$$\mathbf{E}_{\mathrm{TM}}^{+} \uparrow \qquad \uparrow \mathbf{E}_{\mathrm{TE}}^{+}$$

$$\mathbf{E}_{\mathrm{TM}}^{-} \downarrow \qquad \downarrow \mathbf{E}_{\mathrm{TE}}^{-}$$

$$\varepsilon_{1}, \mu_{1} \qquad r_{\mathrm{TM}} \mathbf{E}_{\mathrm{TM}}^{-} \uparrow \qquad \uparrow r_{\mathrm{TE}} \mathbf{E}_{\mathrm{TE}}^{-}$$

$$z = z_{1}$$

$$z = z_{2}$$

$$\varepsilon_{3}, \mu_{3}$$

$$z = z_{N-1}$$

$$\varepsilon_{N}, \mu_{N}$$

$$\mathbf{E}_{\parallel} = \mathbf{H}_{\parallel} = 0$$

 $z = z_{\rm GP} = z_{
m N}$