

LANDSCAPE SPECIFICATIONS

SCOPE OF WORK

- A. Furnish all supervision, labor, materials, services, and equipment required to complete the work covered in these specifications and plans, including the following: planting of trees, shrubs, and groundcover, submittals, maintenance, guarantee, cleanup, and acceptance.

REFERENCES

- A. American Standard for Nursery Stock – ANSI Z60.1 – published by American Nursery & Landscape Association; latest edition.
- B. Hortis Third, 1976 – Cornell University

SUBMITTALS

- A. Samples: Provide representative quantities of mulch and stone. Samples shall be approved by Owner's Representative before use on project.
- B. If requested by the Owner's Representative, the Landscape Contractor shall provide at the site two (2) representative samples of each variety of trees, shrubs, and groundcover plants for Owner's Representative's approval. Photographs of representative plants are acceptable. Photos must show plant clearly from at least two sides.

- C. Plant substitutions must be pre-approved by the Owner's Representative in writing.

JOB CONDITIONS

- A. General Contractor shall leave planting bed areas three (3) inches below finish grade of sidewalks, drives and curbs as shown on the drawings. All construction debris shall be removed prior to Landscape Contractor beginning work.
- B. Underground utilities must be located prior to planting. Landscape Contractor shall arrange for utility location service. Contact Texas811.com at least two working days prior to excavation. Landscape Contractor shall be responsible for protecting utility lines. Repairs due to damage shall be at the Landscape Contractors expense.
- C. Storage of materials and equipment at the job site will be at the risk of the Landscape Contractor. The Owner will not be responsible for theft or damage.

MAINTENANCE and GUARANTEE

- A. The Landscape Contractor is responsible for maintenance of all work from the time of planting until final acceptance by the Owner. No trees, shrubs, or groundcover will be accepted unless they show a healthy growth and satisfactory foliage conditions.
- B. Maintenance shall include watering, cultivation, weeding, edging, pruning of trees, cleaning up, and all other necessary maintenance tasks.
- C. A written notice requesting final inspection and acceptance should be submitted to the Owner's Representative at least five (5) days prior to completion. If requested, an on-site inspection by the Owner's Representative and the Landscape Contractor will be completed prior to final acceptance.
- D. After final acceptance, the Owner assumes responsibility for maintenance.
- E. Trees, shrubs, and groundcover shall be guaranteed for a twelve (12) month period after acceptance. The Contractor shall replace all dead materials as soon as weather permits and upon notification of the Owner's Representative. Plants, including trees, which have partially died so that shape, size, or symmetry has been damaged, shall be subject to replacement.
- F. First initial plant replacement shall be at the Landscape Contractor's expense. Additional replacement plants beyond the first are not guaranteed.
- G. Plants used for replacement shall be of the same size and kind as those originally planted and shall be planted as originally specified.
- H. The Owner agrees that for the guarantee to be effective, he/she will water plants at least twice a week during dry periods. The Landscape Contractor shall visit the site at regular intervals during the guarantee period to observe the condition of the plants, and report any problems and possible remedies to the Owner.

QUALITY ASSURANCE

- A. Owner's Representative has the right to inspect all plant materials at place of growth for compliance with requirements for genus, species, cultivar/variety, size and quality.
- B. Owner's Representative retains the right to further inspect all plant material upon arrival at the site and during installation for size and condition of root balls, limbs, branching habit, insects, injuries, and latent defects.
- C. Owner's Representative may reject unsatisfactory or defective material at any time during the process of work. Remove rejected materials from the site immediately.

PRODUCT DELIVERY, STORAGE AND HANDLING

- A. Balled and burlapped (B&B) Plants: Dig and prepare shipment in a manner that will not damage roots, branches, shape, and future development.

- B. Container grown plants: Deliver plants in rigid container to hold ball shape and protect root mass.

- C. Deliver only plant materials that can be planted in one day unless adequate storage and watering facilities are available on job site.

- D. Protect root balls by heeling in with sawdust or other approved moisture retaining material if not planted within 24 hours of delivery.

- E. Do not lift, move, adjust to plumb, or otherwise manipulate plants by trunks or stems.

PLANTS

- A. Plants shall be well-formed nursery grown stock, with tags showing species and variety. Tags must remain until after final acceptance. Plants will be individually approved by the Owner's Representative and his decision as to their acceptability shall be final.
- B. The Plant and Materials List shown on the plans is an aid to the Landscape Contractor. Confirm all quantities, and report any discrepancies to the Owner's Representative.
- C. Plant materials shall conform to the size given on the plan, and shall be healthy, symmetrical, well-shaped, full branched, and well rooted. Plants shall be free from insects, diseases, injuries to the bark or roots, broken branches, objectionable disfigurements, and insect eggs and larvae.
- D. Trees shall be healthy, full-branched, well-shaped and shall meet the trunk diameter and height requirements of the plant schedule. Balls shall be firm, neat, slightly tapered, and well wrapped in burlap. Any tree loose in the ball or with broken ball at time of planting will be rejected. Balls shall be ten (10") inches in diameter for each one (1") inch of trunk diameter. Unless specified as multi-trunk, trees shall have a single dominant leader.
- E. Substitutions: Plant substitutions may be requested. Substitutions must be pre-approved by the Owner's Representative. In order for a substitution to be considered, the contractor must provide proof that the specified plant is not readily available, either by species, quantity, or size. The contractor shall provide in writing the names, phone numbers, and contact persons from three wholesale nurseries that were contacted. The contractor may suggest an alternative, but the Owner's Representative shall reserve the right as to which substitution, if any, is allowed.

INSTALLATION

- A. Prior to installation, Landscape Contractor shall inspect all existing conditions and report any deficiencies to the Owner's Representative.
- B. Areas to receive rock groundcover: Remove existing grass, weeds, rocks, or other obstructions. Lay polypropylene fabric, using pins as necessary to hold securely in place. Place stone groundcover to depths indicated on plans. Surfaces shall be smooth, without visible depressions or ridges.
- C. Position the trees and shrubs in their intended location as per plan. Notify the Owner's Representative for inspection and approval of all positioning of plant materials. Plants in the vicinity of fire hydrants, meters, or utility boxes must be placed so that, at plant maturity, a five (5) foot clearance is provided.
- D. Dig a wide, rough sided hole the same depth as the height of the ball, especially at the surface of the ground. The sides of the hole should be rough and jagged, never slick or glazed. Root flare of trees must be exposed.
- E. Backfill trees only with existing material excavated from the pit. Carefully settle by watering to prevent air pockets. Backfill shrubs and groundcover beds with planting soil mix as specified in the planting details.
- F. All plant beds and trees shall be mulched with a minimum settled thickness of three (3") inches over the entire bed or pit.
- G. In the event that rock, or underground construction work or obstructions are encountered, the Landscape Contractor shall notify the Owner's Representative or Landscape Architect immediately in order to determine if alternate locations can be selected. Where locations cannot be changed, if possible, the obstructions shall be removed to a depth of not less than three (3) feet below grade and no less than six (6) inches below the bottom of the root ball when plant is properly set at the required grade. For trees, the planting pit shall be at least three times the width of the root ball. Prior to excavating the obstruction(s), the Landscape Contractor shall negotiate with the Owner's Representative to determine if a change order is required.
- H. The Landscape contractor shall return after a period of one year to remove all tree staking materials. If any trees appear to need additional time to stabilize, staking will remain for no longer than an additional 6 months. During the period of time when trees are staked, the contractor is responsible for straightening trees that are not plumb, and adjusting stakes and guy wires as necessary. Guy wires must fit loosely as called for in the planting details.
- I. Lay sod within 24 hours of harvesting. Do not lay sod if ground is frozen or muddy. Sod shall form a solid mass with tightly fitted joints. Butt ends and sides of sod; do not stretch or overlap. Stagger sod strips or pads to offset joints in adjacent courses. Avoid damage to subgrade or sod during installation. Tamp and roll lightly to ensure contact with subgrade, eliminate air pockets, and form a smooth surface. Work sifted soil or fine sand into minor cracks between pieces of sod; remove excess to avoid smothering sod and adjacent grass. Lay sod across angle of slopes exceeding 1:3. Anchor sod on slopes exceeding 1:6 with biodegradable staples spaced as recommended by sod grower but not less than 2 anchors per sod strip to prevent slippage. Saturate sod with fine water spray within two hours of planting. After planting, water daily or more frequently until sod is established.

CLEANUP

- A. During the work, the premises shall be kept neat and orderly at all times. Storage areas for all materials shall be neat and orderly. All trash and debris shall be removed from the site as work progresses. Keep paved areas clean by sweeping or hosing at end of each day's work. Site shall be clean and neat at time of final inspection.

NOTES

THE QUANTITIES OF PLANTS AND MATERIALS SHOWN IN THE ABOVE LISTS MUST BE COMPARED TO THE LANDSCAPE PLAN. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE.

ACTUAL QUANTITY OF SOD (AND/OR HYDROMULCH) NEEDED MAY DIFFER FROM SQUARE FOOTAGES LABELED. CONTRACTOR SHALL BID QUANTITY SHOWN IN PLANT LIST, AND PROVIDE PER SQUARE FOOT UNIT COSTS FOR ADDING AND SUBTRACTING SOD (AND/OR HYDROMULCH). THE CONTRACTOR IS REQUIRED TO TAKE APPROPRIATE MEASURES TO ENSURE THAT A FULL STAND OF HEALTHY GRASS IS ESTABLISHED IN ALL GRASS AREAS. GRASS SHALL BE PLANTED IN AREAS DISTURBED BY GRADING AND OTHER CONSTRUCTION ACTIVITIES. FIELD VERIFICATION OF GRASS LIMITS IS OFTEN REQUIRED. THESE INSTRUCTIONS ALSO APPLY IF EROSION CONTROL BLANKET IS CALLED FOR ON THE PLANS.

PRIOR TO INSTALLATION OF PLANTS, THE LANDSCAPE CONTRACTOR SHALL WALK THE SITE WITH THE OWNER'S REPRESENTATIVE TO VERIFY ALL AREAS TO BE PLANTED, PLANT SIZES, AND COORDINATION OF PLANTING ACTIVITIES WITH IRRIGATION INSTALLATION.

IF HYDROMULCH IS NOT SHOWN ON THE LANDSCAPE PLANS, THE LANDSCAPE CONTRACTOR SHALL DISCUSS WITH THE OWNER'S REPRESENTATIVE IF IT IS POSSIBLE TO INSTALL HYDROMULCH RATHER THAN SOD IN SOME GRASS AREAS. IF HYDROMULCH IS INSTALLED, IT SHALL BE SULTAN, BLACK JACK, OR SAHARA BERMUDA WITH A TACKIFIER ADDITIVE ON 4:1 OR GREATER SLOPES. BERMUDA HYDROMULCH SHALL ONLY BE APPLIED BETWEEN THE DATES OF MAY 1st AND SEPTEMBER 15th. BETWEEN SEPTEMBER 15th and MAY 1st, HYDROMULCH WITH ANNUAL RYE GRASS, AND RETURN AFTER MAY 1st TO REMOVE OR TILL IN RYE GRASS AND HYDROMULCH (OR SOD IF OWNER REQUESTS) WITH BERMUDA. PRIOR TO HYDROMULCHING, VERIFY WITH OWNER'S REPRESENTATIVE AREAS, DATES, AND TYPE OF GRASS. DISCUSS WITH THE OWNER THE SCHEDULE AND OTHER DETAILS REGARDING RETURNING AFTER MAY 1ST TO ESTABLISH PERMANENT BERMUDA GRASS.

ALL PLANT MATERIALS SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS SET FORTH IN THE "AMERICAN STANDARD FOR NURSERY STOCK, ANSI Z60.1-2014."

ALL NEW LANDSCAPED AREAS SHALL BE WATERED BY AN AUTOMATIC UNDERGROUND IRRIGATION SYSTEM EQUIPPED WITH RAIN AND FREEZE SENSORS. SYSTEM SHALL BE DESIGNED BY A TEXAS LICENSED IRRIGATOR, AND INSTALLED BY A TEXAS LICENSED IRRIGATION INSTALLER. DESIGN AND INSTALLATION SHALL CONFORM TO ALL CURRENT TEXAS COMMISSION on ENVIRONMENTAL QUALITY REQUIREMENTS, AND OTHER APPLICABLE CODES.

THE LANDSCAPE CONTRACTOR AND IRRIGATION CONTRACTOR SHALL TAKE NECESSARY MEASURES TO COORDINATE THE TIMING OF INSTALLATION OF PLANTS AND INSTALLATION OF THE IRRIGATION SYSTEM. COORDINATE WITH THE GENERAL CONTRACTOR IF NECESSARY. THE GENERAL CONTRACTOR OR PAVING CONTRACTOR SHALL CONSULT WITH THE IRRIGATION CONTRACTOR REGARDING THE POSSIBILITY OF IRRIGATION SLEEVES WITHIN AREAS TO BE PAVED.

DESIGN/BUILD IRRIGATION NOTES

ALL NEW LANDSCAPED AREAS SHALL BE WATERED BY AN AUTOMATIC UNDERGROUND IRRIGATION SYSTEM EQUIPPED WITH RAIN AND FREEZE SENSORS. SYSTEM SHALL BE DESIGNED BY A TEXAS LICENSED IRRIGATOR, AND INSTALLED BY A TEXAS LICENSED IRRIGATION INSTALLER. DESIGN AND INSTALLATION SHALL CONFORM TO ALL CURRENT TEXAS COMMISSION on ENVIRONMENTAL QUALITY REQUIREMENTS, CITY REQUIREMENTS, AND OTHER APPLICABLE CODES.

THE CONTRACTOR SHALL PROVIDE A DESIGN-BUILD LANDSCAPE IRRIGATION SYSTEM FOR THE PROPOSED PLANTS WITHIN THE PROJECT LIMITS. THE CONTRACTOR SHALL DETERMINE IF AN EXISTING FUNCTIONING SYSTEM IS ALREADY IN PLACE, AND WHETHER OR NOT IT CAN BE EXPANDED. BEFORE CONSTRUCTION BEGINS THE IRRIGATION CONTRACTOR SHALL PREPARE AN IRRIGATION DRAWING FOR APPROVAL BY THE OWNER, INCLUDING THE FOLLOWING DESIGN GUIDELINES:

- A. TURF, SHRUBS, AND TREES SHALL ALL BE ZONED SEPARATELY.
- B. PIPE SHALL BE SIZED TO ALLOW A MAXIMUM FLOW VELOCITY OF FIVE FEET PER SECOND.
- C. OPERATING PRESSURE AT ALL ROTARY HEAD NOZZLES SHALL BE MINIMUM 30 PSI.
- D. OPERATING PRESSURE AT ALL SPRAY NOZZLES SHALL BE MINIMUM 25 PSI.
- E. OPERATING PRESSURE AT ALL DRIP ZONES SHALL BE MINIMUM 25 PSI.
- F. OPERATING PRESSURE AT ALL TREE BUBBLER ZONES SHALL BE MINIMUM 25 PSI.
- G. MANUFACTURER'S INSTALLATION GUIDELINES AND INSTRUCTIONS SHALL BE FOLLOWED.
- H. STATE AND LOCAL IRRIGATION CODES SHALL BE FOLLOWED.

UPON APPROVAL, THE CONTRACTOR'S IRRIGATION PLAN FOR DESIGN-BUILD AREAS SHALL BE USED TO OBTAIN AN IRRIGATION INSTALLATION PERMIT BY THE IRRIGATION CONTRACTOR. UPON COMPLETION, AS-BUILT DRAWINGS SHALL BE PROVIDED TO THE OWNER. THE IRRIGATION CONTRACTOR IS RESPONSIBLE FOR PAYING ANY PERMIT FEES THAT MAY BE REQUIRED.

IRRIGATION SHALL BE INSTALLED TO PROVIDE FULL COVERAGE, WITHOUT GAPS. OVER-SPRAY ONTO SIDEWALKS, PARKING AREAS, AND DRIVEWAYS SHALL BE AS MINIMAL AS POSSIBLE. DRIP IRRIGATION AND OTHER LOW WATER USE IRRIGATION METHODS AND EQUIPMENT SHALL BE EMPLOYED AS MUCH AS POSSIBLE, PRACTICAL, AND AS PER CODES.

THE IRRIGATION CONTRACTOR SHALL ARRANGE TO WALK THE SITE WITH THE OWNER'S REPRESENTATIVE PRIOR TO CONSTRUCTION IN ORDER TO VERIFY ALL PROPOSED ASPECTS OF THE IRRIGATION TO BE PROVIDED.

THE IRRIGATION CONTRACTOR SHALL CONTACT TEXAS 811 PRIOR TO CONSTRUCTION IN ORDER TO LOCATED UNDERGROUND UTILITIES. IF UNDERGROUND UTILITIES ARE DAMAGED DURING IRRIGATION INSTALLATION, THE CONTRACTOR SHALL MAKE ALL NECESSARY REPAIRS, AT NO COST TO THE OWNER.

THE GENERAL CONTRACTOR, LANDSCAPE CONTRACTOR, AND IRRIGATION CONTRACTOR SHALL TAKE NECESSARY MEASURES TO COORDINATE THE TIMING OF INSTALLATION OF SITE CONSTRUCTION ITEMS, LANDSCAPE PLANTS, AND INSTALLATION OF THE IRRIGATION SYSTEM.

PRIOR TO CONSTRUCTION, THE GENERAL CONTRACTOR OR PAVING CONTRACTOR SHALL CONSULT WITH THE IRRIGATION CONTRACTOR REGARDING THE POSSIBILITY OF IRRIGATION SLEEVES WITHIN AREAS TO BE PAVED.

THE ABOVE NOTES ARE INTENDED TO SERVE AS GUIDELINES ONLY. THEY ARE NOT INTENDED TO OVERRULE THE OPINIONS AND RECOMMENDATIONS OF A LICENSED IRRIGATOR, WHO RETAINS THE RIGHT TO REVISE, CHANGE, AND EDIT THESE NOTES.

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Note: the specifications below are generic, and not all the requirements are applicable to this project. Most important are the requirements for plant quality, and the guarantee.