

October 1, 2014,

Stuart Cowan
47-339 Mapumapu Road
Kaneohe, Hawaii 96744

Re: Romano vs. Chili's, et al.

Dear Mr. Cowan:

As you requested, I have reviewed the initial file material your office provided me for the above referenced matter. In addition, I conducted an inspection of the site where Ms. Romano was injured when she tripped and fell in the parking lot at the Chili's Restaurant in Kahala Mall. I also had the opportunity to interview Ms. Romano, as well as her sister who witnessed the fall. Given this information, I then conducted a safety and risk management analysis of Ms. Romano's falling incident. The purpose of this letter is to summarize my preliminary findings.

This incident is similar to a number of other falls at elevation (i.e. slip and falls, trip and falls, or misstep and falls) incidents that I have analyzed over the past 30-plus years. Without preparing a comprehensive report, this letter identifies my opinions to date, along with some of the key factors that support those opinions.

Background

Ms. Romano exited Chili's Restaurant and proceeded down the main sidewalk, which was a designated ADA handicap access ramp towards the parking lot (See Figure 1). Upon reaching the end of the sidewalk, Ms. Romano stepped off the curb and onto the asphalt parking lot surface below. However, unbeknownst to Ms. Romano, the asphalt surface was not planar; rather there was an overlay on the asphalt that did not continue flush all the way to the curb; as a result there was an elevated "seam" in the asphalt that ran parallel to the concrete sidewalk and curb (See Figure 2).

Ms. Romano's second foot stepped from the sidewalk/curb and swung past her lead foot which was planted on the lower portion of the asphalt nearer the curb much like the foot/shoe seen in Figure 3. Once Ms. Romano's second foot was planted on the planar portion of the asphalt, she naturally pivoted up on the ball of her initial foot, which then began to swing forward. However, the toe of her foot/shoe became momentarily entrapped by the unexpected vertical lip in the asphalt (See Figure 3). As a result, the swing path of Ms. Romano's foot was momentarily disrupted which induced an irretrievable loss of balance and fall.



Figure 1: Sidewalk/Ramp Approaching the Parking Lot Area



Figure 2: Close-up View of Area Where Ms. Romano Stepped Down onto the Parking Lot Surface

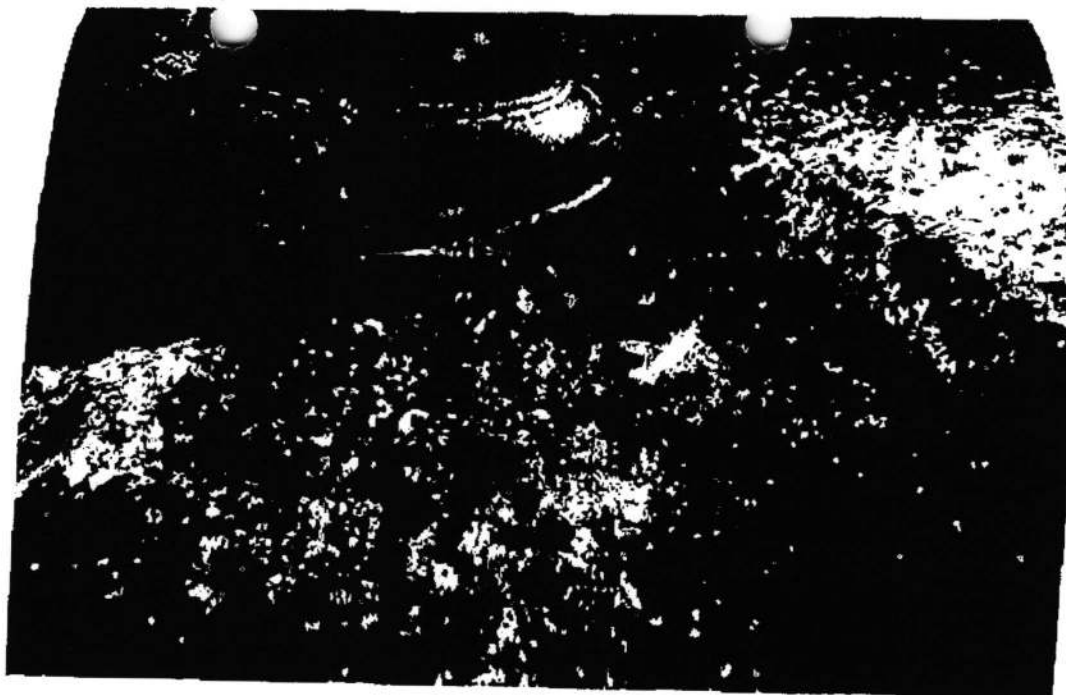


Figure 3: Close-up View of Hazardous Lip

Opinions

1. The degraded/defective parking lot that induced Ms. Romano's fall incident was a functionally hidden hazard that created an unreasonable risk of harm to anyone who had occasion to use the parking lot; this defective condition was one of the underlying causes of Ms. Romano's fall and subsequent injuries.
2. The reason that this functionally hidden hazard existed, as well as the reason it was not mitigated in a timely manner, was due to the deficiencies of the Defendants' safety and risk management programs; these deficiencies were another underlying cause of Ms. Romano's fall and subsequent injuries.
3. Ms. Romano's actions and/or inactions were not a significant contributing factor to her fall and subsequent injuries.

Opinion 1: Hazardous Condition

There are a number of factors that support my opinion that the condition of the parking lot (i.e. the pothole) created an unreasonably dangerous condition. Some of the more salient factors are discussed below.

Fall Hazards

The hazards associated with falls are well understood. Up until the late 1920s falls were the leading cause of accidental deaths in the United States. Since that time automobiles have been the number one cause of accidental deaths and falls have been the second leading cause. In fact, falls typically account for more serious injuries and deaths than

the next four categories combined. Falls-at-elevation are particularly troublesome for the walking public both in frequency of occurrence and the severity of injury. For example, the elderly (i.e. 70 years of age or older) average one such fall a year and nearly 25% of them ultimately die from their injuries.

The hazards associated with unsafe walking surfaces are well known to commercial and business establishments. Fall-at-elevation accidents are consistently the number one cause of accidental injuries for retail stores, restaurants, the hospitality business, and U.S. buildings in general. It is mandatory that such entities control the hazards associated with falls-at-elevation for two reasons. First, the hazard is typically "hidden" from the user or patron; hence they cannot take any actions to avoid it. Second, the potential severity of injury is great if a user fails to detect these hidden hazards.

Violation of Guidelines and Standards

In response to the problem of falls-at-elevation by the general population, there are a number of design guidelines and standards {i.e. the National Bureau of Standards (NBS) the Uniform Building Code (UBC), the Life Safety Code (LSC), the Americans with Disabilities Act (ADA), Illuminating Engineering Society (IES), American Society of Testing and Materials (ASTM), etc.} that have specific sections dedicated to controlling fall hazards. Retail, commercial, hospitality, business, and residential living establishments must control fall hazards by proper design, maintenance, and effective risk management programs.

For example, the American Society of Testing and Materials (ASTM) promulgated its standard ASTM F 1637-95, "Standard Practice for Safe Walking Surfaces" in 1995. It should be noted that the standard, as per Section 1.1, "Scope", puts forth **minimum** design, construction, and **maintenance** standards for new and **existing** buildings and facilities (emphasis added).

Section 4.1.1 of ASTM F-1637-95 requires that walkways, including exterior sidewalks, **parking lots**, and all foreseeable pedestrian pathways (such as the space immediately alongside parking stalls where people walk as they exit/enter their vehicle) shall be maintained **flush and even** to the extent possible (emphasis added). The maximum permissible deviations are set forth in Section 4.2 of the standard; these are the same as those set forth by the Americans with Disabilities Act (ADA). The maximum permissible vertical deviation is $\frac{1}{4}$ inch; deviations from $\frac{1}{4}$ to $\frac{1}{2}$ inch must be beveled at a slope of no greater than 2 horizontal to 1 vertical (i.e. the $\frac{1}{4}$ inch - $\frac{1}{2}$ inch rule). Deviations in excess of $\frac{1}{2}$ inch must be transitioned by a ramp.

Section 4.7 of ASTM F-1637-95 is specifically dedicated to exterior walkways (i.e. sidewalks, parking lots, and the like). Section 4.7.1 requires that "Exterior walkways shall be maintained so as to provide safe walking conditions." The standard then goes on to identify some of the factors that make an exterior walkway or sidewalk unsafe. For example, Section 4.7.1.2 notes that "Exterior walkway conditions that may be considered substandard and in need of repair include conditions in which the pavement is **broken, depressed, raised, undermined, slippery, uneven, or cracked** to the extent that **pieces may be readily removed**" (emphasis added). Section 4.7.2 specifically mandates that "Exterior walkways shall be repaired or replaced where

there is an abrupt variation in elevation between surfaces (emphasis added). Vertical displacements in exterior walkways shall be transitioned in accordance with 4.2." (i.e. the ¼ inch – ½ inch rule).

The offending vertical lip in the parking lot that induced Ms. Romano's fall, which I measured to be ¾ of an inch high, is depicted in Figures 2 and 3. These photographs show that the parking lot area where Ms. Romano fell was **broken, depressed, uneven, and cracked with pieces missing**, thereby creating an **abrupt variation in elevation between surfaces**, inducing Ms. Romano's loss of balance and eventual fall. It is unequivocal that this defective condition in the parking lot, which induced Ms. Romano's fall, was in direct violation of the minimum safety requirements of ASTM F-1637-95 and created an unreasonably dangerous risk of harm to pedestrians such as Ms. Romano.

Lighting

It is my understanding that Ms. Romano's trip and fall occurred at night. It is noted that there are no parking lot lights in the immediate area of Ms. Romano's trip and fall. As such, it would have been even more difficult for Ms. Romano to have detected the unexpected trip hazard created by the elevated seam seen in Figure 2, particularly given the low contrast between the upper and lower surfaces.

Opinion 2: Risk Management

In order to ensure the safety of the general public, commercial and business enterprises such as the Defendants must employ some type of proactive safety and risk management program. Without going into detail, there are five fundamental components to a risk management program: Identify the Hazard, Create a Plan to Control the Hazard, Implement the Solution, Evaluate the Solution, and Document the Process.

It is beyond the scope of this preliminary report to delve into a lengthy discussion of risk management. Suffice it to say, I am quite familiar with the risk management practices of a wide variety of entities such as the Defendants. In fact, I have testified in Hawaii numerous times in both State and Federal courts regarding safety and risk management, and in particular, safety and risk management as it pertains to the control of fall at elevation incidents. Without question, one of the most basic requirements of such risk management programs is the control of fall hazards, particularly for well-known hazardous conditions such as those created by the offending vertical lip that caused Ms. Romano's fall.

When generating or creating a plan to control a known hazard (i.e. the offending pothole), the safety and human factors profession uses a three-level hierarchical process often referred to as the Fundamental Principle of Safety. The first tier or the best alternative is "Safety by Design," that is, either eliminate the hazard or remove the user from the vicinity of the hazard. If Safety by Design is not possible or feasible, the second best alternative is "Guarding" or providing a barrier between the user and the potential hazard. One should **only** resort to a lesser effective level (i.e. chose Guarding over Safety by Design), if and only if it is not possible to implement the more effective level. The final tier is "Persuasion Control", using warnings, training, or other types of human intervention to ensure user safety. One should

only resort to Persuasion Control as a "last resort" as it is known to be so limited in its effectiveness.

The most effective plan would have focused on the root cause of the hazard, namely the dangerous vertical lip in the asphalt parking lot, which was located in an area where people would expectedly walk/step. As discussed above, this condition that was located in the space immediately alongside the sidewalk, in an area where people stepping from the sidewalk onto the parking lot surface would foreseeably step; created an unexpected (for the pedestrian) and hidden hazard that was unreasonably dangerous. This hazardous condition could have and should have been corrected vis-à-vis Safety by Design, by simply filling in/continuing the planar asphalt overlay until it abutted the concrete curb. The failure to have done so was a violation of the Fundamental Principle of Safety.

It should be noted that the offending vertical lip was not something that "occurred over night"; rather, it appears that it was a defect in the asphalt paving. That is, as seen in Figures 2 and 3, the vertical lip in the asphalt appears to be created by an overlay on the asphalt surface that simply did not continue the last 12 inches or so up to the face of the concrete curb. In other words, the vertical lip appears to have been in existence since the time the asphalt surface was initially overlaid. In short, the Defendants knew or should have known of this defective condition well before Ms. Romano's fall.

Alternatively, Guarding could have and should have been employed as an interim measure until the defective parking lot tarmac could be properly repaired. For example, saw horses and/or traffic cones could have been used to close off the subject parking stall(s) until proper repairs could be made. The failure of the Defendants to have done so was yet another violation of the Fundamental Principle of Safety.

At the very least, the Defendants could have and should have implemented Persuasion Control (i.e. such as marking the edge of the offending vertical lip with bright yellow safety paint) until the defective/dangerous condition could be properly repaired. The failure of the Defendants to have done so was an additional violation of the Fundamental Principle of Safety.

Lastly, it is my understanding that immediately after Ms. Romano's trip and fall, an employee from Chili's came to her aid. During their conversations, the Chili's employee stated that there had been other people that had tripped and fell in the same general area. To the extent that Chili's was knowledgeable of prior falls and/or near misses in and around this defective portion of the parking lot, they should have sent written notification to the property owner requesting that immediate repairs be made; the failure to have done so was a violation of basic safety and risk management principles.

Opinion 3: Ms. Romano's Behavior

While it may be "physically possible" to detect the unmarked and unexpected vertical lip that induced Ms. Romano's fall, the more appropriate question is whether a person

management program of the Defendants that contributed to Ms. Romano's falling incident.

Please let me know if you have any questions or if I can be of any further assistance. I look forward to continuing to work with you in this matter.

Sincerely,

A handwritten signature in black ink, appearing to read 'Richard Gill', with a large, stylized circular flourish at the end.

Richard Gill, Ph.D., CHFP, CXLT
President and Chief Scientist