

**APPENDIX A. ZONING MAP AMENDMENT AND PLANNED DEVELOPMENT PROCESS**

## **ZONING MAP AMENDMENT AND PLANNED DEVELOPMENT PROCESS**

1. Recommendation by Hendersonville Regional Planning Commission at regular meeting on the 1<sup>st</sup> Tuesday of the month
2. Recommendation by General Committee of the Board of Mayor and Aldermen on the 2<sup>nd</sup> Tuesday of the month
3. First vote by the Board of Mayor and Aldermen on the 4<sup>th</sup> Tuesday of the month  
Note: If the vote is to deny, this ends the process.
4. Notice of a public hearing is place in The Star News at least 15 days prior to the 4<sup>th</sup> Tuesday of the following month.
5. Public hearing at Board of Mayor and Aldermen meeting on the 4<sup>th</sup> Tuesday of the following month.
6. Second vote by the Board of Mayor and Aldermen on the 4<sup>th</sup> Tuesday of the following month.
7. The Mayor and City Clerk sign the ordinance.
8. Staff updates the official zoning map.
9. This concludes the process for a regular zoning map amendment (rezoning).
10. For a rezoning to a Planned Development, proceed with the Final Development Plan procedure as outlines in Section 8.8D (Final Development Plan).

### Sample Schedule:

January 7, 2014	Recommendation by HRPC
January 14, 2014	Recommendation by General Committee
January 28, 2014	1 <sup>st</sup> Reading by BOMA
February 4, 2014	Notice submitted to Star News
February 7, 2014	Notice runs in Star News
February 25, 2014	Public hearing at BOMA
February 25, 2014	Second reading at BOMA

**APPENDIX B. LETTER OF CREDIT TEMPLATE**

(MUST BE ON ORIGINAL BANK LETTER HEAD)  
IRREVOCABLE STANDBY LETTER OF CREDIT NO. #

DATE:

IN FAVOR OF (BENEFICIARY):

City of Hendersonville  
Attn: Planning Department  
101 Maple Drive North  
Hendersonville, TN 37075

FOR ACCOUNT OF (APPLICANT):

AMOUNT:

We hereby establish our Irrevocable Standby Letter of Credit (hereinafter "Credit") in you favor available by your draft(s) drawn at SIGHT on (Name of Bank) and accompanied by the documents specified below:

1. Certificate of default, signed by the Chairman of the Hendersonville Regional Planning Commission or the Mayor of the City of Hendersonville, certifying that: The applicant has not completed, in accordance with the Hendersonville Zoning Ordinance, the building and site improvements required by said Zoning Ordinance and the approved site plan for (name of business or project) approved by Hendersonville Regional Planning Commission on (date approved), which approval was conditioned upon the completion of the said improvements. The certificate shall also state the approximate dollar amount of damage to the City which amount shall be identical to the face amount of the accompanying draft.
2. Original Letter of Credit and Amendments if any.

This Letter of Credit is valid for an initial period of one (1) year and shall be automatically renewed for successive periods of one (1) year without any effort on the part of the City. We reserve the right to revoke this Letter of Credit, but only after providing the Beneficiary with 90 days notice by certified mail, return receipt requested.

PAGE ONE OF TWO (CONT. ON PAGE TWO)

PAGE TWO OF TWO OF IRREVOCABLE STANDBY LETTER OF CREDIT  
NO.# \_\_\_\_\_

All drafts must be marked: "Drawn under (Name and Address of Bank). Credit No.# \_\_\_\_\_.

Except so far as otherwise expressly stated this Credit is subject to the International Standby Practices/ISP98, International Chamber of Commerce Publication No. 590 or ICC Publication No. 600.

We hereby engage with you that all drafts drawn under and in compliance with the terms of this Credit will be duly honored if drawn and presented for payment on or before the expiration date of this Credit at (name and address of local branch bank – must be within 75 miles of City Hall, Hendersonville, TN). [Include the following language if the alternative method of payment described therein is chosen by the Bank] The local branch bank shall simultaneously submit the Certificate of Default and Draft by facsimile or e-mail to (Bank's Letter of Credit Department facsimile number or e-mail address). The City may elect to submit the Certificate of Default and Draft directly to the Bank at the above stated facsimile number or e-mail address. The bank shall wire the funds to the City's account within two (2) business days.

\_\_\_\_\_  
Signed by Officer of Bank

\_\_\_\_\_  
Print Name and Title

**APPENDIX C. WIRELESS TELECOMMUNICATIONS FACILITIES AND TOWERS**

- AC.1 FINDINGS**
  - AC.2 PURPOSES**
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  - AC.18 ABANDONMENT**
  - AC.19 SPECIAL CONDITIONS FOR LOCATION OF TELECOMMUNICATION FACILITIES WITHIN RESIDENTIAL DISTRICTS**
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## **AC.1 FINDINGS**

The Communications Act of 1934, as amended by the Telecommunications Act of 1996, (“the Act”) grants the Federal Communications Commission (FCC) exclusive jurisdiction over:

- A. The regulation of the environmental effects of radio frequency (RF) emissions from Telecommunications Facilities, and
- B. The regulation of radio signal interference among users of the RF spectrum.

The City’s regulation of Telecommunications Facilities and Towers in the City and adjoining planning jurisdiction will not have the effect of prohibiting any person from providing wireless telecommunications services in violation of the Act.

## **AC.2 PURPOSES**

The general purpose of this Section is to regulate the placement, construction, and modification of Telecommunications Facilities and Towers in order to protect the health, safety, and welfare of the public, while at the same time not unreasonably interfering with the development of the competitive wireless telecommunications marketplace in the jurisdictional area.

Specifically, the purposes of this Section are:

- A. To regulate the location of Telecommunications Facilities and Towers in the City and adjoining planning jurisdiction;
- B. To protect residential areas and land uses from potential adverse impact of Telecommunications Facilities and Towers;
- C. To minimize adverse visual impact of Telecommunications Facilities and Towers through careful design, siting, landscaping, and innovative camouflaging techniques;
- D. To promote and encourage shared use/colocation of Towers and Antenna Support Structures as a primary option rather than construction of additional single-use Towers;
- D. To promote and encourage utilization of technological designs that will either eliminate or reduce the need for erection of new Tower structures to support antenna and Telecommunications Facilities;
- F. To avoid potential damage to property caused by Telecommunications Facilities and Towers by ensuring such structures are soundly and carefully designed, constructed, modified, maintained, and removed when no longer used or are determined to be structurally unsound; and
- G. To ensure that Telecommunications Facilities and Towers are compatible with surrounding land uses.

### **AC.3 SPECIAL PROVISIONS FOR AMATEUR RADIO STATIONS**

Amateur Radio Stations (Hams) licensed under FCC regulations shall be exempt from the general requirements of this ordinance. However, Amateur Radio Stations shall adhere to the following regulations:

- A. No tower shall be placed within any required front, side, or rear setback area.
- B. Towers shall be placed behind the rear building line of the principal structure on the lot.
- C. All towers shall be properly grounded as per National Electric Code 810, Section C.
- D. Amateur towers greater than one hundred (100) feet in height are subject to the following additional provisions: At no time shall the fall radius of the tower include any habitable structure not owned by the amateur. The applicant shall provide documentation of ownership, lease, or permanent easement rights for the entire fall radius of the tower. The tower shall be equipped with guards or other devices to prevent it from being climbed without authorization of the amateur. The applicant shall submit documentation to the Codes Department sufficient to show that all provisions of this section have been met.



- E. Amateur towers located at a site other than the primary residence of a licensed Ham operator shall meet the requirements for setbacks, fencing, screening, and parking/access as detailed in this ordinance. However, amateur towers without ground mounted equipment or buildings need only meet the requirements for access/parking and be designed so that they are not accessible to unauthorized climbing.
- F. Temporary towers may be erected for a maximum of forty-eight (48) hours for special events or emergencies upon approval by the Codes Department.
- G. There shall be no more than one tower per lot.

**AC.4 DEVELOPMENT OF TOWERS**

- A. No person shall build, erect, or construct a Tower upon any parcel of land within any zoning district set forth above unless a conditional use permit, if required herein, has been granted by the Hendersonville Board of Zoning Appeals and a site plan is approved by Planning Commission and a development permit shall have been issued by the City, all in accordance with the applicable provisions of the zoning ordinance.

- B. A Tower shall be a permitted use in the following zoning districts:

INDUSTRIAL DISTRICTS

- C. A Tower shall be a conditional use in the following zoning districts:

RESIDENTIAL DISTRICTS:

RR, SR-1, SR-2, OTR and MFR Residential Districts on publicly owned property and property whose principle use is a church and subject to the special provisions of Section 10.3.P.19 (Special Conditions for Location of Telecommunication Facilities within Residential Districts).

COMMERCIAL DISTRICTS:

General Commercial Districts  
Heavy Commercial Districts

- D. Towers are exempt from the maximum height restrictions of the zoning districts where located. Towers shall be permitted to a height of one hundred and fifty (150) feet. Towers may be permitted in excess of one hundred and fifty (150) feet in accordance with 10.3.P.17 (Criteria for Site Plan Modifications.)
- E. No new Tower shall be built, constructed, or erected in the City or its adjoining planning region unless such Tower is capable of supporting two other Person's operating Telecommunications Facilities comparable in weight, size, and surface area to the Telecommunications Facilities installed by the Applicant on the Tower within six (6) months of the completion of the Tower construction.

## AC.5 APPLICATION

An application to develop a Telecommunications Tower containing the information indicated within this section shall be required of all such proposed facilities. The City may require an Applicant to supplement any information that it considers inadequate or that the Applicant has failed to supply. The City may deny an application on the basis that the Applicant has not satisfactorily supplied the information required in this subsection. Applications shall be reviewed by the city in a prompt manner and all decisions shall be supported in writing, setting forth the reasons for approval or denial.

As a minimum, an Application to develop a Tower shall include:

- A. The name, address, and telephone number of the Owner and lessee of the parcel of land upon which the Tower is situated.
- B. The legal description, map parcel number, and address of the parcel of land upon which Tower is situated.
- C. The names, addresses, and telephone numbers of all owners of other Towers or usable Antenna Support Structures within a one-mile radius of the proposed new Tower site, including city-owned property.
- D. A description of the design plan proposed by the Applicant in the City. Applicant must identify its utilization of the most recent technological design, including microcell design, as part of the design plan. The Applicant must demonstrate the need for towers and why design alternatives, such as the use of microcell, cannot be utilized to accomplish the provision of the Applicant's telecommunications services.
- E. An affidavit attesting to the fact that Applicant made diligent, but unsuccessful, efforts to install or colocate the Applicant's Telecommunications Facilities on City-owned Towers or usable Antenna Support Structures (including water tanks) located within a one mile radius of the proposed Tower site.
- F. An affidavit accompanied by written technical evidence from an Engineer(s) attesting to the fact that the applicant made diligent, but unsuccessful, efforts to install or colocate the Applicant's Telecommunications Facilities on Towers of usable Antenna Support Structures owned by other Persons located within one mile radius of the proposed Tower site.
- G. A written statement from an Engineer(s) that the construction and placement of the tower will not interfere with public safety communications and the usual and customary transmission or reception of radio, television, or other communications services enjoyed by adjacent residential and non-residential properties.
- H. Written, technical evidence from an Engineer(s) that the proposed structure meets the standards set forth in Section 10.3.P.7, (Structural Requirements), of this ordinance.

- I. Written, technical evidence from qualified Engineer(s) acceptable to the Fire Marshall and the Building Official that the proposed site of the tower or Telecommunications Facilities does not pose a risk of explosion, fire, or other danger to life or property due to its proximity to volatile, flammable, explosive, or hazardous materials such as LP gas, propane, gasoline, natural gas, or corrosive or other dangerous chemicals.
- J. In order to assist City staff and the Planning Commission in evaluating visual impact, the Applicant shall submit color photo simulations showing the proposed site of the Tower with a photo-realistic representation of the proposed Tower as it would appear viewed from the closest residential property and from adjacent roadways.
- K. The Act gives the FCC sole jurisdiction of the field of regulation of RF emissions and does not allow the City to condition or deny on the basis of RF impacts the approval of any Telecommunication Facilities which meet FCC standards. In order to provide information to its citizens, the City shall make available upon request copies of ongoing FCC information and RF emission standards for Telecommunications Facilities transmitting from Towers or Antenna Support Structures. Applicants shall be required to submit information on the proposed power density of their proposed Telecommunications Facilities and demonstrate how this meets FCC standards.

#### **AC.6 SETBACKS**

- A. All Towers up to one-hundred (100) feet in height shall be set back on all sides a distance equal to the underlying setback requirement in the applicable zoning district. Towers in excess of one hundred (100) feet in height shall be set back one (1) additional foot per each foot of Tower height in excess of one hundred (100) feet.
- B. Setback requirements for Towers shall be measured from the base of the Tower to the property line of the parcel of land on which it is located.
- C. Setback requirements may be modified, as provided in Subsection 10.3.P.17 (Criteria for Site Plan Development Modifications) when placement of a Tower in a location that will reduce the visual impact can be accomplished. For example, adjacent to trees which may visually may hide the Tower.
- D. Towers shall be setback from all residentially zoned property a minimum of 300 feet.
- E. Setback of towers located in residential zones shall be at least 300 feet from all property lines.

#### **AC.7 STRUCTURAL REQUIREMENTS**

All Towers must be designed and certified by an Engineer to be structurally sound and as a minimum in conformance with the adopted Building Code and any other standards outlined in this Ordinance. All towers in operation shall be fixed to land.

## **AC.8 SEPARATION OF TOWERS**

For the purpose of this Section, the separation distances between Towers shall be measured by following a straight line between the base on the existing or approved structure and the proposed base, pursuant to a site plan of the proposed Tower. The minimum Tower separation distances from residentially zoned land and from other Towers shall be calculated and applied irrespective of City jurisdiction boundaries.

Proposed Towers must meet the following minimum separation requirements from existing Towers or Towers which have a development permit but are not yet constructed at the time a development permit is granted pursuant to this Section.

Tower structures shall be separated from all other Towers by a minimum of 1,500 feet.

## **AC.9 METHOD OF DETERMINING TOWER HEIGHT**

Measurement of Tower height for the purpose of determining compliance with all requirements of this Section shall include the Tower structure itself, the base pad, and any other Telecommunications Facilities attached thereto which extend more than twenty (20) feet over the top of the Tower structure itself. Tower height shall be measured from grade.

## **AC.10 ILLUMINATION**

Towers shall not be artificially lighted except as required by the Federal Aviation Administration (FAA). Upon commencement of construction of a Tower, in cases where there are residential uses located within a distance which is three hundred (300) percent of the height of the Tower from the Tower and when required by federal law, dual mode lighting shall be requested from the FAA.

## **AC.11 EXTERIOR FINISH**

Towers not requiring FAA painting or marking shall have an exterior finish that enhances compatibility with the natural environment.

## **AC.12 LANDSCAPING AND SCREENING**

All landscaping on a parcel of land containing Towers, Antenna Support Structures, or Telecommunications Facilities shall be in accordance with the applicable landscaping requirements in the zoning district where such facilities are located. In order to enhance compatibility with adjacent land uses the City may require landscaping in excess of the requirements in the Zoning Ordinance.

At a minimum, there shall be provided and maintained a continuous, solid, evergreen screen around the perimeter of the Tower enclosure, except for the entry gate. The entry gate and its support structures shall be so constructed as to be one hundred (100) percent opaque. The planting bed for the evergreen screen shall be a minimum of eight

(8) feet in width and the plantings shall be a minimum of six (6) feet in height at the time of planting.

### **AC.13 TELECOMMUNICATIONS FACILITIES ON ANTENNA SUPPORT STRUCTURES**

Any Telecommunications Facilities which are not attached to a Tower may be permitted on any Antenna Support Structure at least fifty (50) feet tall, regardless of the zoning restrictions applicable to the zoning district where the structure is located.

Telecommunications Facilities are prohibited on all other structures. The owner of such structure shall, by written certification to the zoning administrator, establish the following at the time plans are submitted for a building permit.

- A. That the height from grade of the Telecommunications Facilities shall not exceed the height from grade of the Antenna Support Structure by more than twenty (20) feet.
- B. That any Telecommunications Facilities and their appurtenances, located above the primary roof of an Antenna Support Structure, are set back one (1) foot from the edge of the primary roof for each one (1) foot in height above the primary roof of the Telecommunications Facilities. This setback requirement shall not apply to Telecommunication Facilities and their appurtenances, located above the primary roof of an Antenna Support Structure, if such facilities are appropriately screened from view through the use of panels, walls, fences, or other screening techniques approved by the City. Setback requirements shall not apply to Stealth antennas which are mounted to the exterior of Antenna Support Structures below the primary roof, but which do not protrude more than eighteen (18) inches from the side of such an Antenna Support Structure.

### **AC.14 MODIFICATION OF TOWERS**

A Tower existing prior to the effective date of this Section, which was in compliance with the City's zoning regulations immediately prior to the effective date of this Section, may continue in existence as a non-conforming structure. Such nonconforming structures may be modified or demolished and rebuilt without complying with any of the additional requirements of this Section, except for Sections 10.3.P.7 (Separation of Towers); 10.3.P.12 (Landscaping and Screening); 10.3.P.15 (Certification and Inspections); and 10.3.P.16 (Maintenance) provided:

- A. The Tower is being modified or demolished and rebuilt for the sole purpose of accommodating additional Telecommunications Facilities comparable in weight, size, and surface area to the discrete operating Telecommunications Facilities of any person currently installed on the Tower.
- B. An Application for a development permit is made pursuant to this Section allowing the modification or demolition and rebuild of an existing non-conforming Tower. The grant of a permit made pursuant to this Section shall not be considered a determination that the modified or demolished and rebuilt Tower is conforming.

- C. The height of the modified or rebuilt Tower and Telecommunications Facilities attached, thereto, do not exceed the maximum height allowed under this Ordinance.

This provision shall not be interpreted to legalize any structure or use existing at the time this Section is adopted which structure or use is in violation of the Ordinance prior to enactment of this Section.

#### **AC.15 CERTIFICATIONS AND INSPECTIONS**

- A. All Towers shall be certified by an Engineer to be structurally sound and in conformance with the requirements of the standards set forth by the City's Building Code and Federal and State law. For new monopole Towers, such certification shall be submitted with an Application pursuant to Section 10.3.P.5 (Application), and every five (5) years, thereafter. For existing monopole Towers, certifications shall be submitted within sixty (60) days of the effective date of this Section and then every five (5) years, thereafter. For existing lattice or guyed Towers, certification shall be submitted within sixty (60) days of the effective date of this Section and then every two (2) years, thereafter. The Tower owner may be required by the City to submit more frequent certifications should there be reason to believe that the structural and electrical integrity of the Tower is jeopardized.
- B. The City or its agents shall have authority to enter onto the property upon which a Tower is located, between the inspection and certification required above, to inspect the Tower for the purpose of determining whether it complies with the Building Code and all other construction standards provided by the City Code and Federal and State law. The City reserves the right to conduct such inspections at any time, upon reasonable notice to the Tower owner.

#### **AC.16 MAINTENANCE**

- A. Tower owners shall at all times employ ordinary and reasonable care and shall install and maintain in use nothing less than commonly accepted methods and devices for preventing failures and accidents which are likely to cause damage, injuries, or nuisances to the public.
- B. Tower owners shall install and maintain Towers, Telecommunications facilities, wires, cables, fixtures, and other equipment in substantial compliance with the requirements of the National Electric Safety Code and all FCC, state, and local regulations, and in such manner that will not interfere with the use of other property.
- C. All Towers, Telecommunications Facilities, and Antenna Support Structures shall at all times be kept and maintained in good condition, order and repair so that the same shall not menace or endanger the life or property of any Person.
- D. All maintenance or construction of Towers, Telecommunications Facilities, or antenna Support Structures shall be performed by licensed maintenance and construction personnel.

- E. All Towers shall maintain compliance with current RF emission standards of the FCC.
- F. In the event that the use of a Tower is discontinued by the Tower owner, the Tower owner shall provide written notice to the City of its intent to discontinue use and the date when the use shall be discontinued.

#### **AC.17 CRITERIA FOR SITE PLAN DEVELOPMENT MODIFICATIONS**

- A. Notwithstanding the Tower requirements provided in this Section, a modification to the requirements may be approved by the Planning Commission in accordance with the following:
  - 1. In addition to the requirements for a Tower, Application for modification shall include the following: -
    - a. A description of how the plan addresses any adverse impact that might occur as a result of approving the modification.
    - b. A description of off-site or on-site factors that mitigate any adverse impacts that might occur as a result of the modification.
    - c. A technical study that documents and supports the criteria submitted by the Applicant upon which the request for modification is based. The technical study shall be certified by an Engineer and shall document the existence of the facts related to the proposed modifications and its relationship to surrounding rights-of-way and properties.
    - d. For a modification of the setback requirement, the Application shall identify all parcels of land where the proposed Tower could be located, attempts by the Applicant to contract and negotiate an agreement for colocation, and the result of such attempts.
    - e. The Planning Commission may require the Application to be reviewed by an independent Engineer under contract to the City to determine whether the antenna study supports the basis for the modification requested. The cost of review shall be reimbursed to the City by the Applicant.
  - 2. The Planning Commission shall consider the Application for modification based on the following criteria:
    - a. That the Tower as modified will be compatible with and not adversely impact the character and integrity of surrounding properties.
    - b. Off-site or on-site conditions exist which mitigate the adverse impacts, if any, created by the modification.

- c. In addition, the Planning Commission may include conditions on the site where the Tower is to be located if such conditions are necessary to preserve the character and integrity of the neighborhoods affected by the proposed Tower and mitigate any adverse impacts which arise in connection with the approval of the modification.
- B. In addition to the requirements of subparagraph i of this Section, in the following cases, the Applicant must also demonstrate, with written evidence, the following:
  - 1. In the case of a requested modification to the setback requirement established in Section 10.3.P.6 (Setbacks), that the setback requirement cannot be met on the parcel of land upon which the Tower is proposed to be located and the alternative for the Person is to locate the Tower at another site which is closer in proximity to a residentially zoned land.
  - 2. In the case of a request for modification to the separation and buffer requirements from other Towers of Section 10.3.P.8 (Separation) or Section 10.3.P.12 (Landscaping and Buffer Requirements), that the proposed site is standard for separation from residentially zoned lands as provided for in Section 10.3.P.6 (Setbacks).
  - 3. In the case of a request for modification of the separation and buffer requirements from residentially zoned land of Sections 10.3.P.6 (Setbacks) and 10.3.P.12 (Landscaping and Screening), if the Person provides written technical evidence from an Engineer(s) that the proposed Tower and Telecommunications Facilities must be located at the proposed site in order to meet the coverage requirements of the Applicant's wireless communications system and if the Person is willing to create approved landscaping and other buffers to screen the Tower from being visible to residentially zoned property.
  - 4. In the case of a request for modification of the height limit for Towers and Telecommunications Facilities or to the minimum height requirements for Antenna Support Structures that the modification is necessary to:
    - a. facilitate colocation of Telecommunications Facilities in order to avoid construction of a new Tower; or
    - b. to meet the coverage requirements of the Applicant's wireless communication system, which requirements must be documented with written, technical evidence from an Engineer(s) that demonstrates that the height of the proposed Tower is the minimum height required to function satisfactorily, and no Tower that is taller than such minimum height shall be approved.

#### **AC.18 ABANDONMENT**

- A. If any Tower shall cease to be used for a period of three hundred-sixty-five (365) consecutive days, the Planning Department shall notify the Owner, with a copy to the



applicant, that the site has been abandoned. The Owner shall have thirty (30) days from receipt of said notice to show, by a preponderance of the evidence, that the Tower has been in use or under repair during the period. If the Owner fails to show that the Tower has been in use or under repair during the period, the Planning Department shall issue a final determination of abandonment for the site. Upon issuance of the final determination of abandonment, the Owner shall, within seventy-five (75) days, dismantle and remove the Tower.

- B. To secure the obligation set forth in this Section, the Applicant and/or Owner shall post a surety. Such amount shall be determined by the Planning Department based on the anticipated cost of removal of the Tower.

#### **AC.19 SPECIAL CONDITIONS FOR LOCATION OF TELECOMMUNICATION FACILITIES WITHIN RESIDENTIAL DISTRICTS**

The provisions of this section shall apply to the location and expansion of Telecommunications Facilities within any residential zoning district.

##### **A. Property Allowed**

Towers in residential districts shall be limited to publicly owned property and property whose principal use is a church, and only if the Hendersonville Board of Zoning Appeals shall have issued a conditional use permit in accordance with the provisions of this ordinance.

##### **B. Location and Co-Location**

Antennas shall be located on lawfully pre-existing towers or antenna support structures or other lawfully pre-existing buildings or structures whenever possible. No conditional use permit authorizing construction of a new antenna support structure or addition to or expansion of an existing building or structure shall be authorized within any residential district unless the applicant is able to demonstrate that no lawfully pre-existing building or structure is available, on commercially reasonable terms, and sufficient for the location of an antenna necessary for the provision of personal wireless services.

##### **C. Tower Design**

Every new tower located within any residential zoning district shall:

1. not be illuminated unless otherwise required by federal law or regulations; and
2. be at least 1,500 feet from any other such structure.

##### **D. Protection Against Climbing**

Every tower shall be protected against unauthorized climbing.

**E. Color**

Every tower shall be of neutral colors that is harmonious with, and which blends with the natural features, buildings and structures that surround such tower.

**F. Equipment Enclosures**

All electronic and other related equipment and appurtenances necessary for operation of any Personal Wireless Services Antenna shall, whenever possible be located within a lawfully pre-existing building or structure or be located entirely below grade. When a new structure is required to house such equipment any portion of such structure above grade shall have brick exterior and a shingled, pitched roof.

**APPENDIX D. LANDSCAPE STANDARDS**

**AD.1 IRRIGATION**  
**AD.2 RECOMMENDED PLANT MATERIALS**  
**AD.3 TREE SELECTION SPECIFICATIONS**  
**AD.4 TREE PLANTING SPECIFICATIONS**  
**AD.5 PLANTING DETAILS**

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**AD.1 IRRIGATION**

With the initial site plan submittal, a schematic irrigation plan shall be provided which shows the information indicated below:

- A. Plans shall be drawn to scale, and shall show all existing and proposed physical features and boundaries of areas to be watered
- B. All areas of coverage shall be indicated.
- C. Turf, shrub beds and trees shall be zoned separately
- D. Indicate the type of irrigation (i.e. rotor, spray, drip, etc.) used in each zone.
- E. Indicate the point-of-connection
- F. Plan shall be stamped by an IA Certified Irrigation Designer or a registered Landscape Architect
- G. The following note shall be added to the plan: "A detailed irrigation plan complying with all requirements of the Hendersonville Zoning Ordinance shall be submitted to the City for approval prior to an application for Building Permit."

Prior to application for a building permit, detailed irrigation plans shall be submitted which show the information indicated above, as well as:

- A. Indicate piping routes, sizes, classes and sleeves.
- B. Piping shall be installed at a minimum depth of 12 inches.
- C. Indicate valve locations, flow and size
- D. Indicate head locations, types and spray patterns. Precipitation rates shall be matched within a zone.
- E. Indicate design pressure.
- F. Ensure 100% head-to-head coverage at all times and don't exceed spacing of a nozzle's range.
- G. System shall be zoned so as to not exceed the pressure and volume available at the water meter.
- H. Zone valves should be located at middle portion on zone and center feed whenever possible.

- I. Overspray of paved areas and structures shall be avoided.
- J. A rain/freeze sensor shall be installed and located where it can receive direct rainfall.
- K. Check valves and pressure regulators shall be employed to control low-head drainage and high pressure.
- L. Controller type and location shall be indicated.
- M. A backflow preventer shall be installed downstream of the meter and shall have an approved cover.
- N. Indicate meter size and location.
- O. Plan shall be stamped by an IA Certified Irrigation Designer or a registered Landscape Architect

As an alternative to submitting a detailed irrigation plan for approval, the developer or contractor may choose to conduct a post-construction field performance audit, using the Irrigation Association's Certified Landscape Irrigation Program. The irrigation system shall meet all performance criteria listed above. The audit shall check the performance of the system for conformance with state and local requirements including meeting standards for the minimum precipitation rate and lower quarter distribution uniformity (DU<sub>LQ</sub>) (and where possible, emission uniformity for drip/micro-irrigation systems). In addition, the audit shall also verify the installation of specified water management devices such as a rain shutoff device. Audits shall be performed by an IA Certified Irrigation Auditor.

## **AD.2 RECOMMENDED PLANT MATERIALS**

The following plants are recommended for use in projects submitted to the City. Plants not on this list will be evaluated on a case-by-case basis by the City's landscape architect.

The use of certain cultivars or varieties within a species may be required where needed to obtain a particular growth characteristic. For instance, *Acer rubrum* may be inappropriate to use near powerlines, while *Acer rubrum* 'Armstrong' may fit the available space.

### Canopy trees:

*Acer rubrum* – Red Maple  
*Acer saccharum* – Sugar Maple  
*Betula nigra* – River Birch  
*Carpinus betulus* – European Hornbeam  
*Carpinus caroliniana* – American Hornbeam  
*Cercidiphyllum japonicum* – Katsuratree  
*Cladrastis kentukea* – Yellowwood  
*Diospyros virginiana* - Persimmon  
*Ginkgo biloba* – Ginkgo  
*Liriodendron tulipifera* – Tulip Poplar

Liquidamber styraciflua 'Rotundiloba' - Sweetgum  
Metasequoia glyptostroboides – Dawn Redwood  
Nyssa sylvatica – Black Gum  
Pistacia chinensis – Chinese Pistache  
Quercus acutissima – Sawtooth oak  
Quercus alba – White Oak  
Quercus coccinea – Scarlet Oak  
Quercus falcata – Southern Red Oak  
Quercus imbricaria – Shingle oak  
Quercus lyrata –Overcup oak  
Quercus palustris – Pin oak  
Quercus phellos – Willow oak  
Quercus prinus – Chestnut oak  
Quercus rubra – Red oak  
Quercus shubardii – Shumard Oak  
Tilia Americana – American Linden  
Tilia cordata – Littleleaf Linden  
Taxodium distichum – baldcypress  
Ulmus parvifolia – Lacebark Elm  
Zelkova serrata - Zelkova

Ornamental/Understory trees:

Acer buergeranum – Trident Maple  
Acer griseum – Paper Bark Maple  
Aesculus pavia – Red Buckeye  
Amelanchier arborea – Serviceberry  
Cercis Canadensis – Redbud  
Chionanthus virginicus – Fringe tree  
Cornus florida – Flowering Dogwood (anthracnose resistant cultivars)  
Cornus kousa – Kousa Dogwood  
Cornus mas – Corneliancherry Dogwood  
Crataegus viridis 'Winter King' – Winter King Hawthorn  
Franklinia alatamaha – Franklin tree  
Koelreuteria panuculata – Golden Raintree  
Lagerstroemia indica – Crepe Myrtle  
Magnolia x soulangiana- Saucer magnolia  
Magnolia stellate – Star magnolia  
Magnolia virginiana – Sweetbay Magnolia  
Malus cultivars, disease resistant only, e.g. 'Adirondack', 'Callaway', 'Centennial',  
'Donald Wyman', 'Prairiefire', 'Sugar Tyme'  
Ostrya virginiana – American Hophornbeam  
Oxydendrum arboretum – Sourwood  
Pinus thunbergia – black pine  
Prunus campanulata – Okame Cherry  
Prunus subhirtella var. autumnalis – Autumn Flowering Cherry  
Prunus yedoensis – Yoshino cherry  
Styrax japonica – Japanese Snowball  
Syringa reticulata – Lilac Tree

Buffer trees:

Cedrus atlantica – Atlas cedar

Cedrus deodara – Deodar Cedar  
Cryptomeria japonica – Cryptomeria  
Ilex attenuate ‘Fosteri’ – Foster holly  
Ilex x ‘Nellie R. Stevens’ – Nellie R. Stevens holly  
Ilex opaca – American Holly  
Juniperus virginiana – Eastern Red Cedar  
Magnolia grandiflora – Southern Magnolia  
Magnolia virginiana – Sweetbay Magnolia  
Picea abies – Norway Spruce  
Pinus nigra – Austrian Pine  
Pinus sylvestris – Scots Pine  
Pinus taeda – Loblolly Pine  
Pinus thunbergii – Black Pine  
Pinus virginiana – Virginia pine  
Prunus caroliniana – Carolina Cherry Laurel  
Thuja occidentalis – Arborvitae  
Tsuga canadensis – Canadian Hemlock  
Tsuga caroliniana – Hemlock

Buffer shrubs:

Eleagnus pungens – Fragrant olive  
Ilex aquifolium – English holly  
Ilex cornuta ‘Burfordii’ – Burford holly  
Ilex cornuta ‘Nellie R. Stevens’ – Nellie R Stevens holly  
Ilex crenata – Japanese Holly  
Prunus caroliniana – cherry laurel  
Prunus laurocerasis – English laurel  
Viburnum rhytidophyllum – leatherleaf viburnum  
Viburnum ‘Pragense’ – Prague viburnum

Supplemental buffer shrubs (These should be used in conjunction with buffer shrubs above):

Aesculus parviflora – Bottlebrush Buckeye  
Aesculus pavia – Red Buckeye  
Aronia arbutifolia – Red chokeberry  
Forsythia x intermedia – Flowering forsythia  
Ilex verticillata – Winterberry  
Viburnum dentatum – Arrowwood viburnum  
Hamamelis virginiana – Common witchhazel  
Hamamelis x intermedia

**AD.3 TREE SELECTION SPECIFICATIONS:**

- A. Plants shall be so trained in development and appearance as to be unquestionable superior in form, compactness and symmetry. They shall be sound, healthy, vigorous, well branched and densely foliated when in leaf, and free of disease and insect adult eggs, pupae or larvae. They shall have healthy, well-developed root systems and shall be free from physical damage or other conditions that would prevent thriving growth.

- B. There shall be no circling or girdling roots. Circling roots should be cut in at least one place.
- C. Trees should be rooted into the root ball so that soil or media remains intact and trunk and root ball move as one when lifted, but not root bound. The trunk should bend when gently pushed and should not be loose so it pivots at or below soil line.
- D. The point where the top-most root in the root ball emerges from the trunk shall be within two inches of the soil surface. It can be exposed and visible at the soil surface. If it is not within the top two inches of soil, gently remove the top layer of soil from the rootball until the first major root flare is visible.
- E. The relationship between caliper, height and root ball size shall meet the ANSI Z60.1 standard, latest edition.
- F. There should be one dominant leader to the top of the tree with the largest branches spaced at least 6 inches apart. There can be two leaders in the top 10% of the tree if it is otherwise of good quality.
- G. The tree canopy should be symmetrical and free of large voids. Clear trunk should be no more than 40% of tree height unless otherwise specified in the planting specifications. Clear trunk shall be of sufficient height to clear surrounding uses that may be impacted by the future growth of the tree.
- H. Open trunk and branch wounds shall be less than 10% of the circumference at the wound and no more than 2 inches tall. Properly made pruning cuts are not considered open trunk wounds. There should be no conks or bleeding, and there should be no signs of insects or disease on more than 5% of the tree.
- I. If any of the above conditions are not met, trees may be rejected.

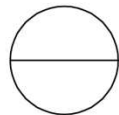
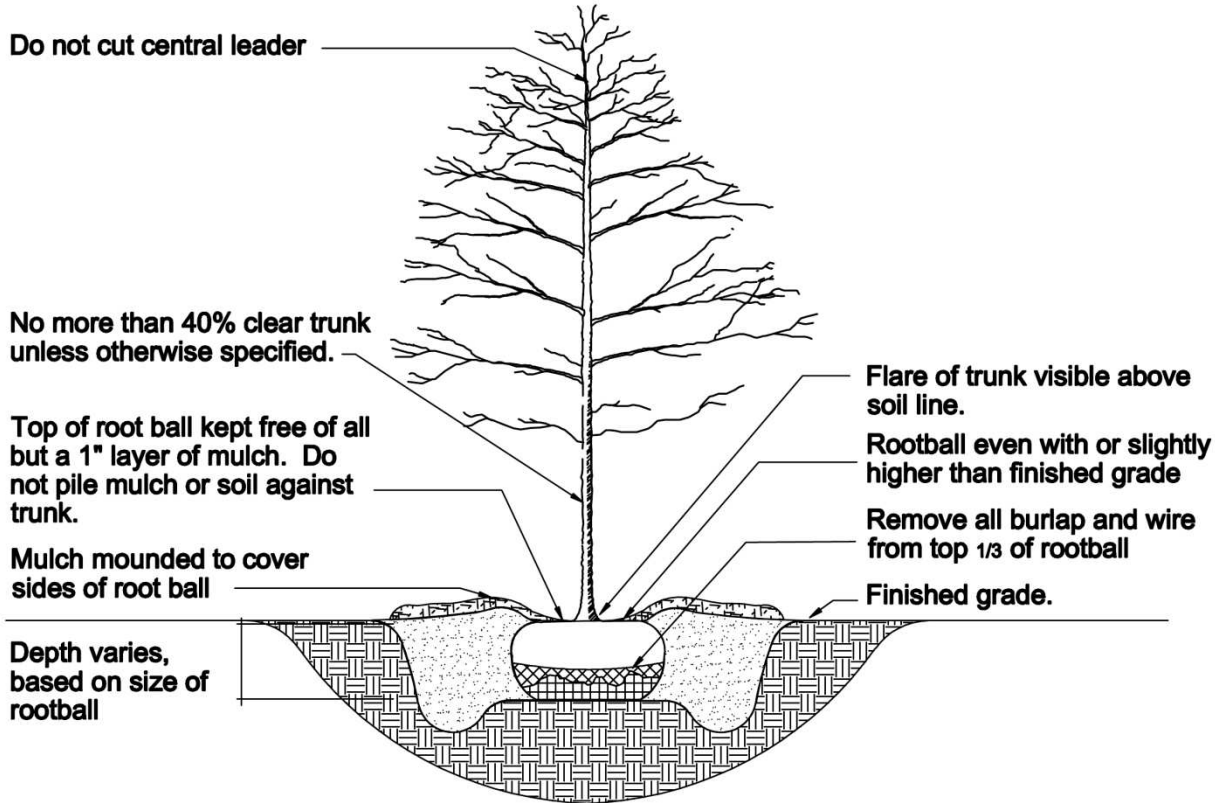
#### **AD.4 TREE PLANTING SPECIFICATIONS**

- A. The depth of the hole dug should be about 10% less than the distance from the top-most root (measured where it joins the trunk) to the bottom of the rootball. The width of the hole shall be at least 2 times the width of the rootball.
- B. Cut away burlap and wiring so that at least 1/3 of the rootball is exposed. Synthetic burlap shall be removed entirely. All twine and rope shall be removed from the base of the tree and from any branches.
- C. After planting, the topmost root shall be no more than 2 inches below the soil surface. Additional soil should be removed. The surrounding grade should be even with or slightly lower than the top root. Please note: some trees will arrive from the nursery with too much soil covering the first major root flare. This soil should be removed. The resulting soil line should be even with or above the surrounding grade.
- D. 3 inches of mulch shall be applied to cover the sides of the rootball to a point even with the dripline. **Do not add any soil to the top of the rootball. Do not add more than 1 inch of mulch to the top of the root ball.**

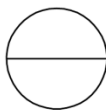
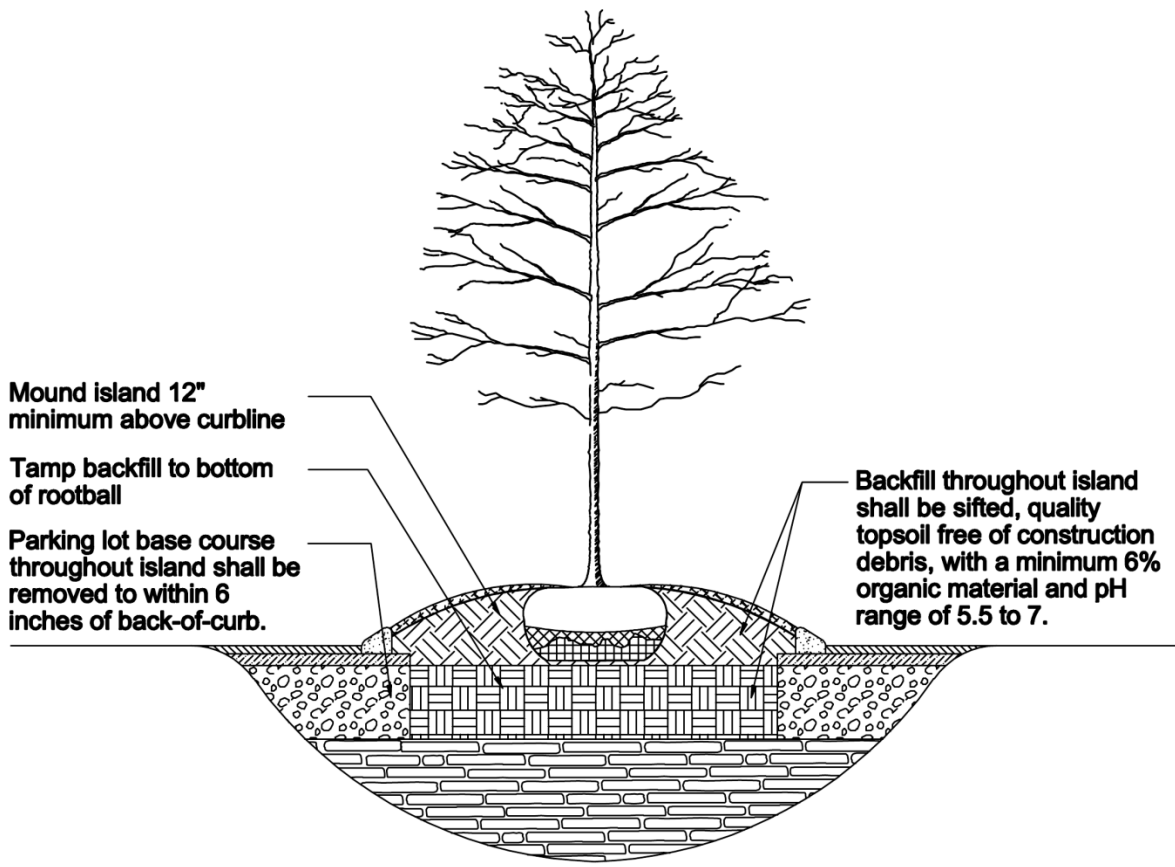


- E. In poorly drained soil, position the top of the rootball 10% or more above the surrounding grade. No more than 20% of the rootball should be above the surrounding grade.
- F. Staking of trees is not allowed unless permission is specifically obtained from the City Planning Department.

**AD.5 PLANTING DETAILS**



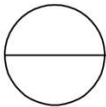
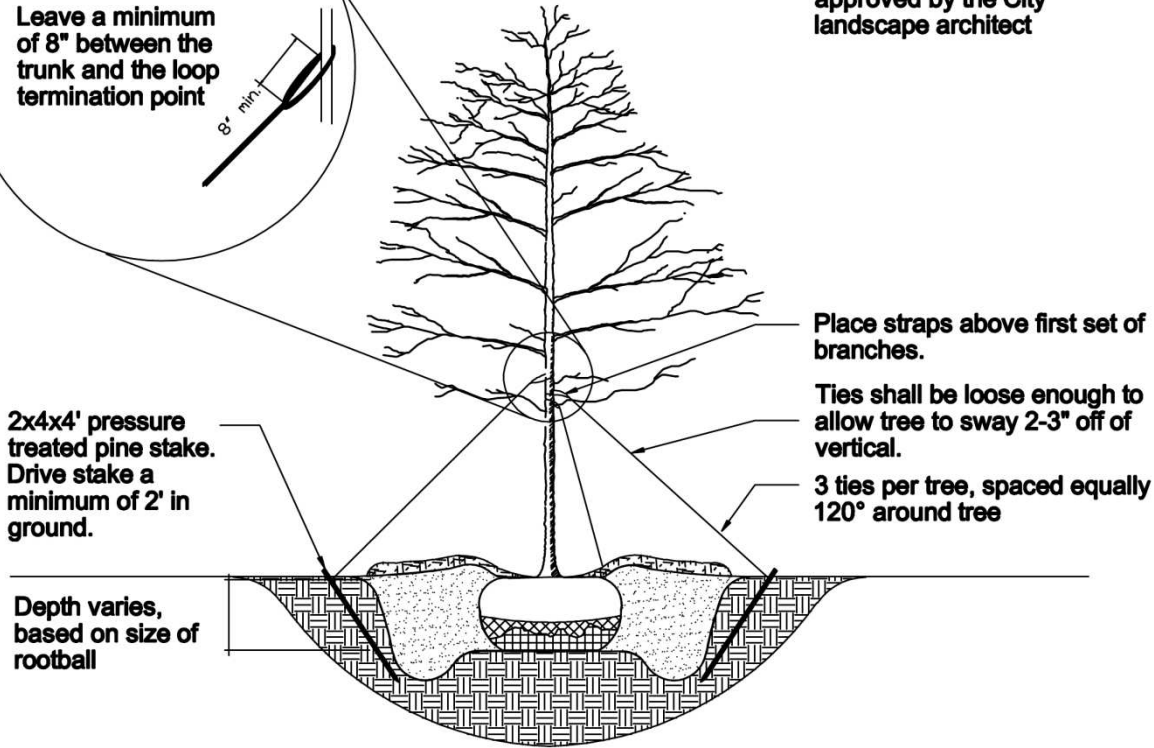
**Tree Planting Detail**



**Tree Planting Detail**  
**For Parking Lot Island or Median**

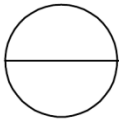
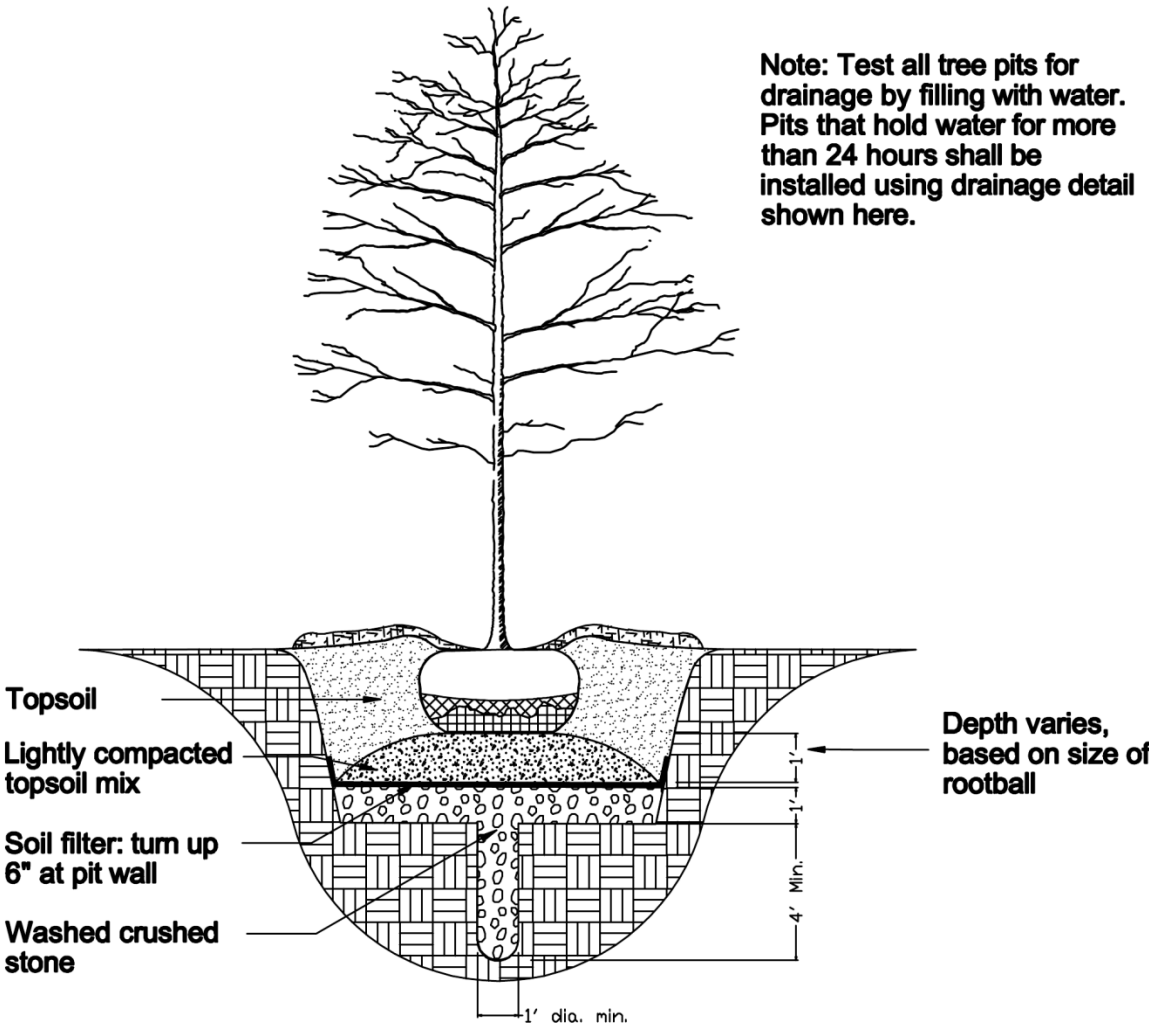


**Note:** Tree staking may be used only on trees larger than 3" cal., unless otherwise approved by the City landscape architect



**Tree Staking Detail**

**Note: Test all tree pits for drainage by filling with water. Pits that hold water for more than 24 hours shall be installed using drainage detail shown here.**

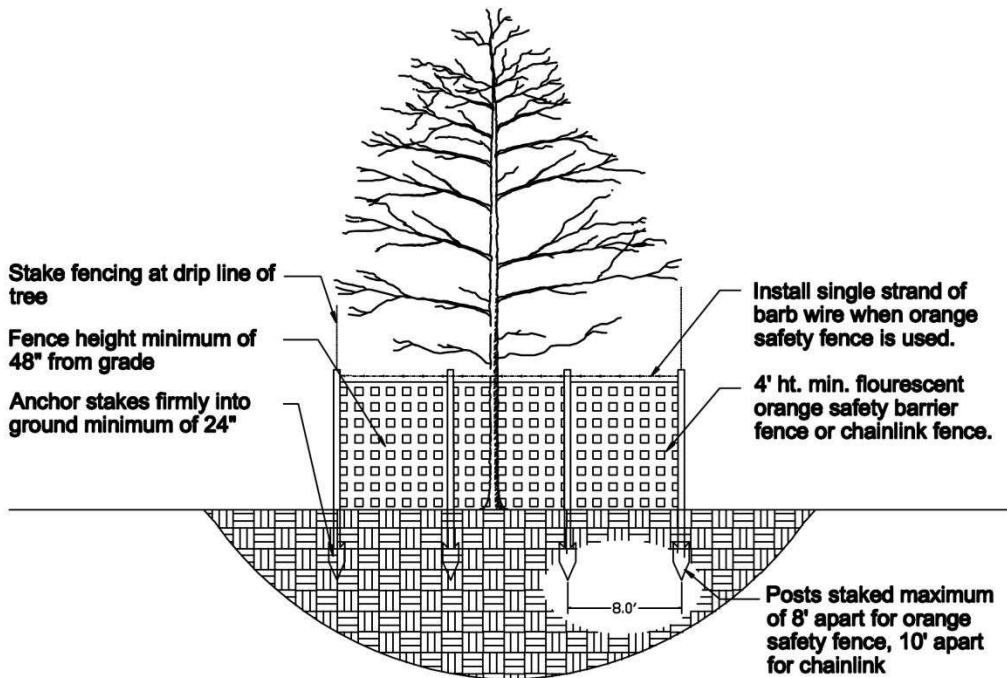
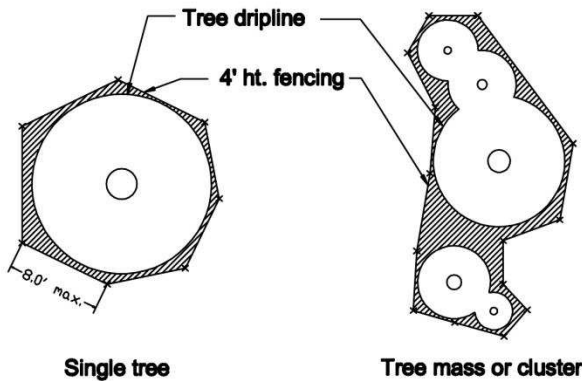


**Tree Pit Drainage Detail**

**Tree Protection Fencing Notes**

1. Tree protection fence shall be minimum of 4' tall and constructed of orange safety fabric or chainlink. Fence shall be mounted on vertical pipes driven 2' in the ground, at a maximum of 8' on center for safety fence or 10' for chainlink.

2. Tree protection fencing shall be erected at the dripline of the tree or 12' from the trunk, whichever is greater. Fence shall be installed prior to the start of any clearing, grading or other construction activity.



**Tree Protection Fencing Detail**