

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF MINES

District 7

REPORT OF MULTIPLE FATAL COAL MINE ROOF-FALL ACCIDENT

NO. 1 MINE
HILLMAR COAL COMPANY, INCORPORATED
ASHERS FORK, CLAY COUNTY, KENTUCKY

July 16, 1971

by

R. B. Jones
Mining Engineer

and

H. A. Jarvis
Coal Mine Inspector

Originating Office - Bureau of Mines
Barbourville, Kentucky 40906
T. R. Mark, Acting Subdistrict Manager
Barbourville, Kentucky, Subdistrict, Coal Mine Health and Safety District 7

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INTRODUCTION

This report is based on an investigation made pursuant to the provisions of the Federal Coal Mine Health and Safety Act of 1969 (83 Stat. 742).

A series of three consecutive roof falls beginning at about 2:45 p.m., Friday, July 16, 1971, near the face of No. 1 entry, 1 left section, resulted in the death of three employees and the injury of three other employees. The names of the victims are recorded in Appendix A of this report.

The Barbourville office of the Bureau of Mines was notified of the accident by Leslie O. Marcum, President, Hillmar Coal Company, Incorporated, at 5 p.m., July 16, 1971, and recovery operations were started immediately upon arrival at the mine. An investigation was started Tuesday, July 20, 1971 and completed Friday, July 30, 1971.

GENERAL INFORMATION

The mine was opened by six drift openings into the Hazard No. 4 coalbed, which averaged 40 inches in thickness. Of the 9 men employed, 8 worked underground on 1 shift a day, 5 days a week, and produced a daily average of 80 tons of coal, all loaded by hand into rubber-tired mine cars.

The mine was developed by a room-and-pillar method. Present mining consisted of developing a pair of left entries near the outcrop and under a hollow towards a new boundary of coal. The entries were 24 to 25 feet wide on 50-foot centers and the crosscuts were 22 to 24 feet wide on 50-foot centers.

The immediate roof in the area of the accident was fragile shale, 6 to 8 inches in thickness, which had been taken down prior to the accident. The main roof was firm laminated shale containing some fossils and hill seams. The adopted and approved roof-support plan, utilizing conventional timbers and roof bolts, required permanent timbers to be set on 4-foot centers to within 5 feet of the uncut faces on each side of a 14-foot wide roadway, and two rows of roof bolts on 5-foot centers (spot locations) over roadways. Safety posts were required to be set on 5-foot centers across the faces during blasting and hand-loading operations. Entries on 60-foot centers were to be driven a maximum of 22 feet wide, and crosscuts on 50-foot centers were to be 18 feet maximum width. The roof-support plan was not being complied with in that entries and crosscuts exceeded the maximum width; timbers and bolts were not installed on the required centers, line timbers were 8 feet from the face on the left side and 12 feet from the face on the right side of the No. 2 entry, and the last room turned right off the No. 2 entry was advanced 21 feet with 1 permanent timber and 3 safety posts set in addition to the installed roof bolts.

No training, under the operator's approved training program, had been conducted during the employment of the victims. Total mining experience, occupation experience, and social security number of each victim are listed in Appendix A.

The mine foreman is the immediate supervisor and is in charge of health and safety. The mine foreman has 32 years mining experience, 17 years as a State certified mine foreman.

A roof-support plan was submitted May 5, 1970, and approved with a modification July 8, 1970. The roof-support plan, if followed, is satisfactory under normal conditions; however, where abnormal conditions, such as hill seams, development beneath hollows and proximity to the surface are encountered, additional means beyond the minimum plan are to be taken to provide adequate protection for the roof.

Those participating in the investigation were:

Hillmar Coal Company, Incorporated

Leslie O. Marcum	President and Co-owner
Jesse Hill	Co-owner
Ernest Horton	Mine Foreman
Sylvester Perkins	Cutting Machine Operator and Roof-bolt drill helper
Willie Mathis	Coal loader (injured eyewitness)
Frank Napier	Coal loader
Woodson Jackson	Surface Employee

Kentucky Department of Mines and Minerals

J. H. Mosgrove	Assistant to the Commissioner
Everett Bartlett	District Supervisor
B. E. Banks	Coal Mine Inspector

United States Bureau of Mines

John W. Crawford	Acting District Manager
T. R. Mark	Acting Subdistrict Manager
R. B. Jones	Mining Engineer
Edward T. Hollop	Mining Engineer
Glen D. Springer	Mining Engineer Technician
H. A. Jarvis	Coal Mine Inspector

The last Federal inspection was completed June 14, 1971.

DESCRIPTION OF ACCIDENT

Ernest Horton, mine foreman, arrived at the mine at 6 a.m., on July 16, 1971, and, after starting the diesel-powered generator and fan, completed the preshift examination of the 1 left section, and, finding no dangers, returned to the surface to await the arrival of the employees. After conferring with W. E. Duke, Coal Mine Inspector (Electrical), concerning the work necessary and availability of components to place the hand-held electric drills in permissible condition, Horton reentered the mine about 9:30 a.m., with Sylvester Perkins and Ernest Harris, operators of the cutting machine and roof-bolt drill, T. J. Hollin, battery-powered tractor operator, Willie Mathis, Frankie Gibson, and Oscar Saylor, coal loaders. Frank Napier, coal loader, did not report for work. Normal operations were started and continued with Horton in and out of the place intermittently until the first fall occurred about 2:45 p.m., trapping both Gibson who was loading coal in the room neck to the left and Mathis working in the face of the No. 1 entry. Mathis, who received an injury to the knee, stated that his first indication that something unusual was happening was an apparent shaking of the floor, evidently a vibration caused by the falling material striking the floor. As Mathis turned from the face, he saw and was struck by falling material while moving toward the protection of the rib and permanent timbers. It is believed Gibson sustained fatal injuries in the first fall. Perkins and Harris, undercutting the face of the parallel No. 2 entry, heard and answered the call for help. Harris went to the surface to notify Horton, obtain help, and send Woodson Jackson, surface employee, to call for an ambulance. Perkins freed Mathis from the fallen material, transported him to the surface, and began collecting tools and materials needed to remove Gibson. Horton and Harris returned to the scene along with Hollin and Saylor and were attempting to remove Gibson from under the first fall of material when the second fall occurred, covering Harris, Hollin, and Saylor. Horton recovered the injured Hollin and stated that he had lifted the fallen material from Harris, who was

alive, and was moving him when the third fall occurred, striking and injuring his left shoulder as he scrambled to safety. Hollin sustained serious injuries and upon being freed by Horton, was taken to the surface by Perkins and by ambulance to Red Bird Hospital, Roark, Kentucky, and later to a hospital at Lexington, Kentucky. Mathis and Horton were treated and released.

The dimensions of the total fallen material measured 35 feet long, 55 feet wide, and 45 to 72 inches in thickness.

RECOVERY OPERATIONS

Gordon Couch, Coal Mine Inspector, who learned of the accident at his home in Manchester, Kentucky, proceeded to the mine with his brother, Stanley, an employee of the nearby Shamrock Coal Company, arriving at 5:45 p.m. Gordon Couch went underground immediately and, upon arrival at the scene of the accident, noted six volunteer workmen, three removing the fallen material in the last connecting crosscut from the No. 2 entry side, and the other three standing by in the No. 1 entry. Couch further noted that the roof in the No. 1 entry was "working" and immediately withdrew the workmen from this area. On his second trip to the surface for timbering materials, Stanley Couch met with members of the Kentucky Department of Mines and Minerals, arriving volunteer workmen from neighboring mines, and U. S. Bureau of Mines personnel. Recovery operations were begun with the installation of numerous timbers and cribs in both entries for roof support in the area and above the fallen material. Tunnelling through and under the fallen material was attempted at two locations with workmen using hand tools. By 8 a.m., Saturday, July 17, 1971, the three bodies were located visibly; however, the thickness of the material resting on the victims, the limited clearance and work space, and the dangerously loose and unstable material above, prevented progress by workmen with hand tools. A diesel-powered air compressor, with a jackhammer and chipper, was obtained from the District Office of the Kentucky Highway Department, which allowed small explosive charges to be strategically placed for penetration and removal of necessary material to reach the victims. The bodies of Gibson, Harris, and Saylor were recovered and brought to the surface at 8:30 a.m., 1 p.m., and 11:45 p.m., respectively, on Sunday, July 18, 1971.

The work of recovering the bodies lasted approximately 54 hours with numerous persons furnishing arduous labor, including members of the Kentucky Department of Mines and Minerals, a more than adequate force of volunteer workmen from the area, and Bureau of Mines personnel.

CAUSE OF ACCIDENT

Failure of management to adequately evaluate the roof conditions and follow the roof-support plan by adapting it to the abnormal roof conditions encountered in the close proximity of the surface and limited cover was

the primary cause of the accident. The seriousness of the accident was compounded by permitting employees to engage in recovery work under inadequately supported roof. Failure of management to comply with the minimum requirements of the approved roof-support plan was a contributing factor.

VIOLATION

Notice and Order

Violation - Section 75.200.

The investigation of the fatal coal mine roof-fall accident disclosed the adopted roof-support plan was not being complied with in that entries and crosscuts exceeded the maximum width, timbers and bolts were not installed on the required centers, line timbers were 8 feet from the face on the left side and 12 feet from the face on the right side in the No. 2 entry 1 left, and the last room turned right off the No. 2 entry was advanced 21 feet with only 1 permanent timber and 3 safety posts set in addition to the installed roof bolts.

A Notice of Violation, No. 1 HJ, was issued July 26, 1971, on Form 104(c), requiring that this violation be totally abated before the mine resumes operations.

Imminent Danger - Section 104(a).

Massive roof fall. Possible multiple fatalities.

Action taken.

Order No. 1 HJ was issued July 16, 1971, requiring that all persons, except persons referred to in Section 104(d), be withdrawn from and prohibited from entering the 1 left section. The Order remains in effect.

REQUIREMENTS

1. The roof of all working places shall be supported adequately to protect persons from falls of roof.
2. No persons shall proceed beyond the last permanent support unless adequate temporary support is provided, except for the purpose of installing such temporary support.
3. Recovery work, even for the purpose of saving lives, should be conducted in a manner to provide reasonable protection to the rescuers or recovery workers.

4. When mining is done near the outcrop or when hill seams or other abnormal roof conditions are encountered, the roof-support system shall be revised by driving the places no wider than necessary to safely accommodate the equipment and by installing additional support, or the area abandoned.

Respectfully submitted,

/s/ R. B. Jones

R. B. Jones

/s/ H. A. Jarvis

H. A. Jarvis

APPENDIX A

Victims of Roof-Fall Accident

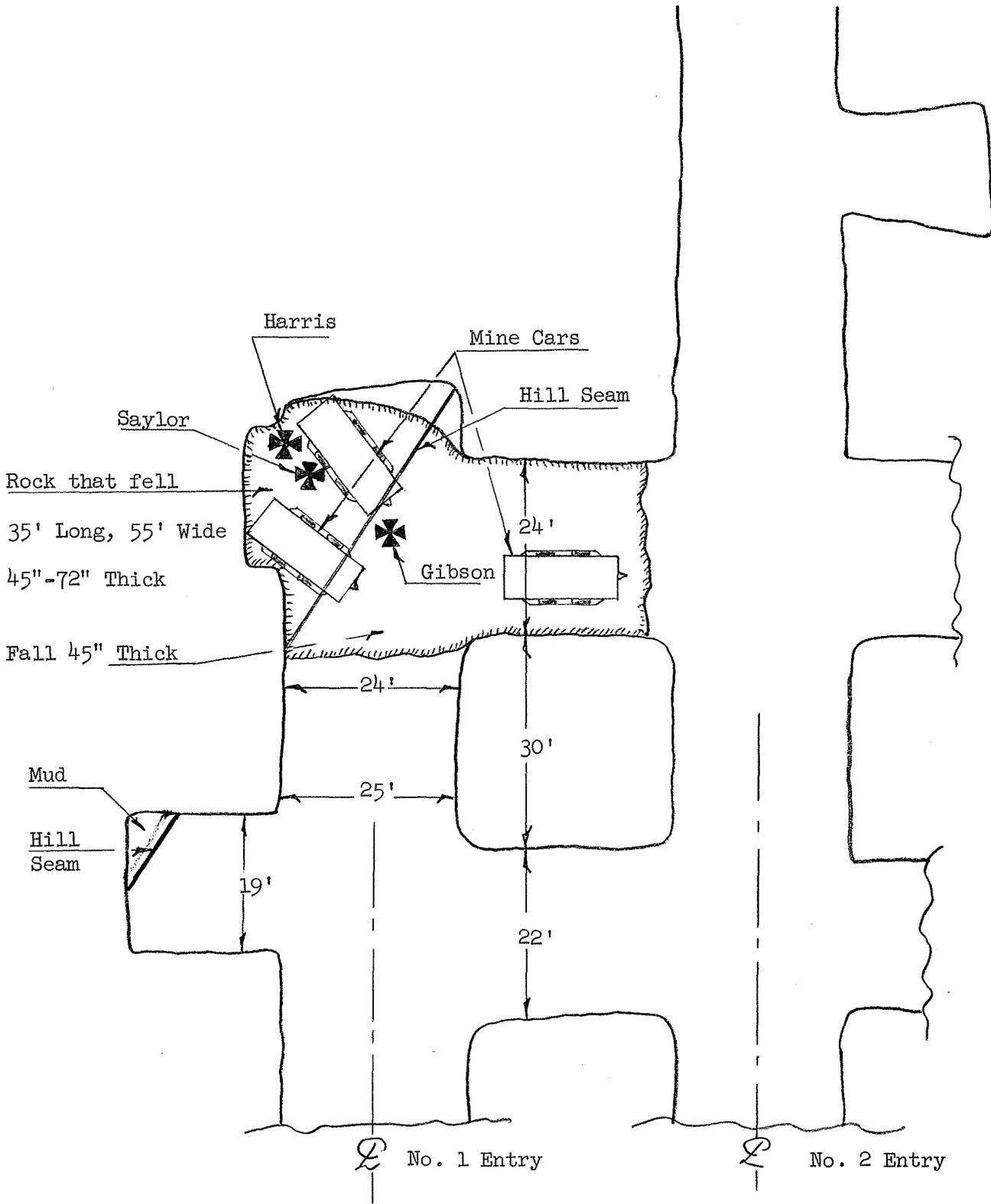
No. 1 Mine, Hillmar Coal Company, Incorporated
Ashers Fork, Clay County, Kentucky

Killed

<u>Name</u>	<u>Social Security No.</u>	<u>Age</u>	<u>Mining Experience</u>	<u>Pres. Occup. Experience</u>	<u>No. of Dependents</u>
Frankie Gibson	██████████	21	2 yrs.	2 days	0
Ernest Harris	██████████	27	7 yrs.	3 mos.	3
Oscar Saylor	██████████	19	1 yr.	2 days	0

Injured

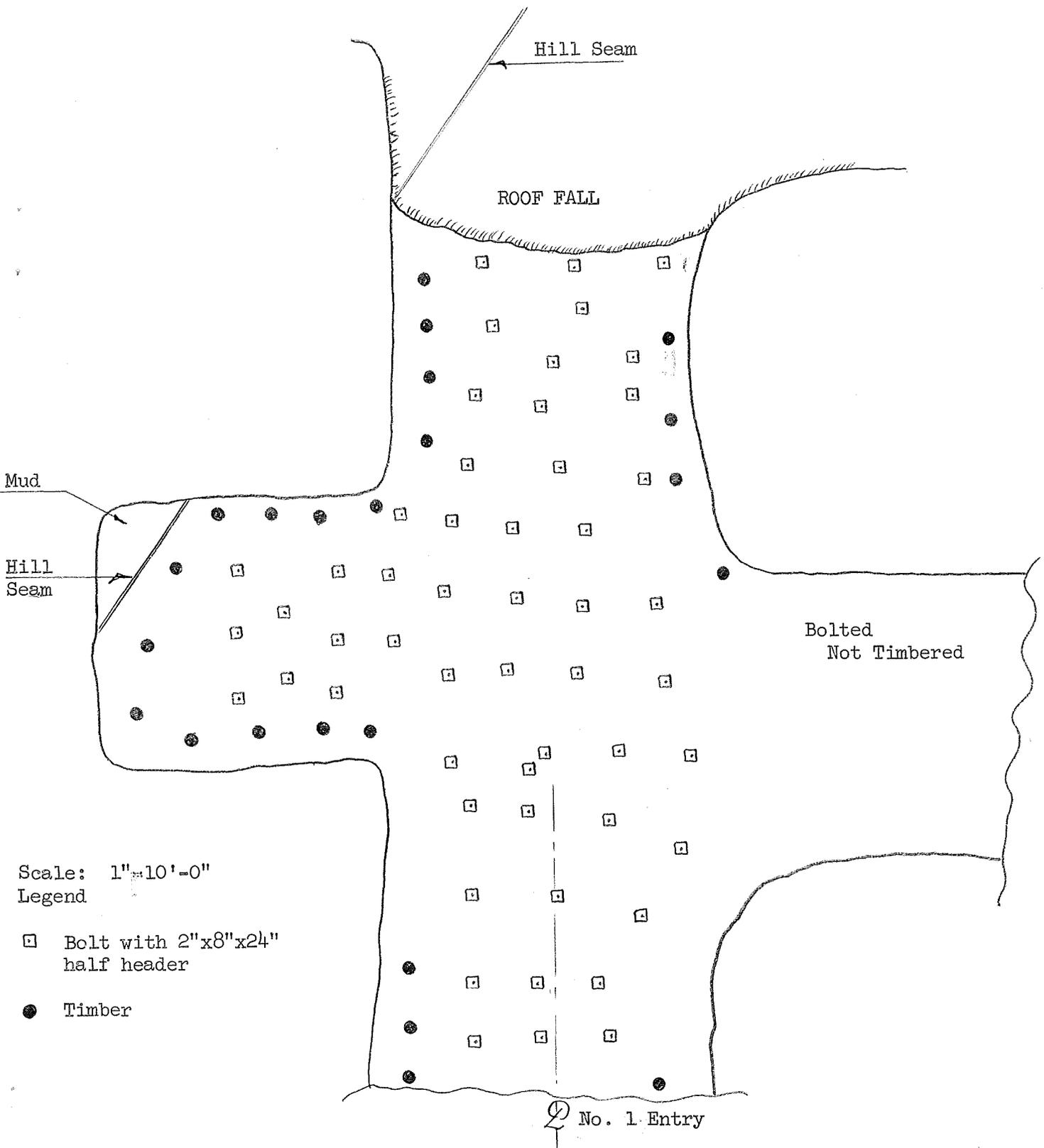
T. J. Hollin	██████████	35	15 yrs.		
Ernest Horton	██████████	47	32 yrs.		
Willie Mathis	██████████	35	16 yrs.		



Scale: 1"=20'-0"
 Ht. of Coal 40"

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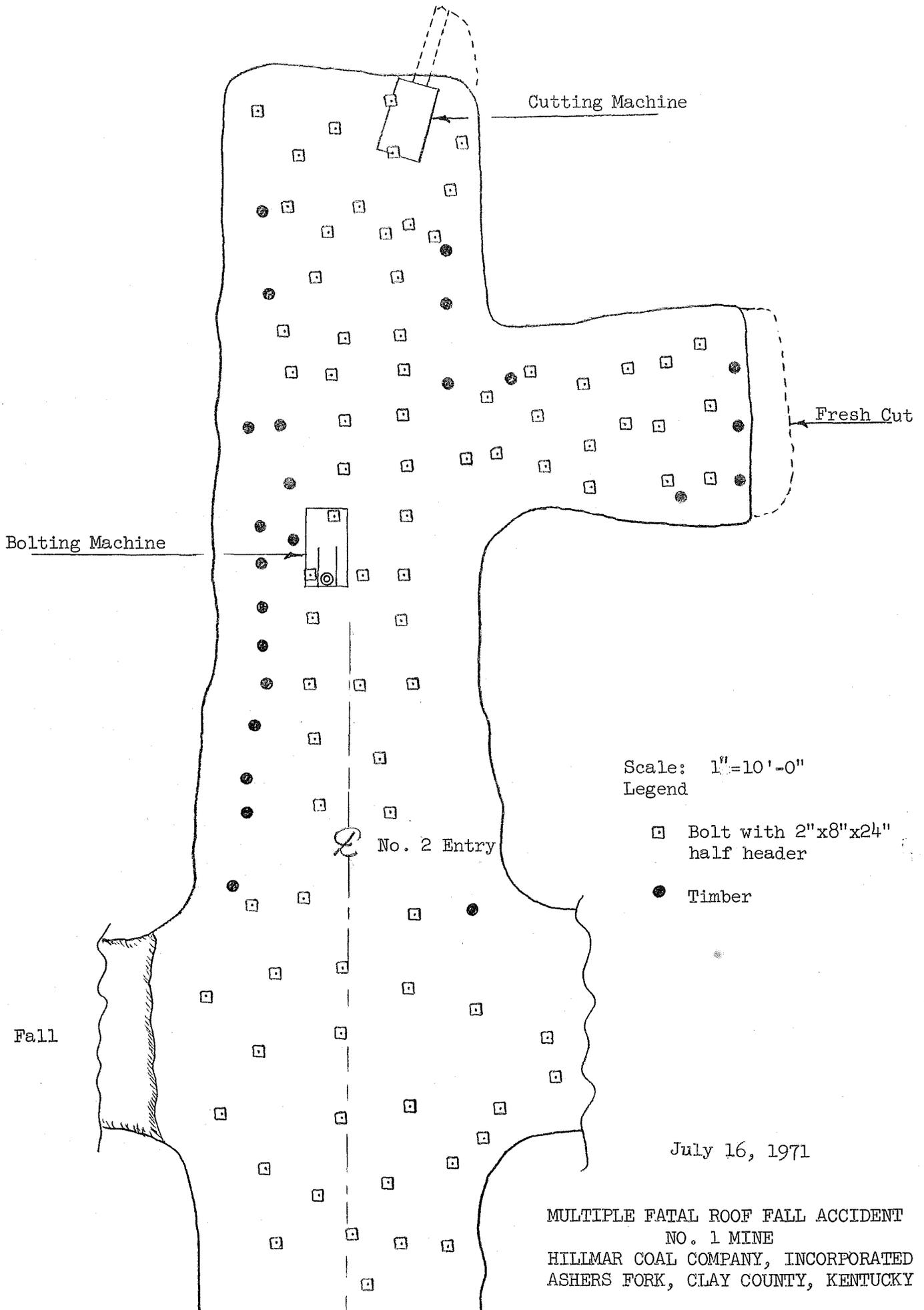


Scale: 1"=10'-0"
Legend

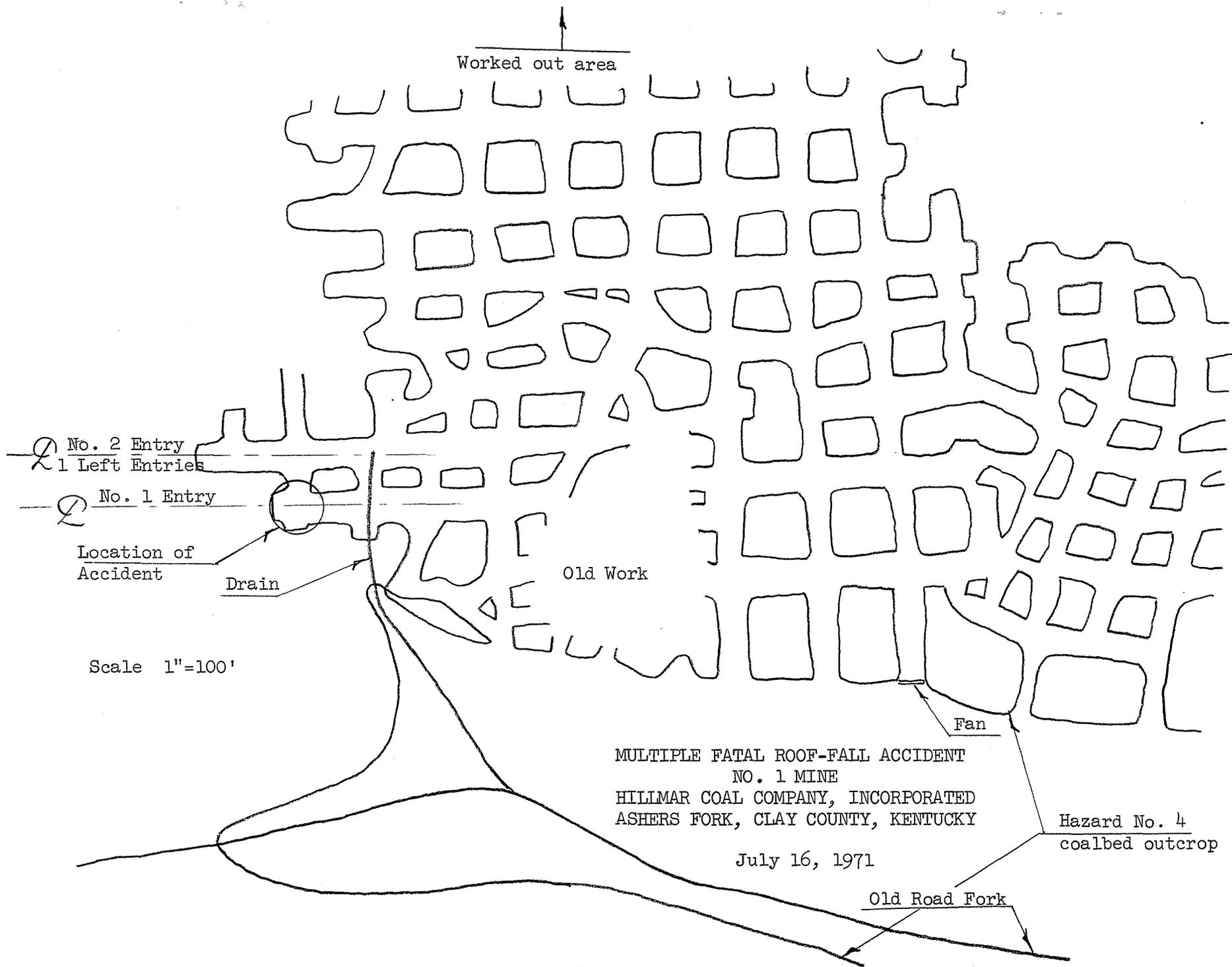
- Bolt with 2"x8"x24"
half header
- Timber

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Worked out area

No. 2 Entry
1 Left Entries

No. 1 Entry

Location of
Accident

Drain

Old Work

Fan

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Hazard No. 4
coalbed outcrop

July 16, 1971

Old Road Fork

Scale 1"=100'