

STRUCTURAL ENGINEERING ASSESSMENTS, PC
A STRUCTURAL CONSULTING / FORENSIC ENGINEERING FIRM

February 28, 2017

Mr. Wayne Large
City of Gatlinburg
Building Maintenance Department
P.O. Box 5
Gatlinburg, Tennessee 37738

Re: Circle Drive Warehouse
226 Circle Drive
Gatlinburg, Tennessee 37738
SEA Project #: 240-16

Dear Mr. Large:

As requested, Structural Engineering Assessments, PC made a site visit on December 15, 2016, to the referenced location to provide a visual assessment regarding potential fire or fire related structural damage to the steel framed structure.

Description

For the purpose of orientation and reference, the side of the structure nearest to Circle Drive will be considered the south face. The referenced project is a single level, warehouse type structure. The building is constructed with pre-engineered steel moment frames, steel roof purlins and steel wall girts with light gauge metal wall and roof panels. The floor is a ground supported concrete slab.

Observations

The majority of the fire related damage appears to be located on the west exterior wall (See Photographs #1 and #2), adjacent to the northwest corner of the building and the east exterior wall (See Photographs #3 and #4), adjacent to the northeast corner of the building.

1. The metal wall panels (See Photograph #5) on the west end of the building displayed significant heat related damage and the wall girts (See Photograph #6) displayed signs of distortion from the heat of the fire.
2. The metal roof panels (See Photographs #7 and #8) above the west end of the building displayed signs of heat related damage, but the steel purlins and pre-engineered steel

moment frames (See Photographs #9 and #10) did not appear to suffer any loss of structural integrity from the heat of the fire.


3. The metal wall panels (See Photographs #11 and #12) on the east end of the building displayed significant heat related damage, but the wall girts (See Photographs #13 and #14) did not appear to suffer any loss of structural integrity from the heat of the fire.
4. The metal roof panels, the steel purlins and pre-engineered steel moment frames (See Photographs #15 and #16) above the east end of the building did not appear to suffer heat related damage or suffer any loss of structural integrity from the heat of the fire.

Conclusion/Recommendation

Based on the noted observations, the fire related damage appears to be localized to the exterior metal panels and secondary structural components. We recommend replacing the steel wall girts on the west end of the building, adjacent to the northwest corner of the building. The exterior metal wall panels and roof panels should be removed and replaced with new panels.

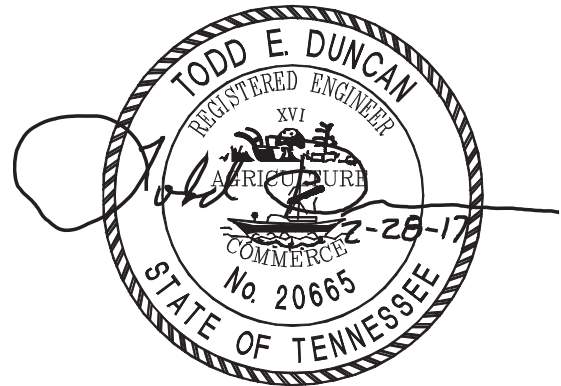
Should you have any question or comments regarding this matter, please feel free to contact our office.

Sincerely,
Structural Engineering Assessments, PC

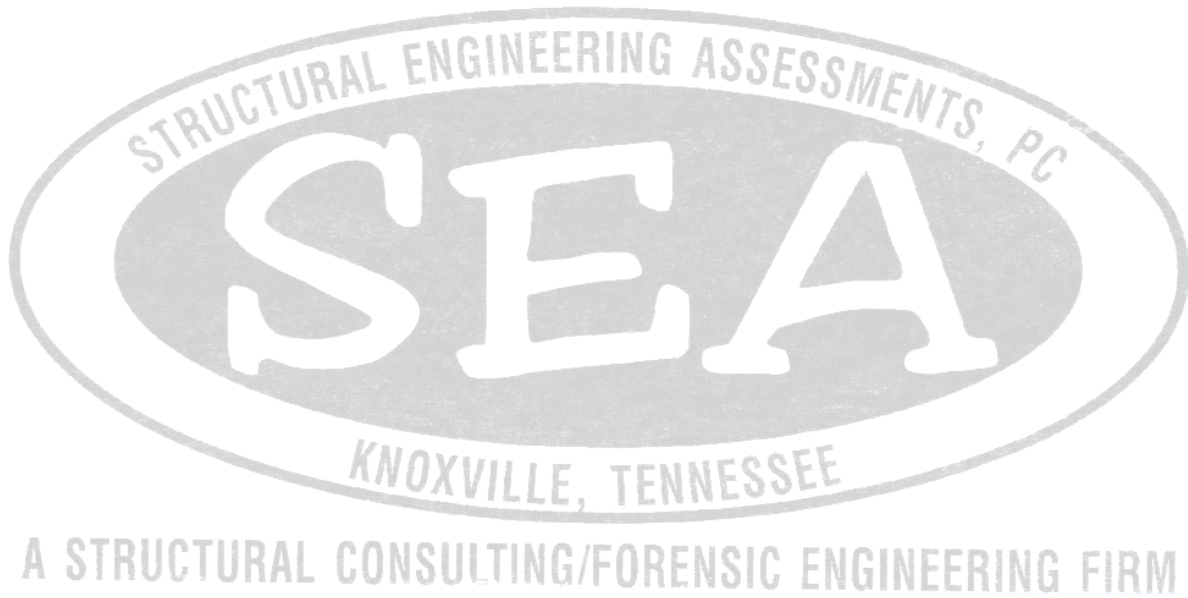

Todd E. Duncan, P.E.
President

TED/dd

Enclosure: Invoice #240-16-01
Photographs (#1 thru #16)



“PHOTOGRAPHS”





Photograph #1 – West Exterior Wall



Photograph #2 – West Exterior Wall



Photograph #3 – East Exterior Wall



Photograph #4 – East Exterior Wall



Photograph #5



Photograph #6



Photograph #7



Photograph #8



Photograph #9



Photograph #10



Photograph #11



Photograph #12



Photograph #13



Photograph #14



Photograph #15



Photograph #16