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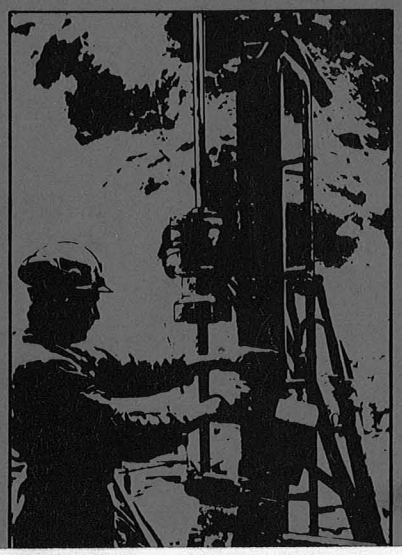

Technical Information Report No. 42

FRACTURE MAPPING IN THE VENTILATION DRIFT AT STRIPA: PROCEDURES AND RESULTS

A. Rouleau, J. E. Gale and J. Baleshta
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Waterloo, Ontario, Canada

March 1981

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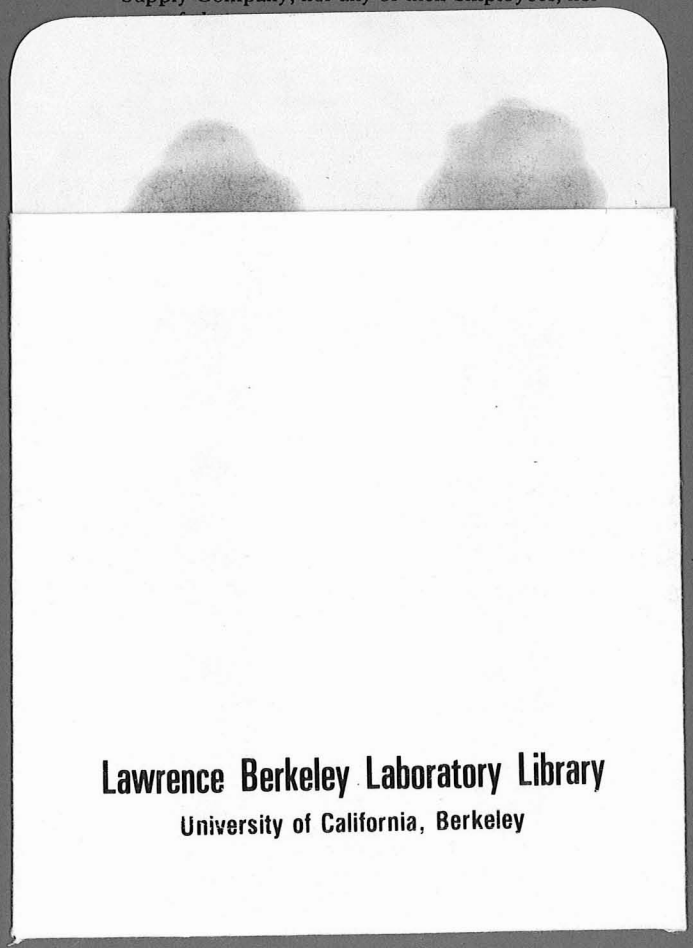

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PREFACE

This report is one of a series documenting the results of the Swedish-American cooperative research program in which the cooperating scientists explore the geological, geophysical, hydrological, geochemical, and structural effects anticipated from the use of a large crystalline rock mass as a geologic repository for nuclear waste. This program has been sponsored by the Swedish Nuclear Power Utilities through the Swedish Nuclear Fuel Supply Company (SKBF), and the U.S. Department of Energy (DOE) through the Lawrence Berkeley Laboratory.

The principal investigators are L.B. Nilsson and O. Degerman for SKBF, and N.G.W. Cook, P.A. Witherspoon, and J.E. Gale for LBL. Other participants will appear as authors of the individual reports.

Previous technical reports in this series are listed below.

1. Swedish-American Cooperative Program on Radioactive Waste Storage in Mined Caverns by P.A. Witherspoon and O. Degerman. (LBL-7049, SAC-01).

2. Large Scale Permeability Test of the Granite in the Stripa Mine and Thermal Conductivity Test by Lars Lundstrom and Haken Stille. (LBL-7052, SAC-02).

3. The Mechanical Properties of the Stripa Granite by Graham Swan. (LBL-7074, SAC-03).

4. Stress Measurements in the Stripa Granite by Hans Carlsson. (LBL-7078, SAC-04).

5. Borehole Drilling and Related Activities at the Stripa Mine by P.J. Kurfurst, T. Hugo-Persson, and G. Rudolph. (LBL-7080, SAC-05).

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9. Theoretical Temperature Fields for the Stripa Heater Project by T. Chan, Neville G.W. Cook, and C.F. Tsang. (LBL-7082, SAC-09).

10. Mechanical and Thermal Design Considerations for Radioactive Waste Repositories in Hard Rock. Part I: An Appraisal of Hard Rock for Potential Underground Repositories of Radioactive Waste by N.G.W. Cook; Part II: In Situ Heating Experiments in Hard Rock: Their Objectives and Design by N.G.W. Cook and P.A. Witherspoon. (LBL-7073, SAC-10).

11. Full-Scale and Time-Scale Heating Experiments at Stripa: Preliminary Results by N.G.W. Cook and M. Hood. (LBL-7072, SAC-11).

12. Geochemistry and Isotope Hydrology of Groundwaters in the Stripa Granite: Results and Preliminary Interpretation by P. Fritz, J.F. Barker, and J.E. Gale. (LBL-8285, SAC-12).

13. Electrical Heaters for Thermo-Mechanical Tests at the Stripa Mine by R.H. Burleigh, E.P. Binnall, A.O. DuBois, D.O. Norgren, and A.R. Ortiz. (LBL-7063, SAC-13).

14. Data Acquisition, Handling, and Display for the Heater Experiments at Stripa by Maurice B. McEvoy. (LBL-7063, SAC-14).

15. An Approach to the Fracture Hydrology at Stripa: Preliminary Results by J.E. Gale and P.A. Witherspoon. (LBL-7079, SAC-15).

16. Preliminary Report on Geophysical and Mechanical Borehole Measurements at Stripa by P. Nelson, B. Paulsson, R. Rachiele, L. Andersson, T. Schrauf, W. Hustrulid, O. Duran, and K.A. Magnussen. (LBL-8280, SAC-16).

17. Observations of a Potential Size-Effect in Experimental Determination of the Hydraulic Properties of Fractures by P.A. Witherspoon, C.H. Amick, J.E. Gale, and K. Iwai. (LBL-8571, SAC-17).

18. Rock Mass Characterization for Storage in Nucler Waste in Granite by P.A. Witherspoon, P. Nelson, T. Doe, R. Thorpe, B. Paulsson, J.E. Gale, and C. Forster. (LBL-8570, SAC-18).

19. Fracture Detection in Crystalline Rock Using Ultrasonic Shear Waves by K.H. Waters, S.P. Palmer, and W.F. Farrell. (LBL-7051, SAC-19).

20. Characterization of Discontinuities in the Stripa Granite--Time Scale Heater Experiment by R. Thorpe. (LBL-7083, SAC-20).

21. Geology and Fracture System at Stripa by A. Okliewicz, J.E. Gale, R. Thorpe, and B. Paulsson. (LBL-8907, SAC-21).

22. Calculated Thermally Induced Displacements and Stresses for Heater Experiements at Stripa by T. Chan and N.G.W. Cook. (LBL-7061, SAC-22).

23. Validity of Cubic Law for Fluid Flow in a Deformable Rock Fracture by P.A. Witherspoon, J. Wang, K. Iwai, and J.E. Gale. (LBL-9557, SAC-23).

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25. Instrumentation Evaluation, Calibration, and Installation for Heater Tests Simulating Nuclear Waste in Crystalline Rock, Sweden by T. Schrauf, H. Pratt, E. Simonson, W. Hustrulid, P. Nelson, A. DuBois, E. Binnall, and R. Haught. (LBL-8313, SAC-25)

26. Part I: Some Results From a Field Investigation of Thermo-Mechanical Loading of a Rock Mass When Heater Canisters are Emplaced in the Rock by M. Hood. Part II: The Application of Field Data from Heater Experiments Conducted at Stripa, Sweden for Repository Design by M. Hood, H. Carlsson, and P.H. Nelson. (LBL-9392, SAC-26).

27. Progress with Field Investigations at Stripa by P.A. Witherspoon, N.G.W. Cook, and J.E. Gale (LBL-10559, SAC-27).

28. A Laboratory Assessment of the Use of Borehole Pressure Transients to Measure the Permeability of Fractured Rock Masses by C.B. Forster and J.E. Gale. (LBL-8674, SAC-28).

29. Thermal and Thermomechanical Data for In Situ Heater Experiments at Stripa, Sweden by T. Chan, E. Binnall, P. Nelson, O. Wan, C. Weaver, K. Ang, J. Braley, and M. McEvoy. (LBL-11477, SAC-29).

30. The Effect of Radon Transport in Groundwater Upon Gamma Ray Borehole Logs by P.H. Nelson, R. Rachiele, and A. Smith. (LBL-11180, SAC-30).

31. Strength and Permeability Tests on Ultra-Large Stripa Granite Core by R. Thorpe, D.J. Watkins, W.E. Ralph, R. Hsu, and S. Flexser. (LBL-11203, SAC-31).

32. Ultrasonic and Acoustic Emission Results from the Stripa Heater Experiments. Part I: A Cross-Hole Investigation of a Rock Mass Subjected to Heating by B.N.P. Paulsson and M.S. King. Part II: Acoustic Emission Monitoring During Cool-Down of the Stripa Heater Experiment by R. Rachiele. (LBL-10975, SAC-32).

33. Numerical Modeling to Assess Possible Influence of the Mine Openings on Far-Field In Situ Stress Measurements at Stripa by T. Chan, V. Guvanasen, and N. Littlestone (LBL-12469, SAC-33).

34. A Field Assessment of the Use of Borehole Pressure Transients to Measure the Permeability of Fractured Rock Masses by C.B. Forster and J.E. Gale. (LBL-11829, SAC-34).

35. Water Inflow into Boreholes During the Stripa Experiments by P.H. Nelson, R. Rachiele, J.S. Remer and H.S. Carlsson (LBL-12547, SAC-35).

36. Petrology and Radiogeology of the Stripa Pluton by H. Wollenberg, S. Flexser, and L. Andersson. (LBL-11654, SAC-36).

37. Geohydrological Data from the Macopermeability Experiment at Stripa, Sweden by C.R. Wilson, J.C.S. Long, R.M. Galbraith, K. Karasaki, H.K. Endo, A.O. DuBois, M.J. McPherson, and G. Ramqvist. (LBL-12520, SAC-37).

38. Characterization of Discontinuities in the Stripa Granite--Full-Scale Heater Experiments by B.N.P. Paulsson, P.H. Nelson, and P.J. Kurfurst. (LBL-9063, SAC-38).

39. Application of Borehole Geophysics at an Experimental Waste Storage Site by P.H. Nelson, K.A. Magnusson, and R. Rachiele. (LBL-11982, SAC-39).

40. Laboratory Investigations of Thermomechanical Properties of Stripa Granite by L. Myer and R. Rachiele. (LBL-13435, SAC-40)

41. Petrologic Changes and Damage in the Stripa Quartz Monzonite in Response to Heater Tests by S. Flexser, H. Wollenberg, and D.E. Wedge. (LBL-14929, SAC-41).

AUTHORS' NOTE

This report presents the fracture data collected during the mapping of the ventilation drift. The data are presented in maps and a coded data file. The data file is related to the map through a one-to-one fracture numbering system. This approach permits maximum use of the fracture data by other researchers interpreting completed or ongoing experiments and as an aid in planning and interpreting future experiments. A detailed statistical analysis of the fracture data is currently under way.

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ABSTRACT

Detail maps of the fracture system in the ventilation drift at the Stripa mine have been prepared. The procedures used in preparing the maps of the floor and walls of the ventilation drift are documented in this report. The fracture data presented in the detailed maps are heavily supplemented by a coded data file. Each discrete fracture, vein, or fracture zone has been identified by a number on the map and this number has been used to link the map to the data file. This approach permits maximum use of the fracture data by other researchers interpreting completed and on-going experiments or as an aid in planning and interpreting future experiments.

1. INTRODUCTION

1.1 Background

The Stripa test site (Witherspoon and Degerman, 1978) is excavated in granite under the north limb of a gently plunging east-northeast synclinal structure (Olkiewicz et al., 1979). This test site has been the focal point of three major experiments supporting the Swedish-American high-level nuclear waste program: two thermomechanical experiments and a fracture hydrology program. There were also a number of supporting studies, including the macropermeability, or ventilation, experiment. Fracture mapping of the drift in which this experiment took place is the subject of this report. Figure 1.1 shows the experimental rooms and the location of the test boreholes.

The granitic rock mass in which these experiments were located is highly fractured, so considerable effort was devoted to characterizing the fracture system. In both the time-scaled and full-scale thermomechanical experimental rooms, this characterization included detailed mapping of the fractures on the floor and walls of the rooms, reconstruction of the core, and mapping of the fractures intersecting the drill cores. These data were then used to describe the statistics of the fracture system in the time-scaled and full-scale experimental rooms (Thorpe, 1979; Paulsson et al., 1981). Preliminary analysis of the thermomechanical data from these two experiments has already shown the importance of such fracture data.

As shown in Fig. 1.1, the ventilation drift is located at the north end of the test excavations. This drift is the site of several experiments in the fracture hydrology program (Gale and Witherspoon, 1978). The macropermeability experiment measured the total groundwater inflow into a sealed-

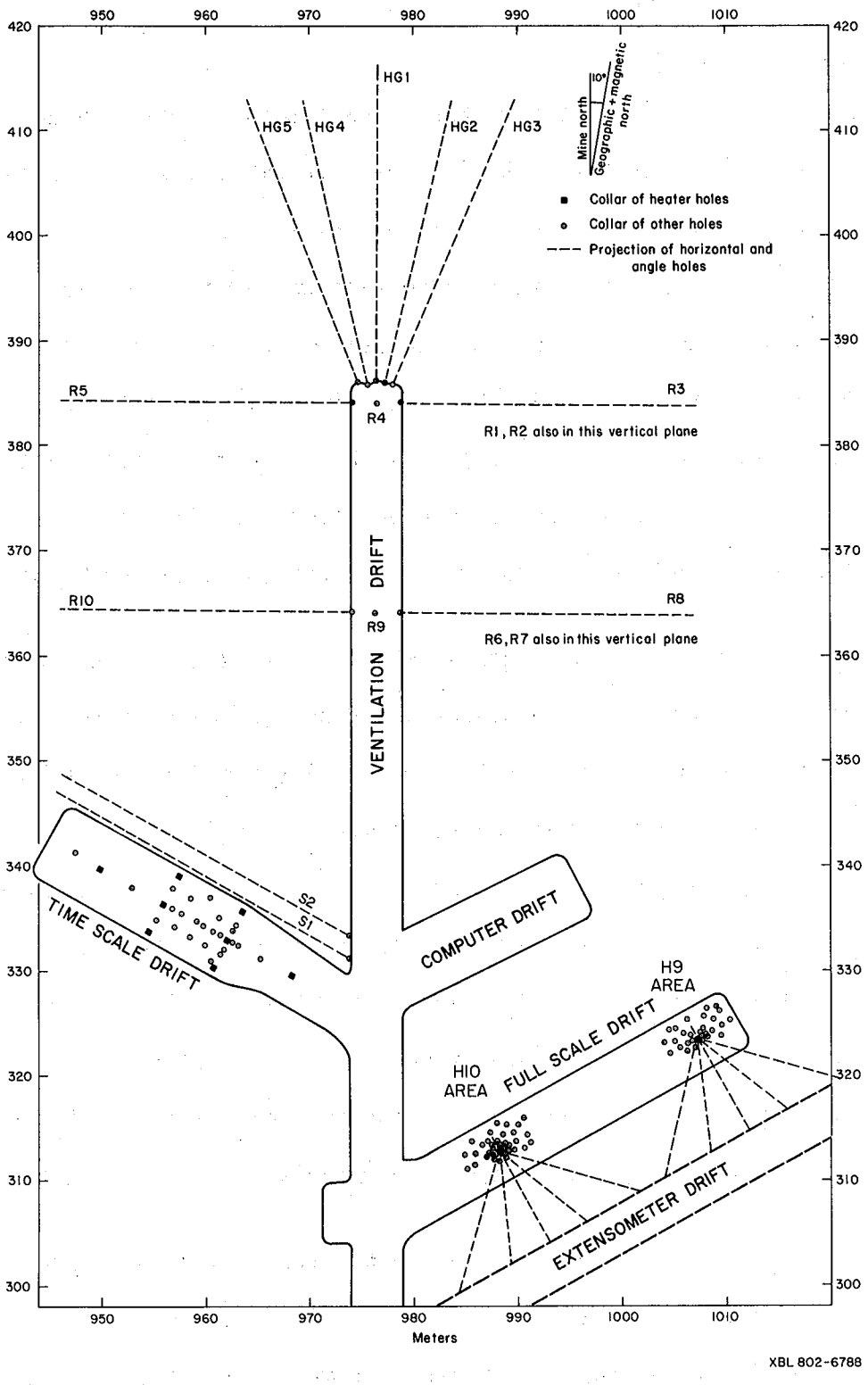

Fig. 1.1 Plan view of the experimental area at Stripa, 340 m underground. The coordinate system on the edges of the figure are references to the original mine coordinates (in meters).

off 33-meter section at the end of the drift (Witherspoon et al., 1980). This same area of the drift will also be the site of the buffer mass test (Carlsson et al., 1980), one of the ongoing studies at Stripa. This test, initiated in the fall of 1980, is a study of the reaction of a quartz-bentonite buffer material to both thermal loading and groundwater seepage. The experiment requires that most of the drift floor and, hence, the lower part of the walls be covered by a 1.5-m-thick concrete slab, which will render the drift inaccessible to further fracture mapping. Because of the importance of a detailed characterization of the fracture system to the macropermeability experiment, the planned buffer mass test, and the fracture hydrology program in general, it was necessary to complete the mapping of the fracture system in the ventilation drift as quickly as possible, bearing in mind that the data should be available to researchers in a usable format. This report describes the procedures used and the results of the mapping from November 17 to December 12, 1980.

1.2 Scope of Study

Figure 1.2 is a detailed plan of the ventilation drift showing the mapped areas and reference points related to the fracture hydrology program, the macropermeability experiment, and the buffer mass test. Because there are many potential users of the fracture data, this study emphasized data collection rather than focusing only on fracture mapping. Although a fracture map has been drawn for each wall and for the floor, these maps are not intended to rigorously represent the precise location of each fracture. Rather, they are reference documents for the fracture data. Each fracture visible in the drift floor and on the walls and having a trace length greater than 0.5 m was assigned a number. These numbers, and their corresponding

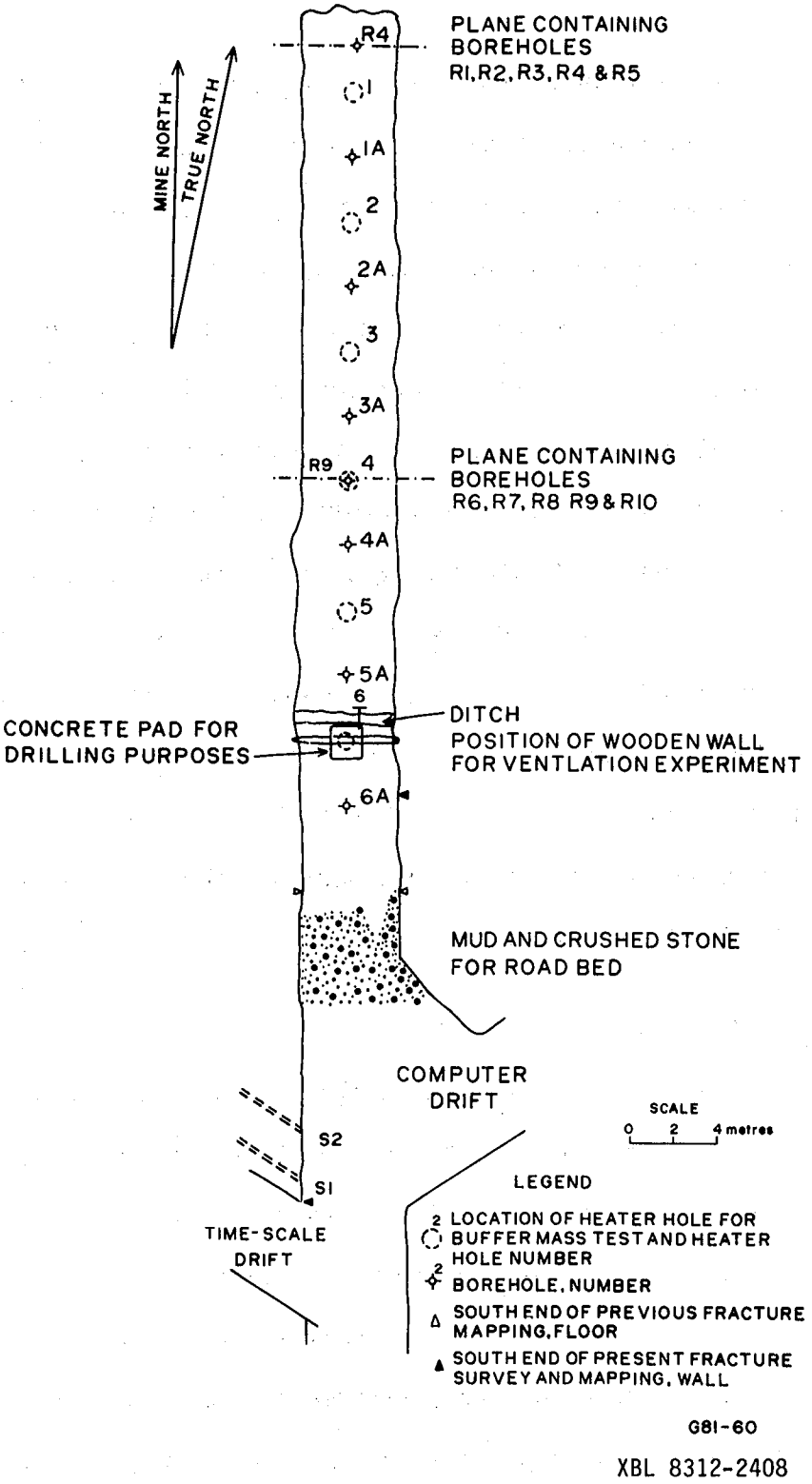

Fig. 1.2 Plan view of ventilation drift showing mapped areas.

traces, are shown on the maps. Each fracture is thus identified with a number that can be used to retrieve the data for that fracture. These collected data include some or all of the following information: the grid square where the fracture was first encountered, the type of fracture, its orientation (strike and dip), trace length, termination face (for both ends), aperture, infilling or coating material, seepage index, and fracture roughness.

The procedures used in measuring the fracture characteristics, constructing the maps, and recording and coding the data are described in Chapter 2 and in Appendix A. The collected data are given in Appendix B. Chapter 2 also explains how to use the fracture data and presents as examples complete sets of data for two fractures to demonstrate the procedure.

1.3 Previous Work

Many workers contributed to the fracture mapping in the ventilation drift and the overall Stripa test site. Results of this geological and fracture mapping are presented by Olkiewicz et al. (1978, 1979), Thorpe (1979), and Paulsson et al. (1981). Figure 1.3, from Olkiewicz et al. (1979), shows the results of a general fracture mapping of the site.

1.4 Ongoing and Future Work

A detailed statistical analysis of the fracture system in the ventilation drift is currently under way and consists of an analysis of fracture orientation, trace lengths, and spacings in order to determine the degree of fracture interconnection. The data from the drift mapping will be combined with the borehole fracture data in an attempt to define the characteristics of the fracture system in the rock mass surrounding the ventilation drift.

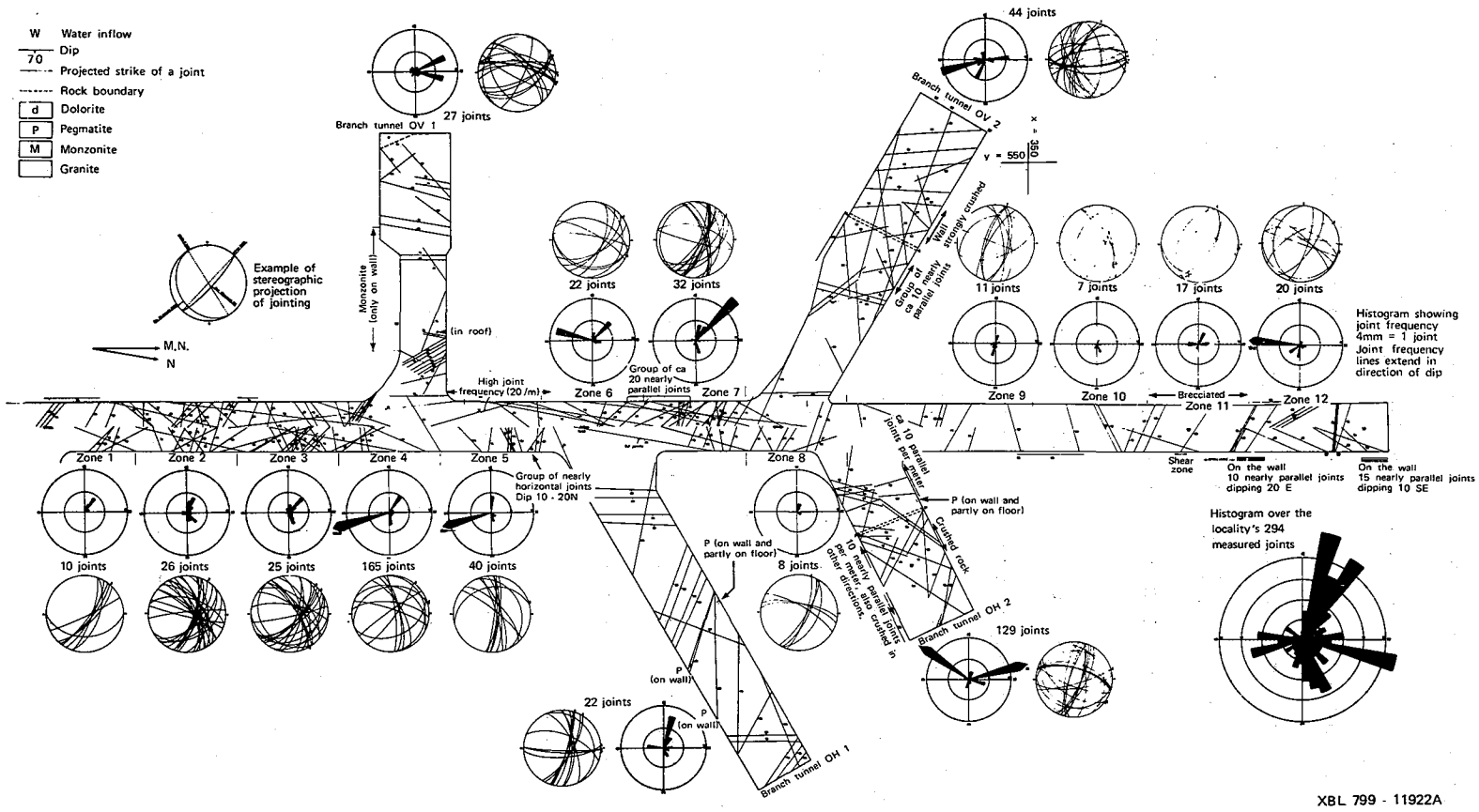

Fig. 1.3 Results of a general fracture survey of the test site. (Olkiewicz et al., 1979).

2. RESULTS OF FRACTURE MAPPING AND USE OF DATA FILES

2.1 Fracture Maps

The fracture maps of the floor and walls of the ventilation drift (Fig. 2.1) are to be used in conjunction with the fracture data of Appendix B. For locating fractures on the floor, an already existing fracture map was used because mud from intervening drilling programs partially obscured the surface.

2.2 Mapping Procedures

Mapping was based on a grid of 1-m squares. The intersections of the grid lines were marked on the rock surface by small painted dots. Some small white crosses, painted on the floor and walls during previous fracture mapping and photographic surveys, were still visible and were used as grid points. The bottom row of these crosses (about 1 m above the floor) was used to align the other dots of the wall grid with the plumbline method illustrated in Fig. 2.2. Each line of grid points in the floor and walls thus forms a cross-sectional plane perpendicular to the drift axis. All grid points are referenced to the north end of the drift.

As seen in Fig. 2.2, each wall is considered to be a vertical plane even though it actually has a somewhat curved surface. Thus, the upper edge of the squares lettered D is as much as 1.0 m closer to the center of the tunnel than the bottom of the wall. Additionally, the walls curve mainly in this D-row of squares and only slightly in the C-row. No attempt has been made to project the fractures along their plane or to draw the fracture trace on a projected plane. The upper boundary of the walls is arbitrarily taken as the point where the tangent to the excavation makes a 45° angle with the vertical.

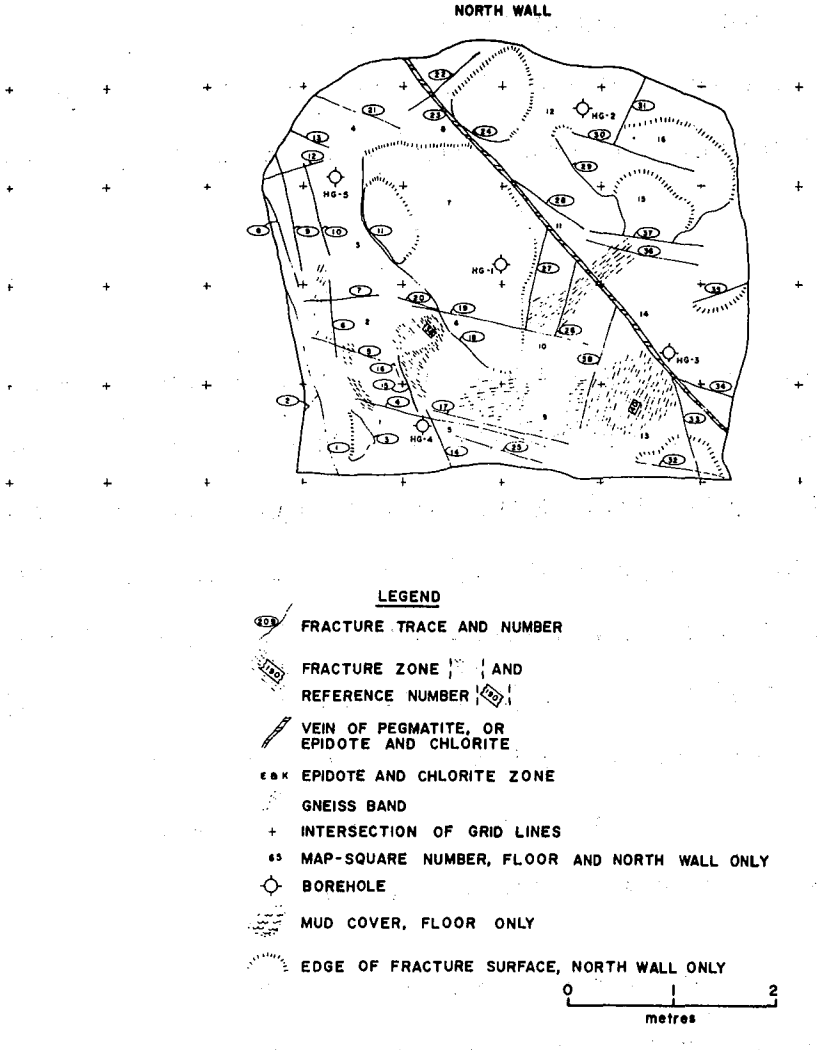

Fig. 2.1 Fracture map A - north wall. Legend applies to all following maps. Each page shows a segment of the east and west walls and of the floor. The pages are arranged to move south from the north end.

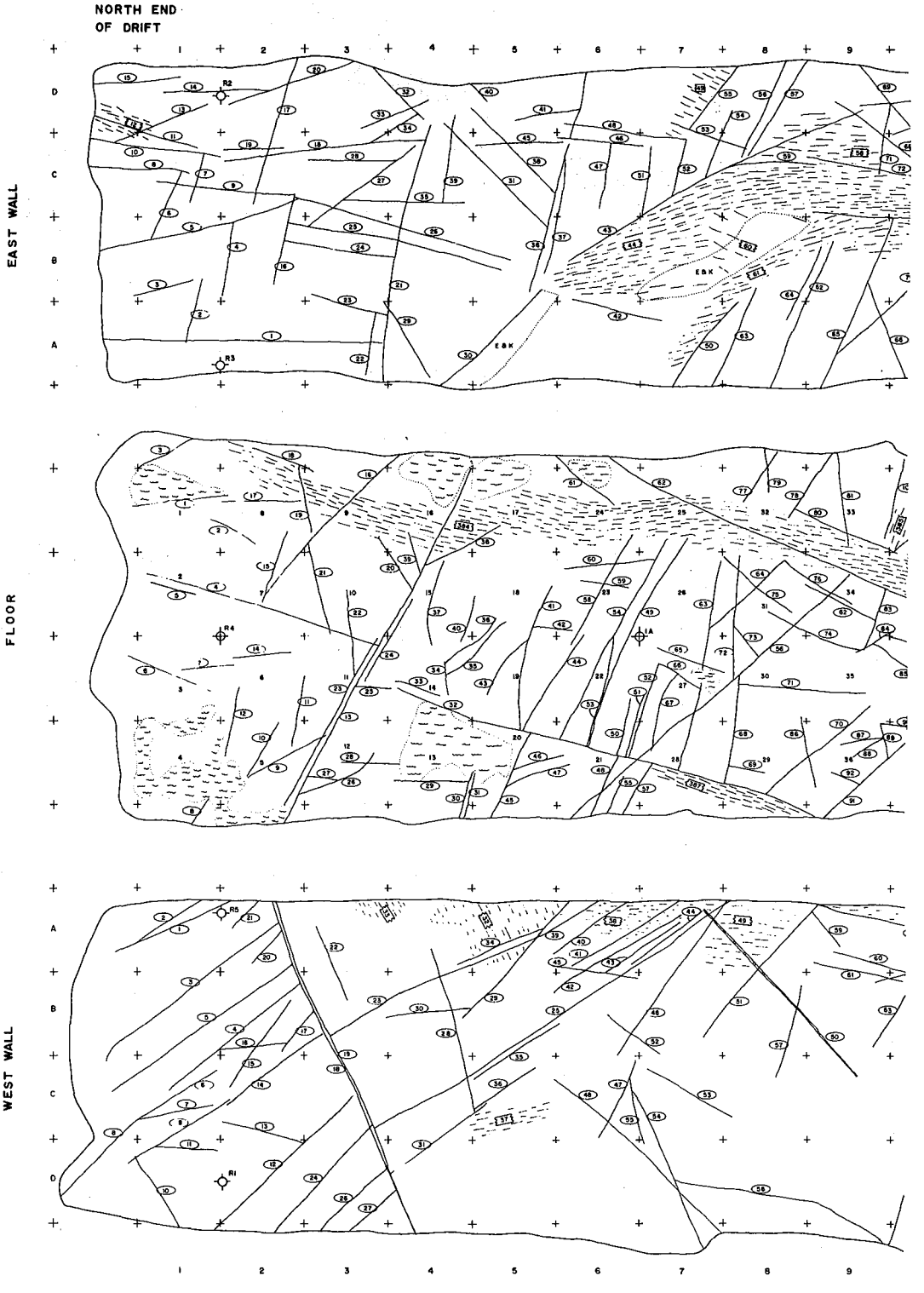

Fig. 2.1 Fracture map B - north end of drift

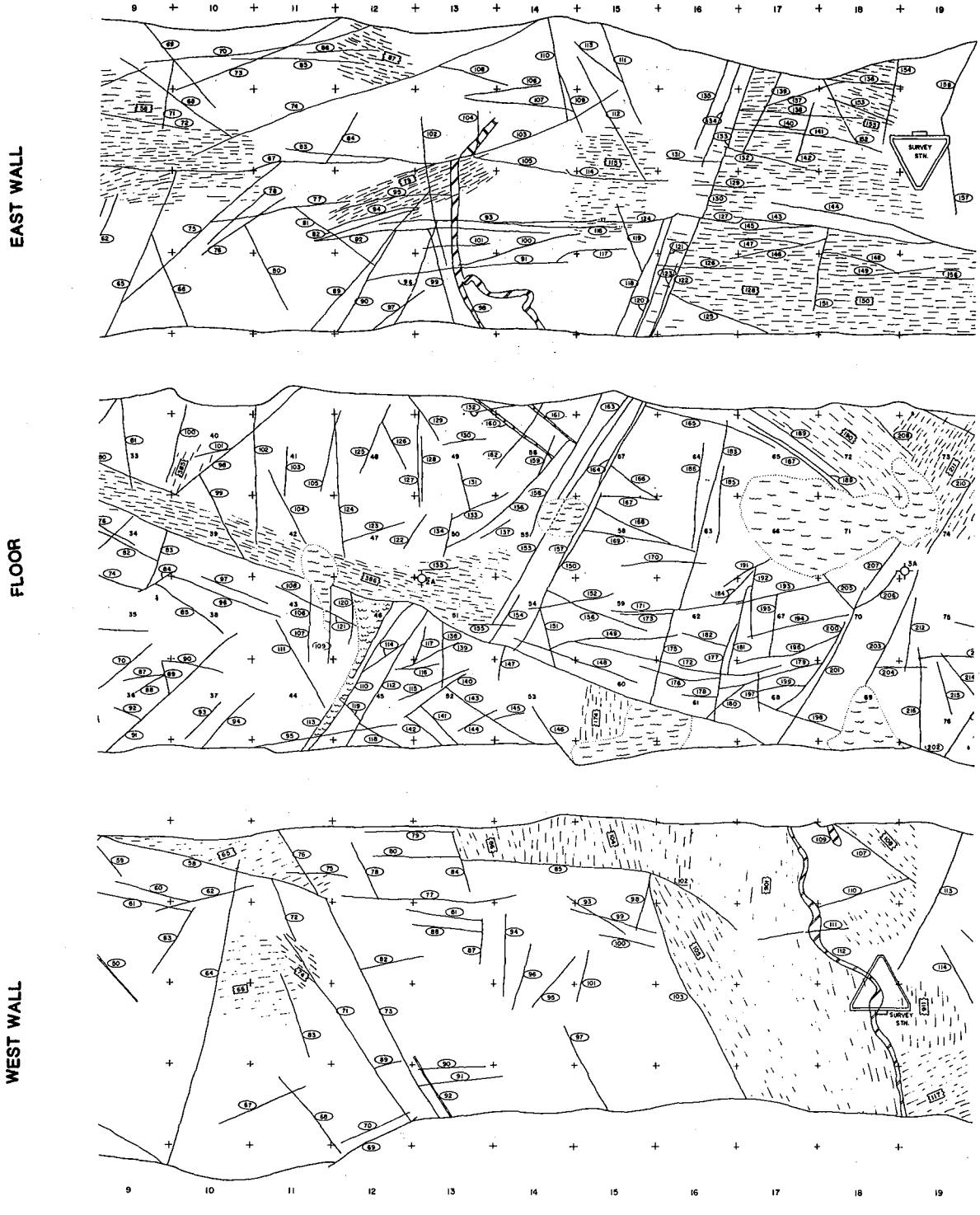

Fig. 2.1 Fracture map C

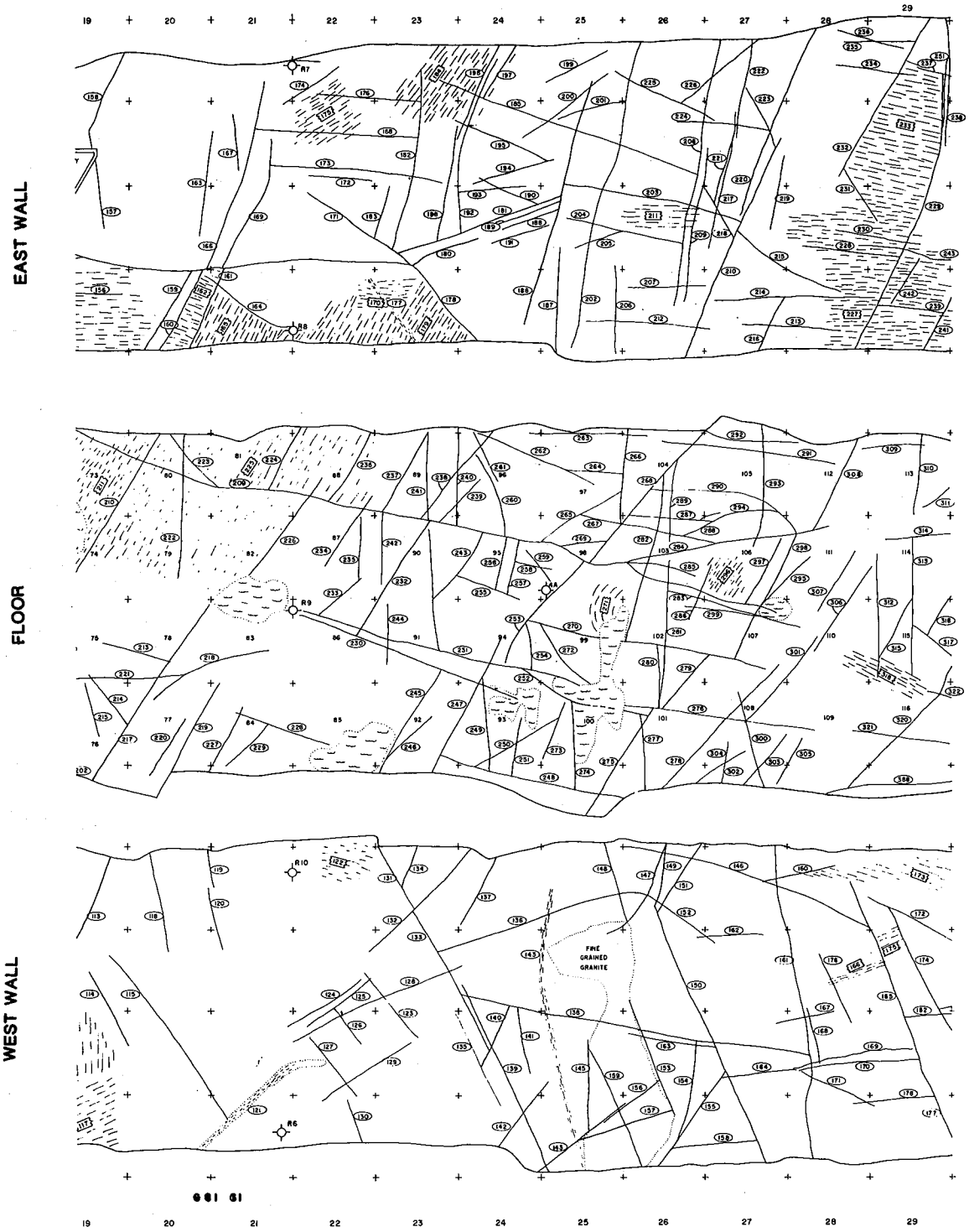

Fig. 2.1 Fracture map D

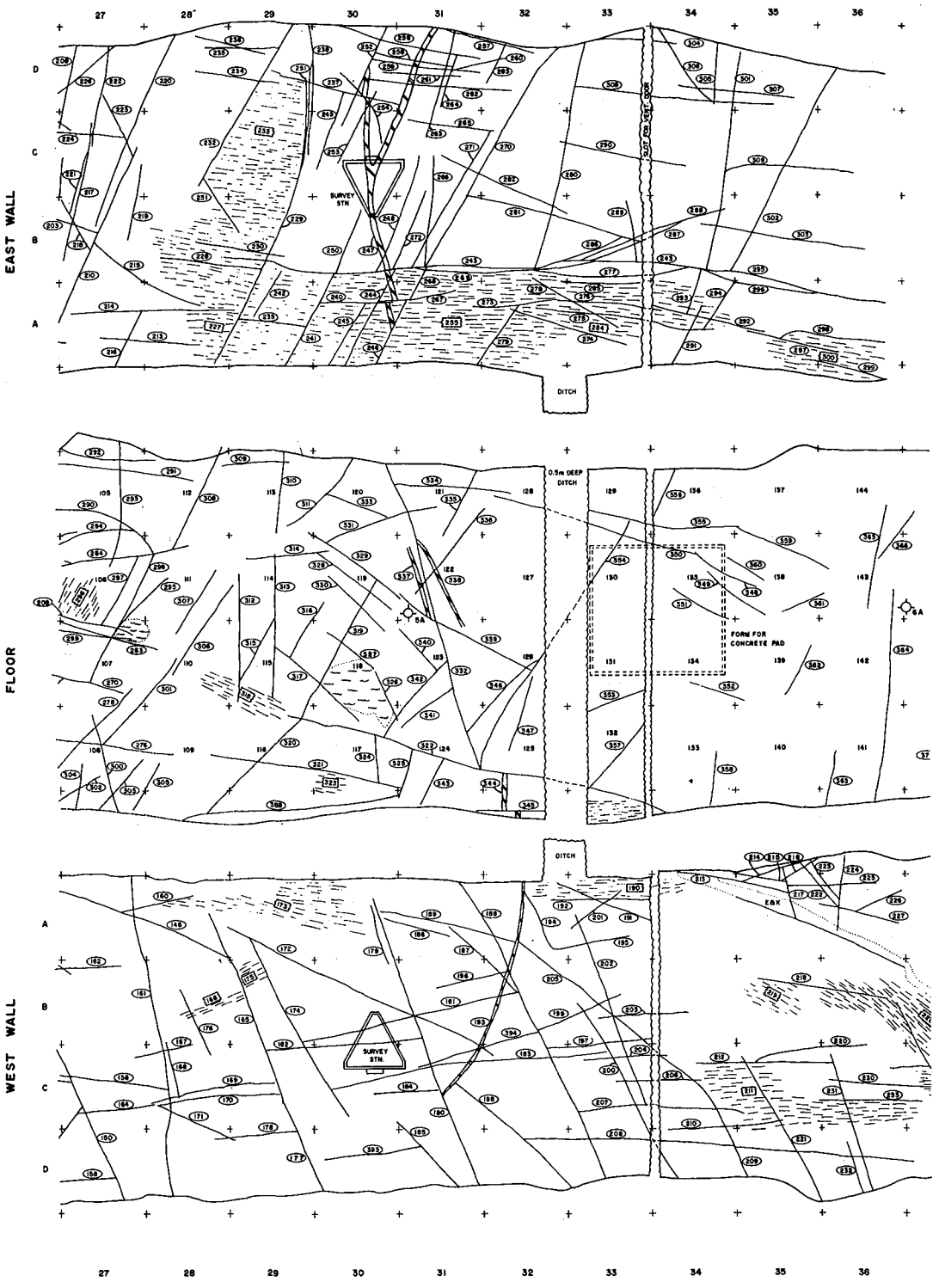

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Fig. 2.1 Fracture map E

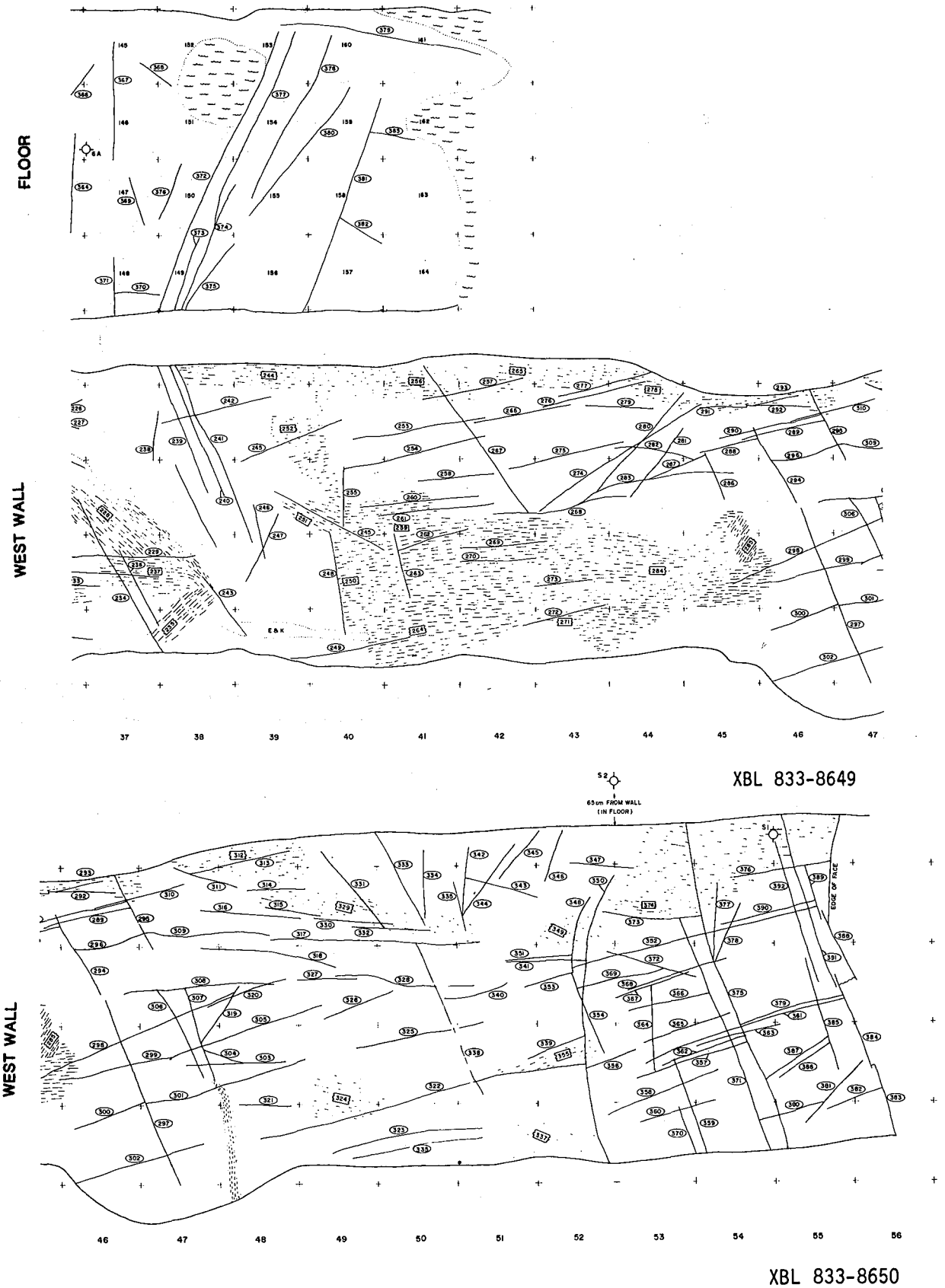

Fig. 2.1 Fracture map F

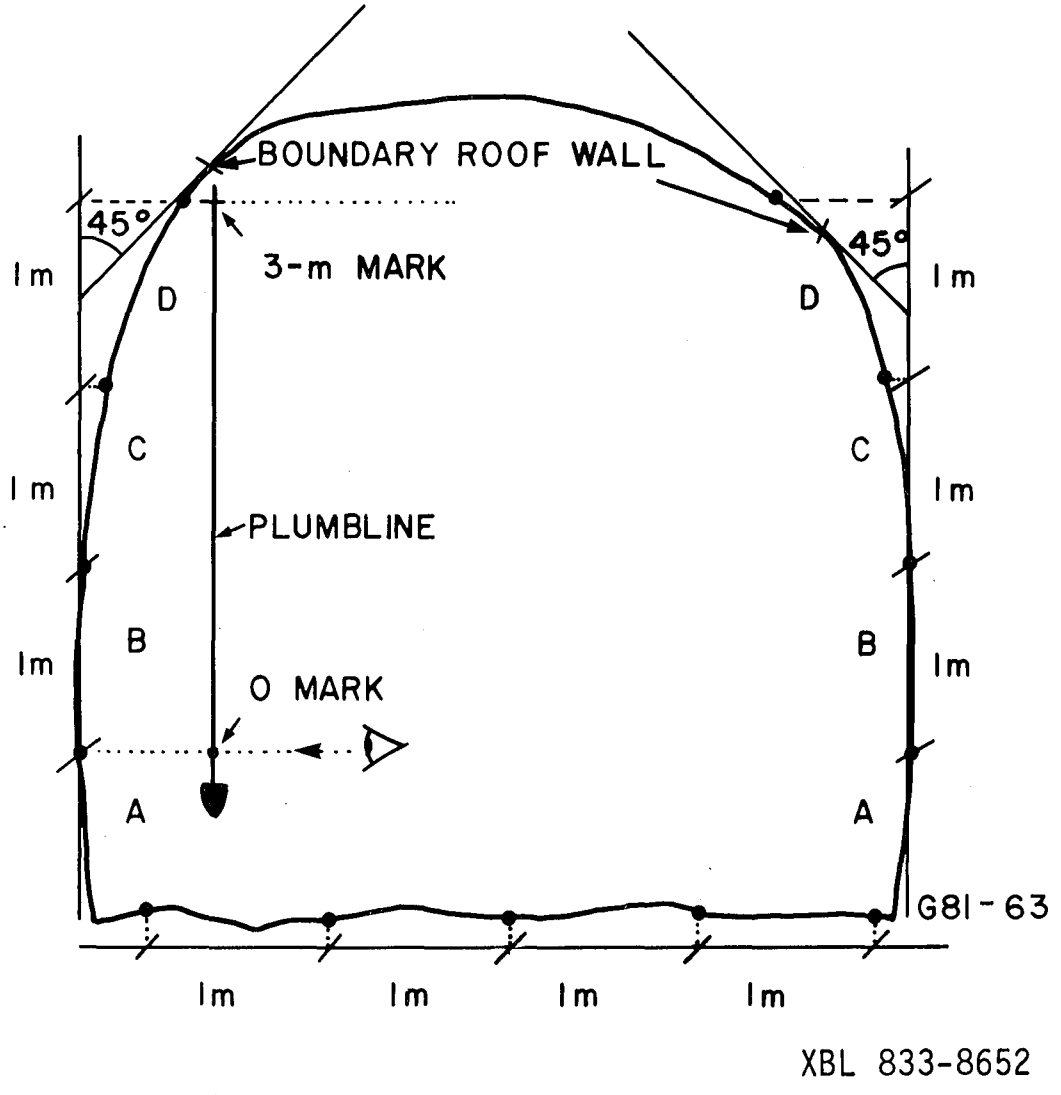

Fig. 2.2 Schematic cross-section of the drift illustrating the plumbline method for setup of the grid.

Establishing a grid on the floor was simpler because the surface is relatively planar.

Fracture traces were drafted on the site at a 1:20 scale (5 cm = 1 m). Because the maps are a reference to fracture locations rather than an exact illustration, the legend was kept as simple as possible. For instance, the fractures for which a surface was visible were represented by a single line joining the two furthest extremities of the exposed fracture surface. However, on the north wall plan, hatching indicates the actual extent of the visible fracture surfaces.

In densely fractured zones (where many fractures have trace lengths less than 0.5 m and a spacing of 5 to 10 cm), only a few measurements have been taken. These zones are shown on the plans by a random hatching approximately parallel to the fracture traces. This procedure is illustrated in Fig. 2.3 by the photographs and their accompanying line drawings.

The photograph of Fig. 2.3A is approximately centered on square number 57 of the floor, looking downward and to the east-southeast. The small crosses represent intersections of grid lines (painted dots). One fracture seen in the photograph cuts the east wall and the floor. Its reference number is 157 on the floor map and 122 on the east wall map to keep the plan of each face complete by itself. In both cases, however, the continuation into the adjoining face is noted in the data file, along with an estimation of its trace length in both faces, so that the two parts of the fracture can easily be matched. The strike value read on the floor is a more precise average of the strike of the whole fracture than that read on the adjacent wall because the reading on the floor is a visual average over 2 or 3 m; on

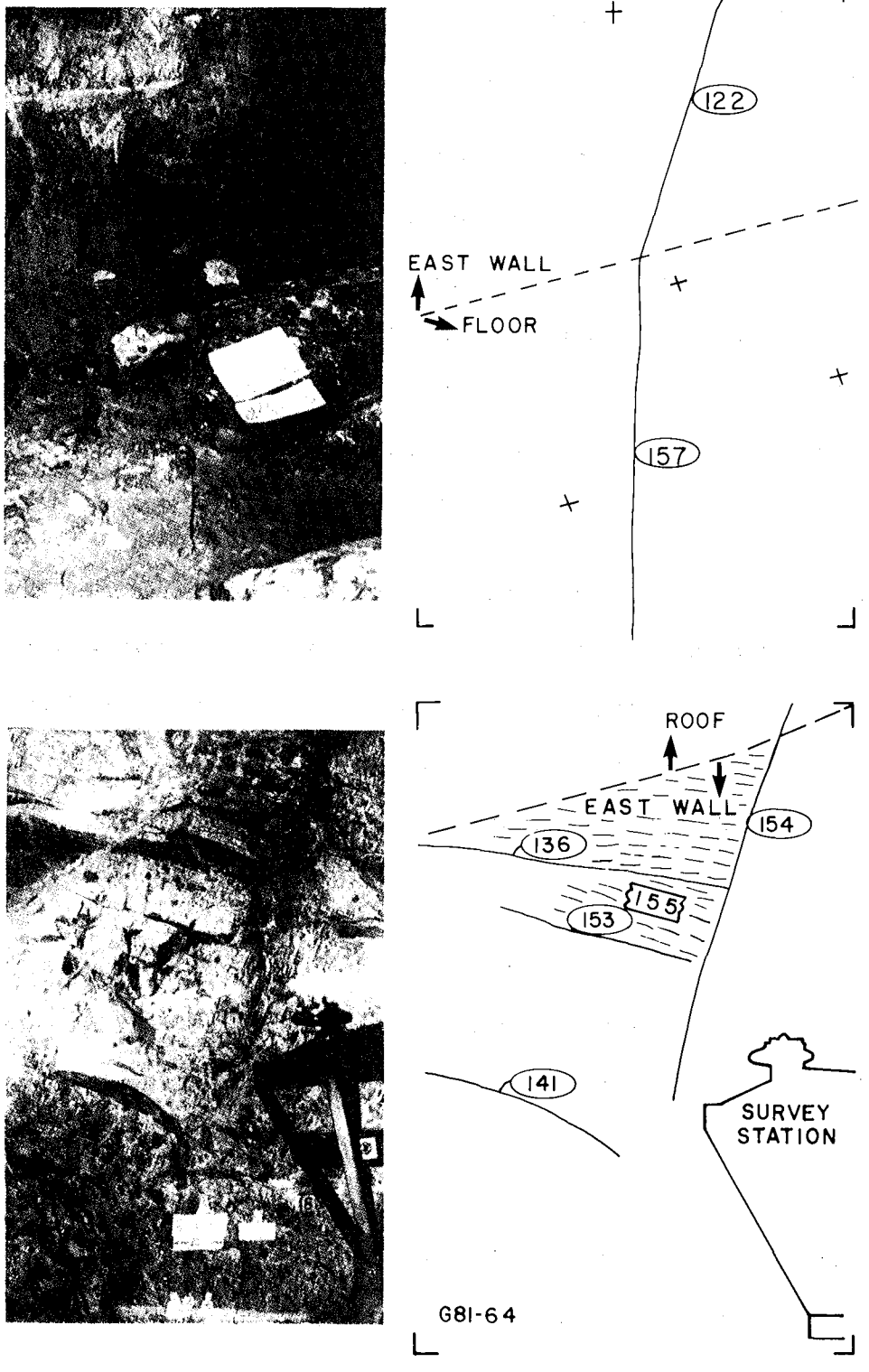

Fig. 2.3 Photographs and outlines of some structural features.
A. Same fracture cutting both east wall (#122) and the floor (#157).
B. A fracture zone on the top part of east wall (#155).

the wall, the averaging is made over a few inches. For dip measurements, the reverse is true, i.e., the reading on the wall is better than the reading on the floor.

Figure 2.3B is centered on square 18 C of the east wall, looking upward and to the northeast. A survey station, installed for the buffer mass test, is partly visible. A fracture zone (i.e., many fracture traces shorter than 0.5 m) is also shown. Their average orientation has been referenced under number 155. Even though the density of fracturing does not show up clearly in the photograph, Fig. 2.3B serves to point out that the hatching used to represent fracture zones is simply intended to show their approximate extent and the average orientation of the traces.

2.3 Using the Fracture Maps and Data Files

The following two examples illustrate how the information presented in this report can be used. For the first example, we consider the fracture shown in Figure 2.3A. As shown in the fracture map of the floor (Fig. 2.1B), this fracture (no. 157) seems to be important from a hydrological viewpoint for four reasons: (1) its trace is relatively long (between 2 and 3 m), (2) it is connected with two roughly parallel fractures (no. 150 and 164) that extend its influence along its orientation, (3) it interconnects many fractures of different orientation, and (4) the same fracture seems to persist on the adjacent east wall. From the data files of Appendix B, the following data line can be retrieved from the drift floor data file for this fracture:

11157055JT2870730201 E F DCK PS

By using the listing format given at the beginning of Appendix B and the coding of Appendix A.2, one can draw out the following information:

11 : this line is a discontinuity data line.

157: fracture number.

055: number of the grid square where this fracture was first encountered in the systematic mapping of all the squares.

JT : the fracture is a joint.

287: the strike of the fracture, with the dip to the right hand side.

073: dip of fracture.

02 : trace length of the fracture on the floor (in meters, $\pm$0.5 m).

01 : total trace length of the fracture on the faces perpendicular to the floor. In this case, according to the map, only the east wall is a perpendicular face containing a trace of this same fracture.

The two blank spaces indicate that the fracture has no trace on the face parallel to the floor, i.e., on the ceiling.

E F: the faces where the fracture trace ends are east wall (E) for one end and the floor (F) for the other.

DC : (D) indicates that the total aperture of the fracture is between 0.6 and 2 mm, or, if a coating mineral is present then (D) indicates that a hairline aperture has been deduced from the presence of coating minerals; (C) indicates that the fracture has no visible free aperture and is closed.

K : chlorite is the coating mineral in this fracture.

The following blank space indicates that no evidence of water seepage has been found along this fracture trace, on either the floor or the east wall.

PS : the fracture surface is planar (P) on a large scale (meters) and smooth (S) on a small scale (centimeters).

The absence of FS in the following 2 spaces indicates that this fracture does not present a surface exposure larger than 0.05 m^2.

This data record shows that fracture no. 157 also has a trace of about 1 m on the east wall. From the fracture map, the corresponding fracture on the east wall is known to be fracture no. 122. Repeating the same data retrieval procedure, we get the following data line from the east wall data file:

1112216AJT2970710103 E F DCK OPS

And by repeating the decoding procedure, one can cross-check the information obtained from the floor.

As a second example, we estimate what fractures are likely to intersect borehole 5A of the buffer mass experiment. By looking at the map of the floor (Fig. 2.1D), one can pick up the numbers of all the fractures that might intersect borehole 5A if their dip is toward the borehole. These numbers are: 313, 317, 320, 322, 327, 331, 332, 337, 338, 339, 340, 341, 342, 346, and 354. From the data files of Appendix B, one can obtain the dip of these fractures, keeping in mind that the strike is given with the dip to the right-hand side. By plotting these dip data on the map one could see that only fractures 319, 332, and 339 are likely to intersect borehole 5A. Table 2.1 gives some of the decoded information for these three fractures. One can see that fracture 319 is a joint with no infilling or coating mineral, fracture 332 is a vein filled with chlorite and quartz, and fracture 339 is a joint with chlorite as the coating mineral.

2.4 Availability of Primary Data

Copies of the maps in Fig. 2.1 on a scale of 5 cm = 1 m and copies of the data files, on magnetic tape, are available from J. E. Gale, Department of Earth Sciences, Memorial University of Newfoundland, St. John's Newfoundland, Canada, A1B 3X5, or from the Earth Sciences Division, Lawrence Berkeley

Table 2.1. Some of the recorded information for fracture numbers 319, 332 and 339 on the floor.

No.	Type	Orientation Strike	Orientation Dip	Trace Length (m)	Total Aperture (mm)	Infilling or Coating Material
319	Joint	108	83	1	0	none
332	Vein	234	64	4	between 2 & 6	chlorite and quartz
339	Joint	22	86	2	between 0.6 & 2.0*	chlorite

*could also be a hairline aperture deduced from the presence of coating mineral.

Laboratory, University of California, Berkeley, California, 94720. Black and white photographs of the walls and floor of the ventilation drift are also available from either of these sources or from the Stripa mine site.

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APPENDIX A. DATA COLLECTION PROCEDURES

A.1 Orientation Measurements

Orientation measurements were taken with a Brunton compass. In most cases, an aluminum plate was used to obtain an accurate average orientation of the fracture plane.

At the start of this mapping program, selected fracture planes were measured with both a Brunton compass and a direct-reading azimuth protractor (DRAP) designed by the U.S. Bureau of Mines (Bolstad and Mahtab, 1973). The purpose of these measurements was to determine if serious magnetic interference was produced by the presence of the borehole and drilling equipment in the drift, or by the presence of the hematite and magnetite in the rock mass at Stripa. Table A-1 gives the results of these measurements. The difference between DRAP and Brunton readings is almost always less than 10° for the strike (generally less than 5°) and less than 5° for the dip in all cases but one. Because it uses a visual estimate of drift direction, we can assume that a DRAP is somewhat less precise than a Brunton compass when used in an environment with no magnetic disturbances. Therefore, the small difference in DRAP and Brunton readings is more likely due to the greater imprecision of the DRAP than to a magnetic interference.

Besides orientation, other observations were recorded: type of discontinuity, size, termination face, aperture, infilling material, water seepage, surface roughness, and exposure of a fracture surface greater than 0.05 m^2. These parameters are described in the next section.

Table A-1. Measurements for comparing DRAP and Brunton compass readings.

Fracture No.*	Instrument	Orientation			Difference (Brunton-DRAP)	
		Strike	Azimuth of Dip	Dip	Strike	Dip
1	Brunton	142		43	-8	+1
1	DRAP	150	240	42		
2	Brunton	133		63	+1	-2
2	DRAP	132	222	65		
3	Brunton	353		72	-5	0
3	DRAP	358	88	72		
4	Brunton	291		65	-2	-3
4	DRAP	189	19	68		
5	Brunton	282		68	-12	-2
5	DRAP	294	24	70		
6	Brunton	128		66	-2	-8
6	DRAP	130	220	74		
7	Brunton	12		79	-3	-3
7	DRAP	15	105	82		
8	Brunton	162		82	-4	+1
8	DRAP	166	256	81		
9	Brunton	103		52	+7	+2
9	DRAP	96	186	50		
10	Brunton	272		60	0	-1
10	DRAP	272	2	61		
11	Brunton	160		17	+4	-4
11	DRAP	156	246	21		
12	Brunton	141		23	-3	-5
12	DRAP	144	235	28		
13	Brunton	355		64	+3	-1
13	DRAP	352	82	65		
14	Brunton	281		69	-4	+2
14	DRAP	285	15	67		

*These numbers do not refer to the numbers in Fig. 2.1.

A.2 Coding Conventions

Fracture number: Each orientation or fracture measurement was given a number, starting with the number 1 at the north end of the drift, for each wall and the floor.

Square number: The 1 m x 1 m grid square in which a fracture was first encountered was recorded. On the floor, the squares are numbered from 1 to 159, starting at the north end of the drift. For the walls, the numbers are of the form XXA, XXB, XXC, or XXD. The first two digits correspond to the distance from the north end of the drift. The letter A, B, C, or D represents the height in the face, with A the bottom square and D the top square (Fig. 2.2).

Type of discontinuity: Five types of discontinuity were distinguished and recorded with different codes:

Discontinuity	Code
Contact between two different rock types	CN
Gneissosity	GS
Joint	JT
Vein	VN
Fracture zone (many fractures shorter than 0.5 m and with 5 to 10 cm spacing)	FZ

Orientation: The convention used consisted of measuring the azimuth of the strike (0° to 360°) of the fracture in the direction such that the direction of the fracture dip is always located on the right-hand side of the strike azimuth.

Size: The trace length of the fractures was measured to the nearest meter. Only fractures with a trace longer than 0.5 m in the face being mapped were recorded. Where a trace persisted beyond the mapped face, the length in both the perpendicular and the parallel faces were recorded separately. This procedure does not apply to fracture zones (FZ). In other cases, blank spaces or a dash (-) mean that no trace, or a trace shorter than 0.5 m, was observed in the corresponding face.

Termination face: The face in which the fracture trace ends is indicated by the following code:

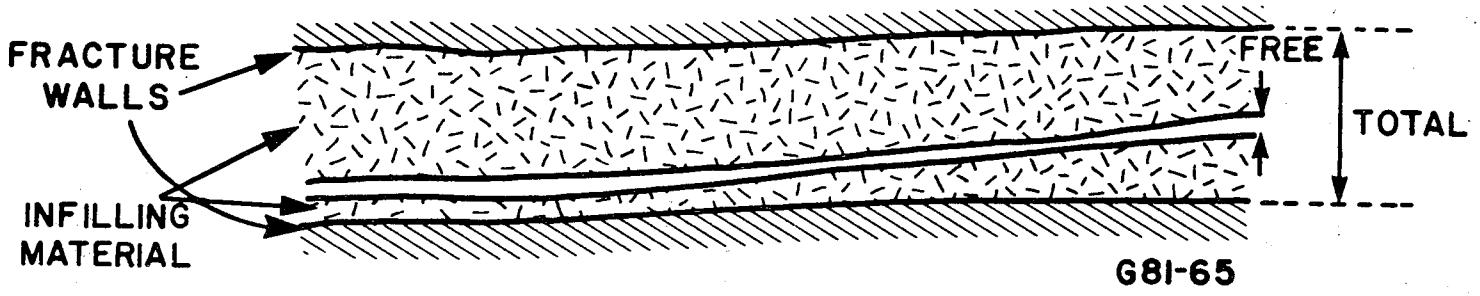
C = ceiling
E = east wall
W = west wall
F = floor
T = north wall of time-scaled drift.

This information is given for both ends of the fracture trace.

Aperture: The total and free aperture (Fig. A-1) of the fractures were estimated and recorded with the following codes:

Aperture	Code
0 mm (or closed)	C (or blank)
0.6-2 mm	D*
2-6 mm	E
6-20 mm	F
20-60 mm	G
unknown	U

*Code D also means that the aperture has only been deduced from the presence of some coating mineral, if a coating mineral is indicated in the data file.



XBL 833-8651

Fig. A-1 Illustration of "total" and "free" aperture.

Infilling or coating material: Provision was made in the data collection sheets for recording only two fracture-filling minerals because this was as many as could be distinguished in the field under normal mapping conditions. The following codes were used:

M = Micas
Q = Quartz
C = Calcite
F = Feldspar
K = Chlorite
U = Unknown

Water: Water seepage, tentatively observed, was recorded with the following codes:

Observation	Code
dry, with no evidence of water flow	0 or - or blank
dry, but evidence of water flow (e.g., rust staining)	1
damp but no free water	2
occasional drop of water	3
continuous flow of water	4
unknown	U

Observation of water seepage is subjective because sometimes when there is dampness on the rock surface it is hard to say exactly from which fracture the water is coming. Seepage information is not recorded for the floor because the accumulation of mud prevented direct observation.

Roughness: The roughness of the fracture surface was estimated on a large scale (meters) and on a small scale (centimeters) and recorded with the following codes:

Description	Code
Large scale:	
stepped	S
undulating	U
curve	C
planar	P
Small scale:	
rough	R
slickensided	K
smooth	S

Fracture surface: When a surface area larger than 0.5 m^2 of a fracture was exposed, the letters FS were recorded.

APPENDIX B - DATA FILE LISTING

Format of the Listing

Columns	Information
1-2	Flag identifying the type of data line (integer). In these columns, 11 means discontinuity data, 33 means free comments and 55 means mapping face.
3-5	Fracture number, starting at 1 for each face (integer).
6-8	Square number (alphanumeric).
9-10	Type of discontinuity (alphabetic)
11-16	Orientation data (integer); 11-13: Strike, with dip to the right-hand side. 14-16: Dip.
17-22	Trace length, in meters (integer): 17-18: On the mapping face itself. 19-20: Sum of the trace lengths on the faces perpendicular to the mapping face. 21-22: Trace length on the face parallel to the mapping face.
23-25	Termination faces for both ends of the fracture trace (alphabetic).
26-28	Blank
29-30	Aperture (alphabetic); 29: Total aperture. 30: Free aperture.
31-31	Infilling material (alphabetic).
33	Water seepage code (integer).
34-35	Roughness (alphabetic): 34: On large scale. 35: On small scale.
36-37	Exposure of a fracture surface larger than 0.05 m^2 (alphabetic).

```
55STRIPA VENTILATION DRIFT EAST WALL
1100101AJT3520510309--C E    DCK 0PKFS
33PEGMATITE DIKE PARALLEL TO JOINT
1100201AJT31308301----E E    DCK 0PSFS
1100301AJT33002201----E E    DCK 0PS
1100402BJT19408401----E E    DCK 0UR
1100501BJT31401802----E N    DCK 0PS
1100601BJT19108501----E E    DCK 0USFS
1100701CJT18808801----E E    DCK 0USFS
1100801CJT0000170101--N E    DCK 0US
1100901CJT06501402----E E    DCK 0PS
1101001CJT3550120101--N E    DCK 2PS
1101101CJT01102401----E E    DCK 2US
1101201DFZ007045                  2
1101301DJT31303901----E E    DCK 0PS
1101401DJT00501401----E E    DCK 0US
1101501DJT18008401----E E    CC  0URFS
1101602BJT31008501----E E    DCK 0PSFS
1101702CJT29307102----C E    DCK 2PS
1101802CJT30902302----E E    DCK 0PS
1101902CJT18108801----E E    DCK 0US
1102002DJT3260270101--C E    DCK 2US
1102103AJT2010840301--C F    DCK 2PSFS
1102203AJT12207401----E E    DCK 0USFS
1102303AJT08902101----E E    CC  0US
1102403BJT00802001----E E    DCK 0PS
1102503BJT00302502----E E    DCK 0PS
1102603BJT03702502----E E    DCK 0PS
1102703CJT26302701----E E    DCK 0PS
1102803CJT00301201----E E    DCK 0PS
1102904AVN01408501----E E    ECKE USFS
33SAME MEAS. FOR VN & JT OF NO 29
1102904AJT01408501----E E    DCKE2USFS
1103004AJT1940540201--E F    DCK 2USFS
1103105CJT06904802----E E    DCK 0PS
1103204CJT085063010401W E    DCK 0PS
1103304CJT1890630101--C E    DCK 0US
1103404CJT21802701----E E    DCK 0PS
1103504BJT01201101----E E    DCK 0US
1103605BJT2880740301--C E    DCK 2US
1103705BJT28707501----E E    DCK 0US
1103805CJT08404801----E E    DCK 0PS
1103904CJT34008201----E E    DCK 2USFS
1104004DJT0810460104--C E    DCK 2PS
1104104DJT33002501----E E    DCK 2US
1104206AJT15506401----E E    DCK 2USFS
1104306BJT19605303----E E    DCK 2UK
1104406BFZ180065                  2
1104505CJT35004201----E E    DCK 0US
1104606CJT34903701----E E    DCK 2US
1104706CJT15009001----E E    DCK 0USFS
1104806DJT00402102----E E    CC  0UR
1104907DFZ350031                  2
1105007AJT2020500101--E F    DCK 2US
```

```
1105107CJT16209001----E E    DCK 2USFS
1105207CJT20408901----E E    DCK 2USFS
1105308CJT0850400101--C E    DCK 2PS
1105408DJT19208901----E E    DCK 2PSFS
1105507DJT0000810101   C E   DCK 2CSFS
1105608DJT2940750101   C E   DCK 2CSFS
1105708DJT20108601----C E    DCK 2USFS
1105809CFZ014021                  2
1105908CJT17505901----E E    DCK 2USFS
1106008BFZ032022                  2
1106108BFZ185034                  2
1106208AJT2840700201--E F    DCK 0PS
1106308AJT24405701----E F    DCK 0US
1106408BJT28907101----E E    DCK 0US
1106509AJT2910240201--E F    DCK 2PS
1106609AJT01908401----E E    DCK 0USFS
1106709BJT34701803----E E    DCK 2US
1106809DJT10803802----E E    DCK 0PS
1106909DJT1060460101--E E    DCK 2PS
1107010DJT33401802----E E    DCK 0PS
1107109CJT19309001----E E    DCK 0USFS
1107210CJT02401701----E E    DCK 0US
1107310DJT17808802----E E    DCK 0USFS
1107411CVN19405905----C E    ECKE USFS
33SAME MEAS. FOR VN & JT OF NO 74
1107411CJT19405905----C E    DCKE2USFS
1107510BVN26604802----E E    ECQ 0US
33SAME MEAS. FOR VN & JT OF NO 75
1107510BJT26604802----E E    CC  0US
1107610BJT28503501----E E    DCK 0US
1107710BJT35502802----E E    DCK 0US
1107810BJT18706901----E E    CC  0PRFS
1107912BFZ291042                  2
1108011AJT12806501----E E    DCKC2PSFS
1108111BJT35506701----E E    DCK 0USFS
1108212BJT35002201----E E    DCK 0US
1108311CJT35402502----E E    DCK 0US
1108412CJT30605901----E E    DCK 0PS
1108511DJT34401902----E E    DCK 2PS
1108612DJT35001901----E E    DCK 0US
1108712DFZ015028                  0
1108812AJT2800490201--E F    DCK 2PS
1109012AVN25804701----E F    ECK 0PS
33SAME MEAS. FOR VN & JT OF NO 90
1109012AJT25804701----E F    CC  0PS
1109112AJT34102202----E E    DCK 0US
1109212BJT33902202----E E    DCK 0PS
1109313BJT34602503----E E    DCK 2US
1109412BJT34902401----E E    DCK 0US
1109512BJT34602201----E E    DCK 0US
1109612AJT28506801----E F    CC  0PS
1109712AJT15707701----E E    DCK 2PSFS
1109813B                     HCQF
33PEGMATITE INCLUSION
```

```
1109913AJT1570750101--E F    DCK 2PSFS
1110013AJT31702801----E F    DCK 0US
1110113BJT30101601----E E    CC  0US
1110213BJT06408202----E E    CC  0UR
1110313CJT27103703----E E    DCK 2US
1110413CJT29806601----E E    DCK 0PS
1110514CJT35404401----E E    DCK 2UKFS
1110613CJT19403301----E E    CC  0UR
1110713CJT35304301----E E    DCK 0UR
1110813DJT03902401----E E    DCK 0US
1110914DJT19205101----E E    DCK 2URFS
1111014DJT07909001----E E    DCCK0UR
1111115DJT3590510101--C E    DCK 2UK
1111215DJT07706402----E E    DCK 2UR
1111315DVN02204401----E C    ECCK0US
1111415BJT34503501----E E    DCK 2US
1111515CFZ015022                 2
1111614BJT34402501----E E    DCK 2US
1111715BJT34401901----E E    DCKC0US
1111815AJT2940700201--E F    DCK 2PS
1111915BJT06906301----E E    CC  0US
1112015AJT2960750101--E F    DCK 2PS
1112115AJT29807601----E F    DCK 0US
1112216AJT2970710103--E F    DCK 0PS
1112316AJT2860700101--E F    DCK 0PS
1112415BJT00300701----E E    DCK 0CS
1112516AJT03503101----E F    DCK 0US
1112616AJT01703301----E E    DCK 0PS
1112716BJT00902701----E E    DCK 0US
1112816AFZ353037                 0
1112916BJT16402401----E E    DCK 0UK
1113016CJT29307401----E E    DCK 0US
1113116CJT17702101----E E    DCK 0US
1113217CJT01004201----E E    DCK 0US
1113316CJT3000650102--C E    DCK 0PSFS
1113416CJT2980710201--C E    DCK 0PS
1113516CJT2960770101--C E    DCK 0PS
1113617DJT08301702----E E    DCK 0PK
1113717CJT19205401----E E    DCK 0PSFS
1113817CJT03201901----E E    DCK 0US
1113917CJT29306201----E E    CC  0PR
1114017CJT05901601----E E    DCK 0PS
1114117CJT05201202----E E    DCK 0CS
1114217CJT21608601----E E    DCK 0US
1114317BJT35503202----E E    DCK 0US
1114417BJT35705206----E E    DCKE0USFS
1114517BJT34802901----E E    DCK 0US
1114617BJT25301201----E E    DCK 0US
1114717BJT03702201----E E    DCK 0US
1114818AJT03602201----E E    DCK 0PS
1114918AJT25101001----E E    DCK 0US
1115018AFZ353045                 0US
1115118AJT20708201----E E    DCK 0URFS
1115218CJT0760560101--C E    DCK 0US
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1115318CJT03901601----E E    DCK  0PS
1115418CJT0140810102--C E    DCK  2USFS
1115518CFZ022013                  0
1115619AJT10800501----E E    DCK  0US
1115719BJT01408101----E E    DCK  0USFS
1115819DJT01205201----E E    DCKC0PSFS
1115920AJT20806301----E E    DCK  2USFS
1116020AJT2980800101--E F    DCKC0US
1116120AJT29408101----E F    DCK  0US
1116220AFZ031014                  0
1116320BJT15709001----E E    DCK  2URFS
1116421AJT02505701----E E    DCK  0US
1116521AFZ285077                  0
1116621BJT28907202----E E    DCK  0US
1116721CJT33408701----E E    DCK  2USFS
1116821CJT07200602----E E    DCK  0US
1116921CJT32607902----E E    DCKC2USFS
1117023AFZ003030                  0
1117122BJT06703601----E E    DCK  0US
1117222CJT33701201----E E    DCK  0PS
1117322CJT10600902----E E    DCK  0US
1117422DJT20007901----E E    DCK  0US
1117522DFZ243050                  0
1117622DJT05100901----E E    DCK  0US
1117723AGS069043
1117823AJT0160770101--E F    DCKC2US
1117923AFZ288082                  0
1118023BJT33403801----E E    DCK  0USFS
1118123BJT32002102----E E    DCK  0US
1118223BJT28508102----E E    DCK  0US
1118323BJT26206401----E E    DCK  0US
1118423DFZ263057                  0
1118524DJT07401603----E E    DCKC0US
1118624AJT29407403----E E    DCKC0US
1118725AJT16207401----E F    DCK  0USFS
1118824BJT19402301----E E    DCK  0PS
1118925BJT20002401----E E    DCK  0PS
1119024BJT15907401----E E    DCK  0USFS
1119124BJT15507301----E E    DCK  0USFS
1119224BJT11709002----E E    DCK  0PS
1119324BJT32203201----E E    DCK  2PS
1119424CJT31703301----E E    DCK  0PS
1119524CJT16707001----E E    DCK  0USFS
1119624DJT27307201----C E    DCK  0PS
1119724DJT27306901----C E    DCK  0PS
1119823CJT19308601----E E    DCKC0URFS
1119925DJT22203901----E E    DCK  0PS
1120025CJT23704601----E E    DCK  0UK
1120125CJT20701901----E E    DCK  0US
1120225CJT25707804----C E    DCK  0US
1120325BJT10300702----E E    DCK  0PS
1120425BJT04901202----E E    DCK  0PS
1120525BJT33102901----E E    DCK  0CS
1120625AJT17208501----E E    DCK  0URFS
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1120726AJT35607201----E E    DCK 0USFS
1120826AJT2580830301--C E    DCK 0US
1120926AJT26207602----E E    DCK 0US
1121026AJT29306702----E F    DCK 0PS
1121126BFZ346025                  0
1121226AJT01203801----E E    DCK 0US
1121327AJT15300301----E E    DCK 0US
1121427AJT00702202----E E    DCKC0US
1121527BJT12804301----E E    DCK 0PK
1121627AJT2490610101--E F    DCK 0UR
1121727BJT27707401----E E    DCK 0US
1121827BJT00607001----E E    DCKC0PSFS
1121927BJT01808801----E E    DCK 0USFS
1122027BJT0180890201--C E    DCK 0PSFS
1122127CJT25407901----E E    DCK 0US
1122227DJT2580780101--C E    DCK 0US
1122327CJT11507501----E E    DCK 0PS
1122427CJT00500701----E E    DCK 0US
1122526DJT09701801----E E    DCK 0PS
1122627DJT29703901----C E    CC  0UR
1122728AFZ119009                  0
1122828BJT02201601----E E    DCK 0US
1122928AJT2820720302--E F    DCK 0CS
1123028BJT01201901----E E    DCK 0PS
1123128BJT02507601----E E    DCK 0PRFS
1123228CJT2520620201--C E    DCK 0US
1123329CFZ006026                  0
1123428DJT15902101----E E    DCK 0PS
1123528DJT15709001----E E    DCK 0USFS
1123629DJT08001701----E E    DCK 0PS
1123729DJT05201901----E E    DCK 0USFS
1123829DJT2830750201--C E    DCKC0PS
1123929AJT04901301----E E    DCK 0US
1124030AJT06200501----E E    DCK 0CK
1124130AJT2650630101--E F    DCK 0PS
1124229AJT24806501----E E    DCK 0PS
1124330BJT34903806----E E    DCKC0UKFS
1124430AJT2960700101  E F    DCK 0PS
1124530AJT29407101----E F    DCK 0PS
1124630AVN2420600101--E F    ECK 0PS
33SAME MEAS. FOR VN & JT OF NO 246
1124630AJT2420600101--E F    CC  0PS
1124730BVN069079             GCQF0UR
33PEGMATITE
1124831BJT29806801----E E    DCK 0PS
1124930CJT19408401----E E    DCK 0PS
1125030BJT25806301----E E    DCK 0PS
1125129DVN30307301----E E    ECK 0US
33SAME MEAS. FOR VN & JT OF 251
1125129DJT30307301----E E    CC  0US
1125230DJT2730630101--C E    DCKC0US
1125330CJT27606601----E E    DCK 0PS
1125430DJT12809001----E E    DCK 0US
1125531AFZ358022                  0
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55STRIPA VENTILATION DRIFT FLOOR
11001001JT343012 1----F F UU UUUSFS
11002001JT 18087 1----F F CC--UCS
11003001JT283068 1----F F CC---US
11004002JT189063 3----F F CC---PS
11005002JT352016 1--- F F CC---USFS
11006003JT190065 1----F F 00--UPS
11007003JT345078 1----F F CC--UCS
11008004JT 8103901 1--W F CC---PSFS
11009005JT14103801----F F CC--UUS
11010005JT10807401----F F CC---PS
11011005JT07705101----F F CC---UR
11012005JT08206401----F F CC---UR
11013005JT28807004----F F DC-KUPS
11014006JT33501401--- F F CC--UURFS
11015007JT28906701----F F CC---CS
11016007JT12006502----E F CC---US
11017007JT34501301----F F CC--UUSFS
11018007JT 1208101----F F CC--UUS
11019007JT 5807601----F F CC---UR
11020009JT22307901----F F CC---UR
11021010JT24508101----F F CC---UR
11022010JT 7805601----F F CC---US
11023011JT28907002----F F CC---FS
11024011JT28807301----F F CC---PS
11025011JT34908501----F F CC---UR
11026012JT13005101----F F CC---CS
11027012JT33408001----F F CC--UCR
11028012JT34507601----F F CC--UPS
11029013JT349 7001----F F CC--UUR
11030013JT107 3001----F W CC--UPSFS
11031013JT282 7401----F W CC--UPS
11032014JT1850610501--W F DC K-PS
11033014JT01506701----F F CC -PS
11034014JT25605001----F F CC -PS
11035014JT17408401----F F CC -PR
11036014JT13408501----F F CC -PR
11037015JT08501601----F F CC -PS
11038015JT16208001----F F CC -UR
11039016JT24807001----F F CC -UR
11040018JT26608001----F F CC---PS
11041018JT29107502----F F CC---UR
11042018JT34902501----F F CC---US
11043019JT29506501----F F DC-K-US
11044019JT28807102--- F F CC---PS
11045020JT2850700101--F W CC---PS
11046020JT15008001----F F CC -US
11047020JT14807301----F F CC -US
11048021JT 9803501----F F CC -PS
11049021JT10003202----F F DC K-PS
11050021JT27708001----F F CC -PS
11051021JT09403401----F F CC -PS
11052021JT27806901----F F CC -PS
11053022JT27406501----F F CC -PS

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11054022JT287 76  ----F F    CC  -US
11055021JT0980330101          CC  -PSFS
11056021JT1260700403--E F     DC-K-PS
11057021JT0970300101--E F     CC  -PSFS
11058023JT28906801----F F     CC  -PS
11059023JT35607101----F F     CC  -PS
11060023JT34108201----F F     CC  -US
11061024JT03708701----E F     CC  -PS
11062024VN181047100601C W     EC K-US
33SAME MEAS. FOR VN & JT OF NO 62
11062024JT181047100601C W     CC  -US
11063026JT 8604002----F F     CC  -PS
11064026JT12107101----F F     CC  -PS
11065027JT17607701----F F     CC  -US
11066027JT01506601----F F     CC  -US
11067027JT08904801----F F     CC  -US
11068029JT08404101----F F     CC  -PS
11069029JT33802901----F F     CC  -PKFS
11070029JT12606802----F F     CC  -PS
11071030JT34702402----F F     CC  -UR
11072030JT08404101----F F     DC  -PS
11073030JT23306601----F F     CC  -UR
11074031JT19305601----F F     CC  -US
11075031JT023087        F F   CC  -US
11076031JT19206801      F F   CC  -PS
11077032JT2870750102--E F     DC K-PS
11078032JT2900730102--E F     CC --PS
11079032JT25506701----F F     CC  -UR
11080033JT18204601----F F     CC  -UR
11081033JT07305901----E F     CC  -PR
11082034JT19704501----F F     CC  -US
11083034JT07801701----F F     CC  -USFS
11084035JT32602601----F F     CC  -USFS
11085035JT02208901----F F     CC  -US
11086036JT25005801----F F     CC  -PS
11087036JT16009001----F F     CC  -PR
11088036JT33102301----F F     CC  -USFS
11089036JT07605901----F F     CC  -UR
11090036JT18106201----F F     CC  -US
11091036JT1240750202--W F     CC  -PS
11092036JT19906901----F F     CC  -PS
11093037JT31803401----F F     CC  -US
11094037JT12408101----W F     CC  -PS
11095037JT15408202----F F     CC  -PS
11096038JT18906401----F F     CC  -PS
11097039JT19106701----F F     CC  -PS
11098040JT1270680202--E F     DCK C-PS
33+EPIDOTE
11099040JT24107401----F F     CC  -PS
11100040JT09608401----F F     CC  -PS
11101040JT15107601----F F     CC  -US
11102041JT25707002----E F     CC  -US
11103041JT24904401----F F     CC  -USFS
11104041JT22906001----F F     CC  UPS
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11105041JT27205801----F F    CC  -CS
11106043JT26201501----F F    CC  UPS
11107043JT07804301----F F    CC  -PS
11108043JT19006201----F F    CC  -PS
11109043JT26107401----F F    CC  UPS
11110044JT2890710201--W F    DC KUPS
11111044JT05205401----F F    CC  -US
11112045VN2890670201--W F    ECKC-PS
33SAME MEAS. FOR VN & JT OF NO 112
11112045JT2890670201--W F    CC  -PS
11113046VN2820640201--W F    EC K-PS
33SAME MEAS. FOR VN & JT OF NO 113
11113046JT2820640201--W F    CC  -PS
11114046JT13908201----F F    CC  -US
11115045JT14207701----F F    CC  -UR
11116045JT15507301----F F    CC   UR
11117051JT09002801----F F    CC  -USFS
11118045JT0260880101--W F    CC  -US
11119045JT02008001----F F    CC  -PS
11120046JT08702301----F F    CC  -PSFS
11121046JT18705401----F F    CC  -PS
11122047JT29102801----F F    CC  -USFS
11123047JT15708601----F F    CC  -PS
11124047JT07408401----F F    CC  -US
11125048JT28507301----F F    CC  -CS
11126048JT23908401----F F    CC  -PS
11127049JT08302601----F F    CC  -URFS
11128049JT25806701----F F    CC  -USFS
11129049JT2270570101--E F    CC  -UR
11130049JT34103301----F F    CC  -PSFS
11131049JT05908001----F F    CC  -PS
11132049JT33002601----F F    CC  -US
11133050JT33904201----F F    CC  -PS
11134050JT07805801----F F    CC  -UR
11135050JT19503501----F F    DC K-USFS
11136050JT15507602----F F    CC  -CP
11137050JT24503201----F F    CC  -URFS
11138051JT08003001----F F    CC   US
11139051JT16008501----F F    CC   UR
11140052JT14208001----F F    CC   UR
11141052JT2170730101--W F    CC   US
11142052JT21608301----W F    CC   PS
11143052JT02708501----F F    CC   PS
11144052JT13702801----F F    CC   URFS
11145053JT19003601----F F    DC K  USFS
11146053JT0380860101--W F    CC   US
11147053VN10502801----F F    EC K  US
33SAME MEAS. FOR VN & JT OF NO 147
11147053JT10502801----F F    CC   US
11148054JT18405102----F F    CC   US
11149054JT16307002----F F    DC K  US
11150054JT29106602----F F    DC K  US
11151054JT07106101----F F    CC   PS
11152054JT15707701----F F    CC   US
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11153054VN289068030301C F EC K US
33SAME MEAS. FOR VN & JT OF NO 153
11153054JT289068030301C F CC US
11154054JT2930690l----F F DC K US
11155054JT35307001----F F CC US
11156054JT00502101----F F CC USFS
11157055JT2870730201 E F DCK PS
11158055JT2900700202--E F DC K PS
11159056JT27006201----F F CC US
11160056VN2210880102--E F GCQF U-
33 PEGMATITE
11161056VN2110850101--E F GCQF U-
11162056JT1240760101--E F CC US
11163057JT2970670201--E F DCK PS
11164057JT2900710101--E F CC US
11165064JT35202402----F F DCK US
11166057JT20102801----F F DCK USFS
11167057JT33702101----F F DCK PSFS
11168058JT20602801----F F DCK USFS
11169058JT35803302----F F DCK USFS
11170058JT17007801----F F DCK US
11171058JT16406902----F F DCK US
11172059JT18308102----F F DCK US
11173059JT00602801----F F CCK US
11174060FZ104032
11175060JT09408101----F F DCK PS
11176061JT00408301----F F CC US
11177061JT 9206801----F F CC PS
11178061JT17806201----F F DCK US
11179061JT15708201----F F CC CS
11180061JT22108601----F F CC US
11181061JT09008401----F F CC US
11182062JT18005701----F F CC USFS
11183062JT27806502----F F DCK PS
11184062JT08501401----F F DCK USFS
11185063JT16200401----F F CC USFS
11186064JT15200801----F F CC USFS
11187065JT01803601----F F DC PS
11188065JT01803601----F F DCK RS
11189065JT0230530101 E F DCK US
11190065FZ022033
11191066JT3220860101 F F DCK PS
11192066JT08408801----F F DCK PS
11193067JT15807101----F F CC PS
11194067JT15807301----F F DC PS
11195067JT 7704601----F F CC PS
11196067JT16108201----F F CC CS
11197068JT08002801----F F DCK US
11198068JT00908601----F F CC UR
11199068JT16807901----F F CC UR
11200068JT31207201----F F CC CS
11201068JT29506902----F F CC US
11202076VN0150790103--W F EC PK
33SAME MEAS. FOR VN & JT OF NO 202

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11202076JT0150790103--W F    CC    PK
11203069JT28107901----F F    CC    US
11204069JT25208801----F F    CC    UR
11205070JT03108001----F F    CC    CS
11206070JT13207601----F F    CC    CS
11207071JT29608601----F F    CC    US
11208072JT03601701----F F    CC    USFS
11209073JT35404808----E F    DCK   UK
11210073JT2870760201--E F    DCKC-US
11211073FZ274075
11212075JT26207301----F F    CC    US
11213075JT18003201----F F    CC    URFS
11214076JT01202801----F F    CC    PRFS
11215076JT24401801----F F    CC    CSFS
11216076JT07708001----W F    CC    UR
11217076JT2900780201--W F    CC    PS
11218077JT14607601----F F    CC    CS
11219077JT2940740101--W F    DCK   PS
11220077JT12108001----F F    CC    CR
11221078JT34208501----F F    CC    UR
11222079JT08605102----E F    CC    US
11223080JT21204601----F F    CC    US
11224081JT25804701----E F    CC    US
11225081FZ259061
11226082JT29208401----F F    CC    US
11227084JT2900730101--W F    DCK   PS
11228084JT17606601----F F    DCK   PS
11229084JT31008601----F F    CC    PR
11230086JT01508603----F F    CC    PS
11231086JT17705303----F F    DCK   PS
11232086JT29108001----F F    CC    PS
11233087JT11408501----F F    CC    PS
11234087JT11308401----F F    CC    PS
11235087JT08904701----F F    CC    UR
11236088JT2850780101--E F    CC    PS
11237089JT29008401----E F    DCK   US
11238089JT29707901----F F    DCK   PS
11239089JT29805701----F F    DCK   PS
11240089JT25806901----F F    DCK   US
11241089VN07905402----F F    ECK   US
33SAME MEAS. FOR VN & JT OF NO 241
11241089JT07905402----F F    CC    US
11242090JT08203301----F F    CC    UR
11243091JT28906801----F F    CC    US
11244091JT07305401----F F    CC    US
11245092JT2910610101--W F    DCK   PS
11246092JT29906401----F F    CC    US
11247092JT2860780201--W F    CC    UR
11248093JT1790610201--W F    DCK   PS
11249093JT25906401----W F    CC    PS
11250093JT32807301----F F    CC    PS
11251093VN08104501----F F    ECK   USFS
33SAME MEAS. FOR VN & JT OF NO 251
11251093JT08104501----F F    CC    USFS
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11252094JT18106501----F F DCK US
11253094JT29706401----F F DCKC CS
11254094JT06303001----F F CC USFS
11255095JT18508701----F F CC PR
11256095JT26103901----F F CC PS
11257095JT25304001----F F CC PS
11258095JT01405301----F F CC PS
11259095JT03000801----F F CC USFS
11260096JT06904401----F F DCK US
11261096JT05104701----F F DCK UR
11262096JT0210670201--E F DCK US
11263096JT35308201----F F CC US
11264097JT35407301----F F CC US
11265097JT14108401----F F CC US
11266097JT26707801----E F CC US
11267098JT17908102----F F CC US
11268098JT297070020401C F DCK PS
11269098JT33607001----F F CC US
11270099JT18205803 F F DCK PS
11271099FZ254051
11272099JT04205701----F F CC UR
11273100JT09802101----F F CC PSFS
11274100JT25707301----F F CC PS
11275100JT29707601----F F CC US
11276101JT17905802----F F DCK PK
11277101JT07308801----W F DCK US
11278101JT301081020403C F DCK US
11279101JT29807201----F F CC PS
11280102JT07406701----F F CC US
11281102JT07106101----F F CC US
11282102JT27208502----F F DCK US
11283103JT18508102----F F DCK US
11284103JT33603802----F F DCK USFS
11285103JT17608601----F F CC PS
11286103JT28908301----F F CC US
11287103JT35208001----F F CC US
11288103JT14607401----F F CC PS
11289104JT26008301----F F DCK US
11290104JT35008102----F F CC UR
11291104JT35509002----F F CC US
11292105JT01008501----E F CC PR
11293105JT27408901----E F CC US
11294105JT34508201----F F CC UR
11295106JT30202001----F F DCK URFS
11296106FZ277088
11297106JT28807901----F F CC US
11298106JT28407702----F F DCK US
11299107JT35602701 F F DCK USFS
11300108JT06507701----W F CC US
11301108JT30306202----F F DCK US
11302108JT1250860101--W F CC PS
11303108JT13608601----W F CC US
11304108JT08001801----F F CC USFS
11388109JT08202101----F F CC PR

11305109JT1610840201--W F CC PS
11306110JT29607201----F F DCK PS
11307111JT10503901----F F DCK PS
11308112JT2860740104--E F DCK US
11309113JT35301701----F F DCK PSFS
11310113JT2630670101--E F CC PS
11311113JT2980630101--E F CC US
11312114JT26006401----F F DCK PS
11313114JT25805802----F F DCK PS
11314114JT33902401----F F DCK USFS
11315115JT28608101----F F DCK PS
11316115JT29202901----F F DCK USFS
11317115JT02509001----F F CC US
11318115FZ014031
11319118JT10808301----F F CC PS
11320116JT11808401----F F CC CS
11321116JT18206701----F F DCK US
11322117VN1850560402 W F ECK PS
33SAME MEAS. FOR VN & JT OF NO 322
11322117JT1850560402 W F CC PS
11323117FZ180051
11324117JT06402501----F F CC UR
11325124JT08202101----F F CC PSFS
11326118JT04704101----F F CC PSFS
11327118JT05902901----F F CC PSFS
11328119JT02505001----F F DCK PS
11329119JT02508301----F F DCK US
11330119JT03303101----F F CC USFS
11331120JT31802601----F F DCK USFS
11332121VN2340640401--E F ECKQ US
33SAME MEAS. FOR VN & JT OF NO 332
11332121JT2340640401--E F CC US
11333120JT18001401----F F DCK UKFS
11334121JT00804601----F F DCK UK
11335121JT2890800101--E F DCK UR
11336121JT32402301----F F DCK UR
11337122VN07507701----F F FCQF PR
33PEGMATITE
11338122VN05706901----F F FCQF UR
33PEGMATITE
11339123JT02208602----F F DCK PS
11340123JT04702601----F F DCK USFS
11341124JT30806201----F F DCK PS
11342123JT29908501----F F CC US
11343124JT09301401----F F CC PSFS
11344125UN0750900103--W F GCQF UR
11345125JT34408601----F F DCK PS
11346125JT30905701----F F DCK PS
11347125JT34302701----F F CC URFS
11348138JT02108401----F F CC UR
11349138JT03802801----F F DCK USFS
11350135JT01103403----F F DCK UKFS
11351135JT20006601----F F CC CR
11352134JT00804701----F F CC US

11353132JT34003201----F F CC USFS
11354130JT28507603----F F DCK PS
11355136JT00005102----F F CC US
11356136JT2840790101--E F DCK PS
11357132JT31509001----F F
11358133JT07505901 F F CC CR
11359138JT02608201 F F DCK US
11360138JT01600901----F F DCK URFS
11361138JT33701801----F F DCK USFS
11362139JT10502201----F F CC PR
11363141JT0860200101 W F CC PSFS
11364141JT0720190200--W F CC URFS
11365143JT25506101----F F DCK PS
11366143JT32002401----F F CC USFS
11367144JT24406202----F F DCK PS
11368145JT03402401----F F CC PSFS
11369147JT05204501----F F UR
11370148JT16504001----F F DCKC USFS
11371148JT2690510101--W F DCK PS
11372149JT2910640402--W F DCK PS
11373149JT2730660102--W F CC PS
11374149JT2760680101--W F DCK PS
11375149JT2970730101--W F DCK PS
11376150JT09802501----F F DCK PKFS
11377150JT29107503----F F DCK PS
11378154JT28908402----F F DCK PS
11379160JT00201602----F F DCK USFS
11380155JT30307302----F F DCK PS
11381157JT2770690301--W F DCK PS
11382158JT19904101----F F CC UR
11383159JT00801601----F F DCK USFS
11384016FZ173035
11385040FZ276073
11386046FZ182062
11387028FZ183064

55STRIPA VENTILATION DRIFT NORTH WALL
11001001JT354 690203--W F DCK -PS
11002001JT 86 31 1----N W CC---UR
11003001JT 47 52 1----N N CC---URFS
11004001JT 7 13 2----N N CC---PS
11005002JT 23 32 1----N N CC---UR
11006002JT 33 80 1----N N CC---UR
11007002JT123 14 1----N N CC---UR
11008003JT350 66 1 1--W N CC---PS
11009003JT344 78 1----W N DC-K-PS
11010003JT340 70 1----N N CC---PS
11011003JT 75 90 1----N N CC---URFS
11012004JT 77 25 1----N W CC---PS
11013004JT277 16 1----N N CC---PS
11014005JT334 690101--N F CC---UR
11015005JT344 7001----N N CC---UR
11016002JT335 7301----N N CC---US
11017005JT334 1701----N N CC---US
11018006JT 71 8202----N N CC---URFS
11019006JT 09 1402----N N CC---PR
11020006JT 19 1801----N N CC---UR
11021004JT311 18010100W N CC---UR
11022008JT206 5501----N N CC---UR
11023008JT355 480406--C E DC K-PS
33PEGMATITE DIKE 4 CM PARALLEL TO JOINT
11024008JT286 7101----N N DC K-PSFS
11025009JT 75 3501----N N CC---UR
11026010JT135 7901----N N CC---UR
11027010JT149 8001----N N CC---UR
11028011ST357 3101----N N CC---UR
11029012JT287 6901----N N DC K-PSFS
11030012JT 93 6301----N N CC---PR
11031016JT154 870101--C N CC---CR
11032013JT288 7401----N N CC---USFS
11033013JT329 8401----N F DC K-PS
11034013JT314 250101--N E CC---UR
11035014JT137 4701----N N CC---PS
11036015JT 15 1101----N N CC---PR
11037015JT 75 1801----N N CC---UR
11038010JT143 7401----N N CC---UR
11039006FZ049050
11040013FZ140073

55STRIPA VENTILATION DRIFT WEST WALL
1100101AJT14404201----W W CC 2PS
1100201AJT1010390101--W F CC -PS
1100301BJT13506202----W W CC -US
1100401CJT08404402----W W CC -US
1100501CVN3570700302--W N ECKC PKFS
33SAME MEAS. FOR VN & JT OF NO 5
1100501CJT3570700302--W N DCK 2PKFS
1100601CJT14605201----W W CC -PSFS
1100701CJT35007501----W N DC K-PSFS
1100801CJT1480590201--C W DC K2PSFS
1100901CJT11504201----W W CC -PS
1101001DJT26505901 --C W CC -US
1101101DJT17507701----W W DC K-PRFS
1101202DJT08503702----C W DC K-PS
1101302CJT35408201----W W CC -URFS
1101402CJT08803401----W W CC -PS
1101502BJT08505902----W W CC -UR
1101602BJT08600601----W W CC -UR
1101702BJT08408301----W W DC K-PS
1101802AJT2920650302--W F DC K2US
1101902AVN2910690409--C F EC K US
33SAME MEAS. FOR VN & JT OF NO 19
1101902AVN2910690409--C F DC K2US
1102002AJT08207001----W W CC -PS
1102102AJT13006601----W F CC -PS
1102203AJT33707601----W W CC -CR
1102303BJT10802703----W W DC K-PS
1102403CJT08304301----C W DC K-PS
1102503CJT0900330402--W F DC K2PS
1102603DJT0920410101--C W DC K-PS
1102703DJT093046010401E W CC -PS
1102804AJT28906802----W W CC US
1102905BJT1200670201--W F DCK 0PSFS
1103004BJT09001101----W W DCK 0PS
1103104CJT07904501----W W DCK 0PS
1103205AFZ253082
1103303AFZ350026
1103405AJT08402701----W W DCK 0PS
1103505BJT08703001----W W DCK 2PS
1103605CJT08904201----W W DCK 0PS
1103705CFZ166052
1103806AFZ185029
1103906AJT0920300101--W F DCK 0PS
1104006AJT0980350101--W F DCK 0PS
1104106AJT1300620101--W F DCK 0PS
1104206AJT09604201----W W DCK 0PS
1104306AJT08904301----W W DCK 0PS
1104407AJT08404001----W W DCK 0PK
1104506BJT34102701----W W DCK 2PS
1104606BJT1290740201--W F DCK 2PSFS
1104706CJT30705901----W W DCK 0PSFS
1104806CJT2000570203--C W DCK 2USFS
1104908AFZ327025

1105008BVN24705103----W W ECQ 0UR
1105108BJT1260670201--W F DCK 0PSFS
1105207BJT21804301----W W CC 0PS
1105307CJT19006201----W W DCK 0URFS
1105407DJT28506602----W W DCK 0PS
1105506CJT15208501----W W DCK 0UR
1105608DJT16807002----W W DCK 0PSFS
1105708BJT13507901----W W CC 0USFS
1105809AVN0040560306--W F ECK PS
33SAME MEAS. FOR VN & JT OF NO 58
1105809AJT0040560306--W F DCK 2PS
1105909AJT02008701----W W DCK 0USFS
1106009AJT33003201----W W CC 2UR
1106109AJT33001801----W W CC 2UR
1106210AJT11902501----W W CC 0US
1106309BJT01508201----W W DCK 0PSFS
1106410CJT16808303----C W DCKE2US
1106510AFZ166072
1106610CFZ326033
1106711DJT01607001----W W DCK 0UR
1106811DJT1920590101--C W DCK 2UKFS
1106912DJT17208101----W W DCK 0PSFS
1107012DJT32907501----W W DCK 0PSFS
1107112CVN2950740301--C W ECK 0PR
33SAME MEAS. FOR VN & JT OF NO 71
1107112CJT2950740301--C W CC 0PR
1107211BJT29307601----W W DCK 2US
1107312CJT2800650301--C W DCK 2US
1107411BFZ284060
1107511AJT17906201----W W DCK 0USFS
1107611AVN2940730102--W F ECK 0PS
33SAME MEAS. FOR VN & JT OF NO 76
1107611AJT2940730102--W F CC 0PS
1107712AJT17605302----W W DCK 0USFS
1107812AJT02608801----W W CC 0PS
1107912AJT06106801----W W CC 0US
1108012AJT16805901----W W CC 0PS
1108113BJT16806601----W W DCK 0CSFS
1108212BJT10501901----W W CC 0PS
1108311CJT17807801----W W DCK 0PSFS
1108413AJT02508801----W W CC 0PS
1108513AJT17604602----W W DCK 0PS
1108613AFZ026090
1108713BJT14407701----W W DCK 0USFS
1108813BJT16506901----W W DCK 0USFS
1108912DJT24201501----W W CC 0PS
1109013DJT10402301----W W CC 0PS
1109113DJT13601401----W W CC 0PS
1109213DVN30107801----W W ECK 0UR
1109315BJT20105501----W W CC 0PS
1109414BJT01808701----W W CC 0USFS
1109514BJT15308001----W W DCK 0PSFS
1109614BJT14508201----W W DCK 0PS
1109714CJT17606101----W W DCK 2USFS

1109815AJT01207901----W W DCK 0PSFS
1109915BJT19504901----W W CC 0US
1110015BJT18102001----W W DCK 0PS
1110115BJT01508501----W W CC 2USFS
1110216AJT18605401----W W DCK 0US
1110316BVN28406602----W W ECK US
33SAME MEAS. FOR VN & JT OF NO 103
1110316BJT28406602----W W DCK 2US
1110415AFZ286058
1110516BFZ284075
1110617AFZ043085
1110718AJT22605201----W F DCK UR
1110818AFZ235028
1110918AVN W W QF
33PEGMATITE INCLUSION
1111018AJT07601701----W W CC 0PS
1111117BJT14102201----W W CC 0PS
1111218BVN 04
33IRREGULAR PEGMATITE DIKE
1111319AJT01307902----W F DCK 0PKFS
1111419BJT17007201----W W CC 0PRFS
1111519BJT17206902----W W DCK 0PSFS
1111619CFZ247083
1111719DFZ155034
1111820AJT2960690101--W F DCK 0PSFS
1111921AJT2920700101--W F DCK 0USFS
1112021AJT28607701----W W DCKC0PS
1112121DGS275040
1112222AFZ241036
1112323BJT30006801----W W CC 0PR
1112422BJT11103701----W W DCK 0CS
1112522BJT10004601----W W DCK 0CS
1112622CJT25705501----W W DCK 0PS
1112722CJT29706101----W W DCK 0PS
1112823BJT16907102----W W DCK 0PSFS
1112922CVN09103501----W W ECK 0US
33SAME MEAS. FOR VN & JT OF NO 129
1112922CJT09103501----W W CC 0US
1113022DJT29008501----C W CC 0PS
1113123AJT2880570101--W F DCKC0PS
1113223AVN08005501----W W ECK 0US
33SAME MEAS. FOR VN & JT OF NO 132
1113223AJT08005501----W W CC 0US
1113323BJT28806502----W W CC 0PS
1113423AJT02606401----W W CC 0PRFS
1113524CJT30908701----W W CC 0USFS
1113624AJT16607203----W W DCK 0US
1113724AJT08106201----W F CC 0UR
33PARALLEL TO DARK MINERAL BANDING
1113824BJT34204604----W W CC 2UKFS
1113924CJT2850760201--C W CC 0PS
1114024CJT02708001----W W CC 2URFS
1114124CJT30508101----W W CC 0PSFS
1114225DJT07005601----C W CC 0UR

1114325CGS279071
33DARK MINERAL BANDING
1114425DJT10103601----W W DCK UK
1114525CJT28708901----W W CC 0PSFS
1114627AJT0020580203--W F DCK 0PSFS
1114726AJT07606501----W W DCK 0CS
1114825AJT28706901----W F DCK 0US
1114926AJT2960870102--W F CC 0US
1115026BJT2790670301--C W DCK 0PS
1115126AJT13208901----W F CC 0USFS
1115226AJT19106601----W W CC 0PR
1115326CJT27506701----W W CC 0US
33BANDING OF DARK MINERAL PARALLEL
1115426CJT09808301----W W DCK 0UR
33BANDING OF DARK MINERAL PARALLEL
1115526DJT09805201----C W DCK 0UR
33BANDING OF DARK MINERAL PARALLEL
1115626DJT11703801----W W CC 0PS
1115726DJT11001501----W W DCK 0PS
1115826DJT05101101----W W DCK 0UK
1115925DJT25806302----C W DCK 0PS
1116028AJT16407401----W W DCK 2PS
1116128BVN24908204 C F ECMK0UR
1116227BJT02201501----W W CC 0PR
1116326CJT22901401----W W DCK 0PS
1116427CJT03301501----W W DCK 0PS
1116529BJT28107702----W W DCK 0PS
1116628BFZ160016
1116728CJT08601701----W W DCK 0US
1116828CJT32107401----W W DCK 0PRFS
1116928CJT01103201----W W DCK 0UR
1117028CJT06000801----W W DCK 0PS
1117128CJT34607401----W W DCK 0USFS
1117229AJT17606103----W W DCK 2PSFS
1117329AFZ339024
1117429BJT25906002----W W DCK 0PS
1117529BFZ163044
1117628BJT28506901----W W DCK 0PS
1117729DJT28205801----W W DCK 0PS
1117829DJT05001101----W W DCK 0PS
1117930AJT28707301----W W DCK 2PS
1118031BJT2860780401--C F DCK 2PSFS
1118131BJT35503803----W W DCK 0UKFS
1118230CJT35602302----W W DCK 0US
1118330CJT00802102----W W DCK 0US
1118430CJT35002301----W W DCK 0US
1118531DJT29905601----C W DCK 0PK
1139330DJT04200801----W W DCK 0US
1118631AJT14208201----W W DCK 0PRFS
1118731AJT18606501----W W DCK 2PSFS
1118831AJT2490630401--C F DCK 0PS
1118931AJT33303101----W W DCK 2PS
1119032AFZ348041
1119133AVN1830560101--W F ECK 0PS

33SAME MEAS. FOR VN & JT OF NO 191
1119133AJT1830560101--W F CC 0PS
1119232AJT33903201----W W CC 2UR
1119332AVN0660640301--W F GCFQ0UR
33PEGMATITE
1119432AJT28606001----W F CC 0PS
1119533AJT04802401----W W DCK 0PS
1119631BJT14701501----W W DCK 0US
1139432BJT04702301----W W CC 0PS
1119733CJT13200701----W W DCK 0PK
1119832CJT1910640401--C W DCK 0PSFS
1119932BJT06001801----W W DCK 0PS
1120033CJT2730600201--C W DCK 0PS
1120133AJT13106901----W F CC 0PR
1120233BJT28307202----W W CC 0PSFS
1120333BJT09200801----W W DCK 0PS
1120433CJT11101201----W W DCK 0PS
1120532BJT19005903----W W DCK 2PSFS
1120633CJT17201401----W W DCK 0US
1120733CJT13200802----W W DCK 2UK
1120833DJT00000003----W W DCK 0US
1120934DJT19306301----W W DCK 2PSFS
1121034DJT00202701----W W DCK 0UK
1121135CFZ339021 2
1121234CJT18900701----W W DCK 0US
1121334AJT18406201----W W CC 0USFS
33CONTACT GRANITE-EPIDOTE
1121435AJT0520210102--W F CC 0UR
1121535AVN20004301----W F ECK 0US
33SAME MEAS. FOR VN & JT OF NO 215
1121535AJT20004301----W F CC 0US
1121635AJT15007401----W F CC 0PSFS
1121735AJT02408801----W W DCK 0USFS
1121835BJT21101501----W W DCK 0US
1121935BFZ208029 0
1122035CJT00801801----W W DCK 0US
1122135DJT27006202----W W CC 0PS
1122235AJT2420490101--W F DCK 0US
1122336AJT25004501----W F DCK 0US
1122436AJT27807501----W F CC 0PS
1122536AJT16003901----W W CC 0UR
1122636AJT07802101----W W DCK 0PR
1122736AJT16607301----W W DCK 0PSFS
1122837BFZ196056 2
1122936CJT34801601----W W DCK 2US
1123036CVN01303002----W W ECK 0US
33SAME MEAS. FOR VN & JT OF NO 230
1123036CJT01303002----W W CC 0US
1123136DJT27406202----C W DCK 2PS
1123236DJT20305401----C W CC 0US
1123336CJT03001901----W W DCK 0US
1123437DJT29207102----C W DCK 2PS
1123538DFZ103034 2
1123637CJT28206901----W W DCK 2PS

1123737CFZ356012 2
1123837AJT29308201----W W CC 0US
1123938AJT2870670203--W F DCK 2PS
1124038AJT2830710201--W F DCK 2PS
1124138AJT2960650201--W F DCK 2US
1124238AJT09601901----W W CC 1US
1124338CJT18505601----W W DCK 2USFS
1124439AFZ000028 2
1124539AJT14703301----W W DCK UUS
1124539BJT19204402----W W DCK 2US
1124639BJT28206801----W W DCK 2PS
1124739CJT01808601----W W DCK 2URFS
1124840CJT19507701----W W DCK 2URFS
1124940DJT01404302----W W DCK 2US
1125040CFZ133024 0
1125139BFZ200041 2
1125239AFZ175027 K 2
1125340AJT15402804----W W DCK 0PS
1125440BJT13003302----W W DCK 0PS
1125540BJT02408801----W W DCK 2US
1125641AFZ351061 0
1125742AJT14402801----W W DCK 0PS
1125841BJT11301701----W W DCK 0PS
1125941BFZ158025 2
1126041BJT15001901----W W DCK 0US
1126141BJT12100901----W W DCK 0US
1126241CJT11602201----W W DCK 0US
1126341CJT26907001----W W DCK 0US
1126441DFZ174050 2
1126542AFZ359064 2
1126642AJT11801701----W W DCK 0PS
1126742BVN25505603----W F FCQK0PS
1126842BJT00802901----W W DCK 0US
1126942CJT16203801----W W DCK 2USFS
1127042CJT17405701----W W DCK 2USFS
1127143DFZ170064 0
1127243DJT16906601----W W CC 0UR
1127343CJT14001801----W W DCK 0US
1127443BJT29504602----W W DCK 0PS
1127543BJT13202503----W W DCK 0PS
1127643AJT13702501----W W DCK 0PS
1127743AJT07701301----W F DCK 0US
1127844AFZ173030 K 2
1127944AJT34403001----W W DCK 0PS
1128044AJT11706502----W W DCK 0CS
1128144AJT11306901----W W DCK 0PS
1128244AJT18701001----W W DCK 0CS
1128343BJT09001403----W W DCK 0US
1128444CFZ171063 0
1128545CFZ030087 0
1128645BJT24206501----W W DCK 0US
1128745BJT06002101----W W DCK 0US
1128845AJT09801101----W W DCK 0US
1128946AJT13501901----W W DCK 0UK

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1129045AJT08401402----W W    DCK 0PS
1129145AJT17403301----W W    DCK 0PS
1129246AJT17501401----W W    DCK 0PS
1129346AJT15702801----W W    DCK 0PS
1129446BJT27706101----W W    DCK 0PS
1129546AJT24207301----W W    DCK 0PR
1129646AJT00101701----W W    DCK 0US
1129746BJT27607003----W W    DCK 0PS
1129846CJT08501703----W W    DCK 0UK
1129946CJT07401301----W W    UUU 0UR
1130046DJT07702001----W W    DCK 0PK
1130147CJT05202102----W W    DCK 0US
1130247DJT0780240201--C W    DCK 0PS
1130347CJT10101001----W W    DCK 0US
1130447CJT31600701----W W    DCK 0US
1130547CJT07001902----W W    DCK 0PS
1130647 VN25605801----W W    ECKE0U-
1130747 VN24706801----W W    ECKE0US
1130847BJT00002702----W W    DCK 0URFS
1130947AJT34703002----W W    DCK 0UKFS
1131047AJT07001701----W W    DCK 0US
1131147AJT18104901----W W    DCK 0PSFS
1131248AFZ355020               K 2
1131348AJT00201301----W W    DCK 0US
1131448AJT17202401----W W    DCK 0PS
1131548AJT18405301----W W    DCK 0PS
1131648AJT00202601----W W    DCK 0US
1131748AJT35404503----W W    DCK 0UK
1131848BJT35004902----W W    DCK 0US
1131948BJT03206601----W W    DCK 0US
1132048BJT10301701----W W    DCK 0UR
1132148DJT16503601----W W    CC  0US
1132248DJT08201404----W W    DCK 0PS
1132349DJT08802102----W W    DCK 0PS
1132449CFZ200066               0
1132549CJT10301802----W W    DCK 0UR
1132649BJT06701801----W W    DCK 0UR
1132749BJT34904501----W W    DCK 0UK
1132849BJT17300802----W W    DCK 0US
1132949AFZ218011               K 0
1133049AJT24800501----W W    DCK 0PK
1133149AJT22706501----W W    DCK 0US
1133249AJT34201501----W W    DCK 0US
1133350AJT25206201----W F    DCK 0PS
1133450AJT28407901----W W    DCK 0PS
1133550AJT29207401----W W    DCK 0PSFS
1133649DJT09901702----W W    DCK 0PS
1133751DJT197058               U-0
1133851CVN24506303----W W    ECK 0PS
1133951CJT10802001----W W    DCK 0PS
1134051BJT17501201----W W    DCK 0CS
1134151BJT17705201----W W    DCK 0PS
1134251AJT03207901----W W    CC--0PRFS
1134351AJT18205701     W W   DCK 0PS
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1134451AJT02406001----W W CC--0USFS
1134551AJT15308801----W W CC--0USFS
1134652AJT14009001----W W DCK 0PSFS
1134752AJT17602901----W W DCK 0PS
1134852AJT05407301----W W CC- 0CR
1134952AFZ184041 K 0
1135052AVN13509004----W W ECK 0US
1135151AJT11600701----W W DCK 0UR
1135251AJT10501603----W W DCK 0PK
1135351BJT10701701----W W DCK 0PK
1135452BJT27606401----W W DCK 0PS
1135552CFZ116014 0
1135652CJT10302201----W W DCK 0PS
1135753CJT10502202----W W DCK 0PS
1135853CJT09502401----W W DCK 0PS
1135953CJT22805701----C W DCK 0PS
1136053DJT10301501----W W DCK 0PS
1136153CJT09701903----W W DCK 0PS
1136253CJT09701601----W W DCK 0PS
1136354CJT12902201----W W DCK 0PS
1136453CJT13708901----W W DCK 0USFS
1136553CJT14502301----W W DCK 0PS
1136653BJT13102501----W W DCK 0PS
1136753BJT08502501----W W DCK 0PS
1136853BJT09901901----W W DCK 0PS
1136953BJT10201701----W W DCK 0PS
1137053DJT32308701----C W DCK 0PSFS
1137153BJT2740700401--C W DCK 0PS
1137253BJT17205901----W W DCK 0PRFS
1137353AJT34702801----W W DCK 0UR
1137453AFZ178042 K 0
1137553AJT2790690401--C F DCK 0PS
1137654AJT05101301----W T DCK
1137754AJT06508401----W W CC 0UR
1137854AJT11807001----W W DCK 0USFS
1137955BJT10002701----W W DCK 0PS
1138055DJT07501101----W W DCK 0PS
1138155DJT10804201----W W DCK 0PS
1138255DJT1590280101--W T DCK 0PS
1138355DJT1840710102--C T DCK 0PS
1138455CJT27407101----W W DCK 0PS
1138555CJT28107302----W W DCK 0PS
1138655CJT11201201----W W DCK 0PS
1138755CJT11601901----W W DCK 0PS
1138855BJT2690700101--T W DCK 0PS
1138955AJT26807101----W W DCK 0PS
1139055AJT13702601----W W DCK 0PS
1139155BJT27106802----W F DCK 0US
1139255AJT26606902----W F DCK 0PS

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