



Nassau County Engineering Services  
96161 Nassau Place  
Yulee, FL 32097

*Robert T. Companion, PE*  
*County Engineer*

### Technical Memorandum

October 25, 2019

To: Michael S. Mullin, County Manager  
Taco E. Pope, Assistant County Manager

RE: **Ordinance 99-17 – Roadway and Drainage Standards**  
**Lot Grading Regulation Revisions**

Engineering Services was tasked with reviewing the current Nassau County Roadway and Drainage Standards, Ordinance 99-17, and make recommendations for updates to the regulations in order to clarify existing discrepancies as well as provide more specific criteria for lot grading provisions.

The following chart details the issues with the effected sections of the current ordinance as well as the recommended amendments to Ordinance 99-17.

Current Issue	Section(s)	Desired Outcome	Proposed Updates / Language
Finished floor elevation (FFE) requirements are dictated by road elevation on larger parcels, may require property owners to bring in excessive fill	10.8.3 10.8.4	Provide some flexibility for approval of FFE changes on the engineering staff level when appropriate.	10.8.3. If no drainage plan exists, or if the plan predates this chapter, the floor level shall be at least eighteen (18) inches above the centerline roadway. <u>This floor level requirement may be reduced on lots greater than five (5) acres, if approved by engineering services.</u>  The maximum floor elevation shall not exceed six (6) inches more than specified in the engineer of record's county approved drainage plan <u>on lots less than one acre.</u>
There are currently no requirements for single family dwellings to consider stormwater runoff and the effects said runoff will have on neighboring parcels. Many issues have been noted on, Amelia Island specifically, related to excessive fill being brought in on new home sites. Runoff concerns, complaints, and litigation has occurred as a result of this issue.	10.8.9.	Lot grading will be planned by a design professional, and all runoff will be required to be treated on site if there is not master drainage plan already in place. If a stormwater system is already engineered (as in most subdivisions), these requirements will not apply.	Section 10.8.9 added

If you have any questions about the recommended ordinance revisions listed above, please let me know.

Sincerely,

A handwritten signature in black ink, appearing to be 'R. Companion', with a stylized flourish at the end.

Robert T. Companion, PE  
County Engineer

## **Section 10.8. - Finished floor elevations and lot grading plans.**

### **Section 10.8. - Finished floor elevations and lot grading plans.**

10.8.1. Finished floor elevations shall be constructed at a level one (1) foot or greater than the current 100-year flood level for all structures built within the special flood hazard areas. In all cases, this shall be the controlling minimum elevation.

10.8.2. In all other areas, finished floor elevation shall be constructed to the elevations specified in the engineer of record's county approved drainage plan.

10.8.3. If no drainage plan exists, or if the plan predates this chapter, the floor level shall be at least eighteen (18) inches above the centerline roadway. This floor level requirement may be reduced on lots greater than five (5) acres, if approved by engineering services.

10.8.4. The maximum floor elevation shall not exceed six (6) inches more than specified in the engineer of record's county approved drainage plan on lots less than one acre.

10.8.5 The utilization of stem wall construction may be approved via a lot specific grading plan submitted with a building permit application and approved by engineering services.

10.8.5. Prior to the issuance of a certificate of occupancy, the county's engineering services department shall inspect site grading and, if properly constructed, provide the building official written confirmation the site work has been completed as permitted. An inspection fee will be set by the board [of] county commissioners via resolution.

10.8.6. If fill is to be placed outside of the building foundation plus five (5) feet, or within ten (10) feet of a property line, a lot grading plan shall be required depicting the existing and proposed conditions prior to any filling activities. This requirement shall also include fill associated with raised septic systems.

10.8.7 A lot grading plan is required for any fill work on a lot changing the existing or natural stormwater drainage patterns causing off-site impacts. The lot grading plan is required regardless of whether the fill work is associated with a building permit. At a minimum, the lot grading plan shall be drawn to a scale of one (1) inch equals fifty (50) feet or larger and shall include the following information:

- a. Property boundary lines;
- b. Existing drainage patterns on the site including points of entry of off-site drainage contributing areas, points of exit of stormwater runoff and if necessary, existing elevations and/or elevation contours;
- c. Proposed limits of filling and grading of the site including fill depth, slopes, floor elevations, and if necessary, final elevations and/or elevation contours of the site;
- d. Location of swales and drains to convey stormwater runoff from the site and any off-site contributing drainage areas to an appropriate point of disposal without unreasonably impacting adjacent and downstream properties;
- e. Any other pertinent information as may be required by the public works department as appropriate for responsible evaluation of the grading plan.

In addition, the lot grading plan shall demonstrate that the fill will not block natural flow of stormwater runoff from adjacent properties and will not divert or direct additional stormwater

runoff onto adjacent properties. Any additional stormwater runoff shall be directed to the roadway drainage system or other approved drainage facility.

10.8.8. The public works department may require construction of retaining walls, roof gutters, underdrains, swales, or any other facility deemed necessary to provide adequate drainage.

#### 10.8.9. Stormwater, Drainage, Storage and Treatment Requirements for Single Family Dwellings

The terms and provisions of this section shall apply as specified herein to all developments and redevelopments, and government agencies located within the unincorporated areas of Amelia Island.

- 1) An applicant shall be required to provide onsite storage of stormwater for all development and redevelopment projects not part of a subdivision with a designed stormwater system and for any addition or modification that increases the impervious surface area on a developed lot by more than 20%.
  - a. Projects located outside of a subdivision, but in an area with an available engineered stormwater system shall ensure that stormwater is properly routed to the stormwater structures.
  - b. Any modification or replacement of driveway and sidewalk areas on a developed lot shall not require onsite storage improvements provided the modification or replacement does increase the impervious area of the existing driveway or sidewalk area.
- 2) Where possible, utilize low impact development (LID) techniques such as rainwater harvesting, roof downspout disconnection, rain gardens, green roofs, trenches and chambers, bioretention, vegetated filter strips, permeable pavement, enhanced grass swales, dry swales, and perforated pipe systems. These systems will need to be in a recorded maintenance agreement to follow the deed on the lot.
- 3) All lots and development sites shall be constructed and graded in such a manner that the stormwater drains to the adjacent street, an existing natural element used to convey stormwater, or county drainage structure after meeting onsite storage requirements.
- 4) Except as required to meet coastal construction codes as set forth within a valid permit from the Florida Department of Environmental Protection; or as required to meet applicable flood zone or stormwater regulations as set forth herein, the elevation of a development or redevelopment site shall not be altered.
- 5) An as-built approved by Nassau County Engineering Services shall be provided before issuance of final certificate of occupancy including any lot grading.
- 6) Volume calculations for any projects that require onsite storage shall be based on the following calculation:  
 $V = CAR/12$ , where  
 $V$  = volume of storage in cubic feet,  
 $A$  = total impervious area,  
 $R$  = mean annual rain event  
 $C$  = runoff coefficient is 0.92, the difference between impervious area ( $C = 1.0$ ) and undeveloped conditions ( $C = 0.08$ ).
  - a. This volume must be stored at least one (1) foot above the wet season water table and below the overflow point to offsite (in many cases this may be the adjacent road elevation). As an option, and as approved by Nassau County Engineering Services, an applicant may implement, at the applicant's cost, offsite storage and necessary

conveyance to control existing flood stages offsite., provided documentation showing appropriate authorization for the off-site use and meeting the requirements of this section is submitted and approved by the county

- 7) There shall be no net loss of storage for areas in a Special Flood Hazard Area and Shaded X zones. Site grading shall create storage onsite to mitigate for filling of volume onsite. This storage is in addition to the storage required for the increase in impervious surface area. The applicant shall provide signed and sealed engineering plans and calculations documenting that this "no net loss" requirement is met.
  - a. This excludes fill brought in for STEM wall stabilization.
  - b. Engineering Services shall have the right to exempt any project from the no net loss requirements which borders on and discharges directly into tidally influences bodies of water
- 8) Subsequent to approval of a property owner's final grading, including onsite and/or floodplain storage and stormwater treatment and closeout of the applicable permit or issuance of certificates of occupancy, the improvements shall be maintained by the property owner and recorded in a maintenance agreement.
  - a. In order to ensure compliance with the provisions of this section and the requirements to maintain onsite stormwater improvements over time, the County is authorized to conduct inspections of property, upon reasonable notice and at reasonable times, for the purpose of inspecting said property and/or onsite storage improvements for compliance with this section and with any applicable conditions of previously issued permits.
  - b. Failure to maintain the improvements will require restoration upon notification by engineering service or code enforcement, within a stipulated time frame.
  - c. If restoration is not completed within Nassau County's Code requirements, the county shall have the right to complete the restoration, and the county's actual cost incurred, together with a charge of one hundred (100) percent of said costs to cover the county's administrative expenses, shall be charged to the then owner of the property.
- 9) Applicants shall provide documents and calculations to demonstrate compliance. The submittal of application for construction shall be completed by an engineer.
- 10) Impervious surface requirements shall not be eligible for relief via waivers from the Planning and Zoning Board.

(Ord. No. 2017-04, 1-23-17)