3

KEYSTONE MINING COMPANY

163 South Main

Salt Lake City, Utah

OME
DEPARTMENT OF THE INTERIOR
FEB 19 1964
REGION III
DENVER, COLORADO

Final Report

Re: OME - 6079 (Lead-Zinc)
Contract No. 14-23-090-2114
Keystone Mining Company
Summit County, Utah

Engineering and Geological Evaluation of Project:

In substance the captioned contract covered two distinct projects though closely related geologically and covered by the same property lein and subordinate agreements. The first project on the Silver Hill 900 level was driven under stages I and II of the contract while the second project, worked through the Lower Keystone Tunnel, was completed under Stage III.

The objective of the work performed on the Silver Hill 900 level was to prospect the lower Park City Formation along the footwall of the Crescent fissure zone to the Southwest of the Silver Hill Shaft. This block of ground, though known for years to be geologically favorable for significant ore deposition, was not prospected earlier, due to owner-ship problems stemming for extralateral rights.

The work on the 900 level was carried out exactly as planned with all of the engineering specification in the contract being complied with completely. The geological findings in regard to structure and stratigraphy were found to correlate very closely to the original projections, but more significantly the new ore shoot or source of mineralization that is necessary to produce a good ore body apparently does not exist. Extensive drilling of the most favorable horizons failed to disclose evidence of sufficient mineralization to represent a new ore body. Some lead-zinc-copper mineralization was found in the first stage of the project but probably represents the fringe of the large ore shoots to the West rather than being related to any new source of ore-bearing solutions. It may be significant that some small stringers and thin beds of pyrite and chalcopyrite mineralization were noted in the heading near the end of the 901 drift, but severe economic conditions forced the curtailment of the project before these possibilities could be fully appraised through additional work.

Some attempt was made first by the operator and then by leasers to mine the ore disclosed in the first stage of the work, but the mineralization proved to be too limited and erratic to be worked profitably and the effort was abandoned after a few months.

No further work on the level is contemplated by the operator although if metal prices continue to improve it is possible that leasers might again attempt to work the ore on a very modest basis.

Complete maps and sketches have been prepared to illustrate the nature of the work performed and make a fair representation of the project findings. Maps and sections covering Stages I & II of the project are indexed below:

Engineering and Geology Maps---Stages I & II

1.	Engineering and Geological plan map S.H. 900 level	1"=100'
2.	Section thru 902 Crosscut (No. 1 Station)	1"=20'
3.	Section thru No. 2 Station	1"=20'
4.	Section thru 904 Crosscut	1"=20'
5.	Section thru No. 3 Station	1"=20'
6.	Section thru No. 4 Station	1"=20'
7.	Section thru No. 5 Station	1"=20'
8.	Section thru 905 Crosscut	1"=20'
9.	Plate illustrating P.D. Holes from Stations No. 6 & 7	1"=20'
10.	Sections thru 906 Crosscut	1"=20'
11.	Plate illustrating P.D. Holes from 906 Crosscut & Station No. 8	1"=20'

Engineering and Geology Maps Stage III

12.	Engineering and Geological Plan map Lower Keystone Tunnel	1"=100'
13.	Section thru No. 2 Crosscut	1"=50'
14.	Section thru No. 3 Crosscut	1"=50'
15.	Section thru No. 4 Crosscut	1"=50'
16.	Assay Map No. 2 Crosscut	1"=20'
17.	Assay Map No. 5 Crosscut	1"=20'

Having once reached an agreement between the interested parties concerning property rights in order to pursue the work on the Silver Hill 900 level, it then became possible to investigate other favorable areas in the limits of the agreement. Consequently a geophysical survey was conducted on the surface near the outcrop of the Crescent zone which survey appeared sufficiently favorable to merit some work to be carried on through the old Lower Keystone Tunnel.

The work was conducted under Stage III of the captioned contract and had as it's objective the prospecting of the favorable beds of the upper Thaynes formation along the footwall of the Crescent zone; especially under the peak of a modest induced polarity anomaly identified by the geophyicists.

The work consisted of rehabilitating the old tunnel with subsequent drifting to the Southwest under the Crescent Fault and the drifting and crosscutting was completed almost exactly as originally planned.

The geological findings with respect to structure and stratigraphy again very closely confirmed the early projections and the stratigraphic horizons cut in the drift were identified as to their place in the geologic column.

Some difficulty was experienced in attempting to drill the overlying favorable beds with percussion drills due to hardness of the rock and the contract had to be amended to use diamond drills to reach the final objective. Six diamond drill holes were completed with some evidence of strong pyrite mineralization found in the Walker horizon with minor intercepts of lead and zinc. Heavy winter snows forced the stoppage of the project before the few remaining feet of entitlment under the contract could be drilled. It is the opinion of the project engineer that further drilling must be done in the area before the tunnel is abandoned and the prospect declared a failure, although the work under this contract is officially completed.

Maps and sections covering Stage III of the project are indexed with Stage I & II.

Summary of Work Performed

Total footages and related costs under government participation are listed below:

Stages I & II (Silver Hill 900 Level)

	Footage	Cost/ft	Cost
Crosscutting	500	$44.00	$22,000.00
Drifting	1,484	44.00	65,296.00
Timbering	398	8.00	3,184.00
Long Hole Percussion Drilling	4,372	1.00	4,372.00
Assay Determinations	376	1.00	376.00
		Total Fixed Costs	$95,228.00

Stage III (Lower Keystone Tunnel Level)

	Footage	Cost/ft	Cost
Rehabilitation	690	$ 7.15	$ 4,933.50
Crosscutting	153	34.75	5,316.75
Drifting	820	34.75	28,495.00
Timbering	132	8,00	1,056.00
Long Hole Percussion Drilling	428	1.00	428.00
Diamond Drilling	817	5.00	4,085.00
Assay Determinations	201	1.00	201.00
		Total Fixed Costs	$44,515.25

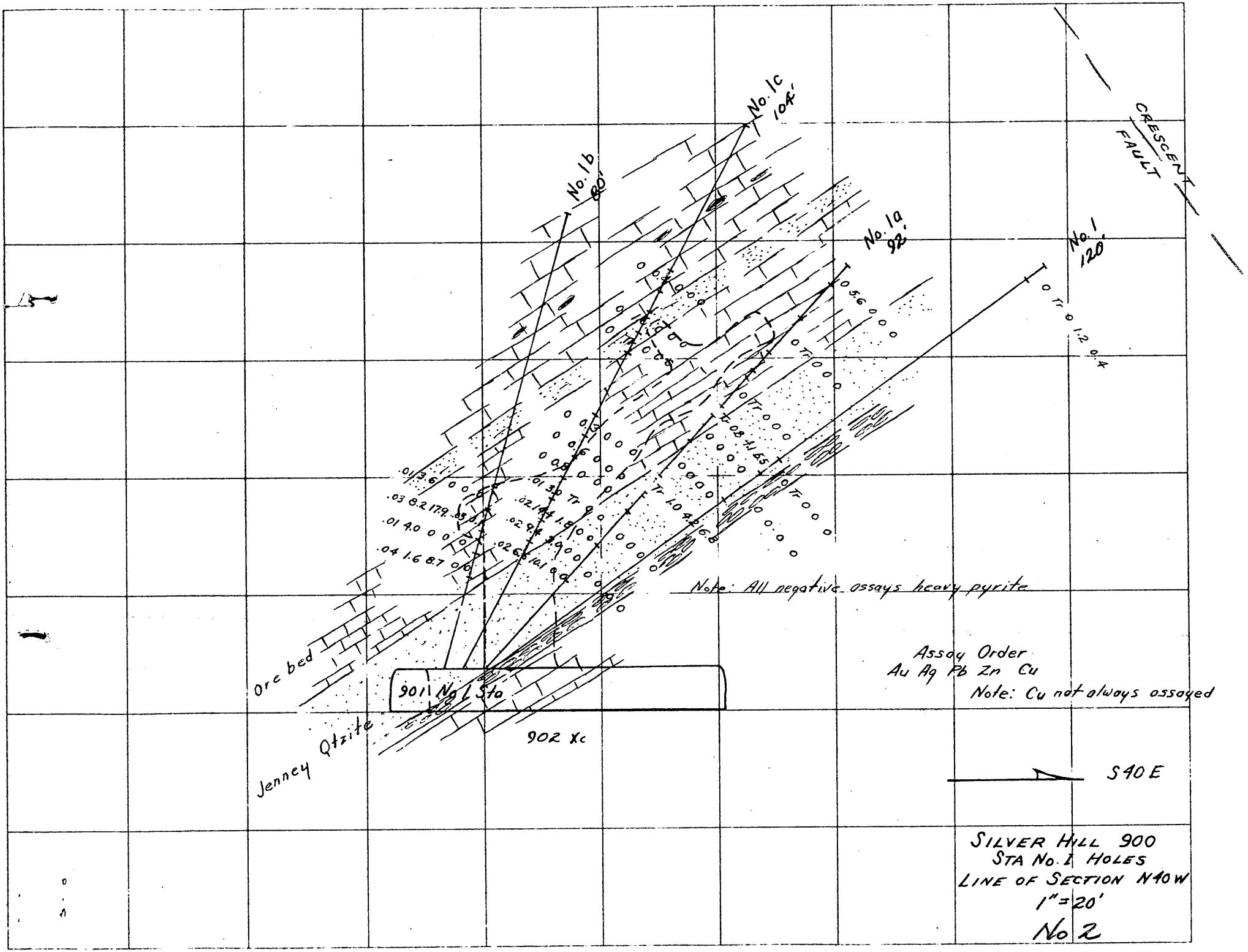
Stages I II & III Grand Total Costs $139,743.25

Should any further information be required pertaining to this contract or the block of ground under lein to the Government under the terms of this contract, the operator will be pleased to provide such to the fullest extent possible. In the event that further work is done in either of the two project areas the Government will be notified by a representative of the Keystone Company.

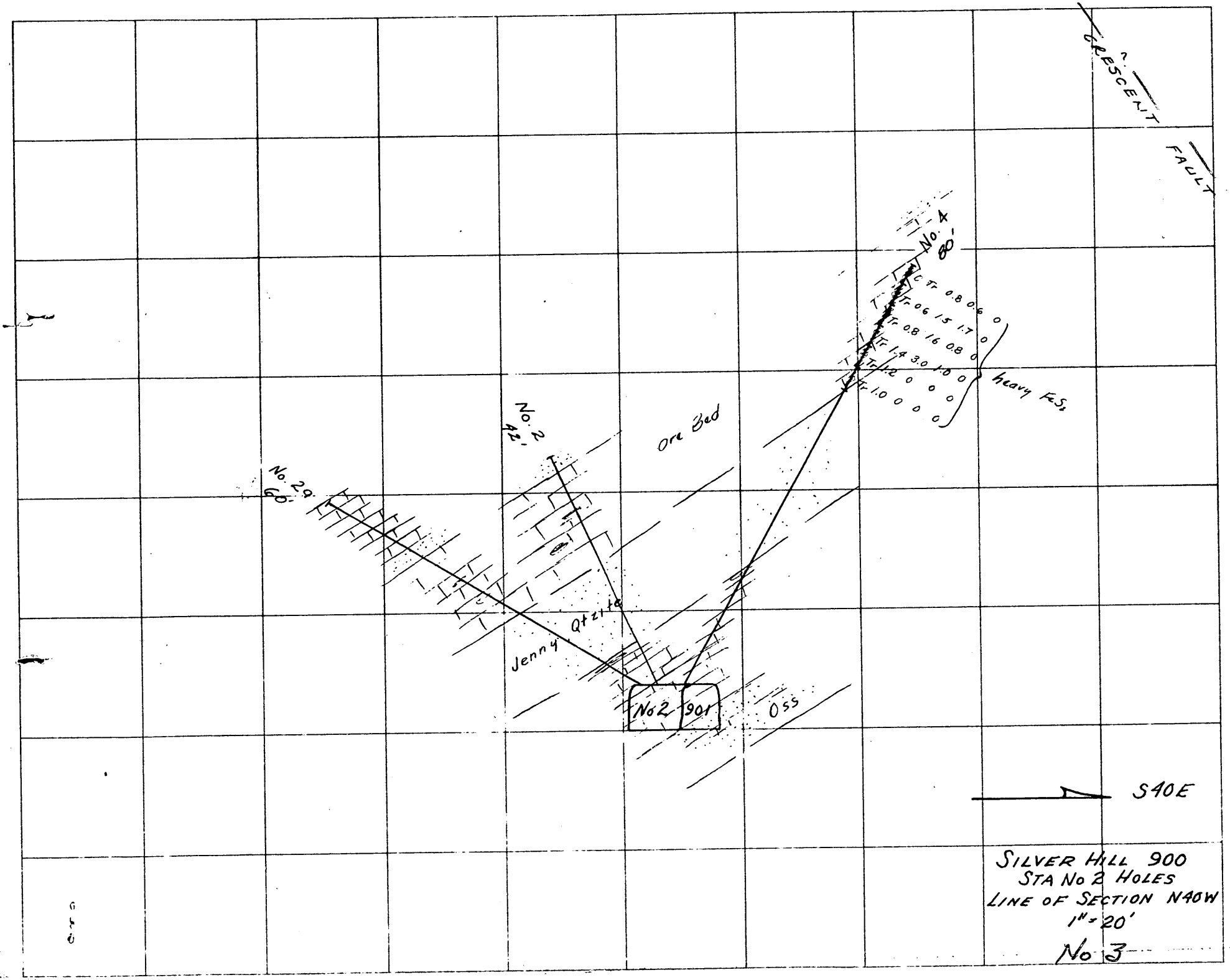
Sincerely

Marvin P. Barnes

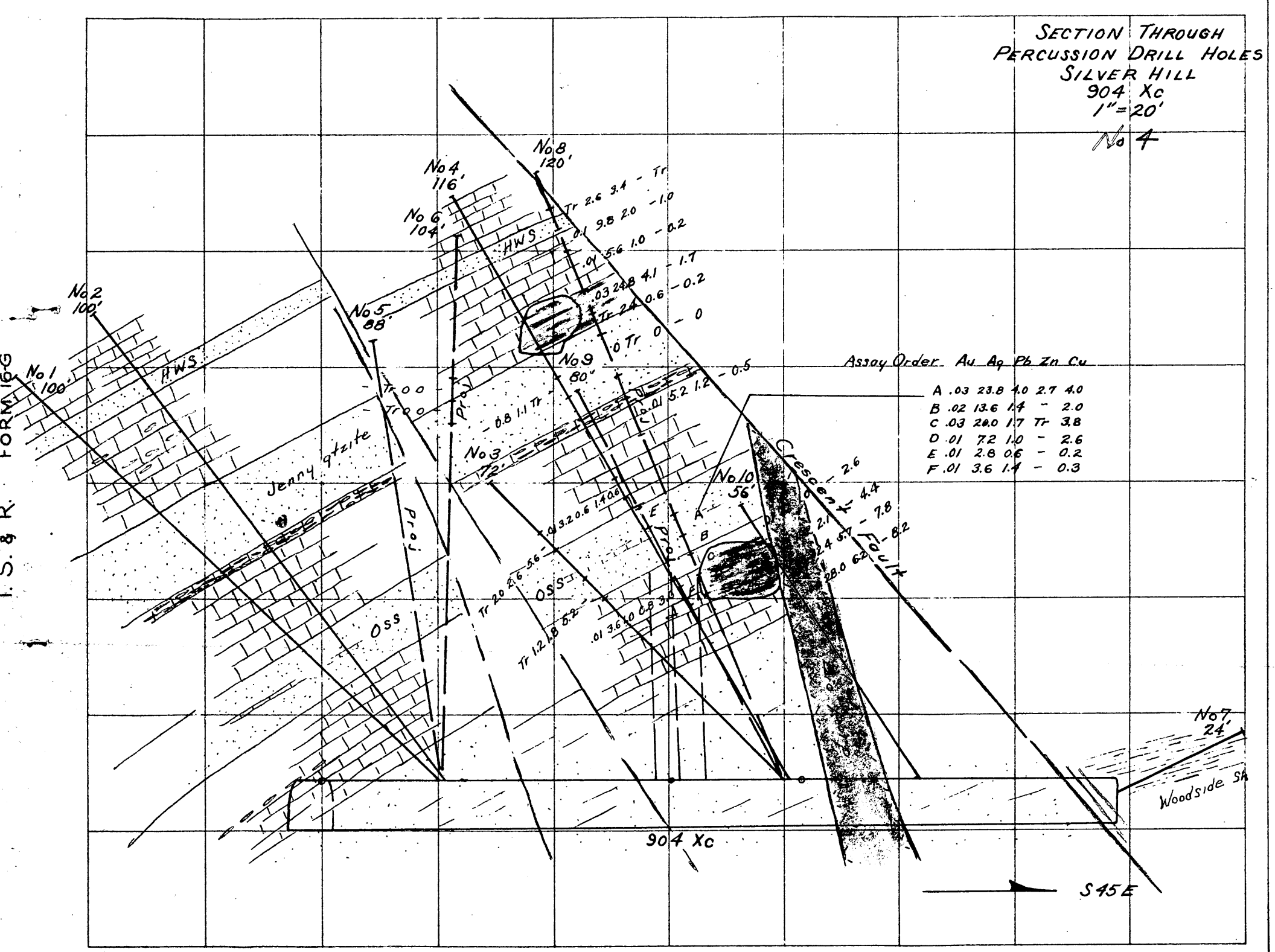
Marvin P. Barnes, Project Engineer
Keystone Mining Company


No. 1c
104'
No. 1b
80'
No. 1a
92'
No. 1
120'
CRESCENT FAULT
Ore bed
Jenney Qtzite
901 No 1 Sta
902 Xc
Note: All negative assays heavy pyrite
Assay Order
Au Ag Pb Zn Cu
Note: Cu not always assayed
S40E
SILVER HILL 900
STA No. 1 HOLES
LINE OF SECTION N40W
1" = 20'
No 2

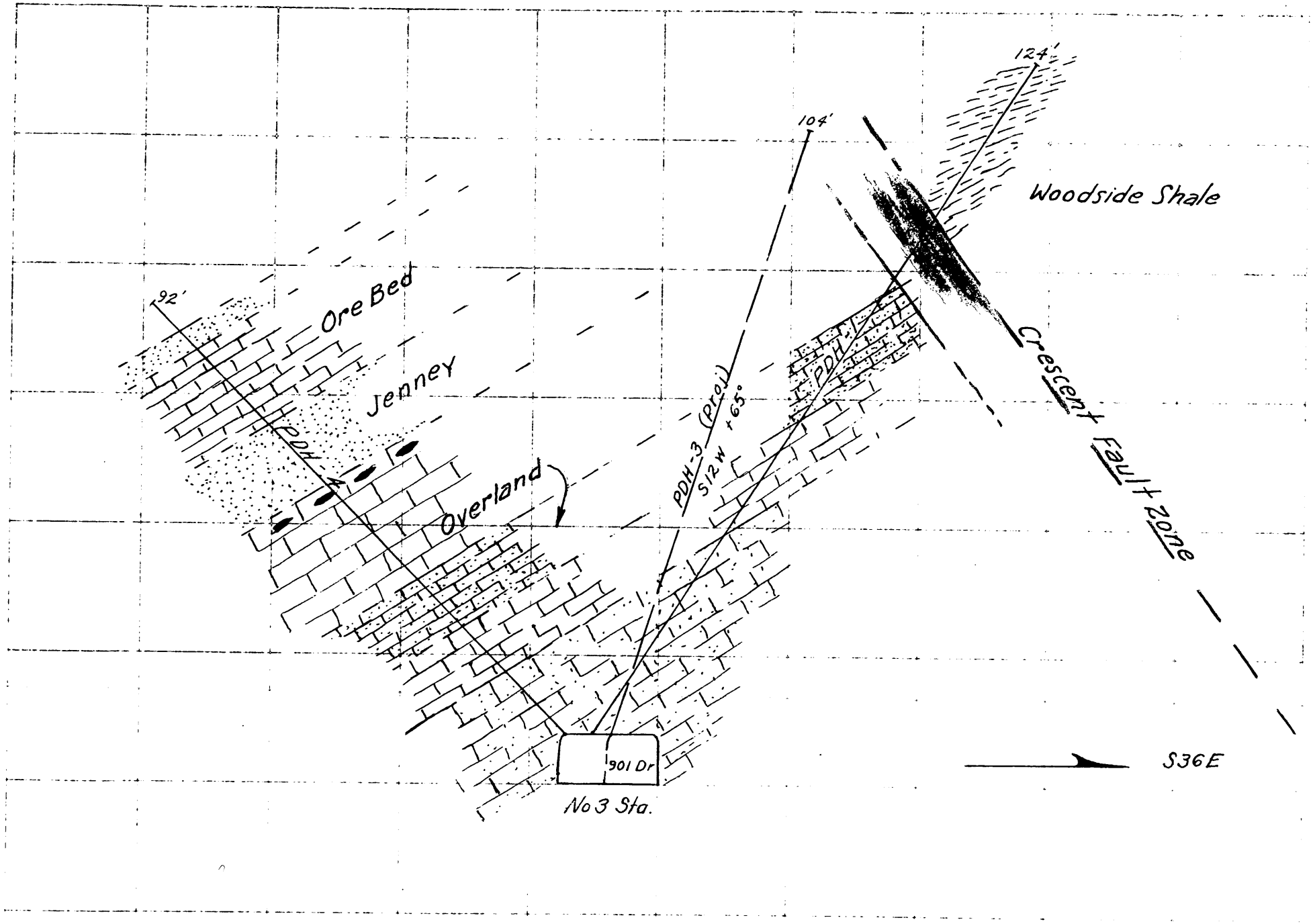
I. S. & R. FORM 16-G


CRESCENT FAULT
No. 4
80'
Tr 0.8 0.6 0
Tr 0.6 1.5 1.7 0
Tr 0.8 1.6 0.8 0
Tr 1.4 3.0 1.0 0
Tr 1.2 0 0 0
Tr 1.0 0 0 0
heavy FeS2
No. 2
42'
Ore Bed
No. 2a
60'
Qtzite
Jenny
No 2
90'
Oss
S40E
SILVER HILL 900
STA No 2 HOLES
LINE OF SECTION N40W
1" = 20'
No 3

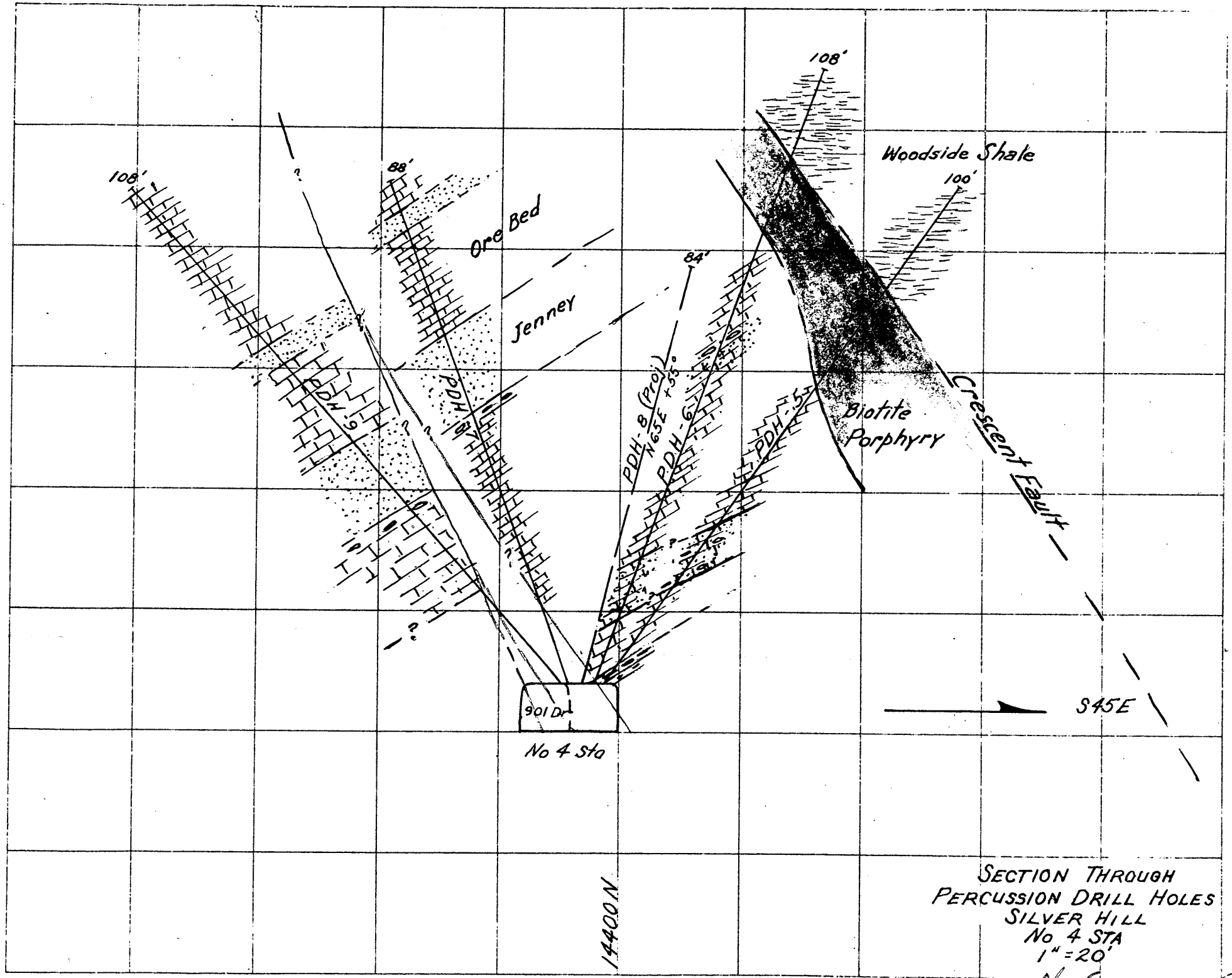
I. S. & R. FORM 103


SECTION THROUGH
PERCUSSION DRILL HOLES
SILVER HILL
904 Xc
1"=20'
No 4
No 1 100'
No 2 100'
No 3 72'
No 4 116'
No 5 88'
No 6 104'
No 7 24'
No 8 120'
No 9 80'
No 10 56'
HWS
Jenny qtzite
Proj
OSS
Crescent Fault
Woodside Sh
904 Xc
S 45 E
Assay Order Au Ag Pb Zn Cu
A .03 23.8 4.0 2.7 4.0
B .02 13.6 1.4 - 2.0
C .03 20.0 1.7 Tr 3.8
D .01 7.2 1.0 - 2.6
E .01 2.8 0.6 - 0.2
F .01 3.6 1.4 - 0.3

U. S. & R. FORM 16-G



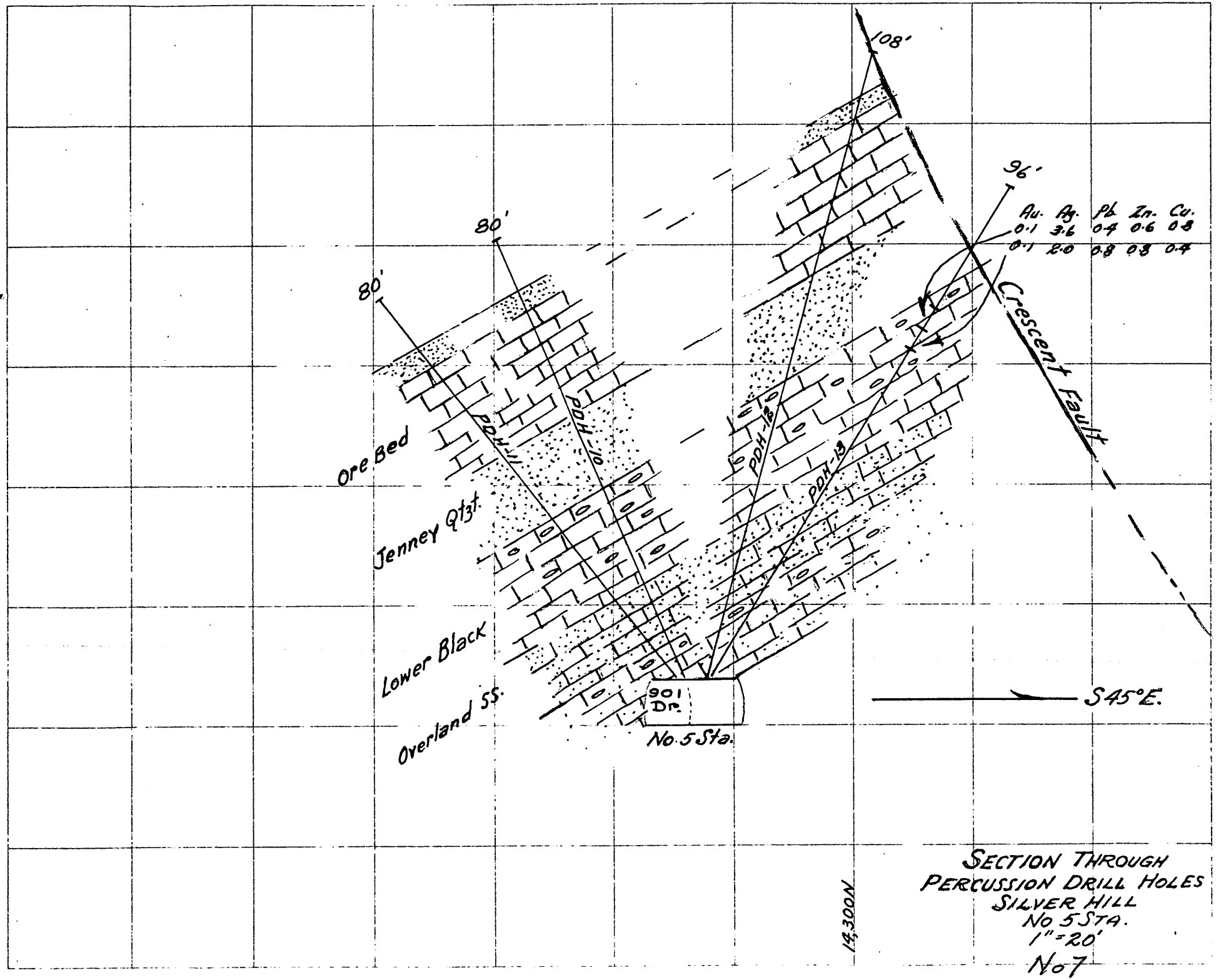
SECTION THROUGH
PERCUSSION DRILL HOLES
SILVER HILL
No 3 STA
1" = 20'
No 5



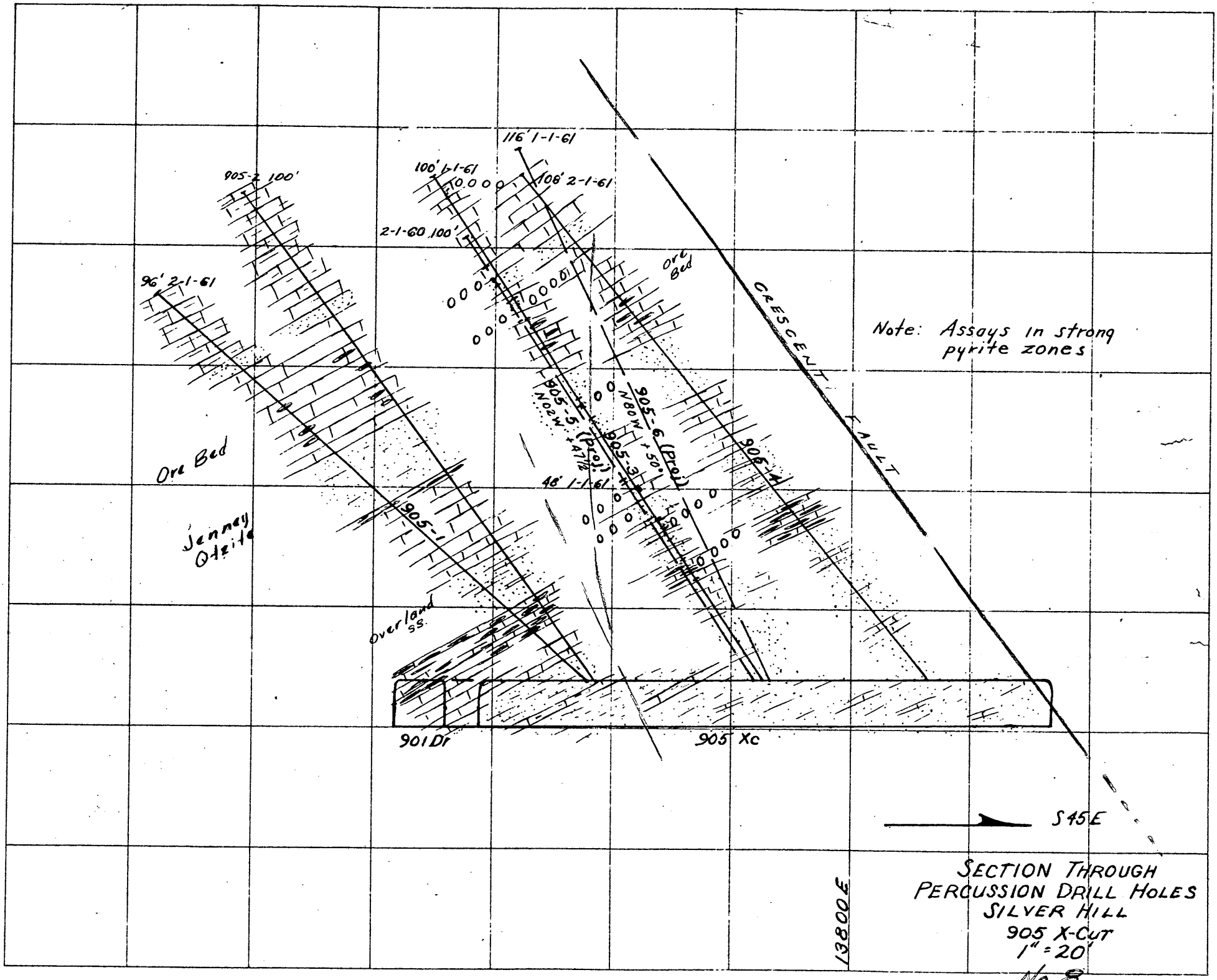
SECTION THROUGH
PERCUSSION DRILL HOLES
SILVER HILL
No 4 STA
1" = 20'

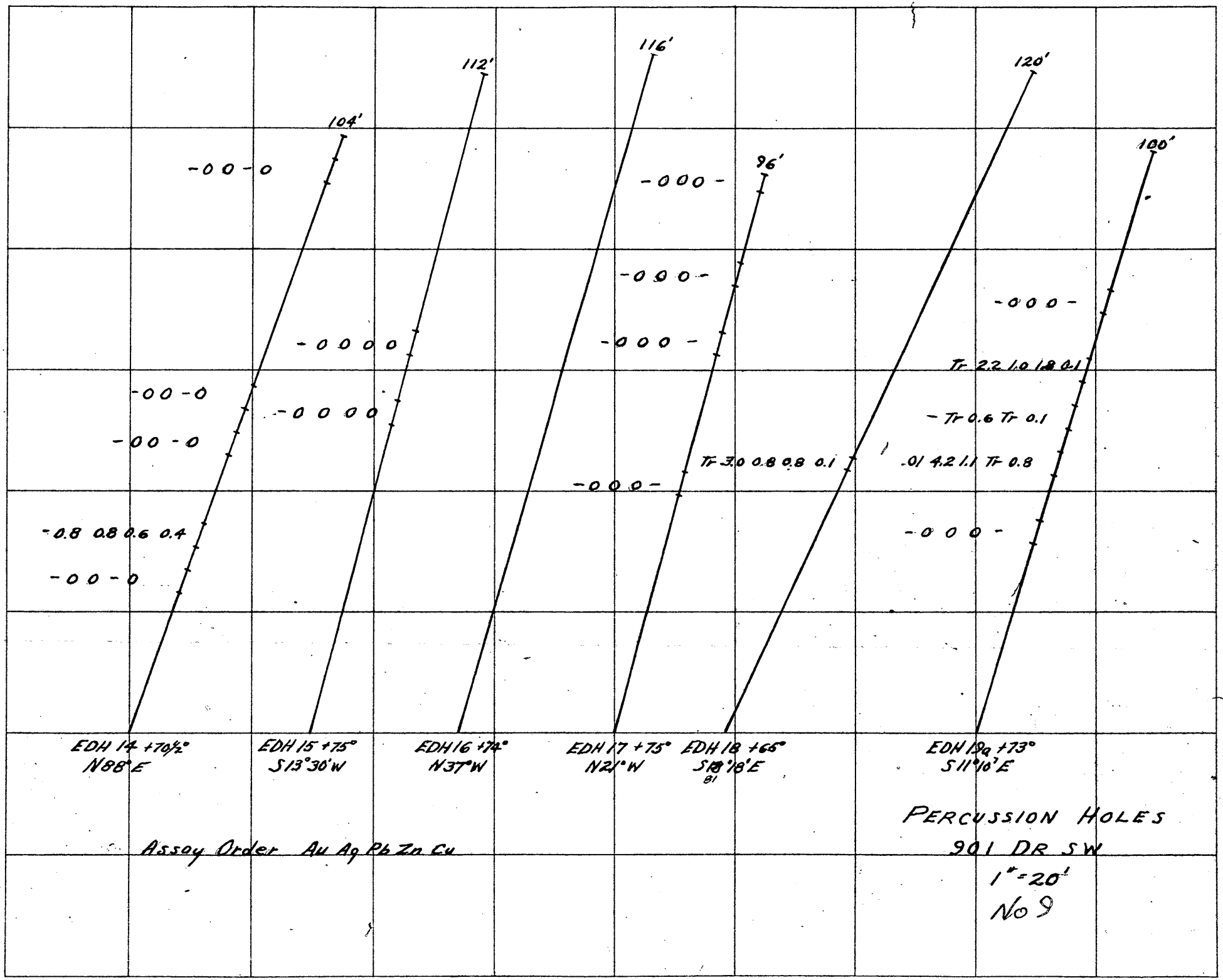
No 6

FORM 1006

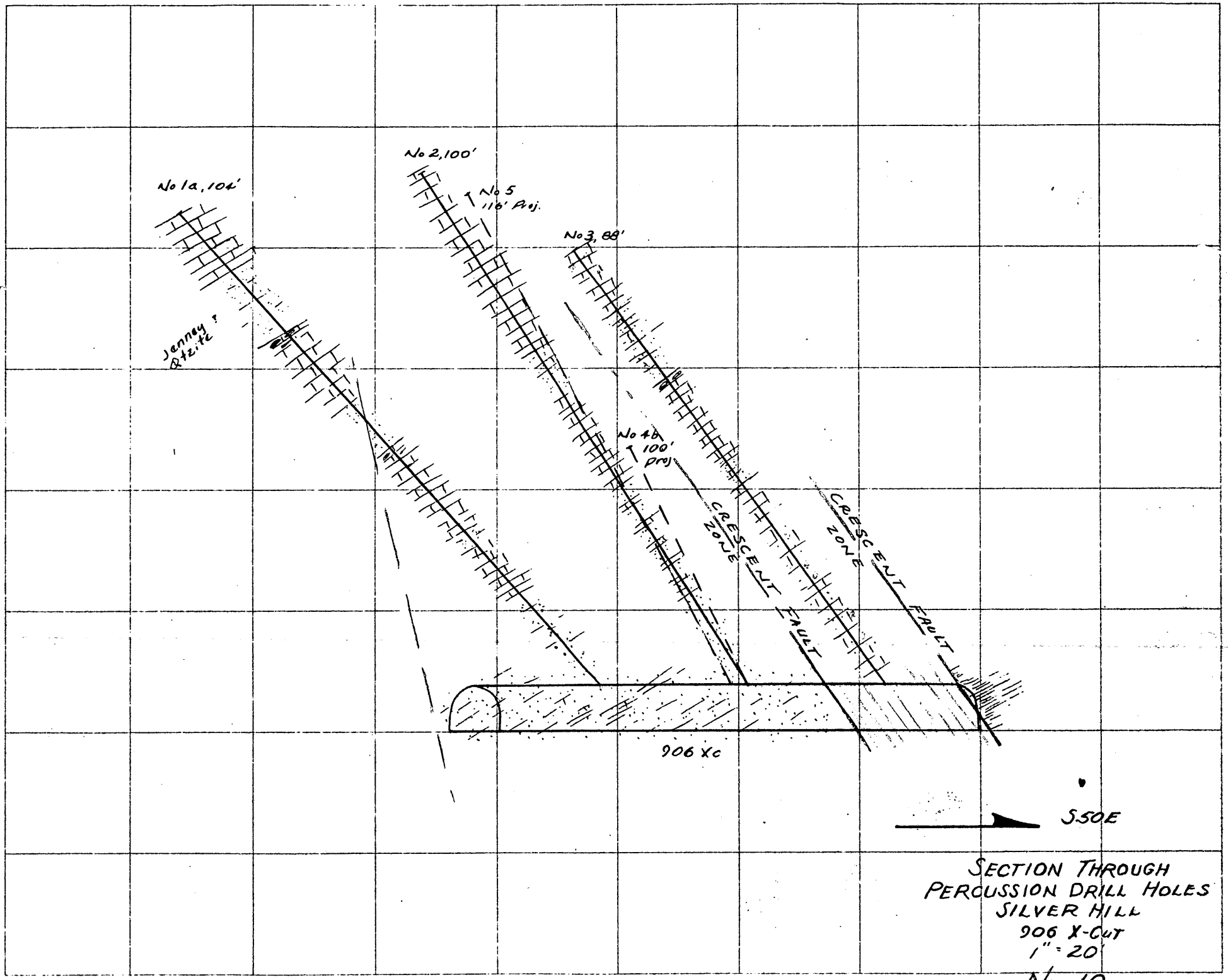


SECTION THROUGH
PERCUSSION DRILL HOLES
SILVER HILL
No 5 STA.
1" = 20'
No 7


116' 1-1-61
100' 1-1-61
108' 2-1-61
905-2 100'
2-1-60 100'
96' 2-1-61
Ore Bed
CRESCENT FAULT
Note: Assays in strong pyrite zones
905-6 (Proj)
N80W +50°
905-5 (Proj)
N02W +47½
905-3
48' 1-1-61
905-4
905-1
Ore Bed
Jenney Qtzite
Overland SS.
901 Dr
905 Xc
S45E
138000E
SECTION THROUGH
PERCUSSION DRILL HOLES
SILVER HILL
905 X-CUT
1" = 20'
No 8

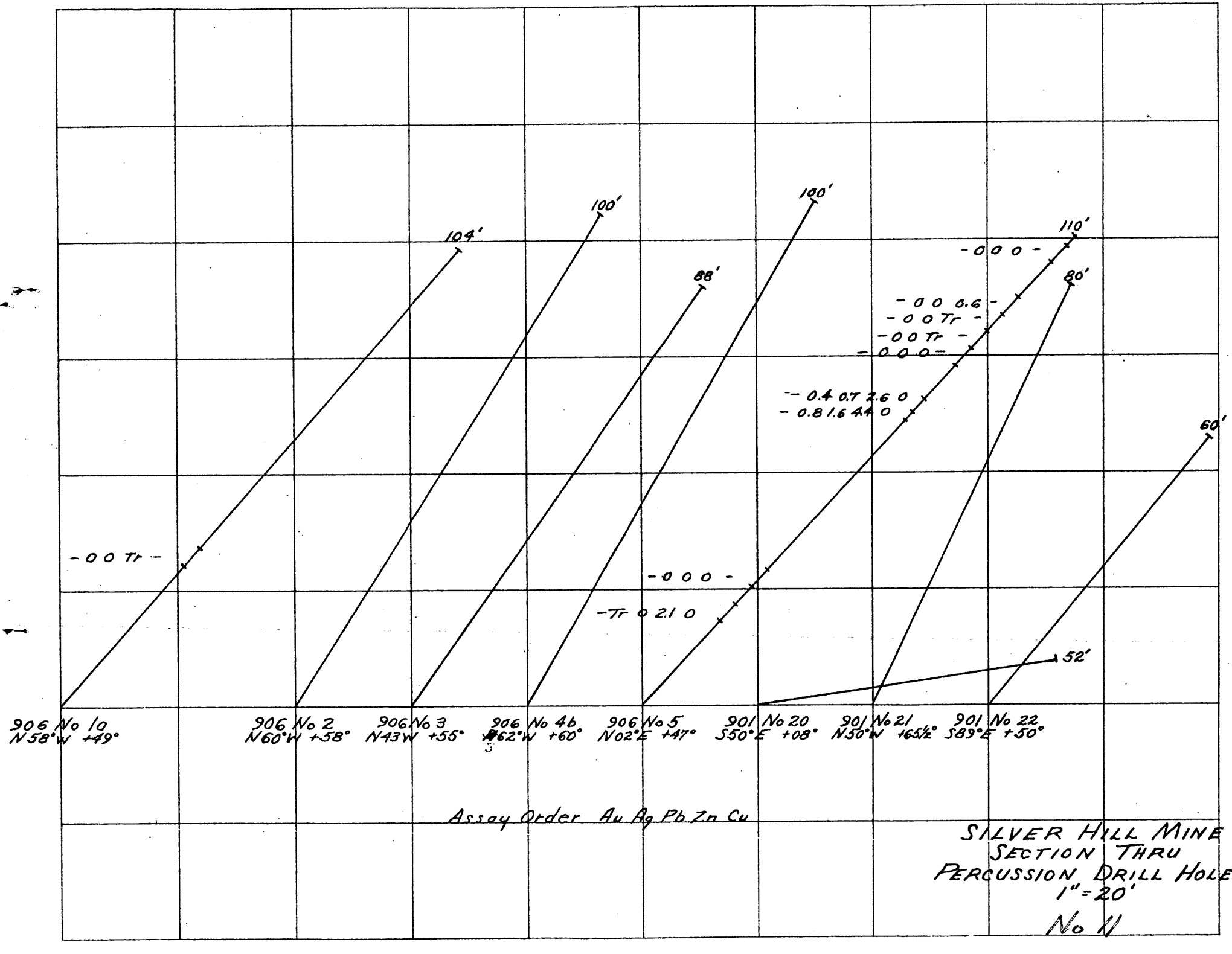

104'
112'
116'
96'
120'
100'
-0 0 -0
-0 0 0 -
-0 0 0 -
-0 0 0 -
-0 0 0 -
-0 0 0 0
-0 0 0 -
-0 0 0 -
Tr 2.2 1.0 1.8 0.1
-0 0 -0
-0 0 0 0
-Tr 0.6 Tr 0.1
-0 0 -0
Tr 3.0 0.8 0.8 0.1
.01 4.2 1.1 Tr 0.8
-0 0 0 -
-0.8 0.8 0.6 0.4
-0 0 0 -
-0 0 -0
EDH 14 +70½°
N88°E
EDH 15 +75°
S13°30'W
EDH 16 +74°
N37°W
EDH 17 +75°
N21°W
EDH 18 +65°
S18°18'E
EDH 19a +73°
S11°10'E
Assay Order Au Ag Pb Zn Cu
PERCUSSION HOLES
901 DR SW
1" = 20'
No 9

FORM 1006

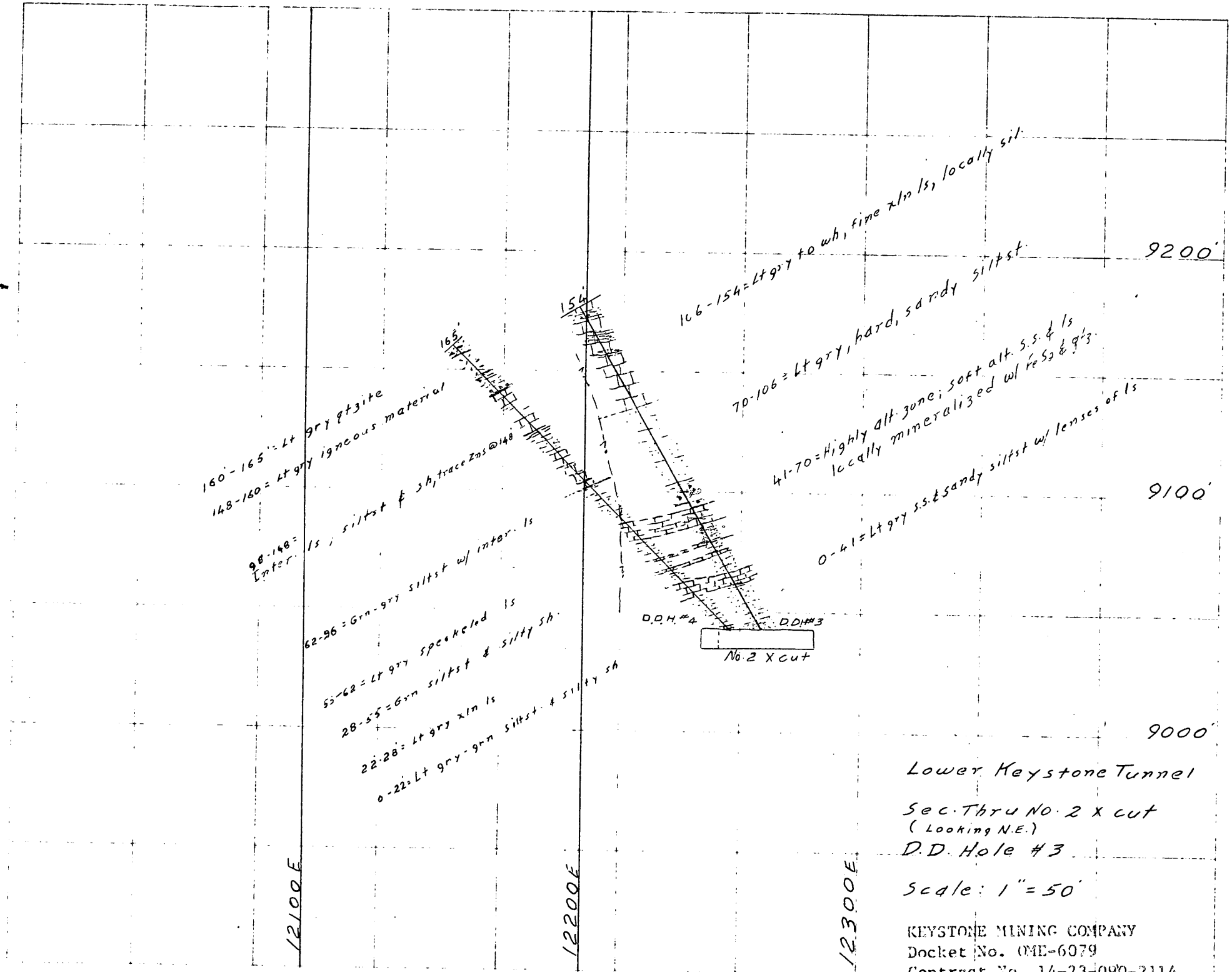


SECTION THROUGH
PERCUSSION DRILL HOLES
SILVER HILL
906 X-CUT
1" = 20'

No 10


I. S. & R. FORM 16-G
104'
100'
100'
88'
110'
80'
60'
52'
-0 0 Tr -
-0 0 0 -
-Tr 0 2.1 0
-0 0 0 -
-0 0 0.6 -
-0 0 Tr -
-0 0 Tr -
-0 0 0 -
-0.4 0.7 2.6 0
-0.8 1.6 4.4 0
906 No 1a N58°W +49°
906 No 2 N60°W +58°
906 No 3 N43W +55°
906 No 4b 62°W +60°
906 No 5 N02°E +47°
901 No 20 S50°E +08°
901 No 21 N50°W +65½°
901 No 22 S89°E +50°
Assay Order Au Ag Pb Zn Cu
SILVER HILL MINE
SECTION THRU
PERCUSSION DRILL HOLES
1" = 20'
No 11

FORM 1006



Lower Keystone Tunnel

Sec. Thru No. 2 X cut
(Looking N.E.)
D.D. Hole #3

Scale: 1" = 50'

KEYSTONE MINING COMPANY
Docket No. OME-6079
Contract No. 14-23-090-2114

No 13

FORM 1006

D.D. No. 1

Core Samples

Ft'ge	Au	Ag	Pb	Zn
117-117½	.02	5.6	2.3	6.2
125-126½	.02	6.8	2.6	11.1
157-157½	tr	1.6	0	2.3
163½-166	0	0.8	0	10.0

Slc. Samples

116½-117½	0	0.6	0	1.7
117½-126½	0	tr	0	0
147½-157½	0	tr	0	2.1
163½-166½	0	0.6	0	3.7

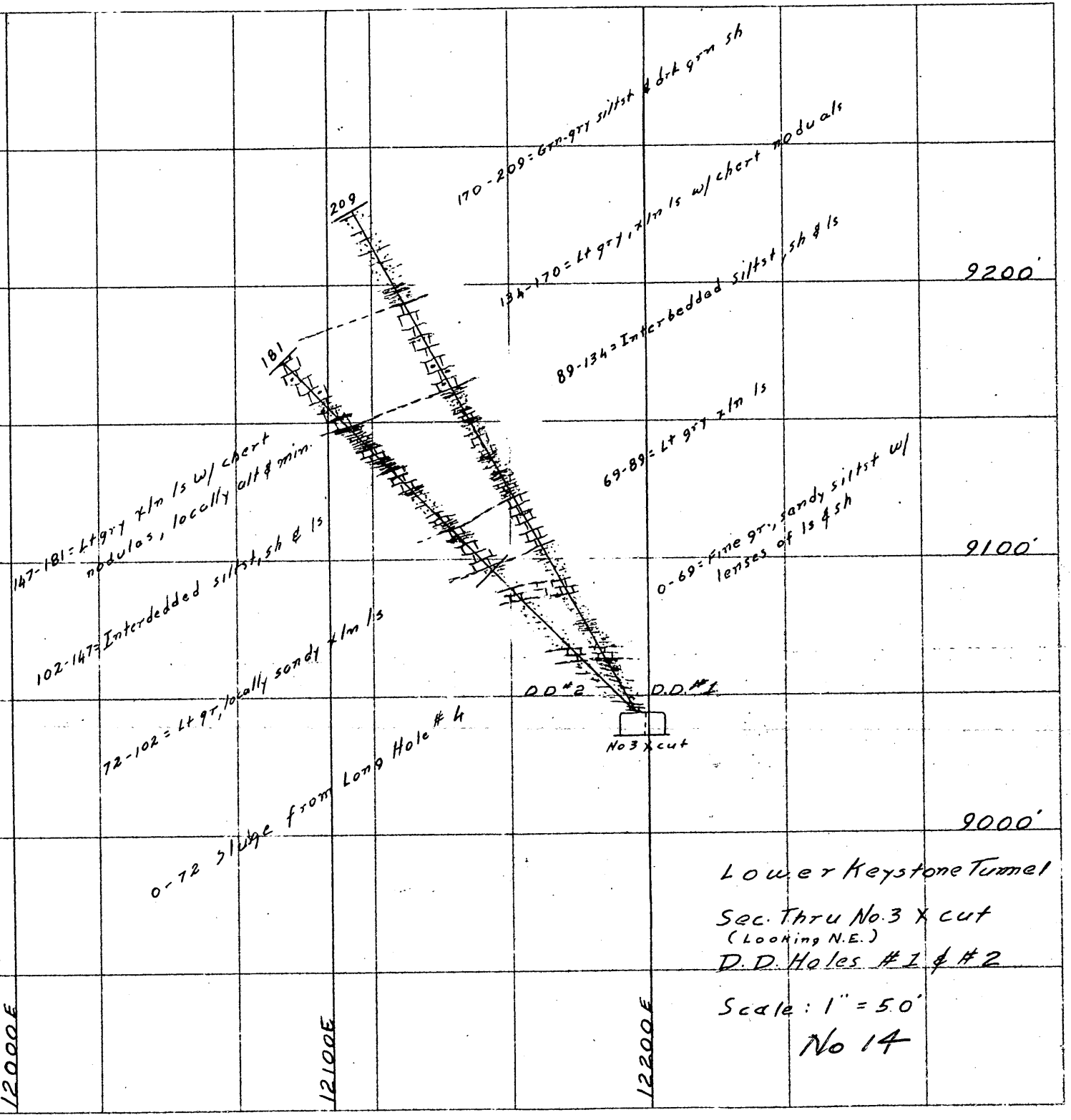
D.D. No. 2

Core Samples

125½-126	tr	1.2	8.1	12.5
135-136	tr	1.6	tr	2.3
150-151	0	0.6	tr	2.0
153-158	0	0.4	0	0
166-171	0	0.2	0	1.3

Sludge Samples

112½-122	0	tr	0	0
122-123	0	0.8	0	1.4
138-143	0	tr	0	0
143-153	0	tr	0	0
153-158	0	1.6	0	0.7
158-161	0	1.0	0	0.4
161-171	0	0.8	0	tr



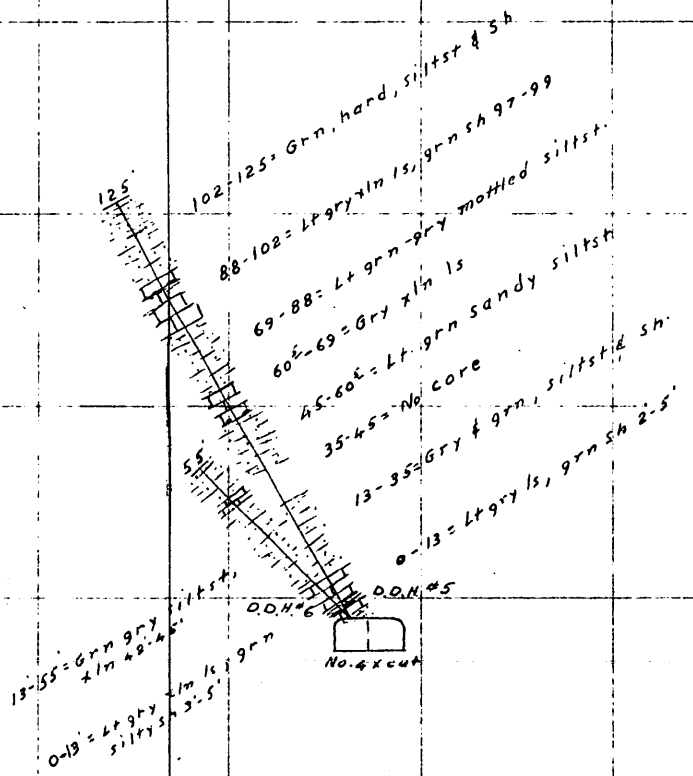
FORM 1006

D.D.H. No. 4
Core Sample

Ftge	Au	Ag	Pb	Zn
137-138:	0	tr	0	2.7

Sludge Samples

138-145:	0	0.8	0	2.5
145-155:	tr	1.2	0.8	2.0
155-165:	0	0	0	tr

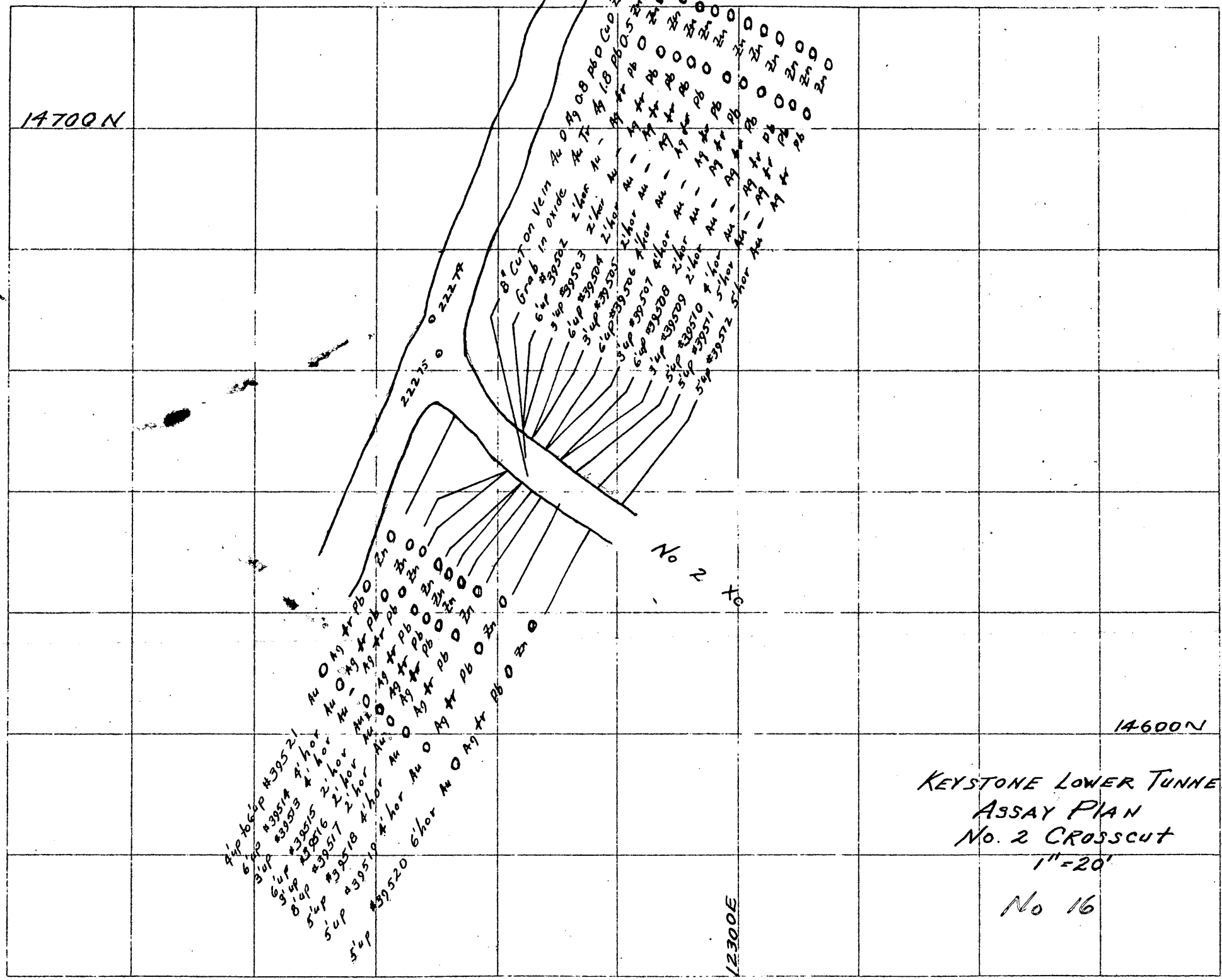


Lower Keystone Tunnel
Sec. Thru No. 4-X cut
Looking N.E.
D.D.H. No's. 5 & 6
Scale: 1" = 50'

KEYSTONE MINING COMPANY
Docket No. OME-6079
Contract No. 14-23-090-2114

No 15

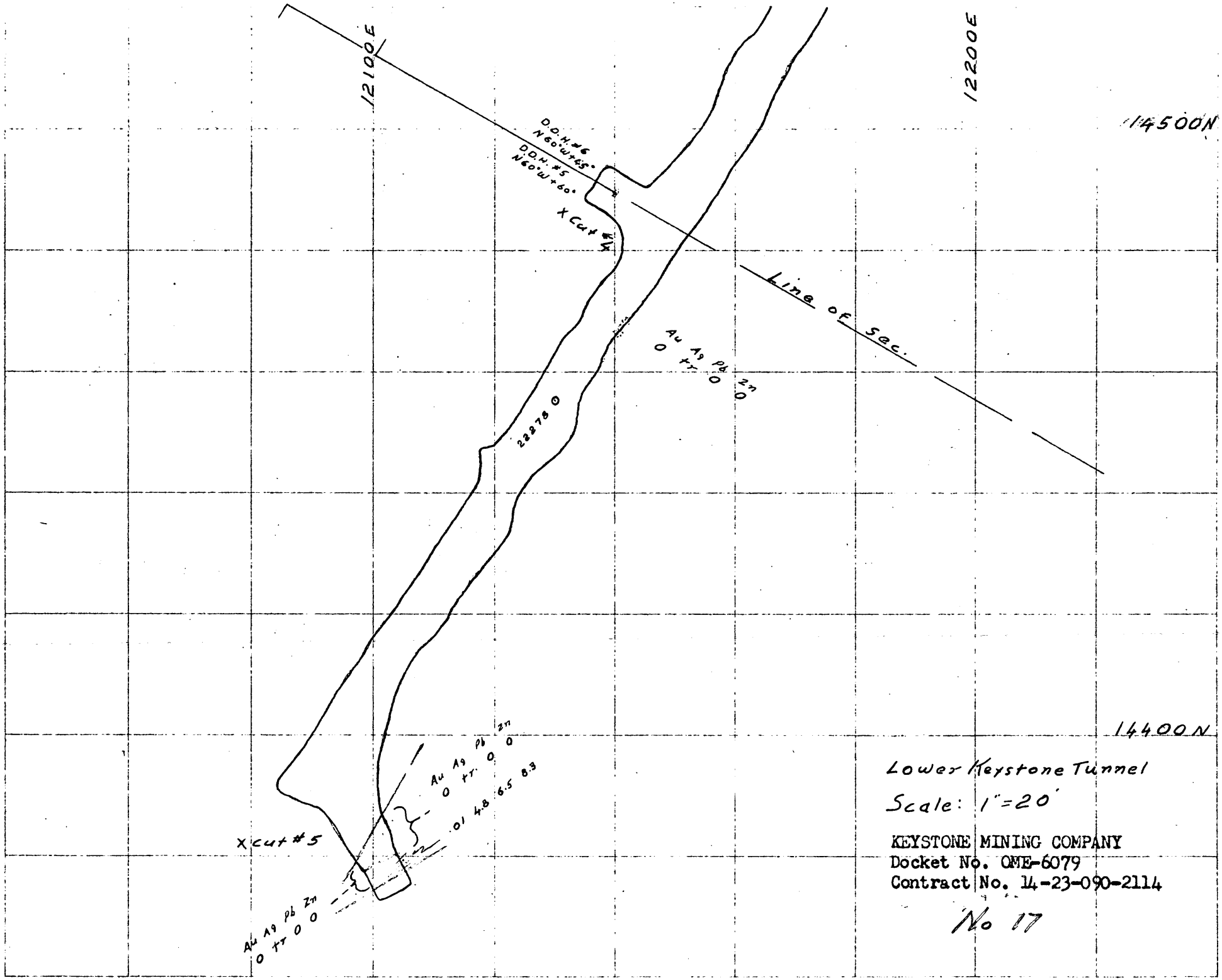
FORM 1006



KEYSTONE LOWER TUNNEL
ASSAY PLAN
No. 2 CROSSCUT
1" = 20'

No 16

I. S. & R. FORM 16-G

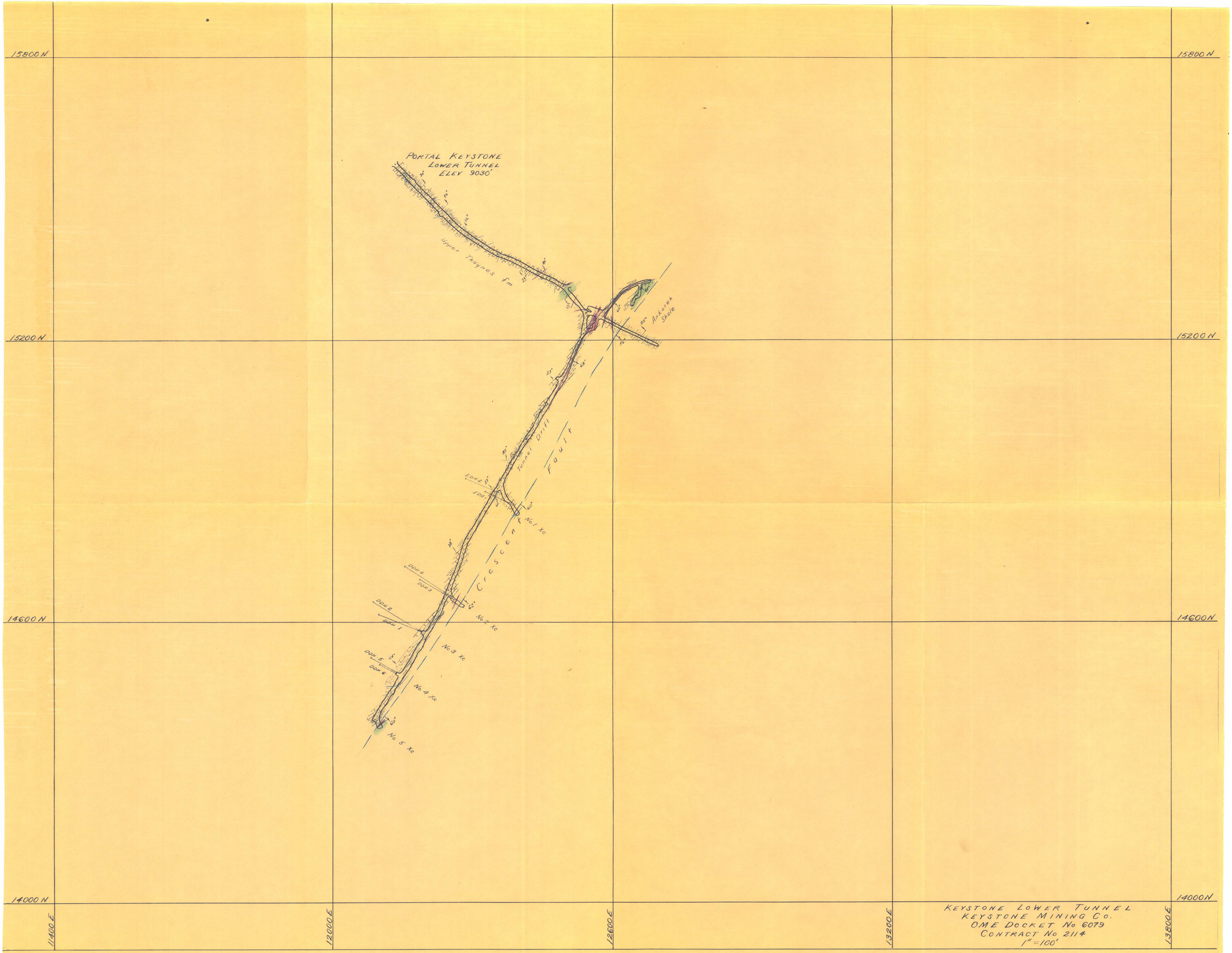


Lower Keystone Tunnel

Scale: 1"=20'

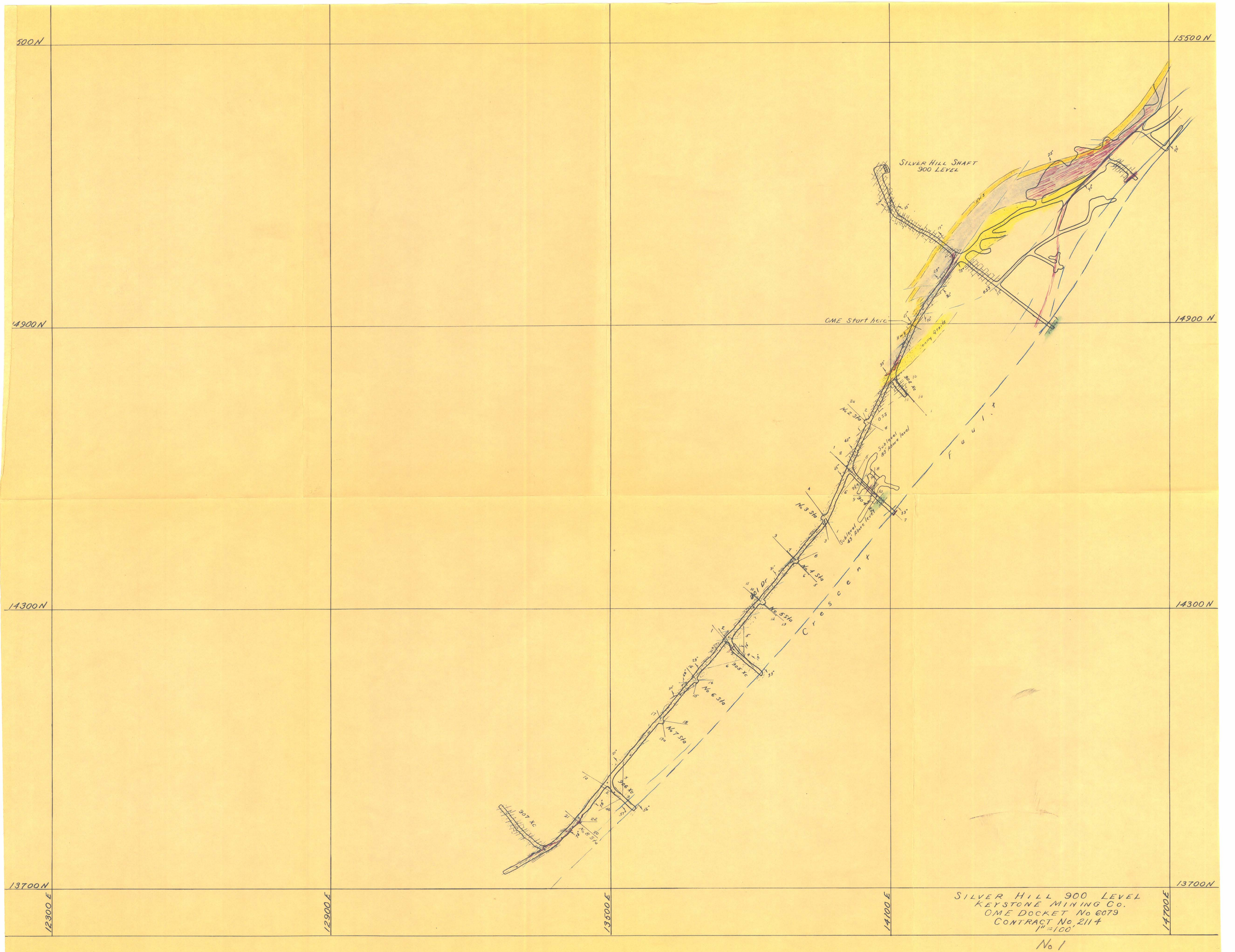
KEYSTONE MINING COMPANY
Docket No. OME-6079
Contract No. 14-23-090-2114

No 17



KEYSTONE LOWER TUNNEL
KEYSTONE MINING Co.
OME DOCKET No 6079
CONTRACT No 2114
1" = 100'

No 12



SILVER HILL 900 LEVEL
KEYSTONE MINING CO.
OME DOCKET No 6079
CONTRACT No 2114
1" = 100'

No 1