

GWINNETT COUNTY BUILDING PLAN REVIEW

Department of Planning & Development

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RETAINING WALL CODE COMPLIANCE CHECKLIST

PROJECT CRITERIA: Plan review is based on the following information:

DATE OF REVIEW: _____ CDP / MDP / SDP #: _____

PROJECT NAME: _____

PROJECT ADDRESS: _____

STRUCTURAL ENGINEER: _____ GEORGIA REG. #: _____

RETAINING WALL CODE COMPLIANCE ITEMS:

2006 INTERNATIONAL BUILDING CODE with 2007 Georgia State Amendments

SCOPE: Each retaining wall (*which either exceeds 4 feet in height or which has backfill slope greater than 1 foot rise in 3 feet horizontal*) and each detention pond wall (*dam*) requires a separate building permit prior to construction with submission of complete structural construction details and specifications subject to the requirements of this report.

Note: *All of the following building code compliance items that are checked [] must be clearly addressed before issuance of a building permit. Building Plan Review personnel shall initial in the space provided next to each item to acknowledge resolution of the item in question.*

[] _____ RW01. Submit copy of county-approved site grading plan which clearly indicates the applicable location for each retaining wall and for each detention pond wall (*dam*) and which specifies the elevation at top and bottom of each wall. (*Alternatively, for retaining walls that are located on single-family residential lots, provide a plan which clearly indicates the location of each dwelling, property line, and proposed wall including elevation at top and bottom of wall.*)

[] _____ RW02. Provide complete structural construction details for each retaining wall and for each detention pond wall (*dam*) shown on county-approved site grading plans which clearly specify required materials, wall and footing dimensions, reinforcing (type, size and spacing), concrete design strength, drainage method for relief of hydrostatic pressure, type of backfill material, and slope of backfill finished grade. (*For modular type retaining walls, details shall also clearly show the required types, spacing and embedment length of all geogrid reinforcement.*)

- [] _____ RW03. Structural construction details for each retaining wall exceeding six (6) feet in height and for each detention pond wall (*dam*) exceeding five (5) feet in height shall be sealed and signed by a professional structural engineer registered in the state of Georgia in accordance with **Gwinnett County Construction Code and Development Regulations.**

- [] _____ RW04. Specify on structural drawings for each retaining wall which exceeds 6 feet in height and for each detention pond wall (*dam*) the applicable soil parameters utilized in the wall design including but not limited to allowable soil bearing pressure, equivalent lateral fluid pressure (active and passive), surcharge load, internal angle of friction, coefficient of friction, and soil density.

- [] _____ RW05. Specify on structural drawings the 28-day design compressive strength (*f'c*) of concrete for compliance with **IBC Table 1904.2.2. (IBC sections 1805.4.2, 1901.4, 1904.2.2, and 1905.1)**

- [] _____ RW06. Indicate on structural drawings the required material specifications for all steel reinforcement to be placed in concrete construction including ASTM designation, and material grade or yield strength (KSI) for compliance with **ACI 318-05 section 3.5. (IBC section 1901.4)**

- [] _____ RW07. Specify the minimum required concrete cover for reinforcement for all concrete structural elements including but not limited to foundations, slabs, and walls. **(IBC sections 1901.4 and 1907.7)**

- [] _____ RW08. Specify the minimum required lap splice lengths (*units of feet/inches*) for steel reinforcement in compression and tension for all concrete structural elements including but not limited to foundations, slabs, and walls. **(IBC section 1901.4; ACI 318-05 sections 12.14 thru 12.19)**

- [] _____ RW09. Specified thickness of structural concrete element (*including but not limited to footing, slab, wall*) does not appear to provide the minimum required embedment depth for the proposed reinforcement beyond either construction joint or free edge of element to ensure full tensile development in accordance with **ACI 318-05 sections 12.2, 12.4, and 12.5** for adequate transfer of design forces.

- [] _____ RW10. Proposed wall reinforcement (*horizontal and vertical*) does not appear to comply with the minimum requirements of **ACI 318-05 section 14.3.3. (IBC section 1901.2; ACI 318-05 section 14.1.2)**

- [] _____ RW11. Submit calculations sealed and signed by the structural engineer-of-record which demonstrate the structural adequacy of each proposed wall to resist the applicable design loads within the specified allowable soil bearing pressure and to maintain a minimum factor of safety of 1.5 against overturning and sliding. **(Gwinnett County Construction Code section 103.2.2; IBC sections 1610.1 and 1806.1)**

- [] _____ RW12. State the following verbatim on structural construction details for each retaining wall which exceeds 10 feet in height (from top of footing) and for each detention pond wall (dam) submitted for building permit for compliance with **Gwinnett County Development Regulations Articles 9.8.2.d(2), 9.8.2.d(4)** and **Gwinnett County Construction Code sections 103.2.2, 103.8.6.8:**

“Prior to construction, soil design parameters stated on the county-approved structural construction wall details including but not limited to allowable soil bearing pressure, equivalent lateral fluid pressure (active and passive), internal angle of friction, coefficient of friction, and soil density shall be field-verified by a Gwinnett County approved *Third Party Geotechnical Testing Firm*. A corresponding written report sealed and signed by a professional engineer registered in the state of Georgia and employed by the *Third Party Geotechnical Testing Firm* shall be submitted to *Gwinnett County Chief Commercial Building Inspector* prior to construction beyond footing installation. In the event of conflict between field-verified soil parameters and those stated on the county-approved details, construction shall not proceed until appropriate design modifications submitted by the wall design engineer-of-record have been reviewed and approved by *Gwinnett County Building Plan Review*.”

- [] _____ RW13. State the following verbatim on structural construction details for each retaining wall which exceeds 10 feet in height (from top of footing) and for each detention pond wall (dam) submitted for building permit for compliance with **Gwinnett County Development Regulations Articles 9.8.2.d(2), 9.8.2.d(4)** and **Gwinnett County Construction Code sections 103.2.2, 103.8.6.8:**

“Prior to issuance of a Certificate of Completion for each wall by Gwinnett County, written notification sealed and signed by the wall design engineer-of-record shall be submitted to the *Gwinnett County Chief Commercial Building Inspector* which acknowledges receipt of a soils investigation report by a Gwinnett County approved *Third Party Geotechnical Testing Firm* and which confirms that all soil parameters applicable to the design of the wall are consistent with those reported as field-verified.”

- [] _____ RW14. Note directly on plans the name of the Gwinnett County approved *Third Party Geotechnical Testing Firm* responsible for performing the subsurface soils investigation and for verifying the soil design parameters specified on the structural construction details for each retaining wall which exceeds 10 feet in height (from top of footing) and for each detention pond wall (dam). **(Gwinnett County Development Regulations Articles 9.8.2.d(2), 9.8.2.d(4) and Gwinnett County Construction Code section 103.8.6.8)**

The Gwinnett County approved *Third Party Geotechnical Testing Firm* and the wall design engineer-of-record per item RW03 shall be independent of one another such that there is no business or employment relationship between parties.

- [] _____ RW15. Each retaining wall up to 10 feet in height (*from top of footing*) which has been designed for an allowable soil bearing pressure greater than 2000 PSF shall be subject to the requirements of items RW12, RW13, and RW14 of this document based on the common soil classifications in this region, material class #4 of **IBC table 1804.2. (IBC sections 1802.2.1, 1802.4, 1802.5, and 1802.6)**

ADDITIONAL CODE COMPLIANCE ITEMS

- [] _____ RW16. _____

[] _____ RW17. _____

[] _____ RW18. _____

[] _____ RW19. _____

[] _____ RW20. _____

[] _____ RW21. _____

[] _____ RW22. _____

