Plan Review Requirements for New Construction for the 2010 NYS Residential Code

The *New* Building Codes of NYS, adopted in July 2002 have been in full effect since January 2003 and another edition has come into effect fully December 28,2010. There are some significant differences in the new codes, a few of which are outlined below. Building Plans must show compliance with the new codes; buildings and structures must be constructed per plan to the requirements of the Codes.

The Town of Smithtown is in a 110mph Hurricane Prone Region wind zone. The Residential Code requires that wood frame dwellings be designed in accordance with one of the following Reference Documents (R301.2.1.1). Also see the Building Code of NYS, Section 1609:

1. American Forest and Paper Association (AF&PA) Wood Frame Construction Manual (WFCM) for One-and Two-Family Dwellings, 2001 High Wind Edition

2. Southern Building Code Congress International Standard for Hurricane Resistant Residential Construction (SSTD 10)

3. American Society of Civil Engineers, Minimum Design Loads for Buildings and Other Structures (ASCE 7-05)

The design must account for uplift, shear and overturning moments due to wind.

All high wind load design & framing elements, that are now required and which are normally not required for conventional construction need to be identified and shown in detail on the plans. WFCM 2001 and SSTD 10 reference standards have many illustrations of framing and clipping details for high wind load design and standard building practice. It is recommended the Design Professional review these elements with the building contractor.

Table R301.2 (1) Climatic and Geographic Design Criteria for Town of Smithtown

Ground Snow Load	Wind zone	Seismic Design Category	Weathering	Frost line Depth	Termite	Decay	Winter design Temp.	Ice shield required	Flood hazards
20	110 Mph	B	Severe	3 Feet	Moderate to Heavy	Slight to Moderate	11	See Section 905	AE/VE

The following are some of the essential items we will be looking for on the plans. Submit all information for your project required by NYS Codes and the (zoning) Codes of the Town of Smithtown. Submit Three (3) sets of plans with your application.

- In a conspicuous area on the plans indicate if the design is Engineered or Prescriptive. Provide a copy of the analysis where applicable. Indicate Wind Exposure category used in the design (R301.2.1.4), Exposure B is urban, suburban or wooded; Exposure C is open and shoreline. List the Design Loads: Dead & Live for all floors, attic, porches, decks, balconies, Ground Snow (20 psf), Wind (110 mph), Seismic (B), etc. Also list floor areas including decks & porches.
- Plans must show all structural elements including girders, floor joist, walls, header and roof rafter dimensional, engineered lumber sizes and their supports. Indicate lumber species & grades. Flooring, wall and roof sheathing must be specified. Indicate this information on the appropriate drawings.
- Show critical load paths from the roof to foundation. Show framing details on plans, including clips, straps and foundation anchoring that are appropriate for the required loads (Foundation anchor spacing is much closer in high wind zones). Also, clip and connector manufacturers allow some of their products to be installed under or over the sheathing. However, there is a difference in the attachment fastener length. Specify the details on the plan.
- Each roof rafter must be strapped across the ridge or appropriately clipped to the ridge, or have a collar tie. They must also be appropriately clipped to the plates. .
- Include a top view illustration of the roof showing the component & cladding pressure zones. Indicate both the edge and interior panel-nailing schedule for each zone to provide the required uplift restraint. Specify spacing and type of nails, including nail gun options.
- The design for open porches, elevated (i.e. 2nd story) decks, carports, and similar open type structures must account for uplift. Show connections for the critical path to the foundation (including those for hollow columns). Lag bolt decks & porches to house structure.
- Indicate the nailing schedule for all walls. Sheathing must be nailed to top plate, other plates, all studs and all headers. This is a common framing mistake in the field. Show detail on plan.
- Great rooms, and all wall areas with large or continuous windows & doors will need a wall diaphragm that is designed to resist wind pressure and shear. Strapping between floors, around openings and multiple hold down brackets are probably required (show details). All floor joists must be restrained at the ends to prevent rotation (R502.7 and High Wind Loads). Show the details for corner hold down brackets, floor and roof diaphragm bracing in the two end bays, gable end wall bracing (or balloon framing) and other elements of high wind load design.

- Truss design drawings shall be provided prior to their installation and shall be in conformance with the requirements of R502.11 and R802.10. Blocking and attachment details are to be shown in the building plans. The above referenced AF&PA High Wind, Wood Frame Construction Manual has many illustrations. Truss plans must be on site for the framing inspection. Draft stopping is required in concealed spaces every 1000 sq. ft. (R502.12).
- Emergency Escape R310: All sleeping rooms and habitable space in a basement requires an Emergency escape opening (5.7 sq. ft. (or 5 sq. ft. if within +/- 44 inches of grade). Identify each Emergency Escape Window on the floor plan. Include basement window well design plan if applicable.
- Energy Code: See the Residential Code of NYS, Chapter 11 and the Energy Conservation Construction Code of NYS, submit appropriate worksheet and certification. Methods of Compliance: Systems Analysis, Renewable Energy Sources, Component, Prescriptive or REScheck software for residential. Suffolk is zone 4.
- Modular house plans shall include a certification letter from the Department of State for the snow load (20 psf) & 110 mph high wind load design, including glazing meeting the large missile test, or structural panels for wind borne debris (per R301.2.1.2). Plans shall also include a foundation design appropriate for the area, and include anchoring details. Non- factory addition plans shall include all of the appropriate information required in this section and by the NYS Codes.
- Install smoke alarms as required by R313.2 and J504.2
- Install carbon monoxide alarms as required by R313.4 and J504.2
- The NYS Codes also applies to accessory structure design.

Additionally, for any parcel located within 1 mile of the coastal mean high water of Smithtown Town the following is required for new construction, exterior windows must be protected via glazing meeting the large missile test certification of ASTM E 1886-97 and ASTM E 1996-99, or via structural shutters with attachment hardware provided, or building designed as a partially enclosed structure per the Building Code of NYS. See Residential Code Definitions (Chapter 2) & R301.2.1.2. Also see the Building Code of NYS, Section 1609.

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Note: The items listed on this sheet are common deficiencies noted during new construction plan reviews and are not intended to list all code and structural requirements. For all code and structural requirements see the New York State Residential Code and your design professional.