



optimized stiffened equivalent ellipsoidal shell; inward $\cos(\theta)$ normal line load from $\theta=0$ to 90 deg.

PA= 0.0; PB= 1581.35; 480 finite elements are used; crude model

step 54 displacement w contours at maximum PB

nonlinear w; $\cos(\theta)$ point loads along row no. 2 of shell segment no. 2 (see Fig.2)

subroutine usfab.soccerball.plastic.src is used with NGCP = 1

Θx -0.00

Θy 0.00

Θz -0.00



9.900E+00

Fig. 264 The **optimized isogrid-stiffened equivalent ellipsoidal shell; Wimp=0.2 inch; the optimum design is listed in columns 2 and 3 of Table 33.** State of the shell at load set B (PB) step no. 54 in Run 1. (See Fig. 263). Load set B consists of a number of concentrated inward directed normal **loads** applied along row 2 of shell segment 2 (Figs. 2, 169, 258 and 259) distributed in the circumferential direction as $\cos(\theta)$ from $\theta = 0$ to 90 degrees. This " $\cos(\theta)$ " load distribution is used because it generates a residual dent that **locally** resembles the negative of the buckling modal deformation in Fig. 258, that is, the negative of the linear buckling modal imperfection with $n = 1$ circumferential wave. Compare with Fig. 239.