) 1936-1942: Teaching mining and metallurgy at Sacramento Junior College.

(7) 1942-1944: Consulting Engineer for the Kaiser Company at its iron development at Fontana, California.

(8) 1942-1950: Senior partner of Dietrich, Morse and Associates, Consulting Engineers, Sacramento.

(9) 1951-1959: Division head with the U. S. Bureau of Mines, Washington, D. C.

(10) 1959-1965: With the U. S. Bureau of Mines as Chief of the Division of Mineral Resources in San Francisco.

As discussed with you on August 16, it is now planned to test completely two samples, the one representative of the fresh rhyolite (resampled) and the other the crushed (red) zone, both reported with exceptional value, by others.

Mr. Dietrich will be requested to test each of the samples as outlined on page 3.

I. Standard Cyanide Test.

II. Cyanide test, following procedures prescribed by Budd Rude et al.

III. Standard fire assay.

IV. Fire assay, using an additional 20 grams of silver.

V. Fire assay using the Beamish Process.

VI. A check of the material via the Perkins-Elmer atomic absorption test.

There is asufficiantt material for other testing, in the event, further testing is desired by Budd Rude, John B. O'Malley of Denver, or some other competent Denver custom assayer, in whom interested parties have confidence.

A commitment takes me to Mendocino County, California for the period August 22, through 25. F or that time I can be reached at the Holiday Motel, Ukiah, Ualifornia.

Yours very truly,

David McCount Evans.

cc: Mr. Arthur M. Krill,
Mr. T. C. Vest

Values in dollars for file samples listed above are summarized as follows:

Analyst and Date	Opal I and II and other Contact Group Samples: Rink	Howard	Others	East Cambridge Area: Howard
R (10-11-61)	$ 44.33*			
R (2-17-62)	132.07 *			
R (5- 7-62)	54.60*			
R (3-30-62)	84.63*			
R (3-30-62)	117.20*			
R (2-16-66)		$77.35**		$40.95
R (6-17-66)		10.50**		
R (6-17-66)		63.00**		
S (4-28-66)		12.25 X ~~8.75~~***		
S (4-28 66)		XX nil ~~Nil 3.50~~	~~salt~~ - 6 1.75	
S (5-16-66)		14.00 X ~~12.25~~***	3.50	
S (5-16-66)		14.00 1.75 XX ~~1.50~~ 3.50 XX ***		
P (6-21-66)		0.74X	~~$0.74*~~	
P (6-10-66)		1.80*		
P (6-20-66)		1.80*		
P (6-20-66)		Tr		
P (7-12-66)		51.83*		
P (7- 12-66)		10.21*		
		65.64	13.13	
O (7-31-66)		21.21**		
O (7-31-66)		19.74**		

* Gold and silver

** Gold only as recovered.

***~~Gold recovered and gold in tails.~~

Methods of treatment to get the above results have been reported in communications, as follows. The following, too, is for the record, and not with any intent to recommend any method:

"R" Nevada Analytical Service, by Mr. Budd Rude, reporting:

"To 2 1/2 assay ton of ore-add 500 milliliters of distilled water and 10 grams of potassium cyanide for 5 grams of potassium hydroxide.

Stir 48 hours (can be turned off at night) while heating (not boiling) adding 2 milliliters of hydrogen peroxide at 15 minute intervals until reaction ceases.

Filter-boil-add 5 grams of 20 mesh zinc and stir 4 hours.

Cool-filter-dissolve the excess zinc with one to one nitric acid. Ignite the filter paper and weigh residue of gold ".

"S" J. Franklin Schrumm (concl) with reference to samples dated May 16, 1966:

Method------

1,000 ml H_2O stirred with glass tirrer
plus 20 g. KCN
plus 10 G. KOH
plus 2. A.T. Pulverized ore as received.

Mix heated to 85 degrees, plus or minus 2 degrees. 100 ml H_2O_2 was added in 4 ml increments in 15 minute intervals (end point when last two additions resulted in strong surface foaming), when peroxide addition was complete. Heat was shut off and stirring continued for a total of 48 hours.

The pulp was filtered cold and the cake washed with 100 ml of 1% KCN solution. The combined solutions were boiled for 5 minutes to strip free oxygen and the solution adjusted to 1,000 ml.

Precipitation------

To the cool solution with stirring was added 20 ml of a 10% solution of lead acetate followed by the addition of 1 g. of zinc dust. With continued stirring under the hood the mix was heated to 85 degrees and 90 ml of 1/1 HCL added slowly, to make the mix sufficiently acid to dissolve the zinc. When the zinc was completely dissolved, the preciptated lead containing the values was washed with hot water on a filter and paper and solids reduced in a crucible with flux and the resulting lead button cupelled.

and by alternative methods, as follows:

Method which produced $1.75 in Au

200 ml of water
0.6 G. KCN
50 ml of H_2O_2
2 A.T. of ore (same ore as above)

Forthese alternatives leach and precipitation proceedures were repeated as above.

method which produced $3.50 in AU

200 ml of water
0.6 g KCN, pH dropped to 9 at end of 24 hours. o.6 g ~~plus~~ KCN plus 0.6 g. KOH added
50 ml H_2O_2
2 A.T. ore.

note: for Schrumm samples of April 28 fire assays of mixed tailings gave $3.50 gold and 0.05 oz per ton silver. Tnis has been added to recovered values for that date for total.

"S", J. Franklin Schrumm, with reference to samples dated April 28, 1966:

Material milled to 100 mesh.

F = C° × 9/5 + 32

" Method

1/2 gal + or 2 qts.

— 2000 ml H_2O stirred with glass stirrer.
plus 40 G. KCN
plus 20 G. KOH
Plus 4 A.T. (116.8 G.) of minus 100 mesh ore.

= 185 F.

10 Deciliters = 1000 ML = 1.06 liquid quarts

= 1 LITER.

Stirring continued while heating to 85 degrees C. 162 ml of H_2O_2 was added in 8 Ml increments at 15 minute intervals with hot water added periodically to make up evaporation loss. When the peroxide addition was complete, the heat was shut off and stirring continued for a total of 48 hours.

Schumm Procedure

The pulp was filtered through a Whatman #42 paper, and to get a 'bright' filtrate it was passed through the cake a second time, and cake was the washed with 200 Ml of a 1% KCN solution. The combined pregnant solution and wash were adjusted to 2,000 Ml and split to form two 1000 portions. (before adjustment the siltion was boiled for 5 minutes.)

Precipitation-----

Solution 4051-A

To the cool solution with stirring was added 20 Ml of a 10% solution of lead acetate, followed by 1 G of zinc dust.

With continued stirring the mix was heated to boiling and 90 ml of 1/1 HCL (under the hood) added slowly, to make the solution sufficiently acid to dissolve the zinc. When the zinc was completely dissolved the lead containing the values was separated on the filter and paper and solids reduced in a crucible with flux to produce a button which was cuppeled.

The bead removed from the cupel weighed 0.60 mg. Flattened and parted the weight was 0.50 mg. Since the split solution represented 2 assay tons, the weight divided by 2 equals ¼ oz. of gold and 0.05 oz of silver.

Solution 4051-B

S olution 4051-B was heated with stirring to 90 degrees C. and 20 grams of 20 mesh granulated zinc added. The heat was shut off and stirring continued for 4 hours. The cool mix was washed by decantation and the zinc dissolved by adding 100 ml of 25% nitiric acid. 500 ml of water was added and the solids removed by filtratuon.

The paper was ashed. No gold was found.

CONSIDERING POSSIBILITY THAT RUDE- HAS NOT PARTED- PRECIOUS METALS, & ENDED UP, BY CONSIDERING ALL PRECIPITATE GOLD —

& USING- MORSE - values - FOR Au & Ag

3733

.1. STANDARD- FIRE ASSAY -

Au — 0.0025
Ag .47
0.4725 x $35 = $16.53

.2. ~~Rate~~ Fairbanks ~~INMAN~~ - Au 0.0175
natrum. Ag ~~.079~~ .79
Value assumed .8075 X 35 $28.00

.3. Standard Cyanide -

Au - 0.0145
Ag 0.31
.3245 X 35 $11.36

.4. Amalgamation
Au - 0.02
Ag - 0.179
0.81 x 35 ie: $28.35

4 | 84.24 ($21.06 ACR.
4.

3734

0.0189
.25
.2689 x 35 - 9.41

0.02
0.59
.61 x 35 21.35

81
35
405
243
.5

For the record, earlier sampling is included with this analysis. Information is from the files of the Carson City office of the Ken R. White C ompany and is listed below.

Summarized by date, sampler, location and analyst we have:

Date	Sampler	Description	Analyst
10-12-61	Rink	500' cut from hill NW of shaft; see Evans 3729	R
2-17-62	Rink	Wall at Opal Shaft; see Evans 3730	R
5- 7-62	Rink	C ontact West No.1 pit; see Evans 3727	R
3-30-62	Rink	No icentification	R
3-30-62	Rink	No identification	R
2-16-66	Howard	Opal area	R
2-16-66	Howard	East Cambridge	R
4-28-66	Howard	4051-A; O$_p$al #I	S
4-28-66	Howard	4051-B; Opal #1	S
5-16-66	Howard	4054; head sample Opal II	S
5-16-66	Howard	4052; head sample Opal II	S
5-16-66	Howard	4055; HEAD tail sample Opal II - using reduced Chgs	S
5-26-66	Howard	4053 HEAD ~~tail~~ sample O al II dte	S
6-21-66	McAlester		P
6-10-66	Howard		P
6-20-66	Howard	Report on this group so	P
6-20-66	Howard	confusing that values can-	P
7-12-66	Howard	not be correlated with	P
7-12-66	Howard	descriptions	P
7-31-66	Howard	Opal Area	O
7-31-66	Howard	Opal Area	O

Analysys

"R" is by Nevada Analytical Service of Carson City by "special cyanidation process".

"O" by John B. O'Malley, consulting metallurgist, of Denver, using amalgamation.

"P" is by Polaris Laboratories Inc. of Phoenix, Arizonay using "special wet chemical method for precious metals"

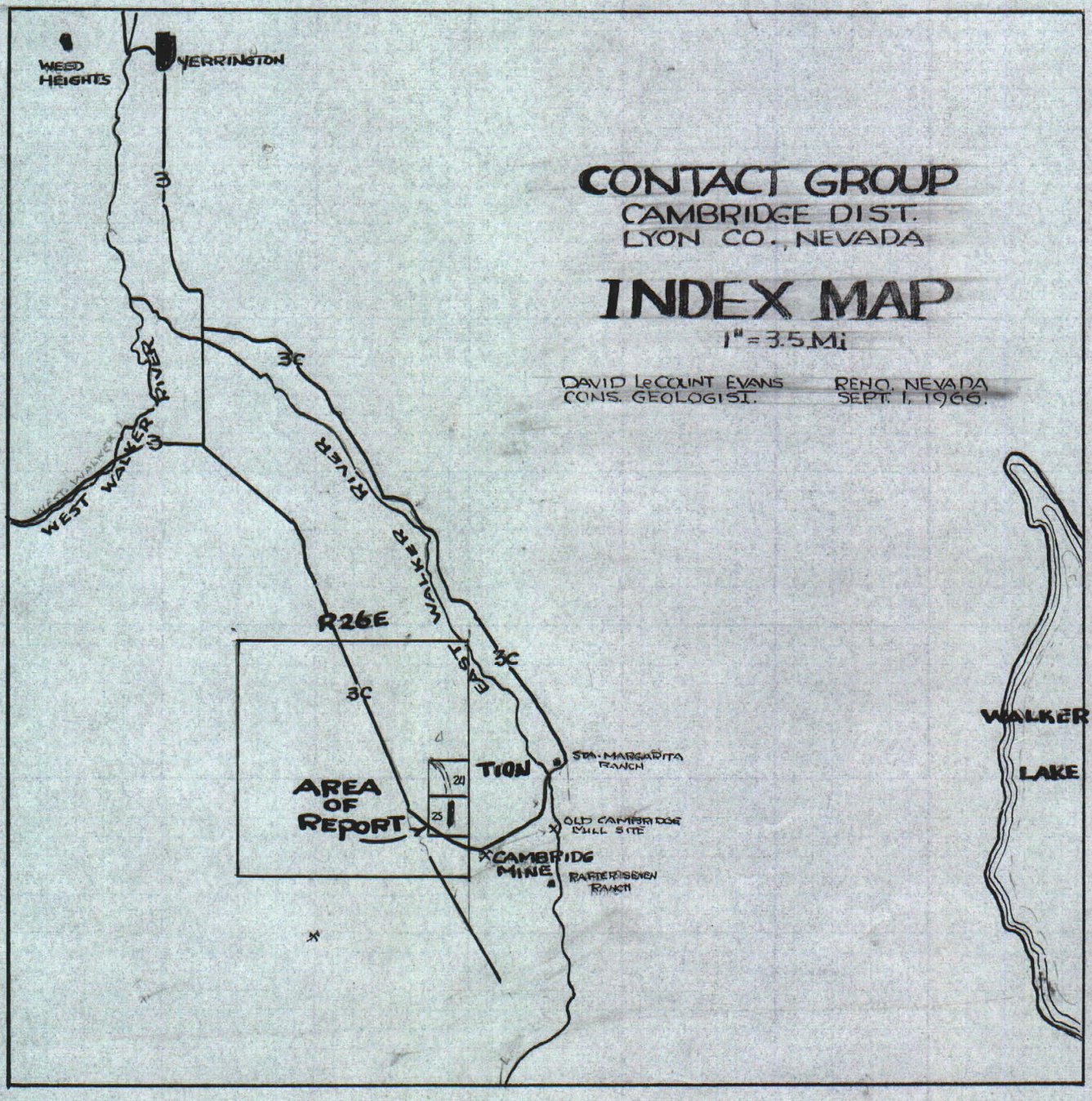
"S" is by Franklin Schrumm (D.Sc) consultant in metallurgy, Reno, Nevada , using wet method.

0.0145 × 35
51
0524 5

18.36
35) 649.12 (16.37 ave
3
19
18
1 1
9

HAVE RUDE-SAVE HIS ~~RECOVERED~~
BUTTONS-TO TAKE TO SACRAMENTO.
(IN SAC.- SEE THAT HE "PARTS"
them AGAIN.

A



CONTACT GROUP
CAMBRIDGE DIST.
LYON CO., NEVADA

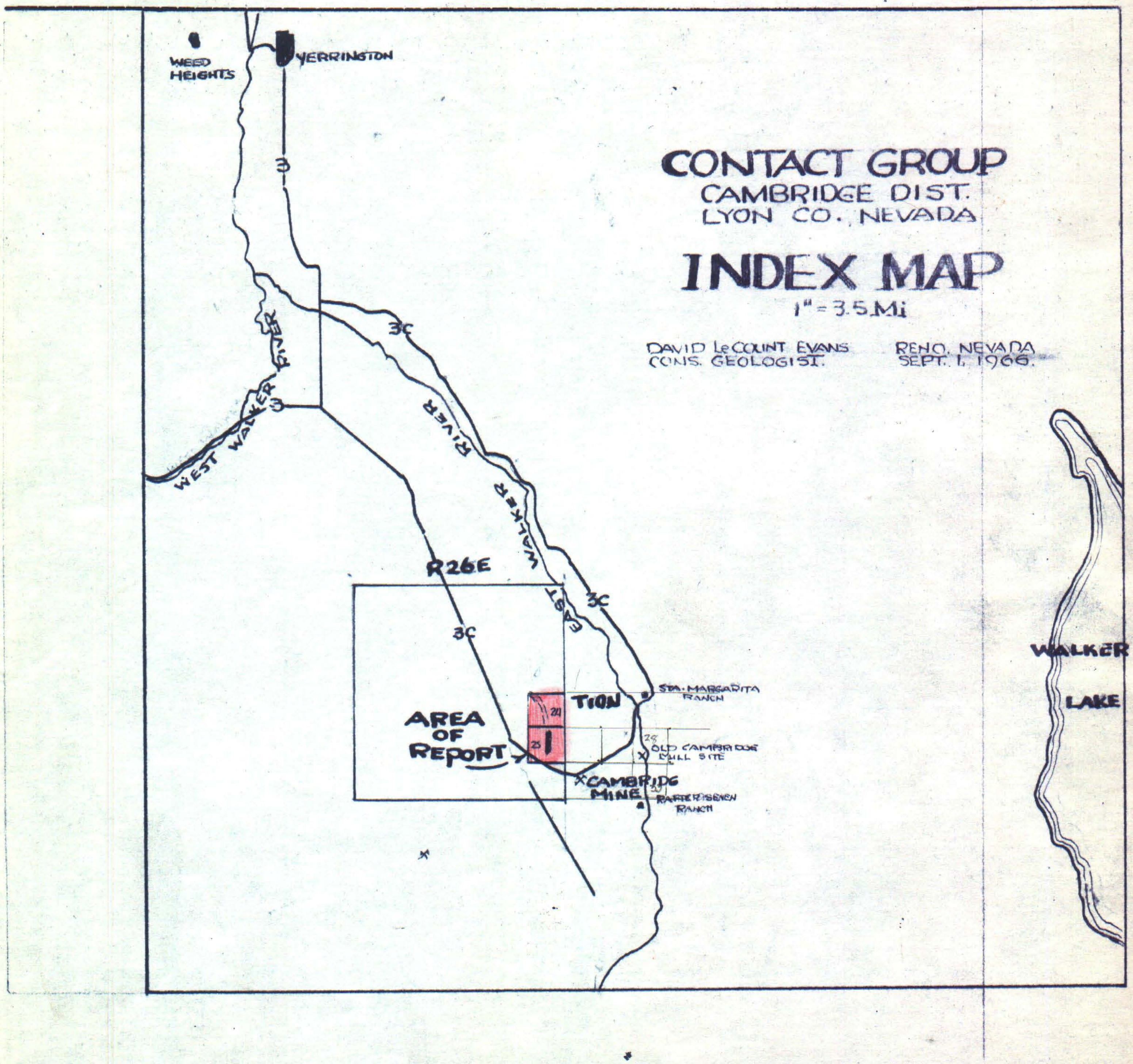
INDEX MAP

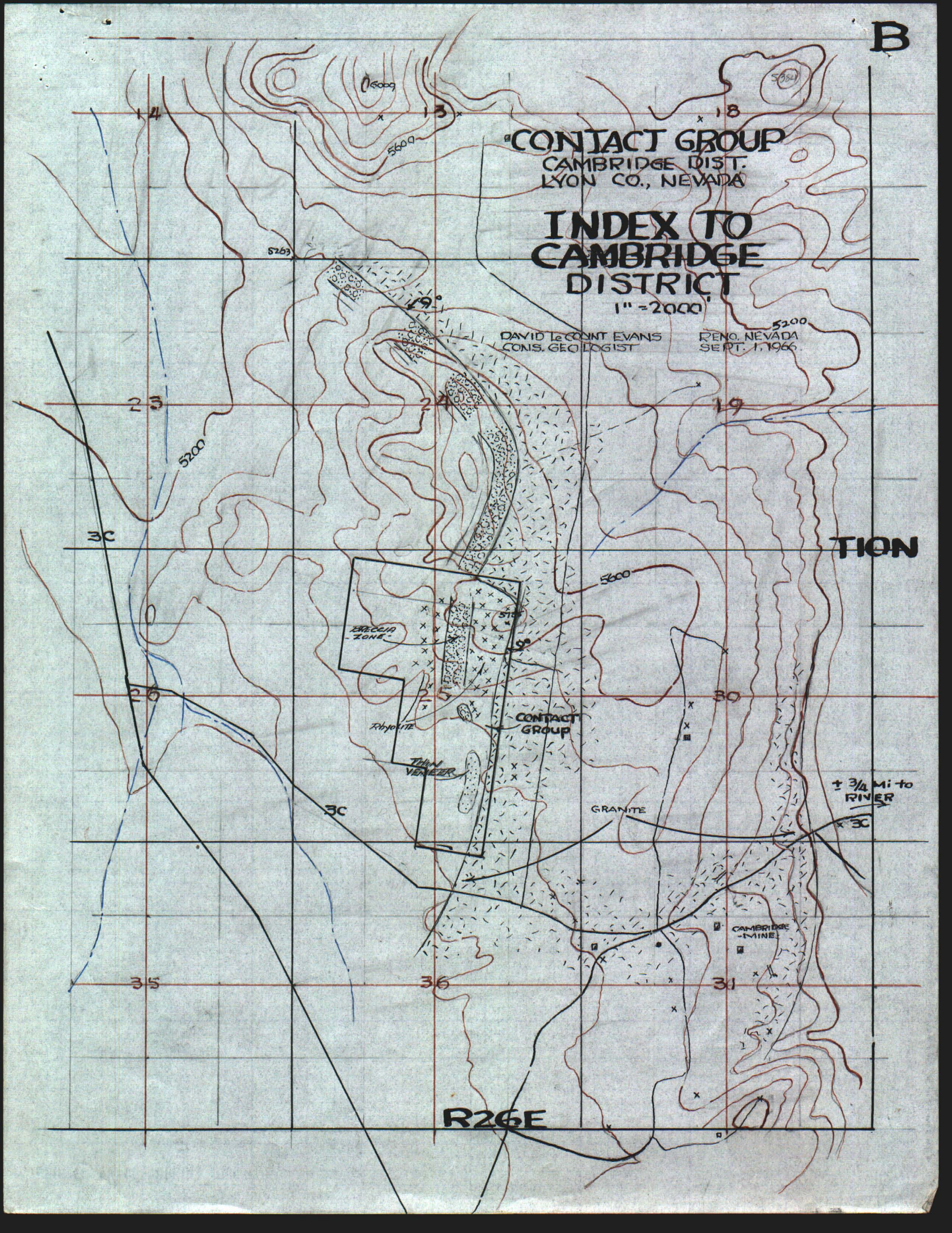
1" = 3.5 Mi

DAVID LeCOUNT EVANS — RENO, NEVADA
CONS. GEOLOGIST. — SEPT. 1, 1966.

Place with 847 — original

A




B
CONTACT GROUP
CAMBRIDGE DIST.
LYON CO., NEVADA
INDEX TO CAMBRIDGE DISTRICT
1" = 2000'
DAVID LeCOUNT EVANS
CONS. GEOLOGIST
RENO, NEVADA
SEPT. 1, 1966
TION
R26E
BRECCIA ZONE
CONTACT GROUP
Rhyolite
THIN VENEER
GRANITE
CAMBRIDGE MINE
± 3/4 Mi to RIVER
5600
5200
5263
5384
14
13
18
23
24
19
30
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36
31
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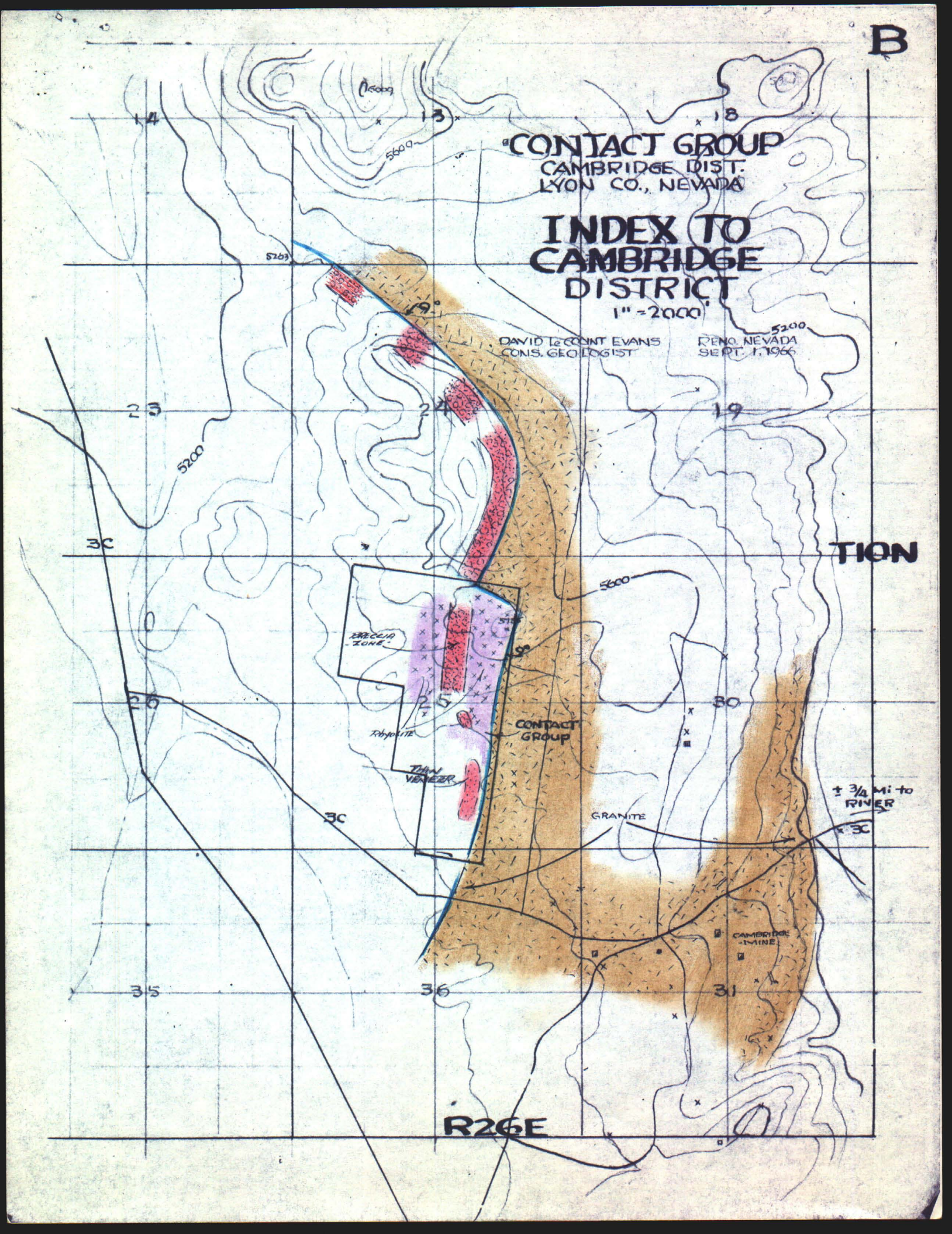
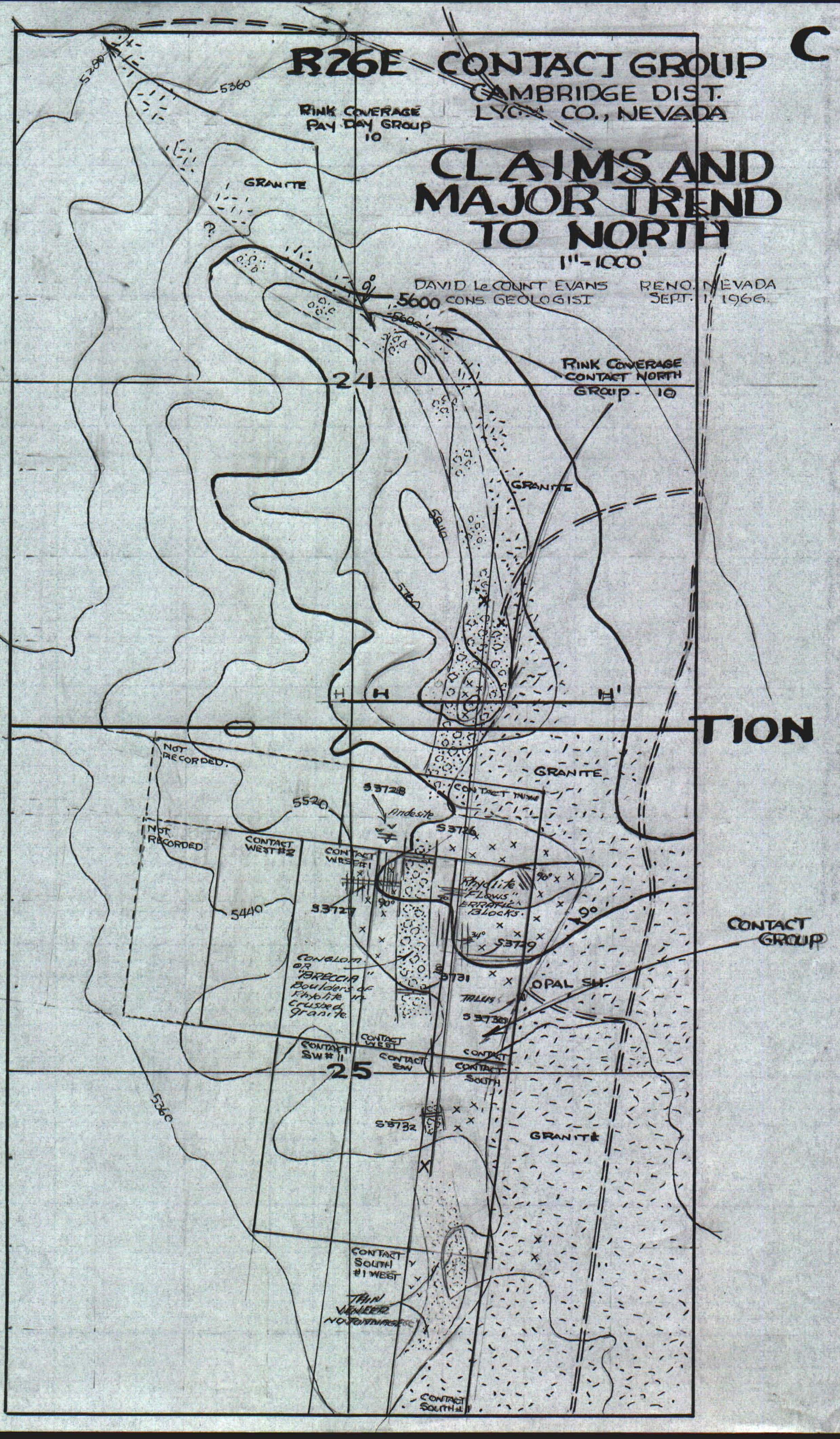
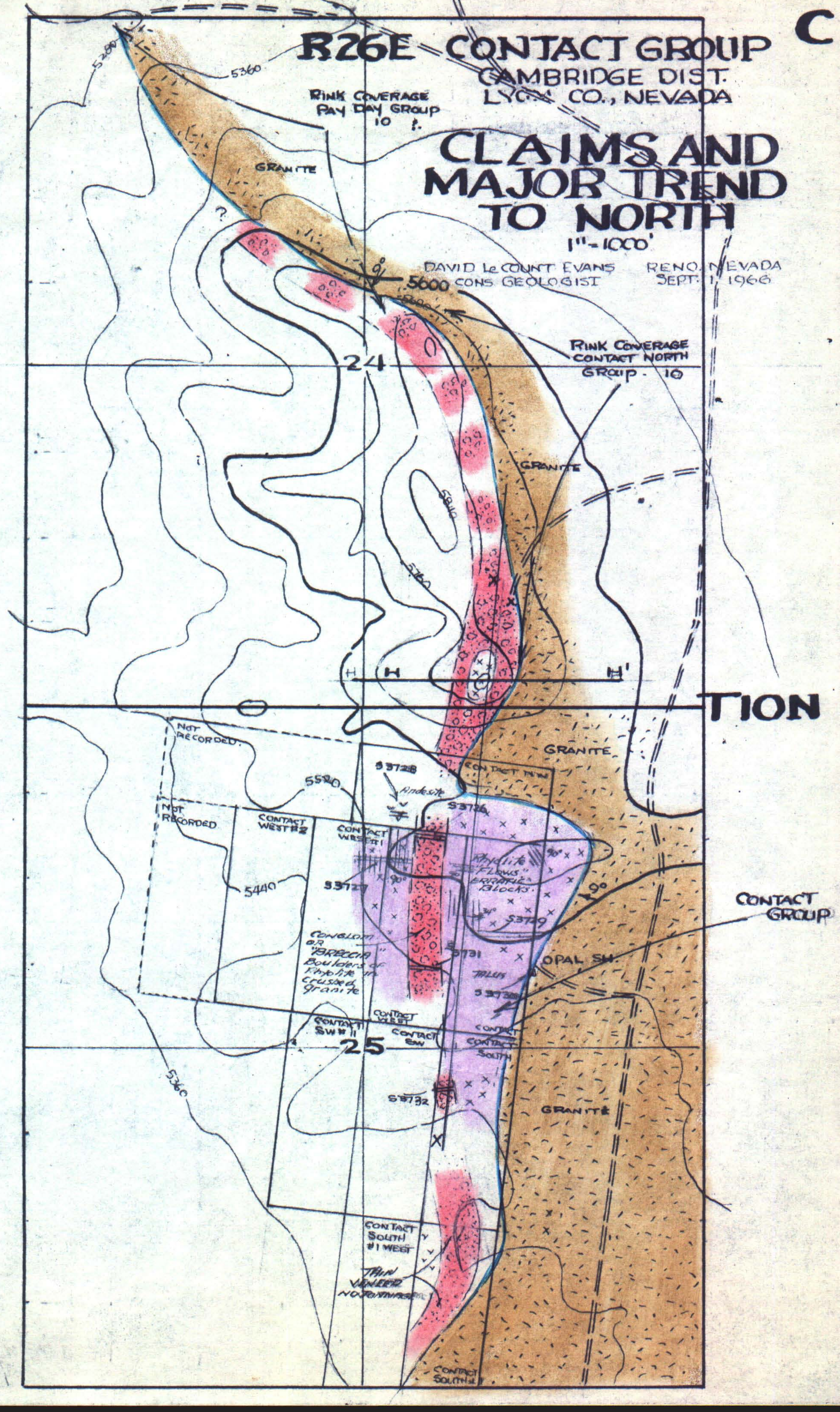
3C


B
CONTACT GROUP
CAMBRIDGE DIST.
LYON CO., NEVADA
INDEX TO CAMBRIDGE DISTRICT
1" = 2000'
DAVID LeCOUNT EVANS
CONS. GEOLOGIST
RENO, NEVADA
SEPT. 1, 1966
5200
5600
5283
19°
18°
CONTACT GROUP
RHYOLITE
TUFF VENEER
GRANITE
± 3/4 Mi to RIVER
CAMBRIDGE MINE
TION
R26E


C
R26E CONTACT GROUP
CAMBRIDGE DIST.
CO., NEVADA
CLAIMS AND MAJOR TREND TO NORTH
1"=1000'
DAVID LeCOUNT EVANS
CONS. GEOLOGIST
RENO, NEVADA
SEPT. 1, 1966
RINK COVERAGE
PAY DAY GROUP
10
RINK COVERAGE
CONTACT NORTH
GROUP - 10
GRANITE
5360
5600
24
5560
5440
H
H'
TION
NOT RECORDED
5520
CONTACT TWIN
CONTACT WEST #2
CONTACT WEST #1
Andesite
Rhyolite "Flows" Erratic Blocks
CONTACT GROUP
OPAL SH.
TALUS
CONTACT WEST
CONTACT SW #11
CONTACT SW
CONTACT SOUTH
25
Conglom. or "Breccia" Boulders of Rhyolite in Crushed Granite
CONTACT SOUTH #1 WEST
THIN VENEER
CONTACT SOUTH #1

C



R26E CONTACT GROUP
CAMBRIDGE DIST.
LYON CO., NEVADA
CLAIMS AND MAJOR TREND TO NORTH
1" = 1000'
DAVID LeCOUNT EVANS
CONS GEOLOGIST
RENO, NEVADA
SEPT. 1, 1966
RINK COVERAGE PAY DAY GROUP 10
RINK COVERAGE CONTACT NORTH GROUP 10
GRANITE
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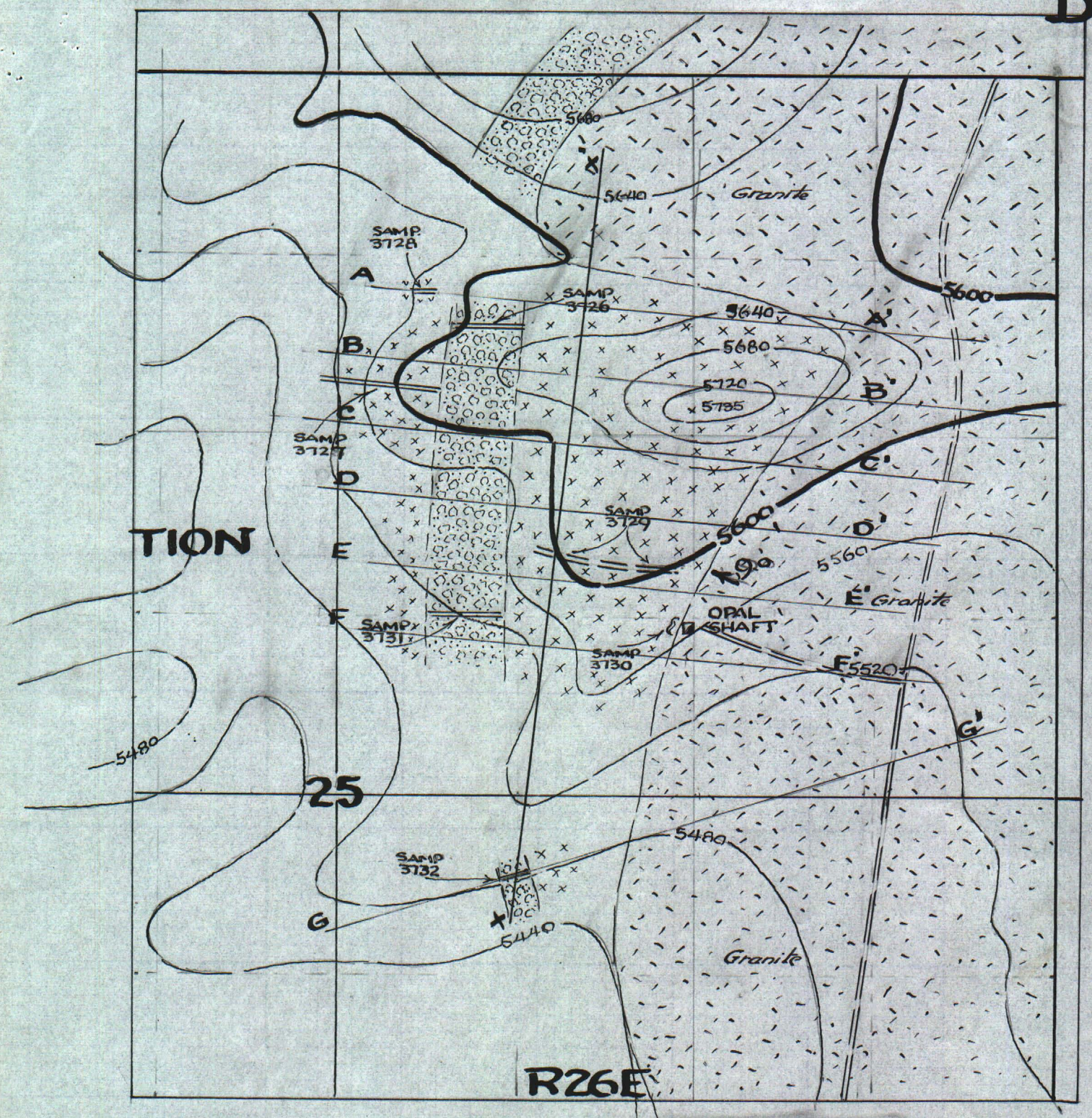
TION
NOT RECORDED
CONTACT WEST #2
CONTACT WEST #1
S3728
S3726
S3727
S3729
S3731
S3732
Andesite
Rhyolite Flows Erratic Blocks
Conglom or "Breccia" Boulders of Rhyolite in Crushed Granite
CONTACT GROUP
OPAL SH.
TALUS
CONTACT WEST
CONTACT SW #1
CONTACT SW
CONTACT SOUTH
CONTACT SOUTH #1 WEST
THIN VENEER NO CONTINUATION
CONTACT SOUTH #1



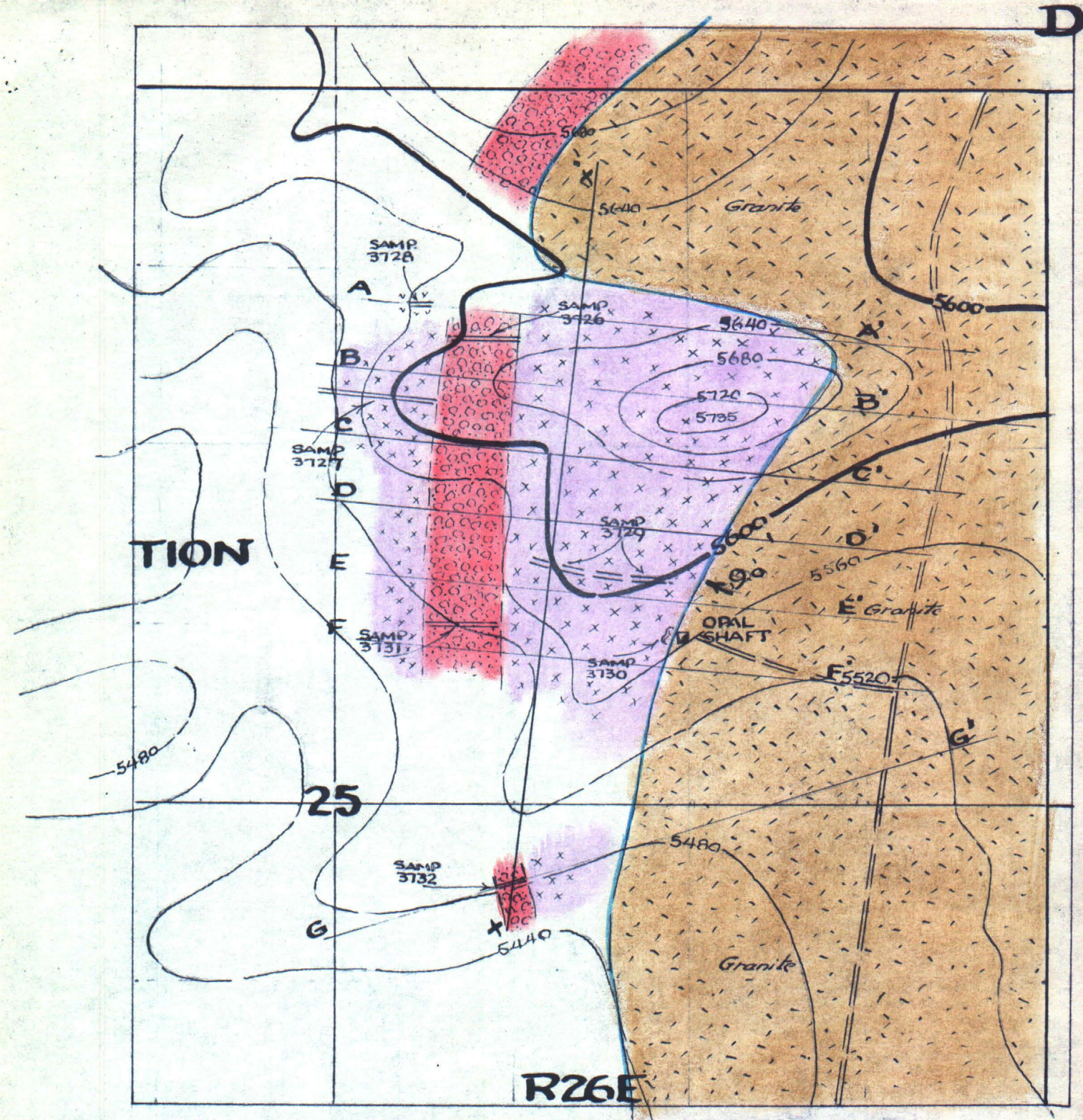
CONTACT GROUP

CAMBRIDGE DIST.
LYON CO., NEVADA

SAMPLES & REC. GEOLOGY

1"=500'

DAVID LE COUNT EVANS CONS. GEOLOGIST
RENO, NEVADA
SEPT. 1, 1966.



CONTACT GROUP

CAMBRIDGE DIST.
LYON CO., NEVADA

SAMPLES & REC. GEOLOGY

1"=500'

DAVID Le COUNT EVANS CONS. GEOLOGIST RENO, NEVADA
SEPT. 1, 1966

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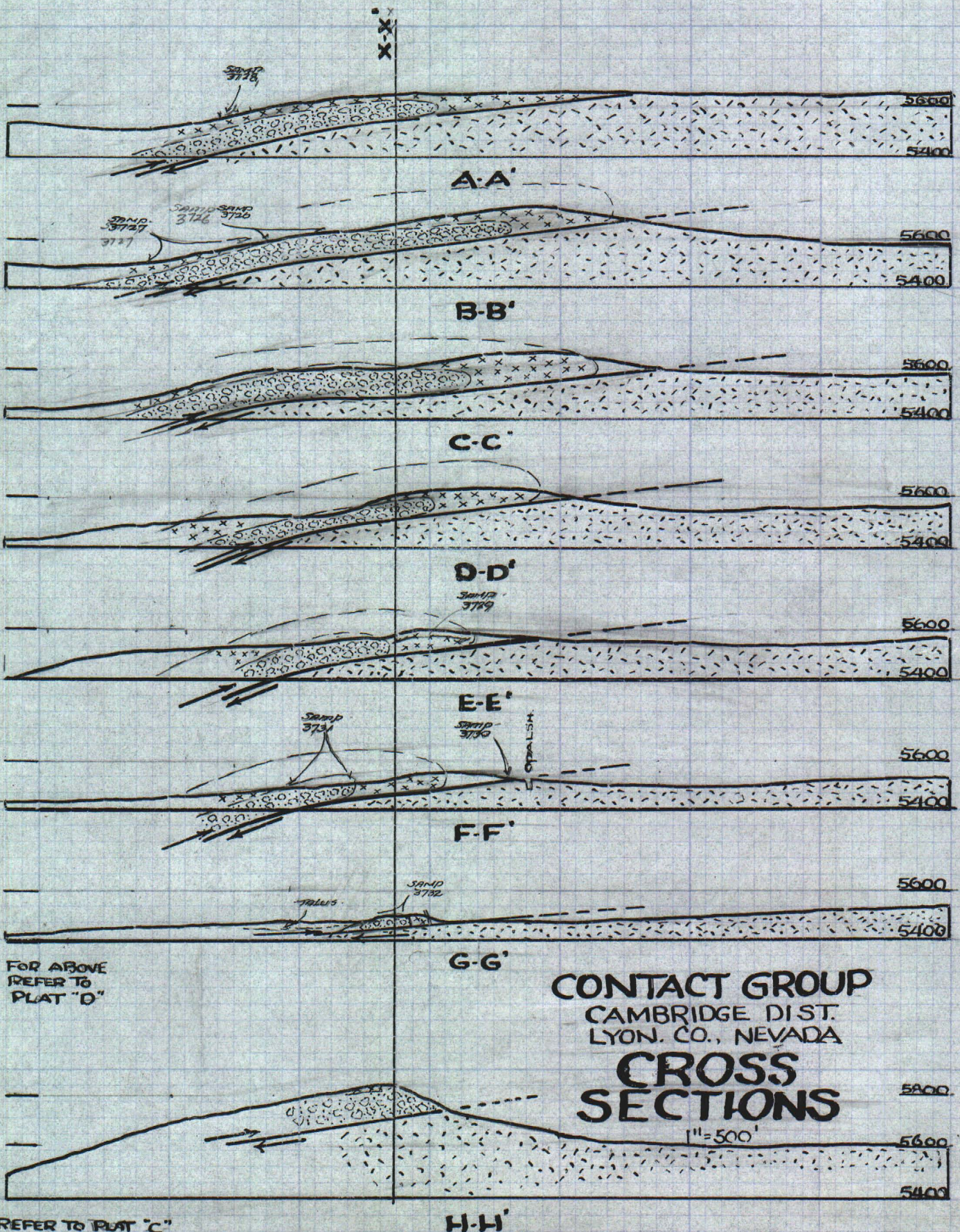


FOR ABOVE REFER TO PLAT "D"

REFER TO PLAT "C"

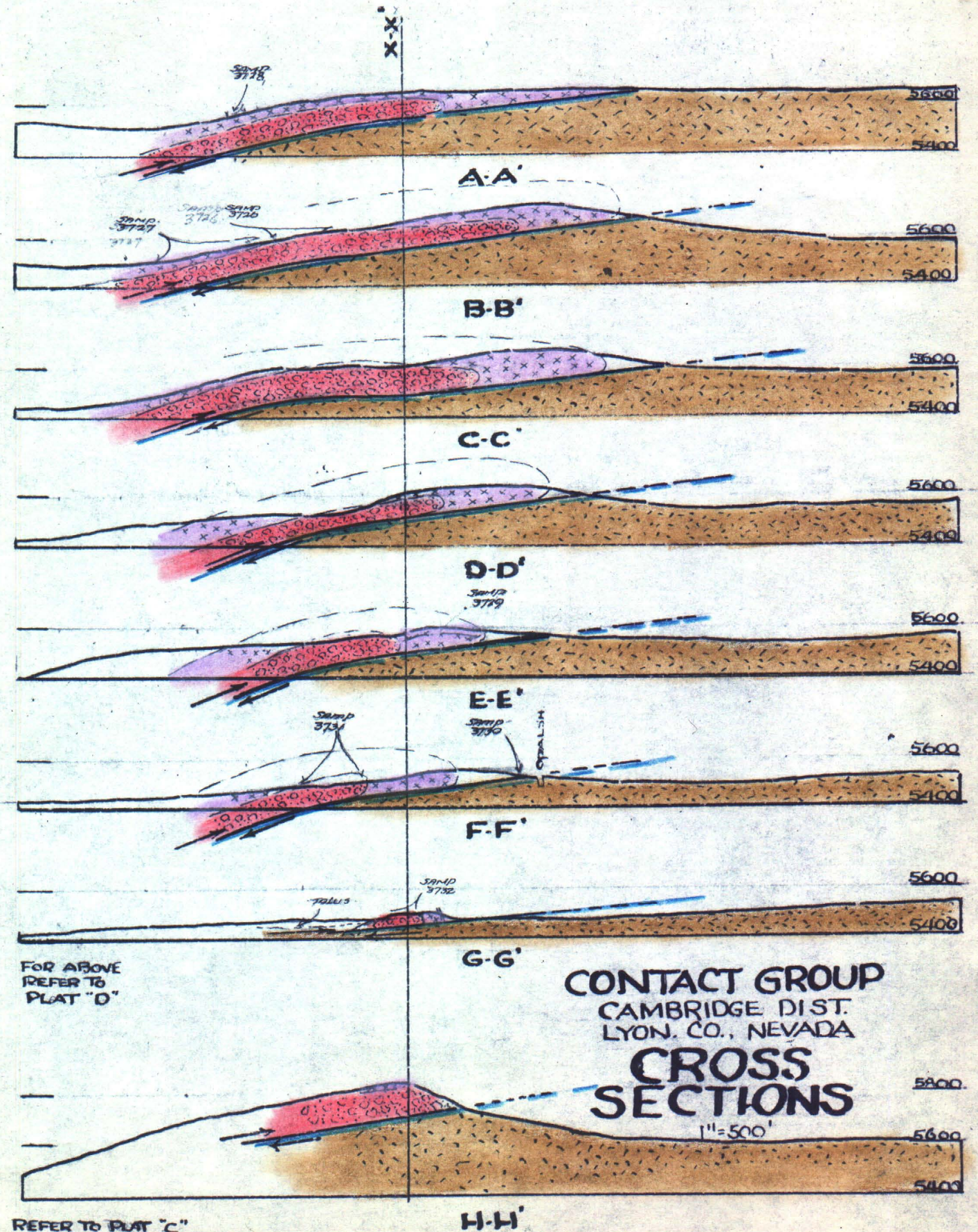
CONTACT GROUP
CAMBRIDGE DIST.
LYON. CO., NEVADA

CROSS SECTIONS

1"=500'

DAVID LeCOUNT EVANS
CONS. GEOLOGIST
RENO, NEVADA
SEPT. 1, 1966

E



FOR ABOVE REFER TO PLAT "D"

REFER TO PLAT "C"

CONTACT GROUP
CAMBRIDGE DIST.
LYON. CO., NEVADA

CROSS SECTIONS

1"=500'

DAVID LeCOUNT EVANS
CONS. GEOLOGIST
RENO, NEVADA
SEPT. 1, 1966

PINE GROVE HILLS QUADRANGLE
NEVADA—LYON CO.
15 MINUTE SERIES (TOPOGRAPHIC)

(HAWTHORNE 1:250 000)