

# *MSHA's New Bleeder Policy – A Brief Outline for Design & Compliance*

*Gary M. Hartsog, PE & PS (SU)*

Alpha Engineering Services, Inc.

Beckley, WV

***September 10, 2014***

***Illinois Mining Institute -- 122<sup>nd</sup> Annual Event***

Copyright © by 2014 Alpha Engineering Services, Inc., Beckley, WV

# *MSHA's New Bleeder Policy - - -*

## MSHA's PROGRAM POLICY LETTER NO. P13-V-12

### *Examination, Evaluation, and Effectiveness of Bleeder Systems*

EFFECTIVE DATE: December 30, 2013

## *MSHA's New Bleeder Policy - - -*

- Was being constructed 2006-7
- Some elements came out in 2006
- Input from 2007 Vent Summit
- Was on agenda for Stakeholders meeting: August 2013 - & delayed
- EFFECTIVE DATE: 12/30/2013  
(w/ completion of UBB changes)

## *MSHA's New Bleeder Policy - - -*

- *“MSHA has determined there is a need for greater focus on safe travel and access to the locations necessary for proper evaluation of bleeder systems.”*

## *MSHA's New Bleeder Policy - - -*

- Seeing this policy in isolation *does not work* – one MUST review this policy with other policies and the regulations
  - Travelways, maintenance, dewatering, roof & rib support, 19.5% O<sub>2</sub>, SponCom, Fan Sizing, # entries in mains, leakage, intake splits & “sweeteners”
- There are major implications to mine design, reserve recovery and mine economic models

## *MSHA's New Bleeder Policy - - -*

- It isn't the LAW, so it really doesn't change things?
- ***According to MSHA:*** *This PPL is a “general statement of policy” and provides definitions, clarifications and guidance for the Operator.*
- Voids the 1996 Bleeder Vent Course
- Sets firmly in the Vent Plan Process

## *MSHA's New Bleeder Policy - - -*

### Defines:

- 1) A pillared or abandoned area –
- 2) Ineffective Bleeder –
- 3) Approval criteria for Pillar Districts –
- 4) Actions for Gas/Dust/Fumes in pillared areas –
- 5) Where to CH<sub>4</sub> is diluted –
- 6) Where to examine pillared areas –



# *MSHA's New Bleeder Policy - - -*

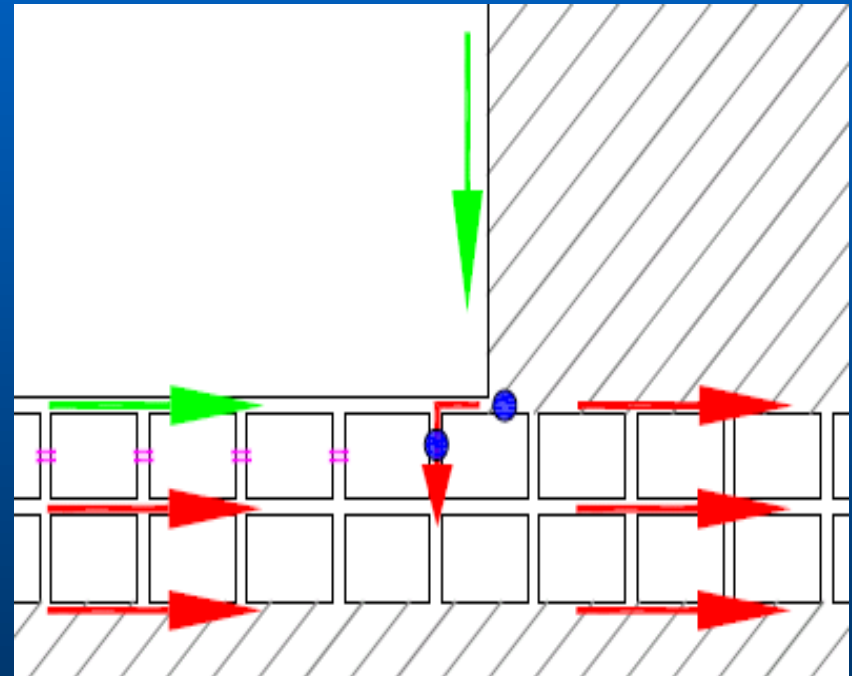
## *Executive Summary:*

1) . . . “pillared area” is any area where the pillar size has been reduced during retreat mining . . . each “pillared area” is considered separate and individual . . . all other areas are a part of the bleeder system . . . .



## *MSHA's New Bleeder Policy - - -*

- Any pillars left are a part of the bleeder system – so – each pillar panel or LW is a separate gob to be ventilated and evaluated separately



# *MSHA's New Bleeder Policy - - -*

## *Executive Summary:*

2) . . . Accumulations of methane that ***ARE, CAN BECOME or ARE APPROACHING*** the explosive range ***OR are irrespirable*** may pose a hazard where ever they occur. . . . Wherever they occur . . . may be indicative of an ineffective bleeder . . . .

## *MSHA's New Bleeder Policy - - -*

- Any indication of CH<sub>4</sub> above ~4.5% indicates an ineffective bleeder system – becomes a PLAN ISSUE
- Less than 19.5% O<sub>2</sub> is a PLAN ISSUE
- Coal Dust in a bleeder or pillared area becomes a PLAN ISSUE
- Access-Water become PLAN ISSUES
- “Ineffective Bleeder” = VENT PLAN ISSUE

# *MSHA's New Bleeder Policy - - -*

## *Executive Summary:*

3) . . . all dilution must occur in the rubble zone . . . No more mixing chambers or similar areas with

- $>4.5\% \text{ CH}_4$  or
- $<19.5\% \text{ O}_2$  (where traveling). . .

## *MSHA's New Bleeder Policy - - -*

- **Expectation that all open areas are  $< 4.5\%$**
- **Where does the  $\text{CH}_4$  get diluted?**
- **Air MUST travel across the rubble – but what if it can't?**
- **Is the solution more pressure? More air flow?**
- **Physical limitations, RC measures, other concerns may severely limit district geography**

# *MSHA's New Bleeder Policy - - -*

## *Executive Summary:*

4) . . . examinations may include all vent controls that control airflow in the bleeders . . . and aircourses formerly considered abandoned “in the gob”

## *MSHA's New Bleeder Policy - - -*

- **Vent controls that are against the gob or in inner bleeders are examined**
- **Leakage across stoppings can trigger the bleeder entry becoming a return; then it must be examined weekly, traveled safely, etc.**



# *MSHA's New Bleeder Policy - - -*

## *Executive Summary:*

5) . . . access and safe travel including in areas formerly traveled by only senior, experienced persons

## *MSHA's New Bleeder Policy - - -*

- **Access and “safe travel” to controls and sites**
  - **>19.5% O<sub>2</sub>**
  - **Water: Local-Regional**
  - **Ground Control: Roof-Rib-Floor**
  - **Maintenance (controls, support, water)**
- **Minimum air-flows where miners work or travel**
  - **WV State Law – >3,000 CFM**
  - **MSHA – may be looking for the same as at roof bolters on a CM Unit?**

## *MSHA's New Bleeder Policy - - -*

### *Executive Summary:*

6) . . . Vent Plan to include full description/design of the full District; and examination routes/areas - - and increased size will be hard to get once approved . . . . And arrows showing direction in all areas

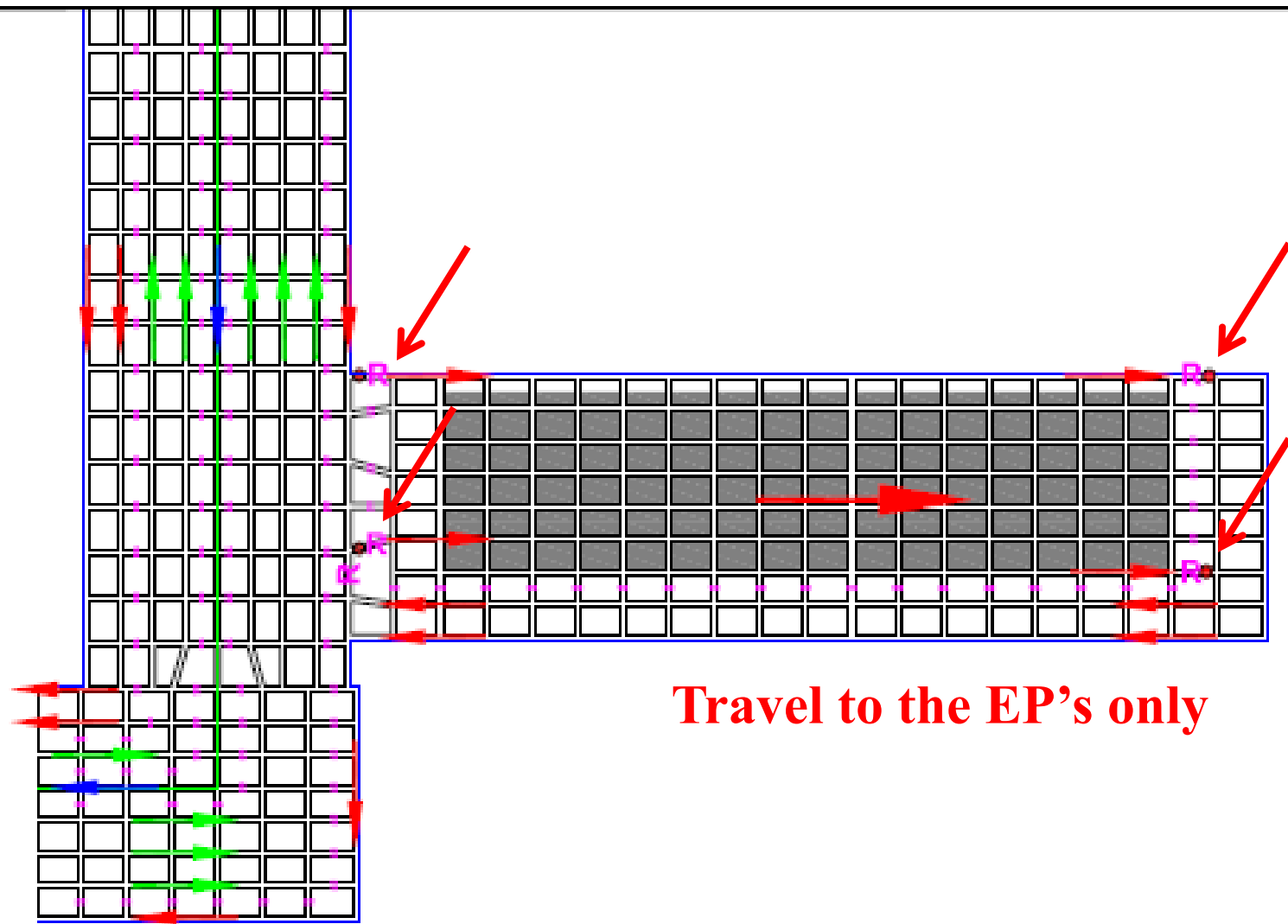
## *MSHA's New Bleeder Policy - - -*

- DM may decide what bleeder aircourses to be traveled;
- By requiring full design of districts to be approved in the Vent Plan:
  - May be showing > 12 months of projections;
  - May require back-up data for design;
  - MSHA decides if design is adequate;
  - Addition of panels or changes in bleeder entry configuration require MSHA approval
  - May require computer modeling?
- *DM may elect to approve panel-by-panel*

# *MSHA's New Bleeder Policy - - -*

---

A few examples . . . . .

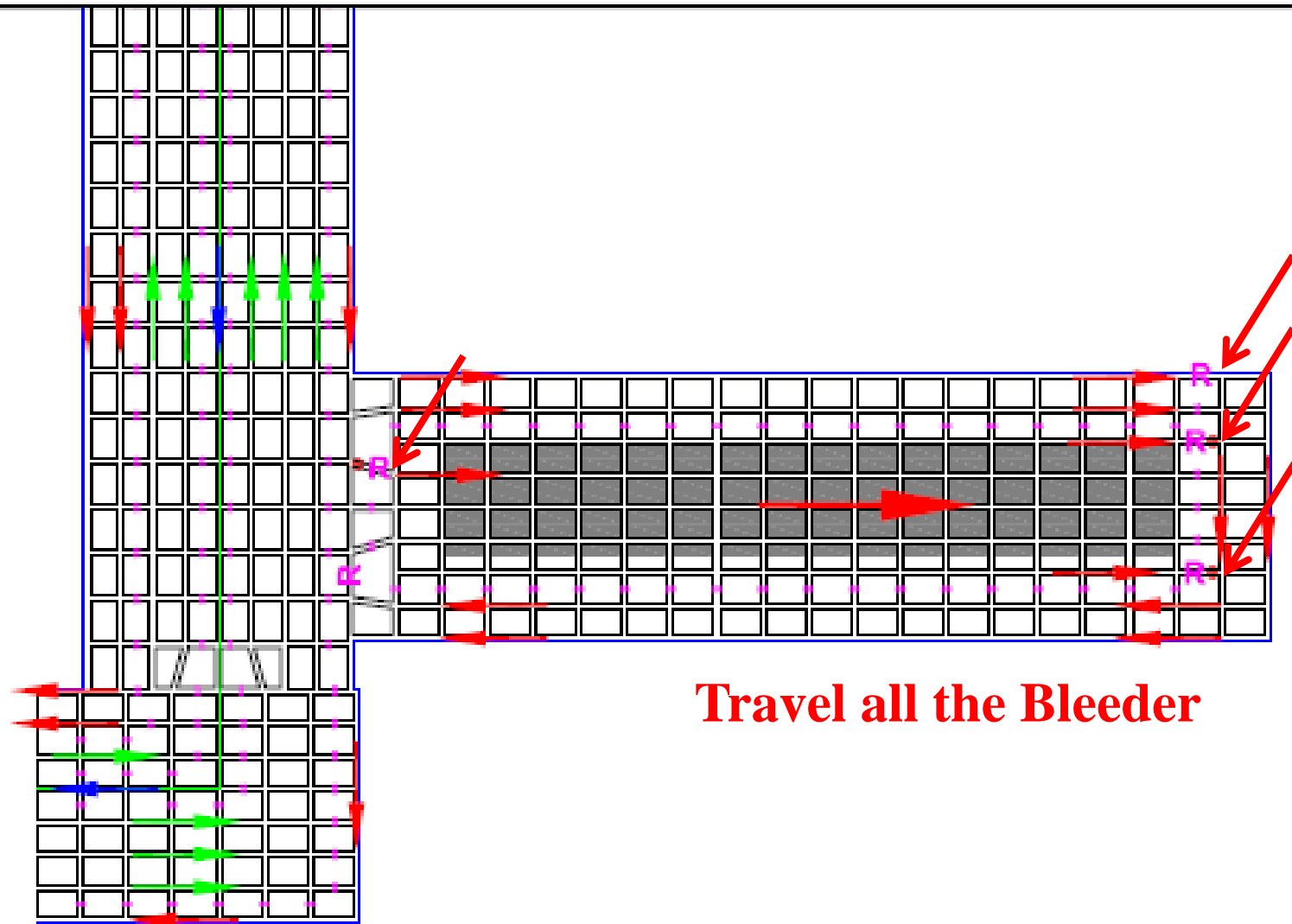


Pillar Panel Vent Scenario No. 1





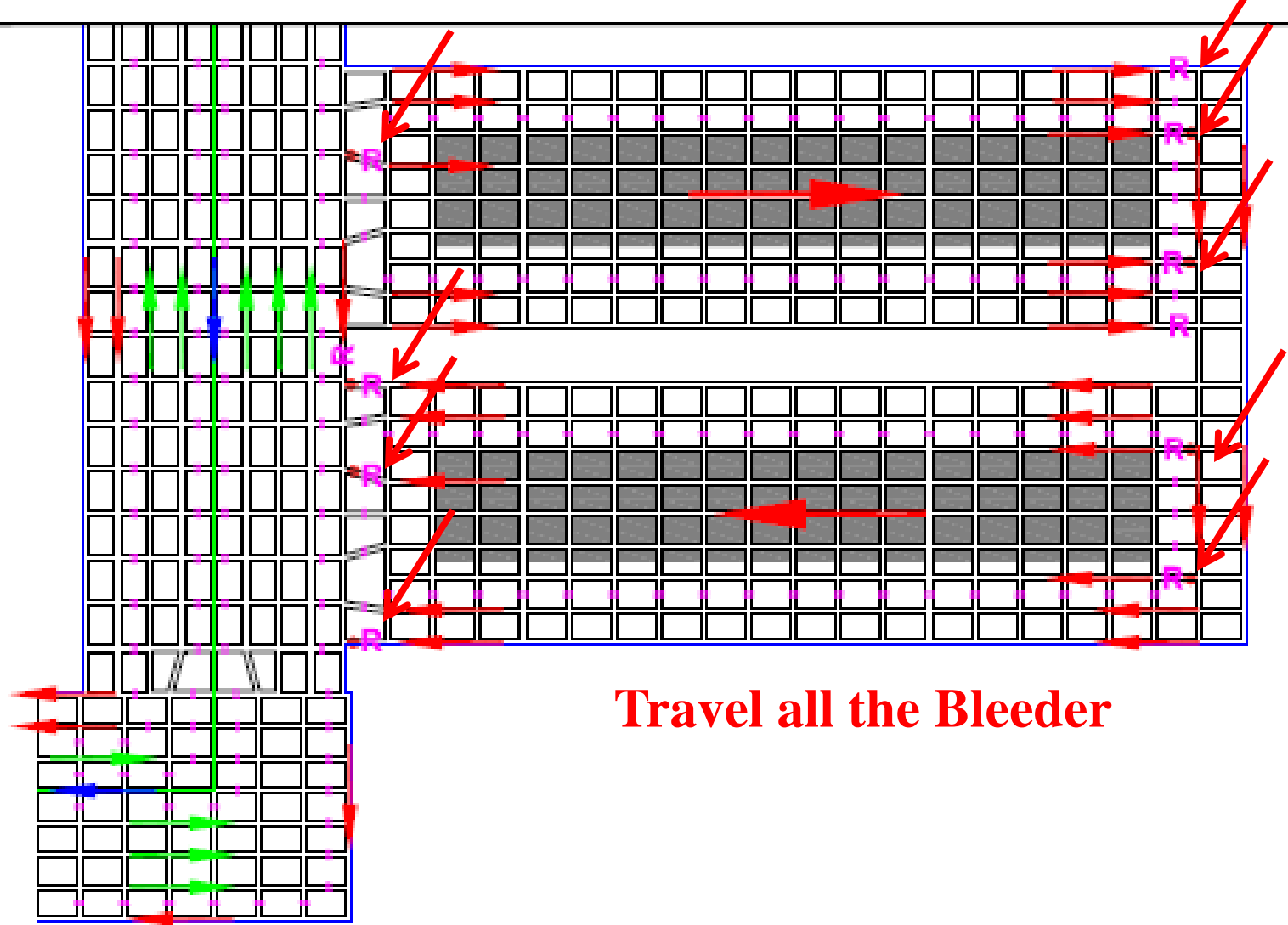




Pillar Panel Vent Scenario No. 3

0' 300' 600'  
Scale: 1"=300'

# New Policy Method?

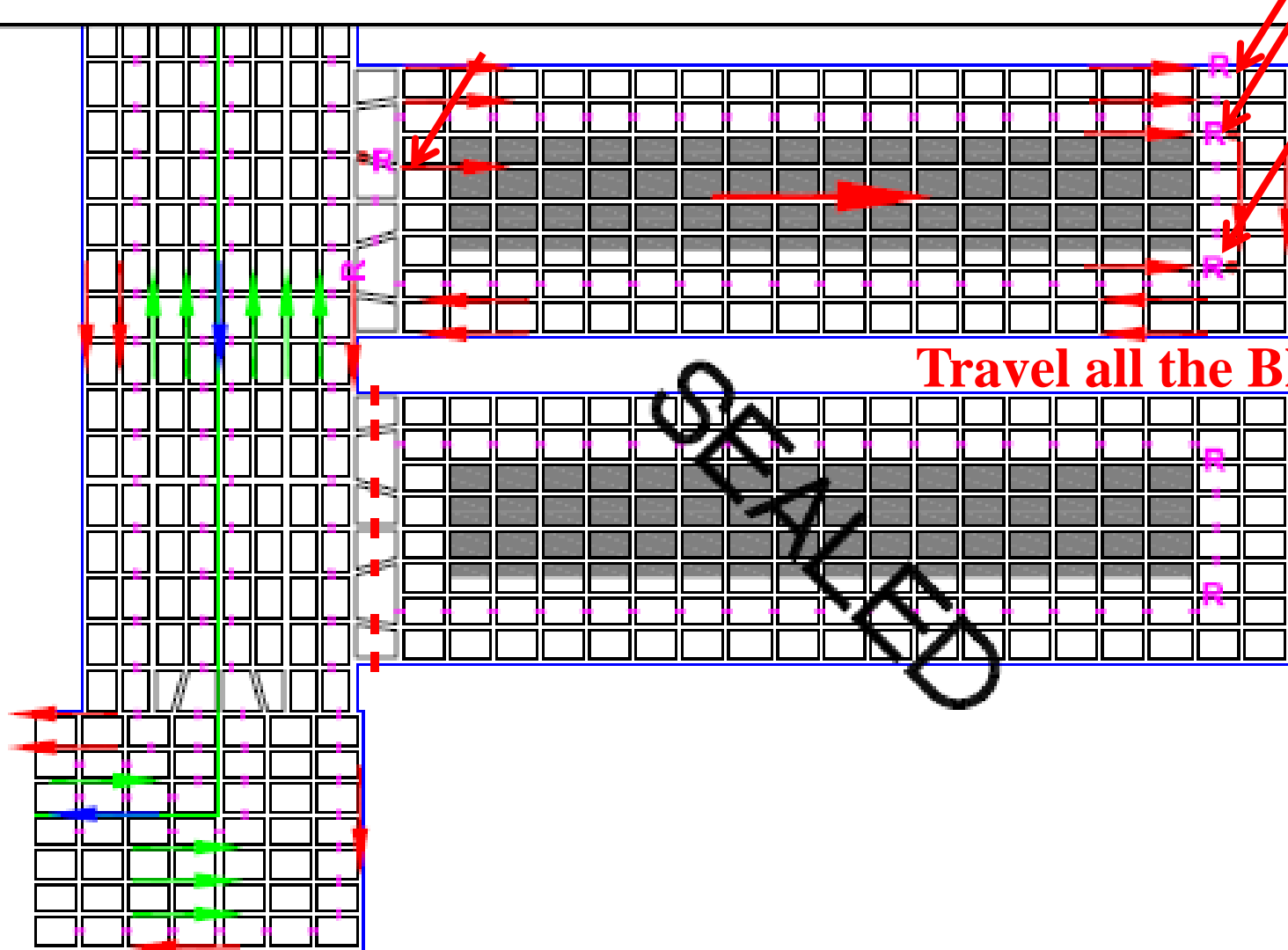


**Travel all the Bleeder**

Pillar Panel Vent Scenario No. 4A

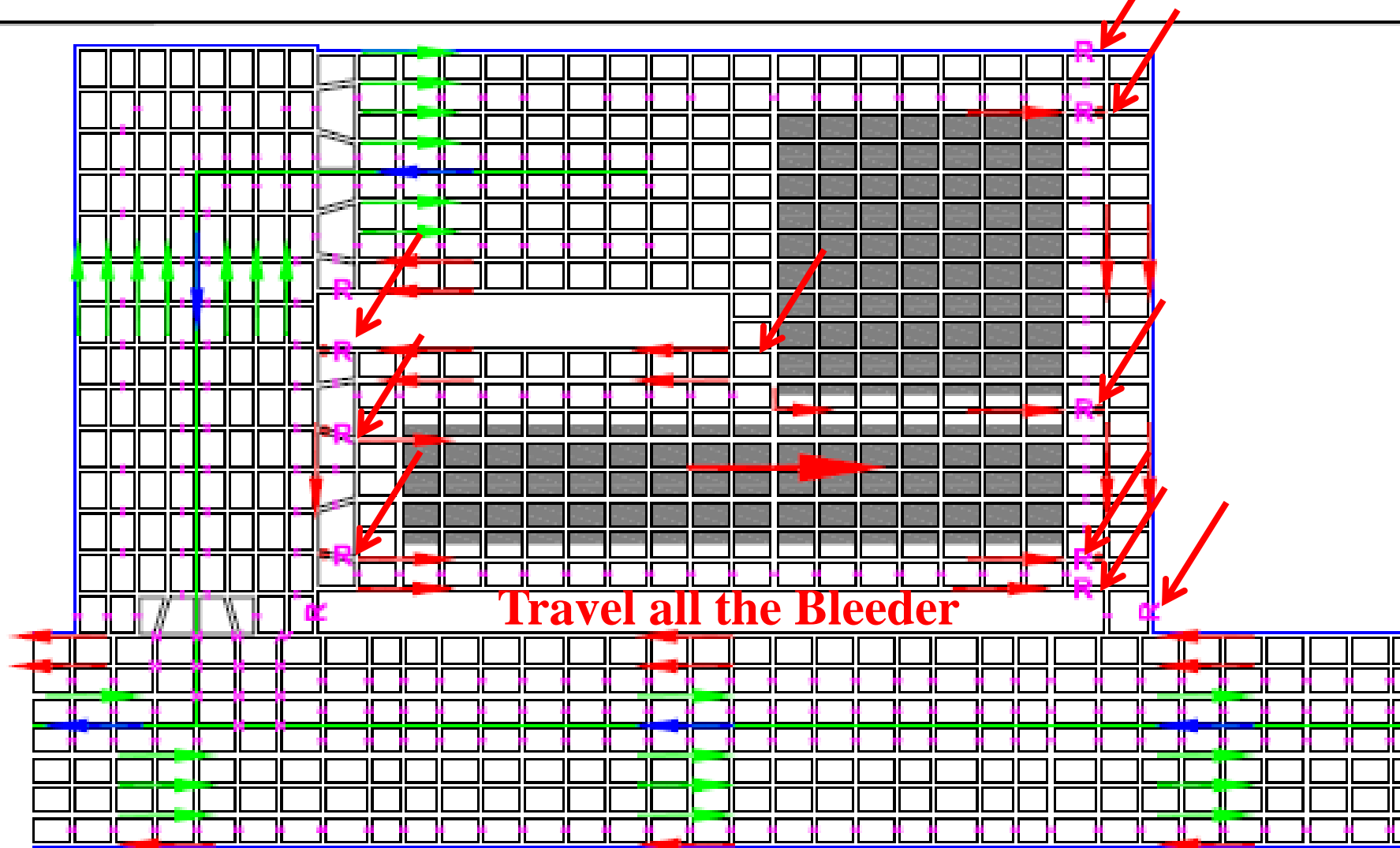


# New Policy Method



Pillar Panel Vent Scenario No. 5

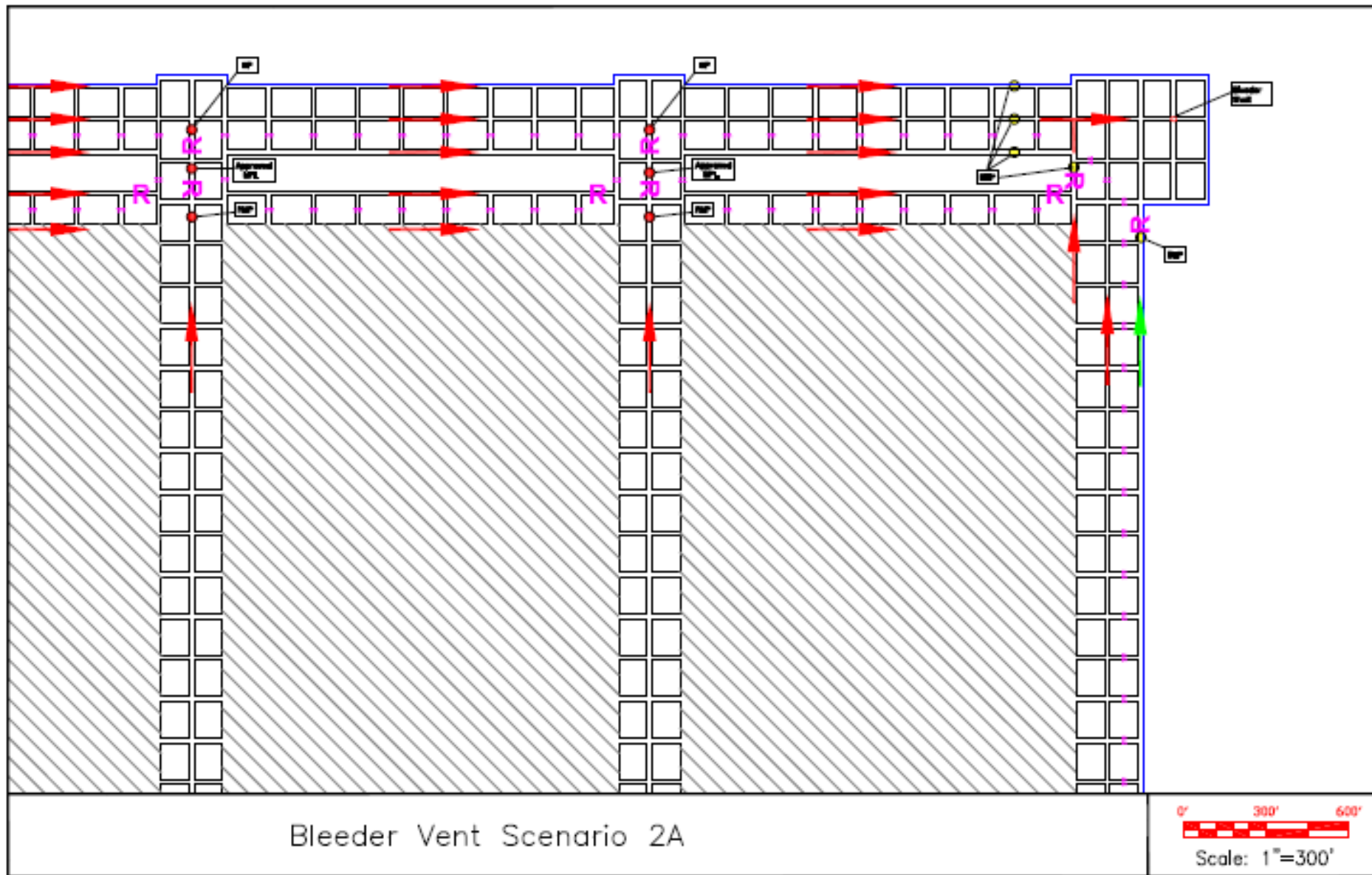


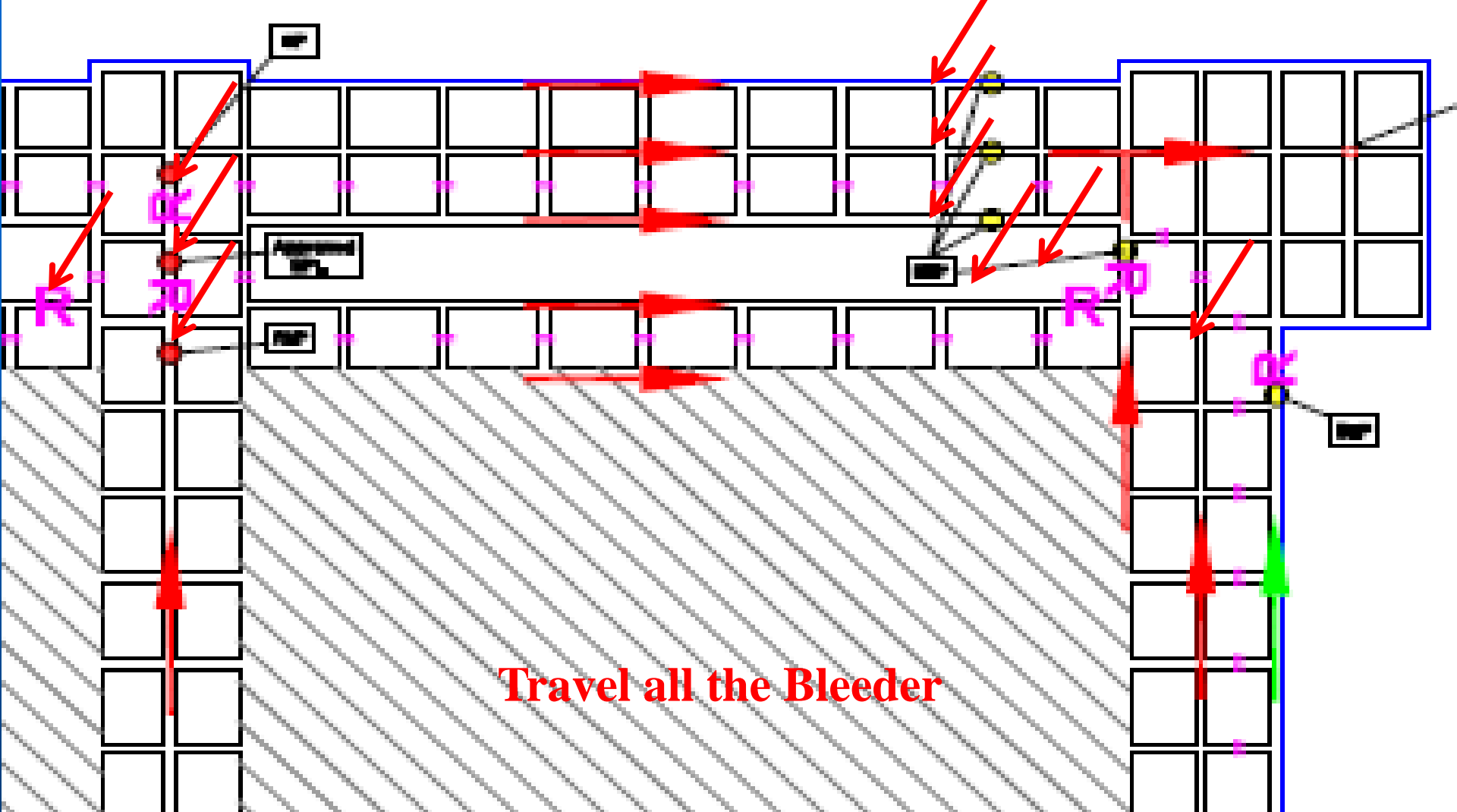


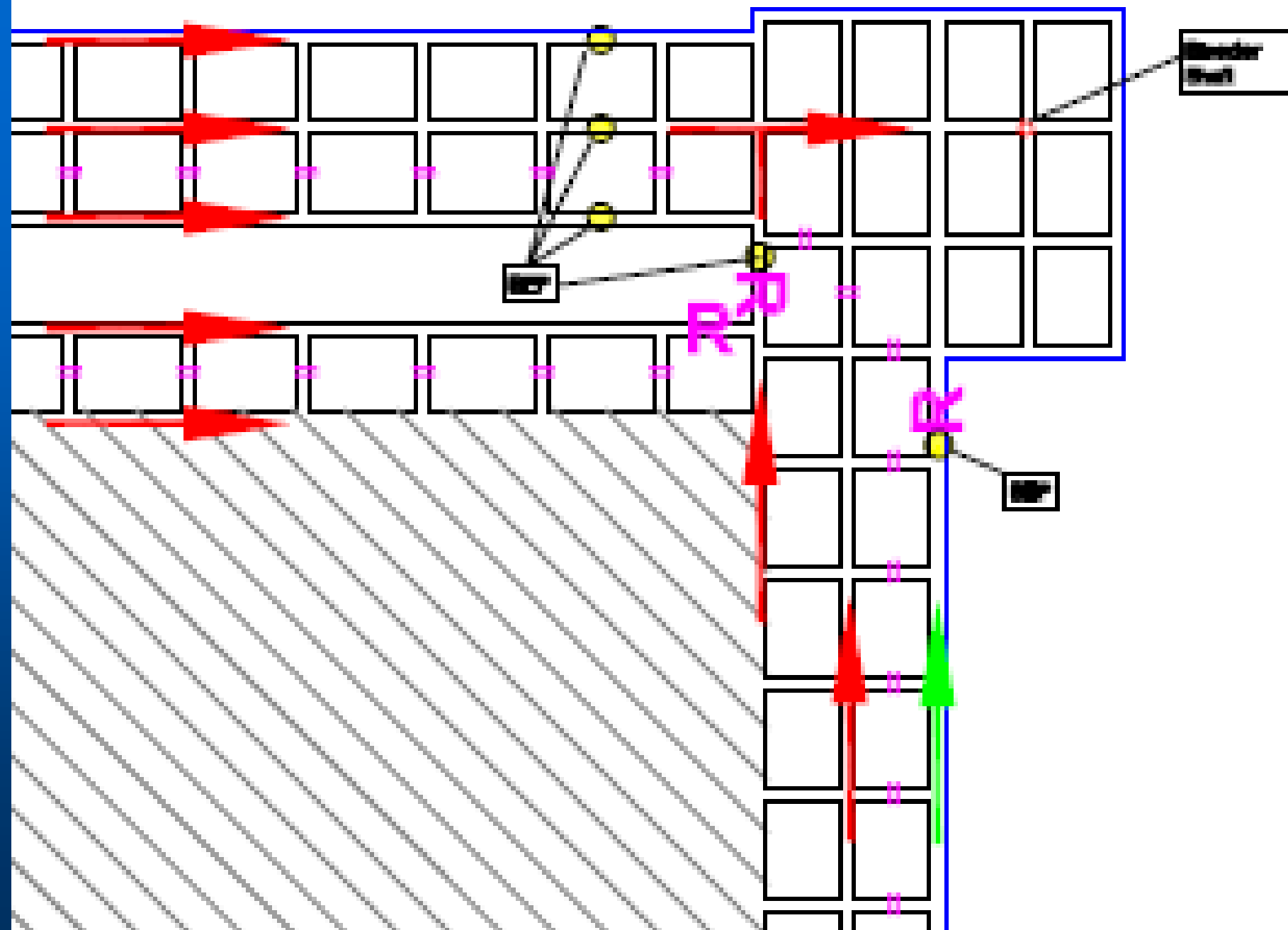
Pillar Panel Vent Scenario No. 7

0' 300' 600'  
Scale: 1"=300'

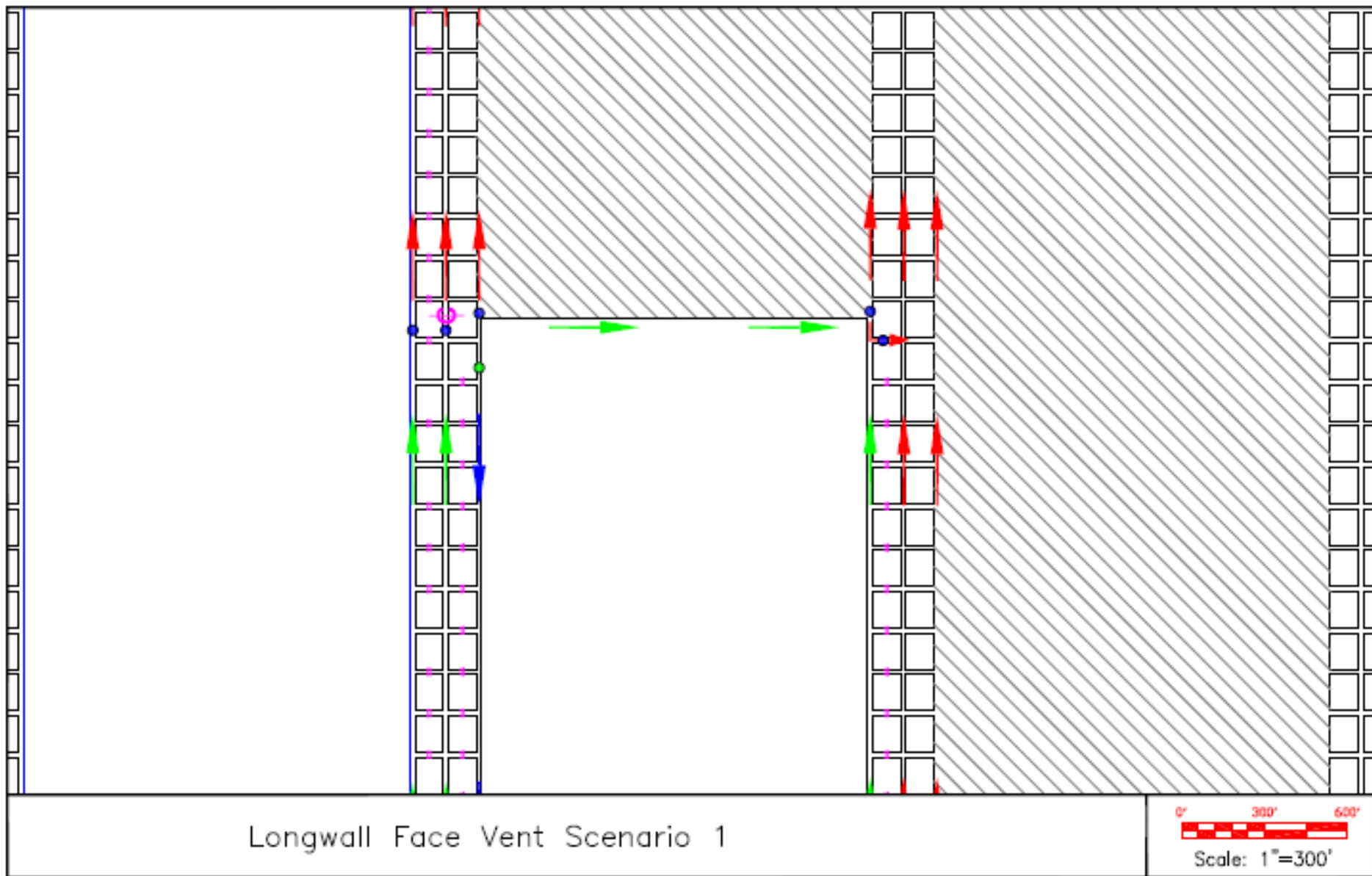
# “Back to the Future” Method?

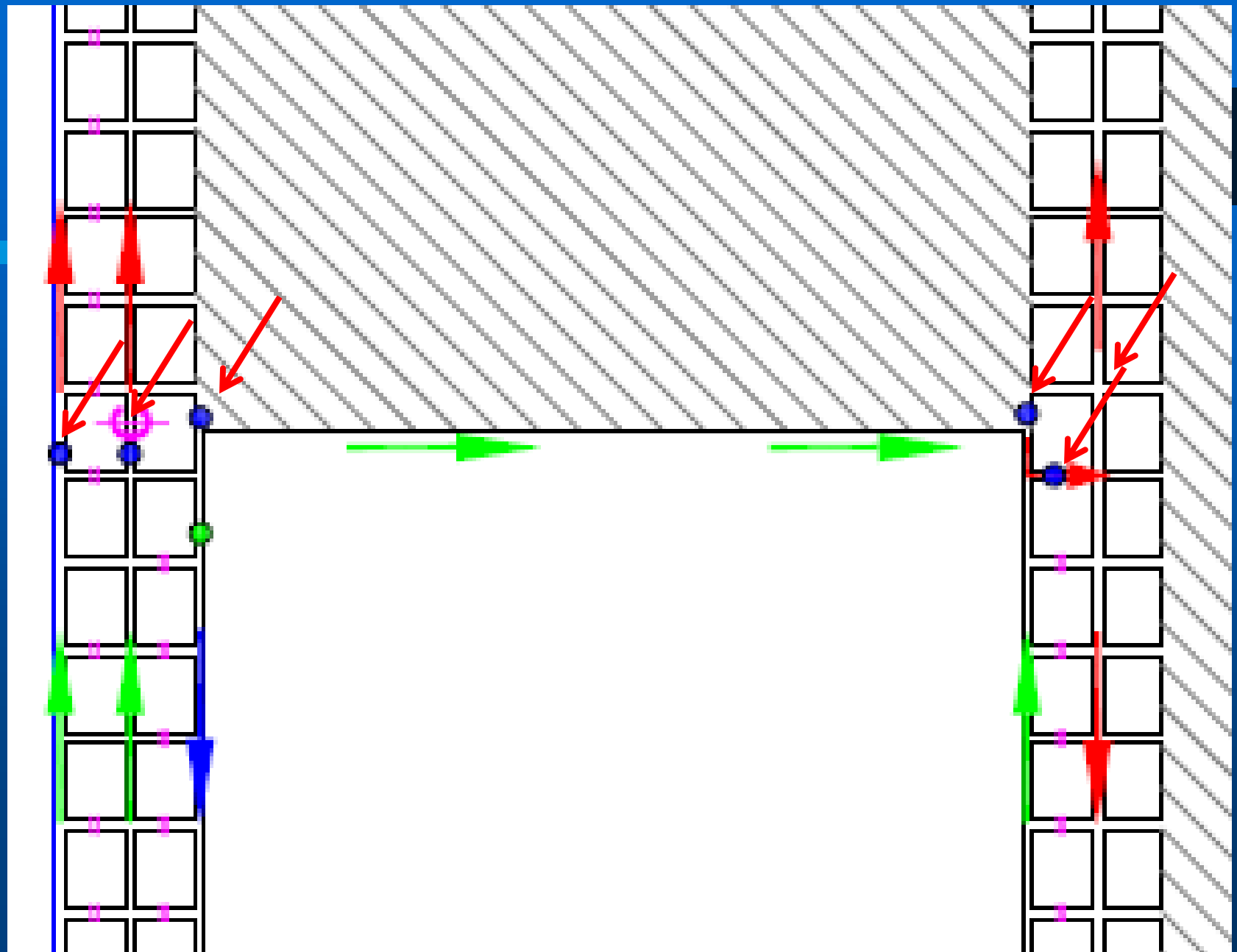


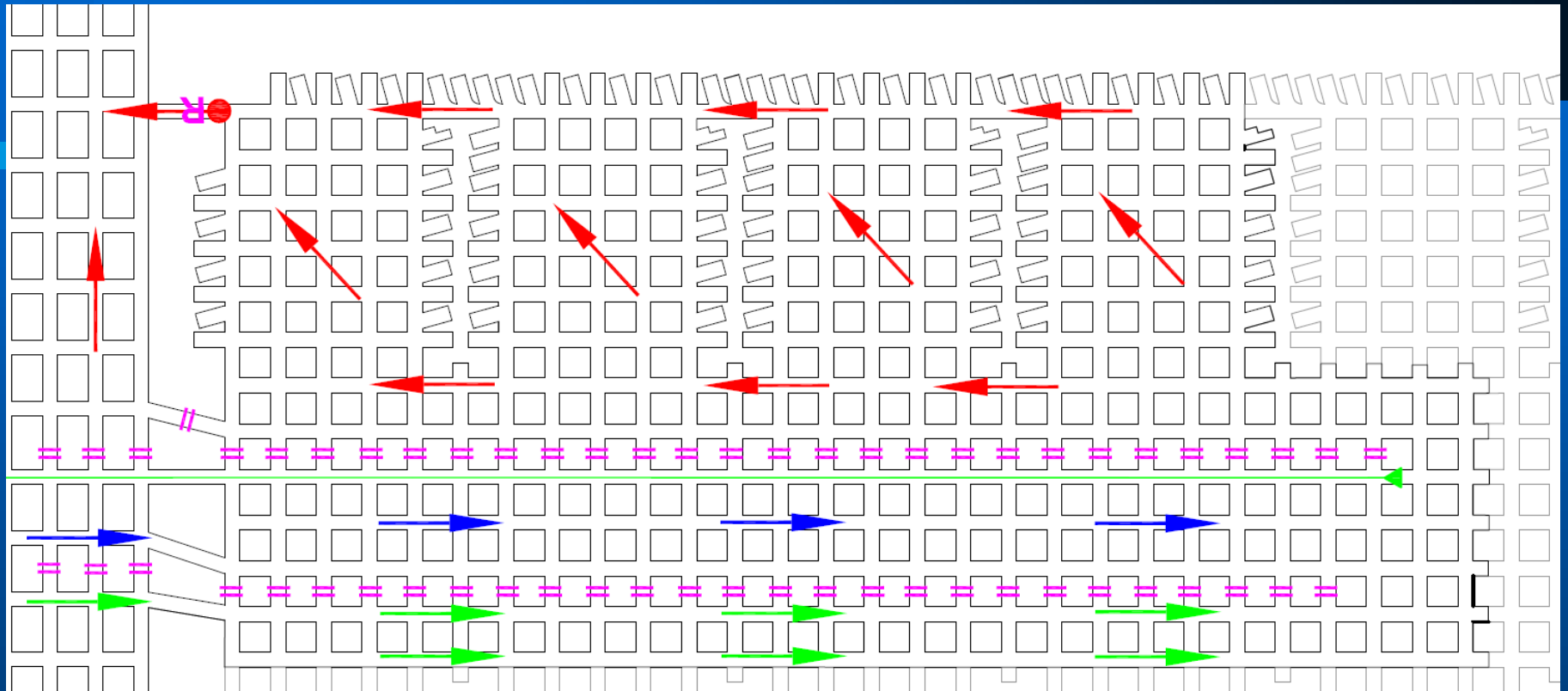


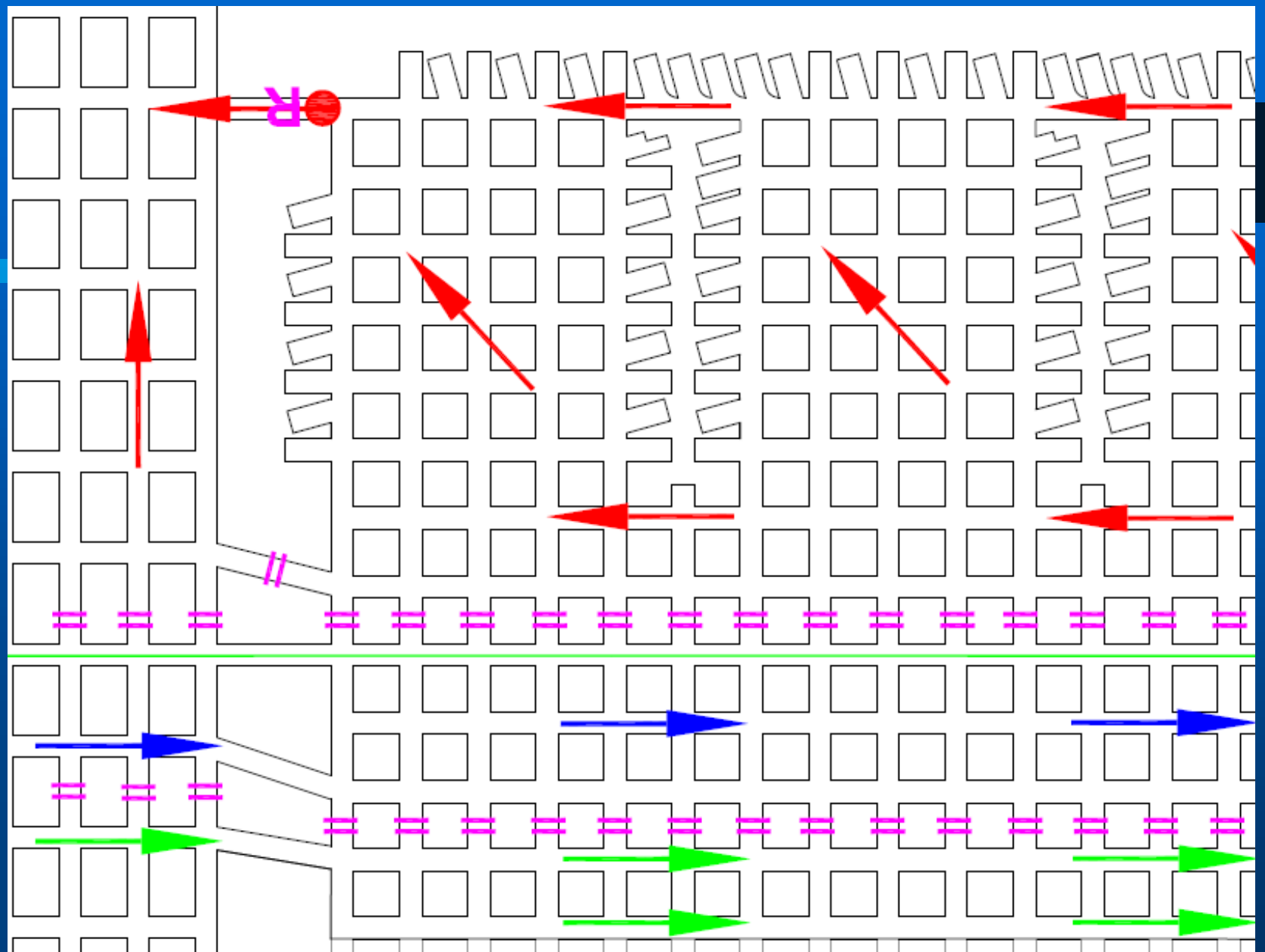












## *MSHA's New Bleeder Policy - - -*

### Some MSHA Comments:

- It isn't the INTENSION to check methane "against the rubble zone" –
- MUST have a tee-split or it's an Ineffective Bleeder –
- Concern with the number of panels in a District–
- Have been having issues at start-up –
- Planning new Gob & Bleeder Vent Class–

## *MSHA's New Bleeder Policy - - -*

- **Conclusions, at this point:**
- **Re-definitions makes for a**
  - **Re-think of LW and all second mining design**
  - **Consider potential applications to perimeter mining**
- **Need to develop formal history and trending for analysis**
- **Don't be lulled into thinking this is for "the future". The future is here.**

# *MSHA's New Bleeder Policy – A Brief Outline*

*Illinois Mining Institute*

*122<sup>nd</sup> Annual Event*

**Contact Info:**

*Gary M. Hartsog, PE & PS (SU)*

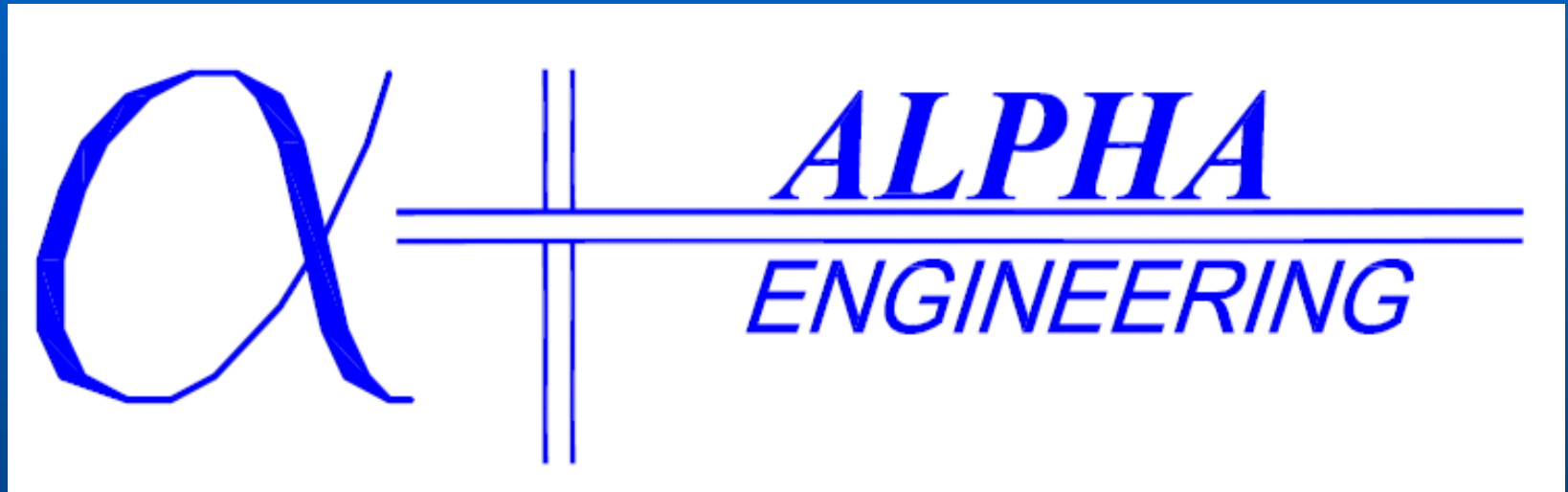
Alpha Engineering Services, Inc.

Beckley, WV

[ghartsog@alphaengineer.com](mailto:ghartsog@alphaengineer.com)

Copyright © by 2014 Alpha Engineering Services, Inc., Beckley, WV





**Note: These slides are part of a visual and oral presentation and do not constitute the entire presentation nor convey the complete set of material or information used in the presentation and discussion.**