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PROPOSED DRILL HOLES
DRILL HOLES IN PROGRESS
DRILL HOLES COMPLETED

SAN XAVIER – ASARCO
BANNER MINING CO.

BANNER MINING CO
ASARCO

SAN XAVIER – ASARCO
ASARCO

AMERICAN SMELTING AND REFINING COMPANY
MISSION UNIT

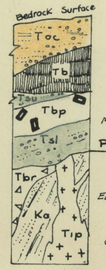
DIAMOND DRILLING PROGRESS MAP

SCALE	DRAWN	DATE	FILE
1" = 200'	ENG. DEPT.	NOV 1966	MIS-IIE - 320

LEGEND

Note: Except for the few scattered outcrops, geology is shown at bedrock sub-outcrop; 200 maximum alluvial cover.

ROCKS



Upper Tertiary	Toc	Older conglomerate (well indurated)
	Tb	Black Mountain basalt
Middle Tertiary	Tsu	Upper member
	Tbp	Basalt porphyry (flow)
	Tsl	Lower member
		San Xavier fm.
POST-ORE.		SAN XAVIER SURFACE
PRE-ORE.		
Early Tertiary	Tip	Intrusive porphyries - mons. or quartz mons. types
	Tbr	Biotite rhyolite (flow & intrusive
Cretaceous	Ka	Amole group (arkose & siltstone
	Tsg	Sierrita granite

MINERALIZATION

NORTH OF "NORTH FAULT"

SULFIDES

- Chalcocite ore (> 0.4% Cu)
- Drill hole w/ primary ore (> 0.4% Cu) outside chalc. blanket
- Approximate max. limits of possible pit ore body, combing primary & chalc. ore.

LEACHED CAPPING

- Approx. limits of limonite after chalcocite
- Approx. limits of maroon hematite "fog" which floods capping of pyrite-limonite (plus traces of chalc.-lim.)
- Approx. limits of limonite after pyrite and hydrothermal alteration
- Projection of alteration zone beneath cover rocks

STRUCTURE

- Post-ore fault (marked by G where structure is based primarily on geophysical survey data.
- Pre-ore fault or vein
- Contact
- Outcrop surrounded by alluvium
- Approx. limits of area intruded by Tip at shallow depths

○ Drill hole in post-ore rocks only

SOUTH of SOUTH FAULT (MISSION ORE ZONE)

Outline of possible pit ore (> 0.4% Cu)

Tsu Tbp Tb Tsl Diagramatic erosional remnant Inferred steep dip

Toc (Overlies Tb at 400'±, Tb to 520'±, unc. above Tbr or Ka)

LIMITS of Tb BASED ON MAGNETIC SURVEY

Line of Cross Section

Tbp Tb Toc Tsu Assumed dip 70° TRACT 1

Ka Tip Tbr Tsl Tbp Tb TRACT 2

TRACT 3

ASARCO MINERAL LEASE BOUNDARY

Old C.D.H. well 0-183' Gravel -736' Fresh siltstone w/ alt ark. w/ py

Tbp Olivene bas. (facies I) Tbr slab in Tsl Arkose Breccia slabs in Tsl

Tsg Tbr Arkose Arkose Old C.D.H. 0-170' Gravel -736' Tbr

Basement Hornfels Fault Zone Paleozoic

Old D.H.'s United Geo.

0-150' gravel 1. Pali shale Silt. 1's, 4's, 7's TD 2. Tb ? 330' TD 3. Tb ? 360' TD

Tsl, Tbp, Tsu } Below Tb, low dips

Very low west dip

Gravity anomalies here may record ridge of Tbp extending NE from X249 S

Tb bottom contact slopes gently NE

Tsl, Tbp, Tsu } dips 20-30°, structure not worked out

Eastern limit, Mission alteration

NORTH FAULT

EAST FAULT

Papago fm. Kino fm. Chalcocite Pyrite

T. 16 S., R. 12 E.

T. 16 S., R. 13 E.

386 000 N
384 000 N
382 000 N
380 000 N
378 000 N
376 000 N
374 000 N
372 000 N
370 000 N
368 000 N

ASARCO

San Xavier Project

Pima County, Arizona

BEDROCK GEOLOGY DRILLING MAP

Scale: 1" = 1000'

May 1960 JEKINWISEN

December 1957

Map No. 1391

LOCATION

SURVEY

SCALE

LEVEL

DATE

SCALE 1"=200'

N 369,000

E 762,000

E 764,000

E 766,000

N 366,000

N 364,000

SAN XAVIER – ASARCO

BARNER MINING CO.

ASARCO

BARNER MINING CO

ASARCO

PROPOSED DRILL HOLES

DRILL HOLES IN PROGRESS

DRILL HOLES COMPLETED

AMERICAN SMELTING AND REFINING COMPANY
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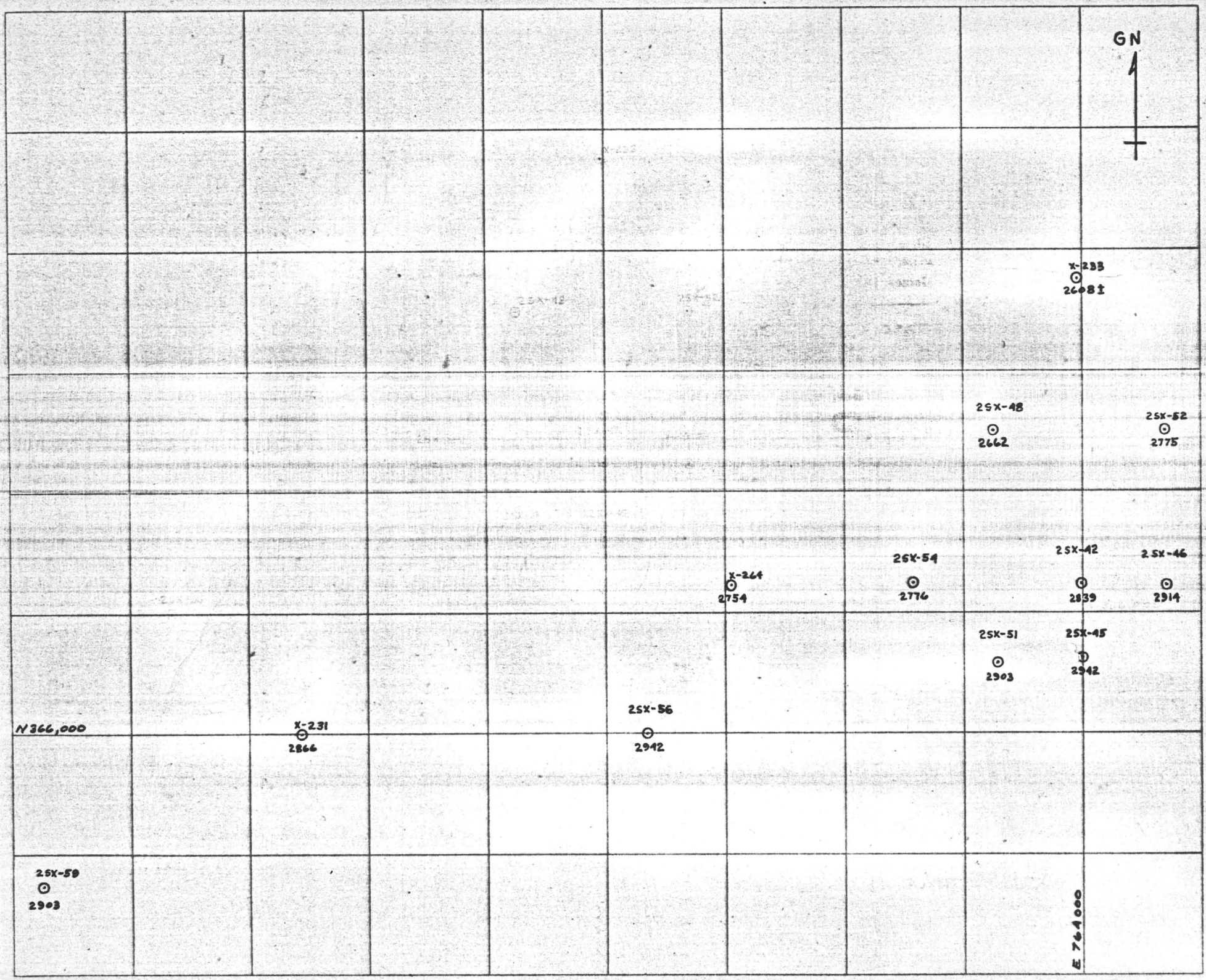
DIAMOND DRILLING PROGRESS MAP

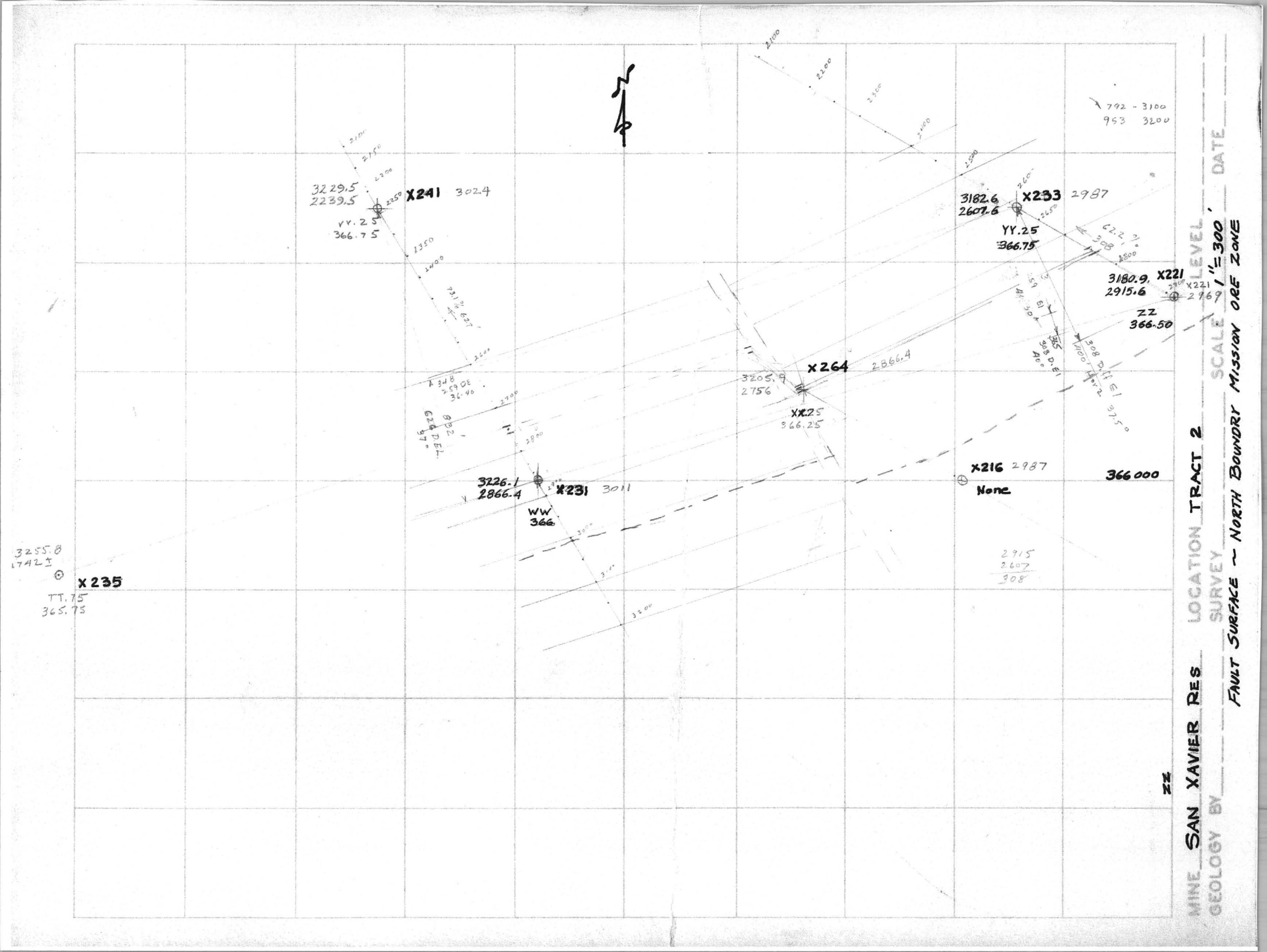
SCALE	DRAWN	DATE	FILE
1" = 200'	ENG. DEPT	Nov. 1966	MIS-IIE-320

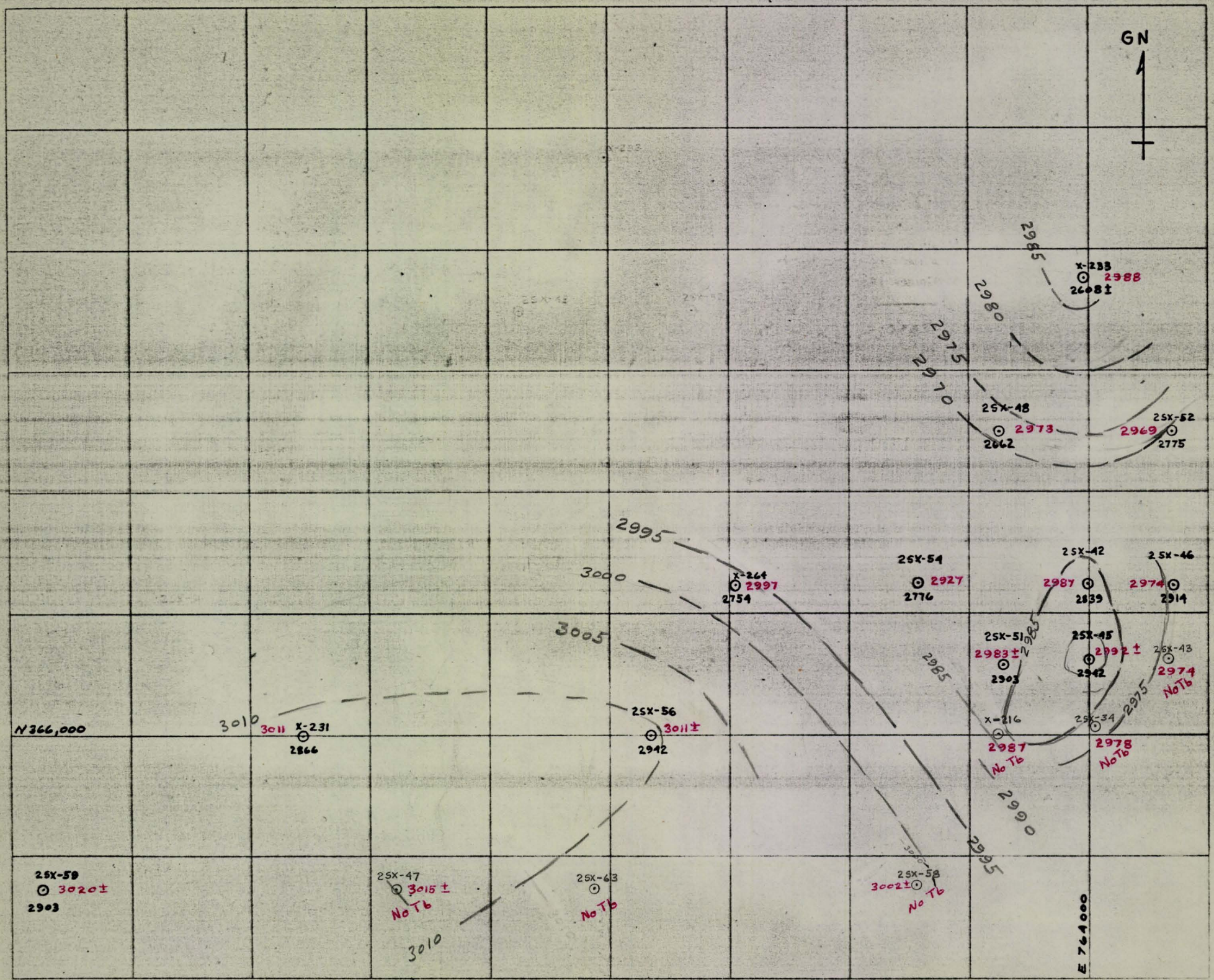


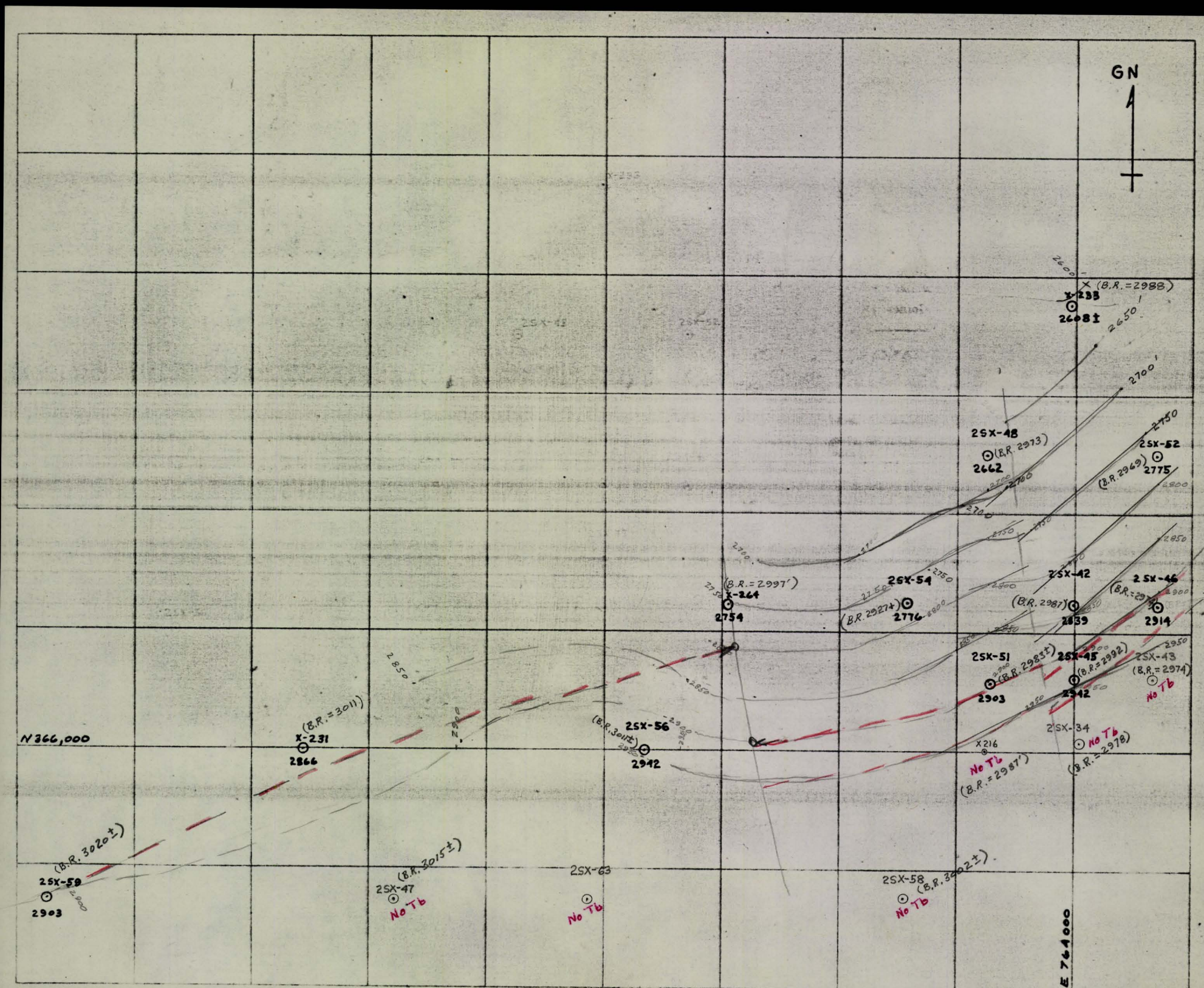
MINE _____ LOCATION Mission - San Xavier LEVEL Surface

GEOLOGY BY _____ SURVEY _____ SCALE 1" = 200' DATE 1-18-67

LOKEN 1008

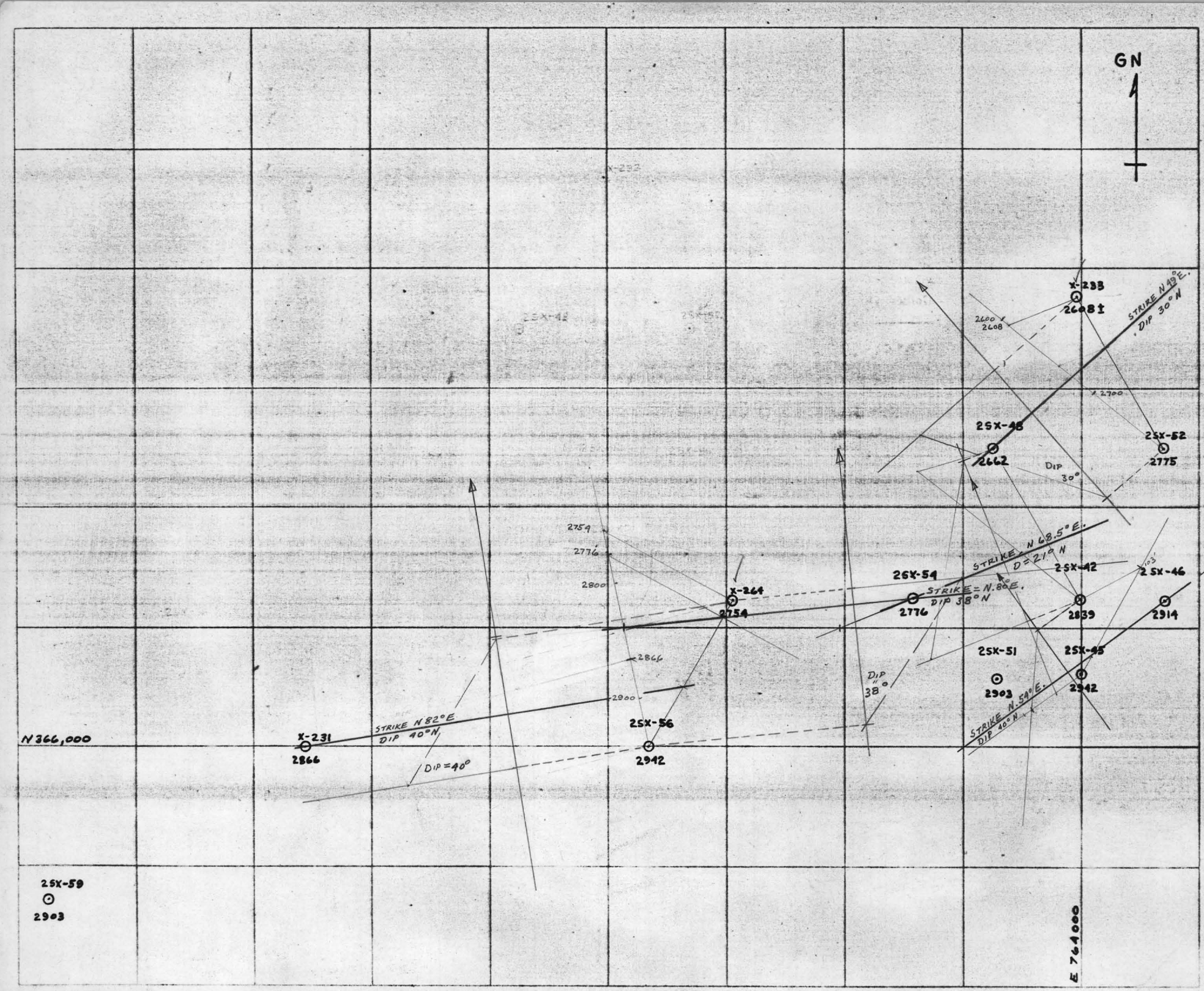

MINE SAN XAVIER RES LOCATION TRACT 2 LEVEL
GEOLOGY BY SURVEY SCALE 1"=300' DATE
FAULT SURFACE ~ NORTH BOUNDRY MISSION ORE ZONE
3229.5
2239.5
X241 3024
YY.25
366.75
3182.6
2607.6
X233 2987
YY.25
366.75
3180.9
2915.6
X221
X221 2969
ZZ
366.50
3205.9
2756
X264 2866.4
XX.25
366.25
3226.1
2866.4
X231 3011
WW
366
X216 2987
None
366 000
3255.8
1742
X235
TT.75
365.75
2915
2607
308
ZZ

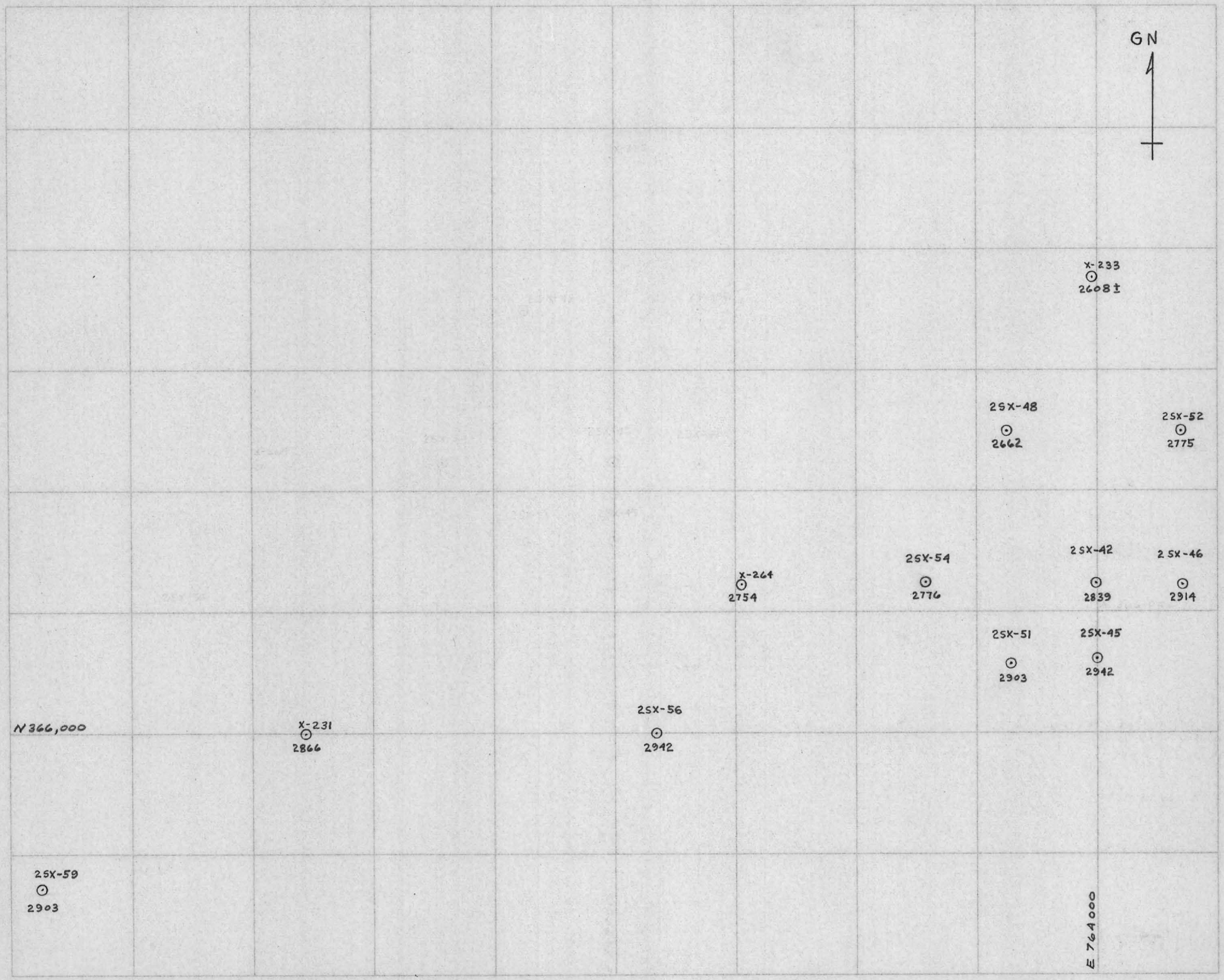

GN
2985
2980
2975
2970
X-233
2988
2608±
25X-48
2973
2662
25X-52
2969
2775
2995
3000
3005
3010
X-264
2997
2754
25X-54
2927
2776
25X-42
2987
2839
25X-46
2974
2914
25X-51
2983±
2903
25X-45
2992±
2942
25X-43
2974
NoTb
X-216
2987
NoTb
25X-34
2978
NoTb
2990
2995
N366,000
3011
X-231
2866
25X-56
3011±
2942
25X-59
3020±
2903
25X-47
3015±
NoTb
25X-63
NoTb
25X-58
3002±
NoTb
3010
E 764000
LOCATION Mission - San Xavier
LEVEL B.R. Surface
MINE
SURVEY
SCALE 1" = 200'
DATE 1-13-67
GEOLOGY BY



MINE _____ LOCATION Mission - San Xavier LEVEL Bottom Surface of Tb

GEOLOGY BY _____ SURVEY _____ SCALE 1" = 200' DATE 1-13-67


GN
X-233
2608
STRIKE N 49° E.
DIP 30° N
2600
2608
2700
25X-48
2662
25X-52
2775
DIP 30°
2754
2776
2800
X-264
2754
25X-54
STRIKE N 68.5° E.
D = 21.9 N
STRIKE = N. 80° E.
DIP 38° N
2776
25X-42
2839
25X-46
2914
2866
2900
25X-51
2903
25X-45
2942
DIP 38°
STRIKE N. 54° E.
DIP 40° N
N 366,000
X-231
2866
STRIKE N 82° E.
DIP 40° N
25X-56
2942
DIP = 40°
25X-59
2903
E 764000
LOCATION Mission - San Xavier
LEVEL Surface
MINE
SURVEY
SCALE 1" = 200'
DATE 1-18-67
GEOLOGY BY



LOCATION Mission - San Xavier LEVEL Surface

MINE

GEOLOGY BY SURVEY SCALE 1" = 200' DATE 1-13-67