

SECTION 02900 - LANDSCAPE

PART 1 - GENERAL

1.1 REFERENCED DOCUMENTS

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

1.2 DESCRIPTION OF WORK

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. Notification of sources
- 4. Water and Maintenance until final acceptance 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
- American Joint Committee on Horticultural Nomenclature: 1942 Edition of Standardized
- C. Texas Association of Nurserymen, Grades and Standards.
- D. Hortis Third, 1976 Cornell University

1.4 NOTIFICATION OF SOURCES AND SUBMITTALS

- 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
- 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
- C. Product Data: Submit complete product data and specifications on all other specified
- 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.

PART 3 - EXECUTION

3.1 BED PREPARATION & FERTILIZATION

- Landscape Contractor to inspect all existing conditions and report any deficiencies to the
- B. All planting areas shall be conditioned as follows:
 - 1. Prepare new planting beds by scraping away existing grass and weeds as necessary. Till existing soil to a depth of six (6") inches prior to placing compost and fertilizer. Apply fertilizer as per manufacturers recommendations. Add six (6") inches of compost and till into a depth of six (6") inches of the topsoil. 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 areas shall receive a two (2") inch layer of specified mulch. 3. Backfill for tree pits shall be as follows: Use existing top soil on site (use imported topsoil as needed) free from large clumps, rocks, debris, caliche, subsoils, etc., placed in nine (9") inch layers and watered in thoroughly.

C. Grass Areas:

- . 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 with 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

- Maintenance of plant materials shall begin immediately after each plant is delivered to the site and shall continue until all construction has been satisfactorily accomplished.
- Plant materials shall be delivered to the site only after the beds are prepared and area 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
- Position the trees and shrubs in their intended location as per plan.
- Notify the Landscape Architect for inspection and approval of all positioning of plant
- 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

relationship to the finish grade as it did to soil surface in original place of growth.

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.
- 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.

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.
- 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

2. Maintenance shall include watering of trees and plants, cultivation, weeding spraying,

- 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

B. Guarantee:

do any of the above listed work.

- 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 size and kind 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
- 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 oremises 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

Shrub and tree pits shall be no less than two (2') feet, twenty-four (24") inches, wider than

the surface of the ground. The sides of the hole should be rough and jagged, never slick

hours, the tree needs to move to another location or have drainage added. Install a PVC

Backfill only with 5 parts existing soil or sandy loam and 1 part bed preparation. When

the hole is dug in solid rock, topsoil from the same area should not be used. Carefully

as well as all nylon, plastic string and wire mesh. Container trees will usually be pot

settle by watering to prevent air pockets. Remove the burlap from the top 1/3 of the ball

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 and mulch with at least two (2") inches of specified mulch.

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 the 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

Trees and large shrubs shall be staked as site conditions require. Position stakes to

Pruning and Mulching: Pruning shall be directed by the Architect and shall be pruned in accordance with standard horticultural practice following Fine Pruning, Class I pruning

1. Dead wood or suckers and broken badly bruised branches shall be removed. General tipping of the branched is not permitted. Do not cut terminal branches.

3 Immediately after planting operations are completed, all tree pits shall be covered with

a layer of organic material two (2") inches in depth. This limit of the organic material

1. Curbing shall be aligned as indicated on plans. Stake out limits of steel curbing and

. Stakes are to be installed on the planting bed side of the curbing, as opposed to the

All plant beds and trees to be mulched with a minimum settled thickness of two (2")

N. Obstruction below ground: In the event that rock, or underground construction work or obstructions are encountered in any plant pit excavation work to be done under this

the lateral dimension of earth ball and six (6") inches deeper than it's vertical dimension Remove and haul from site all rocks and stones over one (1") inch in diameter. Plants

G. Dig a wide, rough sided hole exactly the same depth as the height of the ball, especially at

H. Percolation Test: Fill the hole with water. If the water level does not percolate within 24

stand pipe per tree planting detail as approved by the Landscape Architect.

bound, if so follow standard nursery practice of 'root scoring'.

J. Do not wrap trees.

K. Do not over prune.

inches over the entire bed or pit.

secure tree against seasonal prevailing winds.

standards provided by National Arborist Association

2. Pruning shall be done with clean, sharp tools.

obtain Owners approval prior to installation

Do not install steel edging along sidewalks.

2. All steel curbing shall be free of kinks and abrupt bends.

areas clean by sweeping or hosing at end of each days work.

Top of curbing shall be 3/4" maximum height above grade.

3. Cut steel edging at 45 degree angle where edging meets sidewalk.

Cleanup: During the work, the premises shall be kept neat and orderly at all times

END OF SECTION

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

Steel Curbing Installation:

3.3 CLEANUP AND ACCEPTANCE

Landscape Contractor.

should be thoroughly moist before removing containers.

- 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
- 3. The above guarantee shall not apply where plants die after acceptance because of injury from storms, hail, freeze, insects, diseases, injury by humans, machines or 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.
- Repairs: Any necessary repairs under the Guarantee must be made within ten (10) days after receiving notice, weather permitting, and in the event the Landscape Contractor does not make repairs accordingly, the Owner, without further notice to Contractor, may provide materials and men to make such repairs at the expense of the Landscape Contractor.

1.7 QUALITY ASSURANCE

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

Selection of Plant Material:

- 1. Make contact with suppliers immediately upon obtaining notice of contract acceptance to select and book materials. Develop a program of maintenance (pruning and fertilization) which will insure 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 place of growth for compliance with requirements for genus, species, cultivar/variety, size and
- 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

4" DIA. PERFORATED

PVC PIPE W/ CAP PAINTED BLACK

- 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.

A. Delivery:

- 1. Deliver packaged materials in sealed containers showing weight, analysis and name of manufacturer. Protect materials from deterioration during delivery and while stored
- 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 desiccation 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 observed 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 = ROW SPACING

B = ON CENTER SPACING

SPACE PLANTS IN A TRIANGULAR

FROM EACHOTHER AT SPACING

PLANTING GROUNDCOVER/ANNUALS.

PREPARE GROUNDCOVER

AREA PROVIDE SOIL MIX

BED BY TILLING ENTIRE BED -

AS DEFINED IN THE LANDSCAPE

INDICATED ON PLANT LIST.

MULCH IN BED PRIOR TO -

SPECIFICATIONS

- DO NOT CUT CENTRAL LEADER

2 STRANDS NO. 12 GAUGE

GALVANIZED WIRE, TWISTED

— 2" HIGH WATERING RING

CRUSHED ROCK

PREVAILING WINDS.

(3) METAL T-POST PAINTED

GREEN TRIANGULAR SPACING

-FINISH GRADE SCARIFY SIDES

ROOTBALL, DO NOT DISTURB. TOP OF ROOTBALL TO BE SET 1" ABOVE EXISTING GRADE. REMOVE TOP 1/3 BURLAP.

NATIVE SOIL, REF. SPECIFICATIONS

NOTE: LOCATE STAKES OUTSIDE

OF TREE WELL. POSITION STAKES

TO SECURE TREE AGAINST SEASONAL

---- 2" LAYER MULCH, REF. SPECIFICATIONS

— RUBBER HOSE

REFERENCE PLAN FOR TREE TYPE

(02) GROUNDCOVER PLANTING DETAIL

PATTERNAS SHOWN, SPACED EQUALLY

2" MULCH DOUBLE SHREDDED HARDWOOD

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

is an aid to bidders only. Confirm all quantities on plan.

EDGE OF BED

PLANT ROW SPACING 'D' ROW SPACING 'A' PLANTS/10SF

- Architect and his decision as to their acceptability shall be final. 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
- 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.
- Approval: All plant materials shall be subject to the approval of the Owner. 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.
- 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") inched in diameter for each one (1") inch of trunk diameter, Measured six (6") inched above ball. Nomenclature conforms to the customary nursery usage: for clarification, the term
- Pruning: All pruning of trees and shrubs, as directed by the Landscape Architect, shall be executed by the Landscape Contractor at no additional cost to the Owner.

"multi-trunk" defines a plant having three (3) or more trunks of nearly equal diameter.

NOT TO SCALE

2.2 SOIL PREPARATION MATERIALS

- 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 Dallasgrass 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.
- Organic Material: Compost with a mixture of 80% vegetative matter and 20% animal waste. Ingredients should be a mix of course and fine textured material.
- 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. Sharp Sand: Sharp sand must be free of seeds, soil particles and weeds.
- Mulch: Double Shredded Hardwood Mulch, partially decomposed, dark brown. Living Earth Technologies or approved equal.
- Organic Fertilizer: Fertilaid, 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.
- 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% sulphur and 4% iron,
- Peat: Commercial sphagnum peat moss or partially decomposed shredded pine bark or other approved organic material.

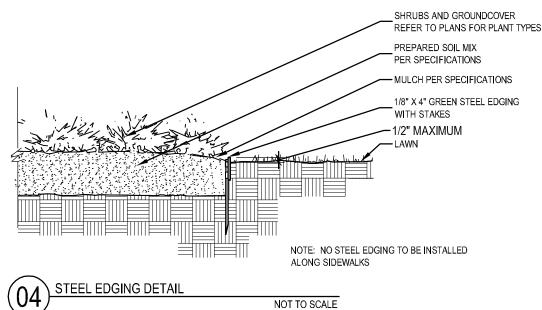
2.3 MISCELLANEOUS MATERIALS

plus micronutrients.

- A. Steel Edging: Shall be Ryerson "Estate Curbing", 1/8" x 4" with stakes 4' on center.
- Staking Material for Shade Trees:
- 1. Post: Studded T-Post, #1 Armco with anchor plate; 6'-0" length; paint green. 2. Wire: 12 gauge, single strand, galvanized wire. 3. Rubber hose: 2 ply, fiber reinforced hose, minimum ½ inch inside diameter. Color:
- C. Gravel: Washed native pea gravel, graded 1 in. to 1-1/2 in.
- Filter Fabric: Mirafi 140N by Celanese Fibers Marketing Company, available at Loftland Co., (214) 631-5250 or approved equal.

SHRUBS AND GROUNDCOVER REFER TO PLANS FOR PLANT TYPES PREPARED SOIL MIX PER SPECIFICATIONS 1/2" MINIMUM BETWEEN TOP OF MULCH AND TOP OF CONCRETE ✓ SIDEWALK





REF. PLAN FOR SHRUB TYPE - 2" LAYER OF SPECIFIED BARK MULCH FINISH GRADE COOTBALL, DO NOT DISTURE PREPARED SOIL MIX PER SPECS. 6" MIN. OF PREPARED SOIL MIX TILLED INTO EXISTING SOIL TO A DEPTH OF 6" SPACING PER - NATIVE SOIL PLANT LIST NOTE: POCKET PLANTING NOT SHRUB PLANTING DETAI NOT TO SCALE

ENGINEER:

OWNER: BURGER ENGINEERING, LLC 151 COFFEE TEXAS REGISTERED ENGINEERING FIRM F-12997 6242 RUFE SNOW DRIVE, SUITE 236 17103 PRESTON ROAD, SUITE 180N NORTH RICHLAND HILLS, TEXAS 76148 DALLAS, TEXAS 75248 (208) 449-8821 (972) 630-3360 CONTACT: DANNY GIESBRECHT CONTACT: BRYAN M. BURGER, P.E.

SOLID SOD NOTES

- 1. Fine grade areas to achieve final contours indicated. Leave areas to receive topsoil 3" below final desired grade in planting areas and 1" below final grade in turf areas.
- 2. Adjust contours to achieve positive drainage away from buildings. Provide uniform rounding at top and bottom of slopes and other breaks in grade. Correct irregularities and areas where water may stand.
- 3. All lawn areas to receive solid sod shall be left in a maximum of 1" below final finish grade. Contractor to coordinate operations with on-site Construction Manager.
- 4. Contractor to coordinate with on-site Construction Manager for availability of
- are touching. Top dress joints by hand with topsoil to fill voids.

5. Plant sod by hand to cover indicated area completely. Insure edges of sod

- 6. Roll grass areas to achieve a smooth, even surface, free from unnatural undulations.
- 7. Water sod thoroughly as sod operation progresses.
- 8. Contractor shall maintain all lawn areas until final acceptance. This shall include, but not limited to: mowing, watering, weeding, cultivating, cleaning and replacing dead or bare areas to keep plants in a vigorous, healthy
- 9. Contractor shall guarantee establishment of an acceptable turf area and shall provide replacement from local supply if necessary.
- 10. If installation occurs between September 1 and March 1, all sod areas to be over-seeded with Winter Ryegrass, at a rate of (4) pounds per one thousand (1000) square feet.



landscape architects, inc 1708 N. Griffin Street Dallas, Texas 75202 Tel 214.871.0083 Fax 214.871.0545 Email smr@smr-la.com

086-002 SITEPLAN

LANDSCAPE SPECIFICATIONS 151 COFFEE LOT 1, BLOCK A - 151 COFFEE ADDITION THE CITY OF COPPELL, TEXAS 17103 Preston Road, Suite 180N BURGER Dallas, Texas 75248 **D** ENGINEERING Office: 972.630.3360 Fax: 972.630.3380 DESIGN | DRAWN | DATE | SCALE NOTES FILE NO.

NONE

11.7.19

BDA

EXHIBIT C-2

NOT TO SCALE

2X DIAMETER

OF ROOTBALL

TREE PLANTING DETAIL

