

Please Post



Naval Facilities Engineering Command, Atlantic

Safety Lessons Learned Accident Abstract

Accident Type: Pre-manufactured wood truss collapse
Injury: Four military sentry personnel - contusions
Damage: Two military personnel POVs
Type of Work: Construction of main gate entrance canopy (70'X40') with steel frame support structure and pre-manufactured wood truss roof system.
Equipment: N/A



DESCRIPTION OF THE ACCIDENT:

Construction of a main gate canopy was performed after normal working hours on weekends with traffic lanes rerouted to avoid interruption to station access during normal hours. When work activity stopped the gate entrance lanes were reopened for traffic. Four days after the in process work stopped the partially installed wood truss system collapsed **injuring four active duty military security personnel and damaging two active duty military personal vehicles.**

DIRECT CAUSE:

- ◆ **Failure to provide adequate temporary bracing** in accordance with Truss Plate Institute (TPI) & Wood truss Council of America (WTCA) specifications (See below). The TPI & WTCA specification was not reviewed, followed, or on site.

INDIRECT CAUSE:

- ◆ The **work schedule was out of sequence** due to a one week delay in material delivery the weekend prior and the contractor decided to install as much of the truss system as possible to catch up without completing the phase.
- ◆ Although an activity hazard analysis (AHA) was developed for truss installation including bracing it **lacked the necessary detail** required by TPI & WTCA specification.
- ◆ Failure to complete the work with permanent bracing and sheathing due to schedule compression.
- ◆ Failure of the contractor quality control program (QC) to incorporate all contract required documents.
- ◆ **Truss bracing was questioned just prior to the collapse.** Contract oversight quality assurance (QA) questioned the contractor and was satisfied with the response but did not ask for a more thorough review of the requirements. Asking the contractor for more detail rather than taking their word for it would have identified the deficiency in temporary bracing.
- ◆ The contractor **did not assure that the trusses were plumb** and only toe nailed rather than using the permanent steel uplift connectors at the truss ends into the bearing plate so that they could be repositioned when the sheathing was installed. TPI recommends that trusses be installed in a plumb position without the need for any adjustment prior to final placement or sheathing installation.

ROOT CAUSE:

- ◆ Ineffective quality control enforcement on the worksite.

LESSONS LEARNED:

- ◆ Work in military and civilian public areas requires strict adherence to quality control and safety oversight. The work site was visited on the weekend by three ROICC personnel. When a concern is raised that may involve safety especially public safety take measures to carefully review contract documents.
- ◆ Use the Activity Hazard Analysis. A more thorough AHA would have prevented the accident by helping to identify the significance of temporary bracing.
- ◆ The contract was a task order based on a seed project with contract drawings and no contract specifications for the project. Several notes were on the drawing in particular the requirement to follow the TPI specification which may not always be included. Designers should ensure that projects involving wood truss include this note. (<http://www.tpinst.org/>) & (<http://www.woodtruss.com/index.php>)

YOUR SAFETY CONTACT IS....

