MISSOURI DEPARTMENT OF AGRICULTURE
DIVISION OF WEIGHTS, MEASURES AND CONSUMER PROTECTION
LAND SURVEY PROGRAM

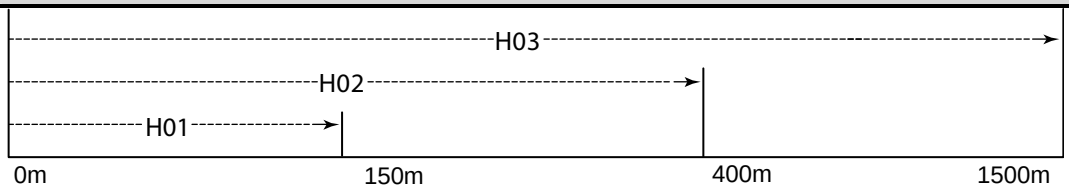
EDM CALIBRATION REPORT – KIRKSVILLE EDM BASELINE (HORIZONTAL)

DATE	COMPANY	REFLECTOR SETUP
		☐ Tripod with tribrach ☐ Prism pole ☐ Bipod pole

INSTRUMENT TYPE, MODEL AND SERIAL NUMBER

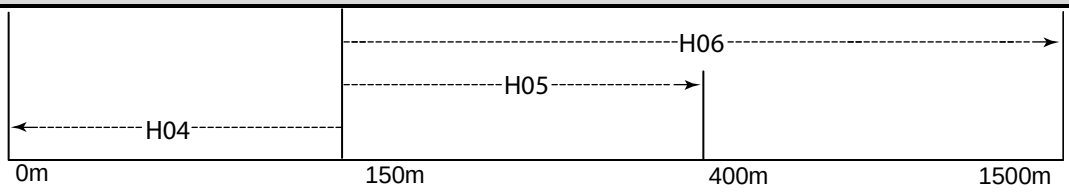
NOTE: ALL DISTANCES SUBMITTED SHALL BE HORIZONTAL.

E.D.M. AT 0m



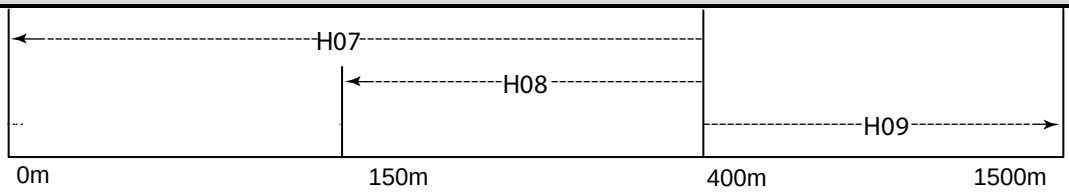
H01 =	H02 =	H03 =	TEMP
H01 = (150.0055m)	H02 = (400.0177m)	H03 = (1500.1068m)	❖ PRESS

E.D.M. AT 150m



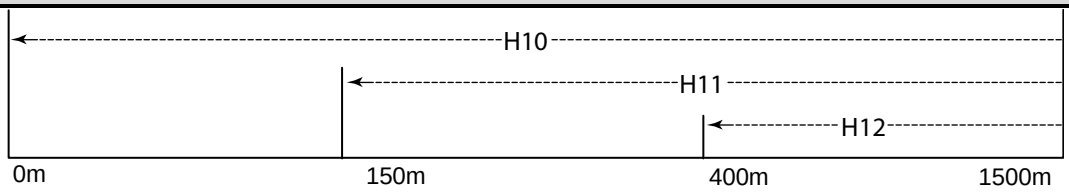
H04 =	H05 =	H06 =	TEMP
H04 = (150.0055m)	H05 = (250.0122m)	H06 = (1350.1013m)	❖ PRESS

E.D.M. AT 400m



H07 =	H08 =	H09 =	TEMP
H07 = (400.0177m)	H08 = (250.0122m)	H09 = (1100.0891m)	❖ PRESS

E.D.M. AT 1500m



H10 =	H11 =	H12 =	TEMP
H10 = (1500.1068m)	H11 = (1350.1013m)	H12 = (1100.0891m)	❖ PRESS

❖ Barometric pressure for EDM calibration **must be station pressure**. Do not use barometric pressure reduced to sea level.

MISSOURI DEPARTMENT OF AGRICULTURE
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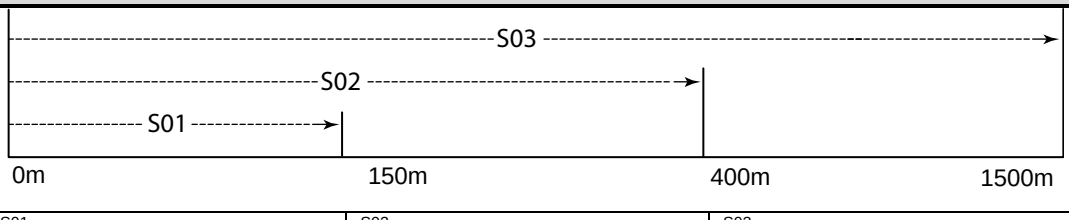
EDM CALIBRATION REPORT – KIRKSVILLE EDM BASELINE (SLOPE)

DATE	COMPANY	REFLECTOR SETUP
		☐ Tripod with tribrach ☐ Prism pole ☐ Bipod pole

INSTRUMENT TYPE, MODEL AND SERIAL NUMBER

NOTE: ALL DISTANCES SUBMITTED SHALL BE SLOPE.

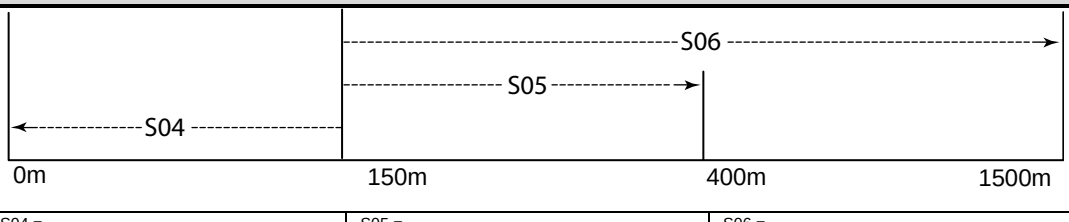
E.D.M. AT 0m



S01 =	S02 =	S03 =	TEMP
H0 =	H0 =	H0 =	❖ PRESS

HI AT 0 METER MARK

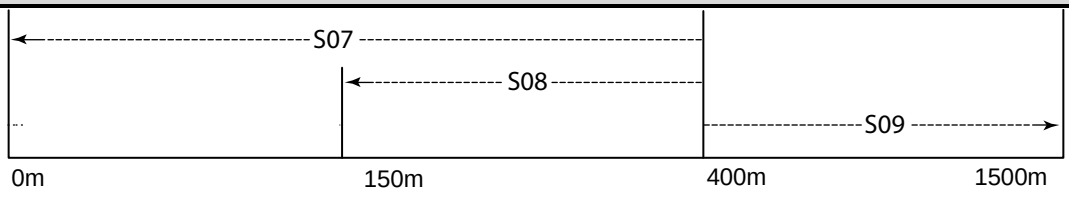
E.D.M. AT 150m



S04 =	S05 =	S06 =	TEMP
H0 =	H0 =	H0 =	❖ PRESS

HI AT 150 METER MARK

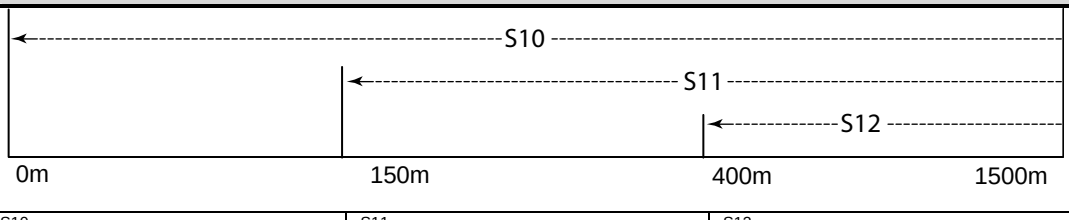
E.D.M. AT 400m



S07 =	S08 =	S09 =	TEMP
H0 =	H0 =	H0 =	❖ PRESS

HI AT 400 METER MARK

E.D.M. AT 1500m



S10 =	S11 =	S12 =	TEMP
H0 =	H0 =	H0 =	❖ PRESS

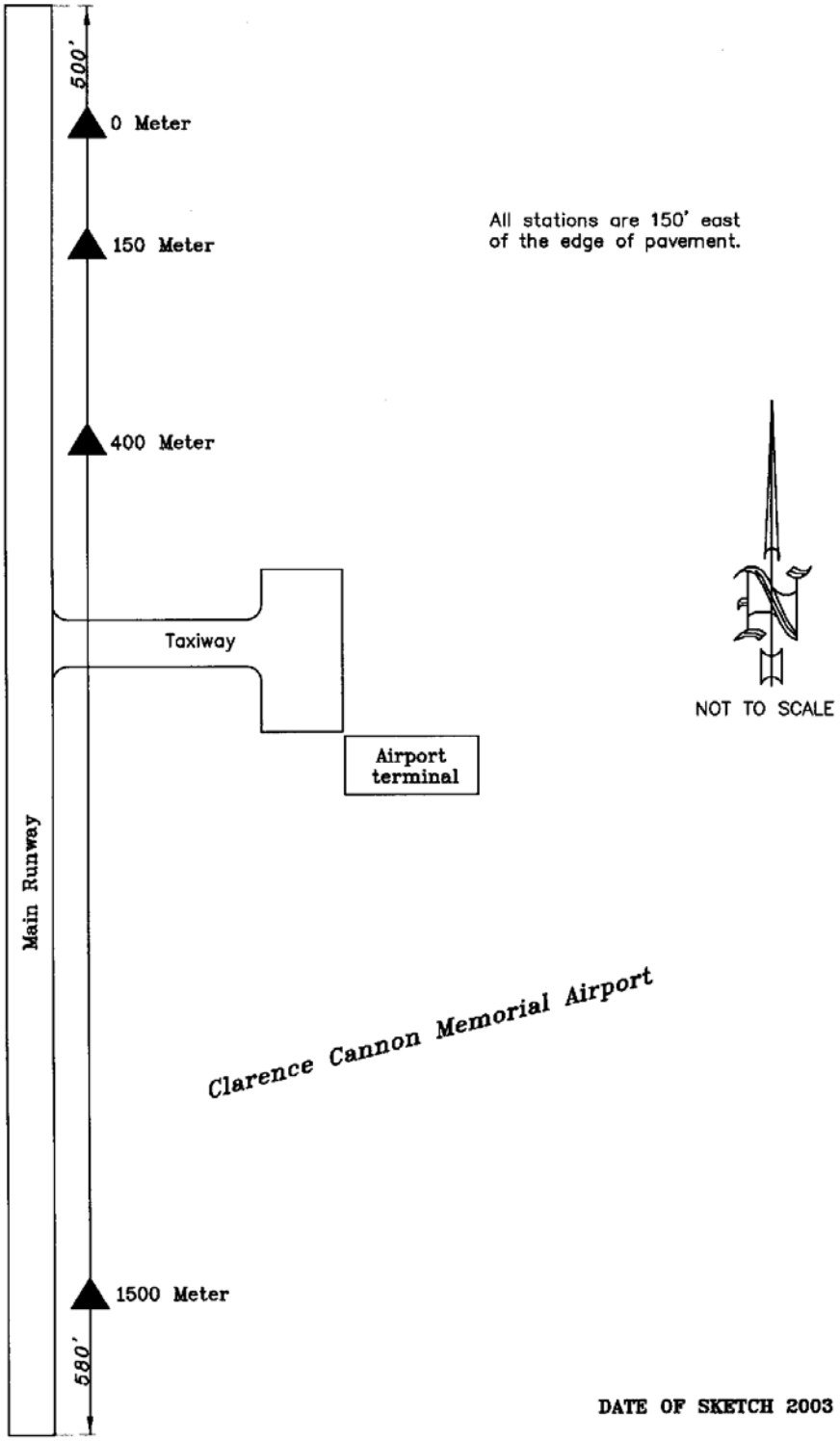
HI AT 1500 METER MARK

Heights or delta elevations between monuments (referenced to NAVD88).

0m = 293.51m 150m = 293.27m 400m = 293.19m 1500m = 292.18m

❖ Barometric pressure for EDM calibration **must be station pressure**. Do not use barometric pressure reduced to sea level.

Kirksville Baseline



KIRKSVILLE BASELINE

Electronic Distance Measurement (EDM) Calibration Baseline
Adair County, Missouri

Established by the
Missouri Department of Agriculture
Division of Weights, Measures & Consumer Protection
Land Survey Program

1984

The Kirksville EDM Baseline is located at the Clarence Cannon Memorial Airport on the west side of U.S. Highway 63 about 8.3 kilometers (5.1 miles) south of its junction with state Route 6, on the south edge of Kirksville, Mo. Permission to use baseline and any special instructions for access should be obtained from the weather station operator in the firehouse building just south of the airport terminal.

The baseline is parallel to and 45.7 meters (150 feet) east of the east edge of the main north-south runway and consists of four stations: 0 meter, 150 meter, 400 meter and 1,500 meter from north to south. Stations are brass caps stamped to identify the station and set flush with the ground surface in concrete.

The 0 meter station is about 152.4 meters (500 feet) south of the north end of the runway and east from a point 31 meters (102 feet) south of the second runway light south of the north end of the runway. The 150 meter station is east from the fifth light south of the north end of the runway. The 400 meter station is east of a point 7.0 meters (23 feet) south of the ninth light south of the north end of the runway (fifth light north of the taxiway). The 1,500 meter station is 176.8 meters (580 feet) north of the south end of the runway and east from a point 5.4 meters (17.7 feet) north of the third light north of the south end of the runway (fifteenth light south of the taxiway).

The baseline station elevations are established on the North American Vertical Datum 1988 (NAVD88) and are as follows:

- 0 meter – 293.51 meters
- 150 meter – 293.27 meters
- 400 meter – 293.19 meters
- 1,500 meter – 292.18 meters

Baseline station autonomous point positions are:

	0 meter	1,500 meter
Latitude	40° 05' 57.68"	40° 05' 09.05"
Longitude	092° 32' 36.61"	092° 32' 37.14"

ELECTRONIC DISTANCE MEASURMENT (EDM)
CALIBRATION BASELINES IN MISSOURI

The Missouri Department of Agriculture has established 12 Electronic Distance Measurement (EDM) calibration baselines in Missouri. Modern equipment provides the user a multitude of options in the art of measurement. Inability, inexperience and incompetence using these systems can cause serious blunders. The EDM baseline will allow the operator to verify the instrument is in calibration, affirm the instrument is being operated properly and substantiate all the equipment utilized in measurement is properly adjusted and used correctly.

Each EDM baseline consists of four monumented stations. The monuments are nominally spaced at 0 meters, 150 meters, 400 meters and 1,500 meters. Each station will be occupied by the EDM instrument and a measurement made to the other three stations for a total of 12 measurements. The results will determine the scale factor, the system constant and the standard deviation of the measurement in parts per million.

The EDM should be tested using the same procedures as in every day fieldwork. This will not only confirm the EDM is in good working order, but will ensure the entire system is properly adjusted. The measuring system includes, but is not limited to, the instrument, the tripods, bipods, tribrachs, prisms, prism poles, thermometers and barometers/altimeters.

WHEN TO CALIBRATE YOUR INSTRUMENT?

- After taking delivery of a new or used instrument
- Immediately after service
- Anytime the operator feels the instrument is not working properly
- Before and after the Missouri Department of Natural Resources or other government agency contracts

BEFORE RUNNING THE BASELINE, PERFORM THE FOLLOWING:

- Check and adjust optical plummets, bull's-eye bubbles and plumbing poles
- Check thermometers and barometers/altimeters
- Make sure all tripods are rigid and stable
- Clean prisms
- Fully charge all batteries
- Have an EDM Calibration Report form for the baseline you are running

When filling out the EDM Calibration Report form, fill in all lines that apply and add additional information if needed.

IMPORTANT NOTE: Before each measurement, enter the temperature and station pressure or absolute pressure into the instrument. The barometric pressure given over the radio and at airports has been reduced to sea level. DO NOT ENTER SEA LEVEL PRESSURE INTO THE EDM. One method used to find station pressure or absolute pressure is by elevation. The barometric pressure is reduced 0.1 inches of mercury for every 90 feet of elevation. So, to correct the sea level pressure obtained from the radio or airport, pick an average elevation for your area and divide by 90. Example: if the elevation is 1,000 feet, dividing 1,000 by 90 equals 11.11. Therefore, subtract 1.11 inches from the sea level pressure to obtain station pressure or absolute pressure.