Observational Method and Traditional Survey Methods to Monitor Rockslides

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Observational method & traditional monitoring techniques:

- Understand -> implement realistic design -> monitor -> reanalyze & adjust -> repeat
- Classic survey of points, nails, prisms, etc. X-Y-Z coordinates. Analyze vector movement (rate + direction). Use GPS or Total Station.
- Direct tape measurement between physical points. Also drones if possible.
- Very useful when time is limited. Back to basics!

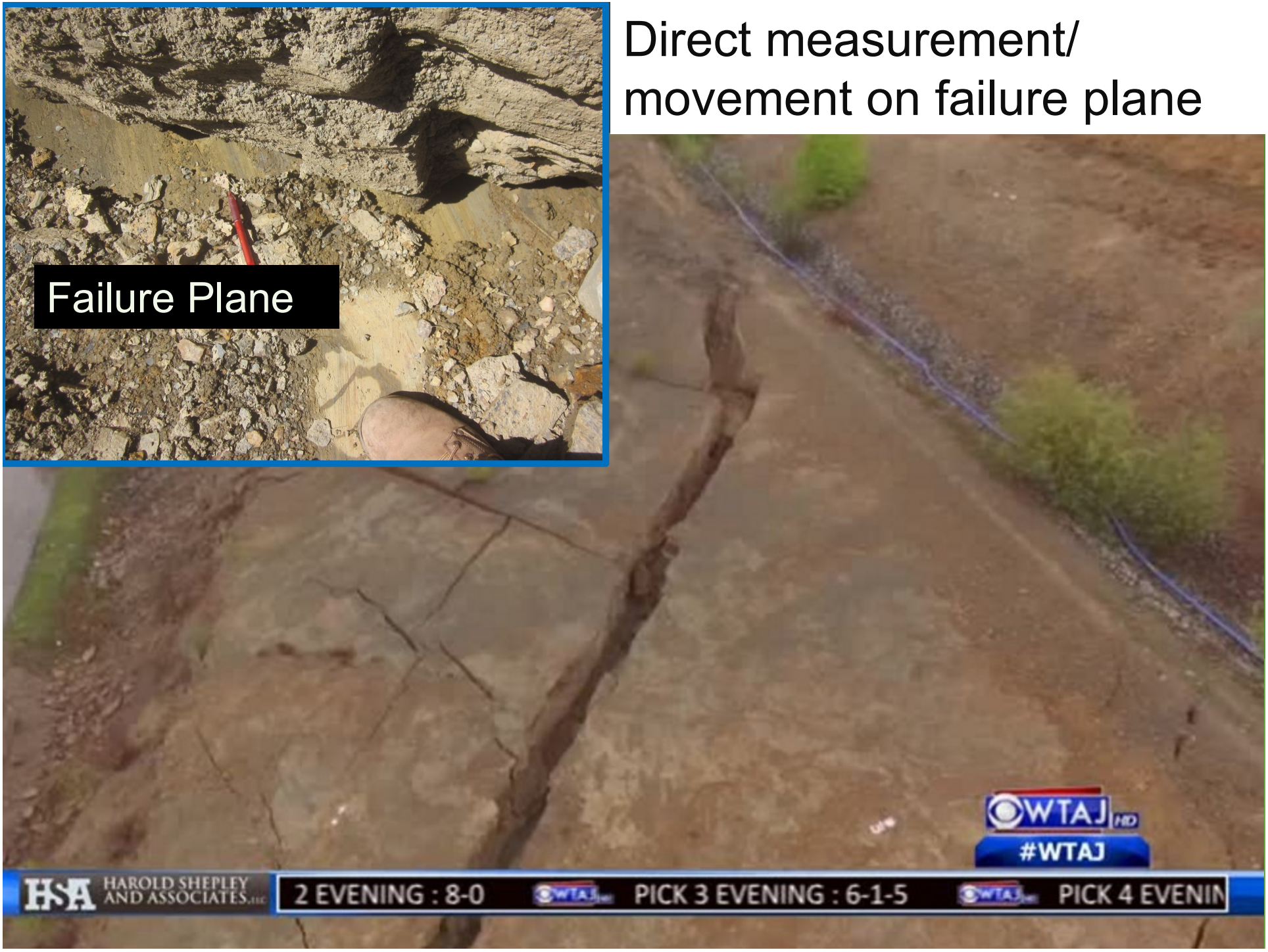
First visit: install nails/points and measure distance in between. Also direction (compass)

A few days/weeks later: establish rate of movement (if possible also direction)

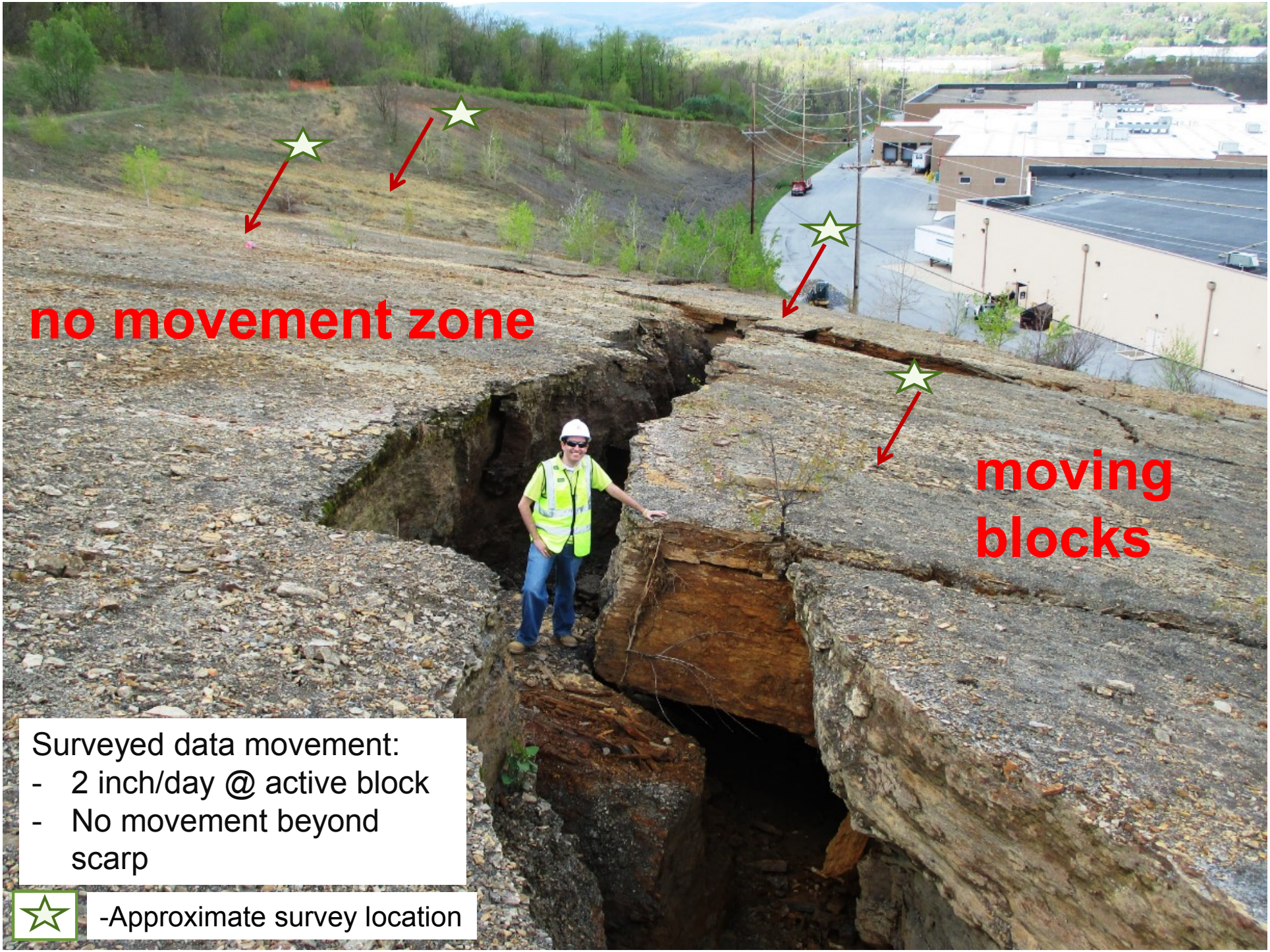
Movement continues, news involved

Not possible to install inclinometers when rate of movement is high

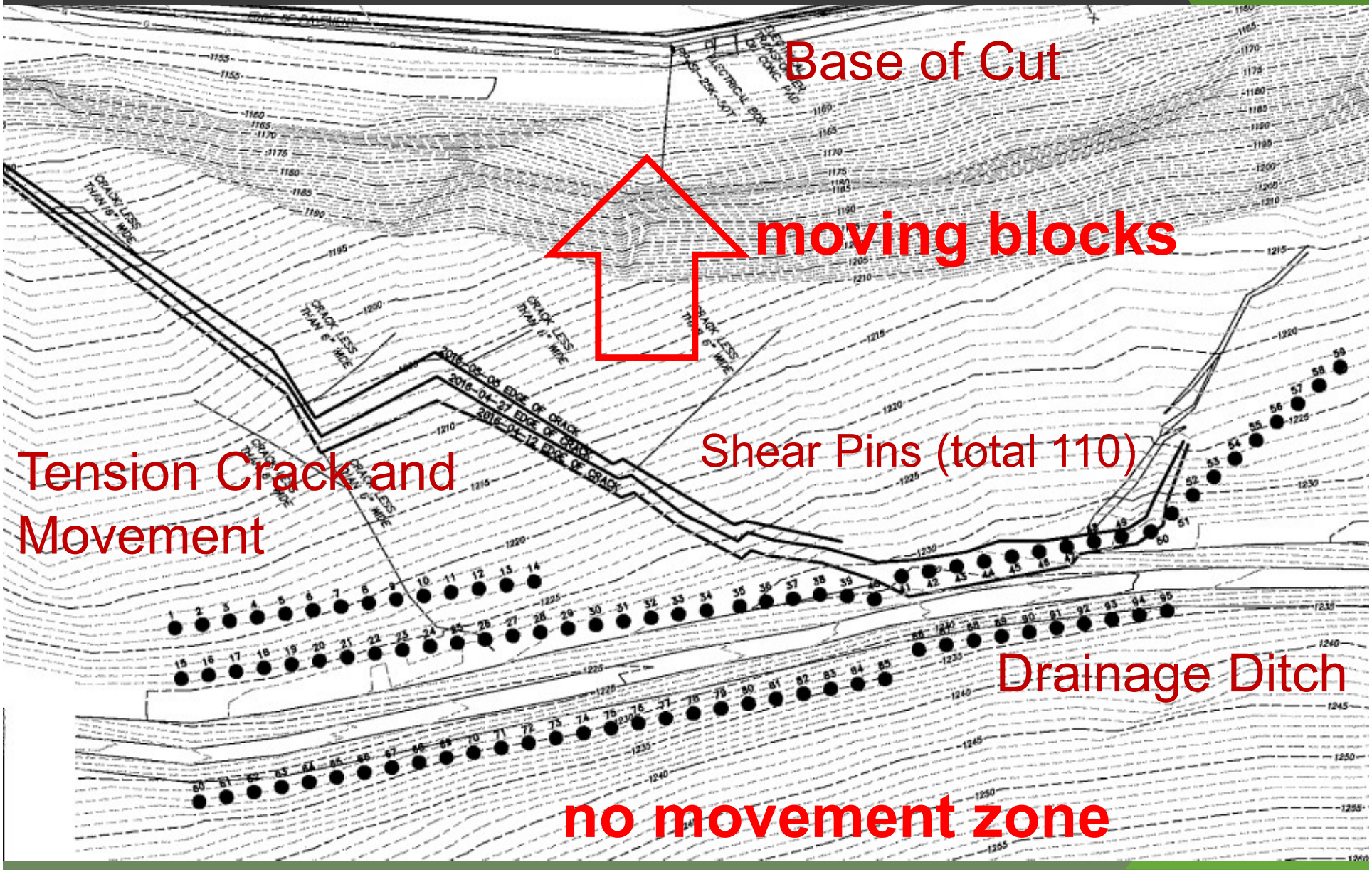
Direct measurement/ movement on failure plane




Regular drone pictures/videos for analyses
PA
SKYOPS
https://player.vimeo.com/video/164624555


no movement zone
moving blocks
Surveyed data movement:
- 2 inch/day @ active block
- No movement beyond scarp
-Approximate survey location

Design/Solution: continue monitoring and see how the slide “reacts”. Adjust solution as needed.




Shear Pin Installation:
- monitoring continues
- Analyze slide reaction
DEERE


After remediation:
- Monitoring continues
- Analyze slide reaction
- Have contingency plan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Quick Lane
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