City of San Diego, Additions to Regional Standard Drawings

Regional Standard Drawings are available at http://www.regional-stds.com/home/book/drawings, and changes can be proposed, to this committee.

Instructions to review group: Review and mark deletions, additions and edits on the nursery stock drawings available at http://urbantree.org/details_specs.shtml. Number and write reasons for the changes (on separate paper). If you finish one set, get another set and review and mark changes.

Names of reviewers: _____ _____ _____

Background* Briefly summarize the relevant existing regulations or review process.

Regional Standard Drawings are used for blueprints, landscape plans, and contract specifications by cities throughout the county. Some cities adapt the plans and/or renumber them, such as the City of San Diego's "whitebook" with standard specifications for public works construction, https://www.sandiego.gov/publicworks/edocref/greenbook.

Specifications for nursery stock, and corrections at the time of planting, were developed by experienced arborists and researchers and peer-reviewed. They are available as set of details and specifications in AutoCAD and PDF formats, at http://urbantree.org/details_specs.shtml. These were reviewed locally by arborists and landscape architects.

Issue* Briefly summarize the issue or problem that has triggered the need for the proposed amendment. Please include any real-world project examples.

Trees that are planted with insufficient space, poor nursery stock, circling roots, and/or planted too far below or above grade will always have stunted growth and perhaps die within 3 to 10 years. Other factors influencing tree health are soils, watering, and young tree pruning. Best management practices are provided in ANSI 300, and those are required in most municipal codes.

The Regional Standard Drawings currently do not include specifications for nursery stock, corrections to nursery stock at time of planting, and corrections to root structure. Without regional specifications in landscape plans, trees will be planted in private developments and public works projects that will not develop into healthy trees.

Objective* Provide a one or two sentence statement of what you want to achieve with the proposed [revisions to the drawings].

Align City code with best management practices from ANSI standards and California Department of Forestry and Fire Protection, . Add drawings for nursery stock and for corrections at time of planting.

Solution* Briefly summarize how you propose to address the issue and achieve the objective with the proposed [revisions to the drawings].

Specifications for nursery stock, and their corrections at point of installation, are recommended to be added to the Regional Standard Drawings.

File Attachments* Marks on each drawing to indicate revisions.

Shade trees that grow to be large shall have one relatively straight central leader (Figure 1). Heading the tree is acceptable provided the central leader is reestablished in the nursery.

Figure 1.

Desirable Desirable Not desirable

Main branches (Figure 2) shall be well distributed along the central leader, not clustered together. They shall form a balanced crown appropriate for the cultivar or species.

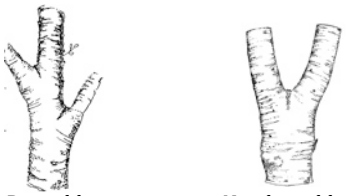
Figure 2.

Desirable Not desirable

The diameter of branches (Figure 3) that grow from the central leader, or trunk, shall be no larger than two-thirds (one-half is preferred) the diameter of the trunk measured just above the branch.

The largest branches shall be free of bark inclusions that extend into the branch union (Figure 4 A and B).

Figure 3.

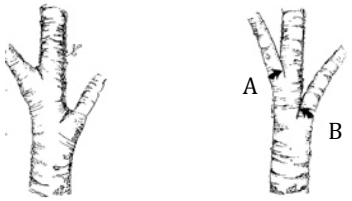


Desirable Not desirable

Small-diameter branches (Figure 5, left), particularly on trees less than 1 inch caliper, should be present along the lower trunk below the lowest main branch. These branches shall be no larger than 3/8 inch in diameter.

The trunk shall be free of wounds, sunburned areas, conks (fungal fruiting bodies), wood cracks, bleeding areas, signs of boring insects, cankers, or lesions. Properly made recent or closed pruning cuts are acceptable.

Figure 4.

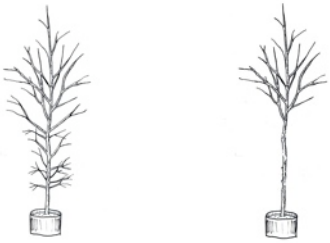


Desirable Not desirable

The trunk caliper (diameter) and taper (Figure 6) shall be sufficient so that the tree remains vertical without a stake.

The root collar (the uppermost roots) (Figure 7) shall be within the upper 2 inches of the soil media (substrate). The root collar and the inside portion of the root ball shall be free of defects, including circling, kinked, and stem-girdling roots. Roots at the surface should grow mostly straight to the side of the container. You may need to remove soil near the root collar to inspect for root defects.

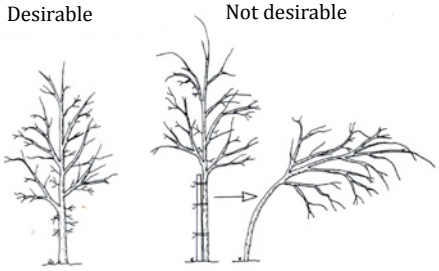
Figure 5.



Desirable Not desirable

The tree shall be well rooted in the soil media. Roots shall be uniformly distributed throughout the container, meaning that roots should not be concentrated at the bottom of the root ball. Some roots should contact the container wall in the top half of the root ball (Figure 7, left). When the container is removed, the root ball shall remain intact. When the trunk is lifted, both the trunk and root system shall move as one. The imprint of the liner or smaller container shall not be visible (Figure 7, left).

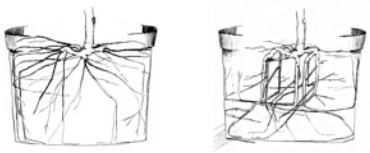
Figure 6.



Desirable Not desirable

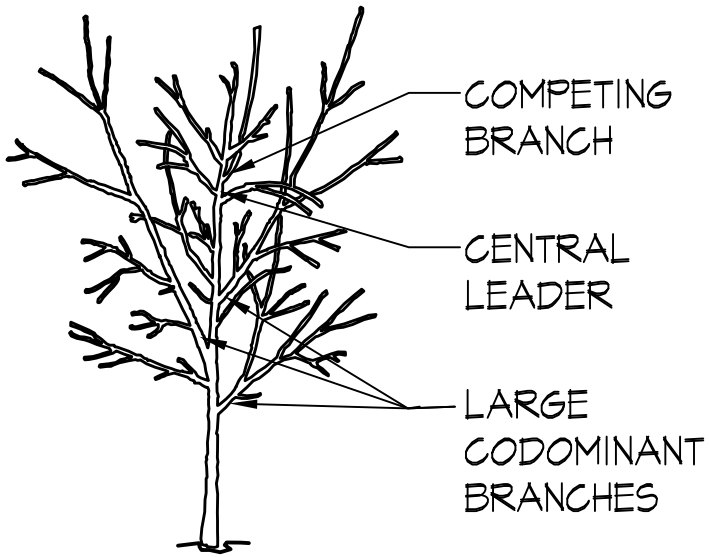
The root ball shall be moist throughout at the time of inspection and delivery. The roots shall show no signs of excess soil moisture as indicated by poor root growth, root discoloration, distortion, death, or foul odor. The crown shall show no signs of moisture stress as indicated by wilted, shriveled, or dead leaves or branch dieback.

Figure 7.



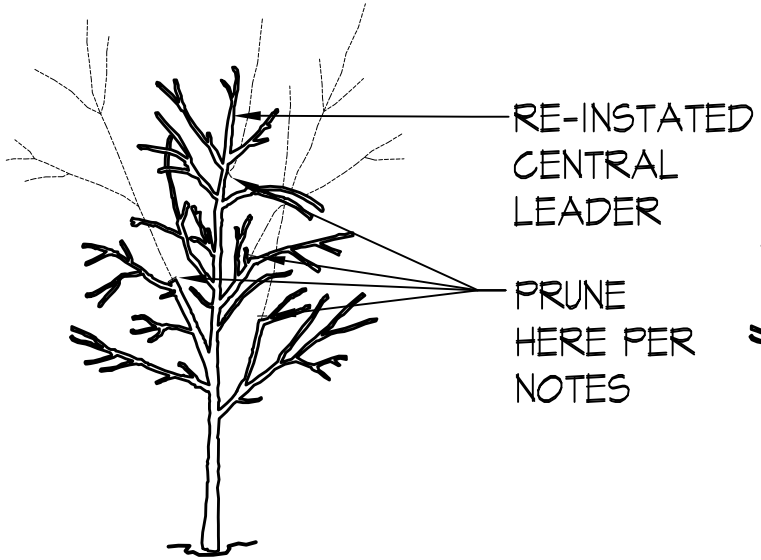
Desirable Not desirable

REJECTABLE TREE



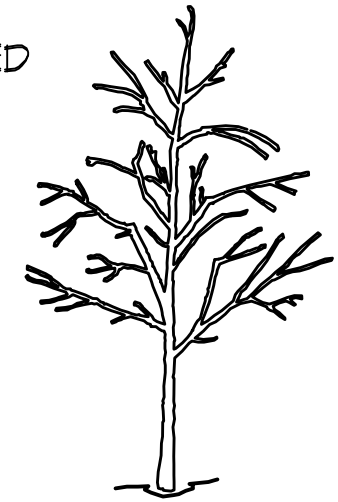
THIS EXAMPLE OF NURSERY STOCK HAS THREE CODOMINANT STEMS AND ONE BRANCH THAT IS COMPETING WITH THE CENTRAL LEADER. THE CODOMINANT AND COMPETING BRANCH INTERFERE WITH THE GROWTH OF THE MAIN STEM IN THE CENTER AND SHOULD BE PRUNED TO SUPPRESS THEIR GROWTH AND TO PROMOTE THE CENTRAL LEADER.

CORRECTIVE STRUCTURAL PRUNING



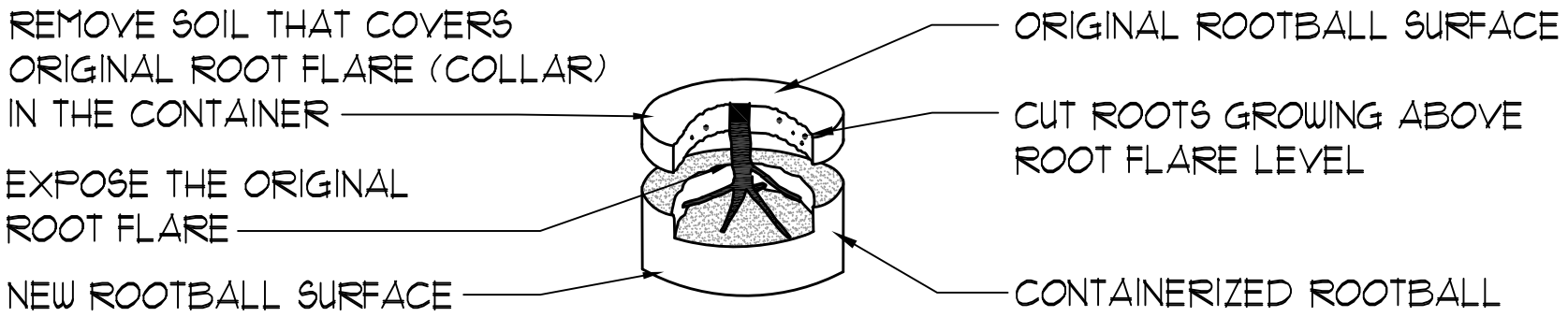
COMPETING STEMS WERE SHORTENED, TO IMPROVE TREE STRUCTURE. CUT BACK BRANCH TO A LATERAL BRANCH THAT POINTS AWAY FROM THE TRUNK AND THAT IS NOT POINTING UPRIGHT. ONLY LARGE DIAMETER BRANCHES NEED TO BE PRUNED BECAUSE THEY ARE THE ONES THAT COMPETE WITH THE CENTRAL LEADER.

ACCEPTABLE TREE

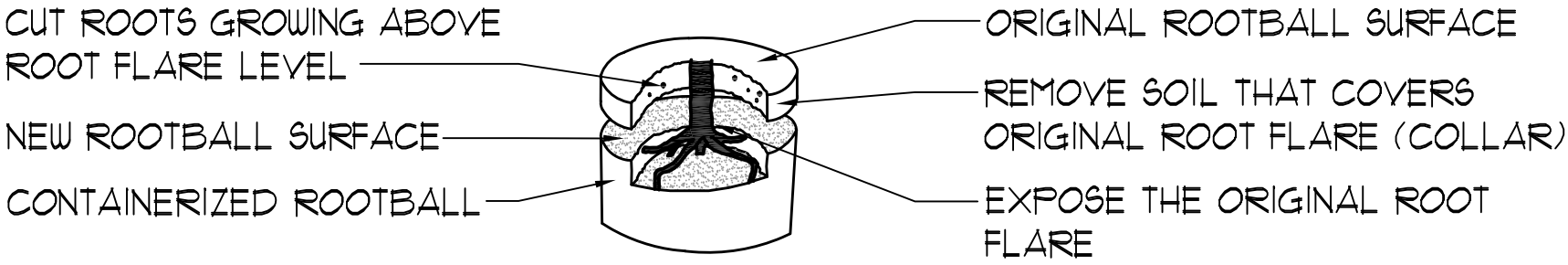


AFTER PRUNING THE TREE HAS ONLY ONE DOMINANT STEM AND AN IMPROVED CROWN STRUCTURE. BEFORE CORRECTION TREATMENT THE TREE WAS REJECTABLE. ALL PRUNING CUTS SHALL BE PER CURRENT ANSI 300 STANDARDS, PART 1.

TREE CROWN OBSERVATION AND CORRECTION DETAIL



EXAMPLE CONDITION 1



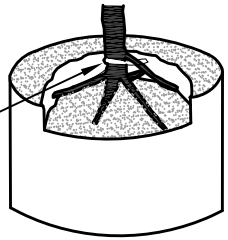
EXAMPLE CONDITION 2

TREE INSPECTION PROCESS #1: EXPOSE AND RESTORE THE ORIGINAL ROOT FLARE TO THE SURFACE

TREES PLANTED TOO DEEPLY IN A CONTAINER CAUSE THESE ROOTBALLS TO BE DEFECTIVE. THESE TREES MAY BE REJECTED UNLESS THE CONDITION IS CORRECTED. WITHOUT CORRECTION, THESE TREES WILL BE PLANTED TOO DEEPLY, WHICH MAKES THEM VULNERABLE AND SUSCEPTIBLE TO ROOT ROT. (DETAIL FROM URBAN TREE FOUNDATION 2014 OPEN SOURCE FREE TO USE DETAILS)

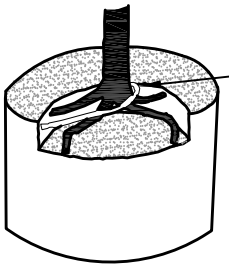
TREE ROOT COLLAR INSPECTION

CUT HERE. REMOVE CIRCLING ROOT WHERE IT BEGINS ON THE TRUNK



EXAMPLE CONDITION 1

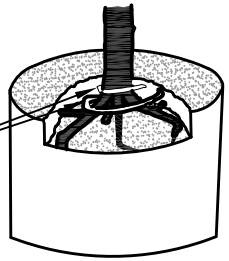
PROTECT ROOTS THAT ARE NOT DEFECTIVE



CUT HERE AND REMOVE CIRCLING ROOT HERE WHERE IT BEGINS ON THE TRUNK

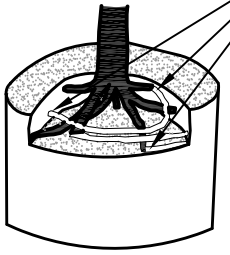
EXAMPLE CONDITION 2

CUT HERE AND REMOVE CIRCLING ROOT HERE WHERE THE ROOT CHANGES DIRECTION AND BEGINS TO CIRCLE THE ROOTBALL



EXAMPLE CONDITION 3

PROTECT ROOTS THAT ARE NOT DEFECTIVE



CUT HERE. REMOVE ROOTS GROWING OVER AND AROUND THE ROOTBALL AND ROOT COLLAR BY CUTTING THEM JUST BEFORE THEY MAKE AN ABRUPT TURN IN ANOTHER DIRECTION

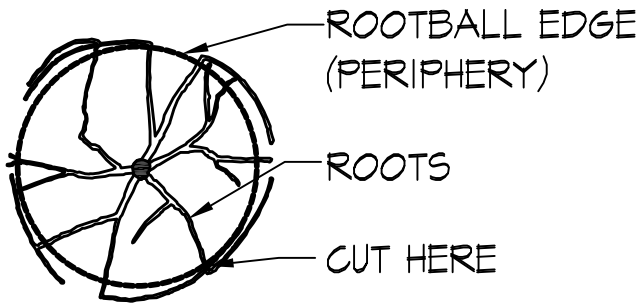
EXAMPLE CONDITION 4

TREE INSPECTION PROCESS #2: CORRECTION OF DEFECTS

THESE EXAMPLES OF TREES WITH ROOTS ILLUSTRATE CIRCLING ROOTS THAT CAN BECOME GIRDLING ROOTS THAT CHOKE OFF OR RESTRICT VASCULAR WATER AND NUTRIENT FLOW. THESE TREES ARE DEFECTIVE. THESE EXAMPLE TREES ARE REJECTABLE UNLESS THE DEFECTIVE ROOTS ARE CORRECTED. ANY ROOT-PRUNED TREES SHALL BE INSPECTED FOR CONFORMANCE TO DETAIL. SMALL ROOTS (1/4" OR LESS) THAT ARE MATTED ON ROOTBALL SURFACES ARE NOT CONSIDERED TO BE A DEFECT AND MAY BE CORRECTED BY ROOT SHAVING WHICH IS A DIFFERENT PROCEDURE. (DETAIL FROM URBAN TREE FOUNDATION 2014 OPEN SOURCE FREE TO USE DETAILS)

DEFECTIVE CIRCLING ROOT CORRECTION

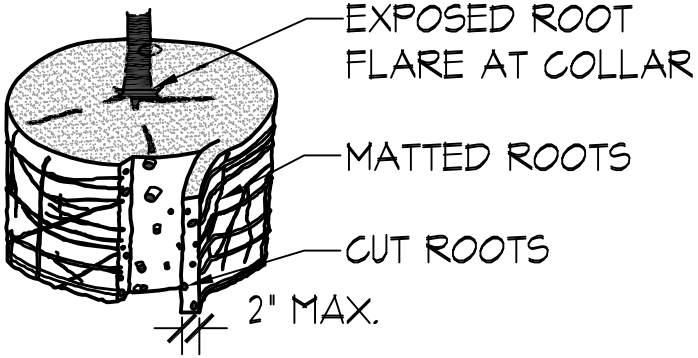
ROOTBALL BEFORE SHAVING



PLAN VIEW

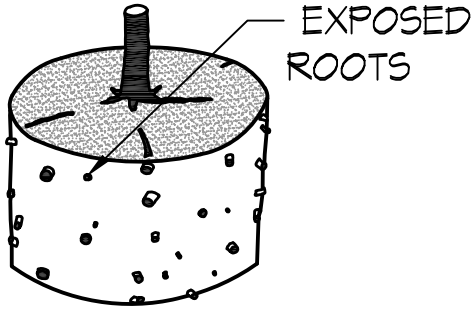
SHAVE ROOTBALL TO REMOVE MATTED SURFACE ROOTS ON THE ROOTBALL PER NOTES.

SHAVING PROCESS



SHAVE NO MORE THAN 2" FROM EDGES AND BOTTOM PER NOTES. KEEP MOIST. PROTECT FROM SUN.

SHAVING COMPLETE



ROOTBALL WITH MATTED ROOTS WITH DIAMETERS 1/4" OR LESS AROUND EDGES AND BOTTOM REMOVED.

GENERAL NOTES

1. WATER CONTAINERIZED TREE IN ADVANCE BEFORE SHAVING ROOTBALL.
2. PERFORM ANY CORRECTIVE OR STRUCTURAL PRUNING OF TREE PRIOR TO SHAVING PROCESS.
3. CONDUCT SHAVING WITH SANITIZED SHARP BLADE OR SAW, ELIMINATING NO MORE THAN NECESSARY TO REMOVE ALL CIRCLING AND MATTED ROOTS ON THE EXTERIOR EDGE (PERIPHERY) OF THE ROOTBALL.
4. SHAVING TO BE PERFORMED JUST BEFORE PLANTING OR AFTER PLACEMENT IN THE PLANTING PIT.
5. KEEP ROOTBALL MOIST WITH WET BURLAP UNTIL PLANTING OPERATION IS COMPLETE. ALL TREES WITH SHAVED ROOTBALLS SHALL BE PLANTED IMMEDIATELY AND WATERED THE SAME DAY. NO EXCEPTIONS.
6. MONITOR SOIL MOISTURE AROUND THE TREE AND DURING MAINTENANCE PERIOD. PROGRAM IRRIGATION AND HAND WATER AS NEEDED TO REDUCE MOISTURE LOSS STRESS, WITHOUT OVERWATERING.
7. DETAIL IS BASED ON URBAN TREE FOUNDATION 2014 OPEN SOURCE FREE TO USE DETAIL

SHAVED ROOTBALL