APPENDIX 1 ADMINISTRATIVE STANDARDS

ROCKDALE COUNTYTREE PROTECTION & LANDSCAPE REVIEW CHECKLIST

Project Name:_____ Project Engineer:_____

Engineer or RLA signature:_____ Date:_____

1. Tree protection and tree planting details must be shown on a separate "Landscape Sheet", with all applicable information on the same page.
2. New subdivisions must include on Final Plat comments requiring SFHB to provide active tree protection prior to any grading, and ay required tree planting per lot prior to CO.
3. All tree protection must be installed and inspected prior to grading.

The following information is required on landscape sheet(s), per the Tree Ordinance. Mark "x" if included on landscape sheet(s), "O" if missing, and "N/A" if not applicable.

1. **TREE PROTECTION**

A. Areas being claimed for the 15 units/acre credit:

_____ Locations of tree protection and fencing. Also all locations of stream buffers protected by active tree protective fencing. Protected areas must be delineated by crosshatch on plans.
_____ All protected areas will be shown on all grading and erosion control sheets.
_____ Tree protection sampling locations within protection zones, the type of sampling, and basis of calculations used to determine units/acre, and total credits.
_____ Details showing active type of fencing to be used for tree protection. On commercial developments metal posts are required for supporting orange weave fencing and required signage.
_____ Required tree protection comments located adjacent to tree protection detail.

B. Exceptional Trees (hardwoods > 24" dbh, understory > 8" dbh)

_____ Call the forester when road centerline is staked and all clearing limits are flagged.
_____ Show location of dripline, common name of tree and dbh value.
_____ If tree requires removal, then indicated means of dbh: ½" caliper recompense.
_____ If tree can be saved, then indicate location of crown dripline and active fencing.

2. **TREE PLANTING**

_____ Replacement trees chosen from the most recent "Approved Tree List"
_____ Planting comments and planting detail per County examples
_____ All proposed overhead and underground utilities and light poles shown on sheet.
_____ All equipment staging areas, areas for storage, concrete washout and debris burn and burial holes located and shown outside of proposed landscape areas.
_____ Indicate all tree planting locations and mature crown diameters.
_____ Required buffer area must indicate native evergreen trees to be used, spacing and minimum heights per species (minimum of 6 feet).

Rockdale County PS&E
Comments Required on Landscape Sheet(s)

Tree protection specifications, to be added to the existing checklist items:

- Locations of tree crown drip lines for all Exceptional trees to be protected will be shown on the landscape sheet, grading sheet, and erosion control sheet.
- Tree protection fence location shall also be noted on the erosion control sheet and the grading sheet. Such fence shall be downhill from silt fence or mulch.
- Detailed example drawings of tree protection will be shown on landscape plan.
- Active tree protection fencing (48" orange mesh) is required on all commercial developments. Support will be with 6 ft metal posts.
- Tree protection fencing shall always be located at the outside line of the tree crown (drip line).
- New subdivisions with Streamside Management Zones will have these zones protected with the active tree fencing. No dirt or silt is allowed to enter this zone.
- The only tree species allowed for planting in traffic easabouts or within new subdivisions are those trees listed on the "Approved Trees for Replacements".

Tree planting specifications: (These notes must appear on landscape sheet, along with tree planting detail drawings)

- No construction debris (aggregate, concrete, wood, etc) is allowed in parking lot tree islands or medians. Contractor will back fill with clean topsoil in such areas.
- Developer or builder will follow Rockdale County's "Approved Trees for Replacements". Only tree species native to the Piedmont Region are allowed.
- Contractor shall verify location of all underground and overhead utilities prior to planting. No trees within 15 feet of any utility lines or septic systems.
- There shall be no substitutions, deletions, or revisions to these landscape plans without prior written approval of the County Urban Forester.
- For balled & burlap trees, the upper ½ of the wire basket and burlap will be removed prior to the backfilling of soil. Backfilled soil will not have air pockets.
- All trees shall be straight trunked, full headed, without trunk damage or wounds, and shall meet the #1 quality standards.
- All trees will be planted at grade. No mounding of trees is allowed.
- Approved mulch will be at least 3" deep, and in a five (5) foot minimum diameter around each tree. No mulch or fill dirt will be within 4" of the tree trunk.
- No tree guys will be used on trees with trunk caliper of 2" or less. If larger trees are used, two stakes at opposite sides of each tree will support them. Approved fabric ties will be used instead of wire and rubber hoses.
- All tree ties and stakes will be removed 8 months after planting.
- All commercial developments shall include an irrigation system for supplying water to all trees at least twice per week for two months, then once per week.
- Contractor will be responsible for the proper watering and maintenance of all planted trees during the one year of replacement guarantee.
- Any tree that dies during the **two years** after planting will be replaced by the property owner with tree of the original size and specifications.
- **Homebuilders** in new subdivisions shall protect all required stream buffers and Streamside Management Zones by installing **active** tree protection fencing.

Section A. Tree Protection and Replacement Plan Notes and Details.

The following notes shall be included on all Tree Protection and Replacement Plans.

TREE PROTECTION NOTES:

TREE PROTECTION FENCING MUST BE INSTALLED BY THE DEVELOPER AND INSPECTED BY THE COUNTY ARBORIST/ URBAN FORESTER PRIOR TO ANY CLEARING OR GRADING. CALL THE DEPARTMENT OF PUBLIC SERVICES AND ENGINEERING FOR AN INSPECTION.

TREE PROTECTION FENCING SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE ROCKDALE COUNTY TREE PROTECTION AND REPLACEMENT ORDINANCE.

THE DENSITY REQUIREMENTS SHOWN ON THE TREE PROTECTION AND REPLACEMENT PLAN MUST BE VERIFIED BY THE COUNTY ARBORIST/ URBAN FORESTER PRIOR TO THE ISSUANCE OF THE CERTIFICATE OF OCCUPANCY OR APPROVAL OF THE FINAL PLAT. CALL THE DEPARTMENT OF PUBLIC SERVICES AND ENGINEERING FOR AN INSPECTION.

MAINTENANCE INSPECTIONS FOR TREES SHOWN WITHIN TREE PROTECTION AREAS ON ALL DEVELOPMENTS WILL BE PERFORMED BY THE COUNTY ARBORIST/ URBAN FORESTER DURING FINAL SITE INSPECTION. CALL THE DEPARTMENT OF PUBLIC SERVICES AND ENGINEERING FOR AN INSPECTION.

TREE REPLACEMENT NOTES:

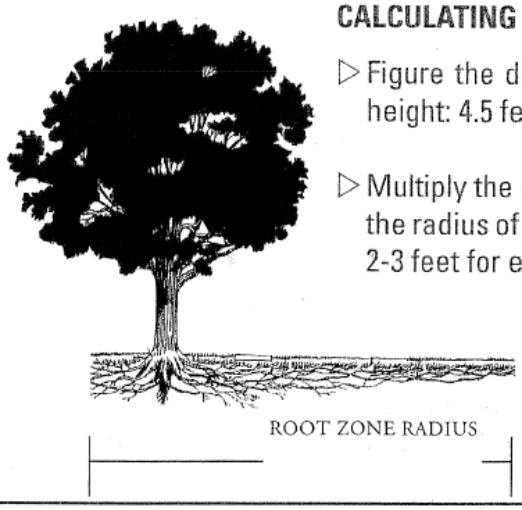
TREE DENSITY AND PLANTING REQUIREMENTS SHOWN ON THE TREE PROTECTION AND REPLACEMENT PLAN OR FINAL PLAT MUST BE VERIFIED BY THE COUNTY ARBORIST/ URBAN FORESTER PRIOR TO THE ISSUANCE OF THE CERTIFICATE OF OCCUPANCY OR APPROVAL OF THE FINAL PLAT/ PROJECT. CALL THE DEPARTMENT OF PUBLIC SERVICES AND ENGINEERING FOR AN INSPECTION.

FOR COMMERCIAL DEVELOPMENTS, A TREE MAINTENANCE INSPECTION SHALL BE PERFORMED BY THE COUNTY ARBORIST/ URBAN FORESTER NO LESS THAN ONE YEAR FROM THE DATE OF THE FINAL SITE INSPECTION. IT

SHALL BE THE RESPONSIBILITY OF THE PROPERTY OWNER TO SCHEDULE THIS INSPECTION.

ALL PLANT MATERIALS SHALL CONFORM TO THE AMERICAN STANDARD FOR NURSERY STOCK, MOST RECENT EDITION, AMERICAN ASSOCIATION OF NURSERYMEN. ALL PLANS WILL INCLUDE REQUIRED TREE PLANTING AND TREE PROTECTION DETAILS AND COMMENTS.

CALCULATING THE ROOT ZONE



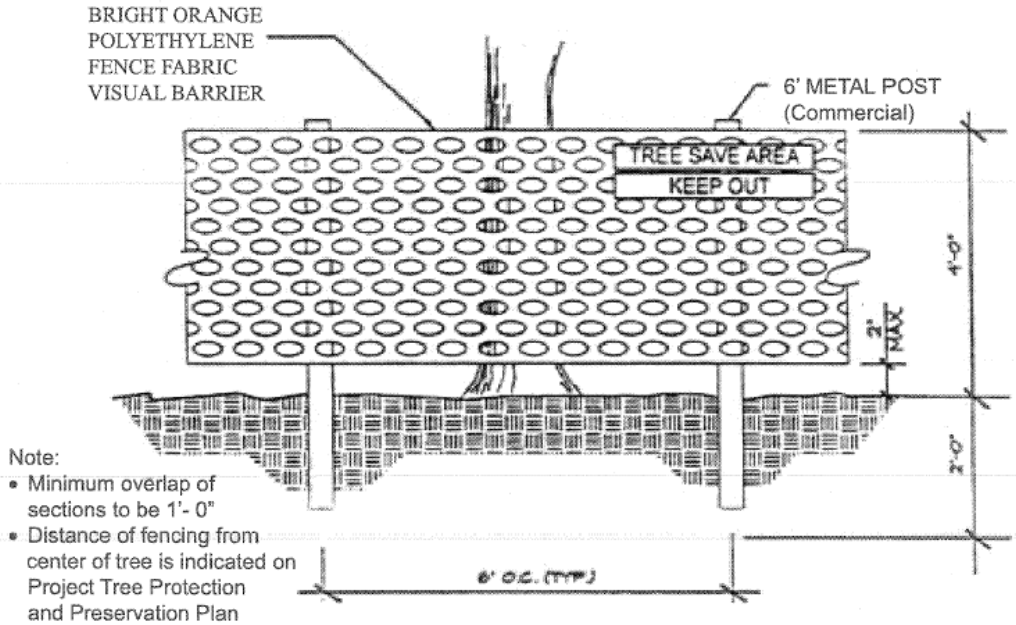
Source: National Arbor Day Foundation

▷ Figure the diameter of the trunk in inches (at breast height: 4.5 feet above ground).

▷ Multiply the diameter breast height (dbh) by 3 to learn the radius of the root zone (roots extend radially about 2-3 feet for every inch of the trunk's diameter).

▷ If construction impacts more than 30 percent of the total root zone, the crown will show signs of dieback.

Tree Save Area Fencing



Note:
- Minimum overlap of sections to be 1'- 0"
- Distance of fencing from center of tree is indicated on Project Tree Protection and Preservation Plan

DENSITY CALCULATIONS

The tree density requirements by the Rockdale County Tree Protection and Replacement Ordinance may be achieved by counting existing trees to be preserved, planting new trees, or some combination of the two as represented by the following formula: Final Density Factor (FDF) equal the Existing Density Factor (EDF) plus the Replacement Density Factor (RDF).

Overall Density Factor (ODF)
The ODF is calculated by multiplying the net Disturbed Area (gross disturbed area minus mandated buffers within the disturbed area) by 15 tree units per acre (see section 328-18).

Existing Density Factor (EDF)
The EDF is calculated by converting the diameter of individual trees remaining into density factor units. The density factor for existing trees is shown in table A-1 below.

Replacement Density Factor (RDF)
The RDF is calculated by subtracting the EDF from the ODF. The density factor for replacement (new) trees is shown in table A-2 below.

EXAMPLE:

1. A commercial site with 7.5 acres net disturbed area and no exceptional trees removed would result in an overall density factor of 113 tree units, calculated as follows:

    7.5 acres x 15 tree density units = 112.50 Density Factor

2. A total of 15 trees will remain on the 7.5 acre site. The tree count is as follows:

    7 – 12" diameter pines
    3 – 14" diameter pines
    3 – 18" diameter oaks
    1 – 21" diameter hickory
    1 – 30" diameter oak

3. Converting diameters (DBH) to density units, the EDF is determined below (see table A-1):

DBH:	Units		No. of Trees	Total
12"	2.8	x	7	19.6
14"	3.5	x	3	10.2
18"	4.7	x	3	14.1
21"	5.8	x	1	5.8
24"	24.6	x	1	24.6

			EDF	74.3

4. The RDF is calculated by subtracting the EDF from the ODF
    RDF = 113 – 74.3 = 38.7

5. A total of 38.7 replacement units are required.

Table A-1. Existing Density Factor (EDF)

The diameter of trees existing on site, including trees to be relocated on site, shall be measured utilizing a Diameter at Breast Height (DBH) calculation. Conversion values from DBH to Tree Density Units for existing trees to be protected shall be as follows:

DBH	Units	DBH	Units	DBH	Units	DBH	Units
3	0.3	15	3.6	27	10.6	39	20.0
4	0.5	16	4.0	28	11.5	40	22.2
5	0.8	17	4.4	29	12.0	41	23.0
6	1.0	18	4.7	30	12.3	42	24.0
7	1.0	19	5.0	31	13.0	43	25.2
8	1.8	20	5.3	32	14.0	44	26.8
9	1.8	21	5.8	33	14.7	45	27.5
10	2.0	22	6.3	34	15.7	46	28.7
11	2.4	23	7.8	35	16.7	47	30.0
12	2.8	24	8.2	36	17.7	48	31.5
13	3.0	25	9.0	37	18.7	49	32.7
14	3.4	26	9.8	38	19.7	50	34.0

Table A-2. Replacement Density Factor

The diameter of trees to be placed on site shall be measured utilizing the caliper calculation, measured 6 inches above ground level. Tree diameter fractions may be "rounded up" if 0.5 inches or greater. Multi-trunk trees shall be give credit by measuring the single larges trunk only. Conversion values from caliper calculations to Tree Density Units for proposed new trees shall be as follows:

Caliper "	Units
1	N/A
2	0.5
3	0.7
4	0.9
5	1.0
6	1.2
7	1.5
8	1.7
9	1.8
10	2.0
11	2.2
12	2.4

Container grown trees where the container is at least fifteen gallons in capacity will be given a replacement credit of 0.5 units each.

Criteria for Replacement Trees

1. Spacing and the potential size of species chosen shall be compatible with spatial limitations of the site.
2. The species must be ecologically compatible with the intended growing site.
3. Trees must be replaced with at least sixty percent (60%) overstory species.
4. The tree must be planted at least 15 feet from proposed and existing utilities.
5. No more than 25% of the replacement trees can be composed of any one genus.

Tree Relocation

Replacement units may be granted for trees proposed to be relocated on site subject to the approval of the forester. Tree relocation is directly dependant on the size of tree spade, water regime for maintenance, and health of the tree.

Size and Condition Criteria for Exceptional Trees

In order to qualify as an exceptional tree or exceptional tree stand, the tree(s) must meet certain size and condition criteria:

Size Criteria

Large Trees, Hardwoods	24 in. DBH, with a life expectancy of 15+ years
Large Trees, Softwoods	30 in. DBH, with a life expectancy of 8 + years
Understory/Small Trees	8 in. DBH, with a life expectancy of 15 + years

Condition Criteria

The forester shall field check the condition of a proposed exceptional tree or exceptional tree stand based on the following criteria:

A. All exceptional trees are to have a sound trunk, with less than 20% radial trunk dieback.
B. No exceptional tree may have more than one major and several minor dead limbs (hardwoods only).
C. No exceptional tree can have major insect or pathological problems.
D. Exceptional tree stands are a contiguous grouping of mature trees of high value. The basis for the high valuation may be that the trees are of pure species composition, possesses historical significance, or possess unusual aesthetic qualities. Not all the trees within the exceptional tree stand have to meet the size criteria above for the stand to qualify.

APPENDIX 2

Approved Trees for Replacements

Rockdale County Ordinance

The County Forester approves the following native tree species. To encourage species diversity, no more than **25%** of each **genus** will be allowed for the site plan. At the bottom of the listing are sampled wholesale nurseries that stock most of these species of quality and sizes acceptable to the county. (Good website for tree information is http://hort.ifas.ufl.edu/trees). Rockdale County does not endorse any vendor, and there are many other local nurseries available.

SHADE TREES FOR PARKING LOT ISLANDS AND EASE-A-BOUTS

Trees that are tolerant of intense heat loads, minimal seed litter, and shade pavement.

Common name	Genus and species
Am. hornbeam	*Carpinus caroliniana*
Shumard oak	*Quercus shumardii*
Willow oak'Hightower'	*Quercus phellos*
Overcup oak'Highbeam'	*Quercus lyrata*

CANOPY TREES FOR PARKING LOT PERIMETERS AND RESIDENTIAL LOTS

In addition to the above species, the following species are useful in areas with more surface area for root development (at least **400** square feet). The following trees exhibit intense fall or spring color, have value for wildlife, and shade the asphalt.

Common name	Genus and species
Yellow poplar	*Liriodendron tulipifera*
Scarlet oak	*Quercus coccina*
Nuttall oak	*Quercus nuttalli*
White ash 'Rosehill'	*Fraxinus americana*
Red maple 'October Glory'	*A. rubrum*
Red maple 'Summer Red'	*A. rubrum*
S. Sugar maple	*Acer barbatum*
Blackgum	*Nyssa sylvatica*
Georgia oak	*Quercus georgiana*
Eastern redbud**	*Cercis canadensis*
Sourwood**	*Oxydendrum arboreum*
Carolina silverbell	*Halesia carolina*
River birch 'Dura Heat'	*'Dura Heat'*
Mockernut Hickory	*Carya alba*

Approved Trees for Replacements (cont.)

Rockdale County Ordinance

Pignut Hickory	*Carya glabra*
Red Hickory	*Carya ovalis*
Sand Hickory	*Carya pallida*
Eastern Persimmon	*Diospyros virginiana*
Black Walnut	*Juglans nigra*
White oak	*Quercus alba*
Southern red oak	*Quercus falcate*
Blackjack oak	*Quercus marilandica*
Rock chestnut oak	*Quercus Montana*
Red oak	*Quercus rubra*
Post oak	*Quercus stellata*
Black oak	*Quercus velutina*

****** Trees useful for islands adjacent to sidewalk and buildings.
(Note: Winged or Chinese elms, or cultivars are **not** allowed; too risky with Dutch elm disease)

TREES FOR BUFFER STRIPS

Evergreen species are useful in landscape strips. Preference is for clustering and linear use of two or more species, for more efficient screening.

Common name	**Genus and species**
E. redcedar'Brodie'	*Juniperus virginiana*
E. redcedar'Burkii'	*Juniperus virginiana*
S. wax myrtle	*Myrica cerifera*
Savannah holly	*Ilex x attenuata*
'Savannah'American holly	*Ilex opaca*
Southern magnolia	*Magnolia grandiflora*
Sweetbay magnolia	*Magnolia virginiana*

Note: **Pine species or Leyland cypress are not acceptable.** The above evergreen species provide better screening, wildlife value, less risk with insects or disease, and seasonal color.

TREES COMPATIBLE WITH OVERHEAD & UNDERGOUND UTILITY LINES

****** Any tree species listed above with a mature height of **less than 20 feet** is compatible. The following species are also available.

Common name	**Genus and species**
Winterberry	*Ilex verticillata*
Fringetree	*Chionanthus virginicus*

Approved Trees for Replacements (cont.)
Rockdale County Ordinance

Yaupon holly	*Ilex vomitoria*
Southern magnolia	*M. grandiflora 'Little Gem'*
Witchhazel	*Hammamelis virginiana*
Georgia Oak	*Quercus Georgiana*
American Hornbeam	*Carpinus caroliniana*
Carolina Silverbell	*Halesia tetraptera*

SAMPLED GEORGIA WHOLESALE NURSERIES

Arthur Jones	Mathews	(706) 547-3342
Bold Springs	Monroe	(770) 267-9196
Lone Oak	Grantville	(706) 637-6240
Mid-Georgia	Meansville	(770) 567-3874
Moon's	Loganville	(770) 554-6849
South Georgia	Valdosta	(229) 794-1294