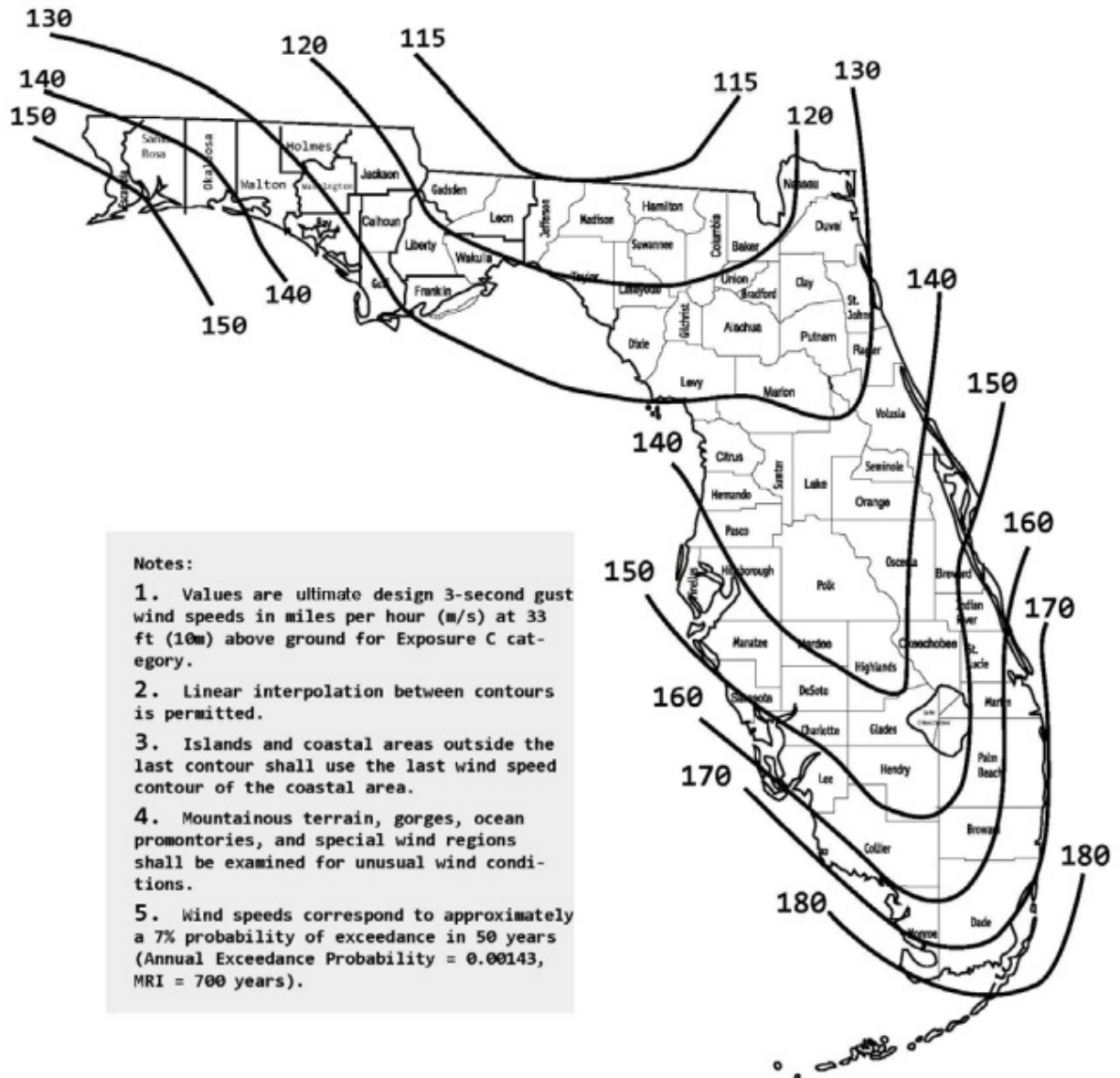


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CHAPTER 16 STRUCTURAL DESIGN

1609.3 Ultimate design wind speed.

The ultimate design wind speed, V_{ult} , in mph, for the determination of the wind loads shall be determined by Figures 1609.3(1), 1609.3(2), 1609.3(3) and 1609.3(4). The ultimate design wind speed, V_{ult} , for use in the design of Risk Category II buildings and structures shall be obtained from Figure 1609.3(1). The ultimate design wind speed, V_{ult} , for use in the design of Risk Category III buildings and structures shall be obtained from Figure 1609.3(2). The ultimate design wind speed, V_{ult} , for use in the design of Risk Category IV buildings and structures shall be obtained from Figure 1609.3(3). The ultimate design wind speed, V_{ult} , for use in the design of Risk Category I buildings and structures shall be obtained from Figure 1609.3(4). The ultimate design wind speed, V_{ult} , for the special wind regions indicated near mountainous terrain and near gorges shall be in accordance with local jurisdiction requirements. The ultimate design wind speeds, V_{ult} , determined by the local jurisdiction shall be in accordance with Chapter 26 of ASCE 7. The exact location of wind speed lines shall be established by local ordinance using recognized physical landmarks such as major roads, canals, rivers and lake shores wherever possible.



**FIGURE 1609.3(1)
 ULTIMATE DESIGN WIND SPEEDS, V_{ULT} , FOR RISK CATEGORY II BUILDINGS
 AND OTHER STRUCTURES**

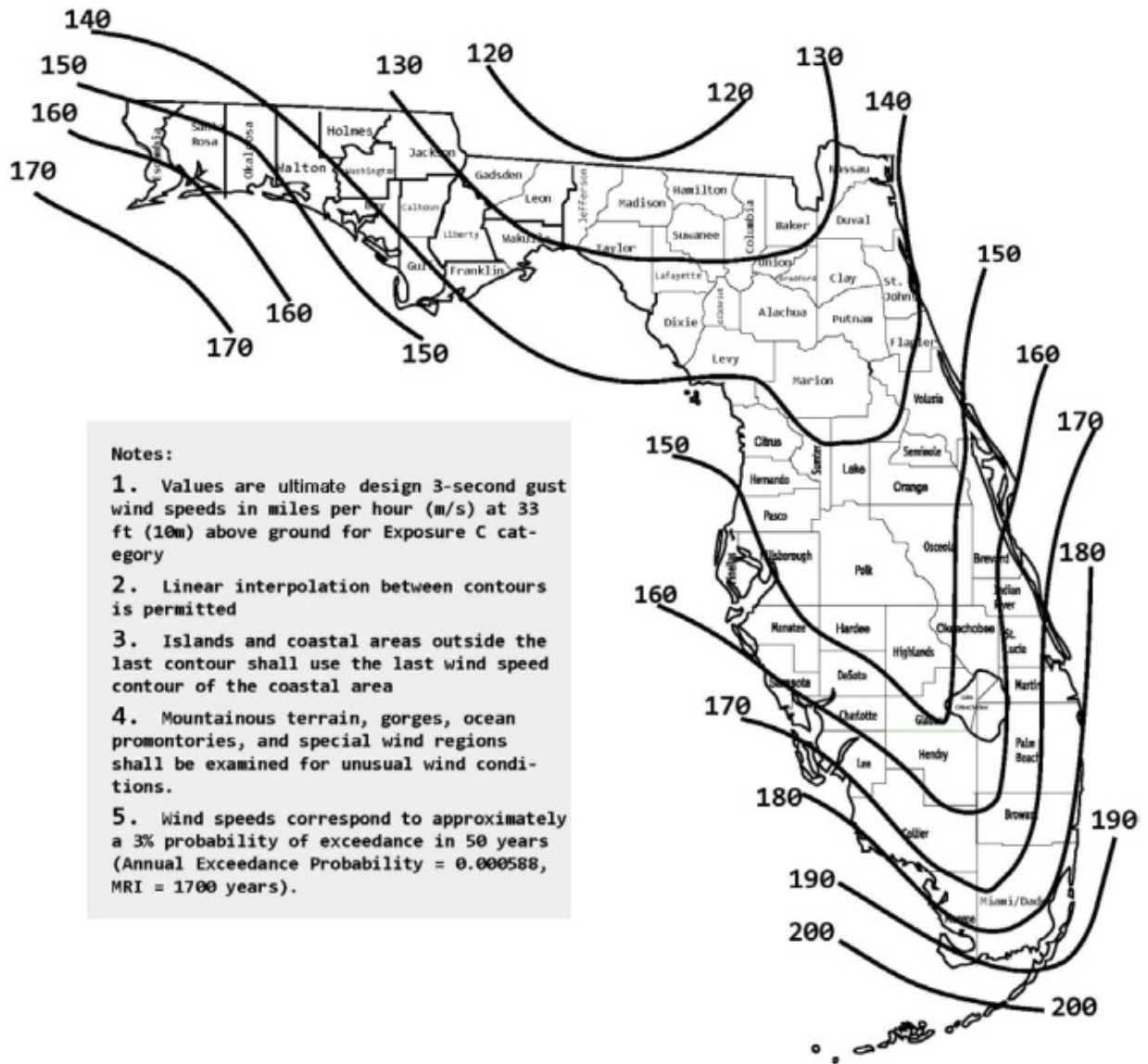
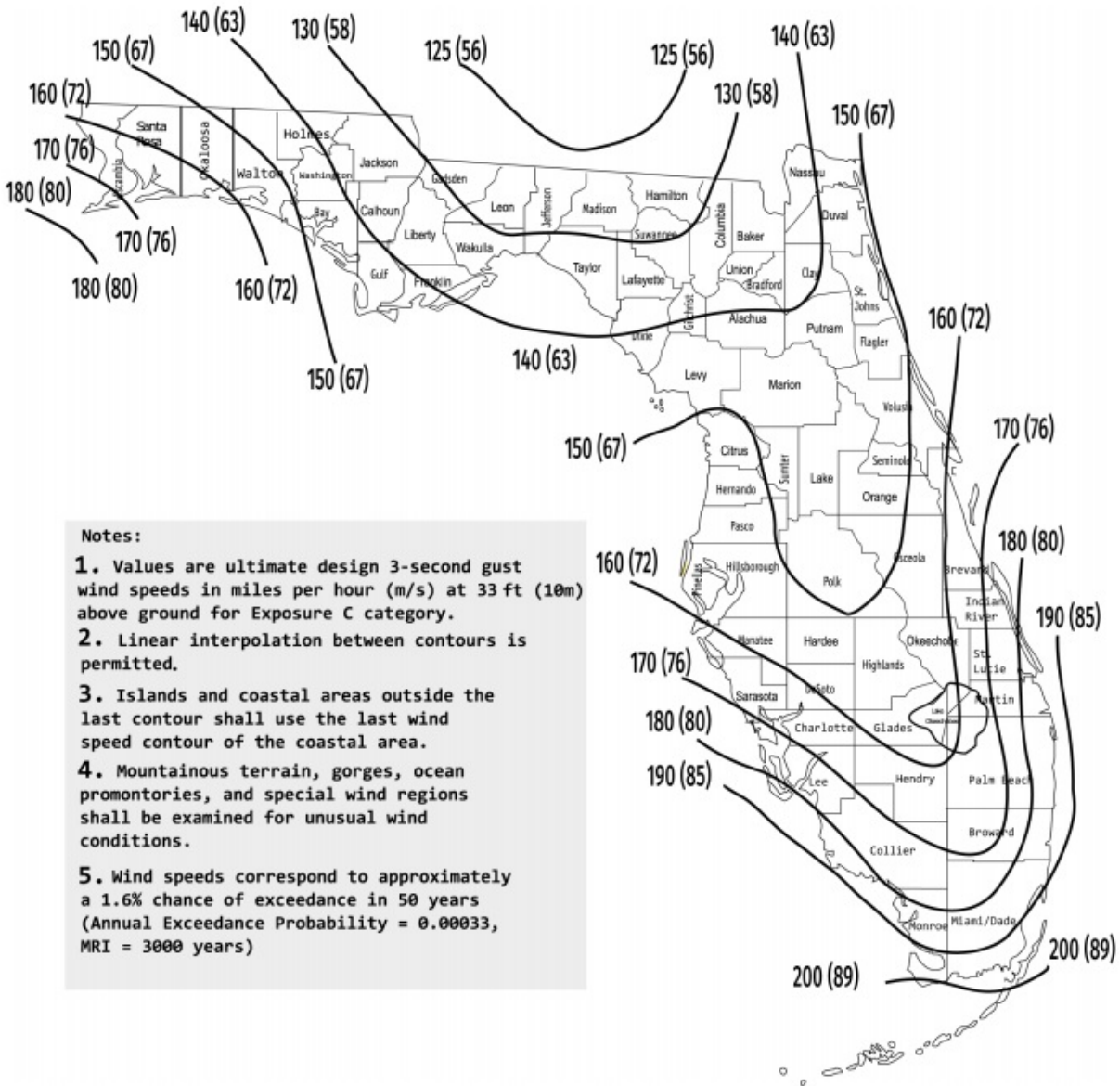
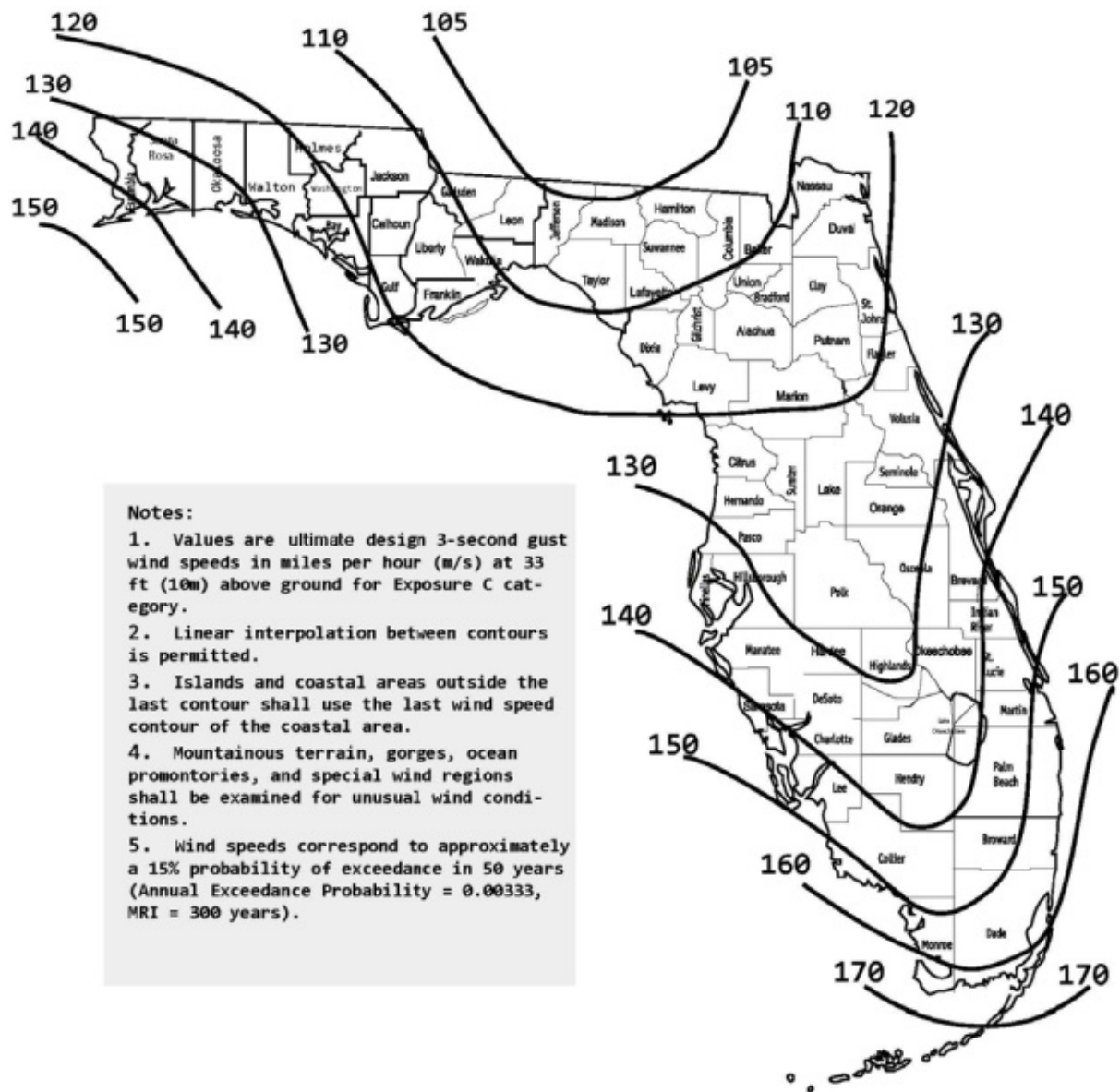


FIGURE 1609.3(2)
ULTIMATE DESIGN WIND SPEEDS, V_{ulr} , FOR RISK CATEGORY III BUILDINGS
AND OTHER STRUCTURES



**FIGURE 1609.3(3)
 ULTIMATE DESIGN WIND SPEEDS, V_{ULT} , FOR RISK CATEGORY IV BUILDINGS
 AND OTHER STRUCTURES**



**FIGURE 1609.3(4)
ULTIMATE DESIGN WIND SPEEDS, V_{ULT} , FOR RISK CATEGORY I BUILDINGS
AND OTHER STRUCTURES**

1609.3.1 Wind speed conversion.

Where required, the ultimate design wind speeds of Figures 1609.3(1), 1609.3(2), 1609.3(3) and 1609.3(4) shall be converted to nominal design wind speeds, V_{asd} , using Table 1609.3.1 or Equation 16-33.

$$V_{asd} = V_{ult} \sqrt{0.6}$$

(Equation 16-33)

where:

V_{asd} = Nominal design wind speed applicable to methods specified in Exceptions 4 and 5 of Section 1609.1.1.

V_{ult} = Ultimate design wind speed determined from Figure 1609.3(1), 1609.3(2), 1609.3(3) or 1609.3(4).

TABLE 1609.3.1
WIND SPEED CONVERSIONS^{a, b, c}

V_{ult}	100	110	120	130	140	150	160	170	180	190	200
V_{asd}	78	85	93	101	108	116	124	132	139	147	155

For SI: 1 mile per hour = 0.44 m/s.

1. a. Linear interpolation is permitted.
2. b. V_{asd} = nominal design wind speed applicable to methods specified in Exceptions 1 through 5 of Section 1609.1.1.
3. c. V_{ult} = ultimate design wind speed determined from Figure 1609.3(1), 1609.3(2), 1609.3(3) or 1609.3(4).