

Environment and Natural Resources Committee



February 1, 2023

Tree Protection Standards

Review Chapter 72 land development code

Tree ordinance basics:

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- I. Some types of properties and activities are exempt
- II. Development on 1 and 2 family residential on existing lots is treated differently than new subdivisions or commercial site plans
- III. There are 5 main standards in the tree code:
 - I. Trees to be retained must be protected from damage
 - II. Trees that are removed must be replaced
 - III. A portion of each development must be set aside for protection of trees
 - IV. Each lot must have a minimum number of trees
 - v. Large trees (specimens and historics) are special and have specific standards

I. Exemptions

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Current

- ❑ Residential owner-occupied property (homestead) including for historic trees
- ❑ Property with agricultural uses with a 3-year rebuttable presumption (agricultural assessment)
- ❑ Trees in certain zoning classifications
- ❑ Trees determined by local government to be deteriorated
- ❑ Trees in rights-of-way or easements
- ❑ Trees planted and grown for sale
- ❑ Nuisance species (camphor, citrus, Brazilian pepper, etc.)

Proposed changes

- ❑ Eliminate exemption for historic trees for single-family owner-occupied lots and/or agricultural lots without a bona fide ag use
- ❑ Increase rebuttable presumption time frame
- ❑ Remove MH-4 and RA exemptions zoning classifications and add C
- ❑ Add 2.5 acre ag exemption requirement
- ❑ Add airport protection, road projects, land management activities and state and federal land exemptions
- ❑ Remove unclear language for planned ROW's on new developments

II. New one and two family residential

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Applies:

- ☐ Tree protection during development
- ☐ Historic tree requirements
- ☐ Tree removal and replacement
- ☐ Minimum tree requirements

Does not apply:

- ☐ Specimen tree requirements
- ☐ Tree preservation area

This will be explained more as we discuss each standard

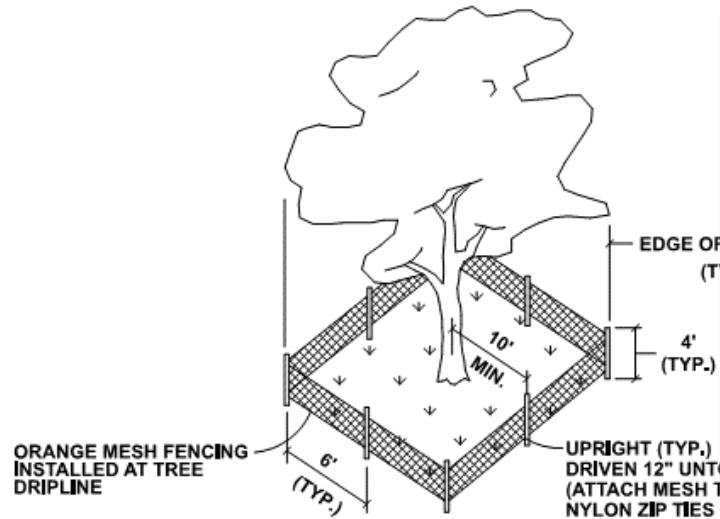
III.I. Tree protection during development

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- ❑ Requires tree protection barricades around trees to be retained
- ❑ Defines a tree protection zone around trees
- ❑ Requires protection from grade changes and trenching
- ❑ Protects the root zone of trees

Tree and root protection

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TYP. TREE PROTECTION DETAIL

N.T.S.

TREE BARRICADES ARE REQUIRED AROUND ALL TREES THAT HAVE BEEN DESIGNATED ON THE SITE PLAN TO BE RETAINED AND PROTECTED. PRIOR TO ANY CLEARING OR CONSTRUCTION ACTIVITY OCCURRING ON THE SITE, TREE BARRICADES SHALL BE CONSTRUCTED BY THE CONTRACTOR AND APPROVED BY THE MUNICIPALITY. TREE BARRICADES SHALL BE PLACED AT THE EDGE OF THE DRIPLINE OR A MINIMUM OF 1' OF RADIUS PER INCH OF TRUNK OF THE TREE, WHICHEVER IS GREATER.

FOR THE BARRIER THE CITY RECOMMENDS ORANGE SAFETY BARRICADE FENCING.

NOTE: EXISTING TREES IN LANDSCAPE BUFFER SHALL ALSO BE PROTECTED.

Boring
(HDD Horizontal
Directional Drilling)

Figure A15.12a
Trenching causes major damage

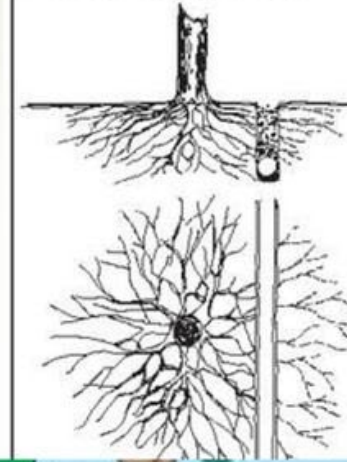
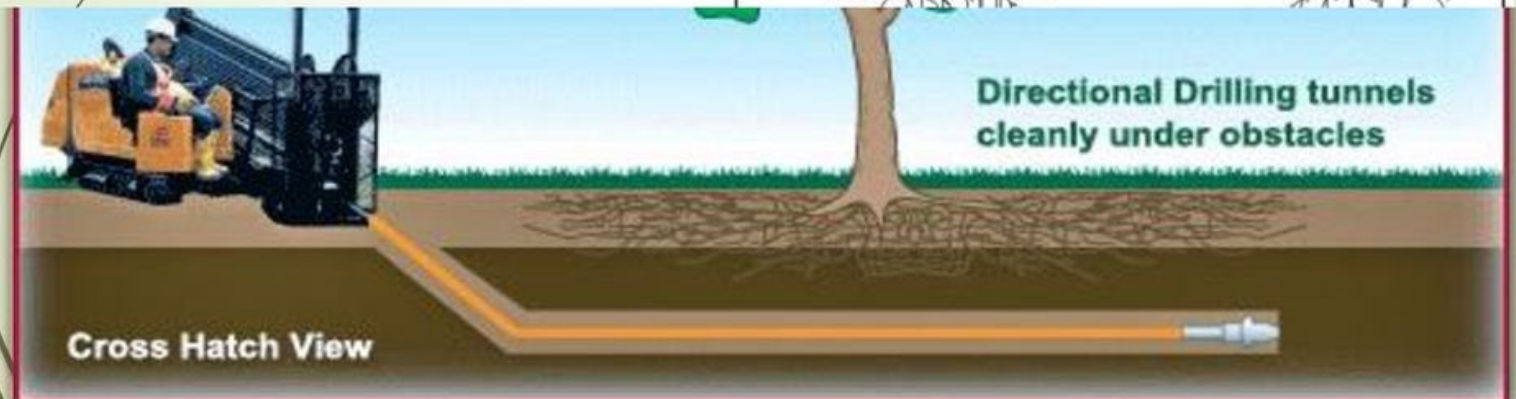
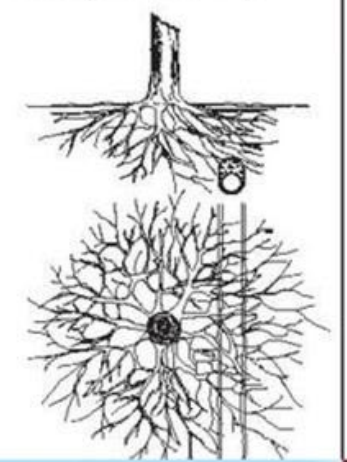


Figure A15.12b
Thrusting minimises damage



Tree and root protection

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General Root Morphology

- ▣ Roots extend 2.5-3 times the crown radius
- ▣ Most roots (>60%) located outside the drip line
- ▣ Tap roots rarely present in mature trees
- ▣ >95% of roots are found in the top 3 feet of soil



Tree protection potential changes

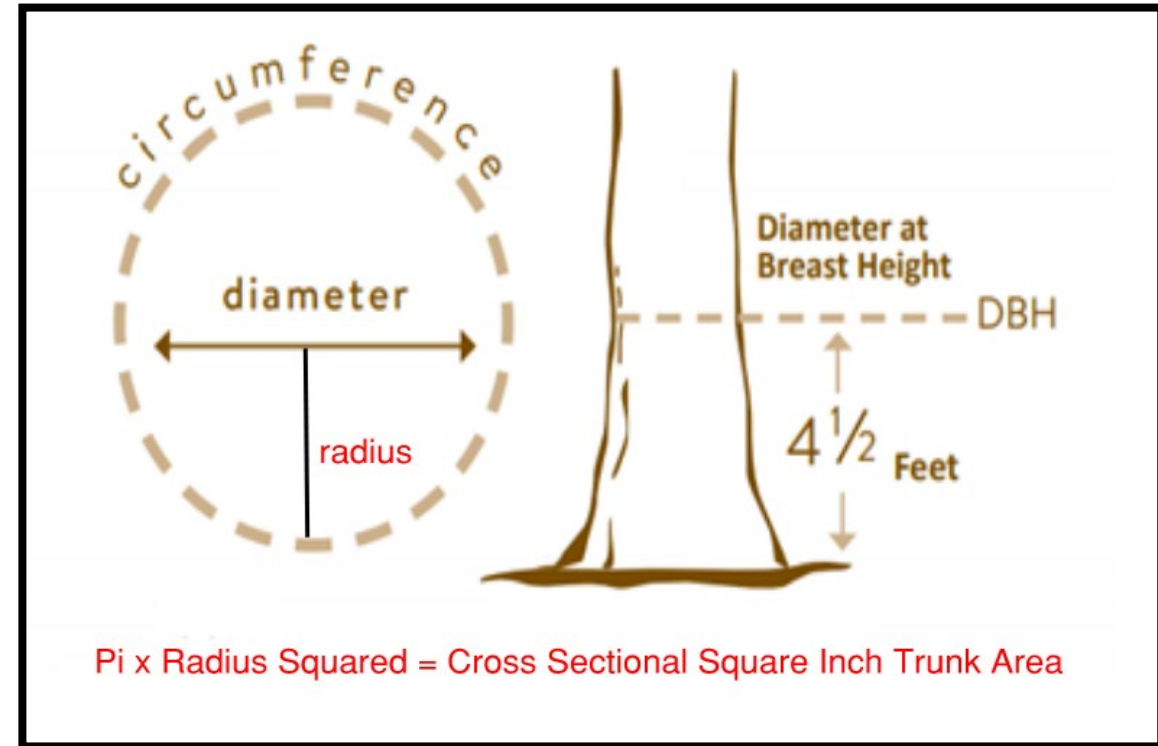
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- ❑ Language changes for clarity
- ❑ Remove tree well language

III.II Tree removal and replacement

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- Trees removed must be replaced based on 15% of the total cross-sectional area of the trunk of the tree removed
- Replacement can include:
 - **Planting** new trees,
 - **Protection** of existing small trees on site or
 - **Payment** into the Tree Replacement Trust Account
- Clearing of lots as part of a subdivision review is limited to 20% of the lots within one calendar year
- Allows for a separate process for single family lot clearing – only the trees within the zoning setbacks are protected



For example:

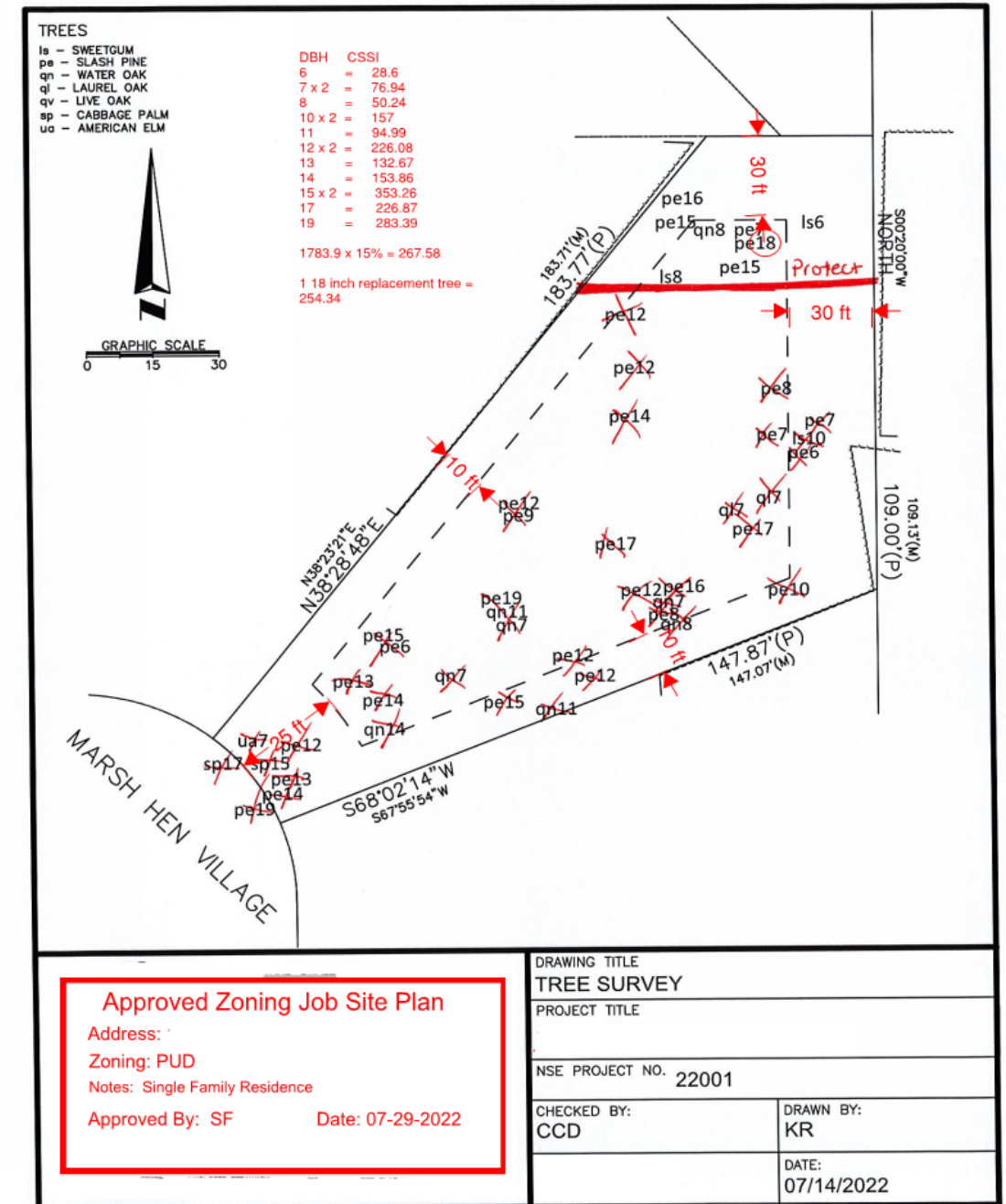
A 15 in. DBH tree:

Radius = 7.5 in.

$3.14 \times (7.5)^2 = 176.625 \text{ csi}$

$176.625 \times 15\% = 26.49 \text{ inches of replacement}$

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Tree replacement potential changes

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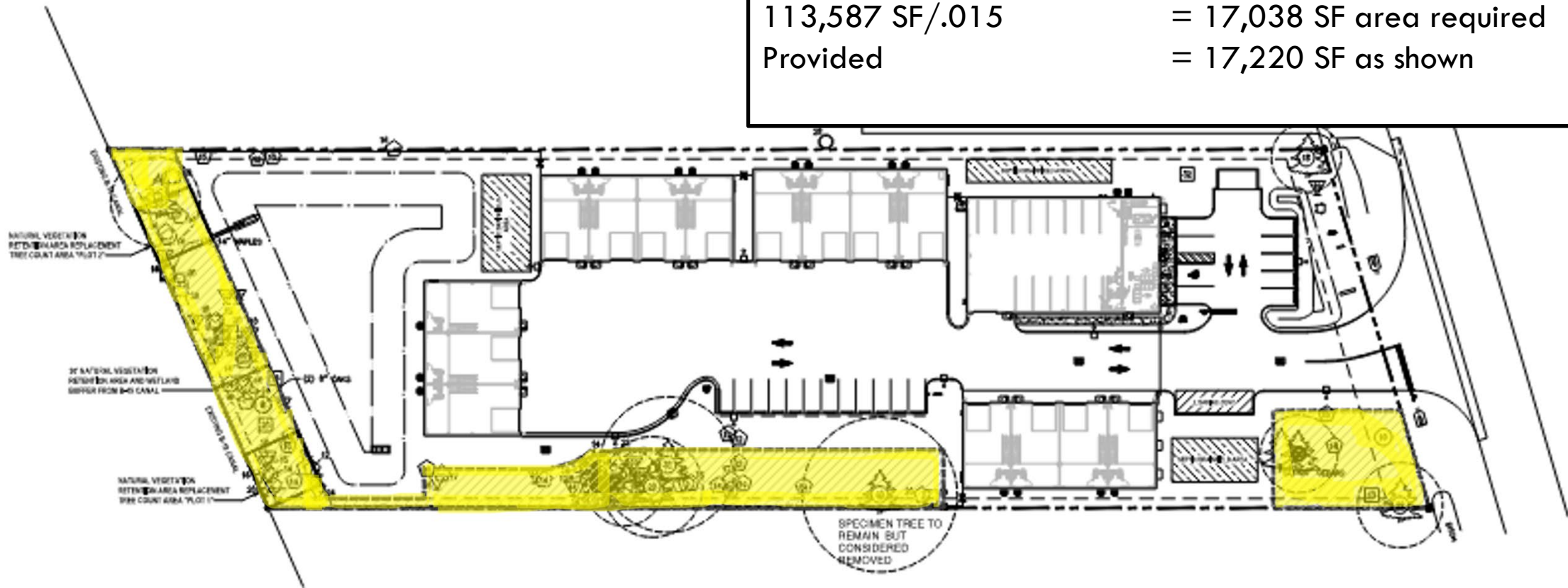
- Require additional tree replacement if developer proposes to clear all lots in a subdivision?
- Palms can only replace palms removed
- Lower minimum replacement size to 1.5 caliper
- Add clarification of existing trees used as replacement
- Add that replacement trees must remain in perpetuity
- Add clarifications and remove inconsistencies

III.III Tree Preservation Area

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- 15% of the square footage of any development shall be designated for the protection of trees

Tree Preservation Required	= 15% of lot area
113,587 SF/.015	= 17,038 SF area required
Provided	= 17,220 SF as shown



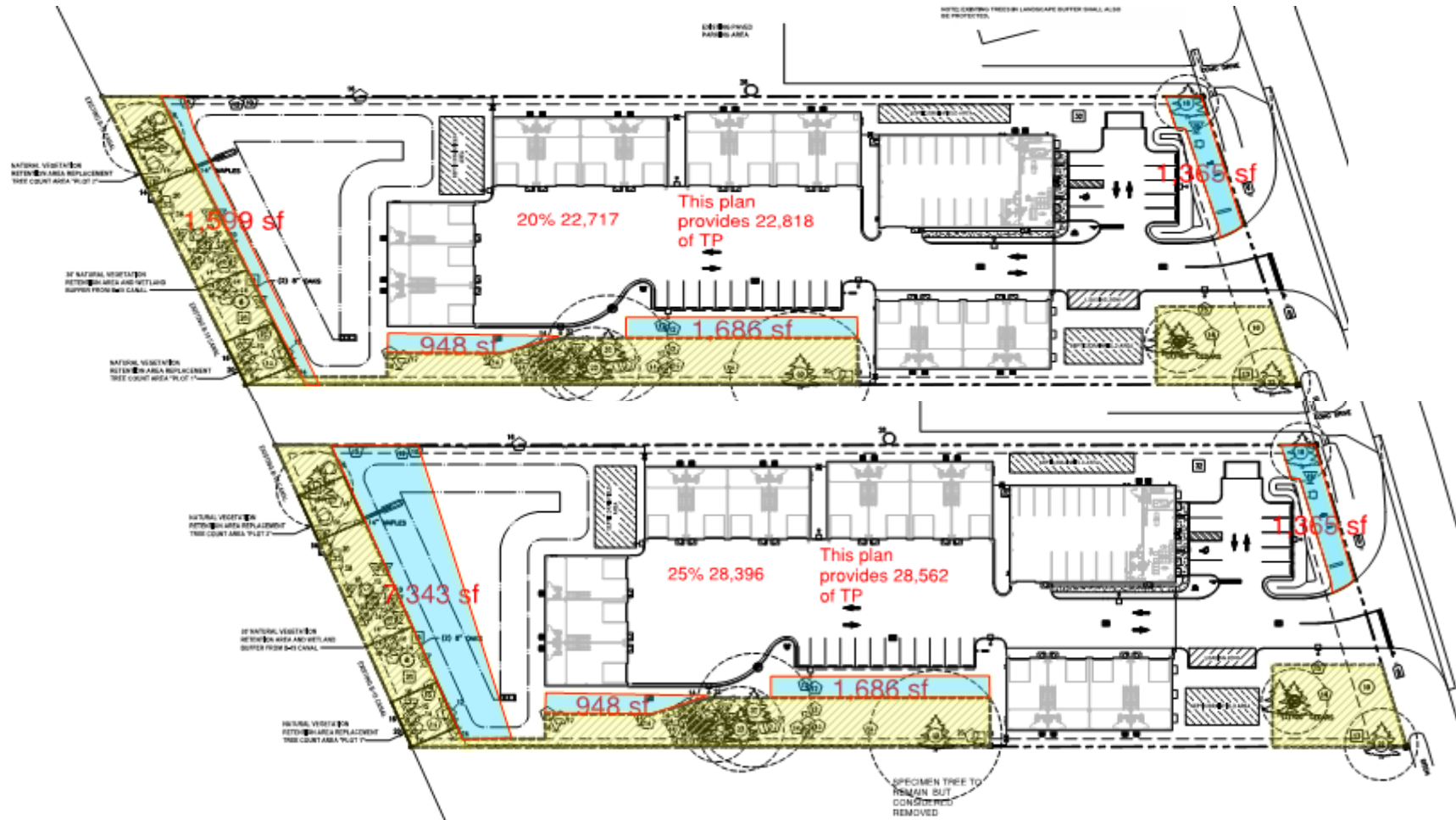
Tree preservation area potential changes

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- ❑ Increase the tree retention area requirement in environmentally sensitive areas (NRMA and ECO)?
- ❑ Removal of exotic vegetation in tree preservation area
- ❑ Requires tree preservation area to be within tracts in subdivisions and sets a minimum width

Tree Preservation Area 20% vs 25%

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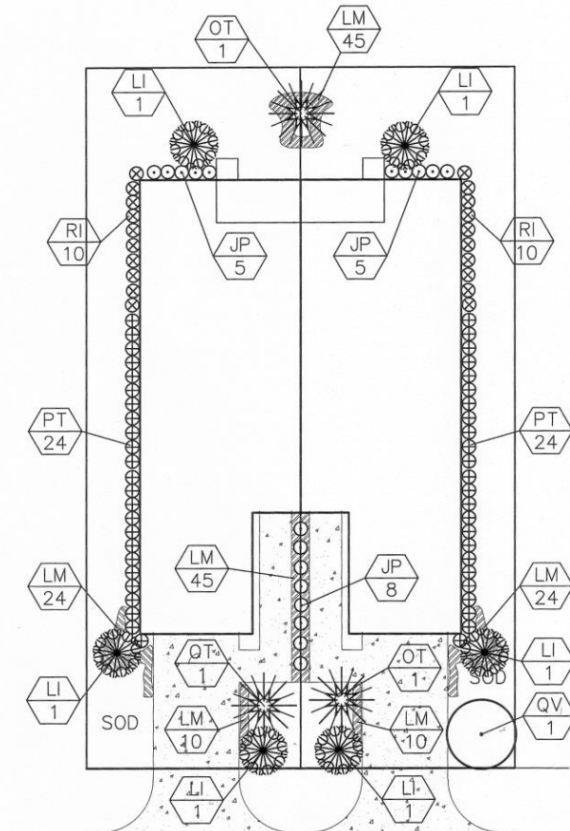
III.IV Minimum tree coverage

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1 tree per 2500 square feet of lot area – for example:

A half acre lot = 21,780 sq. feet and needs a minimum of 8.7 trees (rounded up to 9)

PLANT LIST					
SYMBOL	ABB.	QTY.	BOTANICAL NAME	COMMON NAME	SIZE
	OT	3	QUERCUS VIRGINIANA MAGNOLIA GRANDIFLORA	LIVE OAK SOUTHERN MAGNOLIA	65 GAL.; 10'-12' HT., 2.5" MIN. CAL. DBH
	QV	1	QUERCUS VIRGINIANA	LIVE OAK	65 GAL.; 10'-12' HT., 2.5" MIN. CAL. DBH
	LI	6	LAGERSTROEMIA INDICA	CREPE MYRTLE	30 GAL., 2" CAL.
	RI	20	RAPHIOLEPIS INDICA	INDIAN HAWTHORN	3 GAL; 18"-24" X 24" HT. 30" O.C.
	JP	18	JUNIPEROUS PARSONI	PARSONS JUNIPER	3 GAL; 18"-24" X 24" HT. 30" O.C.
	PT	48	PITTOSPORUM TOBIRA "GREEN"	GREEN PITTOSPORUM	3 GAL; 18"-24" X 24" HT. 30" O.C.
	LM	158	LIRIOPE MUSCARI	BORDER GRASS	1 GAL., 12"-15" SPD. 20" O.C.
SOD			ST. AUGUSTINE "FLORATAM" SOLID SOD (SQ. FT.)		



➡ EACH LOT WILL BE REQUIRED TO MEET THE MINIMUM TREE COVERAGE STANDARD OF ONE TREE PER 2,500 SQUARE FEET OF LOT AREA AND THAT STREET TREES MAY BE USED TO MEET THIS REQUIREMENT.








DUPLEX LAYOUT (PLANT LIST QUANITIES FOR 2 LOTS)

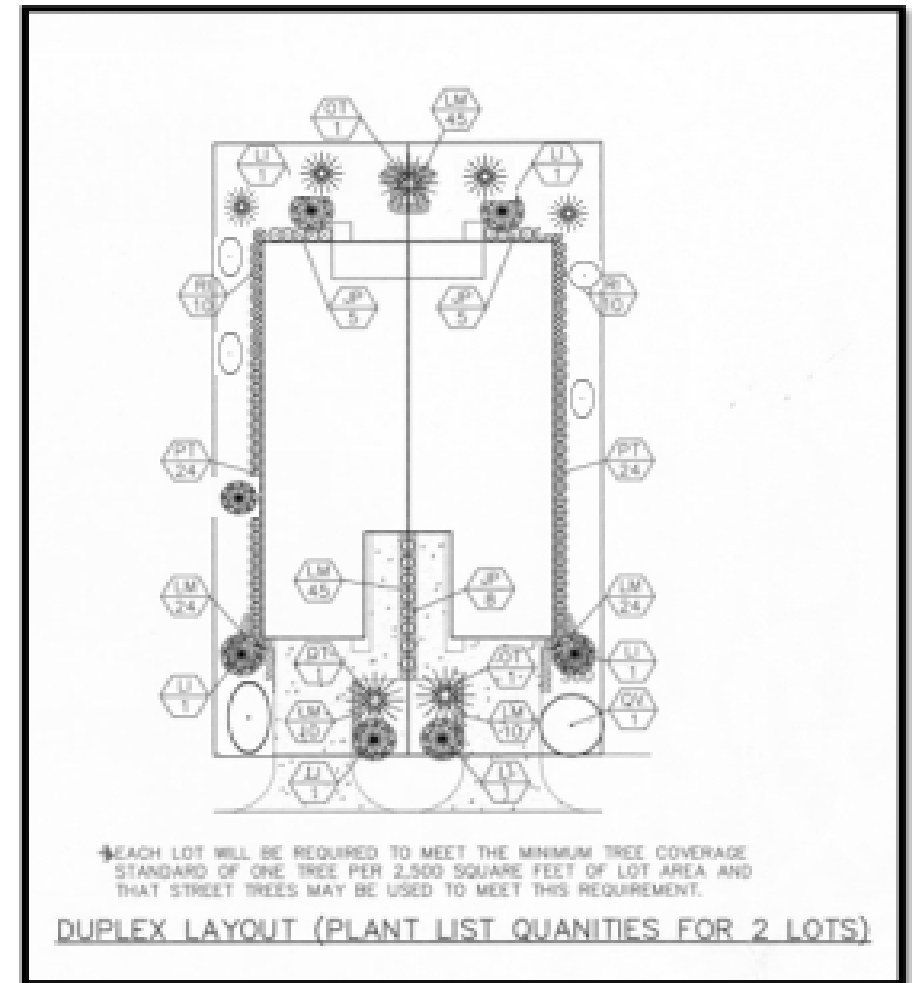
Minimum tree coverage (alternate for residential)

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For lots under 20,000 square feet: 1 tree per 1000 square feet of lot area, exempt from tree replacement requirements.

For example: 20,000 sq. = a minimum of 20 trees

PLANT LIST					
SYMBOL	ABB.	QTY.	BOTANICAL NAME	COMMON NAME	SIZE
	QT	7	MAGNOLIA GRANDIFLORA	SOUTHERN MAGNOLIA	30 GAL., 2" CAL.
	QV	6	QUERCUS VIRGINIANA	LIVE OAK	30 GAL., 2" CAL.
	IV	7	Ilex vomitoria	holly	30 GAL., 2" CAL.
	RI	20	RAPHIOLEPS INDICA	INDIAN HAWTHORN	3 GAL.; 18"-24" X 24" HT. 30" O.C.
	JP	18	JUNIPERUS PARSONI	PARSONS JUNIPER	3 GAL.; 18"-24" X 24" HT. 30" O.C.
	PT	48	PITOSPORUM TOBIRA "GREEN"	GREEN PITOSPORUM	3 GAL.; 18"-24" X 24" HT. 30" O.C.
	LM	156	LIRIOPE MUSCARI	BORDER GRASS	1 GAL., 12"-15" SPD. 30" O.C.
SOD ST. AUGUSTINE "FLORATAM" SOLID SOD (SQ. FT.)					



Minimum tree coverage potential changes

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- Add ability for county forester to waive minimum tree requirements based on site conditions
- Eliminate the alternate minimum for residential lots

III.V Specimen and historic preservation

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- Historic = 36" live oak and bald cypress only
- Historic removal requires DRC approval
- Specimen trees:

Common Name	Botanical Name	DBH
Turkey Oak	(<i>Quercus leavis</i>)	12 inches and larger
Other Oak species	(<i>Quercus</i> spp.)	18 inches and larger
Maple	(<i>Acer</i> spp.)	18 inches and larger
Sweet Gum	(<i>Liquidambar styraciflua</i>)	18 inches and larger
Hickory	(<i>Carya</i> spp.)	18 inches and larger
Elm	(<i>Ulmus</i> spp.)	18 inches and larger
Loblolly Bay	(<i>Gordonia lasianthus</i>)	12 inches and larger
Sweet Bay	(<i>Magnolia virginiana</i>)	12 inches and larger
Red Bay	(<i>Persea borbonia</i>)	12 inches and larger
Swamp Bay	(<i>Persea palustris</i>)	12 inches and larger
Sycamore	(<i>Platanus occidentalis</i>)	18 inches and larger
Magnolia	(<i>Magnolia grandiflora</i>)	12 inches and larger
Bald Cypress	(<i>Taxodium distichum</i>)	18 inches and larger
Red Cedar	(<i>Juniperus silicicola</i>)	12 inches and larger

Number of Specimen Trees per Acre	On-site Protection Required
Less than 3 per acre or a portion thereof	80 percent of all specimen trees
3.0 to 5.0 per acre	65 percent of all specimen trees
5.1 to 8.0 per acre	50 percent of all specimen trees
8.0 or more per acre	4 specimen trees per acre

Specimen and historic preservation potential changes

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- ❑ Eliminate the exemption for historic trees for single-family owner-occupied lots and/or agricultural lots without a bona fide ag use?
- ❑ Expand the definition of historic trees to include pond cypress and longleaf pine?
- ❑ No historic trees on newly created lots
- ❑ Update the definition for specimen trees (add pond cypress, black gum and longleaf pine at 18")
- ❑ Allow for flexibility in modification of the specimen tree requirements based on site conditions

Other potential changes

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- Re-order to make the code flow better
- Add language for clarity
- Make it clear which sections apply to which types of development
- Remove redundancies

Re-order

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□ Movement of Sections

Previous	Changed to
72-831 Purpose and jurisdiction	Same
72-832 Penalty	Same
72-833 Documents incorporated by reference	Same
72-834 General prohibitions	Same
72-835 General exemptions	Same
72-836 Tree permit application requirements	72-837 Tree permit application requirements
72-837 Area tree protection requirements	72-842 Area tree protection requirements
72-838 Minimum tree coverage requirements	72-841 Minimum tree coverage requirements
72-839 Natural vegetation retention areas	72-843 Natural vegetation retention areas
72-840 Tree permits	72-836 Tree permit standards for review
72-841 Tree relocation option	72-844 Tree relocation option
72-842 Tree replacement requirements	72-839 Tree replacement requirements
72-843 Historic and specimen trees	72-840 Historic and specimen trees
72-844 Standards for tree protection during development activities	72-838 Standards for tree and root protection during development activities
72-845 Tree relocation by county	Deleted
72-846 Tree replacement trust account	72-845 Tree replacement trust account
72-847 Issuance of certificates of occupancy	72-846 Issuance of certificates of occupancy
72-848 Tree permit requirements for residential construction	Deleted – merged portion with Sections 72-836 and 72-837
72-849 Appeals	72-847 Appeals

Re-order

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□ New Sections

72-831 Purpose and jurisdiction
72-832 Penalty
72-833 Documents incorporated by reference
72-834 General prohibitions
72-835 General exemptions
72-836 Tree permit standards for review
72-837 Tree permit application requirements
72-838 Standards for tree and root protection during development activities
72-839 Tree replacement requirements
72-840 Historic and specimen trees
72-841 Minimum tree coverage requirements
72-842 Area tree protection requirements
72-843 Natural vegetation retention areas
72-844 Tree relocation option
72-845 Tree replacement trust account
72-846 Issuance of certificates of occupancy
72-847 Appeals