TERRA FIRMA
Engineering & Science

Dec. 4, 2023

To: Mr. Keelan Franzen
340 Chestnut Street, Santa Cruz Ca 95060
Tel: 831 454-6123
email: keelan@newt.garden

Dear Mr. Franzen, at your request I conducted a reconnaissance site visit to assess site conditions at the intersection of Walnut Avenue and Lincoln Street (339 Walnut), as shown on the attached Map; on Nov. 29, 2023.

The issue is wether to, or not to, remove a large redwood tree. In general field observations, described later in this letter report, tend to show the apartment complex foundation is seemingly not being adversely effected by the large Redwood tree.

The scenario has many natural and man made variables. My overall assessment, is that it would be very useful to remove the broken concrete, that would have to be removed as part of a repair anyway, so as to be able to better observe what is actually happening. Hand excavation could be conducted to investigate further, such as hand augering after, with, the pavement removed. Also, the City could, after investigation, do a temporary repair to make the sidewalk(s) walkable and to prevent further erosion under the existing (OK) sidewalk areas.

As shown on the following picture the general area seems to be cuts into the native slope on the opposite side of Walnut from the Redwood tree, with the possibility that fill was placed under part of the roadway for Walnut and Lincoln. It is not obvious wether the apartment complex and 339 is on a cut into the slopes at the site, or possibly on fill at the corner of the complex closest to the Redwood tree, but it appears possible that a cut was made to construct the apartment complex.

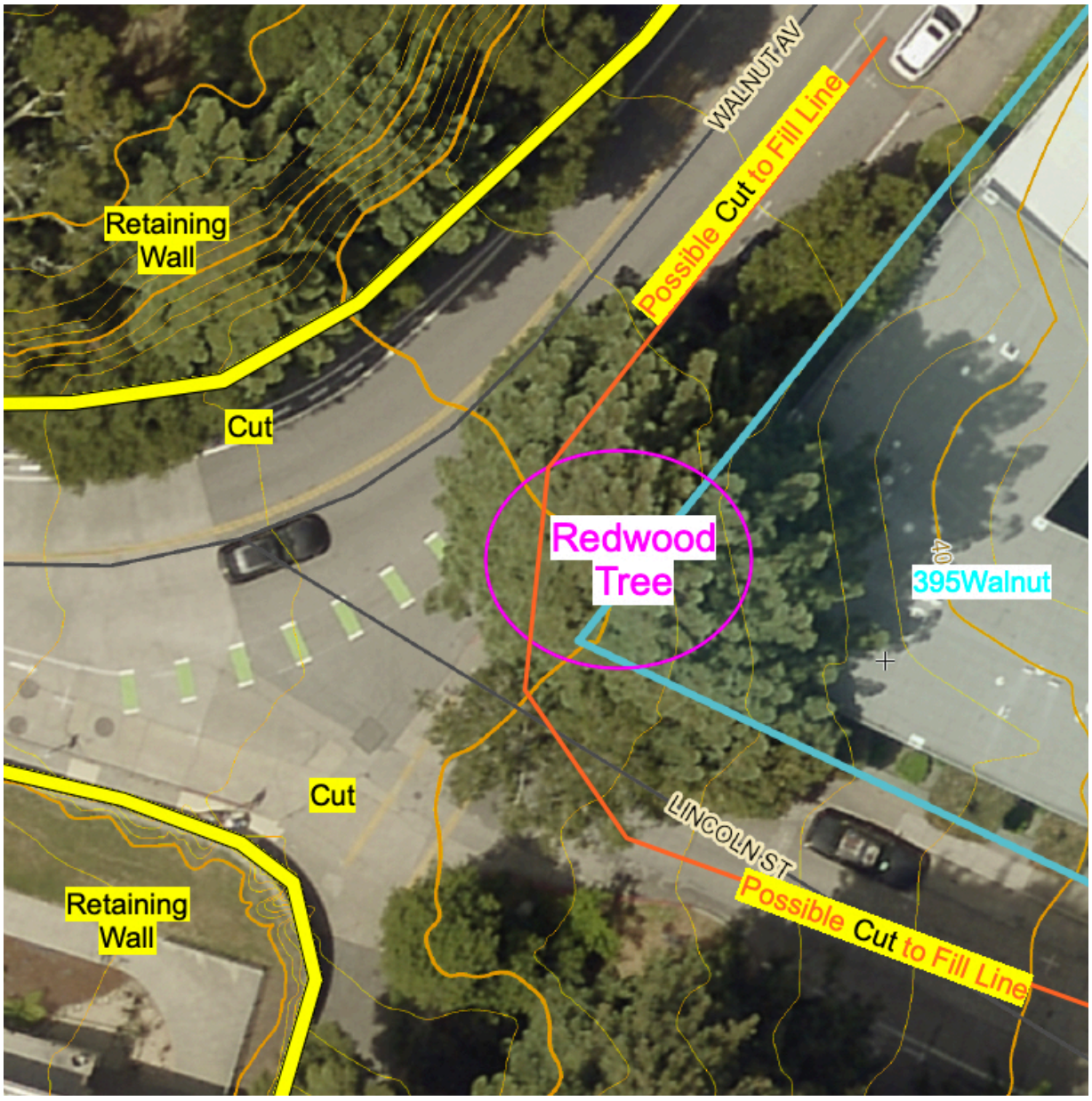
The Redwood tree almost certainly predates (is older than) the existence of the City of Santa Cruz.

In general the sidewalk's along Walnut and Lincoln, on the 339 Walnut side of the roads show settlement in some areas, with seemingly both settlement and uplift next to the redwood tree.

TEL (831) 438-3216
755 Weston Road • Scotts Valley • California • 95066
e-mail wild755blue@icloud.com

TERRA FIRMA
Engineering & Science

Dec. 4, 2023



TEL (831) 438-3216
755 Weston Road • Scotts Valley • California • 95066
e-mail wild755blue@icloud.com

Apartment Complex 339 Walnut, with Redwood tree behind the signpost attached to a lamppost.

Santa Cruz High School, as seen from coned area from 339 Walnut side of street.

TEL (831) 438-3216
755 Weston Road • Scotts Valley • California • 95066
e-mail wild755blue@icloud.com

Within the coned area, sidewalk pavement has been uplifted probably by the Redwood tree's root, ass much as 4 to 6-inches between the tree and a fire hydrant. Also, the pavement seems to have settled (1/2 to 1-inch) due to erosion possibly under the lamppost at the corner of the intersection, and also under several areas of the sidewalks nearby.

TEL (831) 438-3216
755 Weston Road • Scotts Valley • California • 95066
e-mail wild755blue@icloud.com

(Description of picture below) - Redwood tree root (root-beer-colored bark shown in picture under concrete), about 2 to 3-inch dimeter, as shown under area of sidewalk at location of largest sidewalk upward-offset.

TEL (831) 438-3216
755 Weston Road • Scotts Valley • California • 95066
e-mail wild755blue@icloud.com

Based on visual observations of pavement settlement and uplift, generally the sidewalks are subject to settlement, but immediately next to Redwood tree uplift has occurred.

The apartment complex appears to be on a cut, with the redwood tree in close proximity to the complex's foundation.

TEL (831) 438-3216
755 Weston Road • Scotts Valley • California • 95066
e-mail wild755blue@icloud.com

TERRA FIRMA
Engineering & Science

Dec. 4, 2023

There is a brick facade at the base of the complex that has been pushed in locally next to the Redwood tree. It appears that the base of the tree was cut back to prevent such pushing contact between the tree and the facade. If that is the case, the cutting-the-base-of-the tree-back work was done a long time ago as the bark has healed completely leaving a fully bark covered, somewhat squared-off face at the base.

The 339 Walnut apartment complex does not appear to be have been uplifted as there is a band of horizontal wood siding (extending continuously the full length of the building with a vertical height of about 3-feet up the wall)above the brick facade (with the individual each pieces of siding being about 6-inches tall and running typically more than 8-feet in length. As observed on The siding boards run uniformly horizontally, without gaps, or separation, or offset, including at the area next to the Redwood tree; where the brick facade has pushed the brick face inward (into the building footprint. As observed on Nov. 29, 2023, my current visual observation (from the exterior of the building) is that there is no obvious disturbance of the siding that would be expected if there was or is vertical uplift of the building foundation by the Redwood tree root.

In my experience Redwood trees are very aware of moisture….
— Where there is moisture a redwood tree will grow roots in that directions;
— Where there is no moisture such as under a building a redwood doesn't grow roots in that direction.
—My experience is limited. Perhaps because redwood roots do not often cause problems for building foundations?

As written at the beginning of the letter, the easiest way to get useful additional information is to remove the broken pavement in the area of the Redwood tree to allow for observation and possibly limited subsurface investigation.

Yours Sincerely, Marc Ritson
PE, RCE #37100

TEL (831) 438-3216
755 Weston Road • Scotts Valley • California • 95066
e-mail wild755blue@icloud.com

TERRA FIRMA
Engineering & Science

TEL (831) 438-3216
755 Weston Road • Scotts Valley • California • 95066
e-mail wild755blue@icloud.com