

GWINNETT COUNTY BUILDING PLAN REVIEW

Department of Planning & Development
One Justice Square
446 West Crogan Street
Lawrenceville, Georgia 30046
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COMMUNICATION TOWER **CODE COMPLIANCE GUIDELINES**

Plan review and permit requirements for communication towers and related accessory buildings, equipment, and structures.

Refer to the Building Code Compliance Checklist for additional requirements and permitting procedure.

Plan review is based on the following information:

DATE OF REVIEW: _____

PERMIT #: TSP: _____ CDP: _____ BLD: _____

PROJECT NAME: _____

PROJECT ADDRESS: _____

DIST. / LAND LOT / PARCEL #: _____

Use Classification: TOWER PREMANUFACTURED BLDG. ANTENNA CO-LOCATION

Type of Construction: _____

Building Floor Area (sq. ft.): _____ Building Height (ft.): _____

Height (ft.): Tower: _____ Antenna: _____

Lightning Rod: _____ Total Height (ft.): _____

Required Minimum Live Loads (PSF): _____ Bldg. Floor: Bldg. Roof: 20

List of applicable codes:

The Gwinnett County Construction Code

International Building Code -2006 Edition with 2007-2009-2010 Georgia State Amendments
International Mechanical Code -2006 Edition with 2007-2008-2010-2011-2012 Georgia State Amendments
International Fuel Gas Code -2006 Edition with 2007-2008-2009-2010 Georgia State Amendments
International Plumbing Code -2006 Edition with 2007-2008-2009-2010-2011-2012 Georgia State Amendments
NFPA National Electrical Code - 2011 Edition
International Energy Conservation Code -2009 Edition with 2011-2012 Georgia State Amendments

Structural Standards for Steel Antenna Towers and Antenna Supporting Structure – (TIA/EIA-222-F)

Requirements and permitting procedure:

- A. Submit two (2) complete sets of construction documents for review. Verify with Fire Plan Review the requirements for any enclosed structure.
- B. Prior to final authorization for permit, the applicant shall obtain the required authorization from each required review section.
- C. For final review and permit approval, submit two (2) complete sets of construction documents. Documents for projects which require review by Fire Plan Review shall bear the Fire Plan Review stamp of authorization.
- D. In accordance with the Gwinnett County Construction Code, construction documents for this project shall be permitted within six (6) months of the "Date of Review" or the project shall be deemed to have been abandoned. Abandoned projects shall require resubmission of complete construction documents to Department of Planning and Development for complete review.
- E. Mechanical, electrical, and plumbing subcontractors shall submit AFFIDAVITS for each building permit to the Building Permits Section at least two (2) business days before requesting inspections. (Obtain AFFIDAVIT forms from Building Permits Section.)

BUILDING CODE COMPLIANCE ITEMS

PROJECT CRITERIA AND DRAWING FORMAT

1. Please provide ALL Project Criteria (*including the applicable codes*) onto the front sheet of construction documents.
2. Indicate the correct street address for each building and structure of the project in the title block of each drawing including the cover sheet.
3. Each drawing (*including cover sheet with index*) shall bear a legible original or direct image copy of the seal of a professional *engineer* registered in the state of Georgia with handwritten signature thereon. [NOTE: Adhesive-back or embossed seals and CAD or stamp generated signatures are NOT acceptable.] [Official Code of Georgia section 43-15-

22; Georgia State Board of Registration for Professional Engineers and Land Surveyors Rule 180-12-.02]

4. Provide either on or attached to cover sheet of construction documents a complete index of all submitted drawings which address the proposed scope of work including architectural, structural, mechanical, electrical, and plumbing.

SITE PLAN COORDINATION

5. Prior to issuance of a building permit for this project, a Commercial Development Permit (CDP) shall be obtained from the Development Review Section after review and approval of the corresponding site plans. Contact Development Review Section at (678) 518-6010 for additional information regarding requirements for a development permit.
6. Project name on the building construction documents shall correspond with the project name indicated on the approved site plan on file with the Development Review Section.
7. Overall perimeter building dimensions on the building construction documents shall correspond with the building dimensions indicated on the approved site plan on file with the Development Review Section.
8. Square footage of building area under roof as proposed on the building construction documents shall correspond with the square footage indicated on the approved site plan on file with the Development Review Section

STRUCTURAL DESIGN

9. Indicate on structural drawings the allowable soil bearing pressure in terms of pounds per square foot (PSF) utilized in the design of the tower foundation. The presumed design pressure shall not exceed the applicable value specified in IBC table 1804.2 unless substantiated by a foundation and soils investigation. (IBC sections 1802.6 and 1804.2; TIA/EIA-222-F section 7.4)
10. Submit foundation and soils investigation report to substantiate allowable soil bearing pressure greater than 2000 PSF based on the common soil classifications in this region, material class #4 of IBC table 1804.2. The investigation report, signed and sealed by a professional engineer registered in the state of Georgia, shall provide the information required by IBC section 1802.6. (IBC section 1802.2.1; TIA/EIA-222-F section 7.1.3 and ANNEX I)
11. Indicate on tower structural drawings the basic wind speed in miles per hour (mph) which shall be not less than 75 MPH per TIA/EIA-222-F sections 2.3 and 16. (IBC section 1603.1)
12. Indicate on tower foundation drawings the applicable tower design base reactions due to gravity and wind load conditions. (TIA/EIA-222-F section 7.4)
13. Indicate on tower structural drawings the applicable design base reactions due to gravity and wind load conditions. (IBC sections 1603.1 and 3108.4)
14. Submit engineering documentation sealed and signed by a professional engineer registered in the state of Georgia which substantiates via engineering analysis the structural adequacy of the existing tower to receive the additional antennas at the proposed indicated elevation(s) above grade based on a basic wind speed not less than 75 MPH. [Documentation shall include a copy of the original design drawings for the tower structure which have been sealed and signed by the engineer-of-record. The sizes and properties of the structural components considered in

engineering analysis calculations shall be reflected on the original design drawings.] (IBC section 3108.4; TIA/EIA-222-F ANNEX F)

15. Submit complete details sealed and signed by a professional engineer registered in the state of Georgia which clearly indicate required structural framing for support of proposed antennas from the existing tower (including direct attachment of antennas to support framing) to adequately resist a minimum design wind speed of 75 MPH. (IBC section 3108.4; TIA/EIA-222-F sections 2.3 and 16)
16. Provide complete details which clearly indicate required anchorage of equipment building to foundation to adequately resist all applicable design loads including wind and seismic. (IBC sections 1801.2.1; ASCE/SEI 7-05 sections 11.7.3 and 12.1.3)
17. Specify required sizes for all concrete structural elements including but not limited to spread footings, continuous strip footings, thickened slab footings, walls, grade beams, piers, pilasters, pedestals, piles and pile caps, beams, and columns. (IBC sections 1603.1, 1805, 1807, 1808, 1809, 1810, 1811, 1812, 1901.2, 1901.4, 1908, 1909, 1910; ACI 318-05; TIA/EIA-222-F section 7.4)
18. Indicate required type, size, spacing, and location of all reinforcement in concrete structural elements per item CC01. (IBC sections 1805.4, 1805.5, 1808.2.23, 1809.2, 1810.1.2, 1810.3.5, 1810.5.4, 1810.6.4, 1811.5, 1812.4, 1901.2, 1901.4, 1907, 1908, 1913.4, 1915.4; ACI 318-05; TIA/EIA-222-F section 7.4)
19. Specify on structural drawings the 28-day design compressive strength (f'_c) of concrete for all structural elements including but not limited to foundations, slabs, walls, beams, and columns for compliance with IBC table 1904.2.2. (IBC sections 1805.4.2, 1901.4, 1904.2.2, and 1905.1; TIA/EIA-222-F section 7.4)
20. 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; TIA/EIA-222-F section 7.4)
21. Specify the required thickness of concrete and the corresponding reinforcement for all slabs on grade. (IBC sections 1901.4, 1907, and 1910)
22. Specify the minimum required concrete cover for reinforcement for all concrete structural elements including but not limited to foundations, slabs, walls, beams, and columns. (IBC sections 1901.4 and 1907.7)
23. Specify the minimum required lap splice length for each type and size of steel reinforcement in compression and tension for all concrete structural elements including but not limited to foundations, slabs, walls, beams, and columns. (IBC section 1901.4; ACI 318-05 sections 12.14 thru 12.19)
24. Specify on structural drawings the type, size, and spacing of anchors required for connection of steel framing components to concrete structural elements including but not limited to headed bolts, headed studs, hooked (J- and L-) bolts, and expansion-type bolts. (IBC sections 1901.4, 1911, and 1912; TIA/EIA-222-F section 7.4)
25. Specify on structural drawings the minimum required embedment depth into concrete for all anchors per item CC08. (IBC sections 1901.4, 1911, and 1912; TIA/EIA-222-F section 7.4)

26. Indicate the required types, sizes, and locations for structural framing components and connectors including but not limited to tapered tubular steel shafts, braces, girts, purlins, struts, plates, bolts, and screws. (IBC sections 1603.1, 2205.1; GCCC section 103.2)
27. Indicate on structural drawings the required material specifications for all steel framing components and connectors including ASTM designation, yield strength (KSI), and material grade (if applicable). (IBC sections 2203.1, 2204.2, 2205.1; TIA/EIA-222-F section 1.1.1)
28. Specify on structural drawings that bolted connections shall be assembled and inspected in accordance with RCSC-2004 (Specifications for Structural Joints using ASTM A325 or ASTM A490 Bolts). (IBC sections 1704.3.3, 2204.2; TIA/EIA-222-F section 1.1.3)

ELECTRICAL REVIEW

29. In accordance with Gwinnett County Construction Code, submit complete electrical drawings which include riser diagrams, meter groupings with disconnects, panel-board sizes and locations, type of wiring and raceway systems, locations and types of receptacles and fixtures, panel-board schedules and load calculations. (GCCC sections 103.2.1 and 103.2.2)
30. Provide details which clearly indicate proposed grounding of tower structure and electrical service. Tower structure shall have a primary ground consisting of no less than two 5/8 in. diameter galvanized steel ground rods driven a minimum of 8 feet into the ground (180 degrees apart adjacent to the base of the tower structure) and bonded with a minimum No. 6 tinned bare copper lead connected to the nearest leg or to the steel base of the tower structure. Each self-supporting tower (without guys) with a base width greater than five (5) feet shall have a minimum of one primary ground for each support leg. (TIA/EIA-222-F section 12)
31. Indicate on the drawings the available fault current at the service equipment. (NEC articles 110.9 and 110.10)
32. Indicate on the drawings the short-circuit rating of the service equipment. (NEC articles 110.9 and 110.10)

ADDITIONAL ITEMS

33. Submit on business (tenant/developer as applicable) letterhead stationery the value of construction for each structure including all architectural and engineering design fees. The building permit fee shall be based on a cost of five (5) dollars per thousand (1000) dollars of the value of construction. In addition to the building permit fee, a fee of fifty (50) dollars will be assessed for each Certificate of Completion (C. C.) (for each tower and for each unoccupied equipment building) and for each Certificate of Occupancy (C. O.) (for each occupied building).
34. Specify on construction documents the materials, finishes, and colors for towers, antennas, buildings and related structures to ensure compliance with Gwinnett County Telecommunications Tower and Antenna Ordinance. Towers and antennas shall either have a galvanized steel finish or be painted a neutral color to minimize visual obtrusiveness. Accessory buildings and structures shall utilize materials, textures, and colors which blend the tower facilities to the natural setting and building environment.
35. A separate building permit is required for each tower and for each equipment building.

36. Provide details for an effective anti-climbing device on each tower in addition to enclosing the tower with fencing not less than six (6) feet in height. (Gwinnett County Telecommunications Tower and Antenna Ordinance section 406)
37. Attach directly to cover sheet of construction documents submitted for permit a signed copy of approved TALL STRUCTURE PERMIT (TSP) including all conditions of approval. (The height of proposed tower and the elevation for each set of proposed antennas shall not exceed that specified by the TSP.)
38. Construction documents for all pre-manufactured buildings shall be reviewed and approved by the Georgia Department of Community Affairs (DCA) (or DCA-approved Third Party Agency) to indicate compliance with the Industrialized Building Act (Georgia Law 1982 pp. 1637-1643). At the time of final permit authorization, submit two (2) complete sets of revised construction documents which bear the approval stamp of DCA, and one (1) CD (for Fire Marshal's Office). Verify with Fire Marshal's Office the substitution of one (1) set of construction documents for the CD. [NOTE: In absence of DCA approval, Gwinnett County is not authorized to issue a permit for any pre-manufactured building which is assembled at a location other than the project construction job site.]

****For additional information refer to the Building Code Compliance Checklist****