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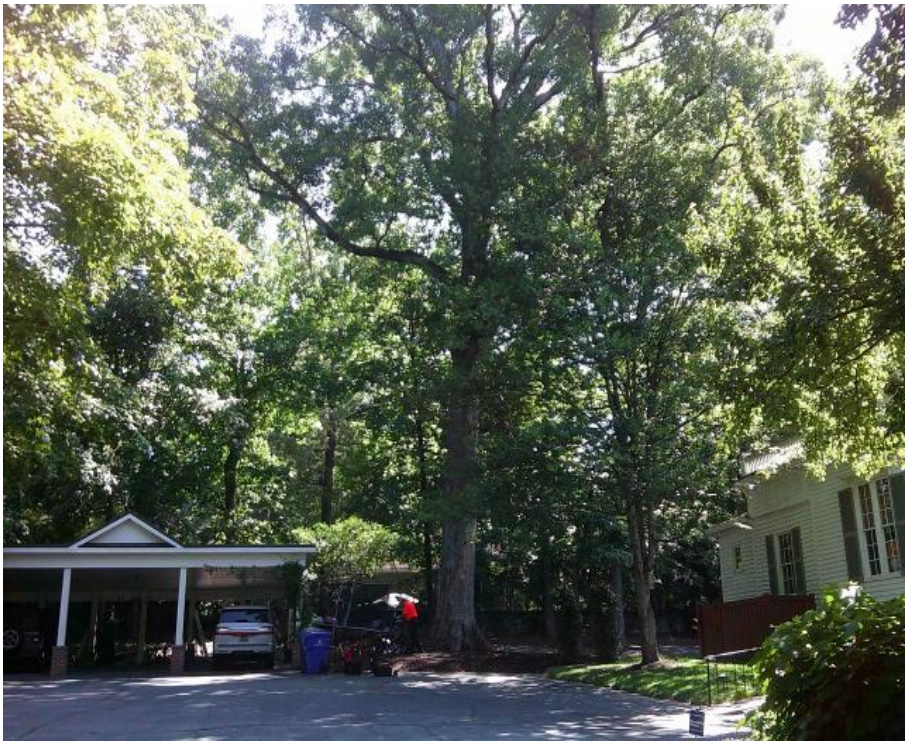
INTEGRITY TREE IMAGING
See your tree from the inside out.

Structural Integrity Report

Produced using Tree-Radar® Technology

(NDE) Nondestructive Evaluation Method

Client: [redacted]con **Date:** 6/20/2025
Address: [redacted] SC 29601
Name: White Oak
Prepared for: [redacted]
Type: Quercus alba
Location: [redacted]
[redacted]



Note: Radar scans are a measurement of the density and soundness of the internal and below-ground structure of the tree. The scans only address the specific areas of the tree where the scans were performed. The internal condition of the trunk/roots from the reported scans are not a diagnosis of the tree's resilience.

Structural Integrity Levels:

A-Excellent 95-100% sound material present in wood
B-Good 80-94% sound material present in wood
C-Marginal 60-79% sound material present in wood
D-Poor 40-59% sound material present in wood
F-Imminent Failure ≤39% sound material present in wood

Tree Radar Unit (TRU™) Project Objective

The picture on the first page of this report is the subject of this entire report. This White Oak (Quercus alba) is located between the existing carport and the most northern corner of the rear of the house. It is located on a level, slightly elevated area of the back yard, directly adjacent to the asphalt driveway and the brick sidewalk that leads to the rear of the house. The tree displays a moderate lean toward the southeast corner of the rear of the house. With a diameter at breast height (DBH) of 54", this White Oak possesses characteristics of a well-manicured and pruned tree. There is no visible sign of damage to the bark from grass mowing or maintenance. There is a very small, insignificant cavity at the trunk/ground interface that is located behind a small, green leafy plant. Based on the 54" DBH measurement, it is reasonable to estimate the age of this tree ranges from 275-300 years old. The imaging locations obtained from 16 scans of the White Oak tree are included in the figures on the following pages.

Figure 1 *illustrates the 6 concentric circle pattern employed to obtain the scans of the root system. The circles start two feet away from the base of the tree and increase every two feet until an approximate 38-ft. diameter is reached. This figure also orients you to the exact tree and location of the tree imaged. This figure, and all the included images, are positioned such that the top of each scan is exactly* ***True North*** *and is where every scan was started and completed.*

Figure 2 *shows the three cross-sectional virtual saw-cuts from the trunk of this tree. The sawcut images were obtained at the 2-ft., 4-ft., and 6-ft. levels, beginning from the ground level.*

Figures 3-15 *are individual images with comments and grades included.*

Addendum *included.*

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Figure 1: Root Concentric Circle Scan Pattern

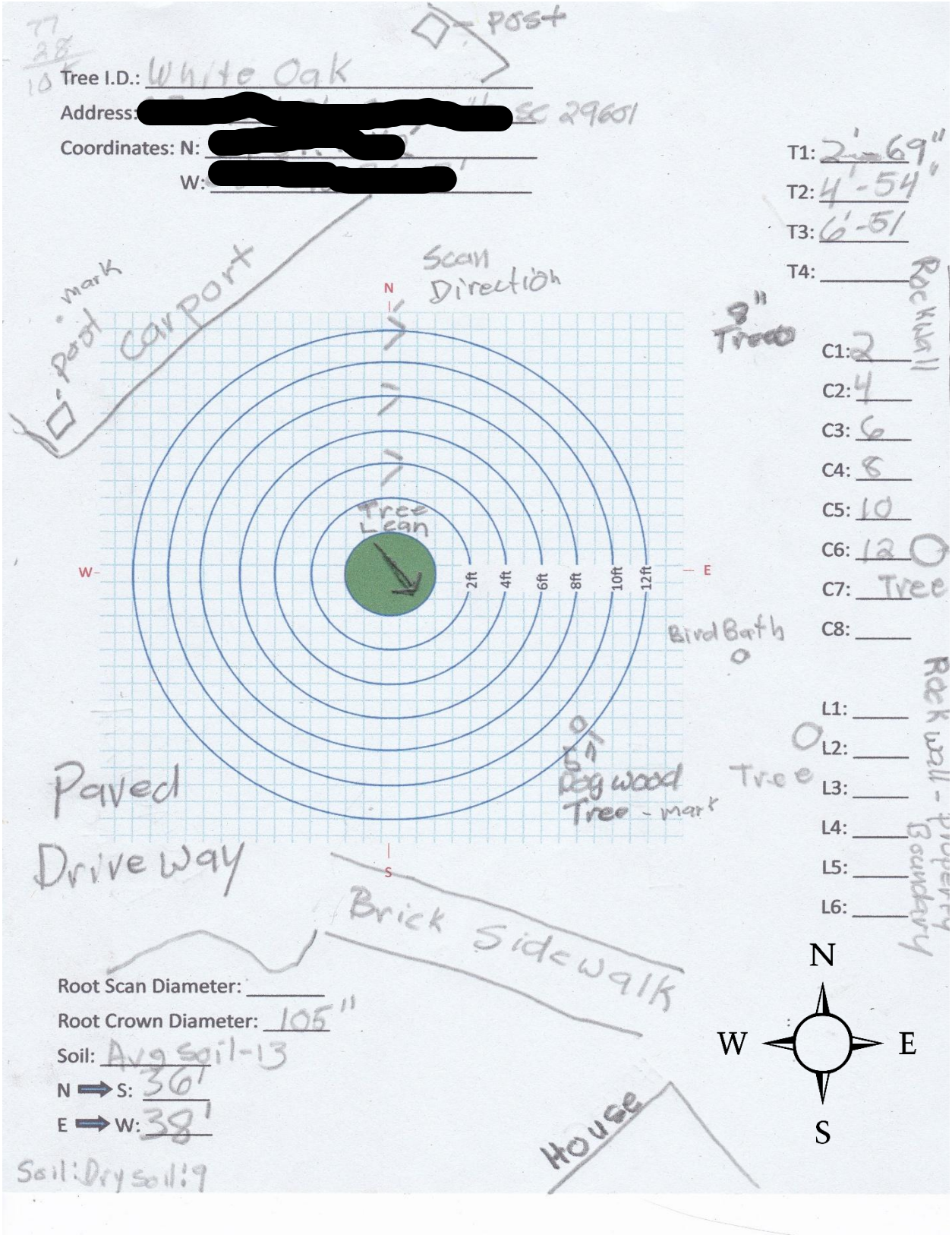

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Figure 2: Trunk Cross-Section Scans/Virtual Saw-cuts-2ft, 4ft, and 6ft on the trunk

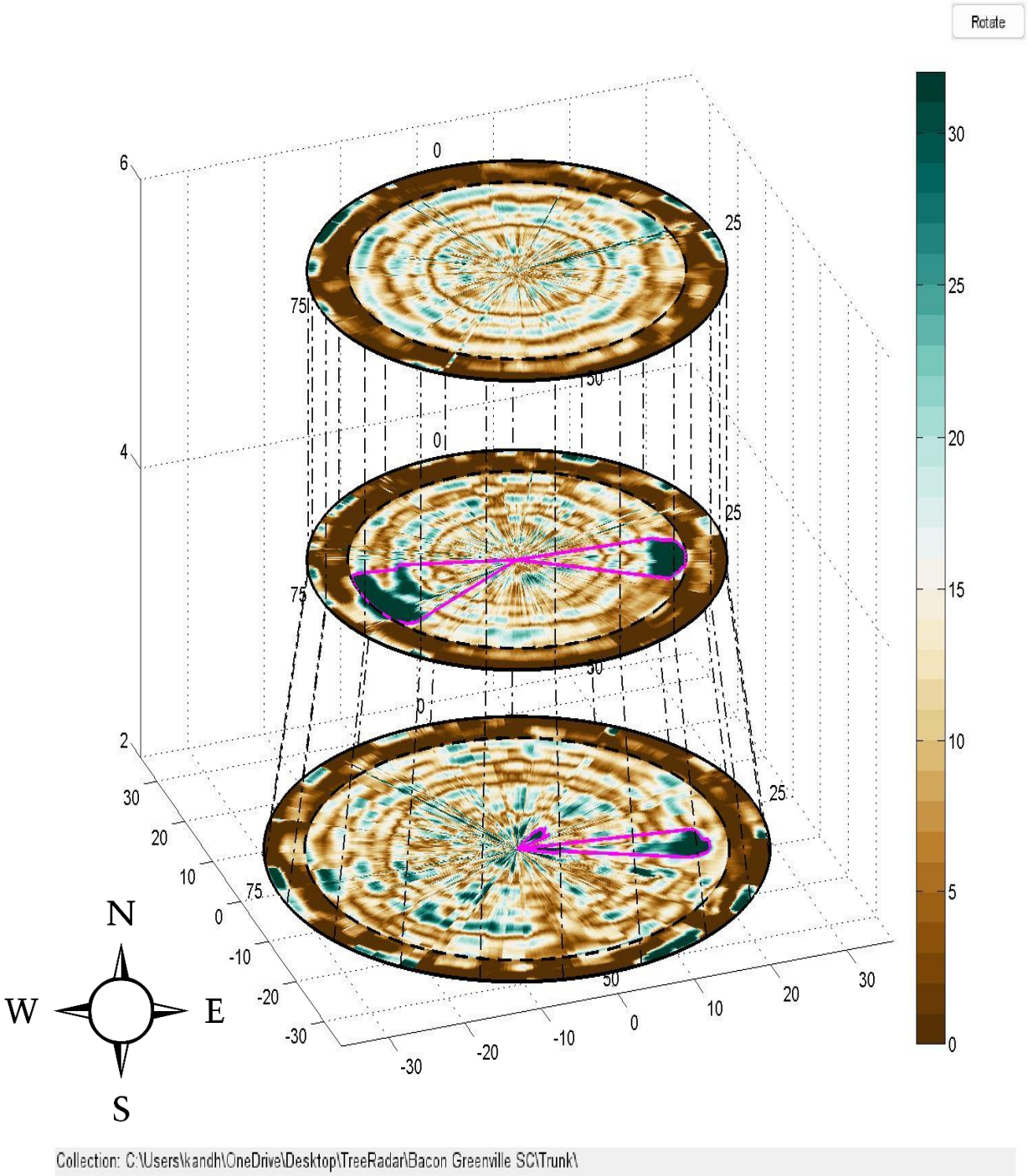

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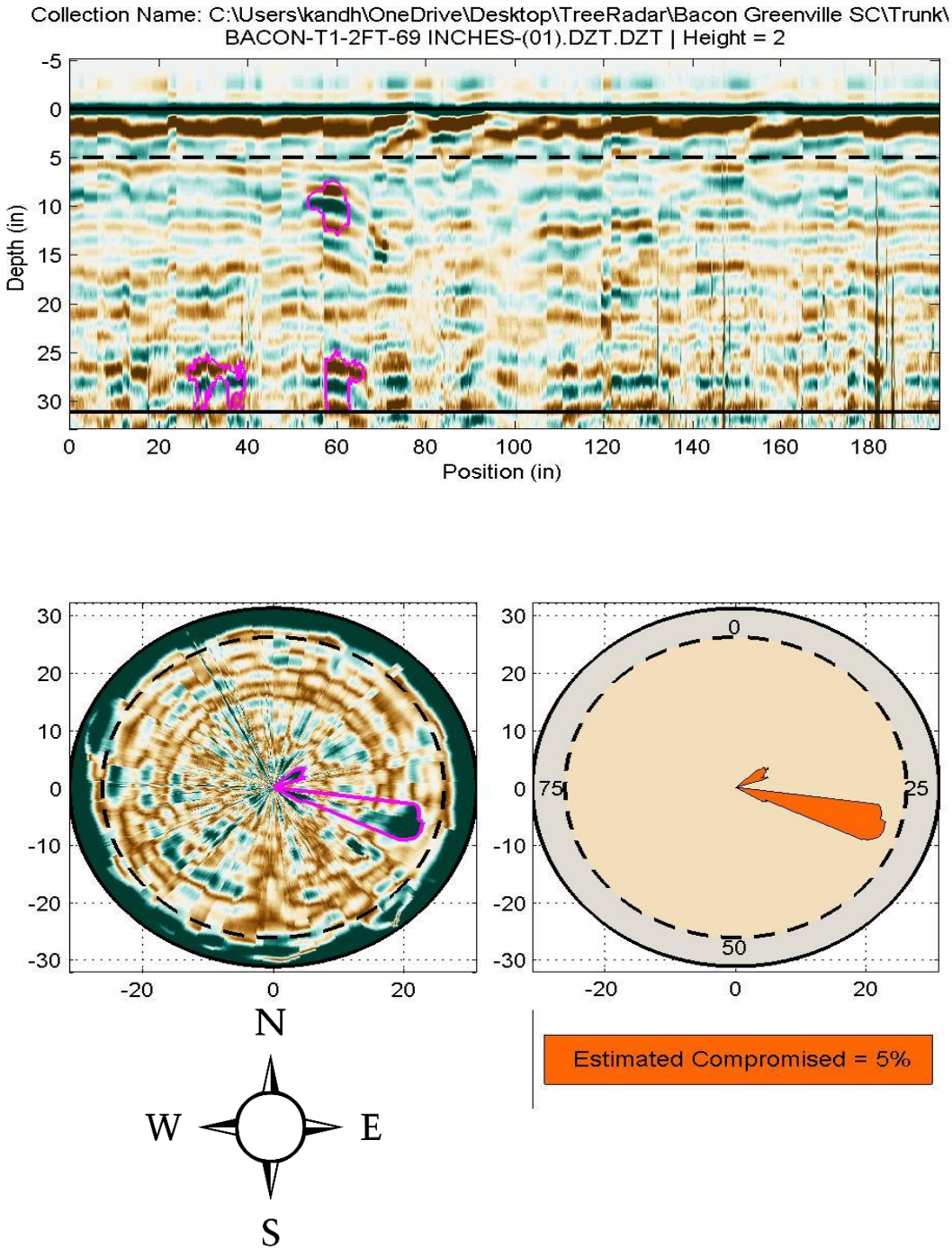
Figure 3: 2ft Cross-Sectional Trunk Scan with Virtual Saw-cut



Grade: **Excellent (A)**-95% structural integrity present at the 2-foot height of this trunk. A slight pocket of softwood is present in the dark green area the 4 o'clock position. Very high level of structural integrity at the most critical load bearing position of the tree. Not of concern.

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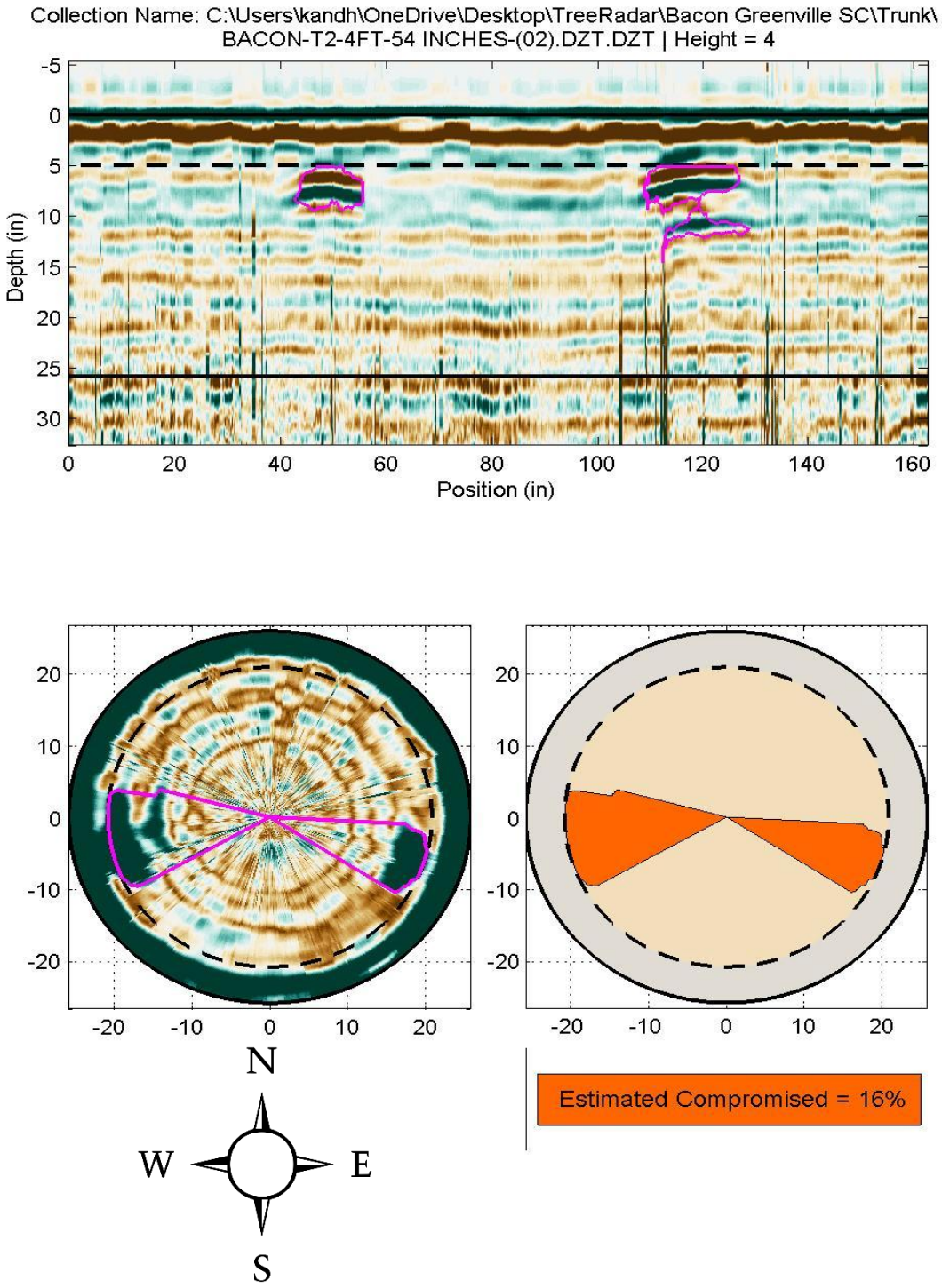
Figure 4: 4-ft Cross-Sectional Trunk Scan with Virtual Saw-cut



Grade*:* Good (B) Two areas of softwood decay noted at the 4 and 9 o'clock locations. Probably from embedded metal such as nail or horseshoe. Approximately nine inches below the bark surface. Benign.

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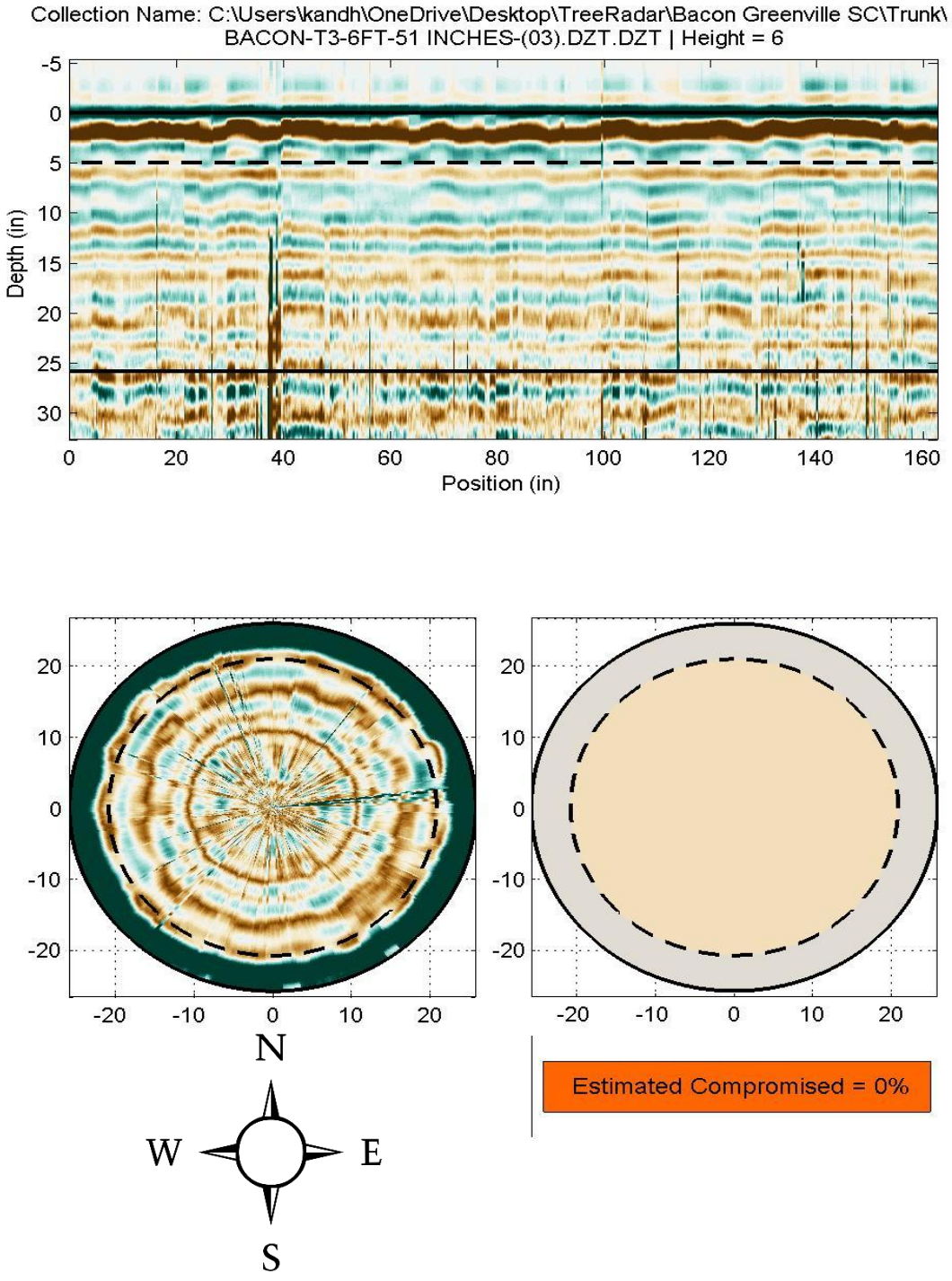
Figure 5: 6-ft Cross-Sectional Trunk Scan with Virtual Sawcut



Grade*:* Excellent (A) No compromise detected. Normal evidence of slight trunk movement from wind, but no decay present. Barbed wire could be present at the 3 o'clock position. Almost perfect structural integrity.

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Figure 6: Root Crown Virtual Saw-cut Scan-Located Immediately Below Ground Surface

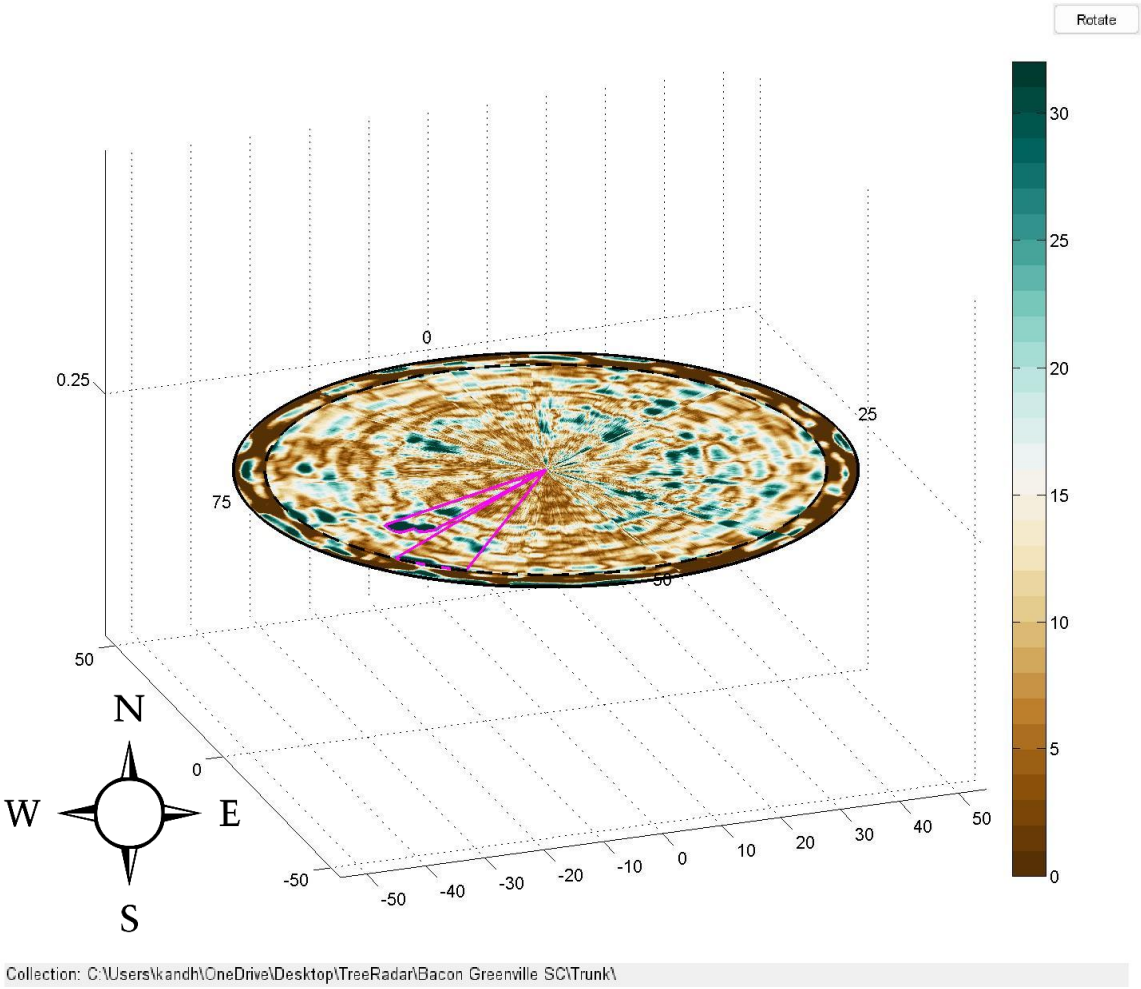

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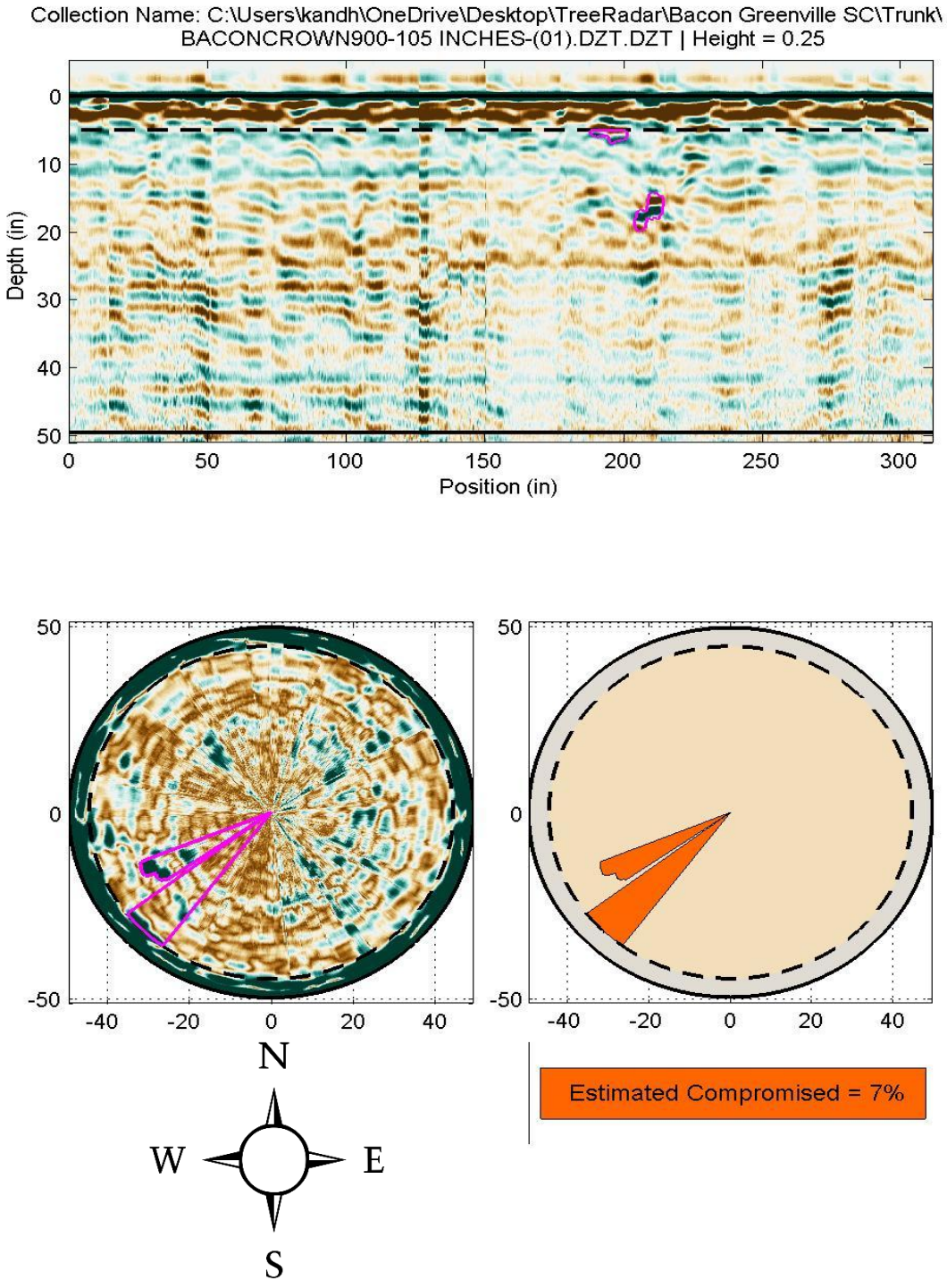
Figure 7: Cross-Sectional Root Crown Scan with Virtual Sawcut



Grade: **Good (B++)** This 8.75-foot diameter scan of the root crown/collar reveals two barely detectable patches of incipient decay 20-30 inches beneath the surface. Not of concern. All images display very good wood integrity immediately underneath the soil. These are exceptionally good levels of integrity.

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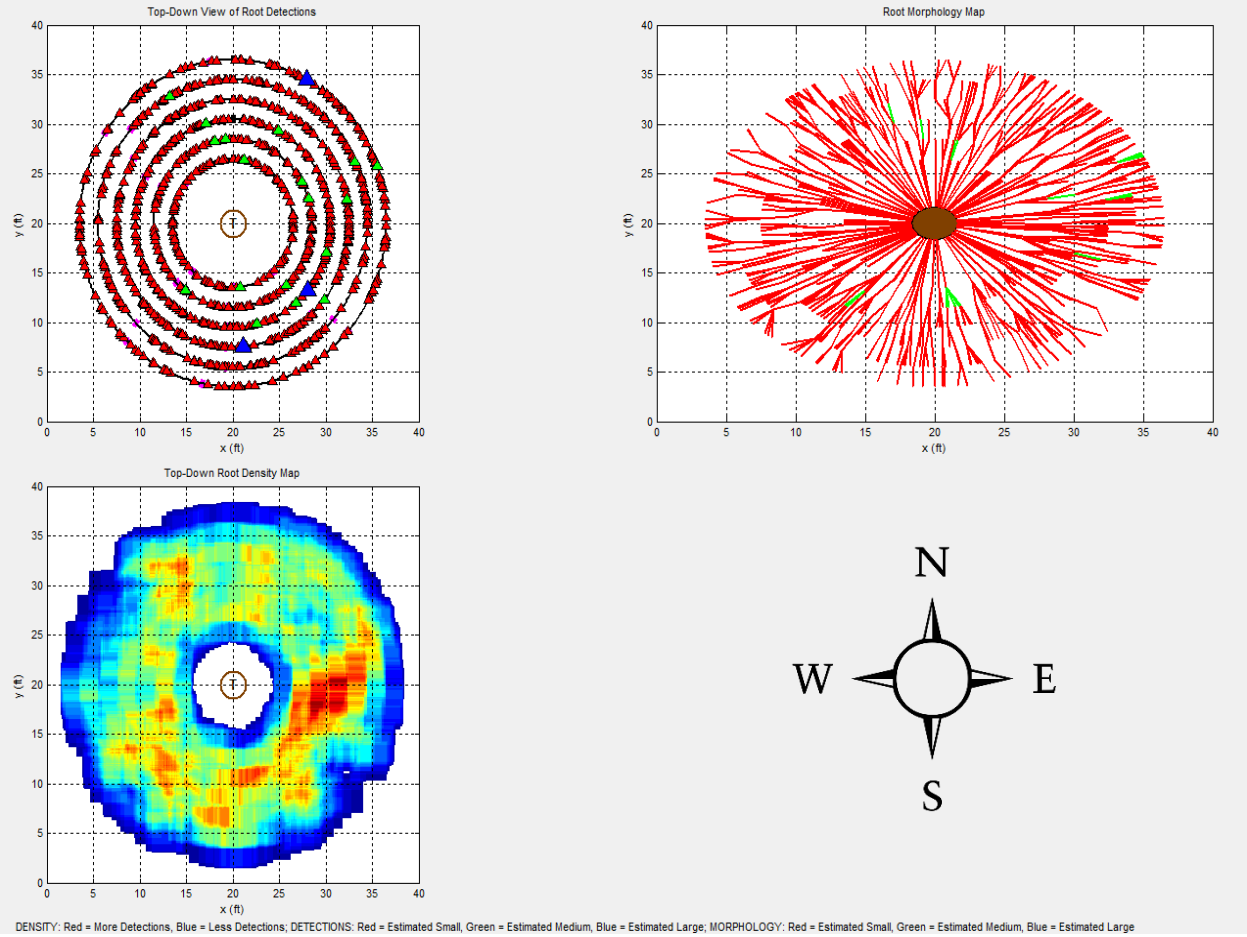
Figure 8: Roots—Typical Root System Scan-32” Deep-Feeder Root System Overview



The upper left image is a top-down view of the root detections/locations, color-coded by size. The Red Triangles signify the small roots that are ¼-inch to 1 inch diameter; the Green Triangles represent the medium roots (1-3 inches diameter); and the Blue Triangles are the large roots (3” diameter and larger). Here, there are three large structural, anchor roots identified by the blue triangles. See the following pages for comments on the other two images (density and morphology).

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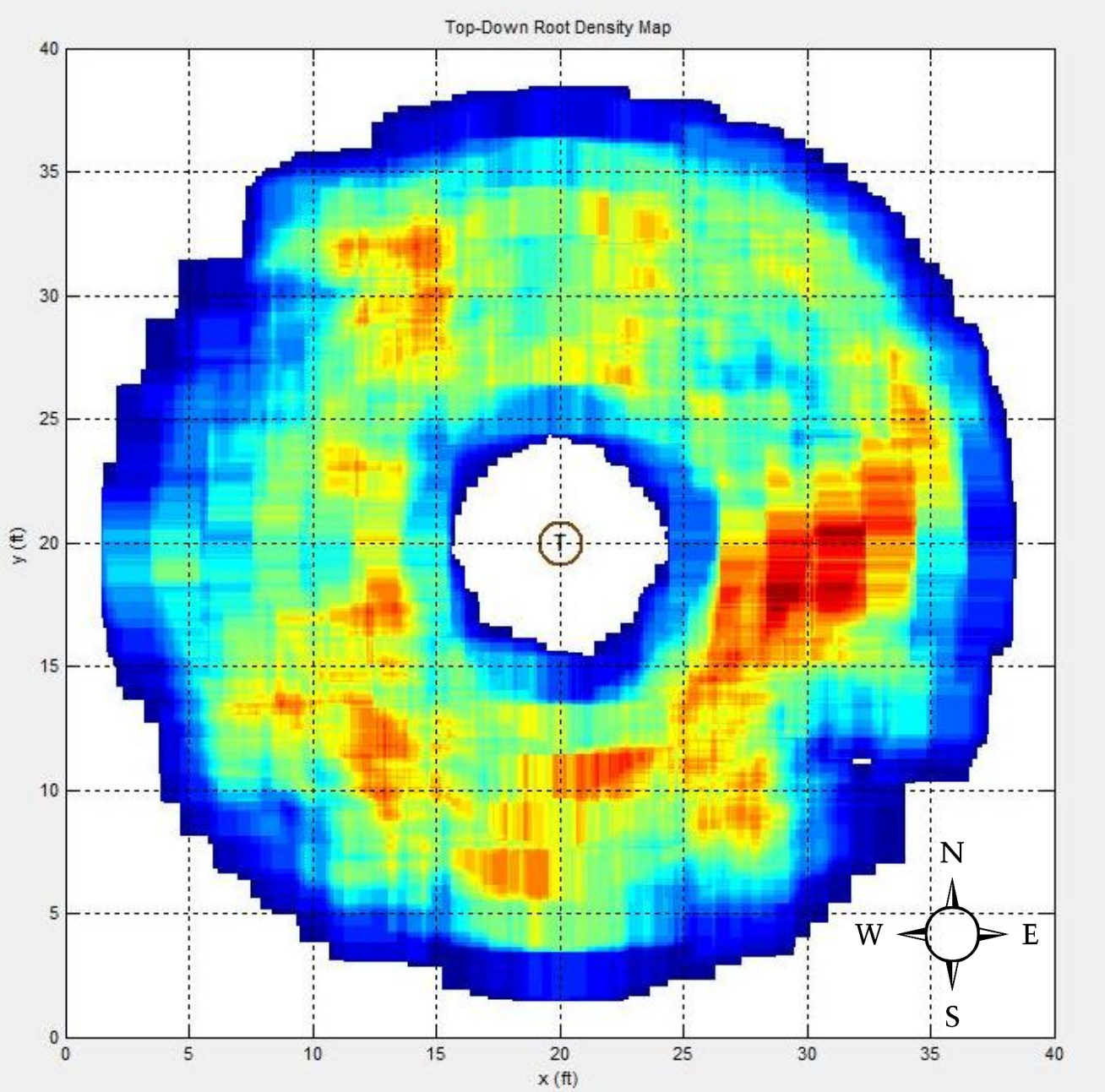
Figure 9: Root Density—Highest Root Density Located in the Eastern Quadrant



The highest root density (red) is eastern quadrant of the root zone. The is a slight decline in root presence in the outer portions of the root zone in the direction of the asphalt and brick sidewalk. These results give great confidence in a healthy feeder root system.

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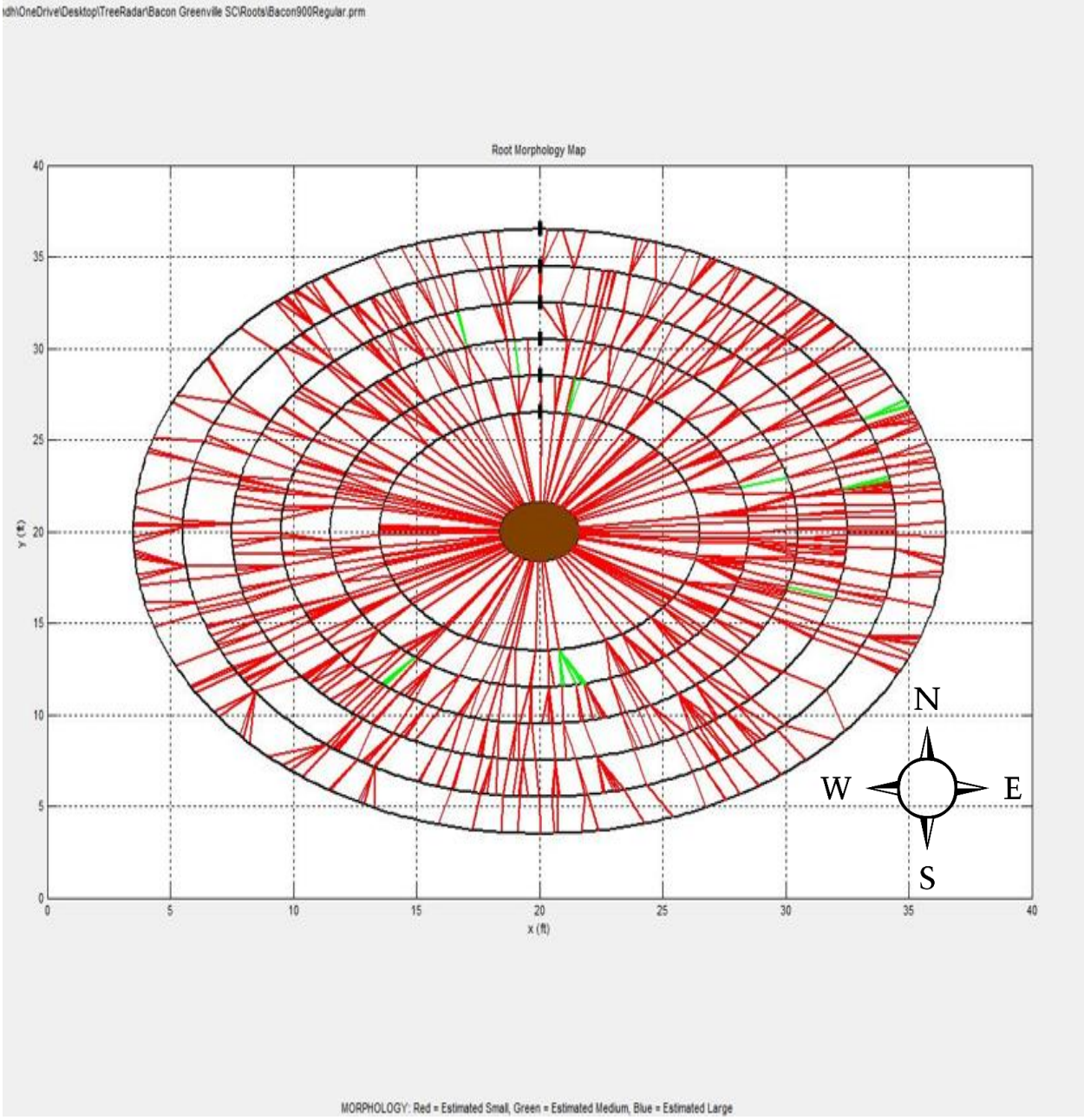
Figure 10: Root Morphology



This root morphology image reveals a robust root system. We see a very dense and fiberous root system that provides adequate, water, nutirents, and stability to this maginificent White Oak. The deep, structural root scan below reveals the deep location of the root system.

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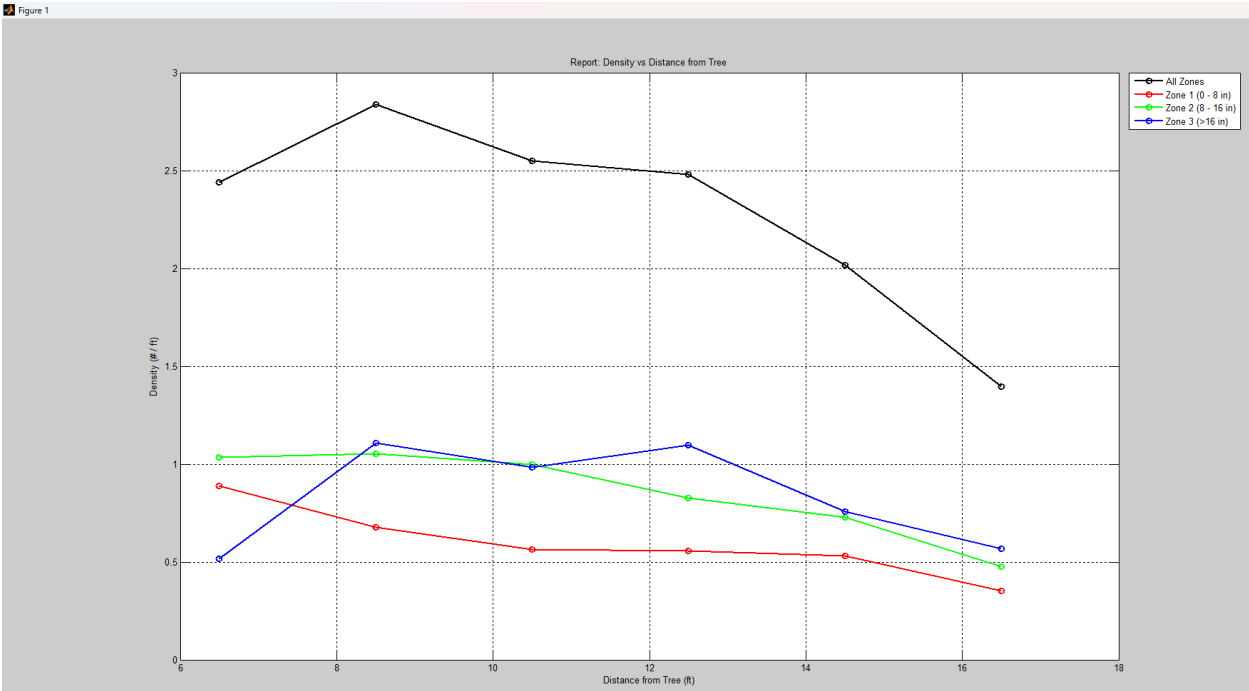
Figure 11: Root Density Report-Upper Surface Feeder Roots



Grade: Excellent (A) Density and root presence at all depths and positions from the tree; shows consistency and good health. There is a slight, insignificant, and expected decline in most outer regions of the root zone. This is normal with the presence of the house, brick sidewalk, and the asphalt driveway. None of the other existing surface structures are causing harm to this tree.

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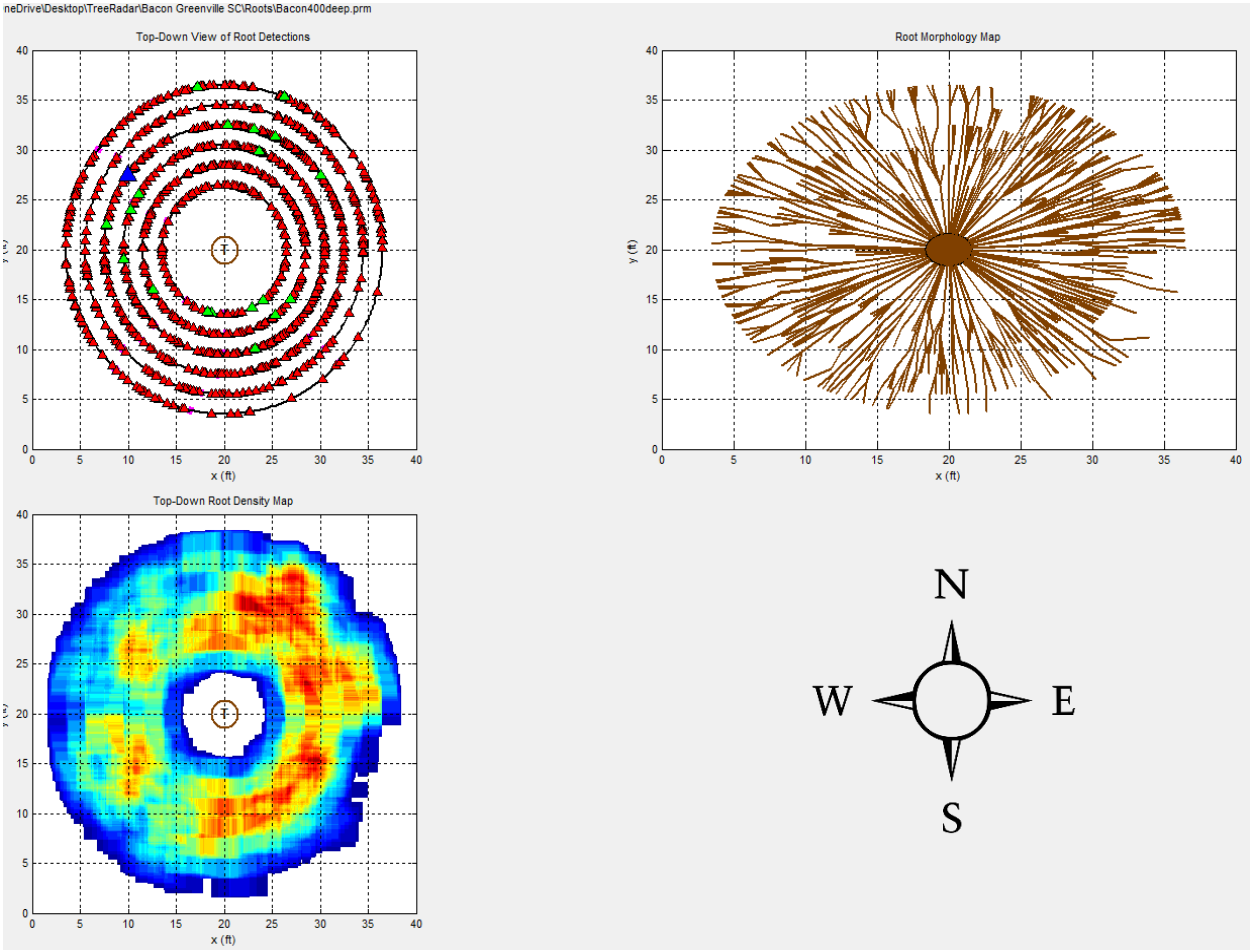
Figure 12: Ultra Deep Structural Root-Overview



The upper left image shows the root location color-coded by root size: the red triangles signify the small roots (1/4”-1” diameter); the green triangles represent the medium roots (1”-3” diameter); and the blue triangles are the large roots (3” diameter and larger). The White Oak deep scans reveal hardy ultra-deep root presence and growth. There is a decline in the outermost regions of the root zone from the 3 to 6 o’clock positions adjacent to the foundation of the house. These very deep roots may have been damaged/cut from grading when the house was installed in its current location in 1980.

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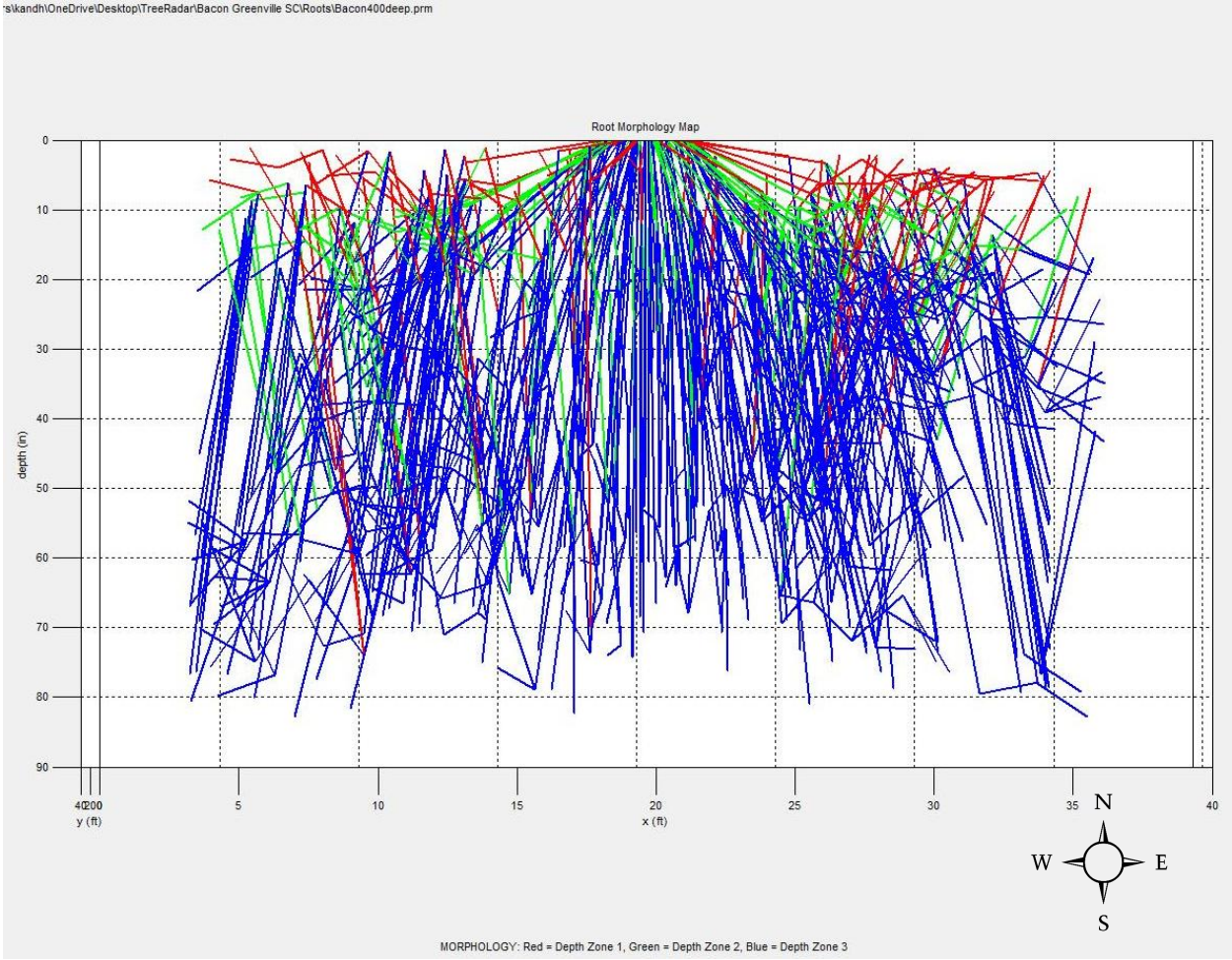
Figure 13: Ultra Deep Root Morphology



The upper right image on the preceding page is a top-down morphology image. In the above image on this page, the same morphology is depicted from a 3-Dimensional perspective, showing the depth of tree roots. Excellent ultra-deep structural root presence is revealed here, with root depths greater than 6 feet. This is a very healthy and strong root system that provides sufficient anchoring strength to guard against unwanted tree uprooting.

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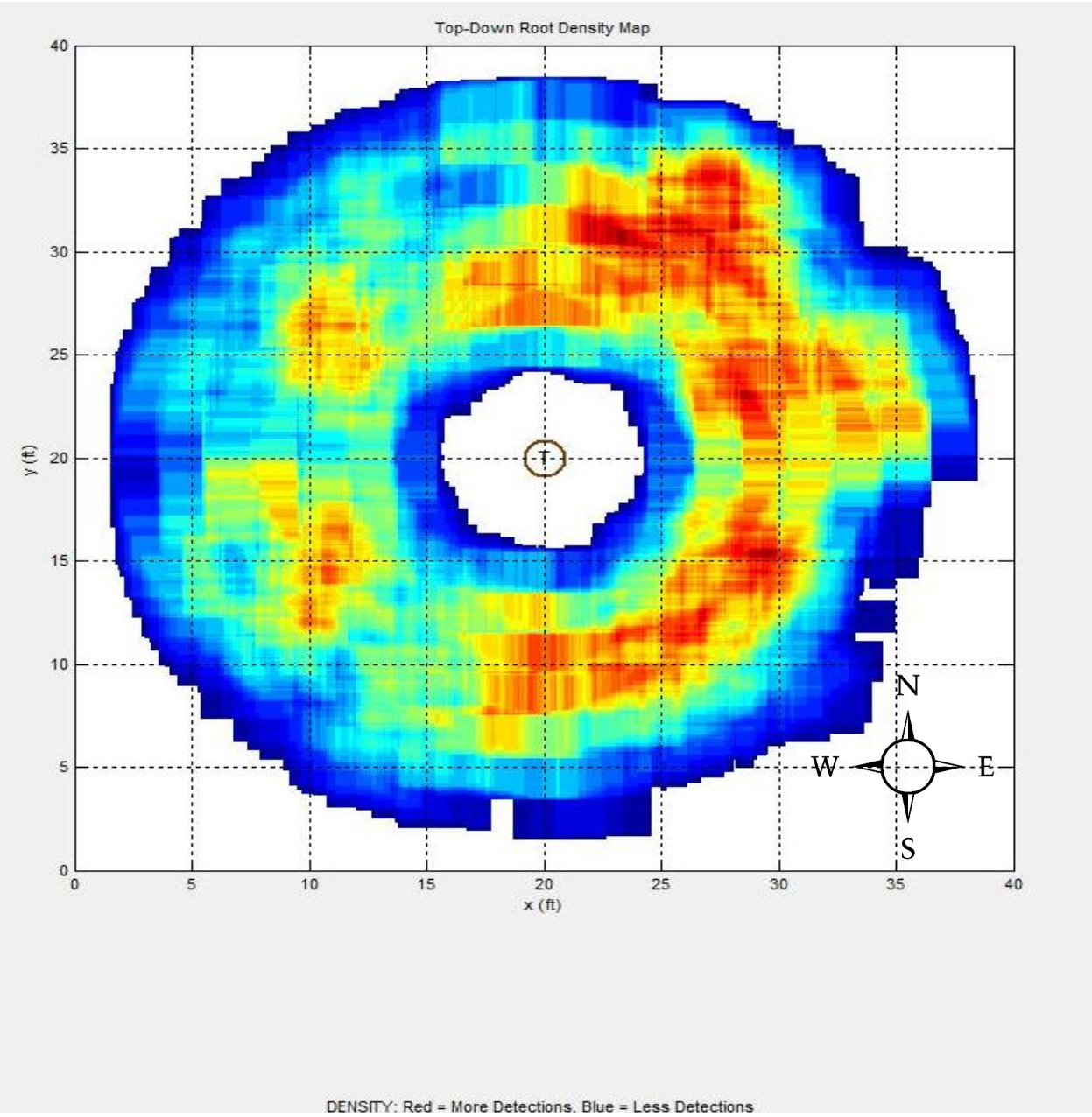
Figure 14: Ultra Deep Root Density



Excellent ultra-deep root density is revealed in this scan, with the red color indicating the highest root density in the entire western quadrant— Very deep, dense, consistent root system.

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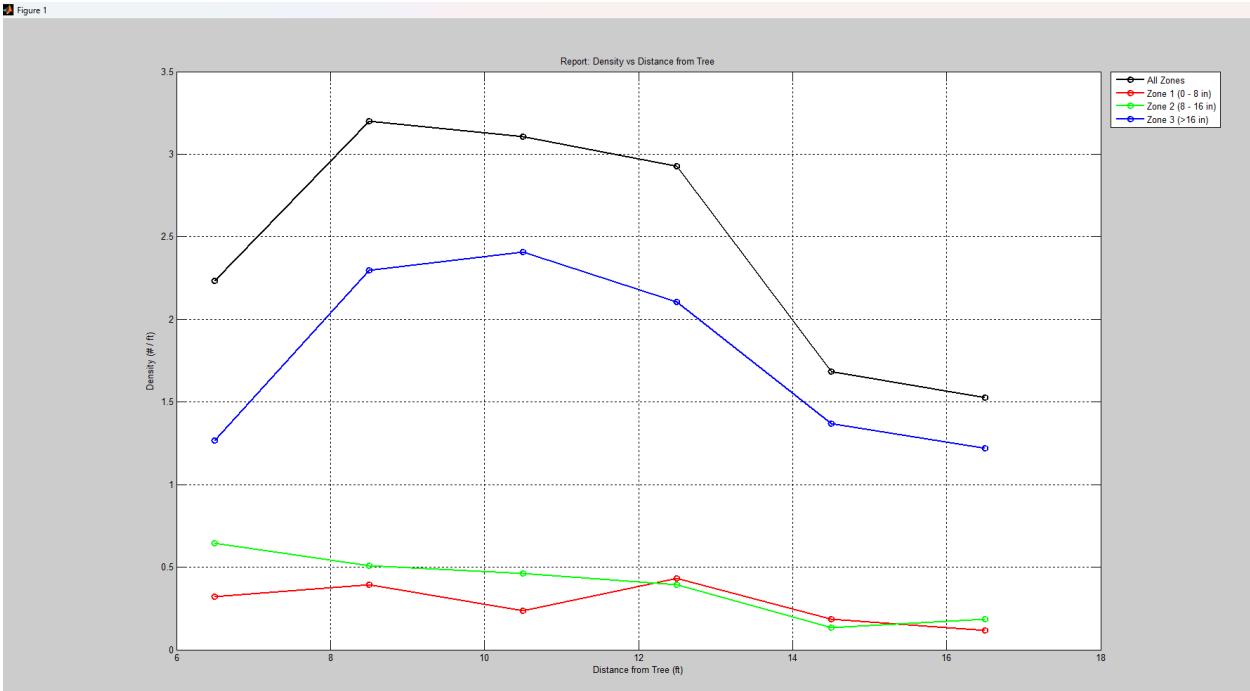
Figure 15: Ultra Deep Root Density Table



Grade: Excellent (A+) High density and root presence exists at all depths and positions scanned; shows consistency and excellent health of tree roots. A much higher density of roots appears in the ultra-deep scans than in the upper-level root scans as expected from a tree of this size and age. Very consistent and widespread; high root density. Root density does decline on the outer most scans toward the house probably due to grading when the house was placed in this location. No concerns found in the root system.

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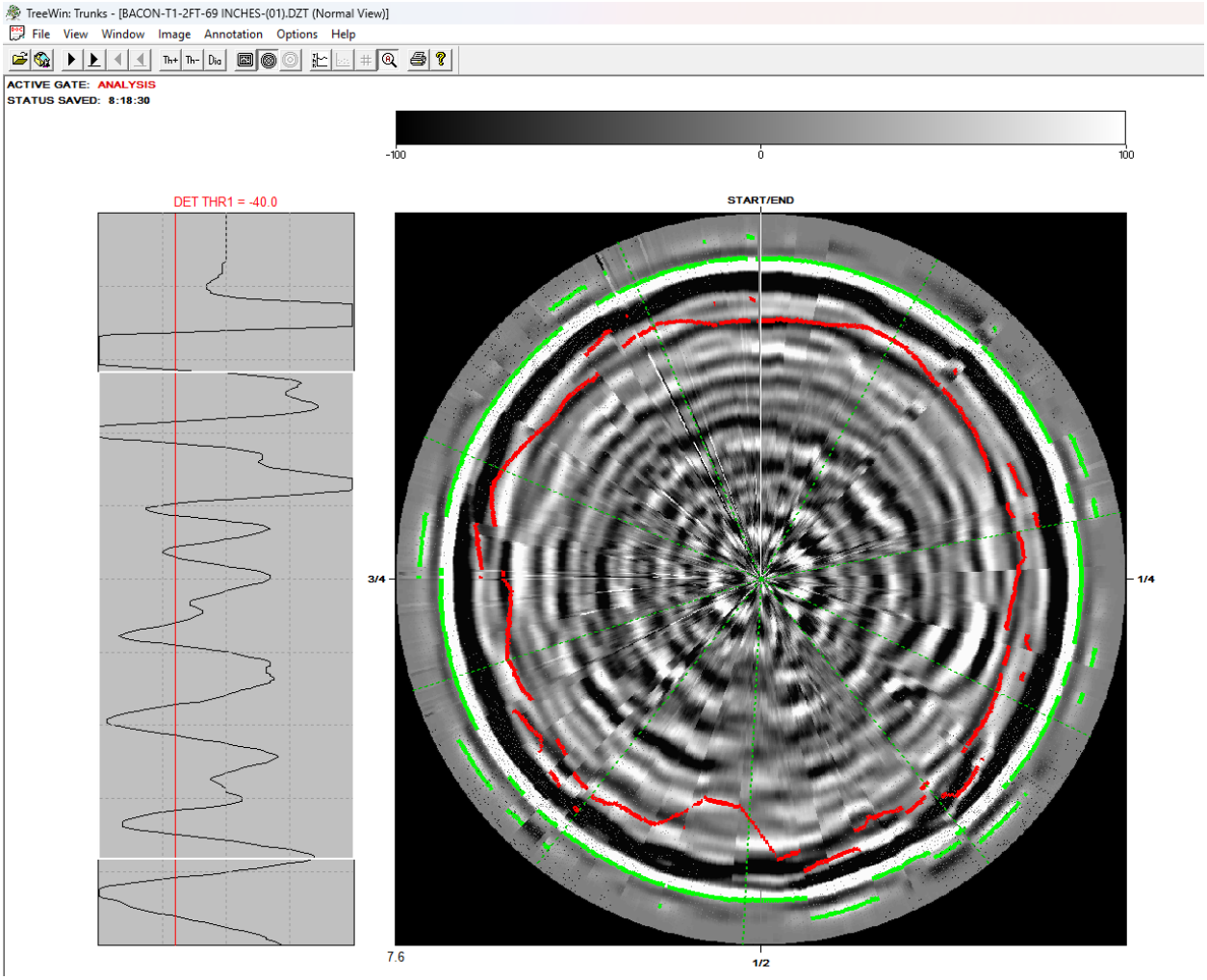
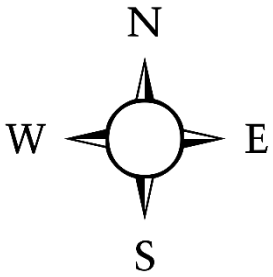
Addendum: Supporting Images: Collaborating Analysis



(Image: Secondary processing of 2-ft scan for additional analysis.)



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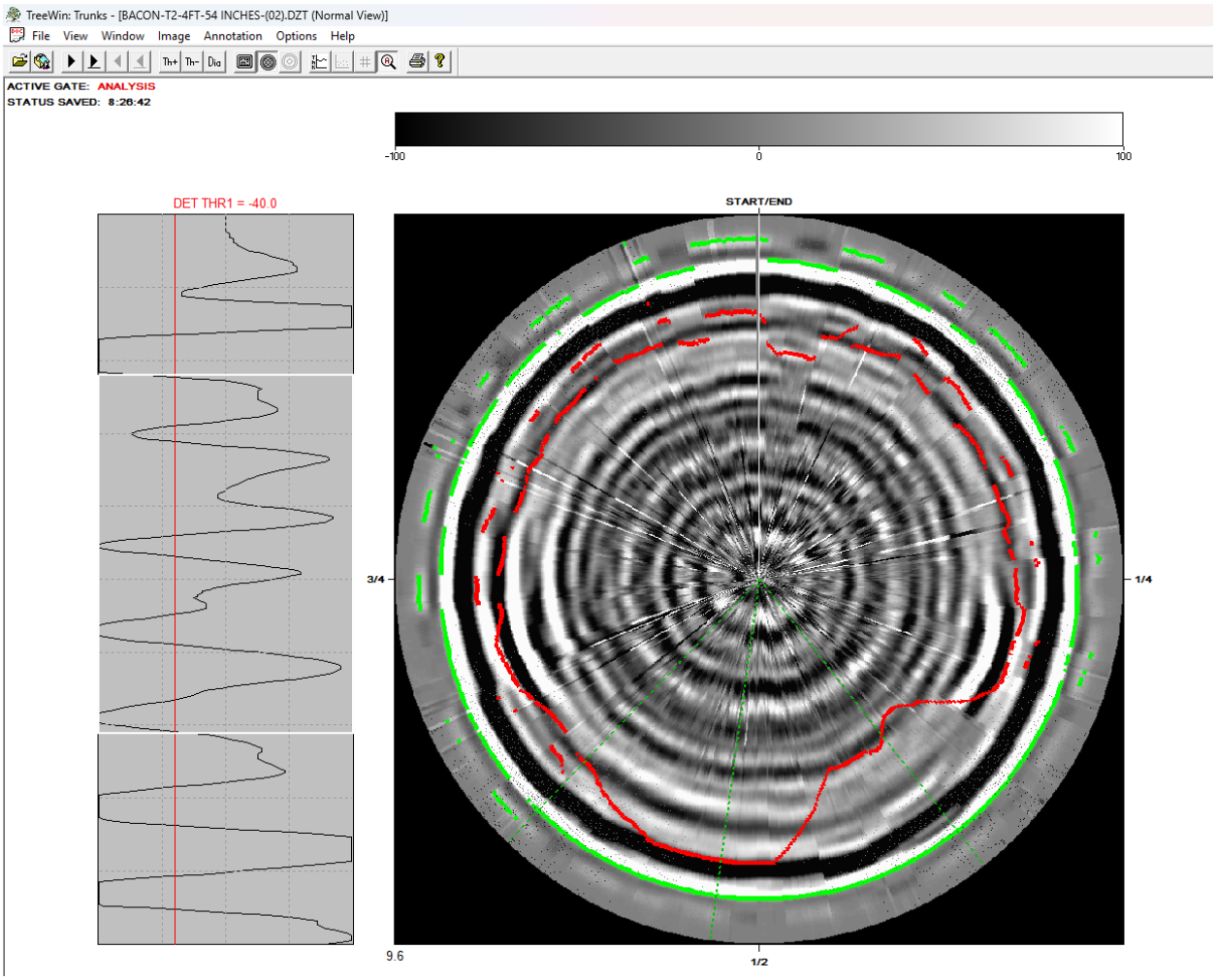
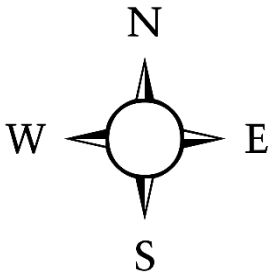


(Image: Secondary processing of 4-ft scan for additional analysis.)



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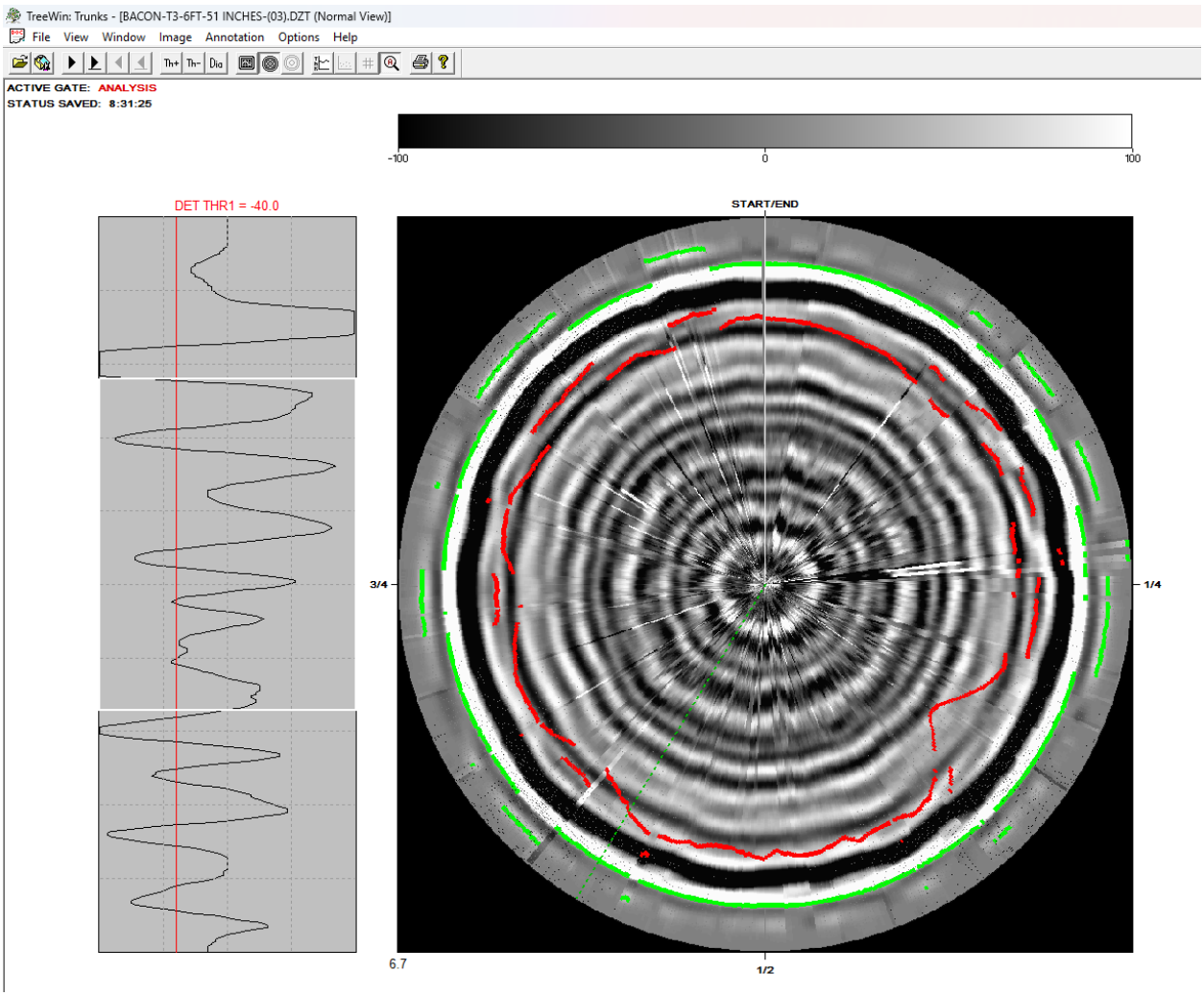
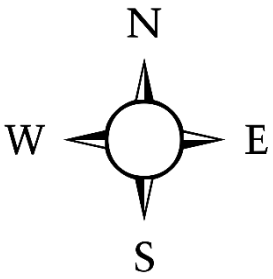


(Image: Secondary processing of 6-ft for additional analysis.)



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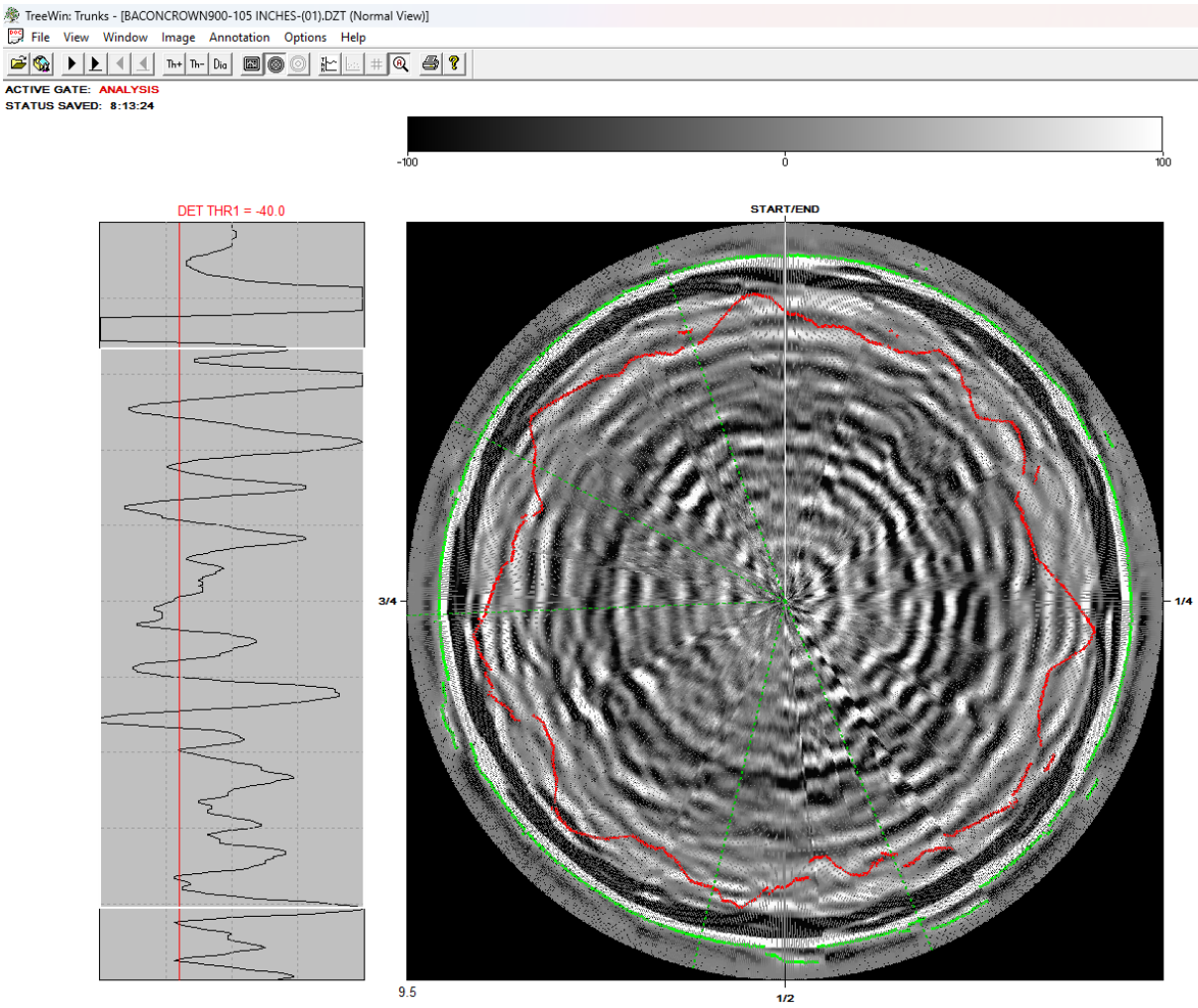
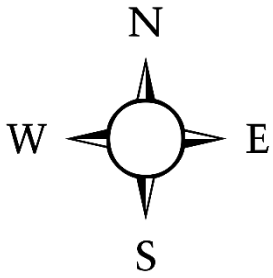


(Image: Secondary processing of Root Crown/Collar for additional analysis.)



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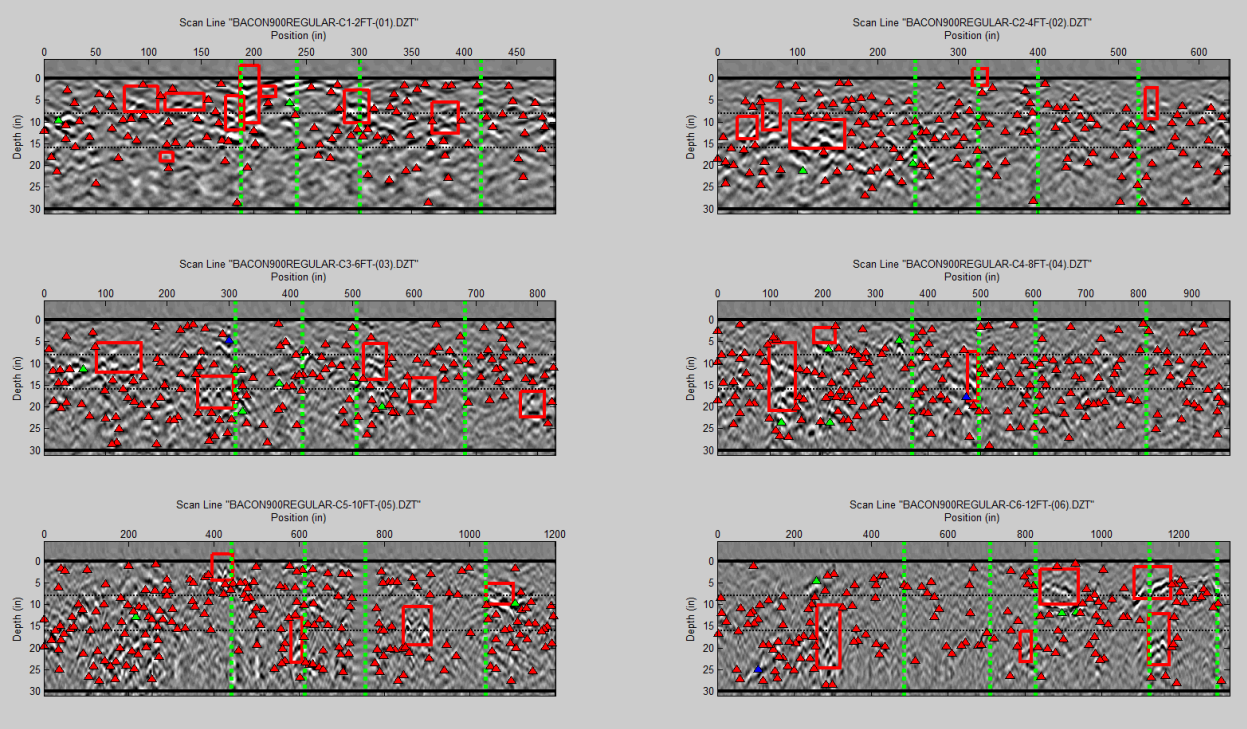

(Image: Virtual trench view of circular scans of root system at 2-,4-,6-,8-,10-,12-foot distances from the trunk. The triangles are root detections, and the red boxes are ignore zones containing false reflectors.)

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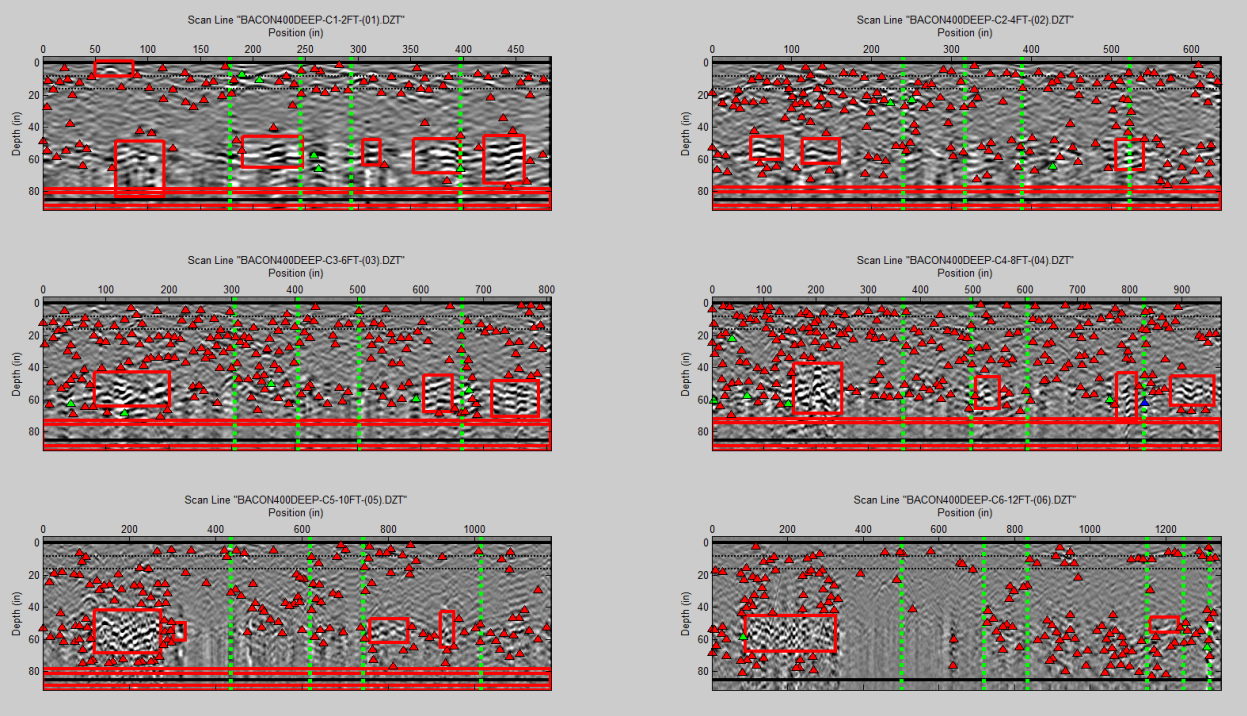

(Image: Virtual trench view of circular, ultra-deep scans of root system at 2-,4-,6-,8-,10-,12-foot distances from the trunk. The triangles are root detections, and the red boxes are ignore zones containing false reflectors.)

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