



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

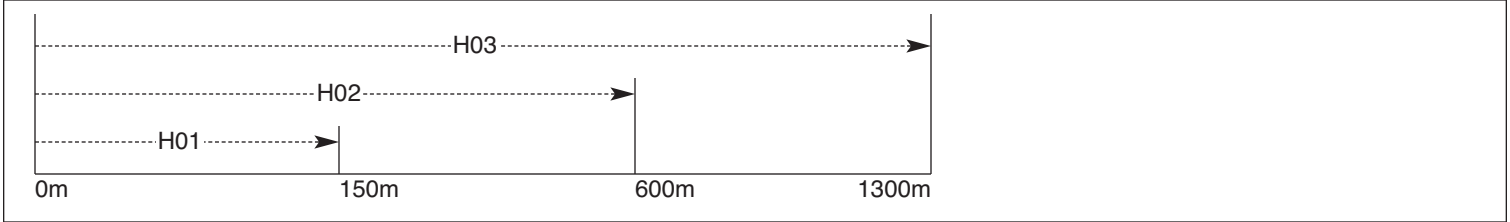
**EDM CALIBRATION REPORT – SQUAW CREEK EDM BASELINE (HORIZONTAL)**

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

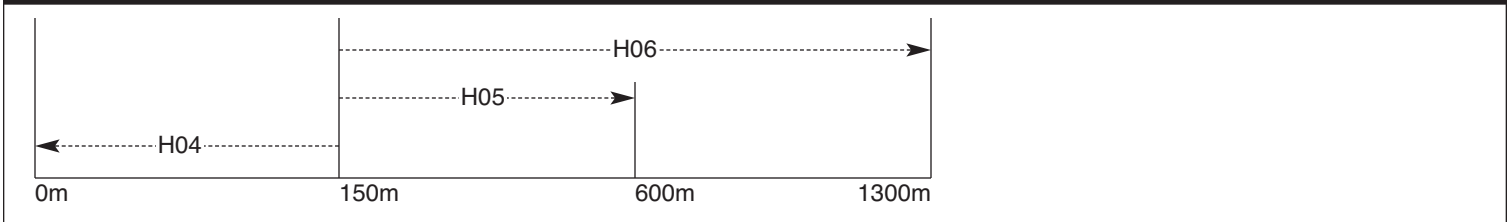
**NOTE: ALL DISTANCES SUBMITTED SHALL BE HORIZONTAL.**

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



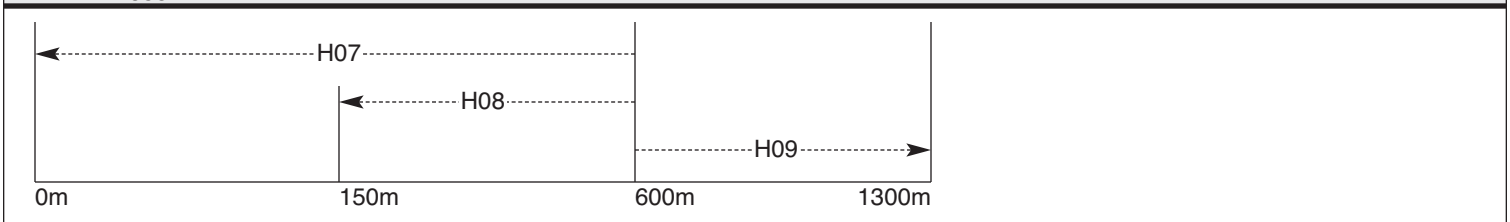
H01 =	H02 =	H03 =	TEMP
(150.0262m)	(600.0003m)	(1300.0059m)	*PRESS

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



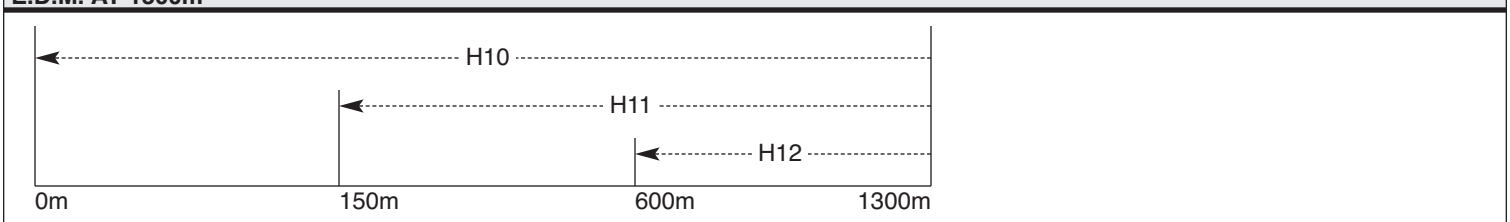
H04 =	H05 =	H06 =	TEMP
(150.0262m)	(449.9741m)	(1149.9798m)	*PRESS

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



H07 =	H08 =	H09 =	TEMP
(600.0003m)	(449.9741m)	(700.0056m)	*PRESS

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



H10 =	H11 =	H12 =	TEMP
(1300.0059m)	(1149.9798m)	(700.0056m)	*PRESS

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



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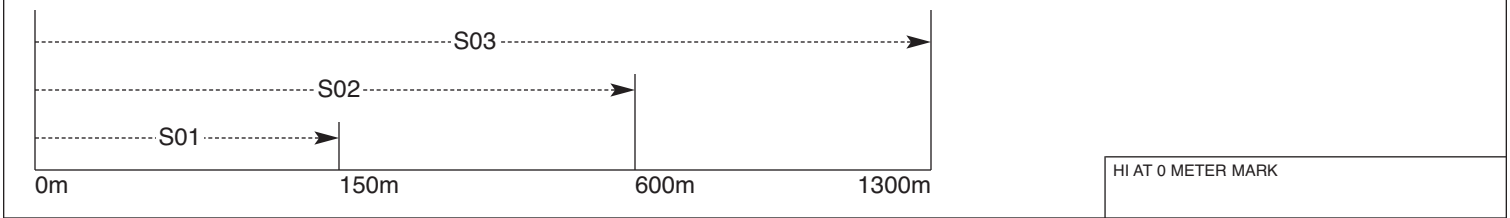
**EDM CALIBRATION REPORT – SQUAW CREEK EDM BASELINE (SLOPE)**

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

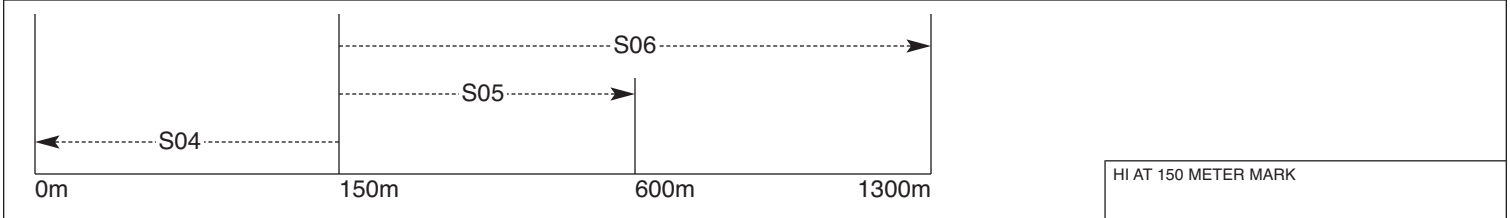
**NOTE: ALL DISTANCES SUBMITTED SHALL BE SLOPE.**

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



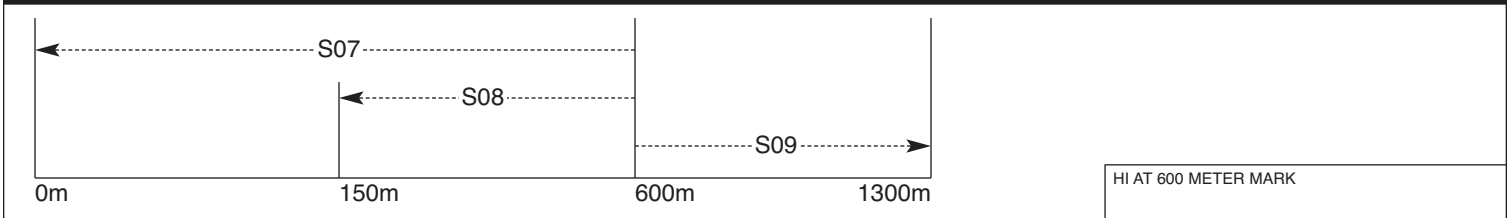
S01 =	S02 =	S03 =	TEMP
H0 =	H0 =	H0 =	*PRESS

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



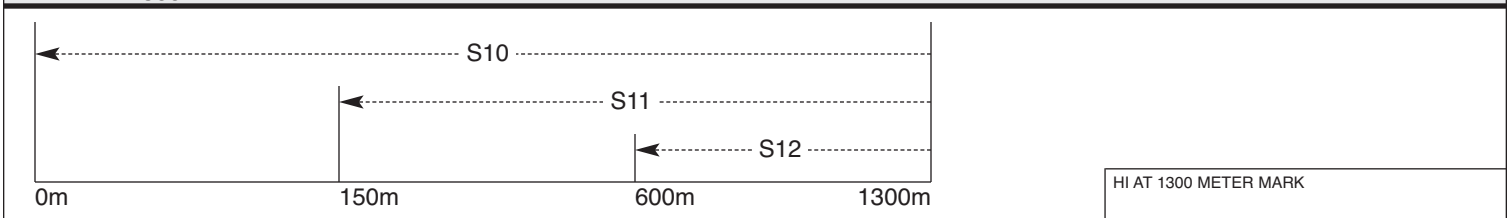
S04 =	S05 =	S06 =	TEMP
H0 =	H0 =	H0 =	*PRESS

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



S07 =	S08 =	S09 =	TEMP
H0 =	H0 =	H0 =	*PRESS

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



S10 =	S11 =	S12 =	TEMP
H0 =	H0 =	H0 =	*PRESS

Heights or delta elevations between monuments. Elevations by Missouri Department of Transportation.  
 0m = 261.41m    150m = 261.37m    600m = 261.33m    1300m = 261.34m

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

*Squaw Creek Baseline*



NOT TO SCALE

*Field road*

1300 Meter

600 Meter

150 Meter

0 Meter

*US Highway 159*

*Paved county road*

DATE OF SKETCH 2003

## **ELECTRONIC DISTANCE MEASUREMENT (EDM) CALIBRATION BASELINES IN MISSOURI**

The Missouri Department of Agriculture has established 11 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 Agriculture 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.**

# **SQUAW CREEK BASELINE**

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

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

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

**1987**

The baseline is located along U.S. Highway 159 near the Squaw Creek National Wildlife Refuge in Holt County, Mo. The baseline runs parallel to U.S. Highway 159 approximately 28 feet north of the highway centerline.

To reach the baseline from the intersection of U.S. Highway 159 and Interstate 29, proceed westerly along U.S. Highway 159 approximately 6.5 miles to an intersection with a paved county road running south. The 0 meter station is located approximately 310 meters west of the intersection just off the north shoulder of the highway.

The baseline consists of six points monumented with copperweld rods set in a mass of concrete flush with the ground. The mark is a center-punched hole in the copperweld rod. For calibration purposes, only Points Two, Three, Five and Six are used. Points One and Four need not be occupied or measured to. The 0 meter station is Point Two and is 29.1 feet (8.88 meters) north of the highway centerline, 300 meters west of Point One (not used), and approximately 310 meters west of the centerline of a paved county road running south. The 150 meter station is Point Three and is 29.2 feet (8.91 meters) north of the highway centerline. The 600 meter station is Point Five and is 28.4 feet (8.65 meters) north of the highway centerline. Point Six is the 1,300 meter station and is located 27.5 feet (8.38 meters) north of the highway centerline. Care should be taken to occupy the correct point for the 150 meter station as Point Four, which is not used, is 50 meters west of Point Three, the correct 150 meter station.

Users of this baseline should exercise caution when moving from point to point as access to the baseline is along a well used two-lane highway. Turning around at any point requires crossing both lanes of traffic.

The baseline station elevations are as follows:

- 0 meter – 261.41 meters
- 150 meter – 261.37 meters
- 600 meter – 261.33 meters
- 1,300 meter – 261.34 meters

Elevation information provided by the Missouri Department of Transportation