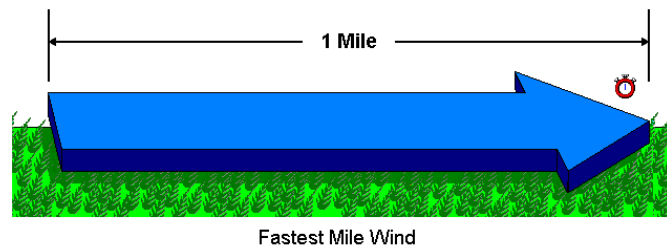


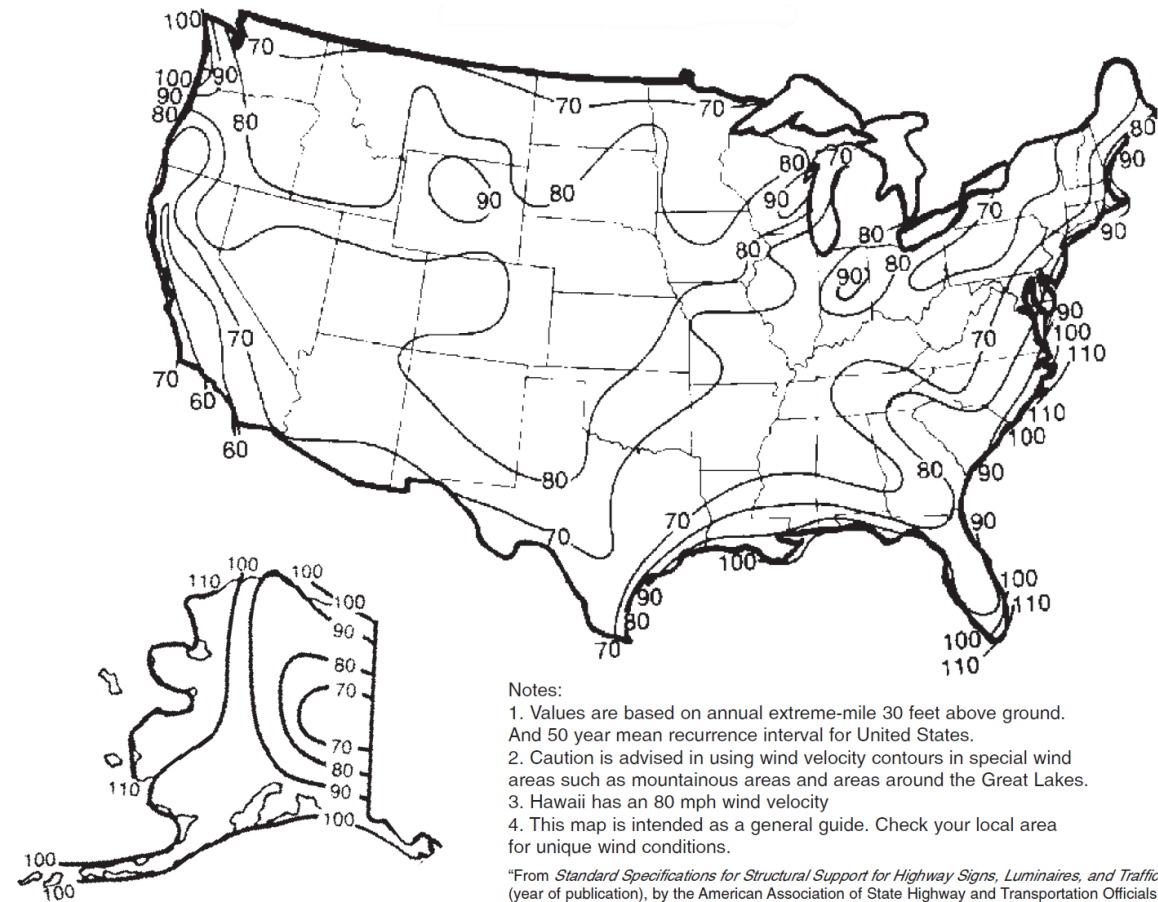
Different Design Criteria

AASHTO 1994 Design Criteria, uses wind map ASCE 7-93: It uses the Fastest-mile wind speed calculation. This is the average speed during the time required for the wind passage over an anemometer of a volume of air with a horizontal length of one mile.

This measurement of wind speed is
The least stringent used for poles.



EPA (ft²) with 1.3 Gust Factor



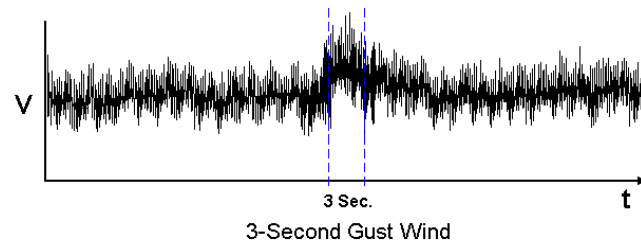
Notes:

1. Values are based on annual extreme-mile 30 feet above ground. And 50 year mean recurrence interval for United States.
2. Caution is advised in using wind velocity contours in special wind areas such as mountainous areas and areas around the Great Lakes.
3. Hawaii has an 80 mph wind velocity
4. This map is intended as a general guide. Check your local area for unique wind conditions.

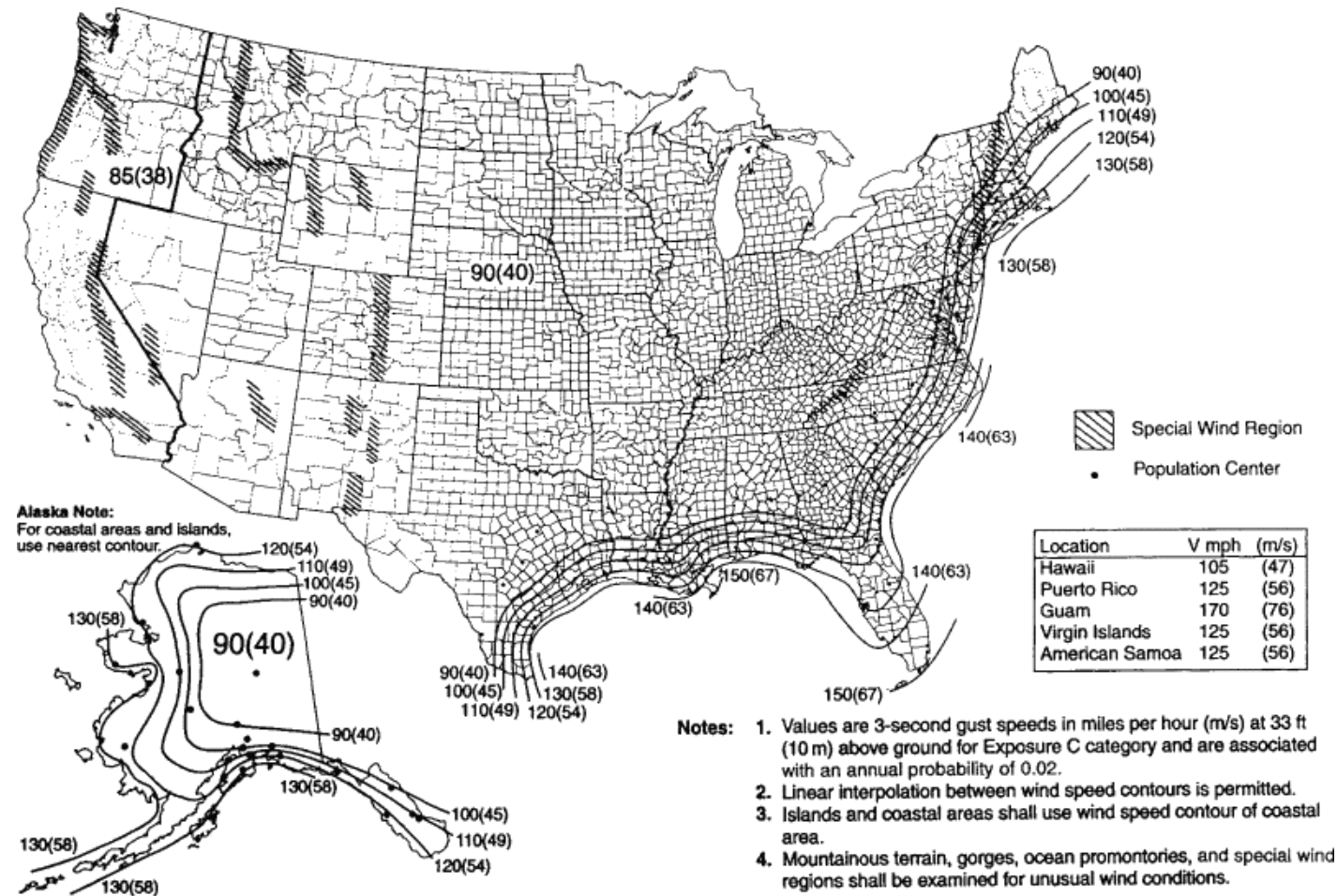
"From *Standard Specifications for Structural Support for Highway Signs, Luminaires, and Traffic Signals*, (year of publication), by the American Association of State Highway and Transportation Officials, Washington D.C. Used by permission. Documents may be purchased from the association's bookstore at 1-800-231-3475 or online at <http://bookstore.transportation.org>."

Different Design Criteria Cont.

AASHTO 2001 Design Criteria, uses wind map ASCE 7-95: It uses the 3-second gust wind speed calculation. This is the average speed of the wind during a peak 3-second interval.

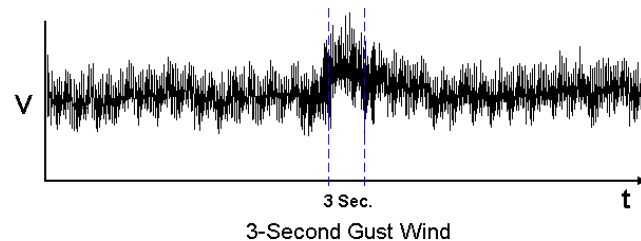


EPA (ft²) with 1.14 Gust Factor

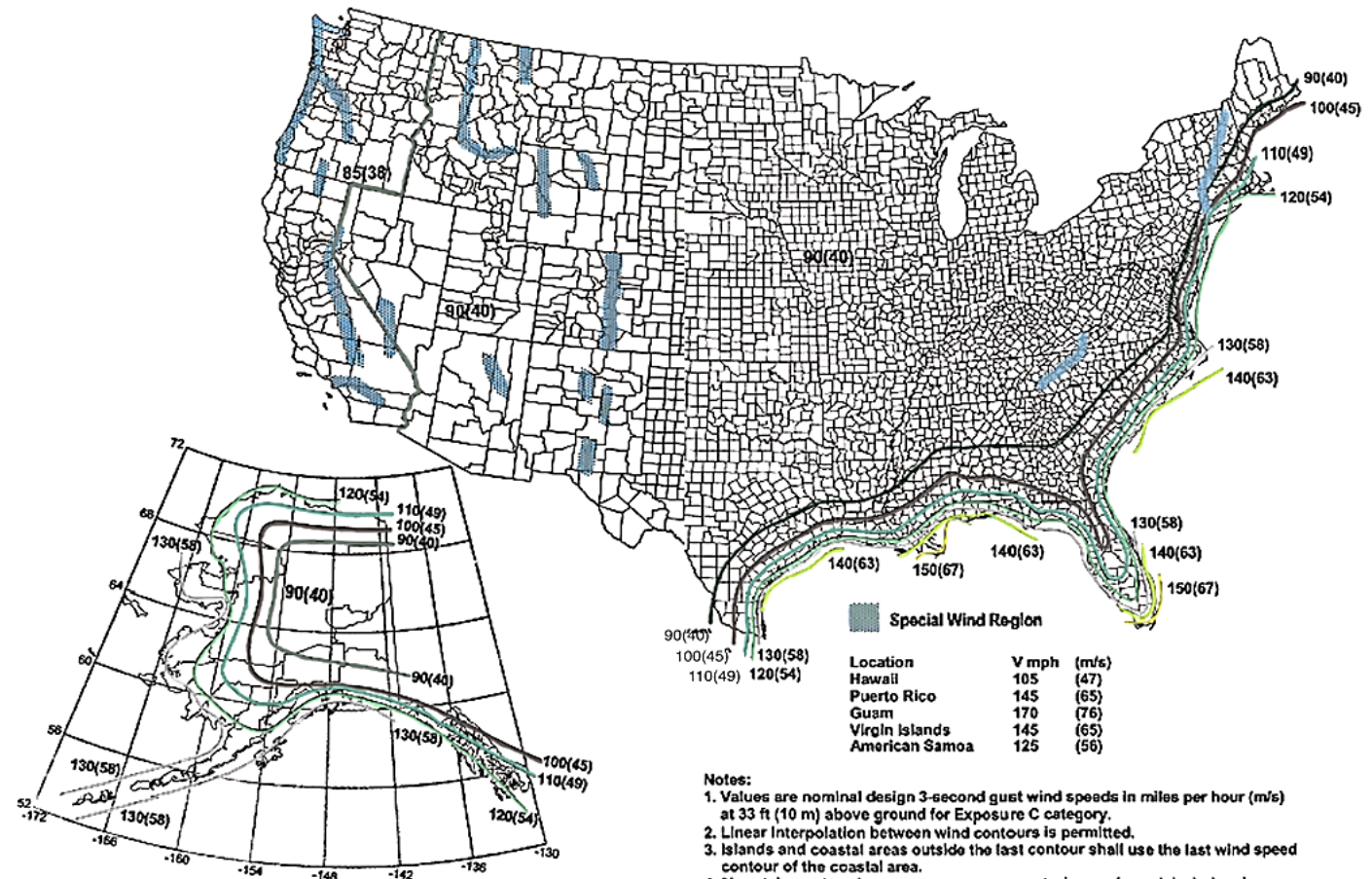


Different Design Criteria Cont.

AASHTO 2009 Design Criteria, used wind map ASCE 7-05: This also uses the 3-second gust wind speed calculation but, in miles per hour (m/s) at 33ft (10m) above ground for Exposure C Category.



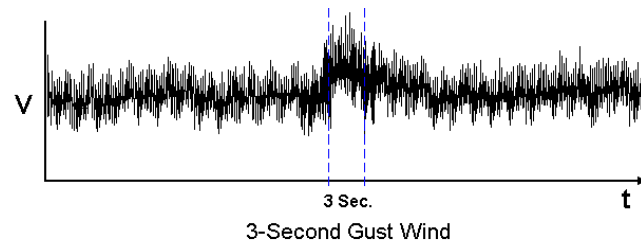
EPA (ft²) with 1.14 Gust Factor



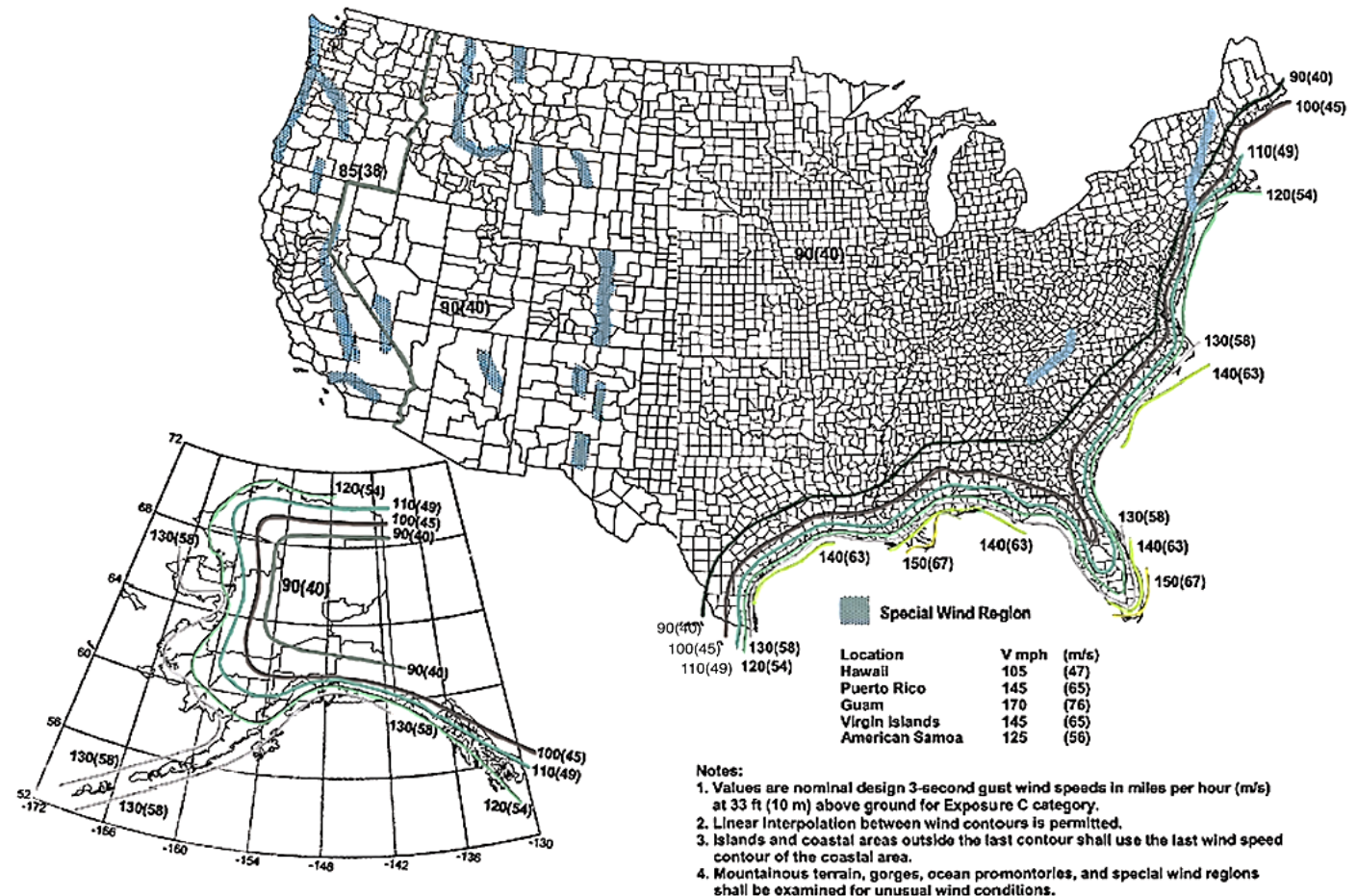
Different Design Criteria Cont.

AASHTO 2013 Design Criteria, uses ASCE 7-05: This also uses the 3-second gust wind speed calculation at 33' above ground and accounts for fatigue of poles on high mast poles (55' +).

This measurement of wind speed is the most stringent used for poles.



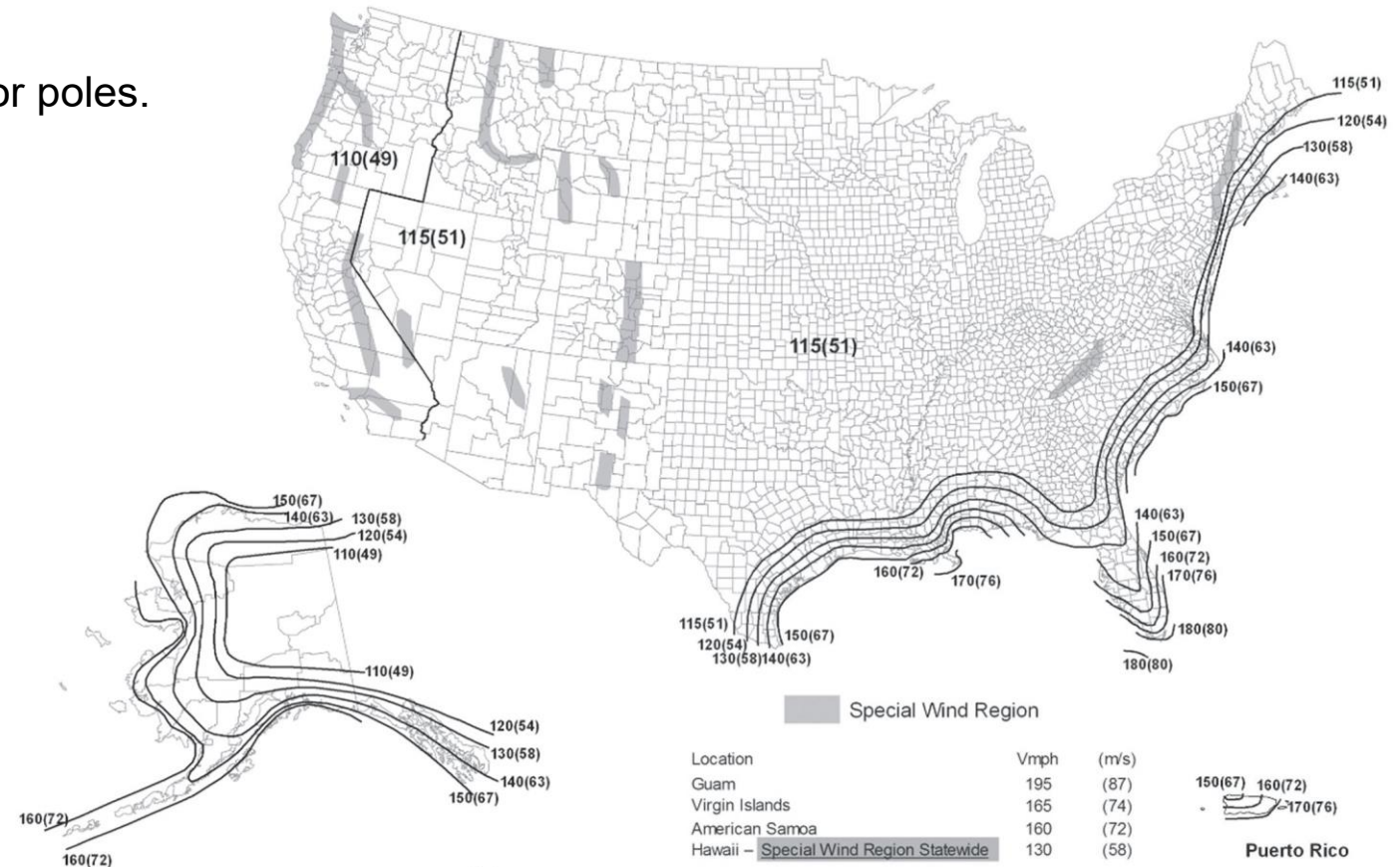
EPA (ft²) with 1.14 Gust Factor



Different Design Criteria Cont.

AASHTO 2015, IBC 2012 & 2015 Design Criteria, use wind map ASCE 7-10: This uses the Ultimate 3-second gust wind speed calculation. The wind speed for your location will vary greatly and is defined by the Risk category for your location.

This measurement is not commonly used for poles.



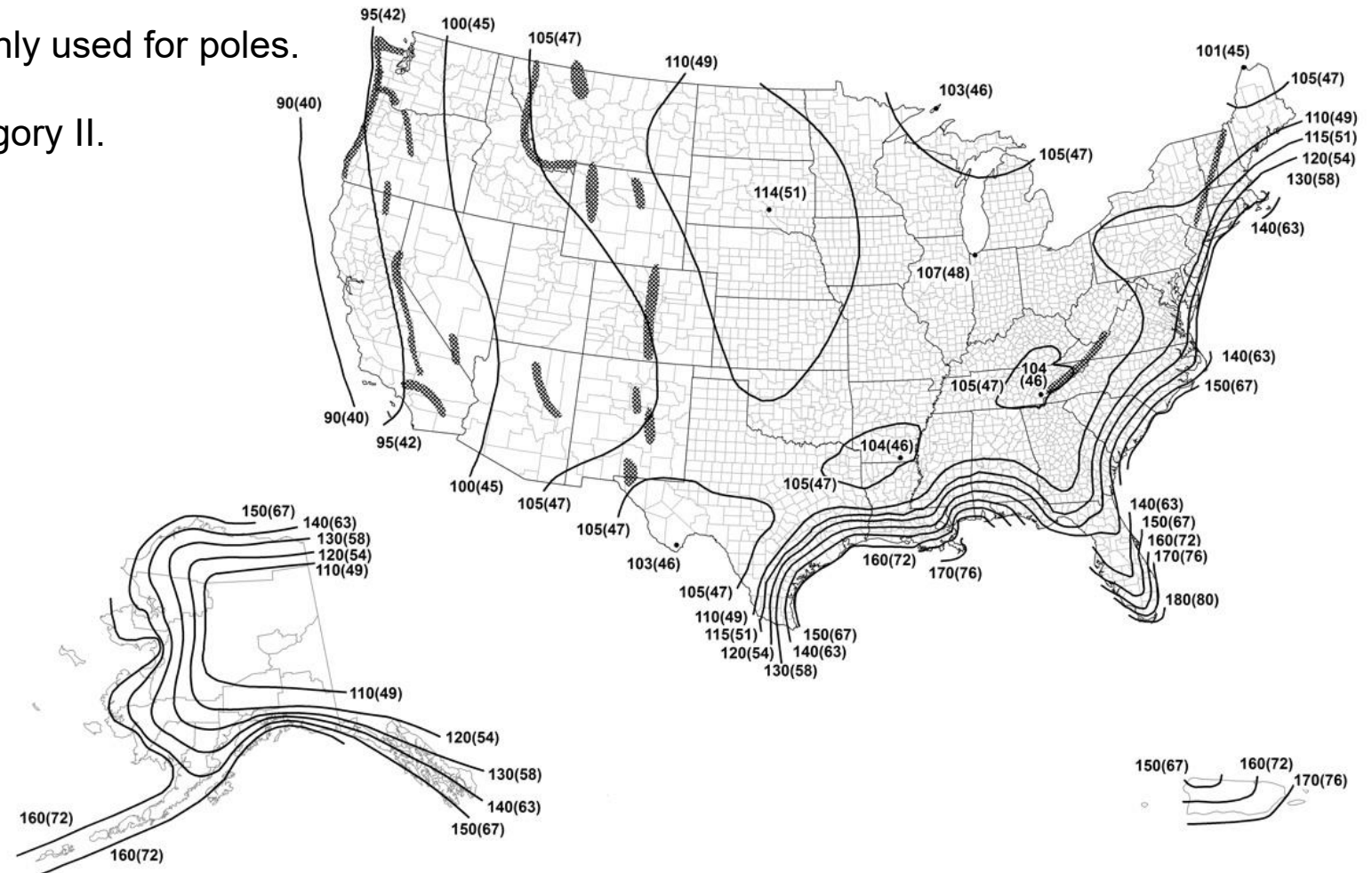
Notes:
1. Values are nominal design 3-second gust wind speeds in miles per hour (m/s) at 33 ft (10m) above ground for Exposure C category.
2. Linear interpolation between contours is permitted.
3. Islands and coastal areas outside the last contour shall use the last wind speed contour of the coastal area.
4. Mountainous terrain, gorges, ocean promontories, and special wind regions shall be examined for unusual wind conditions.
5. Wind speeds correspond to approximately a 7% probability of exceedance in 50 years (Annual Exceedance Probability = 0.00143, MRI = 700 Years).

second gust wind speed
category for your location.

IBC 2018 & 2021 Design Criteria, uses wind map ASCE 7-16: This uses the Ultimate 3-second gust wind speed calculation. The wind speed for your location will vary greatly and is defined by the Risk category for your location.

This measurement is not commonly used for poles.

Map shown here is for Risk Category II.



Summary - Design Criteria, Wind Maps and Wind Calculations

Least Stringent
Measurement

Most Stringent
Measurement

Fastest Mile

- 1.3 gust factor
- Wind Maps used: ASCE 7-93
- Design criteria's that use this calculation:
 - Commercial Criteria
 - AASHTO 1994

3-second gust

- 1.14 gust factor
- Wind Maps used: ASCE 7-95 and ASCE 7-05
- Design criteria's that use this calculation:
 - AASHTO 2001, 2009 & 2013
 - FBC 2004 & 2007
 - IBC 2000, 2006 & 2009

Ultimate 3-second gust

- 1.14 gust factor
- Wind Maps used: ASCE 7-10
- Design criteria's that use this calculation:
 - AASHTO 2015
 - IBC 2012 & 2015
 - FBC 2010 & 2014