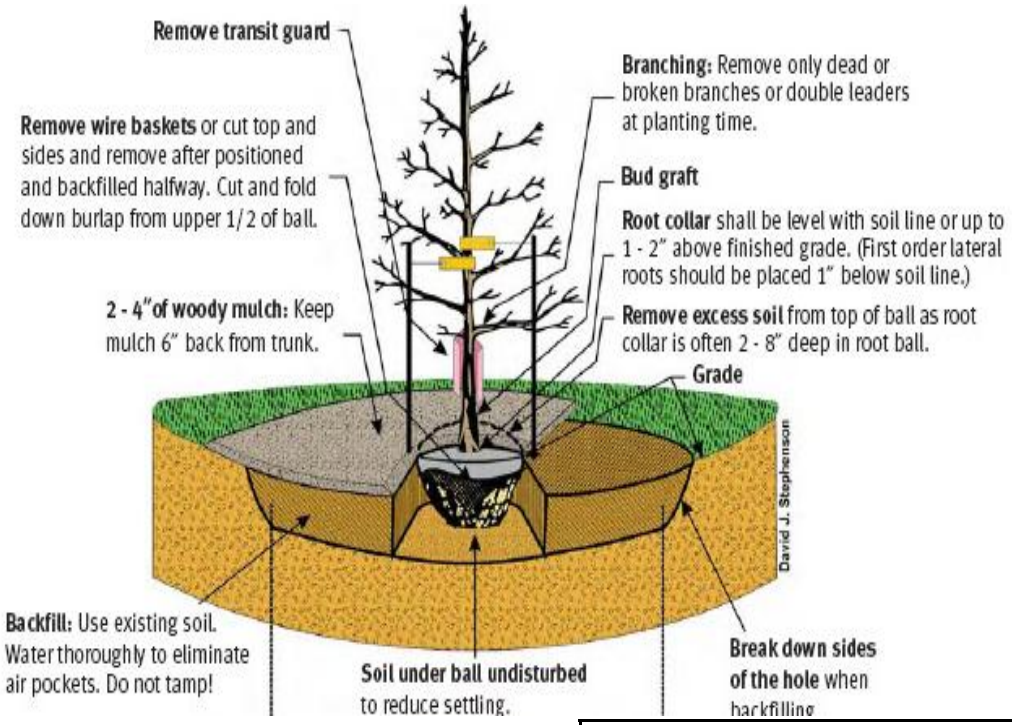
Planting Details



SOIL IMPROVEMENT

The quality of soil available for planting varies widely from site to site, especially after construction activity has occurred. The nature of construction results in compaction, filling, contamination, and grading of the original soil on a site, rapidly making it useless for planting. Previous human activity at a site can also affect the ability of the soil to support plants.

During the design phase, assumptions must be made regarding the probable condition of the soil after construction is complete. The health of existing or remaining soil determines what types of soil preparation will be required and the volume of soil to be prepared. Conditions will vary from location to location within a project, and details must be condition-specific. For large projects or extreme conditions, it is useful to consult an expert experienced in modifying planting soils at urban sites.

NOTES

1. If site or design constraints prohibit use of the dimensions shown on this page, follow the guidelines for planting in urban areas.
2. Whenever possible, the soil improvement area should be connected from tree to tree.
3. Always test soil for pH and nutrient levels and adjust these as required.
4. Loosen soil with a backhoe or other large coarse-tilling equipment when possible. Tilling that produces large, coarse chunks of soil is preferable to tilling that results in fine grains uniform in texture.
5. The bottom of planting soil excavations should be rough to avoid matting of soil layers as new soil is added. It is preferable to till the first lift (2 to 3 in.) of planting soil into the subsoil.

STANDARD ROOT BALL SIZES FOR NURSERY-GROWN SHADE TREES

CALIPER* (IN.)	HEIGHT RANGE (FT-IN)	MAX. HEIGHT (FT)	MIN. BALL DIA. (IN.)	MIN BALL DEPTH (IN.)
1/2	5-6	8	12	9
3/4	6-8	10	14	10-1/2
1	8-10	11	16	12
1-1/4	8-10	12	18	13-1/2
1-1/2	10-12	14	20	13-1/2
1-3/4	10-12	14	22	14-1/2
2	12-14	16	24	16
2-1/2	12-14	16	28	18-1/2
3	14-16	18	32	19-1/2
3-1/2	14-16	18	38	23
4	16-18	22	42	25
5	18-20	26	54	32-1/2

*Up to and including the 4-in. caliper size, the caliper measurement indicates the diameter of the trunk 6 in. above ground level. For larger sizes, the caliper measurement is taken 12 in. above ground level.

NOTES

1. See American Standard for Nursery Stock, ANSI Z60.1, for complete list of nursery standards for other types and sizes of trees and shrubs.
2. See international Society of Arboriculture's "Principles and Practices of Planting Trees and Shrubs"- 1997.

GENERAL RANGE OF SOIL MODIFICATIONS AND VOLUMES FOR VARIOUS SOIL CONDITIONS

POSTCONSTRUCTION SOIL CONDITION	MIN. WIDTH PREPARED SOIL FOR TREES (X)	TYPE OF PREPARATION
Good soil (not previously graded or compacted, topsoil layer intact)	6 ft or twice the width of the root ball, whichever is greater	Loosen the existing soils to the widths and depths shown in details above.
Compacted soil (not previously graded, topsoil layer disturbed but not eliminated)	15 ft.	Loosen the existing soils to the widths and depths shown in details above: add composted organic matter to bring the organic content up to 5% dry weight.
Graded subsoils and clean fills with clay content between 5 and 35%	20 ft.	Minimum treatment: loosen existing soil to widths and depths shown, add composted organic matter to bring organic content up to 5% dry weight. Optimum treatment: remove top 8-10 in. or the existing material, loosen existing soils to the widths and depths shown, add 8-10 in. of loam topsoil.
Poor quality fills, heavy clay soils, soils contaminated with rubble or toxic material	20 ft.	Remove existing soils to the widths and depths shown, replace with loam topsoil.