

Appendix 12. Tabulated Observations and Photographs of Ground Deformation Produced by the M_w 6.0 South Napa Earthquake of August 24, 2014—Isolated Cracking on Slopes

Introduction

The following pages contain maps and tables of descriptions, slip measurements, and photographs of ground deformation features obtained in the field at observation stations located in regions J and Q. Station locations are shown as circles in figure 12.1 and 12.2 and labeled by the Station ID number. To aid in locating a specific observation station, IDs increase numerically from south to north. Where multiple observations occur at the exact same locality, IDs are shown as a range (for example, 200–202 identifies stations 200, 201, and 202 all at the same location). Where stations are too closely spaced to be individually labeled in the figures, a single label is used for a group of stations, with the IDs or groups of IDs listed in a vertical column and the label leader pointing to the approximate midpoint of the group of closely spaced stations. Mappable fault rupture and surface deformation features are symbolized on the included maps as described in appendix 1.

Observations and (or) photographs collected at each station are tabulated by Station ID. Where stations occur at the same locality, earlier observations are listed first. Photographs taken at an observation station, if any, follow the station attribute information; high resolution images can be downloaded by clicking on the associated links. Station and photograph attributes are described in detail in appendix 1.

Region J

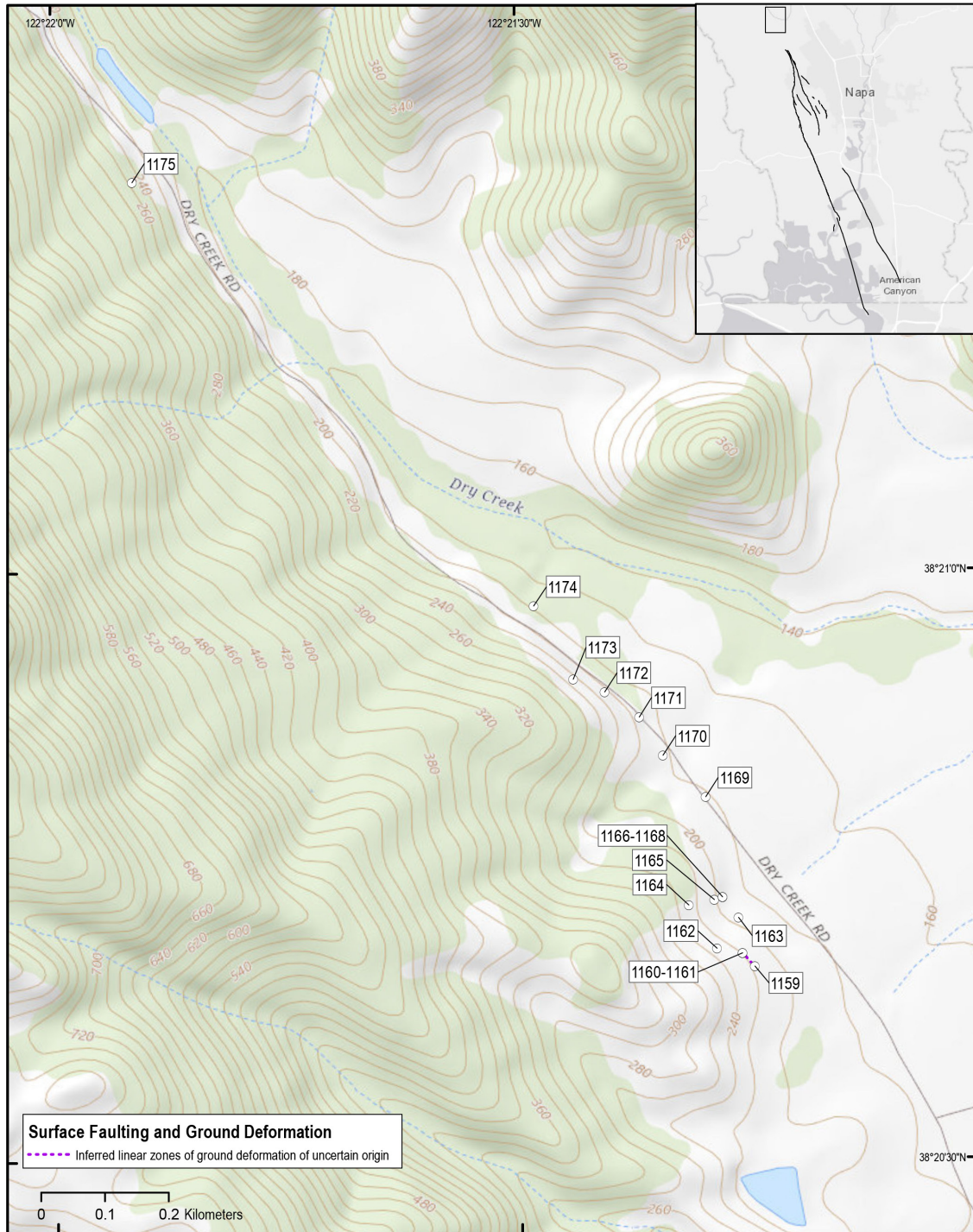


Figure 12.1. Ground deformation map showing locations of observation stations 1159–1175 in Region J of the West Napa Fault System, California, 2 km north of northern terminus of Trace A. Inset shows location of fig. 12.1 relative to full extent of rupture. Shaded relief base from U.S. Geological Survey National Map <https://viewer.nationalmap.gov/advanced-viewer/>.

Station ID: 1159		Observer: Pickering/Crewdson		
Observation Date	Latitude	Longitude	Offset Feature	Inferred Origin
2014:09:10	38.34439	122.35415	Soil	Uncertain
Description				
Fracture continues (property boundary).				
Photographer	Camera Coordinates		Photograph Date	
Pickering/Crewdson			2014:09:10 05:41:47	

[High Resolution Photograph](#)



Station ID: 1160		Observer: Pickering/Crewdson				
Observation Date	Latitude	Longitude	Offset Feature	Inferred Origin		
2014:09:10	38.34458	122.35436	Soil	Uncertain		
Description						
3-6 cm extension fracture.						
Fault Azimuth	Strike Slip	Strike-slip Sense	Extension	Compression	Vertical	Upthrown Side
			3-6*			

Station ID: 1160	Observer: Pickering/Crewdson	
Photographer	Camera Coordinates	Photograph Date
Pickering/Crewdson		2014:09:10 05:20:08

[High Resolution Photograph](#)



Station ID: 1161				Observer: Ponti	
Observation Date	Latitude	Longitude	Offset Feature	Inferred Origin	
2014:09:12	38.34458	122.35436	Soil	Uncertain	
Description					
en echelon fracture trending 310; slip vector 205. Looks to be extensional fracturing with downslope movement.					
Fault Azimuth	Strike Slip	Strike-slip Sense	Extension	Compression	Vertical
310					

Station ID: 1162		Observer: Pickering/Crewdson		
Observation Date	Latitude	Longitude	Offset Feature	Inferred Origin
2014:09:11	38.34465	122.35482	Soil	Uncertain
Description				
Smaller fractures.				

Station ID: 1163		Observer: Pickering/Crewdson		
Observation Date	Latitude	Longitude	Offset Feature	Inferred Origin
2014:09:11	38.34508	122.35443	Pavement	Uncertain
Description				
Large compressional fracture in driveway (patched up).				

Station ID: 1164		Observer: Pickering/Crewdson		
Observation Date	Latitude	Longitude	Offset Feature	Inferred Origin
2014:09:11	38.34526	122.35532	Pavement	Uncertain
Description				
Fractured driveway.				

Station ID: 1165		Observer: Schwartz		
Observation Date	Latitude	Longitude	Offset Feature	Inferred Origin
2014:08:27	38.34533	122.35486	Pavement	Uncertain
Photographer	Camera Coordinates		Photograph Date	
Schwartz			2014:08:27 12:06:42	

High Resolution Photograph



Station ID: 1165

Observer: Schwartz

Photographer

Camera Coordinates

Photograph Date

Schwartz

2014:08:27 12:07:12

[High Resolution Photograph](#)



Photographer

Camera Coordinates

Photograph Date

Schwartz

2014:08:27 12:07:16

[High Resolution Photograph](#)



Station ID: 1165

Observer: Schwartz

Photographer

Camera Coordinates

Photograph Date

Schwartz

2014:08:27 12:07:44

[High Resolution Photograph](#)



Photographer

Camera Coordinates

Photograph Date

Schwartz

2014:08:27 12:08:07

[High Resolution Photograph](#)



Station ID: 1165

Observer: Schwartz

Photographer

Camera Coordinates

Photograph Date

Schwartz

2014:08:27 12:08:09

[High Resolution Photograph](#)



Photographer

Camera Coordinates

Photograph Date

Schwartz

2014:08:27 12:12:51

[High Resolution Photograph](#)



Station ID: 1165

Observer: Schwartz

Photographer

Camera Coordinates

Photograph Date

Schwartz

2014:08:27 12:12:57

[High Resolution Photograph](#)



Photographer

Camera Coordinates

Photograph Date

Schwartz

2014:08:27 12:13:13

[High Resolution Photograph](#)



Station ID: 1166				Observer: Schwartz
Observation Date	Latitude	Longitude	Offset Feature	Inferred Origin
2014:08:27	38.34537	122.35472	Pavement	Uncertain
Photographer	Camera Coordinates		Photograph Date	
Schwartz			2014:08:27 12:03:44	

High Resolution Photograph



Photographer	Camera Coordinates	Photograph Date
Schwartz		2014:08:27 12:04:13

High Resolution Photograph



Photographer	Camera Coordinates	Photograph Date
Schwartz		2014:08:27 12:04:36

High Resolution Photograph



Station ID: 1166

Observer: Schwartz

Photographer

Camera Coordinates

Photograph Date

Schwartz

2014:08:27 12:04:47

[High Resolution Photograph](#)



Photographer

Camera Coordinates

Photograph Date

Schwartz

2014:08:27 12:05:26

[High Resolution Photograph](#)



Photographer

Camera Coordinates

Photograph Date

Schwartz

2014:08:27 12:05:52

[High Resolution Photograph](#)



Station ID: 1166

Observer: Schwartz

Photographer

Camera Coordinates

Photograph Date

Schwartz

2014:08:27 12:16:02

[High Resolution Photograph](#)



Photographer

Camera Coordinates

Photograph Date

Schwartz

2014:08:27 12:17:10

[High Resolution Photograph](#)



Station ID: 1167		Observer: Pickering/Crewdson		
Observation Date	Latitude	Longitude	Offset Feature	Inferred Origin
2014:09:11	38.34537	122.35472	Pavement	Uncertain
Description				
Compressional driveway fracture.				

Station ID: 1168		Observer: Ponti				
Observation Date	Latitude	Longitude	Offset Feature	Inferred Origin		
2014:09:12	38.34537	122.35472	Pavement	Uncertain		
Description						
Compressional deformation on road. Trend 345.						
Fault Azimuth	Strike Slip	Strike-slip Sense	Extension	Compression	Vertical	Upthrown Side
345						
Photographer	Camera Coordinates		Photograph Date			
Ponti	38.34538	122.35471	2014:09:11 17:39:00			

[High Resolution Photograph](#)



Station ID: 1169		Observer: Hudnut				
Observation Date	Latitude	Longitude	Offset Feature	Inferred Origin		
2014:08:28	38.34679	122.35501	Pavement	Uncertain		
Description						
Main crack across driveway is N10E and has no displacement.						
Fault Azimuth	Strike Slip	Strike-slip Sense	Extension	Compression	Vertical	Upthrown Side
10						

Station ID: 1170				Observer: Hudnut		
Observation Date	Latitude	Longitude	Offset Feature	Inferred Origin		
2014:08:28	38.34738	122.35576	Pavement	Uncertain		
Description						
Fracture across paved driveway. Cracks next to tree stump located by side of asphalt driveway. Side-hill slump. Crack crossing driveway in N35W but no displacement; tent feature.						
Fault Azimuth	Strike Slip	Strike-slip Sense	Extension	Compression	Vertical	Upthrown Side
325						
Photographer	Camera Coordinates			Photograph Date		
Hudnut	38.34743	122.35566	2014:08:28	12:16:05		

[High Resolution Photograph](#)



Photographer	Camera Coordinates		Photograph Date	
Hudnut	38.34740	122.35574	2014:08:28	12:16:24

[High Resolution Photograph](#)



Station ID: 1170

Observer: Hudnut

Photographer	Camera Coordinates		Photograph Date
Hudnut	38.34742	122.35571	2014:08:28 12:17:04

[High Resolution Photograph](#)



Photographer	Camera Coordinates		Photograph Date
Hudnut	38.34739	122.35572	2014:08:28 12:17:07

[High Resolution Photograph](#)



Station ID: 1171				Observer: Hudnut
Observation Date	Latitude	Longitude	Offset Feature	Inferred Origin
2014:08:28	38.34792	122.35619	Pavement	Uncertain
Description				
Fractures in paved road.				
Photographer	Camera Coordinates		Photograph Date	
Hudnut	38.34789	122.35621	2014:08:28	12:08:06

[High Resolution Photograph](#)



Station ID: 1172				Observer: Hudnut
Observation Date	Latitude	Longitude	Offset Feature	Inferred Origin
2014:08:28	38.34828	122.35681	Pavement	Uncertain
Description				
Fractures in paved road.				
Photographer	Camera Coordinates		Photograph Date	
Hudnut			2014:08:28	12:05:19

[High Resolution Photograph](#)



Station ID: 1172

Observer: Hudnut

Photographer

Camera Coordinates

Photograph Date

Hudnut

2014:08:28 12:05:25

[High Resolution Photograph](#)



Photographer

Camera Coordinates

Photograph Date

Hudnut

2014:08:28 12:05:32

[High Resolution Photograph](#)



Station ID: 1172

Observer: Hudnut

Photographer

Camera Coordinates

Photograph Date

Hudnut

2014:08:28 12:05:43

[High Resolution Photograph](#)



Photographer

Camera Coordinates

Photograph Date

Hudnut

2014:08:28 12:06:02

[High Resolution Photograph](#)



Station ID: 1172

Observer: Hudnut

Photographer

Camera Coordinates

Photograph Date

Hudnut

2014:08:28 12:06:06

[High Resolution Photograph](#)



Photographer

Camera Coordinates

Photograph Date

Hudnut

2014:08:28 12:06:17

[High Resolution Photograph](#)



Station ID: 1172**Observer: Hudnut**

Photographer	Camera Coordinates		Photograph Date
Hudnut	38.34820	122.35677	2014:08:28 12:07:48

[High Resolution Photograph](#)



Photographer	Camera Coordinates		Photograph Date
Hudnut	38.34827	122.35693	2014:08:28 12:07:50

[High Resolution Photograph](#)



Station ID: 1173				Observer: Rubin
Observation Date	Latitude	Longitude	Offset Feature	Inferred Origin
2014:08:27	38.34846	122.35737	Pavement	Uncertain
Description				
Several open cracks in very steep driveway. Open toward side slope and downslope of driveway. Many are pre-existing. Cracks do not extend to soil.				

Station ID: 1174				Observer: Rubin
Observation Date	Latitude	Longitude	Offset Feature	Inferred Origin
2014:08:27	38.34950	122.35807	Pavement	Uncertain
Description				
Crack perpendicular across driveway. No cracking in adjacent soil. No lateral movement along edge of asphalt. Minor driveway parallel crack at road. Irregular trend closed at east end. Many pre-existing cracks in road do not look fresh.				

Station ID: 1175				Observer: Pickering/Crewdson
Observation Date	Latitude	Longitude	Offset Feature	Inferred Origin
2014:09:11	38.35553	122.36523	Pavement	Uncertain
Description				
Large driveway fracture and house with extensive structural damage.				

Region Q

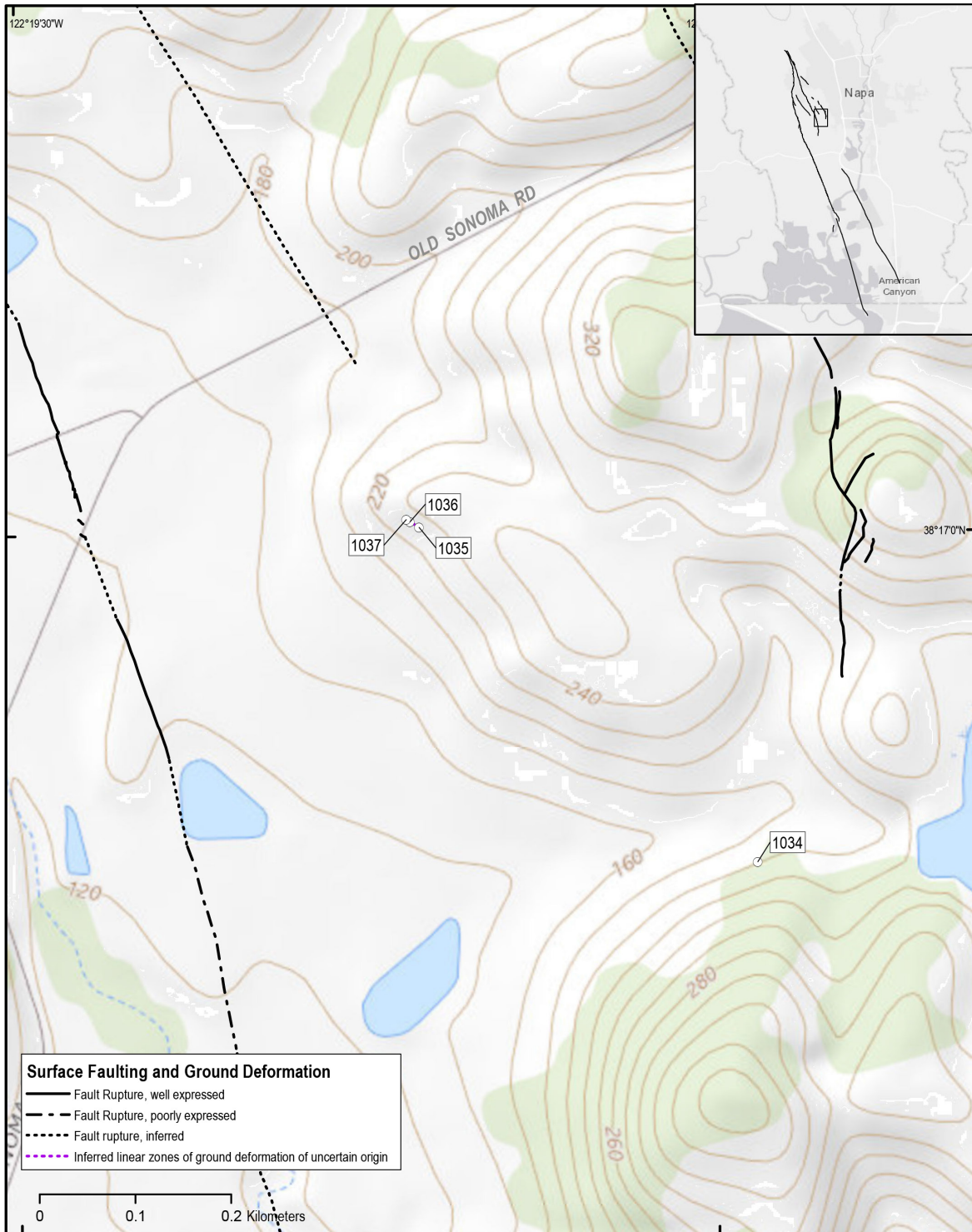


Figure 12.2. Ground deformation map showing locations of observation stations 1034–1037 in Region Q of the West Napa Fault System, California, 400 m southeast of intersection of Old Sonoma Road and Congress Valley Road Inset shows location of fig. 12.2 relative to full extent of rupture. Shaded relief base from U.S. Geological Survey National Map <https://viewer.nationalmap.gov/advanced-viewer/>.

Station ID: 1034				Observer: Hecker		
Observation Date	Latitude	Longitude	Offset Feature	Inferred Origin		
2014:09:19	38.28022	122.31618	Soil	Uncertain		
Description						
Single crack ~1.5m long with ~2 mm opening crossing from grass onto north side of dirt road where it dies as hairline crack. Trend ~344. Only visible fracture along east-west road.						
Fault Azimuth	Strike Slip	Strike-slip Sense	Extension	Compression	Vertical	Upthrown Side
			0.2*			

Station ID: 1035				Observer: Hecker		
Observation Date	Latitude	Longitude	Offset Feature	Inferred Origin		
2014:09:12	38.28340	122.32020	Soil	Uncertain		
Description						
Isolated 0.5-cm-wide crack between vines (only ~0.3 m long).						
Fault Azimuth	Strike Slip	Strike-slip Sense	Extension	Compression	Vertical	Upthrown Side
			0.5*			
Photographer	Camera Coordinates		Photograph Date			
Hecker			2014:09:12 18:12:31			

High Resolution Photograph



Station ID: 1036				Observer: Hecker		
Observation Date	Latitude	Longitude	Offset Feature	Inferred Origin		
2014:09:12	38.28345	122.32031	Soil	Uncertain		
Description						
Isolated 0.5-cm-wide crack between vines. Trend is ~300.						
Fault Azimuth	Strike Slip	Strike-slip Sense	Extension	Compression	Vertical	Upthrown Side
300			0.5*			

Station ID: 1037				Observer: Hecker		
Observation Date	Latitude	Longitude	Offset Feature	Inferred Origin		
2014:09:12	38.28347	122.32036	Soil	Uncertain		
Description						
Isolated crack between vines. May be west end of zone (overall width of zone is unclear); zone is subparallel to and west of UAVSAR lineament. Trend is 300.						
Fault Azimuth	Strike Slip	Strike-slip Sense	Extension	Compression	Vertical	Upthrown Side
300						