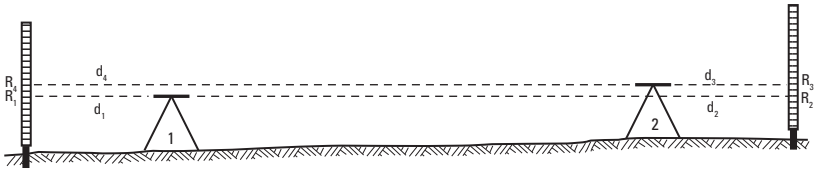
PEG TEST OF ENGINEER'S LEVEL

Make/Model: Circle system type(s): optical digital



$$\text{Collimation} = c = 100 * \left[\frac{(R_1 + R_3) - (R_2 + R_4)}{(d_2 + d_4) - (d_1 + d_3)} \right]$$

Average of d_2 and d_4 should be less than 110 ft.

OPTICAL SYSTEM

$$c = 100 * \left[\frac{(\quad + \quad) - (\quad + \quad)}{(\quad + \quad) - (\quad + \quad)} \right]$$

c = _____ft/100ft as found

	R	d
1		
2		
3		
4		

DIGITAL SYSTEM

$$c = 100 * \left[\frac{(\quad + \quad) - (\quad + \quad)}{(\quad + \quad) - (\quad + \quad)} \right]$$

c = _____ft/100ft as found

	R	d
1		
2		
3		
4		

ADJUSTMENT (level remains set up at 2 and sighted at R_4)

Adjust cross hair to $R_4 \pm \left[\frac{(cd_4)}{100} \right] = ____ \pm \left[\frac{(\quad)}{100} \right]$

Repeat collimation test after adjustment.

COLLIMATION TEST AFTER ADJUSTMENT

$$c = 100 * \left[\frac{(\quad + \quad) - (\quad + \quad)}{(\quad + \quad) - (\quad + \quad)} \right]$$

c = _____ft/100ft as found

	R	d
1		
2		
3		
4		

CLOSURE-ERROR COMPUTATIONS

Circuit No.	No. of Inst. Setups (n)	Allowable closure 0.003 √ n	Closure Error (CE)	CE/(n) (take to 0.0001)

NOTES or SKETCHES:

U.S. DEPARTMENT OF THE INTERIOR

U.S. Geological Survey

Gaging Station Level Notes

Station Number:

Station Name

Date Party (inst.) (rod)

SUMMARY OF OBJECTIVE POINTS

Object	Adjusted 1st Elevation (AE1)	Adjusted 2nd Elevation (AE2)	Difference (AE1 −AE2)	Final Elevation ((AE1+ AE2)/2)

GAGE READINGS

Time	WS			Ref.

INSTRUMENT

Make/Model: _____

Serial Number: _____

Collimation (optical): _____

Collimation test date: _____

Collimation (digital): _____

Collimation test date: _____

ROD

Scale material: _____ CTE _____ 1/F° or 1/C°

CTE conversions: (1/°F * 1.8 = 1/°C) and ((1/°C)/1.8 = 1/°F)

Temperature (T): Rod:_____ °F or °C; Air:_____ °F or °C

Standard temp (T_o): 68°F or 20°C or other: _____

Given/Origin elevation: _____

Max elevation of objective point: _____

Min elevation of objective point: _____

Max elevation difference (L): _____

C_t = CTE * L ($T - T_o$) C_t = _____

Other devices used as rod (list):

Rod taped (circle): yes no

Rod level used (circle): yes no

GAGE RESET

	Ref.			
Found				
Left				

WEATHER: _____

NOTES: _____

Computed by: Checked by: Date:

OBJECT	BS	CORRECTED BS BS+(CTE*BS*(T−T_0))	HEIGHT OF INSTRU-MENT (HI)	FS	CORRECTED FS FS+(CTE*FS*(T−T_0))	ELEVATION	Remarks

CLOSURE-ERROR ADJUSTMENT TO HI	ADJUSTED 1st ELEVATION	ADJUSTED 2nd ELEVATION	DIFFERENCE (AE1 −AE2)	FINAL ELEVATION	OLD ELEVATION	Remarks