

***2018 Tri-State***

***POST #6***

***DAY #1 MINE***

***RESCUE***

***PROBLEM***

## **STATEMENT**

***Thank you for responding today, I am the mine foreman and responsible person for this mine. We had three miners setting up the section and doing some ventilation work on the 5 West Section. One man called out and said that they had a fire and that he was going to get to a safe area. Since that time we have lost contact with the men.***

***The section is a three entry section and the entries are numbered from left to right with the number 1 entry on the left and being the return air entry, # 2 and # 3 entries are the intake air entries.***

***All power is off in the mine, the fan is running and cannot be shut off. There is adverse roof conditions and methane gas throughout this section***

***Good Luck***

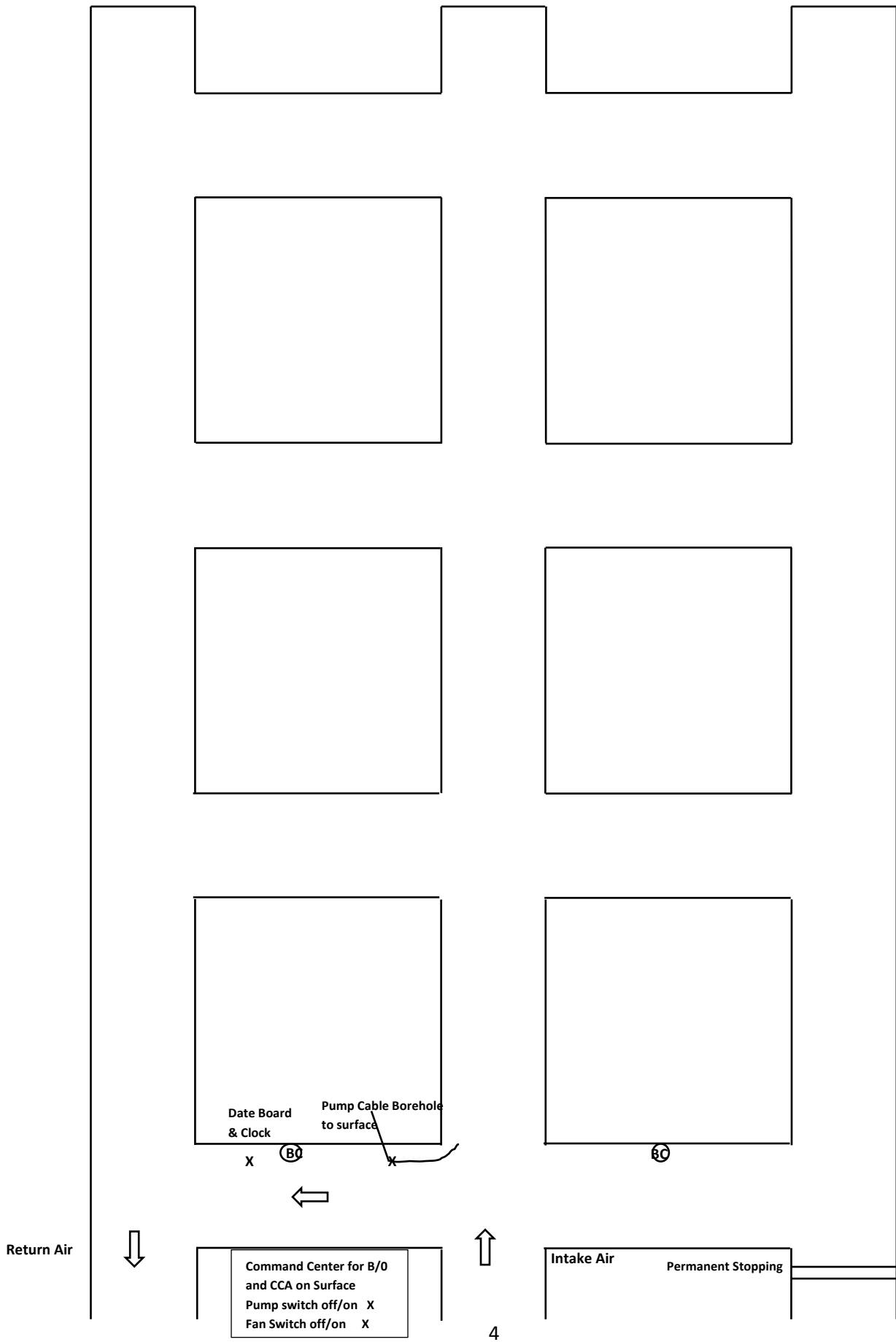
***INSTRUCTIONS TO THE TEAM  
THE PROBLEM***

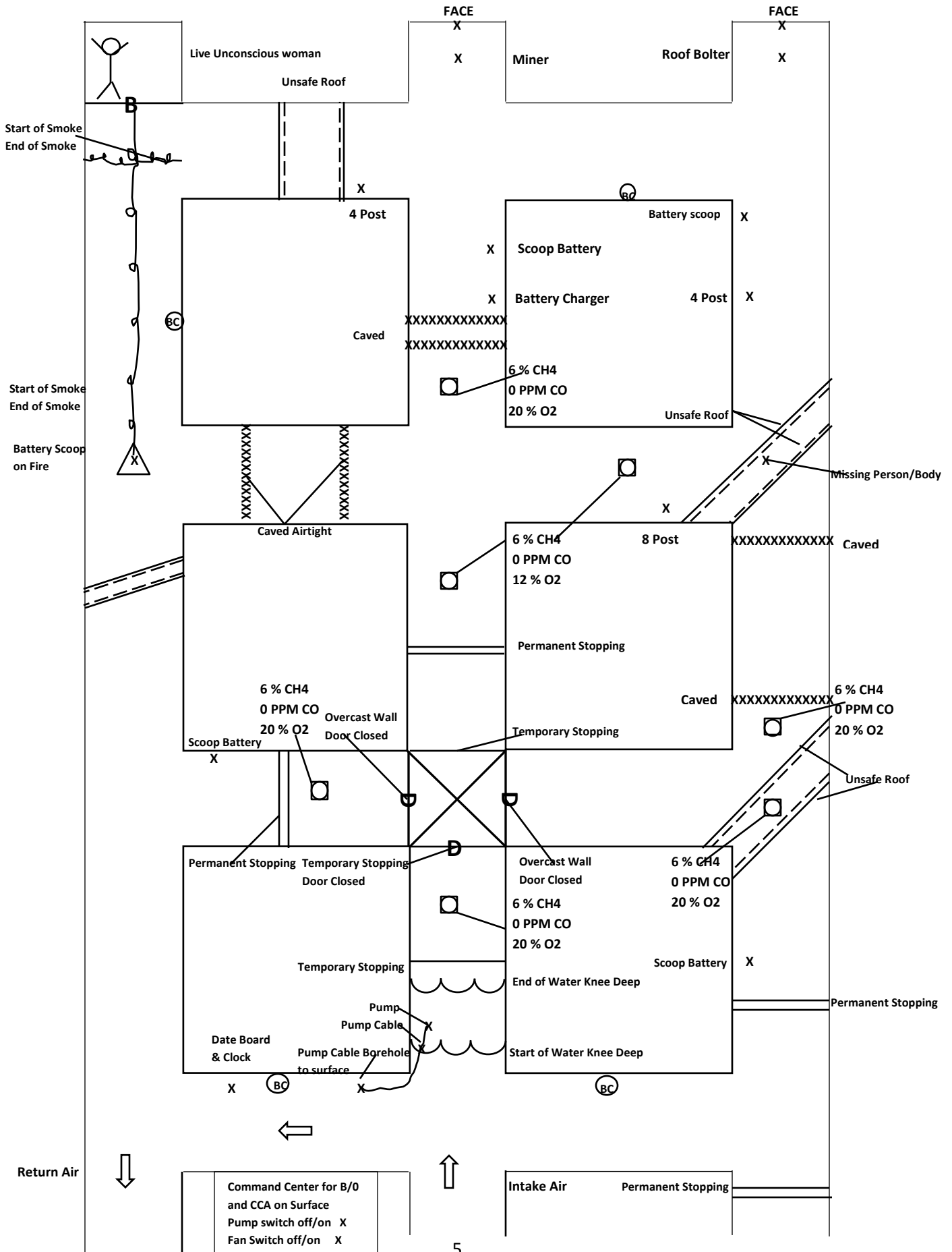
***THE FAN CANNOT BE TURNED OFF***

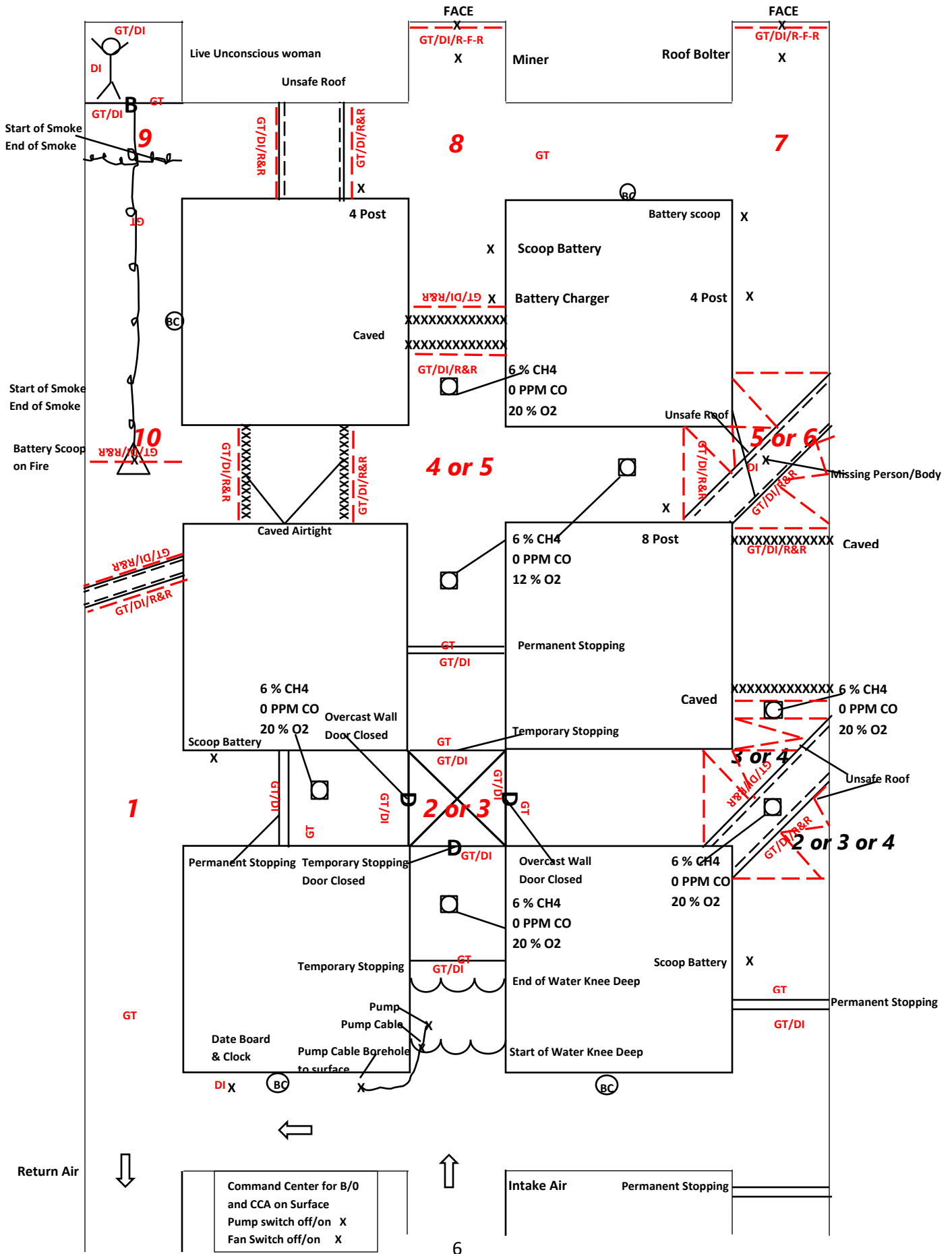
***THE MAPS ARE UP TO DATE***

***EXPLORE ALL AREAS OF THE MINE THAT CAN BE  
EXPLORED SAFELY***

***YOU WILL HAVE A 75 MINUTE TIME LIMIT TO COMPLETE  
THIS PROBLEM AND YOU WILL BE GIVEN A 10 MINUTE LEFT  
WARNING BEFORE THE 65 MINUTE LIMIT.***

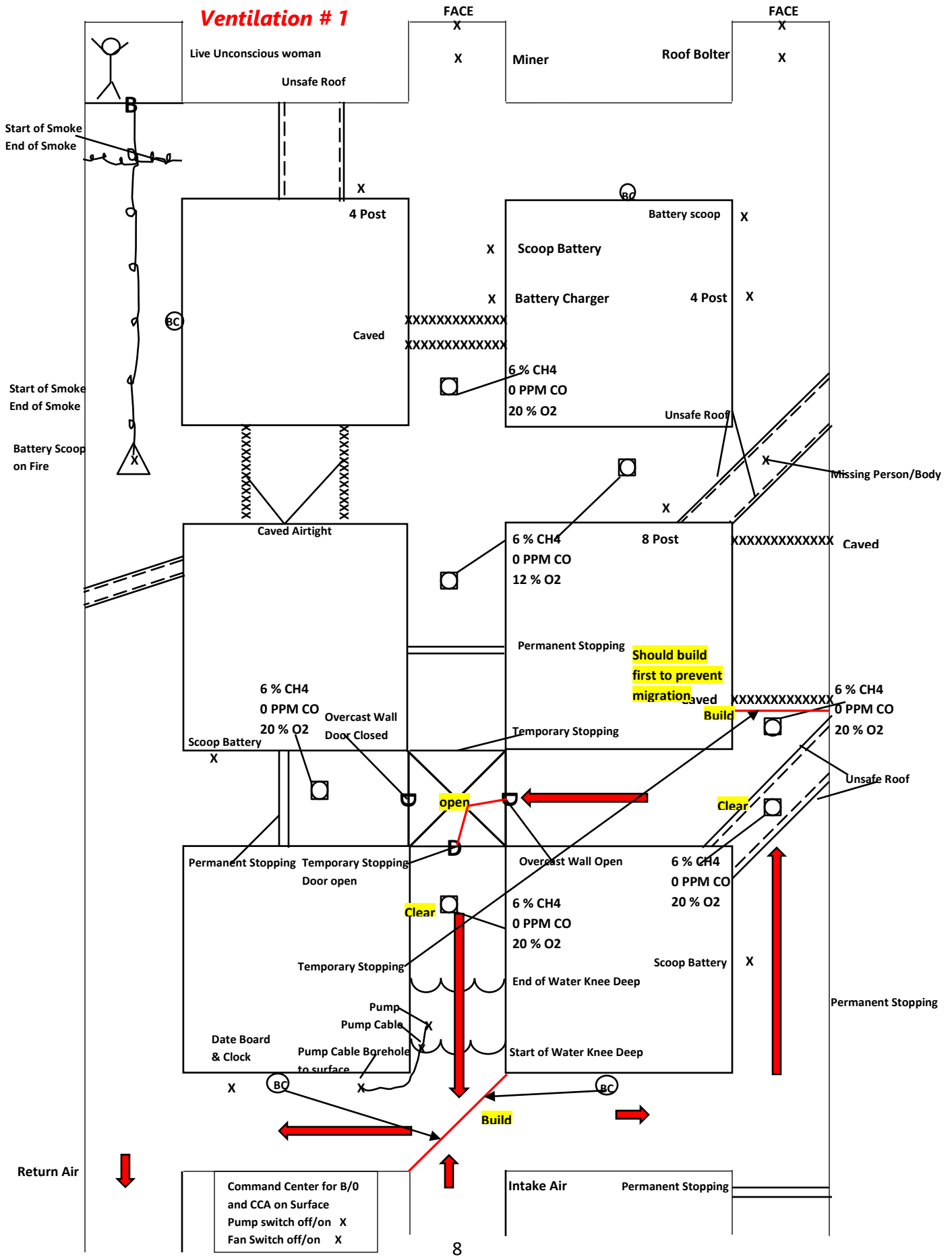




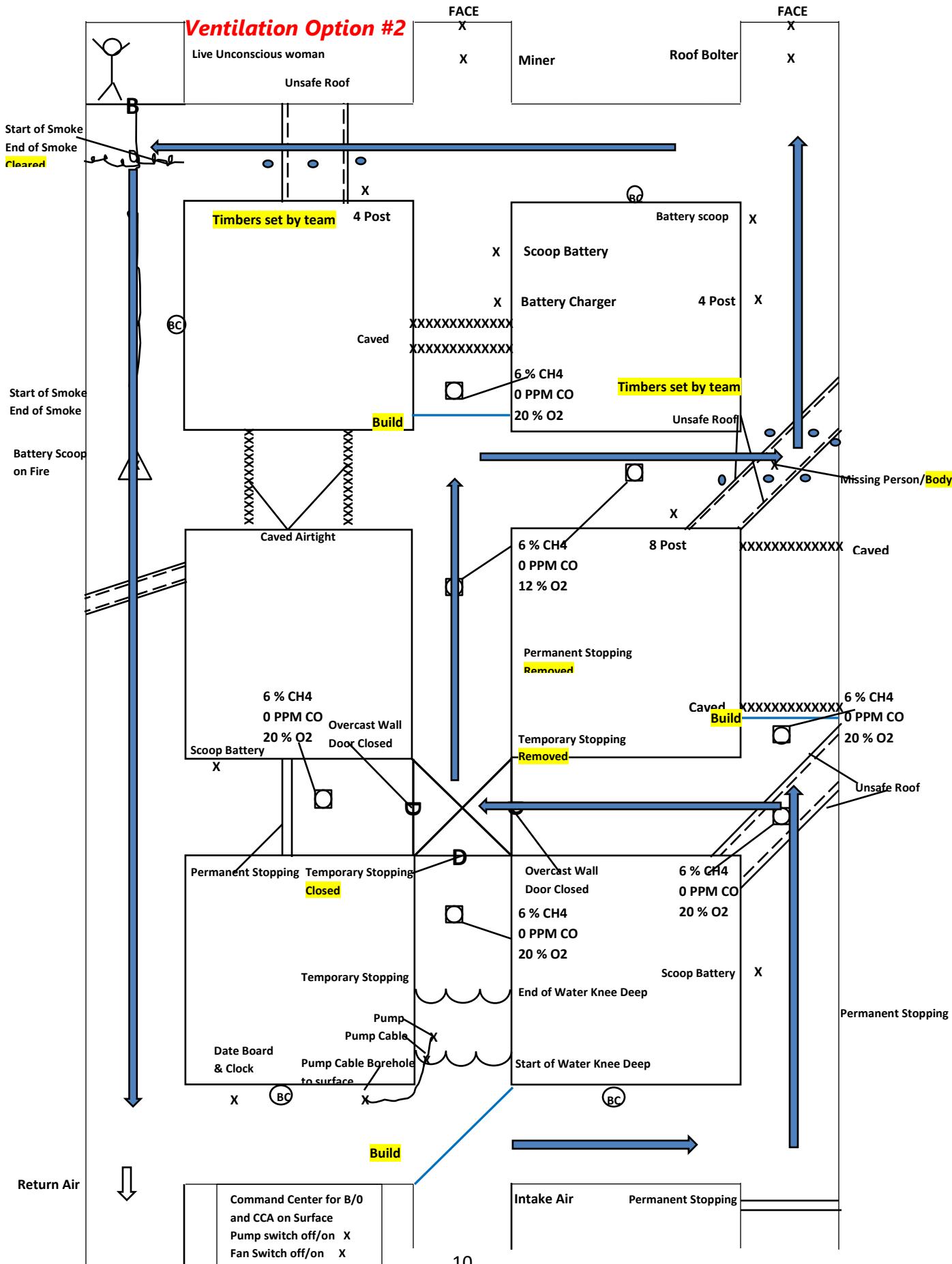




# Ventilation # 1







**Ventilation Option #2**

Live Unconscious woman  
Unsafe Roof

FACE

Miner

Roof Bolter

FACE

Start of Smoke  
End of Smoke  
Cleared

Timbers set by team  
4 Post  
Caved  
Build

Battery scoop  
Scoop Battery  
Battery Charger  
4 Post  
Unsafe Roof  
Timbers set by team

6 % CH4  
0 PPM CO  
20 % O2

Start of Smoke  
End of Smoke

Battery Scoop  
on Fire

Caved Airtight  
6 % CH4  
0 PPM CO  
20 % O2  
Scoop Battery  
Overcast Wall  
Door Closed

8 Post  
6 % CH4  
0 PPM CO  
12 % O2  
Permanent Stopping  
Removed  
Temporary Stopping  
Removed

6 % CH4  
0 PPM CO  
12 % O2

Missing Person/Body

6 % CH4  
0 PPM CO  
20 % O2

Caved

Unsafe Roof

Permanent Stopping  
Temporary Stopping  
Closed  
Temporary Stopping  
Pump  
Pump Cable  
Date Board & Clock  
Pump Cable Borehole to surface

Overcast Wall  
Door Closed  
6 % CH4  
0 PPM CO  
20 % O2  
Scoop Battery  
End of Water Knee Deep  
Start of Water Knee Deep

6 % CH4  
0 PPM CO  
20 % O2

Permanent Stopping

Return Air

Command Center for B/O  
and CCA on Surface  
Pump switch off/on X  
Fan Switch off/on X

Intake Air  
Permanent Stopping

## Judge's Instructions

Portal checks will find that #2 and #3 entries are blocked by stoppings just inby the fresh air base and that the #1 entry is open. It is likely that teams will advance up #1 entry for team stop #1, but if they choose they can air lock through the stoppings in either #2 or #3 entries for team stop #1 also.

**If Team Stop #1** is in A Line of #1 entry the team will find an area of diagonal unsafe roof across the entry blocking their advance inby. In the cross cut toward #2 entry they find a battery scoop then a permanent stopping blocking their reach toward #2 entry. The team then can either air lock through the stopping in the cross cut or return to the fresh air base and air lock through the stoppings in either #2 or #3 entries to advance inby. If they choose to air lock through the stopping in the cross cut toward #2 entry they will in direction of travel encounter an explosive air gas mixture that will extend just to the overcast wall with the door closed in it. Since there is no gas placard against the overcast wall there is no gas overtop of it toward #3 entry. Since #2 and #3 entries are block by stoppings and the maps are up to date showing no other openings inby the fresh air base and there has been an equivalent air tight separation built in the cross cut to air lock in, the team may open the door in the overcast wall to advance into #2 entry of A line for team stop #2 **but should be discounted under Rule 42 last paragraph if they do this.**

**If Team Stop #1** is in A line of #2 entry the team will need to air lock through the temporary stopping in #2 entry where they will encounter an explosive air gas mixture which will extend inby to the temporary stopping with a door closed in it that is on the imaginary line of the intersection against the overcast where the opening should be which is blocking the advance of the team. As mentioned above in the previous paragraph the team has already built an equivalent air tight separation outby and can now open the door to advance into the intersection of #2 entry of A line for Team Stop #1. In the intersection of #2 entry of A line the team finds a temporary stopping on the imaginary line of the intersection where the overcast opening should be on the inby side. Toward #1 entry there is an overcast wall with a door closed in it, toward #3 entry there is another overcast wall with a door closed in it. Basically the team is in a box at this point and can open the door toward #1 or #3 due to the airlock built outby in #2 entry. If the team opens the door toward #1 they will find an explosive air gas mixture that extends in direction of travel to the temporary stopping in the cross cut toward #1. **Note that the gas will be in a different location than if the team had made Team Stop #1 in #1 entry.** The team may either airlock through the temporary stopping and advance toward #1 entry for Team Stop #2 or return to the intersection in #2 entry and close the door then open the door in the overcast wall toward #3 entry. In the cross cut toward #3 entry they will find the start of a diagonal unsafe roof which extends into the intersection and to complete the required reach under Rule #29 paragraph #4 the captain must test this short area of unsafe roof up to the imaginary rib line **before advancing into an unexplored intersection.**

**If Team Stop #1** is in A line of #3 entry the team will need to airlock through the permanent stopping just inby the fresh air base in #3 entry where the team finds a battery scoop. Then they will find the start of a diagonal unsafe roof which extends into the intersection inby in A line of #3 entry, and to complete the required reach under Rule #29 paragraph #4 the captain must test this short area of unsafe roof up to the imaginary rib line **before advancing into an unexplored intersection** for Team Stop #1. Once in the intersection under Rule #29 the captain must complete the appropriate roof test before any team member leaves the intersection. The team will find their advance blocked inby the intersection and will return to the fresh air base to advance inby in #2 or #1 entry as already described.

**Team Stop #2** if it is in A line of #2 in the intersection of #2 entry of A line the team finds a temporary stopping on the imaginary line of the intersection where the overcast opening should be on the inby side. Toward #3 entry there is another overcast wall with a door closed in it. Basically the team is in a box at this point and can open the door toward #3 due to the airlock built in the cross cut from #1 entry or outby in #2 entry depending on how the made team stop #1. If they open the door toward #3 entry they will find the start of a diagonal unsafe roof which extends into the intersection and to complete the required reach under Rule #29 paragraph #4 the captain must test this short area of unsafe roof up to the imaginary rib line **before advancing into an unexplored intersection**. If the team decides to advance inby in #2 entry they have an equivalent airtight separation already built or they can close the door they opened and take down the temporary stopping on the inby imaginary line of the intersection to reach inby in #2 entry where they find another permanent stopping blocking their advance. Again they have an equivalent airtight separation built outby but that will be at the limit of the one cross cut limit as described in Rule #42 paragraph 5, but the closed door in the overcast walls and the temporary wall at the overcast would work. Inby the permanent stopping the team will find an irrespirable air gas mixture extending into the intersection of B line of #2 entry. With the equivalent air tight separation made either by the airlock stopping in #2 entry or closing the doors in the overcast area they can open the door in the overcast wall toward #3 entry and make their reach toward #3 where they will find the start of a diagonal unsafe roof which extends into the intersection and to complete the required reach under Rule #29 paragraph #4 the captain must test this short area of unsafe roof up to the imaginary rib line **before advancing into an unexplored intersection**.

**Team Stop #3** in #3 entry of A Line The captain must complete his roof and in the intersection under Rule 23 and 29 before any team member travels pass the imaginary lines of the intersection, (this would be on the inby side in the entry of #3 entry toward the caved area). Once the intersection's roof test is complete there is a small area requiring a zig zag roof test in #3 entry then a caved area requiring a roof and rib test, gas test, and date and initial in #3 entry. **Note that if the team has not yet tied the outby side of the unsafe roof in #3 entry from the fresh air base side then they will need to do so before they advance the team pass the 2 break limit under Rule 44 since ventilation material is available.**

**Team Stop #4** will be in B Line of #2 entry since #1 and #3 are blocked in by A Line. Since the outby gas in #2 will extend in direction of travel that irrespirable is in the intersection. Toward #1 entry the team will encounter caved air tight across the entry blocking their advance in that direction. Toward #3 entry the team finds and irrespirable gas extending toward #3 entry then 3 feet from the imaginary line of the intersection a diagonal unsafe roof across the entry partially blocking their advance toward #3 entry and 8 post. The irrespirable gas will extend into the intersection and stop at the unsafe roof since the required gas test there indicates no gas found. In by the team will pass an explosive air gas mixture extending in by to a caved but not into the caved area. This will block the team's advance in by in #2 entry. The team will need to advance into the intersection where the unsafe roof is in B Line to reach #3 entry, (see attached drawing detail on page 12).

**Team Stop #5** will be in the intersection of #3 entry of B line after the team posts into the intersection. Note that as they post to the intersection as soon as the captain breaks the imaginary rib line of the intersection all conditions are known and placards requiring action must be addressed under Rule #29 paragraph 3 which means they know the missing person is in the intersection that is located under the unsafe roof must be posted to before breaking the in by imaginary lines of the intersection. The team will need to post to the missing person first, touch by hand and date and initial that person under Rule 32 at that time the missing person is a body. The team may then continue to post through the intersection to examine the outby side again under Rule 23 and 29 they must test the roof of the intersection prior to testing the roof outby toward the caved then they can reach outby finding a caved across the entry blocking their reach outby and requiring a roof and rib test, date and initial and gas test. In by the intersection as the captain stretches in by for his maximum reach he will find 4 post and a battery scoop in #3 entry. Note also that if the area in #3 entry just in by the fresh air base toward A Line intersection of #3 entry has not been explored the team must go back and explore there before exceeding the 2 break limit under Rule 44.

**Team Stop #6** will be in C Line of #3 entry where in by the team will find a face requiring a roof, face and rib test, a gas test and date and initial. In the cross cut toward #2 entry the team will find a brattice cloth.

**Team Stop #7** will be in C Line of #2 entry where the captain making his reach in by finds a face, in the cross cut toward #1 entry he will find 4 post and unsafe roof across the entry blocking his reach in that direction and requiring a roof and rib test, gas test and date and initial. Outby the captain will find a battery scoop then a caved area across the entry blocking his advance outby and requiring a roof and rib test, gas test and date and initial. The team will need to post through the unsafe roof toward #1 entry. Making his maximum reach after post through the unsafe roof the captain will see that there is smoke starting on the imaginary rib line of the intersection.

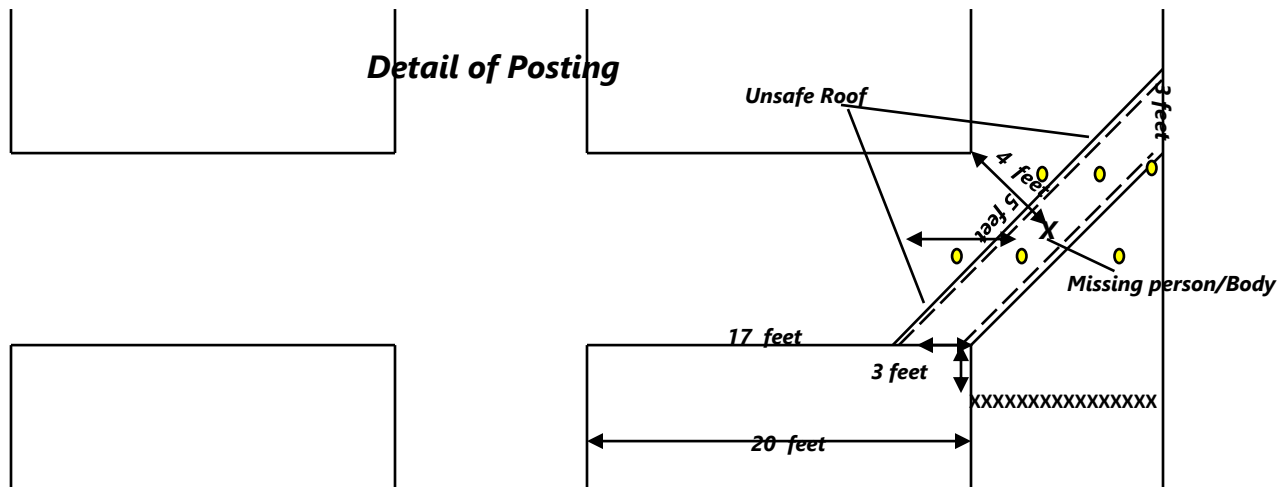
**Team Stop #8** will be in C line of #1 entry but before traveling into the intersection the team will need to tie off in air clear of smoke under Rule 22 if using radios. Note that the #5 man can stay out of smoke in the cross cut and the rest of the team can be in smoke as long as

they are attached to the link line without the #5 man tied off in air clear of smoke. On the imaginary rib line of the intersection the team finds a barricade with no response from inside this will require a gas test and date and initial. Outby they will find a brattice cloth and the smoke extends outby into the B Line intersection of # 1 entry. If the team now moves outby for team stop #9 they must tie off in air clear of smoke before advancing outby.

**Team Stop #9** will be B line of #1 entry where the team will find a fire in the intersection which requires a roof and rib test perpendicular to direction of travel, gas test and extinguish the fire, and a date and initial since it requires the team to stop to extinguish the fire before passing it. Making their reach outby they will find the inby side of the unsafe roof across the entry requiring a roof and rib test, gas test and date and initial, and since the captain's presence has traveled above and below that area on both sides the in between area is known. In the reach toward #2 entry the team finds a caved airtight area blocking their advance and requiring a roof and rib test, gas test and date and initial.

All accessible areas have been explored and ventilation can be started. Please note that Step 1 ventilation can be completed, but before Step # 2 ventilation is completed the team must explore the area in #3 entry in the intersection on the outby side if they did not tie this area toward the caved area there is a small portion of the intersection that is unexplored and they will ventilate at least two irrespirable gas mixture through the area with two missing persons yet to be accounted for.

See Ventilation Maps on Pages #6, 7, and 8 for ventilation courses.



***Once inside the barricade after correctly ventilating the smoke away the team finds an unconscious live woman who requires the captain's touch by hand and date and initial under Rule 32 and assessed and loaded properly onto a stretcher under Rule 12 to be removed to the fresh air base. Inby the team does not find a face but a gas test and date and initial is still required since it stops the teams advance in that direction and there is still one person missing.***

***Since all accessible areas have been explored and the only areas that remain cannot be made safe to explore the team must report that they have not accounted for everyone before clocking out since the statement tells them that they have three missing miners.***