

REUBEN, JUNIUS & ROSE, LLP

November 17, 2014

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CODE, SECTION 31.16(b)(5)

(Note: Pursuant to California Government Code, Section
65009(b)(2), information received at, or prior to, the public
hearing will be included as part of the official file.)

By Messenger

Ms. Angela Calvillo
Clerk of the Board
San Francisco Board of Supervisors
1 Dr. Carlton B. Goodlett Place
Room 244
San Francisco, CA 94102

**Re: 115 Telegraph Hill Boulevard;
Project Sponsor's Opposition to Appeal - Supplemental Geotechnical
Review Comments
Hearing Date: November 18, 2014
Our File No.: 7058.01**

Dear Ms. Calvillo:

At Mr. Frattin's request, please find enclosed 18 hard copies and one electronic copy of the Project Sponsor's Opposition to Appeal - Supplemental Geotechnical Review Comments for the hearing on November 18, 2014 for the project at 115 Telegraph Hill Boulevard.

Thank you.

Very truly yours,

REUBEN, JUNIUS & ROSE, LLP



Cecilia de Leon
Assistant to Daniel A. Frattin

Enclosures:

18 Copies of Project Sponsor's Opposition to Appeal - Supplemental Geotechnical Review
Comments
(1) CD

cc: File

James A. Reuben | Andrew J. Junius | Kevin H. Rose | Daniel A. Frattin
Sheryl Reuben¹ | David Silverman | Thomas Tunny | Jay F. Drake | John Kevlin
Lindsay M. Patrone | Melinda A. Sarjapur | Mark H. Loper | Jody Knight | Jared Eigerman^{2,3} | John McInerney III²

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REUBEN, JUNIUS & ROSE, LLP

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November 17, 2014

NOV 17 PM 3:56

President David Chiu
San Francisco Board of Supervisors
One Dr. Carlton B. Goodlett Place
San Francisco, CA 94102

**Re: 115 Telegraph Hill Boulevard; Project Sponsor's Opposition to Appeal -
Supplemental Geotechnical Review Comments
Hearing Date: November 18, 2014
Our File No.: 7058.01**

Dear President Chiu and Supervisors:

We represent Jeremy Ricks, sponsor of the proposed residential project at 115 Telegraph Hill Boulevard. On November 12, 2014, we submitted a brief in opposition to the meritless appeals of the project's Categorical Exemption and Conditional Use Authorization by the Telegraph Hill Dwellers.

To supplement the previous submittal, please find enclosed a letter authored by Senior Principal Geotechnical Engineer Patrick O. Shires and Principal Engineering Geologist John. M. Wallace of Cotton, Shires and Associates, Inc ("CSA").

This document provides CSA's professional opinion regarding the project's geologic and geotechnical engineering, and responds directly to previous letters authored by the Appellants' engineer, Lawrence B. Karp. As the analysis reveals, Mr. Karp's letters contain numerous inaccuracies, misrepresentations, and opinions unsupported by fact. They do not constitute the "substantial evidence" necessary to support Appellants' request for additional environmental review.

We look forward to presenting this matter to you tomorrow.

Respectfully,

REUBEN, JUNIUS & ROSE, LLP

Daniel A. Frattin

James A. Reuben | Andrew J. Junius | Kevin H. Rose | Daniel A. Frattin
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President Chiu and Supervisors
November 17, 2014
Page 2

Enclosure:

Cotton, Shires and Associates, Inc. Letter dated November 17, 2014

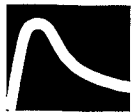
cc: President David Chiu
Supervisor Eric Mar
Supervisor Mark Farrell
Supervisor Katy Tang
Supervisor London Breed
Supervisor Jane Kim
Supervisor Norman Yee
Supervisor Scott Weiner
Supervisor David Campos
Supervisor Malia Cohen
Supervisor John Avalos
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November 17, 2014
G5154

Mr. Daniel Frattin, Esq.
REUBEN, JUNIUS & ROSE, LLP
One Bush Street, Suite 600
San Francisco, CA 94104

SUBJECT: Preliminary Geologic and Geotechnical Review Comments
RE: 115 Telegraph Hill Boulevard
San Francisco, California

Dear Mr. Frattin:

With this letter, Cotton, Shires and Associates, Inc. (CSA) is providing you with our initial engineering geologic and geotechnical engineering opinions of the proposed residential development at 115 Telegraph Hill Boulevard, in San Francisco California. In addition, we are providing you with comments in response to two letters submitted by Lawrence B. Karp to the City of San Francisco regarding his opinions with respect to the proposed development's design and construction impacts. Our preliminary opinions are based upon our review of the following:

- Geotechnical Investigation (report), prepared by Earth Mechanics Consulting Engineers, dated June 22, 2013, signed by Mr. Allen Gruen, GE 2147;
- Critique of EMCE Geotechnical Investigation, Letter to Planning Commission, prepared by Lawrence B. Karp, dated July 16, 2014;
- Supplemental Letter to Board of Supervisors, prepared by Lawrence B. Karp, dated November 6, 2014;
- Architectural Plans, prepared by Butler Armsden Architects, latest revision dated September 16, 2014; and
- In addition, we reviewed the site conditions on November 10, 2014 as well as our project files for multiple projects that we have completed in the area.

DISCUSSION

Cotton, Shires and Associates, Inc. (CSA) has recently been retained to provide geologic and geotechnical services to the project design team. We understand that the proposed development is to include a new, three-unit residential structure fronting Telegraph Hill Boulevard, and the remodeling of an existing cottage at the rear of the property. The new structure is to include below grade living space and parking areas that will result in excavation depths of up to approximately 33 feet. The property is bounded by the Filbert Stairs to the north, a multi-story residential structure with basement to the east, concrete retaining walls to the south, and a residential structure to the west.

EXISTING GEOTECHNICAL DATA

Our review of the EMCE Geotechnical Investigation report reveals that it is a feasibility-level report. The depth of the proposed excavation will warrant CSA obtaining geologic data from large-diameter shafts or large-diameter boreholes excavated 30 to 35 feet in depth in order to obtain geologic data to incorporate into appropriate shoring design. CSA engineering geologists will perform downhole logging of the shaft/borehole whereby we are lowered into the hole to obtain first-hand observations of the geologic structure, geologic stratigraphy, and groundwater conditions. We understand that a structural engineer with experience shoring residential structures in constrained urban areas will design the shoring for the project, in conjunction with geologic and geotechnical recommendations provided by CSA.

REVIEW OF LAWRENCE B. KARP COMMENTS

Review of Lawrence B. Karp letter dated July 16, 2014 Letter:

Dr. Karp indicates that the EMCE Geotechnical Investigation report is "totally inadequate" and is "useless in providing any critical information as to defining the characteristics of the ground that according to Sheet A3.4 will be excavated 33 feet deep at the edge of Telegraph Hill." Dr. Karp opines that "the report contains no substance as to the critical aspect, lateral and subjacent support for the deep excavation at the street", and that "there is no shoring design and no structural plans exist for the project".

CSA Response – We understand that the EMCE report was a feasibility-level investigation performed approximately 1.5 years ago, with the intent of identifying any geologic hazards that could preclude development, consistent with the City's planning

guidelines. The report found none of geologic hazards listed below posed a threat to the site:

- a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
 - i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? (Refer to Division of Mines and Geology Special Publication 42.)
 - ii) Strong seismic ground shaking;
 - iii) Seismic-related ground failure, including liquefaction;
 - iv) Landslides;
- b) Result in substantial soil erosion or the loss of topsoil; and
- c) Be located on geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse.

CSA will be providing the necessary updated detailed geologic and geotechnical data for foundation and shoring design that would accompany the building permit application. The critical issue raised by Dr. Karp, the removal of lateral and subjacent support for adjacent structures, is not a hazard that would preclude development, but a typical project constraint to be addressed at the building permit stage of the project. All comments in his letter relate in some way to the lack of geologic and/or geotechnical (including groundwater) information obtained by EMCE and how that relates to adequate shoring, and ultimately, a stable foundation. However, it should be understood that this type of basement excavation is routine in the City of San Francisco, and that City building code protocol establishes a mechanism for ensuring that appropriate foundation and shoring design are incorporated into the project. These protocols include Section 106A that states that no building shall be erected without obtaining a building permit, and such building permits include technical review by civil and geotechnical engineers as per building code guidelines. Section 105A.6 establishes a Structural Advisory Committee to advise the Building Official, if the Building Official deems it appropriate, on matters pertaining to design and construction of buildings with special features. The committee, comprised of a structural engineer, geotechnical engineer, and geologist provides critical review (as per Section 106A.4.1.4.4) of the proposed development if the site falls with the Slope District Act, or the proposed work may have a substantial impact on the slope stability of any property: shoring, underpinning, excavation or retaining wall work; grading, including excavation or fill, of over fifty (50) cubic yards of earth

materials; or any other construction activity. The committee provides opinions on such items as:

- 1. The validity and appropriateness of the structural design concepts and criteria.**
- 2. An evaluation of the structural design of the building or structure to determine its capability to perform satisfactorily beyond the elastic stresses stipulated by the code, with sufficient redundancy to accommodate overloads or failures of specific structural components.**
- 3. The constructability of proposed structural details and erection methods.**
- 4. The sufficiency of the proposed inspection, testing and monitoring to be provided prior to and during construction.**

Preliminary feasibility-level studies must be augmented prior to approval of permits for grading and construction. Further geologic exploration and geotechnical engineering analysis of the resulting data will be required. These will guide the design of shoring elements by an experienced structural engineer, which will then be reviewed by the Department of Building Inspection as part of the building permit application. In addition, as Per Code Section 108A.1, all construction or work for which a permit is required shall be subject to inspection by the building official, and all such construction or work shall remain accessible and exposed for inspection purposes until approved by the building official.

Review of Lawrence B. Karp Letter dated November 6, 2014:

Dr. Karp states that "the project presents unusual circumstances as there has never before been a vertical excavation more than 10 feet deep in the proximity of the south side of Pioneer Park and Coit Tower."

CSA Response – Excavations up to 33 feet depth in the Franciscan Complex sandstone are commonplace, and are routinely performed throughout the City. There is nothing unusual about this type of excavation, and with the performance of the upcoming detailed geologic and geotechnical investigation, appropriate shoring, foundation, and monitoring recommendations will be provided to assure there is a low risk to adjacent structures from excavation-related distress. As previously mentioned, these data will be critically reviewed by the Department of Building Inspection's geotechnical engineers and/or the Structural Advisory Committee.

Dr. Karp states that "it is more than a reasonable possibility that a 32 or 33 foot deep dewatered excavation into ground that supports Telegraph Hill Boulevard and Pioneer Park (described as an unstable series of the Franciscan Formation) would not only impair lateral and subjacent support along the only access roadway to Coit Tower, but the drawdown due to dewatering alone will significantly affect neighboring properties and leave a latent condition that irreparably relieves lateral and subjacent support along the southern flank of Pioneer Park."

CSA Response - As is typical of shored excavations, shoring will be placed prior to, or in increments as the excavation progresses downward. Monitoring will be conducted to assure that incremental excavation does not result in significant displacements prior to incremental shoring. There should be no significant removal of lateral and subjacent support since the shoring of the site will either be in-place prior to removal of the rock or in increments as the rock is removed. The shoring support should be designed to be a permanent replacement for the excavated rock. The shoring elements should be constructed with a conservative factor of safety (FS = 1.5) to assure that the temporary and permanent excavation support is stronger than the rock that was removed. Again, this design and construction methodology will be critically reviewed as per Code (105A.6, and 106A). The proposed development is not unique or unusual, and is routinely and safely constructed for this type of excavation in the city of San Francisco provided code procedures are followed, and permits are issued in accordance with Section 106A.4.1 (i.e., plans, specifications, and computations and other data filed by an applicant for a permit shall be reviewed by the building official).

It should be noted that the Franciscan Complex at this location is composed of one of the most stable of its lithologic components, a massive, unshaped sandstone terrane. The primary destabilizing components of this rock are the old quarried rock faces that were left unsupported, resulting in rock failures along fractures and along isolated shale interbeds. Provided there are no unsupported cuts for the project at 115 Telegraph Hill, there should be no instability of the freshly cut and adequately shored resistant sandstone bedrock. CSA will be documenting the site conditions by downhole logging a deep test shaft or large-diameter boring, where fracture orientations, shale bedding (if any), and groundwater conditions would be identified and accounted for in the shoring and foundation design and plans.

Because of the site's geographic position, there should be no groundwater table at this elevation on Telegraph Hill. CSA has investigated more than 12 slope stabilization projects atop Telegraph Hill within 1,100 feet of the proposed project, including logging a test shaft up to 50 feet deep at 22 Alta Street, a 20 feet deep shaft on Vallejo Street, and we have rappelled and mapped the 100- to 140-foot high quarried slopes below Coit Tower from Lombard over to Chestnut Street, and we have rappelled and mapped the

slopes along Sansome Street from Union to Alta, as well as the precipitous slopes at 22 Alta Street, and the slopes at Vallejo Street and Montgomery Street. We have not encountered persistent groundwater table in any of these locations. In particular, 115 Telegraph Hill Boulevard is near the top of the hill and, at this elevation, should not support significant groundwater since it is drained by the precipitous quarried slopes on the north and east sides of the hill. In our decades of working on Telegraph Hill, we have not seen evidence for persistent groundwater emanating from any of these slopes. The small excavation at 115 Telegraph Hill, when compared to the immense quarried rock face on the other side of Coit Tower that is completely void of any permanent groundwater seepage, should not result in any alteration of a groundwater table. Thus, we do not believe that there will be any "latent condition that irreparably relieves lateral and subjacent support" to any surrounding properties provided the excavation is properly investigated, designed and supported.

Dr. Karp states (Page 2, second paragraph) that the site is mapped as being between earthquake induced landslide hazard areas, then goes on to state that the effects of dewatering, loss of lateral support, vibrations, the 32 to 33 foot deep excavation, and trucking in a landslide hazard zone are all critical environmental concerns.

CSA Response – Dr. Karp states that the site is between earthquake induced landslide hazard areas. Dr. Karp is correct that the site is located outside of mapped earthquake induced landslide hazard zones. In this case, the hazard zones correspond (and rightfully so) with the old quarried rock faces located 500+ feet to the north, 600+ feet to the east, and 1,000+ feet to the south of the proposed project. Since CSA is responsible for creating landslide hazard maps for many communities, we are keenly aware that the areas between, or outside of, identified hazard zones represent low risk areas with respect to landsliding. With respect to Dr. Karp's second statement about the site being in a landslide hazard zone, we are not aware of the site being mapped in any landslide hazard zone, nor should it be.

Dr. Karp, on Page 2 and 3, opines on the rockfall history of Telegraph Hill. In particular he states that the 2012 rockslide on the northeast side of Telegraph Hill failed in response to the erosion of shale interbeds.

CSA Response – CSA performed a detailed investigation of this failure, and the failure mechanism stated by Dr. Karp is not correct. Our investigation report, on file with the City of San Francisco (Geologic and Geotechnical Investigation, Winthrop at Lombard Street Rockslope, prepared by Cotton, Shires and Associates, Inc., dated May 2014) documents the site conditions and causes/mechanisms of failure and they do not involve shale interbeds.

Dr. Karp also opines on the 2007 rockslide failure on Vallejo Street, and indicates that the City declared the buildings in the area uninhabitable. Also, he states that there is a 'nexus' between the site conditions at the 2007 failure site on Vallejo Street and the project site at 115 Telegraph Hill.

CSA Response – Dr. Karp appears to be attempting to draw a nexus between sites over a 1,000 feet apart, without citing any site specific data, to imply that all sites on Telegraph Hill are landslide prone. The 2007 failure at 455 Vallejo Street and neighboring properties was the result of shallow rockslides on an unsupported old quarried rock face nearly 100 feet in height. CSA performed a detailed investigation of this site (Focused Geologic and Geotechnical Investigation, 455 Vallejo Street, prepared by Cotton, Shires, and Associates, Inc., dated June 2007), including downhole logging of a deep exploratory shaft (which had no significant groundwater despite being excavated shortly after the rockslide). A small portion of the building was temporarily evacuated while we investigated the site, and the site was stabilized with deep rock support and then re-occupied. Since there will be no unsupported cuts at 115 Telegraph Hill, a nexus should not be drawn between the sites, even if the geologic structure is similar. Given CSA's experience with similar rock at 455 Vallejo Street, we will be performing a detailed investigation at 115 Telegraph Hill, and will identify any potentially unstable conditions (should they be present) and provide appropriate stabilization recommendations as deemed necessary. These data, along with detailed shoring plans and structural calculations, will be critically reviewed by the Department of Building Inspection, as per San Francisco Building Code requirements previously cited.

Dr. Karp states that "vibrations and loss of lateral support during construction and after will also significantly impact the project's environment."

CSA Response - CSA routinely monitors for vibration induced distress on projects where heavy construction will occur in close proximity to adjacent structures. Vibrations associated with this type of construction, in our experience and in accordance with the published technical report "Construction Vibrations and Their Impact on Vibration-Sensitive Facilities" by Amik and Gendreau (2000), are unlikely to produce distress. The San Francisco Building Code Section 105A.6.3 addresses this specifically in Item 4, where it states that as part of the building permit review by the structural advisory committee, a written report shall include professional opinions concerning: "The sufficiency of the proposed inspection, testing and monitoring to be provided (sic) prior to and during construction."

This type of monitoring over the years, and working closely with local, experienced structural engineers and shoring contractors has resulted in CSA providing effective

shoring recommendations, and detecting early warning signs of movement before significant distress occurs. We are installing just such ground vibration monitoring equipment in two weeks along Lombard Street to monitor the vibrations associated with the large rock slope stabilization project that CSA investigated and designed on the precipitous rock face on the northeast slope of Telegraph Hill below Coit Tower. We will also be installing tiltmeters and performing pre-construction surveys to document current site conditions in relation to during and post-construction conditions. This type of monitoring and surveying will also be recommended by CSA for the project at 115 Telegraph Hill Boulevard.

Dr. Karp states that "the stability of the Franciscan Formation is affected by water, so the project's dewatering, recharging, subsurface drainage and cyclic recharging by rainfall will surely impact not only the project's ground environment but buildings in the area, and all of those impacts will be significant."

CSA Response – The excavation is not anticipated to result in 'dewatering' of the site since there is unlikely to be a groundwater table encountered at the site; however, we will document the groundwater conditions in our test boring/shaft and provide recommendations accordingly. Rain water or irrigation water typically moves through fractures in the sandstone on Telegraph Hill, migrating downward to significant depths, and this infiltration process should continue as it has over geologic time, regardless of whether there is a 33-foot deep basement excavation at 115 Telegraph Hill Boulevard. If the development would be introducing more water into the subsurface, then perhaps an argument could be made that added water could enter adjacent crawlspaces, or basements, adversely impacting these facilities. However, CSA will be providing drainage recommendations that should result in a net decrease in water infiltrating into the subsurface, and net decrease in surface runoff leaving the site in an uncontrolled manner. Therefore, there should be no negative impact on the subsurface groundwater regime or surface runoff conditions that might adversely impact adjoining structures. These drainage recommendations will be items critically reviewed by the Department of Building Inspection, as per building code, prior to issuance of building permits.

LIMITATIONS

Our services consist of professional opinions and conceptual recommendations made in accordance with generally accepted engineering geology and geotechnical engineering principles and practices. No warranty, expressed or implied, or merchantability or fitness, is made in or intended connection with our work, by the proposal for consulting or other services, or by the furnishing of oral or written reports or findings.


We trust that this provides you with the information that you need at this time. If you have any questions regarding this letter, please feel free to call us.

Respectfully submitted,

COTTON, SHIRES AND ASSOCIATES, INC.

A handwritten signature in black ink, appearing to read "Patrick O. Shires". The signature is fluid and cursive, with a large initial "P" and "S".

Patrick O. Shires
Senior Principal Geotechnical Engineer
GE 770

A handwritten signature in black ink, appearing to read "John M. Wallace". The signature is cursive and somewhat stylized, with a large initial "J".

John M. Wallace
Principal Engineering Geologist
CEG 1923

POS:JMW

COTTON, SHIRES AND ASSOCIATES, INC.