

Key

Given:

Point ALLENPoint THORNTON #2Colorado North Zone NAD 83

$$\begin{aligned} N_1 &= 363,504.213 \\ E_1 &= 952,651.853 \\ \gamma_1 &= +00^\circ 17' 19.8320'' \\ R_1 &= 7,587,444.435 \\ \phi_1 &= 39^\circ 51' 40.26577'' \\ \lambda_1 &= 105^\circ 03' 10.68547'' \end{aligned}$$

$$\begin{aligned} N_2 &= 364,626.654 \\ E_2 &= 958,933.900 \\ \gamma_2 &= \underline{\underline{+0-20-10.7857}} \\ R_2 &= \underline{\underline{7,586,356.283}} \\ \phi_2 &= \underline{\underline{39-52-15.548}} \\ \lambda_2 &= \underline{\underline{104-58-46.106}} \end{aligned}$$

Colorado Central Zone NAD 83

$$\begin{aligned} \gamma_1 &= +00^\circ 16' 54.9779'' \\ R_1 &= 7,773,583.243 \\ N_1 &= 530,011.218 \\ E_1 &= 952,653.546 \end{aligned}$$

$$\begin{aligned} \gamma_2 &= \underline{\underline{+0-19-41.8455}} \\ R_2 &= \underline{\underline{7,772,495.041}} \\ N_2 &= \underline{\underline{531,132.891}} \\ E_2 &= \underline{\underline{958,936.027}} \end{aligned}$$

Draw a diagram and determine:

North Zone

$$\begin{aligned} \phi_o &= \underline{\underline{40-15-02.6}} \\ R_o &= \underline{\underline{7,544,194.617}} \\ N_o &= \underline{\underline{406,657.617}} \\ \text{Grid Azi}_{12} &= \underline{\underline{79-52-10.6}} \\ \delta_{12} &= \underline{\underline{-0.68''}} \\ \text{Geod. Azi}_{12} &= \underline{\underline{80-09-31.1}} \end{aligned}$$

Central Zone

$$\begin{aligned} &= \underline{\underline{39-06-03.7}} \\ &= \underline{\underline{7,857,977.929}} \\ &= \underline{\underline{445,522.418}} \\ &= \underline{\underline{79-52-37.5}} \\ &= \underline{\underline{+1.35''}} \\ &= \underline{\underline{80-09-31.1}} \end{aligned}$$