

ALABAMA COAL ASSOCIATION



*2007 Mine Rescue Contest
May 16, 2007
Bevill State Community College*



STATEMENT

Good morning (afternoon). My name is _____ and I am the Safety Director at the Uptight Coal Company, Stressed Out Mine. Thank you for coming to assist us in our time of need.

This morning the 10 person day shift crew entered the mine at 7:00 a.m. as usual. They were following the section foreman who traveled in advance of the crew performing the pre-shift examination. The foreman had called out and reported that there were no hazards observed. The foreman remained on the section and the crew called out their arrival on the section to the responsible person at 7:47 a.m. The section started to run coal at 8:30 a.m. and continued to run coal throughout the shift. The evening shift section foreman arrived at the mine at 2:00 p.m. and waited for the pre-shift to be called out by the day shift foreman. When he had not received a call by 2:30 p.m., the evening shift foreman called underground and attempted to contact the section. He tried several times and could not establish communication with anyone on the section. The evening shift foreman proceeded underground at 2:45 p.m. thinking that the communication system was not working. He told the evening shift section crew to remain outside until he called them to let them know to proceed underground. The evening shift foreman returned to the surface at 3:25 p.m. and informed the responsible person that he had encountered three of the day shift section crew coming out of the mine and that they had informed him that they had been knocked down by a strong gust of air from the section and that the crew had attempted to evacuate but they had gotten separated from the others and did not know where the other crew members were located. The responsible person

immediately notified all of the proper authorities and arranged for rescue teams to proceed to the mine property.

Some information about the mine is

1. The mine is known to experience gas problems at times.
2. The mine has been experiencing some localized areas of bad roof during the past 3 weeks.
3. The section is developing 4 entries starting with No. 1 entry on the left.
4. We have an exhausting fan that cannot be reversed.
5. There is a sump in the No 4 entry with a pump. Water has been accumulating on the section in areas inby the 2nd line of crosscuts inby this fresh air base. The sump is located such that water from locations inby the sump location will drain to that area to be pumped out of the mine. We have found that, when the pump is not operating, water will roof in a short period of time. Although local areas of water may remain; when the pump is running, we are able to manage the levels so that production activities are not adversely affected.
6. All power inby this point is off but can be restarted at your request.
7. Back up mine rescue teams are available and all authorities are present on site.
8. The section had driven room necks to the left of the No. 1 entry in an attempt to locate a geological fault thought to be running parallel with the section.
9. The map we have for you was updated two days ago.

Be careful and good luck.

2007 MINE RESCUE EXPLORATION

The team will begin to explore all areas of the fresh air base. Team will find exhaust fan operating to the right of No. 4 entry. The fan will remain operating throughout the problem. Team will explore all openings to the area to be explored. No. 1 entry will be examined to the water over knee deep. No. 2 entry will be examined to the caved air tight. No. 3 entry will be examined to the stopping w/door closed and No. 4 entry to the permanent stopping. Since the team found the contaminant in the No. 3 entry, they must advance either in No. 3 or No. 4 entry (contaminated or adjacent) since No. 2 entry is blocked. We will assume that team enters the section in No. 3 entry because of the door. Team must airlock to enter either entry in which they decide to advance.

TS-1 will be made in the 3-1 intersection. **Team must make team check at this team stop.** Examination will be made to the right toward No. 4 entry to the stopping, inby in the No. 3 entry to the water over knee deep and to the left into No. 2 entry crosscut. Team may choose at this time to continue exploration into No. 2 entry because of the stopping in the No. 3 right crosscut.

TS-2 Assume that team continues exploration into No. 2 entry to the 2-1 intersection. Team will examine outby in No. 2 entry to the inby end of the stopping and make appropriate gas tests. Team will examine inby in No. 2 entry and make an appropriate roof test for the unsafe roof/rib. Team must then tie across into the left crosscut between Nos. 2 and 1 entry to the stopping.

All the accessible openings have been explored and the team may continue to explore inby since they have explored all open areas.

TS-3 will be made in the 2-2 intersection. Team must continue the unsafe roof/rib test they may have not completed until they encounter the coal pile on fire outby the intersection. Team will extinguish the fire and continue to roof test into the intersection. The team is in smoke at this time. **NOTE: At this time all team members must remain on the lifeline as long as any team member is in the smoke. Keep in mind that each time the team passes this area; they must make a roof test at the location of the fire.**

The team will examine inby in the No. 2 entry, into the 2 right crosscut and into the 2 left crosscut and make appropriate gas tests for these locations.

Team has now encountered a contaminant (smoke) in the No. 2 entry. Rule 45C states that ***“When advancing in an entry and an intersection is encountered with open crosscuts on both sides, the team would be required to tie across into the contaminated crosscut first unless the team is required to return to a contaminated entry.”*** This would require that the team tie across into No. 1 entry prior to advancing into No. 3 entry. TS-4 will be in the 1-2 intersection. Team will tie outby in the No. 1 entry to the inby end of the caved area and inby in the No. 1 entry and make required gas tests. NOTE: The No. 5 team member must not advance inby the inby corner of the intersection as they are at the two crosscut limit for exploration leaving unexplored area outby them. Team will examine outby in the No. 1 entry while making required roof tests for the area of unsafe roof.

TS-5 Team will then tie across into the 3 right crosscut and make required gas tests. Team will encounter the air clear placards outby the 3-2 intersection and to the right of the intersection.

TS-6 may be made in the 4-2 intersection. Team will make all required tests inby to the unsafe roof and outby. Team will then continue exploration outby in the No. 4 entry.

TS-7 will be made in the 4-1 intersection. Team will tie outby making appropriate gas tests. Team will then return to the No. 2 entry for further exploration. Team may examine the unexplored area in the No. 1 entry through the crosscut to the left of 2-1 intersection by air locking into the area. Team also has left the area outby the stopping outby 2-1 intersection unexplored and must explore this area at some time prior to advancing in either entry for further exploration.

TS-8 will be made in the 1-1 intersection. Team will explore inby to the caved area and make required gas and roof tests. Team will examine to the face to the left of the intersection and outby the closed regulator. Team will encounter the explosive mixture outby the 1-1 intersection; however there are air clear placards to ensure a clear air separation between this area and the smoke. In order to complete the examination outby in No. 1 entry, team must air lock and enter the door in the regulator and examine to the inby end of the water over knee deep.

To complete the exploration outby, team will be required to air lock and enter the stopping outby 2-1 intersection and explore to the inby end of the caved air tight and make required roof and gas tests at this location. It would not be necessary for the team to rebuild the stopping at this location since they have now explored the area and it is airtight.

Team may then return to the point of original exploration in the No. 2 entry and continue to advance.

TS-9 Team may then either explore inby from 2-2 intersection or into the face of the No. 1 entry previously that previously may not have been reached from their stopping point in the 1-2 intersection. Let's assume that team continues advance into the face of the No. 1 entry. Team may explore all the way inby to the face since timbers are provided and installed for support. Once this exploration has been completed, team may continue to advance in No. 2 entry.

TS-10 will be made in the 2-3 intersection. Team must make required gas tests to the right at the water roofed and will check for a response from behind the barricade. There will be a response as follows.

Help! Help! I am behind the barricade with my buddy. I am alright but he is unconscious. The area in here is airtight. There is a solid face behind us. Please get us out! I don't know how much longer we can stay in here.

Team has now explored all accessible areas and do not have the materials to ventilate the barricade at this time. Team will have to use the 4 timbers located in the last open crosscut on the left side to explore the unsafe roof in the No. 4 entry so that they can energize the power cable for the pump and lower the water roofed. They have been told in the statement that any water that has accumulated on the section will go to the sump located in the No. 4 entry, so if they can energize the pump, they can remove all of the water roofed at all the locations. Team will use the provided timbers to enter the unsafe roof area and explore to the water roofed area in No. 4 entry. Once they have completed this exploration, team may energize the pump switch inby the FAB in No. 4 entry. Prior to energizing the pump, the team must build several stoppings because the roof water

areas are considered to be airtight. Team may select their locations to build so long as the area is isolated. Should the team fail to isolate the area of water roofed, they will be discounted as follows. ***Rule 43. "Failure to erect temporary stopping (airlock) when necessary, each infraction 6. Before breaching airtight separations such as: stoppings, doors, seals, barricades, closed regulators, or removing water roofed, an airlock must be formed if conditions on the other side are unknown."*** When the team energizes the pump, the judges will immediately turn over the all water roof placards at all locations. Other placards indicating water will not be turned at this time.

Team may then continue their exploration necessary for ventilation purposes in order to rescue the miners behind the barricade. Team must return to either No. 2 or No. 3 entry to continue exploration (contaminated or adjacent entry). Team has no more timbers to access the unsafe roof inby the sump at this time anyway.

TS-11 may be made in the 3-3 intersection. Assuming that team continued advance to this area from the No. 2 entry side, team must make required gas tests outby in the No. 3 entry and inby toward the face of the No. 3 entry. Team may not advance in the No. 3 entry but if the face can be reached from the team stop, they could explore all the way to the No. 3 face at this time.

TS-12 Will be made at the 4-3 intersection. Team will examine outby to the inby end of the unsafe roof and inby to the barricade. There will be no response from behind the barricade. Team has now completed all the areas that can be explored and must ventilate.

VENTILATION NO. 1

Team must now ventilate to recover the patient from behind the barricade in the face of the No. 2 entry. The team has been informed in the statement that the exhaust fan is operating and cannot be reversed. The No. 2 entry cannot be used as an intake because of the caved airtight inby the FAB. **Also, be aware of the location of the Briefing Officer and his relation to any contaminant that may be moved over his station. Also, be aware of the battery ram car located in the No. 1 right crosscut. This would preclude the use of the No. 1 entry as intake because the explosive mixture inby the regulator would be moved over the battery ram car or over the caved area inby 1-1 intersection. This leaves only No. 3 entry to be used as intake since No. 4 entry must remain the return at this time because of the exhausting fan.**

There are several changes that the team may make prior to effecting an actual air change. Team must build a stopping across No. 3 entry either inby or outby the water over knee deep to prevent the contaminant from being moved over this unexplored area when all persons have not been accounted for. Team will leave the stopping in place between 3-1 and 4-1 intersections. This will put intake air up No. 3 entry to the first intersection and then to the left into the No. 2 entry and then inby in the No. 2 entry. Team will then build a stopping to the right of the 2-2 intersection. This will cause the intake then to be up to the 2-3 intersection. **NOTE: Team MUST build a stopping to the right of 3-3 intersection in order to prevent a contaminant from being passed over the unsafe roof outby 4-3 because there are no timbers to explore this area and all missing persons are not accounted for at this time.** Team may remove the check curtain outby the 3-3 intersection and remove the check curtain between 3-2 and 4-2. Team may remove the stopping inby the FAB in No. 4 entry and build a stopping at the FAB between the No. 3 and No. 4 entries. This will allow the team to hang a line curtain and ventilate the barricade in No. 2 entry.

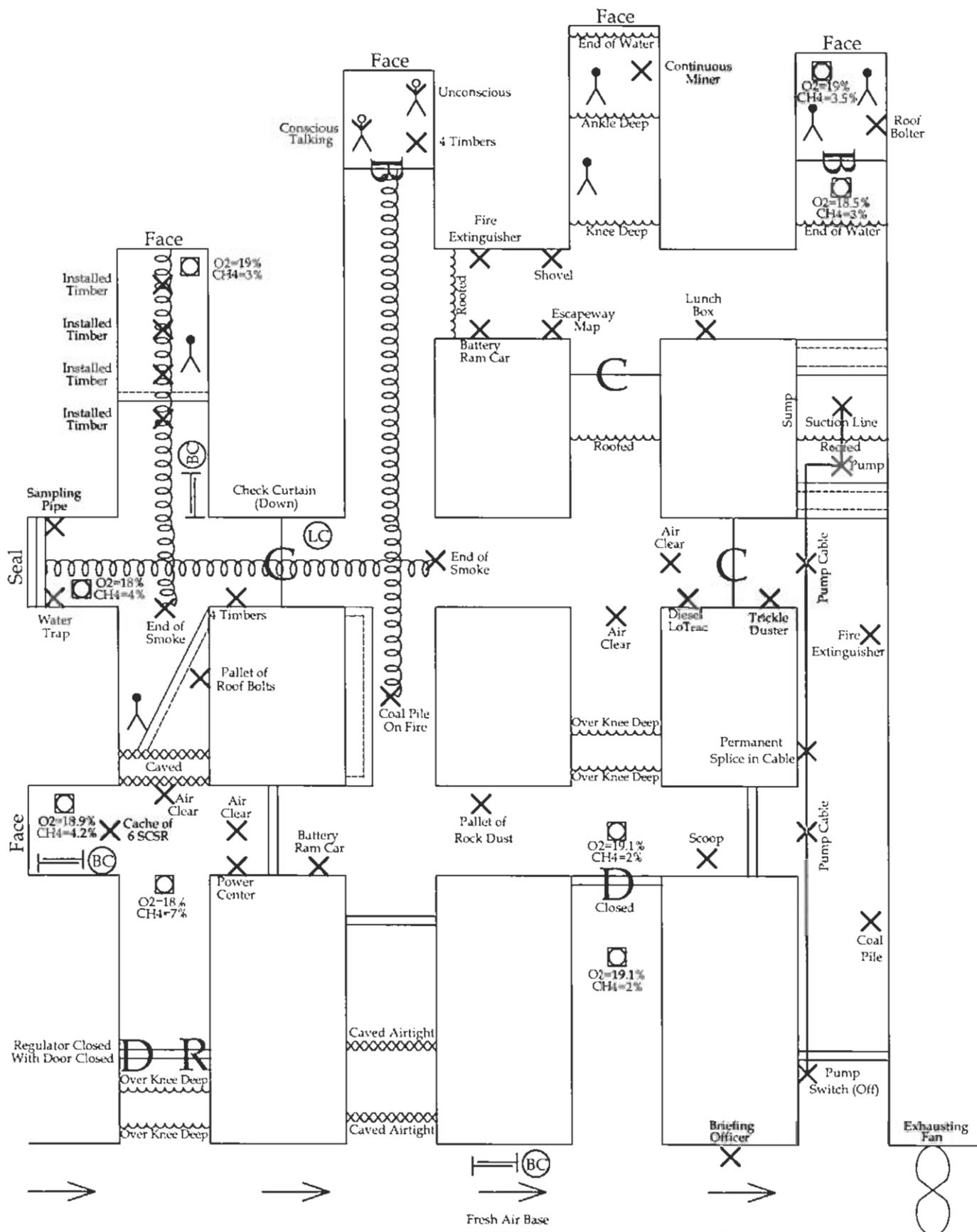
Team will explore the area inby the barricade while preparing to recover the patients and will find the timbers needed to complete their exploration and recovery. Team will

remove the patients to the FAB and re-enter the mine to explore behind the barricade in the face of No. 4 entry.

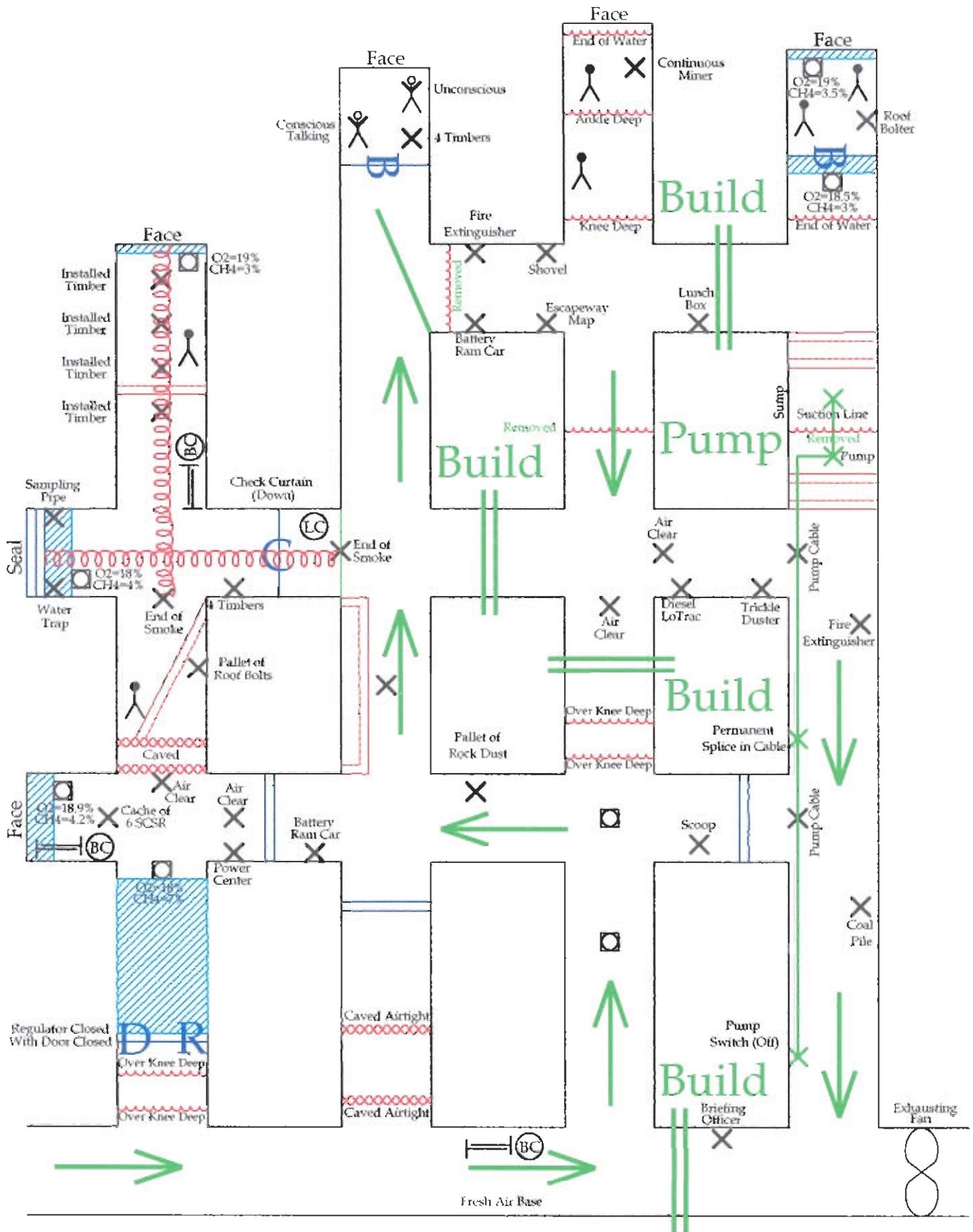
VENTILATION NO. 2

Before the team can ventilate the barricade in No. 4 entry, team must install the timbers and explore the area of the unsafe roof outby 4-3. This must be done in order to ventilate the contaminant remaining outby the barricade to pass through the area. If team fails to explore this area they would be discounted for passing a contaminant through an unexplored area when there are still persons unaccounted for in the mine.

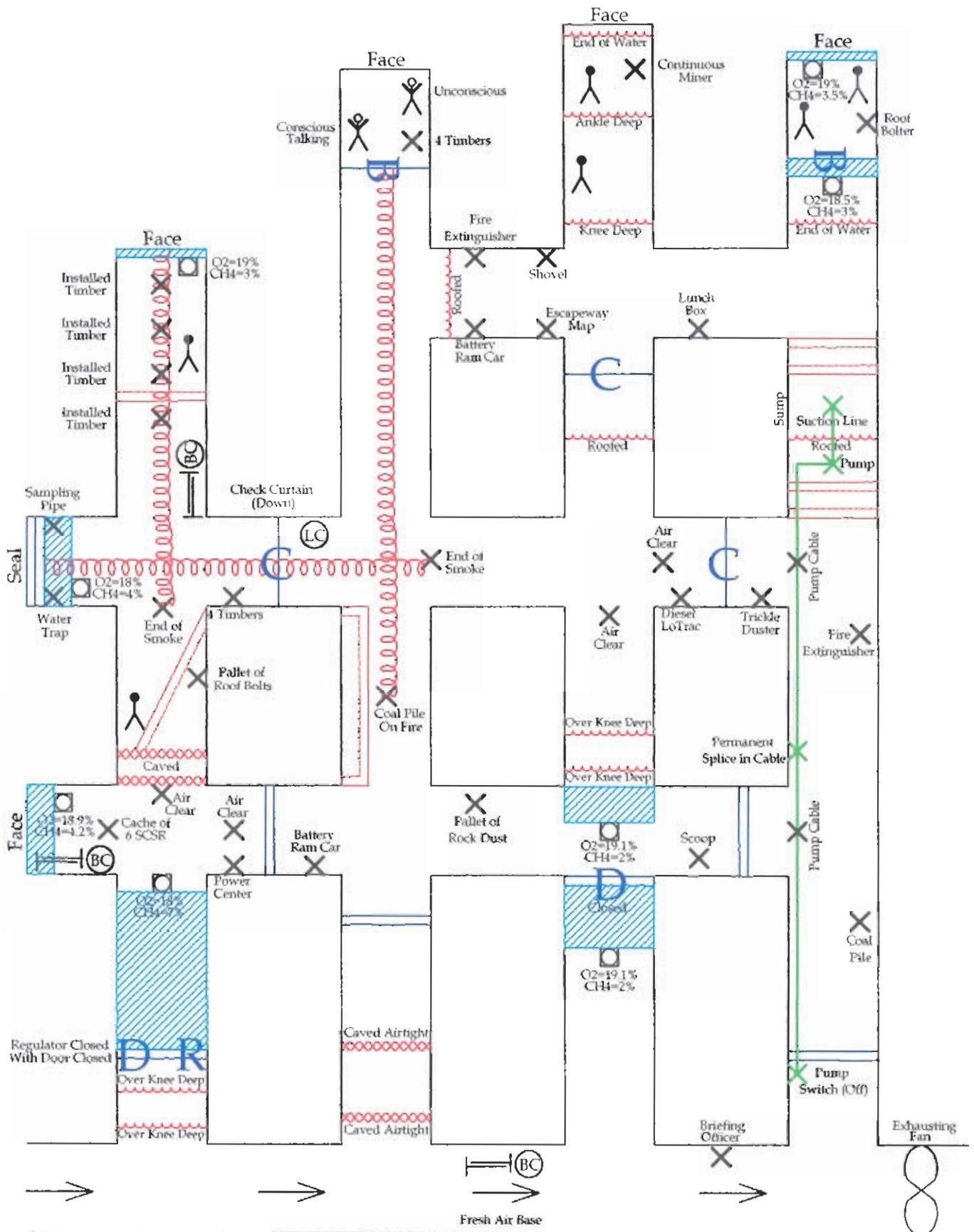
Once team has completed their exploration of the area of the unsafe roof and outby, they are now ready to ventilate. The only changes that are necessary in order to accomplish this are rebuilding the structure outby the 3-3 intersection and removing the structure build in the LOC between No. 3 and No. 4 entry. The team will then hang the line curtain and ventilate the barricade in the face of No. 4 entry. Team must build in order to enter the barricade since there has been no communication. Once the team finds the remaining two miners and explores the area, they may return to the FAB. The problem will be complete.



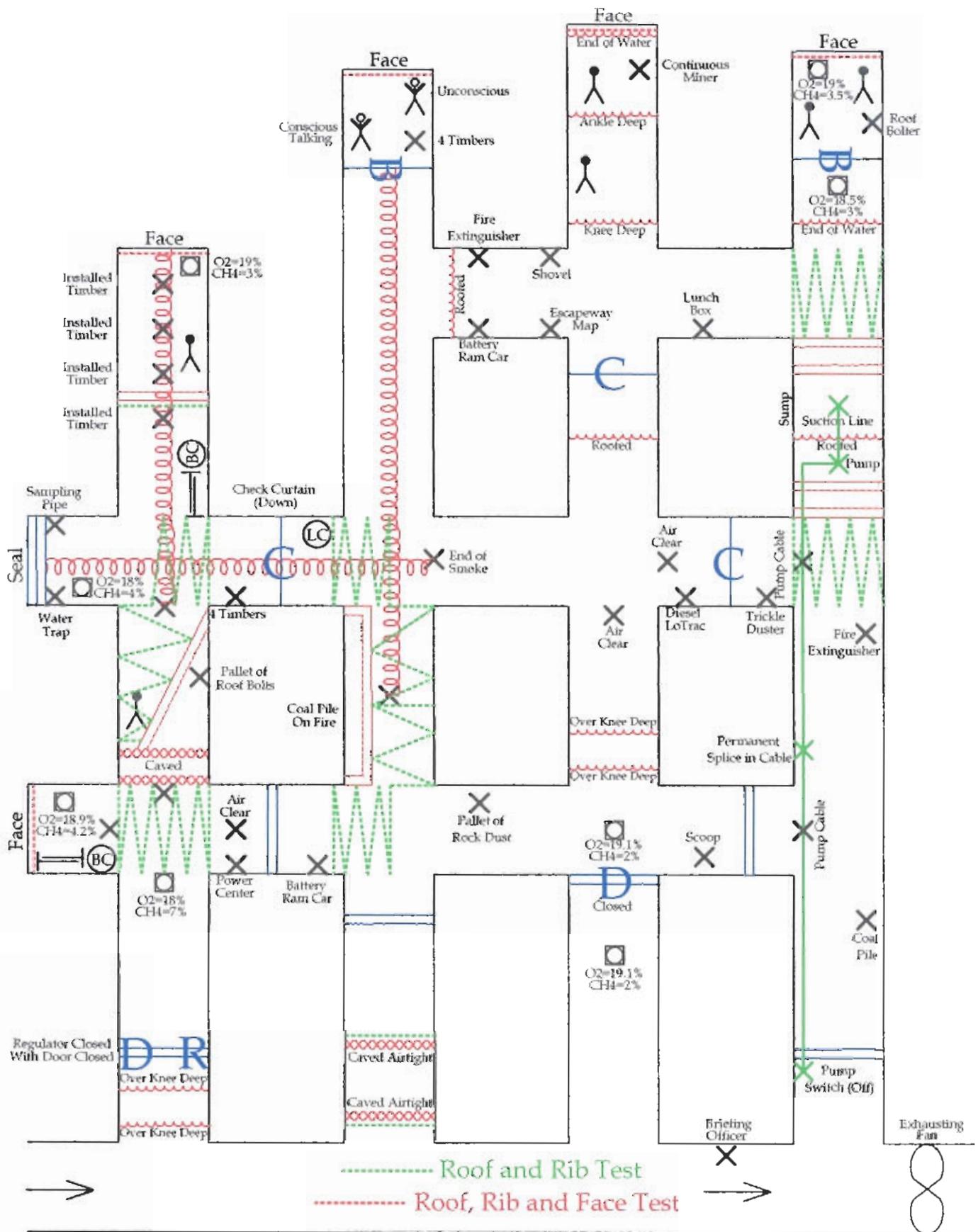
Ventilation #1

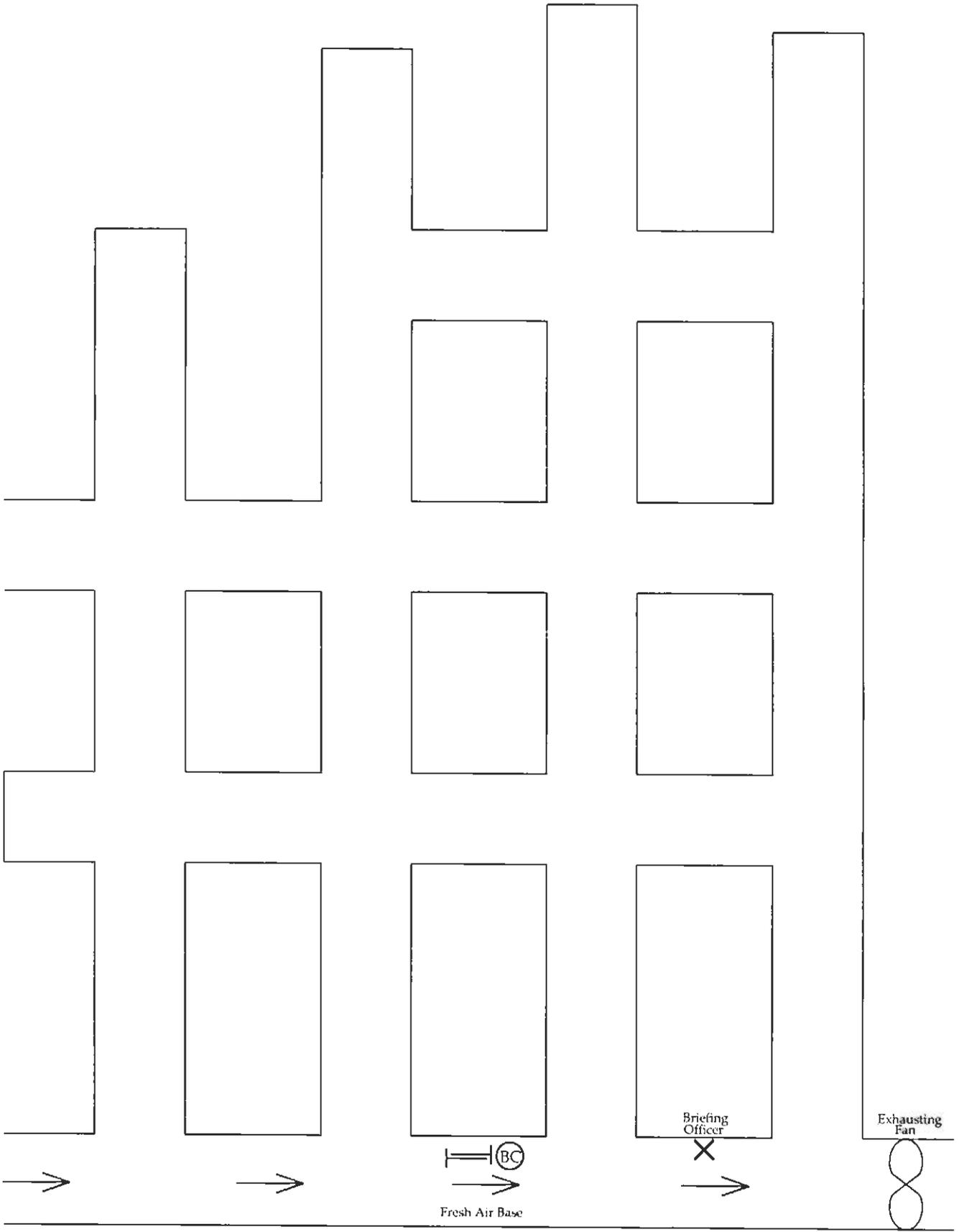


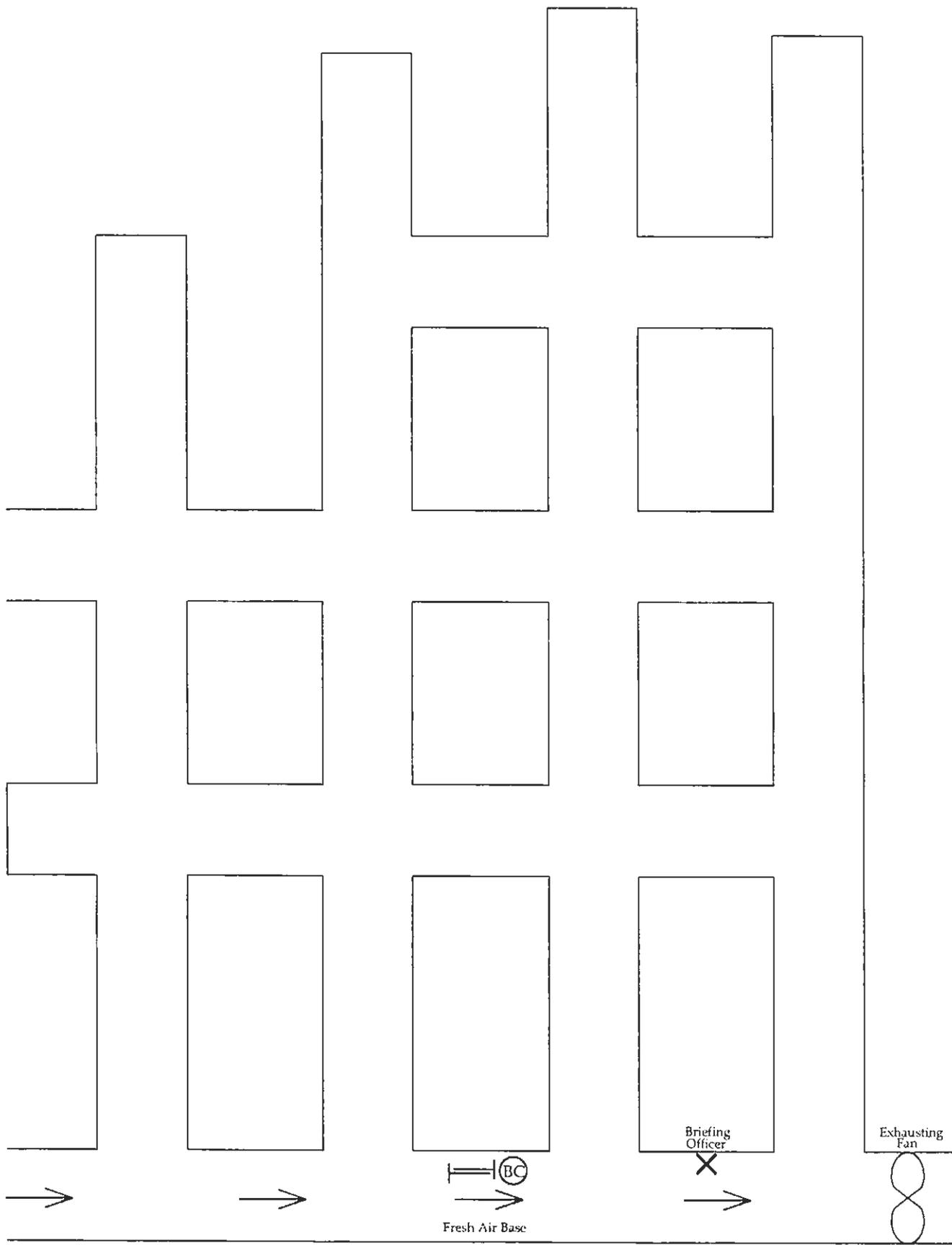
Extent of Gas

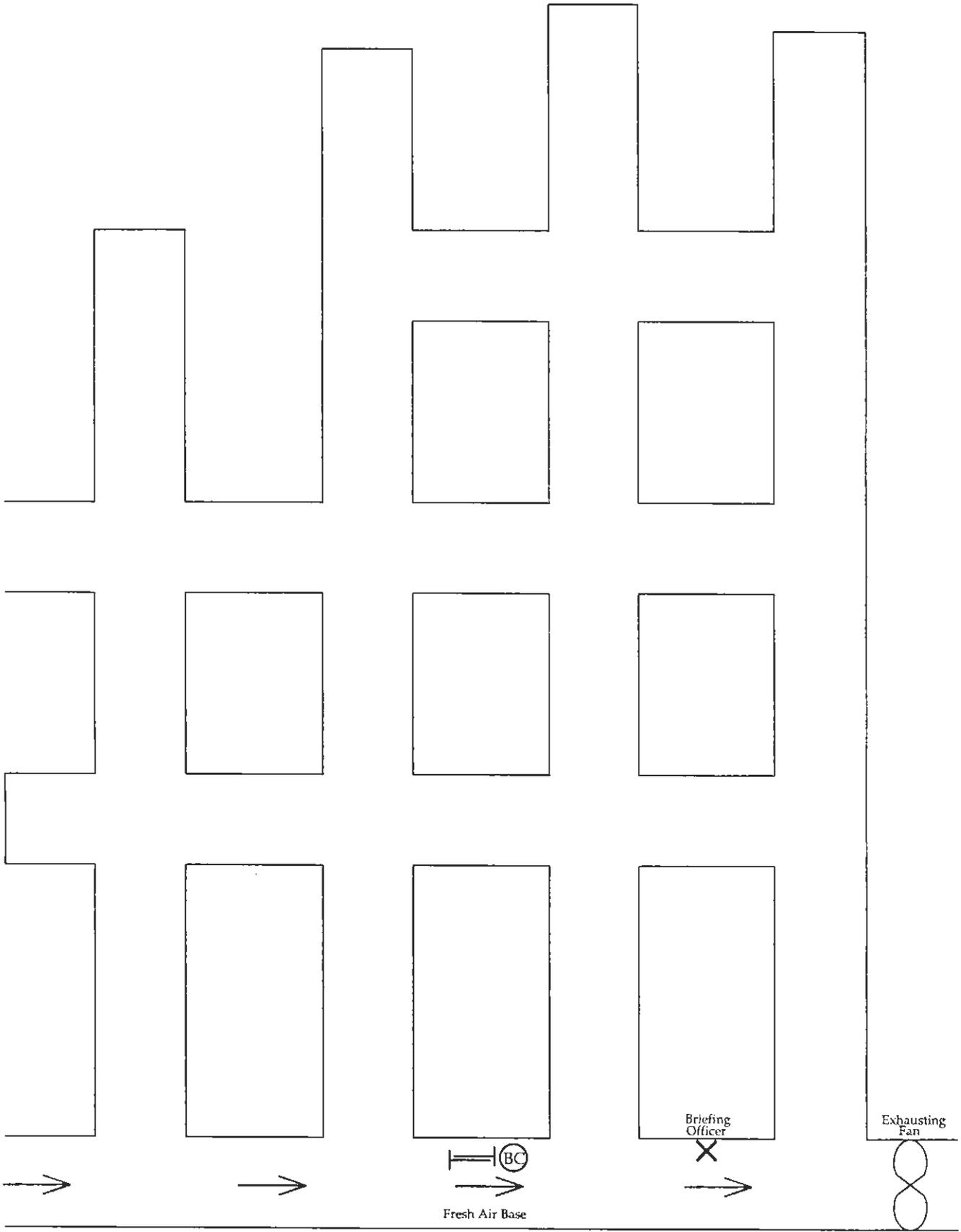


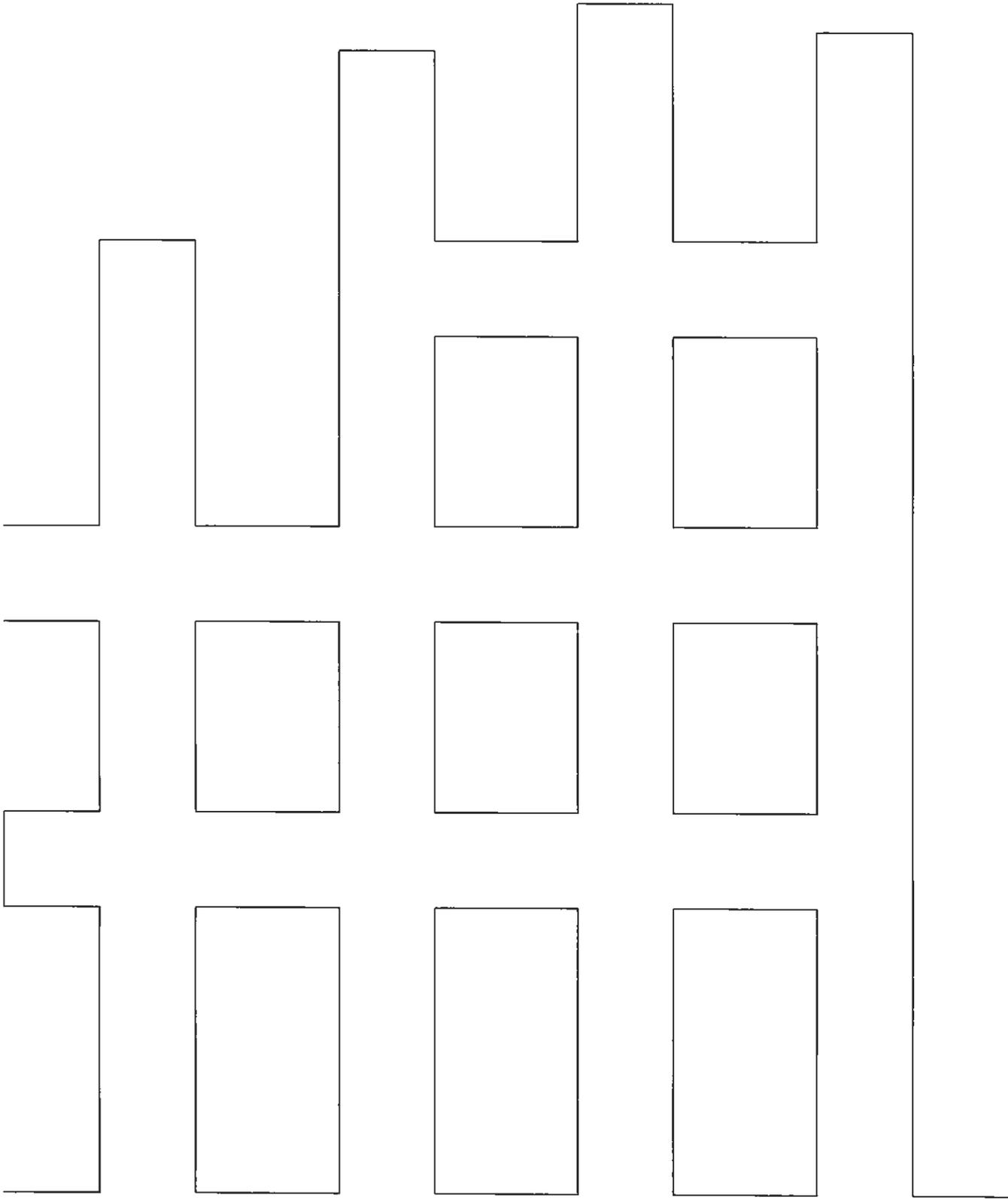
Roof Test











PROBLEM

EXPLORE THE ENTIRE

MINE IF IT CAN BE

DONE SAFELY.

LOCATE ALL MISSING

PERSONS AND BRING

ANY SURVIVORS TO

THE FRESH AIR

BASE.

PATIENT'S STATEMENT

HELP!!! HELP!!! I AM BEHIND THE
BARRICADE WITH MY BUDDY. I AM
ALRIGHT BUT HE IS UNCONSCIOUS. THE
AREA IN HERE IS AIRTIGHT. THERE IS A
SOLID FACE BEHIND US. PLEASE GET US
OUT!! I DON'T KNOW HOW MUCH
LONGER WE CAN STAY IN HERE.

NOTE: This statement may be repeated by the patient as necessary.