



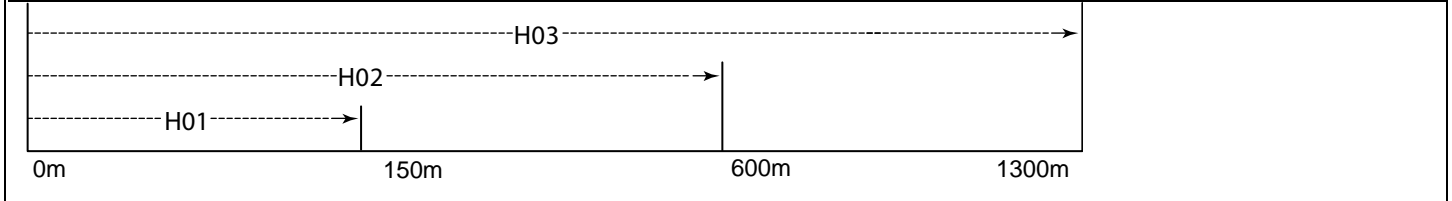
MISSOURI DEPARTMENT OF AGRICULTURE  
 DIVISION OF WEIGHTS, MEASURES AND CONSUMER PROTECTION  
 LAND SURVEY PROGRAM  
**EDM CALIBRATION REPORT – TAYLOR EDM BASELINE (HORIZONTAL)**

DATE	COMPANY	REFLECTOR SETUP <input type="checkbox"/> Tripod with tribrach <input type="checkbox"/> Prism pole <input type="checkbox"/> Bipod pole
------	---------	--

INSTRUMENT TYPE, MODEL AND SERIAL NUMBER

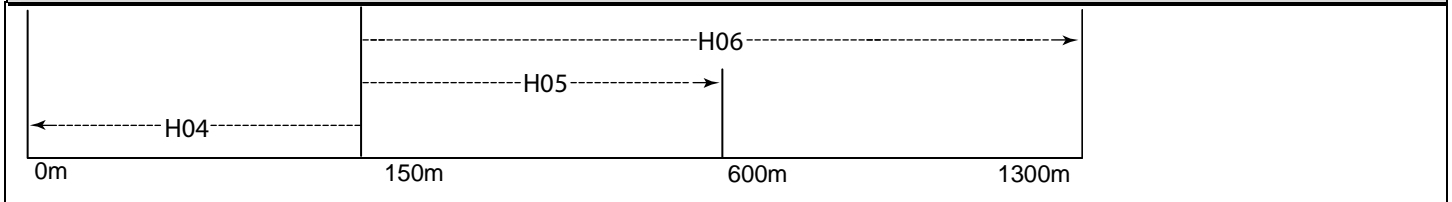
**NOTE: ALL DISTANCES SUBMITTED SHALL BE HORIZONTAL.**

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



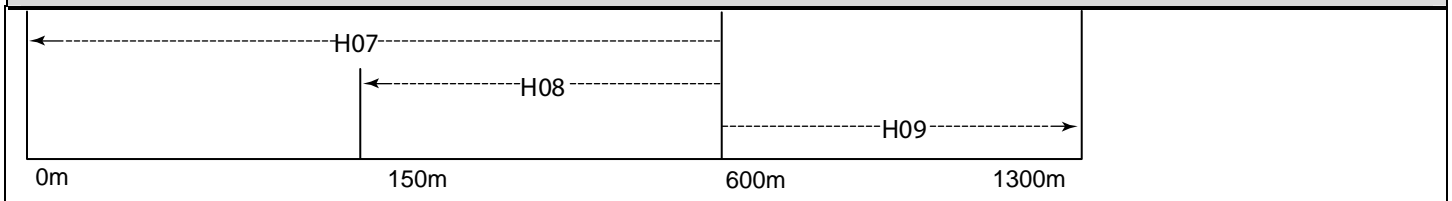
H01 =	H02 =	H03 =	TEMP
H01 = (149.9898m)	H02 = (599.9936m)	H03 = (1300.0088m)	❖ PRESS

**E.D.M. AT 150m**



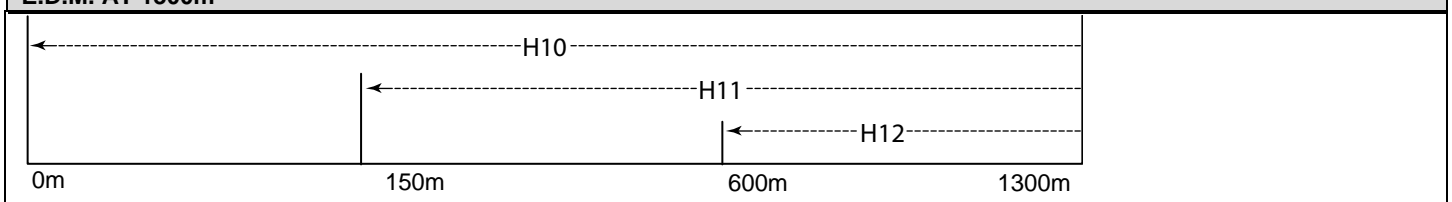
H04 =	H05 =	H06 =	TEMP
H04 = (149.9898m)	H05 = (450.0038m)	H06 = (1150.0190m)	❖ PRESS

**E.D.M. AT 600m**



H07 =	H08 =	H09 =	TEMP
H07 = (599.9936m)	H08 = (450.0038m)	H09 = (700.0152m)	❖ PRESS

**E.D.M. AT 1300m**



H10 =	H11 =	H12 =	TEMP
H10 = (1300.0088m)	H11 = (1150.0190m)	H12 = (700.0152m)	❖ PRESS

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



MISSOURI DEPARTMENT OF AGRICULTURE  
 DIVISION OF WEIGHTS, MEASURES AND CONSUMER PROTECTION  
 LAND SURVEY PROGRAM  
**EDM CALIBRATION REPORT – TAYLOR EDM BASELINE (SLOPE)**

DATE	COMPANY	REFLECTOR SETUP <input type="checkbox"/> Tripod with tribrach <input type="checkbox"/> Prism pole <input type="checkbox"/> Bipod pole
------	---------	--

INSTRUMENT TYPE, MODEL AND SERIAL NUMBER
--

NOTE: ALL DISTANCES SUBMITTED SHALL BE SLOPE.

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

0m	150m	600m	1300m
			HI AT 0 METER MARK
S01 =	S02 =	S03 =	TEMP
H0 =	H0 =	H0 =	❖ PRESS

**E.D.M. AT 150m**

0m	150m	600m	1300m
			HI AT 150 METER MARK
S04 =	S05 =	S06 =	TEMP
H0 =	H0 =	H0 =	❖ PRESS

**E.D.M. AT 600m**

0m	150m	600m	1300m
			HI AT 600 METER MARK
S07 =	S08 =	S09 =	TEMP
H0 =	H0 =	H0 =	❖ PRESS

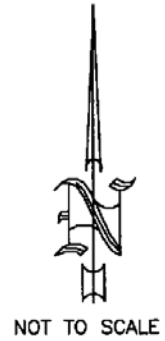
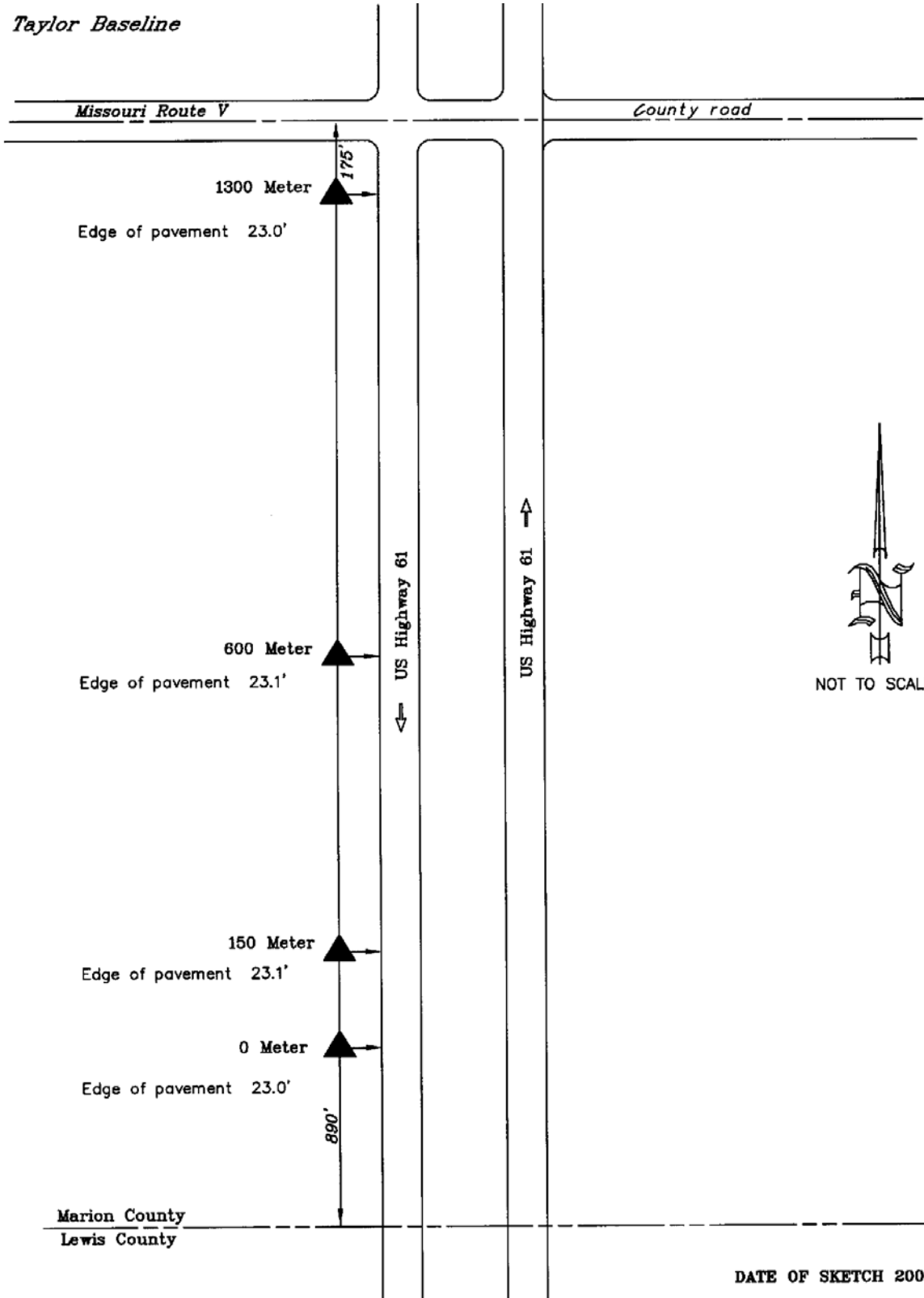
**E.D.M. AT 1300m**

0m	150m	600m	1300m
			HI AT 1300 METER MARK
S10 =	S11 =	S12 =	TEMP
H0 =	H0 =	H0 =	❖ PRESS

Heights or delta elevations between monuments (elevations Referenced to NAVD88).  
 0m = 147.196m    150m = 147.108m    600m = 147.071m    1300m = 146.973m

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

Taylor Baseline



DATE OF SKETCH 2003

# **TAYLOR BASELINE**

## **Electronic Distance Measurement (EDM) Calibration Baseline Lewis 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**

**1994**

The EDM baseline is located just north of Taylor, Mo., on the west right-of-way of the southbound lane of U.S. Highway 61. The south end of the baseline is located approximately 890 feet north of the Lewis/Marion County Line and the north end is located approximately 175 feet south of state Route V.

To reach the baseline from the junction of U.S. Highway 61 and state Route V in Lewis County, go south on U.S. Highway 61 for 0.8 miles and park on the west shoulder of the road.

The baseline consists of four monuments. The monuments are 16 inch by 48 inch poured-in-place concrete with center-punched 1 inch by 24 inch copperwelds set in the center. The monuments are flush with the ground surface and are stamped to identify the stations. The 0 meter station is 23.0 feet west of the west edge of pavement of the southbound lane of Route 61 and 890 feet north of the Lewis/Marion County Line. The 150 meter station is 23.1 feet west of the west edge of the pavement. The 600 meter station is 23.1 feet west of the west edge of the pavement and the 1,300 meter station is 23 feet west of the west edge of the pavement and 175 feet south of the center line of state Route V.

The baseline was monumented by the Missouri Department of Transportation's District #3 Survey Department in Hannibal, Mo. and calibrated by the Missouri Department of Natural Resources' Division of Geology and Land Survey, Land Survey Program.

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

0 meter – 147.196 meters  
150 meter – 147.108 meters  
600 meter – 147.071 meters  
1300 meter – 146.973 meters

Baseline station autonomous point positions are:

	<u>0 meter</u>	<u>1,300 meter</u>
Latitude	39° 56' 55.99"	39° 57' 38.14"
Longitude	091° 31' 07.82"	091° 31' 06.87"

## **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, 600 meters and 1,300 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.**