

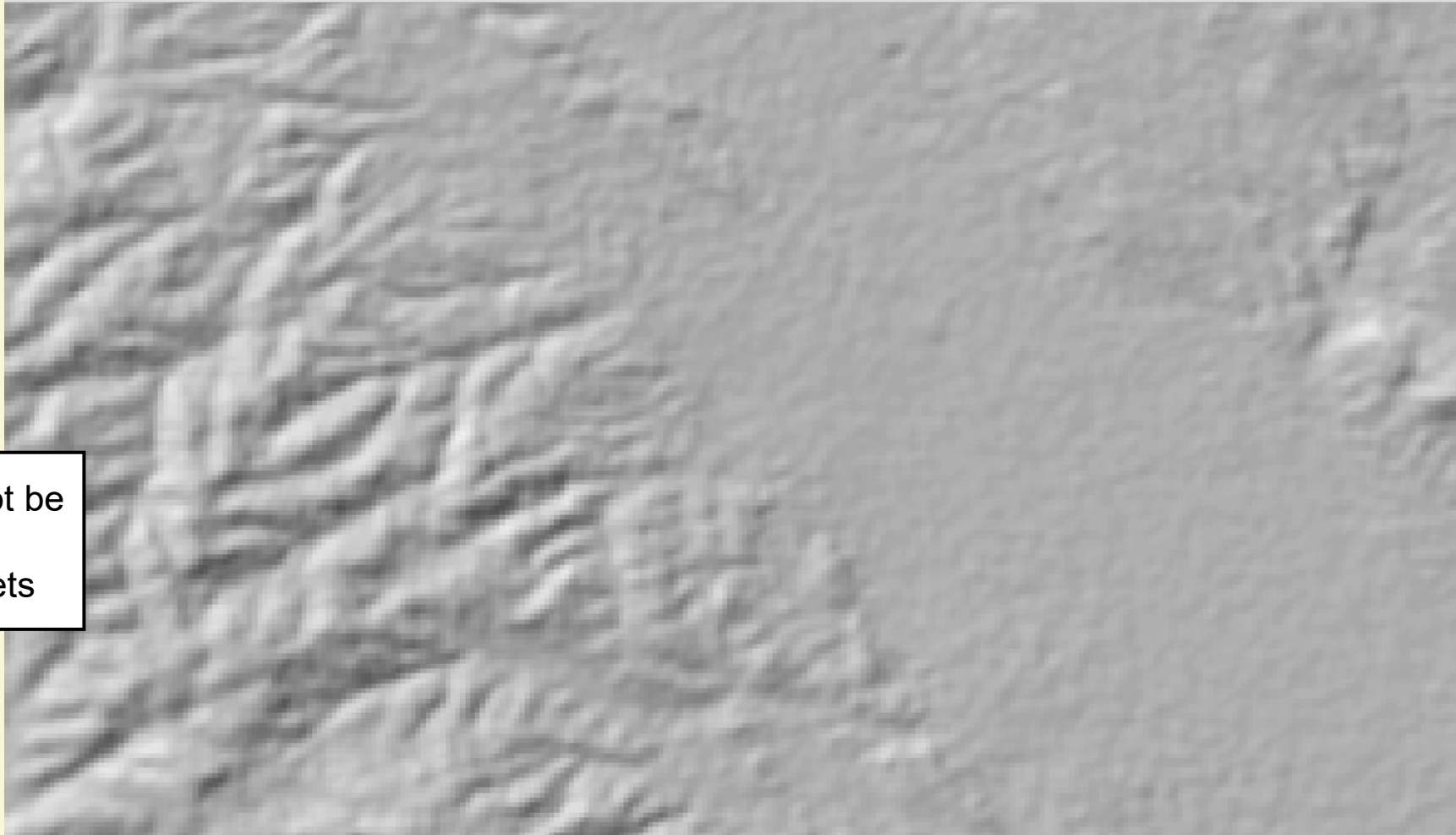
# Project 1 Discussion

# Mapping Discussion

# GIR Feature Classification

## *Triangular facets*

*- Features similar to triangular facets can exist outside of the tectonic context. In order to correctly identify it, it must be a result of faulting instead of the front stopping because of urbanization or proximity to active water.*



These would not be considered triangular facets

# GIR Feature Classification

## *Triangular facets*

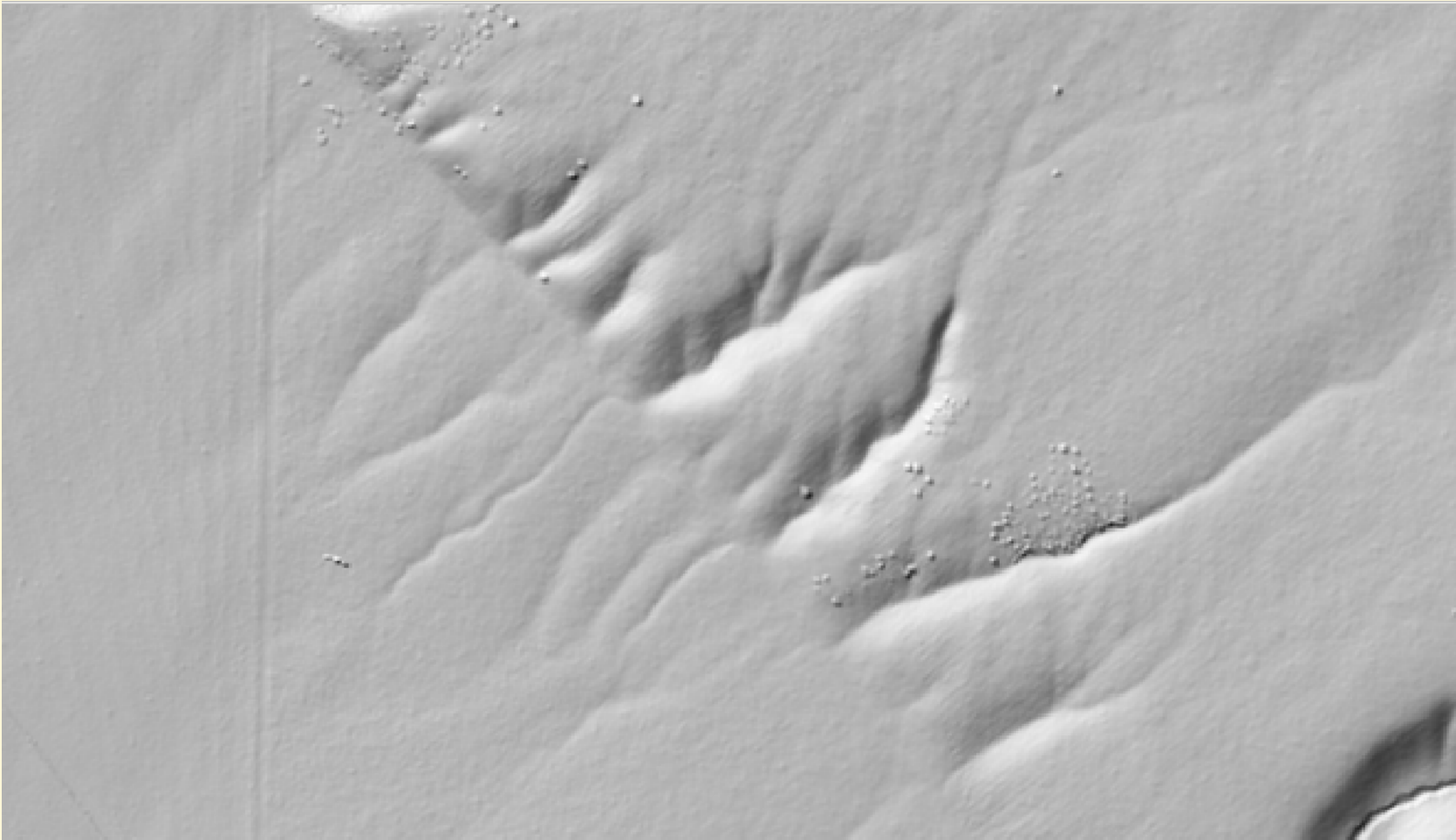
*- Features similar to triangular facets can exist outside of the tectonic context. In order to correctly identify it, it must be a result of faulting instead of the front stopping because of urbanization or proximity to active water (lateral erosion).*



# GIR Feature Classification

## *Beheaded Drainages*

*- Beheaded drainages must be mapped on the downslope portion or the drainage that is beheaded by the fault. If there is no evidence of this, the drainage is not truly beheaded.*

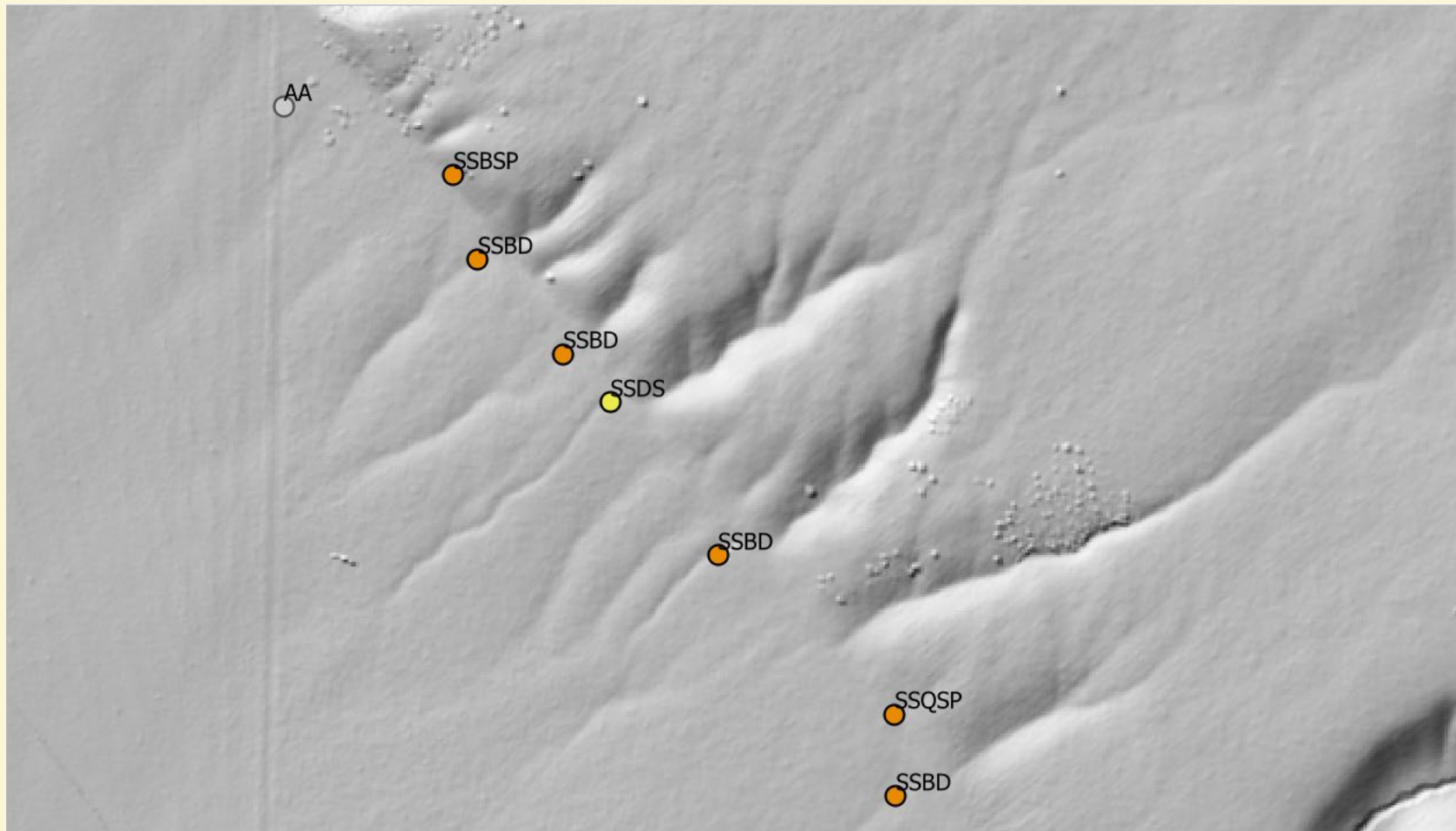




# GIR Feature Classification

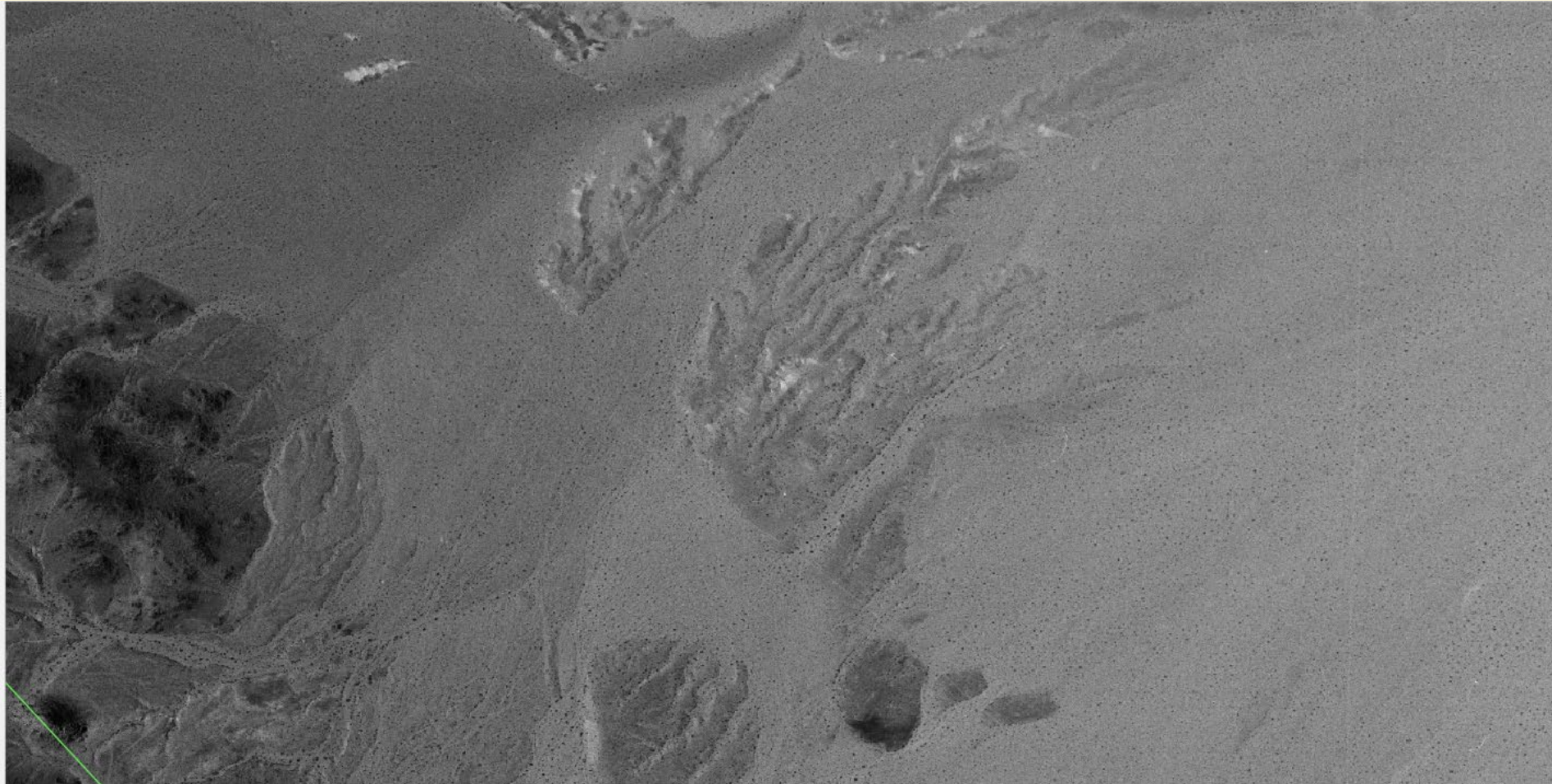
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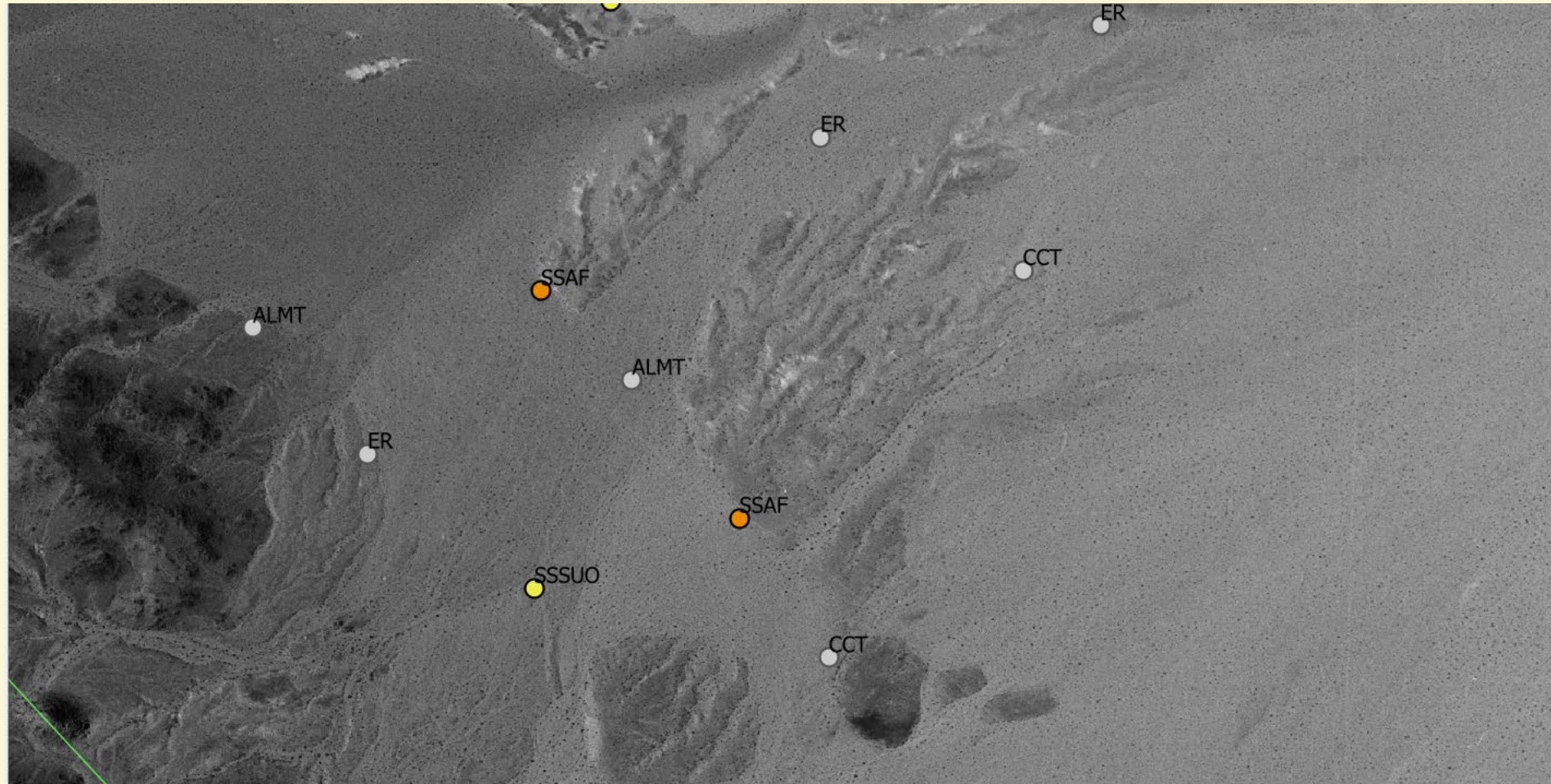
*Cut/offset alluvial fan – A cut or offset alluvial fan must show some evidence of either the natural progression of the fan being halted or the drainages/surface units within a fan being offset*





# GIR Feature Classification

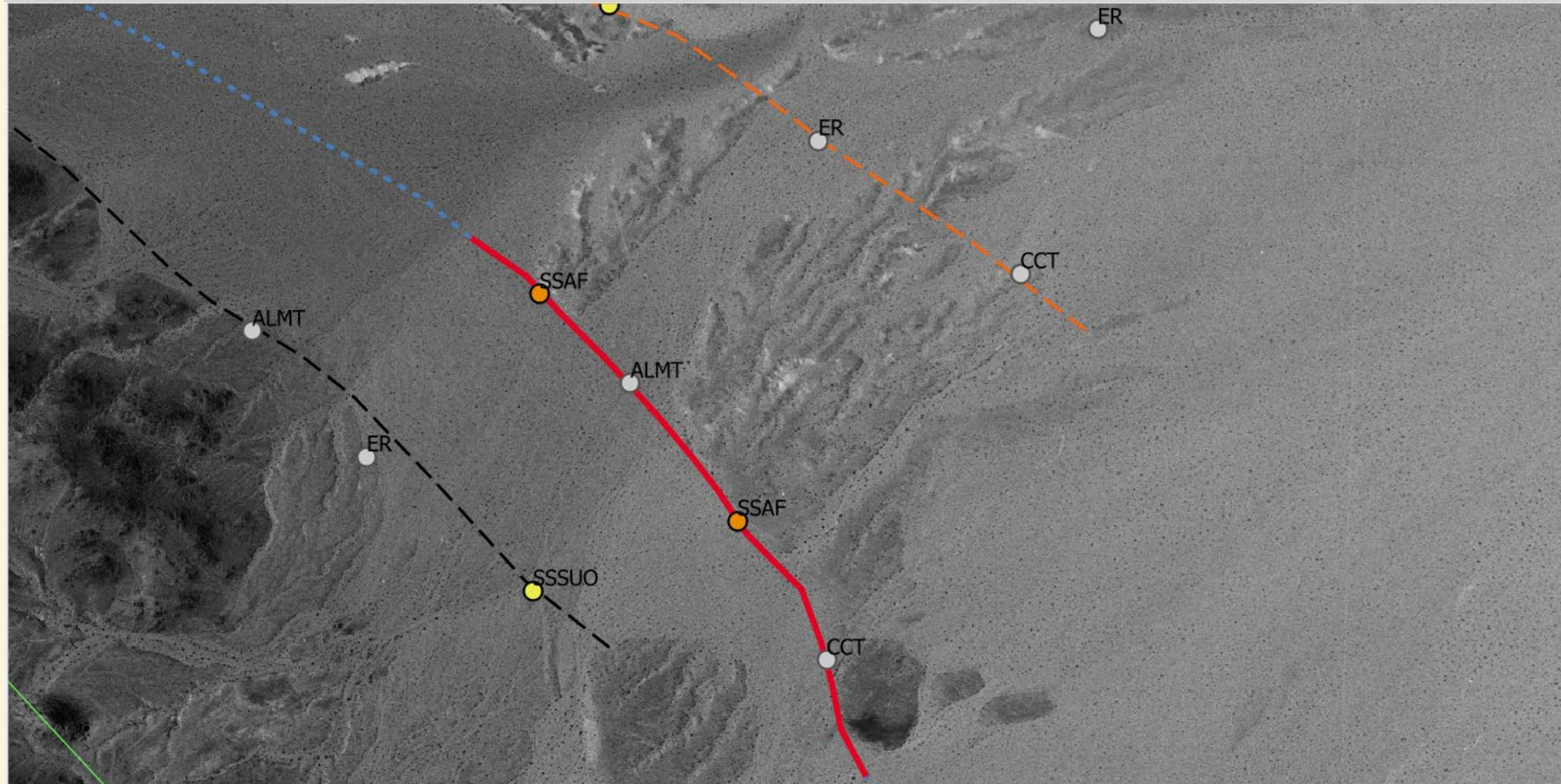
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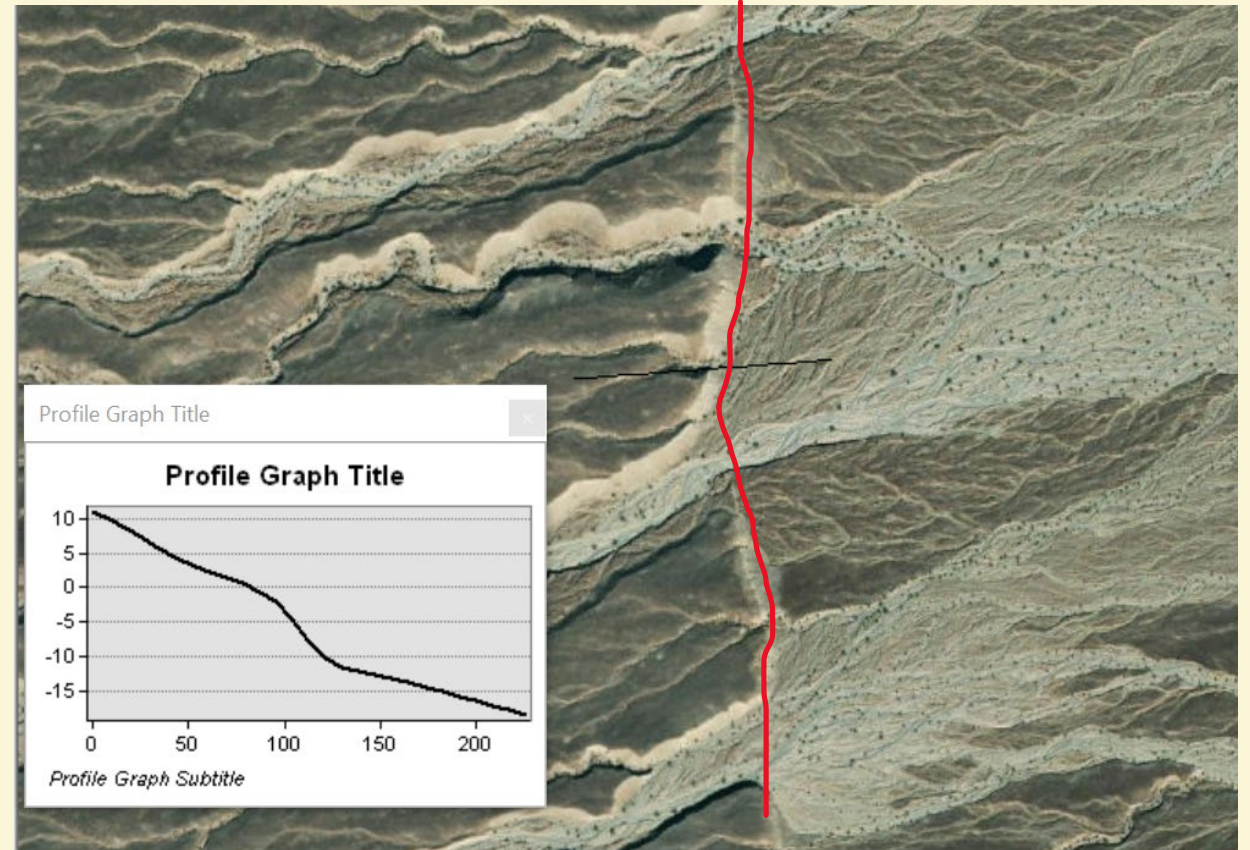
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# GIR Feature Classification

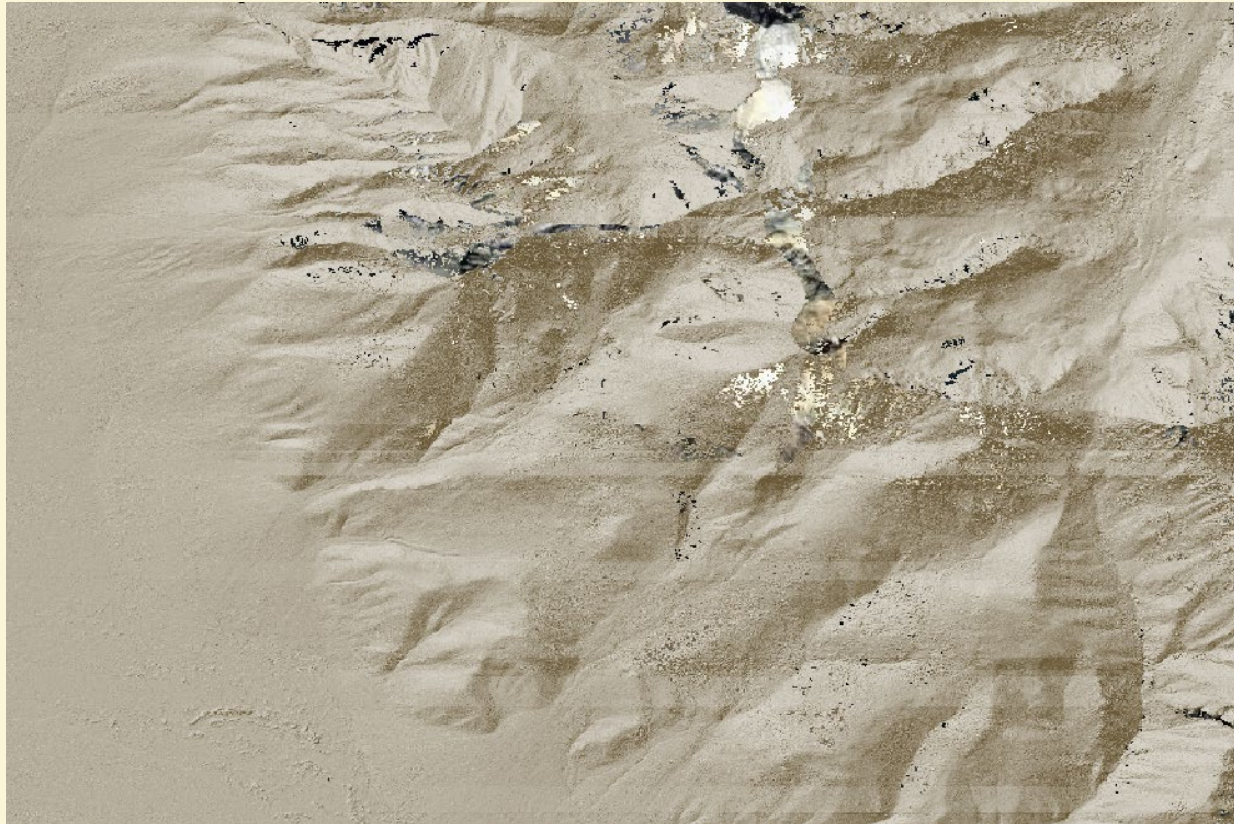
*Cut/offset alluvial fan – Some features mapped as alluvial fans are just where the range front/bedrock meets the unconsolidated sediment*





# Rangefront Placement

*While following the base of a rangefront can generally help identify a fault, you do not want to strictly trace it as there can be evidence outside of the front that indicates the trace will deviate either upslope or downslope. This is particularly notable when the rangefront is not along a continuous trace.*

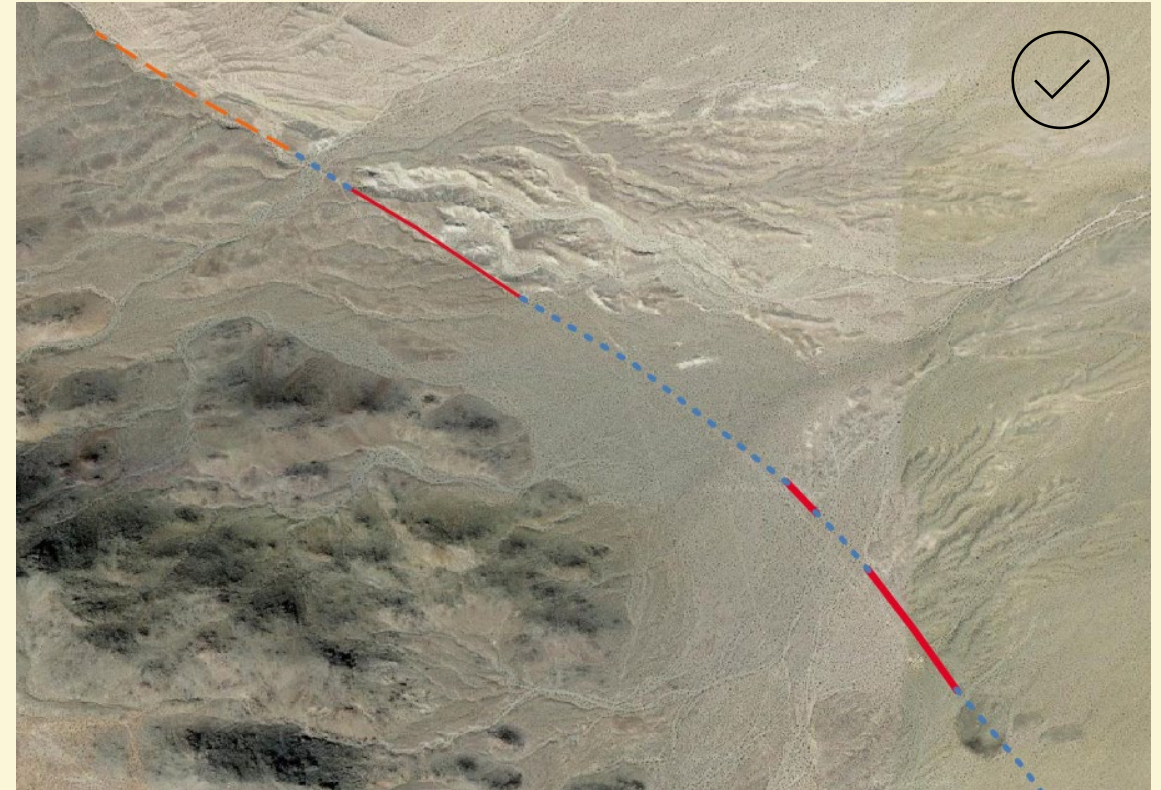




# Continuity of fault traces

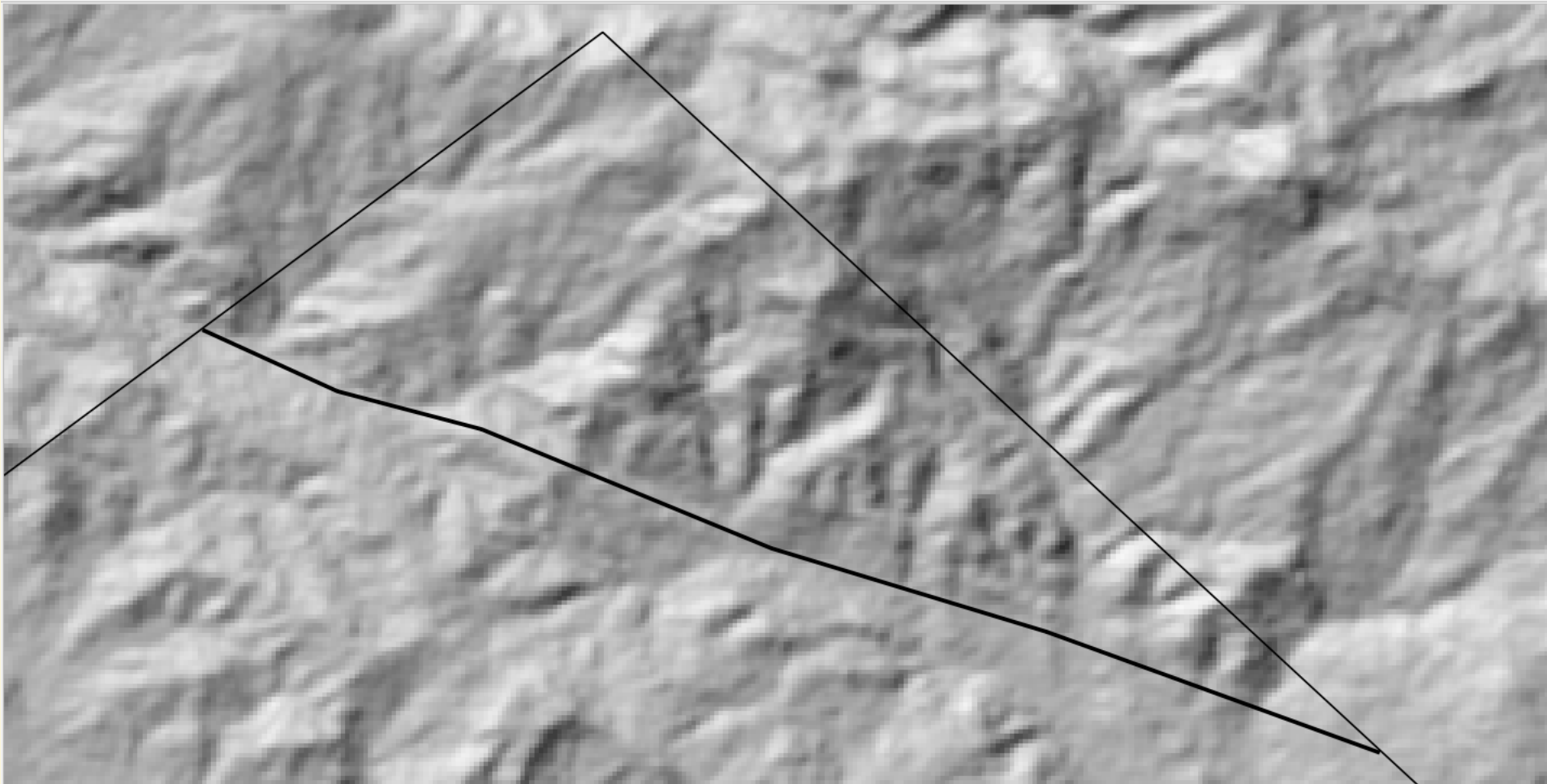
*Mainly with the main primary fault but longer traces in general, the trace should be continuous through the landscape. While some areas along the fault strike may go through urbanized land or active water, the assumption when the trace does not follow through this area is that it will not rupture in a future earthquake.*

*However, it is more likely than not that if principal trace is reactivated, it will rupture the entire trace and not 'skip over' the areas with buildings and water.*



# Mapping at full resolution of data

- *If doing one of the assignments that includes multiple datasets, be sure to look at all available data. The SRTM or other base imagery is helpful to locate the general fault traces but other, better imagery must be used in conjunction with it to map the trace with better accuracy.*





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# Mapping at full resolution of data

- *After adding in the data with better resolution, the trace of the fault can be better fitted to the topography in the landscape and will not be as straight.*





# Mapping at full resolution of data

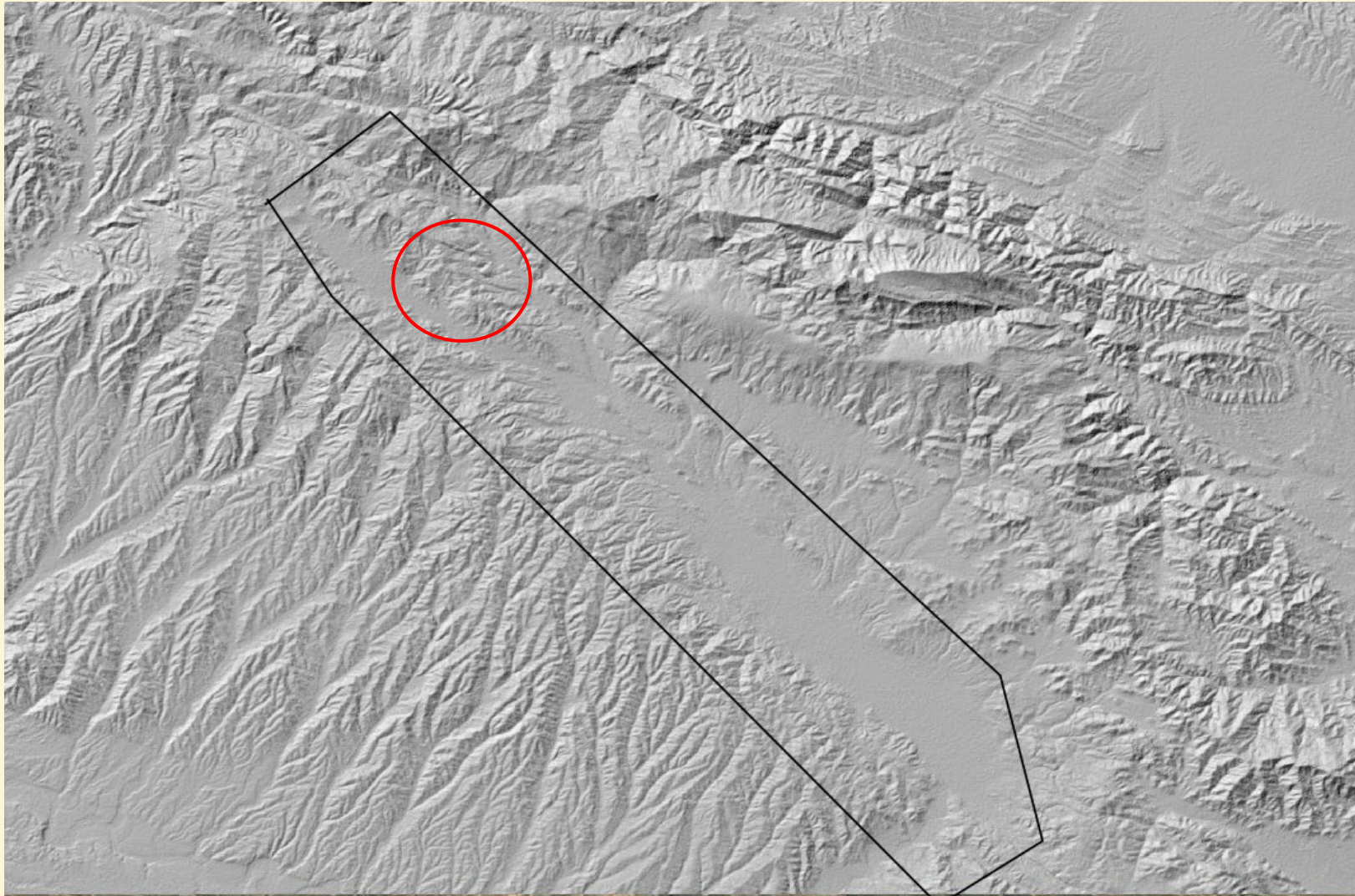
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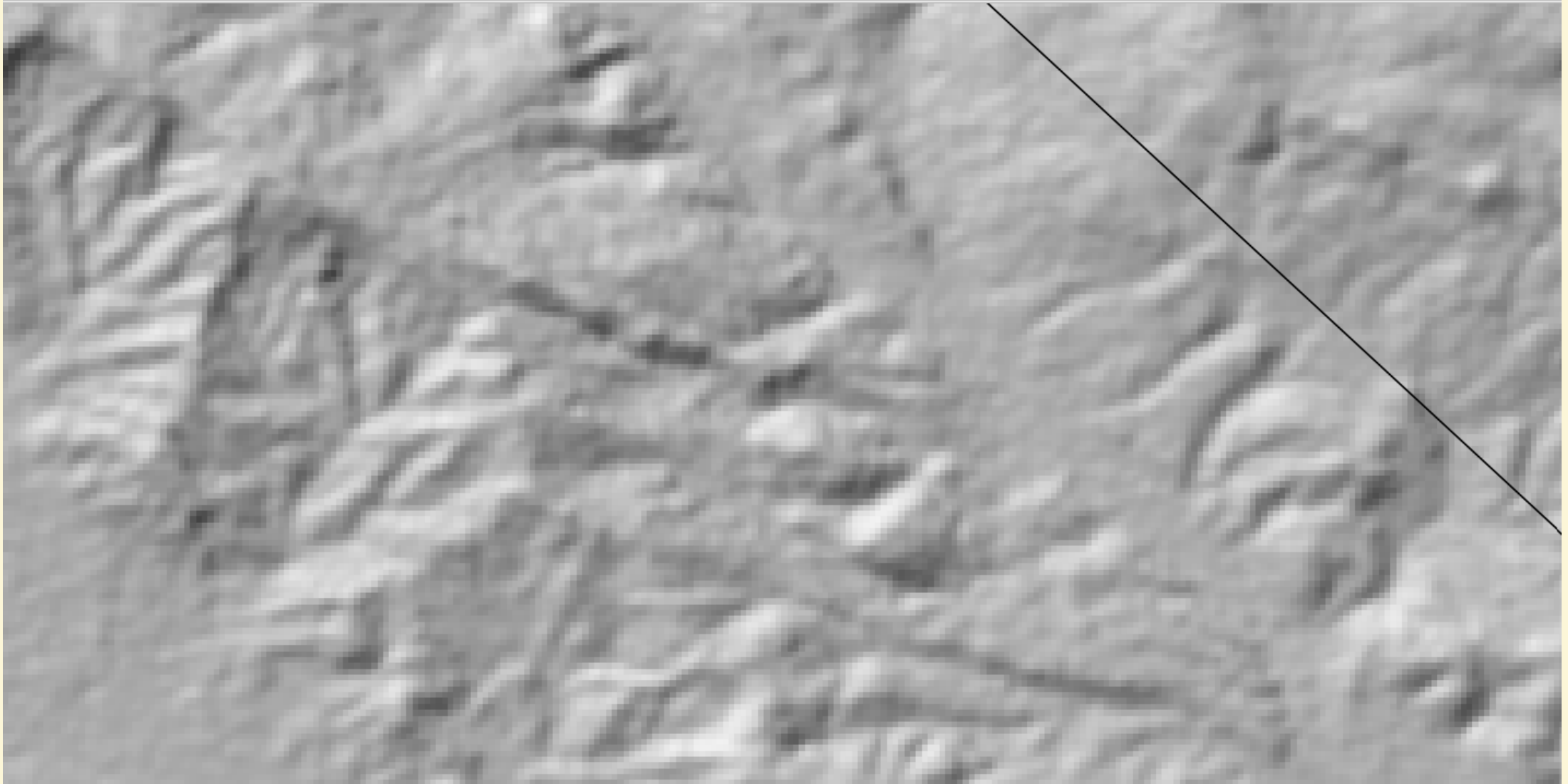


# Greater geologic context

- *Fault trace placement must also make sense in the greater geologic context for the area. If you know the sense of slip and the general area, traces are unlikely to deviate strongly from the main strike and location.*



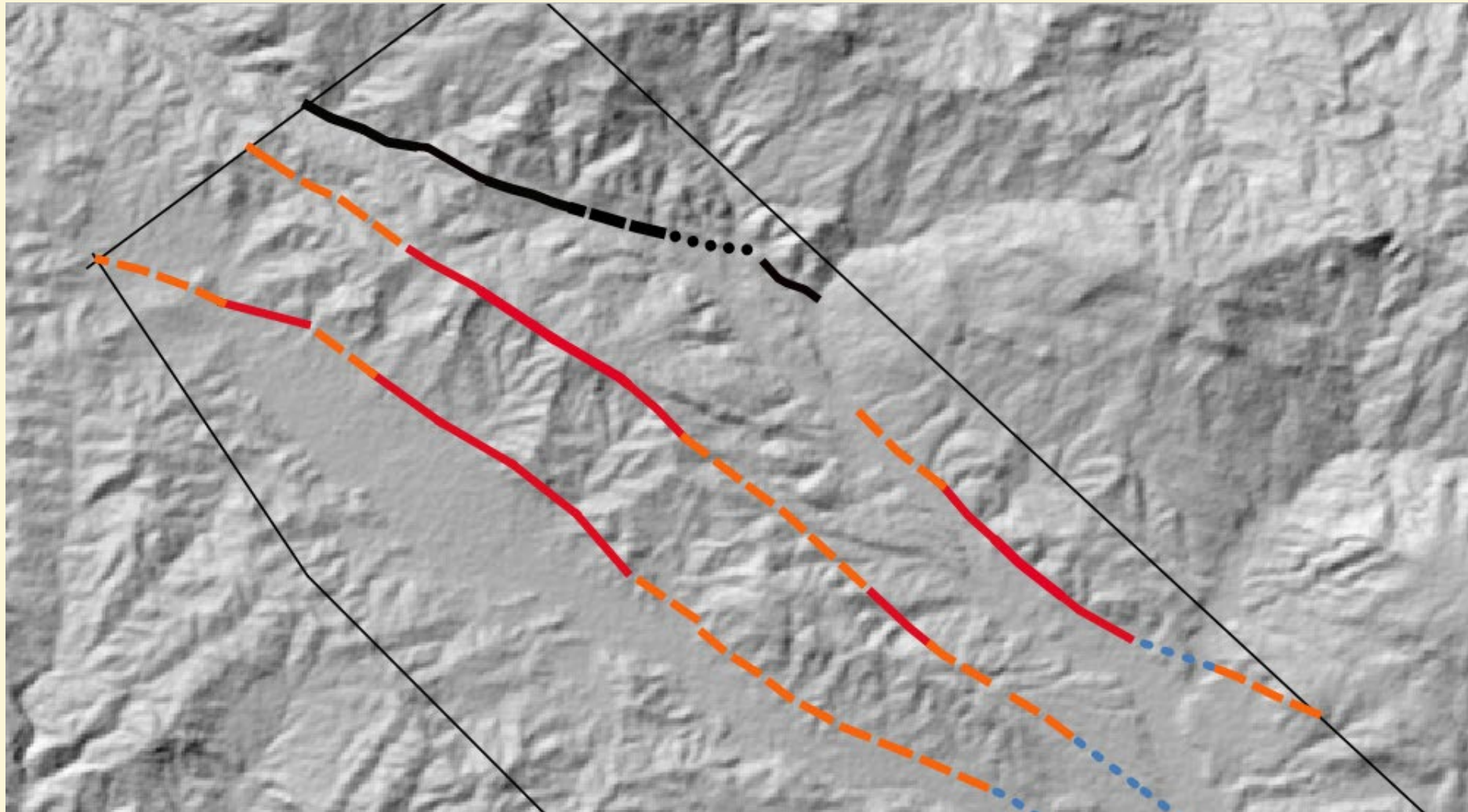
# Greater geologic context





# Greater geologic context

- *If we zoom out a bit more from the area of focus, we can see that if we were to place faults along the proposed location, it will deviate from the main strike and would not make sense in the context of a strike-slip faulting environment on the San Andreas Fault.*

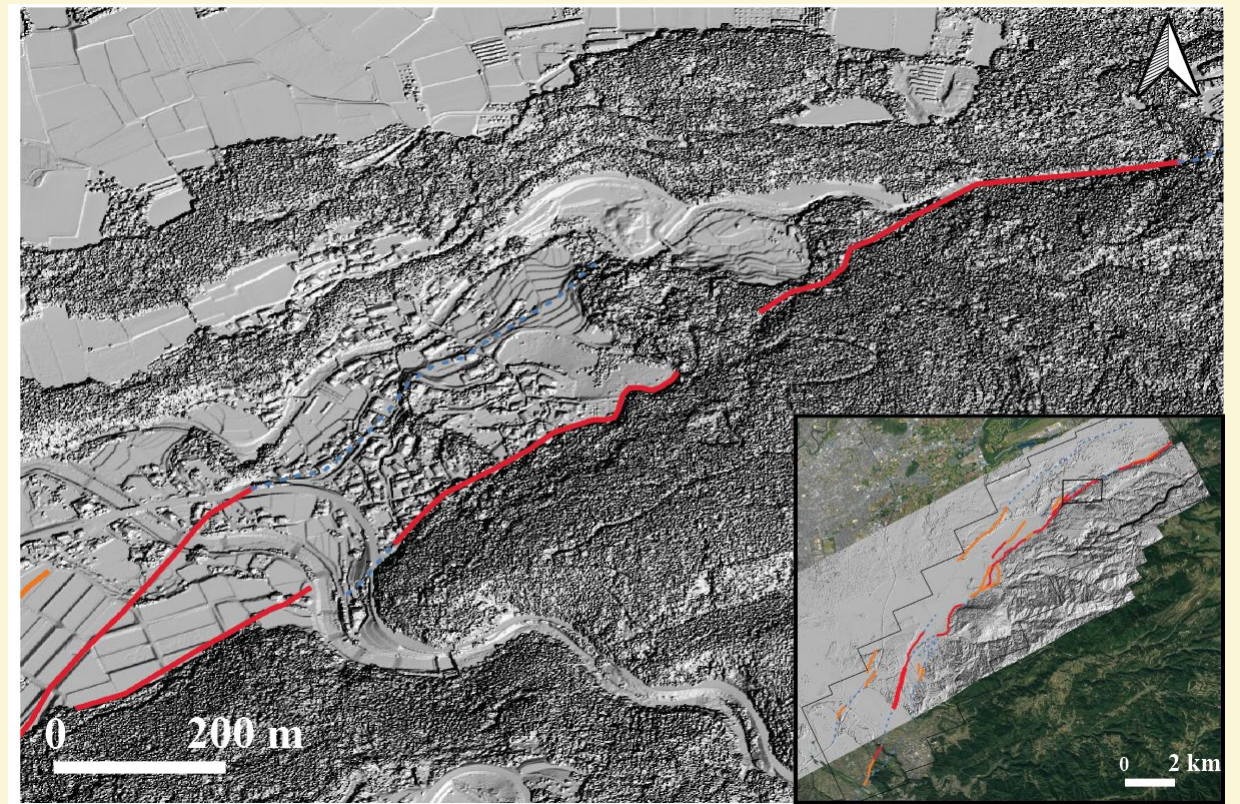
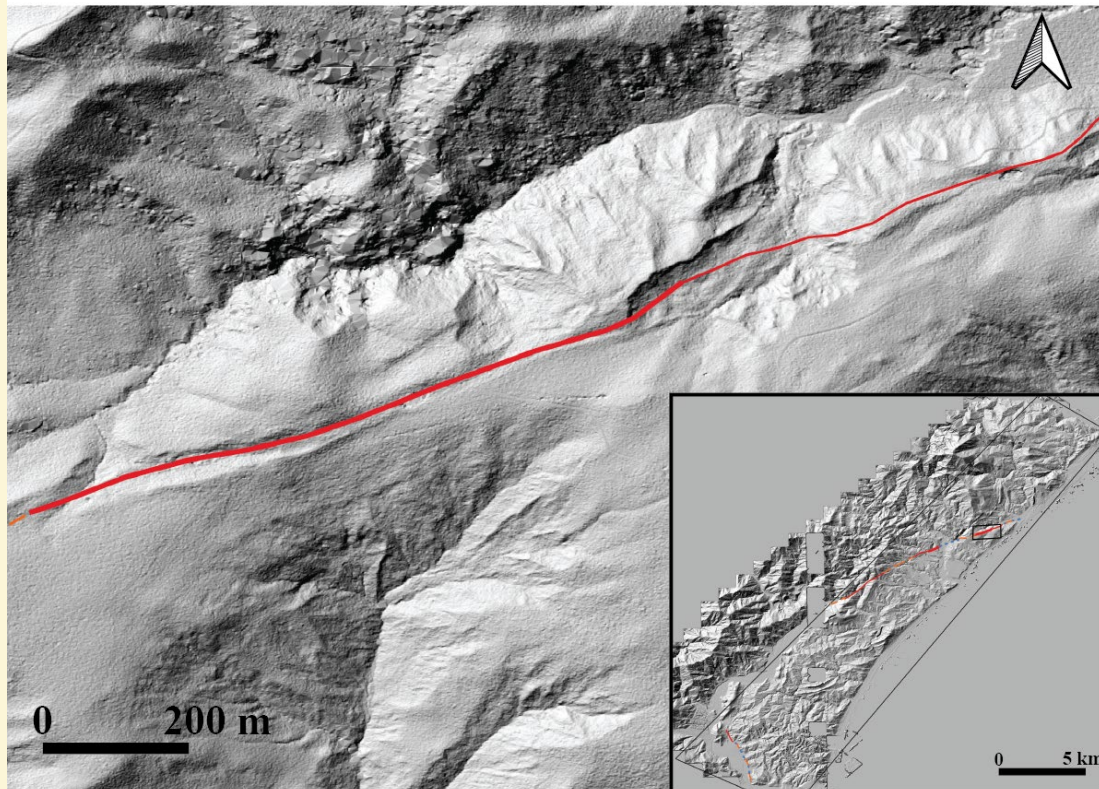




# Report Discussion

# Organization

- Reports should include an introduction to the project and outline the rest of the report
- Figures should include north arrow, scale bar, and legend. When zooming into an area of the map for discussion, it is nice to show an inset image of where on the map you are.



## Legend

### Fault Confidence Ranking









	Strong & Primary		Strong & Secondary
	Distinct & Primary		Distinct & Secondary
	Weak & Primary		Weak & Secondary
	Uncertain & Primary		Uncertain & Secondary



# Faulting Discussion

- Reports should include a discussion of how the mapper distinguished between each of the four rankings for the fault confidence as well as between primary and secondary traces.
  - “Strong is a lot of high GIR features and uncertain is little to no GIR features” is not descriptive enough.

## Fault Confidence Ranking

	Strong & Primary
	Distinct & Primary
	Weak & Primary
	Uncertain & Primary
	Strong & Secondary
	Distinct & Secondary
	Weak & Secondary
	Uncertain & Secondary

“Fault traces/segments with a ranking of strong (or 4) were determined by the number of GIR features exceeding \_\_\_ and the fact that there were more GIR features with a ranking of 4 than other locations on the fault trace.”

“Fault traces/segments with a ranking of distinct (or 3) were determined by their proximity to traces with a strong ranking and the number of GIR features exceeding \_\_\_ ...”

“Primary and secondary fault traces were determined by \_\_\_\_\_ ...”