



Drive-In Environmental Test Chamber for U.S. Army Vehicle Testing

What Was Sold?

The U.S. Army contacted CSZ with a project to build an oversized drive-in chamber with a special equipment and control room. The chamber was installed outdoor and was designed to test a large semitruck and radar system. Requirements for the chamber were to cycle between 120°F to -35°F with 110,000 watts of live load.

CSZ designed a 33,750 cu. ft. drive-in chamber with exterior dimensions of 48'W x 65'D x 27'H. To meet the specific testing requirements, this vast chamber required an extensive refrigeration system. The system included a total of (6) modular plenums, (6) 30-30 cascade refrigeration systems and (6) remote air cooled condensers with a combined air flow of 24,000 cfm.

Special Features

- Double 15' Doors with heated windows in each door
- (6) 6" diameter ports in chamber wall for routing cables
- One 36" personnel door to enter/exit the chamber
- Equipment Room with 48" personnel door, one 14' wide rolling door, (4) 6 inch diameter ports, inside emergency release. The equipment room housed the back up system generator.
- Temperature-conditioned Control Room with 48" personnel door with windows, (6) 6" diameter ports, inside emergency release, emergency lighting and exit.

Control room houses instrumentation panel, data acquisition system, controllers, recorders, oxygen deficiency monitors, and main power disconnects. Large windows were also included to view interior of the test chamber from the control room.

- Pole Barn covering entire footprint of drive-in chamber, rooms, external mounted plenums and condensers.
- System safeties including temperature limited sheathed heaters.
- Cargocaire and dry air purge to remove moisture.



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Cincinnati Sub-Zero
The Testing Standard.