

and Building Enclosures

23 April 2014

Mr. Eric Dausman General Manager Sutro Tower Inc. 1 La Avanzada San Francisco, CA 94131-1124

Project 067199 – Sutro Tower Structural Engineering Services

Re: 2013 Annual Inspection and Maintenance Program

Dear Eric:

Since 1999, Sutro Tower has retained a special inspection firm to perform annual condition surveys of the tower framing in accordance with a City-approved protocol. Each annual survey consists of visual observation of structural framing and connections, as well as attachments of antenna and other appurtenances on one tower face, at all elevations and in one tower leg. These surveys are performed on a rotating basis such that the entire tower is inspected on a three-year cycle, one third of the tower per year. When these surveys have revealed deterioration of the structure due to weather exposure or other causes, we have assisted you in designating appropriate structural repair and preservation items.

In the past, CEL Consulting Engineers provided the inspection service. In 2013, you elected to retain Tower Consultants Inc. (TCI) to perform this service. TCI specializes in communication tower structures and has the capability to rig the structure with drop scaffolding and similar access devices that permit observation of conditions that had previously been inaccessible.

In 2013, TCI performed a routine annual inspection of Leg B, the east face trusses and strands, and Stack B located above the 6th level. In addition, TCI rigged scaffolding beneath the Level 2 trusses, removed siding on these trusses and performed comprehensive surveys of the condition of framing that had hitherto been obscured from inspection. TCI's surveys of this included caliper measurements of member section loss, where this occurred, and detailed photography of observed conditions. As TCI performed these surveys, SGH performed calculations to determine whether corrosion has compromised the structure's integrity. We determined that all of the members retain adequate capacity. However, where corrosion was found, we directed removal of oxidized material, and treatment with preservative coating. In addition, a number of bolts with significant corrosion were replaced at this level.

The findings of TCI's annual inspections of Leg B, Stack B and the east tower face are documented in a TCI letter report dated 16 December 2013. As noted in this report, TCI observed several conditions requiring attention including additional corroded fasteners, a few corroded gusset plates, and two bent members. In addition, we identified that some corrosion was occurring as a result of the way siding attachments to the structure are detailed, permitting pockets of water to form, and also that weep holes intentionally placed in horizontal framing are

initiation points for corrosion. Working with TCI we have developed improved details for these conditions which should minimize such corrosion in the future.

We understand that TCI and repair crews will be mobilizing to the site shortly to implement repairs of conditions discovered during the 2013 inspections, and also to perform the 2014 annual inspections. We will continue to work with TCI to develop repair actions for deteriorated conditions, as they are discovered.

Please feel free to contact us if you have any questions on the above.

Sincerely yours,

Ronald O. Hamburger, SE Senior Principal CA License S-2951 (Structural) I:\SF\Projects\2006\067199.11-COND\WP\004ROHamburger-L-067199.11.jdi_Maintenance Completion.docx