

## 2016 Southern Regional Mine Rescue Contest

New Iberia, LA.

May, 2016

### Problem Solution Day #2

(See Solution Maps)

#### **FAB**

The teams will arrive at the FAB and have introductions, the team will also be informed that they will be able to string out their communication line but will not be able to check functionality until they have started the clock. Once the clock has been started the team will receive all of their maps and information.

#### **Team Stop #1**

The team will explore west until they reach the west ventilation shaft and examine the first mine opening which will be entry 17, stretching north they find a "Permanent Stopping with a Door".

#### **Team Stop #2**

The team will then travel to the next mine opening which is entry 16 and identify a set of ventilation doors with the first being open and the second closed.

#### **Team Stop #3**

The team will then travel to the next mine opening which is entry 15 and identify a set of ventilation doors with the first being open and the second closed. The team will most likely conduct a 50' check and proceed into entry 15.

#### **Team Stop #4**

The team will use the ventilation doors as an air lock and enter entry 15, identifying a permanent stopping to the east, "Heavy Smoke" (count off), and a "Loader on Fire (fire out of control)", the team will quickly retreat out of the area. Note: the team may choose to leave the vent door slightly open, to be used as a regulator or close it completely both methods will be acceptable. The team should NOT leave both doors wide open. The team must then, without undue delay, find all other approaches to the fire and seal or regulate them. This does not preclude systematic exploration of the area.

#### **Team Stop #5**

The team will now enter entry 16, by way of using the ventilation doors as an airlock. Exploring the intersection the team identifies that they have reentered "Heavy Smoke" (count off), exploring east the team will identify "Ray-004"; the miner is deceased upon assessment. The team will also find a "BG4 (no oxygen)", a "Check Curtain", and another approach to the "Loader on fire". The team will not have building materials and will need to convert the check curtain into a temporary stopping with a regulator.

#### **Team Stop #6**

The team will have to travel west into entry 17 in order to continue systematic exploration and explore the intersection. Stretching west the team will identify a "Powder Rig" and the face. Exploring north the team will identify "Unsafe Roof". The team can now continue their task of finding all approaches to the fire.

#### **Team Stop #7**

The team will retreat to entry 16 and explore north to the next intersection. Stretching west the team will identify a "Check Curtain", north they will identify "Caved Impassable".

### **Team Stop #8**

The team will continue east to entry 15 and explore the next intersection. Examining north they will identify a “Transformer” and “Sump pump Controls”. Exploring east they identify a “Permanent Stopping”. Exploring south they identify a “Check Curtain (open)” and the final approach to the fire. The team will convert the check curtain into a temporary stopping with a regulator. **Note: The team should realize that they have identified all approaches to the fire and will most likely seal those regulators. There is no ventilation movement in this area at this time.**

### **Team Stop #9**

The team will now continue exploration west to entry 17 and crosscut 3. Exploring west they identify the “Tool Crib Door”, knocking they identify “Rob-005” and he will shout “get me out of here, the air in here is ok, I’m not hurt and I’m sealed in. Knowing the conditions the team will most likely tell Rob that they will be back for him. Continuing exploration west the team will identify “Roof Jacks (3)” and the face. Exploring south they find the other side of the “Unsafe Roof” and now have the means to support the area and tie in.

### **Team Stop #10**

The team will travel north in entry 17 and examine the intersection. Exploring west they will identify “Building Materials (1)” and a “Face”. Exploring north they will identify a “Face Drill” and the entry “Face”, they should also recognize that they have remained in “Heavy Smoke”.

### **Team Stop #11**

The team will continue exploration east to the next crosscut and are now in entry 16. Exploring north they identify the “Face”, exploring south they identify the backside of the “Caved Impassable”.

### **Team Stop #12**

The team will continue exploration east until they reach “Water Over Knee Deep”, the team may also see the “Lunchroom Door” but, they will not be able to address it due to the location of water over knee deep. The team will tie in south in entry 15. The team will now figure out how to pump down the water to continue exploration. The water solution is quite simple, the team will only have to turn the sump pump controls to the on position and the water will immediately change to “Water Knee Deep”. The team will then continue exploration in entry 15. Exploring east they will identify a “Permanent Stopping”, exploring north they will identify the “Sump” and the “Face”. Note: If at any time any team member steps inside the “Sump” area they will be discounted for team endangerment, due to the inside of the sump being over knee deep. The team will identify the lunchroom door, knocking on the door they find “Rod-006” and he will shout “get me out of here, the air in here is ok, I’m not hurt and I’m sealed in. the team will not be able to enter due to gas concentrations outside of the lunchroom and instead will have to ventilate the mine.

**The team has now explored all accessible areas of the mine and must ventilate in front of the Tool Crib and the lunchroom in order to rescue the two miners. The team will only have the means to complete the ventilation change to rescue Rob but, will eventually need a second set of building materials to course ventilation to the lunchroom.**

### **Ventilation Change #1 to enter the Tool Crib (See attached map)**

The team will request to make a ventilation change, once granted the following step will be required to clear the tool crib door.

- Open the check curtain between entry 16 and 17 in crosscut 3
- Build a temporary stopping between entry 17 and 16 in crosscut 2
- Relocate the fresh air base to the east side of the ventilation door
- Open the door on the permanent stopping in entry 17
- Open vent doors in entry 16 to course air north
- Close the ventilation door between entry 17 and 16 in crosscut 1

### **Team Stop #13**

Ventilation will clear the tool crib door and the team will be able to enter the area. The team will recheck gases along their route of travel and enter finding Rob – 005, he is not injured and can walk out with the team. The team will also find a set of “Building Materials” and a “BG4 Unit”. (Note: the team should recognize that the BG4 has no oxygen, but respiratory protection will not be necessary due to clear air).

### **Ventilation Change #2 to enter the Lunchroom (See attached map)**

The team has located a second set of building materials and will now have the means to clear the lunchroom to rescue Rod. The team will request to make a ventilation change, once granted the following step will be required to clear the tool crib door.

- Convert the check curtain to a temporary stopping in entry 17 and 16 in crosscut 3.
- Maintain the temporary stopping between entry 17 and 16 in crosscut 2 in place
- Maintain the FAB in the new location
- Build a temporary stopping in entry 16 in front of the caved impassable to course the air east to entry 15.

### **Team Stop #14**

Ventilation will clear the lunchroom door and the team will be able to enter the area. The team will recheck gases along their route of travel and enter finding Rod – 006, he is not injured and can walk out with the team. The team will also find a “BG4 Unit”. (Note: the team should recognize that the BG4 has no oxygen, but respiratory protection will not be necessary due to clear air). The team will transport Rod to the fresh air base and stop the clock.

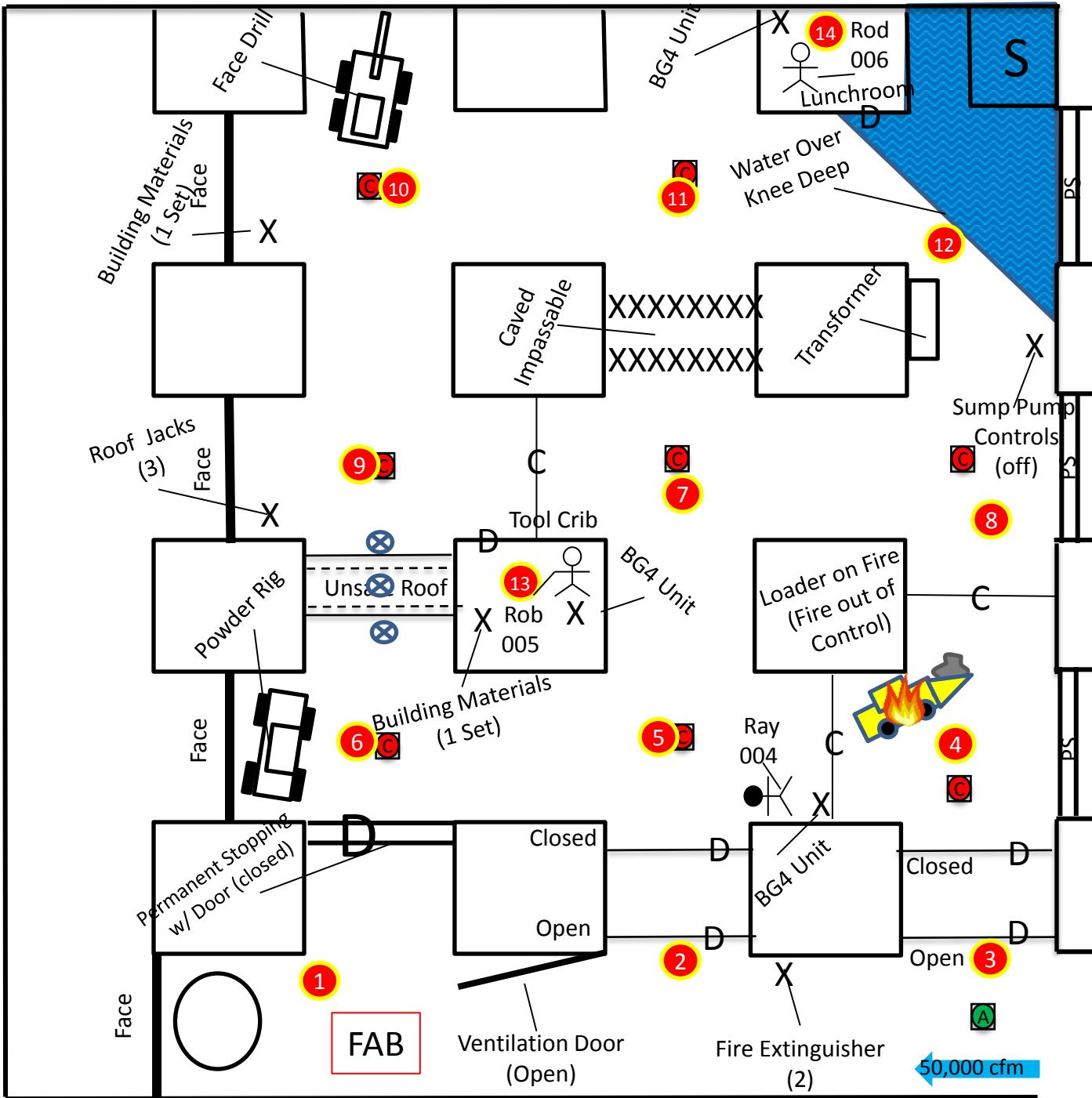
The team has now explored all accessible areas of the mine, extinguished or sealed all fires, located all missing miners, and brought all survivors to the fresh air base. THE END

Entry 18

Entry 17

Entry 16



Entry 15



Day 2

Solution Map

**GAS PLACARD KEY**

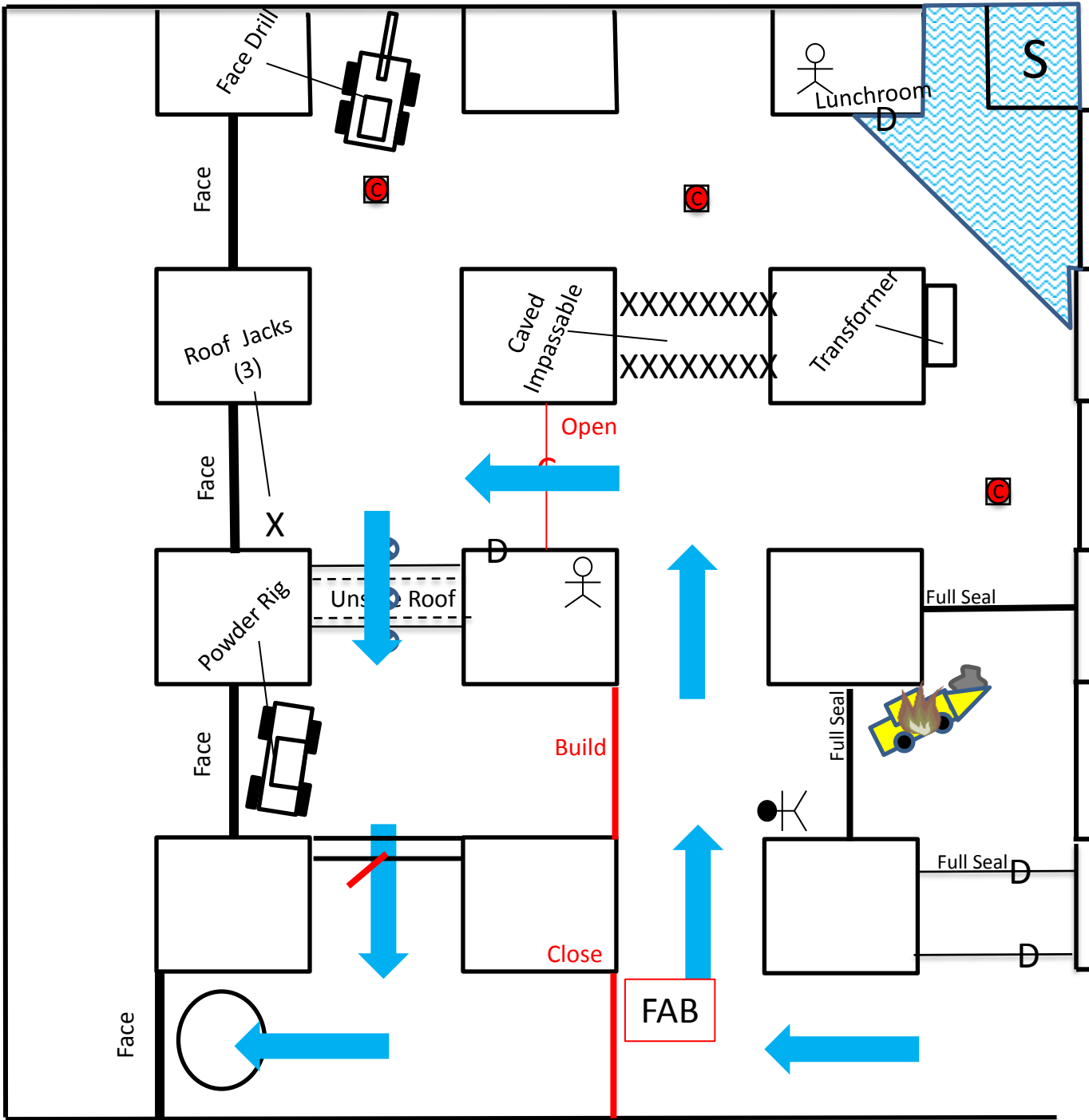
	= Clear air		= 16 % O <sub>2</sub>
			CO - 4500 ppm
			CH <sub>4</sub> - 0%
			Heavy Smoke

Entry 18

Entry 17

Entry 16

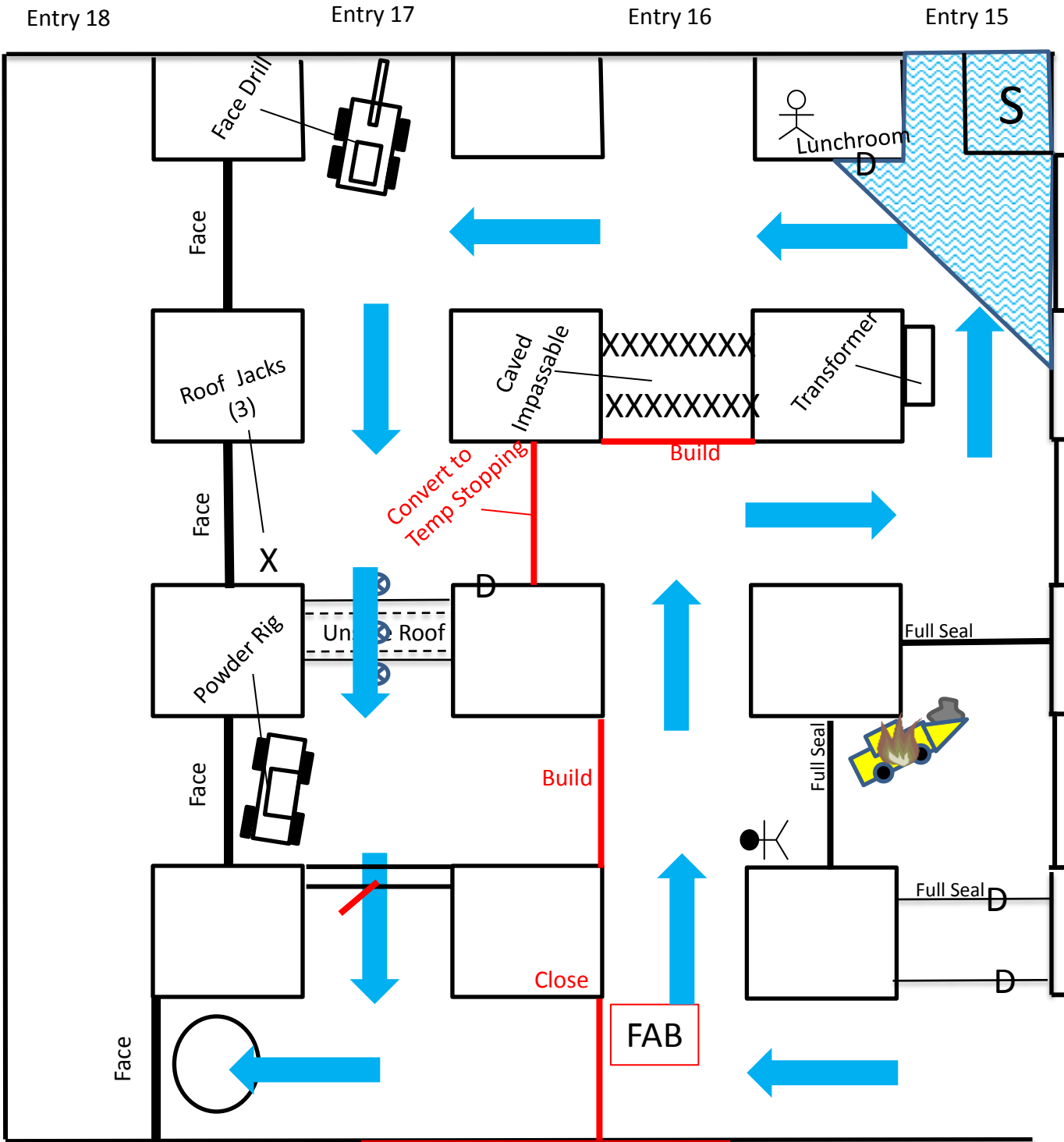
Entry 15



Ventilation Change #1

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- Build between entry 16 and 17 in crosscut #2
- Open the check curtain
- Move FAB to the east side of the Vent Door
- Open door on the permanent stopping
- Open vent doors in entry 16 to course air north
- Close the vent door between entry 16 and 17



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Ventilation Change #2

- Maintain changes from vent change 1
- Convert the check curtain to a temporary stopping
- Build a temp stopping in entry 16 to course the air east to clear the Lunchroom door