CLA Engineers, Inc.

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May 17, 2022

Ledyard Youth Football, Attn. Tom Staigers
Thomas.J.Staigers@pfizer.com

Re: Structural Review of Scoreboard
1888 CT-12, Gales Ferry, CT 06335

CLA Job# 7209

At your request our office has prepared this letter based on our review of the existing and proposed scoreboards at the above mentioned address. The primary purpose of our review was to determine whether the existing support structure could hold the proposed billboard. Based on the requirement that the existing structure be utilized, our office determined the change in loading condition and ascertained the required configuration with the new sign which would result in the same loading.

On 2022-05-13, our office visually reviewed the existing sign structure. The existing structure is a three post structure cantilevered column or "flag pole" system which we were informed was built around 1980. The posts and the mounting mechanisms attached to them are carbon steel and have undergone substantial degradation over the years. The foundations could not be reviewed.

The proposed signage is a larger area than the existing. The proposed signage has an area of 234.7 square feet, while the existing area is only 180.4 square feet. The existing signage is therefore only 76.86% of the proposed. The proposed signage is to be attached to all 3 support posts, while the existing is only attached to two of the support posts, but a shared footing is presumed below grade.

As stated, the foundation could not be reviewed or measured, so the overturning resistance could not be analytically determined, resulting in the need to presumptively apply a capacity. Our office determined the wind overturning moment exerted by the currently existing arrangement of signage and ascertained the elevation possible with the new signage to maintain the same loading. Based on our analysis and the presented design drawings, the bottom of the new sign must be situated no more than 48 3/8" above the existing grade. This results in a proposed centroid of the sign area at 8.97', matching the overturning force of the existing arrangement, given the larger area of the proposed signage. The proposed sign must attach to all 3 posts in a manner to be determined by the manufacturer/owner.

The existing structure must be mechanically cleaned. During cleaning, the welded angle elements and any other hardware used for sign attachment must be removed, cleaned, and then re-welded/re-attached; and the structure must be re-finished. All areas of rust damage are to be treated with POR-15 Rust Preventative Paint (RPP) or an approved equal. Once the RPP is applied, the entire stair should be primed and painted at the owner's discretion. Our office advises use of POR-15 Tie-Coat primer, which facilitates bond with the RPP. Our office advises that the primer and paint be of strongly

clashing colors (such as yellow or red primer with black paint) in order to facilitate visual identification of future problems with the paint early on in their development.

The interior of the existing posts must be mechanically cleaned, cleared of debris, and then filled with Portland cement/grout in order to protect from further degradation. The posts must be exposed below grade to the top of footing prior to repair / refinishing work. When grade is reinstalled, our office recommends that the posts be covered with lime-sand (3 parts sand to 1 part masons lime) for a minimum cover thickness of 3"; the lime-sand may be placed dry. This will help protect the post from corrosion below grade, while minimizing any hazard presented by the cementitious material.

The structure can safely support the larger proposed sign. The new sign must be at the elevations required herein, unless the area of signage is reduced or the support structure is reinforced. The repairs recommended herein are required to prevent failure due to continued corrosion.

If you have any questions, or require any additional information, please do not hesitate to call our office.

Sincerely,

CLA Engineers, Inc.

Asa Bender, P.E.
Geo-Structural Engineer