

Section 02915

TREE PLANTING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Street right-of-way tree planting and maintenance.

1.02 MEASUREMENT AND PAYMENT

- A. Unit Prices.

1. Payment for tree planting is on unit price basis for each tree planted.
2. When shown on Drawings or directed by City Engineer to remove and relocate tree affected by trench zone, work shall be paid for under one of the following bid items.
  - a. Bid item "Remove and Relocate Tree" includes moving tree with truck mounted tree spade and replanting same tree in new location. Payment is for each tree removed and relocated.
  - b. Bid item "Remove, Temporary Store and Replant Tree" includes moving tree with truck mounted tree spade and replanting tree at temporary location, (determined by Contractor) maintaining tree until construction is complete and replanting same tree back to its original location. Payment is for each tree removed, stored and replanted.
3. Refer to Section 01270 - Measurement and Payment for unit price procedures.

- B. Stipulated Price (Lump Sum). If Contract is Stipulated Price Contract, payment for work in this Section is included in total Stipulated Price.

1.03 REFERENCES

- A. ANSI Z 60.1 - Nursery Stock.

1.04 SUBMITTALS

- A. Conform to requirements of Section 01330 - Submittal Procedures.
- B. Submit certification from supplier that each type of tree conforms to these specification requirements.

- C. For unpackaged materials, submit analysis by recognized laboratory made in accordance with methods established by Association of Official Agriculture Chemists, when applicable.
- D. Submit name and experience of qualified Arborist to City Engineer.
- E. Submit temporary tree storage location. Location must be outside public right-of-way and within 5 miles of project site, unless otherwise approved by City Engineer.

1.05 QUALITY ASSURANCE

- A. Landscaper shall be a firm specializing in landscape and planting work.
- B. Do not make substitutions of approved trees unless approved in writing by City Engineer. When specified planting material is not obtainable, submit proof of non-availability together with proposal for use of equivalent material. Substitutions of larger size or better grade than specified will be allowed, but with no increase in unit price.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Ship trees with Certificates of Inspection as required by governing authorities. Label each tree and shrub with securely attached waterproof tag bearing legible designation of botanical and common name. Do not remove container grown stock from containers before time of planting.
- B. Deliver packaged materials in fully labeled original containers showing weight, analysis and name of manufacturer. Protect materials from deterioration during delivery, and while stored at Site.
- C. Materials shall not be pruned prior to installation unless approved by City Engineer in writing. Do not bend or bind-tie trees or shrubs in such manner as to damage bark, break branches, or destroy natural shape. Use protective covering during delivery.

1.07 WARRANTY

- A. Warrant trees against defects including death, unsatisfactory growth, or loss of shape due to improper pruning, maintenance, or weather conditions, for 1 year after completion of planting. Plumb leaning trees during warranty period.
- B. Remove and replace trees found to be dead during warranty period. Remove and replace trees, which are in doubtful condition at end of warranty period, or when approved by City Engineer, extend warranty period for trees for full growing season.

PART 2 PRODUCTS

2.01 TREES

- A. Provide container grown trees, which are straight and symmetrical and have persistently preferred main leader. Crown shall be in good overall proportion to entire height of tree with branching configuration as recommended by ANSI Z60.1 for type and species specified. Where clump is specified, furnish plant having minimum of three stems originating from common base at ground line. Measure trees by average caliper of trunk as follows:
  - 1. For trunks up to 4 inches or less in diameter, measure caliper 6 inches above top of root ball.
  - 2. For trunks more than 4 inches, measure caliper 12 inches above top of root ball.
  - 3. Caliper measurements shall be by diameter tape measure. Indicated calipers on plans are minimum. Averaging of plant calibers will not be allowed.
- B. Trees shall conform to following requirements:
  - 1. Healthy, vigorous stock, grown in recognized nursery.
  - 2. Free of disease, insects, eggs, larvae; and free of defects such as knots, sun-scald, injuries, abrasions, disfigurement, or borers and infestations.

2.02 SOIL PRODUCTS

- A. Topsoil: Conform to requirements of Section 02911 - Topsoil.
- B. Peat moss, bark, and fertilizer: Use material recommended by nursery for establishment of healthy stock after replanting.

2.03 STAKES AND GUYS

- A. Provide minimum 8-foot long steel T-stakes and 1 inch wide plastic tree chains.
- B. Where applicable for anchoring trees, use wood deadmen of at least 2 by 4 stock, 36 inches long and buried 3 feet. Provide white surveyor's plastic tape for flagging tree guys.

2.04 TREE WRAP, TWINE, AND SEAL

- A. Wrap: First quality, bituminous impregnated tape, corrugated or crepe paper, specifically manufactured for tree wrapping and having qualities to resist insect infestation.
- B. Twine: Lightly tarred, medium-coarse sisal (lath) yarn. Do not use nails or staples to fasten wrapping.
- C. Seal: Commercially available asphaltic-base black emulsion specifically produced for use in sealing tree cuts and wounds.

2.05 WATER

- A. Water shall be potable from municipal water supplies.

2.06 SOURCE QUALITY CONTROL

- A. Notify City Engineer, prior to installation, of location where trees that have been selected for planting may be inspected. Plant material will be inspected for compliance with following requirements.
  - 1. Genus, species, variety, size and quality.
  - 2. Size and condition of balls and root systems, insects, injuries and latent defects.

**PART 3 EXECUTION**

3.01 PREPARATION

- A. Schedule work so that planting can proceed rapidly as portions of site become available. Plant trees after final grades are established and prior to planting of lawns, unless otherwise approved by City Engineer in writing. When planting of trees occurs after seeding work, protect lawn areas and promptly repair damage to lawns resulting from tree planting operations.
- B. Layout individual trees at locations shown on Drawings. In case of conflicts, notify City Engineer before proceeding with Work. Trees shall be staked and approved by City Engineer prior to planting.

3.02 PREPARATION OF PLANTING SOIL

- A. Before mixing, clean topsoil of roots, plants, sod, stones, clay lumps, and other extraneous materials harmful or toxic to plant growth.
- B. Strip and utilize 4 inch layer of top soil, placed on esplanades under Section 02921 - Hydro-mulch Seeding, for planting soil mixture.
- C. Mix recommended soil amendments with topsoil at following rates:
  - 1. Top soil: 50 percent.
  - 2. Peat moss: 25 percent.
  - 3. Well rotted Bark: 25 percent.
  - 4. Fertilizer: Rate recommended by nursery.

- D. Delay mixing of fertilizer when planting will not follow placing of planting soil within 48 hours, unless otherwise directed.
- E. Incorporate amendments into soil as part of soil preparation process prior to fine grading, fertilizing, and planting. Broadcast or spread amendments evenly at specified rate over planting area. Thoroughly incorporate amendments into top 3 or 4 inches of soil until amendments are pulverized and have become homogeneous layer of topsoil ready for planting.

3.03 PLANTING

- A. Excavate pits, beds, or trenches with vertical sides and with bottom of excavation raised minimum of 6 inches at center for proper drainage. Provide following minimum widths:
  - 1. 15 gallon containers or larger, 2 feet wider than diameter of root ball.
  - 2. 1 and 5gallon containers, 6 inches wider than diameter of root ball.
- B. When conditions detrimental to plant growth are encountered, such as unsatisfactory soil, obstructions, or adverse drainage conditions, notify City Engineer before planting.
- C. Deliver trees after preparations for planting have been completed and plant immediately. When planting is delayed more than 6 hours after delivery, set trees and shrubs in shade, protect from weather and mechanical damage, and keep roots moist by covering with mulch, burlap, or other acceptable means of retaining moisture, and water as needed.
- D. Set root ball on undisturbed soil in center of pit or trench and plumb plant. Place plants at level that, after settlement, natural relationship of plant crown with ground surface will be established.
- E. When set, place additional backfill around base and sides of ball, and work each layer to settle backfill and eliminate voids and air pockets. When excavation is approximately 2/3 full, water thoroughly before placing remainder of backfill. Repeat watering until no more water is absorbed.
- F. Dish top of backfill to allow for mulching. Mulch pits, trenches and planted areas. Provide not less than 4-inch thickness of mulch, work into top of backfill, and finish level with adjacent finish grades. Cover entire root ball.
- G. Prune, thin out and shape trees in accordance with standard horticultural practice. Prune trees to retain required height and spread. Unless otherwise directed in writing, do not cut tree leaders, and remove only injured and dead branches from flowering trees. Remove and replace excessively pruned or misformed stock resulting from improper pruning.

- H. Inspect tree trunks for injury, improper pruning and insect infestation and take corrective measures.
- I. Guy and stake trees immediately after planting.
- J. Control dust caused by planting operations. Dampen surfaces as required. Comply with pollution control regulations of governing authorities.

3.04 FIELD QUALITY CONTROL

- A. City Engineer may reject unsatisfactory or defective material at anytime during progress of Work. Remove rejected trees immediately from site and replace with specified materials. Plant material not installed in accordance with these Specifications will be rejected.
- B. An inspection to determine final acceptance will be conducted by City Engineer at end of 12-month maintenance period. Additional inspections will be conducted for extended warranty periods provided for in paragraph 1.07B.

3.05 MOVING EXISTING TREES

- A. Perform tree moving and replanting by a professional Arborist during dormant growth season.
- B. Provide tree spade of adequate size as directed by professional Arborist.

3.06 MAINTENANCE

- A. Maintain trees during planting operations and for period of 12 months after completion of planting.
- B. Water trees to full depth minimum of once each week, or as required to maintain healthy vigorous growth.
- C. Prune, cultivate, and weed as required for healthy growth. Restore planting saucers. Tighten and repair stake and guy supports, and reset trees and shrubs to proper grades or vertical position as required. Restore or replace damaged wrappings. Spray as required to keep trees and shrubs free of insects and disease.

3.07 CLEANUP AND PROTECTION

- A. During planting work, keep pavements clean and work area in orderly condition.
- B. Protect planting work and materials from damage due to planting operations. Maintain protection during installation and maintenance period. Treat, repair, or replace damaged planting work as directed by City Engineer.

- C. Dispose of excess soil and waste in accordance with requirements of Section Waste 01576 - Waste Material Disposal. On-site burning of combustible cleared materials will not be permitted.

END OF SECTION