

There was substantial concern about the acoustic noise produced by the gun inasmuch as it is located directly below a large lecture room. Partly to help control noise, and partly for safety purposes, a catcher tank was constructed that contains all of the fragments and the gas. This tank, which incorporates a large evacuated target area, and the heavy concrete shielding around the muzzle reduce the noise to surprisingly low levels. We have been able to fire, at pressures up to 3000 psi so far, without disturbing classes in the room above.

### III. DESIGN DETAILS

#### A. Location

The room in which the gun facility is located is a basement room in a large classroom and office building on the WSU campus - Sloan Hall. It is approximately 75' x 25' and is partially below ground level. Inside this room we constructed a very heavy, reinforced concrete muzzle room approximately 11' x 16' x 7'. The walls, ceiling and floor are reinforced and are 12" thick. The door is  $\frac{1}{2}$ " thick steel plate and weighs 600 pounds. This room was designed to withstand the maximum overpressure of the gas in case of rupture of the catcher tank (approximately 4 psi).

Concrete blocks with reinforcing rods were used to shield the breech and compressor room from the central part of the main room. The central portion, between the breech and muzzle rooms, is used as a working area and houses the instrumentation and the control console.

A sketch of the layout is shown in Fig. 4.

The gun is mounted on an I-beam, which in turn rests on a solid concrete foundation.