

is of interest because this practice has not been widely observed by previous BPATs. Although laminated structural members rated for exterior use are available, the Hurricane Opal BPAT could not determine the rating of those it saw. No failures of these beams and joists were observed however.

2.3.6 CONNECTIONS

Many of the connections observed were deficient. The BPAT observed widespread corrosion of galvanized straps, hangers, and joist-to-beam ties beneath elevated buildings. Some of the corroded connectors had failed either before or during the storm.

The BPAT observed some galvanized strap connectors between piles, beams and joists (in otherwise good condition) that failed as a result of insufficient nailing or because storm forces exceeded the design forces (see Figure 2-9). This was not a common mode of failure, however. The BPAT also found evidence that structural components had pulled away from one another when acted on simultaneously by flood and wind forces, despite the presence of the galvanized connectors. In some instances, foundation piles and beams were well-connected and withstood storm forces, while walls or upper structure components were poorly connected and were damaged or destroyed by wind forces, flood forces, or both.

2.3.7 BRACING

The use of 2 x 8 or similar timber cross-bracing between timber piles was common beneath elevated wood-frame structures. Some bracing failures were observed that were apparently due to horizontal loading from water, debris, or both. The use of threaded galvanized rods and turnbuckles as cross-bracing was less common (see Figure 2-10). No failures of this type of bracing



Figure 2-8 These piles were not long enough and were spliced to add depth. The splicing was exposed by storm-induced erosion.