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 John E. Kinnison 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.

AMERICAN SMELTING AND REFINING COMPANY
Tucson Arizona

April 7, 1958

MEMORANDUM TO T. A. SNEDDEN

EAST PIMA SHAFT
Sampling

This refers to the conversation with you and Mr. Hall April 3, and to Mr. Hall's memoranda of April 2 to Mr. Waidler and April 3 to you.

Although the shaft and raises are not being driven specifically to check the accuracy of drill hole samples, it seems that certain samples of bedrock should be obtained as the shaft is being sunk.

In addition to piling the material from each shaft round separately, as Mr. Hall's letter instructs, a grab should be taken from each bucket and combined into a sample weighing, say, 50 or 75 pounds and representing the round. These samples will be sent to the East Pima lab where they will be crushed, split and pulverized. A jar of crushed reject and duplicate pulps will be prepared. One pulp will go to SilverBell for assay. The jar of reject and one pulp will be stored in the lab.

A vertical, continuous channel should be cut extending eventually from the top of bedrock to the bottom of the shaft. The position of this cut should be near the drill hole, but otherwise Mr. Waidler should select whatever location would be convenient, providing the same location is used all the way.

The channel should be segmented into individual samples as follows: a sample should end at each set, and the interval between sets should be made up of at least two samples. If the rock is relatively uniform in grade and hardness, the two samples should be of equal length (2' 10", I believe); but the lengths should be varied, according to Mr. Waidler's judgment, to match any distinct rock changes either in grade or hardness. In some instances it may be best to subdivide the set interval into three samples.

These samples should be cut under Mr. Waidler's supervision because it can then be done whenever the wall is exposed and the cutting can best be fitted to the work cycle. Of course, Mr. Kinnison can assist in measuring the channels in advance whenever he is on hand to do so; but he has other work to do and cannot necessarily be present every time samples should be cut.

The channel should be cut approximately 2" deep and 4" wide; but this need not be precise, except that the channel cross-section should be reasonably uniform within an individual sample.

Mr. Kinnison will show the position of each channel sample and each round (approximately) on his geological sketches.

The channel samples will be processed at the lab in the same manner as the grab samples.

Original Signed By
K. Richard

KENYON RICHARD

cc: ACHall
WCWaidler
JEKinnison
JHCourtright

AMERICAN SMELTING AND REFINING COMPANY
Tucson Arizona

March 4, 1958

Mr. L. H. Hart
Chief Geologist
New York Office

EAST PIMA INTERSPACED DRILL HOLES

Dear Sir:

Enclosed are three sections, 10.0W, 12.50W, and 34.50N, which show the assay results of the recent interspaced drill holes to date.

In terms of tons of ore these holes have approximately balanced adjacent holes. However, the ore lenses have not all appeared in their predicted positions. These discrepancies can be accounted for by local changes in structural interpretations, which are of only minor consequence in terms of the overall structural pattern. However, some of these discrepancies were quite unexpected.

As you know, this extreme eastern part of the ore body was the most difficult to decipher structurally and stratigraphically. I suppose we will just have to accept the fact that the details of structure and ore distribution cannot be worked out precisely in advance in that area. However, there is sound reason to expect that the total amount of copper now calculated in that area will be recovered during mining.

In addition to holes currently drilling, we plan to drill locations P-8 and P-9; also we plan to drill one hole at coordinate 31.50N and 7.50W. This location is critical insofar as the pit's main haulage system is concerned. It seems to be needed on the theory that if some presently unknown cross structure exists in this southeast corner of the ore body, it could materially influence the pit design. In other words, with this hole we will be buying some insurance against an error in our interpretations.

Yours very truly,

Original Signed By
K. Richard

KENYON RICHARD

Enclosures: 3 sections
KR/ds
cc: WOSchubel - w/o Encl.
bcc: JHCourtright)
JCKinnison) w/o Encl.

May 25, 1959

MISSION PROJECT
Underground Samples

U-13

	Core	Sludge
135.3 - 138.5	.03	
138.5 - 143.1	.01	
143.1 - 147.0	.03	
147.0 - 150.4	.02	
150.4 - 154.6	Tr.	
154.6 - 158.3	.02	.06
158.3 - 163.1	.02	.07
163.1 - 165.0	.02	.06

X-264

728.1 - 737.7	.15
737.7 - 747.4	.19
747.4 - 760.6	.18

		% Cu
24 SP	323.0 - 327.5	.40
25 SP	327.5 - 332.9	.81
26 SP	332.9 - 337.5	.91
27 SP	337.5 - 342.0	.60

cc: ACHall
KRichard
WCWaidler
WOSchubel
SCFall
JEKinnison

June 22, 1959

MISSION PROJECT
UNDERGROUND SAMPLES

DDH X-264

	% Cu
1026.0 - 1035.4	.20
1035.4 - 1044.7	.01
1044.7 - 1056.3	.01
1056.3 - 1066.5	.02
1066.5 - 1081.7	.07
1081.7 - 1091.6	.01
1091.6 - 1105.9	.02
1105.9 - 1116.0	.04

Mission		% Cu
5 SP	225.7 - 232.0	.55
9 SP	248.9 - 254.8	.66
10 SP	254.8 - 259.8	.69
11 SP	259.8 - 264.9	.84
12 SP	264.9 - 270.3	.94

NOTE - Check assays have revealed that the following assay should be changed as follows:

DDH X-264

G-101	922.3 - 927.0	.95

cc: ACHall
KRichard
WCWeidler
WOSchubel
SCFall
JEKinnison

June 18, 1959

MISSION PROJECT
UNDERGROUND SAMPLES

		% Cu
6 SP	232.0 - 237.0	.67
7 SP	237.0 - 243.3	.73
8 SP	243.3 - 248.9	.61

DDH X-264

1116.0 - 1133.8	.02
1133.8 - 1143.6	.04
1143.6 - 1153.4	.01
1153.4 - 1163.2	.02
1163.2 - 1178.3	.02

	Cu	NS Cu
*TF-16	.68	.16
TF-17	.51	.20

*Tucson - Field -- for JEKinnison

cc: ACHall
KRichard
WCWaidler
WOSchubel
SCFall
JEKinnison

June 9, 1959

MISSION PROJECT
UNDERGROUND SAMPLES

DDH X-264

	% Cu
955.5 - 962.4	.01
962.4 - 972.7	.03
972.7 - 981.2	.07
981.2 - 995.2	.02
995.2 - 1009.2	.02
1009.2 - 1015.9	.02
1015.9 - 1026.0	.02

Mission

		% Cu
13 SP	270.3 - 275.4	.44
14 SP	275.4 - 280.6	.52
15 SP	280.6 - 284.3	.55
16 SP	284.3 - 289.1	.58

	Ag	Cu	Pb	Zn
*G-100	10.6	2.63	18.7	27.0

*Sam Fall - Silver Bell

cc: ACHall
KRichard
WCWaidler
WOSchubel
SCFall
JEKinnison

June 3, 1959

MISSION PROJECT
UNDERGROUND SAMPLES

		% Cu
17 SP	289.1 - 293.5	.43
18 SP	293.5 - 298.2	.38
19 SP	298.2 - 302.5	.37
20 SP	302.5 - 307.8	.62
21 SP	307.8 - 312.9	.37
22 SP	312.9 - 318.1	.21
23 SP	318.1 - 323.0	.23

Hole X-264

	% Cu	MoS2
828.9 - 839.4	.14	.034
839.4 - 852.3	.17	.016
852.3 - 863.3	.14	
863.3 - 871.6	.12	
871.6 - 881.0	.07	
881.0 - 883.6	.54	
883.6 - 894.2	.17	
894.2 - 904.9	.21	
904.9 - 911.5	.06	
911.5 - 922.3	.19	
922.3 - 927.0	1.10	.95 Re-run
927.0 - 942.1	.02	
942.1 - 955.5	.02	

cc: ACHall
KRichard
WCWaidler
WOSchubel
SCFall
JEKinnison

May 29, 1959

MISSION PROJECT
UNDERGROUND SAMPLES

X-264

	% Cu
760.6 - 770.6	.12
770.6 - 778.1	.19
778.1 - 790.7	.24
790.7 - 803.0	.25
803.0 - 813.2	.18
813.2 - 824.5	.13
824.5 - 828.9	.16

cc: ACHall
KRichard
WCWaidler
WOSchubel
SCFull
JEKinnison

May 20, 1959

MISSION PROJECT
Underground Samples

X-264	Core
657.9 - 666.8	.12
666.8 - 679.3	.18
679.3 - 685.4	.14
685.4 - 695.4	.26
695.4 - 704.2	.20
704.2 - 714.3	.11
714.3 - 720.5	.16
720.5 - 728.1	.16

U-13	Sludge
147.0 - 150.4	.03
150.4 - 154.6	.04

		% Cu	Grab
28 SP	342.0 - 346.6	1.12	1.17
29 SP	346.6 - 351.0	1.77	1.71
30 SP	351.0 - 355.5	1.74	1.30
31 SP	355.5 - 359.9	1.88	1.99

cc: ACHall
KRichard
WCWaidler
WOSchubel
SCFall
JEKinnison

May 19, 1959

MISSION PROJECT
Underground Samples

X-264

	Core
602.8 - 611.0	.21
611.0 - 623.7	.21
623.7 - 635.9	.25
635.9 - 645.9	.21
645.9 - 657.9	.15

U-13

	Core	Sludge
127.6 - 131.1	.01	.04
131.1 - 135.3	.01	.02
135.3 - 138.5		.02
138.5 - 143.1		.04
143.1 - 147.0		.05

Shaft Sample No.	Depth	% Cu	Corresponding Grab assay
32 SP	359.9 - 364.8	2.07	2.16
33 SP	364.8 - 369.6	2.49	2.54
34 SP	369.6 - 374.7	3.17	3.11

cc: ACHall
KRichard
WCWaidler
WOSchubel
SCFall
JEKinnison

May 14, 1959

MISSION PROJECT
Underground Samples

DDH U-13

	Core	Sludge
114.2 - 118.9	.03	
118.9 - 124.2	.03	.06
124.2 - 127.6	.03	.08

SX-264

504.7 - 516.4	.20
524.9 - 536.9	.26
557.5 - 568.4	.24
568.4 - 578.1	.24

cc: ACHall
KRichard
WCWaidler
WOSchubel
SCFall
JEKinnison

May 12, 1959

MISSION PROJECT
UNDERGROUND SAMPLES

DDH U-13

	Core	Sludge
76.2 - 80.5	.02	
80.5 - 84.0	.02	
84.0 - 88.1	.03	
88.1 - 91.5	.02	.05
91.5 - 96.5	.02	.04
96.5 - 99.9	.02	.03
99.9 - 103.3	.02	.03
103.3 - 106.6	.01	.04
106.6 - 110.8	.01	.04
110.8 - 114.2	.01	.03
114.2 - 118.9		.09

X-264

516.4 - 524.9	.20
536.9 - 547.3	.24
547.3 - 557.5	.21
578.1 - 591.6	.15
591.6 - 602.8	.09

cc: ACBall
KRichard
WCWaidler
WOSchubel
SCFall
JEKinnison

May 6, 1959

MISSION PROJECT
UNDERGROUND SAMPLES

DDH X-264

	% Cu
452.1 - 461.7	.22
461.7 - 471.1	.19
471.1 - 484.3	.27
484.3 - 493.4	.22
493.4 - 504.7	.29

DDH U-13

	% Cu Core	% Cu Sludge
68.5 - 72.8	.03	.05
72.8 - 76.2	.03	.04
76.2 - 80.5		.05
80.5 - 84.0		.07
84.0 - 88.1		.05

cc: ACHall
KRichard
WCWaidler
WOSchubel
SCFall
JEKinnison

May 5, 1959

MISSION PROJECT
UNDERGROUND SAMPLES

DDH U-13

	% Cu Core	% Cu Sludge
48.0 - 52.5		.22
52.5 - 56.0		.14
56.0 - 60.9	.03	.13
60.9 - 65.1	.03	.07
65.1 - 68.5	.04	.04

cc: ACHall
KRichard
WCWaidler
WOSchubel
SCFall
JEKinnison

May 1, 1959

MISSION PROJECT
UNDERGROUND SAMPLES

Muck	Cu %	Interval	Bulk	Cu %
		Raise 4350 - 1500W		
R 40 GS	0.43	49.2 - 54.6	R 40 SPA-1	0.38
		Raise 3750N - 1500W		
R 35 GS	0.25	40.9 - 45.1	R 35 SPA-1	0.22
R 37 GS	0.22	45.1 - 50.9	R 37 SPA-1	0.20
R 39 GS	0.28	50.9 - 56.5	R 39 SPA-1	0.26

cc: ACHall
KRichard
WCWaidler
BOSchubel
SCFAll
JEKinnison

April 29, 1959

MISSION PROJECT
UNDERGROUND SAMPLES

DDH U-13

	% Cu Core	% Cu Sludge
28.9 - 32.0	1.64	
32.0 - 35.3	.45	.63
35.3 - 38.8	.09	.11
38.8 - 40.4	.01	.12
40.4 - 44.2	.03	
44.2 - 48.0	.02	.26
48.0 - 52.5	.01	
52.5 - 56.0	.01	

cc: ACHall
KERichard
WCWaidler
WOSchubel
SCFall
JEKinnison

April 27, 1959

MISSION PROJECT
UNDERGROUND SAMPLES

Muck	Cu %	Interval	Bulk	Cu %
		Raise 4350N - 1500W		
R 34 GS	.86	34.8 - 39.2	R 34 SPA-1	.86
R 36 GS	.57	39.2 - 44.0	R 36 SPA-1	.67
R 38 GS	.68	44.0 - 49.2	R 38 SPA-1	.67
		29.7 - 34.8	R 32 SPA-1	.68
		Raise 3750N - 1500W		
R 31 GS	.22	30.2 - 35.4	R 31 SPA-1	.22
R 33 GS	.24	35.4 - 40.9	R 33 SPA-1	.26

DDH U-13

	Cu % Core	Cu % Sludge
0.0 - 1.0	1.29	-
1.0 - 4.5	.23	.69
4.5 - 9.6	.56	.52
9.6 - 14.2	.49	.83
14.2 - 17.8	1.00	1.15
17.8 - 24.2	.84	.75
24.2 - 28.9	.46	.38
28.9 - 32.0		1.24

NOTE - Check assays have revealed that the following assays should be changed as follows:

DDH U-9

55.1 - 57.2	2.91
57.2 - 59.4	8.58

cc: ACHall
KERichard
WCWaidler
WOSchubel
SCFall
JEKinnison

April 21, 1959

MISSION PROJECT
UNDERGROUND SAMPLES

Muck	Cu %	Interval	Bulk	Cu %
		Raise 3750N - 1500W		
R 29 GS	.17	24.6 - 30.2	R 29 SPA-1	.17
		Raise 4350N - 1500W		
R 32 GS	.72	29.7 - 34.8		

DDH U-12 - Core

0.0 - 3.7	.42
3.7 - 7.0	.59
7.0 - 11.6	.08
11.6 - 15.0	.43

cc: ACHall
KERichard
WCWaidler
WOSchubel
SCFall
JEKinnison

April 20, 1959

MISSION PROJECT
Underground Samples

Muck	Cu %	Interval	Bulk	Cu %
		Raise 3750N - 1500W		
R 27 GS	.13	18.7 - 24.6	R 27 SPA-1	.15
		Raise 4350N - 1500W		
R 30 GS	2.49	24.5 - 29.7	R 30 SPA-1	2.15

U-11 Core

26.5 - 31.7	.45
31.7 - 34.2	.72
34.2 - 35.8	2.07
35.8 - 39.0	1.50
39.0 - 42.6	1.09
42.6 - 45.9	3.06
45.9 - 47.7	4.63
47.7 - 51.9	23.78
51.9 - 56.5	3.08
56.5 - 59.8	6.64
59.8 - 64.0	7.31
64.0 - 69.0	10.99
69.0 - 71.8	11.90
71.8 - 74.6	6.62
74.6 - 76.5	4.86
76.5 - 81.5	15.25
81.5 - 84.3	13.26

cc: ACHall
KERichard
WCWaidler
WOSchubel
SCFall
JEKinnison

April 15, 1959

MISSION PROJECT
UNDERGROUND SAMPLES

Raise 1500W - 3750N

Muck	Interval	Cu %	Bulk Sample Plant	Interval	Cu %
R 23GS	9.0 - 13.9	.14			
R 25GS	13.9 - 18.7	.08	R-25SP(A1)	13.9 - 18.7	.09

Raise 4350N - 1500W

R 28GS	18.6 - 24.5	1.09	R-28SP(A1)	18.6 - 24.5	1.26

DDH U-11

	Core	Sludge
1.6 - 2.5	.50	
2.5 - 5.9	.53	.53
5.9 - 10.3	.23	.30
10.3 - 15.7	.29	
15.7 - 19.1	3.76	
19.1 - 23.5	.42	
23.5 - 26.5	.20	
45.9 - 51.9		10.57
51.9 - 56.5		8.43
56.5 - 59.8		9.28

DDH U-10

0.0 - 5.3	1.36
5.3 - 10.3	1.43
10.3 - 14.5	.58

cc: ACHall
KRichard
WCWaidler
WOSchubel
SCFall
JEKinnison

April 13, 1959

MISSION PROJECT
UNDERGROUND SAMPLES

Raise 1500W - 3750N

Muck	Interval	Cu %	Bulk Sample Plant	Interval	Cu %
R 21GS	0.0 - 9.0	.54	R-21SP(A1)	0.0 - 9.0	.57
			R-23SP(A1)	9.0 - 13.9	.13

Raise 4350N - 1500W

			R-22SP(A1)	0.0 - 9.0	.73
R 24GS	9.0 - 13.7	1.29	R-24SP(A1)	9.0 - 13.7	1.57
R 26GS	13.7 - 18.6	1.16	R-26SP(A1)	13.7 - 18.6	1.51

DDH U-9

	Core	Sludge	
42.9 - 48.2	.68		
48.2 - 49.8	.35	.78	
49.8 - 53.7	.89		
53.7 - 55.1	.14	1.42	2.91 } Dup pulps
55.1 - 57.2	1.20		
57.2 - 59.4	.85	4.10	8.58 } Dup pulps
59.4 - 61.2	.73		

DDH U-11

10.3 - 15.7	.35
15.7 - 19.1	2.22
19.1 - 23.5	1.05
23.5 - 26.5	.61
26.5 - 31.7	.52
31.7 - 35.8	1.46
35.8 - 42.6	1.27
42.6 - 45.9	2.59

cc: ACBall
KRichard
WCWaidler
WOSchubel
SCFall
JEKinnison

April 6, 1959

MISSION PROJECT
UNDERGROUND SAMPLES

Raise 4200 - 1450W

Muck	Interval	Cu %	Bulk Sample Plant	Interval	Cu %
R 19GS	48.8 - 52.7	1.23	R-19SP(A1)	48.8 - 52.7	1.37

Raise 4350 - 1500W

R 22GS	0.0 - 9.0	.67

1500N - Drift South	Cu
Slab Round at Face	.32

DDH U-9

	%Cu	Sludge
23.7 - 27.9	.96	
27.9 - 31.2	.65	.89
31.2 - 35.7	.23	.33
35.7 - 38.7	.55	.31
38.7 - 42.9	1.02	.87
42.9 - 48.2		1.26

cc: ACHall
KRichard
WCWaidler
WOSchubel
SCFall
JEKinnison

April 3, 1959

MISSION PROJECT
UNDERGROUND SAMPLES

Raise 4200 - 1450W

Muck	Interval	Cu %	Bulk Sample Plant	Interval	Cu %
R 17GS	42.9 - 48.8	1.64	R-15SP(Al)	37.3 - 42.9	2.65
			R-17SP(Al)	42.9 - 48.8	1.73

Raise 4350 - 1250W

R 18GS	40.9 - 47.2	2.07	R-18SP(Al)	40.9 - 47.2	2.09
R 20GS	47.2 - 51.8	1.94	R-20SP(Al)	47.2 - 51.8	2.29

		Cu	NS.Cu
Duplicate sludge pulp DDH U-7, 57.5-61.1	G-92	3.31	-
	HP-14	Nil	Nil

			Cu
Raise 4350N - 1375W	351	D. D. Station	.61
4200N - Drift East	396DC	100.0 - 106.7	.66

DDH U-9	Cu	Sludge
1.7 - 5.5	.40	.82
5.5 - 9.8	3.33	2.21
9.8 - 15.7	6.16	3.74
15.7 - 18.7	.60	.68
18.7 - 23.7	1.35	1.52
23.7 - 27.9		1.13

DDH U-8		
25.4 - 32.4	.09	
32.4 - 37.2	.74	
37.2 - 44.0	.04	
44.0 - 48.1	.02	
48.1 - 51.4	.03	
51.4 - 54.4	.01	.01
54.4 - 60.1	.28	.32
60.1 - 65.1	.43	.39
65.1 - 67.5	.41)	.29
67.5 - 70.1	.04)	

cc: ACHall
KERichard
WCWaidler
WOSchubel
SCFall
JEKinnison

March 26, 1959

MISSION PROJECT
UNDERGROUND SAMPLES

DDH U-8	Core	Sludge
13.4 - 17.2	Nil	
17.2 - 22.1	.01	.06
22.1 - 25.4	.42	.47
25.4 - 32.4		.11
32.4 - 37.2		.91
37.2 - 44.0		.05
44.0 - 48.1		.03
48.1 - 51.4		.06

Raise 4200 - 1450W

Muck	Interval	Cu %	Bulk Sample Plant	Interval	Cu %
R 13GS	32.6 - 37.3	.17	R-13SP(A1)	32.6- 37.3	.24
R 15GS	37.3 - 42.9	1.87			

Raise 4350 - 1250W

	R 14GS	31.5 - 35.9	.88	R-14SP(A1)	31.5 - 35.9	.74
	R 16GS	35.9 - 40.9	.57	R-16SP(A1)	35.9 - 40.9	.41
Repeat -	R 8GS	17.7 - 21.5	3.53 (G-91)			

370-4200N Drift East

Channel

387DC	55 - 60	Nil
388DC	60 - 65	.01
389DC	65 - 70	Nil
390DC	70 - 75	Nil
391DC	75 - 80	Nil
392DC	80 - 85	.03
393DC	85 - 90	.08
394DC	90 - 95	.74
395DC	95 - 100	1.07

cc: ACHall
KHRichard
WCHaidler
WOSchubel
SCFall
JHKinnison

March 20, 1959

MISSION PROJECT
UNDERGROUND SAMPLES

370-4200N Drift East

	Channel	
376DC	0.0 - 5.0	.83
377DC	5.0 - 10.0	.04
378DC	10.0 - 15.0	.01
379DC	15.0 - 20.0	.02
380DC	20.0 - 25.0	.03
381DC	25.0 - 30.0	.02
382DC	30.0 - 35.0	.02
383DC	35.0 - 40.0	.02
384DC	40.0 - 45.0	.01
385DC	45.0 - 50.0	.62
386DC	50.0 - 55.0	.48

370-4200N Drift West

	Channel	
363DC	60.0 - 65.0	4.47
364DC	65.0 - 70.0	1.47
365DC	70.0 - 75.0	1.23
366DC	75.0 - 80.0	4.86
367DC	80.0 - 85.0	1.63
368DC	85.0 - 90.0	.46
369DC	90.0 - 95.0	.08
370DC	95.0 -102.0	.05

DDH U-8	Core	Sludge
0.0 - 1.3	.11	
1.3 - 5.9	.11	.08
5.9 - 9.6	.11	.06
9.6 - 13.4	.04	.03
13.4 - 17.2		.06

Raise 4200 - 1450W

Muck	Interval	Cu %	Bulk Sample Plant	Interval	Cu %
R 7GS	18.6 - 23.9	1.08	R-5-SP-A-1	14.0 - 18.6	3.42
R 9GS	23.9 - 28.1	1.37	R-7-SP-A-1	18.6 - 23.9	1.11
R 11GS	28.1 - 32.6	.91	R-9-SP-A-1	23.9 - 28.1	1.38
			R-11-SP-A-1	28.1 - 32.6	1.00

Raise 4350 - 1250W

R 8GS	17.7 - 21.5	1.44	R-6-SP-A-1	13.5 - 17.7	3.23
R 10GS	21.5 - 26.9	5.41	R-8-SP-A-1	17.7 - 21.5	3.97
R 12GS	26.9 - 31.5	6.38	*R-8-SP-A-1	17.7 - 21.5	3.96
			R-10-SP-A-1	21.5 - 26.9	5.46
			R-12-SP-A-1	26.9 - 31.5	6.68

*Repeat

cc: ACHall
KERichard
WCWaidler
WOSchubel
SCFall
JEKinnison

March 19, 1959

MISSION PROJECT
UNDERGROUND SAMPLES

DDH U-5	Core	Sludge
2.0 - 5.7	.28	.31
5.7 - 9.7	.52	.40
9.7 - 14.8	.92	
14.8 - 18.7	.38	

DDH U-6	Core	Sludge*
0.0 - 1.0	2.82	*No sludge for this hole.
1.0 - 6.2	.03	
6.2 - 10.5	.95	
10.5 - 13.7	10.13	

DDH U-7

	Core	Sludge
0.0 - 4.1	.49	.58
4.1 - 6.4	.03	.04
6.4 - 10.6	.02	.04
10.6 - 13.9	.06	.05
13.9 - 20.6	.07	.08
20.6 - 23.7	.04	.04
23.7 - 26.2	.05	.09
26.2 - 28.5	.09	.21
28.5 - 31.2	.15	

	Core	Sludge
31.2 - 33.9	.14	1.08
33.9 - 36.2	1.74	
36.2 - 38.5	.94	.57
38.5 - 43.6	.19	
43.6 - 46.8	.66	.69
46.8 - 49.2	.95	1.30
49.2 - 53.6	1.48	
53.6 - 57.5	.29	.33
57.5 - 61.1	1.35	3.33

Raise 4200 - 1450W

Muck	Interval	Cu %
R 1GS	0.0 - 9.0	1.66
R 3GS	9.0 - 14.0	6.40
R 5GS	14.0 - 18.6	3.05

Bulk Sample Plant	Interval	Cu %
R-1-SP-A-1	0.0 - 9.0	1.76
R-3-SP-A-1	9.0 - 14.0	6.92

Raise 4350 - 1250WR

R 2GS	0.0 - 8.5	2.46
R 4GS	8.5 - 13.5	2.71
R 6GS	13.5 - 17.7	2.97

R-2-SP-A-1	0.0 - 8.5	2.47
R-4-SP-A-1	8.5 - 13.5	2.97

cc: ACHall
KERichard
WCWaidler
WOSchubel
SCFall
JEKinnison

March 9, 1959

UNDERGROUND SAMPLES

WR 370 4200N

1-R 0 - 9 1.66

ER 370 4200N 4350

2-R 0 - 8.5 2.46

DDH U-5

	Core	Sludge
33.7 - 36.3	1.22	
36.3 - 40.7	.25	
40.7 - 43.9	.03	
43.9 - 47.3	Tr.	.17
47.3 - 52.4	.02	.14
52.4 - 56.4	Tr.	.15
56.4 - 61.2	Nil	.10

cc: ACHall
KERichard
WCWaidler
WOSchubel
SCFall
JHKinnison

March 4, 1959

UNDERGROUND SAMPLES

370 East Drift 4200N

348D D. D. Station .10

370 West Drift 4200N

350D D.D. Station .14

DDH U-5	Core	Sludge
9.7 - 14.8	.92	.79
14.8 - 18.7	.38	.44
18.7 - 21.2	.23	
21.2 - 25.3	1.18	1.06
25.3 - 26.0	9.02	
26.0 - 28.3	.15	
28.3 - 28.7	6.86	5.57
28.7 - 31.6	9.10	
31.6 - 33.7	1.96	6.91
33.7 - 40.7		2.13
40.7 - 43.9		.29
2.0 - 5.7	.28	.31
5.7 9.7	.52	.40

cc: ACHall
KERichard
WCWaidler
WOSchubel
SCFall
JEKinnison

February 27, 1959

UNDERGROUND SAMPLES

370 East Drift 4200N

336D	78.4 - 83.0	.40
338D	83.0 - 87.2	.18

	Cu
G-85	4.19

370 West Drift 4200N

335D	65.6 - 70.0	1.47
337D	70.0 - 73.7	1.78
339D	73.7 - 78.1	2.28
341D	78.1 - 82.7	1.89

	Channel	
351DC	0 - 5	.35
352DC	5 - 10	.09
353DC	10 - 15	.20
354DC	15 - 20	.20
355DC	20 - 25	1.68
356DC	25 - 30	.87
357DC	30 - 35	.95
358DC	35 - 40	2.10
359DC	40 - 45	2.86
360DC	45 - 50	.70
361DC	50 - 55	1.11
362DC	55 - 60	1.44

cc: ACHall
KENichard
WCWaidler
WGSchubel
SCFall
JEKinnison

February 20, 1959

UNDERGROUND SAMPLES

370 East Drift 4350N

299DC	240.3 - 245.3	.05
300DC	245.3 - 250.3	.02
301DC	250.3 - 255.3	.02
302DC	255.3 - 260.3	.01
303DC	260.3 - 265.3	.04
304DC	265.3 - 270.3	.01
305DC	270.3 - 276.0	.01

370 East Drift 4200N

328D	60.2 - 65.2	.55
330D	65.2 - 69.7	.21
332D	69.7 - 73.5	.17
334D	73.5 - 78.4	.22

cc: ACHall
KERichard
WOSchubel
SCFall
JEKinnison

February 19, 1959

UNDERGROUND SAMPLES

370 East Drift 4200W

324D	50.7 - 55.7	.15
326D	55.7 - 60.2	.36

370 West Drift 4200N

329D	51.3 - 56.0	2.11
331D	56.0 - 60.9	1.98
333D	60.9 - 65.6	3.14

370 East Drift 4350N

270DC	95 - 100	.96
271DC	100 - 105	1.08
272DC	105 - 110	.57
273DC	110 - 115	.62
274DC	115 - 120	.31
275DC	120 - 125	.90
276DC	125 - 130	3.09
277DC	130 - 135	.29
278DC	135 - 140	.45
279DC	140 - 145	.43
280DC	145 - 152.5	.77

Dike Sample -

281DC	152.5 - 155.3	.50
282DC	155.3 - 160.3	.59
283DC	160.3 - 165.3	.54
284DC	165.3 - 170.3	.87
285DC	170.3 - 175.3	.78
286DC	175.3 - 180.3	.81
287DC	180.3 - 185.3	1.40
288DC	185.3 - 190.3	.71
289DC	190.3 - 195.3	1.28
290DC	195.3 - 200.3	2.26
291DC	200.3 - 205.3	.74
292DC	205.3 - 210.3	1.23
293DC	210.3 - 215.3	5.81
294DC	215.3 - 220.3	19.95
295DC	220.3 - 225.3	4.89
296DC	225.3 - 230.3	5.24
297DC	230.3 - 235.3	.23
298DC	235.3 - 240.3	.05

cc: ACHall
KERichard
WCWaidler
WOSchubel
SCFall
JEKinnison

February 16, 1959

UNDERGROUND SAMPLES

370 West Drift 4200N

325D	43.7 - 47.7	1.64
327D	47.7 - 51.3	.70

370 North Drift 1375W

346DC	100.0 - 103.5	.57

370 North Drift 1450W

218DC	338.0 - 345.0	7.03

370 East Drift 4350N

251DC	0 - 5	2.10
252DC	5 - 10	.67
253DC	10 - 15	.37
254DC	15 - 20	1.39
255DC	20 - 25	1.43
256DC	25 - 30	..73
257DC	30 - 35	.47
258DC	35 - 40	.54
259DC	40 - 45	1.84
260DC	45 - 50	.30
261DC	50 - 55	.59
262DC	55 - 60	.27
263DC	60 - 65	.24
264DC	65 - 70	.36
265DC	70 - 75	.53
266DC	75 - 80	.32
267DC	80 - 85	.26
268DC	85 - 90	.44
269DC	90 - 95	.89

cc: ACHall
KERichard
WCWaidler
WOSchubel
SCFall
JEKinnison

February 13, 1959

UNDERGROUND SAMPLES

Muck Samples

370 East Drift 4200N

318D	34.5 - 40.7	.97
320D	40.7 - 45.8	.38
322D	45.8 - 50.7	.22

370 West Drift 4200N

319D	29.8 - 35.0	.82
321D	35.0 - 39.5	2.47
323D	39.5 - 43.7	3.11

cc: ACHall
KERichard
WCWaidler
WOSchubel
SCFall
JEKinnison

February 10, 1959

UNDERGROUND SAMPLES

Check Assays

G-37	1.25	G-49	.53	G-61	1.30	G-73	.49
G-38	1.48	G-50	.73	G-62	1.47	G-74	.70
G-39	1.39	G-51	1.16	G-63	1.19	G-75	1.17
G-40	2.45	G-52	1.93	G-64	2.19	G-76	1.86
G-41	3.24	G-53	.96	G-65	3.07	G-77	1.04
G-42	4.19	G-54	.81	G-66	3.79	G-78	.74
G-43	2.13	G-55	.32	G-67	2.09	G-79	.28
G-44	1.19	G-56	.07	G-68	1.16	G-80	.06
G-45	1.02	G-57	1.70	G-69	1.07	G-81	1.73
G-46	.67	G-58	1.00	G-70	..66	G-82	.93
G-47	.55	G-59	.01	G-71	.58	G-83	Tr.
G-48	.46	G-60	.06	G-72	.44	G-84	.07

U-4 Core

138.2 - 143.0	2.38
143.0 - 148.0	2.72
148.0 - 152.0	.11
152.0 - 154.1	.05
154.1 - 157.0	3.63
157.0 - 162.0	.99
162.0 - 165.1	1.74
165.1 - 168.2	10.67
168.2 - 173.0	4.40
173.0 - 178.1	8.50
178.1 - 180.8	8.05
180.8 - 183.1	.18
183.1 - 186.4	.48
186.4 - 196.0	.14

Surface Hole 190

1057.1 - 1067.7	Tr.
1081.8 - 1095.6	.01
1142.1 - 1152.1	Tr.
1194.1 - 1202.7	Tr.
1248.2 - 1256.1	.06
1281.7 - 1290.3	.01
1349.0 - 1359.0	.01
1389.1 - 1399.1	Tr.
1444.6 - 1454.7	Tr.
1488.7 - 1498.8	Tr.

4200N

Muck Samples

305D Slab Round END .08

370 E.D.

306D	0.6 - 6.0	.06
308D	6.0 - 12.0	.03
310D	12.0 - 18.3	.03
312D	18.3 - 24.0	.05
314D	24.0 - 28.8	.14
316D	28.8 - 34.5	1.06

370 W.D.

307D	0.0 - 5.5	.10
309D	5.5 - 11.0	.25
311D	11.0 - 15.3	.20
313D	15.3 - 20.3	.66
315D	20.3 - 25.0	.81
317D	25.0 - 29.8	1.46

cc: ACBall
KERichard
WCWaidler
WOSchubel
SCFall
JEKinnison

February 2, 1959

UNDERGROUND SAMPLES

U-4 CORE

108.2 - 112.2	1.65
112.2 - 117.0	4.45
117.0 - 122.0	3.55
122.0 - 124.5	3.40
124.5 - 129.5	3.71
129.5 - 131.4	1.93
131.4 - 133.0	.11
133.0 - 136.2	.08
136.2 - 138.2	.48

Channel Samples

North Drift - 1375W

		Cu
*304D	DDH Sta	1.17
338DC	60 - 65	.27
339DC	65 - 70	.25
340DC	70 - 75	.43
341DC	75 - 80	.86
342DC	80 - 85	.47
343DC	85 - 90	1.27
344DC	90 - 95	.60
345DC	95 -100	.53

*Bulk

North Drift - 1450W

		Cu
212DC	308 - 313	.46
213DC	313 - 318	.79
214DC	318 - 323	.88
215DC	323 - 328	.96
216DC	328 - 333	7.65
217DC	333 - 338	9.72

Bulk Samples

East Drift - 4350W

302D	265.4 - 271.0	.02
303D	271.0 - 276.0	.02

cc: ACHall
KERichard
WCWaidler
WOSchubel
SCFall
JEKinnison

January 30, 1959

UNDERGROUND SAMPLES

U-4 Sludge

157.0 - 162.0	1.16
162.0 - 168.2	8.01
168.2 - 173.0	4.59
173.0 - 178.1	12.48
178.1 - 183.1	4.83
183.1 - 186.4	1.23
186.4 - 190.0	.45

Channel Samples

370 North Drift, 1375W

		Cu
331DC	25 - 30	.68
332DC	30 - 35	.31
333DC	35 - 40	.33
334DC	40 - 45	.66
335DC	45 - 50	.10
336DC	50 - 55	.22
337DC	55 - 60	.25

East Drift, 4350N

297DC	240.0 - 245.0	.36
300DC	255.1 - 261.3	.03
301DC	261.3 - 265.9	.01

North Drift, 1450W

		Cu
196DC	228 - 233	.06
197DC	233 - 238	.68
198DC	238 - 243	.42
199DC	243 - 248	.08
200DC	248 - 253	.97
206DC	278 - 283	1.44
207DC	283 - 288	4.44
208DC	288 - 293	.89
209DC	293 - 298	.75
210DC	298 - 303	.95
211DC	303 - 308	.40

Surface DDH 190 Core

900.2 - 910.3	.01
945.0 - 955.3	.02
955.3 - 959.9	.05
959.9 - 968.4	.01
968.4 - 978.8	.02
1003.2 -1008.0	.04

cc: ACHall
KERichard
WCWaidler
WOSchubel
SCFall
JEKinnison

94 D .94
193 D 2.19
165 D 6.78

UNDERGROUND SAMPLES

January 23, 1959

U-4

Core

91.2 - 93.2	.71
93.2 - 96.0	.17
96.0 - 97.8	1.15
97.8 - 99.8	.89
99.8 - 102.3	1.39
102.3 - 105.1	2.82
105.1 - 108.2	.04

Sludge

133.0 - 136.2	.64
136.2 - 143.0	2.45
143.0 - 148.0	3.32
148.0 - 152.0	.35
152.0 - 157.0	1.80

North Drift

Channel

192DC	208.0 - 213.0	1.27
193DC	213.0 - 218.0	1.49
194DC	218.0 - 223.0	.02
195DC	223.0 - 228.0	.06
277D	75.0 - 79.0	.60
279D	79.0 - 84.8	.75
281D	84.8 - 88.8	.57
283D	88.8 - 93.5	.78
285D	93.5 - 98.5	.72
287D	98.5 - 103.5	.68

West Drift

225DC	0 - 5	.56
226DC	5 - 10	.48
227DC	10 - 15	.54
228DC	15 - 20	.73
229DC	20 - 25	1.18
230DC	25 - 30	1.89
231DC	30 - 35	.94
232DC	35 - 40	.80
233DC	40 - 45	.31
234DC	45 - 50	.07
235DC	50 - 55	.47
236DC	55 - 62	.89
291D	Slab Round	.83

East Drift

280D	178.1 - 183.3	1.43
282D	183.3 - 188.3	2.07
284D	188.3 - 193.6	1.21
286D	193.6 - 198.5	.99
288D	198.5 - 204.1	1.49
289D	204.1 - 208.1	4.73
290D	208.1 - 213.3	7.68
292D	213.3 - 218.8	11.84
293D	218.8 - 224.7	17.90
294D	224.7 - 229.0	2.77
295D	229.0 - 234.5	.96
296D	234.5 - 240.0	.23

Surface Hole 190

658.0 - 667.8	.01
712.2 - 722.2	.02
752.1 - 762.1	.01
809.6 - 819.6	Tr.
857.1 - 869.3	.01

cc: ACHall
KERichard
WCWaidler
WOSchubel
SCFall
JEKinnison

UNDERGROUND SAMPLES

January 21, 1959

U-4

	Cu Core	Cu Sludge
33.0 - 36.9	.96	
36.9 - 39.9	2.06	
39.9 - 45.0	1.73	
45.0 - 46.0	.28	
46.0 - 49.0	1.98	
49.0 - 53.4	.19	
53.4 - 56.0	1.54	
56.0 - 58.2	2.45	
58.2 - 62.9	.57	
62.9 - 67.4	.93	1.02
67.4 - 72.4	5.50	4.43
72.4 - 77.2	.72	1.16
77.2 - 82.1	.65	.96
82.1 - 87.9	.51	.65
87.9 - 91.2	1.05	1.18
91.2 - 97.8		.74
97.8 -102.3		1.19
102.3 -108.2		1.63
108.2 -112.2		2.26
112.2 -117.0		2.95
117.0 -122.0		3.30
122.0 -129.5		3.84
129.5 -133.0		1.75

cc: ACBall
KERichard
WCWaidler
WOSchubel
SCFall
JEKinnison

UNDERGROUND SAMPLES

January 16, 1959

U-4 Core

	Cu
2.9 - 6.5	.87
6.5 - 9.9	.76
9.9 - 14.3	4.40
14.3 - 18.1	.70
18.1 - 21.8	1.60
21.8 - 25.7	1.13
25.7 - 28.7	.65
28.7 - 33.0	1.28

U-4 Sludge

	Cu
9.9 - 14.3	3.69
14.3 - 18.1	.90
18.1 - 21.8	1.65
21.8 - 25.7	1.34
25.7 - 28.7	.78
28.7 - 33.0	1.26
33.0 - 36.9	.86
36.9 - 39.9	2.02
39.9 - 45.0	1.91
45.0 - 49.0	2.29
49.0 - 53.4	.66
53.4 - 58.2	1.29
58.2 - 62.9	.35

Core - DDH 190

	Cu
495.3 - 502.4	.02
502.4 - 512.4	.02
562.9 - 568.6	.01
601.6 - 606.7	.06

North Drift

275D	69.8 - 75.0	.40

East Drift

276D	168.3 - 172.8	.51
276D	172.8 - 178.1	.50

cc: ACHall
KERichard
WCWaidler
WOSchubel
SCFall
JEKinnison

UNDERGROUND SAMPLES

January 12, 1959

North Drift

		Cu
263D	41.5 - 46.3	.52
265D	46.3 - 50.6	.33
267D	50.6 - 55.4	.27
269D	55.4 - 59.8	.24
271D	59.8 - 65.4	.24
273D	65.4 - 69.8	.13

East Drift

		Cu
268D	148.6 - 153.2	.84
270D	153.2 - 158.3	1.72
272D	158.3 - 163.3	.78
274D	163.3 - 168.3	.69

U-3 Sludge

144.8 - 148.5	.03
148.5 - 151.6	.03
151.6 - 152.4	.04

U-4 Sludge

2.9 - 6.5	.52
6.5 - 9.9	1.43

SURFACE HOLE

E. P. DDH 190

	Core
292.1 - 296.9	.01
352.9 - 358.5	.01
397.3 - 402.0	.01
446.5 - 449.0	.01

cc: ACHall
KERichard
WCWaidler
WOSchubel
SCFall
JEKinnison

January 5, 1958

UNDERGROUND SAMPLES

	Cu		Cu
G-25	1.38	G-31	2.68
G-26	.98	G-32	2.75
G-27	1.94	G-33	.25
G-28	1.29	G-34	.45
G-29	2.99	G-35	4.39
G-30	2.28	G-36	7.97

East Drift

		Cu
254D	114.4 - 119.1	.59
256D	119.1 - 123.8	.62
258D	123.8 - 128.5	1.03
260D	128.5 - 133.7	1.29
262D	133.7 - 138.8	.72
264D	138.8 - 143.5	.63
266D	143.5 - 148.6	.77

North Drift

		Cu
255D	26.8 - 31.4	.51
259D	31.4 - 36.4	.46
261D	36.4 - 41.5	.53

West Drift

257D	58.0 - 62.0	.65

U-3

Core

	Cu
65.2 - 70.9	.05
70.9 - 74.9	.02
74.9 - 80.7	.03
80.7 - 83.7	.03
83.7 - 87.2	.03
87.2 - 90.9	.02
90.9 - 92.7	.02
92.7 - 95.9	.01
* 98.8 - 100.9	.07
100.9 - 105.9	.01
105.9 - 109.9	.03
109.9 - 113.0	.04
113.0 - 115.9	.01
115.9 - 117.9	.01
117.9 - 120.9	.02
120.9 - 125.9	.02
125.9 - 130.9	.03
130.9 - 134.9	Nil
134.9 - 138.0	.01
138.0 - 144.8	.03
144.8 - 148.5	.06
148.5 - 151.6	.03
151.6 - 152.4	.02
* 95.9 - 98.8	.02

Sludge

	Cu
87.2 - 90.9	.02
90.9 - 95.9	.01
95.9 - 100.9	.03
100.9 - 105.9	Tr
105.9 - 109.9	.04
109.9 - 113.0	.05
113.0 - 117.9	.05
117.9 - 120.9	.03
120.9 - 125.9	.03
125.9 - 130.9	.03
130.9 - 134.9	.02
134.9 - 138.0	.01
138.0 - 144.8	.04

cc: ACHall
KERichard
WCWaidler
WOSchubel
SCFall
JEKinnison

December 29, 1958

UNDERGROUND SAMPLES

Composites for Moly and Tungsten

	Moly	Tungsten
J-3	.073	.003
K-1	.027	.003
K-2	.019	.002

North Drift

		Cu
249D	11.2 - 16.2	.68
251D	16.2 - 21.4	.80
253D	21.4 - 26.8	.72

East Drift

		Cu
250D	104.4 - 109.4	.45
252D	109.4 - 114.4	.79

DDH U-3

Core

	Cu
54.2 - 57.4	.01
57.4 - 61.7	.02
61.7 - 65.2	.03

Sludge

	Cu
54.2 - 57.4	.04
57.4 - 61.7	.03
61.7 - 65.2	.03
65.2 - 70.9	Tr
70.9 - 74.9	Tr
74.9 - 80.7	.04
80.7 - 83.7	.03
83.7 - 87.2	.02

cc: ACHall
KERichard
WCWaidler
WOSchubel
SFall
JEKinnison

December 22, 1958

UNDERGROUND SAMPLES

U-3

	Cu Core		Cu Sludge
1.4 - 6.0	.07		
6.0 - 8.2	.02	)	.07
8.2 - 9.6	.05	)	
9.6 - 14.4	.02		.02
14.4 - 18.8	.06		.07
18.8 - 22.7	.03		.08
22.7 - 26.2	.03		.04
26.2 - 29.2	.03		.18
29.2 - 32.8	.05		.04
32.8 - 36.1	.01		.02
36.1 - 39.4	.02		.01
39.4 - 43.4	.03		.05
43.4 - 47.9	.01		.02
47.9 - 51.1	.03		.03
51.1 - 54.2	.01		.03

East Drift

236D	56.0 - 60.8	.87
238D	66.0 - 70.8	.43
240D	75.6 - 81.0	.33
242D	86.0 - 90.3	1.01
244D	90.3 - 95.5	1.27
246D	95.5 -100.0	.99
248D	100.0 -104.4	.66

East ~~West~~ Drift

237D	60.8 - 66.0	.44
239D	70.8 - 75.6	.34
241D	81.0 - 86.0	.35

370 North Drift 1375-W

243D	Slab Round	.45
245D	0.0 - 5.3	.42
247D	5.3 -11.2	.43

cc: ACHall
KERichard
WCWaidler
WOSchubel
SFall
JEKinnison

December 12, 1958

UNDERGROUND SAMPLES

East Drift			West Drift		
230D	42.3 - 46.5	.76	231D	44.5 - 48.8	.69
232D	46.5 - 52.0	.49	233D	48.8 - 53.6	.46
234D	52.0 - 56.0	.55	235D	53.6 - 58.0	.47

DDH No.U-2 - Sludge

	Cu
65.6 - 70.9	.55

cc: ACHall
KERichard
WCWaidler
WOSchubel
SFall
JEKinnison

December 11, 1958

UNDERGROUND SAMPLES

EAST DRIFT

		Cu
222D	25.0 - 29.0	.51
224D	29.0 - 33.5	.60
226D	33.5 - 37.7	.76
228D	37.7 - 42.3	1.13

WEST DRIFT

		Cu
221D	22.0 - 26.0	3.21
223D	26.0 - 30.0	.14
225D	30.0 - 35.5	2.18
227D	35.5 - 40.5	1.31
229D	40.5 - 44.5	1.03

4.19 by G-42 check assay (duplicate pulp)

DIAMOND DRILL HOLE U-2

Core

10.8 - 13.8	.30
13.8 - 19.0	.52
19.0 - 23.7	.71
23.7 - 29.0	.24
29.0 - 32.0	.34
32.0 - 36.0	2.16
36.0 - 39.3	.20
39.3 - 42.6	2.91
42.6 - 45.9	.89
45.9 - 48.0	2.33
48.0 - 51.0	.32
51.0 - 53.5	.57
53.5 - 55.8	.31
55.8 - 61.0	.19
61.0 - 65.6	.47
65.6 - 70.9	.64

Sludge

6.6 - 10.8	.43
10.8 - 13.8	.25
13.8 - 19.0	.54
19.0 - 23.7	.55
23.7 - 29.0	.22
29.0 - 32.0	.31
32.0 - 36.0	1.22
36.0 - 39.3	.38
39.3 - 42.6	2.30
42.6 - 45.9	.48
45.9 - 51.0	1.10
51.0 - 55.8	.46
55.8 - 61.0	.21
61.0 - 65.6	.22

SPECIAL - DUPLICATE PULP

G-15	1.57
G-16	1.14
G-17	.86
G-18	.61
G-19	.43
G-20	2.17
G-21	1.00
G-22	.83
G-23	.63
G-24	.46

cc: ACBall
KERichard
WCWaidler
WQSchubel
SFall
JEKinnison

December 5, 1958

UNDERGROUND SAMPLES

370 North Crosscut

202D	301.0 - 305.7	.37
203D	305.7 - 310.6	.39
204D	310.6 - 314.8	.82
205D	314.8 - 320.7	.95
211D	Slab Round	2.05

212D	0 - 5	3.99
214D	5 - 11.5	1.10
216D	11.5 - 15.5	2.67
218D	15.5 - 20.5	1.70
220D	20.5 - 25.0	.73

213D	0 - 5	1.26
215D	5 - 10.5	1.41
217D	10.5 - 16.0	1.37
219D	16.0 - 22.0	2.39

SPECIAL - DUPLICATE PULP

Muck

G-5	1.61
G-6	1.05
G-7	.85
G-8	.61
G-9	.43

Channel

G-10	2.14
G-11	1.02
G-12	.87
G-13	.58
G-14	..40

DIAMOND DRILL HOLE #1

Core

67.3 - 71.9	.10
71.9 - 77.1	.30
77.1 - 82.2	.34
82.2 - 86.3	.67

Sludge

50.0 - 55.0	.95
55.0 - 60.9	.75
60.9 - 62.9	.18
62.9 - 67.3	.04
67.3 - 71.9	.22
71.9 - 77.1	.25
77.1 - 82.2	.35
82.2 - 86.3	.39

DIAMOND DRILL HOLE #2

1.3 - 6.6	.85
6.6 - 10.8	.70

cc: ACHall
KERichard
WCWaidler
WOSchubel
SFall
JEKinnison

AMERICAN SMELTING AND REFINING COMPANY
Tucson Arizona

November 25, 1958

FILE MEMORANDUM

MISSION SHAFT SAMPLES
Reduction to Assay Pulps

Bulk and channel samples from the shaft and underground workings in the Mission Project were prepared for assaying at the Company's Mission (East Pima) sample laboratory.

The samples were delivered daily to the lab in 50 lb. canvas sample sacks. The samples were weighed, dumped into open pans and placed in drying ovens. Drying required 8 to 24 hours at a temperature of 230° F.

After drying, a sample was crushed to minus 1/2" in the 4" x 6" jaw crusher and reduced to two 1/16 portions, (or approximately 8 lbs.) in a Jones splitter. The remaining 7/8 was discarded. One of these 1/16 portions was placed in a quart meason jar for storage.

The remaining 1/16 portion was crushed to minus 10 mesh in the 10" gyro roll reduction crusher, and reduced to approximately 500 grams in a Jones splitter.

The sample was then ground to about minus 100 mesh in the pulverizer, well mixed by rolling on a plastic sheet, and split once more by a Jones splitter. One 250 gram pulp was sent for assay and the other stored at the laboratory for future reference.

SAMUEL C. FALL

SCF:S
cc: TASnedden
ACHall
KERichard
WCWaidler
JHCourtright
JEKinnison

December 1, 1958

UNDERGROUND SAMPLES

North Drift

Channel

		Cu
188DC	188.0 - 193.0	.01
189DC	193.0 - 198.0	.72
190DC	198.0 - 203.0	.50
191DC	203.0 - 208.0	.70

Muck

206D	320.7 - 325.3	1.84
207D	325.3 - 330.3	4.94
208D	330.3 - 334.5	6.53
209D	334.5 - 339.7	6.08
210D	339.7 - 345.0	2.39

U - 1

Sludge

4.0 - 8.9	2.18
8.9 - 17.8	1.61
17.8 - 27.1	1.45
27.1 - 32.2	.66
32.2 - 38.1	.09
38.1 - 45.0	.17
45.0 - 50.0	.58

Core

0.0 - 4.0	.35
4.0 - 8.9	2.61
8.9 - 11.3	1.87
11.3 - 17.8	1.73
17.8 - 22.1	1.18
22.1 - 27.1	1.66
27.1 - 32.2	.51
32.2 - 38.1	.04
38.1 - 45.0	.15
45.0 - 50.0	.48
50.0 - 55.0	.87
55.0 - 60.9	.75
60.9 - 62.9	.19
62.9 - 67.3	.04

cc: ACHall
WCWaidler
WOSchubel
JEKinnison

November 20, 1958

UNDERGROUND SAMPLES

North Drift

Drift

		Cu
189D	244.3 - 248.4	.58
190D	248.4 - 253.0	.60
191D	253.0 - 258.5	2.06
192D	258.5 - 261.5	3.03
193D	261.5 - 266.8	2.19
194D	266.8 - 270.3	1.66
195D	270.3 - 275.3	.66
196D	275.3 - 279.9	.64
197D	279.9 - 284.0	.59
198D	284.0 - 288.0	3.20
199D	288.0 - 292.5	1.96
200D	292.5 - 296.5	.60
201D	296.5 - 301.0	.48

cc: ACHall
WCWaidler
WOSchubel
JEKinnison

November 17, 1958

UNDERGROUND SAMPLES

North Drift

Drift

		Cu
184D	220.3 - 225.3	1.00
185D	225.3 - 229.7	.30
186D	229.7 - 235.4	.50
187D	235.4 - 239.5	1.06
188D	239.5 - 244.3	.97

cc: ACHall
WCWaidler
WOSchubel
JEKinnison

November 6, 1958

UNDERGROUND SAMPLES

North Drift

Drift

		Cu	
170D	337.8 - 344.0	1.24	- New pulp from reject for check assay
177D	190 - 194	.02	
178D	194 - 198.6	.42	
179D	198.6 - 202	1.68	
180D	202 - 207	1.31	
181D	207 - 211.8	1.66	
182D	211.8 - 216	1.45	
183D	216 - 220.3	1.86	

cc: ACHall
WCWaidler
WOSchubel
JEKinnison

October 20, 1958

UNDERGROUND SAMPLES

East Drift

	Drift	Cu
176D	372.0-377.3	.07

	Channel	
122DC	255 - 261.5	.66
Dyke Channel	261.5-267.0	.01
123DC	267 - 272	.80
124DC	272 - 277	.67
125DC	277 - 282	.82
126DC	282 - 287	.65
127DC	287 - 292	.68
128DC	292 - 297	.44
129DC	297 - 302	1.77
130DC	302 - 307	1.32
131DC	307 - 314	.90
132DC	314 - 319	2.39
133DC	319 - 324	3.06
134DC	324 - 329	1.60
135DC	329 - 334	2.10
136DC	334 - 337	3.38
137DC	337 - 342	.35
138DC	342 - 347	.34
139DC	347 - 352	.10
140DC	352 - 357	.03
141DC	357 - 362	.05
142DC	362 - 367	.36
143DC	367 - 372	.12
144DC	372 - 377	.08

cc: ACHall
WCWaidler
WOSchubel
JEKinnison

October 10, 1958

UNDERGROUND SAMPLES

East Drift

Channel

		Cu
107DC	180 - 185	.03
108DC	185 - 190	.09
109DC	190 - 195	.40
110DC	195 - 200	.87
111DC	200 - 205	.36
112DC	205 - 210	.53
113DC	210 - 215	.46
114DC	215 - 220	.06
115DC	220 - 225	.56
116DC	225 - 230	1.18
117DC	230 - 235	.71
118DC	235 - 240	.58
119DC	240 - 245	.36
120DC	245 - 250	.16
121 DC	250 - 255	1.51

Drift

169D	332.5-337.8	2.08
170D	337.8-344.0	1.31 — check 1.24 % from New pulp (Nov 6)
171D	344.0-349.0	.27
172D	349.0-355.3	.13
Special Channel		
	235.0-238.5	.29
173D	355.3-361.2	.22
174D	361.2-368.0	.35
175D	368.0-372.0	.18

cc: ACHall
WCWaidler
WOSchubel
JEKinnison

October 7, 1958

UNDERGROUND SAMPLES

East Drift

Channel

		Cu
96DC	125 - 130	.42
97DC	130 - 135	.63
98DC	135 - 140	.17
99DC	140 - 145	.31
100DC	145 - 150	.20
101DC	150 - 155	.17
102DC	155 - 160	.25
103DC	160 - 165	.71
104DC	165 - 170	.13
105DC	170 - 175	.04

cc: ACHall
WCWaidler
WOSchubel
JEKinnison

October 3, 1958

UNDERGROUND CHANNEL SAMPLES

East Drift

		Cu
92DC	105 - 110	.31
93DC	110 - 115	.74
94DC	115 - 120	1.60
95DC	120 - 125	.60

E.D. Bulk Samples

165D	314.4-318.5	6.78
166D	318.5-323.0	5.11
167D	323.0-328.0	2.42

cc: ACHall
WCWaidler
WOSchubel
JEKinnison

September 30, 1958

UNDERGROUND BULK SAMPLES

North Drift

		Cu
172DC	130.0 - 135.0	.18
181DC	150.0 - 155.0	.40
182DC	155.0 - 160.0	.55

~~South Drift~~ East D.

5DC	20 - 25	.93
6DC	25 - 30	2.03
7DC	30 - 35	.94
54DC	265 - 270	.50
156D	272.0 - 276.5	.36
159D	285.3 - 290.7	.56
160D	290.7 - 295.3	1.17
161D	295.3 - 300.7	2.06

cc: ACHall
WCWaidler
WOSchubel
JEKinnison

UNDERGROUND BULK SAMPLES

SOUTH DRIFT

		Cu
1DC	0 - 5	1.67
2DC	5 - 10	.91
3DC	10 - 15	.20
4DC	15 - 20	.72
8DC	35 - 40	.97
9DC	40 - 45	.42
10DC	45 - 50	.29
48DC	235 - 240	.40
49DC	240 - 245	.18
50Dc	245 - 250	.26
51DC	250 - 255	.14
52DC	255 - 260	.11
53DC	260 - 265	.12
55DC	270 - 275	.98
56DC	275 - 280	.19
57DC	280 - 285	.25
58DC	285 - 290	.43
59DC	290 - 295	.23
60DC	295 - 300	.09
61DC	300 - 306.3	.56
157D	276.5 - 281.5	.54

NORTH DRIFT

165DC	70 - 75	.43
167DC	80 - 85	.87
168DC	85 - 90	1.58
169DC	90 - 95	3.15
170DC	95 - 100	2.00
171DC	100 - 105	1.71
172DC	105 - 110	1.76
173DC	110 - 115	3.32
174DC	115 - 120	3.37
175DC	120 - 125	1.33
176Dc	125 - 130	.41
178DC	135 - 140	.34
179DC	140 - 145	.34
180DC	145 - 150	.47
183DC	160 - 165	.02
184DC	165 - 170	.01
185DC	170 - 175	.03
186DC	175 - 180	.02
187DC	180 - 188	.02

(Continued)

EAST DRIFT

		Cu	
80DC	45 - 50	.92	
85DC	70 - 75	.43	
86DC	75 - 80	.70	
87DC	80 - 85	.74	
88DC	85 - 90	1.49	Channel
89DC	90 - 95	4.92	
90DC	95 - 100	2.23	
91DC	100 - 105	2.21	
154D	262.3 - 265.8	.92	
155D	265.8 - 272.0	.53	
158D	281.5 - 285.3	.72	Muck
162D	300.7 - 305.3	1.77	
163D	305.3 - 310.3	1.52	
164D	310.3 - 314.4	2.30	

cc: ACHall
WCWaidler
WOSchubel
JEKinnison

September 22, 1958

UNDERGROUND BULK SAMPLES

SOUTH DRIFT

		Cu
32DC	155 - 160	.22
34DC	165 - 170	.08
35DC	170 - 175	.14
38DC	185 - 190	.22
40DC	195 - 200	.16
41DC	200 - 205	.13
42DC	205 - 210	.15
43DC	210 - 215	.30
44DC	215 - 220	.31
45DC	220 - 225	.75
46DC	225 - 230	.66
47DC	230 - 235	.82

NORTH DRIFT

150D	186 - 190	.03
155DC	20 - 25	.62
156DC	25 - 30	.59
158DC	35 - 40	.85
163DC	60 - 65	.26
164DC	65 - 70	.43
166DC	75 - 80	.85

DRIFT

EAST DRIFT

81DC	50 - 55	.81
82DC	55 - 60	.68
83DC	60 - 65	.86
84DC	65 - 70	.62

153D	258.3 - 262.3	.63
149D	244.3 - 249.4	.32

DRIFT

cc: ACHall
WCWaidler
WOSchubel
JEKinnison

September 19, 1958

UNDERGROUND BULK SAMPLES

NORTH DRIFT

		Cu
148D	180.3 - 186.0	.04
151DC	0.0 - 5	.53
152DC	5 - 10	.46
153DC	10 - 15	1.01
154DC	15 - 20	.71
157DC	30 - 35	1.50
159DC	40 - 45	.18
160DC	45 - 50	.18
161DC	50 - 55	.16
162DC	55 - 60	.31

SOUTH DRIFT

21DC	100 - 105	3.14
22DC	105 - 110	3.54
23DC	110 - 115	1.08
24DC	115 - 120	.93
25DC	120 - 125	.19
26DC	125 - 130	.31
27DC	130 - 135	.30
28DC	135 - 140	.45
29DC	140 - 145	.26
30DC	145 - 150	.17
31DC	150 - 155	.20
33DC	160 - 165	.32
36DC	175 - 180	.21
37DC	180 - 185	.16
39DC	190 - 195	.12

EAST DRIFT

147D	239.3 - 244.3	.37
151D	249.4 - 254.0	.61
152D	254.0 - 258.3	1.30

cc: ACHall
WCWaidler
WOSchubel
JEKinnison

September 18, 1958

UNDERGROUND BULK SAMPLES

NORTH DRIFT

		Cu
134D	163.5 - 167.3	.10
136D	167.3 - 171.0	.04
138D	171.0 - 176.3	.08

EAST DRIFT

116D	209.5 - 214.5	.43	
118D	214.5 - 219.0	.49	
144D	224.0 - 228.5	.56	
145D	228.5 - 234.3	.74	
146D	234.3 - 239.3	1.35	
71DC	0 - 5	.76	
76DC	25 - 30	1.00	
77DC	30 - 35	1.69	Channel
78DC	35 - 40	.63	
79DC	40 - 45	2.33	

SOUTH DRIFT

133D	278.5 - 282.7	.34	
135D	282.7 - 287.0	.46	
137D	287.0 - 292.7	.44	
139D	292.7 - 296.8	.22	
143D	302.0 - 306.3	.80	
11DC	50 - 55	1.28	
12DC	55 - 60	.98	
13DC	60 - 65	.95	channel
14DC	65 - 70	.33	
15DC	70 - 75	.71	
16DC	75 - 80	.39	
17DC	80 - 85	.62	
18DC	85 - 90	1.13	
19DC	90 - 95	1.15	
20DC	95 - 100	2.17	

cc: ACHall
WCWaidler
WOSchubel
JEKinnison

September 15, 1958

UNDERGROUND BULK SAMPLES

EAST DRIFT

		Cu
72DC	5.0 - 10.0	.71
73DC	10.0 - 15.0	.50
74DC	15.0 - 20.0	.41
75DC	20.0 - 25.0	.95
108D	191.7 - 195.5	.63
110D	195.5 - 199.5	.86
112D	199.5 - 204.7	.58
114D	204.7 - 209.5	1.15
140D	219.0 - 224.0	.74

channel

NORTH DRIFT

124D	141.0 - 146.0	.14
126D	146.0 - 151.0	.24
128D	151.0 - 156.0	.23
130D	156.0 - 160.3	.24
132D	160.3 - 163.5	.15
142D	176.3 - 180.3	.08

SOUTH DRIFT

125D	258.0 - 263.6	.35
127D	263.6 - 268.5	.45
129D	268.5 - 273.7	.65
131D	273.7 - 278.5	.68
141D	296.8 - 302.0	.23

cc: ACHall
WCWaidler
WOSchubel
JEKinnison

August 29, 1958

UNDERGROUND BULK SAMPLES

North Drift

		Cu
99D	95.0 - 100	2.37
101D	100.0 - 104.0	2.49
103D	104.0 - 108.3	2.61
105D	108.3 - 113.0	2.45
109D	113.0 - 117.3	3.02
111D	117.3 - 122.7	3.22
115D	122.7 - 127.3	1.71
119D	127.3 - 131.4	.86
120D	131.4 - 135.5	1.09
122D	135.5 - 141.0	.65

East Drift

98D	167.5 - 172.0	.49
100D	172.0 - 176.3	.23
102D	176.3 - 181.3	.20
104D	181.3 - 186.0	.08
106D	186.0 - 191.7	.11

South Drift

71D	198.0 - 202.3	.18
73D	202.3 - 207.7	.22
75D	207.7 - 212.5	.17
77D	212.5 - 217.0	.20
79D	217.0 - 222.5	.48
81D	222.5 - 227.5	.83
83D	227.5 - 232.0	.60
107D	232.0 - 237.8	.51
113D	237.8 - 243.7	.39
117D	243.7 - 248.0	.24
121D	248.0 - 253.0	.33
123D	253.0 - 258	.44

cc: ACHall
WCWaidler
WOSzhubel
JEKinnison

August 25, 1958

UNDERGROUND BULK SAMPLES

NORTH DRIFT

370 N. D.		Cu
91D	76.6 - 81.3	.98
93D	81.3 - 85.5	1.70
95D	85.5 - 89.5	2.41
97D	89.5 - 95.0	1.64

EAST DRIFT

370 E. D.		Cu
Lot #7	81.3 - 86.8	1.39
90D	145.3 - 150.5	.80
92D	150.5 - 156.3	.87
94D	156.3 - 161.5	.94
96D	161.5 - 167.5	1.00

SOUTH DRIFT

370 S. D.		Cu
69D	193.3 - 198.0	.18

cc: ACHall
WCWaidler
WOSchubel
JEKinnison

August 14, 1958

UNDERGROUND BULK SAMPLES

EAST DRIFT

370 E. D.		Cu
80-D	124.0 - 129.0	1.23
84-D	129.0 - 134.5	.73
86D	134.5 - 140.3	1.09
88D	140.3 - 145.3	.47

SOUTH DRIFT

65D	183.0 - 187.5	.19
67D	187.5 - 193.3	.14

370 SD

Lot No. 6

96 - 100	1.17

NORTH DRIFT

370 ND

82D	59 - 64	.25
85D	64 - 68	.56
87D	68 - 72	.57
89D	72 - 76.6	1.08

cc: ACHall
WCWaidler
WOSchubel
JEKinnison

August 12, 1958

UNDERGROUND BULK SAMPLES

EAST DRIFT

		Cu
52D	86.8 - 92.0	2.28
56D	92.0 - 97.0	1.91
60D	97.0 -103.0	1.58
64D	103.0 -108.4	.94
68D	108.4 -114.0	1.30
72D	114.0 -119.3	1.44
76D	119.3 -124.0	1.34

SOUTH DRIFT

		Cu
53D	154.3 - 158.8	.10
55D	158.8 - 163.5	.10
57D	163.5 - 168.5	.20
59D	168.5 - 174.3	.14
61D	174.3 - 178.5	.27
63D	178.5 - 183.0	.30

NORTH DRIFT

		Cu
Lot #5 Slab Round		1.44
54D	22.3 - 27.0	.72
58D	27.0 - 32.5	.71
62D	32.5 - 38.5	.79
66D	38.5 - 43.8	.65
70D	43.8 - 49.3	.19
74D	49.3 - 54.5	.18
78D	54.5 - 59.0	.23

So drift

cc: ACHall
WCWaidler
WOSchubel
JEKinnison

July 31, 1958

UNDERGROUND SAMPLES

East Drift

		Cu
36-D	62.5 - 68.8	.75
40-D	68.8 - 73.3	.50
42-D	73.3 - 81.3	3.68
46-D	81.3 - 86.8	1.47

North Drift

		Cu
38-D	Slab Round	2.13
43-D	0.0 - 6.0	1.39
44-D	6.0 - 11.6	.85
48-D	11.6 - 17.3	.98
50-D	17.3 - 22.3	1.05

South Drift

37-D	121.5 - 126.5	.28
39-D	126.5 - 131.6	.34
41-D	131.6 - 136.7	.33
45-D	136.7 - 140.5	.30
47-D	140.5 - 144.8	.20
49-D	144.5 - 149.1	.21
51-D	149.1 - 154.3	.16

.8

cc: ACHall
WCWaidler
WOSchubel
JEKinnison

July 24, 1958

UNDERGROUND SAMPLES

South Drift		Cu	East Drift		Cu
29-D	101.5 - 106.8	.90	28-D	41.8 - 47.0	2.04
31-D	106.8 - 112.0	1.17	30-D	47.0 - 52.0	1.06
33-D	112.0 - 116.5	.64	32-D	52.0 - 57.3	.81
35-D	116.5 - 121.5	.45	34-D	57.3 - 62.5	.64

cc: ACHall
WCWaidler
WOSchubel
JEKinnison

July 21, 1958

UNDERGROUND SAMPLES

South Drift		Cu
SD:13-D	60.2 - 64.2	1.13
SD:15-D	64.2 - 69.3	.69
SD:17-D	69.3 - 74.1	.61
SD:19-D	74.1 - 78.9	..50
SD:21-D	78.9 - 83.9	.80
SD:23-D	83.9 - 88.8	.57
SD:25-D	88.8 - 95.5	.93
SD:27-D	95.5 -101.5	1.05

East Drift		Cu
ED:14-D	10.5 - 14.5	1.26
ED:16-D	14.5 - 18.6	1.35
ED:18-D	18.6 - 22.2	1.22
ED:20-D	22.2 - 28.5	.90
ED:22-D	28.5 - 33.3	1.19
ED:24-D	33.3 - 37.3	1.54
ED:26-D	37.3 - 41.8	1.67

cc: ACHall
WCWaidler
WOSchubel
JEKinnison

July 18, 1958

SHAFT SAMPLES

	Cu
1500E:E.D.:6-D:Slab Round	1.10
1500E:E.D.:9-D:0.5.3	1.16
1300E:E.D.:11-D:5.3 - 10.5	1.21
SD-5D: 35.6 - 41.0	.87
SD-7D: 41.0 - 46.3	.76
SD-8D: 46.3 - 51.0	.62
SD-10D: 51.0 - 57.2	.75
SD-12D: 56.2 - 60.2	.91

cc: ACHall
WCWaidler
WOSchubel
JEKinnison

July 11, 1958

SHAFT SAMPLES

Sample Number		
35 - Sta 370	0 - 16	1.31
1D-1500E	16.0 - 21.1	1.08
2D	21.1 - 26.4	1.36
3D	26.4 - 30.7	1.32
4D	30.7 - 35.6	.99

cc: ACHall
WCWaidler
WOSchubel
JEKinnison

Kinnison

AMERICAN SMELTING AND REFINING COMPANY
Tucson Arizona
March 20, 1959

FILE MEMORANDUM

MISSION PROJECT
Check Assays

Since December 1, 1958 numerous check samples have been sent to Silver Bell for re-assaying to check various phases of the Mission sampling program. This memo will describe the check samples and tabulate the assays to date.

Code numbers G-1 through G-4 were not used in the check series to avoid confusion with composite sample pulps having these designations.

Check samples G-5 through G-24 were re-assayed to check assaying procedures of random muck and channel samples from the Mission underground workings. Assay comparison among (1) original pulps, (2) other pulps made up from the crushed rejects, and (3) duplicate original pulps, are as follows:

Sample Number	Original Pulp Assay	Stored Reject Pulp Code No.	Stored Reject Pulp Assay	Duplicate Orig. Pulp Code No.	Duplicate Orig. Pulp Assay
60-D	1.58	G-5	1.61	G-15	1.57
86-D	1.09	G-6	1.05	G-16	1.14
5-D	.87	G-7	.85	G-17	.86
83-D	.60	G-8	.61	G-18	.61
178-D	.42	G-9	.43	G-19	.43
20-DC	2.17	G-10	2.14	G-20	2.17
55-DC	.98	G-11	1.02	G-21	1.00
125-DC	.82	G-12	.87	G-22	.83
155-DC	.62	G-13	.58	G-23	.63
165-DC	.43	G-14	.40	G-24	.46

Check series G-25 through G-36 compares assays of grab samples of fine (-1") and coarse (+3") material from random piles of the underground bulk material. These samples were taken to determine if the values systematically favored the coarse or the fine material.

Sample Number	Original Pulp Assay	Coarse Material Code No.	Coarse Material Assay	Fine Material Code No.	Fine Material Assay
64-D	.94	G-25	1.38	G-26	.98
115-D	1.71	G-27	1.94	G-28	1.29
28-D	2.04	G-29	2.99	G-30	2.28
192-D	3.03	G-31	2.68	G-32	2.75
147-D	.37	G-33	.25	G-34	.45
165-D	6.78	G-35	4.39	G-36	7.97

Samples numbered G-37 through G-84 are re-assays of duplicate original pulps and new pulps of stored crushed reject from other underground muck and channel samples.

Sample Number	Original Pulp Assay	Dup. Orig. Pulp Code No.	Dup. Orig. Pulp Assay	Stored Reject Pulp Code No.	Stored Reject Pulp Assay
213-D	1.26	G-37	1.25	G-61	1.30
215-D	1.41	G-38	1.48	G-62	1.47
217-D	1.37	G-39	1.39	G-63	1.19
219-D	2.39	G-40	2.45	G-64	2.19
221-D	3.21	G-41	3.24	G-65	3.07
223-D	*0.14	G-42	4.19	G-66	3.79
225-D	2.18	G-43	2.13	G-67	2.09
227-D	1.31	G-44	1.19	G-68	1.16
229-D	1.03	G-45	1.02	G-69	1.07
231-D	0.69	G-46	0.67	G-70	0.66
225-DC	0.56	G-47	0.55	G-71	0.58
226-DC	0.48	G-48	0.46	G-72	0.44
227-DC	0.54	G-49	0.53	G-73	0.49
228-DC	0.73	G-50	0.73	G-74	0.70
229-DC	1.18	G-51	1.16	G-75	1.17
230-DC	1.89	G-52	1.93	G-76	1.86
231-DC	0.94	G-53	0.96	G-77	1.04
232-DC	0.80	G-54	0.81	G-78	0.74
233-DC	0.31	G-55	0.32	G-79	0.28
234-DC	0.07	G-56	0.07	G-80	0.06
183-D	1.86	G-57	1.70	G-81	1.73
184-D	1.00	G-58	1.00	G-82	0.93
194-DC	0.02	G-59	0.01	G-83	Tr.
195-DC	0.06	G-60	0.06	G-84	0.07

*This assay was obviously in error and was rechecked by sample No. G-85 re-run from the pulp returned from Silver Bell. The assay rerun showed 4.19% Cu.

Check assays numbered G-86 through G-89 are from duplicate pulps taken by coning and removing assay pulp with a spatula compared to the original assay which was from a pulp reduced by a Jones splitter.

Sample Number	Original Pulp Assay	Dup. pulp by Spatula Code No.	Dup. pulp by Spatula Assay
1-RSP	1.76	G-86	1.76
2-RSP	2.47	G-87	2.41
3-RSP	6.92	G-88	6.92
4-RSP	2.97	G-89	3.10

G-90 was a recheck of drill hole intercept 26.0 - 28.3 in U-5. The sample was re-run from the stored crushed core reject.

Sample Number	Original Assay	Crushed Reject Code No.	Crushed Reject Assay
U-5 26.0-28.3	0.15	G-90	0.17

SAMUEL C. FALL

SCF:S
cc: TASnedden
ACHall
KERichard
WCWaidler
JHCourtright
JEKinnison

July 2, 1958

SHAFT SAMPLES

Sample No.		
53C	342.5 - 345.4	.95
54C	345.4 - 348.2	1.23
55C	348.2 - 351.1	1.77
56C	351.1 - 353.9	2.66
57C	353.9 - 356.8	2.43
58C	356.8 - 359.6	2.59
59C	359.6 - 362.5	1.60
60C	362.5 - 365.3	1.41
61C	365.3 - 368.2	3.72
62C	368.2 - 371.0	8.75
63C	371.0 - 374.7	4.79

cc: ACHall
WCWaidler
WOSchubel
JEKinnison

June 30, 1958

SHAFT SAMPLES

Sample No.		
32	359.9 - 364.8	2.16
33	364.8 - 369.6	2.54
34	369.6 - 374.7	3.11

cc: ACHall
WCWaidler
WOSchubel
JEKinnison

June 20, 1958

SHAFT SAMPLES

Sample No.		
30	351.0 - 355.5	1.30
31	355.5 - 359.9	1.99

cc: ACHall
WCWaidler
WOSchubel
JEKinnison

June 13, 1958

SHAFT SAMPLES

Sample No.		
29	346.6 - 351.0	1.71
41C	308.3 - 311.2	.15
42C	311.2 - 314.0	.30
43C	314.0 - 316.9	.24
44C	316.9 - 319.7	.62
45C	319.7 - 322.6	.29
46C	322.6 - 325.4	.55
47C	325.4 - 328.3	.61
48C	328.3 - 331.1	.58
49C	331.1 - 334.0	.34
50C	334.0 - 336.8	.16
51C	336.8 - 339.7	.57
52C	339.7 - 342.5	1.42

cc: ACHall
WCWaidler
WOSchubel
JEKinnison

June 11, 1958

SHAFT SAMPLES

Sample No. 27

337.5 - 342.0 .58

Sample No. 28

342.0 - 346.6 1.17

cc: ACHall
WCWaidler
WOSchubel
JEKinnison

June 9, 1958

SHAFT SAMPLES

Sample No.		
24	323.0 - 327.5	.39
25	327.5 - 332.9	.81
26	332.9 - 337.5	.79

cc: ACHall
WCWaidler
WOSchubel
JEKinnison

June, 3, 1958

SHAFT SAMPLES

Sample No.		
22	312.9 - 318.1	.19
23	318.1 - 323.0	.21
35C	291.2 - 294.1	.24
36C	294.1 - 296.9	.45
37C	296.9 - 299.8	.24
38C	299.8 - 302.6	.13
39C	302.6 - 305.5	.20
40C	305.5 - 308.2	.27

cc: ACHall
WCWaidler
WOSchubel
JEKinnison

SHAFT SAMPLES

Sample No. 20 has been reported with an incorrect footage.

Please change your records as follows:

Sample No. 20	302.5 - 307.8	.59
Sample No. 21	307.8 - 312.9	.38

cc: ACHall
WCWaidler
WOSchubel
JEKinnison

SHAFT SAMPLES

Sample No.		
20	307.8 - 312.5	.59
29C	274.1 - 277.0	.56
30C	277.0 - 279.8	.73
31C	279.8 - 282.7	.76
32C	282.7 - 285.5	.28
33C	285.5 - 288.4	.64
34C	288.4 - 291.2	1.89

cc: ACHall
WCWaidler
WOSchubel
JEKinnison

May 23, 1958

SHAFT SAMPLES

Sample No.		
17	289.1 - 293.5	.35
18	293.5 - 298.2	.32
19	298.2 - 302.5	.34

cc: ACHall
WCWaidler
WOSchubel
JEKinnison

May 19, 1958

SHAFT SAMPLES

Sample No.		
15	280.6 - 284.3	.51
16	284.3 - 289.1	.53
25C	262.7 - 265.6	2.59
26C	265.6 - 268.4	1.18
27C	268.4 - 271.3	.88
28C	271.3 - 274.1	.23

cc: ACHall
WCWaidler
WOSchubel
JEKinnison

JEKinnison

May 12, 1958

SHAFT SAMPLES

6C	211.4 - 214.3	.16
7C	214.3 - 217.1	.10
8C	217.1 - 220.0	.09
9C	220.0 - 222.8	.32
10C	222.8 - 225.7	.38
11C	225.7 - 226.8	.86
12C	226.8 - 228.5	3.04
13C	228.5 - 231.4	.28
14C	231.4 - 234.2	.34
15C	234.2 - 237.1	.36
16C	237.1 - 239.9	.45
17C	239.9 - 242.8	.68
18C	242.8 - 245.6	.43
19C	245.6 - 248.5	.75
20C	248.5 - 251.3	1.93
21C	251.3 - 254.2	1.88
22C	254.2 - 257.0	1.17
23C	257.0 - 259.9	1.14
24C	259.9 - 262.7	2.90

Sample No.		
10	254.8 - 259.8	.59
11	259.8 - 264.9	.76
12	264.9 - 270.3	.70
13	270.3 - 275.4	.35
14	275.4 - 280.6	.50

cc: ACHall
WCWaidler

May 5, 1958

SHAFT SAMPLES

Sample No. 8

243.3 - 248.9 .57

Sample No. 9

248.9 - 254.8 .67

cc: ACHall
WCWaidler

April 30, 1958

SHAFT SAMPLES

Sample No. 1C	
197.2 - 200.0	1.34
Sample No. 2C	
200 - 202.9	.47
Sample No. 3C	
202.9 - 205.7	.30
Sample No. 4C	
205.7 - 208.6	.48
Sample No. 5C	
208.6 - 211.4	.54
Sample No. 6	
232.0 - 237.0	.71
Sample No. 7	
237.0 - 243.3	.70

April 28, 1958

SHAFT SAMPLES

Sample No. 4

216.2 - 225.7	.37	210.8-220.8- .40
216.2 - 225.7	.36	

Sample No. 5

220.8-230.2- .55

225.7 - 232.0	.52
225.7 - 232.0	.56

April 21, 1958

SHAFT - MUCK SAMPLES

Sample #1	Cu
200.0 - 207.4	.68
Sample #2	
207.4 - 212.1	.44
Sample #3	
212.1 - 216.2	.29

200 - 210.8 - .80

210.8 - 220.8 - .40

AMERICAN SMELTING AND REFINING COMPANY
Tucson Arizona

July 21, 1958

FILE MEMORANDUM

EAST PIMA SHAFT
Sampling

In reference to Mr. Hall's memorandum of July 1 to Mr. Waidler, this will record my impression as to the channel sampling needed in the lateral workings.

Both in the shaft and in the drifts to date mineralization has been free of evident structural control. No sharp waste/ore contacts have yet been encountered. In this circumstance a uniform channel cut along each side of each drift and broken into even 5-foot segments should give adequate information. As a matter of fact, channel samples along one side only might be sufficient if it is found that the sample cutting shows the advance of the drifts; but I rather favor both sides because it will provide more information on the distribution of copper.

In case a sharp change in grade or rock type does occur within a 5-foot sample interval, the sample can be broken into two samples. This would be a matter of Mr. Waidler's judgment. If Mr. Kinnison observes any features which warrant special sample intervals he can of course point these out to Mr. Waidler ahead of the sampling.

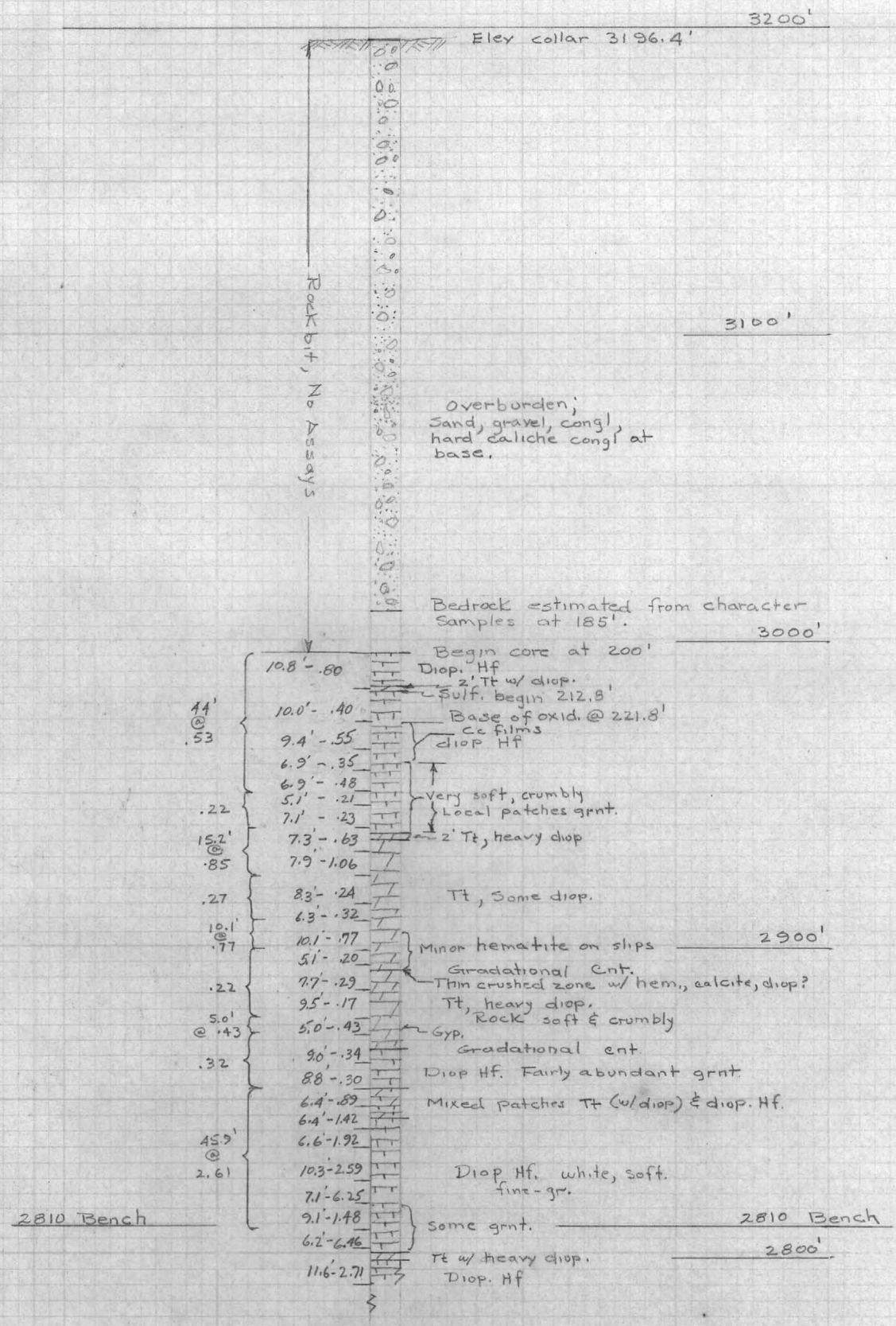
KENYON RICHARD

KR/ds
cc: TASnedden
ACHall
WCWaidler
JEKinnison

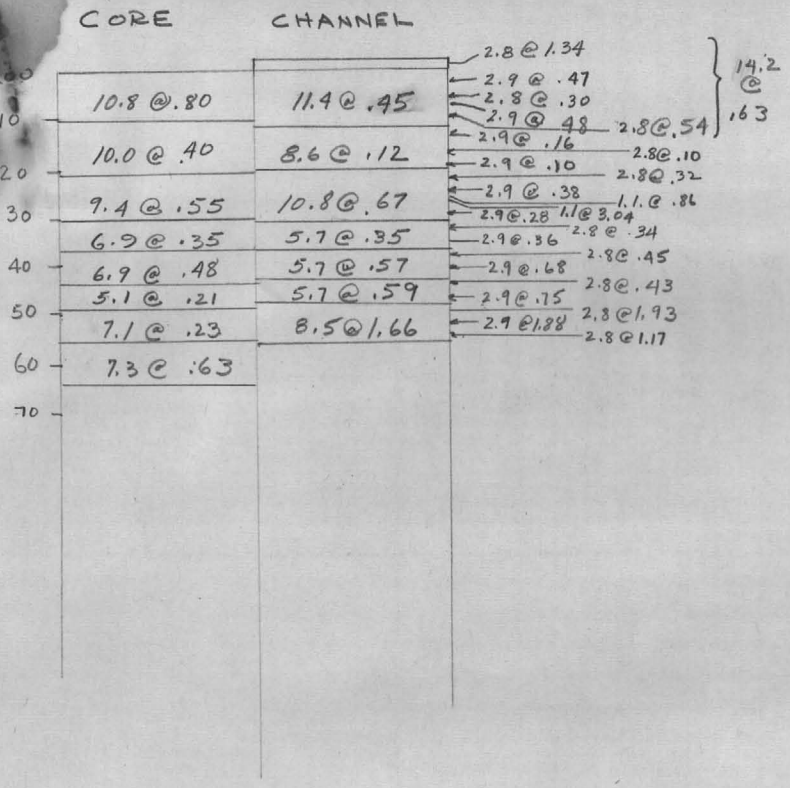
D.D.H. AT SHAFT SITE

D.D.H. 151

40+50N 15+00W



SCALE : 1" = 50'

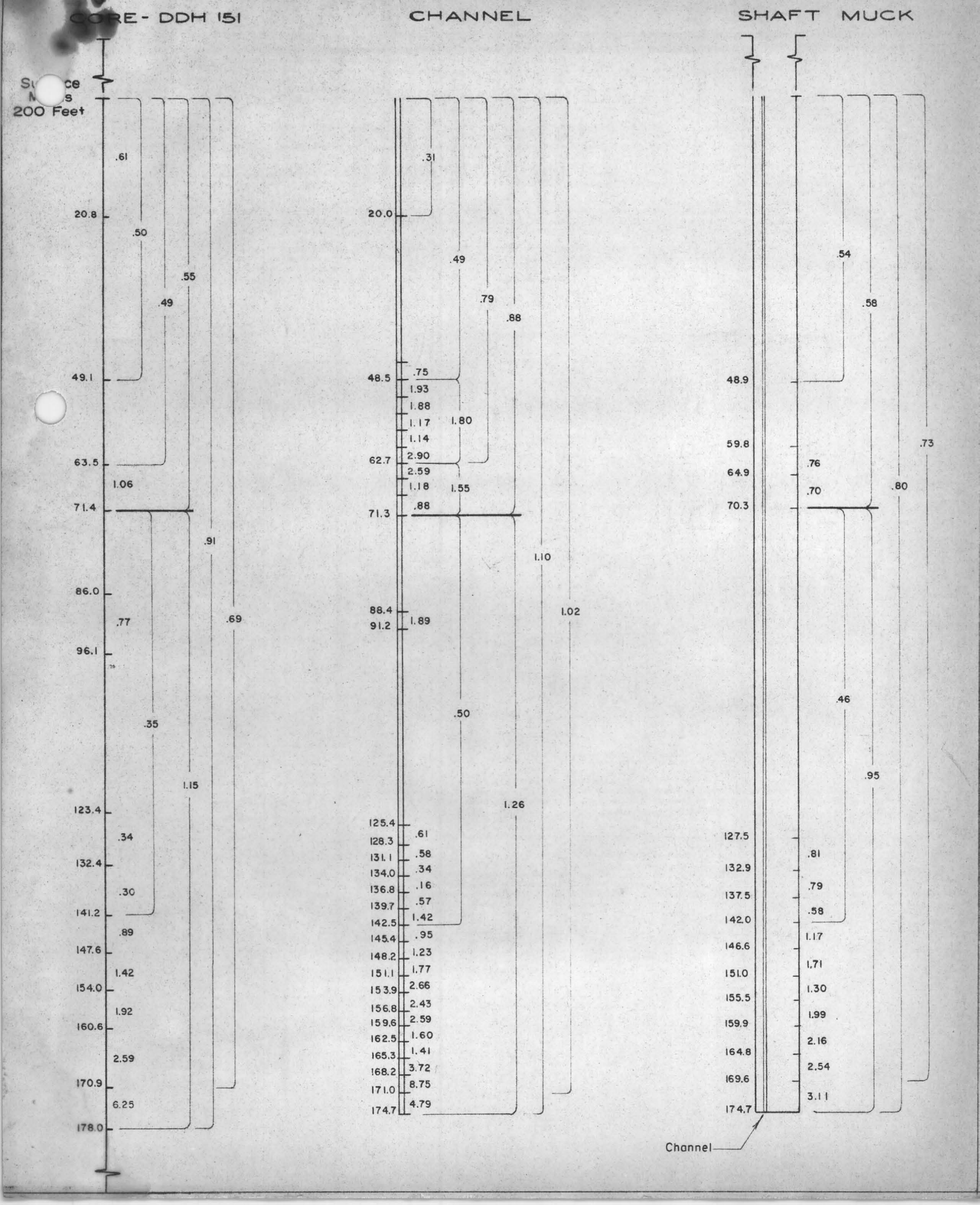


$$\frac{7100}{10.8} = .66$$

$$\frac{14132}{8.5}$$

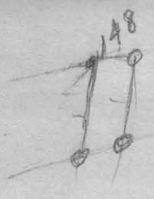
SAMPLE COMPARISON

1" = 20'



Transit Survey - A.H. - spads
Mission U.

		N	E	Elev	
Down	U-1	362 607.4	766 227.9	2827.5	
up	U-2	362 607.8	766 227.9	2840.2	
	U-3	362 655.3	766 606.0	2836.0	
303	303 A	362.812.8	766 282.1		N 01-10-20 E
	303 B	362 830.4	766 282.2		N 01-01-20 E
303 B	℄ Face W.D	362 832.6	766 177.8		N 88-46-40 W
	DDH 62	362-833.4	766 177.8		
303A	303 C	362 832.3	766 309.3		N 54-23-50 E
303	℄ Face E Dr	362 836.8	766 384.6		N 86-34-50 E
	D. 148	362 984.9	766 225.5		
307	308	362 987.5	766 360.2		N 89-00-48 E
308	℄ Face N.D	363 097.0	766,359.8		N 00-11-12 - W
308	℄ Face E.D	362 988.1	766 560.1		N 89-48-50-E
	DDH 130	362 985.84	766, 476.14		
	DDH 149	362 386.45	766, 231.12		



T - 2272

Benjamin

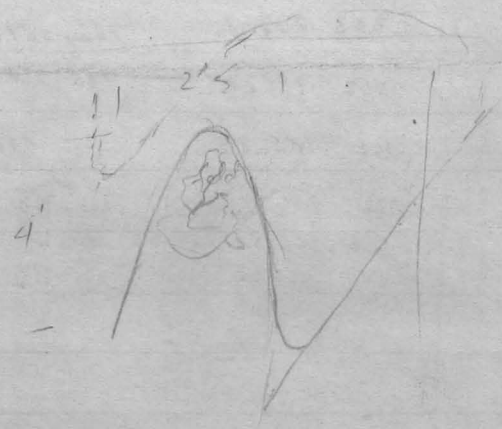
1. Weekly R.
2. DD.
3. Note book
4. Trips

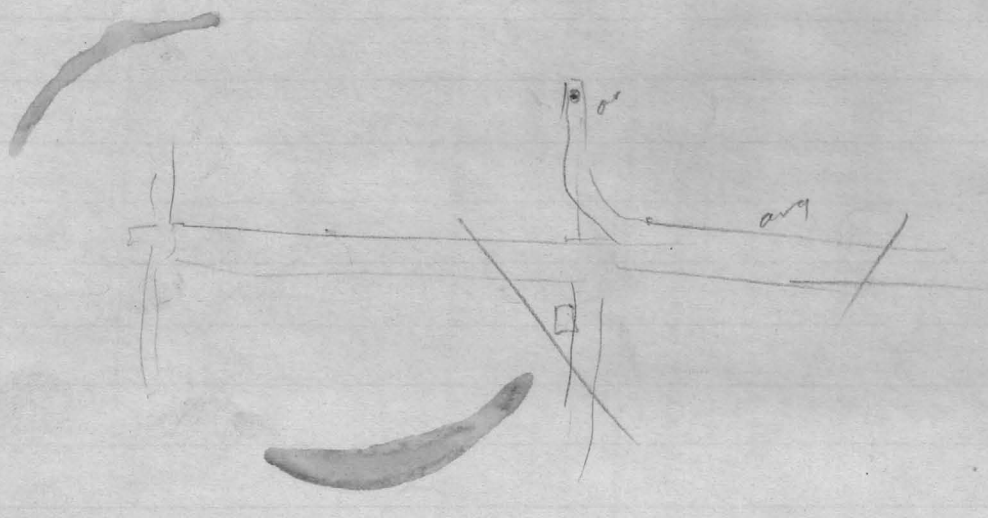
1200
100

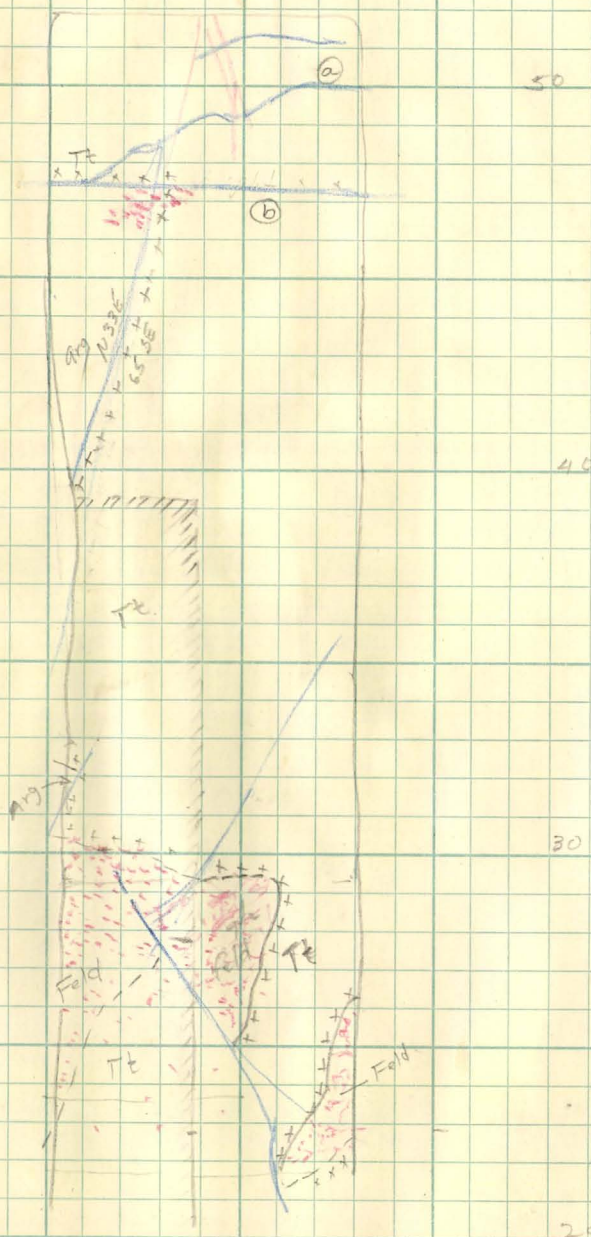
15 12:15

1.50

30
100
145
375
4.15



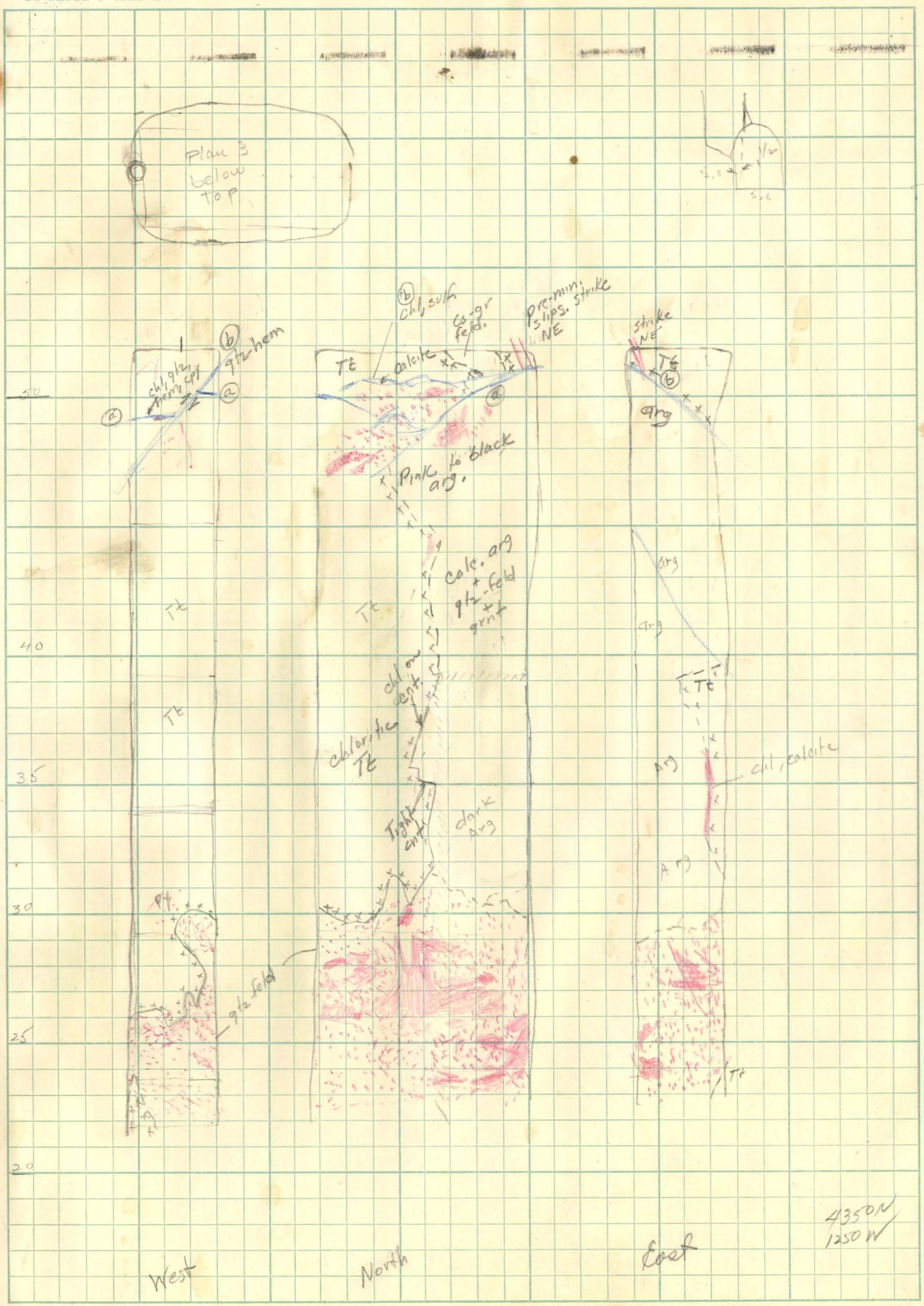




South

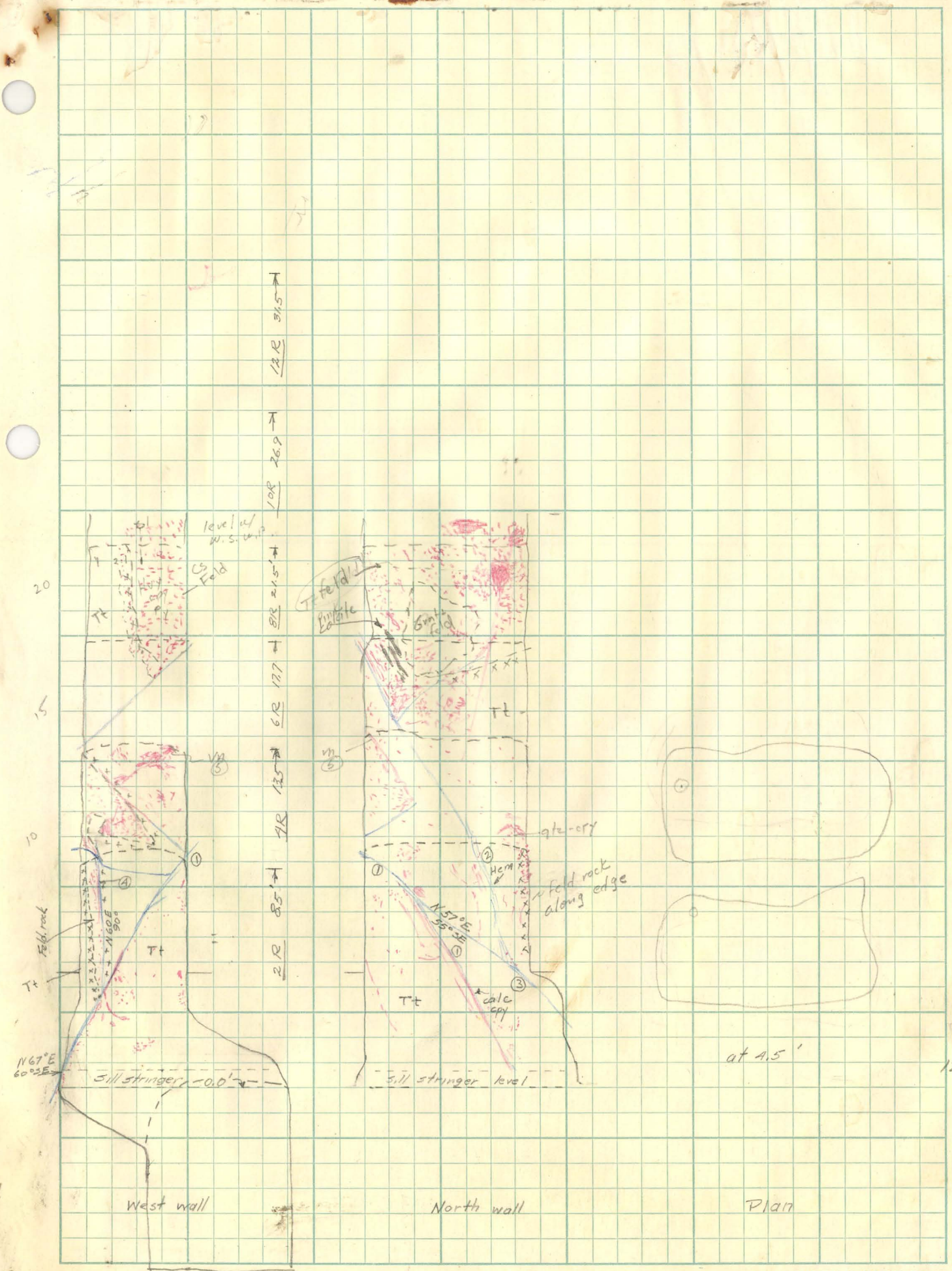
4350N
1280W

KEUFFEL & ESSER CO.
MADE IN U.S.A.
K+E 353-5
5 X 5 to the inch.



KEUFFEL & ESSER CO. MADE IN U.S.A.
K+E 353-5 5 X 5 to the inch.

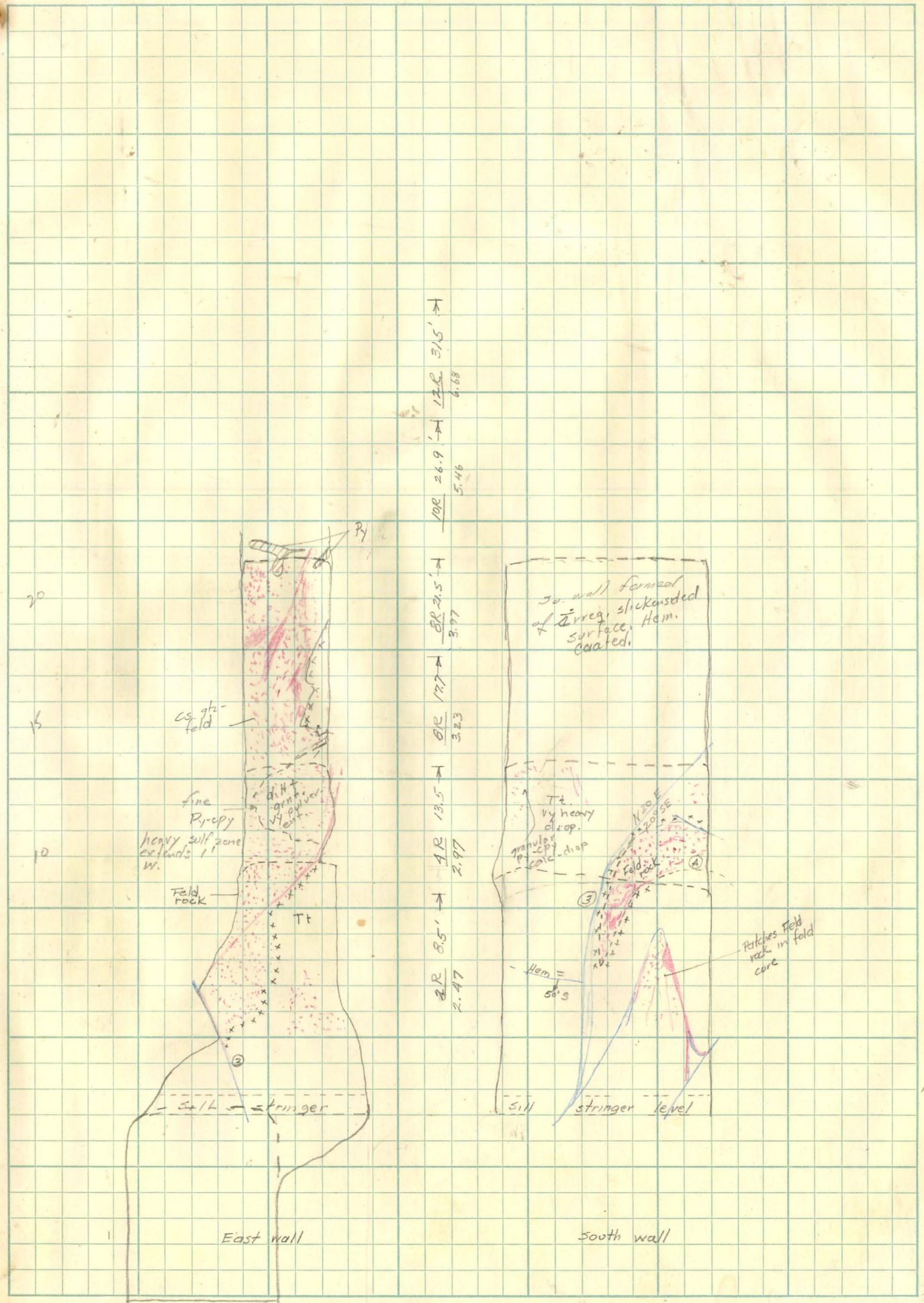
K+E 353-5
5 X 5 to the inch.



MISSION 370 - 4350N, E. RS. JEK

KEUFFEL & ESSER CO.
MADE IN U.S.A.

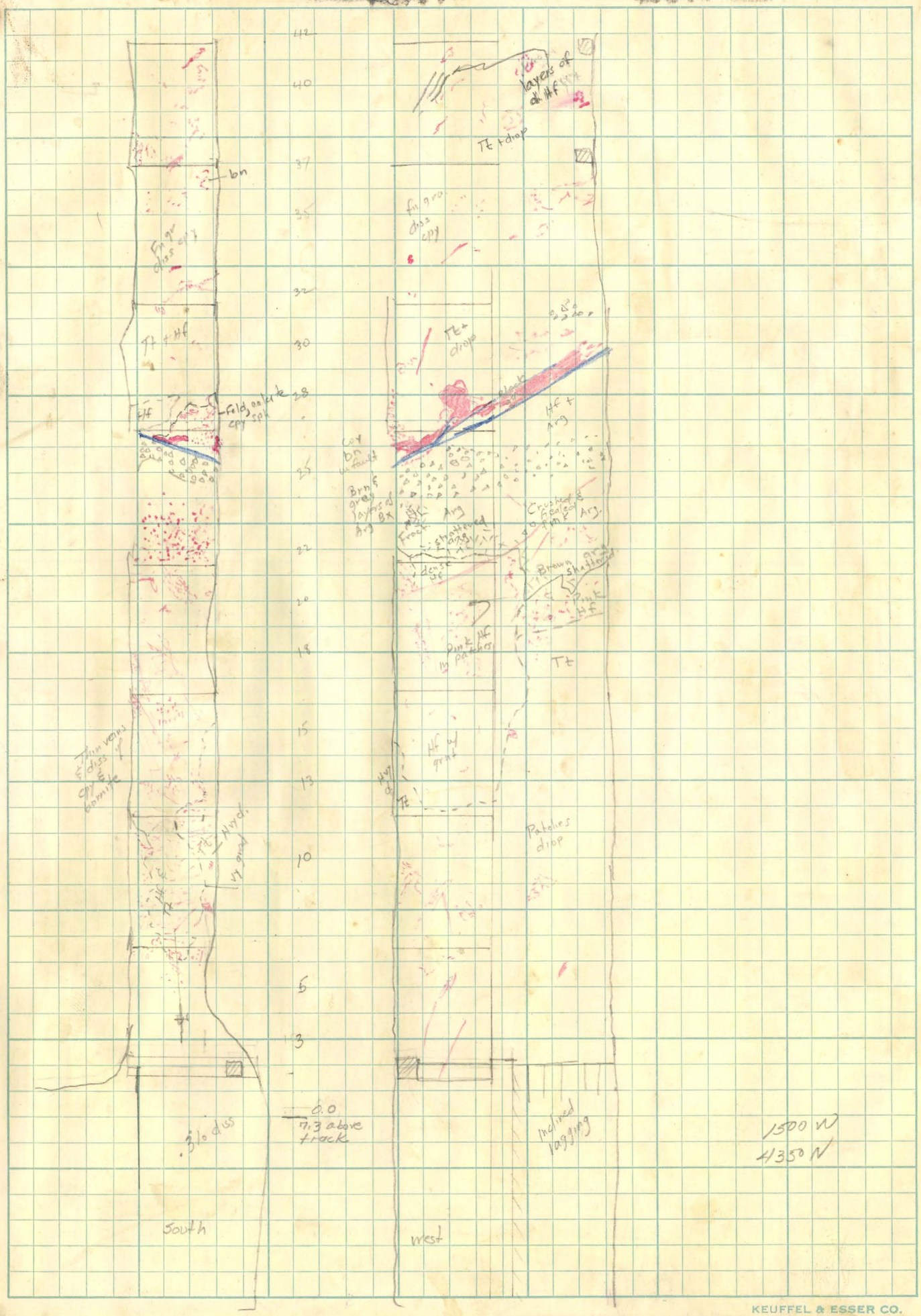
K+E 353-5
5 X 5 to the inch.



MISSION 370 - 4350 N., E. Rs

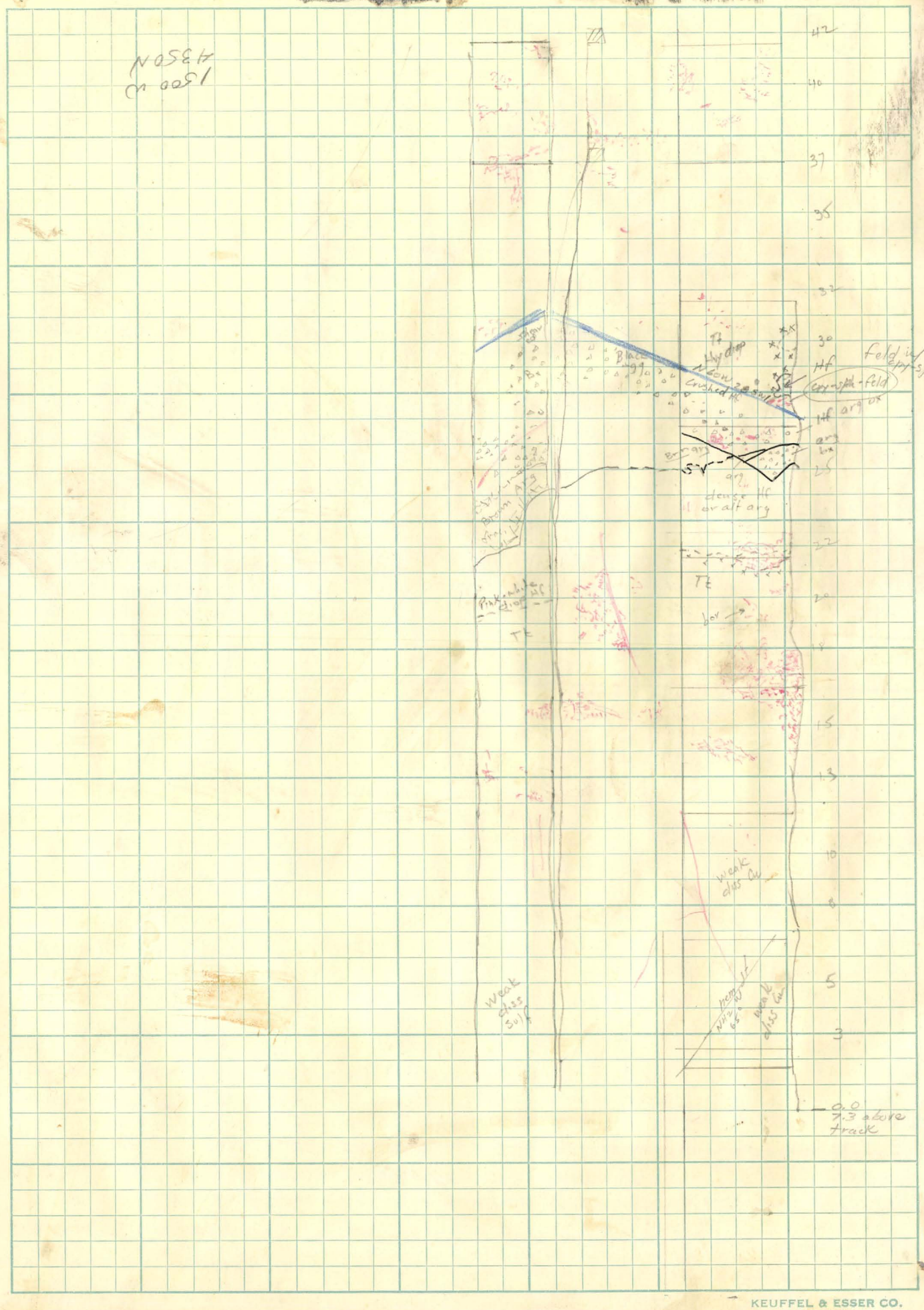
KEUFFEL & ESSER CO.
MADE IN U.S.A.

K+E 353-5
5 X 5 to the inch.



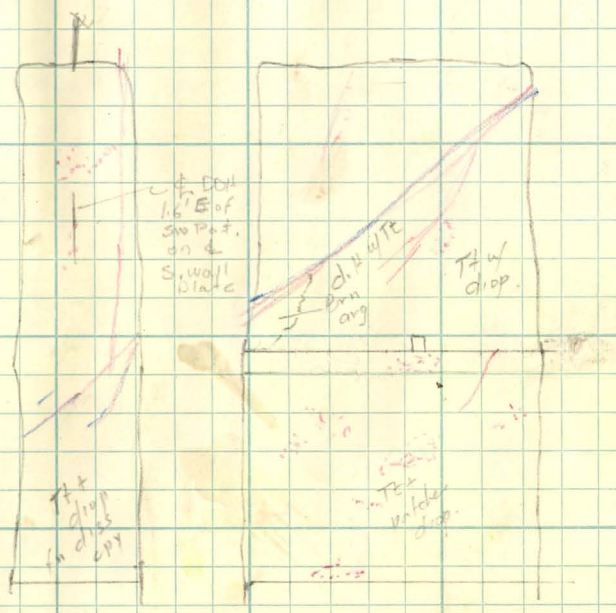
KEUFFEL & ESSER CO.
MADE IN U.S.A.

K+E 353-5
5 X 5 to the inch.



KEUFFEL & ESSER CO.
MADE IN U.S.A.

K+E 353-5
5 X 5 to the inch



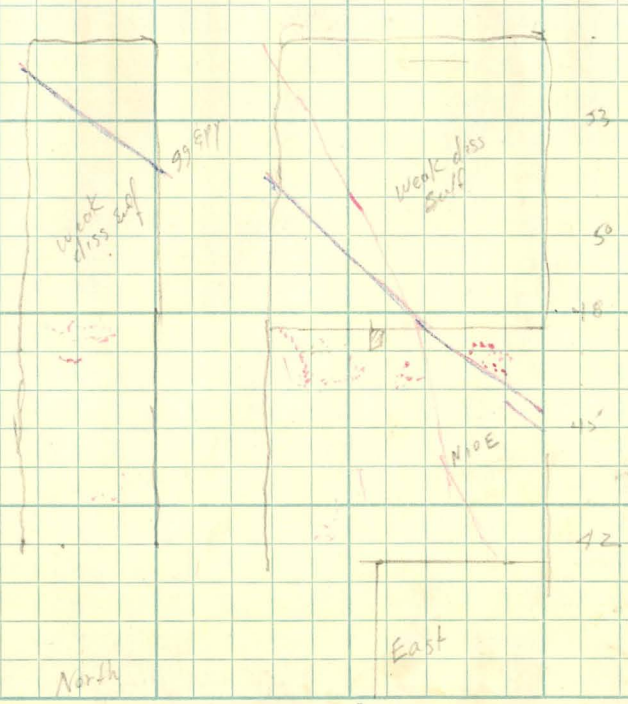
1500 W
4350 W

KEUFFEL & ESSER CO.
MADE IN U.S.A.

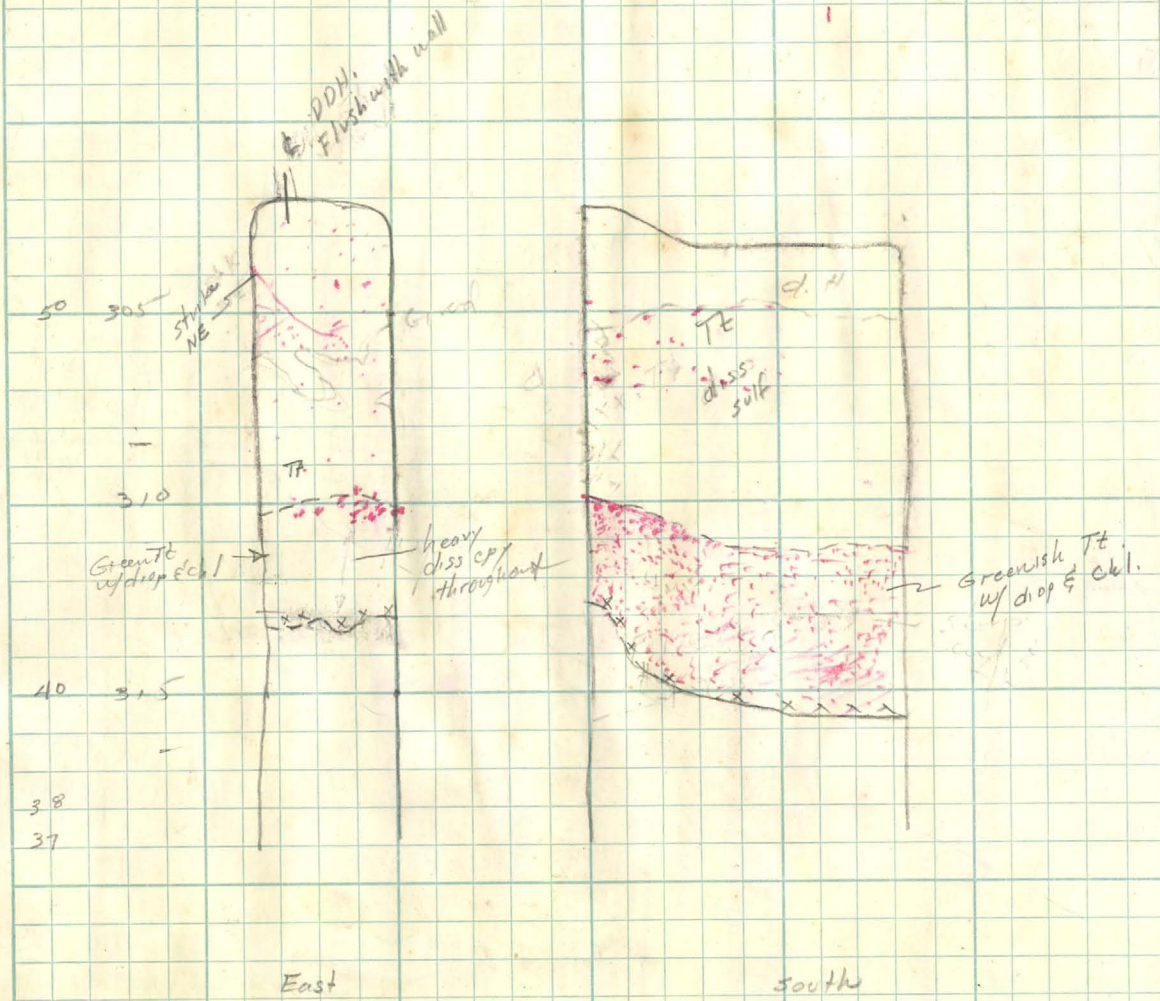
K+E 353-5
5 X 5 to the inch.

47.6
7.5
55.1

1500 W
4350 N



KEUFFEL & ESSER CO.
MADE IN U.S.A.



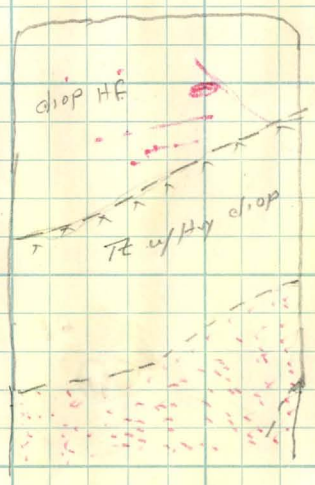
DDH. Flush with wall
50
305
strike NE
Tt
310
Green Tt w/ diop & chl
heavy diss cpy throughout
40
315
38
37
Tt
diss sulf
Greenish Tt w/ diop & chl.
East
South

4200 N
1450 W

K+E 353-5
5 X 5 to the inch.

HD

West

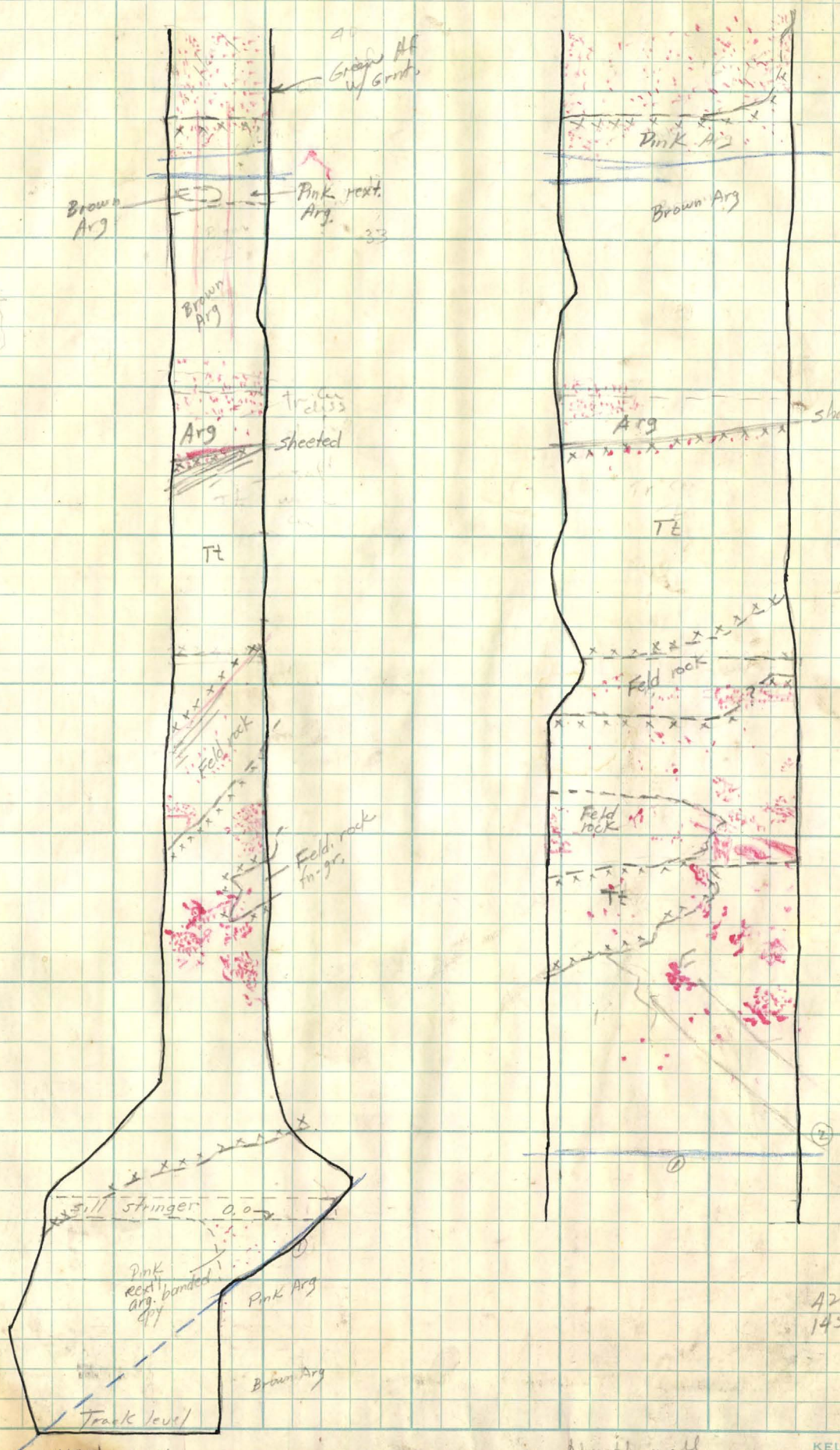


North

4200 N
1450 W

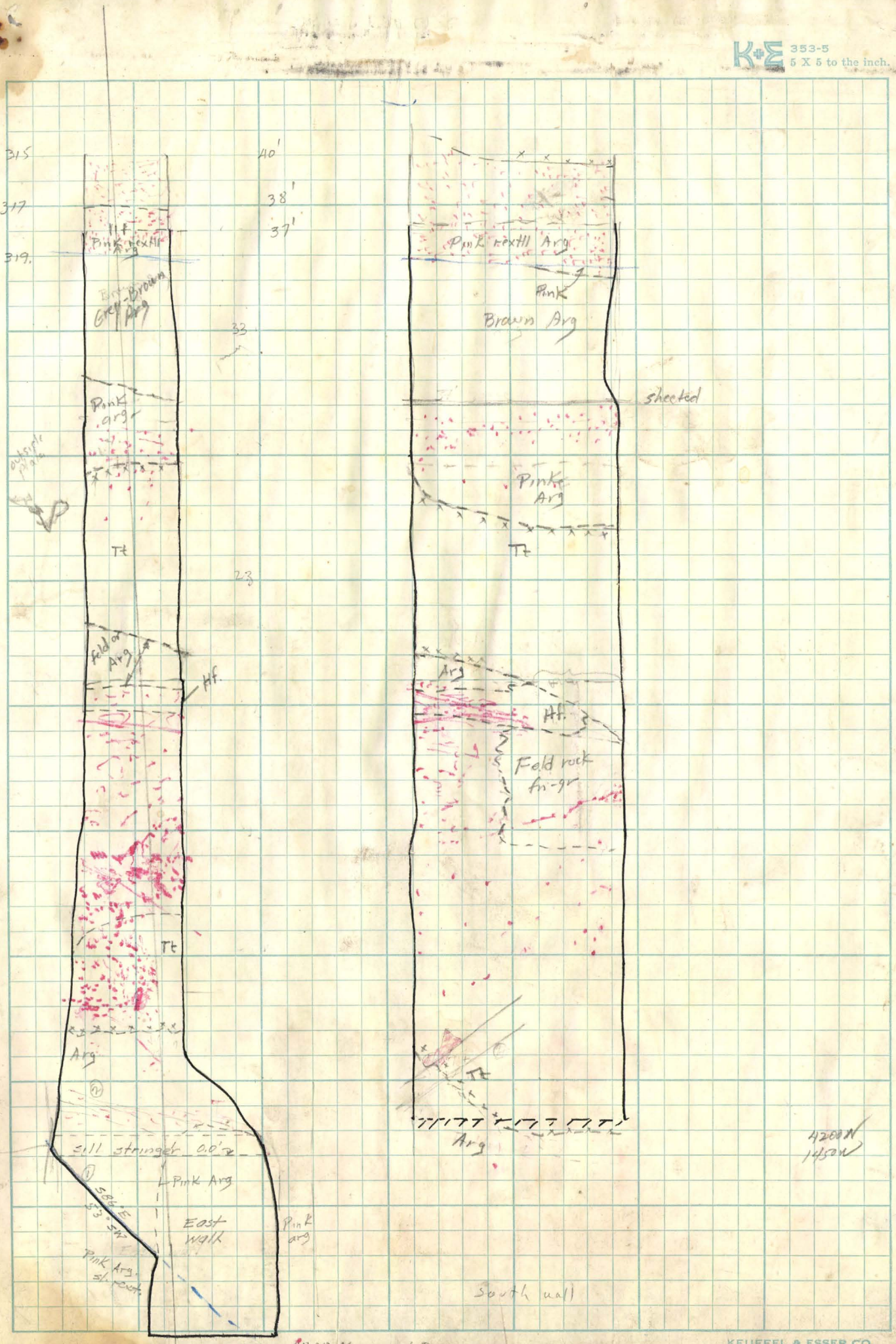
KEUFFEL & ESSER CO.
MADE IN U.S.A.

K+E 353-5
5 X 5 to the inch.

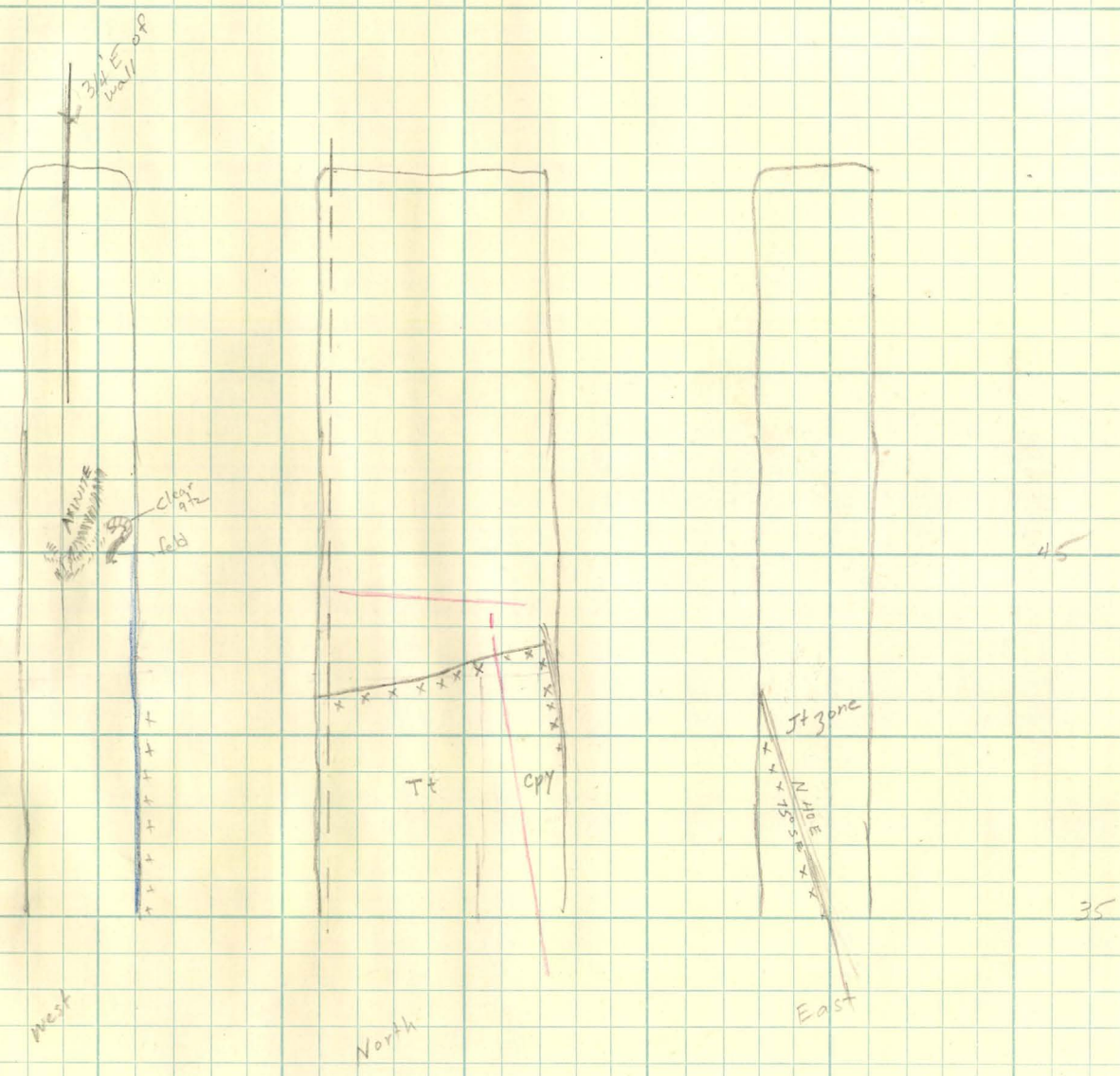


KEUFFEL & ESSER CO.
MADE IN U.S.A.

K+E 353-5
5 X 5 to the inch.

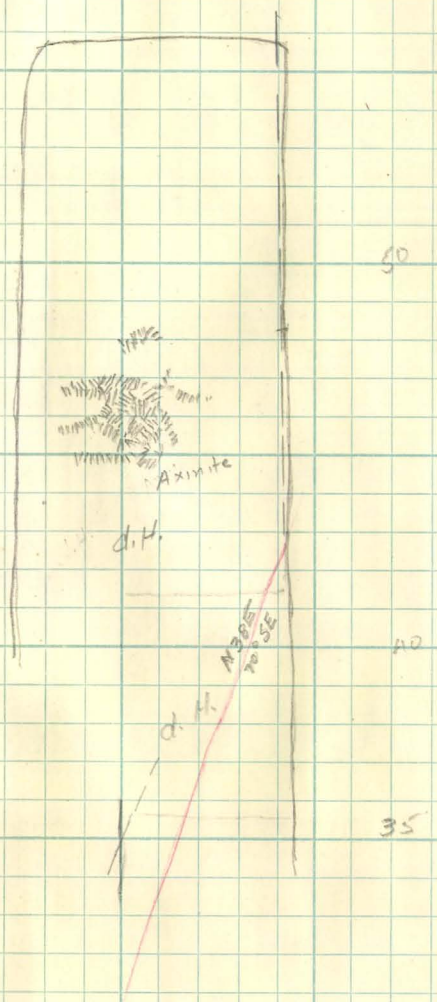


KEUFFEL & ESSER CO.
MADE IN U.S.A.



1500 W
3750 N

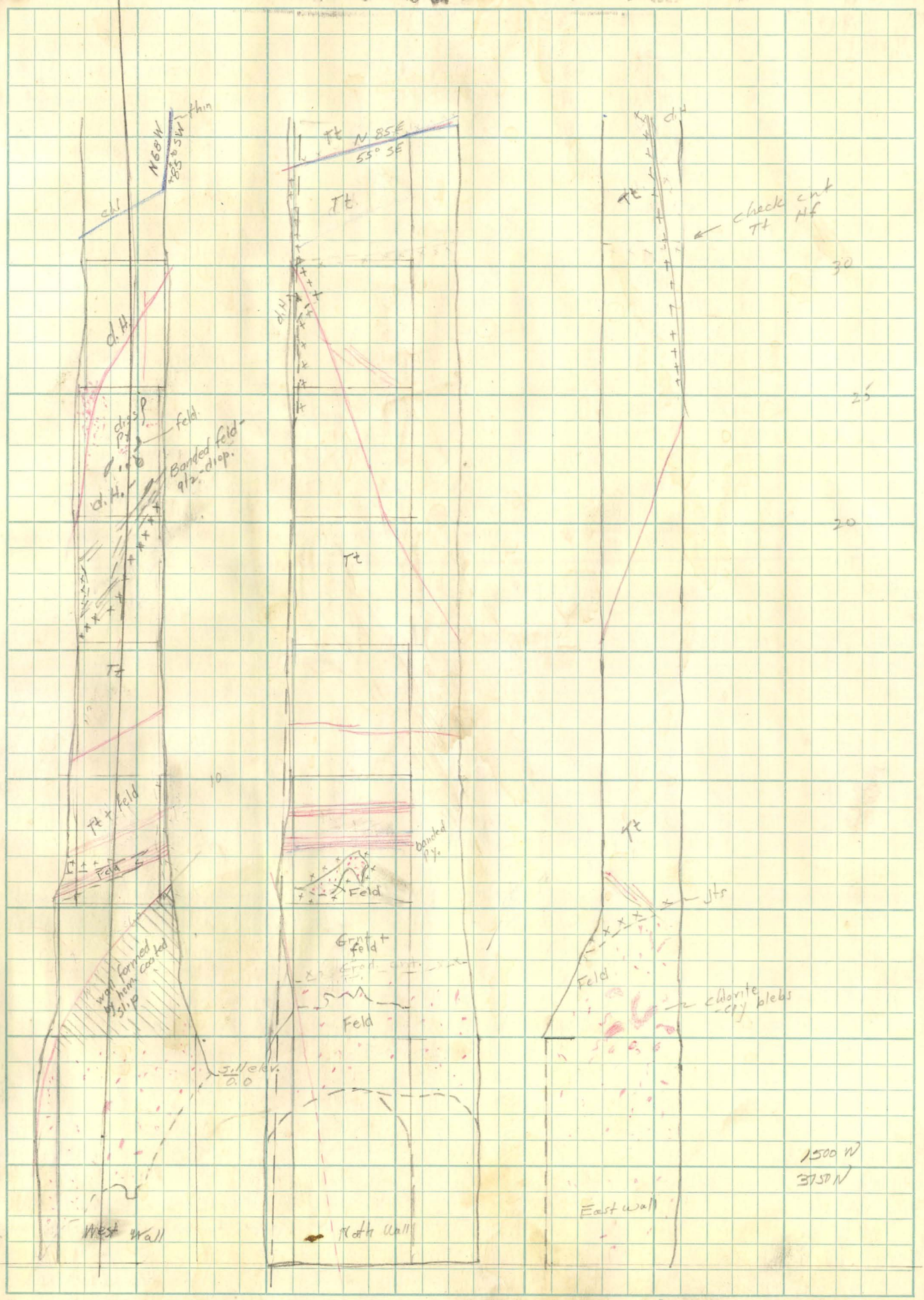
KEUFFEL & ESSER CO.
MADE IN U.S.A.
K+E 353-5
5 X 5 to the inch.



1500 N
3750 N

KEUFFEL & ESSER CO.
MADE IN U.S.A.
K+E 353-5
5 X 5 to the inch.

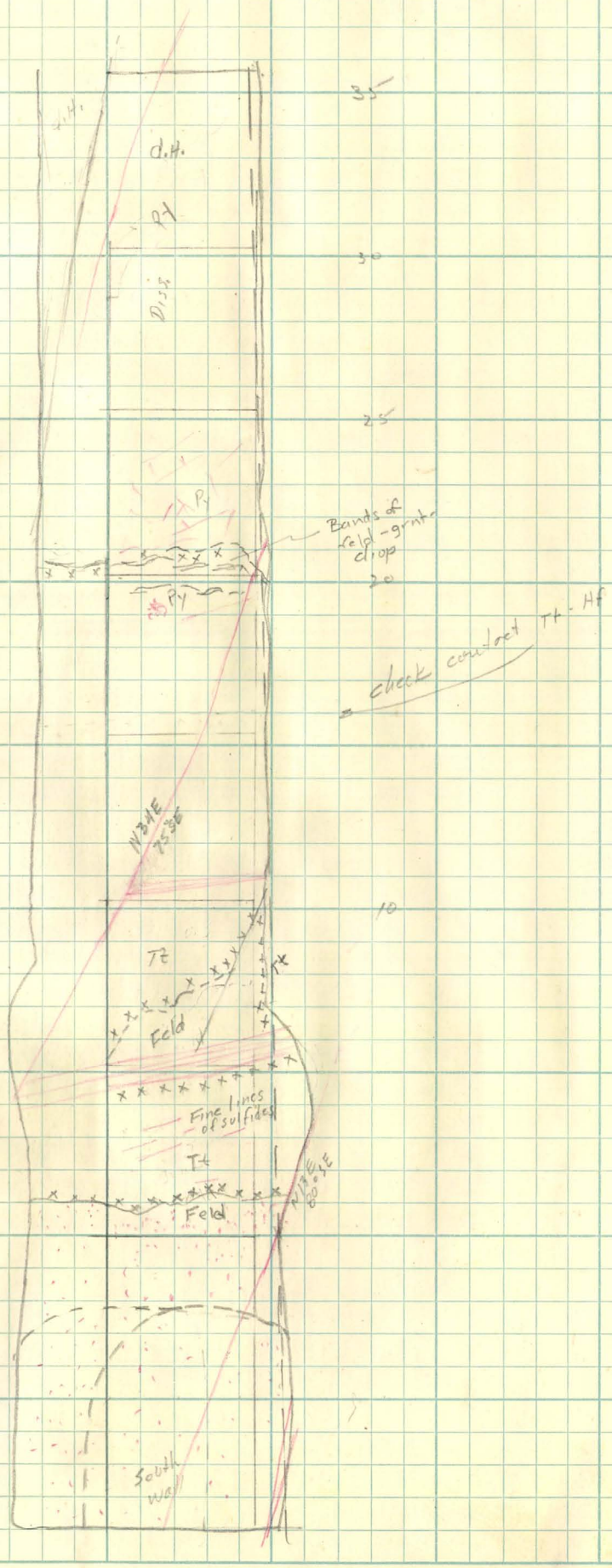
K+E 353-5
5 X 5 to the inch.



of 8.8'
- 7.3
1.5

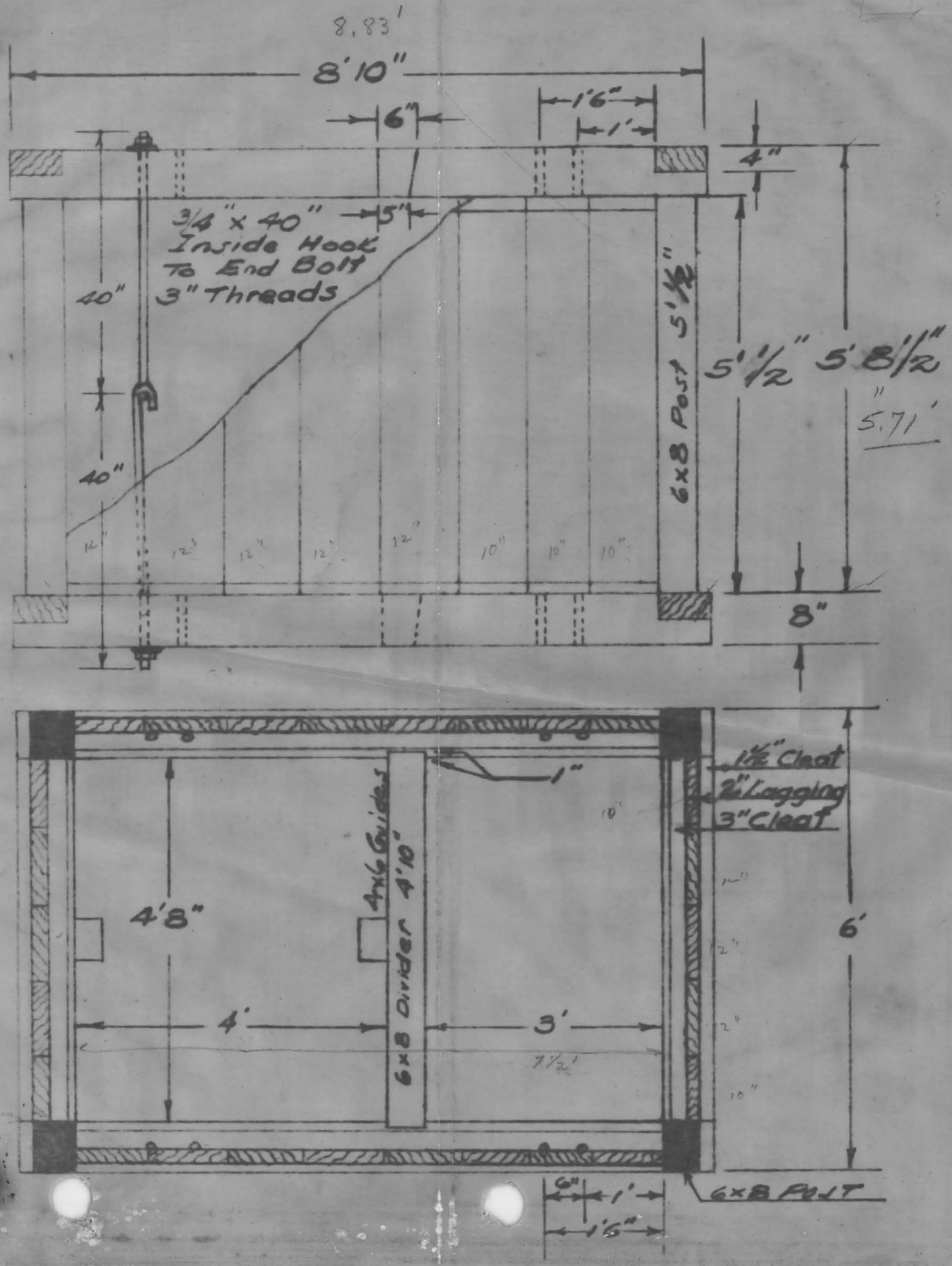
KEUFFEL & ESSER CO.
MADE IN U.S.A.

K+E 353-5
5 X 5 to the inch.



1500 W
3750 N

KEUFFEL & ESSER CO.
MADE IN U.S.A.



FRAMING - SHAFT SET

Wall and End Plates - 8"x8"
No Daps For Posts

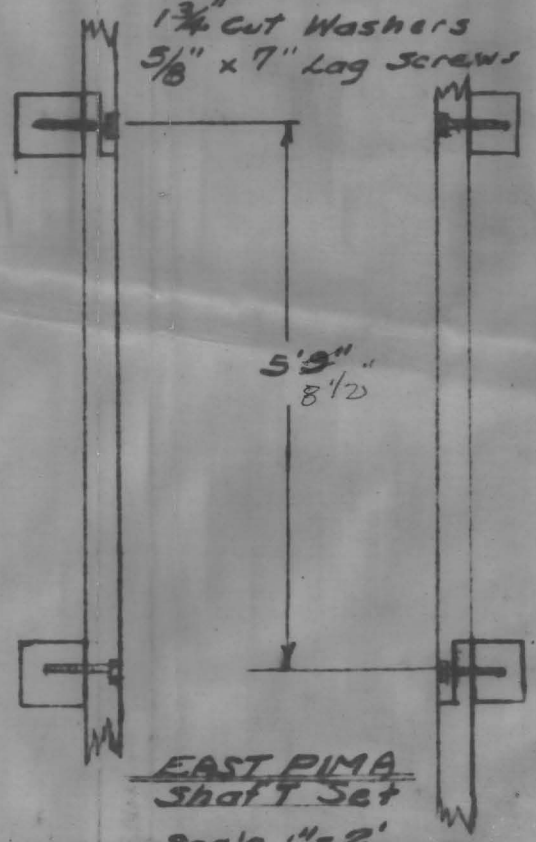
Posts and Divider - 6"x8"

Cleats from 2" Stock.
Drill and Nail 1 1/2" Cleats
To Wall and End Plates

Lagging Per Set
16 - 2"x12"x5'
10 - 2"x10"x5'

Framing - Guides

2" Counter-Sunk Holes
1 3/4" Cut Washers
5/8" x 7" Lag Screws



EAST PIMA
Shaft Set
Scale 1" = 2'