

COLUMBIA COUNTY
 Section 23 T5N R4W WM
 August 14, 1973
 Latitude 45° 54' 05"
 Longitude 123° 08' 30"
 Temp 55
 M Doty

Polaris at Eastern Elongation

Greenwich Civil Time of Eastern Elongation August 9th 23 hours 00.5 minutes
 " " " " " August 19th 22 " 21.4
 10 days 39.1 min diff

$39.1 \div 10 = 3.91$ minutes correction per day

August 14th

" 8th (Eastern Elongation given is for previous day)

6 days $6 \times 3.91 = 23.46$ minutes correction

Greenwich Civil Time of Eastern Elongation August 9th 23 hours 00.5 minutes
 Correction for August 14th - 23.46 "

Greenwich Civil Time of Eastern Elongation August 14th 22 hours 37.04 minutes
 Correction for longitude $123.14 \times .011 = -1.35$

Pacific Standard Time of Eastern Elongation 22 hours 35.69 minutes

Local Civil Time Correction for longitude $123.14 - 120 = 3.14 \times 4 \text{ min} = 12.56$ minutes

Pacific Standard Time of Eastern Elongation 22 hours 48.25 minutes

Pacific Standard Time of Eastern Elongation = 10 : 48.25 = Pacific Daylight Time = 11 : 48.25

$$\frac{\text{Polar Distance in Minutes}}{\text{Cosine of Latitude}} = \text{Bearing of Polaris in minutes}$$

Polar Distance August 9th = 51.61

" " " 19th = 51.58

10 days = .03

Correction for 5 days = $\frac{.03 \times 5}{10} = .015$

Polar Distance August 9th = 51.61

correction for " 14th = -.015

Polar Distance August 14th = 51.595

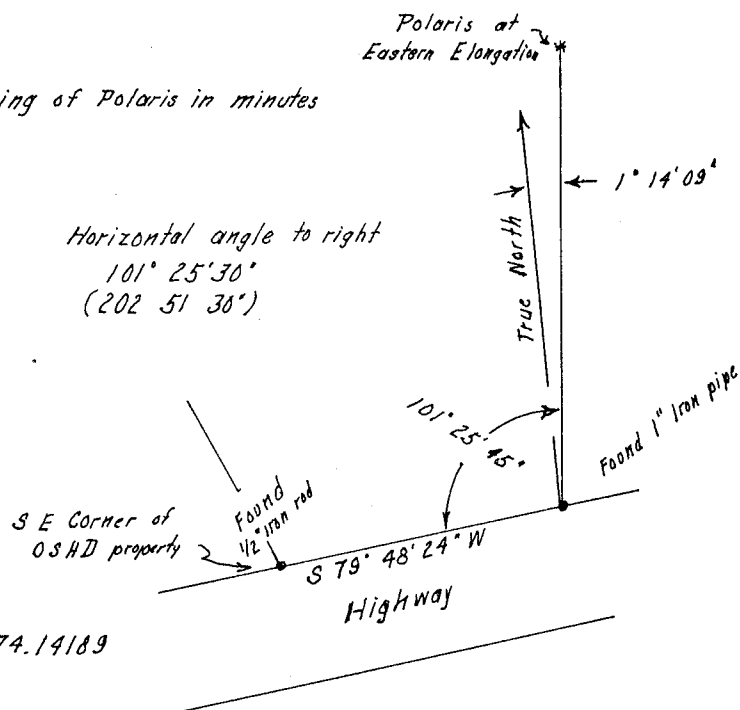
$$\frac{\text{Polar Distance in minutes} = 51.595}{\text{Cosine of Lat } 45^{\circ} 54' 05''} = 74.14189$$

$$\text{Cosine of Lat } 45^{\circ} 54' 05'' = .69589539$$

$$\text{Bearing of Polaris} = 1^{\circ} 14' 09''$$

$$\begin{array}{r} \text{True Bearing} = S 79^{\circ} 48' 24'' W \\ + \theta = 1^{\circ} 52' 30'' \\ \hline \text{Grid Bearing} = S 81^{\circ} 40' 54'' W \end{array}$$

$$\begin{array}{r} \text{Horizontal Angle} = 101^{\circ} 25' 45'' \\ - \text{Bearing of Polaris} = 1^{\circ} 14' 9'' \\ \hline 100^{\circ} 11' 36'' \\ 179^{\circ} 59' 60'' \\ 100^{\circ} 11' 36'' \\ S 79^{\circ} 48' 24'' W \text{ Bearing of Highway} \end{array}$$



NOTE
 Monuments are not on
 Road Right of Way