LANDSCAPE SPECIFICATIONS

SECTION 02900

PART 1 - GENERAL

1.1 REFERENCED DOCUMENTS

A. Refer to bidding requirements, special provisions, and schedules for additional requirements.

1.2 DESCRIPTION OF WORK

A. Work included: Furnish all supervision, labor, materials, services, equipment and appliances required to complete the work covered in conjunction with the landscaping covered in these specifications and landscaping plans, including:

1. Planting (trees, shrubs, and grass)
2. Bed preparation and fertilization
3. Installation of sources
4. Water and Maintenance until final acceptance
5. Guarantee

1.3 REFERENCE STANDARDS

A. American Standard for Nursery Stock published by American Association of Nurserymen 27 October 1980, Edition; by American National Standards Institute, Inc. (Z60.1)-plant material.
B. American Joint Committee on Horticultural Nomenclature: 1942 Edition of Standardized Plant Names.
C. Texas Association of Nurserymen, Grades and Standards.
D. Hortis Third, 1976 - Cornell University.

1.4 NOTIFICATION OF SOURCES AND SUBMITTALS

A. The Contractor shall, within ten (10) days following acceptance of bid, notify the Architect/Owner of the sources of plant materials and bed preparation required for the project.
B. Samples: Provide representative quantities of sandy loam soil, mulch, bed mix material, gravel, and crushed stone. Samples shall be approved by Architect before use on project.
C. Product Data: Submit complete product data and specifications on all other specified materials.
D. Submit three representative samples of each variety of ornamental trees, shrubs, and groundcover plants for Architect's approval. When approved, tag, install, and maintain as representative samples for final installed plant materials.
E. File Certificates of inspection of plant material by state, county, and federal authorities with Architect, if required.
F. Soil Analysis: Provide sandy loam soil analysis if requested by the Architect.

1.5 JOB CONDITIONS

A. General Contractor to complete the following punch list. Prior to Landscape Contractor initiating any portion of landscape installation, General Contractor shall leave planting bed areas three (3") inches below finish grade of sidewalks, drives and curbs as shown on the drawings. All lawn areas to receive solid sod shall be left one (1") inch below the finish grade of sidewalks, drives, and curbs. All construction debris shall be removed prior to Landscape Contractor beginning any work.
B. General Contractor shall provide topsoil as described in Section 02200 - Earthwork.
C. Storage of materials and equipment at the job site will be at the risk of the Landscape Contractor. The Owner cannot be held responsible for theft or damage.

1.6 MAINTENANCE AND GUARANTEE

A. Maintenance:

1. The Landscape Contractor will be held responsible for the maintenance of all work from the time of planting until final acceptance by the Owner. No trees, shrubs, groundcover or grass will be accepted unless they show a healthy growth and satisfactory foliage conditions.
2. Maintenance shall include watering of trees and plants, cultivation, weeding, spraying, edging, pruning of trees, mowing of grass, cleaning up and all other work necessary of maintenance.
3. A written notice requesting final inspection and acceptance should be submitted to the Owner at least seven (7) days prior to completion. An on-site inspection by Owner and Landscape Contractor will be completed prior to written acceptance.
4. After final acceptance of installation, the Landscape Contractor will not be required to do any of the above listed work.

B. Guarantee:

1. Trees shall be guaranteed for a twelve (12) month period after acceptance. Shrubs and groundcover shall be guaranteed for twelve (12) months. The Contractor shall replace all dead materials as soon as weather permits and upon notification of the Owner. Plants, including trees, which have partially died so that shape, size, or symmetry has been damaged, shall be considered subject to replacement. In such cases, the opinion of the Owner shall be final.
   a. Plants used for replacement shall be of the same kind and size as those originally planted and shall be planted as originally specified. All work, including materials, labor and equipment used in replacements, shall carry a twelve (12) month guarantee. Any damage, including ruts in lawn or bed areas, incurred as a result of making replacements shall be immediately repaired.
   b. At the direction of the Owner, plants may be replaced at the start of the next year's planting season. In such cases, dead plants shall be removed from the premises immediately.
   c. When plant replacements are made, plants, soil mix, fertilizer and mulch are to be utilized as originally specified and reinspected for full compliance with Contract requirements. All replacements are to be included under "Work" of this section.
2. The Owner agrees that for the guarantee to be effective, he will water plants at least twice a week during dry periods and cultivate beds once a month after final acceptance.
3. The above guarantee shall not apply where plants die after acceptance because of injury by storms, hail, freeze, insects, diseases, injury by humans, machines or theft.
4. Acceptance for all landscape work shall be given after final inspection by the Owner provided the job is in a completed, undamaged condition, and there is a stand of grass in all lawn areas. At this time, the Owner will assume maintenance on the accepted work.

1.7 QUALITY ASSURANCE

A. General: Comply with applicable Federal, State, County, and Local regulations governing landscape materials and work.
B. Personnel: Employ only experienced personnel who are familiar with the required work. Provide full-time supervision by a qualified foreman acceptable to Landscape Architect.
C. Selection of Plant Materials:

1. Make contact with suppliers immediately upon obtaining notice of contract for Landscape Contractor and replaced with acceptable plants as specified. Develop a program of maintenance (pruning and fertilization) which will ensure the purchased materials will meet and/or exceed project specifications.
2. Landscape Architect will provide a key identifying each tree location on site. Written verification will be required to document material selection, source and delivery schedules to site.
3. Owner and/or Architect shall inspect all plant materials, when reasonable, at places of growth for compliance with requirements for genus, species, cultivar/variety, size and quality.

1.7 QUALITY ASSURANCE

C. Selection of Plant Materials (cont.)

4. Owner and/or Architect 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.
5. Owner and/or Architect may reject unsatisfactory or defective material at any time during the process of work. Remove rejected materials from the site immediately. Plants damaged in transit or at job site shall be rejected.

1.8 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Preparation:

1. Balled and Burlapped (B&B) Plants: Dig and prepare shipment in a manner that will not damage roots, branches, shape, and future development.
2. Container Grown Plants: Deliver plants in rigid container to hold ball shape and protect root mass.

B. Delivery:

1. Deliver packaged materials in sealed containers showing weight, analysis and name of manufacturer. Protect materials from deterioration during delivery and
2. Deliver only plant materials that can be planted in one day unless adequate storage and watering facilities are available on job site.
3. Protect root balls by heeling in with sawdust or other approved moisture retaining material if not planted within 24 hours of delivery.
4. Protect plants during delivery to prevent damage to root balls or deciduous of leaves. Keep plants moist at all times. Cover all materials during transport.
5. Notify Architect of delivery schedule 72 hours in advance so plant material may be on hand upon arrival at job site.
6. Remove rejected plant material immediately from site.
7. To avoid damage or stress, do not lift, move, adjust to plumb, or otherwise manipulate plants by trunk or stems.

PART 2 - PRODUCTS

2.1 PLANTS

A. General: Well-formed No. 1 grade or better nursery grown stock. Listed plant heights are from tops of root balls to nominal tops of plants. Plant spread refers to nominal outer width of the plant, not to the outer leaf tips. Plants will be individually approved by the Architect and his decision as to their acceptability shall be final.
B. Quantities: the drawings and specifications are complimentary anything called for on one and not the other is as binding as if shown and called for on both. The plant schedule is an aid to bidders only. Confirm all quantities on plan.
C. Quality and size. Plant materials shall conform to the size given on the plan, and shall be healthy, symmetrical, well shaped, full branched, and well rooted. The plants shall be free from injurious insects, diseases, injuries to the bark or roots, broken branches, objectionable disfigurements, insect eggs and larvae and are to be of specimen quality.
D. Approval: All plant materials shall be subject to the approval of the Owner and/or Landscape Architect. All plants which are found unsuitable in growth, or in any unhealthy, badly shaped, or undersized condition, will be rejected by the Landscape Architect, either before or after planting, and shall be removed at the expense of the Landscape Contractor and replaced with acceptable plants as specified.
E. Trees shall be healthy, full branched, well shaped, and shall meet the trunk diameter and height requirements of the plant schedule. Balled and Burlapped 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, measured six (6") inches above ball.
   a. Nomenclature conforms to customary nursery usage; for clarification, the term "multi-trunk" defines a plant having three (3) or more trunks of nearly equal diameter.
F. Pruning: All pruning of trees and shrubs, as directed by Landscape Architect, shall be executed by Landscape Contractor at no additional cost to the Owner.

2.2 SOIL PREPARATION MATERIALS

A. Sandy Loam:

1. Friable, fertile, dark, loamy soil, free of clay lumps, subsoil, stones and other extraneous material and reasonably free of weeds and foreign grasses. Loam containing Dallesgrass or Nutgrass shall be rejected.
2. Physical properties as follows:
   Clay-between 7-27 percent
   Silt-between 15-25 percent
   Sand-less than 52 percent
3. Organic matter shall be 3%-10% of total dry weight.
4. If requested, provide a certified soil analysis conducted by an approved soil testing laboratory verifying that sandy loam meets the above requirements.

B. Organic Materials: Compost with a mixture of 60% vegetative matter and 30% animal waste. Ingredients should be a mix of course and fine textured material.
C. Premixed Bedding Soil as supplied by Vital Earth Resources, Gladewater, Texas; Professional Bedding Soil as supplied by Living Earth Technology, Dallas, Texas or Acid Gro Municipal Mix as supplied by Soil Building Systems, Dallas, Texas or approved equal.
D. Sharp Sand: Sharp sand must be free of seeds, soil particles and weeds.
E. Mulch: Double Shredded Hardwood Mulch, partially decomposed, dark brown. Living Earth Technologies or approved equal.
F. Organic Fertilizer: Fertilizit, Sustane, or Green Sense or equal as recommended for required applications. Fertilizer shall be delivered to the site in original unopened containers, each bearing the manufacturer's guaranteed statement of analysis.
G. Commercial Fertilizer: 10-20-10 or similar analysis. Nitrogen source to be a minimum 50% slow release organic Nitrogen (SCU or UF) with a minimum 8% sulfur and 4% iron, plus micronutrients.
H. Peat: Commercial sphagnum peat moss or partially decomposed shredded pine bark or other approved organic material.

2.3 MISCELLANEOUS MATERIALS

A. Steel Edging: Shall be Ryerson "Estate Curbing", 1/8"x4" with stakes 4' on center.
B. Staking Material for Shade Trees:

1. Post: Studded T-Post, no1 Armco with anchor plate; 6'-0" length; paint black
2. Wire: 12 gauge, single strand, galvanized wire.
3. Rubber hose: 2 ply, fiber reinforced hose, minimum 1/2 inch inside diameter.
4. Color: Black

C. Gravel: Washed native pea gravel, graded 1 in. to 1-1/2 in.
D. Filter Fabric: Mirafi 140N by Celanese Fibers Marketing Company, Available at Lofland Co., (214) 631-0260 or approved equal.

3.2 INSTALLATION

A. Maintenance of plant materials shall begin immediately after each plant is delivered to the site and shall continue until and beyond the date of construction has been satisfactorily accomplished.
B. Plant materials shall be delivered to the site only after the beds are prepared and are ready for planting. All shipments of nursery materials shall be thoroughly protected from the drying winds during transit. All plants which cannot be planted at once, after delivery to the site, shall be well protected against the possibility of drying by wind and sun. Balls of earth of B & B plants shall be kept covered with soil or other acceptable material. All plants remain the property of the Contractor until final acceptance.
C. Position the trees and shrubs in their intended location as per plan.
D. Notify the Landscape Architect for inspection and approval of all positioning of plant materials.
E. Excavate pits with vertical sides and horizontal bottom. Tree pits shall be large enough to permit handling and planting without injury to balls of earth or roots and shall be of such depth that, when planted and settled, the crown of the plant shall bear the same relation to the finish grade that it did to soil surface in place of growth.

3.1 BED PREPARATION & FERTILIZATION

A. Landscape Contractor to inspect all existing conditions and report any deficiencies to the Owner.

B. All planting areas shall be conditioned as follows:

1. Prepare new planting beds by scraping off existing grass and weeds as necessary. Till existing soil to a depth of six inches prior to fertilizer and compost application. Apply fertilizer as per manufacturer's recommendations. Add six (6") inches of compost and till into a depth of six (6") inches of the native soil. Apply organic fertilizer such as Sustane or Green Sense at the rate of twenty (20) pounds per one thousand (1,000) square feet.
2. All planting bed areas shall receive a two (2") inch layer of specified mulch.
3. Backfill for tree pits shall be as follows: Use existing topsoil on site, free from large clumps, rock, debris, caliche, subsoils, etc., placed in nine (9") inch layers and watered in thoroughly.

C. Grass Area:

1. Areas to be Solid Sod Bermudagrass: Blocks of sod should be laid joint to joint, (staggered joints) after fertilizing the ground first. Roll grass areas to achieve a smooth, even surface. The joints between the blocks of sod should be filled with topsoil where they are evidently gaped open, then watered thoroughly.
2. Areas to be Hydromulch Common Bermudagrass: Hydromulch will Bermudagrass seed at a rate of two (2) pounds per one thousand (1,000) square feet. Use a 4' x 8' batter board against the bed areas.

3.2 INSTALLATION (cont.)

F. Shrub and tree pits shall be no less than two (2) feet, twenty-four (24") inches wider than the lateral dimension of earth ball and six (6") inches deeper than its vertical dimension. Remove and haul from site all rocks or stones over one (1") inches in diameter. Plants should be thoroughly moist before removing containers.
G. Dig a wide, rough sided hole exactly 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.
H. Percolation Test: Fill the hole with water. If the water level does not percolate within 24 hours, the tree needs to be moved to another location or have tile hole drainage added.
I. Backfill only with native soil or sandy loam and 1 part bed preparation. When hole is dug in solid rock, topsoil from the same area should not be used. Carefully settle by watering to prevent air pockets. Remove the burlap from the top 1/3 of the ball, as well as all nylon, plastic string and wire mesh. Container trees will usually be pot bound. If so follow standard nursery practice of "root scoring".
J. Do not wrap trees.
K. Do not over prune.
L. Mulch the top of the ball. Do not plant grass all the way to the trunk of the tree. Leave the area above the top of the ball unplanted and mulch with at least two (2") inches of specified mulch.
M. All plant beds and trees to be mulched with a minimum settled thickness of two (2") inches over the entire bed or pit.
N. Obstruction below ground: In the event rock or underground construction work or obstructions are encountered in any plant pit excavation work to be done under this section, alternate locations may be selected by the Owner. Where locations cannot be changed, 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 bottom of ball when plant is properly set at the required grade. The work of this section shall include the removal from the site of such rock or underground obstructions encountered at the cost of the Landscape Contractor.

3.2 INSTALLATION (CONT.)

O. Trees and large shrubs shall be staked as site conditions require. Position stakes to secure tree against seasonal prevailing winds.
P. Pruning and Mulching: Each area shall be pruned in accordance with standard horticultural practice to preserve the natural character of the plant and in the manner fitting its use in the landscape design.

1. Dead wood or suckers and broken or badly bruised branches shall be removed General tipping of all branches is not permitted.
2. Pruning shall be done with clean sharp tools.
3. Immediately after planting operations are completed, all tree pits shall be covered with a layer of specified mulch two (2") inches in depth. The limit of the specified mulch for trees shall be the diameter of the plant pit.

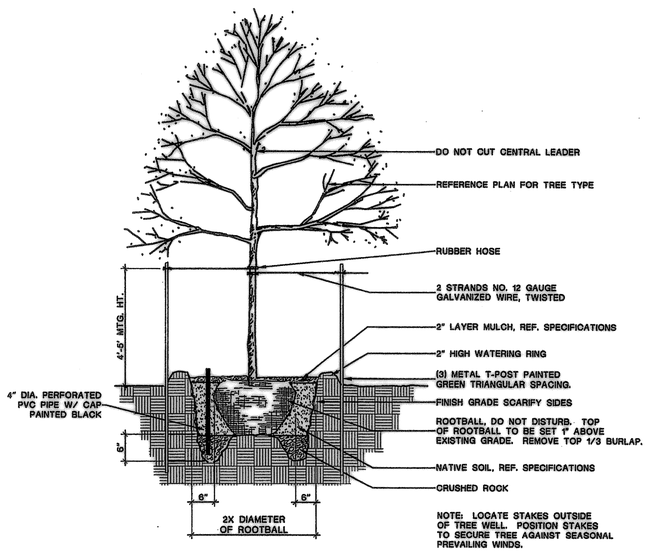
Q. Steel Curbing Installation:

1. Curbing shall be aligned as indicated on plans.
2. All steel curbing shall be free of kinks or abrupt bends.
3. Top of curbing shall be 1/2" maximum higher than existing grade.
4. Stakes are to be installed on the planting bed side of the curbing, as opposed to the grass side.
5. Do not install steel edging along sidewalks.
6. Cut steel edging at 45 degree angle where edging meets sidewalk.

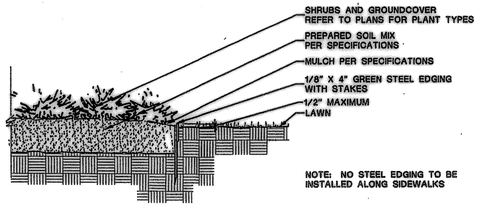
3.3 CLEANUP AND ACCEPTANCE

A. Cleanup: During the work, the premises shall be kept neat and orderly at all times. Storage areas for all materials shall be so organized that they, too, are 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 days' work.

END OF SECTION



01 TREE PLANTING DETAIL
NOT TO SCALE



02 STEEL EDGING DETAIL
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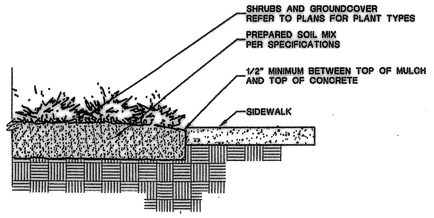
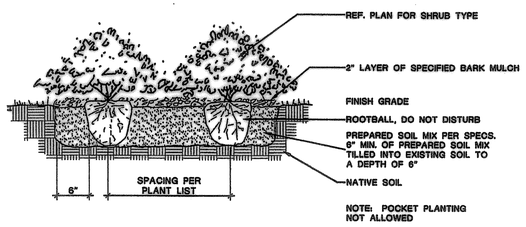


04 SIDEWALK / MULCH DETAIL
no steel along sidewalks NOT TO SCALE



03 SHRUB / GROUNDCOVER DETAIL
NOT TO SCALE

REGISTERED LANDSCAPE ARCHITECT BRIAN D. ADAMS 1761 STATE OF TEXAS
3.21.05

smr
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DATE AS BUILT 7/14/05

REV.	DATE	REMARKS
2	5-02-05	ISSUED FOR CONSTRUCTION
1	3.22.05	ADDENDUM #1

LANDSCAPE SPECS AND DETAILS

LOTS 17, 18, 19, BLOCK A

HORIZION RIDGE ADDITION

THE CITY OF ROCKWALL, TEXAS

LAWRENCE A. CATES & ASSOC., INC.
14200 MIDWAY ROAD, SUITE 122 (972) 385-2272
CONSULTING ENGINEERS
DALLAS, TEXAS

DESIGN	DRAWN	DATE	SCALE	NOTES	FILE	NO.
BDA	BDA	3/8/05	none	D.P.	20050 DIMCTRL1	L.3