



Case # BZA-03-24-00759

Charleston County BZA Meeting of April 1, 2024

Applicant: Phil Spitz of Grantham Homes, LLC

Property Owners: Timothy D. Arnold and Cheryl A. Arnold

Representative: Marshall Badeaux of Charleston Tree Experts

Property Location: 3234 Johnstowne Street – Johns Island

TMS#: 203-10-00-084

Zoning District: Planned Development (PD) Zoning District

Request: Variance request to construct a pervious driveway and a detached garage within three times the DBH (Critical Root Zone) of a Grand Live Oak Tree.

Requirement:

The Charleston County Zoning and Land Development Regulations Ordinance (ZLDR), Chapter 9 Development Standards, Article 9.2 Tree Protection and Preservation, Sec. 9.2.4.C. Required Tree Protection states, "In no case shall any paving, filling, grading, Building, or construction footing occur or be placed within three times the DBH in inches from the trunk of the Tree, unless otherwise approved by the Board of Zoning Appeals."

Sec. 9.2.4 Required Tree Protection

A. General.

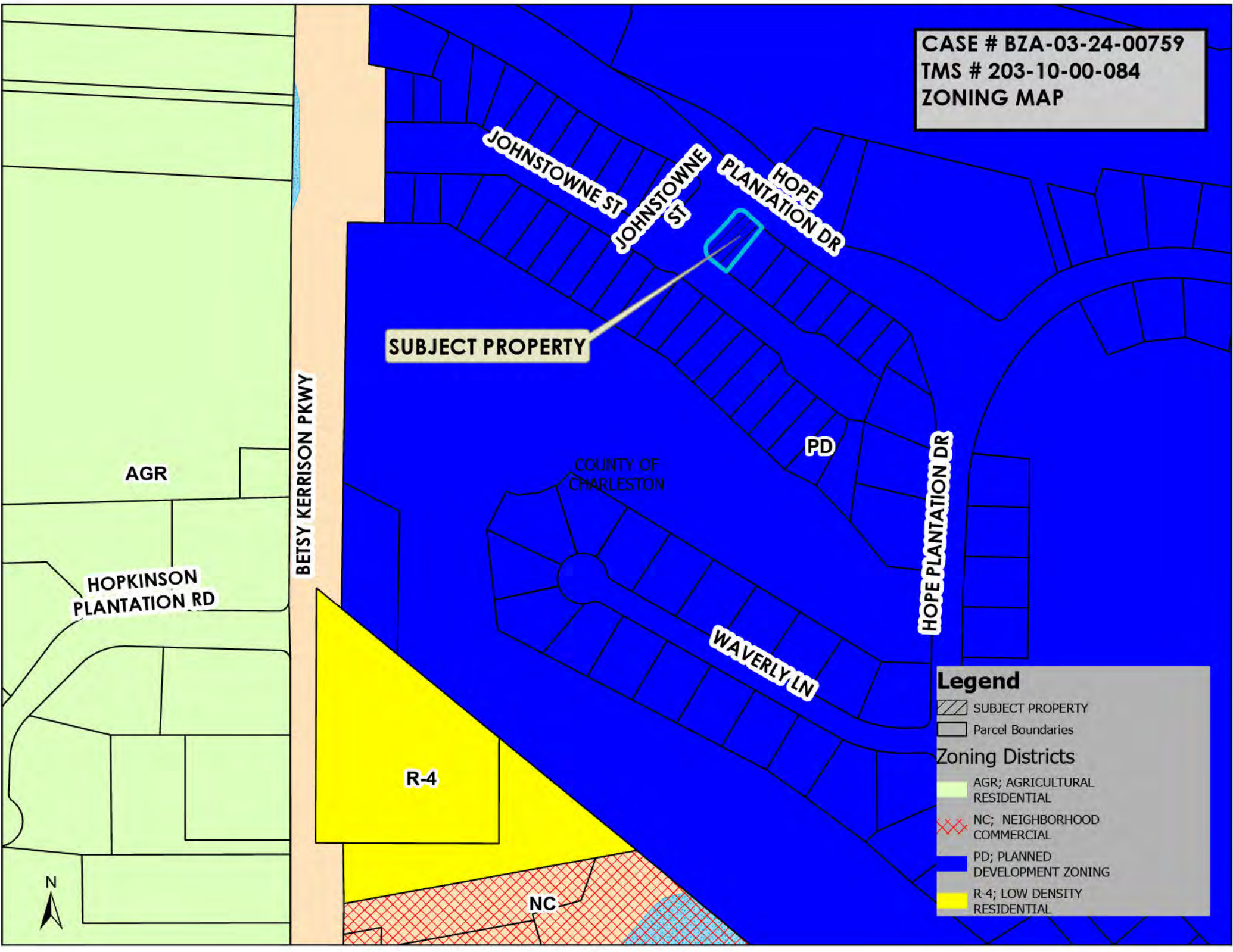
1. All Grand Trees and any other Trees required to remain on a site must be protected during construction and Development of a Parcel. Tree protection must be shown on all Development plans prior to site plan approval. A site inspection of the Tree barricades must be scheduled by the Applicant with the Zoning and Planning Department for approval prior to the issuance of permits or the start of Development activities.
 2. Prior to issuance of a Zoning Permit, a pre-construction planning conference is required for on-site Tree preservation with the Zoning and Planning Director or staff representative, the Applicant(s), and any appropriate parties for determining if there is need for additional Tree protection techniques and for designating placement of Tree barricades, construction employee parking, temporary construction office, and dumpsters.
- B. Prior to the start of Land Development activities, protective Tree barricades shall be placed around all Required Trees in or near Development areas. The barricades shall be constructed of wood, metal, or plastic fencing or other materials approved by the Zoning and Planning Director, and include a top rail. Tree barricades shall be placed beneath the canopy Drip Line or one foot times the DBH of the Tree as a radius from the trunk, whichever is greater. Other protective devices or construction techniques may be used as approved by the Zoning and Planning Director. Three inches of mulch shall be installed and maintained within all Tree barricade areas. The mulch shall remain in place throughout Development activities. The area within the Tree barricade shall remain free of all Building materials, dirt, fill, and other construction debris, vehicles, and Development activities. All Required Trees are also subject to the requirements of Sec. 9.4.6, *Landscape Materials Standards*, and Article 11.3, *Enforcement Responsibility and Complaints*.
- C. In no case shall any paving, filling, grading, Building, or construction footing occur or be placed within three times the DBH in inches from the trunk of the Tree, unless otherwise approved by the Board of Zoning Appeals.
- D. Limited Clearing and Grubbing may be authorized by the Zoning and Planning Director prior to the installation of Tree barricades on sites that exhibit unusually heavy undergrowth and where access to the interior of the site and its Protected Trees is impractical. Limited Clearing shall be for the express purpose of accessing the property and Protected Trees to erect the Required Tree barricades and silt fencing. Such limited Clearing shall be done with hand tools, push or walk -behind equipment, or lightweight bush-hog type equipment designed for brush and undergrowth Clearing and which is not capable of removing vegetation greater than three inches in diameter. Under no circumstances may metal-tracked bulldozers, loaders, or similar rider/operator equipment be allowed on site until the Tree barricades are erected and a Zoning Permit is issued.
- E. Limited encroachments into the area located within Tree barricades may be allowed by the Zoning and Planning Director provided that encroachments do not constitute more than 25 percent of the protected area beneath a Tree and do not occur in the area located within three times the DBH in inches from the trunk of the Tree unless otherwise approved by the BZA. Any paving, Grading, trenching, or filling of the protected area must be pre-approved by the Zoning and Planning Director or the Board of Zoning Appeals, as required by this Ordinance, and may require specific construction techniques to preserve the health of the Tree. When grading and construction within the protected area of a Tree has been approved, all damaged roots shall be severed clean.
- F. Prior to issuance of a Zoning Permit for uses other than Single-Family Detached Residential, the following numbers of Trees with a DBH of eight inches or greater shall be preserved and protected pursuant to the requirements of this Ordinance. Preservation and protection of native Trees is to be prioritized. Properties within the Industrial (IN) District may elect to mitigate the removal of these Protected Trees, as described in Sec. 9.2.6.D, with the exception that all Grand trees and any required Buffer tree measuring eight inches (8") or greater shall be preserved. On properties in the IN District that elect to mitigate the removal of these Protected Trees and where the planting of canopy trees is required within Buffers and other landscaping, screening, and buffer areas, canopy trees shall be a minimum of four inch (4") caliper.
1. 20 Trees per acre; or
 2. Any number of Trees with a combined DBH of at least 160 inches per acre.
- G. When Lots lack a sufficient number of Trees to meet the requirement for DBH/number of Trees per acre, this requirement shall be fulfilled by existing Trees and must equal 40 inches per acre combined DBH. On Lots with less than 40 inches per acre combined DBH, additional Trees shall be planted on the Lot equaling or exceeding 40 inches per acre combined DBH. Planting schedules shall be approved by the Zoning and Planning Director. Properties within the Industrial (IN) District may elect to mitigate the removal of Protected Trees, as described in Sec. 9.2.6.D, with the exception that all Grand Trees and any required Buffer tree measuring eight inches (8") or greater shall be preserved. On properties in the IN District that elect to mitigate the removal of Protected Trees and where the planting of canopy trees is required within Buffers and other landscaping, screening and buffer areas, canopy trees shall be a minimum of four inch (4") caliper.

H. Required drainage improvements, such as Detention and retention ponds and wetlands, may be subtracted from the area used to calculate Tree preservation requirements.

(Ord. No. 2239, 12/06/2022)

Effective on: 12/6/2022, as amended

CASE # BZA-03-24-00759
TMS # 203-10-00-084
ZONING MAP



SUBJECT PROPERTY

PD

AGR

R-4

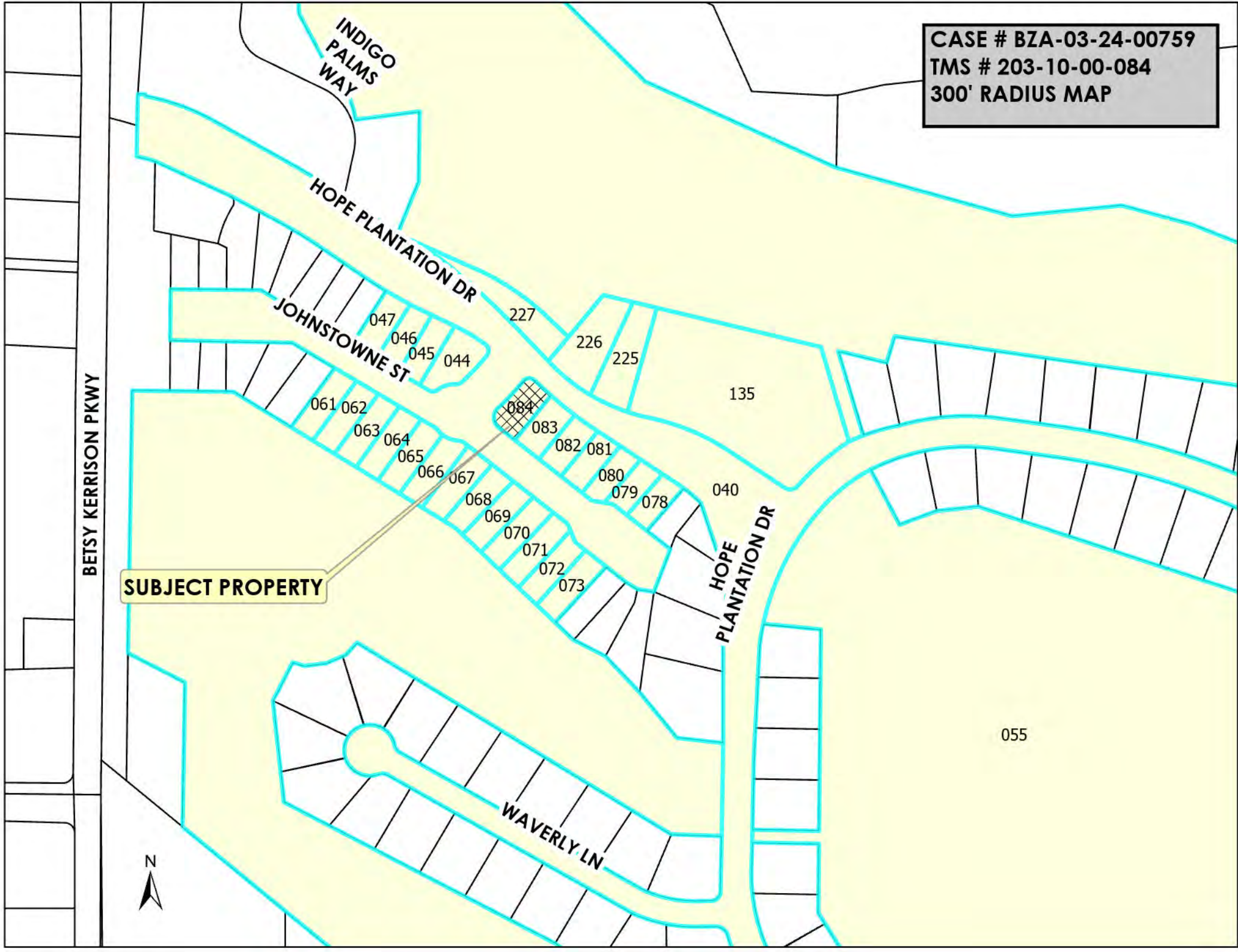
NC

Legend

- SUBJECT PROPERTY
- Parcel Boundaries
- Zoning Districts**
- AGR; AGRICULTURAL RESIDENTIAL
- NC; NEIGHBORHOOD COMMERCIAL
- PD; PLANNED DEVELOPMENT ZONING
- R-4; LOW DENSITY RESIDENTIAL



CASE # BZA-03-24-00759
TMS # 203-10-00-084
300' RADIUS MAP



SUBJECT PROPERTY

CASE # BZA-03-24-00759
TMS # 203-10-00-084
AERIAL VIEW



JOHNSTOWNE ST

HOPE PLANTATION DR

SUBJECT PROPERTY

JOHNSTOWNE ST



CASE # BZA-03-24-00759
TMS # 203-10-00-084
AERIAL VIEW

INDIGO
PALMS
WAY

HOPE PLANTATION DR

JOHNSTOWNE ST

JOHNSTOWNE ST

BETSY KERRISON PKWY

SUBJECT PROPERTY

HOPE
PLANTATION DR



Case # BZA-03-24-00759

BZA Meeting of April 1, 2024

Subject Property: 3234 Johnstowne Street – Johns Island

Proposal: Variance request to construct a pervious driveway and a detached garage within three times the DBH (Critical Root Zoning) of a Grand Live Oak Tree.



171" DBH Live Oak Tree

Construct within 3 x DBH - Zoning Variance required from BZA



171" DBH Live Oak Tree

Construct within 3 x DBH - Zoning Variance required from BZA



Staff Review:

The applicant, Phil Spitz of Grantham Homes, LLC, the property owners, Timothy D. Arnold and Cheryl A. Arnold, represented by, Marshall Badeaux of Charleston Tree Experts are requesting a variance to construct a pervious driveway and a detached garage within three times the DBH (Critical Root Zone) of a Grand Live Oak Tree at 3234 Johnstowne Street (TMS # 203-10-00-084) on Johns Island in Charleston County. The subject property and all surrounding properties are located in the Planned Development (PD) Zoning District in the Hope Plantation subdivision. The 7,096 sq. ft. (0.16 acre) subject property is located on the corner of Hope Plantation Drive and Johnstowne Street and is vacant.

The Grand Live Oak Tree in question is a multi-stem Diameter Breast Height (DBH) inches: 16/18/19/22/22/24/25/25 = 171 total DBH inches. The proposed tree protection will be located 25' from the base of the nearest stem. In addition, the proposed driveway will remain gravel beyond the house with geo-fabric installed. Part of the tree is located on property line of the subject property (Lot 41E) and the adjacent property (Lot 40E.) The applicant plans to preserve two (2) 18" DBH Laurel Oak Trees located near the southwest corner of the subject property. The applicant's letter of intent explains, *"The owner has prepared the attached proposed site plan which allows for an improvement which least impacts the Subject Tree by placement of a permeable driveway within the Required Tree Protection. In that regard, we respectfully request a variance allowing encroachment of the Required Tree Protection for the Subject Tree to allow improvement and unrestricted utilization of the property. Damage to the tree will be mitigated by installing a pervious driveway and enacting the attached proposed Tree Preservation Plan prepared by Marshall Badeaux, ASCA Registered Consulting Arborist (RCA) and ISA Board Certified Master Arborist (BCMA), outlining Orders of Preservation to assure the Subject Tree is provided a greater level of care pre-construction, during construction and post-construction."*

Applicable ZLDR requirement:

The Charleston County Zoning and Land Development Regulations Ordinance (ZLDR), Chapter 9 Development Standards, Article 9.2 Tree Protection and Preservation, Sec. 9.2.4.C. Required Tree Protection states, *"In no case shall any paving, filling, grading, Building, or construction footing occur or be placed within three times the DBH in inches from the trunk of the Tree, unless otherwise approved by the Board of Zoning Appeals."*

Applicable ZLDR Chapter 12 Definitions, Article 12.1 Terms and Uses Defined:

Arborist, Certified A Person certified by the International Society of Arboriculture.

Diameter Breast Height (DBH) The total diameter, in inches, of a Tree trunk or trunks measured at a point four and one-half feet above existing Grade (at the base of the Tree). In measuring DBH, the circumference of the Tree shall be measured with a standard diameter tape, and the circumference shall be divided by 3.14.

Grand Tree Any Tree with a diameter breast height of 24 inches or greater, with the exception of Pine Tree and Sweet Gum Tree (*Liquidambar styraciflua*) species.

Staff conducted a site visit of the subject property on March 13, 2024. Please review the attachments for further details regarding this request.

Planning Director Review and Report regarding Approval Criteria of §3.10.6:

§3.10.6(1): *There are extraordinary and exceptional conditions pertaining to the particular piece of property;*

Response: There are extraordinary and exceptional conditions pertaining to the 7,096 sq. ft. (0.16 acre) subject property. The property is located on a corner lot **with the 171" DBH Grand Live Oak on the northeast property line and two (2) 18" DBH Laurel Oak Trees located near the southwest corner of the** subject property. **The applicant's letter of intent states, "The property owner has worked with engineers and a BCMA/RCA to establish the least impactful house design and driveway placement which has resulted in the placement of a permeable driveway within the Required Tree Protection. Any other home design and/or driveway placement would cause greater disturbance to the Subject Tree or other protected trees. Without approval of the requested variance, the property could not be improved thereby unreasonably restricting utilization of the property."** Therefore, the request meets this criterion.

§3.10.6(2): *These conditions do not generally apply to other property in the vicinity;*

Response: These conditions are unique to the subject property and do not generally apply to other properties in the vicinity. **The applicant's** letter of intent states, **"The applicant is unaware of other properties subject to the same conditions and believes the conditions are unique to the subject property."** Therefore, the request meets this criterion.

§3.10.6(3): *Because of these conditions, the application of this Ordinance to the particular piece of property would effectively prohibit or unreasonably restrict the utilization of the property;*

Response: The application of this Ordinance, Chapter 9 Development Standards, Article 9.2 Tree Protection and Preservation, Sec. 9.2.4.C. Required Tree

Protection to 3234 Johnstowne Street would unreasonably restrict the utilization of the property. **The applicant's letter of intent** states, **"Application of the Required Tree Protection to the Subject Tree unreasonably restricts utilization of the property as the location of the tree protection barricade required for the Subject Tree completely obstructs improvement abilities, making it inaccessible for utilization of the property."** Therefore, the request meets this criterion.

§3.10.6(4): *The authorization of a variance will not be of substantial detriment to adjacent property or to the public good, and the character of the zoning district will not be harmed by the granting of the variance;*

Response: Authorization of this variance request may not be of substantial detriment to adjacent properties or to the public good. Therefore, the character of the Planned Development (PD) Zoning District may not be harmed. **The applicant's** letter of intent states, **"The applicant does not believe authorization of the requested encroachment of the Required Tree Protection for the Subject Tree would be a substantial detriment to the adjacent property. Additionally, among others, some of the intentions of the Sec. 9 Development Standards are to 'assure the protection and preservation of natural resources, such as trees and wetlands' (Sec. 9.1(B)(6), and to 'prioritize low-impact design strategies in order to increase the resilience of Charleston County and preserve the landscape and character of the Lowcountry.'** (Sec. 9.1(B)(8)). We believe the variance requested is aligned with the intentions of the Development Standards as the Subject Tree will be retained and any potential damage will be mitigated. Furthermore, the Subject Tree will receive a greater level of care than is set forth by the Required Tree Protection thereby assuring its preservation. In harmony with the proposed tree preservation, we believe the design proposed is low-impact in that it provides reasonable **encroachment into one (1) tree's required protection and prevents disturbance of any other protected trees which is in alignment with the strategies intended by the Development Standards. For these reasons, the authorization of the requested variance is not a substantial detriment to the adjacent property or to the public good, nor would the character of the zoning district be harmed."** Therefore, the request may meet this criterion.

§3.10.6(5): *The Board of Zoning Appeals shall not grant a variance the effect of which would be to allow the establishment of a use not otherwise permitted in a zoning district, to extend physically a nonconforming use of land, or to change the zoning district boundaries shown on the official zoning map. The fact that property may be utilized more profitably, should a variance*

be granted, may not be considered grounds for a variance;
Response: The variance does not allow a use that is not permitted in this zoning district, nor does it extend physically a nonconforming use of land or change the zoning district boundaries. Therefore, the request meets this criterion.

§3.10.6(6): *The need for the variance is not the result of the applicant's own actions;*
Response: The need for the variance may be **the result of the applicant's own actions** because the encroachment into the protected root zone may be reduced by removing or relocating the garage, which affects the position of the driveway. Therefore, the request may not meet this criterion. However, the **applicant's letter of intent** contends, **"The applicant does not believe the need for a variance is the result of any actions taken by any parties."**

§3.10.6(7): *Granting of the variance does not substantially conflict with the Comprehensive Plan or the purposes of the Ordinance;*
Response: Granting of the variance may not substantially conflict with the Comprehensive Plan or the purposes of the Ordinance if the Board finds that the strict application of the provisions of the Ordinance results in an unnecessary hardship and the Tree Preservation Plan approved by Planning Staff is implemented. Therefore, the request may meet this criterion.

Board of Zoning Appeals' Action:

According to Article 3.10 Zoning Variances, Section §3.10.6 Approval Criteria of the *Charleston County Zoning and Land Development Regulations Ordinance (ZLDR)*, (adopted July 18, 2006), The Board of Zoning Appeals has the authority to hear and decide appeals for a Zoning Variance when strict application of the provisions of this Ordinance would result in unnecessary hardship (§3.10.6A). A Zoning Variance may be granted in an individual case of unnecessary hardship if the Board of Zoning Appeals makes and explains in writing their findings (§3.10.6B Approval Criteria).

In granting a variance, the Board of Zoning Appeals may attach to it such conditions regarding the location, character, or other features of the proposed building or structure as the Board may consider advisable to protect established property values in the surrounding area or to promote the public health, safety, or general welfare (§3.10.6C).

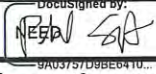
The Board of Zoning Appeals may approve, approve with conditions or deny Case # BZA-03-24-00759 [Variance request to construct a pervious driveway and a detached garage within three times the DBH (Critical Root Zone) of a Grand Live Oak Tree at 3234 Johnstowne Street (TMS # 203-10-00-084) on Johns Island, Charleston County] based on the BZA's "Findings of Fact", unless additional information is deemed necessary to make

an informed decision. In the event the BZA decides to approve the application, Staff recommends the following conditions:

1. If the Grand Tree **requested for encroachment (171" DBH Live Oak) dies within 3** years of the completion of the project, the applicant shall mitigate the tree by either (a) submitting a mitigation plan for review and approval indicating the installation of canopy trees no smaller than two and one-half (2.5) inches in caliper equaling inch per inch replacement, (b) by depositing funds into the Charleston County Tree Fund as described in Sec. 9.2.6 of the ZLDR, or (c) a combination of both (a) and (b). The allotted mitigation shall be in place prior to its removal.
2. **The tree barricade for the 171" DBH Live Oak shall be installed** along the setback lines within the canopy of the tree, constructed of chain link fencing, and inspected by staff prior to Zoning Permit approval for construction.
3. The proposed driveway beyond the house shall be pervious and constructed in a way that will not require excavation or compaction of the existing ground area within the canopy dripline. The applicant shall submit a construction detail for staff to review and approve to confirm compliance prior to Zoning Permit approval for construction.
4. The applicant shall retain a Certified Arborist to monitor and treat the Tree onsite before, during, and after construction. The applicant shall provide a Tree Preservation Plan prepared by the Arborist to the staff for review and approval prior to Zoning Permit approval for construction.

ZONING VARIANCE APPLICATION

Charleston County Board of Zoning Appeals (BZA)

Property Information			
Subject Property Address: 3234 Johnstowne Street, Johns Island, SC 29455			
Tax Map Number(s): 2031000084			
Current Use of Property: Undeveloped			
Proposed Use of Property: Single Family Project			
Zoning Variance Description: Encroachment of the Required Tree Protection for a Grand Tree			
Applicant Information (Required)			
Applicant Name (please print): Phil Spitz			
Name of Company (if applicable): Grantham Homes, LLC			
Mailing Address: 572 Savannah Hwy			
City: Charleston	State: sc	Zip Code: 29407	
Email Address: phil.spitz@crescenthomes.net		Phone #: (843) 573-9635	
Applicant Signature: 		Date: 2/16/2024 8:45:18 AM PS	
Representative Information (Complete only if applicable. Attorney, Builder, Engineer, Surveyor etc.)			
Print Representative Name and Name of Company: Marshall Badeaux, Charleston Tree Experts			
Mailing Address: 2851 Maybank Hwy			
City: Johns Island	State: SC	Zip Code: 29455	
Email Address: marshall@charlestontreeexperts.com		Phone #: 843-501-4297	
Designation of Agent (Complete only if the Applicant listed above is not the Property Owner.)			
I hereby appoint the person named as Applicant and/or Representative as my (our) agent to represent me (us) in this application.			
Property Owner(s) Name(s) (please print): Timothy D. Arnold and Cheryl A. Arnold			
Name of Company (if applicable, LLC etc.):			
Property Owner(s) Mailing Address: 3325 Hopkinson Plantation Road			
City: Johns Island	State: SC	Zip Code: 29455	Phone #: 843-814-8525
Property Owner(s) Email Address: tarnold6363@yahoo.com			
Property Owner(s) Signature:			Date: 2/16/24
FOR OFFICE USE ONLY:			
Zoning District: PD	Flood Zone: Shaded X (0785K)	Date Filed: 03-01-2024	Fee Paid: \$250.00 CC
Application #: 03-24-00759	TMS #: 203-10-00-084	Staff Initials: GAH	

Description of Request

Please describe your proposal in detail. You may attach a separate sheet if necessary. Additionally, you may provide any supporting materials that are applicable to your request (photographs, letter of support, etc.)

Charleston County Land and Development Ordinance Sec. 9.2.4(B), Required Tree Protection, (hereinafter referred to as "Required Tree Protection") requires protective tree barricades to be placed around all required trees beneath the canopy drip line or one foot times the DBH of the tree as a radius from the trunk, whichever is greater. There is multi-stem Live oak measuring a total of 107" DBH, indicated on the attached Property Plat (hereinafter referred to as the "Subject Tree") that requires tree protection for land development activities. Application of the Required Tree Protection establishes protective tree barricade to be installed at 107" as a radius from the trunk. Placement of the required tree barricade greatly obstructs a portion of the property and prevents the owner from improving the property, and thereby unreasonably restricting utilization of the property.

The owner has prepared the attached proposed site plan which allows for an improvement which least impacts the Subject Tree by placement of a permeable driveway within the Required Tree Protection. In that regard, we respectfully request a variance allowing encroachment of the Required Tree Protection for the Subject Tree to allow improvement and unrestricted utilization of the property. Damage to the tree will be mitigated by installing a pervious driveway and by enacting the attached proposed Tree Preservation Plan prepared by Marshall Badeaux, ASCA Registered Consulting Arborist (RCA) and ISA Board Certified Master Arborist (BCMA), outlining Orders of Preservation to assure the Subject Tree is provided a greater level of care pre-construction, during construction and post-construction.

Applicant's response to Article 3.10 Zoning Variances, §3.10.6 Approval Criteria

Zoning Variances may be approved only if the Board of Zoning Appeals finds that the proposed use meets all 7 of the approval criteria. In evaluating your request, the members of the board will review the answers below as a part of the case record. You may attach a separate sheet if necessary.

1. Are there extraordinary and exceptional conditions pertaining to the subject property? Explain:

The Property Owner has worked with engineers and a BCMA/RCA to establish the least impactful house design and driveway placement which has resulted in the placement of a permeable driveway within the Required Tree Protection. Any other home design and/or driveway placement would cause greater disturbance to the Subject Tree or other protected trees (see attached proposed site plan with trees indicated). Without approval of the requested variance, the property could not be improved thereby unreasonably restricting utilization of the property.

2. Do these conditions generally apply to other property in the vicinity or are they unique to the subject property? Explain:

The applicant is unaware of other properties subject to the same conditions and believes the conditions are unique to the subject property.

3. Because of these extraordinary and exceptional conditions, would the application of this Ordinance to the subject property effectively prohibit or unreasonably restrict the utilization of the property? Explain:

Application of the Required Tree Protection to the Subject Tree unreasonably restricts utilization of the property as the location of the tree protection barricade required for the Subject Tree completely obstructs improvement abilities, making it inaccessible for utilization of the property.

4. Will the authorization of a variance be a substantial detriment to adjacent property or to the public good? Will the character of the zoning district be harmed if this variance is granted? Explain:

The applicant does not believe authorization of the requested encroachment of the Required Tree Protection for the Subject Tree would be a substantial detriment to the adjacent property. Additionally, among others, some of the intentions of the Sec. 9 Development Standards are to "assure the protection and preservation of natural resources, such as trees and wetlands" (Sec. 9.1(B)(6)), and to "prioritize low-impact design strategies in order to increase the resilience of Charleston County and preserve the landscape and character of the Lowcountry." (Sec.9.1(B)(8)). We believe the variance requested is aligned with the intentions of the Development Standards as the Subject Tree will be retained and any potential damage will be mitigated. Furthermore, the Subject Tree will receive a greater level of care than is set forth by the Required Tree Protection thereby assuring its preservation. In harmony with the proposed tree preservation, we believe the design proposed is low-impact in that it provides reasonable encroachment into one (1) tree's required protection and prevents disturbance of any other protected trees which is in alignment with strategies intended by the Development Standards.

For these reasons, the authorization of the requested variance is not a substantial detriment to the adjacent property or to the public good, nor would the character of the zoning district be harmed.

5. The BZA shall not grant a variance the effect of which would be to allow the establishment of a use not otherwise permitted in a zoning district, to extend physically a Nonconforming Use of land, or to change the zoning district boundaries shown on the Official Zoning Map. The fact that property may be utilized more profitably if a Zoning Variance is granted shall not be considered grounds for granting a Zoning Variance. Does the variance request meet this criterion?

The applicant does not believe any of the described disallowment of the variance request applies.

6. Is the need for the variance the result of your own actions? Explain:

The applicant does not believe the need for a variance is the result of any actions taken by any parties.

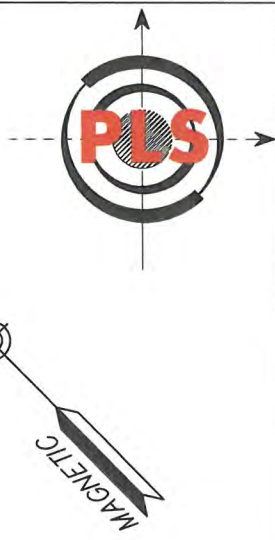
7. Does the variance substantially conflict with the Charleston County Comprehensive Plan or the purposes of the Ordinance? Explain

The applicant does not believe the variance request substantially conflicts with the Charleston County Comprehensive Plan or the purposes of the Ordinance.

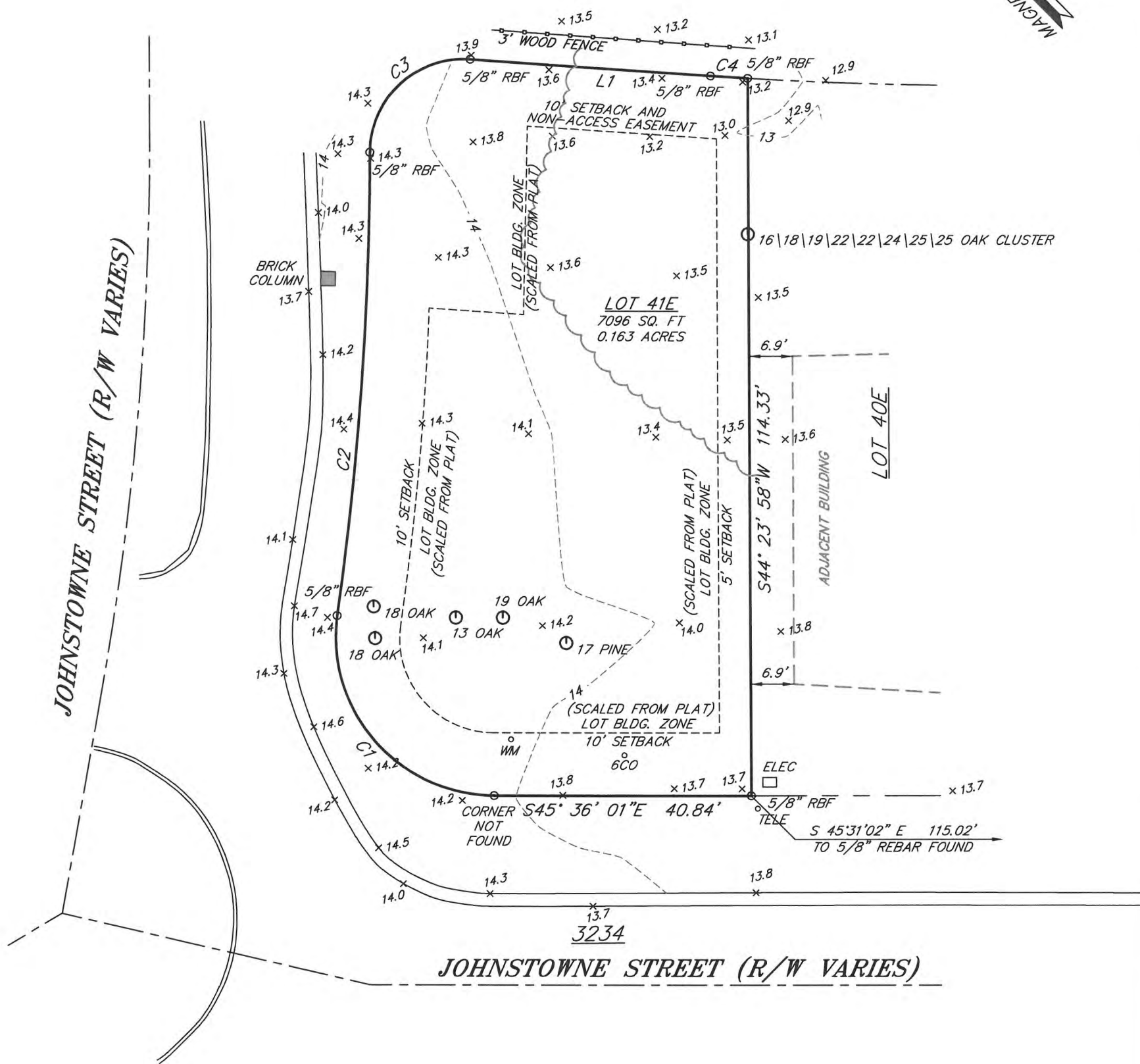
In granting a variance, the Board of Zoning Appeals may attach to it such conditions regarding the location, character, or other features of the proposed building or structure as the Board may consider advisable to protect established property values in the surrounding area or to promote the public health, safety, or general welfare.

CURVE TABLE				
CURVE	RADIUS	LENGTH	CHORD	DIRECTION
C1	25.00	42.88	37.82	S03° 32' 24"W
C2	535.00	74.00	73.94	N48° 43' 05"E
C3	15.00	24.46	21.84	N88° 32' 15"W
C4	689.17	5.88	5.88	S42° 04' 32"E

LINE TABLE		
LINE	DIRECTION	LENGTH
L1	N41° 49' 50"W	38.23



HOPE PLANTATION DRIVE (R/W VARIES)



JOHNSTONE STREET (R/W VARIES)

SURVEYED FOR CRESCENT-FLEX

**TREE AND TOPOGRAPHIC SURVEY SHOWING LOT 41E, "KIAWAH RIVER ESTATES"
HOPE PLANTATION PHASE V, TMS #203-10-00-084
LOCATED IN CHARLESTON COUNTY, SOUTH CAROLINA**

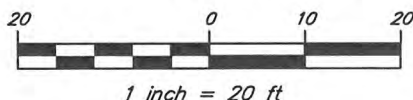
SCALE: 1" = 20' DATE: AUGUST 1, 2023
 REFERENCE: PLAT RECORDED IN PLAT BOOK EE, PAGE 583
 LOT MAY BE SUBJECT TO EASEMENTS AND RESTRICTIONS NOT OBVIOUS OR APPARENT TO THE SURVEYOR.
 PROPERTY APPEARS TO LIE IN FLOOD ZONE
 X (SHADED), 45019C 0785 K, REVISED JANUARY 29, 2021
 HP-5-41E-TT DTC FEMA REVISION CHECK: 8/4/2023
 LAUREN MAURICE WILDER S.C.P.L.S. No. 29523
 PARKER LAND SURVEYING, LLC
 5910 GRIFFIN STREET, HANAHAN, SC 29410
 TEL: (843) 554-7777

I HEREBY STATE THAT TO THE BEST OF MY PROFESSIONAL KNOWLEDGE, INFORMATION AND BELIEF, THE SURVEY SHOWN HEREIN WAS MADE IN ACCORDANCE WITH THE REQUIREMENTS OF THE STANDARDS OF PRACTICE MANUAL FOR SURVEYING IN SOUTH CAROLINA, AND MEETS OR EXCEEDS THE REQUIREMENTS FOR A CLASS B SURVEY AS SPECIFIED THEREIN; ALSO THERE ARE NO VISIBLE ENCROACHMENTS OR PROJECTIONS OTHER THAN SHOWN.



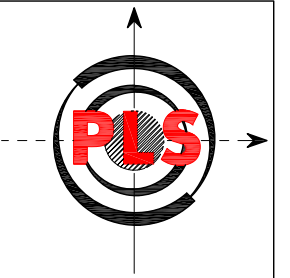
PROPERTY LINE WITH PROPERTY CORNER. MONUMENT FOUND OR SET AS DESCRIBED

SETBACKS PER REFERENCED PLAT AND SHOULD BE VERIFIED WITH ALL GOVERNING MUNICIPALITIES AND ASSOCIATIONS BEFORE DESIGN OR CONSTRUCTION



CURVE TABLE				
CURVE	RADIUS	LENGTH	CHORD	DIRECTION
C1	25.00	42.88	37.82	S03° 32' 24"W
C2	535.00	74.00	73.94	N48° 43' 05"E
C3	15.00	24.46	21.84	N88° 32' 15"W
C4	689.17	5.88	5.88	S42° 04' 32"E

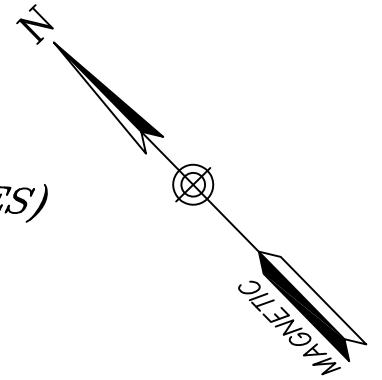
LINE TABLE		
LINE	DIRECTION	LENGTH
L1	N41° 49' 50"W	38.23



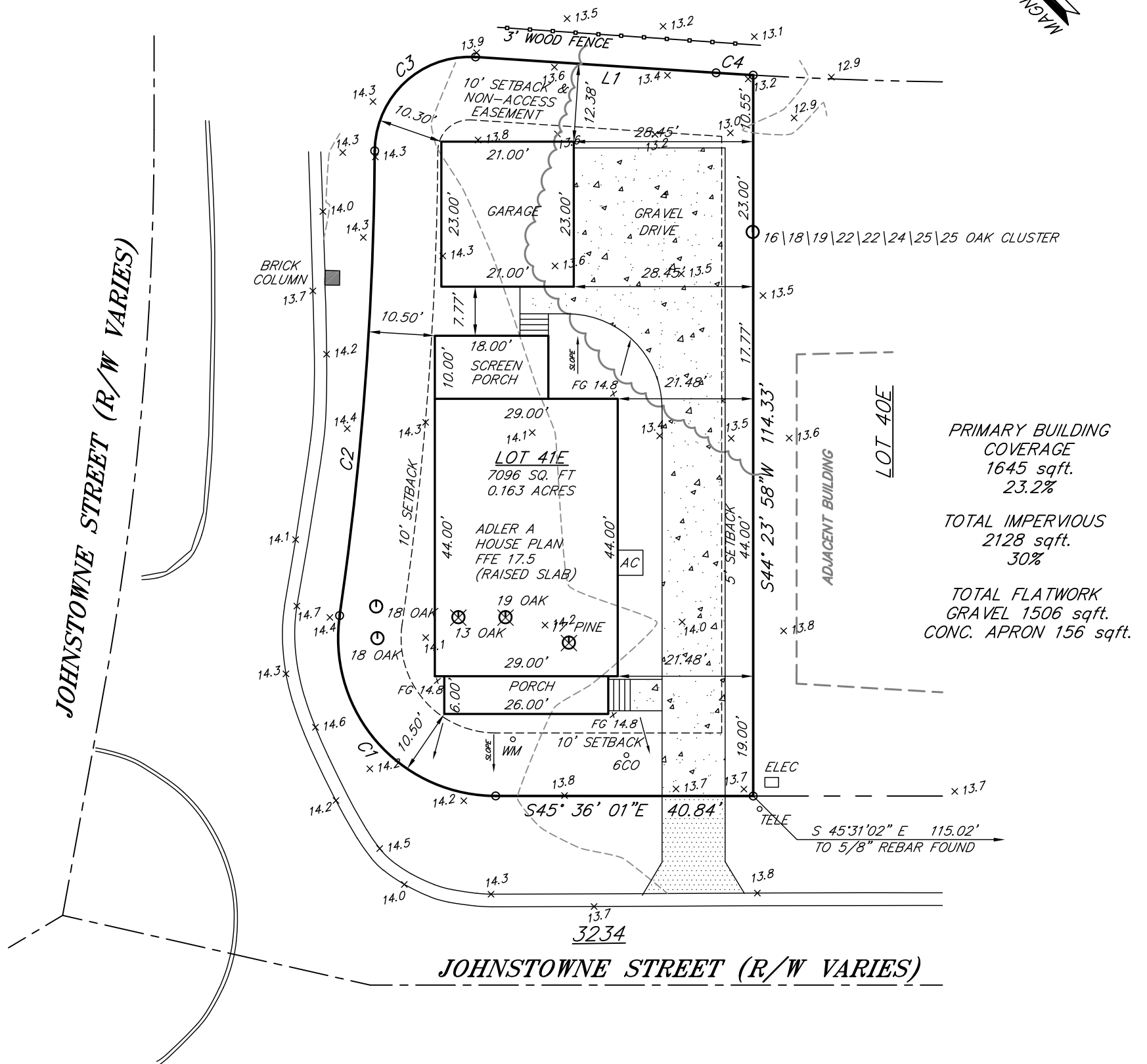
X = TREE TO BE REMOVED PER BUILDER

TREE NOTE:
TREES SHOWN WERE MEASURED AT DIAMETER BREAST HEIGHT (DBH) WITH A FORESTRY TREE TAPE. ALL TREE SIZES AND SPECIES SHOULD BE VERIFIED BY GOVERNING MUNICIPALITY AND/OR A LICENSED ARBORIST BEFORE DESIGN OR CONSTRUCTION

TREE REMOVAL NOTE:
APPROVAL/PERMISSION TO REMOVE TREES IS GRANTED BY THE GOVERNING MUNICIPALITY. THIS DOCUMENT SHOULD BE VERIFIED AGAINST THE MUNICIPALITY APPROVED TREE REMOVAL PLAN. THIS DOCUMENT CANNOT BE CONSTRUED IN ANY WAY AS TO GRANT APPROVAL. PARKER LAND SURVEYING, LLC IS IN NO WAY RESPONSIBLE FOR TREES REMOVED



HOPE PLANTATION DRIVE (R/W VARIES)



PRIMARY BUILDING COVERAGE
1645 sqft.
23.2%

TOTAL IMPERVIOUS
2128 sqft.
30%

TOTAL FLATWORK
GRAVEL 1506 sqft.
CONC. APRON 156 sqft.

PREPARED FOR CRESCENT-FLEX

PLOT PLAN SHOWING LOT 41E, "KIAWAH RIVER ESTATES" HOPE PLANTATION PHASE V, TMS #203-10-00-084

LOCATED IN CHARLESTON COUNTY, SOUTH CAROLINA

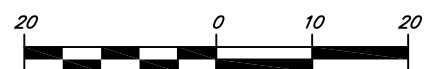
SCALE: 1" = 20' DATE: NOVEMBER 14, 2023
REFERENCE: PLAT RECORDED IN PLAT BOOK EE, PAGE 583
LOT MAY BE SUBJECT TO EASEMENTS AND RESTRICTIONS NOT OBVIOUS OR APPARENT TO THE SURVEYOR.
PROPERTY APPEARS TO LIE IN FLOOD ZONE X (SHADED), 45019C 0785 K, REVISED JANUARY 29, 2021
FLOOD ZONE SHOULD BE VERIFIED WITH GOVERNING MUNICIPALITY BEFORE CONSTRUCTION. FEMA REVISION CHECK: 11/14/2023
ELEVATIONS SHOWN ARE BASED ON NAVD 88 DATUM, FINISHED GRADES ARE ASSUMED
HP-5-41E-PP DTC

PARKER LAND SURVEYING, LLC
5910 GRIFFIN STREET, HANAHAN, SC 29410
TEL.: (843) 554-7777

THIS PLOT PLAN IS FOR PERMITTING PURPOSES ONLY AND NOT FOR CONSTRUCTION USE. IT DOES NOT REPRESENT A LAND SURVEY, WAS NOT PREPARED FOR RECORDATION, AND IS NOT SUITABLE FOR DEEDING OF PROPERTY. NO GROUND SURVEY WAS PERFORMED.

PROPERTY LINE WITH PROPERTY CORNER. MONUMENT FOUND OR SET AS DESCRIBED

SETBACKS PER REFERENCED PLAT AND SHOULD BE VERIFIED WITH ALL GOVERNING MUNICIPALITIES AND ASSOCIATIONS BEFORE DESIGN OR CONSTRUCTION



1 inch = 20 ft

TREE PRESERVATION PLAN

SHEET INDEX

- TPP-0 INDEX
- TPP-1 TREE SURVEY
- TPP-2 TREE INVENTORY
- TPP-3 ORDERS OF PRESERVATION
- TPP-4 TREE PRESERVATION PROTOCOL
- TPP-5 TREE DETAIL

NOTES:

TREE RISK ASSESSMENT

TREES PROVIDE NUMEROUS BENEFITS TO THE URBAN ENVIRONMENT. THESE BENEFITS INCREASE AS THE AGE AND SIZE OF THE TREES INCREASE. HOWEVER, AS A TREE BECOMES LARGER AND MORE MATURE, IT IS LIKELY TO SHED BRANCHES OR DEVELOP DECAY OR OTHER CONDITIONS THAT CAN PRE-dispose IT TO FAILURE. IN ASSESSING AND MANAGING TREES, WE STRIVE TO STRIKE A BALANCE BETWEEN THE RISK THAT A TREE POSES AND THE BENEFITS THAT INDIVIDUALS AND COMMUNITIES DERIVE FROM TREES.

TREE RISK ASSESSMENT (TRA) IS THE SYSTEMATIC APPROACH USED TO IDENTIFY, ANALYZE AND EVALUATE TREE RISK. BY IDENTIFYING THE TREE RISK, MITIGATION CAN BE CONDUCTED TO REDUCE RISK WHILE PRESERVING THE TREES THAT MEET ACCEPTABLE LEVELS OF RISK.

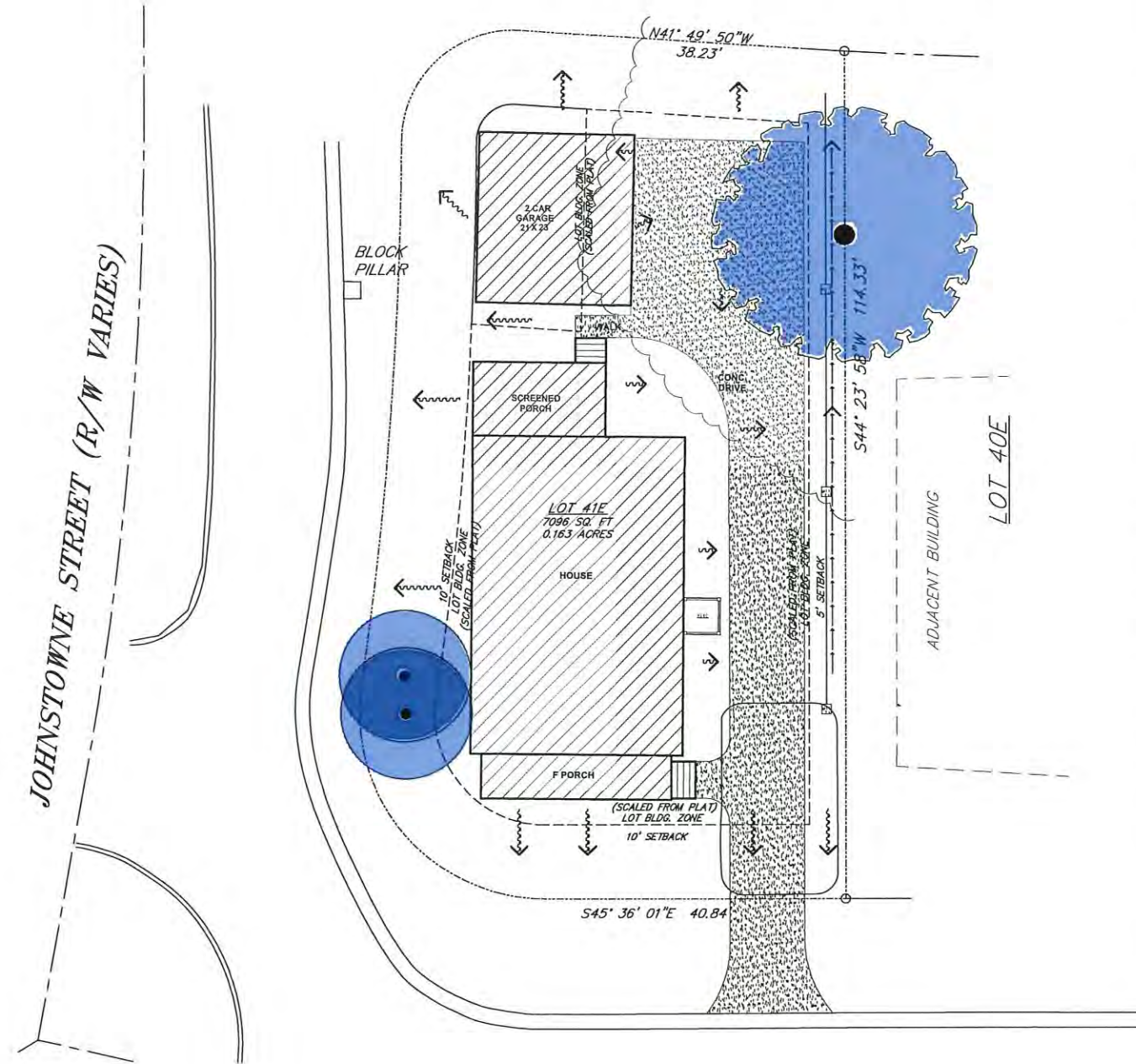
A PRIMARY GOAL OF TRA IS TO PROVIDE THE TREE OWNER WITH RESOURCEFUL INFORMATION ABOUT THE LEVEL OF RISK POSED BY A TREE OVER A PERIOD OF TIME. THIS IS ACCOMPLISHED BY CONDUCTING A QUALITATIVE ANALYSIS AND DETERMINING THE LIKELIHOOD AND CONSEQUENCES OF A TREE FAILURE. IF THE RISK RATING DEFINED FOR A TREE EXCEEDS THE LEVEL OF ACCEPTABLE RISK, MITIGATION IS RECOMMENDED.

TREE PRESERVATION

TREES AND GREEN SPACES PROVIDE MANY BENEFITS TO THE COMMUNITY AND ADD SIGNIFICANT VALUE TO DEVELOPMENTS. THE ABILITY OF TREES TO IMPROVE AND MAINTAIN THE QUALITY OF WATER, SOIL, AND AIR AND TO REMOVE POLLUTANTS FROM THE AIR IS WELL KNOWN AND UNDERSTOOD. TREES ALSO PROVIDE SHADE AND HELP LOWER TEMPERATURES DURING HOT WEATHER, ENRICH PEOPLE'S LIVES AND BEAUTIFY LANDSCAPES. PRESERVING TREES HAS POSITIVE EFFECTS ON THE IMAGE AND ATTRACTIVENESS OF COMMUNITIES, DEVELOPMENTS AND ENHANCES DEVELOPERS' REPUTATIONS AND PROFITS.

PRESERVING TREES IN COMMUNITIES, DEVELOPMENTS, AND SINGLE-FAMILY HOME IMPROVEMENTS INCREASES A PROJECT'S ATTRACTIVENESS, MONETARY VALUE, AND MARKETABILITY BY PROVIDING AESTHETIC AND FUNCTIONAL VALUES. LOTS WHERE TREES ARE PRESERVED CAN BE SOLD MORE QUICKLY AND AT HIGHER PRICES. RESEARCH HAS SHOWN THAT MATURE TREES INCREASE THE WORTH OF A PROPERTY BY 12 PERCENT OR MORE. ARCHITECTS, DEVELOPERS AND PROPERTY OWNERS WHO UNDERSTAND THESE VALUES REALIZE THAT IT IS IN THEIR BEST INTEREST TO ENCOURAGE THE PRESERVATION OF TREES AND GREEN SPACES. THESE ENTITIES CAN TAKE ADVANTAGE OF DIFFERENT OPPORTUNITIES WHEN CONSIDERING THE PRESERVATION OF TREES. INDIVIDUAL HISTORIC, LANDMARK, AND ORNAMENTAL TREES ARE ALL GOOD CHOICES FOR PRESERVATION, AS ARE NATIVE TREES IN GROVES AND WOODLOTS. OPPORTUNITIES DIFFER FROM ONE DEVELOPMENT TO ANOTHER, BUT MANY OF THE RECOMMENDATIONS FOR PRESERVING TREES REMAIN THE SAME.

VARIOUS PEOPLE, SUCH AS ARBORISTS, ENGINEERS, ARCHITECTS, PLANNERS, PROPERTY OWNERS AND MUNICIPAL OFFICIALS, MAY BECOME INVOLVED IN PRESERVING TREES. PROPERLY PRESERVING TREES IN DEVELOPMENT, NEW DEVELOPMENT, REMODEL, AND IMPROVEMENTS TAKES TIME, GOOD DESIGN, COMMUNICATION, AND MONEY. HOWEVER, THE RESULTS ARE WORTH THE EFFORT WHEN THE PROJECT IS COMPLETED. TREE PRESERVATION STARTS WITH A BASIC UNDERSTANDING OF THE HEALTH OF TREES, THE SITE, AND THE SOILS THAT SUPPORT TREES.



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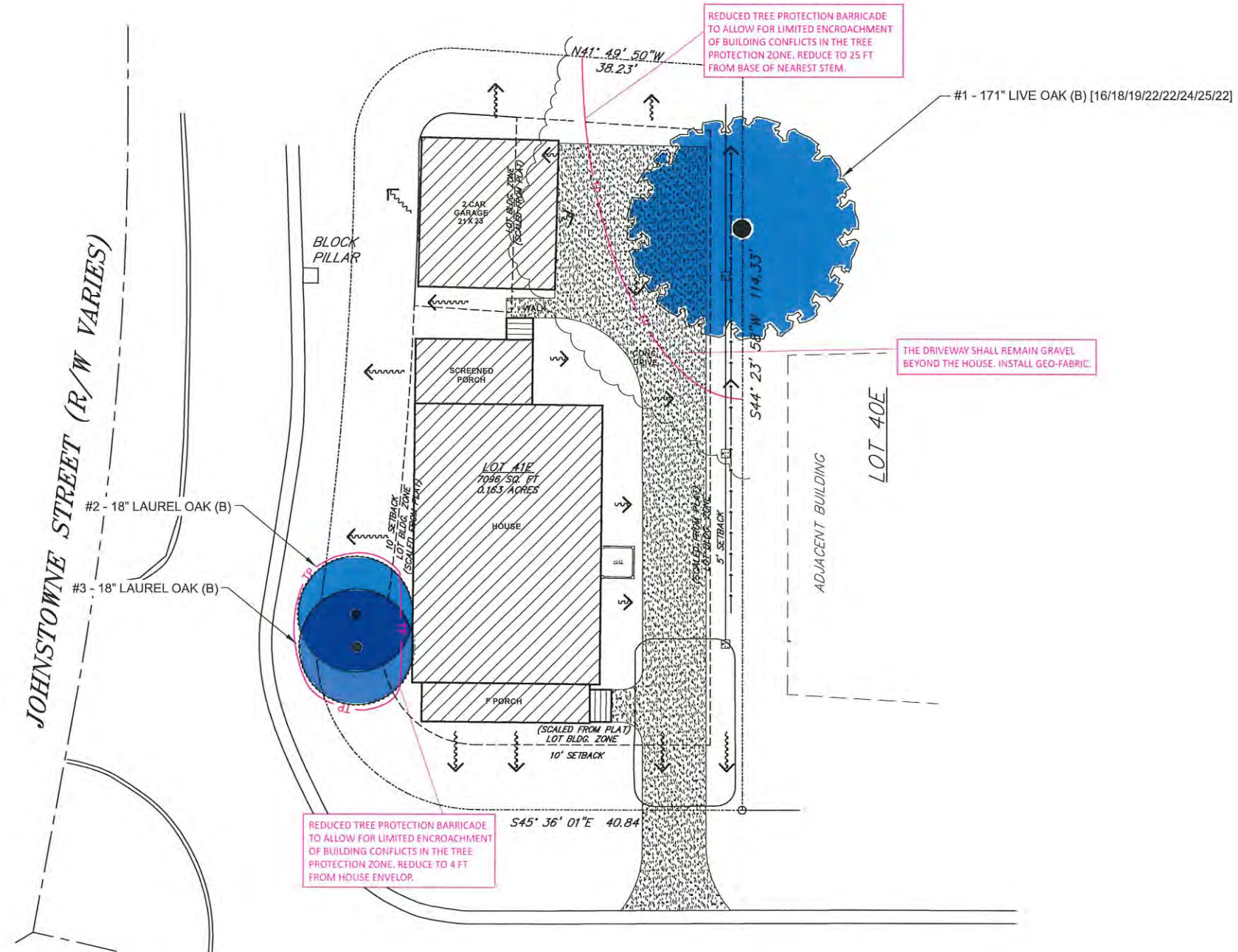
DRAWINGS PROVIDED BY:
 CHARLESTON TREE EXPERTS, LLC
 2851 MAYBANK HIGHWAY
 JOHN'S ISLAND, SC 29455
 (843) 952-8300 marshall@charlestontreeexperts.com

PROJECT DESCRIPTION
 TMS# 203-10-00-084
 3234 JOHNSTOWNE STREET
 JOHN'S ISLAND, SC 29455
 KIAWAH RIVER ESTATES

SHEET TITLE
 INDEX

REV. NO.	BY	DATE	DESCRIPTION OF REVISION	DATE:
				01/30/2024
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				TPP-0

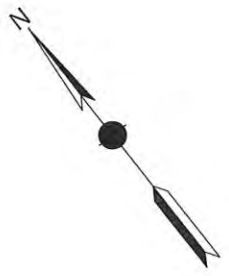
TREE PRESERVATION PLAN



	SIGNIFICANT TREE (8'-23') TO REMAIN-RATED F		GRAND TREE (24'+) TO REMAIN-RATED F		SIGNIFICANT TREE (8'-23') TO BE REMOVED-RATED F		GRAND TREE (24'+) TO BE REMOVED-RATED F
	SIGNIFICANT TREE (8'-23') TO REMAIN-RATED D		GRAND TREE (24'+) TO REMAIN-RATED D		SIGNIFICANT TREE (8'-23') TO BE REMOVED-RATED D		GRAND TREE (24'+) TO BE REMOVED-RATED D
	SIGNIFICANT TREE (8'-23') TO REMAIN-RATED C		GRAND TREE (24'+) TO REMAIN-RATED C		SIGNIFICANT TREE (8'-23') TO BE REMOVED-RATED C		GRAND TREE (24'+) TO BE REMOVED-RATED C
	SIGNIFICANT TREE (8'-23') TO REMAIN-RATED B		GRAND TREE (24'+) TO REMAIN-RATED B		SIGNIFICANT TREE (8'-23') TO BE REMOVED-RATED B		GRAND TREE (24'+) TO BE REMOVED-RATED B
	SIGNIFICANT TREE (8'-23') TO REMAIN-RATED A		GRAND TREE (24'+) TO REMAIN-RATED A		SIGNIFICANT TREE (8'-23') TO BE REMOVED-RATED A		GRAND TREE (24'+) TO BE REMOVED-RATED A
	SIGNIFICANT TREE (8'-23') TO REMAIN-UNRATED		SIGNIFICANT TREE (8'-23') TO REMAIN-UNRATED		SIGNIFICANT TREE (8'-23') TO REMAIN-UNRATED		GRAND TREE (24'+) TO REMAIN-UNRATED

GRADES: B - GOOD D - POOR
 A - EXCELLENT C - FAIR F - DISEASED/DEAD

TP ——— TP ——— TP TREE PROTECTION BARRICADE
 TP ——— TP ——— TP TREE PROTECTION BARRICADE: TREE IMPERVIOUS SETBACK REQUESTED WHERE CONFLICTS ARE SHOWN



SCALE: 1 INCH = 10 FEET

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SHEET TITLE:
 SURVEY

REV. NO.	BY	DATE	DESCRIPTION OF REVISION	DATE:
				01/30/2024
				SHEET:
				TPP-1

TREE PRESERVATION PLAN

TREE INVENTORY TABLE									
TREE #	DBH	SPECIES	GRADE	CONDITION	RISK RATING	CLASS	LIMIT OF ENCROACHMENT	REMOVE	COMMENT
1	171"	LIVE OAK	B	GOOD	LOW	GRAND	25' FROM BASE	N	DECAY IN ONE STEM
2	18"	LAUREL OAK	B	GOOD	LOW	PROTECTED	4' FROM HOUSE	N	
3	18"	LAUREL OAK	B	GOOD	LOW	PROTECTED	4' FROM HOUSE	N	

TREE GRADING SYSTEM

A - SPECIMEN TREE EXHIBITING VIGOROUS GROWTH AND SHOWING LITTLE OR NO SIGN OF DAMAGE.

B - HEALTHY TREE, EXHIBITING VIGOROUS GROWTH, SHOWING MINIMAL SIGNS OF DAMAGE.

C - SEMI-HEALTHY TREE, SHOWING SOME SIGNS OF DAMAGE WHICH ARE PERHAPS CORRECTABLE (I.E., SOME INSECT INFESTATIONS, SOME DISEASES, ROOT COMPACTION, ETC.); STILL SHOWS SIGNS OF GROWTH, BUT SUFFERED SIGNIFICANT DAMAGE.

D - TREE IN DECLINING HEALTH; HAS SUFFERED EXTENSIVE DAMAGE; HAZARDOUS, TREE MAY FAIL WITHOUT NOTICE OR STILL LIVE FOR MANY YEARS BUT MAY NOT BE SUCCESSFULLY TREATED TO AGAIN BECOME A HEALTHY, SPECIMEN TREE.

F - TREE WHICH IS DETERMINED TO BE IRREPARABLY DAMAGED, DISEASED OR HAZARDOUS.



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 TREE INVENTORY

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				SHEET:
				TPP-2

TREE PRESERVATION PLAN

SITE REGULATIONS:

PRE-CONSTRUCTION:

- ALL TREE PRESERVATION WORK SHALL BE OVERSEEN, PERFORMED, OR SUPERVISED BY AN ISA BOARD CERTIFIED MASTER ARBORIST OR ISA CERTIFIED ARBORIST WITH A SOUTH CAROLINA COMMERCIAL PESTICIDE APPLICATOR LICENSE AND EXPERIENCED IN THE PRESERVATION OF TREES IMPACTED BY CONSTRUCTION. HERE IN REFERRED TO AS THE "ARBORIST".
- THE GENERAL CONTRACTOR SHALL HOLD A PRE-CONSTRUCTION MEETING WITH THE ARBORIST, ARCHITECT, ENGINEER, PRINCIPAL SUBCONTRACTORS AND ZONING ADMINISTRATOR. PRIOR TO MEETING, ALL SITE IMPROVEMENTS SHALL BE STAKED AND THERE SHALL BE A WRITTEN CONSTRUCTION TIMELINE FOR REVIEW. CONSTRUCTION PLANS WILL DEPICT ALL TREE PROTECTION ZONES (TPZ) AND TREE PROTECTION BARRICADES (TPB) ARE TO BE FREE OF STAGING, EXCAVATION, FILLING, AND TRENCHING ACTIVITIES.
- THE TREE PROTECTION BARRICADE SHALL BE APPROVED BY THE ZONING ADMINISTRATOR PRIOR TO THE PERFORMANCE OF ADDITIONAL WORK ON THE SITE.
- THE GENERAL CONTRACTOR SHALL PROMOTE AND CHAMPION THE ENFORCEMENT OF THESE "SITE REGULATIONS" IN THE ABSENCE OF THE ARBORIST DURING THE DAILY CONSTRUCTION ACTIVITIES.

DURING CONSTRUCTION:

- EXCAVATION, TRENCHING, AND FILLING IN PROXIMITY TO THE TPB SHALL ONLY BE PERFORMED UNDER THE SUPERVISION AND DIRECTION OF THE ARBORIST. THE ARBORIST IS TO PERFORM THE INITIAL ROOT PRUNING IF LARGER ROOTS IN THE EXCAVATED AREA OR NEAR THE TPZ NEED TO BE CUT.
- IF UTILITIES PASS THROUGH THE PROTECTION ZONE, CONTRACTOR MUST USE UNDERGROUND BORING TECHNIQUES.
- THE GENERAL CONTRACTOR SHALL EXERCISE SUFFICIENT DUTY OF CARE TO ENFORCE THESE "SITE REGULATIONS" AND SHALL ASSIGN THE FOLLOWING REQUIREMENTS TO THE APPOINTED SITE SUPERVISOR:
 - "POLICE" THE TREE PROTECTION BARRICADES TWICE A DAY TO ENSURE THE BARRICADES ARE IN GOOD WORKING ORDER.
 - MITIGATE DAMAGE TO THE FENCING MATERIAL BY MAKING REPAIRS AND REPLACE HARDWARE AS NEEDED.
 - VERIFY THE TPB IS FREE OF DEBRIS AND REPAIR SEDIMENT RUNOFF/EROSION AS NEEDED. THIS WORK SHALL BE PERFORM WITH HAND TOOLS. NO MACHINES.
 - NOTIFY THE ARBORIST OF ANY SIGNIFICANT DAMAGE TO THE TPB OR SITE CHANGES THAT MAY IMPACT THE TREES.
 - PROVIDE THE ARBORIST WITH PROGRESS REPORTS ON A FREQUENT BASIS. FOR EXAMPLE, THE ARBORIST SHALL BE ALERTED ONE WEEK IN ADVANCE WHEN THE CONTRACTOR PLANS TO TRENCH UTILITIES OR IRRIGATION.
- CONTRACTORS SHALL NOT ENTER THE TPB WITHOUT OBSERVATION OF THE ARBORIST DURING ENTRY.
- THE PAINTING CREW SHALL NOT UNDER ANY CONDITIONS USE THE SHADY AREA BENEATH A TREE TO CLEAN OFF THEIR PAINT BRUSHES.
- SUPPLIERS AND VENDORS SHALL ESTABLISH THE LOADING/UNLOADING AREA AWAY FROM ANY TPB.
- THE ARBORIST AND ZONING ADMINISTRATOR SHALL HAVE THE AUTHORITY TO AMEND THE TREE PROTECTION PLAN AS NECESSARY TO PROVIDE A GREATER LEVEL OF PROTECTION FOR THE TREES IN PRESERVATION IF DURING THE CONSTRUCTION PROJECT THE ARBORIST BECOMES AWARE OF SITE CONFLICTS DUE TO UNFORESEEN CIRCUMSTANCES. FOR EXAMPLE, THE ARBORIST CAN INCREASE THE LEVEL OF CARE IN THE PRESERVATION PROTOCOL TO AUTHORIZE ADDITIONAL ENCROACHMENT OR PRUNING ACTIVITIES.

POST CONSTRUCTION:

- THE LANDSCAPE PLAN SHALL RECEIVE ARBORIST APPROVAL PRIOR TO INSTALLATION.
- THE AREA WITHIN THE TPB SHALL BE RETAINED AS A NATURAL MULCH LANDSCAPE BEDDING. NO LAWN OR TURF. NO TRENCHING IRRIGATION. LIMITED FILL, LIGHTING AND PLANTINGS MAY BE INSTALLED IF APPROVED BY THE ARBORIST.
- NPK FERTILIZER PRODUCTS SHALL NOT BE APPLIED WITHIN THE TPZ WITHIN THE FIRST TWO YEARS FOLLOWING THE COMPLETION OF CONSTRUCTION.
- THE CONTRACTOR SHALL HOLD A LANDSCAPE PLANNING MEETING WITH THE ARBORIST AND LANDSCAPE INSTALLER PRIOR TO LANDSCAPE ACTIVITIES ON THE SITE.
- THE TREE PROTECTION BARRICADE SHALL NOT BE REMOVED UNTIL APPROVED BY THE ZONING ADMINISTRATOR.
- ONLY THE ARBORIST IS AUTHORIZED TO DISMANTLE, MOVE, OR REMOVE THE TREE PROTECTION BARRICADE.
- THERE SHALL BE NO ADDITIONAL PRUNING TO THE TREES IMPACTED BY CONSTRUCTION FOR TWO YEARS FOLLOWING THE COMPLETION OF CONSTRUCTION, EXCEPT WHERE NEEDED TO MITIGATE HAZARD.

ARBORIST DUTIES:

PRE-CONSTRUCTION:

1. 30 DAYS PRIOR TO CONSTRUCTION - THE ARBORIST SHALL PRUNE GRAND AND PROTECTED TREES IN ACCORDANCE TO THE ANSI A300 PRUNING STANDARD AND AS NECESSARY FOR HAZARD MITIGATION AND CONSTRUCTION CLEARANCES.
2. AT THE TIME OF PRUNING - THE ARBORIST SHALL INSTALL CHAIN-LINK, SILT FENCE, AND SIGNAGE AS SPECIFIED IN THE TPP DRAWING, TREE PROTECTION DETAIL, AND TREE PROTECTION ZONE SPECIFICATIONS OUTLINE IN THIS REPORT.
3. AT THE TIME OF PRUNING - THE ARBORIST SHALL PERFORM A SOIL ANALYSIS FOR TREES IDENTIFIED FOR PRESERVATION.
4. AT THE TIME OF PRUNING - THE ARBORIST SHALL ADMINISTER THE FIRST MONTH TREE HEALTH CARE TREATMENTS AND AMEND THE SOIL AS NECESSARY TO PROMOTE HEALTH AND VIGOR AS PART OF THE MONTHLY CONSTRUCTION IMPACT TREATMENT PROGRAM.
5. AT THE TIME OF PRUNING - THE ARBORIST SHALL INSTALL MULCH WITHIN THE TPB AT A THICKNESS OF 2-4" OR AS NEEDED.
6. 30 DAYS AFTER TREE PRUNING - THE ARBORIST SHALL APPLY A TREE GROWTH REGULATOR AND PERFORM THE FIRST MONTH PHC TREATMENT 30 DAYS PRIOR TO THE START OF CONSTRUCTION. THE ARBORIST SHALL AMEND THE SOIL AS NECESSARY TO PROMOTE HEALTH AND VIGOR.

DURING CONSTRUCTION:

1. THE ARBORIST SHALL INSPECT THE TREES AND SITE MONTHLY UNTIL COMPLETION OF CONSTRUCTION AND LANDSCAPING ACTIVITIES.
2. THE ARBORIST SHALL PROVIDE MONTHLY TREE HEALTH CARE TREATMENT PROTOCOL THROUGHOUT CONSTRUCTION.
3. THE ARBORIST SHALL PERFORM THE INITIAL ROOT PRUNING IF LARGER ROOTS IN THE EXCAVATED AREA OR NEAR THE TPZ NEED TO BE CUT.
4. THE ARBORIST SHALL INSTALL TEMPORARY IRRIGATION OR IMPLEMENT A SUFFICIENT WATER SCHEDULE IF SOIL WITHIN TPB BECOMES DRY.
5. THE ARBORIST SHALL HAVE THE AUTHORITY TO AMEND THE TREE PROTECTION PLAN AS NECESSARY TO PROVIDE A GREATER LEVEL OF PROTECTION FOR THE TREES IN PRESERVATION IF DURING THE CONSTRUCTION PROJECT THE ARBORIST BECOMES AWARE OF SITE CONFLICTS DUE TO UNFORESEEN CIRCUMSTANCES. FOR EXAMPLE, THE ARBORIST CAN INCREASE THE LEVEL OF CARE IN THE PRESERVATION PROTOCOL TO AUTHORIZE ADDITIONAL ENCROACHMENT OR PRUNING ACTIVITIES.

POST CONSTRUCTION:

1. THE ARBORIST SHALL REMOVE THE TREE PROTECTION BARRICADE WHEN AUTHORIZED BY THE ZONING ADMINISTRATOR.
2. THE ARBORIST SHALL TILTH THE SOIL WITH AN AIR-SPADE ROOT REMEDIATION TOOL WITHIN THE TPZ OF EACH TREE BEING PRESERVED TO REDUCE COMPACTION.
3. THE ARBORIST SHALL REVIEW THE LANDSCAPE PLAN TO VERIFY MINIMAL IMPACT TO THE TREES ASSOCIATED WITH ELEVATION CHANGES, FILLING, INSTALLATION OF LIGHTING AND IRRIGATION, PLANTING, LAWN/TURF, HARDSCAPE, AND OTHER SITE IMPROVEMENTS. THE ARBORIST MAY APPROVE OR ORDER CHANGES TO THE DESIGN.
4. THE ARBORIST SHALL CONTINUE PROVIDING MONTHLY TREE HEALTH CARE TREATMENTS FOR A PERIOD OF ONE YEAR FOLLOWING THE COMPLETION OF CONSTRUCTION.



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SHEET TITLE:

ORDERS OF PRESERVATION

REV. NO.	BY	DATE	DESCRIPTION OF REVISION	DATE:
				01/30/2024
				SHEET:
				TPP-3

TREE PRESERVATION PLAN

TREE PROTECTION CONSTRUCTION STANDARDS

A. PRE-CONSTRUCTION

i. TREE PROTECTION FENCING

PRIOR TO ANY CLEARING, GRUBBING, TRENCHING, GRADING, OR ANY LAND DISTURBANCES, TREE PROTECTION FENCING MUST BE INSTALLED AS FOLLOWS:

THE FENCING SHALL BE CHAIN-LINK, TEMPORARY, READILY VISIBLE, AND A MINIMUM OF 4-FEET HIGH. THE FENCING SHALL EFFECTIVELY:

1. KEEP THE FOLIAGE, CROWN, BRANCH STRUCTURE AND TRUNK CLEAR FROM DAMAGE BY EQUIPMENT, MATERIALS OR DISTURBANCES;
2. PRESERVE ROOTS AND SOIL IN AN INTACT AND NON-COMPACTED STATE; AND
3. IDENTIFY THE TPZ ZONE. CHAIN LINK FENCING IS USED FOR THE GRAND TREES. TREE BARRICADES SHALL BE ONE-FOOT TIMES DBH PLACED AS A DIAMETER AROUND THE TREE OR AS MODIFIED BY THE TPP DRAWING AND TREE PROTECTION DETAIL.
4. INSTALL EROSION CONTROL BARRIER ALONG THE OUTSIDE PERIMETER OF EACH TPZ TO PREVENT EROSION AND CONTAMINATION.

THE MOST ESSENTIAL ROOTS FORM THE STRUCTURAL ROOT PLATE WHICH IS THE ZONE OF RAPID ROOT TAPER THAT PROVIDES THE TREE STABILITY AGAINST WIND THROW. THESE LARGE, STRONG ROOTS EXTEND UP TO 11 FEET FROM THE STEM IN LARGER DIAMETER TREES. DAMAGING THESE ROOTS IN ANY WAY IS USUALLY FATAL AND MAY LEAVE A TREE UNABLE TO STABILIZE ITSELF.

VERIFICATION THAT TREE PROTECTION FENCING HAS BEEN INSTALLED PURSUANT TO THE APPROVED TPP SHALL BE PERFORMED BY THE ZONING DEPARTMENT PRIOR TO ZONING APPROVAL AND BEFORE CONSTRUCTION COMMENCES.

ii. SIGNAGE

ONE ENGLISH LANGUAGE AND ONE SPANISH LANGUAGE, READILY VISIBLE, DURABLE, WATERPROOF "KEEP OUT" OR "TREE PROTECTION AREA" SIGN SHALL BE INSTALLED ON THE FENCE AROUND EACH INDIVIDUAL GRAND TREE.

iii. PRE-CONSTRUCTION SOIL ANALYSIS AND TREATMENT

A SOIL SAMPLE WILL BE OBTAINED AND SENT TO THE CLEMSON HOME GARDENING LABORATORY FOR ANALYSIS TO DETERMINE THE LACKING NUTRIENTS AND MINERALS IN THE SOIL. A DETAILED PRESCRIPTION OF SOIL AMENDMENTS WILL BE COMPILED TO ENSURE THE TREES RECEIVE THE NECESSARY NUTRIENTS TO MAINTAIN PRIME HEALTH.

AT LEAST 30 DAYS PRIOR TO STARTING CONSTRUCTION A GROWTH REGULATOR AND PLANT HEALTH CARE TREATMENT MATERIALS WILL BE APPLIED VIA SOIL INJECTION TO SUPPLY A BALANCE OF ONE OR MORE NUTRIENTS ESSENTIAL TO THE GROWTH OF THE TREE TO PROMOTE HEALTH AND VIGOR. THESE INJECTIONS ARE COMPOSED OF A UNIQUE BLEND OF PLANT DERIVED AMINO ACIDS, PLANT HORMONES, HUMIC AND FULVIC ACIDS, CYTOKININS, CARBON, STIMULANTS, AND NUMEROUS ESSENTIAL AND BENEFICIAL ELEMENTS FOR OPTIMAL ROOT GROWTH. INSECTICIDE WILL BE APPLIED TO PROVIDE RESISTANCE TO LEAF AND WOOD FEEDING INSECTS. THE PROPOSED PLANT HEALTH CARE TREATMENTS SHALL BE APPLIED ONCE MONTHLY FOR ONE COMPLETE YEAR POST CONSTRUCTION. THESE TREATMENTS WILL BOOST THE OVERALL HEALTH AND VIGOR OF THE TREE ENCOURAGING OPTIMAL SUSTAINABILITY.

THE TREES TO BE PROTECTED ARE CURRENTLY NOT BEING IRRIGATED BY TRADITIONAL SPRINKLER SYSTEM. HOWEVER, JUST PRIOR TO CONSTRUCTION AND THROUGHOUT, IRRIGATION OR A TEMPORARY WATER SCHEDULE SHOULD BE PROVIDED AS NEEDED WITHIN THE TPZS TO MAINTAIN A MOIST ENVIRONMENT. A DEEP WATERING OF THE TREE IS IDEAL. WATER WILL NEED TO PENETRATE SIX TO EIGHT INCHES DEEP WITHIN AND THROUGHOUT THE TPZ (FITE AND SMILEY, 2008). ONCE THE CONTRACTOR HAS ESTABLISHED A WATER SUPPLY ON SITE, THE BCMA SHALL INSTALL DRIP IRRIGATION AS NECESSARY FOR ADEQUATE WATERING CYCLES THROUGHOUT CONSTRUCTION.

B. DURING CONSTRUCTION

i. TREE PROTECTION ZONE RESTRICTIONS

NO GROUND DISTURBANCE, GRADING, TRENCHING, CONSTRUCTION ACTIVITIES OR STRUCTURAL DEVELOPMENT SHALL OCCUR WITHIN THE TPZ EXCEPT AS SPECIFICALLY AUTHORIZED BY THIS PERMIT AND THE APPROVED TPP.

NO EQUIPMENT, SOIL, OR CONSTRUCTION MATERIALS SHALL BE PLACED WITHIN THE TPZ. NO OIL, GASOLINE, CHEMICALS, PAINTS, SOLVENTS, OR OTHER DAMAGING MATERIALS MAY BE DEPOSITED WITHIN THE TPZ OR IN DRAINAGE CHANNELS, SWALES OR AREAS THAT MAY LEAD TO THE TPZ.

UNLESS OTHERWISE DIRECTED BY THE PROJECT BCMA, ALL WORK DONE WITHIN THE TPZ, INCLUDING BRUSH CLEARANCE, DIGGING, TRENCHING AND PLANTING, SHALL BE DONE WITH HAND TOOLS, SMALL HAND-HELD POWER TOOLS, OR GAS-POWERED, PUSH-TYPE OR WALK-BEHIND EQUIPMENT DESIGNED FOR BRUSH OR UNDERGROWTH CLEARING, THAT ARE OF A DEPTH AND DESIGN THAT WILL NOT CAUSE ROOT DAMAGE.

TRENCHING WITHIN THE TPZ SHOULD BE AVOIDED AND CAN DAMAGE THE ROOT SYSTEM OF A TREE AND LEAD TO TREE DECLINE OR DEATH. NINETY PERCENT OF FINE ROOTS THAT ABSORB WATER AND MINERALS ARE FOUND WITHIN THE TOP FEW INCHES OF SOIL. ROOTS REQUIRE AIR, SPACE, WATER, AND GROW MOST VIGOROUSLY WHEN THESE REQUIREMENTS ARE MET, WHICH IS USUALLY THE SURFACE OF THE SOIL. IF TRENCHING IS REQUIRED THROUGH THE TPZ, IT SHOULD BE PERFORMED BY HAND, NOT MECHANICALLY, WHENEVER IT IS REASONABLE TO DO SO. WHENEVER ROOTS ARE CUT DUE TO TRENCHING, THE CUT SHOULD BE CLEAN, AND NOT LEAVING TORN EDGES. TUNNELING AND BRIDGING SHOULD BE USED TO PRESERVE ROOTS TWO INCHES IN DIAMETER OR GREATER, AND WHEREVER IT IS REASONABLE. UNDERGROUND LINES SHOULD OCCUPY COMMON TRENCHES. MULTIPLE TRENCHING IS DESTRUCTIVE AS IT IMPACTS A GREATER PERCENTAGE OF THE ROOT SYSTEM. (FITE AND SMILEY, 2008). TRENCHING TO BE PERFORM VIA DIRECTION OF THE PROJECT BCMA ON SITE THROUGHOUT THE DURATION OF THAT SCOPE OF THE PROJECT.

GRADE CHANGES OUTSIDE OF THE TPZ SHALL NOT SIGNIFICANTLY ALTER DRAINAGE TO GRAND TREE. THE GRADE OUTSIDE THE TREE PROTECTION ZONE SHALL ONLY BE DECREASED WITH THE USE OF APPROVED RETAINING WALLS OR TERRACING PLANS. GRADING WITHIN THE TPZ SHALL USE METHODS THAT MINIMIZE ROOT DAMAGE AND ENSURE THAT ROOTS ARE NOT CUT OFF FROM AIR. MODERATE FILL MAY BE ALLOWED UPON PRIOR APPROVAL OF THE DEPARTMENT OF ZONING AND PLANNING AND PROJECT BCMA. A DECREASE IN GRADE SHALL NOT BE ALLOWED WITHIN THE TPZ, WHERE EROSION MAY BE A FACTOR RETURN AND PROTECT THE ORIGINAL GRADE OR OTHERWISE STABILIZE THE SOIL. THE LOWERING OR RAISING OF GRADE WITHIN THE ROOT ZONE CAN DAMAGE OR KILL A TREE. THE NORMAL EXCHANGE OF MOISTURE AND GASES WITHIN THE ROOT ZONE IS DISRUPTED WITH ANY CHANGE IN GRADE. THE ORIGINAL GRADE SHOULD BE MAINTAINED AS FAR OUT FROM THE TRUNK AS POSSIBLE. AS LITTLE AS FOUR INCHES OF SOIL PLACED OVER THE ROOT SYSTEM OF SOME SPECIES OF TREE CAN BE FATAL. THE CHANGE IN GRADE CAN HAVE BOTH IMMEDIATE AND LONG-TERM ADVERSE EFFECTS ON THE TREE. (MATHENY, ET, AL, 1998)

GRAND TREES SHALL NOT BE USED FOR POSTING SIGNS, ELECTRICAL WIRES OR PULLEYS; FOR SUPPORTING STRUCTURES; AND SHALL BE KEPT FREE OF NAILS, SCREWS, ROPE, WIRES, STAKES AND OTHER UNAUTHORIZED FASTENING DEVICES OR ATTACHMENTS.

NO PAVING WITH CONCRETE, ASPHALT, OR OTHER IMPERVIOUS MATERIAL SHALL BE DONE WITHIN SUCH PROXIMITY AS TO BE HARMFUL TO A GRAND TREE. PVIOUS SURFACE RESTRICTS MOVEMENT OF WATER AND AIR IN THE ROOT ZONE. IF EXCAVATION IS PERFORMED WITHIN THE TPZ, SIGNIFICANT DAMAGE TO THE TREE ROOT SYSTEMS WILL OCCUR AND DECLINE OR DEATH OF THE TREE MAY FOLLOW.

ii. TREE CARE

MULCH INSTALLATION WITH ORGANIC MULCH WITHIN THE TPZ WILL BE DONE TO PROMOTE SOIL MICROORGANISM ACTIVITY, IMPROVING SOIL TILTH AND HELP LESSEN SOIL COMPACTION CAUSED BY CONSTRUCTION EQUIPMENT. IT ALSO INHIBITS WEED GERMINATION AND GROWTH AND HOLD MOISTURE PROTECTING TREE ROOTS FROM DRYING OUT. THE MULCH IS APPLIED AT 2"-4" IN DEPTH. THE TREES IN THE CONSTRUCTION ZONE ARE SUBJECT TO SOIL COMPACTION FROM VEHICLES, THE PURPOSED CONSTRUCTION AND HEAVY DEBRIS PLACED IN THE TPZ. SOIL COMPACTION OCCURS WHEN THE PORE SPACE BETWEEN SOIL PARTICLES IS REDUCED SIGNIFICANTLY. THIS CAUSES THE REDUCTION OF OXYGEN AVAILABLE TO THE TREE AND LEAD TO DECLINE OR MORTALITY IN THE TREE. USE OF EQUIPMENT, DIGGING, GRADING, AND HEAVILY USED WALKING PATHS CAN CAUSE SOIL COMPACTION IN THE CONSTRUCTION AREA. USE OF PROTECTIVE FENCING, MULCHING WITHIN THE TPZ, AND LIMITED AMOUNTS OF ACCESS ROUTES WILL MINIMIZE COMPACTION. (MATHENY, ET AL, 1998). SOIL SHALL BE TILTH BY A CERTIFIED ARBORIST USING AN AIR-SPADE UPON COMPLETION OF CONSTRUCTION.

iii. PRUNING

TREE CARE SERVICES PROPOSED INCLUDE CROWN CLEANING WHICH INVOLVES THE REMOVAL OF HAZARDOUS BRANCHES, VINES, DEAD, DYING, DISEASED, CROSSED, AND WEAKLY ATTACHED BRANCHES TO PROMOTE TREE HEALTH AND SAFETY. IT ALSO INCLUDES CROWN REDUCTION WHICH INVOLVES REDUCTION PRUNING OF LARGE LIMBS BACK TO APPROPRIATE LATERALS TO REDUCE WEIGHT AND WIDTH OF THE TREE. THESE SERVICES WOULD REDUCE THE RISK OF FOLIAGE, CROWN, AND BRANCH DAMAGE BY EQUIPMENT, MATERIALS, OR DISTURBANCES.

PRUNING SHALL BE IN ACCORDANCE TO THE AMERICAN NATIONAL STANDARDS INSTITUTE, ANSI: A300 PRUNING STANDARDS FOR SHADE TREES. CLIMBING GAFFS SHALL NOT BE USED ON LIVE WOOD.

NO LIVE TISSUE MAY BE REMOVED FROM A GRAND TREE SOLELY FOR THE PURPOSE OF ALTERING THE APPEARANCE OF A TREE.

PRUNING WILL NOT EXCEED MORE THAN TWENTY-FIVE PERCENT OF THE LEAF SURFACE ON BOTH THE LATERAL BRANCH AND THE OVERALL FOLIAGE OF A MATURE TREE THAT IS PRUNED WITHIN A GROWING SEASON. PRUNING WILL LEAVE REMAINING ONE-HALF OF THE FOLIAGE OF A MATURE TREE EVENLY DISTRIBUTED IN THE LOWER TWO-THIRDS OF THE CROWN AND INDIVIDUAL LIMBS UPON COMPLETION OF ANY PRUNING.

PRUNING MAY BE PERFORMED TO REDUCE WIDTH/DRIPLINE TO ALLOW GREATER BUILDING SPACE.

iv. DAMAGE

THERE WILL BE HEAVY EQUIPMENT AND VEHICLES USED NEAR THE GRAND TREES. WOUNDS TO TREE BRANCHES, TRUNK, AND ROOT COLLAR CAUSED BY MECHANICAL DAMAGE, MAY REDUCE TREE STABILITY BY DECREASING THE WOOD STRENGTH, THE INTERNAL MOVEMENT OF WATER AND NUTRIENTS, AND THE ABILITY TO COMPARTMENTALIZE AGAINST DECAY. ENCLOSING THE TPZ WITH CHAIN LINK FENCE WILL PREVENT DAMAGE FROM CONSTRUCTION EQUIPMENT. (MATHENY, ET, AL, 1998).

C. POST-CONSTRUCTION

i. POST-CONSTRUCTION TREATMENT

MONTHLY PLANT HEALTH CARE TREATMENT MATERIALS WILL BE APPLIED VIA SOIL INJECTION TO SUPPLY A BALANCE OF ONE OR MORE NUTRIENTS ESSENTIAL TO THE GROWTH OF THE TREES TO PROMOTE HEALTH AND VIGOR. THESE INJECTIONS ARE COMPOSED OF A UNIQUE BLEND OF PLANT DERIVED AMINO ACIDS, PLANT HORMONES, HUMIC AND FULVIC ACIDS, CYTOKININS, CARBON, STIMULANTS, AND NUMEROUS ESSENTIAL AND BENEFICIAL ELEMENTS FOR OPTIMAL ROOT GROWTH. INSECTICIDE WILL BE APPLIED TO PROVIDE RESISTANCE TO LEAF AND WOOD FEEDING INSECTS. THESE INJECTIONS WILL BE ADMINISTERED MONTHLY FOR ONE COMPLETE YEAR AFTER CONSTRUCTION.

ii. OTHER POST-CONSTRUCTION RECOMMENDATIONS

NO ADDITIONAL PRUNING SHALL BE CONDUCTED WITHIN THE NEXT TWO YEARS WITH THE EXCEPTION OF CLEARANCES FOR CONSTRUCTION AND HAZARDS. THE PRUNING SHALL BE PERFORMED IN ACCORDANCE TO WITH THE ANSI A300 PRUNING STANDARD. IT IS IMPORTANT WE RETAIN AS MANY WATER-SPROUTS AS POSSIBLE TO ALLOW PHOTOSYNTHESIS TO CONTINUE UNHINDERED.

NO NITROGEN FERTILIZER TO BE USED UNTIL YEAR TWO TO DISCOURAGE GROWTH OF WOOD DECAY FUNGI PRESENT IN THE SOIL.

iii. MITIGATION

THE TREES IN PRESERVATION DURING CONSTRUCTION APPEAR TO BE HEALTHY AND DOES NOT NEED TO BE REPLACED AT THIS TIME. AS REQUIRED BY LOCAL ORDINANCE THE CONTRACTOR IS TO REPLACE ANY TREES DAMAGED DURING CONSTRUCTION OR DESTROYED WITHIN TWO YEARS OF COMPLETION OF CONSTRUCTION DUE TO CONSTRUCTION DAMAGE. IF THE TREES ARE INSURED OR THE MUNICIPALITY, COMMUNITY OR PROPERTY OWNER WISH TO UTILIZE ALTERNATIVE METHODS AT THEIR DISPOSAL; THEN AN ACCEPTED APPRAISAL METHOD OF DETERMINING VALUE OF A TREE OUTLINED IN THE COUNCIL OF TREE & LANDSCAPE APPRAISERS' GUIDE TO PLANT APPRAISAL, 10TH EDITION, USING A TPAQ, TREE AND PLANT APPRAISAL QUALIFIED ARBORIST SHALL BY ACCEPTABLE MEANS OF MITIGATION.

TREE VALUATION

GRADE A LIVE OAKS TYPICALLY APPRAISE AT APPROXIMATELY \$1,000 PER INCH DBH.

CONCLUSION

THE TREES OUTLINED IN THIS TREE PRESERVATION PLAN ARE HEALTHY ENOUGH TO SURVIVE THE IMPACTS OF CONSTRUCTION IF THE ORDERS OF PRESERVATION HEREIN ARE FOLLOWED CORRECTLY.



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PROJECT DESCRIPTION:

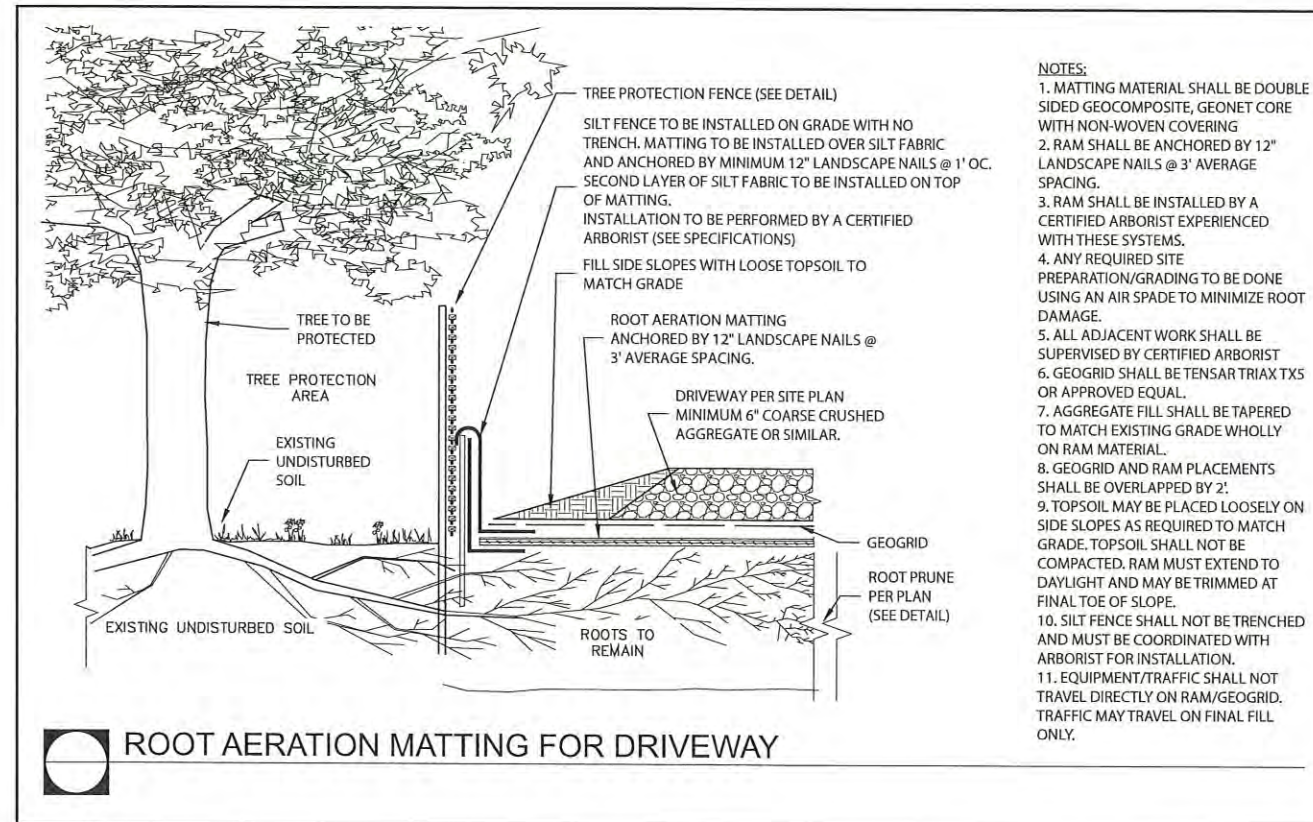
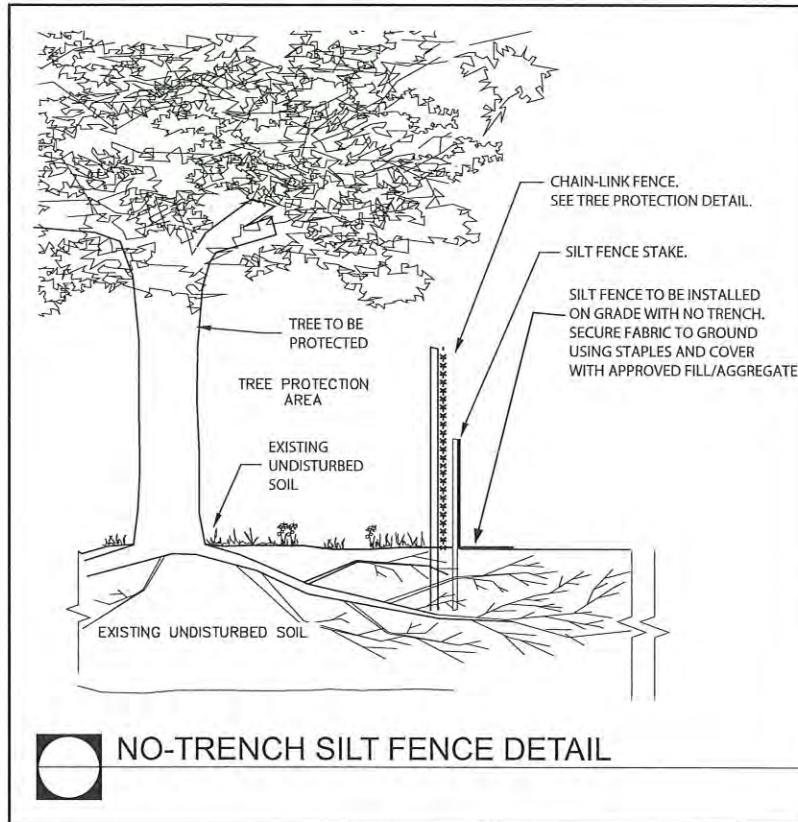
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 3234 JOHNSTOWNE STREET
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SHEET TITLE:

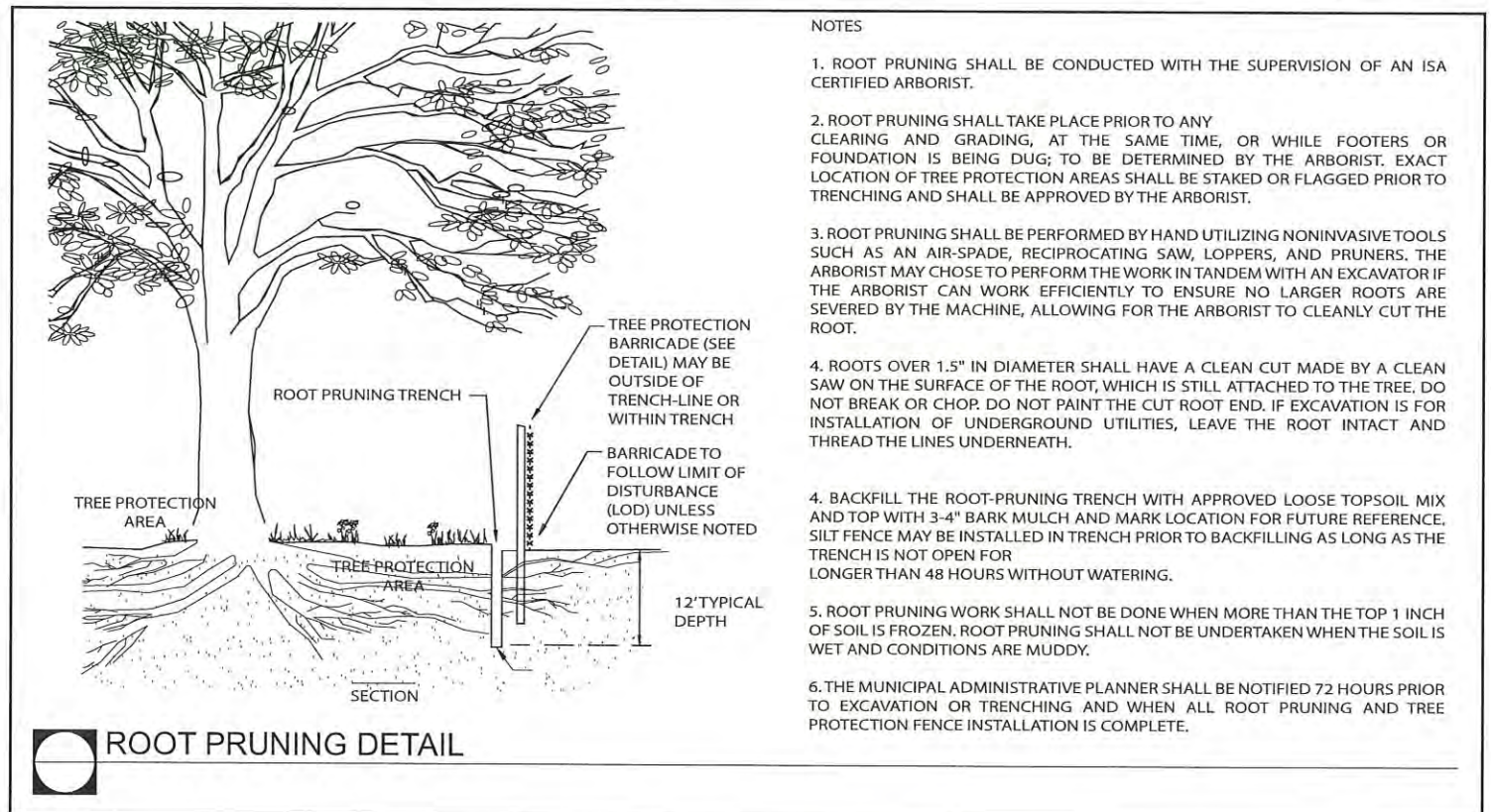
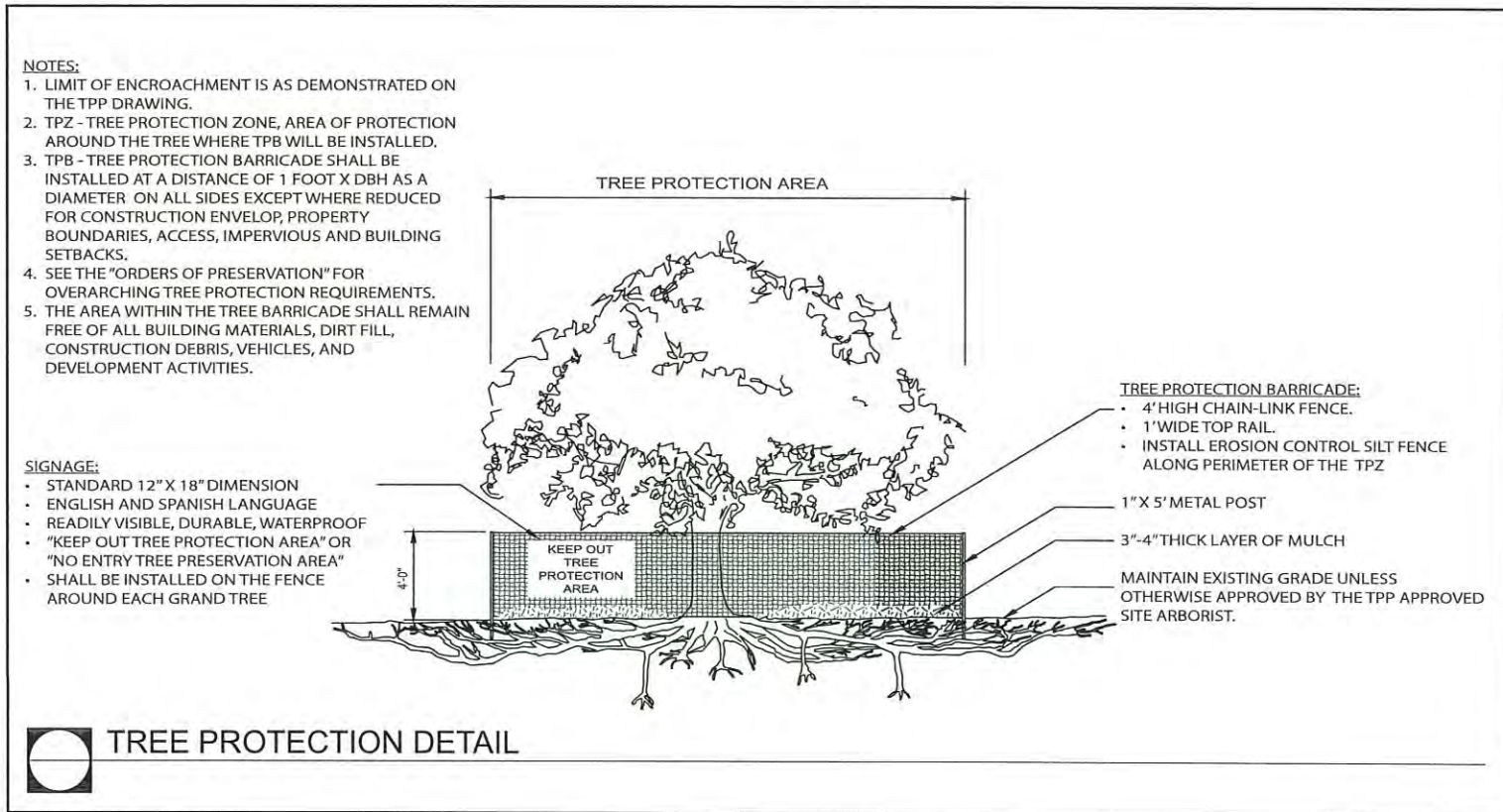
TREE PRESERVATION PROTOCOL

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				TPP-4

TREE PRESERVATION PLAN



- NOTES:**
- MATting MATERIAL SHALL BE DOUBLE SIDED GEOCOMPOSITE, GEONET CORE WITH NON-WOVEN COVERING
 - RAM SHALL BE ANCHORED BY 12" LANDSCAPE NAILS @ 3' AVERAGE SPACING.
 - RAM SHALL BE INSTALLED BY A CERTIFIED ARBORIST EXPERIENCED WITH THESE SYSTEMS.
 - ANY REQUIRED SITE PREPARATION/GRADING TO BE DONE USING AN AIR SPADE TO MINIMIZE ROOT DAMAGE.
 - ALL ADJACENT WORK SHALL BE SUPERVISED BY CERTIFIED ARBORIST
 - GEOGRID SHALL BE TENSAR TRIAX TX5 OR APPROVED EQUAL.
 - AGGREGATE FILL SHALL BE TAPERED TO MATCH EXISTING GRADE WHOLLY ON RAM MATERIAL.
 - GEOGRID AND RAM PLACEMENTS SHALL BE OVERLAPPED BY 2'.
 - TOPSOIL MAY BE PLACED LOOSELY ON SIDE SLOPES AS REQUIRED TO MATCH GRADE. TOPSOIL SHALL NOT BE COMPACTED. RAM MUST EXTEND TO DAYLIGHT AND MAY BE TRIMMED AT FINAL TOE OF SLOPE.
 - SILT FENCE SHALL NOT BE TRENCHED AND MUST BE COORDINATED WITH ARBORIST FOR INSTALLATION.
 - EQUIPMENT/TRAFFIC SHALL NOT TRAVEL DIRECTLY ON RAM/GEOGRID. TRAFFIC MAY TRAVEL ON FINAL FILL ONLY.



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SHEET TITLE:
 ARBORIST DETAIL

REV. NO.	BY	DATE	DESCRIPTION OF REVISION	DATE:
				01/30/2024
				SHEET:
				TPP-5

