

and Building Enclosures

22 February 2016

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

Project 067199.11 - Condition Assessment of Sutro Tower, 2016 Inspections

Dear Mr. Dausman:

At your request, Simpson Gumpertz & Heger Inc. (SGH) provided oversight and engineering support for tower condition assessment and repair work performed in 2015. Under agreement with the City of San Francisco (the "Standard Conditions") Sutro Tower performs annual inspections of 1/3 of the tower, consisting of one of the three legs and the horizontal framing on one face, each year. In accordance with the inspection protocol, these inspections are typically rotated such that the entire tower is inspected over a three-year period.

On a five-year schedule, the inspection agreement calls for an in-depth inspection to identify problems which may not be readily detectable with a visual review in the annual inspection, such as evaluation of guy wire tension and inspection of welds of tower leg columns to their base plates. In addition, three years ago, you embarked on a program of temporary removal of enclosing siding on tower levels located within the typical elevations impacted by fog, so that detailed evaluation of corrosion on normally obscured surfaces could be performed. This work continued into 2015. although no abnormal conditions were discovered.

In a meeting with the neighborhood liaisons in March 2014, it was agreed that the 2014 inspections would encompass two tower legs and two tower faces. Accordingly, in 2014 TCI performed inspection of Leg A, Stack A, and the north face trusses, as well as Leg C, Stack C and the south face trusses, comprising both the scheduled 2014 and 2015 inspections. TCI inspected Leg B and the east face trusses in 2013 and again, in 2015. Thus, the inspections performed in 2015 actually comprise the scheduled inspections for 2016.

SGH provided TCI and Sutro Tower with inspection protocols and a series of standard forms for recording their observations. These forms as well as accompanying photographs are included in TCl's report dated 9 February 2016. As the work progressed, TCl provided us reports of their corrosion measurements and other structural findings. We made calculations as necessary to determine if corrective action was required. TCI found six corroded gussets in Leg B below Level 2; a bent member at Level 6; and a coped member at Level 6; all of which we directed them to replace. This work was completed as documented in TCI's letter report of 9 February 2016 re: Review of Annual Maintenance, 977-ft Self-Supported Tower, San Francisco, California, TCI Project Number 145/082.001. That report also documents the successful repair of deficiencies identified in the 2014 (and 2015) surveys, which they also corrected.

In addition to the above-referenced report, TCI has provided an additional report documenting the results of their 2016 inspections dated 9 February 2016 re: Field Evaluation of Existing 966-Foot Self-Support Tower San Francisco, California, TCI Project Number 15.082.001. In this report, TCI identifies several conditions that require further evaluation or repair. These include:

- 1. Four rusted gusset plates between Levels 1 and 3. TCl recommends removal of paint and corrosion to allow inspection of the condition of the plates, so that a decision can be made as to how to address this condition.
- 2. Plugged drain holes in connections of diagonals to main members. TCI recommends cleaning of these drain holes and inspection of the member condition following cleaning.
- 3. TCI reports numerous fasteners with varying levels of corrosion on nuts and or heads. This corrosion is generally slight and not a concern. Regardless, TCI recommends cleaning of the paint from these bolts, gauging to evaluate their conformance with the criteria previously prepared by us and replacement of any bolts that fail to meet the acceptable limits.

In addition to the above, TCI identified several non-structural conditions that should be addressed during this year's (2016) maintenance cycle.

We concur with TCI's findings and recommendations and confirm that the reported repair work was appropriately performed. <u>Further, based on our review of the photographs, we concur that the three items identified above as requiring further investigation do not presently represent serious deterioration and can easily be left in place until weather conditions improve. We do recommend that this work be performed during the next dry season.</u>

Sincerely yours,

Ronald O. Hamburger, S.E.

Senior Principal

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