



INDIANA DEPARTMENT OF TRANSPORTATION

Driving Indiana's Economic Growth

Design Memorandum No. 11-14 Technical Advisory

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TO: All Design, Operations, and District Personnel, and Consultants

FROM: /s/ Eric N. Banschbach, P.L.S.
Eric N. Banschbach, P.L.S.
Manager, Office of Land and Aerial Surveys
Engineering Services and Design Support

SUBJECT: Use of U.S. Survey Foot

REVISES: *Indiana Design Manual Section 22-5.01*

EFFECTIVE: Immediately

In consideration of the required use of english units as the primary measurement system, and the potential errors created if an incorrect conversion factor for a foot is used, all units of length will be measured or converted using the U.S. Survey foot.

This issue stems from the fact that there are two, though slightly different, conversion factors that can be used in converting meters to feet. The difference between conversion to the U.S. Survey foot as compared to the International System foot is 2 parts per million. This difference can sometimes be negligible. However, in working with coordinates systems, as with the Indiana State Plane, the difference can be significant.

To eliminate potential errors caused during conversion, maintain consistency, and comply with IC 32-19-2-1 in expressing positions or locations using the Indiana State Plane coordinate system, the conversion factor for the U.S. Survey foot will be utilized.

The US Survey foot is defined as 1 meter = 39.37 inches.

The formula for conversion from meters to U.S. Survey feet is as follows:

$$(\text{meters}) (3937/1200) = \text{U.S. Survey feet}$$

The conversion factor is 1 meter = 3.280833333333 U.S. Survey feet. The factor should be carried to 12 places to the right of the decimal in working with State Plane coordinates.

ENB:alu

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