

SECTION 32 93 00 - PLANTING MATERIALS (Coordinate planting selection with UTD Landscape Supervisor) ([UTD Approved Planting Materials List – See Attached](#))

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Trees.
2. Ground Covers.
3. Wood Chip Mulch.
4. Tree Stake Systems.
5. Related Materials.
6. Root Ball Anchor System.
7. Tree Guying System.

1.2 REFERENCES

- A. ANSI -American National Standards Institute: 260.1-1996 -American Standard for Nursery Stock.
- B. ASTM-ASTM International: D 1557-Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort.
- C. ICBN -International Code of Botanical Nomenclature.
- D. ICNCP-International Code of Nomenclature of Cultivated Plants.

1.3 DEFINITIONS

- A. Acceptance: Wherever the terms "acceptance," "accepted," or "acceptable" are used herein, they mean acceptance by the Owner in writing.
- B. Plant Height: Measurement of main body height, not measurement to top branch tip.
- C. Plant Spread: Measurement of main body diameter, not measurement from branch tip to tip.
- D. Caliper: Trunk diameter measured at a point 12" above natural ground surface for trees.
- E. Excessive Compaction: Planting area soil or soil mix compaction greater than 75% maximum dry density as determined by ASTM D 1557.

1.4 SUBMITTALS

A. Product Data:

1. Steel Header and Stakes.
2. Metal Tree Stake System.
3. Root Ball Anchor System.
4. Tree Ties.
5. Wood Pole Tree Stakes.

1.5 QUALITY ASSURANCE – Not Used

1.6 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Handling Plants

1. Do not lift or handle container plants by tops, stems or trunks.
2. Do not bind or handle plants with wire or rope.
3. Pad trunk and branches where hoisting cables or straps contact.

B. Anti-desiccant:

1. Spray plant material in full leaf immediately before transporting with anti-desiccant.
2. Meet requirements of anti-desiccant manufacturer's current printed application instructions.

C. Digging Plants: Dig ball and burlap plants with firm, natural balls of earth of diameter meeting or exceeding requirements of ANSI Z60.1 and of sufficient depth as required to include the fibrous and feeding roots.

D. Plant Storage Prior to Installation:

1. Protect plant root balls from sun and drying winds.
2. Keep root balls moist.
3. Keep sun-sensitive plants shaded.
4. Anchor plants to prevent damage from strong winds.

1.7 SITE CONDITIONS

A. Environmental Requirements: Protect plant material being stored on site from sun and drying winds.

B. Existing Conditions:

1. Prior to Work commencement, review and clearly mark in field horizontal and vertical locations of public existing underground utilities and structures with respective utility companies.
2. Prior to Work commencement, review and clearly mark in field horizontal and vertical locations of private underground utilities and structures with the Owner's Representative.

1.8 WARRANTY

A. Warranty Period: Warrant that plant material will be healthy and in vigorous, flourishing condition of active growth one year from date of Final Acceptance

B. Delays: Delays in completion of planting operations which extend the planting into more than one planting season shall extend the Warranty Period correspondingly.

C. Condition of Plants: Plants shall be free of dead or dying branches and branch tips, with foliage of a normal density, size and color.

D. Incorrect Materials:

1. During Warranty Period, replace at no additional cost to the Owner, plants revealed as being untrue to name.
2. Provide replacements of a size and quality to match the planted materials at the time the mistake is discovered.

E. Replacements:

1. As soon as weather and seasonal conditions permit, replace, without additional cost to the Owner, dead plants and plants not in a vigorous, thriving condition, as determined by the Owner during and at the end of Warranty Period.
2. Apply requirements of this Section to replacements.

1.9 MAINTENANCE – Not Used

PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS AND SUPPLIERS – Not Used

2.2 SUBSTITUTIONS

- A. Plant Material: Accepted substitute plants shall be true to species and variety and shall meet requirements of this Section except that plants larger than specified may be used, if accepted by the Owner, and if without additional cost to the Owner.

2.3 MATERIALS

A. Plant General Requirements:

1. Growing Practices: Nursery grown in accordance with best horticultural industry practices.
2. Nomenclature: Plant nomenclature shall meet requirements of ICBN and ICNCP.
3. Climatic Growing Conditions: Grown under climatic conditions similar to those of project for at least 2 years unless otherwise accepted by the Owner.
4. Container Growth Limitations: Container stock excluding annuals shall have been grown in the containers in which delivered for at least 6 months, but not over 2 years.
5. Root-ball Size: Meet or exceed requirements of ANSI Z60.1.
6. Branching: Structurally strong, able to stand upright without stakes or guys on a windless day; exceptionally heavy, symmetrical, tightly knit, so trained or favored in development and appearance as to be superior in form, number of branches, compactness and symmetry.
7. Vigor: Sound, healthy and vigorous, well branched and densely foliated when in leaf.
8. Disease and Pests: Free of disease, insect pests, eggs, or larvae.
9. Root System: Healthy well-developed root systems, free of kinked, circling, girdling and center roots, root-bound condition and cracked or broken root balls.
10. Plant Size: Measure plants when branches are in their normal upright position.
11. Pruning: Thin or shape plants before delivery.
12. Unacceptable Conditions: Multiple leaders, unless specified, damaged or crooked leaders, bark abrasions, sunscald, disfiguring knots, or fresh cuts of limbs over 3/4" diameter which have not completely callused.

- B. Tree and Shrub Fertilizer: Roots M-roots dryroots with myorrhiza 3-3-3.

- C. Water: Clean, fresh, potable and free of toxic elements.
- D. Wood-chip Mulch: 4" maximum length, free of soil, rocks, toxic materials, and other debris.
- E. Anti-desiccant: Commercially available spray protective coating, designed to reduce plant transpiration loss, which produces a moisture retarding barrier not removable by rain or snow.

2.4 MIXES – Not Used

2.5 SOURCE QUALITY CONTROL – Not Used

PART 3 - EXECUTION

3.1 EXAMINATION

- A. General: Examine site and verify that conditions are suitable to receive Work and that no defects or errors are present which would cause defective installation of products or cause latent defects in workmanship and function.
- B. Finish Grading and Soil Preparation: Verify that finish grading and soil preparation Work is complete.
- C. Verification Surface Drainage: Verify positive surface drainage of planted areas.

3.2 PREPARATION

A. Protection of Existing Conditions:

1. Use every possible precaution to prevent damage to existing conditions to remain such as structures, utilities, plant materials and walks on or adjacent to the site of the work.
2. Provide barricades, fences or other barriers to protect existing conditions to remain from damage during construction.
3. Use every possible precaution to prevent excessive compaction of planting area soil within or adjacent to the areas of work.
4. Do not store materials or equipment, permit burning, or operate or park equipment under the branches of existing plants to remain.
5. Submit written notification of damaged plants and structures to the Owner's Representative immediately.

3.3 SUBSURFACE OBSTRUCTIONS

A. Plant Pit Excavation:

1. If rock, underground utilities, structures, tree roots or other obstructions are encountered in the excavation of plant pits, alternate locations may be accepted by the Owner.
2. Submit written notification of encountered obstructions to the Owner's Representative immediately.

B. Irrigation Piping: Reroute around the plant root ball.

3.4 STEEL HEADER – Not Used

3.5 PLANT LAYOUT

A. Trees:

1. Stake location of trees where indicated on Drawings.
2. Scale tree locations where no dimensions are given.
3. Drive a 3' long wood lath stake at each tree location and mark each tree type with different color survey tape.
4. Contact the Owner to review locations in field prior to excavating plant pits and installing irrigation.
5. Do not excavate plant pits or install irrigation until the Owner has accepted locations.

### 3.6 EXCAVATION OF ON-GRADE TREE AND SHRUB PLANT PITS

#### A. Equipment:

1. Excavate pits with a back-hoe or hand digging.
2. Do not use an auger.

#### B. Dimensions:

1. Excavate plant pits to a depth equal to the root ball height minus the amount needed to account for settlement and to install the root balls at the specified elevation relative to adjacent finished grade except where indicated otherwise on the Drawings.
2. Install top of plant root balls 1" above adjacent finished grade except where indicated otherwise.
3. Excavate pits to a diameter which is 2 times the root ball diameter, except where indicated otherwise on the Drawings.
4. Center plant pits on plant locations where possible.
5. Where plant pits cannot be excavated to specified dimensions nor centered on plants due to obstructions such as paving, walls, curbs, or other structures excavate pits in directions without obstructions until pit volume equals the specified plant pit volume, except where indicated otherwise.
6. Do not undercut adjacent obstructions unless accepted by the Owner.
7. Excavate plant pit sides along adjacent elements such as paving, walls, curbs, and other structures at a 45° angle sloping away from the bottom surfaces of the adjacent elements, except where indicated otherwise.

### 3.7 PLANTING AND BACKFILL OPERATIONS

#### A. Protection of Plants Prior to Installation:

1. Protect plant root balls from sun or drying winds.
2. Keep root balls of plants that cannot be planted immediately upon delivery in the shade, well-protected and well-watered.

#### B. Removal of Containers:

1. Remove canned stock carefully after cans have been cut on two sides with accepted cutter.
2. Do not use spade to cut containers.

3. Do not roll container to loosen root ball.
- C. Root Ball Scarification:
1. After removing plant from container, scarify side of root ball to prevent root-bound condition.
  2. Loosen root ball soil surface to depth of 1/8 to 1/4" without damaging roots or breaking root ball.
- D. Cutting Circling Roots:
1. If circling roots are encountered at root ball sides, notify the Owner for field review.
  2. Upon the Owner's acceptance, cut roots on 4 sides of root ball 90° apart at no extra cost to the Owner.
  3. Use a 4" wide sharp straight blade.
  4. Cut roots by pushing spade or knife down sides of root ball 90° to root ball surface and 2" into root ball.
  5. Keep spade or knife sharp to cut roots cleanly.
- E. Plant Placement:
1. Handling plant carefully, set plant root ball on pit bottom centered on accepted horizontal location.
  2. Install plant root ball vertically so that top of root ball is 1/2" to 1 1/2" above adjacent finished grade after settlement, except where indicated otherwise.
- F. Removal of Root Ball Wrapping Materials: Remove and dispose of burlap, nylon cord, wire baskets, twine and other materials prior to backfilling.
- G. Root Ball Anchors:
1. Where indicated, install root ball anchors before backfilling tree pits.
  2. Install root ball anchors as indicated in this Section below.
- H. Backfill Mix Placement:
1. Place mix carefully as not to damage the plant root ball, trunk, branches, or foliage.
  2. Fill pit until top of backfill mix is even with top of root ball.
- I. Backfill Mix Settlement:
1. Settle mix by watering evenly.
  2. Fill settled backfill mix areas with additional backfill mix as required to bring it even with top of root ball, drench added backfill mix with water.
  3. Continue filling settled areas and drenching with water until settlement stops.
- J. Settled Plant Adjustment: Raise plant root balls which settle so that the top of root balls are at the specified elevation relative to adjacent finished grade.
- K. Fertilizer for Trees and Shrubs:
1. After backfill settlement and plant adjustment work, uniformly spread 10 pounds of 3-3-3 fertilizer over the surface of the backfill in a 12" wide zone adjacent to the perimeter of each root ball.

2. After application, uniformly sprinkle surface of plant pits and root balls with 2” of water.
- 3.8 ROOT BARRIER – Not Used
  - 3.9 ROOT BALL ANCHOR SYSTEM – Not Used
  - 3.10 WOOD POLE TREE STAKE SYSTEM – Not Used
  - 3.11 METAL PIPE TREE STAKE SYSTEM – Not Used
  - 3.12 TREE GUYING SYSTEM – Not Used
  - 3.13 FIELD QUALITY CONTROL
    - A. Owner's Review of Tree and Shrub Layout and Plant Orientation:
      1. Schedule Owner to review staked tree and shrub locations in the field to determine specific location and orientation for each plant.
      2. Do not excavate plant pits or install local irrigation lines until plant locations are accepted.
  - 3.14 WOOD CHIP MULCH INSTALLATION
    - A. Depth: Install a 2” depth uniform mulch layer over plant watering basins, and shrub planting areas except where indicated otherwise on the Drawings. Install a 1” depth uniform mulch layer over ground cover planting areas, except where indicated otherwise on the Drawings.
    - B. Surface: Rake mulch surface smooth.
    - C. Woody Plant Stems: Slope mulch away from woody plant stems so that mulch does not touch stems.
  - 3.15 SCHEDULES – Not Used

END OF 32 93 00

**APPROVED PLANT LIST**

<b><u>COMMON NAMES</u></b>	<b><u>BOTANICAL NAME</u></b>
Asian Jasmine	Trachelospermum Asiaticum
'Forest Pansy' Redbud	Cerci Canadensis
'Little Gem' Magnolia	Magnolia Grandiflora 'Little Gem'
Indian Hawthorn 'Clara'	Raphiolepis Indicia 'Clara'
Crimson Pygmy Barberry	Berberis Thunbergii 'Crimson Pygmy'
Dwarf Yaupon Holly	Ilex Vomitoria 'Nana'
Oakleaf Hydrangea	Hydrangea Quercifolia
'Savannah' Holly	Ilex attenuata 'Savannah'
'Big Blue' Liriope	Liriope Muscari 'Big Blue'
Aaron's Beard	Hypericum Calycinum
Leatherleaf Mahonia	Mahonia Bealeii
Chinese Pistachio Tree	Pistachio Chinese
Texas Mountain Laurel	Sophora Secundiflora
Glossy Abelia	Abelia Grandiflora Spp.
Carissa Holly	Ilex Cornuta 'Carissa'
Green Aucuba	Aucuba Japonica - Green
Japanese Maple	Acer Palmatum 'Oshio Beni'
Chitalpa Tree	Chilopsis X Catalpa
Mexican Plum	Prunus Mexicana
False Lamium	Lamiastrum Galeobdelon
Krossa Regal Hosta	Hosta SPP. 'Krossa Regal'
Seasonal Color	See List for Recommended Mix



Purple Winter creeper	Euonymus Fortunei
Mexican Feather Grass	Massella Tenuissima
Red Yucca	Hesperaloe Parvifolia
Soft Leaf Yucca	Yucca Recurvifolia
Shore Juniper	Juniperus Conferta
Weeping Yaupon Holly	Ilex Vomitoria Pendula
Ginkgo Tree	Ginkgo Biloba
Flame Acanthus	Anis acanthus Wright II
Wax Myrtle Patiotrees	Myrica Cerifera
Indian Hawthorn	Raphiolepis Indica 'Majestic Beauty'
Bald Cypress	Taxodium Distichum
Red Oak	Quercus Virginiana
Crepe Myrtle	Lagerstromia
Chinese Fringe flower	Loropetalum Rubrum "Burgundy"
'October Glory' Red Maple	Acer Rubrum 'October Glory'
Weeping Love Grass	Eragrostis curvula
Green Fountain Grass	Pennisetum alopecuroides
Cedar Elm	Ulmus Crassifolia
Japanese Holly Fern	Crytomium Falcatum
Southern Wood Fern	Thelypteris Kunthii
Red Muhly Grass	Muhlenbergia Capillaris
Foster Holly	Ilex x Attenuata 'Fosteri No. 2'
Dwarf Burford Holly	Ilex Cornuta 'Buefordii Nana'
'Needlepoint' Holly	Ilex Cornuta 'Needlepoint'