

ORDINANCE ADOPTING CHAPTER 26, ARTICLE VIII OF THE BUNCOMBE COUNTY CODE OF ORDINANCES,
THE RETAINING WALL ORDINANCE OF BUNCOMBE COUNTY

WHEREAS, pursuant to N.C. Gen. Stat. § 153A-121, the County may adopt an ordinance to regulate conditions detrimental to the health, safety, or welfare of its citizens; and

WHEREAS, retaining walls are commonly used to stabilize or increase the land area for development within the steeper areas of the county, and the failure of such retaining walls and retaining wall systems poses a threat to the health, safety, and welfare of both citizens above and below the retaining wall systems; and

WHEREAS, this Board finds that the proposed ordinance is in the public interest as it sets forth standards for the construction of retaining walls and retaining wall systems which will require conscientious design and construction, provide for safety barriers, and enable the long term monitoring of large walls.

NOW, THEREFORE, BE IT ORDAINED BY the Board of Commissioners for the County of Buncombe as follows:

Section 1. The Buncombe County Code of Ordinances is hereby amended as follows:

Chapter 26, Add new Article: Article VIII, Retaining Walls

Division 1. Generally

Sec. 26-500. Title

This article shall be known and may be cited as “The Retaining Wall Ordinance of Buncombe County, North Carolina” and may be referred to as the “retaining wall ordinance.”

Sec. 26-501. Authority

In pursuance of the authority conferred by state law, the Buncombe County Board of Commissioners hereby ordains and enacts into law this article.

Sec. 26-502. Jurisdiction

The provisions of this article shall apply to all unincorporated portions of the County which are not under the jurisdiction of any municipal zoning ordinance.

Sec. 26-503. Definitions

Caliper means the measurement of the diameter of the trunk of the tree six inches above the ground.

Retaining wall means a wall or man-made soil retention system designed to resist lateral soil pressure and hold back, or “retain,” higher level ground behind it. Retaining walls providing a cumulative vertical relief greater than 10 feet are subject to the requirements set forth in this

article. For the purposes of this article, methods of soil retention regulated shall include, but not be limited to: cast-in-place walls, soil nailing, modular systems, h-beam systems, boulder walls, and gabions.

Retaining wall system means a cumulative system of walls or man-made soil retention systems designed to resist lateral soil pressure and hold back, or “retain,” higher level ground behind them. Retaining wall systems providing a cumulative vertical relief greater than 10 feet are subject to the requirements set forth in this article. For the purposes of this article, methods of soil retention regulated shall include, but not be limited to: cast-in-place walls, soil nailing, modular systems, h-beam systems, boulder walls, and gabions.

Sec. 26-504. Penalties for Violations

The provisions of this Article shall be enforced pursuant to Sec. 78-583 of the Buncombe County Code of Ordinances or as amended. Where “zoning administrator” is stated in Sec. 78-583, “administrator” shall be substituted for the purposes of this article.

Sec. 26-505. Remedies for Violations of Article

If a retaining wall is erected, constructed, reconstructed, altered, repaired, converted, moved or maintained in violation of this article, the ordinance administrator, in addition to other remedies, may institute appropriate action or proceedings to prevent the unlawful erection, construction, reconstruction, alteration, repair, conversion, moving, maintenance or use; to restrain, correct or abate the violation; to prevent use of the site; or to prevent any illegal act, conduct of business or use in or about the premises.

Sec. 26-506. Abrogation or Greater Restrictions

When provisions of this article impose higher standards than are required in any other statute or local ordinance or regulations, provisions of this article shall govern. When the provisions of any other statute or local ordinance or regulation impose higher standards than are required by the provisions made by this article, the provisions of that statute or local ordinance or regulation shall govern.

Sec. 26-507 through 26-519 reserved

Division 2. Administration and Enforcement

Sec. 26-520. Enforcement generally; duties of enforcing officers and agencies

All questions arising in connection with the enforcement of this article shall be presented first to the ordinance administrator who shall be responsible for the day-to-day administration of this article. The board of adjustment shall have the authority to rule on matters of interpretation of this article, consider appeals from decisions of the ordinance administrator, and grant variances from the standards set forth in this ordinance.

Sec. 26-521. Administrator Duties

This Article shall be administrated by the Planning Director or his designee. It shall be the duty of the duly appointed Administrator to administer and enforce the provisions of this article. If the Administrator finds that any of the provisions of this article are being violated, he shall notify in writing the person responsible for such violation, indicating the nature of the violation

and ordering the action necessary to correct it. He shall order discontinuance of the illegal construction of retaining walls; removal of illegal retaining walls, or of additions, alterations or structural changes thereto; discontinuance of any illegal work being done; or shall take any action authorized by this article to ensure compliance with or to prevent violation of its provisions.

Sec. 26-522. Certificate of Compliance

- (a) Required. No retaining wall shall be erected, moved, added to or structurally altered, nor shall any building permit be issued until a certificate of compliance has been issued by the Administrator. All retaining walls shall meet the requirements noted in this article. No certification of compliance shall be issued except in conformity with the provisions of this article.
- (b) Applications; contents. Applications for certificates of compliance shall be accompanied by plans showing the actual dimensions of the lot to be built upon, and the location on the lot of the retaining wall(s) proposed to be erected or altered, the location of public or private streets, any planting required by this article, and such other information as may be necessary to provide for the enforcement of the provisions of this article.
- (c) Fees. The county board of commissioners shall establish certificate of compliance review fees as well as policies, and may amend and update the fees and policies when needed.

Sec. 26-523. Building permit required

Upon receiving a certificate of compliance, a building permit shall be obtained from the Buncombe County Permits and Inspections Department for the construction or alteration of any retaining wall, pursuant to the section 10-66 et seq. herein.

Sec. 26-524. Certificate of completion required

In conjunction with the final building inspection, the ordinance administrator shall certify that all requirements of this article have been met. The applicant shall call the ordinance administrator and apply for such certification coincident with the final building inspection or within ten days following completion. A certificate of completion, either for the whole retaining wall system or for a part of the system, shall be issued within 30 days of the application for such certification if the erection or structural alterations of such retaining wall system, or part, shall have been completed in conformity with the provisions of this article. If the certificate of occupancy is denied, the ordinance administrator shall state in writing the reasons for refusal, and the applicant shall be notified of the refusal. A record of all certificates shall be kept on file in the office of the administrator.

Sec. 26-525. Construction Progress

If no substantial construction progress has been made within one year of the date of the issuance of the certificate of compliance, the certificate of compliance becomes invalid. If the building permit issued by Buncombe County Permits and Inspections is rendered invalid for any reason, then the certificate of compliance will also be rendered invalid.

Sec. 26-526. Prevention of Violation by Legal Procedure

In case any retaining wall is erected, constructed, reconstructed, altered, repaired, converted or maintained in violation of this article, the ordinance administrator or any other appropriate county authority, or any person who would be damaged by such violation, in addition to other remedies, may institute an action for injunction, or mandamus, or other appropriate action or proceedings to prevent such violation.

Sec. 26-527. Appeals from decision of the ordinance administrator

(a) Appeals. All questions arising in connection with the enforcement of this article shall be presented first to the ordinance administrator, and such questions shall be presented to the board of adjustment only on appeal from a ruling of the administrator. Any order, requirement, decision, or determination made by the administrator may be appealed to the board of adjustment pursuant to the procedure found in Section 78-623. Where “zoning administrator” is stated in Section 78-623, “administrator” shall be substituted for the purposes of this article.

Sec. 26-528 through 26-539 reserved

Division 3. Standards

Sec. 26-540. Retaining Wall Standards.

(a) Terracing. The terracing of retaining walls is required when the cumulative vertical height of the wall system exceeds 20 feet. Walls shall be terraced in order to provide for increased stability and maintenance of the wall. The lowest level of a terraced retaining wall system may be no more than 20 feet tall at its highest point, and each successive level of terracing may not exceed 15 feet in height. Terraces may be used for vegetative plantings as required by this ordinance. The required width of the terrace shall account for the type and size equipment needed for proper maintenance of the wall but in no case shall be less than 10 feet. The above terracing requirements shall not apply where:

- i. The wall or wall system serves as the structural support wall of a connected building or structure.
- ii. Soil-nailing techniques are utilized.

(b) Landscaping. Retaining walls shall be located in such a way as to provide for the required minimum planting requirements as set forth below. Foreground landscaping and attached vegetative screening shall be required for retaining walls and retaining wall systems if:

- i. The wall or wall system exceeds 20 feet in height and the base of the wall system is closer than 100 feet to the edge of the road surface of a public or private street.
- ii. The cumulative vertical height is greater than 30 feet regardless of proximity to a public or private street.

Bushes must be placed on terraces as required below regardless of the cumulative height of the wall system or its proximity to a street.

Foreground landscaping or attached vegetative screening may be considered part of any required buffer, as applicable. The application of the required planting shall be based on the cumulative height of the terraced walls. Deciduous and evergreen tree planting requirements shall apply only to the ground level at the base of the retaining wall system. Trees shall not be planted in terraces. The required width of the planting strip for trees shall account for the species and respective drip line distance to ensure tree root systems do not impact the retaining wall foundation.

Planting of bushes and vegetative screening shall occur at each base level of any terraced system. Attached vegetative screening supports shall consist of vine supports structurally integrated into the wall to support vine planting.

Planting as required by this section must meet the spacing and species requirements as set forth below. Any of the required plantings which do not survive within the first year must be replaced to the specifications set forth in this ordinance.

iii. Exemptions:

- a. In locations where the wall or wall system serves as the structural support wall of a connected building or structure the planting requirements set forth herein shall not apply.
- b. Where the face of the wall shall be blocked from ground-level view by a building or structure when standing parallel to the plane of the wall on the property line aligned with the center of the structure, the foreground landscaping and vegetative screening requirements set forth herein shall not apply to that portion of the wall or wall system.



Table: Planting Requirements

<u>Retaining Wall System Height</u>	<u>Minimum Required Foreground Landscaping: Trees</u>	<u>Minimum Required Foreground Landscaping: Bushes</u>	<u>Minimum Required Terrace Landscaping: Bushes on Terraces</u>	<u>Minimum Required Attached Vegetative Screening</u>
<u>< 20 feet</u>	<u>none</u>	<u>none</u>	<u>none</u>	<u>none</u>
<u>> 20 feet to 30 feet</u>	<u>One small deciduous tree species and one evergreen species for every 30 linear feet, spaced 15' apart on center, alternating between deciduous and evergreen species</u>	<u>1 row of 3 gallon-sized bushes planted 5 feet on center with adequate distance from terrace edges to provide for root growth</u>	<u>1 row of 3 gallon-sized bushes planted 5 feet on center with adequate distance from terrace edges to provide for root growth</u>	<u>Attached vegetative screening supports covering 50% of the wall face and planting consisting of 2 gallon-sized vines planted 3 feet on center</u>
<u>>30 feet</u>	<u>One large deciduous tree species and one evergreen species for every 40 linear feet, spaced 20' apart on center, alternating between deciduous and evergreen species</u>	<u>2 rows of 3 gallon-sized bushes planted 5 feet on center with adequate distance from terrace edges to provide for root growth</u>	<u>2 rows of 3 gallon-sized bushes planted 5 feet on center with adequate distance from terrace edges to provide for root growth</u>	<u>Attached vegetative screening supports covering 75% of the wall face and planting consisting of 2 gallon-sized vines planted 3 feet on center</u>

Table: Approved Species List for Planting Requirements

<u>EAST/NORTH FACING</u>	<u>SOUTH/WEST FACING</u>
<u><i>Large Deciduous Trees (minimum 2" caliper)</i></u>	
<u>Tulip Poplar</u>	<u>Tulip Poplar</u>
<u>Sycamore</u>	<u>Sycamore</u>
<u>Red Maple</u>	<u>Red Maple</u>
<u>River Birch</u>	<u>River Birch</u>
<u>Winter King Hawthorne</u>	<u>Winter King Hawthorne</u>
<u>Sweetgum</u>	<u>Sweetgum</u>
<u>Southern Magnolia</u>	<u>Southern Magnolia</u>
<u>Chinese Elm</u>	<u>Chinese Elm</u>
<u>Japanese Zelcova</u>	<u>Japanese Zelcova</u>
<u>Blackgum</u>	
<u>Chestnut Oak</u>	
<u>White Oak</u>	
<u>Sugar Maple</u>	
<u><i>Small Deciduous Trees (minimum 1.5" caliper)</i></u>	
<u>Redbud</u>	<u>Redbud</u>
<u>Sourwood</u>	<u>Sourwood</u>

<u>Cherry</u>	<u>Cherry</u>
<u>Star Magnolia</u>	<u>Star Magnolia</u>
<u>Serviceberry</u>	<u>Kousa Dogwood</u>
<u>Dogwood</u>	
<u>Evergreen Trees (minimum 6' height)</u>	
<u>Nellie Stevens Holly</u>	<u>Nellie Stevens Holly</u>
<u>Green Giant Arborvitae</u>	<u>Green Giant Arborvitae</u>
<u>Nigra Arborvitae</u>	<u>Nigra Arborvitae</u>
<u>Virginia Pine</u>	<u>Virginia Pine</u>
<u>Hetzi Juniper</u>	<u>Hetzi Juniper</u>
<u>Eastern Red Cedar</u>	<u>Eastern Red Cedar</u>
<u>Attached Vegetative Screening (2 gallon-sized buckets)</u>	
<u>Virginia Creeper</u>	<u>Carolina Jessamine</u>
<u>Dutchman's Pipe</u>	<u>Trumpet Vine</u>
<u>Crossvine</u>	-
<u>Boston Ivy</u>	-
<u>Bushes (3 gallon-sized buckets)</u>	
<u>Otto Luykens Laurel</u>	<u>Otto Luykens Laurel</u>
<u>Schip Laurel</u>	<u>Schip Laurel</u>
<u>Juniper</u>	<u>Juniper</u>
<u>Littleleaf Japanese Holly</u>	<u>Littleleaf Japanese Holly</u>
<u>Littleleaf Boxwood</u>	<u>Littleleaf Boxwood</u>
<u>Hydrangea</u>	<u>Hydrangea</u>
<u>Virginia Sweetspire</u>	<u>Virginia Sweetshrub</u>
<u>Summersweet</u>	<u>Summersweet</u>
<u>Dwarf Winterberry</u>	<u>Dwarf Winterberry</u>
<u>Weigela</u>	<u>Weigela</u>
<u>Mountain Laurel</u>	<u>Yucca</u>
<u>Fotergilla</u>	<u>Smoot Sumac</u>
<u>Winter Jasmine</u>	<u>Winter Jasmine</u>

iv. Variances. Application for a variance from the landscaping requirements set forth in Section 26-540(b) may be made pursuant to the procedure found in Section 78-623, shall be subject to the standards set forth in Section 78-621(4), and will be heard by the board of adjustment. The board of adjustment will consider evidence provided as to meet the standards set forth in 78-621(4), as applicable to the request.

(c) Safety barrier required. The installation of fencing shall be required at the top level of the retaining wall or retaining wall system in order to deter unsafe activities near the edge

of the wall. Fencing at a minimum shall be four feet tall, and shall consist of a chainlink or a solid visual barrier fence. Installation of a guardrail shall also be required where vehicular traffic will be within 10 feet of the edge of the top level of the retaining wall.

(d) Engineer certification required. Retaining systems providing a cumulative vertical relief greater than 10 feet shall provide final certification to the Planning Department by the design engineer that the constructed wall has been built to design specifications as approved by the Buncombe County Permits and Inspections Department and indicate:

- i. The Foundation support system is adequate for the intended site conditions;*
- ii. Measurement of the quality of construction materials for conformance with building code specifications;*
- iii. Determination of the similarity of actual soil conditions to those anticipated in design; and*
- iv. Examination of backfill materials and any drainage systems for compliance with plans and specifications.*

If the Administrator has determined that the design engineer is unable to provide final certification, the Administrator may choose to accept certification from another engineer.

(e) Enabling the Long Term Monitoring of Retaining Wall Systems. Retaining walls which are large or lengthy can pose a public safety hazard or impact the environment upon failure. The purpose of this section is to enable or provide for the long term monitoring of large retaining walls to ensure public safety and protect natural resources.

Upon completion of a retaining wall system greater than forty (40) feet in cumulative height, the owner, at a minimum, shall have a survey performed by a North Carolina licensed surveyor of the location of the wall. Said survey(s) shall be performed within thirty (30) days of the completion of any section of the wall to the standards set forth in this section and shall be recorded at the Buncombe County Register of Deeds.

- i. The survey shall include both vertical and horizontal data sufficient to establish a baseline datum for future inspections.*
- ii. Wall slope and any existing cracks, undulations or anomalies shall be included in the survey.*
- iii. The surveyor shall set no less than two (2) permanent control markers on site, to be protected by a recorded easement. The permanent control markers shall be set in a location that is independent of any movement related to the retaining wall. The permanent control markers shall be set in a position such that the wall can be readily located and shall consist of concrete monuments with discs and markings*

easily related to the recorded plat. The permanent control markers shall contain coordinates and elevations tied to the North Carolina grid system and NAVD 88.

- iv. Permanent reference marks on each retaining wall terrace shall be established and tied to the permanent control markers described in section 3 above. The surveyor, in cooperation with the design engineer, shall determine the appropriate amount and location of reference marks to be placed in the wall for monitoring purposes. The survey of the permanent reference marks tied to the wall system shall be performed to obtain a positional accuracy (error probability of 95%) of 0.007 m horizontally and 0.010 m vertically relative to the permanent control markers established on site separate from the wall system.

The design engineer shall consider methods and techniques which monitor and abate unfavorable conditions behind the wall. These conditions include, but are not limited to, water pore pressure, foundation settlement, increased lateral soil pressure, failure of lateral wall support and corrosive conditions.

Section 2. If any section, subsection, sentence, clause, or phrase of this ordinance is, for any reason, held to be invalid, such decision shall not affect the validity of the remaining portions of this ordinance. The Board of Commissioners hereby declare that it would have passed this ordinance, and each section, subsection, sentence, clause, or phrase thereof irrespective of the fact that any one or more sections, subsections, sentences, clauses, or phrases be declared invalid.

Section 3. All ordinances or parts of ordinances in conflict herewith are hereby repealed to the extent of such conflict.

Section 4. This resolution is effective upon adoption.

Read, approved and adopted this 21st day of June, 2011.

ATTEST

BOARD OF COMMISSIONERS FOR THE
COUNTY OF BUNCOMBE

Kathy Hughes, Clerk

BY _____
David Gantt, Chairman

APPROVED AS TO FORM

Michael C. Frue, County Attorney