U.S. Geological Survey
Trigonometric Leveling
Traverse Form

Survey crew: Date: Total station model and serial number:

Data collector job name: Weather: Prism(s) model and serial number:

Horizontal datum: ☐ NAD 83 ☐ NATRF2022 ☐ Assumed ☐ Other Vertical datum: ☐ NAVD 88 ☐ NAPGD2022 ☐ NGVD 29 ☐ Other

Traverse type: ☐ SRLT ☐ DRST ☐ OT

—Establish Baseline—

Origin point coordinate, in feet (N/E/Z): Foresight point coordinate, in feet (N/E/Z):

Instrument height at origin point (HI), in feet = Prism height at foresight (SH), in feet =

	Vertical difference, in feet	Horizontal distance, in feet			Vertical difference, in feet	Horizontal distance, in feet
Face 1			Face 2			
Face 2			Face 1			
Face 1			Face 2			

Mean vertical difference, in feet =

Mean horizontal distance, in feet =

Azimuth of baseline from origin to foresight, in degrees =   Method: Compass ☐ Recovered benchmark ☐ GNSS ☐ Other ☐

Air temperature, in degrees Fahrenheit		Total station constant and scale error	mm +	ppm
Atmospheric pressure, in inches of Hg		Total station angular uncertainty		arc-seconds
Prism offset, in mm				

Helpful conversions: 1 m = 3.28084 ft; 1 mm = 0.00328084 ft; 1° C = 1.8°F; 1 mm = 0.03937008 inches

Setup # 1 Description

Backsight point number		BS prism height (SH), in feet =		
Station point number		Instrument height (HI), in feet =		
Foresight point number		FS prism height (SH), in feet =		

Point number	Instrument orientation	Vertical difference, in ft	Horizontal distance, in ft	Section misclosure
	BS direct—F1			
	FS direct—F1			
	FS reverse—F2			
	BS reverse—F2			

$$\underline{\quad}_{HI} + \underline{\quad}_{VD} - \underline{\quad}_{SH(FS)} = \boxed{\quad}\ VD_{(mark-to-mark)}$$

$VD_{(mark-to-mark)}$ from point _____ to _____ = ☐

$VD_{(mark-to-mark)}$ from point _____ to _____ = ☐

Section misclosure, in ft = ☐

Setup # _____ Description

Backsight point number		BS prism height (SH), in feet =		
Station point number		Instrument height (HI), in feet =		
Foresight point number		FS prism height (SH), in feet =		

Point number	Instrument orientation	Vertical Difference, in ft	Horizontal distance, in ft	Section misclosure
	BS direct—F1			
	FS direct—F1			
	FS reverse—F2			
	BS reverse—F2			

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Section misclosure, in ft = ☐

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Backsight point number		BS prism height (SH), in feet =		
Station point number		Instrument height (HI), in feet =		
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Section misclosure, in ft = ☐