homes are constructed with a roof rafter system. The discussion of prefabricated light wood trusses contained in the "Roof Framing Systems" section below is to be considered typical for each of the building types addressed.

One- to Two-Story Light Wood-Frame Buildings

The catastrophic failure of one- to two-story wood-frame buildings was observed more frequently than the catastrophic failures of other types of site-built structures. Building failure was determined to be primarily a result of negative pressure and/or induced internal pressure overloading the building envelope.

An absence of or improper installation of framing connections, load transfer straps, or bracing from non-loadbearing walls to connecting wall and roof components was noted. This condition contributed significantly to the primary failure of the framing system (see Figures 4 and 5).

The wood-frame gable ends of roof structures were found to be especially failure-prone. Wood-frame gable ends are effectively a vertical continuation of windward/leeward wall systems and require bracing from within the roof structure for lateral force resistance. A lack of an adequately defined load transfer path for the gable ends was evident. Bracing of the wood-frame gable ends was not performed with the consistency and completeness required to effectively resist and transfer the wind loads in the absence of roof sheathing. This indicates a lack of a clear understanding of the gable sections' importance to the integrity of the overall structural system during a wind storm by those responsible for the design and construction of such systems. (see Figures 6 and 7). The reliance on plywood sheathing to act as the sole stiffener of the roof diaphragm left buildings susceptible to structural damage from roof truss collapse when sheathing separated from the roof trusses.