STATE BUILDING CODE INTERPRETATION NO. I-63-00

September 27, 2000

The following is offered in response to a request for a formal interpretation of the provisions of Chapter 18 of the BOCA National Building Code/1996 portion of the 1999 State Building Code as it applies to frost protected footings and foundation walls.

Question: In an unheated "mini-storage" building, is it required to provide full perimeter frost-protected foundation walls, or is it acceptable to support the structural columns on frost-protected piers and allow the edge of the slab to be on a haunch, permitting the slab to "float" independently of the piers.

Answer: Either foundation system is code-compliant if designed properly. Sections 1806.1 and 1812.1 of the BOCA National Building Code/1996 portion of the 1999 State Building Code require that footings and foundation walls of buildings and structures larger than 100 square feet (200 square feet for Use Group U) be protected from frost. The intent of the code is that frost action not be permitted to cause damage to the structure. While the code allows individual pier foundations (Section 1815.0 covers such foundations), care must be taken to ensure the intent of the code has been met when they are utilized as per your request. If the method you ask about, independent pier foundations and a "floating" slab, is employed, the slab edge must be designed to resist the potential for frost upheaval by use of a grade beam tied to the frost-protected piers or other approved method. This is particularly important since the building is unheated, and the lightweight nature of the building's walls will not provide resistance to frost action. The responsibility to ensure a frost-protected foundation system lies with the designer of the project. Adequate construction documents with appropriate calculations documenting frost protection must be submitted to the local building official for permit approval prior to construction.