# DAMMON ENGINEERING, INC.

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*CONSULTING* *DESIGN* *STUDIES* *EXPERT WITNESS*

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August 15, 2011

David McQueen
Textron Marine & Land
Supervisor, Maintenance
2585 Front Street
Slidell, LA 70458

RE: Safety Harness Support system Calculations

Dear David,

Dammon Engineering was contacted to assist in determining whether or not the existing roof trusses and beams at Textron's facility in Slidell would be adequate to support a proposed safety Harness system. Two buildings were inspected at locations determined by Textron staff. The support system shall not be used to support anything other than workers on a safety harness. Do not use the support system for any type of equipment or material handling. Install two cable clamps at each end of the cable for safety.

**Bldg. 1: (max load 425lb.)**

The proposed system consists of a belt-type pulley system that will ride back and forth on a 10ksi cable spanning between existing roof trusses. The cable shall be secured to the existing trusses at each end with a cable tie rated at 5ksi. The span between trusses is 25'-0". Dammon Engineering approves this system provided:

- The cable shall be installed at a location nearest to existing lateral truss supports. If the system needs to be installed in an area where there is no existing lateral support, then a lateral support must be designed and installed at that location to prevent lateral torsional buckling.
- The cable shall be installed at a location nearest to the existing truss web members.
- The truss bottom chord is a C-shape section (C5X6.7). Install web stiffeners at locations where cable is installed to prevent the member from crippling.
- The maximum weight that the bottom chord support can support is limited by vertical deflection. A deflection of L/600 would allow for 950lb load, or 425lb at each truss. Therefore the maximum weight for this system is **425lb.**

**Bldg.2: (max load 500lb.)**

The proposed system consists of a belt-type pulley system that will ride back and forth on a 10ksi cable spanning between existing rigid frame beams. The cable shall be secured to the existing beams at each end with a I-beam clamp provided by owner. The span between beams is 24'-0". Dammon Engineering approves this system provided:

- The cable shall be installed at a location nearest to existing lateral beam supports. If the system needs to be installed in an area where there is no existing lateral support, then a lateral support must be designed and installed at that location to prevent lateral torsional buckling.
- The existing beam is capable of support a load in excess of the 10k rated cable. However the I-beam clamp specifications are not known and will dictate the maximum load. Dammon engineering recommends that no more than 2x 250lb men be supported for a total of **500lb.**

If you have any questions, or require any additional information, please don't hesitate to call.

Sincerely,
Emmett G. Dammon, P.E.