FORM TO SPECIFY INPUT DATA FOR
SOUND-SPEED MODEL CSTANH

This model represents the sound-speed (squared) profile by a sequence of linear segments that are smoothly joined by hyperbolic functions:

$$C^2 = C_o^2 + \frac{b_1}{2}(z-z_o) + \sum_{i=1}^{n} \delta_i \left(\frac{b_{i+1} - b_i}{2}\right) \ln \frac{\cosh\left(\frac{z-z_i}{\delta_i}\right)}{\cosh\left(\frac{z_i-z_o}{\delta_i}\right)} + \frac{b_{n+1}}{2}(z-z_o)$$

$$\frac{dC^2}{dz} = b_1 + \sum_{i=1}^{n} \left(\frac{b_{i+1} - b_i}{2}\right) \left\{\tanh\left(\frac{z-z_i}{\delta_i}\right) + 1\right\}$$

$$b_i = (C_i^2 - C_{i-1}^2)/(z_i - z_{i-1}) \quad .$$

$z = r - r_e$, where r_e is the Earth radius, and r is the radial coordinate of the ray point. Thus, δ_i is the half-thickness of a region centered at approximately z_i km, in which dC^2/dz changes from b_i to b_{i+1}. Start by drawing a profile with linear segments, and get C_i^2 and z_i from the corners. Then select δ_i to round the corners. The final profile will not go through (C_i^2, z_i).

Specify--

the model check for CSTANH = 2.0 (W150)

the input data-format code = _____ (W151)

an input data-set identification number = _____ (W152)

an 80-character description of the model with parameters:

_____

and the profile values:

the number of points in the profile -2 = n = _____

the profile:

i	z_i (km,m)	C_i (km/s, m/s)	δ_i (km,m)

OTHER MODELS REQUIRED: Any sound-speed-perturbation model. Use NPSPEED if no perturbation is desired. FUNCTION ALCOSH.