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January 17, 2017

Washoe County Commissioner's
c/o Bob Lucey
1001 East 9th Street
Reno, NV 89512

Trevor Lloyd, Sr. Planner
Washoe County Planning Department
1001 East 9th Street
Reno, NV 89512

Subject: Objections to Ascent'e Tentative 635 Acre Development Plan

This letter outlines my objections to the Ascent'e development plan that has been submitted by NNV1 Partners LLC for your review and consideration. I am a long time resident of Callahan Ranch having lived here since 1988. I am also a retired Geological Engineer and Environmental Manager in the State of Nevada and former owner of Porter Geotechnical a geotechnical engineering firm which has, as part of our routine work prepared geotechnical reports such as the one presented by Lumos and Associates for this development. As a retired engineer I have numerous concerns regarding the scope of technical reports prepared thus far which have not addressed significant geologic and engineering concerns with the project as it currently proposed. As a resident I am also concerned about the negative impact this project will have on the quality of life for residents of my community and on the negative impact this project will have on our property values.

Technical Issues

Fault Hazards: A 2011 Nevada Bureau of Mines and Geology (NBMG) Report has mapped a concealed fault (West Steamboat Fault) crossing the subject site. The location of this fault is based on topographic expression as observed in Low Sun Angle Aerial Photography and some field checking. The fault is classified as concealed due to surface land disturbance (development). The exact location or activity has not been established with any studies to date. I have attached a copy of a portion of this map showing the location of the fault and where it crosses the site. Lumos and Associates recommends "a site investigation by trenching... to prove or disapprove the possible concealed fault location". We agree with their recommendation.

Additionally an older map report prepared by NBMG (1983), Earthquake Hazards of the Mt Rose Quad, shows several faults entering the site from the north. This map has much more detail than the more

recent map. The 1983 maps shows two faults entering the site from the north. The southern boundary of this map stops just short of the project area. However it is clear that these faults do not stop at the section line but in fact continue on toward the south crossing the subject site. I have prepared a composite map blending the findings of the two reference maps with my own interpretation, based on my extensive experience in mapping such faults. This composite geologic map is also attached. The inferred location of one of these faults passes directly thru the highest cluster of proposed home sites located at the south end of Fawn Lane. If in fact this fault is found thru fault exploration trenching work to be an active fault it will have a significant impact on how home sites can be built in this area given the required structural setback needed from the fault. Other potentially active, less than 100,000 yr old faults project into the site from the north. It should be noted that the recent Napa California earthquake was centered on what was believed to be a potentially active and not active fault. I have explored some of the faults in the Callahan area within the same tensional block that divides the subject property from the Mount Rose tectonic block. I have thru my exploration confirmed active faults in this region and have assigned building and utility setbacks from them. Later studies conducted by other consultants for The Estates Development also found active faults, including the one that enters the subject site from the north to be active. **Clearly these faults need to have detailed exploration before any further consideration is given to approval of this project.**

Grading and Slope/Engineered Fill Stability: The June 2016 Geotechnical Research report prepared by Lumos is by their own description, a literature research report and does not include any site specific testing. Considering the steepness of the slopes proposed for development and the fact that almost all the higher portions of this site will be founded on bedrock, in a faulted setting, including very hard rock, the economic feasibility of this project remains in question. Lumos correctly states that excavation into the rock particularly for confined excavations for utilities could very well require blasting. Blasting could be in locations directly above existing residents. **Continuous blast monitoring stations will be needed for the protection of existing residents located downhill of blast areas to assure no damage to them or their structure.**

Blasting and excavation in hard rock will generate a large quantity of angular rock boulders. These materials, because of the size cannot be used in engineered fill because of the problems with nesting and creation of large voids in any fill. At this point it is not known whether a sufficient quantity of fill soil of suitable size for use as engineered fill can be generated with onsite excavation. If not, large quantities of soil may need to be imported in order to create proposed building pads. The import of these material would add greatly to construction traffic. Importing soil for fill could make the project financially unfeasible. **Ripability studies should be conducted prior to site design to establish the extent that blasting will be necessary.**

It has been customary as of recent to use the large rock generated from rock slope excavations for retaining walls on the lower side of building pads and roads in areas that are graded for tracts in hillside development. This should not be permitted. My firm had investigated numerous failures of Rock Retaining Walls in various hillside subdivisions in Sparks. The failures occur in one of two ways, either by movement of the rock itself, a particular concern given the seismic environment at this location. I have also observed failure where fines in the foundation fill soil hydraulic pipe down between the rocks creating soil movement (flow) toward downslope locations. The loss of foundation support resulted in cracking of flatwork and building foundations. There is no engineered standard for rock wall construction, such as there is for precast concrete structures. Rock wall performance depends to a large extent on the level of care in the placement of the rock. The walls are subject to failure placing existing structures including existing Callahan residents located below such walls at great risk particularly during

a seismic event. Another concern is that the surface of areas retained by rock walls cannot be revegetated, thereby creating a far greater visual impact from the development. One needs to look only as far as the hillside developments in the East foothills above Sparks to assess the visual impact of such developments. **Washoe County should stipulate that no rock walls be used in the construction of this project.**

Runoff: The Ascent'e project will have a substantial impact on areas downslope from the increase in storm water runoff. Hard surfaces from roofed areas, roadways and hard compacted soils will create a directed flow, which will place existing downslope properties at risk. Residents of Callahan have already been impacted by runoff from The Estates project forcing the engineer to comeback and redesign and build a much larger storm water management system. My home was one of the homes that was impacted from that failure having lost my driveway culvert from the increased flows. The current plan for Ascent'e is considerably undersized. We have observed these so called infiltration basins recently built for The Estates. These basins were filled nearly to capacity with the one storm we had this past week. This occurred without any snow to melt on the ground surface. Design of storm water systems in this area must not be made using rainfall records alone as this will lead to a substantially under designed system. It must include a consideration for two scenarios. One is the combination of 100 yr rain event falling on a melting heavy snowpack. It must also take into account peaks from summer flash flood events which can yield several inches of rainfall in just a few hours or even minutes. **For the protection of all downstream properties the proposed stormwater management system must be increased to account for peak flows that could be generated from either of these two scenarios.**

Personal Homeowner Issues

As a longtime resident of this area I have observed the rural nature of life in the Callahan area continue to erode with each new large development built around us. While all of these projects have had some impact, none has had the impact this project will bring as the neighborhood clearly would no longer be rural in nature. The following cites the major concerns I and many of my neighbors have with regard to this development.

Public Land Access: For the people who live in Callahan and Fawn lay we access public lands in the Steamboat hills area thru three earth roads that all pass thru the development area. This area is the recreation backyard for us. We frequently either drive our quad, 4X4 truck, UTV or ride our horse, bike or simply walk our dogs on these roads up to the public lands. One look at the heavily used earth roads will confirm this. The trail system Assent'e proposes is not practical and clearly is located up very steep slopes where it will not interfere with the marketing of the lots on their development. Such so called trails are too steep for horses and probably many hikers, and doesn't accommodate the people who drive onto the mountain with trucks, quads or UTV's. It also doesn't provide for parking at the trailheads. The project will, in effect cut off our community from direct public land access and would force many people to drive to another access point. We will no longer be able to walk or ride directly from our home to access public land. **The trail system, as proposed, is laid out to accommodate marketability of the project and will not meet the needs of all current users of the public lands. As such a plan that meets the needs of all users of the trails must be prepared prior to project approval.**

Property Values: Because of this project I have contacted a realtor about selling my home. I would prefer to stay in my home if the right measures are put in place to protect existing homeowner's interest. My home has "great mountain views" of Steamboat Hills. I have been advised by my realtor

that I must disclose to any prospective buyer about this project and that I will not be able to list mountain views as this property will soon be developed. **Therefore my property values and marketability has already been impacted by this development as we will no longer be able to advertise in our listing "mountain views".**

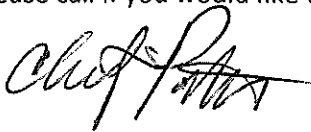
Traffic: Development plans call for the construction of 32 foot wide road ways that funnels into streets that are as narrow as 24 feet in the Callahan area. This obviously will create a safety problem when faster moving traffic on the wider streets enters our narrow streets. In addition the pavement thickness for our streets is not designed for this increase in loading, leading to premature pavement failure. Residents of our development should not be subjected to this increase, particularly the heavy truck traffic that is associated with construction. **This project should have its own dedicated access directly off Mount Rose Highway, with only emergency access granted thru the Callahan area. If that for some reason is not possible our streets should be upgraded to the same standard used in the proposed development.**

Safety: Callahan residents were recently ordered to evacuate because of the Washoe Valley fire. In the early 1980s fire actually burned brush in the corner of my lot. Fire is a real threat to this area and has threatened us several times since living here. Development has cut out all access roads but one, for residents to escape. Originally there were three roads connecting our area. It took some residents an hour to get out for this recent fire. Any additional traffic loads in time of emergency could easily result in the loss of life. If a fire is racing up the west slopes of the Steamboat hills residents at the top of the new development could be trapped. **Safety above all is the most important reason that Ascent'e obtain direct access to the project off Mount Rose Highway.**

School and Public Service Funding: Washoe County residents are now paying extra sales tax to help fund development. I really believe placing the burden of development with existing residents is unfair. These cost should be paid for by the developer. A Verdi developer has recently volunteered to pay an "impact fee" for each residential lot in his development. Why should existing residents continue to get stuck with paying for new development? The costs should be paid by the developer who will pass the cost to new residents of the area. **The County should request a community service impact fee to offset cost for all expansion of public services for this project.**

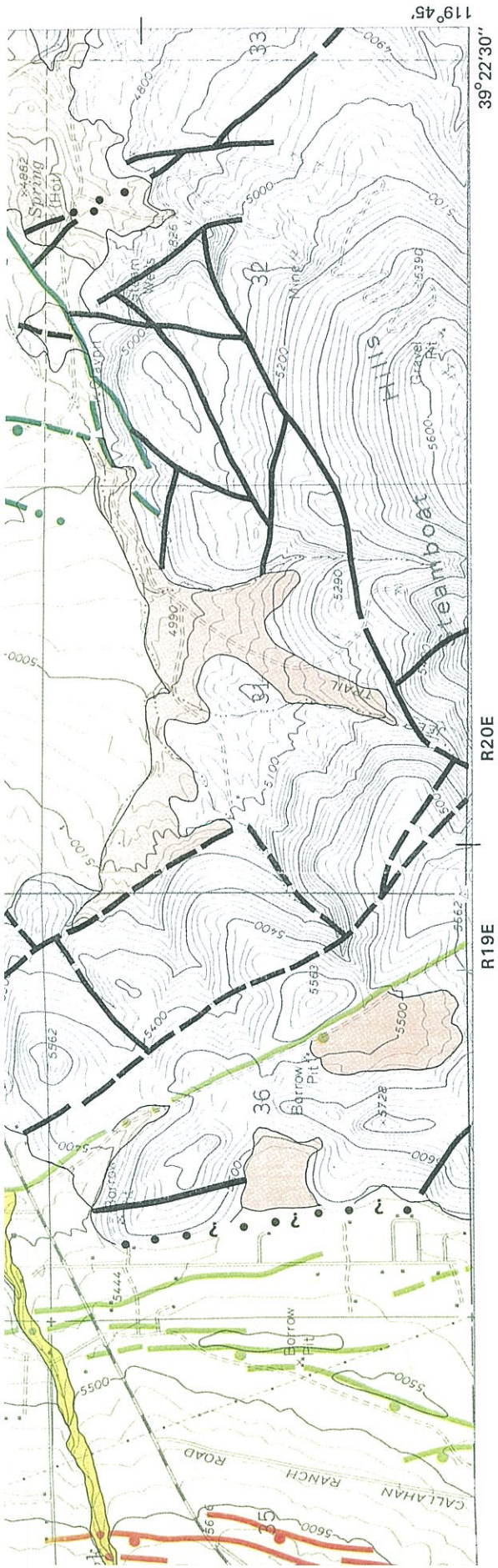
Water: My well and many other wells in my neighborhood dried up as a result of pumping groundwater from deeper larger diameter community supply wells drilled in this neighborhood. I have been forced to connect up to public water supply. This is not just a local issue in the Callahan area it must be a concern for all of southern Washoe County. We know that water rights on which so much of the development expansion is based on, is substantially over allocated in the times of extended draught such as we have experienced for many of the recent years. How can the County continue to approve projects of this size without first having real water not paper water in hand?

Please call if you would like to discuss my concerns further.



Edward "Chip" Porter
Nevada Geological Engineer 7843 (Inactive)
Nevada Environmental Manager EM-1035

HAZARDS



POTENTIAL FOR SURFACE RUPTURE Age of youngest fault displacement

- ← INCREASING POTENTIAL HAZARD
- Holocene (< 12,000 years), less than 3000 years at White's Creek
 - Mid- to late Pleistocene (approximately 35,000–100,000 years)
 - Early to mid-Pleistocene (approximately 100,000 years–1.8 m.y.)
 - Indeterminate; predominately bedrock faults of probable pre-Pleistocene and early to mid-Pleistocene age

Note: Extensive trenching would be required to determine the age of the most recent movement on each fault; however, this was impractical given the large number of faults in the quadrangle and the time constraints of this study. Therefore, recent fault movements are not precluded in the categories above. Ages shown are based on geomorphic, soil, and geologic evidence (in the absence of trenching data).

- Fault. Ball on downthrown side;
- - - dashed where approximately located;
- ? - queried where presence uncertain; dotted where concealed
- • • • •

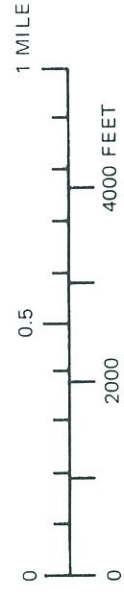
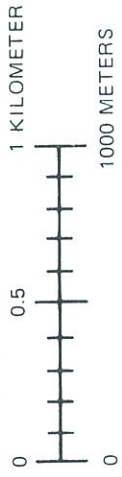
Gail Cordy Szecsydy, 1983

Assisted by Michael R. Nichol

Geology from Bonham and Rogers (1983) Geologic map, Mount Rose NE quadrangle, Nevada Bureau of Mines and Geology Map 4Bg.

Depth to ground water based on geotechnical borings, regional ground-water elevations from Cohen and Loeltz (1964), and unpublished data of the U.S. Geological Survey, Sierra Pacific Power Company, and Nevada Bureau of Mines and Geology.

Scale 1:24,000



CONTOUR INTERVAL 20 FEET
DOTTED LINES ARE 10-FOOT CONTOUR
DATUM IS MEAN SEA LEVEL

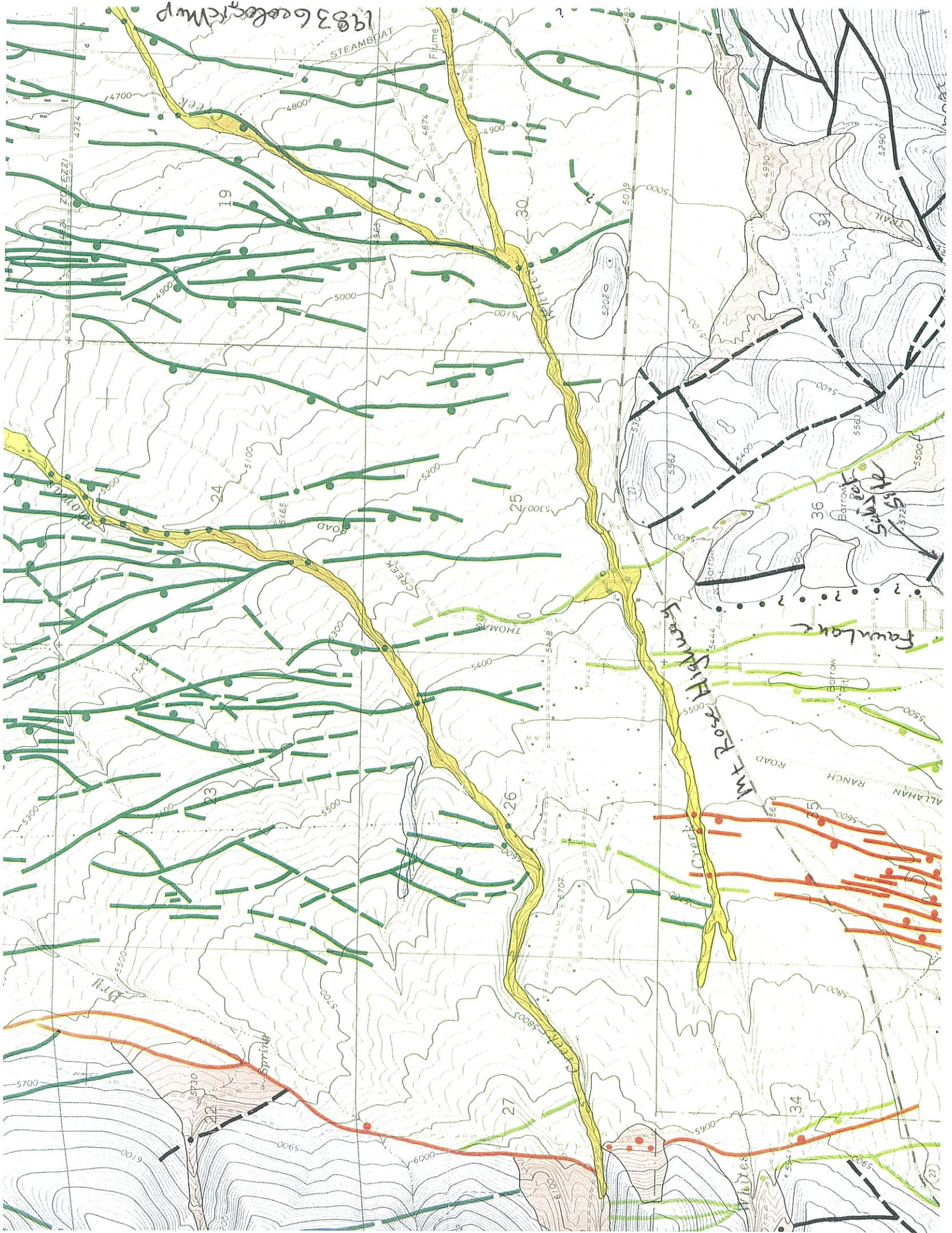
Research for this map supported by
U.S. Geological Survey Earthquake
Hazards Reduction Grant No. 14-08-0001-1982

NEVADA BUREAU OF MINES AND GEOLOGIC
UNIVERSITY OF NEVADA, RENO
RENO, NEVADA 89557-0008
ORDER MAP NO. 4Bi—PRICE \$3.C

Topographic base from
U.S. Geological Survey
Mt. Rose NE 7 1/2' quadrangle, 1969
Cartography by Larry Jacox



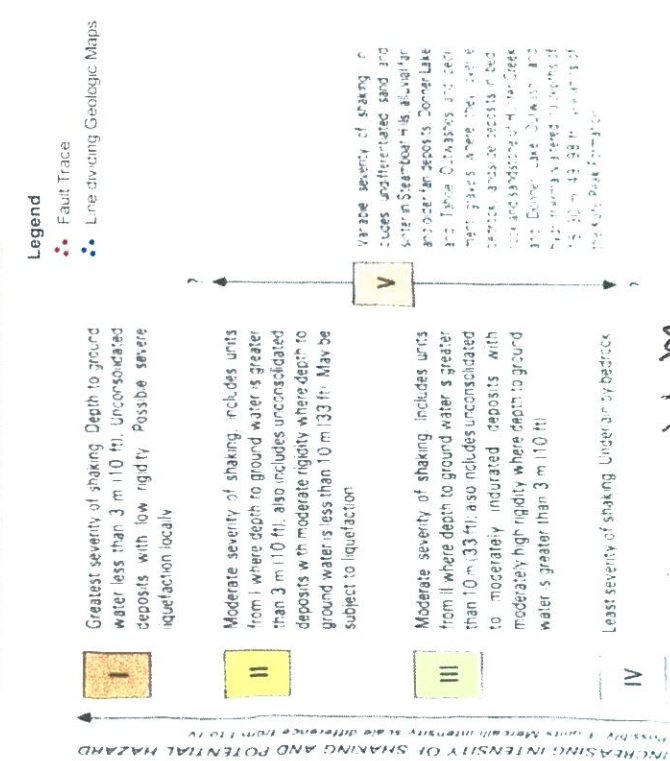
1983 Geologic Map



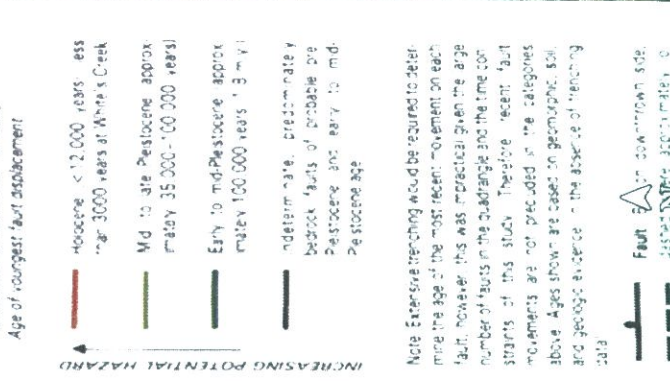
Geologic Maps of Ascente Project



POTENTIAL FOR GROUND SHAKING DURING EARTHQUAKES



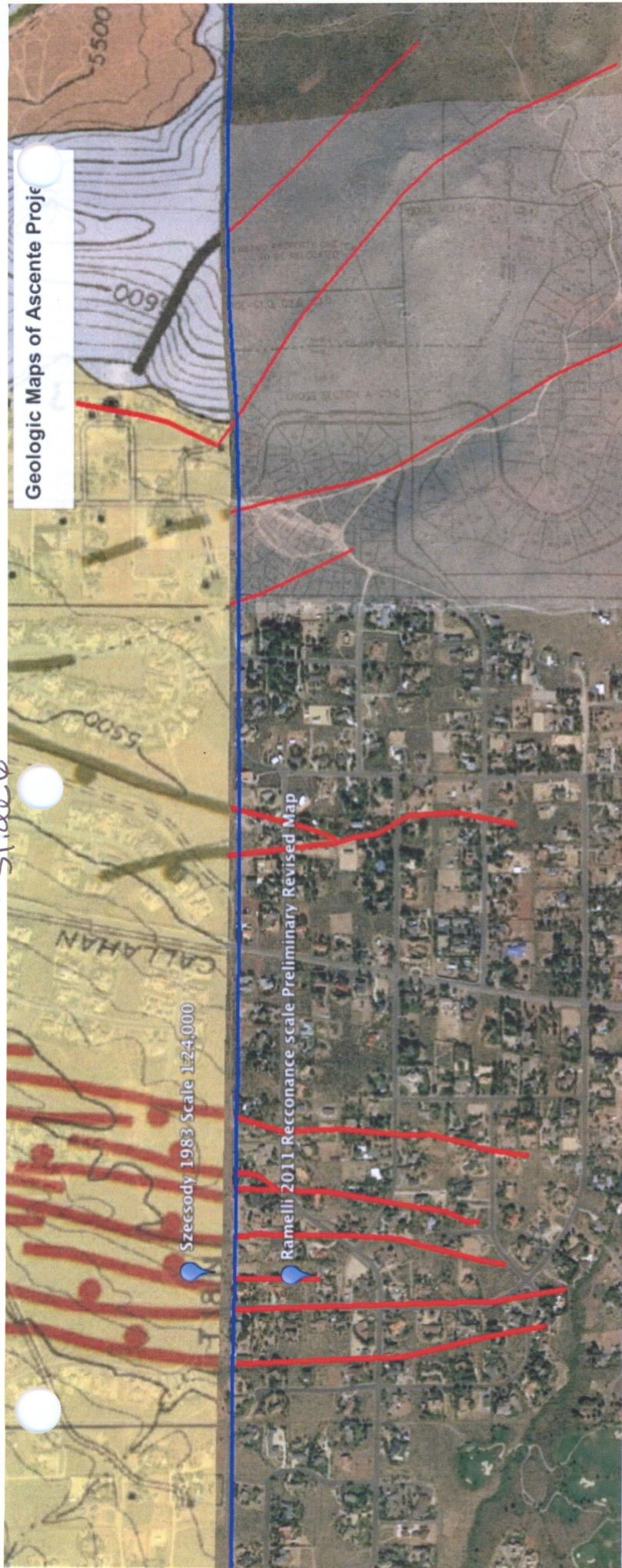
POTENTIAL FOR SURFACE RUPTURE



Composite Map

stick

Geologic Maps of Ascente Project



POTENTIAL FOR GROUND SHAKING DURING EARTHQUAKES

Increasing Intensity of Shaking and Potential Hazard from I to IV

I Greatest severity of shaking. Depth to ground water less than 3 m (10 ft). Unconsolidated deposits with low rigidity. Possible severe liquefaction locally

II Moderate severity of shaking. Includes units from I where depth to ground water is greater than 3 m (10 ft); also includes unconsolidated deposits with moderate rigidity where depth to ground water is less than 10 m (33 ft). May be subject to liquefaction

III Moderate severity of shaking. Includes units from II where depth to ground water is greater than 10 m (33 ft); also includes unconsolidated to moderately indurated deposits with moderately high rigidity where depth to ground water is greater than 3 m (10 ft)

IV Least severity of shaking. Underlain by bedrock

Variable severity of shaking. Includes undifferentiated sand and silt in Stearns-Hills, alluvial fan and older fan deposits; Donner Lake and Tahoe Outwashes and pebbly gravels where they overlie bedrock; landslide deposits in bedrock and sandstone of Hunter Creek and Donner Lake Outwash, and hydrothermally altered to depths of 15-30 m (49-98 ft) volcanics of the Salt Peak Formation

Legend

- Fault Trace
- Line dividing Geologic Maps

POTENTIAL FOR SURFACE RUPTURE

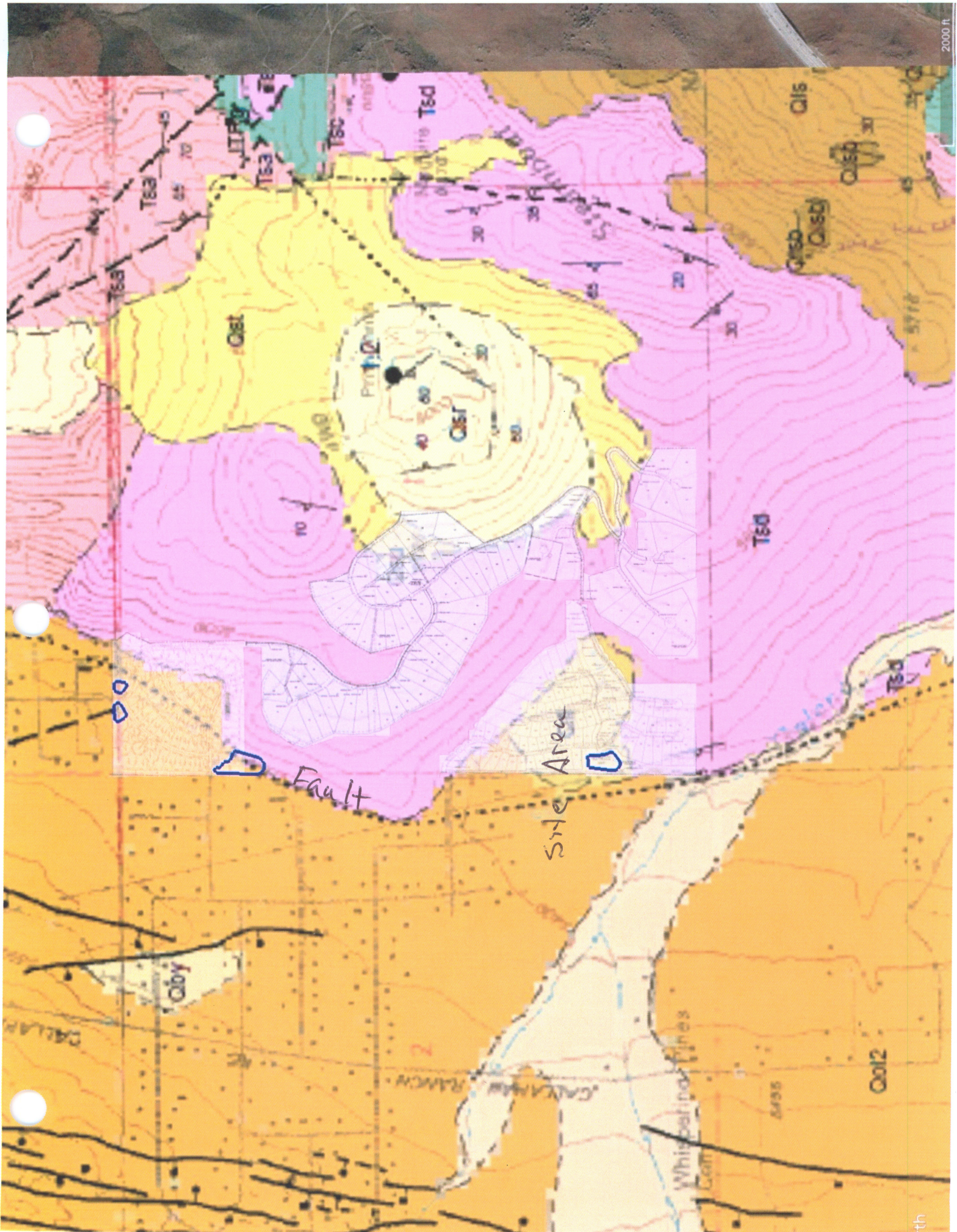
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Fault ⚠ on downthrown side; dashed where approximately located; solid where presence certain; dotted where concealed

2000 ft



Fault

Site Area

D

D

D