



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

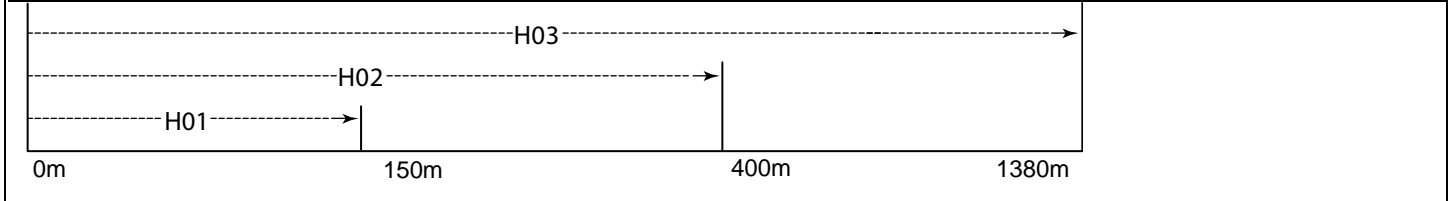
EDM CALIBRATION REPORT – JASPER COUNTY EDM BASELINE (HORIZONTAL)

DATE	COMPANY	REFLECTOR SETUP <input type="checkbox"/> Tripod with tribrach <input type="checkbox"/> Prism pole <input type="checkbox"/> Bipod pole
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INSTRUMENT TYPE, MODEL AND SERIAL NUMBER

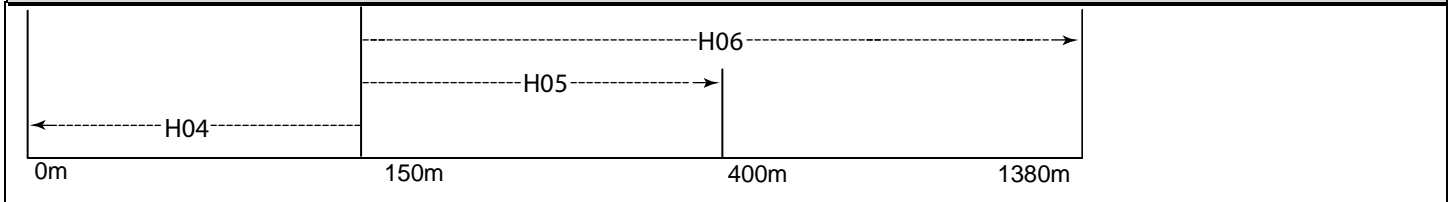
NOTE: ALL DISTANCES SUBMITTED SHALL BE HORIZONTAL.

E.D.M. AT 0m



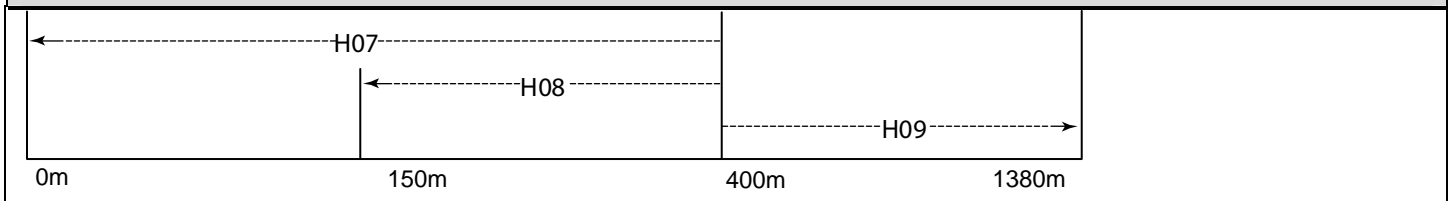
H01 =	H02 =	H03 =	TEMP
H01 = (150.1186m)	H02 = (400.0511m)	H03 = (1388.1804m)	❖ PRESS

E.D.M. AT 150m



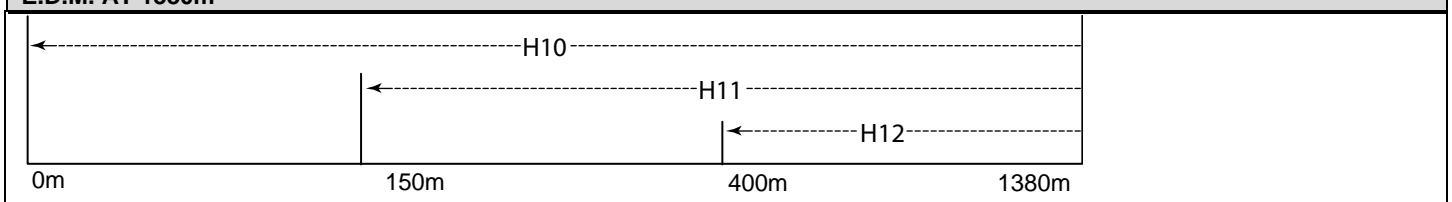
H04 =	H05 =	H06 =	TEMP
H04 = (150.1186m)	H05 = (249.9324m)	H06 = (1238.0617m)	❖ PRESS

E.D.M. AT 400m



H07 =	H08 =	H09 =	TEMP
H07 = (400.0511m)	H08 = (249.9324m)	H09 = (988.1293m)	❖ PRESS

E.D.M. AT 1380m



H10 =	H11 =	H12 =	TEMP
H10 = (1388.1804m)	H11 = (1238.0617m)	H12 = (988.1293m)	❖ PRESS

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



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 LAND SURVEY PROGRAM

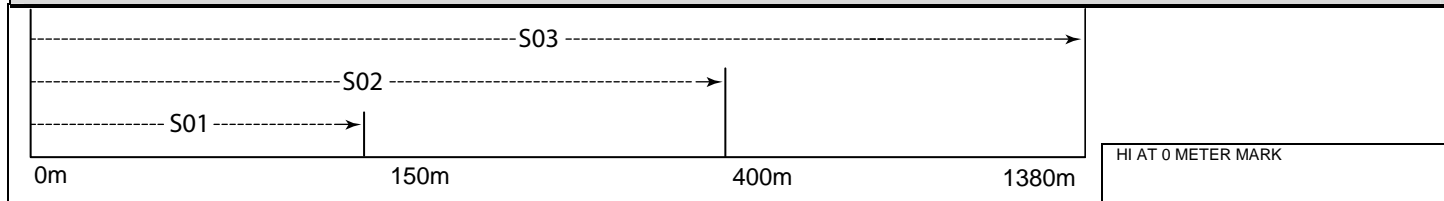
EDM CALIBRATION REPORT – JASPER COUNTY EDM BASELINE (SLOPE)

DATE	COMPANY	REFLECTOR SETUP <input type="checkbox"/> Tripod with tribrach <input type="checkbox"/> Prism pole <input type="checkbox"/> Bipod pole
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INSTRUMENT TYPE, MODEL AND SERIAL NUMBER

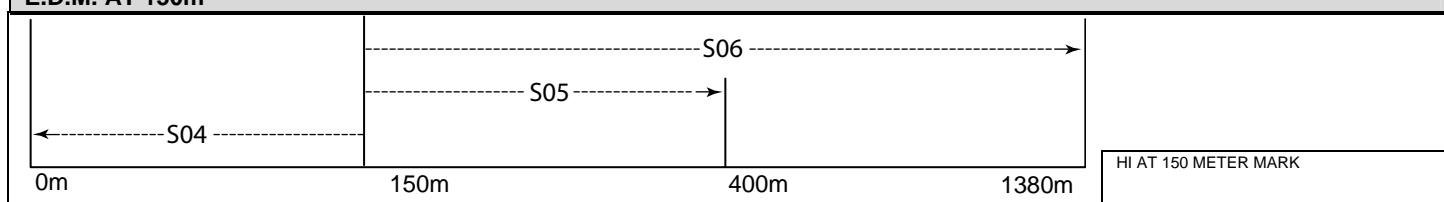
NOTE: ALL DISTANCES SUBMITTED SHALL BE SLOPE.

E.D.M. AT 0m



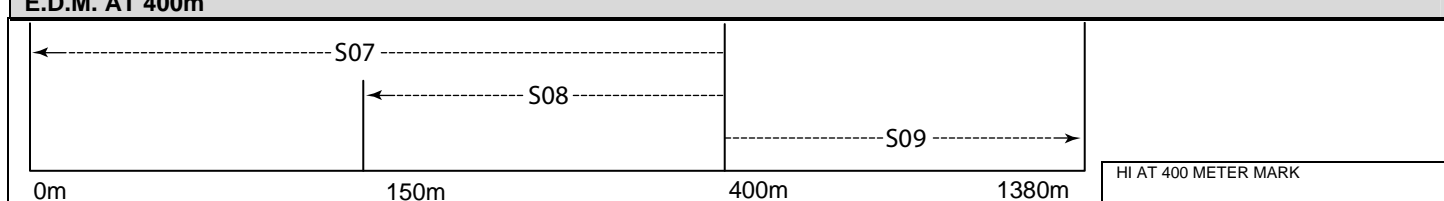
S01 =	S02 =	S03 =	TEMP
H0 =	H0 =	H0 =	❖ PRESS

E.D.M. AT 150m



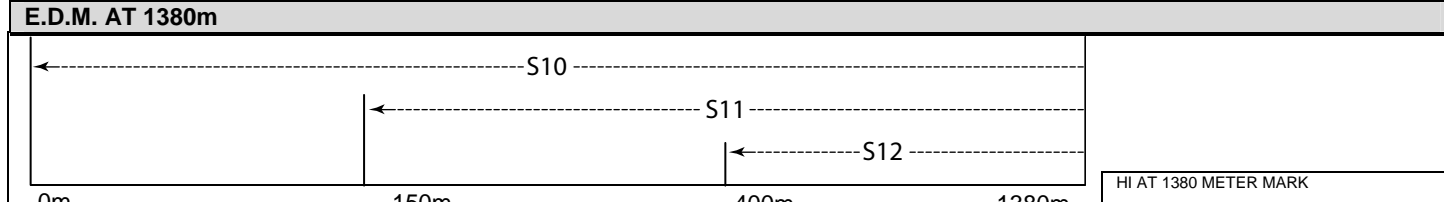
S04 =	S05 =	S06 =	TEMP
H0 =	H0 =	H0 =	❖ PRESS

E.D.M. AT 400m



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

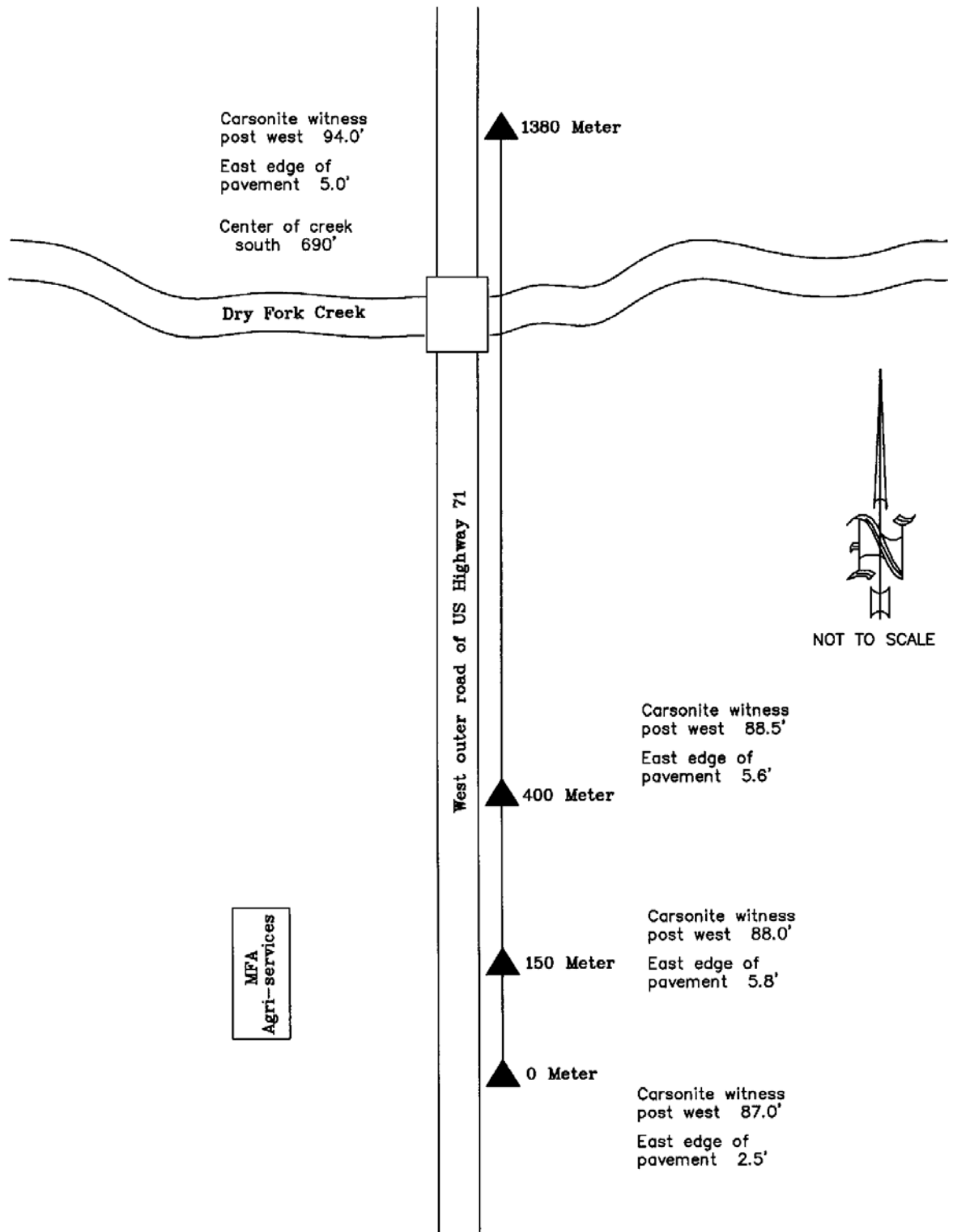
E.D.M. AT 1380m



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

Heights or delta elevations between monuments. Elevations by the Missouri Department of Transportation.
 0m = 282.98m 150m = 282.67m 400m = 282.07m 1380m = 294.50m
 ❖ Barometric pressure for EDM calibration **must be station pressure**. Do not use barometric pressure reduced to sea level.

Jasper County Baseline



DATE OF SKETCH 2003

JASPER COUNTY BASELINE

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

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

**in cooperation with the
Missouri Department of Transportation**

1998

The baseline is located about 2.0 miles south of Jasper, Mo. and 9.0 miles north of Carthage. To reach the baseline from the junction of U.S. Highway 71 and state Routes M and N, go west on state Route M for 0.1 mile to the junction with the west outer road. Turn left (south) on the outer road and go 2.25 miles to the 0 meter station on the left as described just past the MFA Agri-Services entrance.

The baseline consists of four monuments. The monuments are Missouri Department of Natural Resources aluminum disks set in a 12" x 30" poured-in-place concrete monument, set flush with the ground surface.

The 0 meter station is 2.5 feet east of the edge of pavement and 87 feet east of a Carsonite witness post set at the west right-of-way (R/W). The 150 meter station is 5.8 feet east of the edge of pavement and 88.0 feet east of a Carsonite witness post at the west R/W. The 400 meter station is 5.6 feet east of the edge of pavement and 88.5 feet east of a Carsonite witness post at the west R/W. The 1,380 meter station is 5.0 feet east of the edge of pavement and 94.0 feet east of a Carsonite witness post at the west R/W.

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

0 meter – 282.98 meters
150 meter – 282.67 meters
400 meter – 282.07 meters
1,380 meter – 294.50 meters

ELECTRONIC DISTANCE MEASUREMENT (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 1,380 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.