

003119

**CURRAGH RESOURCES INC.**

**FARO MINE**

**UNDERGROUND**

**GEOLOGICAL EVALUATION**

**VOLUME I**

**Beacon Hill Consultants Ltd.  
R.J. Morris, M. Sc.**

FROM

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DATE

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TO

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SUBJECT

BEACON HILL CONSULTANTS  
UNDERGROUND REPORT

POSTCODE

MESSAGE

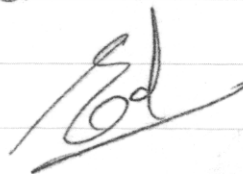
THE RESERVE FIGURES QUOTED IN THIS REPORT ARE MISCALCULATED. THE AUTHOR HAS INFLATED THE RESERVES BY SLIGHTLY MORE THAN 15% FROM THE ACTUAL RESULTS OBTAINED USING THE STATED ASSUMPTIONS.

THE CORRECT TONNAGES FOR PAGE 8 OF THE REPORT ARE:

NORTHWEST AREA	300,385 TONS
CORRIDOR AREA	108,138 "
SOUTHWEST AREA	1,590,883 "
TOTAL	1,999,405 "

REPLY FROM

THIS DOES NOT IMPACT ON THE BULK OF THE REPORT BUT DOES LOWER THE RESERVES TO A LEVEL WHERE ECONOMIC FEASIBILITY OF THE PROJECT MAY NEED RE-EXAMINATION.



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## Summary

Mr. R. Morris, M.Sc., associate consultant Beacon Hill Consultants Ltd., was requested by Mr. K. Galovich, Chief Engineer, Curragh Resources Inc., to update the geological data base at the southwest area of the open pit at the Faro mine site. The work also entailed recommendation of a diamond drilling program to upgrade the data base for the underground expansion.

A total of 50 diamond drill holes have tested the proposed underground expansion area. The area has been divided into three parts:

1. The Northwest area, between Sections 115+000 and 120+000.
2. The Corridor area, between Sections 120+000 and 125+000.
3. The Southwest area, between Sections 125+000 and 131+000.

Of the three, only the Corridor area, has drilling which shows that the ore horizon thins significantly down dip. In the other two areas the down dip potential remains open.

Mapping of S2 planes (degree of deformation) indicates relatively large sections, up to 150 feet along both strike and dip directions, of uniform lithologies with no tight folding. An overall change of strike from 125 to 180 degrees is observed at approximately Section 125+000. Dips vary from approximately 12 degrees from Section 125+000 north to approximately 20 degrees between Sections 125+000 and 131+000.

A study of joint orientations indicates two prominent joint directions (strike/dip):

- 1 -  $81^{\circ}/56^{\circ}$  and  $252^{\circ}/77^{\circ}$
- 2 -  $173^{\circ}/77^{\circ}$  and  $359^{\circ}/82^{\circ}$

A study of fault orientations indicated four groups (strike/dip):

- 1 -  $44^{\circ}/79^{\circ}$
- 2 -  $82^{\circ}/45^{\circ}$  and  $269^{\circ}/77^{\circ}$
- 3 -  $120^{\circ}/58^{\circ}$  and  $302^{\circ}/72^{\circ}$
- 4 -  $178^{\circ}/85^{\circ}$

Mapping located one major fault as well as three major structures where displacement couldn't be determined but which have been used in the interpretation. At least six breaks with wide gouge zones were located though no displacement was observed or interpreted. All of these major structures are plotted and named on the geological map, Figure 7. It should be noted that only at

geological station number 11 was there significant water flow while at station number 9 there was a small water seep.

A preliminary estimate of the reserves for the three areas indicates 2,371,000 tons @ +9% combined zinc lead. This reserve figure is classed as inferred, geologically in-place. An overall increase, due to folding of the ore horizon, has not been included in the preliminary estimate.

The following is recommended:

1. Geological mapping of all pit walls and any underground development is recommended to assist in geological interpretations and structural evaluations of pit wall and underground roof stability.
2. Several major structures were mapped in the southwest area of the pit, ramp 3790. It is recommended that these be continually monitored as the pit progresses since they will undoubtedly effect the interpretation of this area.
3. The pit wall between geological stations 11 and 31 was poorly exposed during July-August, it is recommended that it be studied in detail as it is directly above the underground area.
4. Eleven diamond drill holes are proposed to be drilled, seven of which will greatly improve the geological data base while the remainder will test the down dip extension.

## **Introduction**

Mr. K. Galovich, Chief Engineer, Curragh Resources Inc. contacted Mr. R. Morris, M.Sc., Associate Consultant Beacon Hill Consultants Ltd. in July, 1988 to undertake the following geological program at the Faro open pit.

- A detailed surface mapping of the southwest area of the BZ and CD phases of the existing pit.
- An evaluation, interpretation and modification of existing cross-sections.
- To recommend a diamond drilling program.
- To evaluate structural complexities in both the northwest and southeast underground zones.
- To provide a report covering the above work.

Mr. Morris spent two weeks, from the end of July to early August, at the site completing the on site work and returned to Vancouver to finalize the report.

## **Property Description**

### **Location and Access**

The Faro mine is located in south-central Yukon approximately 200 km northeast of Whitehorse. The mine is in the Anvil Ranges in the north side of the Tintina Trench.

Access to the mine is by all-weather, gravel, highway from Whitehorse.

### **Property History**

The Faro deposit was discovered in the 1950's. Mining started in 1967 and continued until 1982. In 1985, Curragh Resources Inc. was organized and the mine was producing again by 1986.

## **Geology**

### **Regional Geology**

The Faro deposit is hosted by late Precambrian to upper Paleozoic metasedimentary and metavolcanic rocks, intruded by a Cretaceous granitic plutonic suite.

The district has a complex deformational and metamorphic history. Two overlapping Mesozoic regional metamorphic and folding events ranging from greenschist to amphibolite grade as well as subsequent non-penetrative folding and faulting have been recognized.

The mineralization occurs in uppermost Mt. Mye formation of Late Proterozoic and Lower Cambrian. Faro is a stratiform, stratabound, pyritic, massive sulfide deposit of probable syngenetic, exhalative origin.

### **Field Mapping**

Geological mapping was confined to the northwest and southwest sides of the existing pit between July 25 and August 8, 1988. Most mapping was completed along the 3790 ramp from the south, the 3620 and 3550 benches in the north and the access ramp along the west wall below the main road.

The objectives of the mapping were to locate lithologic contacts, major breaks and to determine the orientation of jointing.

Rock types encountered included ore, schists and intrusives. The numerous ore and intrusive varieties have not been differentiated on the geological map. The schists are highly variable in composition though the main units mapped included the "transition zone" and the "calc-silicate".

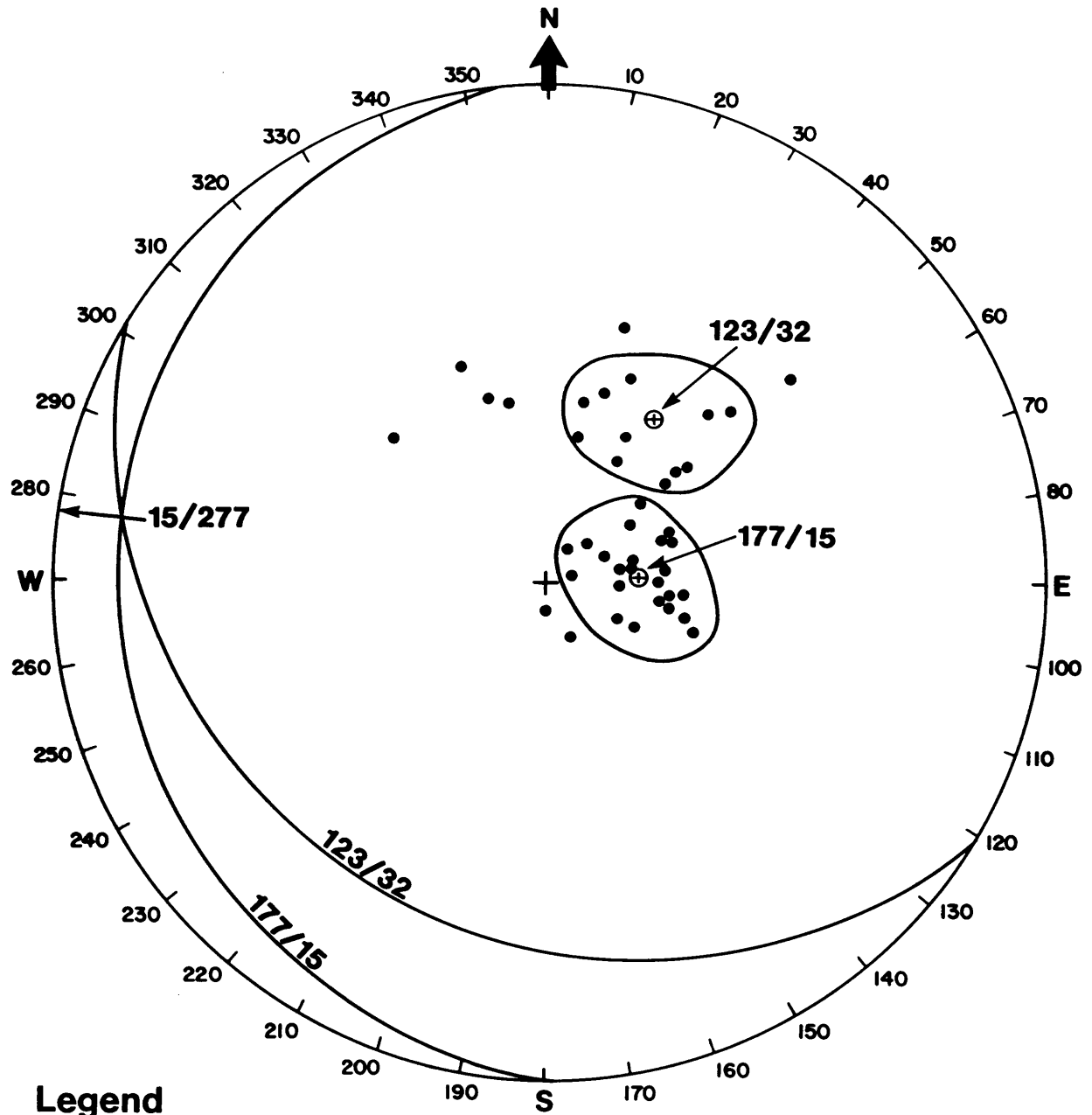
Forty-two S2 planes were measured and plotted on Figure 6 to show their distribution. Figure 1 is a stereonet plot of the poles to S2 planes. One interpretation of this plot indicates a continuum of S2 strikes from 80 to 210 degrees. There appears to be a pair of orientations averaging  $177^{\circ}/15^{\circ}$  and  $123^{\circ}/32^{\circ}$  which could indicate a fold whose axis plunges  $15^{\circ}$  forwards  $277^{\circ}$ . This structure can be visualized on Figure 28 between the Corridor and Southwest areas, at approximately Section 125+000, where the overall strike changes from southeasterly to southerly.

By applying S2 dips measured in drill core to the cross sections a more realistic interpretation was produced. The dips explained both the over thickening of the ore horizon in some drill holes as well as its overall flattening down dip. Figures 8 to 26 show the interpreted structure which is dominated by tight folds along axes trending to the northwest. Field evidence for these tight folds is not obvious though the geological map shows several areas of highly variable S2 strikes (for example, station 21 and above station 23).

Eighty-six joint planes were measured and plotted on Figures 2 and 3. Figure 2 is a stereonet plot of the poles to joint planes while Figure 3 is a circular frequency histogram of the strike direction of joints. Both figures shown two main joint

ROCK UNIT : ALL UNITS  
LOCATION : FARO U.G.  
DATE : 88-09-15

MEASURED BY : RJM  
EQUAL AREA



**Legend**

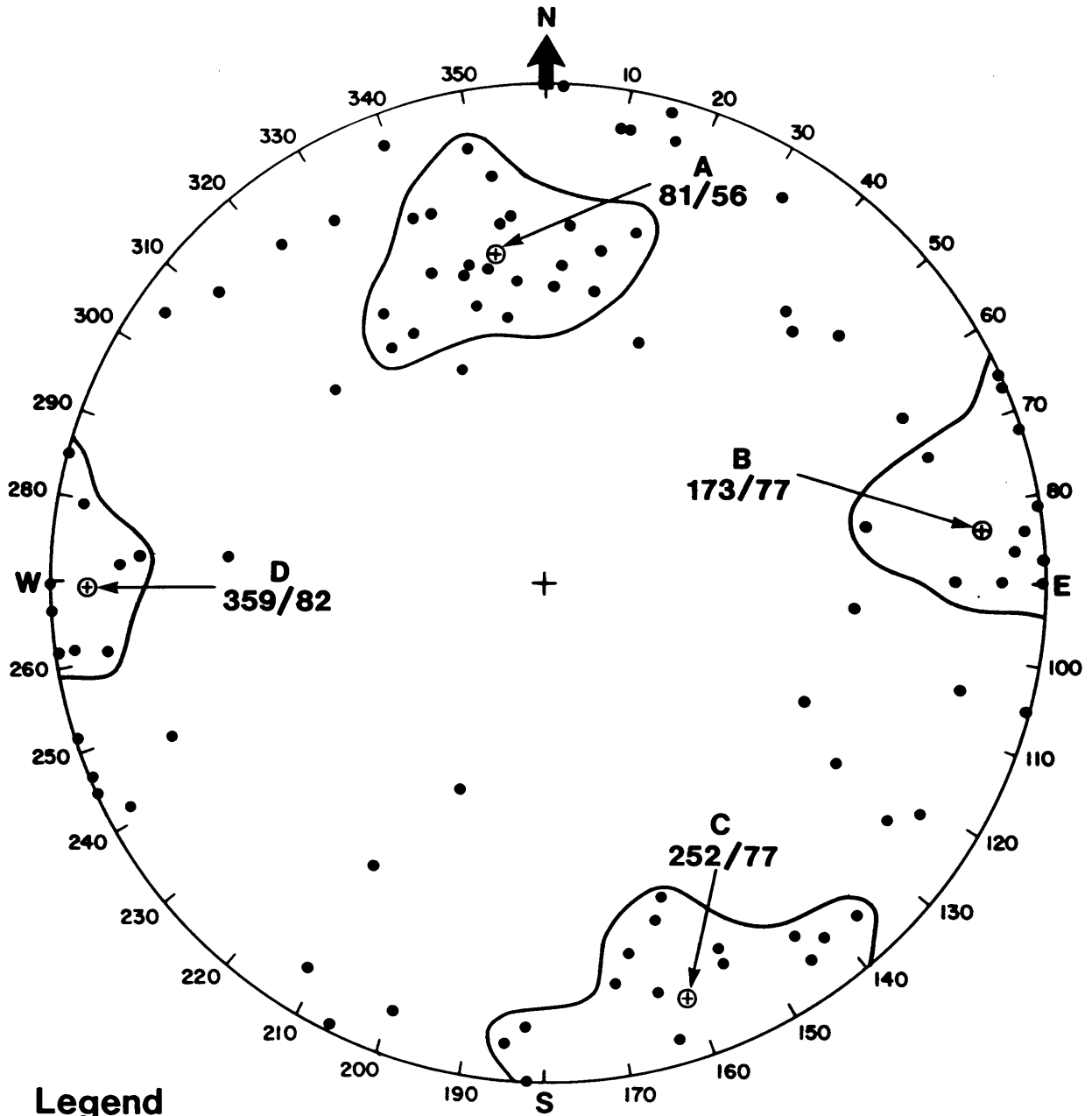
- ⊕ AVERAGE
- ← FOLD AXIS

**POLES TO  $S_2$**

**FIGURE 1**

ROCK UNIT : ALL UNITS  
LOCATION : FARO U.G.  
DATE : 88-09-15

MEASURED BY : RJM  
EQUAL AREA

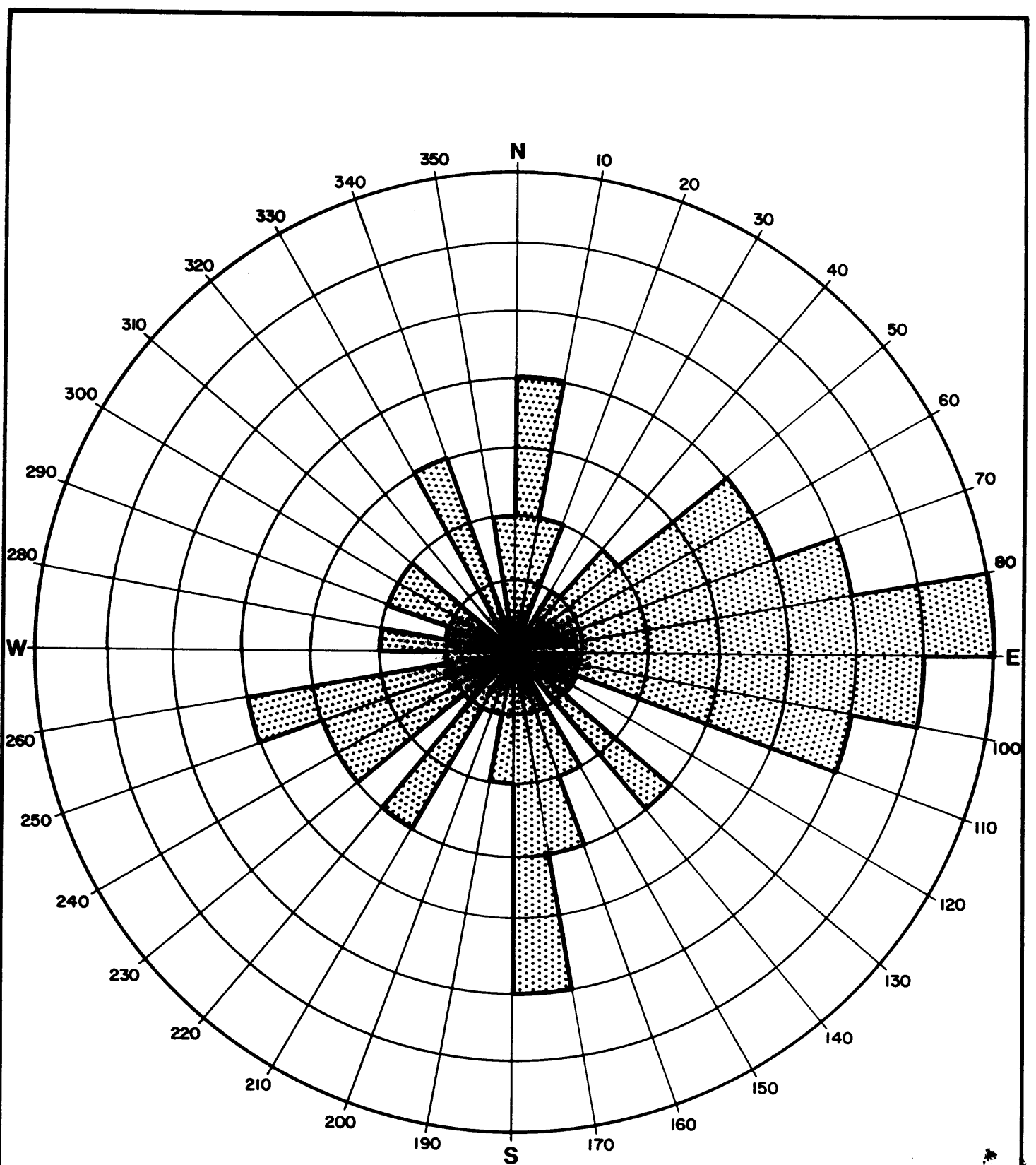


**Legend**

⊕ AVERAGE

**POLES TO JOINTING**

**FIGURE 2**

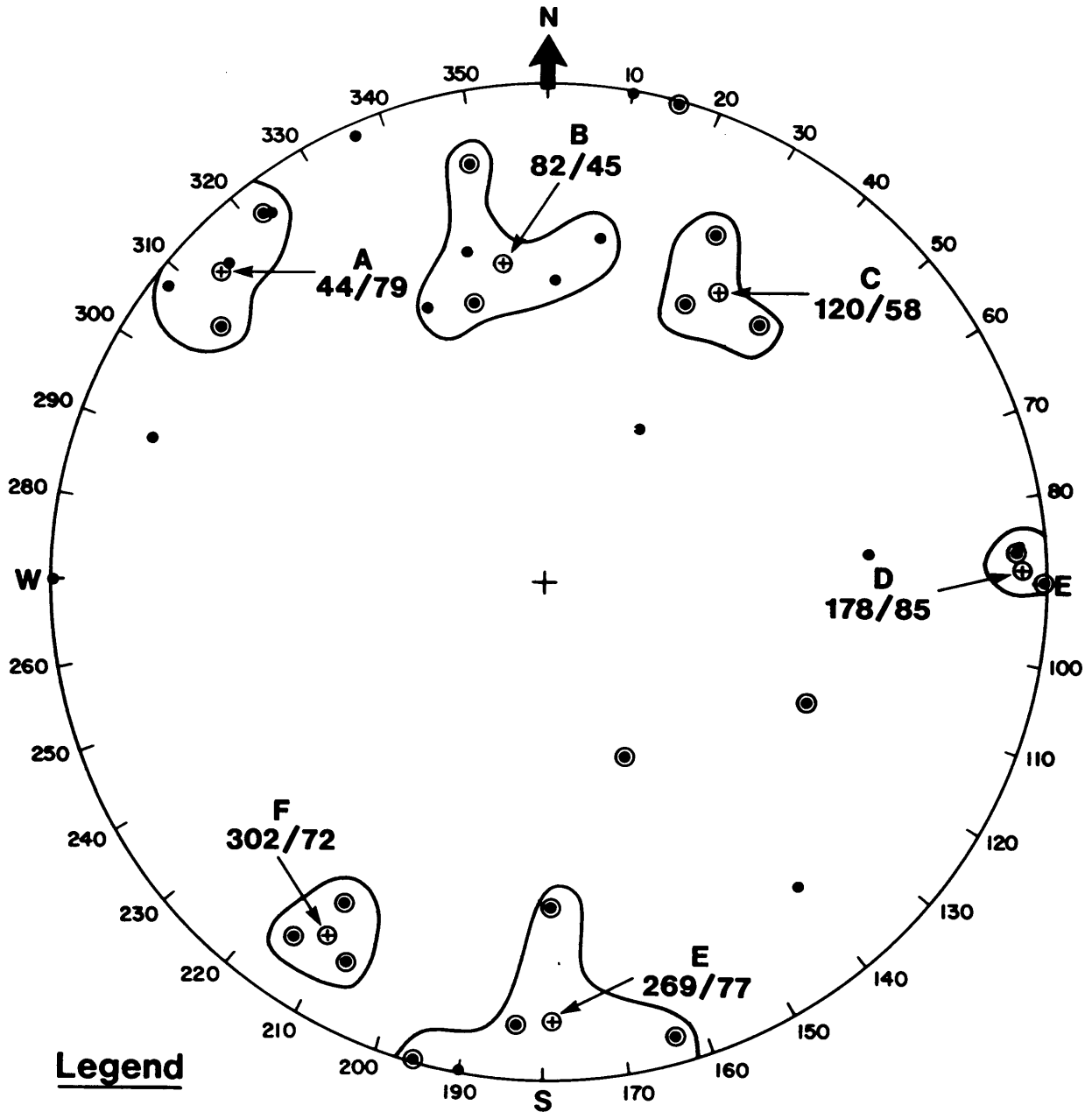


**DISTRIBUTION OF JOINT STRIKES**

**FIGURE 3**

ROCK UNIT : ALL UNITS  
LOCATION : FARO U.G.  
DATE : 88-09-15

MEASURED BY : RJM  
EQUAL AREA

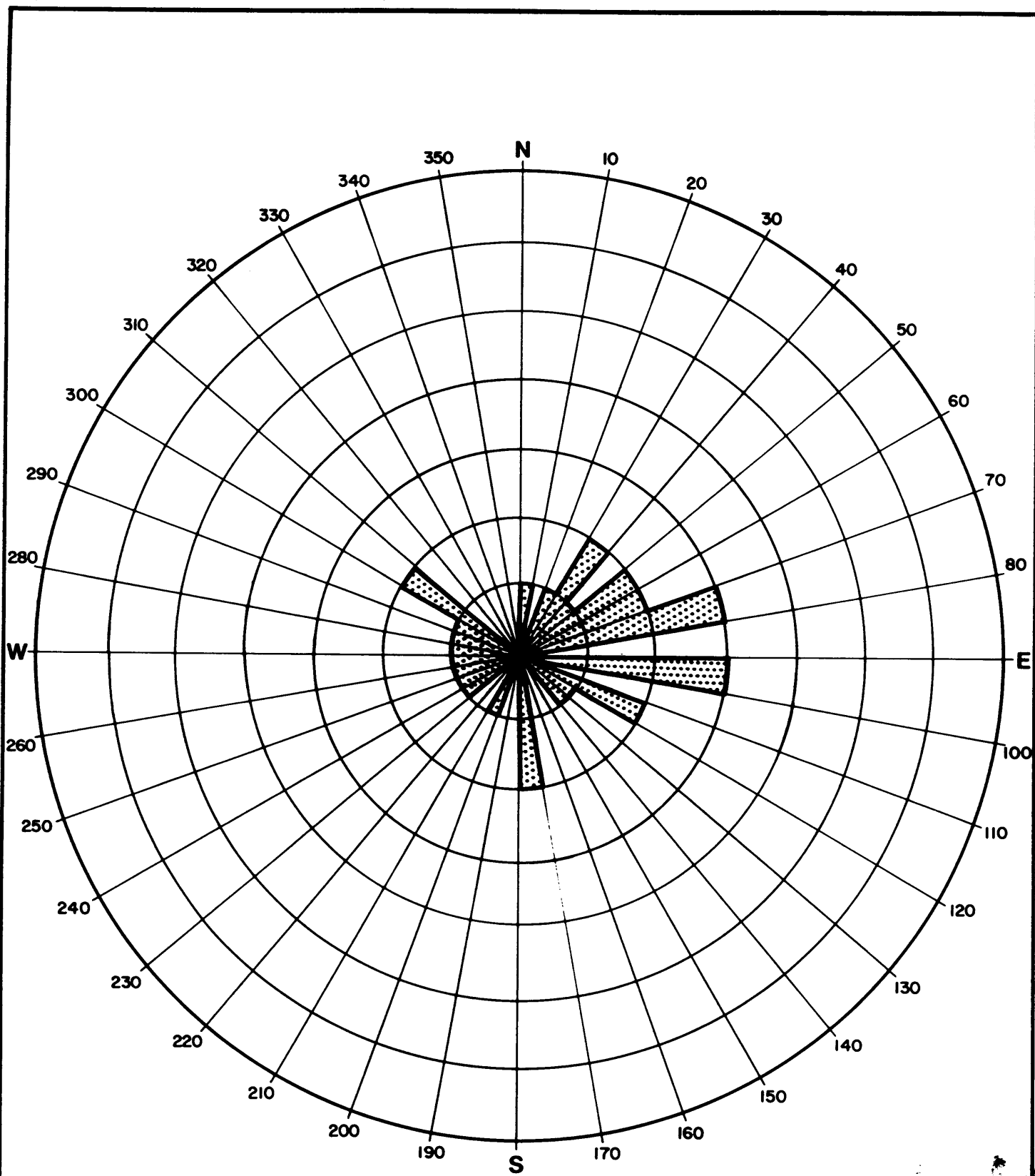


**Legend**

- ⊙ MAJOR FAULT
- ⊕ AVERAGE

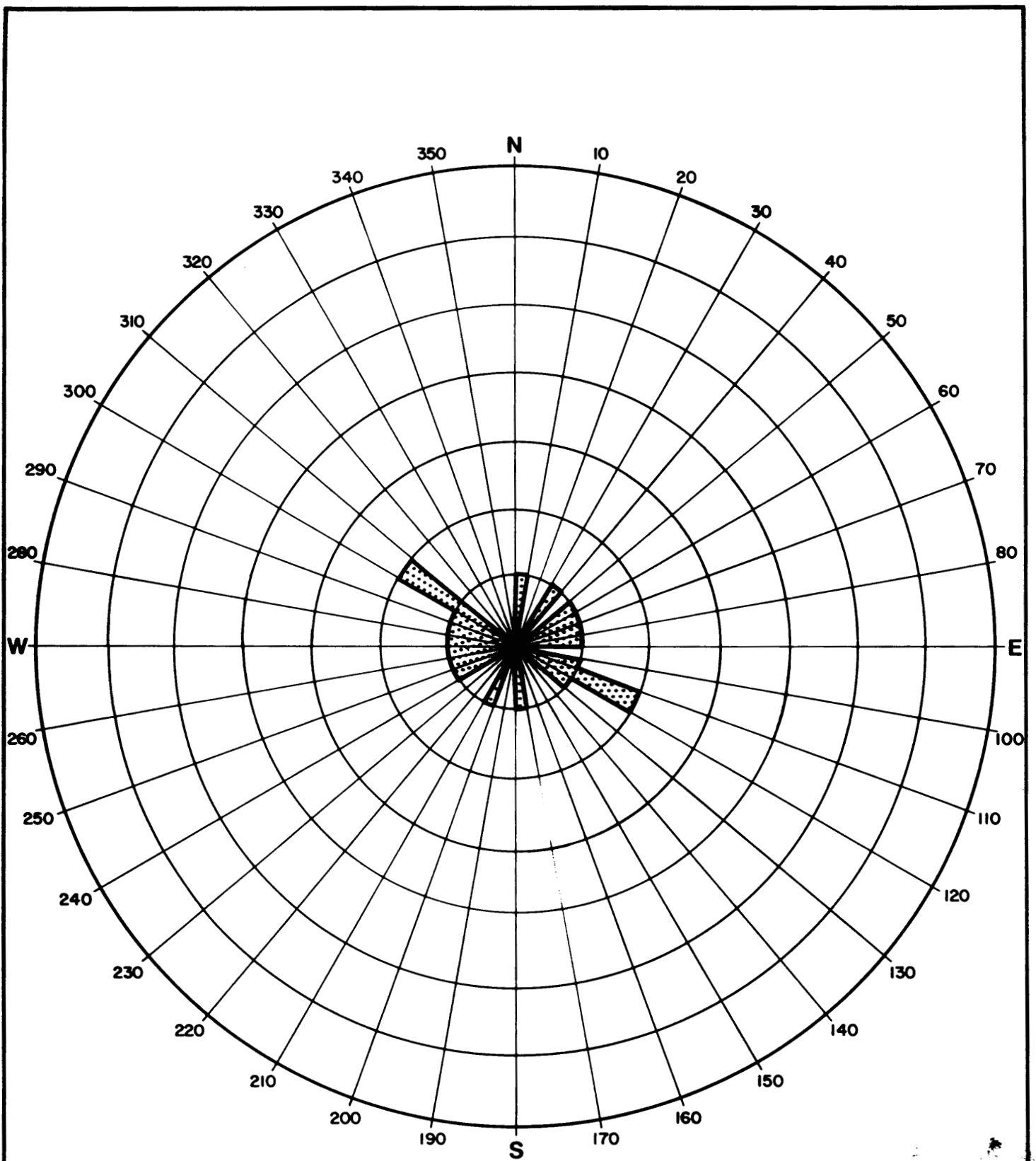
**POLES TO FAULTS**

**FIGURE 4**



**DISTRIBUTION OF FAULT STRIKES**

**FIGURE 5**



**DISTRIBUTION OF MAJOR FAULT STRIKES**

**FIGURE 6**

directions, the most prominent strike direction is  $77^{\circ}$  while the other is  $176^{\circ}$  (average of  $81^{\circ}/56^{\circ}$ ,  $252^{\circ}/77^{\circ}$  and  $173^{\circ}/77^{\circ}$ ,  $359^{\circ}/82^{\circ}$ ). As this study indicates the failure planes, it will be useful in the lay-out of room and pillar orientations.

Thirty-one fault planes or major fractures with gouge zones were measured and are shown on Figures 4, 5, 6 and 7. Because of the monotonous sequence of similar rock the amount of displacement on breaks was rarely seen. Figure 4 is a stereonet plot of poles to all fault planes while Figures 5 and 6 are circular frequency histograms of all faults and major faults respectively. Because the number of data is small any interpretation would be subject to further study. There appears to be six groupings, A to F, and groups B, D and E seem to be similar to joint set orientations. Fault groups C and F represent complimentary, major fault orientations ( $120/58$  and  $302/72$ ), while group A represents a major fault orientation  $76^{\circ}$  from groups C-F. On only one fault, NW 1, could the displacement be seen with confidence. On several faults, NW 2, NW 3, and the Big Gulp, the displacement has been calculated from cross-section. There are numerous major breaks with wide gouge zones, NW 3, NW 4, NW 5, SW 1, SW 2, and SW 3, where displacement is not observed nor is it required to fit the interpretation.

#### **Data Base**

Table 1 lists the drill holes within the proposed underground expansion area. The area is defined by the ultimate pit design of Feb. 17, 1988 for the easterly edge and the extent of drilling as the westerly edge.

It should be noted that the down dip potential has not been defined by drilling in the Northwest area, between Sections 115+000 and 120+000, nor the Southwest area, between Sections 125+000 and 131+000. Only within the Corridor area, between Sections 120+000 and 125+000, has drilling indicated that the ore horizon becomes too thin to the west and southwest.

Table 1 has been divided into two main sections, the ore horizon and the low grade envelope. The ore intercepts were calculated to maximize thickness yet maintaining a nine percent combined lead-zinc grade. The intercept thicknesses have been reduced to an approximate true thickness by using an average dip for each section.

The grade listed in Table 1 has been calculated by weighting sample intervals by thickness.

The low grade envelope section of Table 1 is included to show the potential thickness of the ore horizon if the minimum grade is reduced. This envelope could also be used for mine development to avoid following folding of the ore horizon.

#### **Thickness**

Table 1 lists the thicknesses of ore intercepts within the proposed underground expansion area. The ore intercepts have been reduced to approximate true thicknesses using an average dip as shown on the structure contour map. A minimum thickness of seven feet has been used to outline the potentially mineable

area, Figure 27. The seven foot minimum thickness constraint is from Kilborn, 1987.

The Northwest area between Sections 120+000 and 115+000, includes five drill holes with thicknesses varying from 4.9 to 42.2 feet. It is interpreted that the 42.2 foot intercept is through a folded ore horizon. From this limited data a 13 foot average thickness could be applied to the area.

The Corridor area, between Sections 125+000 and 120+000, includes fourteen drill holes with thicknesses varying from 1.0 to 65.3 feet. Two of the four thickest intercepts are at the pit limit though holes 70-12, and 87F-01 show 35.3 and 65.3 foot intercepts. This over - thickening is interpreted to be caused by folding. An average thickness of 13 feet could be applied to the area.

The Southwest area, between Sections 131+000 and 125+000, includes twenty-three drill holes with thicknesses varying from 3.0 to 42.3 feet. This area displays a more uniform thickness of 18 feet.

### **Grade**

A minimum of 9% combined lead-zinc was used to determine ore intercepts, as per Kilborn, 1987. Table 1 lists the grades of the intercepts within the proposed underground expansion area. Figure 27 shows the distribution of the drill holes with their respective grades.

The ore grades show little variation because the objective was to maximize intercept thickness while maintaining the minimum grade. Table 1 also lists a low grade envelope thickness and grade above and below the ore intercepts.

The cross-sections show both the ore horizon and low grade envelope. It should be noted that the correlation of ore horizons between drill holes is probably more complex than shown. In reality there is probably a horizon which has intercalations of ore grade material rather than a uniform, continuous layer.

The horizon is not pronounced and there will be considerable difficulty in determining mining lines. Surface drilling and underground definition drilling will define block outlines but sampling of muck piles and wall sampling will be required to define specific mining lines since visual examination will not be feasible.

### **Footwall Structure Contours**

Table 1 lists the elevations of both the hangingwall and footwall of ore intercepts within the proposed underground expansion area. Figure 28 shows the interpreted footwall structure contours.

The Northwest area, between Sections 115+000 and 120+000, shows three structural blocks. The most northwesterly block, A, appears to be uplifted, relatively. Major faults bound block A to the southeast and southwest, faults NW 2 and NW 1 respectively. Both of the faults are mappable though their displacements could not

TABLE 1

## FARO UNDERGROUND DRILL HOLE DATA BASE

DRILL HOLE	SECTION NUMBER	COLLAR ELEV	DEPTH FROM	(ft) TO	HANGWALL ELEV	FOOTWALL ELEV	ORE HORIZON					LOW GRADE ENVELOPE				
							THICKNESS	GRADE				HANGWALL THICKNESS	GRADE (Pb+Zn)	FOOTWALL THICKNESS	GRADE (Pb+Zn)	
								Cu (%)	Pb (%)	Zn (%)	Ag (oz/ton)					Pb+Zn (%)
7204	116	4036.2	509.0	526.1	3527.2	3510.1	17.1	0.06	2.65	6.36	45.95	9.01	-	-	-	-
6605	118	4018.1	509.0	519.0	3509.1	3499.1	10.0	0.07	3.25	6.56	43.65	9.81	10.0	3.44	35.0	4.52
7102	118	4005.0	532.0	553.0	3473.0	3452.0	21.0	-	3.15	5.75	-	8.90	-	-	20.0	3.78
7611	119	3992.0	501.0	544.0	3491.0	3448.0	43.0	0.12	5.90	7.76	125.89	13.66	-	-	-	-
7103	120	3992.6	593.0	598.0	3399.6	3394.6	5.0	-	4.50	5.80	-	10.30	10.0	3.65	40.0	3.95
7610	121	4009.1	524.2	538.0	3484.9	3471.1	13.8	0.15	4.54	7.22	34.54	11.76	-	-	17.0	3.92
7101	121	3967.2	615.5	616.5	3351.7	3350.7	1.0	0.26	2.93	6.24	58.40	9.17	1.5	3.33	8.5	4.29
87F03	122	3750.3	271.9	279.6	3478.4	3470.7	7.7	-	3.13	5.69	47.13	8.82	-	-	13.2	3.24
7012	122	4006.7	554.5	591.0	3452.2	3415.7	36.5	0.15	5.89	9.86	55.12	15.75	13.5	2.7	13.0	2.90
7609	123	4012.5	496.2	551.5	3516.3	3461.0	55.3	0.27	4.46	5.43	63.08	9.89	-	-	5.0	3.55
84F24	123	3910.1	449.1	451.8	3461.0	3458.3	2.7	0.20	4.76	8.87	74.34	13.63	2.8	4.83	18.5	4.01
82F11	124	4009.4	496.6	528.0	3512.8	3481.4	31.4	0.21	3.89	5.66	59.13	9.55	-	-	47.5	3.80
7104	124	3992.6	524.0	534.0	3468.6	3458.6	10.0	-	3.55	5.70	-	9.25	20.0	3.71	14.0	7.51
82F13	124	3946.6	584.6	591.4	3362.0	3355.2	6.8	0.30	3.17	6.21	69.83	9.38	25.1	3.51	-	-
7545618	124	3981.9	739.0	748.0	-	-	9.0	0.17	3.11	5.28	60.31	8.39	19.0	6.28	-	-
84F02	124	3985.5	786.7	793.0	3198.8	3192.5	6.3	0.14	2.96	4.72	47.22	7.68	5.7	4.01	11.0	4.40
84F04	124	3960.3	860.0	865.9	3100.3	3094.4	5.9	0.12	4.49	6.23	131.65	10.72	19.1	5.57	14.2	2.56
87F01	125	3792.3	264.0	330.3	3528.3	3462.0	66.3	-	4.96	6.05	70.81	11.01	-	-	-	-
82F10	125	3940.6	530.5	543.7	3410.1	3396.9	13.2	0.16	5.11	8.09	81.52	13.20	4.5	4.92	13.2	2.17
82F07	126	3912.8	355.2	363.9	3557.5	3548.9	8.6	0.15	5.52	6.35	84.14	11.87	11.4	6.31	21.6	4.92
7105	126	4001.5	517.5	544.0	3484.0	3457.5	26.5	0.17	3.72	5.29	61.25	9.01	3.5	2.34	21.0	5.82
7213	126	4002.0	582.0	627.0	3420.0	3375.0	45.0	0.18	6.69	6.85	79.13	13.54	-	-	20.0	2.86
83F19	126	3988.6	697.9	728.0	3290.7	3260.6	30.1	0.17	6.09	11.35	87.38	17.44	3.4	3.36	7.9	3.09
83F22	126	3989.6	842.4	851.8	3147.2	3137.8	9.4	0.11	3.31	6.31	55.45	9.62	8.0	4.46	16.3	3.60
7715	127	4016.0	405.0	420.6	3611.0	3595.4	15.6	0.16	2.98	6.46	29.36	9.44	5.0	2.95	50.4	7.08
82F14	127	3992.1	565.5	596.3	3426.6	3395.8	30.8	0.24	5.24	7.43	78.27	12.67	9.8	4.02	4.0	4.98
82F16	127	4004.4	643.3	657.8	3361.1	3346.6	14.5	0.19	5.84	7.86	88.88	13.70	4.1	4.14	18.6	5.42
7013	128	4011.2	471.0	479.0	3540.2	3532.2	8.0	0.11	4.87	8.08	53.20	12.95	4.0	2.60	9.0	2.87
82F17	128	3912.9	301.0	376.8	3611.9	3586.1	25.8	0.19	4.01	5.92	56.23	9.93	-	-	12.4	3.44
8102	129	3994.5	277.2	290.1	3717.3	3704.4	12.9	0.20	2.57	3.70	32.90	6.27	1.2	4.28	34.4	3.10
84F10	129	3886.3	400.9	417.3	3485.4	3469.0	16.4	0.26	4.77	5.80	75.62	10.57	-	-	46.6	4.45
83F15	129	4013.1	641.4	669.8	3371.7	3343.3	28.4	0.12	3.73	5.65	57.98	9.38	-	-	38.8	3.68
83F12	129	4004.7	736.6	755.5	3268.1	3249.2	18.9	0.13	4.22	8.02	64.78	12.24	-	-	9.2	4.92
66E05	130	4014.0	310.0	325.0	3704.0	3689.0	15.0	0.15	3.94	7.00	72.50	10.94	65.0	4.55	20.0	2.28
8103	130	4011.6	292.6	295.3	3719.0	3716.3	2.7	0.07	4.69	8.50	43.90	13.19	-	-	11.7	3.05
82F12	130	3875.3	335.2	344.4	3540.1	3530.9	9.2	0.09	3.80	6.27	27.68	10.07	-	-	22.5	4.91
82F15	130	4025.6	595.5	615.4	3430.1	3410.2	19.9	0.13	3.14	5.51	46.10	8.65	-	-	30.7	4.36
7545615	130	4015.0	722.5	742.5	3292.5	3272.5	20.0	0.15	4.94	7.90	55.60	12.84	6.0	1.70	24.5	3.95
7419	131	4016.4	236.0	251.0	3780.4	3765.4	15.0	0.11	2.12	4.04	44.97	6.16	-	-	25.0	4.38
7212	131	4018.0	320.9	324.5	3697.1	3693.5	3.6	0.08	1.85	3.40	29.60	5.25	-	-	-	-
84F17	131	3871.1	137.0	141.6	3734.1	3729.5	4.6	0.11	4.70	10.26	58.94	14.96	3.6	5.59	29.2	4.92
84F14	131	3870.6	228.5	231.5	3642.1	3639.1	3.0	0.18	1.44	3.14	37.32	4.58	-	-	-	-
66E04	132	4023.0	130.0	195.0	3893.0	3828.0	65.0	0.15	4.12	5.65	56.73	9.77	-	-	5.0	4.64
8104	132	4018.7	223.0	228.8	3795.7	3789.9	5.8	0.39	4.42	6.02	65.09	10.44	-	-	-	-
66E07	132	4018.0	241.0	250.0	3777.0	3768.0	9.0	0.09	8.35	13.20	153.14	21.55	21.0	5.64	-	-
84F13	132	3872.5	71.1	79.9	3801.4	3792.6	8.8	0.16	2.97	5.02	46.74	7.99	-	-	24.4	4.94
8107	133	4009.8	53.0	61.0	3956.8	3948.8	8.0	0.14	3.01	5.44	56.30	8.45	-	-	26.7	4.29
8106	133	4010.5	132.8	140.4	3877.7	3870.1	7.6	0.17	4.66	6.86	68.25	11.52	25.5	7.34	18.3	2.64
7421	133	4014.0	99.0	119.0	3915.0	3895.0	20.0	0.17	4.52	5.09	57.88	9.61	-	-	8.0	2.51
8105	133	4005.8	134.9	144.5	3870.9	3861.3	9.6	0.10	4.57	7.79	106.35	12.36	-	-	21.5	6.03

be determined. Block B is a major structural block which shows a shallow dip and several folds. Block C has not been drilled to date so it is highly interpretive.

The Corridor area, between Sections 120+000 and 125+000, shows a single structural block, block D. This block indicates an almost level connection between the Northwest and Southwest areas.

The Southwest area, between Sections 120+000 and 131+000, is interpreted to be a single structural block, C. This block has a westerly dip with numerous tight folds.

It should be noted that the structure contours follow the footwall of the ore horizon as interpreted on cross section. As noted in the previous section, the ore horizon is probably not a continuous layer. From a mining engineering point of view, Figure 28 shows a very complex footwall. A more simplistic approach is to smooth the footwall with a "best fit" line within the ore horizon. This line could represent the mine development layout which would then leave the details of ore thickness and grade control to a later stage.

**Reserves**

A very preliminary review of the geological reserves indicates the following:

Northwest Area

Area 400 ft. x 500 ft. - 13 ft. thick  
 SG 3.7                      356,000 tons                      300,385 = 272,450 t

Corridor Area

Area 120 ft. x 600 ft. - 13 ft. thick  
 SG 3.7                      128,000 tons                      108,138 = 98,020 t

Southwest Area

Area 850 ft. x 900 ft. - 18 ft. thick  
 SG 3.7                      1,887,000 tons                      1,590,883 = 1,442,930 t

Total all areas                      2,371,000 tons  
 @ a grade of +9% combined lead Zinc.

1,999,405                      24.3

Per 68%  
 1240  
 20% del.

## **Conclusions and Recommendations**

### **Conclusions**

The proposed Faro underground includes the down dip extension to the present open pit. The area of study was the southwest pit wall between Sections 115+000 and 131+000.

The study area has been divided into three parts, the northwest area, between Sections 115+000 and 120+000, the corridor area, between Sections 120+000 and 125+000, and the southwest area, between Sections 125+000 and 131+000.

The corridor area has drilling which shows that the ore becomes too thin down dip while both the northwest and southwest areas are open to down dip reserve expansion.

The southwest pit wall shows relatively large, continuous, structural blocks with rare tight folding. There is a change in strike from southeasterly to southerly at approximately Section 125+000. Dips vary from approximately 12 degrees from Section 125+000 north to approximately 20 degrees between Sections 125+000 and 131+000.

Numerous faults were located with mapping. Only one fault had observable displacement though three faults showed displacement on cross section. Six faults display wide gouge zones though displacement was not observed or interpreted.

Joint sets were mapped and show two main orientations, striking  $77^{\circ}$  and  $176^{\circ}$ .

Ore zone thicknesses were determined using a greater than nine percent combined lead-zinc grade. Thicknesses are highly variable though most anomalies can be attributed to structural complexities. An average of thirteen feet can be applied to the northwest and corridor areas, north of Section 125+000, and eighteen feet to the southwest area, between Sections 125+000 and 131+000.

The grade of the ore was calculated by thickness weighting the drill hole intercepts. The objective was to maximize ore thickness yet maintain a minimum of 9% combined lead-zinc.

### **Recommendations**

The following exploration program is recommended:

A total of eleven diamond drill holes are recommended, Table 2 and Figure 27. Seven of these holes are deemed essential to assist in geological interpretation.

Table 2

Proposed Diamond Drill Holes

Northwest Area

Hole No.	Surface Elev (ft)	FW Elev (ft)	Depth to FW (ft)	Total Depth (ft)	Cumulative Depth (ft)
1	3554	3500	54	100	100
2	3550	3475	75	150	250
3	3550	3440	110	170	420
4	3700	3480	220	275	695
5	3720	3410	310	360	1,055
-----					
6	3885	3460	425	475	1,530
7	3895	3420	475	525	2,055

Southwest Area

Hole No.	Surface Elev (ft)	FW Elev (ft)	Depth to FW (ft)	Total Depth (ft)	Cumulative Depth (ft)
1	3830	3385	445	495	495
2	3828	3490	338	390	885
-----					
3	3994	3305	689	740	1,625
4	3828	3490	338	390	2,015

In the Northwest area, between Sections 115+000 and 120+000, five additional holes will provide good drill density for an area of 400 by 500 feet. The first four holes are in structural block B and will better define the footwall structure contours, thickness and grade. The fifth to seventh drill holes are in structural block C and will help to extend the down dip potential of the Northwest area. These three holes add another 200 feet to the width of the area.

It is recommended that holes six and seven be drilled only if thick ore grade material is located with the first five holes.

The Corridor area, between Sections 120+000 and 125+000, has enough drilling to allow a confident geological interpretation.

In the Southwest area, between Sections 125+000 and 131+000, four additional drill holes are proposed. The first two holes fill-in an area of 400 by 400 feet while holes three and four increase drill density down dip. Additional drilling down dip can be completed as required for underground development as the pit is finished in that direction.

## **References**

**Canadian Mine Development, August, 1987, Underground exploration, development and mining; Curragh Res., internal report.**

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**Jennings, D.S. and Jilson, G.A., 1984, Geology and sulfide deposits of Anvil Range, Yukon; Mineral Deposits of the Norther Cordillera, pp. 319-361.**

**Jilson, G.A., 1983, Lith Codes for column labeled "rock unit"; Cyprus Anvil, internal report.**

**Kilborn, Feb. 1987, Faro underground mining; Curragh Res., internal report.**

**Preciado, J. and Galovich, K., June 1988, Diamond drilling, geological and geotechnical evaluation, Faro underground; Curragh Res., Expenditure proposal.**

**Statement of Qualifications**

I, Robert J. Morris, Associate Consultant of Beacon Hill Consultants Ltd., do declare:

THAT I graduated as a geologist from the University of British Columbia, Vancouver, with a degree of Bachelor of Science in 1973.


THAT I graduated as a geologist from Queen's University, Kingston, Ontario, with a degree of Master of Science in 1978.

THAT I am a Fellow of the Geological Association of Canada.

THAT I have no direct or indirect interest in the subject property or in the securities of Curragh Resources Inc. or their affiliates.

THAT I personally wrote and supervised the preparation of this report.

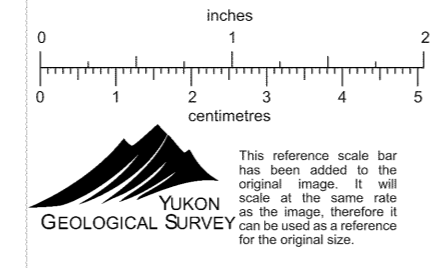
Dated 15th September, 1988 in Vancouver, British Columbia.

  
88.09.27  
\_\_\_\_\_  
R.J. Morris, M.Sc.  
Geologist  
Beacon Hill Consultants Ltd.

**CURRAGH RESOURCES INC.**  
**FARO UNDERGROUND**

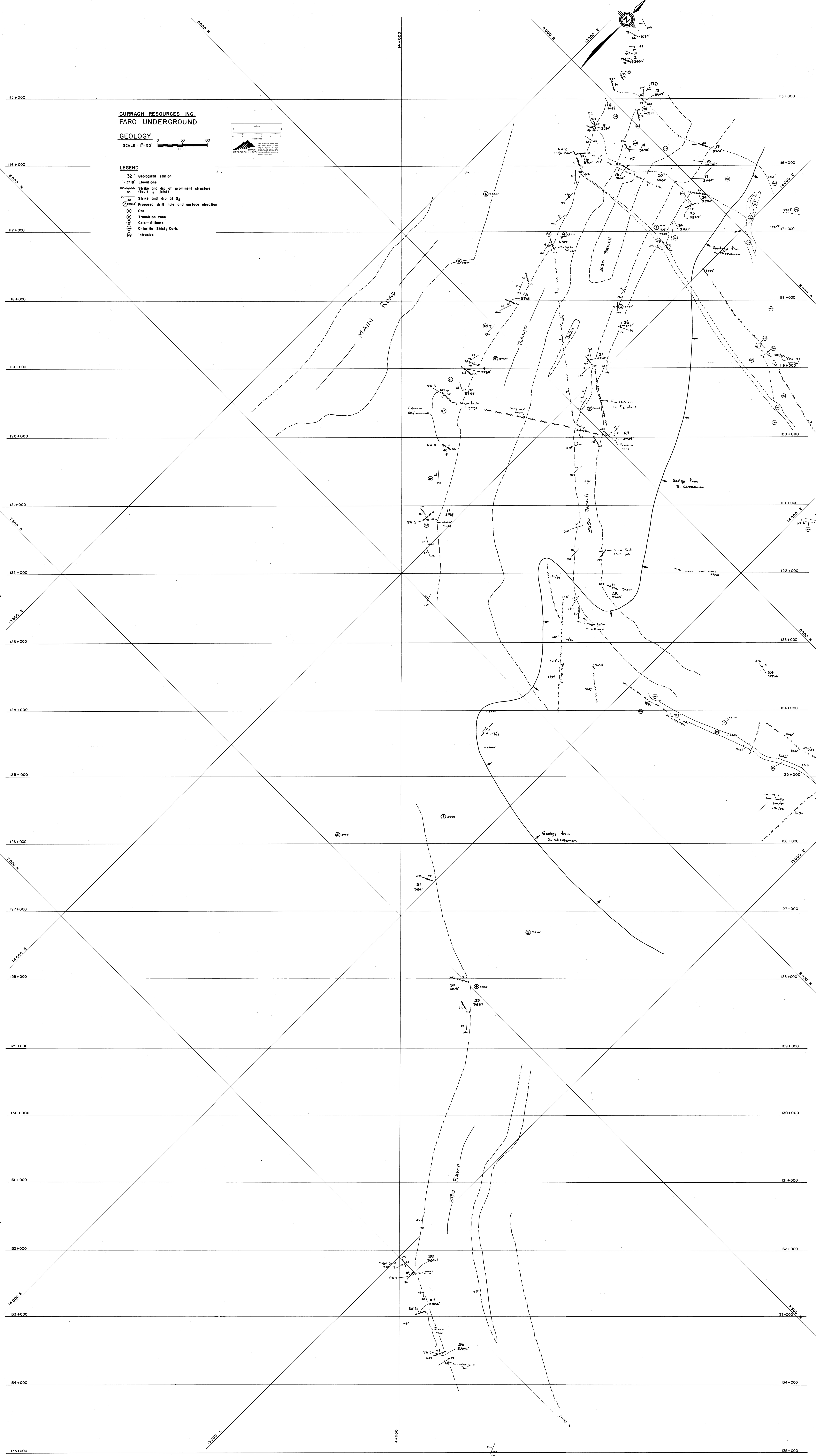
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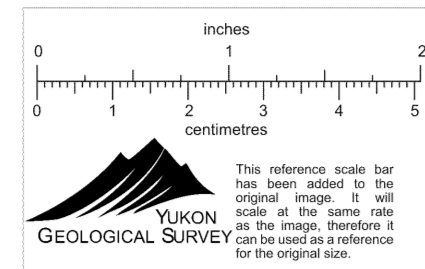
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 0 50 100  
 FEET



**LEGEND**

- 32 Geological station
- 3716' Elevations
- 110-111 Strike and dip of prominent structure (North : West)
- 70-71 Strike and dip of S<sub>2</sub>
- ① Proposed drill hole and surface elevation
- Ore
- ⊖ Transition zone
- ⊕ Calc-Silicate
- ⊗ Chloritic Shale, Carb.
- ⊙ Intrusive



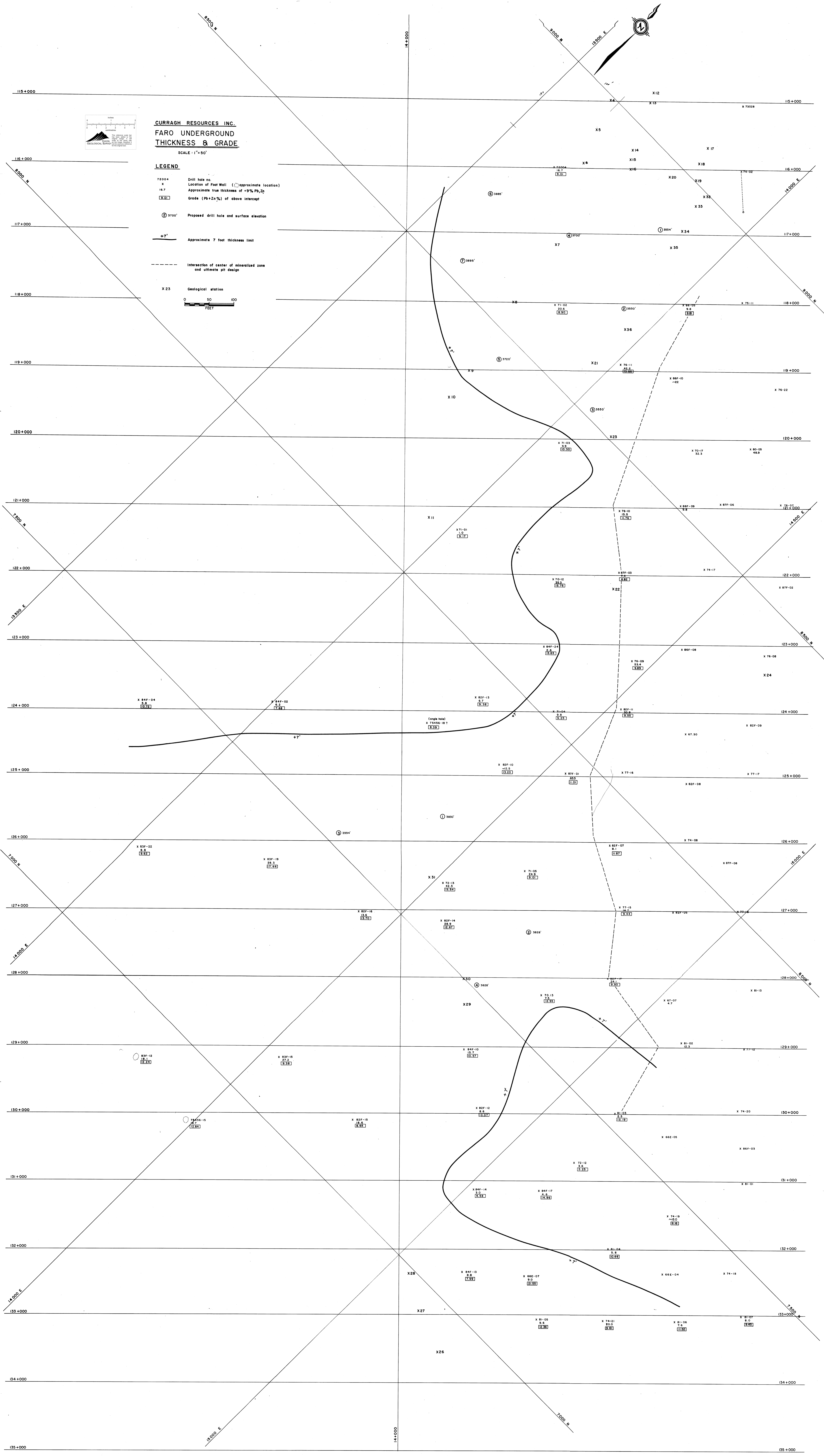
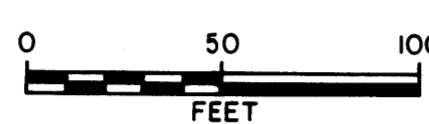


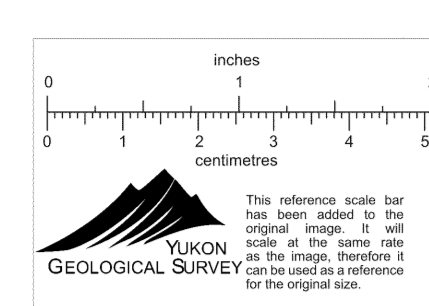
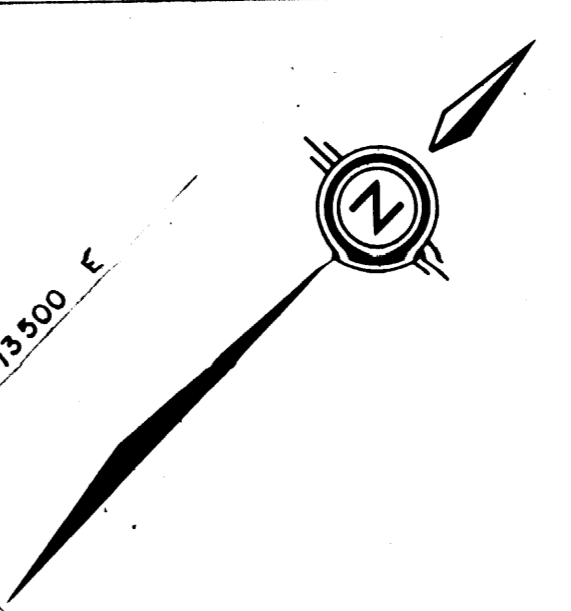
**CURRAGH RESOURCES INC.**  
**FARO UNDERGROUND**  
**THICKNESS & GRADE**

SCALE: 1" = 50'

**LEGEND**

- 72004 Drill hole no.
- X Location of Foot Wall (approximate location)
- 16.7 Approximate true thickness of +9% Pb, Zn
- Grade (Pb+Zn%) of above intercept
- 3700' Proposed drill hole and surface elevation
- +7' Approximate 7 foot thickness limit
- Intersection of center of mineralized zone and ultimate pit design
- X 23 Geological station





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**FARO UNDERGROUND**  
**FOOTWALL STRUCTURE CONTOURS**

SCALE: 1" = 50'

**LEGEND**

- 71-01 3450' Drill hole and collar elevation
- 3450' (approximate location)
- - - Intersection of center of mineralized zone and ultimate pit design
- - - Intrusive contact
- - - Approximate 7 foot thickness limit
- - - 3450' Structure contours at 10' intervals
- 0 50 100 FEET
- A Structure blocks

