

7**MEMORANDUM**

TO: W. Calvin Horton, Town Manager
FROM: Roger S. Waldon, Planning Director
SUBJECT: Thresholds Triggering Stormwater and Tree Protection Regulations
DATE: May 10, 2004

We have prepared this memorandum to offer additional thoughts on the topic of setting land disturbance thresholds to trigger stormwater management and tree protection requirements. The Town Council is considering revisiting the current requirement that, if more than 5,000 square feet of land will be disturbed in construction of a single-family or two family dwelling (either new construction or addition to an existing dwelling), tree surveys must be performed and stormwater management devices are required.

ILLUSTRATIONS

We offer the following examples of recent proposals. These are typical and illustrative of the kinds of improvements that are proposed, showing how the regulations operate.

The first is a new single-family house. The developer proposed to construct a new dwelling of 4,761 square feet, on a lot of 9,073 square feet. (Shown on attached sketch labeled "New House.") Considering all land disturbance that would be necessary for construction, driveway, and utilities, the estimated land disturbance was 7,900 square feet. Since this exceeds 5,000 square feet, stormwater management and tree protection were required.

The owner identified all significant trees on the site, and was required to identify which trees would be preserved, and required to install tree protection fencing to identify clearing limits. Stormwater control devices were installed: level spreader and berm, along with french drains.

In the second example, the owner of an existing dwelling proposed to add a room to the house. (Shown on attached sketch labeled "Addition to Existing House.") The new addition proposed to add 156 square feet to the home, and estimated total land disturbance was 4,100 square feet. In this case, we required the homeowner to install tree protection fencing as the first step in construction, to indicate the clearing limits and assure that land disturbance would not exceed the stated amount. No stormwater management improvements were required.

COMMENTS ON PLANNING BOARD RECOMMENDATION

The Planning Board has suggested that the 5,000 square foot threshold for land disturbance is too high, and should be lowered. The Board also suggests different triggering thresholds for tree protection vs. stormwater requirements, noting that the threshold to trigger stormwater requirements should consider soil type and topography.

Regarding the first suggestion: We believe that a 5,000 square foot threshold for land disturbance has worked well to distinguish between construction of a new house and additions to an existing house. Disruption is almost always less in an addition situation: usually no utility work is involved, no new driveways, etc. We believe it makes sense to make this distinction between new construction and additions. Also, in the case of new construction we are almost always dealing with a developer or professional homebuilder who is skilled at addressing complex requirements. In the case of an addition, we are almost always dealing with a homeowner who has limited knowledge of or skill in addressing complex regulations.

Regarding the second suggestion: We believe that there is value in having the same threshold to trigger both tree protection and stormwater management requirements. If a situation calls for hiring a professional engineer for one of these requirements, it is our experience that there is little additional complexity in having the engineer address both requirements. The biggest difference is between no requirement and any requirement; the difference between one requirement and two requirements is much less.

Finally, we believe that it will be difficult to explain and enforce requirements that cannot be known until a property owner has soil and slope analysis performed. We believe that it is best to have requirements structured in such a way that it is as easy as possible to know what circumstances trigger which requirements.

COMMENTS ON COST-BENEFIT ISSUES

From our conversations with homeowners and developers, we conclude that the costs involved in meeting the stormwater management and tree protection requirements are approximately \$4,000 - \$6,000 for a typical single family house construction. This cost is significant, but is more easily absorbed into the construction cost and sale of a new single-family house (where the average sales price in Chapel Hill exceeds \$300,000). This cost becomes more of an obstacle in the context of an addition to an existing house.

We do not yet have good information on the benefits gained from requiring stormwater management and tree protection controls for single-family house construction. We intend to work on an evaluation of these benefits beginning in Fall, 2004.

SUMMARY

We offer these facts and observations for consideration as the Council considers whether or not to adjust the land disturbance thresholds that trigger stormwater management and tree protection requirements for single-family and two-family dwellings.

New House

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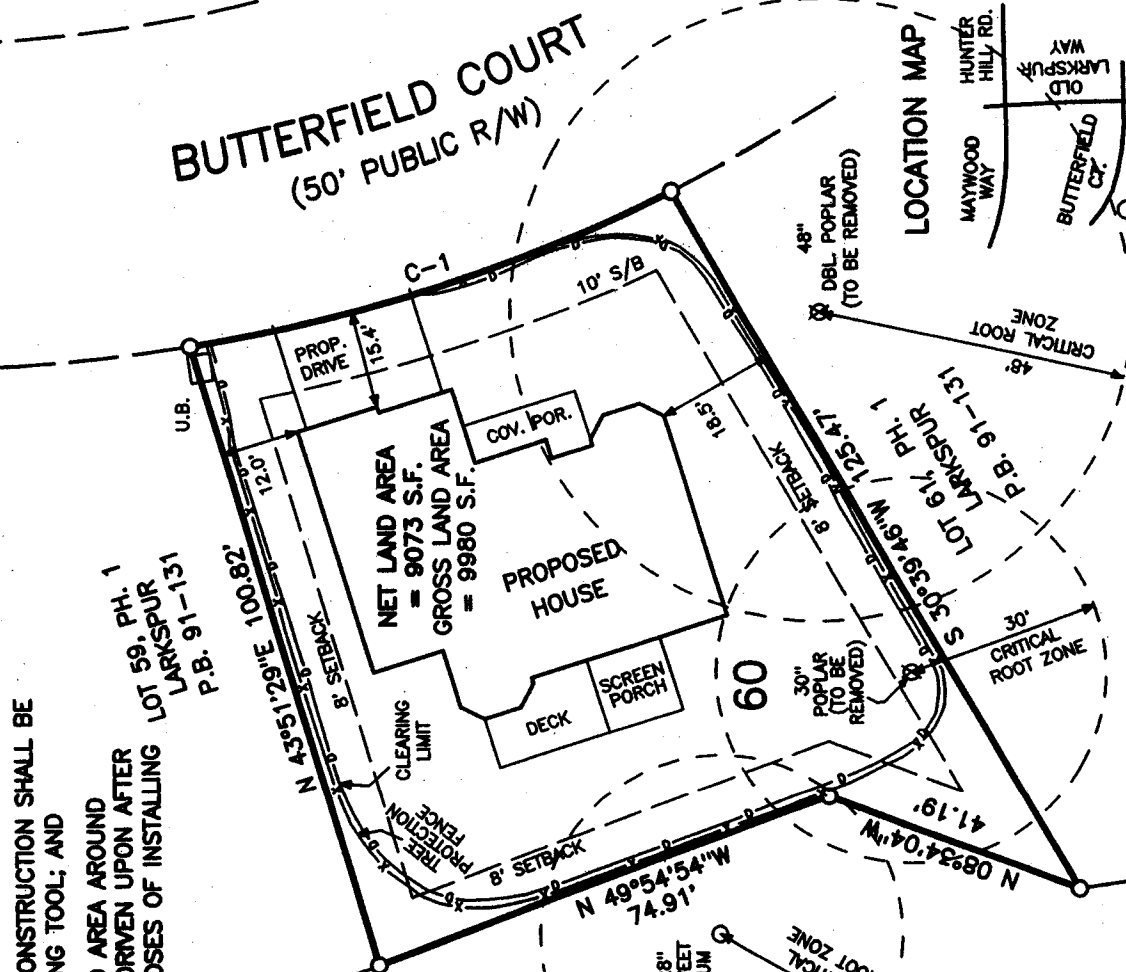
NOTES:

1. NO FEMA - DELINEATED 100 YEAR FLOOD ON PROPERTY.
2. NO RCD ON PROPERTY.

LANDSCAPE PROTECTION NOTES:

- 1) A PRE-CONSTRUCTION CONFERENCE SHALL BE HELD WITH THE PROJECT MANAGER AND THE TOWN'S LANDSCAPE ARCHITECT BEFORE ANY SITE WORK BEGINS;
- 2) ANY TREE ROOTS EXPOSED BY CONSTRUCTION SHALL BE SEVERED CLEANLY WITH A PRUNING TOOL; AND
- 3) THE SOIL WITHIN THE PROTECTED AREA AROUND EXISTING TREES SHALL NOT BE DRIVEN UPON AFTER FENCE REMOVAL FOR THE PURPOSES OF INSTALLING UTILITIES OR LANDSCAPING.

DISTURBED AREA = 7900 S.F.



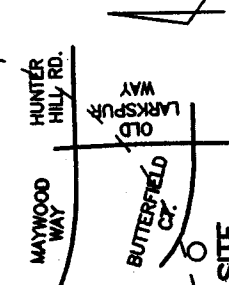
PROPOSED IMPERVIOUS SURFACES
 HOUSE (INCL.) = 2268 S.F.
 COV. PORCH = 144 S.F.
 SCREEN PORCH = 144 S.F.
 DRIVE = 348 S.F.
 TOTAL = 2760 S.F.

SIT
 BUTTEF
 LOT 60, F
 CHAPEL HILL
 NORT

SCALE: 1" = 30'

FREEHOLD LA
 P.O. BOX 188
 CARREBO

LOCATION MAP



CURVE	RADIUS	LENGTH	DELTA	CHORD	CH.BEARING
C-1	275.67'	78.03'	16°25'35"	78.76'	S 46°58'45"E

PRIVATE OPEN SPACE & RECREATION SPACE TRACT A P.B. 91-131

LEGEND:

- IRON FOUND
- ⊗ IRON SET
- △ CALC. CORNER
- CONC. MONU.
- o- DISTURBED AREA

RATIO OF CLOSURE 1:10,000+

ADDITION TO EXISTING HOUSE

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SCALE: 1" = 40'

FREEHOLD LA
P.O. BOX 186 CARRBO.

P.B. 9-19

LOT 44, SEC. 1, COKER HILLS
D.B. 1586-377
TRUSTEES
DIANE I. LASSITER
WILLIAM E. LASSITER

S 08°19'00"W 184.02'

ALLARD ROAD

ELLIOTT ROAD

S 81°49'48"E
150.08'

ALTERNATE ACCESS
15' x 90' = 1350'

50' BLDG. SETBACK

43

NET LAND AREA
= 27,584 S.F.

GROSS LAND AREA
= 36,342 S.F.

ONE STORY BRICK

PROPOSED ADDITION

N 81°39'28"W
150.08'

JAMES A. URQUHART
DINA G. URQUHART
D.B. 1474-452
LOT 28, SEC. 1, COKER HILLS
P.B. 9-19

TIE: N 81°49'48"W 147.42'

LOT 42, SEC. 1, COKER HILLS
D.B. 2109-122
PAGE H. BARNETT
P.B. 9-19

N 08°19'00"E
183.57'

EDWARD J. GILL
D.B. 182-488
LOT 28 REV., SEC. 1
COKER HILLS
P.B. 9-62

NOTES:

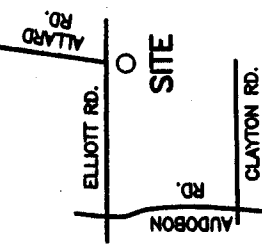
1. NO FEMA - DELINEATED 100 YEAR FLOOD ON PROPERTY.
2. NO RCD ON PROPERTY.

DISTURBED AREA
= 2000 S.F.
ACCESSES
= 2100 S.F.
TOTAL: 4100

IMPERVIOUS SURFACES

EXISTING HOUSE	= 2358 S.F.
CONCRETE DRIVE	= 2728 S.F.
GRAVEL DRIVE	= 439 S.F.
TOTAL	= 5525 S.F.

PROPOSED ADDITION & STEPS	= 257 S.F.
AREA BETWEEN HOUSE & RET. WALL	= 239 S.F.
NEW TOTAL	= 6021 S.F.



LOCATION MAP

LEGEND:

- IRON FOUND
- ⊗ IRON SET
- △ CALC. CORNER
- CONC. MONU.
- DISTURBED AREA

RATIO OF CLOSURE 1:10,000+