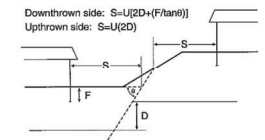




To calculate the building setbacks from the identified fault zone and individual fault traces at the site, the measured and estimated characteristics of the faulting were used in conjunction with the equations and diagram below which is provided by the Utah Geological Survey, 2016 in Bowman and Lund, 2016.



U = Criticality Factor (1.5 for proposed development at subject site)
D = Per-event fault displacement measured or estimated for the fault
F = Planned footing depth
θ = Average dip angle of fault

Minimum building setbacks from faults have been established in the International Building Code (IBC) based on building type (occupancy group) and criticality. As such, the minimum building setback from the faulting at the site is 15 feet on either side of the zone of faulting. Where the calculated setback using the equations above is greater than the minimum setback, the calculated setback takes precedence and should be applied.

Based on the setback equations above and where, for the site, we have applied the following variable values:
U = 1.5
D = 6.5 feet
F = 10 feet
θ = 80 degrees

Down-thrown side: S = 22 feet (setback)
Up-thrown side: S = 20 feet (setback)

The calculated setbacks above are both more than the minimum setback of 15 feet for the site. Thus, the calculated setbacks should be implemented in design and construction of the new development at the site. If the proposed development is different than what we have understood or changes following the submittal of this report, please inform CMT so that appropriate changes can be made to the required building setbacks, if warranted.

The fault traces in the western zone of faulting at the subject site have been mapped based on our analysis of laser DTM and our exploration trenching. Fault locations observed in the trenching were surveyed following logging of the trenches. The mapped fault locations in the western fault zone are shown on Figure 12, Hazard Mitigation, as red lines. The required building setbacks of 22 feet on the down-thrown side of the faulting and 20 feet on the up-thrown side of the subject site are shown on Figure 12 as blue lines paralleling the mapped fault traces (red lines). No footings for any building designed for human occupancy should be placed between or across the setback lines at the site. The areas beyond the setbacks on either side of the zone of faulting are suitable for the location of buildings in relation to surface fault rupture hazards.

FAULT SETBACK



DEVELOPMENT

PAYSON VIEW ESTATES PHASE 3

DEVELOPER

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SCALE: 1"= 200'

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REVISIONS		DATE	DESCRIPTION
NO.	DATE		
1			
2			
3			
4			
5			
6			

ACTION

DATE

PRELIM

4/20/2022

PROJECT

PAYSON VIEW ESTATES PHASE 3

DESCRIPTION

PRELIMINARY PLANS

SHEET NAME

HAZARDS

SHEET NUMBER

SL4