

OXLEY WILLIAMS THARP

ADDENDUM 01

Date: 05 December 2017

To: All Bidders

From: Oxley Williams Tharp Architects

Project Name: Texas Gun Experience

OWT Project No.: 2016-028-00



05 December 2017

This addendum shall be considered to be part of the contract documents for the project referenced above. Where provisions of the following supplemental information differ from that contained in the original contract documents, this Addendum shall govern and take precedence. Bidders are hereby notified to make any necessary adjustments in their estimate on account of this Addendum. It will be construed that each Bidder's proposal is submitted with full knowledge of all modifications and supplemental data specified therein.

Addenda Items:

01-01:	Landscape Specifications
01-02:	Bonding requirements

The owner has chosen to waive all bonding requirements contained in the invitation to bidders.

Attachments:

1. The following landscape specification sections.
 - 32 9200 – Turfgrass Planting
 - 32 9300 – Shrub, Native Grass and Ground Cover Planting
 - 32 9343 – Tree Planting

End of ADDENDUM 01

SECTION 32 92 00

TURFGRASS PLANTING

PART 1 - GENERAL

1.01 SCOPE

- A. The work in this section includes all soil preparation, fertilization, planting and other requirements associated with turfgrass planting. Furnish all labor, materials, equipment and services required as herein specified and as indicated on the drawings.

1.02 SUBMITTALS

- A. All delivery receipts and copies of invoices for materials used for this work shall be subject to checking by the Owner's Representative.
- B. Various samples, certificates and specifications for seed, fertilizer and other materials shall be submitted for approval by the Owner as required by subsequent sections of this specification.

PART 2 – PRODUCTS

2.01 TURFGRASS

- A. Bermuda Grass Sod: Turfgrass sod shall be "Cynodon dactylon" Common Bermuda Grass. Sod shall consist of stolons, leaf blades, rhizomes and roots with healthy, virile system of dense, thickly matted roots throughout the soil of the sod. The sod pad shall be not less than three quarter (3/4") inches thick. Sod shall be alive, healthy, vigorous, free of insects, disease, stones and undesirable foreign materials and grasses. The grass shall have been mowed prior to sod cutting so that the height of the grass shall not exceed two (2") inches. Sod shall not be harvested or planted when the moisture condition of the sod is so excessively wet or dry that its survival will be affected. All sod shall be harvested, delivered and planted within a thirty-six (36) hour period. Sod shall be protected from exposure to wind, sun and freezing. If sod is stacked, it shall be kept moist and shall be stacked roots-to-roots and grass-to-grass.
 - 1. Prior to planting, provide the Owner's Representative with the State Certificate stating the analysis of the sod.
 - 2. All sod shall be the same thickness. Sod sections shall be rectangular and may vary in length but the width of all sod sections must be equal. Broken or torn sod pads will be unacceptable.

B. Rye Grass Seed: Turfgrass seed shall be “Lolium multiflorum” (Italian or Annual Rye Grass). The seed shall be harvested no more than one (1) year prior to planting and shall be free of weed seed to the limits allowable under the Federal Seed Act and applicable seed laws. The seed shall be at least ninety-five (95%) percent pure and shall have a minimum ninety (90%) percent germination rate. Seed shall be labeled in accordance with U.S. Department of Agriculture rules and regulations.

1. Prior to planting, provide the Owner’s Representative with the State Certificate stating the analysis of purity and seed germination.

2.02 FERTILIZER

A. Fertilizer shall be a commercial product, uniform in composition, free flowing and suitable for application with approved equipment. Fertilizer shall be delivered to the site in fully labeled original containers. Fertilizer that has been exposed to high humidity and moisture or has been damaged making it unsuitable for use will not be acceptable.

B. Fertilizer for the initial planting application shall have an N-P-K ratio of 4-5-1 (19-26-5). The phosphorus content must be derived from monoammonium phosphate to stimulate vigorous development of new roots, stolons and rhizomes.

1. Submit a sample label or specification of the fertilizer for the Owner’s approval.

C. Fertilizer for the post planting application will be a complete fertilizer of a chemical base containing by weight the following percentages of nutrients: 27-3-4 +2% Fe (N-P-K) from a methylene urea or the nitrogen equivalent of 33-3-10.

1. Submit a sample label or specification of the fertilizer for the Owner’s approval.

PART 3 – EXECUTION

3.01 GENERAL

A. All turf planting shall be executed across the slope parallel to the finish grade contours.

3.02 SCHEDULE

A. Sod areas not established by September 15 shall be planted with Bermuda sod over seeded with Rye Grass at the turf farm prior to delivery to the site. The Contractor will still be responsible for producing an acceptable coverage of Bermuda Grass as specified.

B. Grass planting can only proceed upon approval of the fine grading by the Owner’s Representative.

3.03 SOIL PREPERATION

- A. Soil shall be tilled to loosen the soil, destroy any existing vegetation and to prepare an acceptable planting bed. All turf areas shall be tilled to a depth of five (5") inches.
- B. Soil shall be cleaned of all debris, building materials, rubbish, weeds and stones larger than three-quarter (3/4") inches in diameter. All collected materials shall be removed off-site.
- C. After tilling and cleaning the areas to be planted shall be leveled, fine graded and drug with a float drag or a weighted spike harrow. The end result shall be a planted area free of ruts, depressions, humps and any soil clods.

3.04 FERTILIZATION

- A. The initial planting fertilizer application shall be applied at a rate of nine (9lbs.) pounds per one thousand (1000) square feet or four hundred (400lbs) pounds per acre.
 - 1. Fertilizer shall be applied over sodded areas after planting, but not more than two (2) days later.
- B. The post planting fertilizer application shall be applied thirty (30) days after planting and shall be applied at a rate of one (1lb.) pound of nitrogen per one thousand (1000) square feet or forty-four (44lbs.) pounds per acre.
 - 1. The Owner's Representative will determine if it is too late in the growing season for the post planting application. In this event the application shall be made in the spring of the following year or the Owner shall be credited the cost of this fertilization.
 - 2. Areas of turf grass that have not obtained uniform coverage within thirty (30) days will receive subsequent applications of fertilizer every thirty (30) days until uniform coverage is obtained.

3.05 SOD PLANTING

- A. Prior to laying the sod, the planting bed shall be raked smooth and moistened to a depth of four (4") inches, but not to the extent of causing puddling.
- B. Sod shall be laid smoothly and butted end to end with staggered joints.
- C. The sod shall be pressed firmly into contact with the subgrade by rolling in order to eliminate all air pockets, to provide a true and even surface and to ensure rooting without displacement of the sod or deformation of the surfaces of the sodded area.

- C. Following rolling, fine screened soil of good quality shall be used to fill any cracks between sod sections. Excess soil shall be worked into the grass with suitable equipment and shall be well watered. The texture of the fill soil shall be such that it will not smother the grass.

3.06 PROTECTION

- A. No heavy equipment shall be moved over the planted turf areas. Any areas disturbed prior to turfgrass acceptance shall be tilled, re-graded, leveled and replanted.
- B. It will be the Contractors responsibility to protect all paved surfaces, utilities, plant material and any other improvements from damage during grassing operations. Any damage will be repaired at no cost to the Owner.

3.07 IRRIGATION SYSTEM

- A. The proposed irrigation system must be completely operational before grassing operations may begin. After planting, any breakdowns or malfunctions of the irrigation system must be immediately repaired by the Contractor. Otherwise, the cost of replacing lost turf due to the Contractor's failure to promptly repair the irrigation system will be borne by the Contractor.
- B. Areas not covered by the proposed irrigation system shall be watered with a temporary irrigation system. Temporary irrigation must be approved by the Owner prior to installation. Once the non-irrigated turfgrass has achieved an acceptable stand of grass the temporary irrigation system must be removed.

3.08 ESTABLISHMENT AND ACCEPTANCE

- A. Regardless of unseasonable climatic conditions or any other adverse conditions affecting grassing operations, the germination and growth of turfgrass, it shall be the sole responsibility of the Contractor to produce uniform turfgrass coverage.
- B. Uniform coverage in sodded areas shall be defined as no visible joints showing or felt between sod sections and all sod sections must be firmly rooted to the subgrade.

3.09 POST PLANTING MAINTENANCE

- A. Turf maintenance shall begin immediately after grass is planted. All planted areas will be protected and maintained by watering, weeding and replanting as necessary for at least thirty (30) days after planting and for as long as necessary to establish uniform

coverage of the specified grass. All areas which do not achieve uniform coverage at the end of thirty (30) days will continue to be replanted and maintained by the Contractor until the turfgrass is completely covered and accepted.

- B. Apply at least one-half (1/2 ") inch of water over the entire planted area every three (3) days until grass is established. Contractor shall water thoroughly and infrequently once grass is established to encourage deep root growth. Water will be paid for by the Owner as long as it is not used in a wasteful manner.
- C. Once grass is established the turf areas must be mowed at least once every other week at a height of two (2") inches until the end of the growing season or until the project is completed. The Contractor shall anticipate at least four (4) mowings as a part of this contract.
- D. No sooner than forty-five (45) days after grass has germinated any weed growth shall be eradicated by applying MSMA broadcasted over the entire planted area. Additional spot applications of MSMA may be required to eliminate any weeds that continue to grow after the initial application. MSMA may only be used during the growing season. All weed growth during the dormant season will be controlled with spot applications of "Round-Up".
- E. All turf areas adjacent to pavement or planting beds shall be edged as required to maintain a neat appearance.

3.10 EROSION CONTROL

- A. Throughout the grow-in and maintenance period it is the Contractor's responsibility to maintain the topsoil in place at the finish grade. Any topsoil or turfgrass losses due to erosion will be replaced by the Contractor until establishment and acceptance is achieved.

3.11 CLEAN UP

- A. The Contractor shall remove any excess material or debris brought to the site or uncovered during grassing operations.

3.12 GUARANTEE

- A. The Contractor shall guarantee that all materials used for grassing operations are the type, quality and quantity specified.

END OF SECTION

SECTION 32 93 00

SHRUB, NATIVE GRASS AND GROUND COVER PLANTING

PART 1 – GENERAL

1.01 SCOPE

- A. The work included in this section includes all fine grading of bed areas, soil preparation and planting associated with shrub, native grass and ground cover planting. Furnish all labor, materials, equipment and services as herein specified and as indicated on the drawings.
- B. The Contractor must supply the Owner with qualifications and references of work completed on similar projects.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. SECTION 32 92 00 – Turfgrass Planting
- B. SECTION 32 94 00 – Tree Planting

PART 2 – PRODUCTS

2.01 SOIL AMMENDMENTS

- A. Compost: Compost shall be a fully composted cotton burr based organic material acidified with sulfur. This material shall have been composted for at least four (4) months at temperatures exceeding one hundred fifty (150°F) degrees Fahrenheit. Compost shall be coarsely screened and free of fungus, grass or weed seed, debris or any toxic substance. Compost suppliers must be a member of the United States Composting Council.
 - 1. Use compost produced by Back to Nature, Inc. Slaton, TX; 888.282.2000, Soil Building Systems, Dallas, TX; 972.831.8181 or approved equal.
 - 2. Submit a product specification and a one (1) quart sample of the compost for the Owner's approval.

2.02 MULCH

- A. Mulch shall be shredded hardwood mulch free of stones, clay or other foreign debris.
 - 1. Submit a product specification and a one (1) quart sample of the mulch for the Owner's approval.

2.03 FERTILIZER

A. Fertilizer shall be naturally occurring organic glauconite with an N-P-K ration of 0-2-5.

1. Use Texas Greensand available from Soil Building Systems, Dallas, TX, 972.831.8181, or Living Earth Technologies, Inc. Dallas, TX, 972.869.4332, or Garden Ville, Austin, TX 888.655.6115 or an approved equal.
2. Submit a product specification and a one (1) quart sample of the fertilizer for the Owner's approval.

2.04 WATER

A. Water shall be available at the site via the irrigation system. Water required in connection with planting will be furnished by the Owner provided it is not used in a wasteful manner. Any hose or other watering equipment shall be provided by the Contractor.

2.05 PLANT MATERIAL

A. The names and locations of all plants are noted on the drawings. The nomenclature of all plant material is per Hortus Third by L.H. Bailey. Plant materials not conforming to this reference will be rejected.

B. Quality and Size

1. All plant materials shall be first class representatives of their normal species or variety unless otherwise specified. Plants shall have a habit of growth that is normal for their species and shall be healthy, shapely, well rooted and vigorous. All plant materials shall be free from insects, pests, plant diseases and injuries. The containers of all plants delivered to the site shall be free from weeds or grasses which could be considered noxious or objectionable. **All plant material shall be equal to or exceed the size requirements specified on the plans.** Plants shall be measured after pruning with branches in their normal position. The requirement for measurement, branching, grading and quality of plants generally follows the code of standards currently recommended by the American Association of Nurserymen, in the American Standard for Nursery Stock.
2. **The Owner must approve all plant material prior to planting.** Plant material having the following features may be subject to rejection;
 - a. Excessive amount of abrasions to the bark.
 - b. Dried or damaged root system.
 - c. Dried or damaged top wood of deciduous plants or dried, damaged foliage and top wood on evergreens.

- d. Prematurely opened or damaged buds.
 - e. Disease or insect infestation, including eggs or larvae.
 - f. Dry, loose, cracked, broken or undersized root balls or containers which do not conform to the sizes shown on the plans.
 - g. Evidence of heating, molding, freezing, wind burn, sun scald, etc.
 - h. Root-bound or overgrown.
 - i. Plants with bench balls (roots repacked with soil).
 - j. Plant balls encased in non-biodegradable plastic or other impervious material.
 - k. Field grown or collected plants transferred into containers for less than six (6) months.
 - l. Plants with disfiguring knots or fresh cut branches greater than one (1") inch that have not completely calloused.
 - m. Plants that do not exhibit a normal balance between height and spread for their species.
 - n. Plant containers that are not structurally sound.
 - o. Plants in containers with a less than a three-quarter (3/4) planting medium depth.
 - p. Any physical damage or adverse condition that would prevent thriving growth or cause an unacceptable appearance.
 - q. Plants that do not meet the size requirements shown on the plans.
3. The balls of B&B plants which cannot be planted immediately upon delivery shall be covered with moist soil or mulch or otherwise protected from drying winds and the sun.
4. All plants shall be watered as necessary until planting.
- C. All plants shall conform to the measurements specified in the Plant Schedule included in the drawings. The specified sizes shall be the minimum size acceptable for each plant variety.
- D. All plants shall be nursery grown. Nursery grown plants shall be defined as plants which are healthy, vigorous plants lined out in rows at a nursery and which are annually cultivated, sprayed, pruned and fertilized in accordance with good horticultural practices.
- E. Plants larger in size than specified in the Plant Schedule may be used if approved by the Owner's Representative and there is no additional cost.
- F. Plants designated as B&B on the plans shall be balled and burlapped. Plants shall be dug with firm, natural balls of earth of sufficient diameter and depth to encompass the fibrous and feeding root system necessary for full recovery of the plant. Balls shall be firmly wrapped with burlap or similar materials and bound with twine, cord or wire

mesh. Where necessary, to prevent breaking or cracking of the ball during the delivery and planting process, the ball may be secured to a platform.

- G. No plant shall be bound with wire or rope at any time so as not to damage the bark or break the branches.
- H. Substitutions will not be permitted unless approved by the Owner. The Contractor must make every effort to locate and acquire the specified plants in a timely manner.
- I. Plants shall be loaded and protected during delivery and after arrival at the project site against wind damage or other injuries and at no time shall plants be stored on paved surfaces or allowed to dry out.
- J. All plants shall be handled so that roots are adequately protected at all times from drying out and from injury.

2.06 COMPOSITE EDGING

- A. The edging separating the plant beds from turf areas shall be a composite edging. The edging shall be four (4") inches tall, brown and shall be manufactured from wood components and recycled plastic. Product is Epic Edge manufactured by Epic Plastics, www.epicplastics.com or approved equal.
 - 1. Contractor shall submit manufacturer's literature on the edging for approval by the Owner.

2.07 DECOMPOSED GRANITE

- A. Rock Mulch shall be decomposed granite.
 - 1. Submit a one (1) gallon sample of the decomposed granite for the Owner's approval.

2.08 WEED CONTROL FABRIC

- A. Weed control fabric shall be Plantex Pro non-woven polypropylene weed control fabric manufactured by DuPont or approved equal.

2.09 DECOMPOSED GRANITE STABILIZER

- A. Stabilizer for Stabilized Aggregate surfaces provided by the following manufacturer:
 - 1. Stabilizer Solutions, Inc. 33 South 28th St., Phoenix, AZ 85034; phone (602) 225-5900, (800) 336-2468; fax (602) 225-5902; website stabilizersolutions.com; email info@stabilizersolutions.com

2.09 MEXICAN BEACH PEBBLES

- A. Mexican Beach Pebbles shall be three to five (3 to 5") inches diameter grey smooth beach pebbles.

PART 3 – EXECUTION

3.01 LAYOUT

- A. Location and spacing for plants and outline of areas to be planted shall be as denoted by stem location or by notations on the plans.

3.02 BED PREPARATION

- A. Prior to bed preparation the Contractor shall apply Round-Up herbicide to all bed areas. Follow manufacturer's recommendations as to the timing requirements for effective weed control.
- B. Planting areas shall be dug and soil fully prepared, graded and made ready to receive the plant material before delivery of plant material. After planting, all beds shall be finished graded one (1") inch above the adjacent grade to allow for settling.
- C. Plant beds shall be excavated to a depth of two (2") inches to accommodate two (2") inches of compost. After the compost is spread the beds shall be tilled to a depth of eight (8") inches.
- D. Texas Green Sand shall be tilled into the prepared soil mix at a rate of eighty (80) pounds per one thousand (1000) square feet.
- E. The bed edge for all beds not enclosed by concrete paving, concrete edging or building foundations shall be steel edging.

3.03 SETTING THE PLANTS

- A. All plants shall be planted in pits or beds as shown on the plans, centered and set to touch such depth that the top of the root ball will be one (1") to two (2") inches above finished grade. Root flare must be visible after planting. Each plant shall be planted plumb and faced to give the best appearance or relationship to adjacent plants or structures. Twine or wire shall be cut so that the burlap covering the top of the B&B root balls can be pulled back. Burlap shall not be pulled out from under root balls. All broken or frayed roots shall be cut off cleanly.

- B. Soil shall be placed carefully in planting pits to avoid injury to roots and to fill all voids. When the planting pit is nearly filled, add water and fertilizer and allow it to soak away.

3.04 GRADING

- A. After planting all bed areas shall be fine graded to slope soil as shown on the plans.

3.05 MULCHING

- A. After fine grading all bed areas will be covered with two (2") inches of mulch completely covering the entire bed area. Root flares must be visible after mulching.

3.06 DECOMPOSED GRANITE PREPARATION

- A. Base shall be a four (4") inch compacted layer of crushed granular road base. Make any corrections necessary to base furnished and installed to bring gravel to the elevations shown on the drawing.
- B. Pre-soak base material with water and compact to 95% determined by Test Method ASTM D 1557.

3.07 DECOMPOSED GRANITE BLENDING

- A. Stabilizer® shall be thoroughly pre-mixed with the decomposed granite at the rate of 15-lbs of Stabilizer® per 1-ton of aggregate. Verify with Stabilizer Solutions, Inc. for correct Stabilizer® rate for project and climate conditions. Stabilizer shall be mechanically pre-mixed per manufacturer's recommendations using an approved mechanical blending unit that will adequately mix and blend Stabilizer® with aggregate. Always blend Stabilizer® and aggregate DRY.

3.08 DECOMPOSED GRANITE PLACEMENT

- A. Place the Stabilized Aggregate directly on a prepared base, and rake smooth to desired grade and cross section. Place material to sufficient depth to allow for a two (2") inch depth after compaction.

3.09 DECOMPOSED GRANITE WATERING

- A. Water heavily for full-depth moisture penetration of profile. Water activates Stabilizer®, saturate to total depth. Apply twenty five to forty five (25 to 45) gallons of water per ton.
- B. Contractor shall wait a minimum of six (6) hours and a maximum of seventy two (72) hours or until such time that the decomposed granite is able to accept compaction from a two to five (2 to 5) ton roller without separation, plowing or any other physical compromise of the aggregate.
- C. If surface aggregate dries significantly quicker than subsurface material, lightly mist surface before compaction.

3.10 DECOMPOSED GRANITE COMPACTION

- A. Compact decomposed granite to eighty five (85%) percent compaction with a roller using three to four (3 to 4) passes. DO NOT use a vibratory plate compactor or vibration feature on roller, as vibration separates large aggregate particles. If pumping or pancaking of surface occurs, surface is still too wet to roll.
- B. Lightly spray surface area following compaction. Do not disturb aggregate surface with spray action.

3.11 DECOMPOSED GRANITE FINISH

- A. Finished surface of decomposed granite shall be smooth, uniform and solid. Cured and compacted surface shall be firm throughout profile with no spongy areas. Loose material shall not be present on the surface after installation, but may appear after use and according to environmental conditions. Surface shall remain stable underneath the loose granite on top with a 'natural' look. Any significant irregularities in Stabilized Aggregate surface shall be repaired to the uniformity of entire installation.

3.12 MEXICAN BEACH PEBBLE INSTALLATION

- A. Install boulders, flagstone and river cobbles per the details on the plans.

3.13 CLEANUP

- A. After planting all excess soil, bed preparation material, fertilizer and plant containers shall be removed from the site.

3.12 MAINTENANCE

- A. The Contractor is responsible for watering, weed control and other necessary maintenance until final acceptance of all work.

3.13 GUARANTEE

- A. All shrubs, native grass and ground cover shall be guaranteed for one (1) year. Guarantee shall begin upon final acceptance by the Owner.
- B. At the end of the guarantee period an inspection will be made by the Owner and Contractor. Any plant material that is dead or does not exhibit a satisfactory growth condition shall be removed and replaced with plant material that is similarly sized with the surrounding plant material at no cost to the Owner.

END OF SECTION

SECTION 32 93 43

TREE PLANTING

PART 1 – GENERAL

1.01 SCOPE

- A. The work included in this section includes all fine grading of bed areas, soil preparation and planting associated with shrub, native grass and ground cover planting. Furnish all labor, materials, equipment and services as herein specified and as indicated on the drawings

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. SECTION 32 92 00 – Turfgrass Planting
- B. SECTION 32 94 00 – Shrubs, Native Grass and Ground Cover Planting

1.03 QUALITY ASSURANCE

- A. Comply with all applicable federal, state, county and local regulations governing landscape materials and work.
- B. Provide quantity, size, genus, species, and variety of the scheduled trees that comply with applicable requirements of ANSI Z60.1 “American Standard for Nursery Stock”.
- C. Measure trees with branches and trunks or canes in their normal position. Do not prune to obtain the required sizes. Caliper measurements shall be taken six (6”) inches above the ground for trees up to and including four (4”) inch caliper and twelve (12”) inches above the ground for larger trees. Measure the main body of all trees for height and spread dimensions.
- D. Trees shall be approved by the Owner’s Representative before planting. Tree approval shall be based on compliance with requirements for genus, species, variety, size and quality. Trees shall be inspected for size and condition of the root ball and root systems, insects, injuries, latent defects and unsatisfactory or defective trees. The Contractor shall remove rejected trees immediately from the project site and replace the rejected trees with acceptable trees at no cost to the Owner.

1.04 DELIVERY, HANDLING AND STORAGE

- A. Do not prune trees prior to delivery unless approved by the Owner’s Representative. Provide adequate protection of the root systems and foliage from drying wind and sun. Do not bend or bind trees in such a manner that would damage the bark, break

branches or destroy the trees natural shape. Provide protective coverings during delivery. Any tree in full leaf will be sprayed with an anti-desiccant prior to delivery.

- B. Deliver trees after preparations for planting have been completed and then plant immediately. If tree planting is delayed for more than six (6) hours after delivery set the trees in the shade, protect them from the weather and construction damage and keep the roots moist.
- C. Do not remove trees from their containers until they are ready to be planted.
- D. While waiting to be planted trees shall not be stored on pavement or any surfaces which reflect a large amount of heat during storage.
- E. All trees shall be handled carefully so that the roots are adequately protected from drying out and from injury. The balls of balled and burlapped trees which cannot be planted immediately upon delivery shall be "heeled in" for protection with soil, mulch or other acceptable material.

1.05 JOB SITE CONDITIONS

- A. Tree planting shall not take place between the months of June through August unless approved by the Owner's Representative.
- B. Protect all paved areas, lawn and bed areas from damage during tree installation. Any damage will be repaired by the Contractor at no cost to the Owner.

1.06 GUARANTEE AND REPLACEMENT

- A. All trees installed as a part of this contract shall be guaranteed to remain alive and in a healthy, vigorous condition for a period of two (2) years from the date of final acceptance of the landscape installation.
- B. During the guarantee period the Contractor will replace all trees that are dead, dying, have an unsightly growth habit or exhibit an unhealthy appearance as determined by the Owner's Representative. Trees shall be replaced with the specified tree. Trees must be replaced within fifteen (15) days of written notification from the Owner's Representative and at no cost to the Owner.
- C. Warranty shall not include damage or tree loss due to Acts of God, theft, fire, vandalism, or negligence on the part of the Owner.

PART 2 – PRODUCTS

2.01 SOIL AMMENDMENTS

- A. Fertilizer shall be a slow release granulated organic fertilizer. Acceptable products include Garden-Ville Soil Food Select containing a 6-2-2 (N-P-K) ratio of nutrients, Sustane containing a 5-2-4 (N-P-K) ratio of nutrients or approved equal.
 - 1. Fertilizer shall be delivered in standard containers that identify the weight, analysis and name of the manufacturer. Fertilizer shall be stored in a weatherproof storage area and will be stored in such a way that it will remain dry and its effectiveness not be compromised. Any fertilizer that gets wet or is otherwise damaged making it unsuitable for use will not be accepted.
 - 2. Submit a sample label or specifications of the fertilizer proposed for approval by the Owner's Representative.
- B. Root stimulator shall be Maxicrop or Garden Ville brand liquefied seaweed or approved equal.
- C. Mulch shall be shredded hardwood mulch free of stones, clay or other foreign materials.
 - 1. Submit a one (1) quart sample of the proposed mulch for approval by the Owner's Representative.
- D. Weeds shall be controlled with Round-up as manufactured by Monsanto, Inc. or approved equal.
- E. Contractor shall supply the Owner's Representative with copies of all invoices and delivery tickets for soil amendments.
- F. Water shall be available via the irrigation system. Water required in connection with tree planting will be furnished and paid for by the Owner provided it is not used in a wasteful manner. Any hose or water equipment necessary for tree watering must be supplied by the Contractor.

2.02 TREE STABILIZATION

- A. Trees shall be stabilized by means of an at-grade or sub-grade root stabilization system. The recommended system is to be Arbor Stake Tree Staking System or approved equal.

2.03 TREES

- A. Provide trees grown in a recognized nursery in accordance with good horticultural practices with healthy root systems developed by transplanting or root pruning. Provide only healthy stock free of disease, insects, eggs, larvae and defects such as sun scald, knots, injuries, abrasions or disfigurements. Tree trunks will be centered in the root ball. Pruning cuts larger than three-quarter (3/4") inches will be cause for rejection.
- B. The names and locations of the trees are as noted on the drawings. The nomenclature of all trees is per Hortus Third by L.H. Bailey. Plant material not conforming to this reference will be rejected.
- C. All trees shall be first class representatives of their normal species or variety unless otherwise specified. Trees shall have a habit of growth that is normal for their species and shall be healthy, shapely, well rooted and vigorous. The containers of all trees delivered to the site shall be free from weeds or grasses which could be considered noxious or objectionable. **All trees shall be equal to or exceed the size requirements specified on the plans.** Trees shall be measured after pruning with branches in their normal position. The requirement for measurement, branching, grading and quality of trees generally follows the code of standards currently recommended by the American Association of Nurserymen, in the American Standard for Nursery Stock.
- D. Label all trees with a securely attached waterproof tag bearing the botanical and common name.
- E. **The Owner must approve all trees prior to planting.** Trees having the following features may be subject to rejection;
 - a. Excessive amount of abrasions to the bark.
 - b. Dried or damaged root system.
 - c. Dried or damaged top wood of deciduous trees or dried, damaged foliage and top wood on evergreens.
 - d. Prematurely opened or damaged buds.
 - e. Disease or insect infestation, including eggs or larvae.
 - f. Dry, loose, cracked, broken or undersized root balls or containers which do not conform to the sizes shown on the plans.
 - g. Evidence of heating, molding, freezing, wind burn, sun scald, etc.
 - h. Root-bound or overgrown.
 - i. Trees with bench balls (roots repacked with soil).
 - j. Root balls encased in non-biodegradable plastic or other impervious material.
 - k. Field grown or collected trees transferred into containers for less than six (6) months.
 - l. Trees with disfiguring knots or fresh cut branches greater than one (1") inch that have not completely calloused.

- m. Trees that do not exhibit a normal balance between height and spread for their species.
- n. Containers that are not structurally sound.
- o. Trees in containers with a less than a three-quarter (3/4) planting medium depth.
- p. Trees which have a damaged, pruned, crooked, malformed leaders or multiple leaders unless multiple leader are normal for their species and is the specified tree
- q. Any physical damage or adverse condition that would prevent thriving growth or cause an unacceptable appearance.
- r. Trees that do not meet the size requirements shown on the plans.

2.03 REQUIREMENTS FOR CONTAINER GROWN STOCK

- A. Provide healthy, vigorous, well rooted trees established in the containers in which they are sold.
- B. Balled and burlapped stock is required when the trees exceed the maximum size recommendations per ANSI Z60.1 for container grown stock.
- C. Established container stock is defined as a tree grown in or transplanted and grown in a container for a minimum of six (6) months so that tree can develop a new fibrous root system and possess a critical root mass that will retain its shape and will hold together when the container is removed.
- D. Use rigid containers which will hold the ball shape and will protect the root ball during shipping.

2.04 REQUIREMENTS FOR B&B STOCK

- A. Trees designated as B&B on the plans shall be balled and burlapped. Trees shall be dug with firm, natural balls of earth of sufficient diameter and depth to encompass the fibrous and feeding root system necessary for full recovery of the tree. Balls shall be firmly wrapped with burlap or similar materials and bound with twine, cord or wire mesh. Where necessary, to prevent breaking or cracking of the ball during the delivery and planting process, the ball may be secured to a platform.

PART 3 – EXECUTION

3.01 GENERAL

- A. Cooperate with other trades and contractors working in and adjacent to landscape areas.
- B. Stake individual tree locations and secure the Owner's Representatives acceptance before start of tree installation.
- C. Prior to planting eradicate all weeds and plant material with Round-Up per the manufacturer's recommendations.

3.02 EXCAVATION

- A. Excavate tree pits with roughened sides of the tree pit. Leave the soil in the bottom of the tree pit undisturbed.
- B. Save excavated soil to be used for backfilling the tree pit.
- C. All tree planting pits shall be excavated two and one-half (2 ½) times the diameter of the root ball.
- D. If rock, underground utilities or other obstructions are encountered while excavating tree pits notify the Owner's Representative to determine whether the obstruction will be removed or the tree location will be moved.
- E. After excavation test the tree pit for adequate percolation. If subsoil conditions indicate the retention of water in the tree pit or if seepage is encountered notify the Owner's Representative before planting the tree. A determination will be made if a drainage pipe or other drainage measures will be required.

3.03 TREE PLANTING

- A. Before backfilling clean the excavated soil of roots, plants, stones, clay lumps or other extraneous material that would be harmful or toxic for tree growth.
- B. Set trees on undisturbed soil in a plumb position and centered in the tree pit. Trees shall be faced to give the best appearance or relationship to adjacent plants and structures. The top of the root ball shall be one and one-half (1 ½") to two (2") inches above the finish grade. Remove burlap from the top of the root ball but do not remove the sides or bottom. Remove any wire or twine that is securing the root ball.
- C. Remove and replace any trees where the ball is broken or cracked during planting operations.

- D. After tree is set in place the excavated soil shall be carefully placed around the sides and base of the root ball. After the backfilling is complete water thoroughly to settle the backfill.
- E. After planting apply the specified root stimulator and fertilizer at the application rates recommended by the manufacturer.
- F. Immediately after planting install the tree stabilization system as shown on the plans.
- G. Create a shallow saucer of excavated soil around the tree pit.
- H. After planting apply a two (2") layer of hardwood bark mulch **paying special attention not cover the trees root flare.**
- I. Unless otherwise directed by the Owner's Representative, do not cut tree leaders but remove any injured or dead branches. Any pruning shall be in accordance with standard horticultural practices. If after pruning, the tree has become misshapen or changed in its appearance the tree will be rejected and must be removed and replaced.

3.04 CLEAN UP

- A. After all tree planting operations are complete remove all trash, excess soil, empty containers and construction debris from the property.
- B. All damage to the surrounding area during tree installation shall be repaired back to its original condition.

3.05 MAINTENANCE

- A. Tree maintenance shall occur until final acceptance of the landscape installation. Maintenance shall include watering, pruning, fertilization, weeding and the application of appropriate herbicides, insecticides and fungicides as necessary.
- B. If a tree settles the tree shall be removed, re-set, re-staked and the mulch redistributed.

END OF SECTION