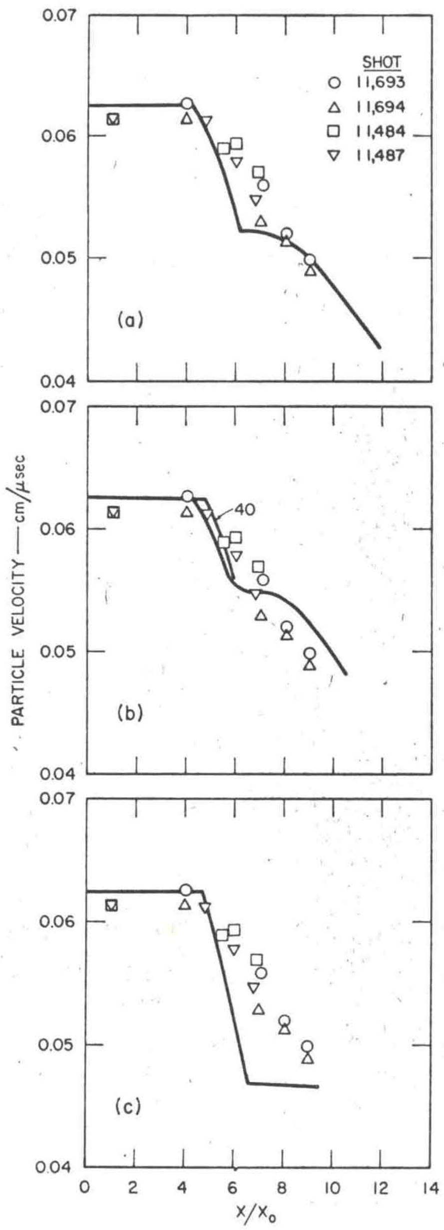

FIG. 11. Comparison of experimental and calculated results for 2024-T351 aluminum impacted at 0.125 cm/μsec.

of the elastic and plastic relief waves, the drop in stress caused by the elastic relief wave is poorly determined. This means that the variation of the yield stress with stress or strain is also poorly determined.

In anticipation of the discussion of the results it can be stated that the shear modulus does not appear to increase indefinitely, a desirable characteristic of this model.

C. Pressure Dependence of Shear Modulus and Yield Stress of 2024-T351 Aluminum

In order to make some comparison of calculated and experimental results it was necessary to assume values of $\sigma_e - \sigma_f$. The value shown in Table III for a 110-kbar shock is the same as that assumed by Curran.[1] The value for the 340-kbar shock was obtained by assuming that all the attenuation observed in Fig. 5 was due to an elastic relief wave, so that the amplitude of the wave is at least 65 kbar.

It should be noted that the uncertainty in the value of the amplitude of the elastic relief wave does not introduce a large uncertainty into the value calculated for the shear modulus. The crucial measurement is the velocity of sound behind the shock front.

Values of G and $(Y_e + Y_f)$ determined from the experiments are shown as functions of the specific volume in Fig. 10. The zero stress value of G, 0.287

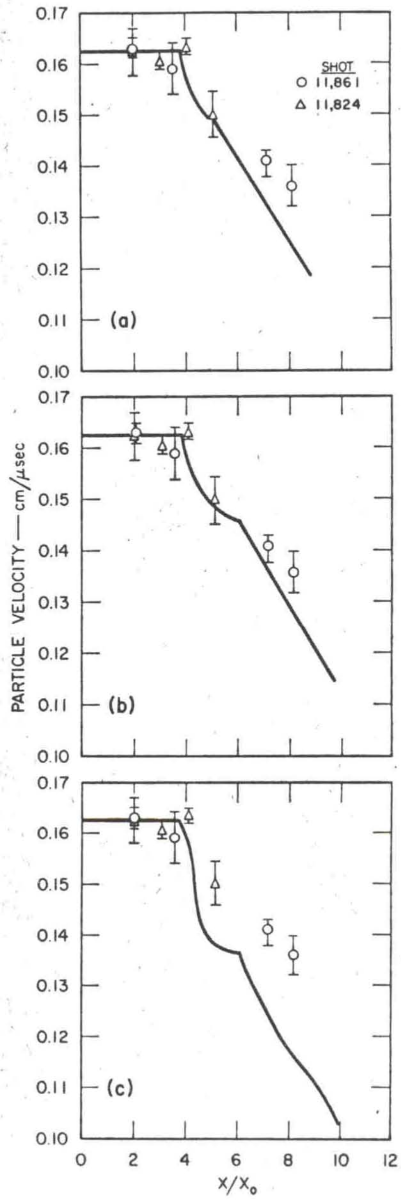

FIG. 12. Comparison of experimental and calculated results for 2024-T351 aluminum impacted at 0.33 cm/μsec.