



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

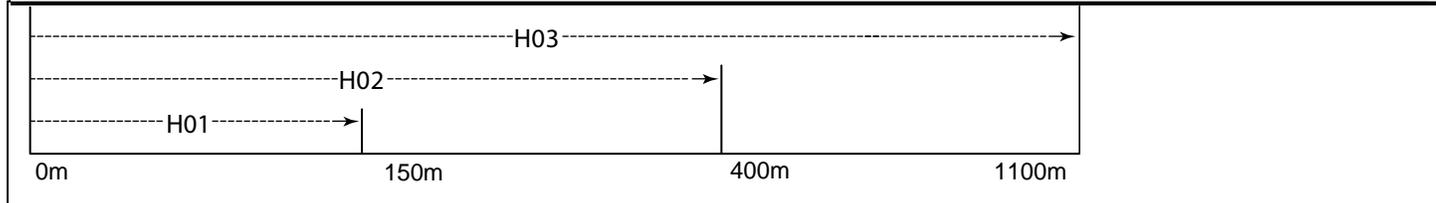
**EDM CALIBRATION REPORT – RIVER VALLEY EDM BASELINE (HORIZONTAL)**

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

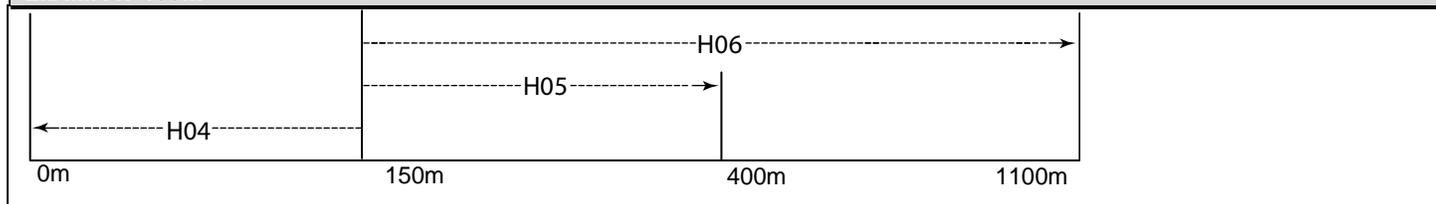
**NOTE: ALL DISTANCES SUBMITTED SHALL BE HORIZONTAL.**

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



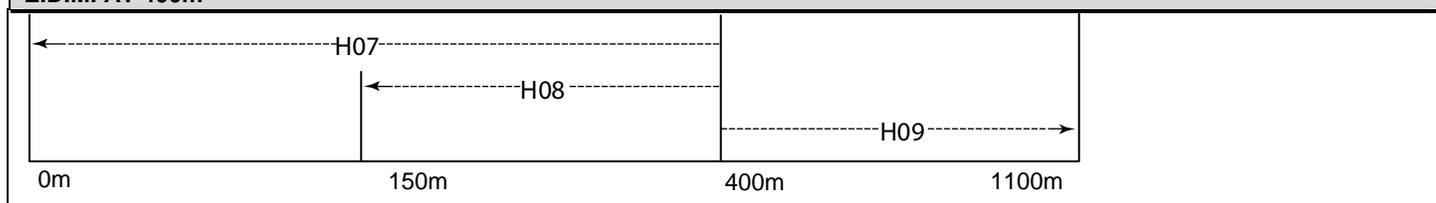
H01 =	H02 =	H03 =	TEMP
H01 = (150.0394m)	H02 = (400.0957m)	H03 = (1100.0290m)	❖ PRESS

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



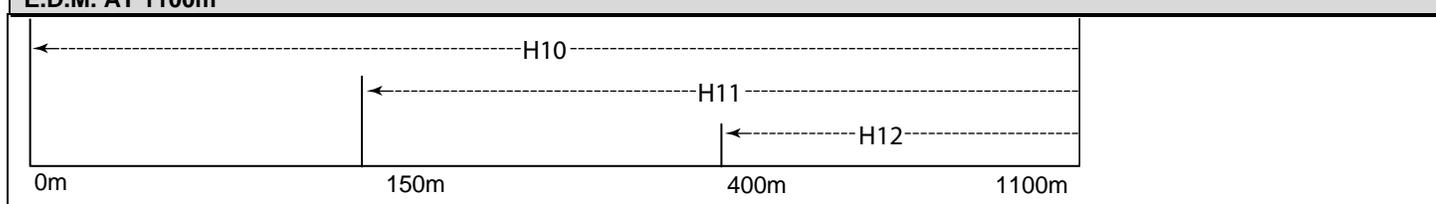
H04 =	H05 =	H06 =	TEMP
H04 = (150.0394m)	H05 = (250.0563m)	H06 = (949.9896m)	❖ PRESS

**E.D.M. AT 400m**



H07 =	H08 =	H09 =	TEMP
H07 = (400.0957m)	H08 = (250.0563m)	H09 = (699.9333m)	❖ PRESS

**E.D.M. AT 1100m**



H10 =	H11 =	H12 =	TEMP
H10 = (1100.0290m)	H11 = (949.9896m)	H12 = (699.9333m)	❖ PRESS

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



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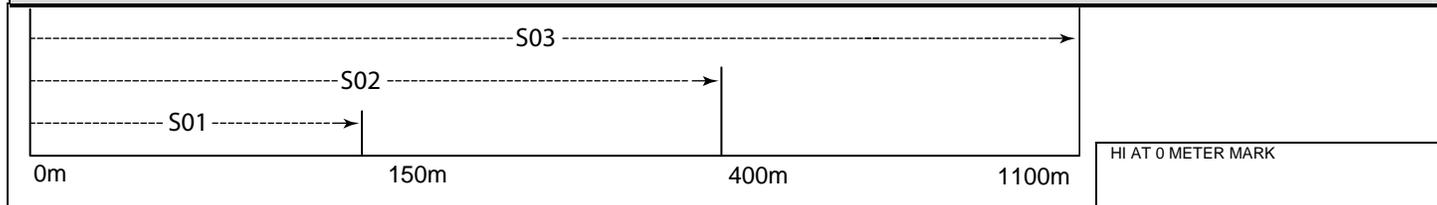
**EDM CALIBRATION REPORT – RIVER VALLEY EDM BASELINE (SLOPE)**

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

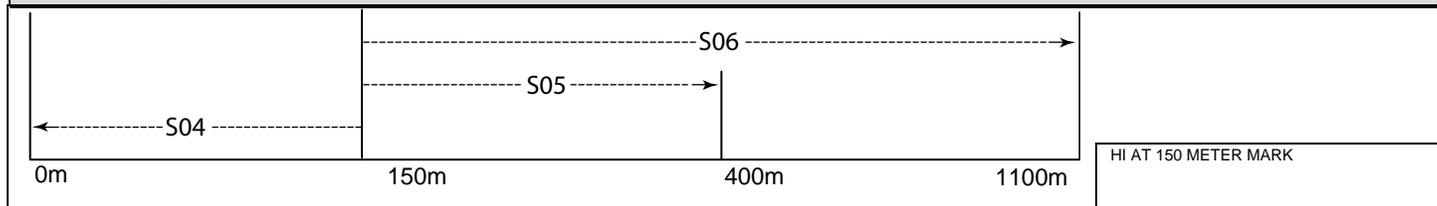
NOTE: ALL DISTANCES SUBMITTED SHALL BE SLOPE.

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



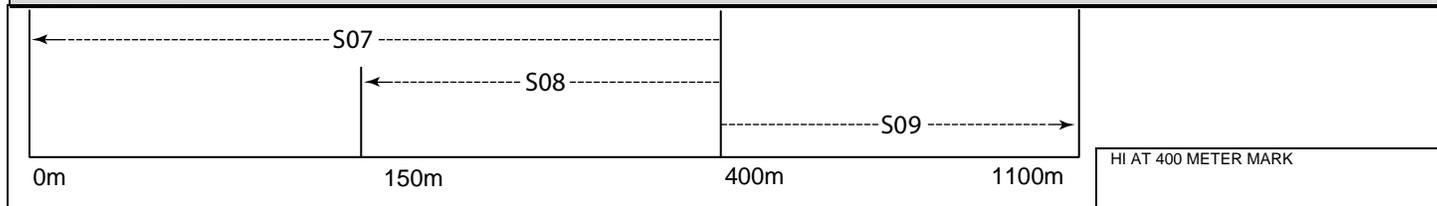
S01 =	S02 =	S03 =	TEMP
H0 =	H0 =	H0 =	❖ PRESS

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



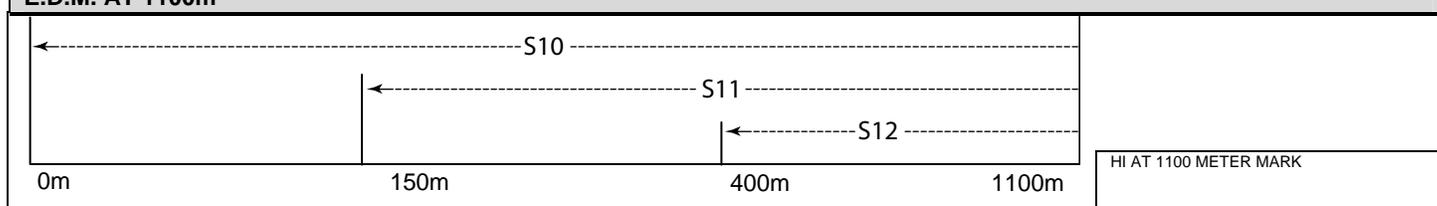
S04 =	S05 =	S06 =	TEMP
H0 =	H0 =	H0 =	❖ PRESS

**E.D.M. AT 400m**



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

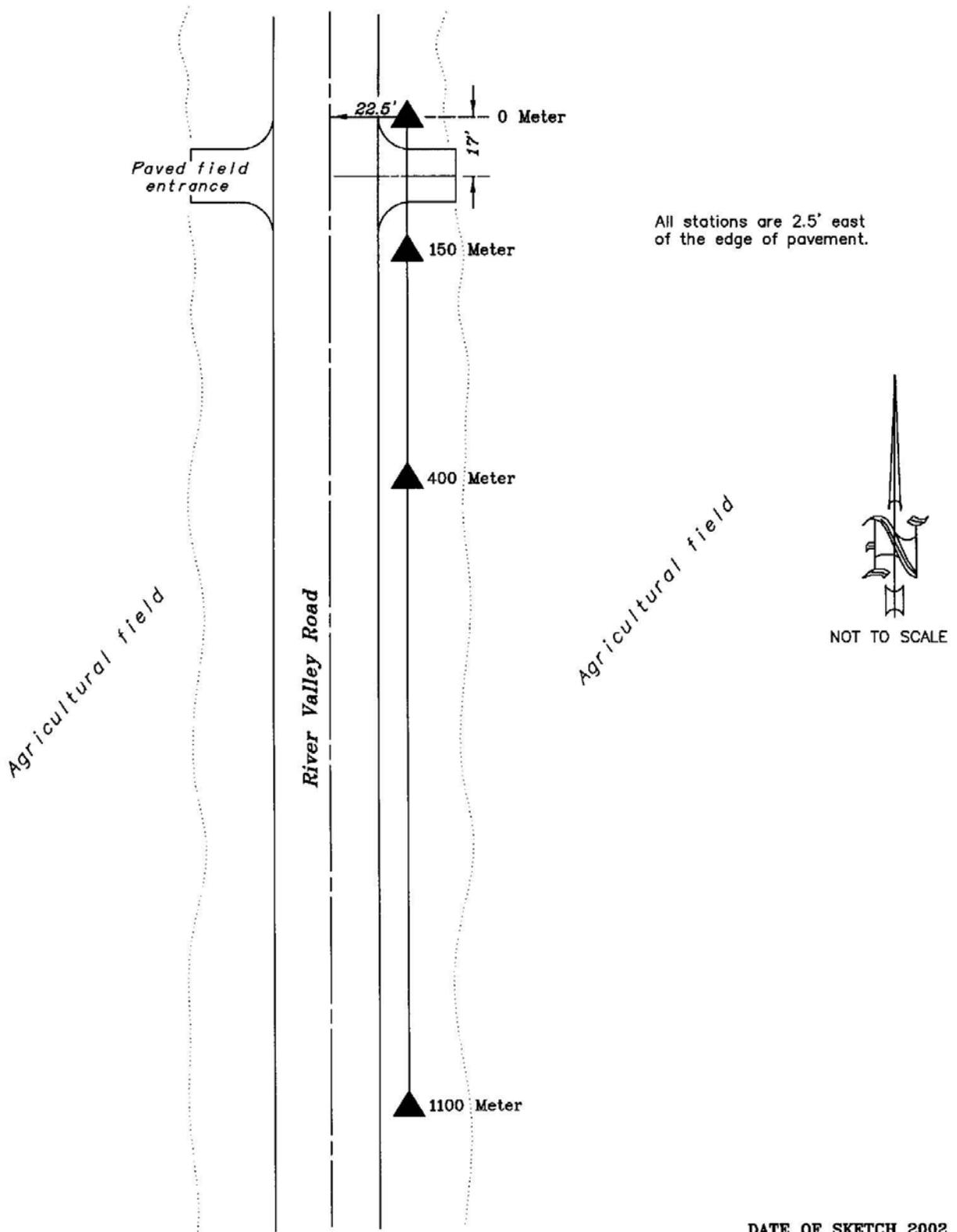
**E.D.M. AT 1100m**



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

Heights or delta elevations between monuments (referenced to NAVD88).  
 0m = 137.45m    150m = 137.40m    400m = 137.47m    1100m = 137.90m  
 ❖ Barometric pressure for EDM calibration **must be station pressure**. Do not use barometric pressure reduced to sea level.

*River Valley Baseline*



DATE OF SKETCH 2002

# **RIVER VALLEY BASELINE**

## **Electronic Distance Measurement (EDM) Calibration Baseline St. Louis County, Missouri**

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

**in cooperation with the  
St. Louis County Department of Highways and Traffic**

**2002**

To reach the River Valley EDM Baseline from the intersection of state Route 141 (Woods Mill Road) and state Route 340 (Olive Street Road) go easterly on state Route 340 for 0.6 mile to the intersection with Creve Coeur Mill Road. Turn left and go northerly along Creve Coeur Mill Road for 2.2 miles to the intersection with River Valley Drive. Turn left on River Valley Drive and go westerly for 1.1 miles to a right angle turn to the left. Continue southerly on River Valley Drive another 0.7 mile to a paved field entrance on the east (left) side and the 0 meter monument for the baseline.

To reach the River Valley EDM Baseline from the intersection of Interstate Highway 270 and Dorsett Road, go westerly along Dorsett Road for about 1.6 miles to the intersection with Marine Avenue. Go northerly on Marine Avenue for 1.5 miles to the intersection with Creve Coeur Mill Road. Go westerly and southerly on Creve Coeur Mill Road for 1.4 miles to the intersection with River Valley Drive. Turn left on River Valley Drive and go westerly for 1.1 miles to a right angle turn to the left. Continue southerly on River Valley Drive another 0.7 mile to a paved field entrance on the east (left) side and the 0 meter monuments for the baseline.

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

0 meter – 137.45 meters  
150 meter – 134.40 meters  
400 meter – 137.47 meters  
1,100 meter – 137.90 meters

Baseline station autonomous point positions are:

	<u>0 meter</u>	<u>1,100 meter</u>
Latitude	38° 42' 30.98"	38° 41' 55.52"
Longitude	090° 30' 56.90"	090° 31' 01.78"

## **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 1,100 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.