

Bufferyard Requirements (Calculations are combined with same Bufferyard requirement on sheet L102)

Per City of Orlando Land Development Code, Section 60.220(a), minimum 80% tree canopy coverage, minimum 20' width and completely opaque up to at least 6' within 3 years and may utilize masonry wall, berm, planted and/or existing vegetation.
 Per City of Orlando LDC, Section 61.312(c)(3), one (1) tree every 50 LF at min. 2" DBH and 12' height is required for VUAs adjacent to property lines and public right-of-way. Non-residential, multi-family and industrial shall also contain a continuous row of evergreen shrubs and ground cover not to exceed 4' in height and have min. 18" ht. at time of planting. Where canopy trees impractical, (3) understory trees or palms may be used in lieu of each canopy tree.

Total VUA Length: 1311.0 LF
 Total Trees Required: 27 Trees Required and 33 Provided

Bufferyard Requirements

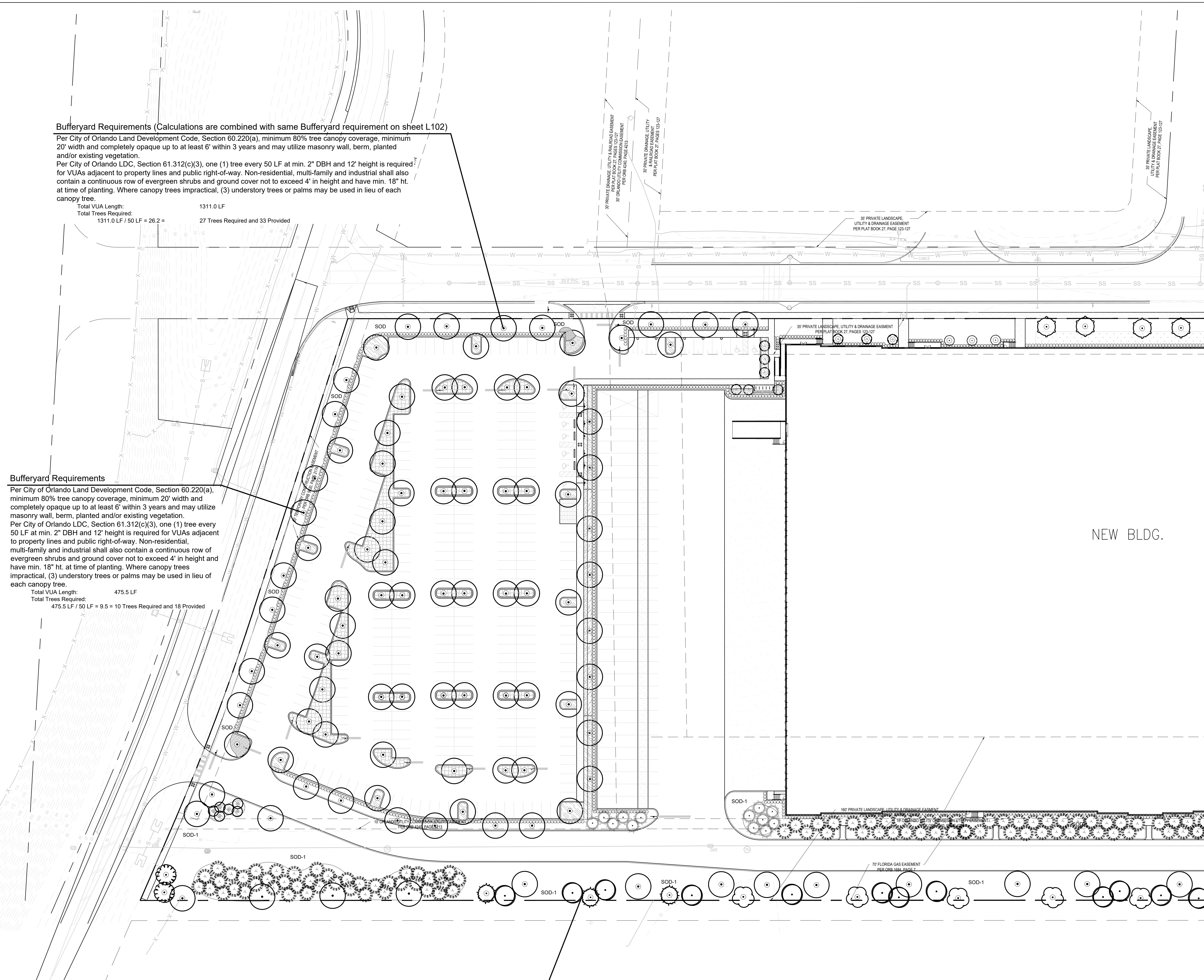
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Total VUA Length: 475.5 LF
 Total Trees Required: 10 Trees Required and 18 Provided

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Total VUA Length: 1478.1 LF
 Total Trees Required: 30 Trees Required and 96 Provided



MATCH LINE - SEE SHEET L102

CONCEPTUAL LANDSCAPE PLAN
PROPOSED SHELL BUILDING
AIPO TRACT T15/T16
PROLOGIS
 CITY OF ORLANDO, FLORIDA

MASTER PLAN 8-20-24

Issue Date and Purpose	
Project Number:	2421
Drawn By:	CJM
Checked:	RVM
File No:	806205/242042

NOTE: Project will be 100% irrigated with head-to-head coverage. System will be equipped with an automatic rain cut-off switch.

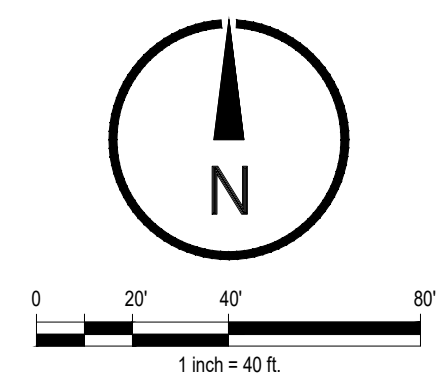
Seal: Ramon V. Murray, LA00001383

CONCEPTUAL LANDSCAPE PLAN
PROPOSED SHELL BUILDING
 AIPO TRACT T15/T16
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MASTER PLAN 8-20-24

Issue Date and Purpose	
Project Number:	2421
Drawn By:	CJM
Checked:	RVM
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L102



Bufferyard Requirements (Calculations are combined with same Bufferyard requirement on sheet L101)

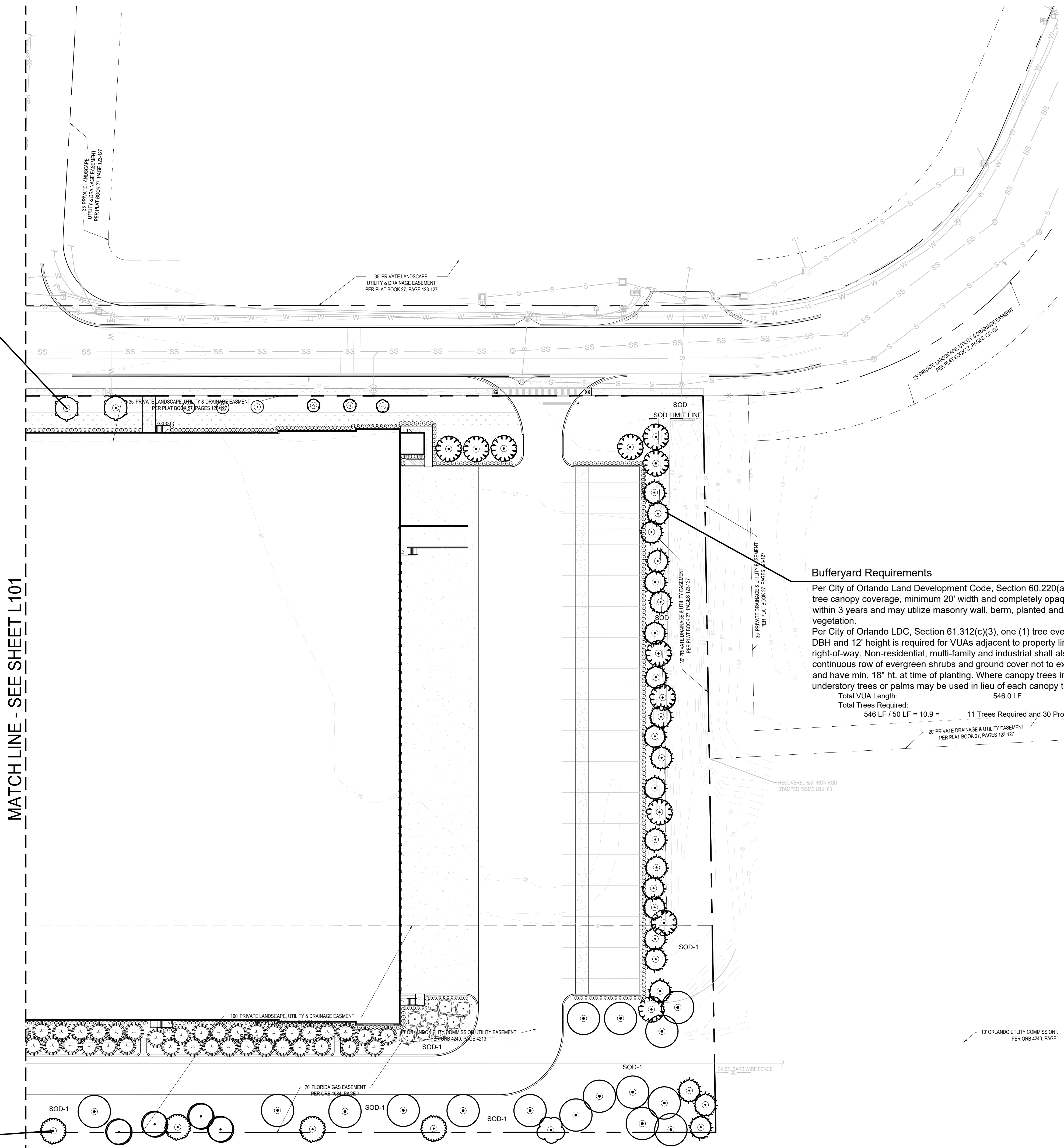
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Total VUA Length: 1311.0 LF
 Total Trees Required: 1311.0 LF / 50 LF = 26.2 = 27 Trees Required and 33 Provided

Bufferyard Requirements (Calculations are combined with same Bufferyard requirement on sheet L101)

Per City of Orlando Land Development Code, Section 60.220(a), minimum 80% tree canopy coverage, minimum 20' width and completely opaque up to at least 6' within 3 years and may utilize masonry wall, berm, planted and/or existing vegetation.
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Total VUA Length: 1478.1 LF
 Total Trees Required: 1478.1 LF / 50 LF = 29.6 = 30 Trees Required and 96 Provided



MATCH LINE - SEE SHEET L101

Bufferyard Requirements

Per City of Orlando Land Development Code, Section 60.220(a), minimum 80% tree canopy coverage, minimum 20' width and completely opaque up to at least 6' within 3 years and may utilize masonry wall, berm, planted and/or existing vegetation.
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Total VUA Length: 546.0 LF
 Total Trees Required: 546 LF / 50 LF = 10.9 = 11 Trees Required and 30 Provided

NOTE: Project will be 100% irrigated with head-to-head coverage. System will be equipped with an automatic rain cut-off switch.

Orlando Non-Residential and Multifamily Landscape Worksheet
 Project Name: AIPO TRAC T15-16 Permit Application #:
 Project Address: Tradeport Drive CO

A. Directions
 (1) Fill in shaded boxes only.
 Required Development Factor: 0.35
 Minimum Required Landscape Score (MRLS): 292,922
 Project Landscape Score: 293,599

(2) Development Type will determine the Development Factor below:

Development Type	Floor Area Ratio	Dwelling Unit per Acre	Development Factor
-Office, Commercial, or Mixed-Use*	Less than 0.75	N/A	0.4
-Office, Commercial, or Mixed-Use*	0.75 or more	N/A	0.3
-Multifamily	N/A	Less than 24 du/acre	0.4
-Multifamily	N/A	24 du/acre or more	0.3
-Industrial	All	N/A	0.3
-Planned Development (PD)			Add 0.05 to applicable score noted above

(3) Minimum Required Landscape Score = Total Site Area x Development Factor
 (4) Input the following Site Information
 Total Site Area** 836,921 sq ft
 Impervious Area On Site 657,741 sq ft
 Calculated DBH 78.59
 Gross Floor Area* 322,152 Sq. Ft.
 Dwelling Units* 0
 Development Type Industrial
 Planned Development Zoning Yes Y/N

* Only Multifamily developments are based on Dwelling Units per Acre. For all other development types, including Mixed-use with residential, input the Gross Floor Area of the buildings.
 ** Do not include public rights-of-way in the Total Site Area calculations; however, new landscaping in the adjacent ROW may be counted towards the score.

B. General Requirements

Requirement	Met/Unmet
(1) No Category I Invasive Species (as listed by FLEPPC) shall be installed.	Met
(2) All landscape plants shall be Florida #1 or better.	Met
(3) Cypress mulch and rubberized mulch-substitute are prohibited.	Met
(4) Landscape plans shall show all underground and overhead utilities and transformers. Trees over 25 ft. ht. at maturity shall not be planted under utility lines.	Met
(5) A Florida-registered Landscape Architect shall sign and seal landscape plans greater than 1/2-acre.	Met

C. Landscape Point Categories

(1) Irrigation
 Requirement: All requirements of City Code Chapter 60, Part 2-1 shall be met.
 Irrigation system includes:
 a. Evapotranspiration (ET) Irrigation System Controller; or Low-Volume Irrigation System used for 75% of the irrigated area. Met add: 4% 11717
 b. At least one Soil-Moisture Sensor is provided micro-climate type. N/A add: 3% 0
 c. Rainwater Harvesting System from retention ponds, cisterns, or rain-barrels. N/A
 Irrigation Requirements add: 0
 Available Captured Rainwater up to: 10% add: 10% 0
 d. No Permanent In-Ground Irrigation System w/ landscaping; requires Zoning Official approval and provision for establishment irrigation. add: 10% 0

(2) Existing Tree Canopy - (include trees in right-of-way)
 Requirement: Show tree protection plan in the landscape plan. Met
 Requirement: Certify that preserved trees for which points are requested are not Category I or II Invasive Species as listed by Florida Exotic Pest Plant Council. Met
 Preservation of trees - calculated at 40 sq ft per inch
 a. Enter the total number of diameter at breast height (dbh) inches for all preserved trees greater than 6" dbh. Relocated trees may be included. 1.5 0

(3) New Tree Canopy - (include trees in right-of-way)
 Requirement: All street trees shall have moderate or better wind-resistance. (see Fig. 12, Approved Plant List). Met
 Requirement: Newly installed trees of 2" caliper or greater shall be anchored to maintain tree in a vertical upright position for at least one year. Met
 a. Understory Trees (min. 8' ht.) or Palm Trees (min. 8' clear trunk) - calculated at 200 sq ft per tree. 24 4,800 0.4 1920
 Canopy Trees - calculated at 800 sq ft per tree
 b. 2" - 3.5" caliper (2" dbh is the minimum size to qualify for points) 149 119200 0.5 59600
 c. Greater than 3.5" caliper 190 152000 0.9 136800
 Trees calculated above may also utilize categories d - e below
 d. Flowering, fruit trees, and nut trees - calculated at 200 sq. ft. per tree. 234 46,800 0.1 4680
 e. All new canopy trees installed have moderate or better wind-resistance. Met add: 1% 2929

(4) Tree Diversity
 Enter number of tree species on site, including both preserved and installed trees. 15 add: 0.5% 21969

(5) Turfgrass and Ground Covers
 Requirement: Turfgrass shall not exceed 60% of the landscaped areas, excluding stormwater management areas, ball fields, and park space.
 a. Argentine Bahiagrass 79229 0.1 7923
 b. Other turfgrass 40430 0.05 2022
 c. Ground Cover Plants (see Fig. 12, Approved Plant List) 1770 0.4 708

(6) Shrubs (see Fig. 12, Approved Plant List)
 a. Small Shrubs - calculated at 5 sq ft per plant 3160 15,800 0.4 6320
 b. Medium and Large Shrubs - calculated at 16 sq ft per plant. 1428 22,848 0.4 9139.2
 Ground covers and shrubs calculated above may also utilize categories d - f below
 c. Drought-Tolerant or Native Plants - calculated at 10 sq ft per plant. Enter # of Drought-Tolerant or Native Plants (do not count trees). 4588 45,880 0.3 13764
 d. Enter # of Flowering Plants and Butterfly/Hummingbird Plants - calculated at 10 sq ft per plant. 4588 45,880 0.1 4588
 e. Plant Diversity
 Enter # species of groundcover, small shrubs, medium shrubs, large shrubs, grasses, vines, and aquatic plants. 13 add: 0.25% 9520

(7) Green Roofs - potted plants will not be considered a green roof
 -requires growth medium greater than 4". Qualifying plantings may also qualify for points in (3) - (6) above. 0 0.8 0

(8) Vegetative Screens and Walls - measured in vertical area. 0 0.5 0

(9) Landscaping of Water Bodies and Storm Water Management Ponds
 a. Provide an upland buffer area of non-turf grass landscaping that is a minimum 25 ft. in width along 75% of the length of a natural water body. N/A add: 2% 0
 b. Provide landscaping of dry detention ponds. Area of Pond 0 0.3 0
 Area of non-turfgrass planted along bases or banks (not to exceed 3:1 slope) of stormwater ponds: 0

Wet Detention Ponds
 c. Requirement: For new wet detention ponds, meet Florida Code 40C-42. N/A
 d. For existing ponds, landscape at least 75% of the linear wet detention edge with native aquatic plants and trees (min. 6" width band). N/A 2% 0
 Underground Stormwater Management
 e. Provide at least 75% of stormwater management underground. N/A add: 5% 0
 f. Provide 75% stormwater detention/retention storage in offsite shared retention area. N/A add: 2% 0

Rain gardens
 g. Provide depressions to collect and store stormwater, and landscape with appropriate plantings (do not calculate stormwater ponds). Area of Bioretention zone 0 0.5 0

(10) Hardscape
 a. Provide permeable pavement that allows percolation to the soil below. Total Pervious Paved Surface 0 0.6 0

(11) Food Cultivation - (calculate plantings in Sections (3)-(6) above)
 -Provide dedicated areas for food production. 0 0.1 0

Project Score 293598.854

Seal: Ramon V. Murray, LA00001383

MASTER PLAN 8-20-24

Seal: Ramon V. Murray, LA00001363

Murray Design Group
 LANDSCAPE ARCHITECTURE
 246 North Westmonte Drive
 Altamonte Springs, FL 32714
 Phone: (407) 340-1105
 www.rmdgplan.com

LANDSCAPE SPECIFICATIONS

PROPOSED SHELL BUILDING

AIPO TRACT T15/T16

PROLOGIS

CITY OF ORLANDO, FLORIDA

MASTER PLAN 8-20-24

Issue Date and Purpose	
Project Number:	2421
Drawn By:	CW
Checked:	RVM
Title No:	806295242042
L301	

PART 1.00 GENERAL

1.01 WORK INCLUDED

A. LANDSCAPING

1. Provide all labor, materials, plant materials, soil additives, soil preparation, aesthetic and fine grading, fertilizing, mulching, planting, pruning, disease equipment, services, and maintaining plantings until final acceptance to specifications. Such approval shall not impair the right of inspection and rejection during progress of work. Inspection and tagging of plant material by Owner Representative's approval of the plant material in regards to their health and vigor. The health and vigor of the plant material is the sole responsibility of the Contractor. Trees that are found damaged or root bound are to be rejected prior to planting.

1.02 RELATED WORK SPECIFIED ELSEWHERE

A. IRRIGATION SYSTEM: Section 02960

1.03 QUALITY ASSURANCE

A. REFERENCE SPECIFICATIONS AND STANDARDS
 1. Standards as established by the Florida Nursery Growers Association (FNGA).

B. TESTS AND INSPECTIONS

1. Plants shall be subject to inspection and approval of the Owner's representative at place of growth and/or upon delivery for conformity to specifications. Such approval shall not impair the right of inspection and rejection during progress of work. Inspection and tagging of plant material by Owner Representative's approval of the plant material in regards to their health and vigor. The health and vigor of the plant material is the sole responsibility of the Contractor. Trees that are found damaged or root bound are to be rejected prior to planting.
 2. The Landscape Contractor shall be responsible for proper plant growth in existing on-site soils. Prior to commitment of plant shipments, the Contractor shall examine the soils in all areas of work by conducting soil tests and filling test holes with water to determine if soil chemistry and drainage is satisfactory. Any unsatisfactory conditions shall be brought to the immediate attention of the Owner's Representative for possible remedial action or plant material substitutions. The Owner's Representative reserves the right to make changes or substitutions in plant type or quantities for the purposes of insuring proper plant growth. Any failure of plant material during the warranty period due to soil conditions shall be the responsibility of the Landscape Contractor.
 3. The Landscape Contractor shall test the irrigation water source to verify that the quality of water is suitable for the plant material prior to planting. Any findings of unsuitable water shall be immediately brought to the Landscape Architect and Owner's Representative attention for a solution. Any failure of plant material during the warranty period due to water source shall be the responsibility of the Landscape Contractor.

C. PERFORMANCE

1. All planting shall be performed by personnel familiar with planting procedure and under supervision of a qualified planting foreman.
 2. All work shall comply with applicable codes and regulations.
 3. The work shall be coordinated with other trades to prevent conflicts.

1.04 SUBMITTALS

A. Submit documentation to Owner's Representative within fourteen (14) days after award of Contract, indicating quantities of plant material availability and source of plant material. Contractor shall be responsible for all material listed on the plant list unless noted otherwise. Any and all substitutions due to unavailability must be requested in writing prior to confirmation of order.
 B. All material shall be subject to inspection and approval by Owner's Representative. Contractor shall coordinate a material lagging trip with the Landscape Architect for all tree, specimen and accent materials as indicated in the pre-construction meeting.

1.05 PROJECT CONDITIONS

A. Sequencing: Do not commence planting until site grading, soil import, and preparation has been completed.
 B. Inspect and approve all sprinkler work and finish grading prior to start of shrub and groundcover planting as specified. Trees may be planted in advance of irrigation system installation provided adequate provision is made for interim watering at the Contractor's own expense.

1.06 WARRANTY

A. The Contractor shall guarantee all tree and shrub/groundcover plantings for a period of twelve (12) months, and all sod for six (6) months after the date of final acceptance. During this period, the Contractor shall continue the observation of plants and guarantee work. The Contractor shall submit monthly observation reports to the Owner with a copy to the Landscape Architect during the guarantee period. The purpose of these reports is to state any maintenance deficiencies observed. It is the Contractor's responsibility to report these to protect his guarantee. Failure to submit reports eliminates any claims that the guarantee is not valid due to improper maintenance by Owner.
 B. Replacement of Defective Plants: Any dead plants or plants showing indication of probable non-survival or lack of health and vigor, or which do not exhibit the characteristics to meet specifications, shall be replaced within two weeks of notice from Owner or Landscape Architect. All replacement plants shall be furnished/ installed at no additional cost to the Owner and shall be guaranteed for a period of twelve (12) months for all tree and shrub/groundcover replacements and for six (6) months for the replacement of sod after the date of the replacements. All replacements shall meet original specifications.
 C. The Contractor shall notify the Owner and Landscape Architect ten days prior to the end of the guarantee period and such guarantee shall be extended until notification is received.
 D. At the end of the guarantee period, all plants that are dead or in unsatisfactory growth shall be replaced within two weeks.

1.07 PRODUCT HANDLING

A. Delivery
 1. Plant transportation shall comply with all Federal and State regulations.
 2. Deliver fertilizer to site in original unopened containers bearing manufacturer's guaranteed chemical analysis, name, trademark and conformance to State Law.
 3. The Contractor shall furnish Owner's Representative receipts for all amendments.
 4. Deliver all plants with legible identification labels.
 a. Label trees, evergreens, bundles of containers of like shrubs or groundcover plants.
 b. Stake correct plant name and size indicated on plant list.
 c. Use durable waterproof labels with water-resistant ink, which will remain legible for at least 60 days.
 5. Protect plant material during delivery to prevent damage to root ball or desiccation of leaves.
 6. The Contractor shall notify the Owner's Representative three (3) days in advance of delivery of all plant materials and shall submit an itemized list of the plants in each delivery.
 B. Storage:
 Store plant material in shade and protect from weather.
 C. Handling: The Contractor is cautioned to exercise care in handling, loading, unloading, and string of plant materials. Plant materials that have been damaged in any way shall be discarded. If they have been installed, they shall be replaced.

1.08 VERIFICATION OF DIMENSIONS AND QUANTITIES

A. All scaled dimensions are approximate. Before proceeding with any work, carefully check and verify all dimensions and quantities. Immediately inform the Owner's Representative of any discrepancies between the Drawings, Specifications, and actual conditions. Do not do work in any area where there is a significant discrepancy until approval to proceed has been received from the Owner's Representative.

1.09 OWNER TAGGED MATERIALS

A. Contractor shall leave all tags on material previously tagged by the Owner's Representative until final acceptance.

1.10 JOB CONDITIONS

A. Protection: The Landscape Contractor shall protect all materials and work against injury from any causes and shall provide and maintain all necessary safeguards for the protection of the public. He shall be held responsible for any damage or injury to person or property, which may occur as a result of his negligence in the prosecution of the work.

1.11 PRODUCT HANDLING

A. Existing Conditions:
 1. The Landscape Contractor shall exercise care in digging and other work so as not to damage existing work including, but not limited to, plant material, irrigation materials, underground pipes and cables, and the pipes and hydrants of watering systems. Should such overhead or underground obstructions be encountered which interfere with planting, the Landscape Architect shall be consulted and will adjust the location of plants to clear such obstruction. The Landscape Contractor shall be responsible for the immediate repair of any damage caused by his/her work.
 2. Should any objectionable materials such as old concrete, bricks or other debris be encountered during planting operations, the Landscape Contractor shall bring it to the attention of the Owner to coordinate removal of the material from the site.
 3. The Landscape Contractor shall be responsible for proper plant growth in existing on-site soils. Any unsatisfactory conditions shall be brought to the immediate attention of the Landscape Architect for possible remedial action or plant material substitutions. The Owner/Landscape Architect reserves the right to make changes or substitutions in plant type or quantities for the purposes of insuring proper plant growth.

1.12 SAMPLE AND TESTS

A. Owner's Representative reserves the right to take and analyze samples of materials for conformity to specifications at any time. Contractor shall furnish samples upon request of Owner's Representative. Rejected materials shall be immediately removed from the site at Contractor's expense. Contractor shall pay cost of testing of materials not meeting specifications.

PART 2.00 PRODUCTS

2.01 MATERIALS

A. GENERAL

1. Nomenclature: All trees, shrubs and plants shall be true to name as established by the American Joint Committee on Horticultural Nomenclature publication "Standard Plant Names". The designated authority for the identification of all material shall be the two publications of L.H. Bailey, "Hortus III" and "Manual of Cultivated Plants", and all specimens shall be true to type, name, etc., as described therein.
 2. Grade Standards and Quality: All plants shall be nursery grown and shall comply with all required inspection, grading standards and plant regulations as set forth in the Florida Department of Agriculture, "Grades and Standards for Nursery Plants", Parts 1 and 2 including revisions.
 a. The minimum grade for all trees and shrubs shall be Florida No. 1 unless otherwise indicated and all plants shall be sound, healthy and vigorous, well branched and densely foliated when in leaf. They shall have healthy, well-developed root systems and shall be free of disease and insect pests, eggs or larvae.
 3. Measurements:

a. The minimum acceptable size of all plants, measured after pruning, with branches in normal positions, shall conform to the specified sizes as shown on the plans. Sizes specified are minimum standards. Plants shall be equal to or larger than all categories (height, spread, caliper, container) of size specification. Substantial deviations from these measurements must be on the plans. Sizes specified are minimum standards. Plants shall be approved by Landscape Architect. Caliper of tree trunks shall be measured one foot above root ball for trees under 6 inches in caliper.
 b. Clear trunk of all types of palms shall be measured from the finished grade to the beginning of the fronds. The banded portion of the head of the palm shall be in proportion to the overall height of the palm.
 4. Plant Protection: Plants shall be protected upon arrival at the site, by being thoroughly watered, kept moist, and properly maintained until arrival.

B. PLANTING MATERIALS: In reference to method of cultivation, root system status, plants for landscaping shall be classified under the following designations:

1. Container Grown Plants:
 a. Container grown plants shall have been grown in a container large enough and for sufficient time for the root system to have developed well to hold its soil together firm and whole. No plants shall be loose in the container. Plants, which have become root bound or for which the system is too large for the size of the container, will be acceptable.
 b. All containers shall be cut and opened fully, in a manner such as will not damage the root system. Container grown plants shall not be removed from the container until immediately before planting, when due care shall be taken to prevent damage to the root system.
 c. Any container grown material that was previously tagged for the job by the Owner/Landscape Architect shall have the looking tag visible on the tree until substantial completion has been awarded.
 2. Balled and Burlapped Trees:
 a. Plants so classified shall be dug with firm natural root balls of earth coming from singular climatic and soil conditions as those on the project site and of sufficient diameter and depth to include most of the fibrous roots. The root ball of these plants shall be properly wrapped with burlap sack material and remain protected and wet until they are planted. The plant shall be handled only by the earth ball and not by the plant itself. All balled and burlapped plants which cannot be planted immediately upon delivery shall be set on the ground and shall be well protected with soil, wet soil, wet moss, or other acceptable material. The plants shall be set with the burlap cover intact and with the burlap showing, until final inspection.
 b. Burlap: Shall be pure burlap, 100% organic material with the ability to decompose.
 c. Roots Plus: All Oak trees classified as balled and burlap shall be tagged as a roots plus product and the tag shall remain until substantial completion has been awarded. Any material previously tagged at a nursery by the Owner/Landscape Architect shall have the nursery's looking tag visible on the tree until substantial completion has been awarded.
 3. Bare Root Plants: No bare root plants shall be used unless otherwise specified.
 4. Grow Bag Plants: No grow bag plants shall be used.

C. Topsoil Materials:

1. Topsoil:
 a. Topsoil shall be a friable loam, typical of cultivated topsoils locally, containing at least 5 percent of decayed organic matter (humus). It shall be taken from a well-drained, arable site. It shall be reasonably free of weeds, subsoil, stones, clods, sticks, roots or other objectionable extraneous matter or debris. It shall not contain toxic materials and shall have an acidity range of pH 6.0 to 7.0. Topsoil from rut grass infested areas will not be acceptable.
 b. Soil testing shall be performed and analyzed by a laboratory registered by the state. Testing shall include fertility and suitability analysis with written recommendations for fertilizer or amendments, which shall take precedence over rates or analysis specified in this section. Soil testing shall be the Contractor's responsibility. Submit test results to the Landscape Architect for review.
 c. Soil Preparation: Prior to placing mix and backfill, or commencing with planting, notify any or all areas that have been previously compacted over 50 percent for other construction purposes.
 2. Fertilizer: Fertilizer shall be a complete balanced blend formula, of which part of the elements shall be derived from organic sources. It shall contain nitrogen, phosphorus and potassium as well as recommended micronutrients such as magnesium, iron, copper, zinc, boron, and manganese in soluble form. Nitrogen shall be applied over all turf, shrub and tree areas at a rate of 1 pound per 1,000 square feet. The complete fertilizer analysis shall be approved by the Landscape Architect.
 3. Weed Control: All planting beds shall be treated with the pre-emergent, Trifluralin, as manufactured by Elanco Products Company, Division of Eli-Lilly Company, Indianapolis, Indiana, or equal. Contractor shall apply the pre-emergent prior to mulching as per manufacturer's instructions.
 4. Mulch: Wood mulch shall be pine nugget mulch, grade #1, clean, bright and free of weeds, moss, sticks and other debris.
 5. Water: Suitable water for the irrigation of the new plantings during the progress of construction shall be provided and provided and paid for by the Contractor, who shall also furnish adequate watering equipment.
 6. Stakes and Ties: Stakes and tree ties shall be provided in accordance with the requirements of Paragraph 3.03.C.19 hereinafter.

PART 3.00 EXECUTION

3.01 INSPECTION

A. Insure that final grades to +/- 0.61m (0.20') have been established prior to commencing planting operations. Provide for inclusion of all amendments, settling, etc. Landscape Contractor shall be responsible for finish grading all planting areas as indicated on Civil Engineer's plans and as directed by the Owner's Representative.
 B. Inspect trees, shrubs and liner stock plant material for injury, insect infestation and trees and shrubs for improper pruning.
 C. Do not begin planting of trees until deficiencies are corrected or plants replaced.

3.02 PREPARATION

A. Soil Preparation:
 1. All planted areas to be planted shall be loosened to 30cm (12") except 2:1 or steeper slopes.
 2. Soil to be used for planting shall be free of rocks over 1.5cm (1/2") in diameter, and free of foreign debris, refuse, plants or roots, clods, weeds, sticks, solvents, petroleum products, concrete, base rock, or other deleterious or extraneous material. Soil shall be free of soil-borne diseases and capable of sustaining healthy plant life. Materials not meeting these specifications shall be removed.

B. Aesthetic Grading:

1. Contractor shall be responsible for regrading of ponds and berm grading as indicated on the aesthetic grading plans.
 2. Fill dirt, if required, shall be locally obtained material from naturally drained sources, free from dry, organic debris, stones larger than 1-inch diameter and other materials harmful to successful drainage and plant growth. Soil shall be well mixed and contain no more than 25 percent muck.
 3. Berms shall be gently rolling and parabolic with uniform levels or slopes with no more than 4:1 maximum slope.
 4. Contractor shall contact the Landscape Architect for approval of all aesthetic grading prior to any planting.
 C. Final Grades:
 1. Minor grading modifications may be required to establish the final grades.
 2. Finished grading shall insure proper drainage of site as determined by the civil engineer's grading plans and the Owner's Representative.
 3. All areas shall be graded such that final grades will be 5cm (2") below adjacent paved areas, sidewalks, valve boxes, headers, clear-cuts, etc. or as indicated on the Drawings.
 4. Surface drainage shall be away from all structure foundations at 1/4" per foot to aid in water runoff.
 5. Remove or redistribute excess soil before application of fertilizer. Make allowances when establishing finish grades for earth excavation from planting pits and muck.
 6. Weeding: Before and during preliminary and finish grading, dig out all weeds and grasses by the roots and dispose of-off the site. Grasses not of the perennial type less than 2-1/2" high and not bearing seeds, may be turned under. Perennial weeds and grasses to be removed, but are not limited to the following:
 a. Nut grass.
 b. St. Augustine.
 c. Puncture Vine.
 d. Morning Glory.
 e. Johnson Grass.
 f. Also remove other noxious or invasive weeds encountered on the site.
 7. Trenches: If a irrigation system has been installed after grading and fertilizing has been completed, re-cut the trench backfill and fertilize to the depth specified for the area, to conform to specified requirements.

8. Eliminate all erosion scars prior to unacceptable maintenance period.
 9. Dispose of excess soil: Dispose of any uncompressible or excess soil at an off-site location approved by Owner.

3.03 MATERIALS CONDITION

A. All plant materials shall be approved by the Owner's Representative as they are delivered to the job site or other site stipendations, as all cases:
 1. Conditions: Plants shall be symmetrical as typical for the variety and species; in a condition of healthy and vigorous growth; free from plant disease, insect pests, or their eggs; and with healthy normal root systems well filled the containers, but not to the point of being rootbound. Plants shall not be pruned prior to delivery, except as authorized by the Owner's Representative. Spray all trees to eliminate insects and fungus, and apply foliar anti-transpirant prior to delivery.
 2. Dimensions: The height and spread of all plants shall be measured with branches in their normal position. Where dimensions of any plant materials are omitted from the Plant List, plants shall be normal stock for type listed.
 3. Actual planting shall be performed during those periods when weather and soil conditions are suitable and in accord with locally accepted practices.
 4. Only as many plants as can be planted and watered on that same day shall be distributed in a planting area.
 5. Containers shall be opened and plants shall be removed in such a manner that the ball of earth surrounding the roots is not broken and they shall be planted and watered as herein specified immediately after removal from the containers. Containers shall not be opened prior to placing the plants in the planting area.
 6. Do not do any planting, other than specimen trees, until all operations involved with the installation of the sprinkler system have been completed, final grades have been established, the planting areas have been properly graded and prepared as herein specified, and the work approved by the Owner's Representative.
 7. The relative position of each tree and plant is subject to approval by the Owner's Representative, and shall, if necessary to achieve project design objectives, be relocated as directed.
 8. Remove each plant from its container and plant in such a manner that when settled, it will bear the same relation to the constructed finished grade as it bore to the grade in the container before being transplanted. Place each plant in the center of the pit and backfill, unless otherwise specified, with the prepared soil. Filling will not be permitted around trunks or stems. Properly cut off all broken or frayed roots.
 9. Layout of major plantings: Locations for plants and outlines of areas to be planted shall be marked on the ground by the contractor before any planting jobs are dug. All such locations shall be approved by the Owner's Representative. If underground construction or utility line is encountered in the excavation of planting areas, other locations for planting may be selected by the Owner's Representative. Layout shall be accomplished with flagged grade stakes indicating plant names and specified container size on each stake or alternate approved method. It shall be the contractor's responsibility to confirm with the Owner and governing agencies the location and depth of all underground utilities and obstructions.

C. Planting of trees, shrubs and groundcovers:

1. Excavation for planting shall include the stripping and stacking of all acceptable topsoil encountered within the areas to be excavated for trenches, tree holes, plant pits and planting beds.
 2. Excess soil generated from the planting holes and not used as backfill or in establishing the final grades, shall be removed from the site.
 3. Protect all areas from excessive compaction when trucking plants or other material to the planting site. Compacted areas shall be cross-tipped to 1/2" and staked.
 4. Center plants in pit or trench.
 5. Face plants with fastest growth toward the best public views.
 6. Set plant plants and hold rigidly in position until soil has been tamped firmly around ball or roots.
 7. All excavated holes shall have vertical sides with roughened surfaces and shall be of a size that is twice the diameter and one-half times the depth of the settled, it will bear the same relation to the constructed finished grade as it root ball for all shrubs. Trees 15 gallon and smaller to be planted as above, trees 24" box or larger to be excavated to the depth of the root ball (allow 1-2" settling) and as space allows, 24" clear of the root ball on all sides.
 8. Lay out areas and set stakes/flags for trees at locations indicated on Drawings. Secure approval from Owner's Representative before excavating jobs. Make necessary adjustments as directed.
 a. Specimen trees to be planted prior to construction of finish grades shall be located by surveyor for position and finish-grade relationship to top of root ball.
 9. When hardpan or muck is encountered, break through to clean soil and backfill with prepared backfill as directed. Loosen compacted soil at sides and bottom by scarifying or other approved method. Set tree to finish grade and fill the pit with prepared soil, progressively setting the soil about the root ball by water jetting and flooding to remove muck.

10. Set tree in center of pit in a vertical position so that crown of ball will be level with finish grade after allowing for watering and settling.

11. Prepare watering basin same width as tree plant ball. Water thoroughly immediately following planting. Backfill all voids which develop with additional prepared planting soil to bring to finish grade. Remove all basins in lawn areas and smooth to finish grade prior to laying sod.
 12. Monitor tree and shrub root balls for adequate moisture content. Deep water and/or provide soaker hoses to maintain moisture supply.
 13. All plants which settle deeper than the surrounding grade shall be raised to the correct level. After the plant has been placed, additional backfill shall be added to the hole to cover approximately one-half of the height of the root ball. At this stage, water shall be added to the top of the partly filled hole to thoroughly saturate the root ball and adjacent soil.
 14. Can removal:
 a. Cut cans on two sides with an acceptable can cutter.
 b. Do not reuse root ball.
 c. Do not cut cans with spade or ax.
 15. Box removal:
 a. Remove bottom of plant boxes before planting.
 b. Remove sides of box without damage to root ball after positioning plant and partially backfilling.

16. Plant tablets:

a. During installation, Gro-Power 7 gram or Agriform 21 gram tablets, or approved equal, shall be provided in each planting hole as per quantities and application of the manufacturers specifications.
 b. Planting tablets shall be set with each plant on the top of the root ball while the plants are still in their containers so the required number of tablets to be used in each hole can be easily verified by the Owner's Representative.
 c. Plant tablets shall be located 1/3 depth of the root ball.

17. Backfill:

a. The remainder of the hole shall then be backfilled and tamped firm.
 b. After backfilling, an earthen basin shall be constructed around each plant. Each basin shall be of a depth sufficient to hold at least two (2) inches of water. The basins shall be constructed of amended backfill materials. Remove basin in all turf areas after initial watering.
 c. Pruning: Pruning shall be limited to the minimum necessary to remove injured twigs and branches. Pruning may not be done prior to delivery of plants.
 d. Staking and guying: The Contractor shall be responsible to maintain trees in a straight and plumb position throughout the warranty period. If the Contractor chooses to stake and guy the trees, staking shall be completed immediately after planting. All staking shall be installed plumb and as indicated on the Drawings. The Contractor shall remove the staking and guying materials once the trees are established.

D. Planting of flowering annuals:

1. Flowering annuals shall be grown in 4" pots as indicated on the plans. Annuals shall remain in their flats until transplanting. The flat's soil shall contain sufficient moisture so that it will not fall apart when transplanting the plants.
 2. The annuals shall be planted in straight rows and evenly spaced, unless otherwise noted, and at intervals called out in the drawings. Triangular spacing shall be used unless otherwise noted on the drawings. Each annual bed shall receive a thin layer of annual mulch.
 3. Each annually shall be planted with its proportionate amount of flat soil. Plantings shall be immediately sprinkled after planting until the entire area is soaked to the full depth of each hole. The planting area shall then be mulched with appropriate fine bedded mulch.
 4. Care shall be exercised at all times to protect the plants after planting. Any damage to plants by trampling or other operations of this Contract shall be repaired immediately.

E. Sod planting:

1. Preparing sod: Remove roots, weeds, and debris from area to be sodded. If sod is compacted, work up soil to a depth of 6 inches and break up all clods. Soil prep areas as noted elsewhere in specifications.
 2. Grading and rolling: Carefully smooth all surfaces to be sodded. Roll areas to expose soil depressions and surface irregularities. Re-grade as required.
 3. Laying sod: Lay first strip of sod slabs along a straight line (use a string in irregular areas). Butt joints tightly, do not overlap edges. On second strip, stagger joints much as in laying bricks. Use a sharp knife to cut to fit curves, edges and around sprinkler heads. Sod shall be laid within 72 hours of harvesting and 12 hours from time of delivery.
 4. Watering: Do not lay white lawn before watering. When a conveniently large area has been sodded, water lightly to prevent drying. Continue to lay sod and to water until installation is complete.
 5. Rolling sod: After laying all sod, roll lightly to eliminate irregularities and to form good contact between the sod and soil. Avoid a very heavy roller or excessive initial watering which may cause roller marks.
 6. Irrigation: Water thoroughly the complete lawn surface. Sod should be moistened at least 8 inches deep. Repeat sprinkling at regular intervals to keep sod moist at all times until rooted.
 7. Care after sod is established, decrease frequency and increase amount of water per application as necessary.
 8. Replacement: Replace all dead or dying sod with equal material as directed by the Owner's Representative.

3.04 CLEAN-UP

A. After all planting operations have been completed, remove all trash, excess soil, empty plant containers and rubbish from the property. All scars, ruts or other marks in the ground caused by this work shall be repaired and the ground left in a neat and as the last working day of each week.
 B. The Contractor shall remove the site area broom-clean and shall wash down all paved areas within the Contract area, leaving the premises in a clean condition. All walks shall be left in a clean and safe condition.

3.05 OBSERVATION SCHEDULE

A. The Contractor shall be responsible for notifying the Owner's Representative in advance for the following site visits, according to the time indicated:
 1. Pre-job conference - 7 days
 2. Tree Tagging - 7 days
 3. Final grade review - 48 hours
 4. Plant material review - 48 hours
 5. Plant layout review - 48 hours
 6. Substantial completion walk-through - 7 days
 7. Final walk-through - 7 days
 B. When observations are conducted by someone other than the Owner's Representative, the Contractor shall show evidence in writing of when and by whom these observations were made.

3.06 FIELD QUALITY CONTROL

A. All inspections herein specified shall be made by the Owner's Representative as the work progresses.
 B. Protect work completed by other trades from damage.

3.07 PROTECTION

A. Continuously protect all lawn areas, plant materials, and supports until final acceptance of the work.
 B. Impact and approve all landscape irrigation work and finish grading prior to the start of shrub planting as specified. Trees may be planted in advance of irrigation system installation provided adequate provision is made for interim watering at the Contractor's own expense.

3.08 FINAL ACCEPTANCE OF INSTALLATION

A. Maintain all planted areas free of debris and insects. Mow, cultivate, weed and water all areas until final acceptance of work by the Owner's Authorized Representative.
 B. Prior to final approval of work, do the following:
 1. Re-seed, re-sod or replant areas where necessary for full and even coverage.
 2. Remove all debris resulting from landscape work.
 3. Re-grade, lightly compact and replant around sprinkler heads where necessary to maintain proper vertical positioning in relation to general grade.
 4. Fill all depressions and eroded channels with sufficient soil mix to adjust grade to assure proper drainage, compact lightly and replant the filled areas in accord with Drawing's requirements.
 5. Address any items noted in the punch list from the substantial completion walk-through.