raindrops. For vertical cylinders and horizontal cylinders parallel to the wind direction the ice area given by Eq. 10-1 is conservative.

C10.4.2 Nominal Ice Thickness

The 50-year mean recurrence interval ice thicknesses shown in Figs. 10-2 to 10-6 are based on studies using an ice accretion model and local data.

Historical weather data from 540 National Weather Service (NWS), military, Federal Aviation Administration (FAA), and Environment Canada weather stations were used with the CRREL and Simple ice accretion models (Jones 1996 and 1998) to estimate uniform radial glaze ice thicknesses in past freezing rain storms. For the 2010 edition of ASCE 7, the models and algorithms have been applied to additional stations in Canada along the border of the lower 48 states. The station locations are shown in Fig. C10-4 for the 48 contiguous states and in Fig. 10-6 for Alaska. The period of record of the meteorological data at any station is typically 20 to 50 years. The ice accretion models use weather and precipitation data to simulate the accretion of ice on cylinders 33 ft (10 m) above the ground, oriented perpendicular to the wind direction in freezing rain storms. Accreted ice is assumed to remain on the cylinder until after freezing rain ceases and the air temperature increases to at least 33 °F (0.6 °C). At each station, the maximum ice thickness and the maximum wind-on-ice load were determined for each storm. Severe storms, those with significant ice or wind-on-ice loads at one or more weather stations, were researched in *Storm Data* (NOAA 1959–Present), newspapers, and utility reports to obtain corroborating qualitative information on the extent of and damage from the storm. Yet very little corroborating information was

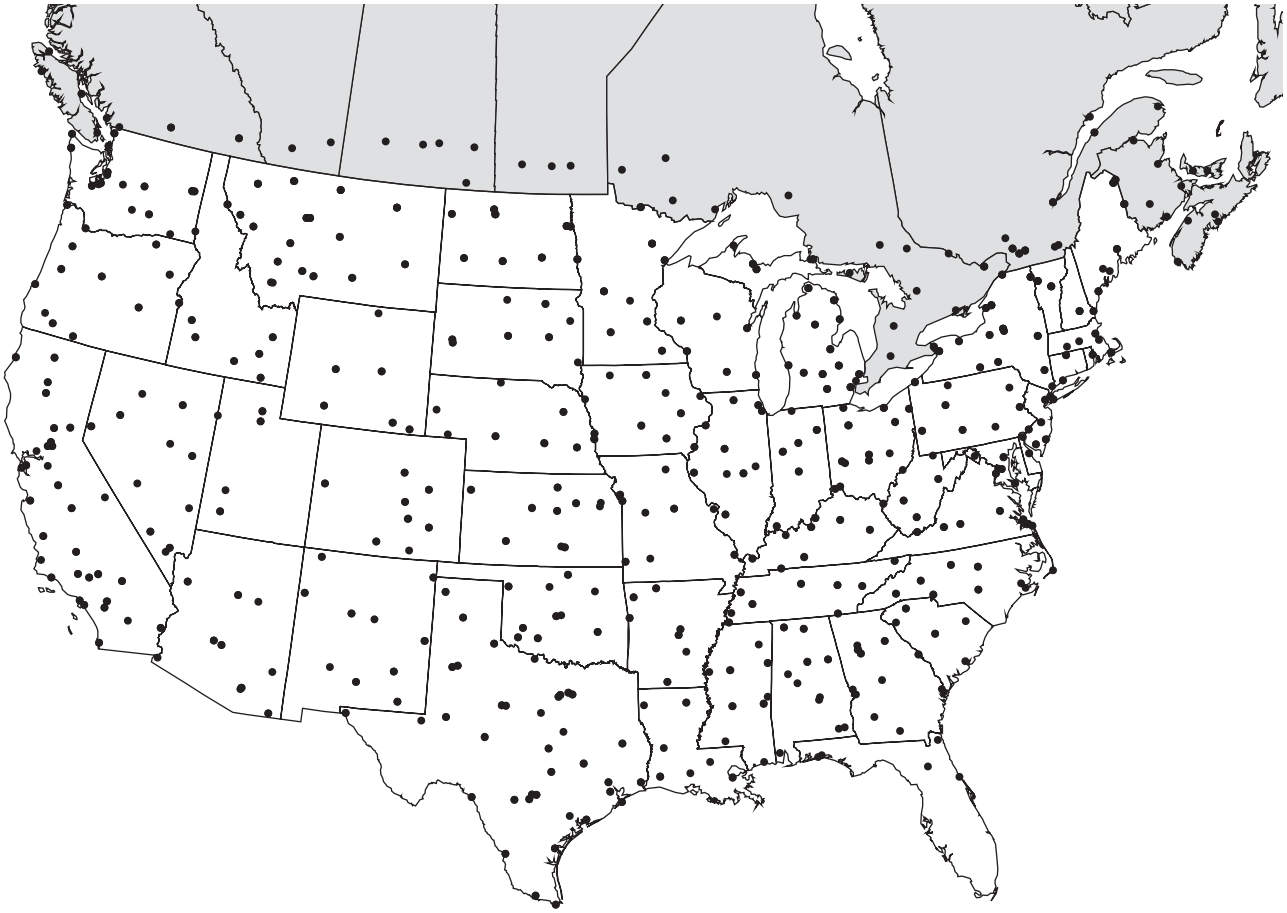

FIGURE C10-4 Locations of Weather Stations Used in Preparation of Figures 10-2 Through 10-5.