

2. The CEO may issue a single project master permit, based on the initial project description and code compliance strategy agreement.

Commentary: The CEO should work collaboratively to review building components or details as scheduled by the owner's project team.

3. The CEO shall inspect built work, as described in Section 107 of this code.

- 3.1. Concurrence on compliance with the code, with respect to both the model and built product, shall be gained before inspections are approved.

4. The owner's project team shall submit a validation document, at project substantial completion, documenting the building as constructed and compliance with the *North Carolina State Building Code*, for records retention by the Authority Having Jurisdiction. Validation document: may be a three dimensional model, two dimensional electronic drawings and records, or a combination of both, accurately reflecting the completed building as approved by the code official in the field, and verified with respect to same.

- Where the validation document varies from the approved virtual model regarding building code compliance, the related Architect/Engineer must approve the change.
- Receipt of the validation document shall be a condition on issuance of Certificate of Occupancy.

106.2.3.2 Definitions.

BIM: Model-based technology linked with a data base of project information, using three-dimensional, real time dynamic modeling software, to plan all building construction. The model encompasses building geometry, spatial relationships, geographic information, and quantities and properties of building components.

IPD: A project delivery method that integrates key participants (owner, Architect, Engineer, contractor, code official, et al.), systems, business structures and practices into a process that collaboratively plans and constructs facilities. The collaborative process begins in early design and continues through all phases of design, fabrication and construction.

Commentary: This applies to any project delivery method employing three dimensional modeling software, to virtually construct all building components, by a collaborative team based process from design start to construction completion.

106.3 Permit application.

106.3.1 Information required. A permit application shall be filed with the Inspection Department on a form furnished for that purpose. The Inspection Department shall make available a list of information which must be submitted with the building permit application, including a complete

building code summary (see Appendix A of the Administrative Code and Policies). The Inspection Department's building code summary shall be in the exact format as, and contain only the information in, Appendix B of the Administrative Code and Policies. The Inspection Department shall only modify its building code summary as set forth in section 103.5 Modifications, or as necessary to reflect any changes by the Office of State Fire Marshal to Appendix B which have been approved of by the Building Code Council.

**SECTION 107
INSPECTIONS**

107.1 General. The inspection department shall perform the following inspections:

1. Footing inspection;
2. Under slab inspection, as appropriate;
3. Foundation inspection;
4. Rough-in inspection;
5. Building framing inspection;
6. Insulation inspection;
7. Fire protection inspection; and
8. Final inspection.

Commentary: The code enforcement official makes these inspections during certain phases of construction and is not on site at all times when construction is in progress. The code official verifies code compliance and/or code defects visible and subject to discovery during the above listed inspections and spot checks numerous similar items.

Nothing in any of Sections 107.1.1 through 107.1.8 requirements is intended to prevent partial inspections of the inspection types listed in Section 107.1 "General" as requested by the permit holder as allowed by the local inspection department. Cumulative partial inspections approved by the code official shall satisfy the same degree of readiness for inspection for viewing as described in Sections 107.1.1 through 107.1.8.

Not all items, such as, but not—limited to, nailing of roof or other sheathing material, are always visible at framing inspection, but remain the responsibility of the permit holder to comply with the code.

Temporary electrical service poles may be inspected at any phase of construction as requested by the permit holder. Temporary utility (TU) applications deemed safe by the AHJ or as otherwise permitted by the code shall be allowed.

107.1.1 Footing inspection. Footing inspections shall be made after the trenches are excavated, all grade stakes are installed, all reinforcing steel and supports are in place and tied, and all necessary forms are in place and braced before any concrete is placed.

107.1.2 Under-slab inspection. Under-slab inspections, as appropriate, shall be made after all materials and equipment to be concealed by the concrete slab are completed.

107.1.3 Foundation inspection, crawl space. Foundation and crawl space inspections shall be made after all foundation supports are installed.

Commentary: Foundation inspections are conducted to verify correct installation and proper bearing support. Poured concrete and masonry walls that have reinforcement steel should be inspected prior to concrete placement. Crawl space leveling, ground clearances, positive drainage and waterproofing/dampproofing, when required, may be inspected at future inspections prior to concealment.

107.1.4 Rough-in inspection. Rough-in inspections shall be made when all building framing and parts of the electrical, plumbing, fire protection, or heating-ventilation or cooling system that will be hidden from view in the finished building have been placed, but before any wall, ceiling finish, or building insulation is installed.

Commentary: Plumbing, mechanical, and electrical components installed underground should be considered as rough-in inspections and may be inspected at any point during construction prior to covering.

107.1.5 Building framing inspection. Framing inspections shall be made after the roof (excluding permanent roof covering), wall ceiling, and floor framing is complete with appropriate blocking, bracing, and firestopping in place. The following items shall be in place and visible for inspection:

1. Pipes;
2. Chimneys and vents;
3. Flashing for roofs and chimneys;
4. Insulation baffles; and
5. All lintels that are required to be bolted to the framing for support shall not be covered by any exterior or interior wall or ceiling finish material before approval. Work may continue without approval for lintels supported on masonry or concrete.

107.1.6 Insulation inspection. Insulation inspections shall be made after an approved building framing and rough-in inspection and after the permanent roof covering is installed, with all insulation and vapor retarders in place, but before any wall or ceiling covering is applied.

Commentary: Insulation baffles that cannot be seen at this inspection, such as vaulted ceilings with concealed rafter cavities, should have baffles installed at framing inspection for verification.

It is acceptable that wall cavity insulation enclosed by an air barrier material behind tubs, showers, and fireplace units installed on exterior walls may not be observable by the code official.

107.1.7 Fire protection inspection. Fire protection inspections shall be made in all buildings where any mate-

rial is used for fire protection purposes. The permit holder or his agent shall notify the inspection department after all fire protection materials are in place. Fire protection materials shall not be concealed until inspected and approved by the code enforcement official.

Commentary: Fire protection inspection is typically performed in commercial building structures and is required in addition to any special inspection as listed in Chapter 17 of the North Carolina Building Code.

107.1.8 Final inspection. Final inspections shall be made for each trade after completion of the work authorized under the technical codes.

Commentary: Each trade shall complete a final inspection giving approval to permitted work. Work required by the technical codes shall be complete before being requested. Temporary power and temporary certificate of occupancy (TCO) requests are allowed prior to final inspection.

107.2 Inspection requests. It shall be the duty of the permit holder or his or her agent to notify the code enforcement official when work is ready for inspection and to provide access to and means for inspection of the work for any inspections that are required by this code.

107.3 Approval required. Work shall not be done beyond the point indicated in each successive inspection without first obtaining the approval of the code enforcement official. The code enforcement official, upon notification, shall make the requested inspections and shall either indicate the portion of the construction that is satisfactory as completed, or shall notify the permit holder or an agent of the permit holder that the work fails to comply with the technical codes. The code enforcement official shall identify code violations and when requested shall identify the specific sections of the technical codes. Any work that does not comply shall be corrected and shall not be covered or concealed until authorized by the code enforcement official.

107.4 Independent inspections authorized by the code enforcement official. The code enforcement official may authorize a North Carolina registered design professional to inspect the following structural elements, components and systems:

1. The excavation of soil and/or forming of footings with the associated placement of reinforcing steel prior to pouring concrete; and
2. The forming of floors, columns, beams and other structural members, including the placement of reinforcing steel prior to pouring concrete.

To utilize this procedure, the permit holder must continue to schedule all inspections normally required for this work by the inspection department. The registered design professional shall provide weekly reports bearing his seal to the inspection department indicating that the placement of the related construction elements, components and systems either complies or does not comply with the approved permit documents. Any

change from the permit documents shall be approved by the code enforcement official prior to its implementation. The permit holder shall immediately inform the code enforcement official if he or she terminates his or her relationship with the registered design professional.

107.5 Special inspections. Special inspections required by the building code or the building inspector shall be performed by a North Carolina registered design professional or an inspector under his responsible charge.