

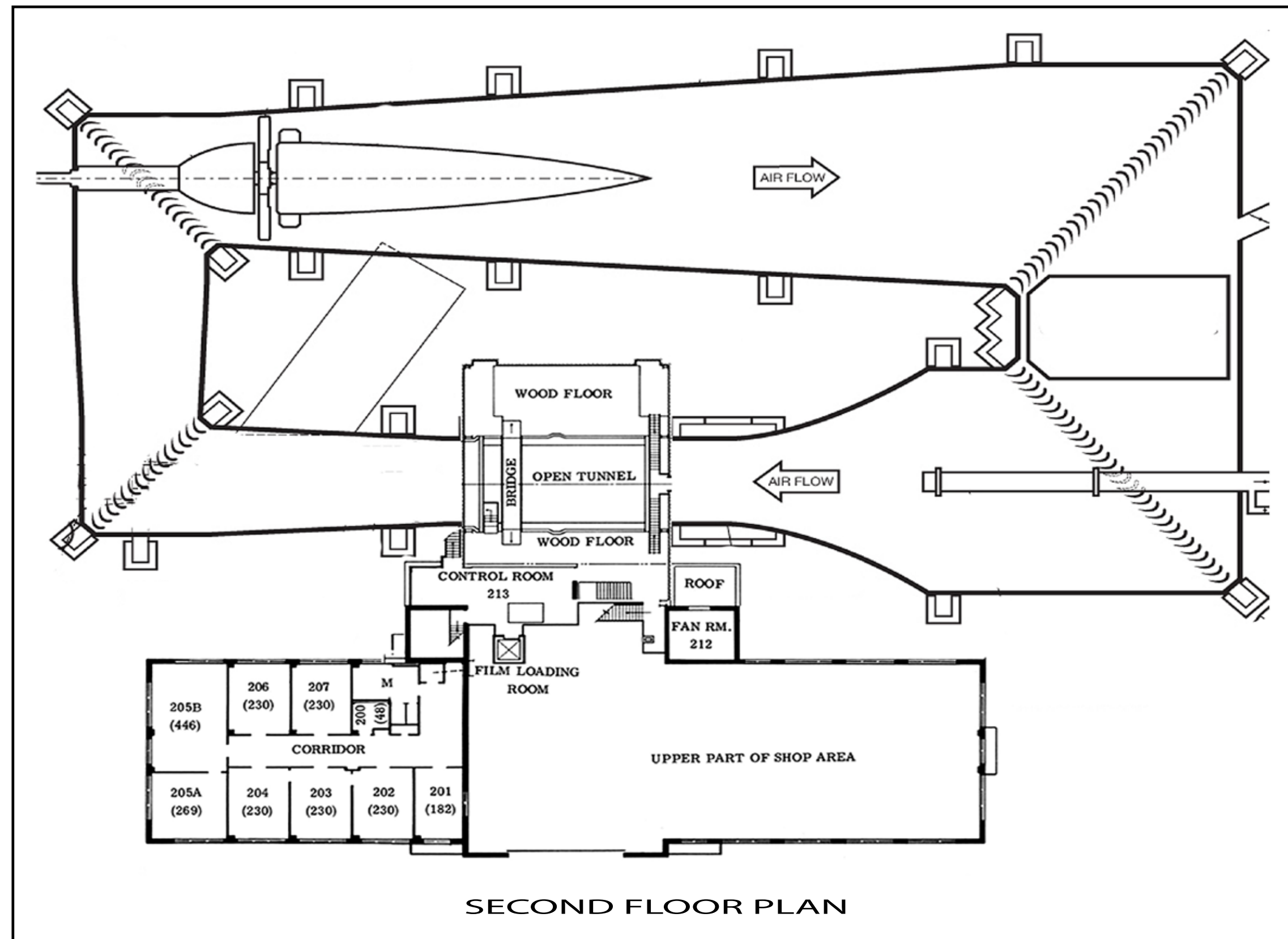
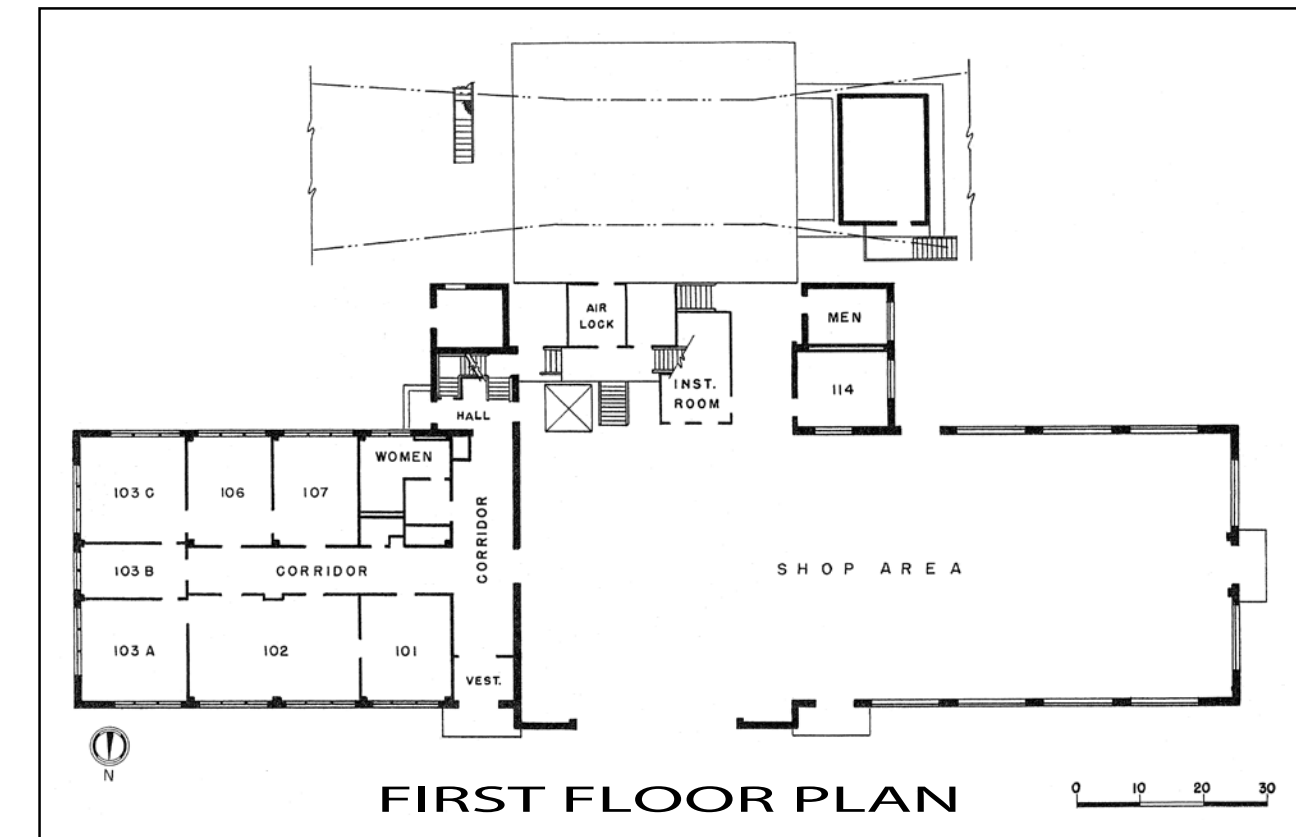
# Altitude Wind Tunnel—Shop and Office Building/Building No. 7

The Altitude Wind Tunnel (AWT) complex consists of several structures. The principal building is the T-shaped Shop and Office Building that faces north on Ames Road. The tunnel entered the rear of this building from the west and exited to the east with the remainder of the tunnel forming a west to east rectangle immediately behind. The Shop and Office Building originally contained the test section and control room in the south extension, two floors of offices in the east wing, a shop area in the west wing, and a high-bay area with an overhead crane in the center of the building.

The entire width of the building was 185 feet 7 1/4 inches. The exterior height was 63 feet 7 3/4 inches in the center and 28 feet 1 1/2 inches at the wings. The three-story central portion of Building No. 7 consists of two distinct areas. The northern front area, referred to as the high-bay, is constructed in the same style as the two wings. This section is presently used for antenna research and contains the Near-Field Antenna Range.

The southern rear portion, referred to as the test chamber, was constructed separately. It contained the AWT test chamber room on the third floor, test section between the second and third floors, and former Space Power Chamber control room beneath the test section. The test section room had a wooden observation platform on either side of the tunnel. Half of the tubular tunnel sat sunken between the second and first floors. During its operational period, the tunnel had a hinged lid, which used a motor-driven system with large counterweights, pulleys, and cables to open, close, and lock in place. The 40-foot-long lid included observation windows.

A soundproof control room was located on the mezzanine level below the observation platform. In the control room, the operator could control all aspects of the tunnel—pressure, temperature, air speed, angle of attack, and engine operation. The Fan Room was located immediately to the west of the control room. Portions of the mezzanine area were later converted into office-type rooms. This three-level area in the center of the building included



an elevator and flights of stairs. The ground level of this area had an Instrumentation Room, air lock into the tunnel's balance chamber, and a restroom.

Originally there was a large truck door at the front center of the building. This door was used to bring hardware, equipment, and test vehicles into the tunnel's test section. In 1991, this truck entrance was sealed, the 45-foot 6-inch-wide high-bay was extended 20 feet 9 inches and covered with horizontal white metal panels.

The shop was a two-story area that occupied the entire western wing of the Shop and Office Building and opened up into the center high-bay area. It was 44 feet 8 inches wide and 42 feet 7 1/2 inches deep. An overhead two-rail crane ran east and west and could transport items from the high-bay. A 1991 expansion resulted in two new offices, a large control room, and smaller computer room along the north wall.

The eastern office wing was separated by walls from the other areas of the Shop and Office Building. During the Space Power Chamber period, the first-floor offices were combined and enlarged. This layout has remained unchanged since the early 1960s. In 1973 and 1974 the Shop and Office Building underwent a major rehabilitation.

