

# COAL FATAL

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UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF MINES

DISTRICT C

REPORT OF FATAL COAL OUTBURST (BUMP) ACCIDENT  
NO. 1 MINE  
TURTLE CREEK COAL COMPANY  
COALGOOD, HARLAN COUNTY, KENTUCKY

August 12, 1965

by

Charles H. Sample  
Federal Coal Mine Inspector

Originating Office - Bureau of Mines  
Barbourville, Kentucky  
G. W. Parry, Acting Subdistrict Manager  
Barbourville, Kentucky Subdistrict, Health and Safety District C

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INTRODUCTION

This report is based on an investigation made in accordance with provisions of the Federal Coal Mine Safety Act (66 Stat. 692; 30 U.S.C. Secs. 451-483).

Floyd Laws, timberman, was killed instantly by a coal outburst (bump) about 6 p.m., Thursday, August 12, 1965. The accident occurred along No. 3 chain pillar in 1 left entries off 9 face left entries in the No. 1 Mine, Turtle Creek Coal Company.

Laws was 47 years old and had 25 years mining experience, about 3 months of which was in the subject mine. He is survived by his widow and 5 dependent children. Lloyd Burton, joy operator, received a bruised left knee but was not hospitalized.

The Harlan office of the Bureau of Mines was notified of the accident by Carl Smithers, Inspector, Kentucky Department of Mines and Minerals, at 8 p.m., August 12, 1965, and an investigation was made the following day.

GENERAL INFORMATION

The No. 1 Mine, located along State Highway Route No. 990 at Coalgood, Kentucky, is opened by drifts in the Harlan coalbed which ranges from 40 to 50 inches in thickness in the area being mined. At the time of the previous inspection 30 men were employed, all underground, on 2 shifts a day, 5 days a week. The average daily production of 250 tons of coal was loaded by mobile loading machines into shuttle cars.

The mine had been developed by a room-and-pillar method. Entries in sets of 2 or more were driven on 60 foot centers. Present mining is confined to the extraction of room and entry pillars.

Conventional undercutting and blasting of the coal is not done. The general practice is for the loading machine operator to load coal from the goaf side of the pillars as the coal is crushed out. Holes are drilled and

blasting is done when the coal becomes tight.

The main roof in the area is massive sandstone of undetermined thickness, that contacts the coal, with up to 1,500 feet of cover. The floor is dense shale that resists plastic flow.

Persons participating in the investigation of August 13 and 16-17, 1965, were:

Turtle Creek Coal Company

Letcher White	Lessee
Bill Carter	Engineer
Finley Wooton	Mine Foreman
Lloyd Burton	Section Foreman and Loading Machine Operator
Claude Napier	Loading Machine Operator (2 right section)

Harlan County Coal Operators' Association

Rufus Bailey	Safety Director
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Kentucky Department of Mines and Minerals

Carl Smithers	Mine Inspector
Grant Hall	Mine Inspector

United States Bureau of Mines

James L. Gilley	Mining Health and Safety Engineer
T. R. Mark	Federal Coal Mine Inspector
Charles H. Sample	Federal Coal Mine Inspector

The preceding Federal inspection was completed May 3, 1965.

DESCRIPTION OF ACCIDENT

The second shift crew, on the day prior to the accident, extracted the remainder of pillar 'X' and a section of pillar 'Y' (see sketch No. 2), and left the loading machine and shuttle car parked at the outby point of pillar 'C'. On the day of the accident the day shift crew loaded 9 mine cars, about 45 tons of coal, off the left side of pillar 'C', then shot and loaded some fallen rock which was obstructing the roadway, between pillars 'A' and 'C'. The second shift, composed of 3 men, entered the mine at 3 p.m., and arrived

on the section shortly thereafter. The workmen were in the process of loading the fourth mine car of loose coal from the outby side of the pillar when the accident occurred. The section foreman stated that just prior to the outburst he instructed Laws to bring up some timbers along the outby side of the loading machine. After the outburst several minutes were required to locate Laws as he was completely covered with coal. The foreman stated that when he located and examined the victim, he found no sign of life; then he and other workmen removed him from the coal and transported him to the surface.

The outburst was violent in nature in that the quantity of coal expelled left a void between the coal and roof, 6 to 10 inches in height, up to 10 feet in depth and 12 feet in length. Several contributing factors include:

1. Natural conditions conducive to coal outburst consisting of up to 1,500 feet of cover, a main roof of thick sandstone that contacts the coal, and a hard firm shale floor that resists plastic flow.
2. Pillars of unequal dimensions and shapes possessing decidedly different load-carrying capacities were formed during previous and recent development. The pillar involved was one of the largest in the area, approximately 100 feet long and 50 feet wide, and was situated on a pillar-line point, an area wherein a large majority of coal outbursts occur.
3. The mining system in the area did not incorporate definite plans to develop and reduce the larger pillars well ahead of the fall line.
4. Digging and loading coal from the outby rib of a highly stressed pillar with a loading machine was being done prior to and at the time of the occurrence.
5. Some pillar remnants had been left in the gob due to adverse roof conditions.
6. An employee, inexperienced in bumping coal and probably unaware of the magnitude of the bump potential, either misunderstood or disregarded instructions of the foreman and positioned himself in a dangerous location between the pillar and shuttle car during loading operations.

#### CAUSE OF ACCIDENT

It is the opinion of the investigating committee that the accident was a result of an accumulative process from a combination of several factors as discussed in this report. Under these circumstances, in all probability, the outburst was triggered by the loading arms of the loading machine striking and penetrating the highly stressed pillar, loading coal from along the outby

side of the pillar thereby opening a free face for easy and spontaneous release of pressure accompanied by a violent expulsion of coal, and the fact that the victim positioned himself in a potentially dangerous location in an area conducive to outburst.

#### RECOMMENDATIONS

Compliance with the following recommendations may prevent accidents of a similar nature in the future:

1. Digging and loading coal from the outby ribs of highly stressed pillars should not be permitted.
2. Complete extraction of pillars should be striven for and pillar remnants should not be left; however, when it is impossible to recover remnants safely their load-carrying capacity should be destroyed by blasting if conditions will permit this to be done without jeopardy of safety.
3. Pillars should be mined in a manner that will prevent pillars projecting into the gob. (See pillar 'A' on Sketch No. 2.)
4. The mining system should include plans to develop pillars as near in uniform size as possible, and to reduce the size of existing pillars well ahead of the fall line.
5. Every means should be taken to properly impress upon employees unfamiliar with bump conditions, the danger of unnecessarily positioning themselves between coal ribs and equipment.

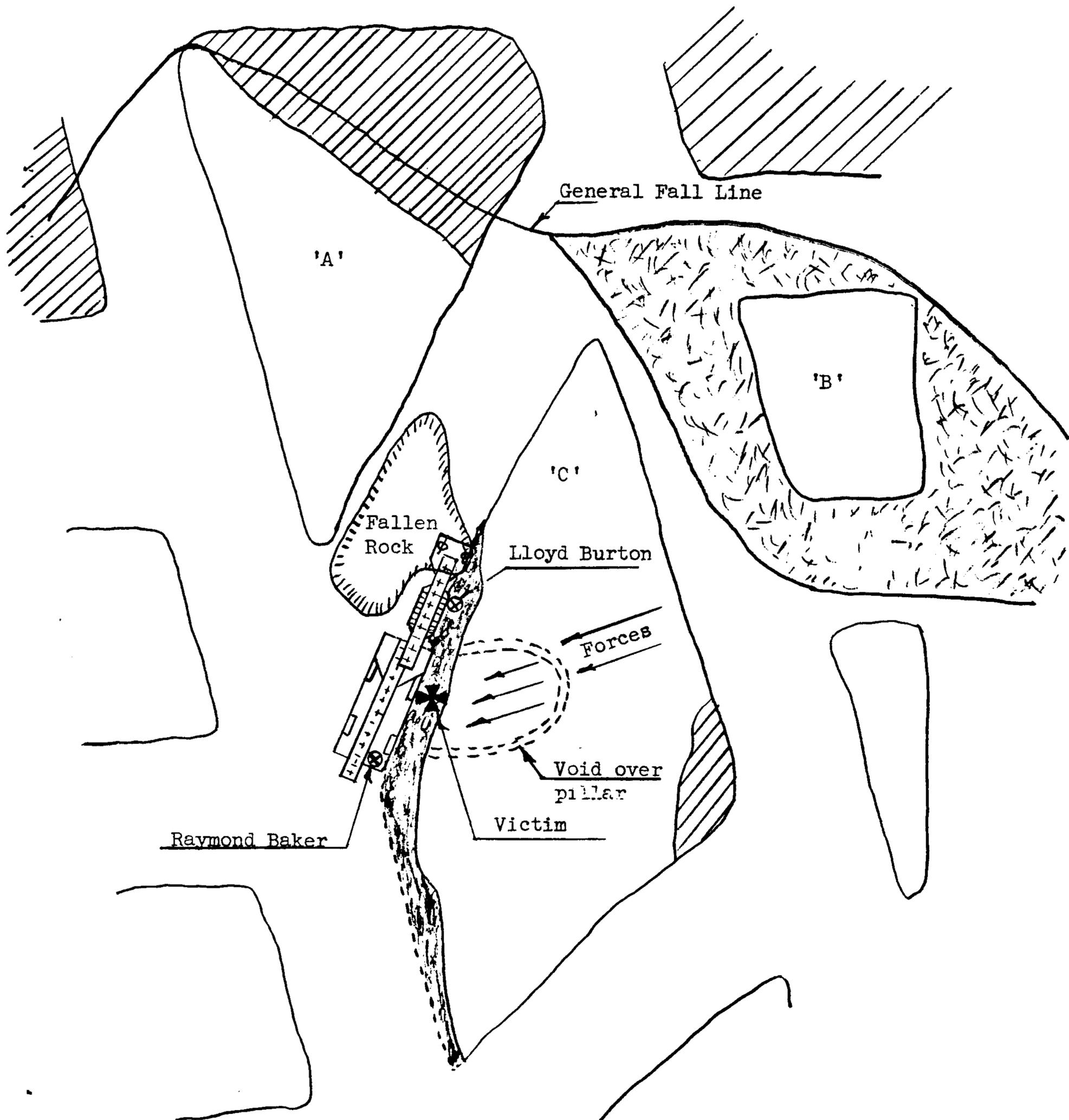
#### ACKNOWLEDGMENT

The cooperation of company officials, employees and others participating in this investigation is gratefully acknowledged.

Respectfully submitted,

/s/ Charles H. Sample

*Charles H. Sample*  
Charles H. Sample



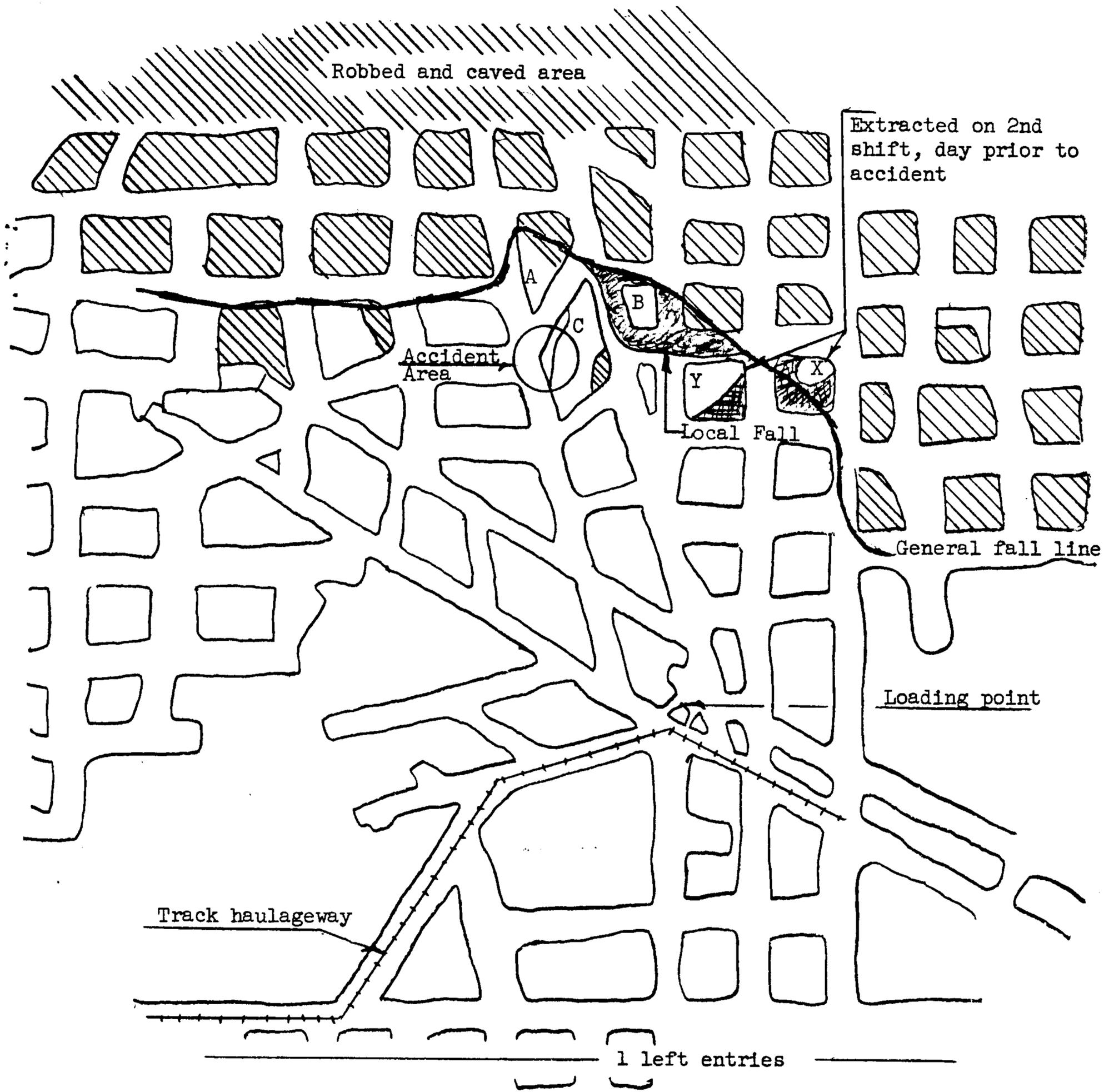
 Coal removed prior to day of accident

 Coal removed day of accident

Ht. of coal 50"  
 Scale 1"=20'-0"

SKETCH NO. 1  
 FATAL COAL OUTBURST (BUMP) ACCIDENT  
 NO. 1 MINE  
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 COALGOOD, HARLAN COUNTY, KENTUCKY

August 12, 1965



— Primary development

 Coal removed

Ht. of coal 50"

Scale 1"=100'-0"

SKETCH NO. 2  
 FATAL COAL OUTBURST (BUMP) ACCIDENT  
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 COALGOOD, HARLAN COUNTY, KENTUCKY

August 12, 1965