NGBS Mandatory Construction Practices

602.1.1.1 – Capillary Breaks
A capillary break and vapor retarder are installed at concrete slabs in accordance with ICC IRC Sections R506.2.2 and R506.2.3 or ICC IBC Sections 1910 and 1805.4.1.

602.1.7 - Moisture Control Measures - *Verified at NGBS Rough Inspection*
Insulation in cavities is dry, in accordance with manufacturer's installation instructions when enclosed with drywall. Moisture control measures are in accordance with the following measures:

1. Building materials with visible mold are not installed or are cleaned or encapsulated prior to concealment and closing.
2. Insulation in cavities is dry in accordance with manufacturer's installation instructions when enclosed with drywall.
3. The moisture content of lumber is sampled to ensure it does not exceed 19% prior to the surface and/or wall cavity enclosure. (e.g. with drywall)
4. Moisture content of subfloor, substrate, or concrete slabs is in accordance with the appropriate industry standard for the finish flooring to be applied.

602.1.8 - Water-resistive barrier
Where required by the ICC IRC or IBC, a water-resistive barrier (WRB) and/or drainage plane system is installed behind exterior veneer and/or siding. A WRB is required where required by the IRC code (regardless if that is the code required by the jurisdiction).

602.1.9 - Flashing
Flashing is provided as follows to minimize water entry into wall and roof assemblies and to direct water to exterior surfaces or exterior water-resistive barriers for drainage. Flashing details are provided in the construction documents and are in accordance with the fenestration manufacturer's instructions, the flashing manufacturer's instructions, or as detailed by a registered design professional.

Flashing is installed at all of the following locations, ***as applicable***:

1. Around exterior fenestrations, skylights, and doors
2. At roof valleys
3. At all building-to-deck, -balcony, -porch, and –stair intersections
4. At roof-to-wall intersections, and parapets
5. At ends of and under masonry, wood, or metal copings and sills
6. Above projecting wood trim
7. At built-in roof gutters
8. Drip edge is installed at eaves and at rake edges

602.1.11 - Tile backing materials - *Verified at NGBS Rough Inspection*
Tile backing materials installed under tiled surfaces in wet areas are in accordance with ASTM C1178, C1278, C1288, or C1325. Code compliant membrane materials with an ICC-ES ESR Report are acceptable as well.

602.1.14 – Architectural Features
All horizontal ledgers are sloped away to provide gravity drainage as appropriate for the application.

602.4.1 – Finished Grade
Finished grade at all sides of a building is sloped to provide a minimum of 6 inches of fall within 10 feet of the edge of the building. Where lot lines, walls, slopes, or other physical barriers prohibit 6 inches of fall within 10 feet, the final grade is sloped away from the edge of the building at a minimum slope of 2 percent.

701.4.1.1 – HVAC System Sizing
Space heating and cooling system is sized according to heating and cooling loads calculated using ACCA Manual J, or equivalent. Equipment is selected using ACCA Manual S or equivalent.

701.4.2.1 - Duct air sealing ***- Verified at NGBS Rough Inspection***
Ducts are air sealed. All duct sealing materials are in conformance with UL181A or UL 181B specifications and are installed in accordance with manufacturer's instructions. For buildings with ducted systems provide product spec or trade contractor's scope of work to confirm use of duct sealing using UL 181 tape, mastic, gaskets, or an IRC or ICC/IMC approved system.

701.4.2.2 - Supply ducts
Building cavities are not used as supply ducts.

701.4.2.3 - Duct system sizing
Duct system is sized and designed in accordance with ACCA Manual D or equivalent.

701.4.3.1 - Building Thermal Envelope ***- Verified at NGBS Rough Inspection***
The building thermal envelope is durably sealed to limit infiltration. The sealing methods between dissimilar materials allow for differential expansion and contraction. The following are caulked, gasketed, weather-stripped or otherwise sealed with an air barrier material, suitable film, or solid material:

a. All joints, seams and penetrations.
b. Site-built windows, doors, and skylights.
c. Openings between window and door assemblies and their respective jambs and framing.
d. Utility penetrations.
e. Dropped ceilings or chases adjacent to the thermal envelope.
f. Knee walls.
g. Walls and ceilings separating a garage from conditioned spaces.
h. Behind tubs and showers on exterior walls.
i. Common walls between dwelling units.
j. Attic access openings.
k. Rim joist junction.
l. Other sources of infiltration

701.4.3.2 - Air sealing and insulation ***- Verified at NGBS Rough Inspection***

Grade 3 insulation installation is not permitted, **Grade 2 or better is mandatory**. Building envelope tightness and insulation installation are considered acceptable when the items listed below applicable to the method of construction are field verified.

Visual Inspection performed on the following at NGBS Rough/Pre-drywall inspection.

Air barrier and thermal barrier

1. Exterior thermal envelope insulation for framed walls is installed in substantial contact and continuous alignment with building envelope air barrier.
2. Breaks or joints in the air barrier are filled or repaired.
3. Air-permeable insulation is not used as a sealing material.
4. Air-permeable insulation is installed with an air barrier.

Ceiling/attic

1. Air barrier in dropped ceiling/soffit is substantially aligned with insulation and any gaps are sealed.
2. Attic access (except unvented attic), knee wall door, or dropdown stair is sealed.

Exterior walls

1. Corners and headers are insulated.
2. Junction of foundation and sill plate is sealed.

Windows and doors

1. Space between window/door jambs and framing is sealed.

Rim joists

1. Rim joists are insulated and include an air barrier.

Floors (including above-garage and cantilevered floors)

1. Insulation is installed to maintain permanent contact with underside of subfloor decking.
2. Air barrier is installed at any exposed edge of insulation.

Shafts, penetrations

1. Duct shafts, flue shafts, and utility penetrations opening to the exterior or an unconditioned space are sealed.

Narrow cavities

1. Batts in narrow cavities are cut to fit, or narrow cavities are filled by sprayed/blown insulation.

Recessed lighting

1. Recessed light fixtures not installed in the conditioned space are air tight, IC rated***, and sealed to drywall.***

Plumbing and wiring

1. Insulation is placed between the outside and pipes. Batt insulation is cut to fit around wiring and plumbing, or sprayed/blown insulation extends behind piping and wiring.

Shower/tub adjacent to exterior wall

1. Showers and tubs adjacent to exterior walls have insulation and an air barrier separation from the exterior.

Electrical/phone box in exterior walls

1. Air barrier extends behind boxes or air sealed-type boxes are installed.

Common wall

1. Air barrier is installed in common walls between dwelling units.

HVAC register boots

1. HVAC register boots that penetrate building envelope ***are sealed to subfloor or drywall.***

701.4.3.3 - Fenestration air leakage
Windows, skylights and sliding glass doors have an air infiltration rate of no more than 0.3 cfm per square foot and swinging doors no more than 0.5 cfm per square foot when tested in accordance with ***NFRC*** 400 or AAMA/WDMA/CSA 101/I.S.2/A440 by an accredited, independent laboratory and listed and labeled. This practice does not apply to site-built windows, skylights, and doors.

701.4.3.4 - Recessed Lighting
Recessed luminaires installed in the building thermal envelope are sealed to limit air leakage between conditioned and unconditioned spaces. All recessed luminaires are IC-rated and labeled as meeting ASTM E283. All recessed luminaires *are sealed with a gasket or caulk between the housing and the interior of the wall or ceiling covering*.

701.4.4 - High-efficacy lighting ***- Verified at NGBS Final Inspection***
A minimum of 50 percent of the total hard-wired lighting fixtures, *or the bulbs in those fixtures*, qualify as high efficacy or equivalent.

702.2.1 - ICC IECC Analysis -
Energy efficiency features are implemented to achieve an energy cost performance that meets the 2009 ICC IECC. A documented analysis using software in accordance with ICC IECC is required. A building complying with Section 702 shall exceed the baseline minimum performance required by the 2009 ICC IECC by **15 percent**.

901.4 - Wood materials
Structural plywood used for floor, wall, and/or roof sheathing is compliant with DOC PS 1 and/or DOC PS 2. OSB used for floor, wall, and/or roof sheathing is compliant with DOC PS 2. The panels are made with moisture-resistant adhesives. The trademark indicates these adhesives as follows: Exposure 1 or Exterior for plywood and Exposure 1 for OSB.

901.6 – Carpets ***- Verified at NGBS Final Inspection***
Wall-to-wall carpeting is not installed adjacent to water closets and bathing fixtures.

902.1 – Spot ventilation
Spot ventilation is in accordance with the following conditions:

1. Bathrooms are vented to the outdoors. The minimum ventilation rate is 50 cfm for intermittent operation or 20 cfm for continuous operation in bathrooms.
2. Clothes dryers are vented to the outdoors.

902.4 - HVAC system protection.
HVAC supply registers (boots), return grilles, and rough-ins are covered during construction activities to prevent dust and other pollutants from entering the system.