Attention Builders

Please be advised that as of January 1, 2021, the following Construction Documents will be required to be submitted with your Building Permit Application. These documents will be needed for the construction of Single-Family Homes and any major home renovations requiring the same. In order for the Planning and Development Office to issue a Building Permit, these documents must be completed and turned in with your Building Permit Application.

If you have any questions or concerns, please contact the Planning and Development Office at 315-637-8619.

INFORMATION REQUIRED ON CONSTRUCTION DOCUMENTS

To receive a building permit, the following information is required to be contained within your construction documents.

ENERGY CODE COMPLIANCE PATH

One of the following energy code compliance paths indicated clearly on the plans

- ☐ 2020 ECCCNYS
  - ☐ Prescriptive
  - ☐ Prescriptive with envelope tradeoffs - Supply *REScheck* or other approved Uoverall calculations
  - ☐ Simulated Performance Alternative - Supply IECC Energy Cost Report
  - ☐ Energy Rating Index Alternative - Supply Preliminary ERi Report and Energy Code Checklist

BUILDING THERMAL ENVELOPE

- ☐ Continuous building thermal envelope depiction
- ☐ Typical cross-sections for each unique assembly type including callouts for:
  - ☐ Insulation R-values, materials, and installed thickness
    - ☐ Fenestration U-factors and solar heat gain coefficients (SHGCs)
    - ☐ Primary air barrier method, materials, and location
- ☐ Construction details for the following, if included in the scope of the project
  - ☐ Slab on grade with insulation extending downward from the top of the slab
  - ☐ Insulated corners: Framing allows space for insulation
  - ☐ Insulated headers: Insulation installed in headers as space allows
  - ☐ Fireplaces on exterior walls: Air barrier between insulation and fireplace insert
  - ☐ Dropped ceiling/soffit: Air barrier aligned with insulation
    - ☐ Porch roofs: Exterior wall sheathing extends behind intersection with porch roof
  - ☐ Skylight shafts: Shaft walls are insulated and include attic-side air barriers
    - ☐ Showers/tubs on exterior walls: Air barrier located between wall insulation and the shower/tub
    - ☐ Knee walls: Air barrier on attic side of knee wall, top plate installed, blocking between floor joists under knee wall
    - ☐ Blocking between joists above walls separating garages from conditioned space
    - ☐ Cantilevered floors: Insulated with solid air barriers underneath insulation and blocking between joists
  - ☐ Attic access hatches: Weather stripped and insulated to the same R-value as the surrounding surface
- ☐ Notes indicate that insulation is to be installed per manufacturer's installation instructions or RESNET Grade I

HEATING AND COOLING SYSTEMS

Thermostats

- ☐ Thermostat type and location

Ducts and Air Handler

- ☐ Duct and air handler locations
- ☐ Notes or drawings specify insulation R-values for ducts in unconditioned spaces
- ☐ Note indicating that HVAC contractor will seal ducts to 4.0 cfm/100 ft^2 conditioned floor area with UL 181 products appropriate for the duct material type. (Testing not required if all ducts are located completely within conditioned space.)
- ☐ Furnace and air conditioner or heat pump specifications

HVAC Design Worksheet

- ☐ Completed ***Heating and Cooling Equipment Worksheet*** (page 1)
- ☐ Completed ***Whole-house Mechanical Ventilation Worksheet*** (page 2)

HVAC Piping

- ☐ Notes or drawings indicate HVAC pipe insulation R-values (e.g. hydronic systems, refrigerant lines)
- ☐ Notes or drawings indicate HVAC pipe insulation protection for pipes/insulation located outdoors (e.g. refrigerant lines)

SERVICE HOT WATER PIPING

- ☐ Hot water pipe insulation R-value for pipes meeting any <u>one</u> of the following conditions
  - ☐ ¾" nominal diameter
  - ☐ Located outside conditioned space
  - ☐ Between the water heater and a manifold
  - ☐ Underground or in a slab
  - ☐ Serving more than one dwelling unit
  - ☐ Supply and return piping in recirculating hot water systems other than demand recirculating systems

LIGHTING

- ☐ Lighting schedule or notes indicating percentage of high-efficacy lighting

RESIDENTIAL HVAC EQUIPMENT DESIGN WORKSHEET
HEATING AND COOLING EQUIPMENT

House Address:_____ Permit#:_____ Date:_____

Permit Applicant:_____ Phone:_____

Requirements:

- ☐ **R403.1.1** All thermostats are programmable
- ☐ **R403.3.1** Ducts in unconditioned spaces are insulated
  - 3" diameter insulated to R-8 in attics and R-6 elsewhere
  - < 3" diameter insulated to R-6 in attics and R-4.2 elsewhere
- ☐ **R403.3.2.1** Air handler has manufacturer's designation ofs; 2% air leakage when tested per ASHRAE 193
- ☐ **R403.3.3** Completed ***Duct and Envelope Testing Form*** will be submitted to the inspector
- ☐ **R403.4** HVAC pipe insulation is R-3 minimum (e.g. hydronic systems, refrigerant lines) and outdoor insulation is protected
- ☐ **R403.7** Manual J report, including heating and cooling design loads, is attached
- ☐ **R403.7** Heating and cooling equipment have been selected in accordance with Manual S, based on loads calculated in accordance with Manual J (see below)

Complete the following based on the attached Manual J report:

Design loads:	**Equipment specifications:**
Design cooling load_____(Btu/h)	Cooling system output capacity_____(Btu/h)
	Cooling equipment make:_____
	Cooling equipment model:_____
Design heating load:_____(Btu/h)	Heating system output capacity:_____(Btu/h)
	Heating equipment make:_____
	Heating equipment model:_____

- ☐ **Manual S.** Specified *cooling* equipment capacity is :s; 1.15 times the design load or the next larger nominal size, whichever is greater. (Exception: Heat pumps may exceed the design load by 1.25 times or the next nominal size.)
- ☐ **Manual S.** Specified *heating* equipment capacity is :s; 1.40 times the design load or the next larger nominal size, whichever is greater

- ☐ **RCNYS R303.4** Whole-house mechanical ventilation worksheet has been completed (see reverse)

RESIDENTIAL HVAC DESIGN FORM

WHOLE-HOUSE MECHANICAL VENTILATION DESIGN WORKSHEET

House Address:_____ Permit#:_____ Date:___ _

Permit holder:_____ Phone:_____

1 . Fill in the conditioned floor area and number of bedrooms for the dwelling:

Conditioned Floor Area =_____ft2 Number of bedrooms=___ _

2. Circle the required airflow value on the table below:

[NV] RCNVS Table **M1505.4.3(1)**

Continuous Whole-House Mechanical Ventilation System Airflow Rate Requirements

Dwelling Unit Floor Area (square feet)	Number of Bedrooms				
	0-1	2-3	4-5	6-7	>7
	Airflow in CFM				
< 1,500	30	45	60	75	90
1,501- 3,000	45	60	75	90	105
3,001- 4,500	60	75	90	105	120
4,501- 6,000	75	90	105	120	135
6,001- 7,500	90	105	120	135	150
> 7,500	105	120	135	150	165

3. Does the fan operate continuously or intermittently? ☐ Continuous D Intermittent

4. If the fan is to be operated intermittently *on a pre-set schedule,* multiply the airflow value from Table M1505.4.3 (above) by the appropriate value in Table M1505.4.3(2) (below).

[NV] RCNVS Table **M1505.4.3(2)**

Intermittent Whole-House Mechanical Ventilation Rate Factors

Run-time Percentage in Each 4-hour Segment	**25%**	33%	50%	66%	**75%**
Factor	4.0	3.0	2.0	1.5	1.3

5. Enter the required airflow =_____CFM

6. R403.6.1. Fan efficacy. Enter the following information regarding the specified fan:

Rated fan airflow =_____CFM Fan make: _ _ _ _ _ _ _ _ _

HVI-rated fan efficacy=_____CFM/Watt

Town of Manlius Planning and Development

RESIDENTIAL DUCT & ENVELOPE TESTING (DET} FORM

House Address:_____ **Permit #:**_____ **Date:**_____

Permit holder:_____ **Phone:**_____

L Building Envelope Air Leakage (mandatory):

Blower door test (Mandatory)

Test Result:

Fan Flow at 50 Pascals = _____ CFM50 Total Conditioned Volume = _____ ft

ACH50 = CFM50 x 60 /Volume= _____. ACH50*

Testing company:_____ Phone:_____

Tester Name (print):_____ Signature:_____ Date:_____

BPI or HERS certification number: BPI no:_____ HERS Rater no:_____ HERS RFI no:_____

*For Simulated Performance Alternative and Energy Rating Index Paths, value must match IECC Energy Cost Report or Final ERi Report

II. Heating and Cooling System Duct Leakage

D I certify that all portions of the ducts are located entirely within the building thermal envelope. Testing is not required.

Owner or approved third party signature:_____ Date:_____

Total duct leakage test

Energy code compliance path: D Prescriptive (including REScheck) D Performance or Energy Rating Index

Type of test performed: ☐ Rough-in with air handler D Rough-in without air handler D Post construction

Test Result System 1:

Fan Flow at 25 Pascals (CFM25) ___ CFM Conditioned Floor Area (CFA) served by system = _____ ft

CFM25 / CFA x 100 = _____ CFM/100 ft²

Test Result System 2 (if present):

Fan Flow at 25 Pascals (CFM25) ___ CFM Conditioned Floor Area (CFA) served by system = _____ ft

CFM25 / CFA x 100 = _____ CFM/100 ft²

Testing company:_____ Phone:_____

Tester Name (print):_____ Signature:_____ Date:_____

BPI or HERS certification number: BPI no:_____ HERS Rater no: HERS RFI no:_____