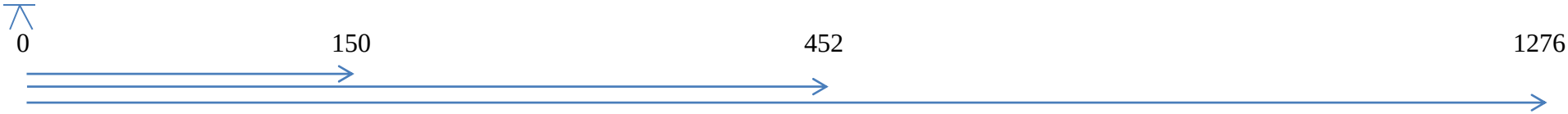
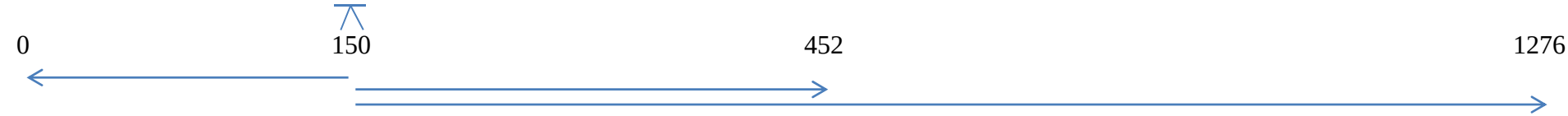
BASE LINE CALIBRATION FORMS

BASE LINE INSTURMENT POSITION AND MEASUREMENT DIAGRAM

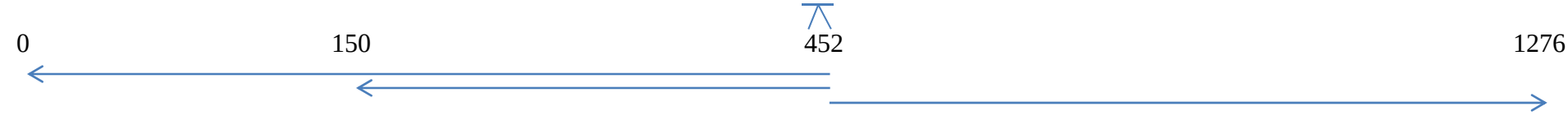
Set Number One, Inst. @ Station 0 Four distances measured (2 direct 2 reverse) to each FS station: 150 452 1276



Set Number Two, Inst. @ Station 150 Four distances measured (2 direct 2 reverse) to each FS station: 0 452 1276

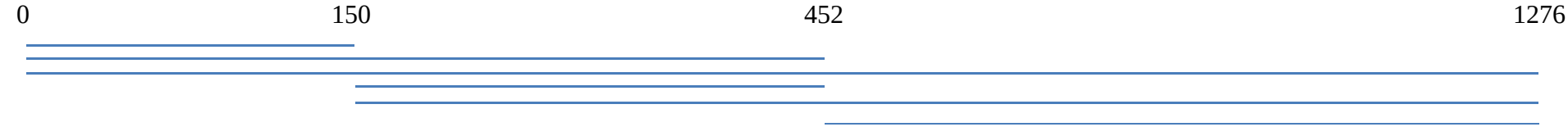


Set Number Three, Inst. @ Station 452 Four distances measured (2 direct 2 reverse) to each FS station: 0 150 1276



Set Number Four, Inst. @ Station 1276 Four distances measured (2 direct 2 reverse) to each FS station: 0 150 452

Final six (6) sets of mean distances to record on "Summary of Base Line Horizontal Distance Calibration" Sheet six (6) are as follows:
0 to 150 0 to 452 0 to 1276 150 to 452 150 to 1276 452 to 1276



CALIBRATION BASE LINE FIELD WORKSHEET

Note: A complete calibration shall contain 4 instrument setups and equipment verification is to be performed with the same auxiliary equipment i.e. tripods, tribrachs and glass used in daily field work with this instrument.

PLEASE NOTE: When filling out this form on the computer, **DO NOT** use the **ENTER** key, **ONLY** use the **TAB KEY** to get you through the form.

H.I. (Meters)		**Horizontal Distance** (Meters)	**Slope Distance** (Meters)	**Vertical Angle** (Degrees)			**Vertical Difference** (Meters)	**Target Height** (Meters)
Inst. @ Station	**F.S. @ Station**							
		D1		°				
		R1		°				
		D2		°				
		R2		°				
	Average	0.0000	0.0000	°			0.000	
		D1		°				
		R1		°				
		D2		°				
		R2		°				
	Average	0.0000	0.0000	°			0.000	
		D1		°				
		R1		°				
		D2		°				
		R2		°				
	Average	0.0000	0.0000	°			0.000	

Date:	Survey Crew:		
Weather:	Temperature: °F	Pressure:	PPM Correction:
Instrument:		Serial No.	
Baseline Name:	Location:		
Notes:			

CALIBRATION BASE LINE FIELD WORKSHEET

Note: A complete calibration shall contain 4 instrument setups and equipment verification is to be performed with the same auxiliary equipment i.e. tripods, tribrachs and glass used in daily field work with this instrument.

H.I. (Meters)		Horizontal Distance (Meters)	Slope Distance (Meters)	Vertical Angle (Degrees)			Vertical Difference (Meters)	Target Height (Meters)
Inst. @ Station	**F.S. @ Station**							
		D1		°				
		R1		°				
		D2		°				
		R2		°				
	Average	0.0000	0.0000	°			0.000	
		D1		°				
		R1		°				
		D2		°				
		R2		°				
	Average	0.0000	0.0000	°			0.000	
		D1		°				
		R1		°				
		D2		°				
		R2		°				
	Average	0.0000	0.0000	°			0.000	

Date:	Survey Crew:		
Weather:	Temperature: °F	Pressure:	PPM Correction:
Instrument:		Serial No.	
Baseline Name:	Location:		
Notes:			

CALIBRATION BASE LINE FIELD WORKSHEET

Note: A complete calibration shall contain 4 instrument setups and equipment verification is to be performed with the same auxiliary equipment i.e. tripods, tribrachs and glass used in daily field work with this instrument.

H.I. (Meters)		**Horizontal Distance** (Meters)	**Slope Distance** (Meters)	**Vertical Angle** (Degrees)			**Vertical Difference** (Meters)	**Target Height** (Meters)
Inst. @ Station	**F.S. @ Station**							
		D1		°				
		R1		°				
		D2		°				
		R2		°				
	Average	0.0000	0.0000	°			0.000	
		D1		°				
		R1		°				
		D2		°				
		R2		°				
	Average	0.0000	0.0000	°			0.000	
		D1		°				
		R1		°				
		D2		°				
		R2		°				
	Average	0.0000	0.0000	°			0.000	

Date:	Survey Crew:		
Weather:	Temperature: °F	Pressure:	PPM Correction:
Instrument:		Serial No.	
Baseline Name:	Location:		
Notes:			

CALIBRATION BASE LINE FIELD WORKSHEET

Note: A complete calibration shall contain 4 instrument setups and equipment verification is to be performed with the same auxiliary equipment i.e. tripods, tribrachs and glass used in daily field work with this instrument.

H.I. (Meters)		**Horizontal Distance** (Meters)	**Slope Distance** (Meters)	**Vertical Angle** (Degrees)			**Vertical Difference** (Meters)	**Target Height** (Meters)
Inst. @ Station	**F.S. @ Station**							
		D1		°				
		R1		°				
		D2		°				
		R2		°				
	Average	0.0000	0.0000	°			0.000	
		D1		°				
		R1		°				
		D2		°				
		R2		°				
	Average	0.0000	0.0000	°			0.000	
		D1		°				
		R1		°				
		D2		°				
		R2		°				
	Average	0.0000	0.0000	°			0.000	

Date:	Survey Crew:		
Weather:	Temperature: °F	Pressure:	PPM Correction:
Instrument:		Serial No.	
Baseline Name:	Location:		
Notes:			

Summary of Base Line Horizontal Distance Calibration

This Summary is **NOT** to be used to determine if the instrument has "passed" the requirements for this Base Line. It is for information only. The information from the worksheets will be used by CDOT for the final determination.

Note: Avg. of all 8 distances shall include 4 direct or face 1 and 4 reverse or face 2 observations (In which 2 direct or face 1 and 2 reverse or face 2 shall be measured from each setup on the baseline)

Base Line: _____ Date: _____

Instrument: _____ Serial Number: _____

Manufactures instrument tolerance is (example: +/- (3mm + 3ppm)): _____

Station to Station		Avg. of all 8 Horizontal Distances	-	Published Distance	=	Computed Difference (Observed +/- From Published)	Computed Tolerance*

*Computed Tolerance is calculated using the following:

Instrument ppm/1,000,000 x Published Horizontal Distance + instrument error (mm) = computed tolerance.

Example: Calculation for an instrument that has specification of +/- (3mm and 3ppm) is calculated as follows:

3/1,000,000 x 150.4239 + 0.003

0.000003 x 150.4239 + 0.003

0.00045 + 0.003 = 0.0035 meters.

Therefore +/- 0.0035 meters would be the allowed error for this instrument at this particular horizontal distance.

Remarks:

Please state the manufacturer of the glass and tripods and list the date when the auxiliary equipment was last adjusted.

_____

_____

_____

_____

_____