ESTERO, FLORIDA

SHEET

DESCRIPTION

CM1 CM2 CM3 CM3 CM6 CM6 CODE MINIMUM L
CODE M

LANDSCAPE LANDSCAPE

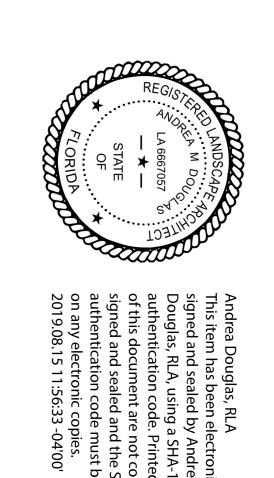
PLAN

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LANDSCAPE | LANDSCAPE | LANDSCAPE LANDSCAPE PLAN PLAN

LANDSCAPE I LANDSCAPE I PLAN

CM10 CM11 CM9 **CALCULATIONS**



08-14-19 Irrigation Pump Relocation and sidewalk change

10-16-2019 Rev. per Civil Changes: parking, seawall, lift station A 02-08-2019 Rev. ADD plant list A 06-17-19 Phase Line Adjust 1A/1E per Civil Dwgs A 07-19-19 Deep Lake Trees Removed, Phase Line Change

COVER

Designed By: OPI Date: 11-13-17 Drawn By: BSH

DO LANDSCAPE SET

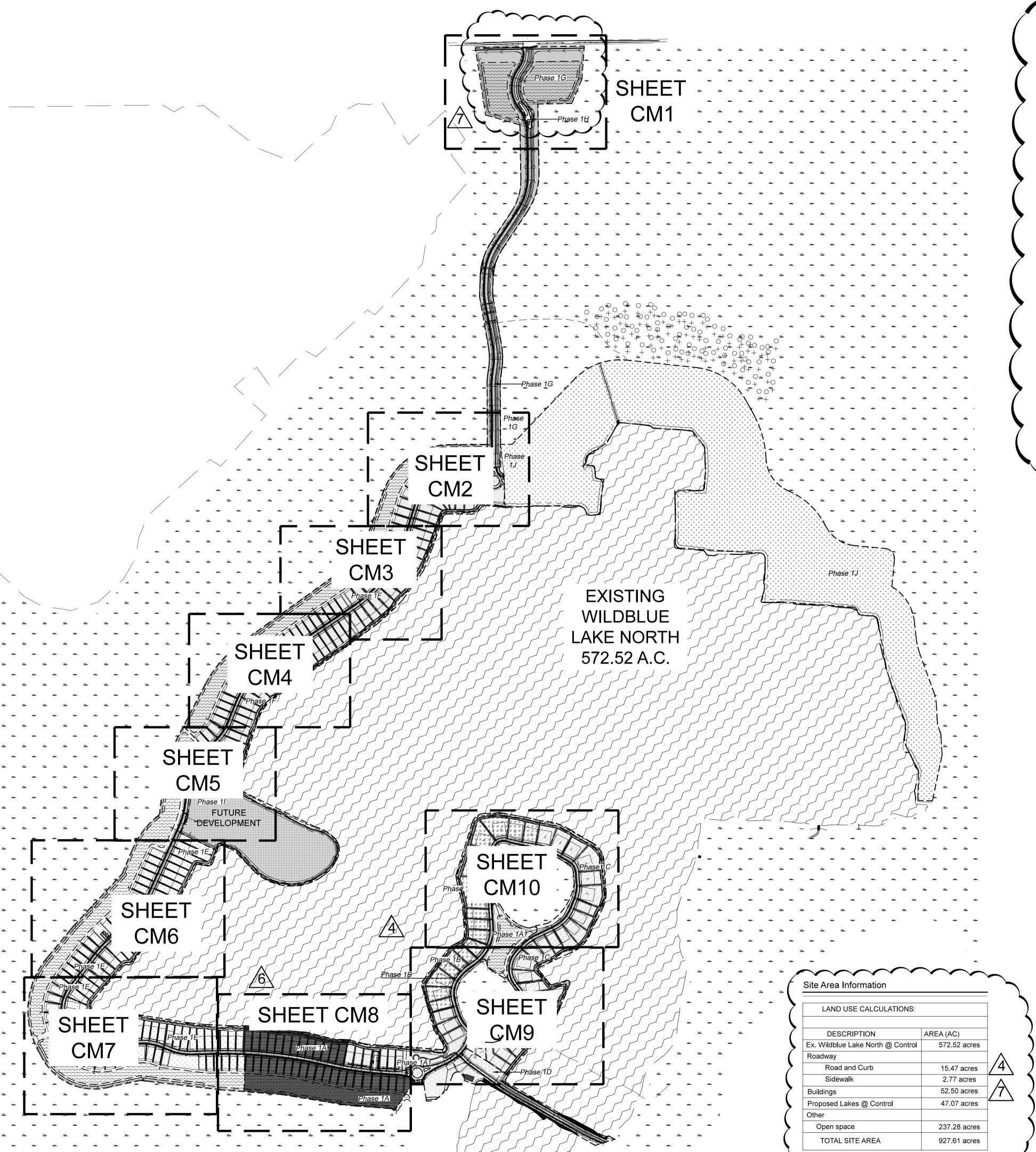
WILD BLUE - PHASE 1 RESIDENTIAL

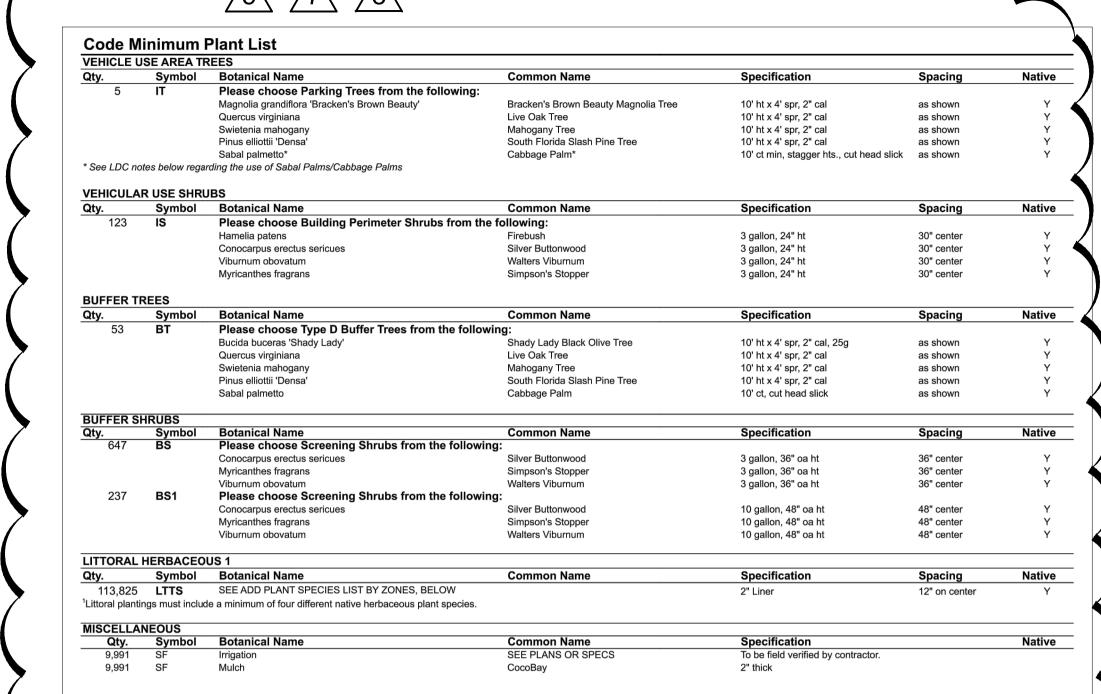
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W. Patrick Trefz, ASLA Landscape Architect #1481

PREPARED FOR: LENNAR HOMES, LLC ESTERO, LEE COUNTY, FLORIDA





* Sec. 10-416, c. 2. a. Trees must be planted or retained in landscaped areas in parking areas, including landscaped areas reserved for future parking spaces, to provide for canopy coverage when the trees mature. At least one canopy tree or a cluster of three sabal palms must be planted or retained for every 250 square feet of required internal planting area, and no parking space may be more than 200 feet from a tree planted in a permeable island, peninsula or median. Canopy requirements may be met with existing indigenous native trees whenever such trees are located within the parking area



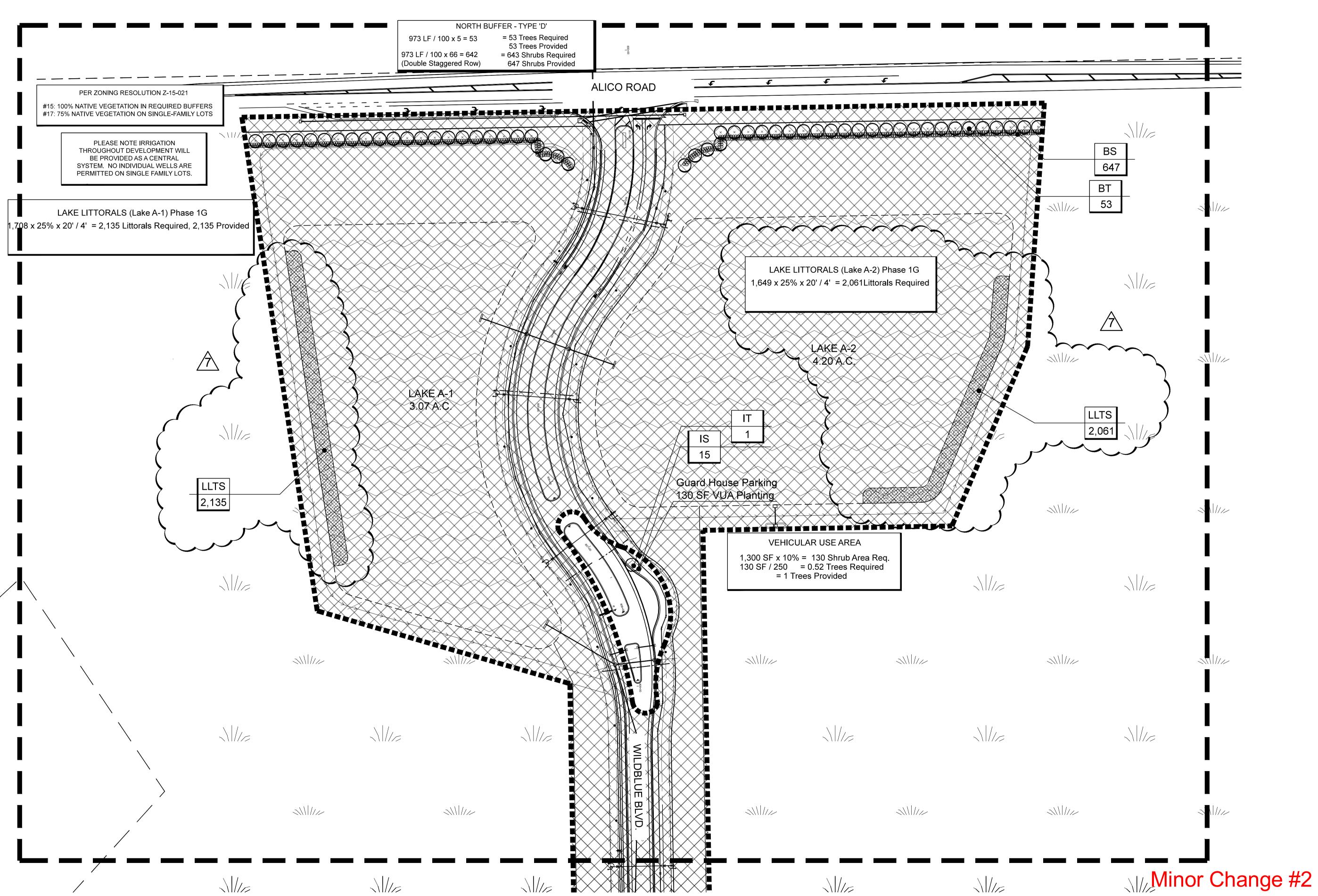
LITTORAL PLANTING SPECIES LIST¹

Common Name	Scientific Name	Minimum Container Size	Planting Density (On Center)	
	Zone 1 – Herbaceous Plantings			
lue Maidencane	Amphicarpum muhlenbergianum	BR	2 ft.	
Cordgrass	Spartina bakeri	BR	2 ft.	
Golden canna	Canna flaccida	BR	2 ft.	
Gulfdune Paspalum	Paspalum monostachyum	2 in.	2 ft.	
Maidencane	Panicum hemitomon	BR	2 ft.	
Muhly grass	Muhlenbergia capillaris	2 in.	2 ft.	
Sawgrass	Cladium jamaicense	2 in.	2 ft.	
Soft rush	Juncus effusus	BR	2 ft.	
Swamp lily	Crinum americanum	BR	2 ft.	
Nater hyssop	Bacopa spp.	BR	2 ft.	
<u> </u>	Zone 2 – Herbaceous Plantings	'	'	
Arrowhead	Sagittaria lancifolia	BR	2 ft.	
Blue flag iris	Iris virginicus	BR	2 ft.	
Bulrush	Scirpus spp.	BR	2 ft.	
Cordgrass	Spartina bakeri	BR	2 ft.	
Golden canna	Canna flaccida	BR	2 ft.	
Maidencane	Panicum hemitomon	BR	2 ft.	
Pickerelweed	Pontederia cordata	BR	2 ft.	
Sawgrass	Cladium jamaicense	2 in.	2 ft.	
Soft rush	Juncus effusus	BR	2 ft.	
Spikerush	Eleocharis spp.	BR	2 ft.	
Water hyssop	Bacopa spp.	BR	2 ft.	
	Zone 3 – Herbaceous Plantings			
Arrowhead	Sagittaria lancifolia	BR	2 ft.	
Bulrush	Scirpus spp.	BR	2 ft.	
Fireflag	Thalia geniculata	BR	2 ft.	
Pickerelweed	Pontederia cordata	BR	2 ft.	
Soft rush	Juncus effusus	BR	2 ft.	
Spikerush	Eleocharis spp.	BR	2 ft.	
<u> </u>	Zone 4 – Herbaceous Plantings	'	'	
Fireflag	Thalia geniculata	BR	2 ft.	
Floating-hearts	Nymphoides aquatica	BR		
Spatter-Dock	Nyphar luteum	BR		
Waterlily	Nymphaea odorata	BR	2 ft.	

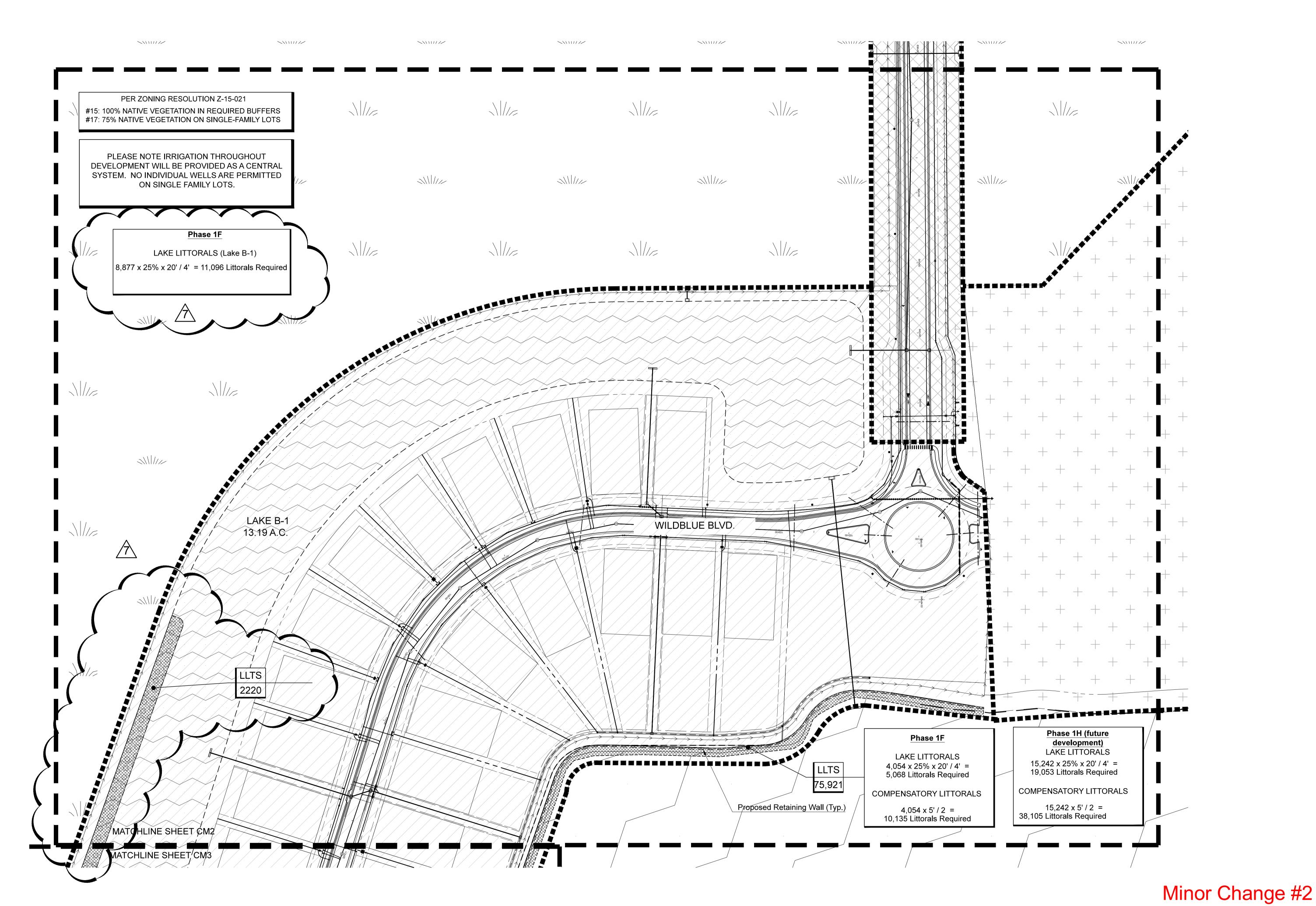
¹Littoral plantings must include a minimum of four different native herbaceous plant species. Additional native species may be included in the planting list prior to DO approval. BR – bare root



Blue North Lake by Phases	l									<u> </u>
	PHASE 1A	PHASE 1A	PHASE 1B	PHASE 1C	PHASE 1D	PHASE 1E	PHASE 1F	PHASE 1	TOTALS BY PHASE	FUTURE DEVELOPMENT
Ol and Parallements										
Shore line length	1,050 LF	1,549 LF	2,621 LF	3,599 LF	1,264 LF	3,725 LF	4,070 LF	2,863 LF	20,741 LF	15,223 LF
equired Littorals (including Compensatory)	3 038	5 809	9 829	13 496	4 740	13 969	15.223	10 736	77 779	57 158



MINIMUM LANDSCAPE



A 10 million of the 100 Million

County comments 🖄 01-16-2019 Rev. per Civil Changes: parking, seawall, lift station 🏄

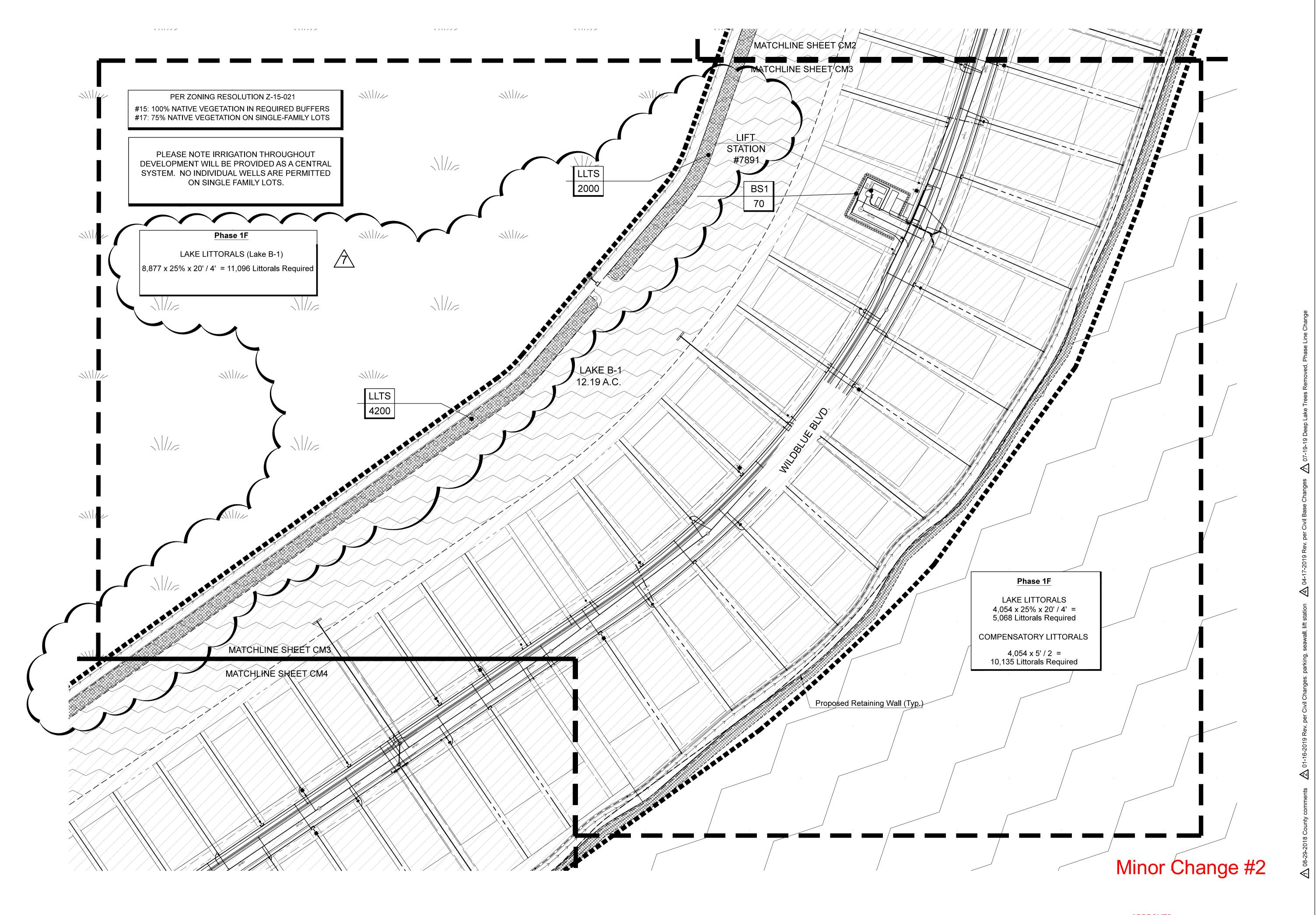
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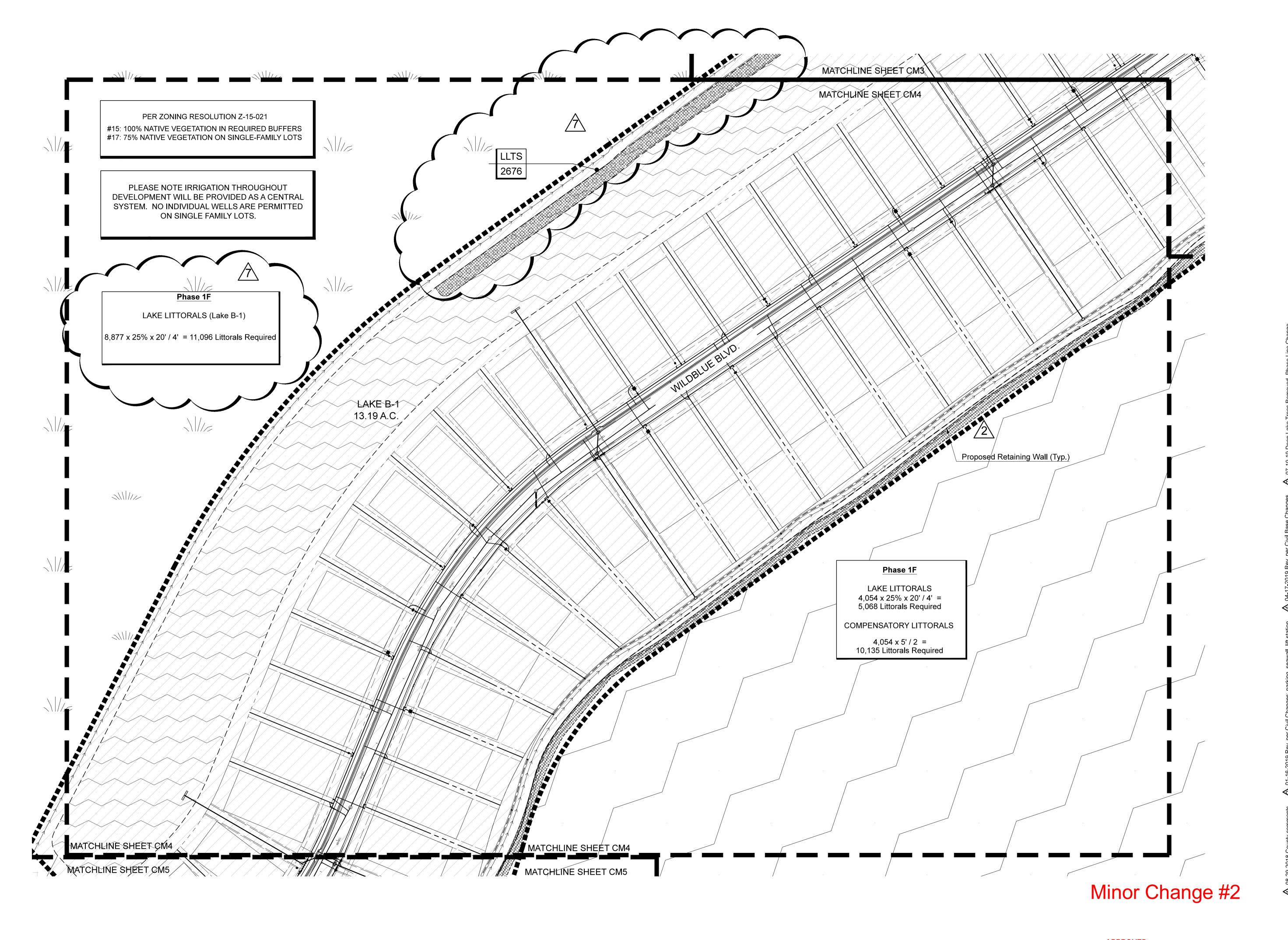
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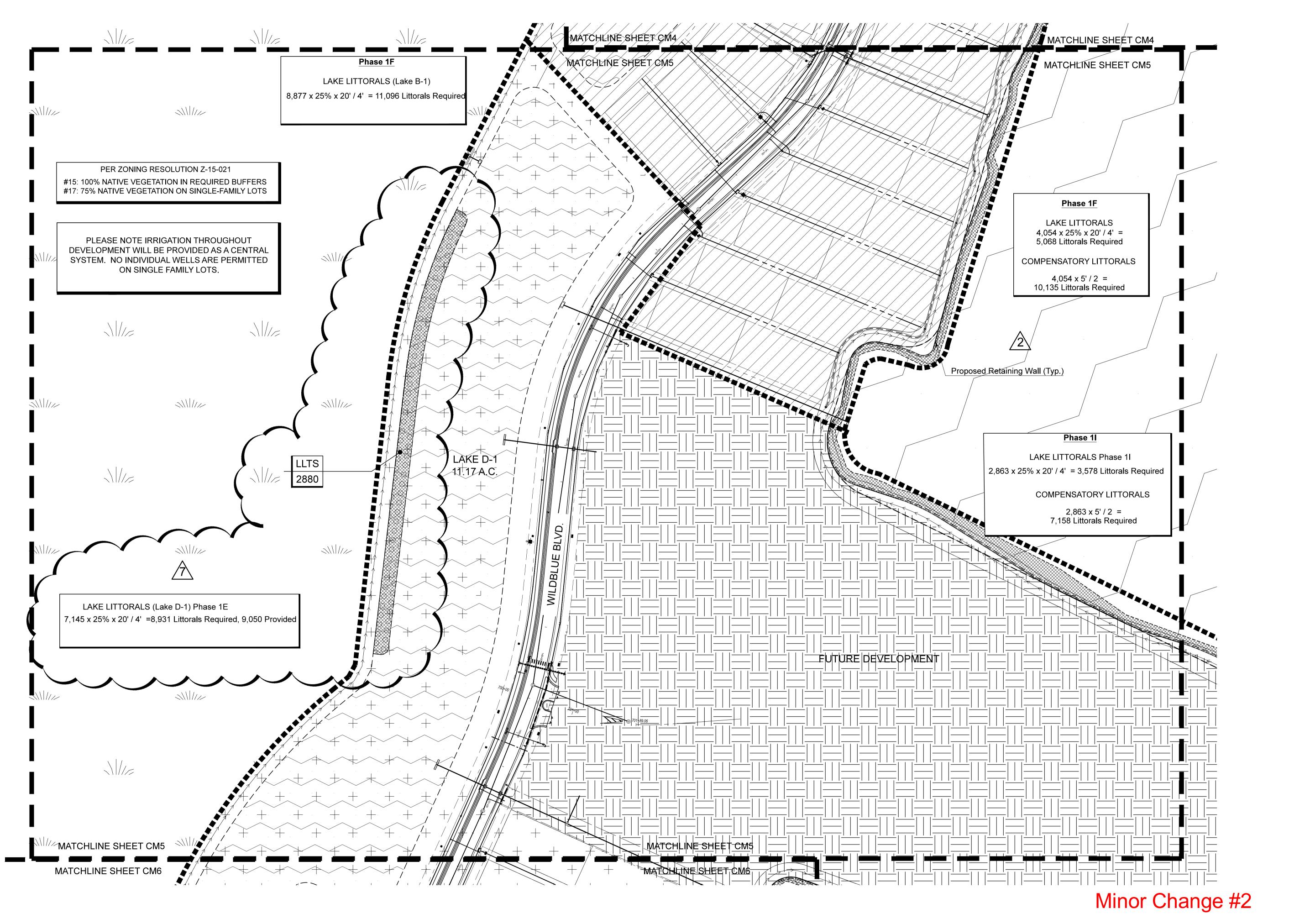
CM2

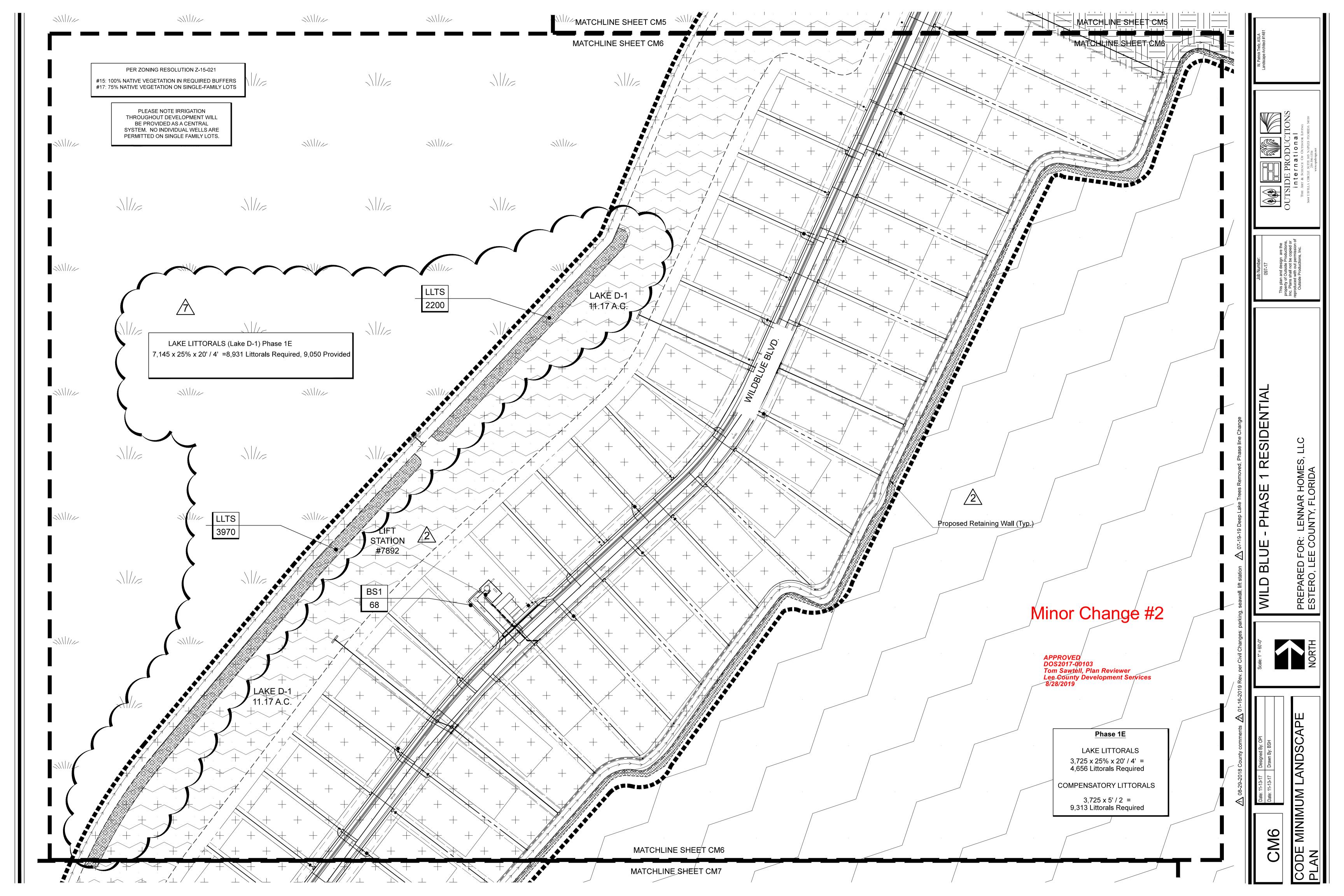
Date: 11-13-17

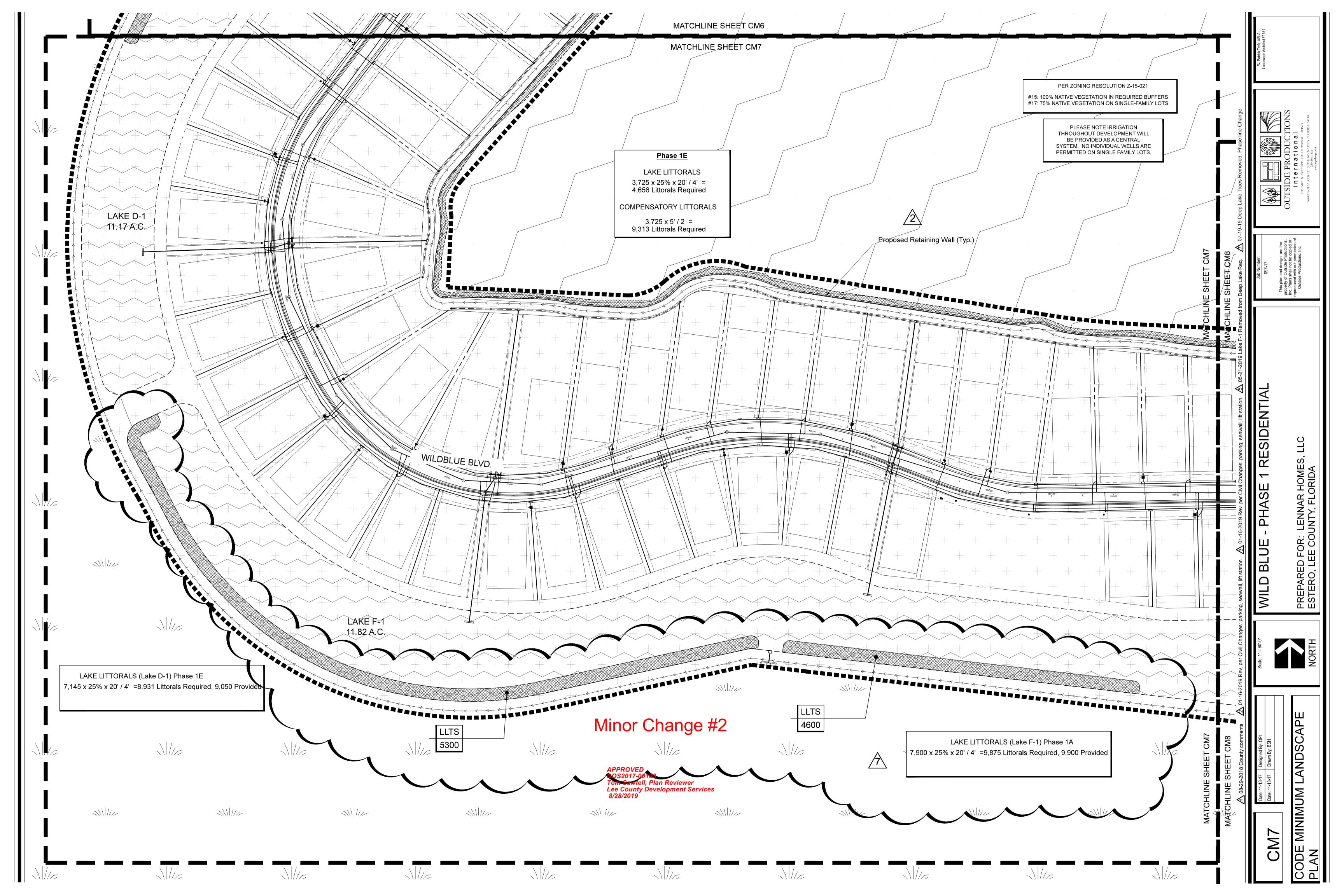
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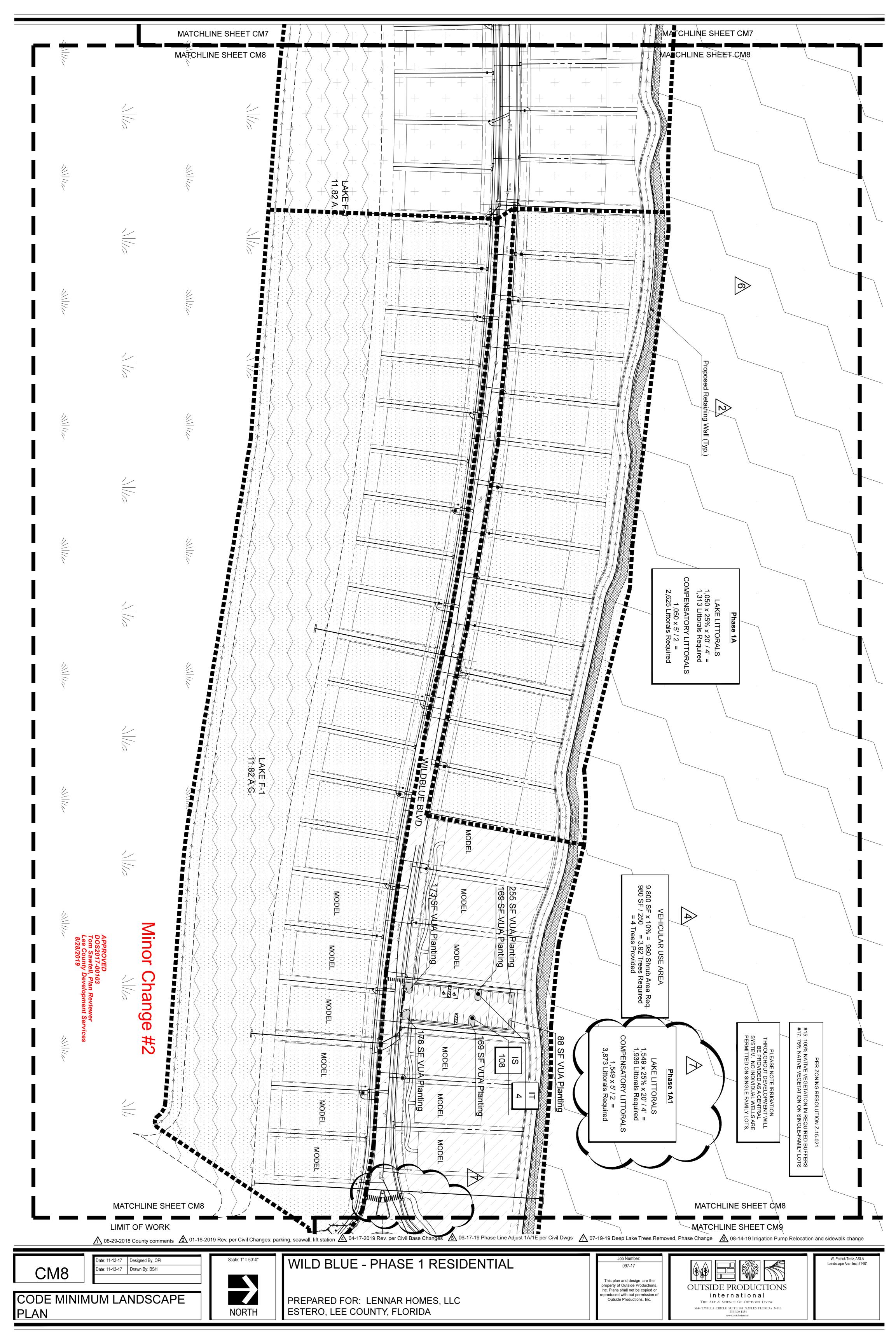


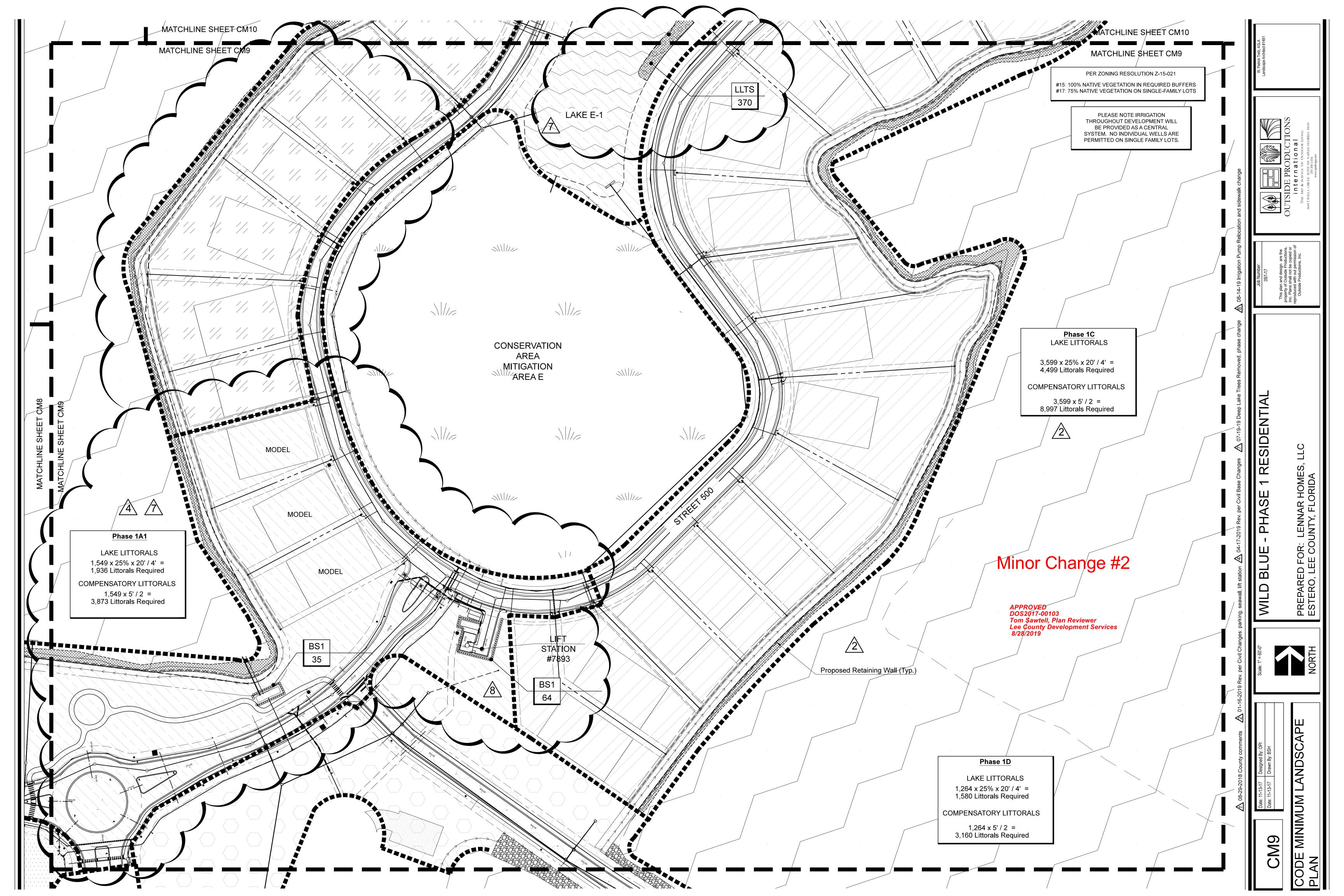


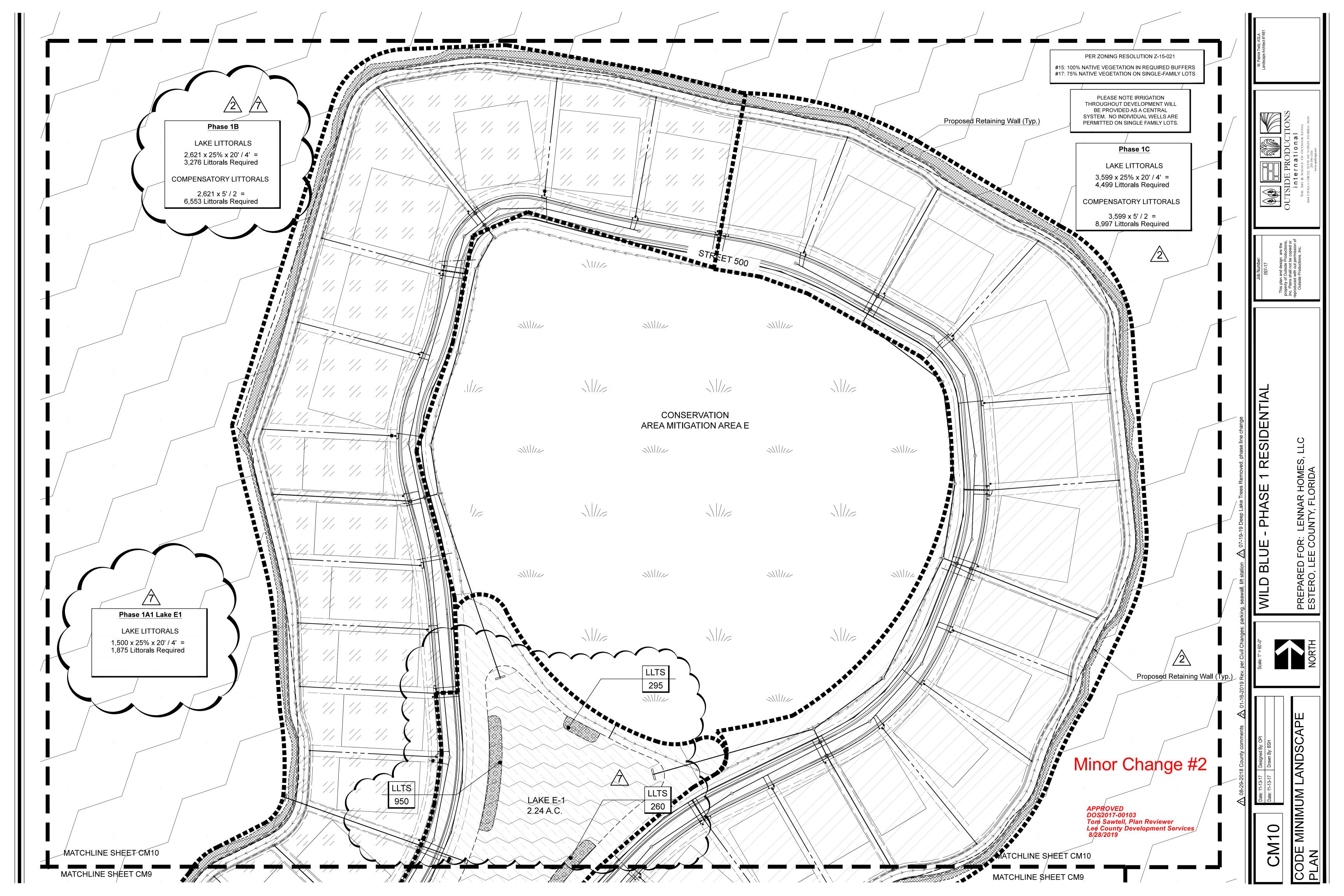












Section 10-415. Open space.

(a) Open space calculations. All development must contain the minimum percentage of open space as outlined in the following table below:

Percent of Open Space Required: PLEASE SEE OPEN SPACE TABLE ON SHEET CM

(b) Indigenous native vegetation and trees.

(1) Preservation. a. Large developments, with existing indigenous native vegetation communities must provide 50 percent of their open space percentage requirement through the onsite preservation of existing native vegetation communities. Refer

b. If the development area does not contain existing indigenous native vegetation communities, but does contain existing indigenous native trees, then 50 percent of their open space percentage requirement must be met through the onsite preservation of existing native trees consistent with subsection 1 through 4 below. Refer to Appendix E 1. Preservation of indigenous tree clusters is preferred over individual tree protection. Reasonable efforts to retain

individual trees must be made. It is recognized that site design requirements (e.g. fill) may limit the ability to retain some individual trees, and in that case the county will allow the removal of those trees 2. Sabal palms may be relocated in a horticulturally correct manner and clustered within open space areas. 3. Native trees (four to 15-inch caliper dbh) may be relocated to open space areas when proper horticultural methods (e.g. root pruning; use of antitranspirants) are utilized to insure the survivability of the trees, and a

vegetation removal permit is obtained. 4. Effort must be made to preserve heritage trees (live oak, South Florida slash pine, or longleaf pine with minimum

20-inch caliper dbh). If a heritage tree must be removed from a site then a replacement tree with a minimum 20-foot height must be planted within an appropriate open space area. c. A minimum setback of 20 feet from buildings is required. For indigenous plant communities subject to fire, such

as pine flatwoods, palmetto prairie and xeric scrub, a 30-foot setback is required for fire protection. (2) Salvaging existing native plants. Open space areas must be designed to incorporate as many of the existing large native trees and sabal palms as possible. Irrigation water must be available on the development site and provisions for adequate irrigation provided.

a. Sabal palms. Healthy sabal palms with a minimum eight-foot clear trunk must be salvaged if conditions (e.g., no rock) and sequence of construction allows. If sequence of construction does not allow the on-site relocation of sabal palms, then the sabal palms must be salvaged for an off-site recipient site or sale. The salvage efforts must be coordinated with the division of environmental sciences staff whether used on-site or otherwise. The number of sabal palms to be relocated or salvaged must be shown on the landscape plan approved as part of the development order. Any sabal palms being relocated must be moved in a horticulturally correct manner per Lee County Extension Services brochure Lee 8/2000A. A 90 percent survival for relocated sabal palms is required. Death of over ten percent of the relocated sabal palms will require a 1:1 replanting.

b. Other trees. Healthy native trees with a minimum caliper of four inches at four and one-half feet above the ground (dbh) may be relocated onsite for five tree credits toward code required landscaping. The trees must be properly prepared for relocation through root pruning or other horticulturally correct methods approved by the environmental sciences director. (3) Credits.

a. For all developments with required open space, except single-family subdivisions with individual lot area of 6,500 square feet or greater and a maximum lot coverage of 45 percent, an incentive to preserve indigenous native upland plant communities or indigenous native trees in large tracts, a scaled open space credit for single contiguous preserve areas will be granted.

b. An additional, maximum ten percent credit will be granted if any of the following are included: 1. Rare and unique uplands as defined by the Lee Plan. 2. Connection to offsite public or private environmental conservation or preserve areas.

Upland buffers to natural waterbodies.

Preservation adjacent to a roadway.

5. Restoration of native shrubs, grasses, and/or groundcover plants with the native tree preservation area. A minimum planting size of one gallon plant, installed on three foot centers (three-foot o.c.). (4) Maintenance. A plan must be submitted for the long term maintenance of vegetation in indigenous open space areas. This indigenous vegetation management plan must include the following criteria:

a. Method and frequency of pruning and trimming. b. Methods to remove and control all exotic and nuisance plants in perpetuity.

d. Protected species management plan conditions.

e. Drafts of educational materials (signage and brochures) to be provided to the residents about the

purpose and function of these areas. f. Monitoring reports, including photos, that narratively document preserve area conditions must be

submitted to obtain development order approval; and, again after project construction in order to obtain a certificate of compliance (CC). The CC monitoring report must describe and document ecological restoration activity that has occurred in the preserve areas. If review of the monitoring reports reveals death or significant decline to preserve vegetation, then revision of the management plan and restoration in accord with section 10-423 will be required.

(c) Minimum dimensions.

(1) The minimum average width of open space areas must be ten feet.

(2) The minimum area of open space must be 180 square feet.

(3) For projects under ten acres in size, indigenous open space areas must have a minimum average width of 20 feet and minimum area of 400 square feet. For projects over ten acres in size, indigenous open space areas must have a minimum average width of 40 feet and minimum area of 1,500 square feet. The average minimum width may be reduced to 30 feet when the preserve is

adjacent to a public road. (4) Open space preservation areas must be designed with adequate widths to preserve and allow the

continued growth and viability of existing native trees. (5) Native tree preservation areas must extend to the full drip line of slash pine, three quarter drip line for all canopy type trees, and six feet from the trunk of any native palm, or other protective means, such

as retaining walls, must be provided. Except for work related to approved ecological restoration activities, no filling, grading or excavating is allowed in open space preservation areas. (6) Surface water management systems may overlap with native tree preservation areas only where it can be clearly demonstrated that the effects of water management system construction or operation

will not cause death or harm to the preserve tree and indigenous plant community of protected species. (d) Use of open space. (1) Open space areas must be landscaped in accordance with this division.

(2) The following uses may contribute to the open space requirements provided the minimum dimensions are met: a. Buffers and landscaped areas in off-street parking areas, except for areas reserved for future parking

spaces pursuant to section 34-2017(d): b. Dry detention areas. c. Existing or proposed bodies of water, including stormwater management areas and areas subject to

saltwater inundation, which may be used to offset up to a maximum of 25 percent of the required open space d. Active and passive recreation areas such as playgrounds, golf courses, beach frontage, nature trails, bikeways, pedestrian ways, tennis courts, swimming pools and other similar open spaces, as long as not more than

20 percent of the recreational area credited as open space consists of impervious surface. e. Outdoor active and passive public use areas such as plazas, atriums, courtyards and other similar public spaces, which may be used to offset up to a maximum of 20 percent of the required open space.

f. Archaeological sites or zones that are designated as significant historic resources pursuant to chapter 22. g. Removal of native vegetation from indigenous open space areas by mechanical or chemical means is prohibited unless specified by the indigenous vegetation management plan.

Section 10-416. Landscape standards.

(a) General. Landscaping for all new developments, except community and regional parks as defined in the Lee Plan, must include, at a minimum, the following number of trees, in addition to the landscaping required for parking and vehicle use areas and buffers. General tree requirements may be reduced through the utilization of larger trees as specified in section 10-420(c)(2) or through use of an alternative landscape betterment plan (see section 10-419). Existing waterbodies within the development area will not be included in the calculation for general tree requirements.

General Tree Calculation:

(1) Single-family residence developments that are constructed on individual (single) lots. One tree must be provided per 3,000 square feet of development area, which must include a minimum of two trees per

single-family lot installed prior to issuance of the certificate of occupancy. (2) All other residential developments. All other residential developments must provide one tree per 3,000

square feet of development area. (3) Recreational vehicle developments. One tree must be provided per 3,000 square feet of development area. (4) All other developments. One tree must be provided per each 3,500 square feet of development area. (b) Building perimeter plantings.

Applicable to this project: YES A. General Landscape Calculation:

Residential Developments SF/3000 = 2,130,955

of Trees Required # of Trees Provided Total Development Area

planting area, but may not be used to meet minimum planting area or open space requirements.

All new development in commercial zoning districts and commercial components of planned development districts feet for the littoral shelf width divided by two to obtain the required plant quantity and DRIs must provide building perimeter plantings equal to ten percent of the proposed building gross ground level floor area. These planting areas must be located abutting three sides of the building with emphasis on the sides most visible to the public, not including the loading area. The perimeter planting areas must consist of landscape areas, raised planters or planter boxes that are a minimum of five feet wide. These landscape areas must nclude shrubs and ground cover plants with a minimum of 50 percent coverage of the landscape area at the time of planting. Shrubs must meet the size requirements of section 10-420(d). General trees may be planted within the building perimeter planting areas, especially effective are clusters (three or more) of sabal palms. Turfgrass is discouraged and is limited to ten percent of the landscape area. Water management areas may not be a part of this five-foot planting area. Pedestrian access ways may cross and loading areas may be placed in the perimeter

(c) Landscaping of parking and vehicle use areas. The provisions of this section apply to all new off-street parking or other vehicular use areas. Existing landscaping that does not comply with the provisions of this code must be brought into conformity, to the maximum extent possible, when: the vehicular use area is altered or expanded except for restriping of lots/drives, the building square footage is changed, or the structure has been vacant for a period of one year or more and a request for an occupational license to resume business is made. Consistent with the provisions of section 10-104, the director may permit administrative deviations where a conflict exists between the application of this division and the requirements for the number of off-street parking spaces or area of off-street loading facilities.

(1) Vehicular overhang of landscape areas. The front of a vehicle may overhang any landscaped area a maximum of two feet, provided the landscaped area is protected by motor vehicle wheel stops or curbing. Two feet of such landscaped area or walkway may be part of the required depth of each abutting parking space. Walkways must be designed with a minimum of five feet width that is clear of any vehicle overhang. (2) Internal landscaping. All parking areas must be internally landscaped to provide visual relief and cooling

effects and to channelize and define logical areas for pedestrian and vehicular circulation, as follows: a. Trees must be planted or retained in landscaped areas in parking areas, including landscaped areas reserved for future parking spaces, to provide for canopy coverage when the trees mature. At least one canopy tree or a cluster of three sabal palms must be planted or retained for every 250 square feet of required internal planting area, and no parking space may be more than 200 feet from a tree planted in a permeable island, peninsula or median of 18-foot minimum width. Canopy requirements must be met with existing indigenous native trees whenever such trees are located within the parking area.

b. Landscaped areas on the parking area perimeter or internal islands must equal or exceed a minimum of ten percent of the total paved surface area. Landscaped areas reserved for future parking spaces pursuant to section 34-2017(d) may not be included in this calculation.

2. Internal landscaping: Guardhouse Parking Total Parking Surface: 1.300 Total Surface Area Parking Trees: # of Trees Required Planting Area Required Planting Area Provided

c. The minimum average dimension of any required internal landscaped area must be ten feet for projects less

Total Surface Area Planting Area Required Parking Trees:

than ten acres and 18 feet for projects ten acres or larger. (d) Buffering adjacent property. Buffering and screening applies to all new development. Existing landscapes that do not comply with the provisions of this section must be brought into conformity to the maximum extent possible when: the vehicular use area is altered or expanded, except for restriping of lots/drives, the building square footage is increased, or there has been a discontinuance of use for a period of one year or more and a request for an occupational license to resume business is made.

Buffer Requirements.	•		
Property Line	Adjacent Use	Type of Buffer	Linear Footage
North	N/A	D	1064
South	N/A	N/A	N/A
East	N/A	N/A	N/A
	ALIA	*1/A	81/A

RESTORATION AREA TO FUNCTION AS BUFFERS. NO ADDITIONAL BUFFERING REQUIRED.

(1) General. A buffering area is required along the entire perimeter of the proposed development whenever the proposed development abuts a different use. The existing use or, where vacant, the permitted use, of the abutting property will determine the type of buffering area required for the proposed development. Buffer areas may not be located on any portion of an existing or dedicated street right-of-way or roadway easement except that buffers may be located within slope easements as long as appropriate planting soils provided in the slope. Variances or deviations from this requirement are prohibited.

(5) Public and quasi-public facilities, including, but not limited to, places of worship, parks, utility facilities, government offices, neighborhood recreational facilities and private schools must provide a type C buffer if, in the opinion of the director, the proposed development will have a significantly adverse impact on adjacent existing residential uses. (6) If roads, drives, or parking areas are located less than 125 feet from an existing single-family residential subdivision or single-family residential lots, a solid wall or combination berm and solid wall not less than eight feet in height must be constructed not less than 25 feet from the abutting property and landscaped (between the wall and the abutting property) with a minimum of five trees and 18 shrubs per 100 lineal feet or a 30-foot wide Type F buffer with the hedge planted a minimum of 20 feet from the abutting property. Where residences will be constructed between the road, drive or parking area and the existing residential subdivision or lots, the wall or wall and berm combination are not required. (10) All freestanding parking areas, whether commercial, public or private, not associated with other development must provide a D type buffer for the right-of-way and C type buffer if they abut single-family residential or multiple-family

Section 10-417. Irrigation design standards.

To improve the survivability of required landscaping, cultivated landscape areas must be provided with an automatic irrigation system. All required irrigation systems must be designed to eliminate the application of water to impervious areas, including roads, drives and other vehicle areas. Required irrigation must also be designed to avoid impacts on existing native vegetation.

All new developments that have required landscaping must be irrigated by the use of an automatic irrigation system with controller set to conserve water. Moisture detection devices must be installed in all automatic sprinkler systems to override the sprinkler activation mechanism during periods of increased rainfall. Where existing irrigation systems are modified requiring the acquisition of a permit, automatic activation systems and overriding moisture detection devices must be installed.

Section 10-418. Surface water management systems.

Design standards. Techniques to mimic the function of natural systems in surface water management systems

(1) Shoreline configuration of surface water management lakes or ponds. Shorelines must be sinuous in configuration to provide increased length and diversity of the littoral zone. Sinuous is defined as serpentine, bending in and out, wavy or winding.

(2) Plant materials. The following are considered sufficient to mimic the function of natural systems in ponds with slopes from 6(H) to 1(V) to not more than 4(H) to 1(V): a. Shorelines must be sloped or bermed to direct stormwater through pretreatment systems or swales prior

to discharge into the pond. b. The minimum required number of native wetland herbaceous plants is one plant per linear foot of lake shoreline as measured at the control elevation water level. Native wetland trees or shrubs may be substituted for up to 50 percent of the total number of herbaceous plants required. One tree (minimum four-foot height; three-gallon container size at planting) or one shrub (minimum 24-inch height; three-gallon container size at planting) may be substituted for ten herbaceous plants.

c. Plants must be installed in clusters around the lake perimeter. Placement of clusters at the inlet and outfall areas is strongly encouraged. Clusters must contain a minimum of 25 plants within a 50-square-foot area. d. At least four species must be planted. Minimum required herbaceous plant size is a two-inch container, referred to as a liner. Trees and shrubs must meet the minimum standards in section 10-420. e. Sodding or mulching of native wetland plant materials is allowed to establish plantings at the minimum required density in lieu of planted liners. f. Survival of plant materials. A minimum of 80 percent survivability at one year is required for herbaceous

wetland plants. Wetland trees and shrubs must be maintained per section 10-421(b). (3) Bulkheads, riprap revetments or other hardened shoreline structures. Bulkheads, riprap revetments or other hardened shoreline structures may comprise up to 20 percent of an individual lake shoreline. Hardened shoreline structures cannot be used adjacent to single-family residential uses. A compensatory littoral zone equal to the linear footage of the bulkhead must be provided within the same lake meeting the following criteria: a. A five-foot wide littoral shelf planted with herbaceous wetland plants to provide 50 percent coverage at

b. An 8:1 slope littoral shelf with herbaceous wetland plants to provide 50 percent coverage at time of planting; or c. An equivalent littoral shelf design as approved by the director

herbaceous vegetation (minimum one-gallon container size planted three-foot on center) the general tree requirement may be reduced by one ten-foot tree. Sec. 10-418, 3.a. Compansatory Littorals A five-foot wide littoral shelf planted with herbaceous wetland plants. To calculate the littorals for this shelf design indicate the number of linear feet of shoreline structure multiplied by five

> Compensatory Littorals for Lake Blue: Phase 1A1: 1.110 LF X 5 LF X 50% = 2,775 Phase 1A: 2,382 LF X 5 LF X 50% = 5,955 Phase 1B: 1,728 LF X 5 LF X 50% = 4,320 Phase 1C: 3,599 LF X 5 LF X 50% = 8,997 Phase 1D: 1,264 LF X 5 LF X 50% = 3,160 Phase 1E: 3.725 LF X 5 LF X 50% = 9.313 Phase 1F: 4,054 LF X 5 LF X 50% = 10,135 Phase 1I: 2.863 LF X 5 LF X 50% = 7,158

(4) For each 400 square feet of dry detention area or drainage swale planted with appropriate native

Lake A-1 2,135 1,708 x 25% x 20' /4' Herbaceous Provided LF of lake edge Lake A-2 2061.3 2,061 x 25% x 20' /4' Herbaceous Provided LF of lake edge Herbaceous Required Lake B-1 11.097 11096.3 8,877 LF of lake edge Herbaceous Required Herbaceous Provided Lake D-1 7.145 8931.3 9,050 x 25% x 20' /4' Herbaceous Provided Herbaceous Required LF of lake edge Lake E-1 1,875 1,500 Herbaceous Provided LF of lake edge Herbaceous Required Lake F-1 9875.0 9,900 7,900 Herbaceous Provided LF of lake edge Herbaceous Required Ex. Lake Blue 44955.0 44,955 35,964 x 25% x 20' /4' LF of lake edge Herbaceous Required Herbaceous Provided Compensatory For Ex. Lake Blue 89,910 89910.0 35,964 x 5 lf x 50% Herbaceous Provided LF of lake edge Herbaceous Required

Section 10-419. Alternate landscape betterment plan.

Applications pursuant to this division are entitled to demonstrate that the intent of this division can be more effectively accomplished through an alternate landscape betterment plan. Alternative, creative designs are encouraged for difficult sites for landscape design, such as "in-fill" and irregularly shaped parcels. The following conditions must be met:

(1) The plan may not deviate from the minimum open space requirements of section 10-415. (2) The plan must be labeled as an alternate landscape betterment plan, and delineate, identify and locate all

changes to the requirements of this division.

(3) 100 percent of the required trees installed must be native species.

(4) The plan must designate the location of all plant material to be installed. (5) The proposed alternate landscape betterment plan must exceed the intent of the minimum landscape

Section 10-420. Plant material standards.

(a) Quality. Plant materials used to meet the requirements of this division must meet the standards for Florida No. 1 or better, as set out in Grades and Standards for Nursery Plants, Parts I and II, Department of Agricultural, State of Florida (as amended). Root ball sizes on all transplanted plant materials must also meet state standards.

(b) This section addressed in Zoning Document Z-15-025, item #13. "Native Vegetation: Development order landscape plans must reflect 100% native vegetation for required landscaping within common elements and a minimum of 75% native vegetation for single-family lot landscaping. These planting requirements and a native plant list must be incorporated into the project's covenants and deed restrictions."

(1) Code-required trees must be a minimum of ten feet in height, have a two-inch caliper (at 12 inches above the ground) and a four-foot spread at the time of installation. Palms must have a minimum of ten feet of clear trunk at planting. Trees having an average mature spread or crown less than 20 feet may be substituted by grouping the same so as to create the equivalent of a 20-foot crown spread. Trees adjacent to walkways, bike paths and rights-of-way must be maintained with eight feet of clear trunk.

(2) Larger trees substituted to reduce the minimum number of general trees must be no less than four inches in

diameter at 12 inches above the ground and no less than 16 feet in height at the time of planting. The general tree requirement cannot be reduced in number by more than 50 percent. (d) Shrubs and hedges. Shrubs must be a minimum of 24 inches (48 inches for type F buffers) in height, at time of planting. Saw palmettos (Serenoa repens) and coonties (Zamia floridana) may be used as shrubs, provided they are 12 inches in height at time of planting. All shrubs must be a minimum three-gallon container size and be spaced 18 to 36 inches on center. They must be at least 36 inches (60 inches for type F buffers) in height within

12 months of time of planting and maintained in perpetuity at a height of no less than 36 inches (60 inches for (e) Required hedges must be planted in double staggered rows and maintained so as to form a continuous, unbroken, solid visual screen within a minimum of one year after time of planting.

(f) The height of all trees and shrubs must be measured from the final grade of the project site. (g) Mulch requirements. A two-inch minimum layer, after watering-in, of mulch or other recycled materials must be placed and maintained around all newly installed trees, shrubs, and groundcover plantings. Each tree must have a ring of mulch no less than 24 inches beyond its trunk in all directions. The use of cypress mulch is

(h) Invasive exotics. The following highly invasive exotic plants may not be planted, (ie. are prohibited) and must be removed from the development area. Methods to remove and control invasive exotic plants must be included on the development order plans. A statement must also be included on the development order that the development area will be maintained free from invasive exotic plants in perpetuity. For purposes of this subsection, invasive exotic plants include:

Common name	Scientific name	Common name	Scientific name
Earleaf acacia	Acacia auriculiformis	Old World climbing fern	Lygodium microphyllum
Woman's tongue	Albizia lebbeck	Melaleuca, paper tree	Melaleuca quinquenervia
Bishopwood	Bischofia javanica	Downy rose myrtle	Rhodomyrtus tomentosus
Australian pines	All Casuarina species	Chinese tallow	Sapium sebiferum
Carrotwood	Cupianopsis anacardioides	Brazilian pepper, Florida holly	Schinus terebinthifolius
Rosewood	Dalbergia sissoo	Tropical soda apple	Solanum viarum
Air potato	Dioscorea alata	Java plum	Syzygium cumini
Murray red gum	Eucalyptus camaldulensis	Rose apple	Syzygium jambos
Weeping fig	Ficus benjamina	Cork tree	Thespesia populnea
Cuban laurel fig	Ficus microcarpa	Wedelia	Wedelia trilobata
Japanese Climbing fern	Lygodium japonicum		

(1) Except for prohibited invasive exotic species as listed above, every consideration must be given to retaining as much of the existing plant material as possible.

(2) Each existing indigenous native tree preserved in place, which has a trunk diameter of four inches or greater measured at four and one-half feet above the ground (dbh) will receive a credit of five trees against the general landscape requirements. Native palms preserved in place that are eight feet or greater from ground level to base of fronds, will receive a credit of three trees. Existing sabal palms, identified on the development order plans that are relocated onsite will be given a two tree credit. Credits for existing trees may not be used to reduce the required parking canopy trees in parking or vehicle use areas. Existing native trees in buffers may be used for credit provided they occur within the required 100-foot buffer segment. Credits will apply only when the trees are labeled as protected-credit trees. If the protected-credit trees die within three years from the development order certificate of compliance, they must be replaced by the number of credit trees taken.

(3) Credits will apply where the preserved tree is in a barricaded area at least two-thirds the radius of the crown spread of the tree measured from the trunk center. In no case may this area radius be less than two and one-half feet. For indigenous native pine trees, the barricaded area may be no less than the full crown spread of the tree, unless other measures such as tie-walls or special slope treatment are constructed for additional protection. Prior to the land clearing stage of development, the owner, developer or agent must erect protective barriers that are at minimum made of three-foot high silt fence, three-foot high orange construction fence or approved alternative barricading material. For all native, indigenous open space areas, including shrubs and ground cover, barricades must be erected around the perimeter of the vegetation. The owner, developer or agent may not cause or permit the movement of equipment or the storage of equipment, material, debris or fill to be placed within the required protective barrier. The protected trees must remain alive and healthy at the end of the construction in order for his credit to apply.

General Trees:

Tree Credits in Indigenous Preserves:

* 5 tree credits = # of Tree Credits Provided # of existing trees

Section 10-421. Plant installation and maintenance standards.

of the plant material. Limerock located within planting areas must be removed and replaced with native or growing quality soil before planting. A plant's growth habit must be considered in advance of conflicts that might be created (e.g. views, signage, overhead power lines, lighting, buildings, circulation). Trees may not be placed where they

(a) Installation. Plant materials must be installed in soil conditions that are conducive to the proper growth

interfere with site drainage, subsurface utilities, or overhead utility lines, or where they will require frequent pruning in order to avoid interference with overhead power lines. All landscape materials must be installed in a recognized horticultural correct manner. At a minimum, the following installation

All landscape areas must be mulched unless vegetative cover is already established.

(2) Trees and shrubs used in buffers must be planted in a minimum width area equal to one-half the required width of the buffer. However, in no case may the planting area be less than five feet in width. (3) All landscaped areas must be provided protection from encroachment by any type of vehicle.

(4) All required plants used in buffers and landscaping must be installed using xeriscape principles. Xeriscape principles include water conservation through drought-tolerant landscaping, the use of appropriate plant material, mulching, and the reduction of turf areas. (5) Utility or drainage easements may overlap required buffers; however, no code required trees or shrubs may

be located in any utility or drainage easement unless a written statement, from the entity holding the beneficial interest in the easement, is submitted specifically stating that the entity has no objection to the landscaping and, that the proposed landscaping will not interfere with the long term maintenance of the infrastructure within easement area. No code required landscaping may be located in anystreet easement or right-of-way. To avoid conflicts with overhead utility lines, only trees less than 20 feet in height at maturity may be used directly adjacent to an overhead line. Variances or deviations from the requirements of this subsection are prohibited (6) Safe sight distance triangles at intersections and vehicle connections. Where an access way intersects a right-of-way or when a property abuts the intersection of two or more rights-of-way, a minimum safe sight distance triangular area must be established. Within this area, vegetation must be planted and maintained in a way that provides unobstructed visibility at a level between 30 inches and eight feet above the crown of the adjacent roadway. Landscaping must be located in accordance with the roadside recovery area provisions of the State of Florida Department of Transportation's Manual of Uniform Minimum Standards for Design, Construction, and Maintenance of Streets and Highways (FDOT Green Book) where appropriate. (7) Signage located within or adjacent to landscape buffer area. All trees and shrubs located within landscape buffer must be located so as not to block the view of signage as shown in Illustration 10-421(a). (8) If a wall or fence is proposed, but not required, then the required buffer plantings must be installed on the

exterior side (between the wall and the abutting property or street right-of-way) of the wall or fence. (b) Maintenance of landscaping. The owner is responsible for maintaining the required landscaping in a healthy and vigorous condition at all times. Tree and palm staking must be removed within 12 months after installation. All landscapes must be kept free of refuse, debris, disease, pests, and weeds. Ongoing maintenance to prohibit the establishment of prohibited invasive exotic species is required. (c) Pruning. Vegetation required by this code may only be pruned to promote healthy, uniform, natural growth of the vegetation (except where necessary to promote health, safety, and welfare) and be in accordance with "American

National Standard for Tree Care Operations - Tree, Shrub, and Other Woody Plant Maintenance - Standard Practices (Pruning) (A300, Part 1)" by the American National Standard Institute, and "Best Management Practices: Tree Pruning" by the International Society of Arboriculture (ISA). Trees must not be severely pruned to permanently maintain growth at a reduced height or spread. Pruning

must not interfere with the design intent of the original installation. Severely pruned trees must be replaced by the property owner. Replacement trees must meet the tree size requirements of LDC section 10-420. A plant's growth habit must be considered in advance of conflicts which might arise (i.e. views, signage, overhead power lines, lighting, circulation, sidewalks, buildings, and similar conflicts).

Section 10-422. Landscape certificate of compliance.

The landscape architect must inspect and certify that all open space area, landscaping and the irrigation system are in substantial compliance with the landscape and irrigation plans approved as part of the development order. An "as built" landscape plan highlighting any changes to the approved plans must be included with the certification. Any changes to an "alternative landscape betterment plan" must be approved by minor change to the development order. The general certificate of compliance procedure outlined in section 10-183 is applicable.

Section 10-423. Restoration standards for native vegetation removed without approval.

A restoration plan based on the minimum standards set out in this division will be required if indigenous native vegetation has been removed without permit or approval. Restoration plantings for vegetation other than trees must be nursery grown, containerized, and planted at no less than three feet on center. The number of replacement plantings will be computed by the square footage of the area destroyed. All other restoration criteria as set forth in chapter 14, article V, pertaining to tree protection, will also apply. Restoration plantings for indigenous native trees must be in compliance with the standards set forth in chapter 14, article V.

Section 34-1743. Residential project walls.

(a) Definition: For purposes of this section, a residential project fence means a wall or fence erected around a residential subdivision (but not individual lots) or development of ten or more dwelling units. (b) - A residential project tence of Wall:

(1) May be a maximum height of eight feet around the perimeter of the project upon a finding by the development services director that the fence does not interfere with vehicle visibility requirements (see section 34-3131) at traffic

(2) May include architectural features such as columns, cupolas, fountains, parapets, etc., at a height not to exceed twice the fence or wall height provided they are compatible with the project and abutting properties. (3) Required or optional residential project walls must be landscaped on the exterior side (between the wall and the

abutting property or street right-of-way) with a minimum of five trees per 100 lineal feet and shrub hedges, within a minimum plantable width of seven and one-half feet located on the exterior side of the wall or fence. a. Hedges must be planted and maintained so as to form a 36-inch high continuous visual screen within

1 year after time of planting. b. Trees adjacent to a right of way must be appropriately sized in mature form so that conflicts with overhead utilities, lighting and signs are avoided. The clustering of trees and use of palms adjacent to the right of way will

add design flexibility and reduce conflicts. (4) Must be constructed to ensure that historic water flow patterns are accommodated and all stormwater from the site is directed to on-site detention/retention areas in accordance with the SFWMD requirements.

(5) May not be permitted until proper documents have been recorded providing for the maintenance of the project fence and landscaping.

Section 10-329. Excavation.

(3) Maximum controlled water depth. Excavations for water retention or detention permitted under this section may not penetrate through impervious soil or rock layer that prohibits intermingling of various watery strata. The controlled water depth for water retention or detention excavations may not be greater than 12 feet unless the following criteria are met: a. Excavation depth may exceed 12 feet, to a maximum of 20 feet, if the water depth does not penetrate any impervious soil or rock layer. For all lakes deeper than 12 feet, a "Deep Lake Management Plan" must be submitted and approved prior to development order issuance. The Deep Lake Management Plan must address long-term management strategies for the lakes greater than 12 feet in depth that include, at a minimum, the following:

1. A destratification system must be installed in any lake that exceeds 12 feet in depth prior to certificate of compliance for the development order. Documentation that the proposed destratification system is adequately sized and designed for each lake deeper than 12 feet must be submitted prior to development order issuance.

2. Native shade trees, meeting the specifications of section 10-416(a)(1) must be planted around the lake perimeter, calculated at one tree per 100 feet of lake shoreline measured at control elevation. The tree planting is in addition to other required trees and must be coordinated with lake littoral plant requirements. The planting locations proposed to meet the wetland herbaceous plant requirements set forth in section 10-418, and other additional trees, must be graphically detailed as part of the Deep LakeManagement Plan. All plants must be grouped or clustered together around the lake perimeter. 3. The property owner must record covenants, in a form acceptable to the county attorney's office, providing that the lake management techniques, including operation of the destratification system specified in the Deep Lake Management Plan, will be

4. A post-construction bathymetric survey, sealed by a professional surveyor and mapper, must be submitted prior to certificate of compliance.



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