



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

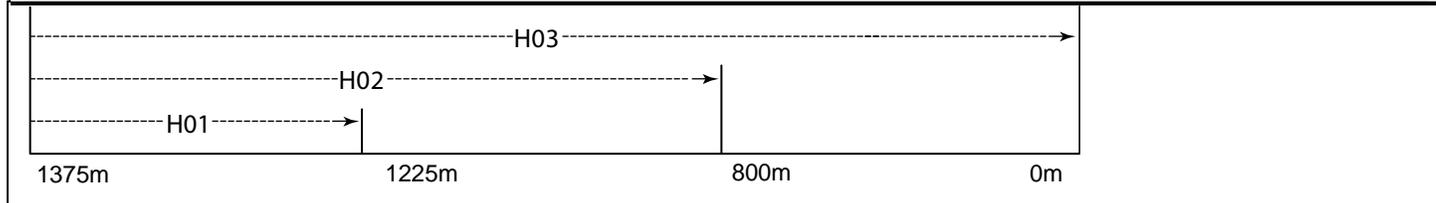
**EDM CALIBRATION REPORT – VICHY REVERSED EDM BASELINE (HORIZONTAL)**

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

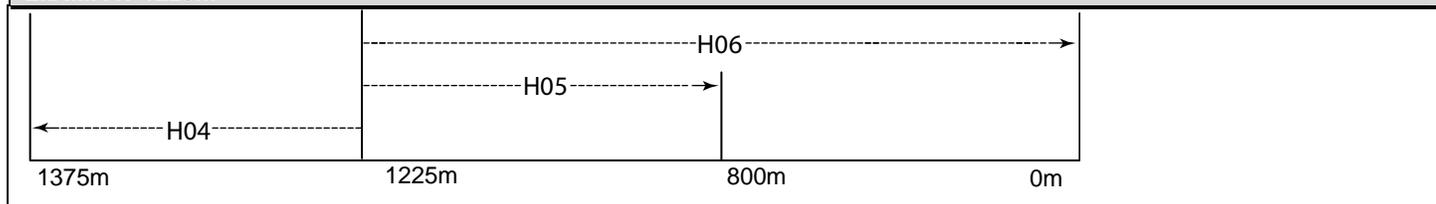
**NOTE: ALL DISTANCES SUBMITTED SHALL BE HORIZONTAL.**

**E.D.M. AT 1375m**



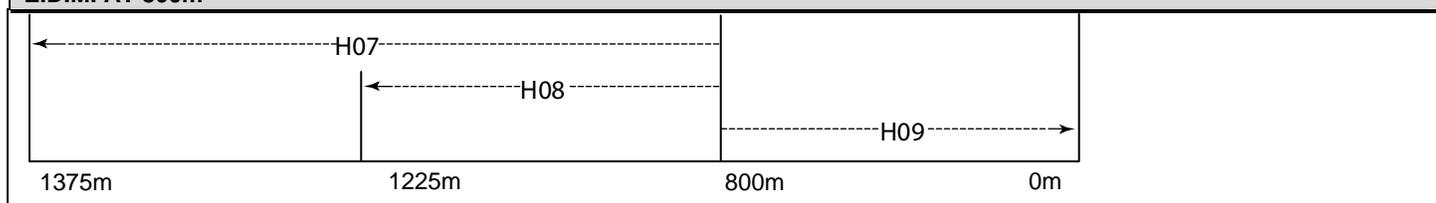
H01 =	H02 =	H03 =	TEMP
H01 = (149.9923m)	H02 = (575.0038m)	H03 = (1374.9230m)	❖ PRESS

**E.D.M. AT 1225m**



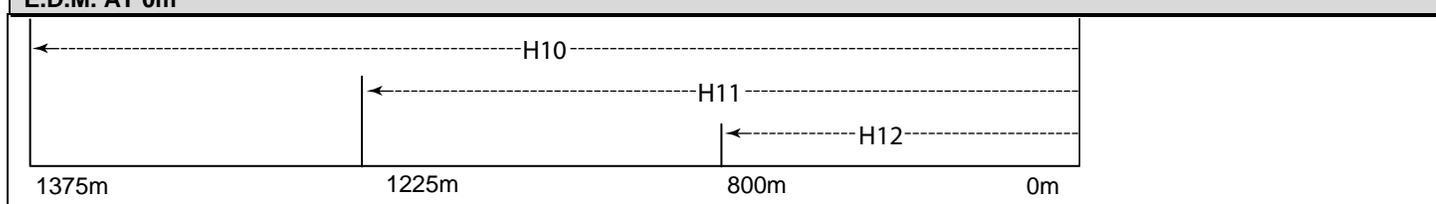
H04 =	H05 =	H06 =	TEMP
H04 = (149.9923m)	H05 = (425.0115m)	H06 = (1224.9307m)	❖ PRESS

**E.D.M. AT 800m**



H07 =	H08 =	H09 =	TEMP
H07 = (575.0038m)	H08 = (425.0115m)	H09 = (799.9192m)	❖ PRESS

**E.D.M. AT 0m**



H10 =	H11 =	H12 =	TEMP
H10 = (1374.9230m)	H11 = (1224.9307m)	H12 = (799.9192m)	❖ PRESS

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



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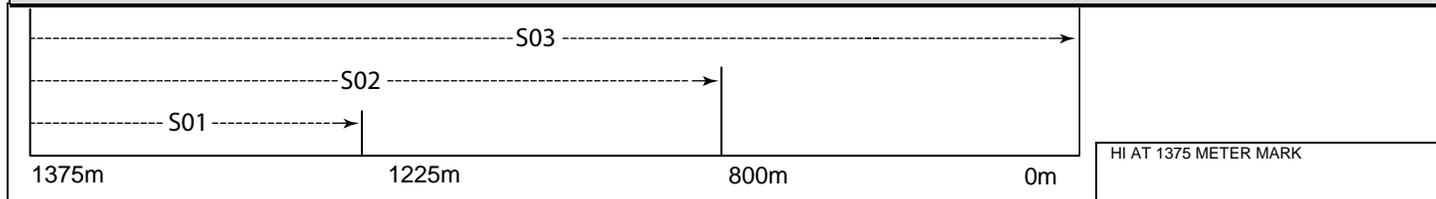
**EDM CALIBRATION REPORT – VICHY REVERSED EDM BASELINE (SLOPE)**

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

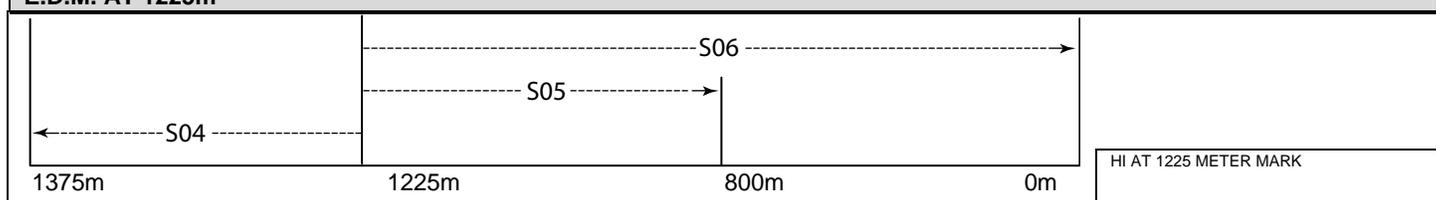
NOTE: ALL DISTANCES SUBMITTED SHALL BE SLOPE.

**E.D.M. AT 1375m**



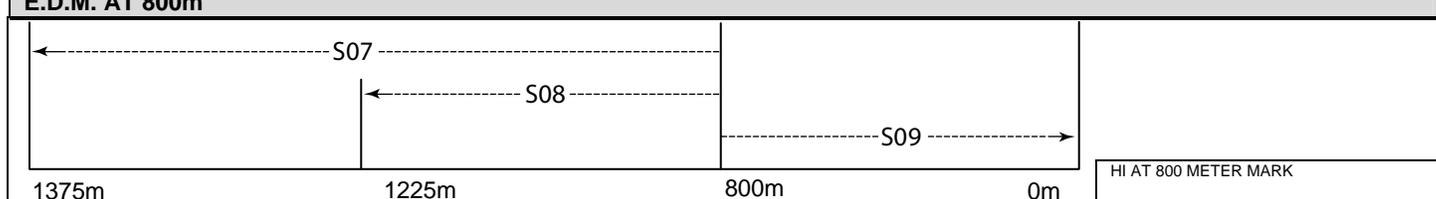
1375m	1225m	800m	0m	HI AT 1375 METER MARK
S01 =	S02 =	S03 =	TEMP	
H0 =	H0 =	H0 =	❖ PRESS	

**E.D.M. AT 1225m**



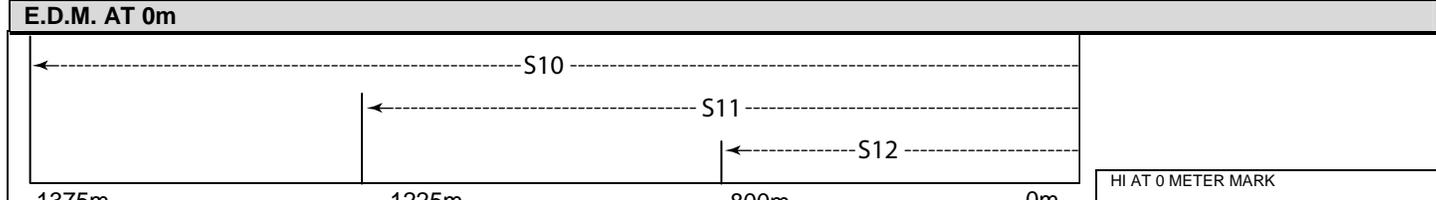
1375m	1225m	800m	0m	HI AT 1225 METER MARK
S04 =	S05 =	S06 =	TEMP	
H0 =	H0 =	H0 =	❖ PRESS	

**E.D.M. AT 800m**



1375m	1225m	800m	0m	HI AT 800 METER MARK
S07 =	S08 =	S09 =	TEMP	
H0 =	H0 =	H0 =	❖ PRESS	

**E.D.M. AT 0m**

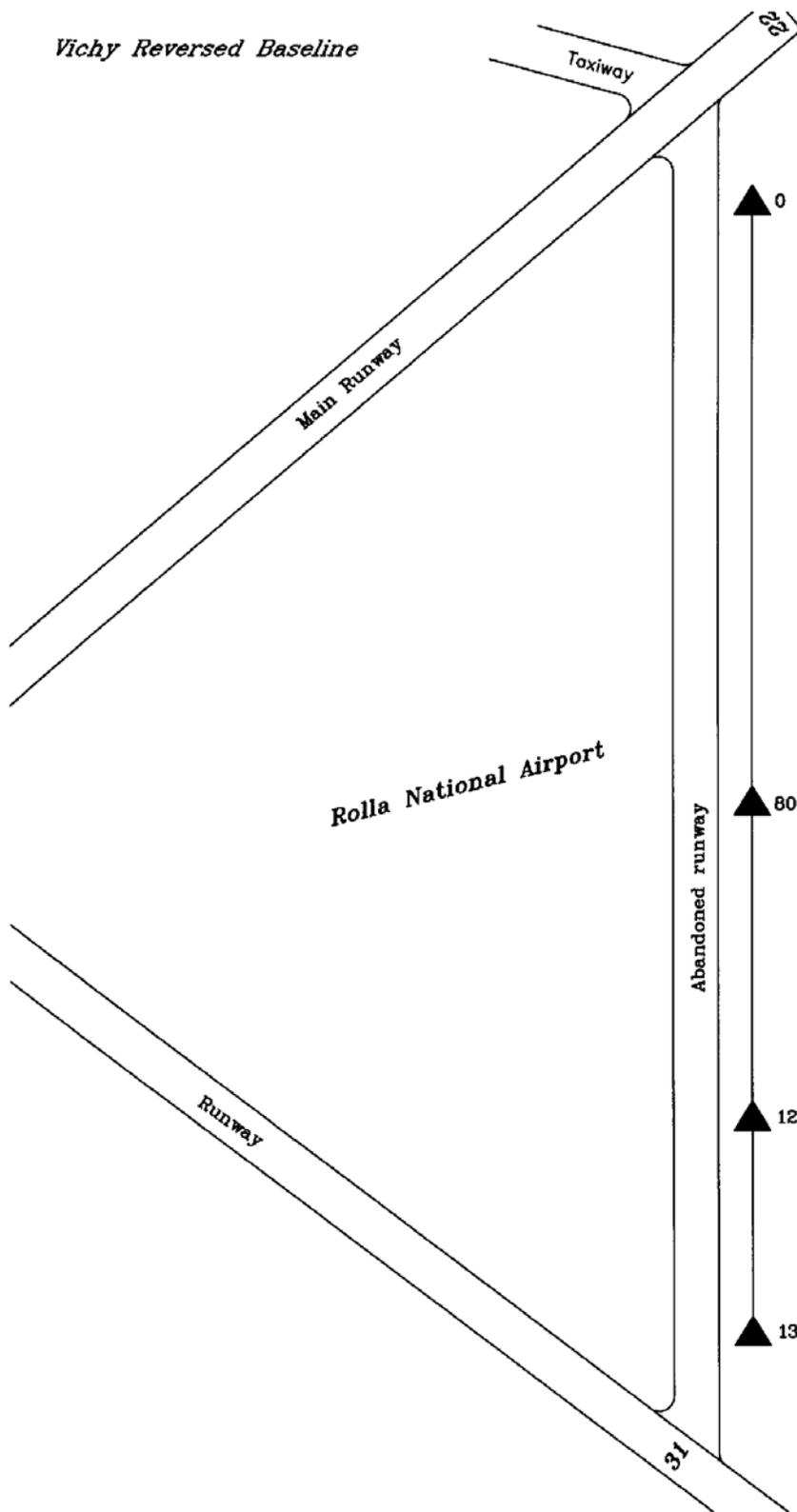


1375m	1225m	800m	0m	HI AT 0 METER MARK
S10 =	S11 =	S12 =	TEMP	
H0 =	H0 =	H0 =	❖ PRESS	

Heights or delta elevations between monuments.  
 1375m = 348.26m    1225m = 346.88m    800m = 343.30m    0m = 336.48m

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

*Vichy Reversed Baseline*



All stations are 25' east of the edge of pavement.



NOT TO SCALE

DATE OF SKETCH 2003

# **VICHY REVERSED BASELINE**

## **Electronic Distance Measurement (EDM) Calibration Baseline Maries County, Missouri**

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

**1986**

The baseline is located 15 miles north of Rolla, Mo., 1.5 miles north of Vichy along the east edge of the old inactive north-south runway on the east side of the Rolla National Airport.

To reach the baseline from the T-junction of U.S. Highway 63 and state Highway 28 go northeast on state Highway 28 for 0.8 mile to the entrance road to the Rolla National Airport. Turn right on the entrance road and go southeast for 0.2 mile to the airport office. To use the baseline, permission must be acquired from the A.A.A. Flight Service office. After permission is granted, continue through the gate to the taxiway. Turn left on the taxiway and go northeast for 0.5 mile to the runway. Cross the runway to the north end of the abandoned runway to the 0 meter station.

The 0 meter station is 75 feet west of the center of a 2 foot x 3 foot storm inlet, 64 feet northeast of the center of an old 6-inch round runway light base on the east edge of the runway and 25 feet east of the east edge of the runway.

The monuments are Missouri State Land Survey Authority brass discs set in 5 inch x 36 inch pre-cast concrete posts set flush with the ground. They are stamped with the respective baseline designation and the year 1977. The baseline is oriented in a north-south direction with the 0 meter station on the north end. The baseline runs parallel with the east edge of the north-south runway between the eastern ends of the two existing runways.

The baseline station elevations are as follows:

1,375 meter – 348.26 meters  
1,225 meter – 346.88 meters  
800 meter – 343.30 meters  
0 meter – 336.48 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, 800 meters, 1,225 meters and 1,375 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.