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NURSERY STOCK SPECIFICATIONS

STEPS TO INSURE HIGH QUALITY NURSERY STOCK

- DEAL ONLY WITH REPUTABLE NURSERIES
- STRICT SPECIFICATIONS
- NURSERY STOCK INSPECTION

DEAL ONLY WITH REPUTABLE NURSERIES

- IS THE NURSERY LICENSED?
- DOES THE NURSERY BELONG TO A PROFESSIONAL ASSOCIATION?
- OTHER BUYER'S EXPERIENCES?
- IS STOCK TRUE TO NAME AND LABELLED?
- ANSI Z60.1-2004?
- PROVENANCE?
- SHIPPING?
- REGULAR INSPECTIONS BY DEPARTMENT OF AGRICULTURE

NURSERY TOURS

VISIT AND OBSERVE NURSERY PRACTICES THROUGHOUT THE SEASON

USE CONTRACT SPECIFICATIONS

- PUT SPECIFICATIONS IN WRITING
- CLEAR AND MEASUREABLE
- NO AMBIGUITY, NO SURPRISES

FOCUS OF SPECIFICATIONS

- WHAT THE BUYER WISHES TO PURCHASE
- WHAT THE SPECIFICATION HOPES TO ACCOMPLISH
- HOW THE SUPPLIER MUST PROCEED

WELL WRITTEN SPECIFICATIONS PROVIDE:

- MORE COMPETITION WHICH MEANS MORE COMPETITIVE PRICES
- CLEARER PICTURE OF WHAT IS DESIRED
- GREATER CONTROL OVER CONTRACTED SERVICES
- ABILITY TO ENFORCE



POORLY WRITTEN SPECIFICATIONS

- DIFFICULT TO CORRECT ONCE RELEASED
- POOR QUALITY
- LESS COMPETITION
- LESS CONTROL
- MORE CONFUSION ABOUT WHAT IS DESIRED

- **WHAT TO SPECIFY SPECIES AND CULTIVAR**
- HARVEST METHOD
- ROOT QUALITY IS PRIMARY
- HEIGHT TO CALIPER RATIO
- TAPER
- CROWN CONFIGURATION
- BRANCHING PATTERN
- TOP TO ROOT RELATIONSHIP
- HEALTH
- DELIVERY AND INSPECTION

ROOT QUALITY

- KINKED ROOTS
- 'J' ROOTS
- CIRCLING/GIRDLING ROOTS
- TRUNK FLARE/ROOT COLLAR LOCATION

ROOT SPECIFICATIONS

- NO ROOT IN THE ROOT BALL LARGER THAN 1/4 INCH DIAMETER SHALL CIRCLE MORE THAN 1/3 AROUND THE ROOT BALL
- THERE SHALL BE NO ROOTS IN THE ROOT BALL THAT MAKE AN ABRUPT TURN OF 90 DEGREES OR MORE
- THE ROOT COLLAR (TRUNK FLARE, ROOT FLARE) SHALL BE AT THE SURFACE OF THE ROOT BALL (CONTAINER MEDIA)
- ROOT BALL SIZE SHALL MEET ANSI Z60.1-2004
- ROOTS OF TREES PRODUCED IN CONTAINERS SHALL HAVE BEEN HELD IN THE CONTAINER FOR A PERIOD OF ONE GROWING SEASON

HEIGHT TO CALIPER RATIO

- STATE LOWER AND UPPER LIMIT FOR HEIGHT
- STATE ROOT BALL OR CONTAINER SIZE

ROOT BALL DIMENSIONS

- DIAMETER AND DEPTH OF ROOT BALL SHOULD ALWAYS CONTAIN ENOUGH OF THE ROOT SYSTEM FOR THE TREE TO THRIVE
- BASED ON HEIGHT AND CALIPER DIMENSIONS
- NURSERY PRACTICES AFFECT THE DENSITY OF THE ROOT SYSTEM



HEIGHT, ROOT BALL SIZE SPECIFICATIONS

- CELTIS OCCIDENTALIS, 2 IN. CAL., 12 TO 14 FT, TRUNK FREE OF BRANCHES 8 FEET.
- THE TRUNK SHALL BE IN THE CENTER OF THE ROOT BALL
- ROOT BALLS LESS THAN 20 INCHES SHALL HAVE A DEPTH OF NOT LESS THAN 65% OF THE BALL DIAMETER MEASURED FROM THE ROOT COLLAR.

TAPER

- DECREASE IN TRUNK CALIPER WITH INCREASING HEIGHT
- STAKING, SEVERE PRUNING, AND CLOSE SPACING PRODUCE A TRUNK WITH LITTLE OR NO TAPER
- SPECIFY AND TRY TO OBTAIN TREES WITH SMALL BRANCHES ON THE LOWER TRUNK

TRUNK SPECIFICATIONS

- TRUNK SHALL BEND WHEN DEFLECTED, NOT REMAIN STRAIGHT AND PIVOT AT OR BELOW SOIL LINE
- TRUNK DIAMETER AND TAPER SHALL BE SUFFICIENT SO THAT TREE REMAINS VERTICAL WITHOUT SUPPORT
- CROWN RATIO (DISTANCE FROM BOTTOM OF CANOPY TO TREE TOP/TREE HEIGHT SHOULD BE AT LEAST 66%)
- THERE SHALL BE NO GAPS OR VOIDS GREATER THAN 12 INCHES IN THE CANOPY OR BRANCHES MISSING ON ONE SIDE OF THE CANOPY
- THE TRUNK SHALL BE FREE OF OPEN WOUNDS (EXCEPT PROPERLY-MADE PRUNING CUTS), INFECTIONS, DISEASES, INSECT DAMAGE, CRACKS, SHIPPING DAMAGE OR ANY OTHER WOUNDING

CROWN CONFIGURATION

- ONE-HALF OR MORE OF THE FOLIAGE SHOULD BE ON BRANCHES ORIGINATING ON THE LOWER TWO-THIRDS OF THE TRUNK, AND ONE-HALF OR LESS SHOULD ORIGINATE ON THE UPPER ONE-THIRD.

BRANCH ATTACHMENTS

- SIZE RELATIONSHIP BETWEEN TRUNK AND BRANCH
- VERTICAL AND RADIAL SPACE BETWEEN BRANCHES
- BRANCH BARK RIDGE
- NO INCLUDED BARK

BRANCH SPECIFICATIONS

- ALL BRANCHES SHALL BE LESS THAN 2/3 THE DIAMETER OF THE TRUNK MEASURED ONE INCH ABOVE THE BRANCH
- THE ATTACHMENT OF BRANCHES SHALL CONTAIN NO BARK INCLUSIONS
- THERE SHALL BE ONE DOMINANT LEADER STRAIGHT TO THE TOP OF THE TREE
- LARGER BRANCHES SHALL BE SPACED AT LEAST 6 INCHES APART AND ARRANGED RADIALY AND VERTICALLY ALONG THE STEM
- THERE SHALL BE LIVE BUDS OR FOLIAGE TO THE ENDS OF ALL TWIGS
- ALL PRUNING CUTS SHALL COMPLY WITH ANSI A-300-2006 STANDARDS AND SHALL BE MADE OUTSIDE THE BRANCH COLLAR AND BRANCH BARK RIDGE
- BRANCHES SHALL NOT BE PRUNED IMMEDIATELY PRIOR TO DELIVERY



TOP TO ROOT RELATIONSHIPS

- LARGER SIZE TREES REQUIRE MORE INTENSIVE INITIAL MAINTENANCE
- LOOK FOR A TREE WITH MODERATE SIZE TOP IN PROPORTION THE ROOT SYSTEM

HEALTH

- ANNUAL TWIG GROWTH SHALL BE AT LEAST SIX INCHES MEASURED BETWEEN ADJOINING BUD SCALE SCARS.
- LEAF SIZE, SHAPE AND COLOR SHALL BE WITHIN THE RANGE CITED IN DIRR'S MANUAL OF WOODY LANDSCAPE

DELIVERY AND INSPECTION

- INSPECT UPON DELIVERY
- CONSIDER DESTRUCTIVELY SAMPLING UP TO 2% OF THE SHIPMENT TO EXAMINE ROOTS
- RESERVE THE RIGHT TO REJECT ENTIRE SHIPMENT
- HAVE CONTRACT IN HAND DURING INSPECTION
- MAINTAIN THE RIGHT TO SELECT AND TAG TREES AT THE NURSERY PRIOR TO HARVESTING AND SHIPPING OF ANY TREES

ROOT COLLAR SPECIFICATION

THE ROOT COLLAR SHALL BE AT SOIL GRADE LEVEL UPON COMPLETION OF INSTALLATION AND SHALL REMAIN AT SOIL GRADE LEVEL FOR A PERIOD OF ONE YEAR FOLLOWING TREE INSTALLATION.

MULCH

- DEPTH
- TRUNK CONTACT
- AVAILABILITY
- PARTICLE SIZE
- APPLICATION DIAMETER

STAKING

STAKING SHOULD BE CONSIDERED THE EXCEPTION NOT THE RULE. STAKE ONLY IF NECESSARY AS DETERMINED BY YOUR SPECIFICATIONS. IF YOU STAKE HAVE A CLEAR SPECIFICATION ABOUT THE DURATION OF STAKING AND REMOVAL OF STAKES.

SPECIFYING AND ENSURING QUALITY-SUMMARY

- GRAPHICS IN SPECS
- GLOSSARY IN SPECS
- DEMONSTRATION TREES
- TRAINING CONTRACTORS
- CONTRACT GROWING
- MONITORING AND INSPECTION
- ENFORCEMENT
- INCENTIVES AND PENALTIES
- PRE-BID MEETINGS