



Municipal Planning & Design Review Commission
Regular Meeting Agenda
Thursday, July 15, 2021, 5:30 PM
City Hall, Lakeland, Tennessee 38002

- I. CALL TO ORDER:
- II. ROLL CALL:
- III. APPROVAL OF MINUTES OF PREVIOUS MEETING:
 - 1. June 17, 2021
- IV. PUBLIC DISCUSSION:
- V. REPORTS OF OFFICERS AND COMMITTEES:
- VI. OLD BUSINESS:
 - 1. Action on approval of Final Plat at 9905 Memphis Arlington Road – Howard Property.
- VII. NEW BUSINESS:
 - 1. Action on approval of Preliminary Plat at Seed Tick Road – Barry Nash Property.
 - 2. Action on approval of Landscaping, Architecture and Lighting at 7677 Highway 64 – Shadrach's Coffee Roasting Company.
 - 3. Action on a recommendation to the Board of Commissioners for an Outline Plan – Chapel Lakes Planned Development.
- VIII. ANNOUNCEMENTS:
- IX. ADJOURNMENT:

LAKELAND MUNICIPAL PLANNING COMMISSION

MEETING MINUTES

THURSDAY, JUNE 17, 2021, 5:30 PM

CITY HALL, LAKELAND, TN.

- I. CALL TO ORDER:** The meeting was called to order at 5:30 PM by Chairman Susan Mitchell.

II. ROLL CALL BY ACTING RECORDER:

Jeff Adams	Present
Commissioner Jim Atkinson	Present
Scott Carmichael	Present
Mayor Mike Cunningham	Present
Todd Laessig	Absent (<i>excused</i>)
Brian Sullivan	Present
(C) Susan Mitchell	Present

Others present:

Shane Horn, City Manager

Richard Donovan, Planning Director

Emily Harrell, City Engineer

Richard Gonzales, Commissioner (in audience)

For the record: Mayor Cunningham administer the Oath of Office to Mr. Brian Sullivan prior to the beginning of the meeting.

III. APPROVAL OF MEETING MINUTES:

Mayor Cunningham moved to approve the regular meeting minutes of May 27, 2021, as written,

Commissioner Atkinson seconded the motion.

Motion passed, voice vote, 6 in favor 0 against.

IV. PUBLIC DISCUSSION:

For the record: No comments were heard.

V. REPORTS OF OFFICERS AND COMMITTEES: *None*

VI. OLD BUSINESS:

- 1. Action on a recommendation to Amend the Land Development Regulations of Lakeland, Tennessee, to make interim amendments to the Land Development Regulations concerning allowed uses for multi-family.**

Commissioner Atkinson moved to bring this item to the floor.

Mayor Cunningham seconded the motion.

**LAKELAND MUNICIPAL PLANNING COMMISSION
MEETING MINUTES
THURSDAY, JUNE 17, 2021, 5:30 PM
CITY HALL, LAKELAND, TN.**

Motion passed unanimously, voice vote, 6 in favor 0 against.

Discussion ensued.

After the discussion, Commissioner Atkinson moved to make a recommendation to the Board of Commissioners to amend the Land Development Regulations of Lakeland, Tennessee, to make interim amendments to the Land Development Regulations concerning allowed uses for multi-family as presented in the staff report.

Mayor Cunningham seconded the motion.

Motion passed unanimously, voice vote, 5 in favor 1 against. (*Vice Chairman Carmichael voted nay*)

VII. NEW BUSINESS:

1. Action on approval of Final Plat at 9905 Memphis Arlington Road-Howard Property.

Commissioner Atkinson moved to bring this item to the floor.

Mayor Cunningham seconded the motion.

Discussion ensued.

After the discussion, Mayor Cunningham moved to approve the Final Plat for the Howard Property with the following conditions:

- Commission's discussion, staff comments and conditions in the staff report and contingent of obtaining all signatures prior to recording of the plat.

Commissioner Atkinson seconded the motion.

Motion failed, roll call vote, 3 in favor 3 against.

Adams	Nay
Atkinson	Yea
Carmichael	Nay
Cunningham	Yea
Sullivan	Nay
(C) Mitchell	Yea

2. Action on approval of a Site Plan at 7677 Highway 64 – Shadrach's Coffee Roasting Company.

Commissioner Atkinson moved to bring this item to the floor.

Mr. Adams seconded the motion.

Motion passed unanimously, voice vote, 6 in favor 0 against.

**LAKELAND MUNICIPAL PLANNING COMMISSION
MEETING MINUTES
THURSDAY, JUNE 17, 2021, 5:30 PM
CITY HALL, LAKELAND, TN.**

Discussion ensued.

For the record: Comments were heard from the following:

Michael Boggs – Tralan Engineering.

After the discussion, Commissioner Atkinson moved to approve the Site Plan for Shadrach's Coffee Roasting Company located at 7677 Highway 64 contingent upon the following conditions:

- The architectural elevations, Lighting, and Landscaping plans all be deferred to the next meeting.

Mr. Sullivan seconded the motion.

Motion passed unanimously, voice vote, 6 in favor 0 against.

3. Action on approval of an amendment to Preliminary Development Plan at 3304 Canada Road – The Lake District.

Vice Chairman Carmichael moved to bring this item to the floor.

Mayor Cunningham seconded the motion.

For the record: Commissioner Atkinson disclosed he was employed by the company representing the applicant and that as advised by the City Attorney and according to the Ethics Ordinance he would not be rescuing himself but would be abstaining.

Discussion ensued.

For the record: Comments were heard from the following:

- David Smith – A2H
- Yehuda Netanel – The Lake District

After the discussion, Vice Chairman Carmichael moved to recommend approval of the amendment to the Preliminary Development Plan for The Lake District subjected to the Commission's discussion, and staff recommendations, with the removal of item # 1 pertaining to sidewalks.

Mayor Cunningham seconded the motion.

Motion passed, voice vote, 5 in favor 0 against 1 abstention. (*Commissioner Atkinson abstained*)

4. Action on approval of Preliminary Development Plan at Old Brownsville Road – Heathfield on Scott's Creek.

Mayor Cunningham moved to bring this item to the floor.

Mr. Sullivan seconded the motion.

**LAKELAND MUNICIPAL PLANNING COMMISSION
MEETING MINUTES**

**THURSDAY, JUNE 17, 2021, 5:30 PM
CITY HALL, LAKELAND, TN.**

Motion passed unanimously, voice vote, 6 in favor 0 against.

Discussion ensued.

For the record: Comments were from the following:
Josh Burditt – McCarty Grandberry Engineering

After the discussion, Commissioner Atkinson moved to recommend approval of the amendment to the Preliminary Development Plan for Heathfield on Scott's Creek subjected to the Commission's discussion, and staff comments and conditions in the staff report including the following:

1. Consolidate staff design standards
2. Full traffic study completed before the final approval
3. Location for cluster mailboxes need final approval.

Mr. Sullivan seconded the motion.

Motion passed unanimously, voice vote, 6 in favor 0 against.

5. Discussion on an amendment to Land Development Regulations for Cluster Mailbox Regulations.

Mayor Cunningham moved to bring this item to the floor.

Chairman Mitchell seconded the motion.

Discussion only, no action was taken.

VIII. ANNOUNCEMENTS:

IX. ADJOURNMENT:

Mayor Cunningham moved to adjourn the meeting. Commissioner Atkinson seconded the motion.

Motion passed unanimously, voice vote, 6 in favor 0 against.

The meeting was adjourned at 7:52 p.m.

Jeff Adams, *Secretary*

ATTEST:

Debra Murrell, *City Recorder*

These minutes were approved on July 15, 2021.

Meeting Cycle: Thursday, July 15, 2021

Subject: Action on approval of Final Plat at 9905 Memphis Arlington Road – Howard Property.

Staff Contact: Richard Donovan, Planning Consultant

STAFF RECOMMENDATION

The Staff recommend approval of the Howard Property Final Plat with no conditions.

DISCUSSION

SITE INFORMATION:

LOCATION:	9905 Memphis Arlington Road
PARCEL ID:	L0150 00545
ZONING:	RE (Exurban)
NEIGHBORHOOD TYPE:	Type II
AREA:	7.73 acres
OWNER:	Eugene and Betty Howard
APPLICANT:	Denise Howard
REPRESENTATIVE:	Kyle Ham, Ledford Engineering, Planning, and Architecture

ANALYSIS & BACKGROUND:

This property was rezoned from Agriculture to Exurban by the BOC at their June 10th meeting and became effective that evening. This 7.73 acre subdivision is creating 3, 2 acre plus parcels. The final plat typically acknowledges that the constructed roads, sidewalks, public utility infrastructure, stormwater facilities, and lot configuration is consistent with the approved preliminary plat and construction drawings. This subdivision is atypical in the fact that utilities and road are in place and available. These lots are being divided using the existing infrastructure that is in place.

PROPOSED (EXAMPLE) MOTIONS:

1. To approve the Final Plat for the Howard Property with the following conditions:
 - a. Commission's discussion.
 - b. Staff comments and conditions in the staff report.
2. To approve of the Final Plat for the Howard Property without conditions.
3. To deny the Final Plat for the Howard Property.
 - a. State the reason for denial.

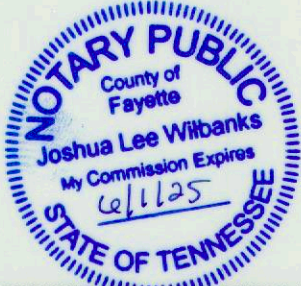
CERTIFICATE OF MORTGAGEE AND DEDICATION

WE, THE MORTGAGEE, Denise Howard, DO HEREBY FREELY CONSENT TO THE SUBDIVISION OF THIS PROPERTY IN ACCORDANCE WITH THE FINAL PLAT; DEDICATE THE PUBLIC IMPROVEMENTS, EASEMENTS, OR LANDS HEREIN SPECIFICALLY IDENTIFIED FOR DEDICATION, TO THE APPROPRIATE AGENCIES AS OUTLINED IN THIS PLAT AND APPROVED BY THE MUNICIPAL PLANNING COMMISSION OF LAKELAND, TENNESSEE FOR THE PURPOSES OF OPERATION, CONSTRUCTION AND MAINTENANCE OF THESE IMPROVEMENTS, AS NEEDED FOR THE PROPER DEVELOPMENT AND MAINTENANCE OF SAID SUBDIVISION.

Denise Howard
SIGNATURE OF AUTHORIZED AGENT OF MORTGAGEE DATE 7/12/2021

BEFORE ME, A NOTARY PUBLIC IN AND FOR SAID STATE AND COUNTY, DULY COMMISSIONED AND QUALIFIED, PERSONALLY APPEARED Joshua Lee Wilbanks, WITH WHOM I AM PERSONALLY ACQUAINTED (OR PROVED TO ME BASED ON SATISFACTORY EVIDENCE), AND THAT HE EXECUTED THE INSTRUMENT SET FORTH ABOVE FOR THE PURPOSES THEREIN CONTAINED, BY SIGNING HIS NAME.

WITNESS MY HAND, AT OFFICE, THIS 12 DAY OF July, 2021
[NOTARIAL SEAL]



Joshua Lee Wilbanks
NOTARY PUBLIC
PRINT NAME: Joshua Lee Wilbanks
MY COMMISSION EXPIRES: 6/1/25

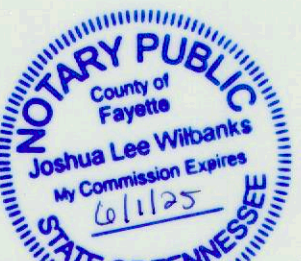
CERTIFICATE OF OWNERSHIP AND DEDICATION

THE UNDERSIGNED, Denise Howard, (ETC.) HEREBY CERTIFY THAT THEY ARE THE OWNERS OF THE FOREGOING PROPERTY AND THAT THE PLAT IS WITH THE FREE CONSENT AND IN ACCORDANCE WITH THE DESIRES OF THE ABOVE NAMED OWNERS, PROPRIETORS, DO HEREBY DEDICATE TO THE CITY OF LAKELAND ALL PUBLIC IMPROVEMENTS, EASEMENTS, OR LANDS HEREIN SPECIFICALLY IDENTIFIED FOR DEDICATION, FOR THE PURPOSES OF OPERATION, CONSTRUCTION AND MAINTENANCE OF THESE IMPROVEMENTS, AS NEEDED FOR THE PROPER DEVELOPMENT AND MAINTENANCE OF SAID SUBDIVISION.

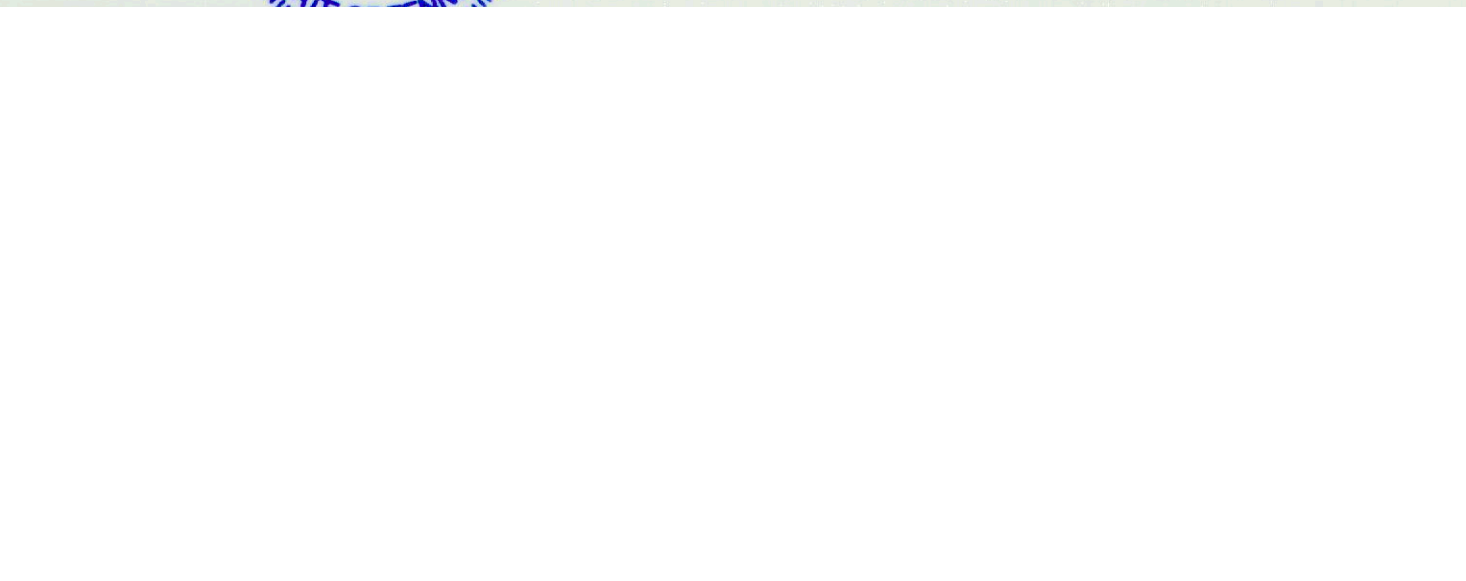
Denise Howard
SIGNATURE OF OWNER(S) DATE 7/12/2021

BEFORE ME, A NOTARY PUBLIC IN AND FOR SAID STATE AND COUNTY, DULY COMMISSIONED AND QUALIFIED, PERSONALLY APPEARED Joshua Lee Wilbanks, WITH WHOM I AM PERSONALLY ACQUAINTED (OR PROVED TO ME BASED ON SATISFACTORY EVIDENCE), AND THAT HE EXECUTED THE INSTRUMENT SET FORTH ABOVE FOR THE PURPOSES THEREIN CONTAINED, BY SIGNING HIS NAME.

WITNESS MY HAND, AT OFFICE, THIS 12 DAY OF July, 2021
[NOTARIAL SEAL]



Joshua Lee Wilbanks
NOTARY PUBLIC
PRINT NAME: Joshua Lee Wilbanks
MY COMMISSION EXPIRES: 6/1/25



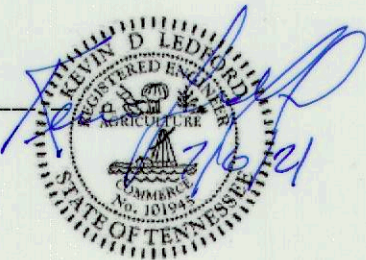
CERTIFICATE OF ENGINEER

I Kevin Ledford, A PROFESSIONAL ENGINEER, DO HEREBY CERTIFY THAT THE DESIGN OF PUBLIC AND PRIVATE IMPROVEMENTS PROVIDED FOR IN THE PRELIMINARY PLAT / CONSTRUCTION PLANS / FINAL PLAT (WHICHEVER IS APPLICABLE) ARE IN ACCORDANCE WITH ACCEPTABLE ENGINEERING PRACTICES, THE TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION, CITY OF LAKELAND MANUAL FOR PUBLIC WORKS AND MATERIALS SPECIFICATIONS, AND ALL CITY OF LAKELAND ORDINANCES, INCLUDING SUBDIVISIONS.

IN WITNESS, WHEREOF, I THE SAID Kevin Ledford, A PROFESSIONAL ENGINEER, HEREUNTO SET OUT HAND AND AFFIX MY SEAL THIS 6th DAY OF July, 2021.

TENNESSEE REGISTRATION NO. 101945

PROFESSIONAL ENGINEER DATE



PLANNING COMMISSION CERTIFICATE OF APPROVAL FOR RECORDING

I, _____ DO HEREBY CERTIFY THAT THE CITY OF LAKELAND MUNICIPAL PLANNING COMMISSION HAS APPROVED THIS PRELIMINARY / FINAL PLAT (WHICHEVER IS APPLICABLE). THE SIGNING OF THIS CERTIFICATE SHALL IN NO WAY BE DEEMED TO CONSTITUTE OR EFFECT AN ACCEPTANCE OF THE DEDICATION OF ANY STREET, IMPROVEMENT, OR OTHER GROUND SHOWN UPON THE PLAT.

MPC SECRETARY DATE

CERTIFICATE OF CITY ENGINEER

THE PRELIMINARY/FINAL PLAT/MINOR SITE PLAN REVIEW/SITE PLAN REVIEW (WHICHEVER IS APPLICABLE) IS REVIEWED AND DEEMED COMPLIANT WITH THE LAND DEVELOPMENT REGULATIONS, SUBJECT TO ANY WAIVERS, MODIFICATIONS, OR VARIANCES THEREOF GRANTED BY THE CITY OF LAKELAND.

CITY ENGINEER DATE

LEGAL DESCRIPTION OF LOT 1:

COMMENCING AT A POINT (P.O.C.) BEING THE INTERSECTION OF THE CENTERLINE OF SEED TICK ROAD (66' R.O.W.) AND THE CENTERLINE OF MEMPHIS ARLINGTON ROAD (R.O.W. VARIES); THENCE N61°56'37"E A DISTANCE OF 315.27 FEET TO A FOUND MAG NAIL; THENCE S46°47'57"E A DISTANCE OF 38.04 FEET TO A POINT, SAID POINT BEING THE POINT OF BEGINNING (P.O.B.); THENCE N61°50'40"E A DISTANCE OF 194.29 FEET TO THE NORTHEAST CORNER OF LOT 1; SAID POINT ALSO BEING ON THE WEST LINE OF THE JEFF & DENISE HOWARD PROPERTY AS RECORDED IN INSTRUMENT 15045851; THENCE S43°41'53"E A DISTANCE OF 530.97 FEET TO A POINT; THENCE S29°28'46"W A DISTANCE OF 160.57 FEET TO A POINT; SAID POINT BEING THE NORTHEAST CORNER OF LOT 2B OF THE OLIVER ACRES SUBDIVISION AS RECORDED IN PLAT BOOK 184 PAGE 66; THENCE N46°48'07"W A DISTANCE OF 628.45 FEET TO THE POINT OF BEGINNING, CONTAINING 98,845 SQUARE FEET OR 2.27 ACRES MORE OR LESS.

LEGAL DESCRIPTION OF LOT 2:

COMMENCING AT A POINT (P.O.C.) BEING THE INTERSECTION OF THE CENTERLINE OF SEED TICK ROAD (66' R.O.W.) AND THE CENTERLINE OF MEMPHIS ARLINGTON ROAD (R.O.W. VARIES); THENCE N61°56'37"E A DISTANCE OF 315.27 FEET TO A FOUND MAG NAIL; THENCE N61°50'40"E A DISTANCE OF 196.95 FEET TO A FOUND MAG NAIL, SAID POINT BEING THE NORTHWEST CORNER OF THE JEFF & DENISE HOWARD PROPERTY AS RECORDED IN INSTRUMENT 15045851; THENCE N61°50'58"E A DISTANCE OF 180.02 FEET TO A POINT; THENCE S28°58'15"E A DISTANCE OF 34.00 FEET TO THE POINT OF BEGINNING (P.O.B.); THENCE N60°39'35"E A DISTANCE OF 269.12 FEET TO THE NORTHEAST CORNER OF LOT 2; THENCE N30°04'01"W A DISTANCE OF 440.45 FEET; THENCE S48°01'16"W A DISTANCE OF 178.33 FEET TO A POINT; THENCE N36°34'40"W A DISTANCE OF 235.56 FEET; THENCE N51°01'59"W A DISTANCE OF 193.30 FEET TO A FOUND MAG NAIL; THENCE N28°58'15"W A DISTANCE OF 66.14 FEET TO THE POINT OF BEGINNING, CONTAINING 100,689 SQUARE FEET OR 2.31 ACRES MORE OR LESS.

LEGAL DESCRIPTION OF LOT 3:

COMMENCING AT A POINT (P.O.C.) BEING THE INTERSECTION OF THE CENTERLINE OF SEED TICK ROAD (66' R.O.W.) AND THE CENTERLINE OF MEMPHIS ARLINGTON ROAD (R.O.W. VARIES); THENCE N61°56'37"E A DISTANCE OF 315.27 FEET TO A FOUND MAG NAIL, THENCE N61°50'40"E A DISTANCE OF 196.95 FEET TO A FOUND MAG NAIL, SAID POINT BEING THE NORTHWEST CORNER OF THE JEFF & DENISE HOWARD PROPERTY AS RECORDED IN INSTRUMENT 15045851; THENCE N61°50'58"E A DISTANCE OF 180.02 FEET TO A FOUND MAG NAIL; THENCE N60°39'35"E A DISTANCE OF 268.47 FEET TO A POINT; THENCE S30°04'01"E A DISTANCE OF 34.00 FEET TO THE POINT OF BEGINNING (P.O.B.); THENCE N60°39'35"E A DISTANCE OF 190.30 FEET; THENCE N60°31'56"W A DISTANCE OF 132.26 FEET; THENCE S6°35'04"E A DISTANCE OF 442.45 FEET; THENCE S48°01'16"W A DISTANCE OF 149.45 FEET TO A POINT; THENCE N30°04'01"W A DISTANCE OF 440.45 FEET TO THE POINT OF BEGINNING, CONTAINING 97,952 SQUARE FEET OR 2.25 ACRES MORE OR LESS.

CERTIFICATE OF SURVEYOR

STATE OF TENNESSEE) COUNTY OF SHELBY) I, ROBERT LANCE LANIER HEREBY CERTIFY THAT THIS PLAT WAS PREPARED FROM NOTES TAKEN DURING AN ACTUAL SURVEY MADE BY ME DURING THE MONTH OF JULY, 2021, AND THAT THIS PLAT OR SITE PLAN CORRECTLY REPRESENTS SAID SURVEY. ALL BEARINGS ARE REFERENCED TO THE 1983 TENNESSEE STATE PLANE COORDINATE SYSTEM; ALL NEW PROPERTY CORNERS ARE MARKED IN ACCORDANCE WITH LAKELAND SUBDIVISION STANDARDS; THE PRECISION OF THE UNADJUSTED SURVEY IS 1:10,000 OR GREATER AND ALL SPECIAL FLOOD HAZARD AREAS ARE PROPERLY LOCATED AS PER THE LATEST FLOOD INSURANCE RATE MAP. ALL DIMENSIONS ARE EXPRESSED IN FEET AND DECIMALS. ALL BEARINGS, DISTANCES, AND FIELD INFORMATION ARE TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE.

IN WITNESS, WHEREOF, I THE SAID ROBERT LANCE LANIER, A LAND SURVEYOR, HEREUNTO SET OUT HAND AND AFFIX MY SEAL THIS 12TH DAY OF JULY 2021.

TENNESSEE REGISTRATION NO. 3065



FINAL PLAT
HOWARD PROPERTY
(SUBDIVISION OF PARCELS RECORDED IN
INSTRUMENT #14113602)
LAKELAND, TENNESSEE

DATE: 6/28/21

OWNER/DEVELOPER:
EUGENE & BETTY HOWARD
9905 MEMPHIS ARLINGTON ROAD
LAKELAND, TN 38002

LEPA JOB: 1468-00

Ledford
Engineering • Planning • Architecture
5567 Commander Drive, Suite 105, Arlington, TN 38002
phone: 901.867.5220 fax: 901.867.5331

TOTAL LOTS: 3
ZONED: RE

SHEET 2 OF 2

Meeting Cycle: Thursday, July 15, 2021

Subject: Action on approval of Preliminary Plat at Seed Tick Road – Barry Nash Property.

Staff Contact: Richard Donovan, Planning Consultant

STAFF RECOMMENDATION

The Staff is with holding a recommendation on the Preliminary Plat for the Barry Nash Property at this time but will provide a recommendation at the meeting.

DISCUSSION

SITE INFORMATION:

LOCATION:	Unaddressed Seed Tick Road
PARCEL ID:	L0150 00077
ZONING:	R1 (Suburban Estate)
NEIGHBORHOOD TYPE:	Type II
AREA:	1.97 acres
APPLICANT/OWNER:	Barry & Heather Nash and Dale Hoskins
REPRESENTATIVE:	Michael Howell, A2H

BACKGROUND:

This property is just under 2 acres and located on Seed Tick Road near French Springs Road. The property is zoned R1 and in Neighborhood Type 2. This subdivision is atypical in the fact that road is in place, but the utilities are not. This property does not have access to public sewer and that is the reason it is required to go through the full subdivision process. This will require a preliminary plat, construction drawings, development contract and the final plat due to the utility expansion be required. The LDRs require any lot under 2 acres to have access to sewer.

ANALYSIS:

General content:

- The preliminary plat is missing the current required signature blocks.

Required notes:

- The name, address, and phone number for the licensed survey need to be shown on the plat.

- Missing the required note for the purpose of the plat that includes the number of lots and residential units allowed per zoning.

Setbacks:

- The 50-foot scenic corridor buffer needs to be shown on the plat. The buffer will be the de facto setback for any structures on the property.
- The rear setback is shown at 20 feet while the LDRs require a 30-foot rear setback.

Minimum lot size:

Staff has reviewed this item and the Preliminary Plat meets the LDR requirements.

Road frontage:

Staff has reviewed this item and the Preliminary Plat meets the LDR requirements.

Easement:

Staff has reviewed this item and the Preliminary Plat meets the LDR requirements.

Flood data:

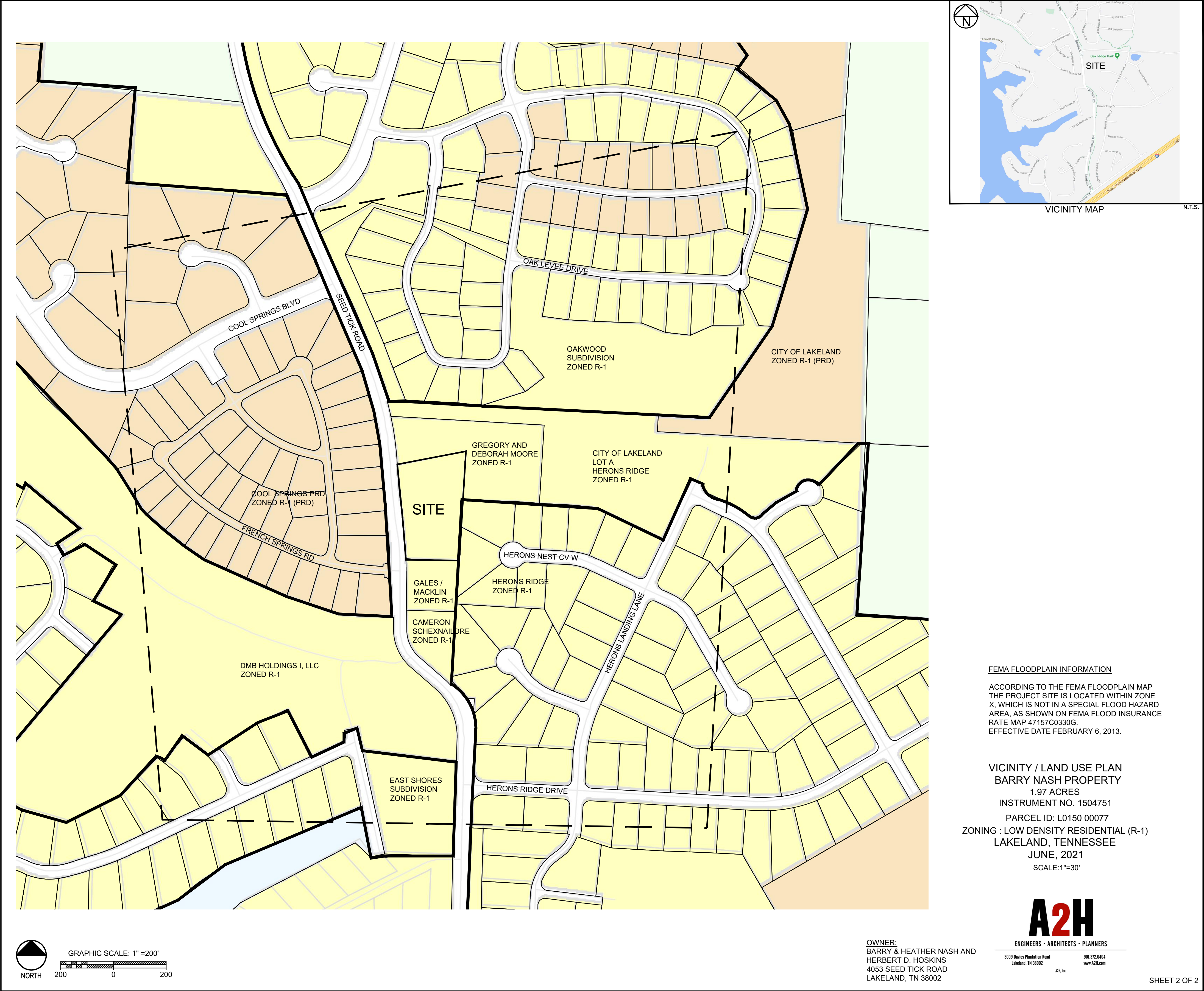
Staff has reviewed this item and the Preliminary Plat meets the LDR requirements.

Utilities:

Staff has reviewed this item and the Preliminary Plat meets the LDR requirements.

PROPOSED (EXAMPLE) MOTIONS:

1. To approve the Preliminary Plat for the Barry Nash Property with the following conditions:
 - a. Commission's discussion.
 - b. Staff comments and conditions in the staff report.
2. To approve of the Preliminary Plat for the Barry Nash Property without conditions.
3. To deny the Preliminary Plat for the Barry Nash Property.
 - a. State the reason for denial.



Meeting Cycle: Thursday, July 15, 2021

Subject: Action on approval of Landscaping, Architecture and Lighting at 7677 Highway 64 – Shadrach’s Coffee Roasting Company.

Staff Contact: Richard Donovan, Planning Consultant

STAFF RECOMMENDATION

The Staff is with holding a recommendation on the Landscaping, Architecture and Lighting for the Shadrach’s Coffee Roasting Company at this time but will provide a recommendation at the meeting.

DISCUSSION

SITE INFORMATION:

LOCATION:	7677 Highway 64
PARCEL ID:	L0159 00529
ZONING:	C2 (Regional Business)
BUILDING SIZE:	1,436 square feet
LOT SIZE:	1.09 acres
APPLICANT/OWNER:	Tranlan Engineering, Inc.
REPRESENTATIVE:	Michael Boggs, Tranlan Engineering, Inc.

BACKGROUND:

This site is located on Highway 64 between Esporta Fitness (former LA Fitness) and Banfield Pet Hospital on one of the few available lots near the I-40 interchange. In June this item was before the MPC/DRC for approval of a Site Plan. The MPC/DRC approved the site plan with the condition that the architectural elevations, landscaping, and site lighting be reviewed and approved by the body at a later date.

ANALYSIS & DISCUSSION ITEMS:

Architecture, façade materials, and rooflines:

Building Materials:

The LDR states, “All Facades shall be constructed of a durable, natural material, such as stone, or brick; false materials intended to look like natural materials are prohibited, unless otherwise stated.”

- The primary façade material is brick with metal accents.

- This is a design element which gives the MPC/DRC the ability to approve an alternative.

Building Cap Type:

The LDR require the following cap types for the commercial buildings, “Permitted Cap Types are the parapet and pitched roof. A tower is permitted.”

The applicant has indicated the use of a parapet which is defined in the following manner by the LDR:

Parapet Cap Type. (Refer to Figure 3.D-1). A parapet is low wall projecting above a building’s roof along the perimeter of the building. It may be utilized with a flat or pitched roof and can serve to hide roof-top mechanicals from view of the street.

- a. Parapet Height. Height is measured from the top of the Upper Story to the top of the parapet.
 - 1) Minimum height is two (2) feet with a maximum height of six (6) feet.
 - 2) Cap shall be high enough to screen the roof and any roof appurtenances from view of the street(s) and any adjacent building of similar height.
 - b. Horizontal Expression Lines. An Expression Line shall define the cap from the Upper Stories of the building and the top of the cap.
 - c. Occupied Space. Occupied space shall not be incorporated behind this Cap Type.
- A parapet is shown on a portion of the building not the perimeter as required to meet the definition.
 - All other requirements are met for a parapet.

Landscaping, screening, and buffering:

Staff has reviewed the landscaping plan and the plan meets the City’s requirements with one exception.

- 1) Frontage buffers are required to meet the following:
 - 3.e Fence. A minimum of three (3) and a maximum of four (4) feet in height steel or PVC picket fence is required, located two (2) feet from the back of curb of the vehicular area.
 - i. No other fence material is permitted.
 - ii. Fence colors are limited to black, grey, or dark green.
 - iii. Fence opacity shall be no greater than sixty (60) percent, no less than thirty (30) percent.
 - iv. A gate opening of six (6) feet is permitted every one hundred (100) feet.
- Staff believes this is minor in nature and can be resolved with a condition of approval.

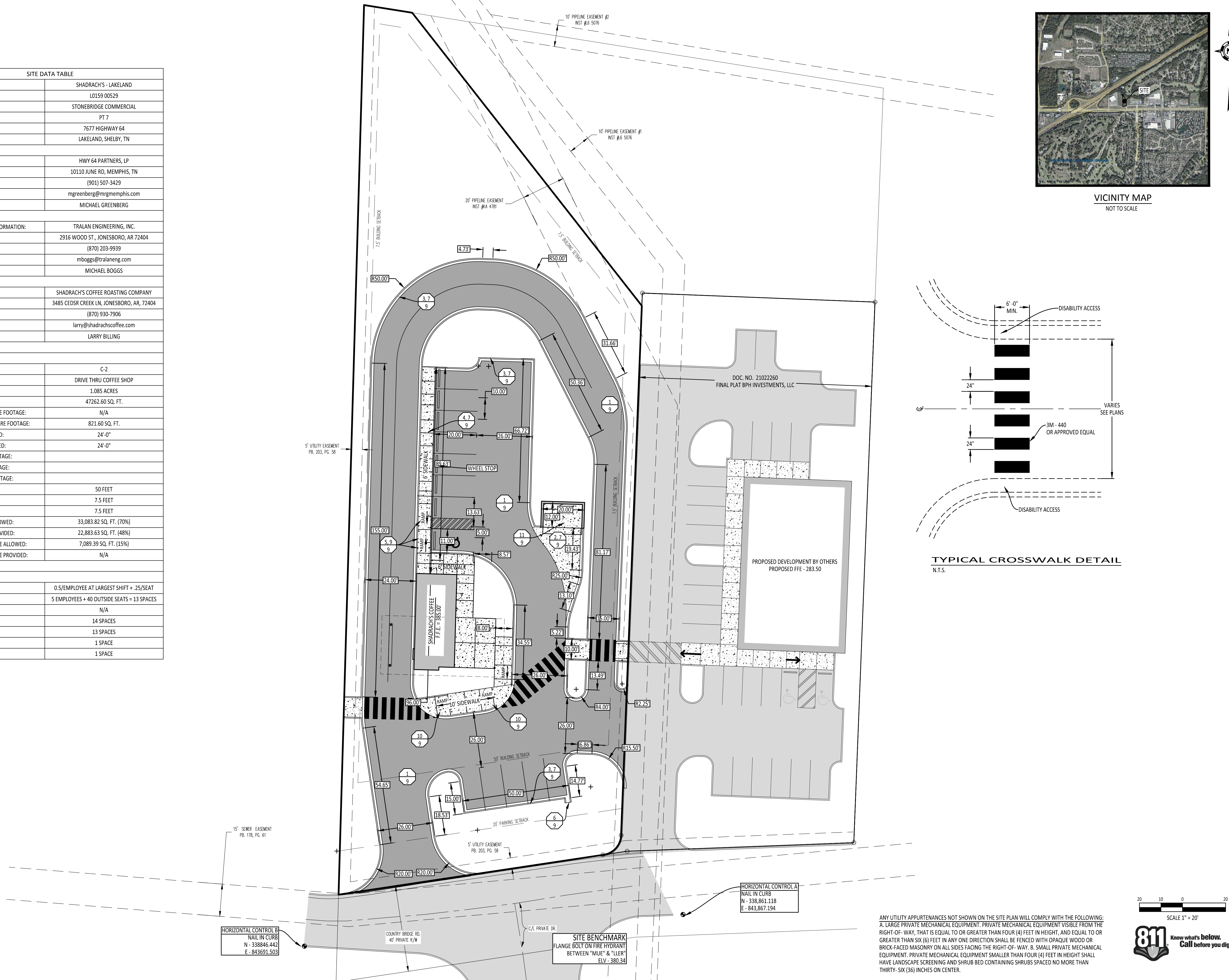
Site Lighting:

The applicant has not submitted a lighting plan at this time. The applicant has communicated with staff that the plan should be ready prior to the meeting. Staff will provide an update on the lighting plan at the meeting.

PROPOSED (EXAMPLE) MOTIONS:

1. To approve the Landscaping, Architecture and Lighting for the Shadrach's Coffee Roasting Company with the following conditions:
 - a. Commission's discussion.
 - b. Staff comments and conditions in the staff report.
2. To approve of the Landscaping, Architecture and Lighting for the Shadrach's Coffee Roasting Company without conditions.
3. To deny the Landscaping, Architecture and Lighting for the Shadrach's Coffee Roasting Company.
 - a. State the reason for denial.

SITE DATA TABLE	
PROJECT NAME:	SHADRACH'S - LAKELAND
PARCEL ID:	L0159 00529
SUBDIVISION:	STONEBRIDGE COMMERCIAL
LOT NUMBER:	PT 7
ADDRESS:	7677 HIGHWAY 64
CITY, COUNTY, STATE	LAKELAND, SHELBY, TN
OWNER INFORMATION:	HWY 64 PARTNERS, LP
ADDRESS:	10110 JUNE RD, MEMPHIS, TN
PHONE NUMBER:	(901) 507-3429
E-MAIL ADDRESS:	mgreenberg@mrgrmemphis.com
CONTACT NAME:	MICHAEL GREENBERG
DESIGN PROFESSIONAL INFORMATION:	TRALAN ENGINEERING, INC.
ADDRESS:	2916 WOOD ST., JONESBORO, AR 72404
PHONE NUMBER:	(870) 203-9939
EMAIL ADDRESS:	mboggs@tralaneng.com
CONTACT NAME:	MICHAEL BOGGS
APPLICANT INFORMATION:	SHADRACH'S COFFEE ROASTING COMPANY
ADDRESS:	3485 CEDSR CREEK LN, JONESBORO, AR, 72404
PHONE NUMBER:	(870) 930-7906
E-MAIL ADDRESS:	larry@shadrachcoffee.com
CONTACT NAME:	LARRY BILLING
ZONING USE AND BULK	
ZONING DISTRICT:	C-2
PROPOSED USE:	DRIVE THRU COFFEE SHOP
SITE ACREAGE:	1.085 ACRES
SITE SQUARE FOOTAGE:	47262.60 SQ. FT.
EXISTING BUILDING SQUARE FOOTAGE:	N/A
PROPOSED BUILDING SQUARE FOOTAGE:	8221.60 SQ. FT.
BUILDING HEIGHT ALLOWED:	24'-0"
BUILDING HEIGHT PROPOSED:	24'-0"
REQUIRED BUILDING FRONTAGE:	
EXISTING BUILDING FRONTAGE:	
PROPOSED BUILDING FRONTAGE:	
FRONT SETBACK:	50 FEET
REAR SETBACK:	7.5 FEET
SIDE SETBACK:	7.5 FEET
IMPERVIOUS SURFACE ALLOWED:	33,083.82 SQ. FT. (70%)
IMPERVIOUS SURFACE PROVIDED:	22,883.63 SQ. FT. (48%)
SEMI-IMPERVIOUS SURFACE ALLOWED:	7,089.39 SQ. FT. (15%)
SEMI-IMPERVIOUS SURFACE PROVIDED:	N/A
PARKING STANDARDS	
PARKING RATIO:	0.5/EMPLOYEE AT LARGEST SHIFT + 25/SEAT
PARKING REQUIRED:	5 EMPLOYEES + 40 OUTSIDE SEATS = 13 SPACES
EXISTING PARKING:	N/A
MAX. PARKING ALLOWED	14 SPACES
PARKING PROVIDED:	13 SPACES
ADA PARKING REQUIRED:	1 SPACE
ADA PARKING PROVIDED:	1 SPACE



COMPANY INFO:
2916 WOOD STREET
JONESBORO, AR 72404
PH: 1-870-203-9939
WWW.TRALANENG.COM

TRALANENGINEERING

PROJECT:
SHADRACH'S - LAKELAND

CLIENT:
SHADRACH'S COFFEE ROASTING COMPANY

MICHAEL A. BOGGS
REGISTERED ENGINEER
No. 122403
STATE OF TENNESSEE
06/14/2021

REVISIONS		
DATE	BY	DESCRIPTION
06/14/2021	MAB	REV PER LAKELAND

DRAWING INFO.	
DRAWN BY:	MAB
DATE:	04/29/2021
SCALE:	1" = 20'
JOB NO.:	20-048
CAD NO.:	

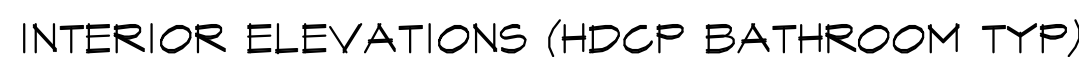
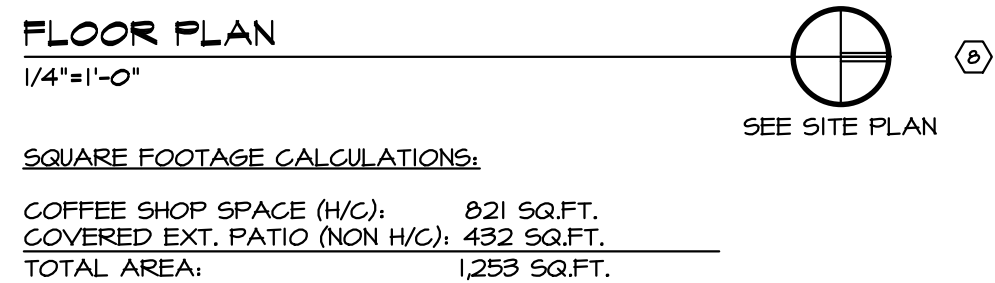
SITE DIMENSION
PLAN

SHEET NUMBER:
5 of 9

ANY UTILITY APPURTENANCES NOT SHOWN ON THE SITE PLAN WILL COMPLY WITH THE FOLLOWING:
A. LARGE PRIVATE MECHANICAL EQUIPMENT: PRIVATE MECHANICAL EQUIPMENT VISIBLE FROM THE RIGHT-OF-WAY, THAT IS EQUAL TO OR GREATER THAN FOUR (4) FEET IN HEIGHT, AND EQUAL TO OR GREATER THAN SIX (6) FEET IN ANY ONE DIRECTION SHALL BE FENCED WITH OPAQUE WOOD OR BRICK-FACED MASONRY ON ALL SIDES FACING THE RIGHT-OF-WAY. B. SMALL PRIVATE MECHANICAL EQUIPMENT: PRIVATE MECHANICAL EQUIPMENT SMALLER THAN FOUR (4) FEET IN HEIGHT SHALL HAVE LANDSCAPE SCREENING AND SHRUB BED CONTAINING SHRUBS SPACED NO MORE THAN THIRTY-SIX (36) INCHES ON CENTER.

20 10 0 20
SCALE 1" = 20'

811
Know what's below.
Call before you dig.



* ALL ACCESSORIES MOUNTED TO SOLID BLOCKING
 & LOCATED PER ADA REQ.

NOTE:

1. ROUGH-IN BY PLUMBING CONTRACTOR, EQUIPMENT PROVIDED BY KITCHEN EQUIPMENT CONTRACTOR. INSTALLATION & CONNECTION BY PLUMBING CONTRACTOR. THIS CONTRACT - NOTE: PLUMBING CONTRACTOR TO OBTAIN KITCHEN EQUIPMENT SPECIFICATIONS & INSTALL/COORDINATE EQUIPMENT PER SPECIFICATIONS & KITCHEN EQUIPMENT CONTRACTOR'S REQUIREMENTS
2. ATTACHED HOOD TO MTL STUD WALL & FROM BAR JOIST'S ABV - VERIFY w/ KITCHEN EQUIPMENT CONTRACTOR

REMARKS	INTERIOR FINISH SCHEDULE
(1) USE 1/2"TK TYPE "WR" GYP BD @ WET-WALLS ONLY THIS ROOM	

WINDOWS					
10	3'-0"	1'-8"		ALUM	ANODIZED FRAME - SEE EXTERIOR ELEVATIONS
11	3'-0"	1'-8"		ALUM	ANODIZED FRAME - SEE EXTERIOR ELEVATIONS
12	5'-0"	5'-8"		ALUM	ANODIZED FRAME - SEE EXTERIOR ELEVATIONS
13	10'-6"	10'-0"		ALUM	ANODIZED FRAME - SEE EXTERIOR ELEVATIONS
14	5'-0"	5'-8"		ALUM	ANODIZED FRAME - SEE EXTERIOR ELEVATIONS

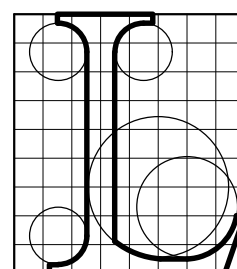
Diagram of a door opening with dimensions and labels:

- Width: 3'-0"
- Height: 7'-0"
- Labels: FLUSH, HM INSUL, ENTRANCE DR, HM FR
- Option: (A) 1, 2, 3

**FLOOR PLAN, WALL SECTION
& SCHEDULES**

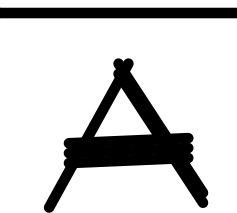
NEW COFFEE SHOP FOR:
SHADRACHS
7677 HIGHWAY 64
LAKELAND, TN 38002

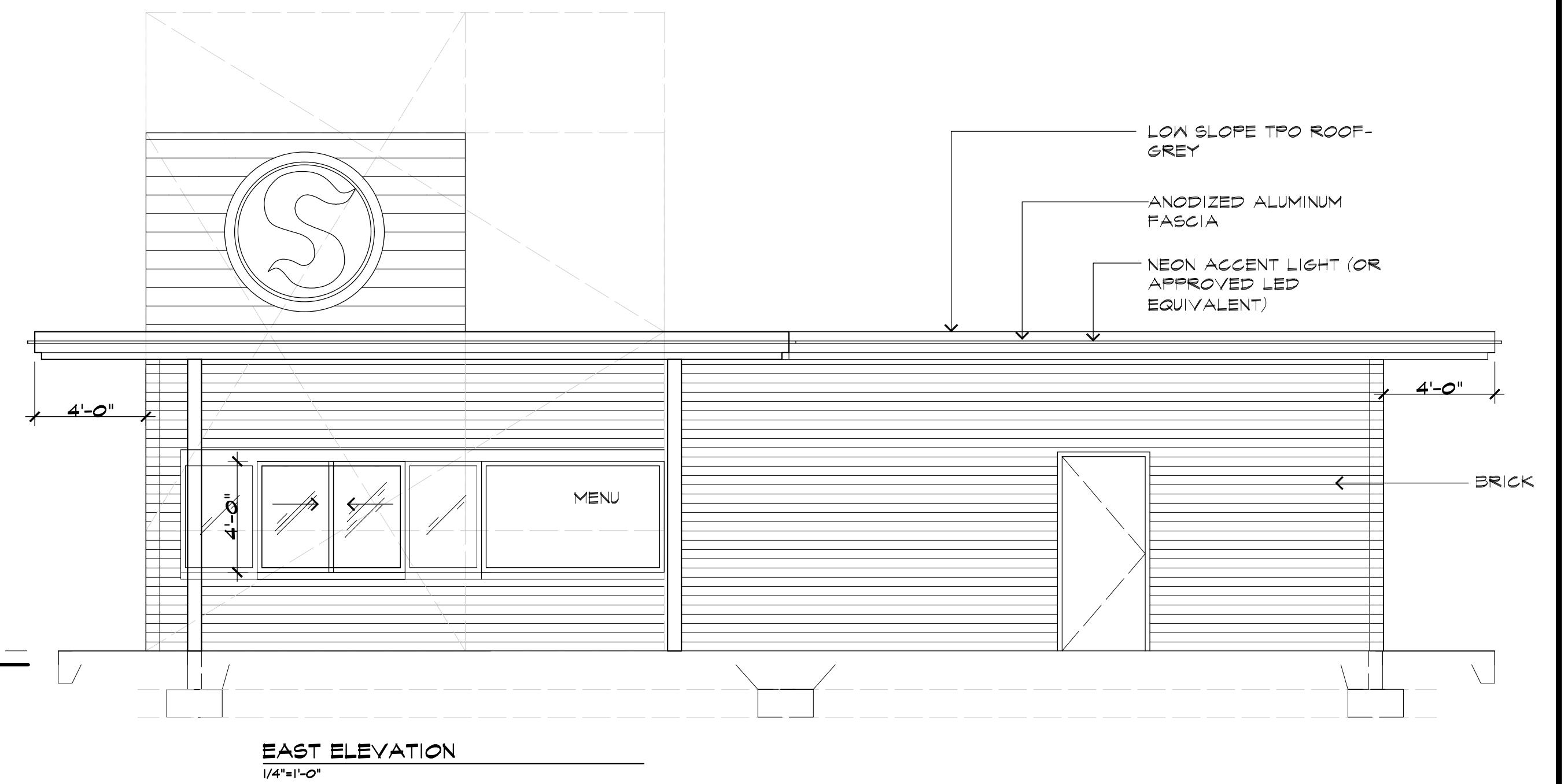
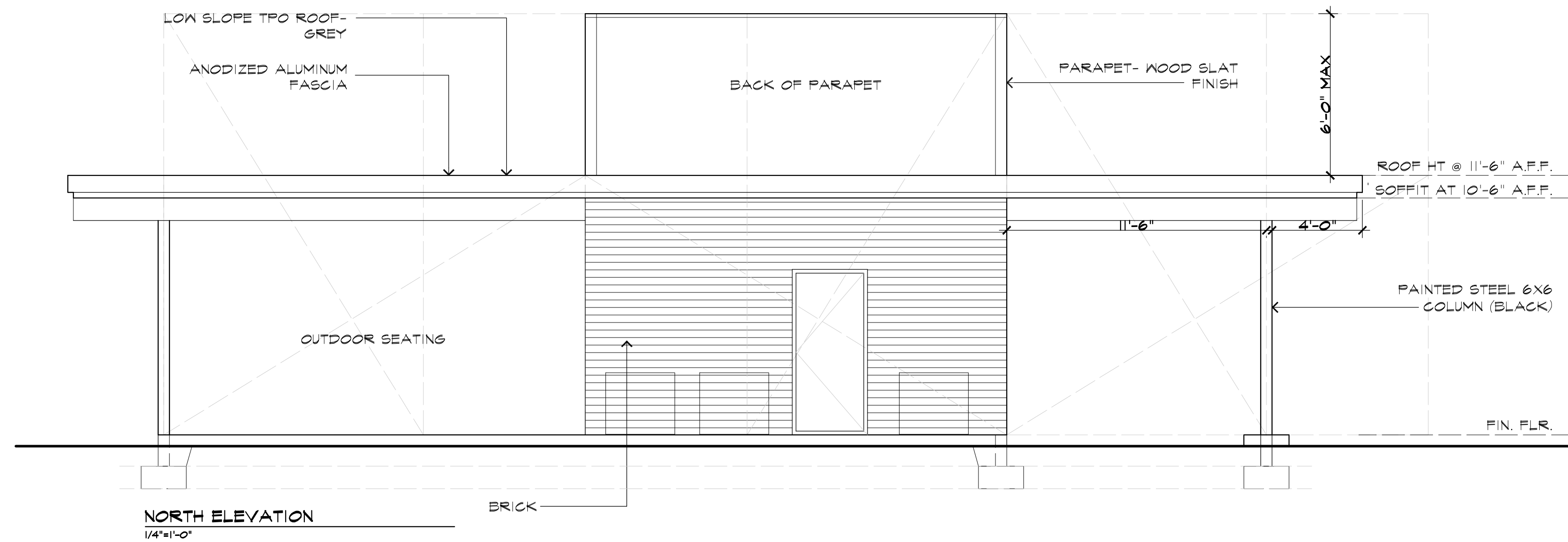
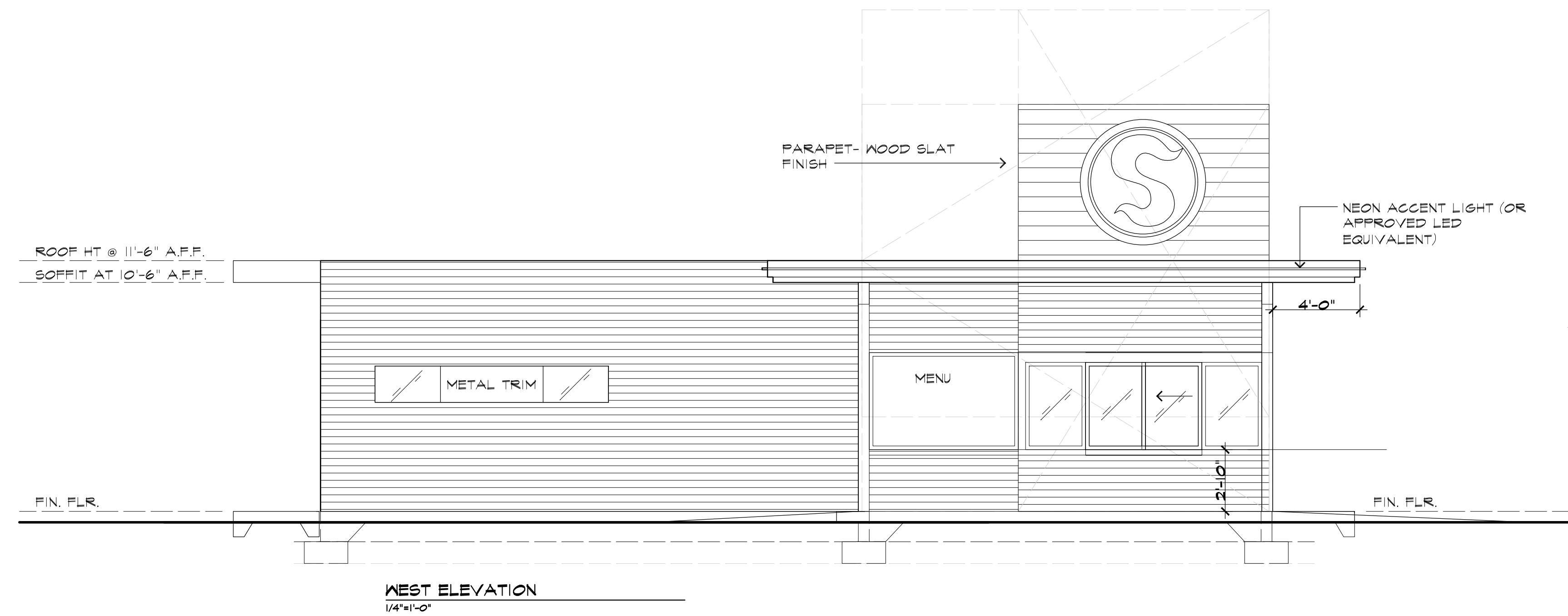
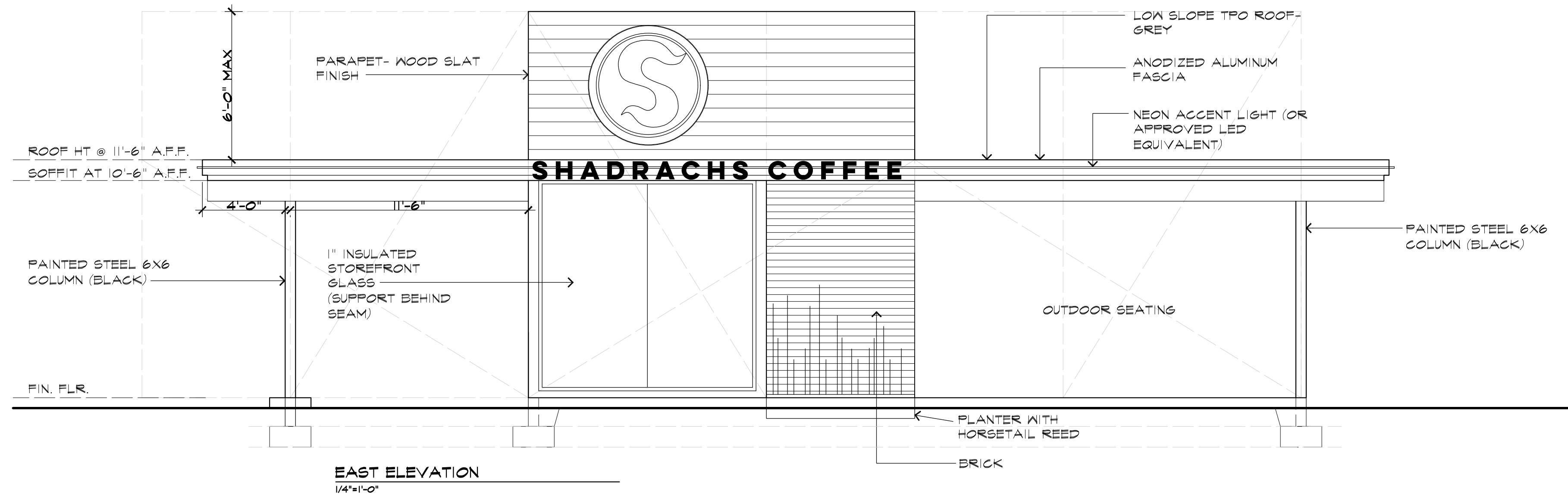
COMM. NO.:
DATE : 06/08/202
FILE:



**LITTLE & ASSOCIATES
ARCHITECTS**

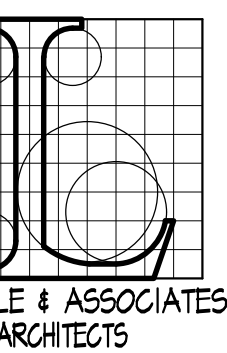
501 UNION
JONESBORO, AR
(870) 930-3813 TEL
(870) 930-3820 FAX
littlearch@sbcglobal.net





EXTERIOR ELEVATIONS

NEW COFFEE SHOP FOR
SHADRACHS
1671 Highway 64
LAKELAND, TN 38002
COMM. NO.:
DATE: 06/08/2021
FILE:



501 UNION
JONESBORO, AR
(870) 430-3913 TEL
(870) 430-3820 FAX
littlearch@ebcglobal.net

A2

Meeting Cycle: Thursday, July 15, 2021

Subject: Action on a recommendation to the Board of Commissioners for an Outline Plan – Chapel Lakes Planned Development.

Staff Contact: Richard Donovan, Planning Consultant

STAFF RECOMMENDATION

The Staff recommend approval of the Chapel Lakes Outline Plan with the following conditions:

1. Any cluster mailbox shall be of a decorative style and be landscaped. The DRC and USPS shall approve any cluster mailboxes and landscaping prior to installation. This shall be completed prior to the construction plans. Locations of the cluster boxes shall be included in the PDP.
2. The approval of this request should be contingent upon the Clear Creek sewer interceptor being constructed.

DISCUSSION

SITE INFORMATION:

LOCATION:	Champers Chapel Road
PARCEL ID:	L151 00483 & L151 00049
ZONING:	R1 (Suburban Estate), R2 (Suburban Manor), OS2 (Neighborhood Open Space), and OS5 (Conservation)
AREA:	126.4 Acres
APPLICANT/OWNER:	Cummings, LLC.
REPRESENTATIVE:	Michelle Ye, DT Design Studio

ANALYSIS & BACKGROUND:

Chapel Lakes PD is a planned residential development having a combined area of 126.4-acres. The subject property is bound generally on the east by Lakeland Trace future ROW, the west by Chambers Chapel, the north by Oakwood Grove, and the south by the future site of the Estates at Chambers Chapel PD.

Cummings, LLC intends to develop the combined 126-acre property as a planned residential development offering 239 single-family residential lots with common open space to include walking trails, ponds, and guest parking. The proposed lot sizes will range from 55-foot wide (5,500 sf) cottage lots to 70-foot wide (10,000 sf) suburban manor lots to 100-foot wide (17,500

sf) suburban estate lots as delineated by the site data table. The proposed overall density is 1.89 dwelling units per acre. The overall green space contemplated is 37.6 acres.

LAND USE PLAN:

Lakeland's Comprehensive Land Use Plan Update, adopted March of 2006, recommends "Suburban Neighborhood" and "Conservation Overlay" for the property.

"Suburban Neighborhood" is defined as "Primarily single-family residential lots with a maximum density of 2.5 dwelling units per acre, but may contain religious facilities, schools, and public buildings. Development requires public water and sanitary sewer service. Streets shall be designed with an urban cross section".

"Conservation Overlay" is defined as "Primarily Planned Developments containing single family residential lots that require conservation development practices in the design and preservation of natural resources. Areas shall contain substantial passive open space and possibly come limited active open space. Development requires public water and sanitary sewer services. Streets may be designed with a rural or urban cross-section as approved by the Municipal Planning Commission and Board of Commissioners.

DEVELOPMENT REGULATIONS:

The subject properties are currently zoned R1 (Suburban Estate), R2 (Suburban Manor), OS2 (Neighborhood Open Space), and OS5 (Conservation) as defined and regulated by the Lakeland Land Development Regulations. This is different than most PDs before the MPC and BOC as there are currently zoning entitlements in place for the property and the property could develop through the traditional subdivision process.

However, in the Spring of 2014 the City adopted a planned development ordinance to allow for flexibility in all zoning districts with a PD. The planned development ordinance allows greater flexibility of design and relief from various provisions of the Lakeland Development Regulations (Zoning Ordinance) when the standards and criteria of the planned development ordinance are met. When a planned development is approved, the underlying zoning of the property remains unchanged, but the conditions of the planned development regulate the uses and bulk regulations of the property as opposed to the zoning provisions.

DISCUSSION ITEMS:

- A. Does the proposed planned development have access to all utilities including sanitary sewer?
Staff's Opinion: The main concern with extending approval of developments in this part of the City is the lack of capacity in the Clear Creek Interceptor. Once the new interceptor construction has begun, there will not be an issue. As such, the MPC and BOSC can grant approval contingent on the construction of the Interceptor.
- B. Does the proposed planned development meet the standards and criteria of the planned development ordinance?
Staff's Opinion: Yes, the proposed planned development provides greater design flexibility, protects the natural resources of the property, promotes an efficient use of land, provides more

useable provisions for public and common area facilities, provides an efficient traffic circulation pattern, and provides a safe and desirable living environment.

- C. Does the proposed planned development comply with the various recommendations of the Comprehensive Land Use Plan?

Staff's Opinion: Yes, the proposed planned development (as reviewed at outline plan level) complies with the various plans and recommendations of the Comprehensive Land Use Plan.

- D. Does the proposed planned development comply with all applicable provisions of the Lakeland Development Regulations?

Staff's Opinion: Yes, as proposed the planned development generally complies. Additional review is necessary at the Preliminary Development Plan approval level to ascertain complete compliance.

Originally the Outline Plan was scheduled to be on the May agenda and was held for the July agenda by the applicant to address some concerns of the City and Citizens. The below are a few highlights of the changes that have occurred since May:

	May 2021	July 2021
Number of Homes	261	239
Density (Units an acre)	2.1	1.89
Open Space (acres)	28.6	37.6

The applicant has provided a list of the items they are seeking to vary from in the LDRs. This is in the spirit of complying with our soon to be requirement for stating what exception they need and why and where they seek to exceed the LDRs.

Below is the applicants list of exceptions from the LDRs. The packet provided to the MPC also has the letter stating these requests and why they are needed. Each request has staff's take on the request.

- 1) Provide less than 20% of lost as R1.
 - a. Applicant is providing 11.5% of the site in R1 lots
 - b. Staff has been working with the Applicant prior to the most recent changes to the LDRs for the Zoning Mix
 - c. The pre-application meeting was held in January of 2021.
 - d. Sketch Plan feedback was received in March of 2020.
- 2) Utilization of 55-foot right-of-way with a 5-foot sidewalk on rural neighborhood streets.
 - a. Staff requested the applicant provide a sidewalk instead of a 10-foot-wide trail.
 - b. Staff supports this request as the connection between the 5-foot-wide sidewalk and 10-foot-wide trail would have been odd. The 10-foot trail is also limited in the development and provides a more consistent look for the development.
 - c. The additional 5 foot in right-of-way is due to the reduction in trail to sidewalk.
- 3) Request to use a 5' rear setback in for R3 lots
 - a. The LDRs require a 10' setback for R3 lots. This would lessen that requirement for 5' which is allowed for detached accessory structures.
 - b. 5' setbacks are not uncommon for alley loaded products in jurisdictions throughout the state and country.
- 4) Request to use a 50' lot with vs. 55' with no maximum.

- a. In Staff's opinion the 5-foot request is minor in nature and will be difficult to tell in the field.
 - b. Maximum lot width are atypical requirements and are typically required to promote a compact building form that in the PD case is controlled with the outline plan.
- 5) Request to use the Common Open Spaces to satisfy the Conservation Area Requirements of the LDRs.
- a. The City's Conservation Index does identify several areas along the southern boundary that should be preserved.
 - b. The applicant has provided a less dense pattern for these areas vs. preserving them as required by the Conservation sections of the LDRs.

PROPOSED (EXAMPLE) MOTIONS:

- 1. Recommend approval of the Outline Plan for Chapel Lake with the following conditions:
 - a. Commission's discussion.
 - b. Staff comments and conditions in the staff report.
- 2. Recommend approval of the Outline Plan for Chapel Lake without conditions.
- 3. Recommend approval of denial the Outline Plan for Chapel Lake.
 - a. State the reason for denial.



CITY OF LAKE LAND
Application for Planned Developments

Case No. _____ Date of Application 04/15/2021 Resubmittal 7/9/21

Name of Applicant DT Design Studio (Michelle Ye)

Address 6465 N. Quail Hollow Rd. Ste 401, Memphis, TN 38120

Daytime Telephone Number 901-646-5077 Fax Number _____

Name of Property Owner Cummings, LLC. (Owner/Developer)

Address 803 Mt. Moriah Rd, Suite 201, Memphis, TN 38117 Telephone Number 901-233-1591

Name of Project Planning/Engineering Firm DT Design Studio

Name of Project Manager or Contact Person Michelle Ye

Address 6465 N. Quail Hollow Rd. Ste 401, Memphis, TN 38120

Telephone Number 901-646-5077 Fax Number _____

E-mail michelle@dt-designstudio.com

Name of Planned Development Chapel Lakes Parcel ID# L0151 00483 & 00049

Site Location Chambers Chapel Road South of Mt. McKenzie Rd.

Site Acreage 126.4 Zoning District(s) R-1, R-2, OS-2, OS-5

Proposed Use(s) Single-Family Residential and Open Space

Proposed Number of Lots/Dwelling Units ~~261~~ ²³⁹ Proposed Gross Floor Area N/A ⁵ Sq. ft.

Multiple Phases? Yes If yes, total number of phases and schedule Approx. 6 phases

Approval requested: ☒ Outline Plan ☐ Preliminary Development Plan ☐ Final Development Plan

Application for Planned Developments

Michelle Ye
Applicants Signature

04/15/2021

Date

[Signature]
Property Owners Signature (if different from applicant)

4.15.2021
Date

Please contact the Planning Department Staff for meeting dates and times, number of copies of all required materials, and the required filling fee to be submitted with the application.

CITY OF LAKELAND

10001 Highway 70

Lakeland, TN 38002

Office: (901) 867-2717 Fax: (901) 867-2063

Email: dmurrell@lakelandtn.org

www.lakelandtn.gov

OBJECTIVES

The Board of Commissioners may, upon proper application, grant a special permit for a Planned Development to facilitate the use of flexible techniques of land development and site design providing relief from zoning requirements designed for conventional developments. Planned developments shall be permitted in all zoning districts except for the FW-Floodway District.

PRE-APPLICATION CONFERENCE WITH CITY STAFF

At least thirty (30) days prior to filing any application for a Planned Development, the prospective applicant shall request a pre-application conference with the City. A preliminary development plan shall be submitted to the Planning Commission with the application for the Planned Development within six (6) months of the pre-application conference.

EFFECT OF APPROVAL OF DEVELOPMENT PLANS

The approved preliminary development plan shall bind the applicant, owner and mortgagee, if any, with respect to the contents of such plan. The preliminary development plan shall be used in lieu of a Master Subdivision Plan to comply with the provisions of the Subdivision Regulations pertaining to Master Plans. A Planned Development and the approved preliminary development plan may be amended in accordance with the procedure which governed its approval. If any application for a Planned Development is denied by the Board of Commissioners, a reapplication pertaining to the same property and requesting the same Planned Development may not be filed within twelve (12) months of the date final action was taken on the previous application, unless such reapplication is initiated by the Planning Commission or authorized by the Board of Commissioners.

GENERAL PROVISIONS

No action of the Board of Zoning Appeals shall be required in the approval of a special permit for a Planned Development. The preliminary and final development plans shall contain a certification that the services of a Certified Planner (AICP or equivalent), Landscape Architect, Architect, and/or Civil Engineer were utilized in the design and planning of the project and related plan documents.

DEVELOPMENT AGREEMENT

Following approval of the Final Development Plan by the Planning Commission and prior to construction, the developer and/or owner must enter into a Development Agreement with and satisfactory to the City of Lakeland Board of Commissioners relative to all required public and private improvements. Construction including land preparation will not be permitted to commence until a Development Agreement has been fully executed by the City and developer.

DEVELOPMENT PERIOD, STAGING

The Planning Commission may recommend and the Board of Commissioners may establish a reasonable period of time for the completion of the Planned Development at the time the Special Permit is granted.

Each stage of development shall be planned and related to existing surrounding and available public facilities and services such that failure to proceed to subsequent stages will not have an adverse impact on the development or its surroundings at any stage of the development.

If no actual construction has begun or no use has been established in the Planned Development within the approved time period, the Board of Commissioners may, in its discretion, terminate the final development plan by giving written notice to the applicant. Actual construction is defined to include the placing of construction materials in a permanent position and fastened permanently or extensive grading including demolition or removal of existing structures necessary for the development. If actual construction is not commenced within this approved time period, the final development plan may be terminated.

Upon the request of the applicant and review of the recommendation of the Planning Commission, the Board of Commissioners may extend for a reasonable time, not to exceed one (1) year, the period for the commencement of actual construction of the Planned Development.

If the Final Development Plan is terminated, the Planned Development designation shall be removed from the Official Zoning Map and a notice of revocation shall be filed on the recorded development plan.

RECORDING OF FINAL DEVELOPMENT PLAN WITH REGISTERS OFFICE

After a final development plan is approved by the Planning Commission, the plan shall be recorded in the Shelby County Register's Office after receipt of any necessary bonds, fees, and execution of Development Agreements relative to the provision of public and/or private improvements. All required certificates of approval shall be properly executed prior to recording of the final development plan and related documents.

PLANNED DEVELOPMENT SUBMISSION CHECKLIST

		For Office Use Only
Written Documents		
Outline Plan		
Following a pre-application conference with City staff, the applicant shall submit a request for an Outline Plan to the Planning Commission with the application for a Planned Development, all required fees and associated documentation. If the planned development is less than fifty (50) acres, the applicant may exclude this step and begin with the Preliminary Development Plan. The Preliminary Development Plan shall include as a minimum:		
a) A legal description prepared by and certified by a licensed surveyor or civil engineer in a form acceptable to the City of Lakeland of the total site proposed for development. b) A statement of current and proposed ownership and existing and proposed zoning. c) A statement of planning objectives to be achieved by the Planned Development through the design and use mixture approach proposed by the applicant. This statement should include a detailed description of the character development; d) Quantitative data for the following: i) Total acreage of the development and acreages devoted to specific uses. Any proposed phases shall be indicated. ii) Requested uses shall be designated by references to appropriate Lakeland Zoning Districts, including permitted use sections, densities, and bulk and area requirements. Deviations from the specific district regulations shall be requested in writing. iii) Approximate densities of development shall be indicated on the application and required plan. iv) Approximate acreage to be maintained as common acres and proposed maintenance plans. v) Appropriate studies, if applicable, (depending on the size and complexity of the development as determined by the Planning Director and Engineer) used in the development of the Outline Plan, such as but not limited to soils analysis, an economic feasibility study, a transportation impact study, an environmental inventory and impact analysis, a housing study, market analysis, and utility and infrastructure requirements. e) The Outline Plan shall include one or more graphic presentation maps. The Plan map shall include as a minimum the following: i) A property survey prepared and certified by a licensed surveyor or civil engineer in a form or other description acceptable to the Lakeland Planning Commission on a scale approved by the Planning Commission;		

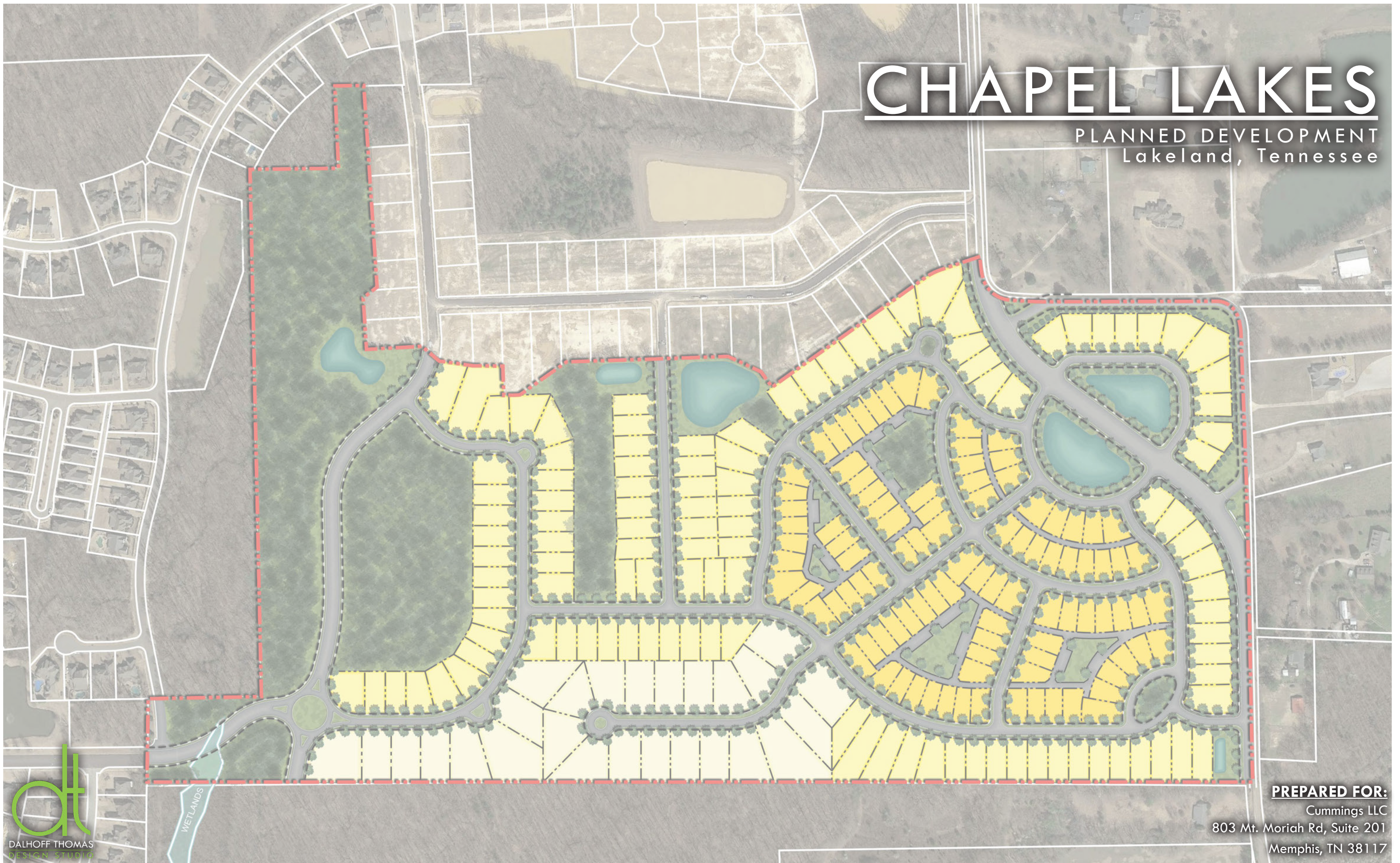
ii) A contour map on two (2')-foot intervals noting water courses, designated floodplains, identified aquifers or wetlands, and areas with slopes in excess of ten (10%) percent; iii) Aerial photographs or a surveyed drawing noting major natural features such as forested areas, lakes, streams, and existing uses and transportation features; iv) A Transportation Plan showing all existing and proposed arterial and collector status streets, as well as existing minor residential streets, and design concepts to be utilized such as frontage roads and internal circulation concepts should be submitted in the written documents and illustrations provided; v) A drainage analysis and plan; vi) Location of existing utilities, public facilities, proposed open space, and recreational or natural preservation areas; vii) A General Plan for provisions of utilities; viii) Proposed zoning scheme noting areas for residential, commercial, and industrial uses; ix) A Tree Preservation Plan; and, ix) Conceptual lot lines and plot designs.		
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Preliminary Development Plan Approval Process and Effect of Approval		
1. <u>Application Deadline</u> -An optional application / submission for approval of a Preliminary Development Plan of the entire Planned Development, if it is to be completed in one phase, or of a portion of the Planned Development, if it consists of more than one phase, shall be submitted, when complete, by the applicant on a date and time no later than the corresponding filing deadline for the Planning Commission meeting at which it is to be considered, as indicated in the approved Annual Planning Commission Filing and Meeting Schedule, and insufficient time so that the applicant may develop the Planned Development in accordance with the phasing schedule, if any, of the approved Preliminary Development Plan. An application shall not be considered complete and available for docketing at the Planning Commission until all of the filing requirements of this article are provided and on file with the City of Lakeland on or prior to the applicable filing deadline as stated herein. 2. <u>Application / Submission Materials</u> - The application /submission for Preliminary Development Plan approval shall be filed with the Planning Commission and shall include, but not be limited to the following, if not supplied previously with the Preliminary Development Plan: a. Tree survey per the Lakeland Tree Management Ordinance. b. Selected Stream Management Buffer requirements, as stated in Section 2 of this article. c. Preliminary Plat d. Subdivision covenants and restrictions. e. All quantitative and data requirements of the Preliminary Development Plan, shall be presented in final form, unless a specific requirement is expressly waived and deferred to a subsequent approval step by the Planning Commission. f. Detailed design guidelines including, but not limited to, building elevations, architectural renderings, design standards, and floor plans, for structures and improvements, in accordance with the documentation provided with the preliminary development plan, unless a specific requirement is expressly waived and deferred to a subsequent approval step by the Planning Commission. If necessary, any refinements to the standards and guidelines submitted with the preliminary development plan shall be provided with the detailed design guidelines, so that building permits subsequently approved shall be in substantial compliance with the detailed design guidelines. Standards, renderings, and proposed elevations shall be in substantial compliance with Lakeland Municipal Code, Chapter 14, Chapter 11, Architectural Design Standards, if applicable. The Planning Commission may waive Chapter 11 requirements for a mixed use development. For a mixed use development for which waivers of Chapter 11 are considered, each applicable standard that is waived shall be individually and expressly waived in writing. For each item waived, the applicant shall be required to provide alternative written standards, renderings, and elevations, or a written rationale as to why compliance cannot be achieved for the applicable item.		

g. The general location, arrangement, and design of architectural, wall, or pole lighting, typical specifications and fixture types, pole types, and lighting levels. Plans shall be in compliance with Article III, Section 13 of the Land Development Regulations regarding, Site Lighting Standards, if applicable. If waivers are requested and an item is waived, each applicable standard that is waived shall be individually and expressly waived in writing. h. The general location, arrangement, and standards for signs that are part of a consistent design theme, in compliance with the Lakeland Sign Ordinance. Plans shall be in compliance with the Lakeland Sign Regulations. If waivers are requested and item is waived, each applicable standard that is waived shall be individually and expressly waived in writing. i. All textual information (such as descriptions, objectives, quantitative data, tabulations, bulk standards, and conditions) of the Preliminary Development Plan, and all other conditions of approval stated as part of the Special Permit granted by the Board of Commissioners, shall be provided on a separate plan sheet(s).		
Final Development Plan Approval Process		
1. Application /Submission Deadline -An application /submission for approval of a Final Development Plan of the entire Planned Development, if it is to be completed in one phase, or of a portion of the Planned Development, if it consists of more than one phase, shall be submitted by the applicant on a date and time no later than the corresponding filing deadline for the Planning Commission meeting at which it is to be considered, as indicated in the approved Annual Planning Commission Filing and Meeting Schedule, and in sufficient time so that the applicant may develop the Planned Development in accordance with the phasing schedule, if any, of the approved Preliminary Development Plan. An application shall not be considered complete and available for docketing at the Planning Commission until all of the filing requirements of this article are provided and on file with the City of Lakeland on or prior to the Applicable filing deadline as stated herein. 2. Application /Submission Materials-The application/submission for Final Development Plan approval shall be filed with the Planning Commission and shall include, but not be limited to the following: a. A plan suitable for recording with the Shelby County Register's Office b. Proof referred to on the plan and satisfactory to the City Attorney as to the provision and maintenance of common open space c. All certificates, seals and signatures required for the dedication of land and recordation of documents d. Location and type of existing and proposed landscaping e. Location and dimensions of utility and drainage facilities f. All textual information (such as descriptions, objectives, quantitative data, tabulations, bulk standards, and conditions) of the Preliminary Development Plan, and all other known conditions of approval stated as part of the Special Permit granted by the Board of Commissioners, shall be provided on a separate plan sheet(s). g. All other requirements of a Final Plan and Final Plat under the Lakeland Subdivision Regulations and/or this Ordinance		

CHAPEL LAKES

PLANNED DEVELOPMENT
Lakeland, Tennessee

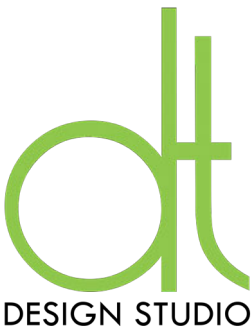


DEVELOPER:

Cummings LLC
803 Mt. Moriah Rd, Suite 201
Memphis, TN 38117
901.233.1591

contact: Mr. Trent Crowley - trent@astorfinebuilders.com

PLANNER / LANDSCAPE ARCHITECT:



DT design|studio
6465 North Quail Hollow | Suite 401
Memphis, Tennessee 38120
901.646.5070
www.dt-designstudio.com
contacts: Bob Dalhoff - bob@dt-designstudio.com
Michelle Ye - michelle@dt-designstudio.com

CIVIL ENGINEER:



The Reaves Firm
6800 Poplar Avenue | Suite 101
Memphis, TN 38138
901.761.2016
www.reavesfirm.com
contact: Dave Watkins - sdw@reavesfirm.com

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DISCLAIMER:
Graphics, images, and photographs included in this booklet are solely to convey form and character within Chapel Lakes Planned Development and are not intended to be a final product design. All site design, engineering, graphics, and images are subject to final design and approvals. Some images used in this booklet are not property of DALHOFF THOMAS design studio. A full list of photo credits can be provided if needed.

July 9, 2021

Ms. Emily Harrell
City Engineer
City of Lakeland
10001 Highway 70
Lakeland, TN 38002

**RE: Chapel Lakes Planned Development
Outline Plan Submittal**

Dear Ms. Harrell,

We are pleased on behalf of Cummings LLC, the Owner & Developer, to submit this Outline Plan application for the property located on the west side of Chambers Chapel Road, just north of I-40, and currently referred to as Chapel Lakes Planned Development (PD). The team received positive feedback on the preliminary plan submitted for Sketch Plan review in March 2020, and we have worked diligently on plan adjustments in response to the Municipal Planning Commission’s priorities and tree survey data. This Outline Plan resubmittal represents an improved version of the April 2020 Outline Plan submittal, including the following major changes:

- Increase of common open space from 23.4% to 30.8% ±
- Decrease in gross density from 2.06 to 1.89 DU/AC ±
- Preservation of the areas with higher conservation priority and unique topography near Lakeland Trace Road
- Increased width of the rear lot line of lots adjacent to Oakwood Grove to 100’

Chapel Lakes PD encompasses 126.4± acres and 261 proposed single-family lots located on the west side of Chambers Chapel Road, east of Grove and Oakwood Subdivisions, and South of the Oakwood Grove Subdivision. Roughly 4.4 acres will be comprised of the existing and proposed realignment of Chambers Chapel Road, resulting in a net acreage of 122.1± acres. Close attention was paid to the natural features of the site including topography and vegetation. Three lot types are proposed for the development to offer residents different lifestyle options while accommodating the various natural features of the site. The largest of these is the R-1 Suburban Estate lot which will be complemented with a rural street cross-section. R-2 Suburban Manor lot is the next smallest lot type. Although this product type is currently allowed to be 70’ minimum width in Lakeland’s Land Development Regulations, the Developer has made the lots that are directly adjacent to Oakwood Grove lots a minimum of 100’ wide at the rear, to match the minimum lot width of the neighboring Oakwood Grove lots. The smallest lot type is the R-3 Suburban Cottage lot. This product type is required by the Land Development Regulations to be 55’ minimum width with a 5,500 SF lot size. To achieve the proposed tree preservation targets, we are asking for an exception that allows these R-3 lots to be 50’ minimum width. It is currently anticipated that less than 10 lots will fall under the 55’ minimum width standard. The lots in Chapel Lakes PD represent a gross density of about 1.89 DU/AC ±, which is well under the 2.5 DU/AC recommended by the Suburban Neighborhood designation for this property in the Lakeland Future Land Use Plan.

The common open spaces of Chapel Lakes were prioritized in the conceptual development plan to preserve the features that make this neighborhood uniquely Lakeland. Since the Sketch Plan was originally presented to the MPC, the amount of common open space in the development has increased from 17.7% ± to 30.8% ±. These include a mixture of natural areas to be preserved, beautiful lakes as an entry feature, and smaller neighborhood pocket parks for residents’ daily recreation. The two primary north-south connections through the site, Chambers Chapel Road and Lakeland Trace Road, are both designed as “scenic corridors” with gently winding alignment and landscape buffers or greenspaces along both sides. No lots or driveways are directly fronting either of these roads.

Over 7,000 trees were identified by a certified arborist on site, including 533 specimen trees. After receiving the tree survey locations, the design team adjusted the conceptual development plan that was previously submitted for the Sketch Plan with the goal of saving as many specimen trees as possible. Through this exercise, it is estimated that at least 80 more specimen trees could now be preserved compared to the original plan, resulting in a total of about 140 specimen trees projected to be preserved, or about 26.3% of all specimen trees on site. Over 2,000 total trees are projected to remain, or about 29.1%. The conceptual development plan provides an Existing Density Factor of about 7,300, well over the 2,442 Site Density Factor that is required, even without accounting for any new trees which will be planted as part of the streetscape or within common open spaces. The full arborist report and tree data has been provided as a separate document in the submittal for reference.

A traffic impact study was performed by M.E. Lipinski, PE, PhD, PTOE concluding that the traffic generated by the development would not require any modifications to the existing roadway network in terms of geometric design or control. Even if development increases beyond expectations along Chambers Chapel Road, the site’s driveways would continue to operate at high levels of service. The study was performed using an estimate of 270 lots, which represents a worst-case traffic scenario for the 239-lot conceptual development plan.

The design character of Chapel Lakes PD will be implemented by architectural regulations and guidelines, which will be utilized by the Developer’s Design Review Committee to ensure architectural and aesthetic continuity throughout the life of the development. To set the tone for the overall development, the main entrances from Chambers Chapel Road are flanking a moderately sized pond that appears to carry from one side of the road to the other. Streetscape along Chambers Chapel Road will include sidewalks, landscape, and hardscape materials that highlight the naturalistic feeling of the current site. Common open space is provided throughout rather than bulked together in one area of the site. By doing this, residents are never too far from a park-like setting, and overall walkability of the neighborhood is improved.

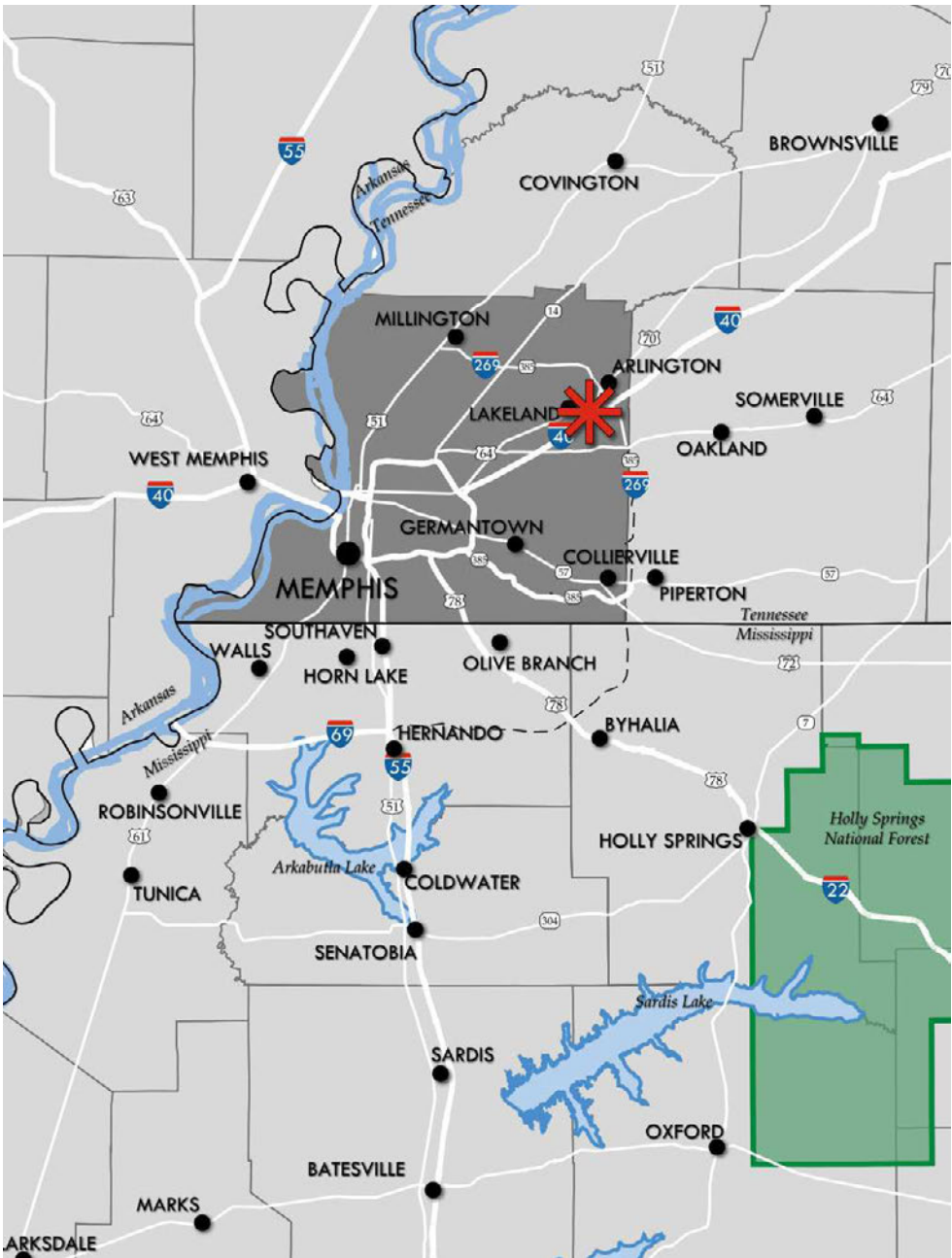
We feel that Chapel Lakes Planned Development will create an extraordinary neighborhood which the City of Lakeland and the Developer will be proud to have, and will provide the City a shining example of high-quality, site-sensitive development. The Developer’s commitment to this neighborhood is sincere in pledging to make Chapel Lakes an integral part of the growth and prominence of the City of Lakeland. If we can be of any help with regards to this application, please do not hesitate to contact us.

Sincerely,

Michelle Ye, PLA
Senior Associate
DT design studio

REGIONAL LOCATION

Chapel Lakes Planned Development is located in the northeastern portion of Shelby County, Tennessee and is in the limits of the City of Lakeland. The property is inside the realm of the Memphis Metropolitan Area boasting a population of over 1.29 million. Metropolitan Memphis is also known as the Mid-South. Chapel Lakes PD contains 126.40 acres ±.

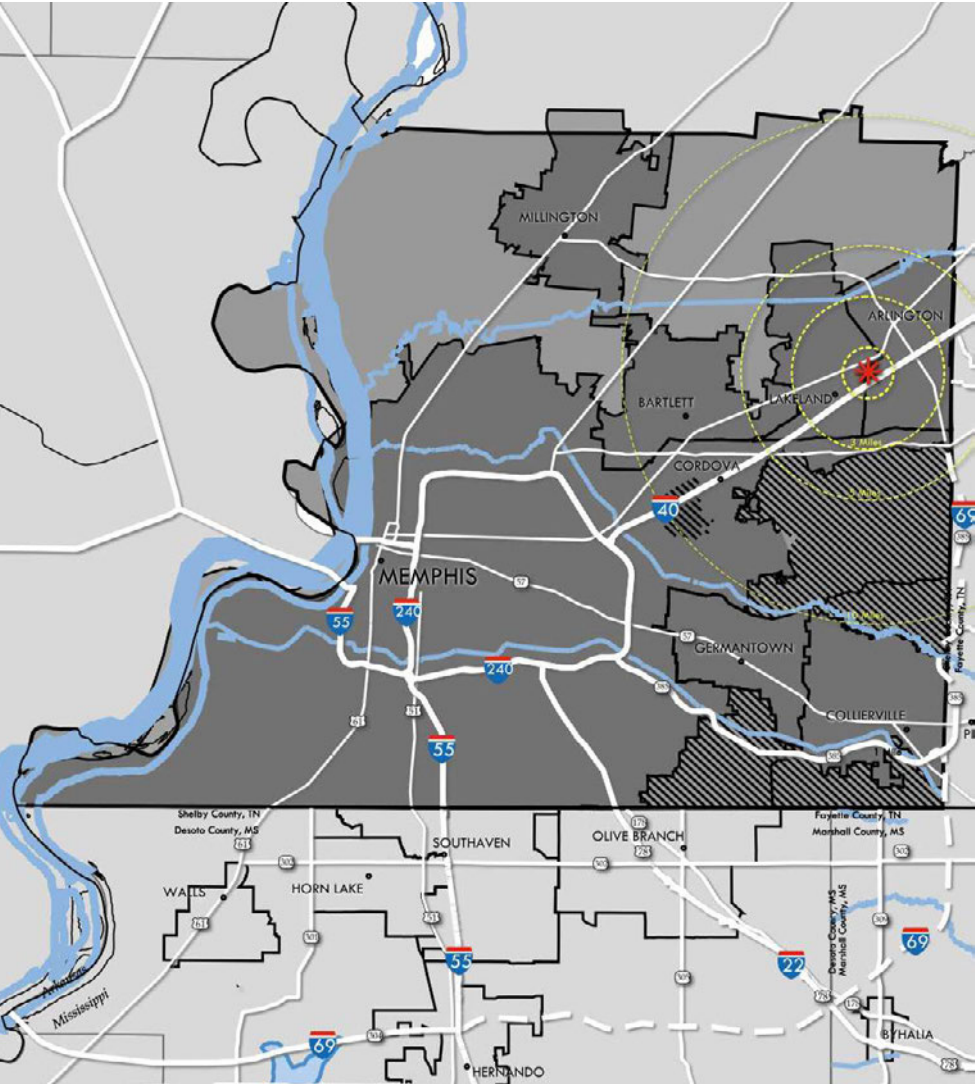


IMMEDIATE LOCATION

More specifically defined, the Chapel Lakes Planned Development is located in the eastern portion of the City of Lakeland. The subject property is bound by single family residential developments to the north and south, Chambers Chapel Road to the east, and Maple Walk Drive to the west. The site consists of approximately 122.1 acres ± after accounting for right-of-way dedications expected for improvements to Chambers Chapel Road.

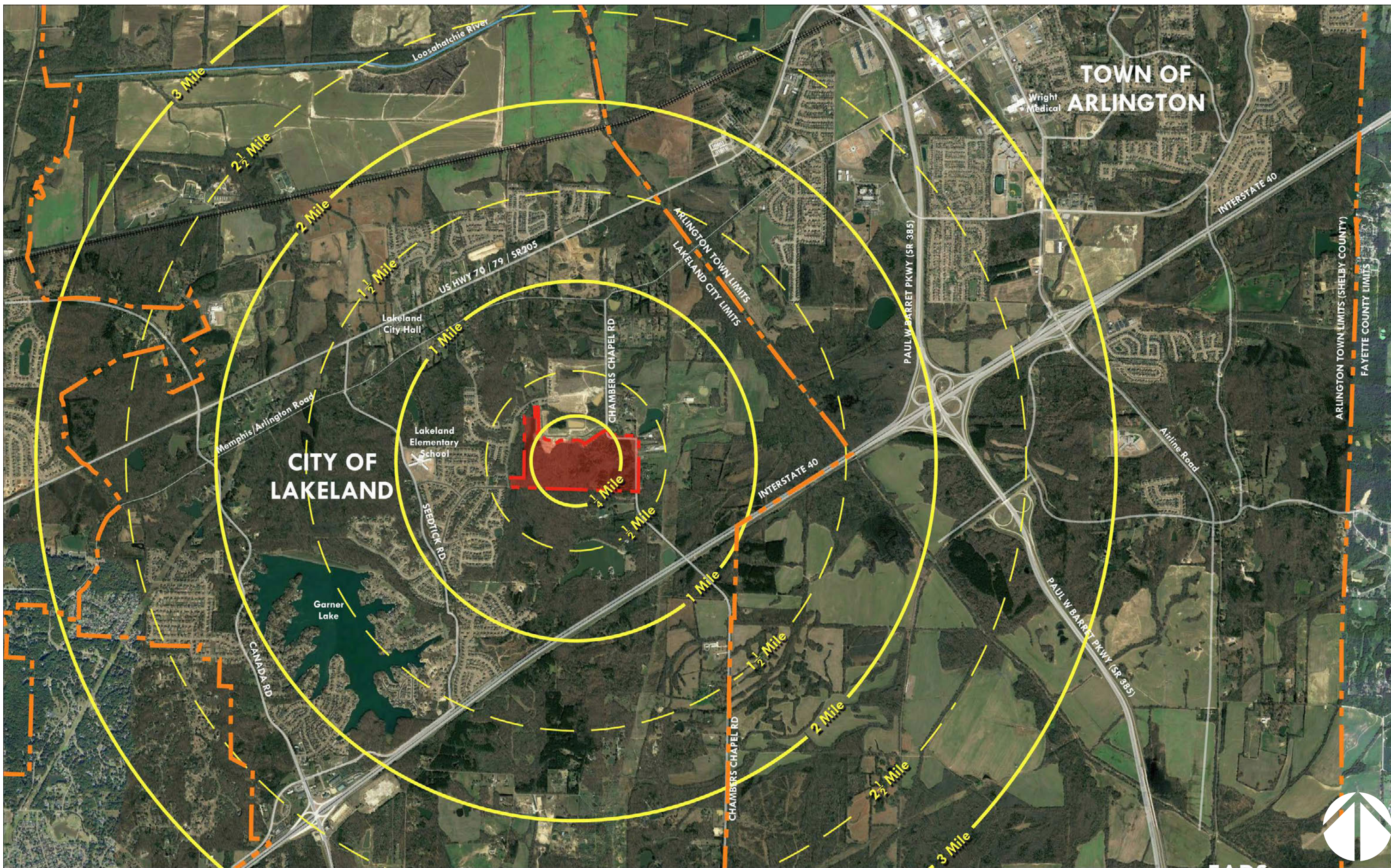
CURRENT MUNICIPALITIES

Chapel Lakes Planned Development falls entirely within the Lakeland municipal boundary. The US Census Bureau estimates the current population within the City of Lakeland to be approximately 12,617. The City is located in the northeastern portion of Shelby County. The County itself has a population of over 935,000.



MILEAGE TO SURROUNDING MUNICIPALITIES (±)

Lakeland.....	2.5
Bartlett	10.6
Germantown	17.8
Collierville	20.4
Memphis.....	27.6
Olive Branch	34.8
Southaven.....	37.1
Jackson, TN	63.5
Little Rock, AR	163.0
Nashville, TN.....	189.0
Measured to City/Town Hall	



BOUNDARY SURVEY & LEGAL DESCRIPTION

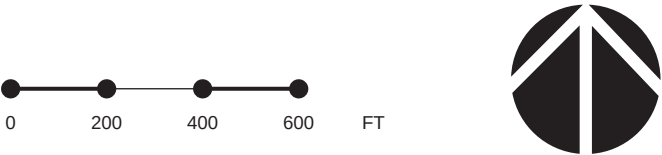
Boundary survey and legal description provided by Lawson Engineering on 11/8/17. Note: The survey has been modified from its original format and scale to fit this page. A full-size copy of the survey is available by request.

Beginning at a point having coordinates of N:355803.91, E:861405.68 said point being in the centerline of Chambers Chapel Road 3990 feet South of the intersection of Chambers Chapel Road and Memphis Arlington Road; thence along the centerline of Chambers Chapel Road with a bearing of S 86°08'58" E a distance of 673.98 feet to a point; thence in a southeasterly direction with a tangent curve turning to the right with a radius of 85.00 feet, having a chord bearing of S 42°00'05" E and a chord distance of 118.41, having a central angle of 88°17'54" and an arc length of 130.99 to a point; thence with a bearing of S 02°08'48" W a distance of 775.44 feet to a point; thence with a bearing of S 02°50'11" W a distance of 778.99 feet to a point in the North line of the Bank of Bartlett Property (Instrument No. 11000708); thence along said north property line with a bearing of N 86°00'08" W a distance of 3760.47 feet to a point in the East property line of the Steven and Mikki Gibson Property (Instrument No. 06085432); thence with a bearing of N 04°46'46" E a distance of 283.66 feet to a point in the South property line of the Bruce and Alison Nelson property (Instrument No. 09104215); thence with a bearing of S 87°02'33" E a distance of 385.20 feet to a point in the East property line of the Grove at Lakeland Homeowners Association LLC (Instrument No. 14083333); thence following said property line with a bearing of N 02°45'35" E a distance of 1793.97 feet to a point; thence with a bearing of S 86°43'24" E a distance of 300.95 feet to a point; thence with a bearing of N 02°54'04" E a distance of 280.02 feet to a point; thence with a bearing of S 86°42'54" E a distance of 90.98 feet to a point in the West property line of the TFB LLC property (Instrument No. 16035351); thence along said property line in a southeasterly direction with a tangent curve turning to the right with a radius of 0.50 feet, having a chord bearing of S 43°14'24" E and a chord distance of 0.69, having a central angle of 86°57'01" and an arc length of 0.76 to a point; thence with a bearing of S 00°14'07" W a distance of 686.27 feet to a point; thence with a bearing of S 55°55'03" W a distance of 60.06 feet to a point; thence with a bearing of S 00°14'07" W a distance of 175.53 feet to a point; thence with a bearing of S 89°13'54" E a distance of 188.52 feet to a point; thence with a bearing of S 45°32'01" E a distance of 76.77 feet to a point; thence with a bearing of S 78°01'41" E a distance of 117.86 feet to a point; thence with a bearing of S 85°26'05" E a distance of 100.10 feet to a point; thence with a bearing of S 02°03'27" W a distance of 100.10 feet to a point; thence with a bearing of S 87°56'33" E a distance of 54.65 feet to a point; thence with a bearing of N 58°40'53" E a distance of 194.73 feet to a point; thence with a bearing of S 87°50'10" E a distance of 277.83 feet to a point; thence with a bearing of S 88°02'49" E a distance of 271.60 feet to a point; thence with a bearing of S 60°57'57" E a distance of 123.97 feet to a point; thence with a bearing of S 31°34'21" E a distance of 64.23 feet to a point; thence with a bearing of N 58°25'39" E a distance of 638.40 feet to a point; thence in a northeasterly direction with a tangent curve turning to the right with a radius of 212.00 feet, having a chord bearing of N 67°05'00" E and a chord distance of 63.81, having a central angle of 17°18'41" and an arc length of 64.05 to a point; thence with a bearing of N 75°25'04" E a distance of 138.59 feet to a point; thence with a bearing of S 00°32'32" W a distance of 33.27 feet to a point; thence in a southeasterly direction with a non-tangent curve turning to the left with a radius of 125.00 feet, having a chord bearing of S 42°11'32" E and a chord distance of 173.53, having a central angle of 87°54'51" and an arc length of 191.80 to the point of beginning; containing 5505810.87 square feet or 126.396 acres.

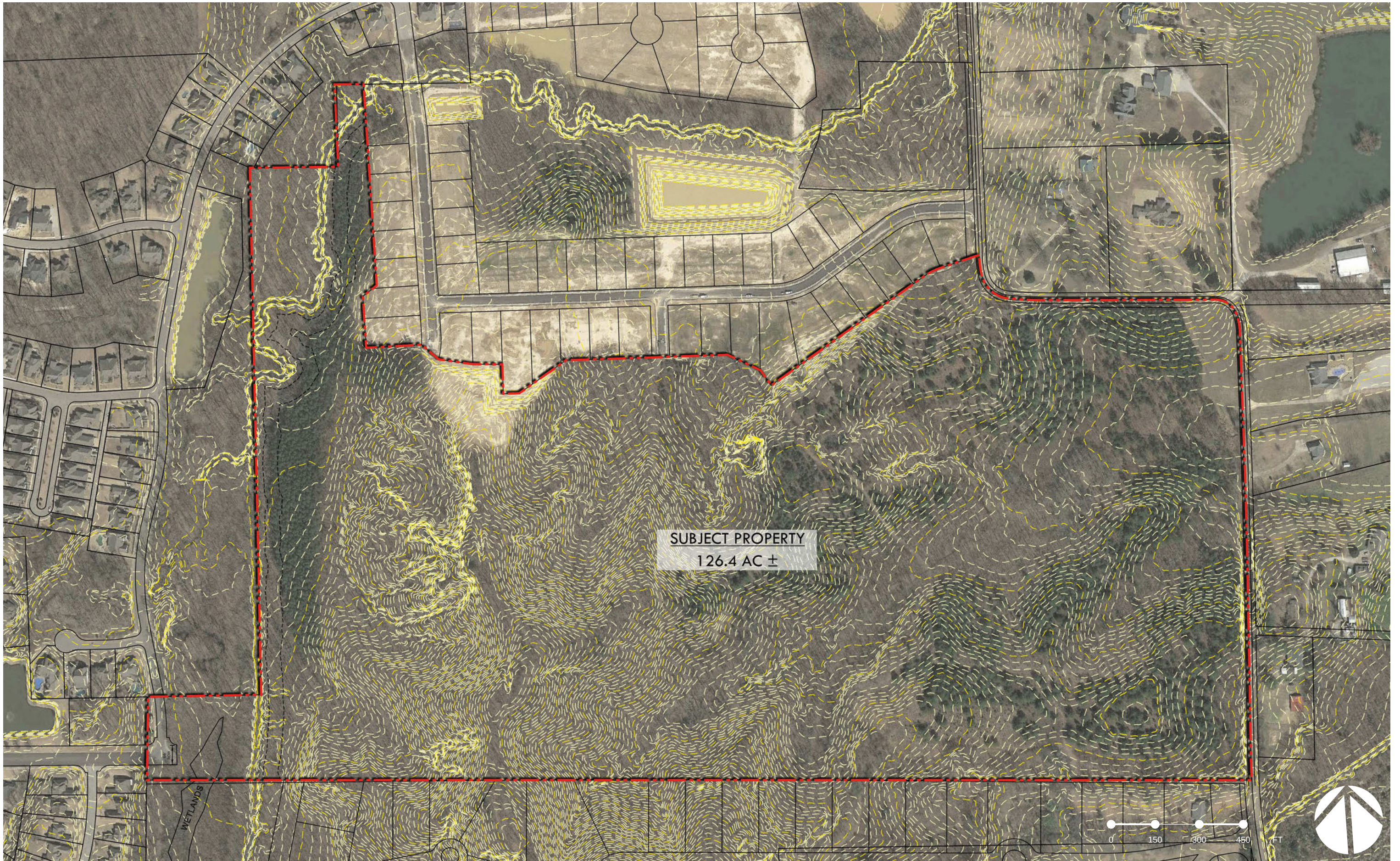
The Northing and Easting coordinates as referred to in this description are relative to the Tennessee State Plane Coordinate System (North American Datum 1983).

Parcel Line Table		
Line #	Length	Direction
L1	90.98	S86° 42' 54.14"E
L2	686.27	S0° 14' 07.00"W
L3	60.06	S55° 55' 03.00"W
L4	175.53	S0° 14' 07.00"W
L5	188.52	S89° 13' 54.07"E
L6	76.77	S45° 32' 01.00"E
L7	117.86	S78° 01' 40.95"E
L8	100.10	S85° 26' 04.72"E
L9	100.10	S2° 03' 27.09"W
L10	54.65	S87° 56' 32.91"E
L11	194.73	N58° 40' 53.00"E
L12	277.83	S87° 50' 10.00"E
L13	271.60	S88° 02' 49.00"E
L14	123.97	S60° 57' 57.00"E
L15	64.23	S31° 34' 21.00"E
L16	638.40	N58° 25' 39.00"E
L17	138.59	N75° 25' 04.40"E

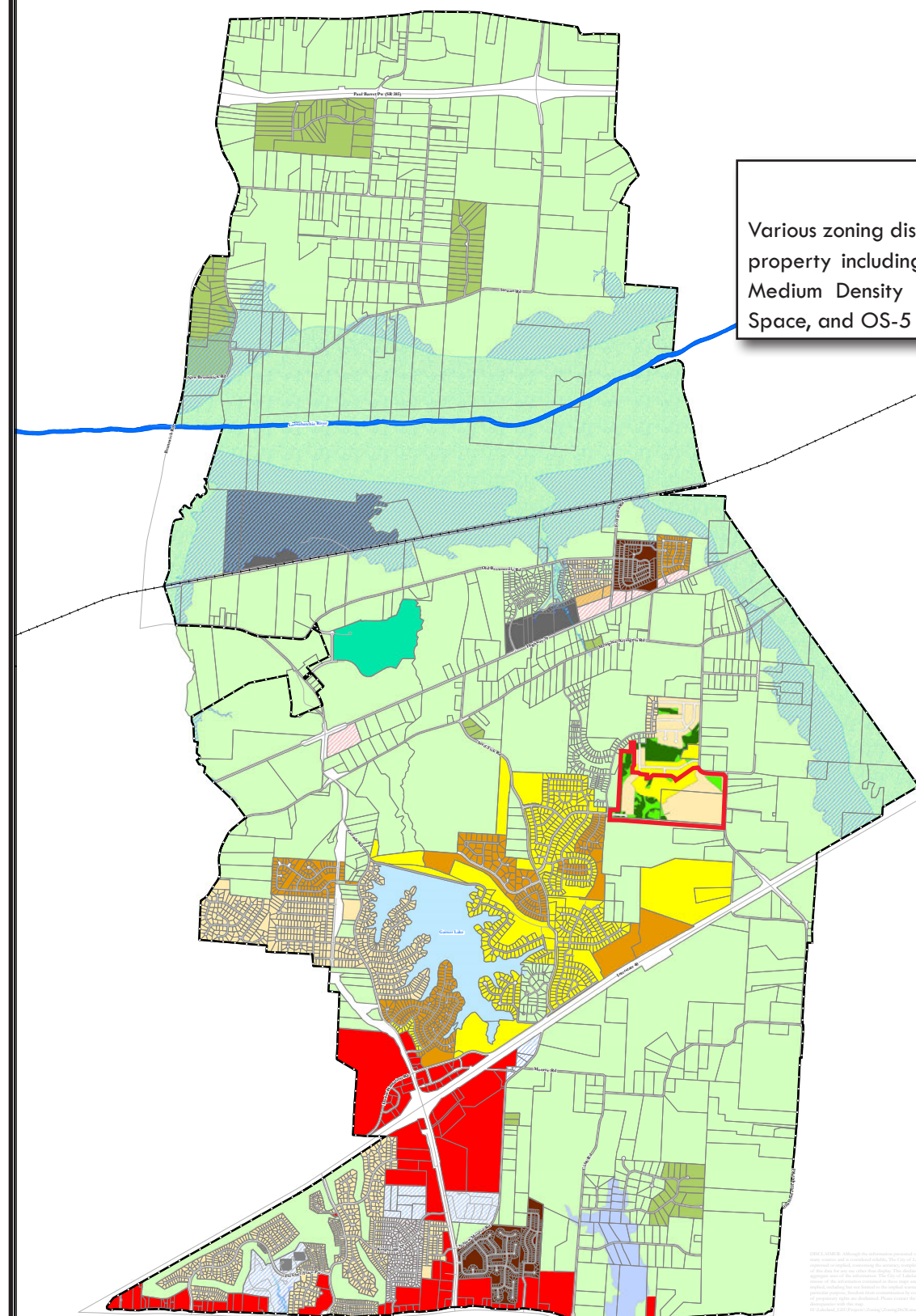
Curve Table					
Curve #	Length	Radius	Delta	Chord Direction	Chord Length
C1	64.05	212.00	17.31	N67° 05' 00"E	63.81
C2	191.80	125.00	87.91	S42° 11' 32"E	173.53
C3	130.99	85.00	88.30	S42° 00' 05"E	118.41



PROPERTY SURVEY		
CHAPEL WOODS SUBDIVISION LAKELAND, TENNESSEE		
TOTAL AREA: 126.40 Ac.	NUMBER OF LOTS: 214	
ZONING DISTRICT: R1, R2, OS2, OS5	WARD 64, BLOCK 51, PARCEL 483 AND 49	
DEVELOPER: EVOLVE BANK& TRUST 6070 POPLAR AVE. SUITE 200 MEMPHIS, TN 38119 PHONE: (901)334-0980	ENGINEER: LAWSON ENGINEERING AND CONSULTING, INC. 5909 POLK ST. ARLINGTON, TN 38002 PHONE: (901)383-3278 FAX: (901)867-5546	
100 YEAR FLOOD ELEVATION: N/A	FEMA MAP PANEL NUMBER: 47157C0215 G	FEMA MAP DATE: FEBRUARY 6, 2013
DATE: 11/8/17	SCALE: 1"=400'	SHEET 1



City of Lakeland Zoning Map

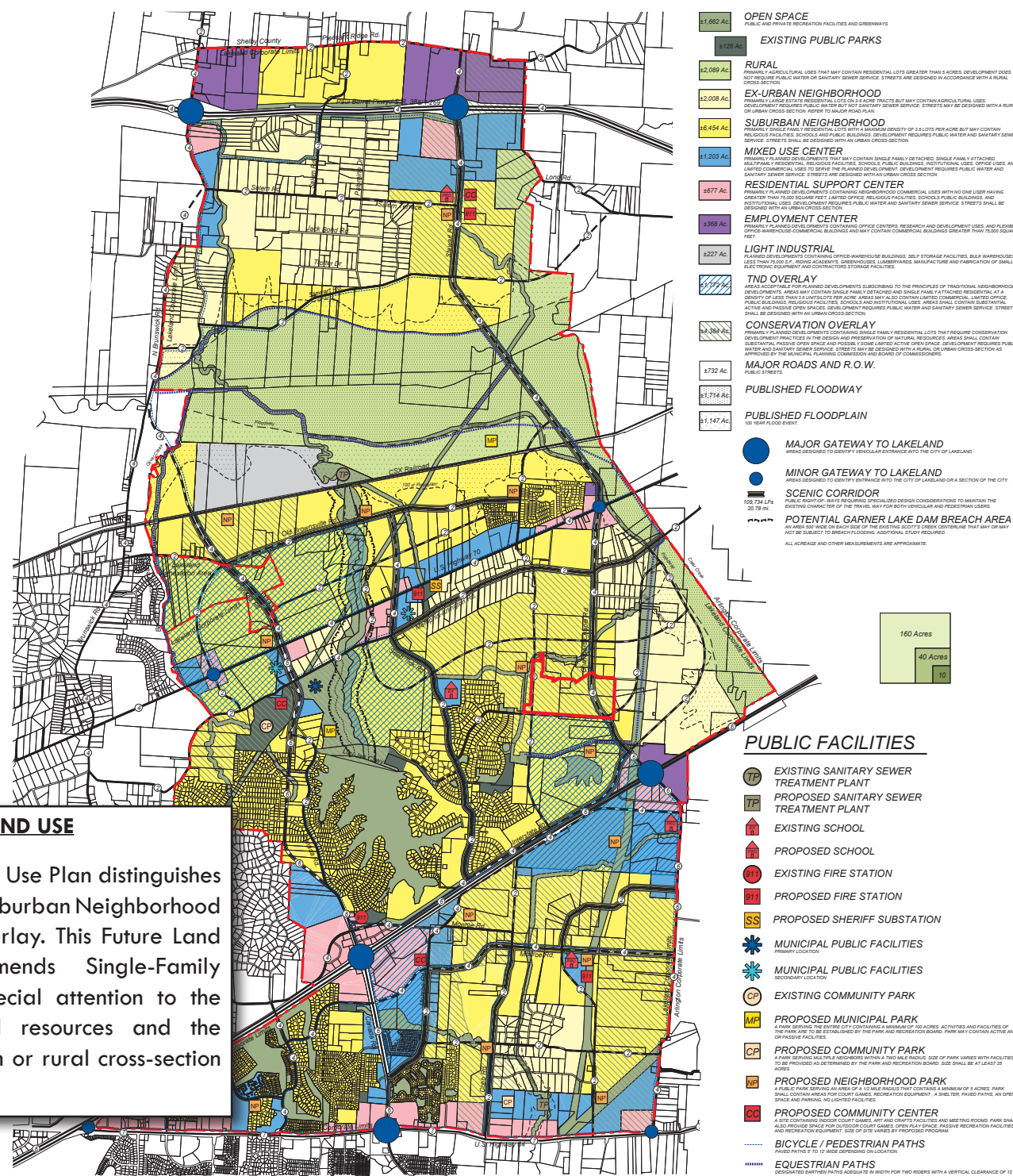


ZONING

Various zoning districts are included within the subject property including R-1 Low Density Residential, R-2 Medium Density Residential, OS-2 General Open Space, and OS-5 Conservation area.

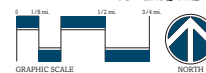


CITY OF LAKE LAND, TENNESSEE
COMPREHENSIVE LAND USE PLAN UPDATE



FUTURE LAND USE

The Lakeland Future Land Use Plan distinguishes the subject property as Suburban Neighborhood with a Conservation Overlay. This Future Land Use category recommends Single-Family Residential Lots with special attention to the preservation of natural resources and the utilization of either urban or rural cross-section streets.



LAND USE PLAN

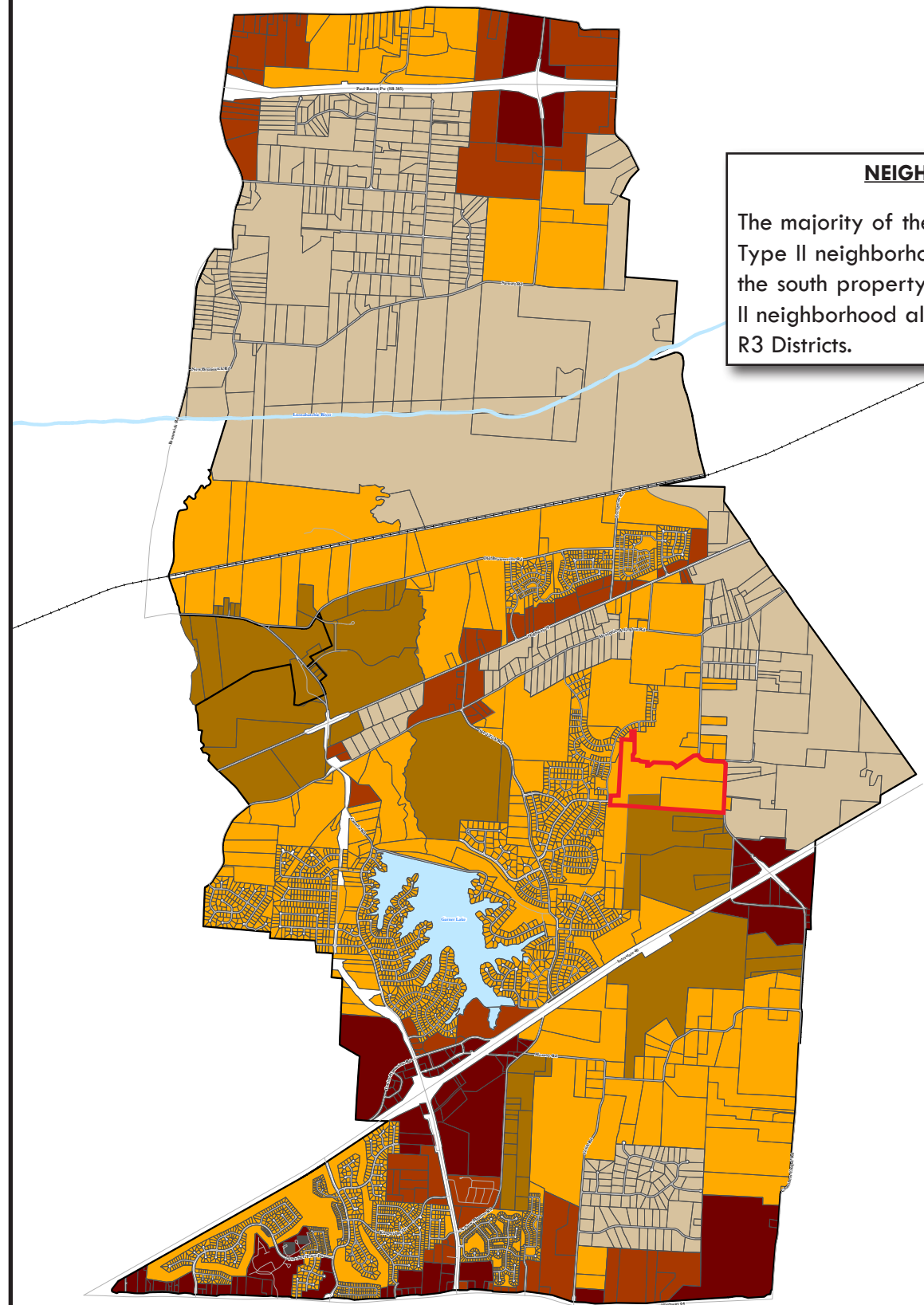
Brenda P. Solomito
Land Planner
0145 Mackwood Drive • Lakeland, TN 38002
brendasolomito@bellsouth.net

DUGAN DESIGN GROUP, LLC
planning, landscape architecture, design

5100 WHEELS DRIVE, SUITE 110 MEMPHIS, TN 38117
TEL 901.680.9080 FAX 901.680.9095
WWW.DUGANDESIGNGROUP.COM

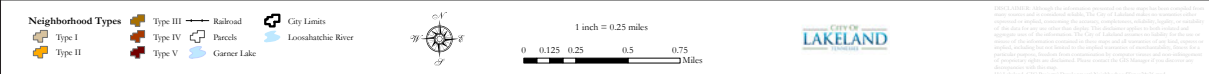
March 20, 2006 E024FinalLandUsePlan.doc

City of Lakeland Neighborhood Types

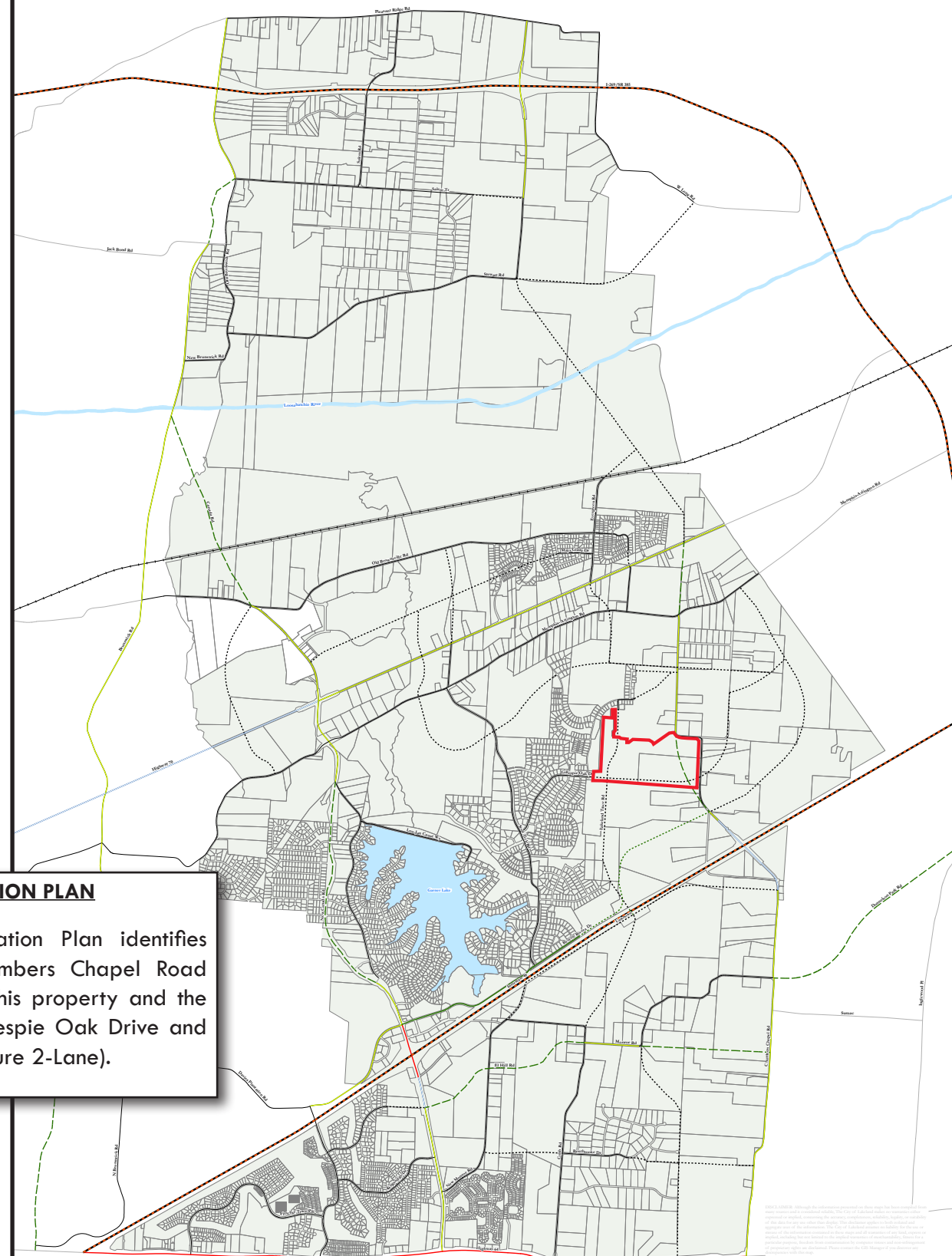


NEIGHBORHOOD TYPES

The majority of the property is designated as a Type II neighborhood, with a small portion near the south property line being Type III. The Type II neighborhood allows a mixture of R1, R2, and R3 Districts.

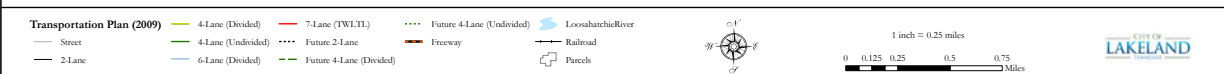


City of Lakeland Transportation Plan



TRANSPORTATION PLAN

The Lakeland Transportation Plan identifies the realignment of Chambers Chapel Road (Future 4-Lane) through this property and the connections made to Gillespie Oak Drive and Lakeland Trace Road (Future 2-Lane).



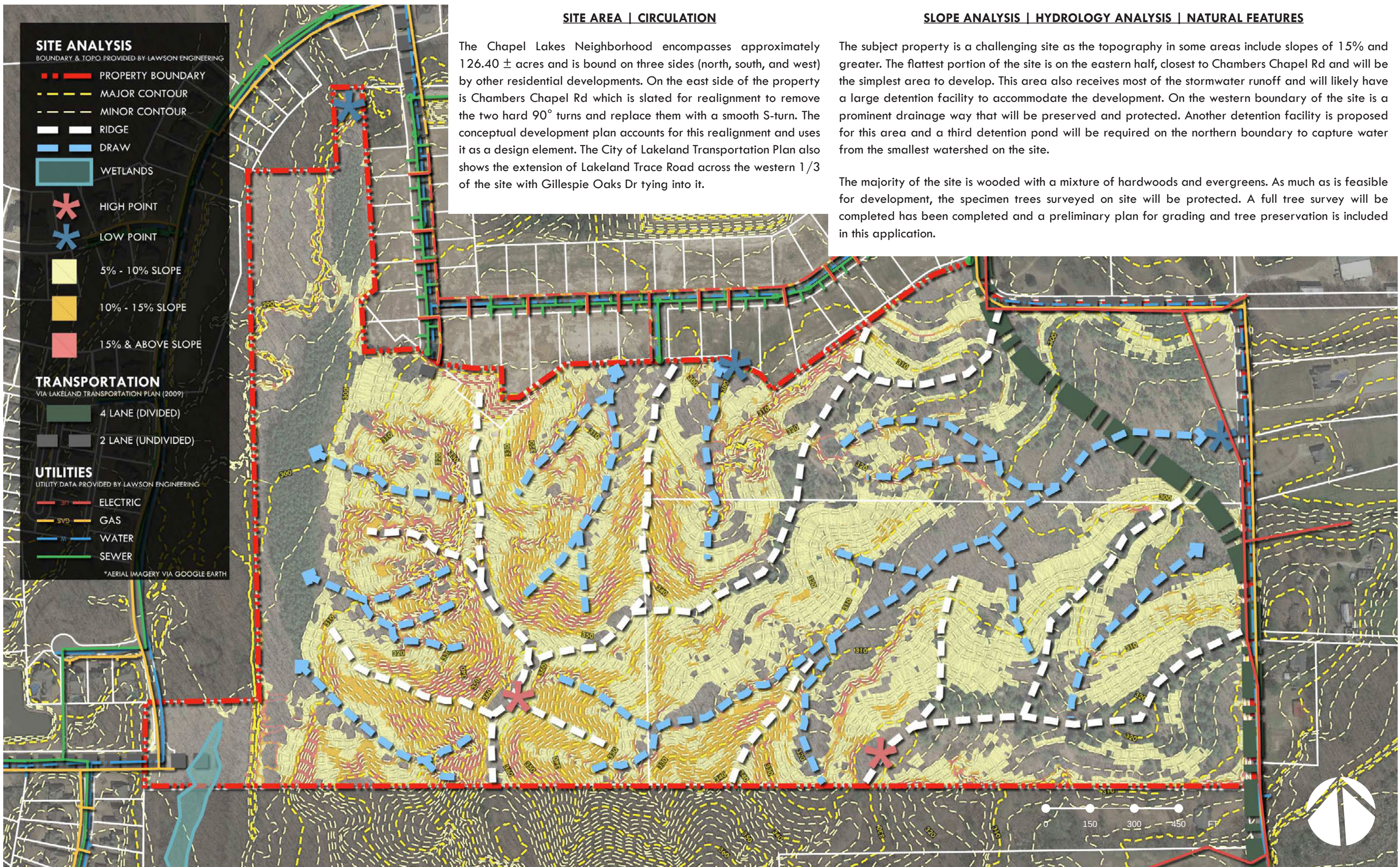
SITE AREA | CIRCULATION

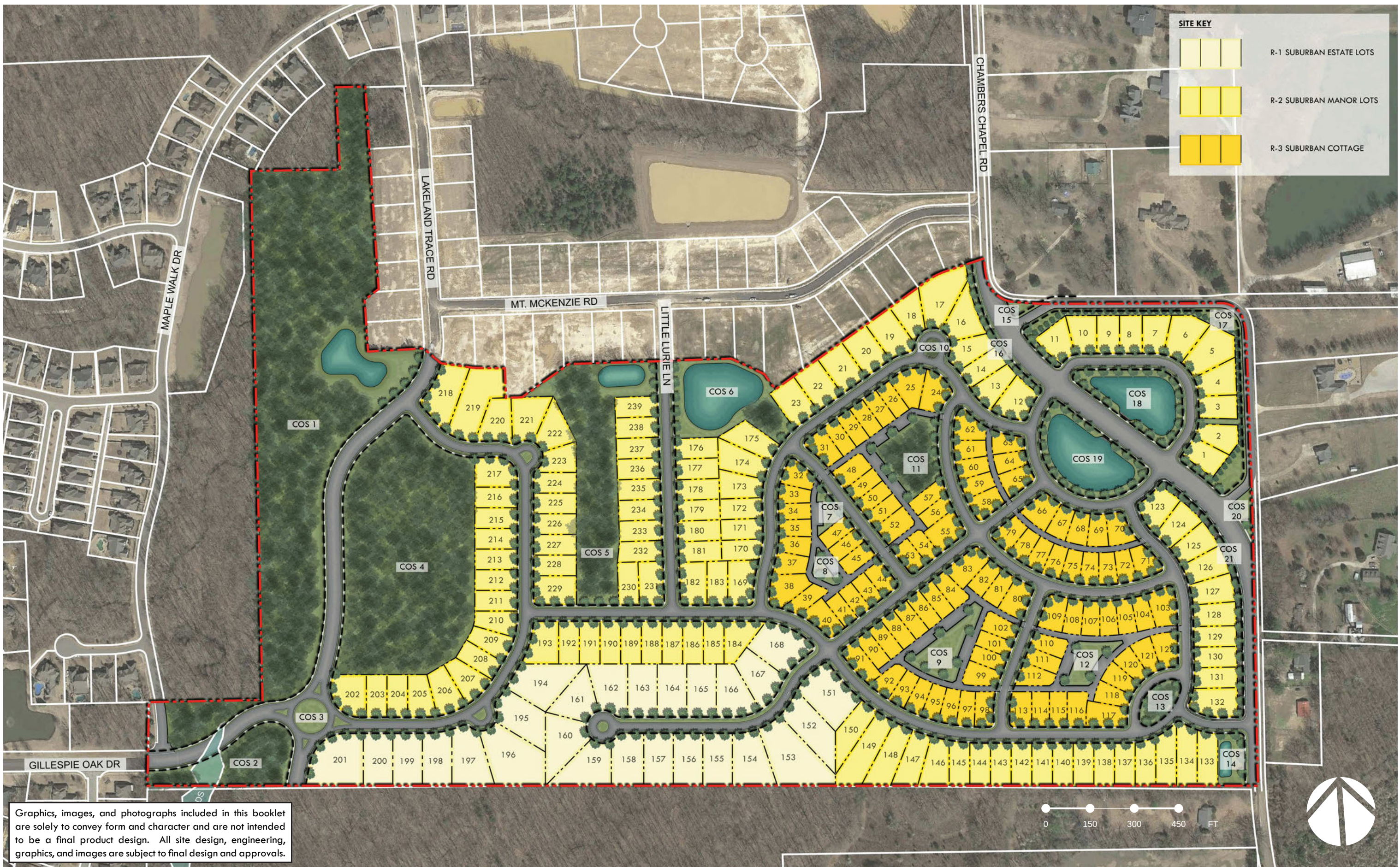
The Chapel Lakes Neighborhood encompasses approximately 126.40 ± acres and is bound on three sides (north, south, and west) by other residential developments. On the east side of the property is Chambers Chapel Rd which is slated for realignment to remove the two hard 90° turns and replace them with a smooth S-turn. The conceptual development plan accounts for this realignment and uses it as a design element. The City of Lakeland Transportation Plan also shows the extension of Lakeland Trace Road across the western 1/3 of the site with Gillespie Oaks Dr tying into it.

SLOPE ANALYSIS | HYDROLOGY ANALYSIS | NATURAL FEATURES

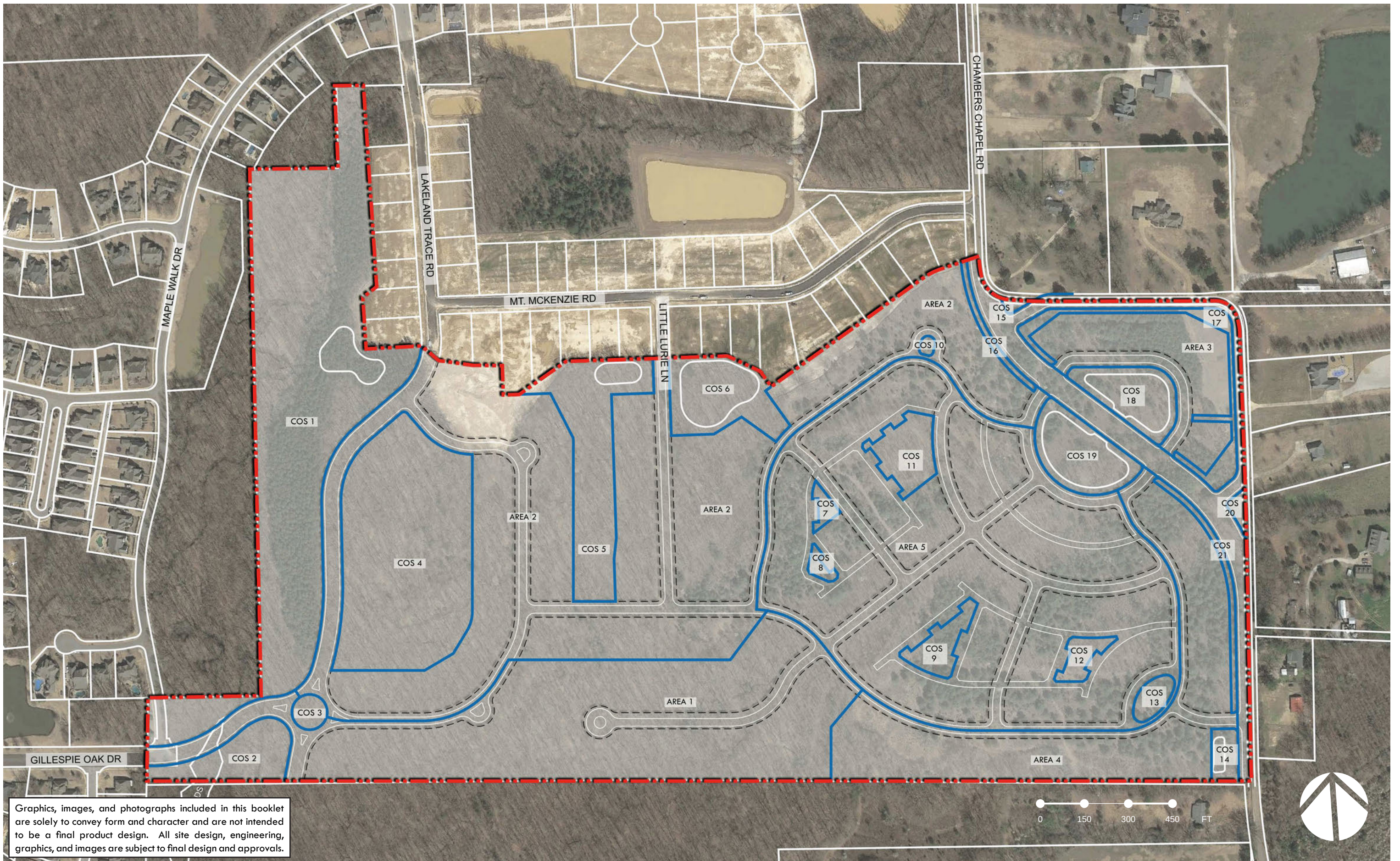
The subject property is a challenging site as the topography in some areas include slopes of 15% and greater. The flattest portion of the site is on the eastern half, closest to Chambers Chapel Rd and will be the simplest area to develop. This area also receives most of the stormwater runoff and will likely have a large detention facility to accommodate the development. On the western boundary of the site is a prominent drainage way that will be preserved and protected. Another detention facility is proposed for this area and a third detention pond will be required on the northern boundary to capture water from the smallest watershed on the site.

The majority of the site is wooded with a mixture of hardwoods and evergreens. As much as is feasible for development, the specimen trees surveyed on site will be protected. A full tree survey will be completed has been completed and a preliminary plan for grading and tree preservation is included in this application.





Graphics, images, and photographs included in this booklet are solely to convey form and character and are not intended to be a final product design. All site design, engineering, graphics, and images are subject to final design and approvals.



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CHAPEL LAKES PLANNED DEVELOPMENT
JULY 7, 2021
OUTLINE PLAN TEXT

I. GENERAL STATEMENT

Chapel Lakes Planned Development, a 126.4 acre ± tract of land located in Lakeland, Tennessee, is a Planned Development that provides a mixture of residential products and open spaces that complement the unique natural features of the area. It is the intent to develop Chapel Lakes with a cohesive neighborhood character through the use of unifying architectural guidelines and landscaping criteria. With distinctive entrances into the neighborhood, as well as various types of open spaces, Chapel Lakes will establish itself as a highly attractive and carefully planned neighborhood with its own “Sense of Place” and the feel of a quality community.

The Outline Plan shall serve as the land use and transportation plan for development of the site. It is understood that internal roadways and lot arrangements may be adjusted somewhat at the time of final design to take advantage of topography, utilities, storm drainage, detention, and market conditions along with other site considerations. The Conceptual Development Plan shall serve as a graphic illustration of the conceptual vision for the development.

The purpose of this General Statement is to set forth the conceptual vision of Chapel Lakes as depicted in the Conceptual Development Plan. The actual permitted uses, dimensional regulations, access and circulation and design criteria for the project shall at all times be governed by the Outline Plan and any Conditions of Approval, along with the Declaration of Covenants, Conditions, and Restrictions. The community will contain a mix of residential products, which not only reflects current residential market demands, but also exemplifies a complementary development to the surrounding area. It is anticipated that the various Areas may be developed as depicted on the Outline Plan to include:

- A. Areas 1-5

These Areas offer compatible and complementary residential products, all single-family dwellings, with quality architectural character, vivid streetscapes, and common area amenities. The well-planned pedestrian and vehicular circulation system accentuates natural views, enhances pedestrian safety, and connects neighborhood amenities.

Areas 1-4 are planned to have Street-Access lots. Area 5 is planned to have Rear-Access lots only.
- B. COS 1-21

Common open space areas located within Chapel Lakes Planned Development are intended to be common neighborhood amenities for Chapel Lakes residents. Some of these areas provide an open and friendly place for neighbors to gather and recreate whereas others soften transitions from surrounding streets and neighborhoods.

II. USES PERMITTED

- A. Area 1

Single-Family detached, street-access homes as regulated by the R-1 Suburban Estate district of the Lakeland Land Development Regulations, as modified herein, are allowed throughout these areas.
- B. Areas 2-4

Single-Family detached, street-access homes as regulated by the R-2 Suburban Manor district of the Lakeland Land Development Regulations, as modified herein, are allowed throughout these areas.
- C. Area 5

Single-Family detached, rear-access homes as regulated by the R-3 Suburban Cottage district of the Lakeland Land Development Regulations, as modified herein, are allowed throughout these areas.
- D. Common Open Spaces 1-21

Passive park areas, landscape areas, and common neighborhood amenities such as lakes (detention or retention), walking trails, sidewalks, open lawn areas, benches, and pavilions are allowed throughout these areas.

SITE DATA			
GENERAL SITE INFO			
GROSS ACREAGE		126.4 AC ±	
ROW DEDICATION		4.4 AC ±	
NET ACREAGE		122.1 AC ±	
RESIDENTIAL			
AREA	QTY	MIN. LOT SIZE	ACREAGE
1	26 ±	17,500 SF	16.3 AC ±
2	75 ±	10,000 SF	28.0 AC ±
3	11 ±	10,000 SF	4.0 AC ±
4	28 ±	10,000 SF	9.5 AC ±
5	99 ±	5,500 SF	26.7 AC ±
TOTAL		239 ± LOTS	
GROSS DENSITY		1.89 DU/AC ±	
NET DENSITY		1.96 DU/AC ±	
COMMON OPEN SPACE			
COS 1		14.8 AC ±	
COS 2		1.4 AC ±	
COS 3		0.3 AC ±	
COS 4		7.8 AC ±	
COS 5		3.4 AC ±	
COS 6		2.0 AC ±	
COS 7		0.2 AC ±	
COS 8		0.1 AC ±	
COS 9		0.6 AC ±	
COS 10		0.1 AC ±	
COS 11		1.0 AC ±	
COS 12		0.4 AC ±	
COS 13		0.3 AC ±	
COS 14		0.4 AC ±	
COS 15		0.1 AC ±	
COS 16		0.2 AC ±	
COS 17		1.0 AC ±	
COS 18		1.4 AC ±	
COS 19		1.6 AC ±	
COS 20		0.1 AC ±	
COS 21		0.4 AC ±	
TOTAL COS		37.6 AC ±	30.8% ±

ZONING	AREA NO.	ACREAGE	% OF TOTAL NET ACREAGE	LOTS	% OF TOTAL LOTS
SUBURBAN ESTATE (R1)	1	16.3 AC ±	13.3% ±	26 ±	10.9% ±
SUBURBAN MANOR (R2)	2, 3, 4	41.5 AC ±	34.0% ±	114 ±	47.7% ±
SUBURBAN COTTAGE (R3)	5	26.7 AC ±	21.9% ±	99 ±	41.4% ±
COMMON OPEN SPACE	COS 1-21	37.6 AC ±	30.8% ±		
TOTAL NET ACREAGE		122.1 AC ±		239 ±	

III. BULK REGULATIONS

Development of the neighborhood will be guided by the Outline Plan and the area use descriptions provided above. Development of individual parcels must be in compliance with the provisions for dimensional regulations and access and circulation conditions provided below.

Other restrictions not specifically addressed here or elsewhere in the conditions (and its attachments) including, but not limited to, setbacks, side and rear yard requirements, minimum lot areas, accessory uses, and parking and loading areas shall be as defined in the City of Lakeland Land Development Regulations (LDR) as applicable to the referenced District for the Area per section II. of this Outline Plan. Where provisions of this Outline Plan are in conflict with the above-referenced LDR, these provisions shall apply.

- A. Design Standards for Single-Family Detached Homes
1. All single-family detached residences shall follow the architectural guidelines within the City of Lakeland Land Development Regulations for the referenced District.
- B. Minimum Building Setbacks per Area
1. Area 1

a. Minimum Front Yard Setback30'

b. Minimum Side Yard Setback 10'

c. Minimum Rear Yard Setback30'

2. Areas 2-4

a. Minimum Front Yard Setback30'

b. Minimum Side Yard Setback 5'

c. Minimum Rear Yard Setback25'

3. Area 5

1. Minimum Front Yard Setback..... 15'

2. Minimum Side Yard Setback 5'

3. Minimum Rear Yard Setback..... 5'

4. Fence Setback Against Service Drive..... 5'
- C. Minimum Lot Widths per Area
1. Area 1 100'

2. Areas 2-4.....70'

3. Area 550'
- NOTE: Lot widths shall be measured at the designated front yard building setback. The developer may include lots wider than the minimum in order to provide a more diverse product mix.
- D. Minimum Lot Size per Area
1. Area 1 17,500 SF

2. Areas 2-4..... 10,000 SF

3. Area 5 5,500 SF
- E. Maximum Building Heights and Maximum Building Coverage shall be as regulated by the City of Lakeland Land Development Regulations.

IV. ROADWAYS, ACCESS, AND PARKING

- A. Chambers Chapel Road shall be constructed per the City of Lakeland Transportation Plan, with an 86’ Right-of-Way width.
- B. Lakeland Trace Road and the extension of Gillespie Oak Drive west of Lakeland Trace Road shall be constructed per the City of Lakeland Transportation Plan, with a 66’ Right-of-Way width.
- C. Interior public streets within Area 1 may utilize a modified Rural Neighborhood Street Type with a 55’ typical Right-of-Way width. Medians are permitted to accommodate grading and tree preservation. The trail within this Street Type may be a minimum of 5’ wide to ensure connectivity with the rest of the pedestrian network.
- D. Interior public streets within Areas 2-5 may utilize the Urban Neighborhood Street Type with a 54’ typical Right-of-Way width.
- E. All corner radii at intersections of public streets within the development may be a minimum of 15’ at the R.O.W.
- F. Head-in parking may be provided directly off of any interior public street or private service drive adjacent to a Common Open Space to facilitate resident access to common amenities.
- G. Service drives shall be a minimum of 20 feet in width.
- H. All service drives shall be owned and maintained by the Homeowners’ Association.
- I. The minimum driveway clearance for corner lots shall be 10’ from the point of tangency of the radius curvature of the ROW to the edge of driveway.

V. LANDSCAPING, SCREENING, AND OPEN SPACE

- A. All public streets shall have street trees per the Streetscape Cross-Sections of the Chapel Lakes PD booklet.
- B. A 30’ landscape buffer shall be provided between Chambers Chapel Road and adjacent lots, per the Landscape Plan and 86’ ROW Streetscape Cross-Section of the Chapel Lakes PD booklet.
- C. All new landscaped areas, except for Common Open Spaces intended to become naturalized, must be irrigated with a subsurface irrigation system.
- D. All required landscaping shall be located on the property such that it shall not interfere with any utility easements and may be altered according to MLGW requirements.
- E. A Homeowners’ Association shall be established at the time of recording of any final plat. Any buffer areas, retention basins, landscape areas, open areas, street medians, entrance signs, pedestrian areas/easements, and any other common elements and/or easements proposed to be dedicated to the Homeowners’ Association in that phase shall be deeded over to the Homeowners’ Association with the recording of the final plat of that respective phase. A copy of the finalized incorporation papers and any deeds transferring common elements to the Homeowners’ Association shall be submitted to the City of Lakeland for inclusion in the file.
- F. All Common Open Space areas, internal medians, streetscape areas, and neighborhood greens/parks shall be privately owned and maintained by a Homeowners’ Association..
- G. All Common Open Space may include amenities such as walking trails, sidewalks, open lawn areas, shelter structures, bike racks, lighting, and benches where appropriate.

VI. SIGNAGE

- A. All signage (temporary and permanent) will follow the City of Lakeland Land Development Regulations.

VII. DRAINAGE FACILITIES & SERVICES

- A. The stormwater drainage system shall be designed and constructed to the design standards required by the City of Lakeland.
- B. A Storm Water Pollution Prevention Plan (SWPPP) will be filed with the state authorities prior to commencement of construction.
- C. According to the FEMA Flood Insurance Rate Map, this property does not lie in any Special Flood Hazard Areas as identified in Community Panel Numbers 47157 C0215G and 47157 C0330G, dated February 6, 2013.
- D. Grading and storm drainage plans shall be established per the City of Lakeland Land Development Regulations.
- E. All public stormwater drainage shall require a public easement.

VIII. SANITARY SEWER & SERVICES

- A. A Master Sanitary Sewer Concept Plan shall be submitted at the time a Phase One Preliminary Plan is submitted for review and approval.
- B. The City of Lakeland will provide sanitary sewer service.
- C. Sanitary sewer improvements shall be provided under contract in accordance with the City of Lakeland Land Development Regulations and the State of Tennessee regulations.
- D. Sizes of sanitary sewer lines shall be determined at the time a Final Plan is submitted to the Town Engineer.
- E. Sanitary Sewer Plans shall be submitted to the Tennessee Department of Environmental Conservation (TDEC) for written approval.
- F. All sanitary sewer located in a private drive or otherwise outside of public right-of-way shall be within a public easement.

IX. WATER SERVICE / UTILITIES

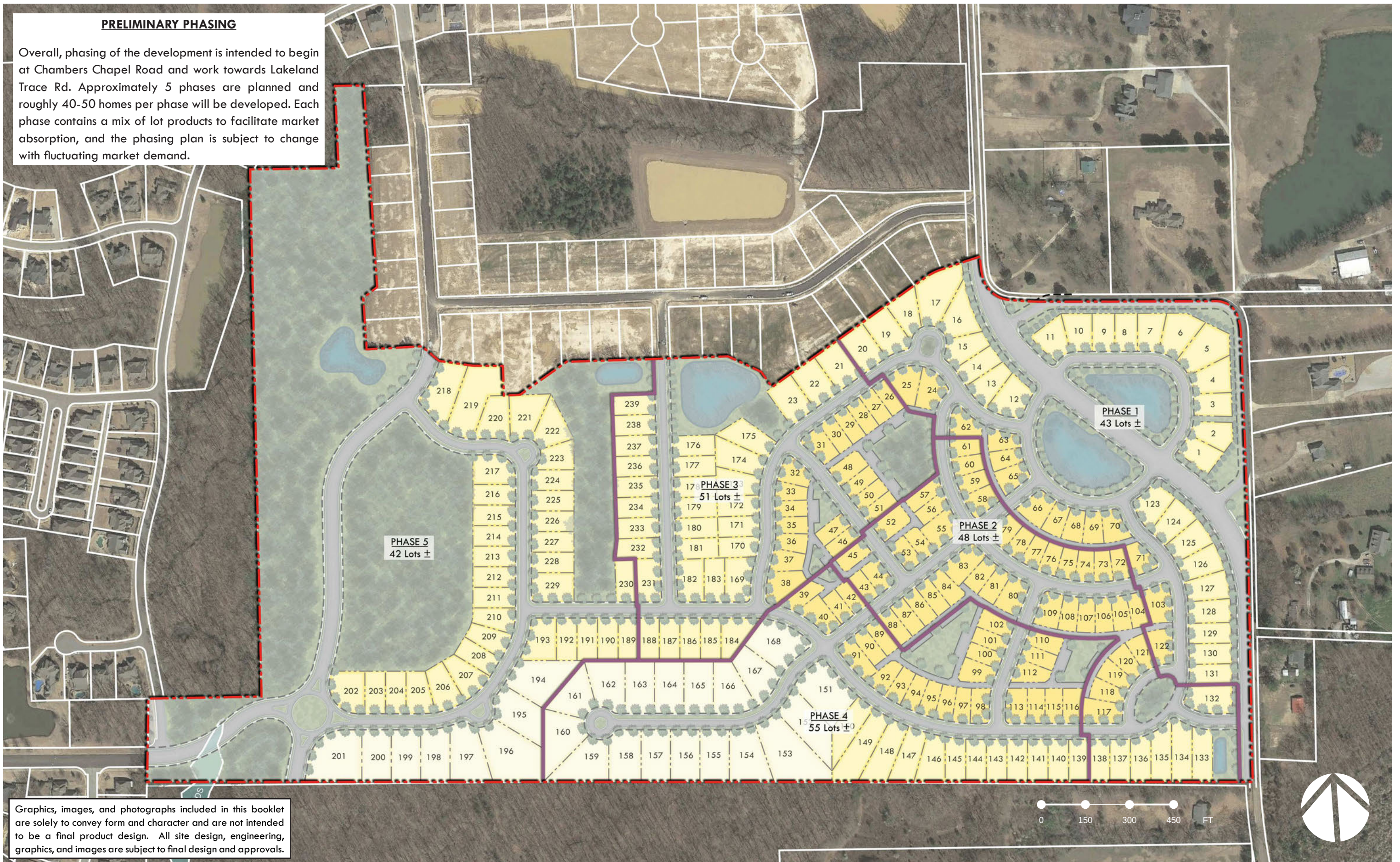
- A. Public water improvements shall be provided by the Developer under contract in accordance with the City of Lakeland Land Development Regulations and the State of Tennessee regulations.
- B. All utilities and services to be installed underground, with the exception of three-phase electric.
- C. All water services located in a private drive or otherwise outside of public right-of-way shall be within a public easement.

X. DEVELOPMENT PHASING

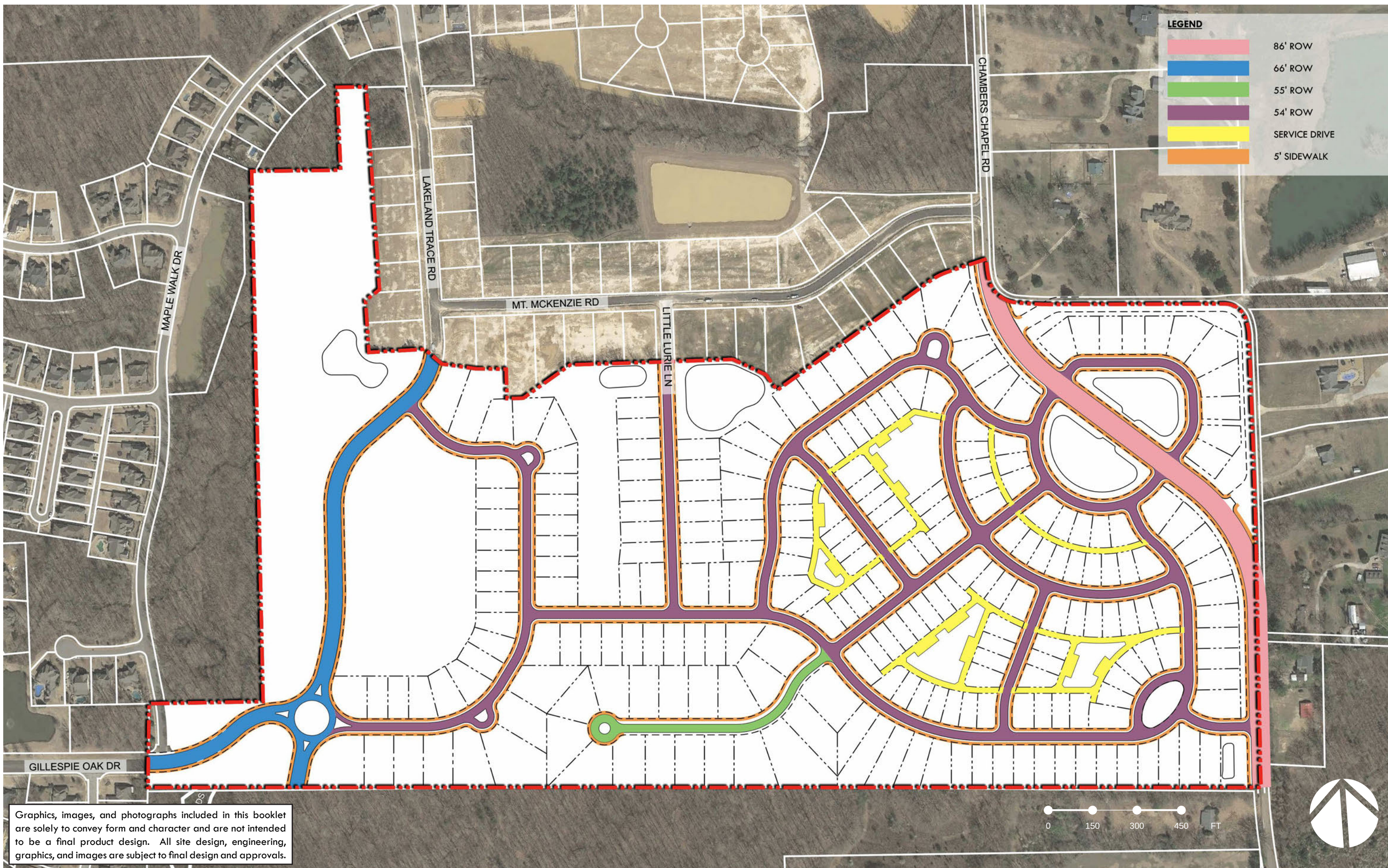
- A. The Development is planned to be constructed in 5 phases, with the first phase planned to begin construction in 2021. See the Preliminary Phasing Plan for more details.
- B. The Preliminary Phasing Plan is subject to change as plans are finalized and as market demands fluctuate. Construction of phases may be singular or a mix to meet current and future market demands.
- C. The synchronization of Phases of Chapel Lakes Planned Development may be modified by the Developer at any time to allow for current and future market demands.
- D. Minor changes to lot configuration may occur with the final plans.

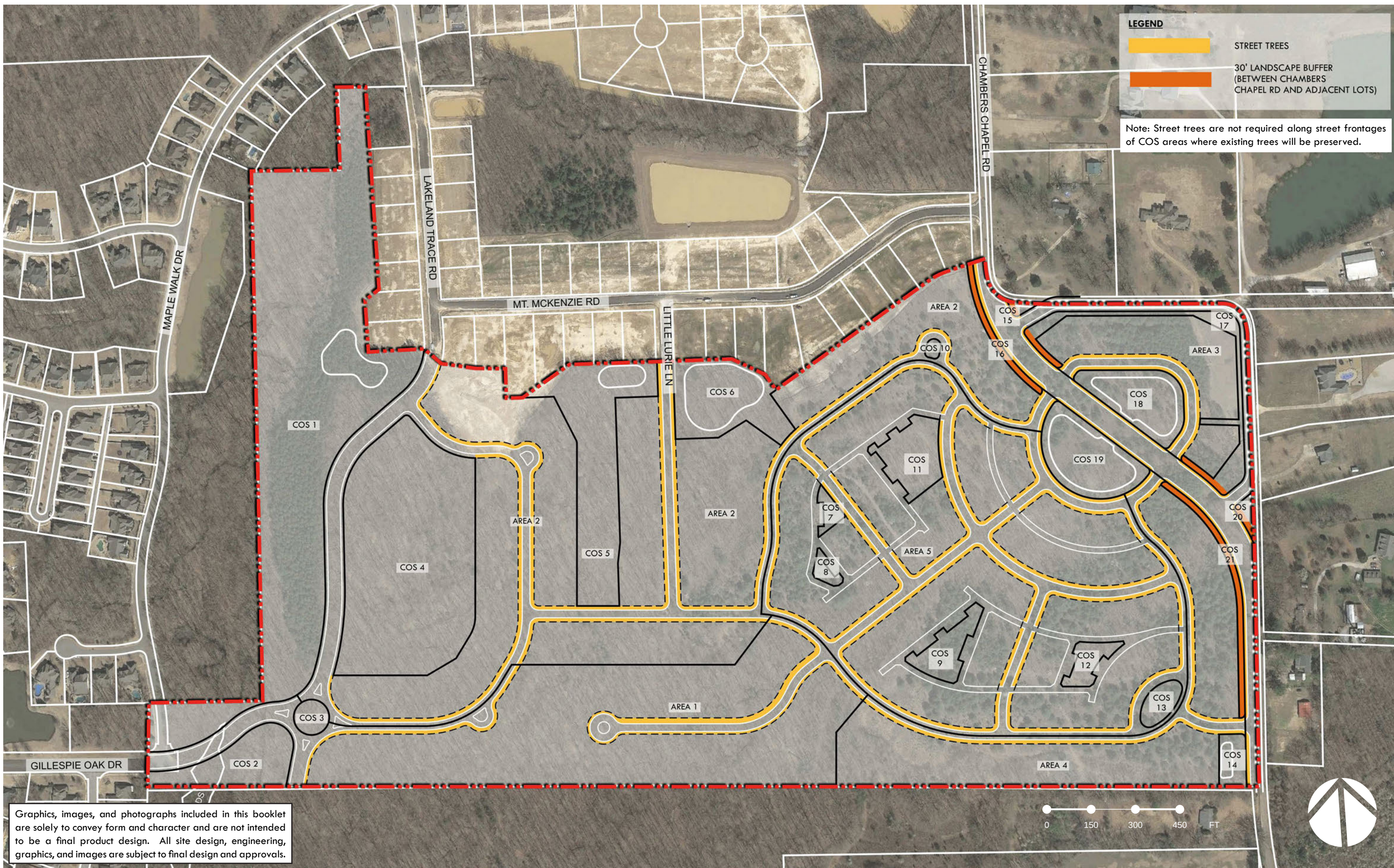
PRELIMINARY PHASING

Overall, phasing of the development is intended to begin at Chambers Chapel Road and work towards Lakeland Trace Rd. Approximately 5 phases are planned and roughly 40-50 homes per phase will be developed. Each phase contains a mix of lot products to facilitate market absorption, and the phasing plan is subject to change with fluctuating market demand.

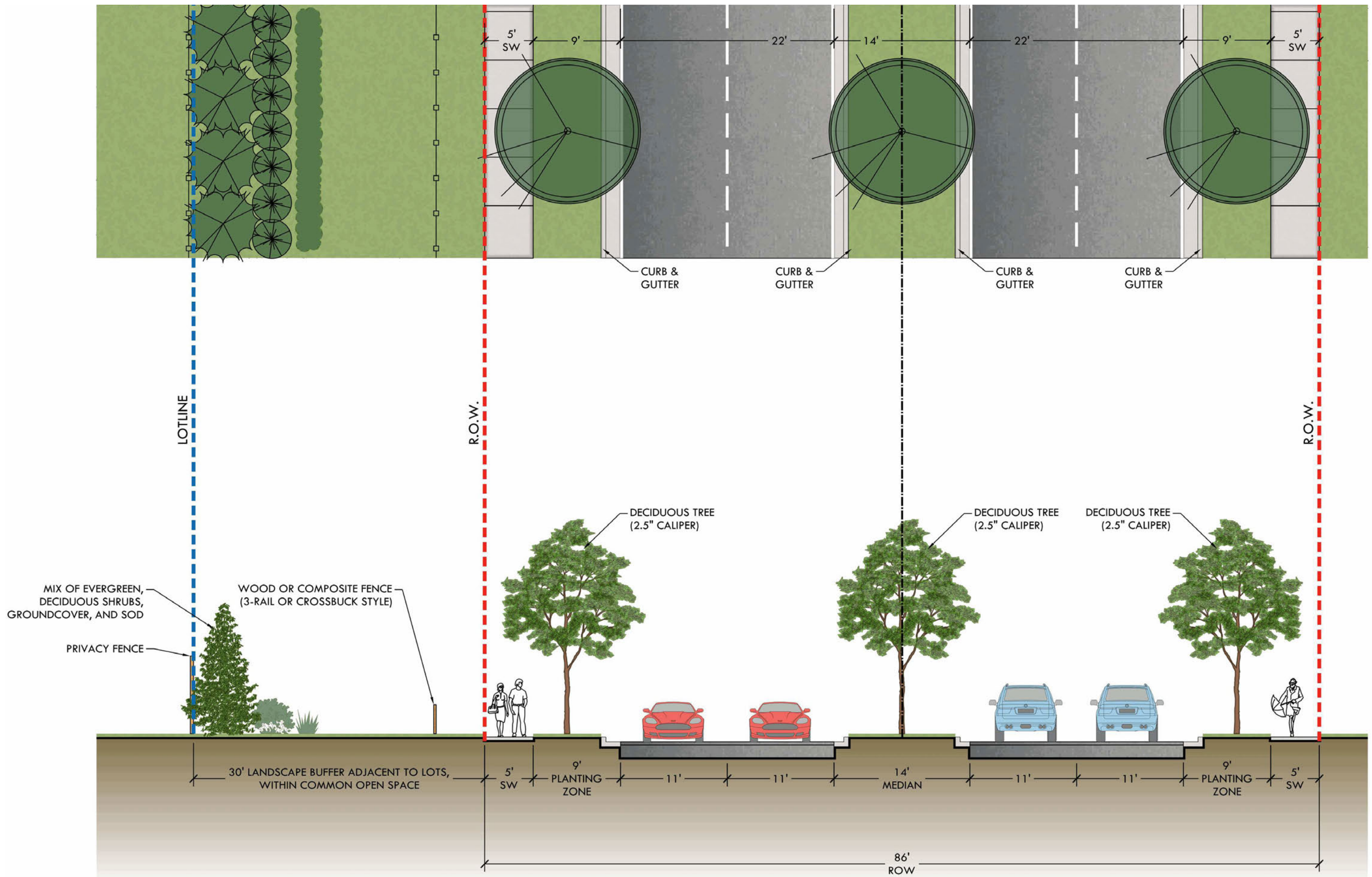


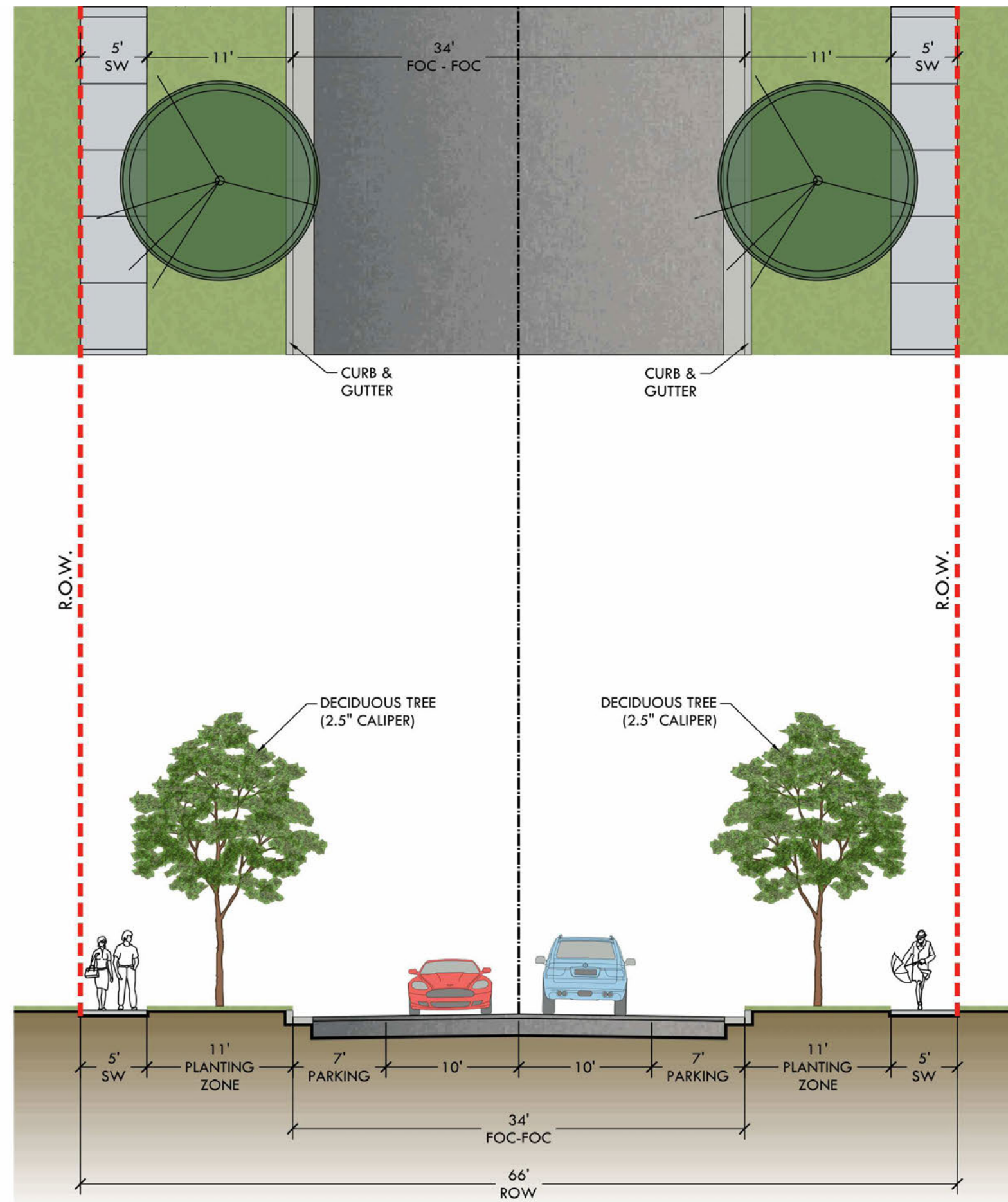
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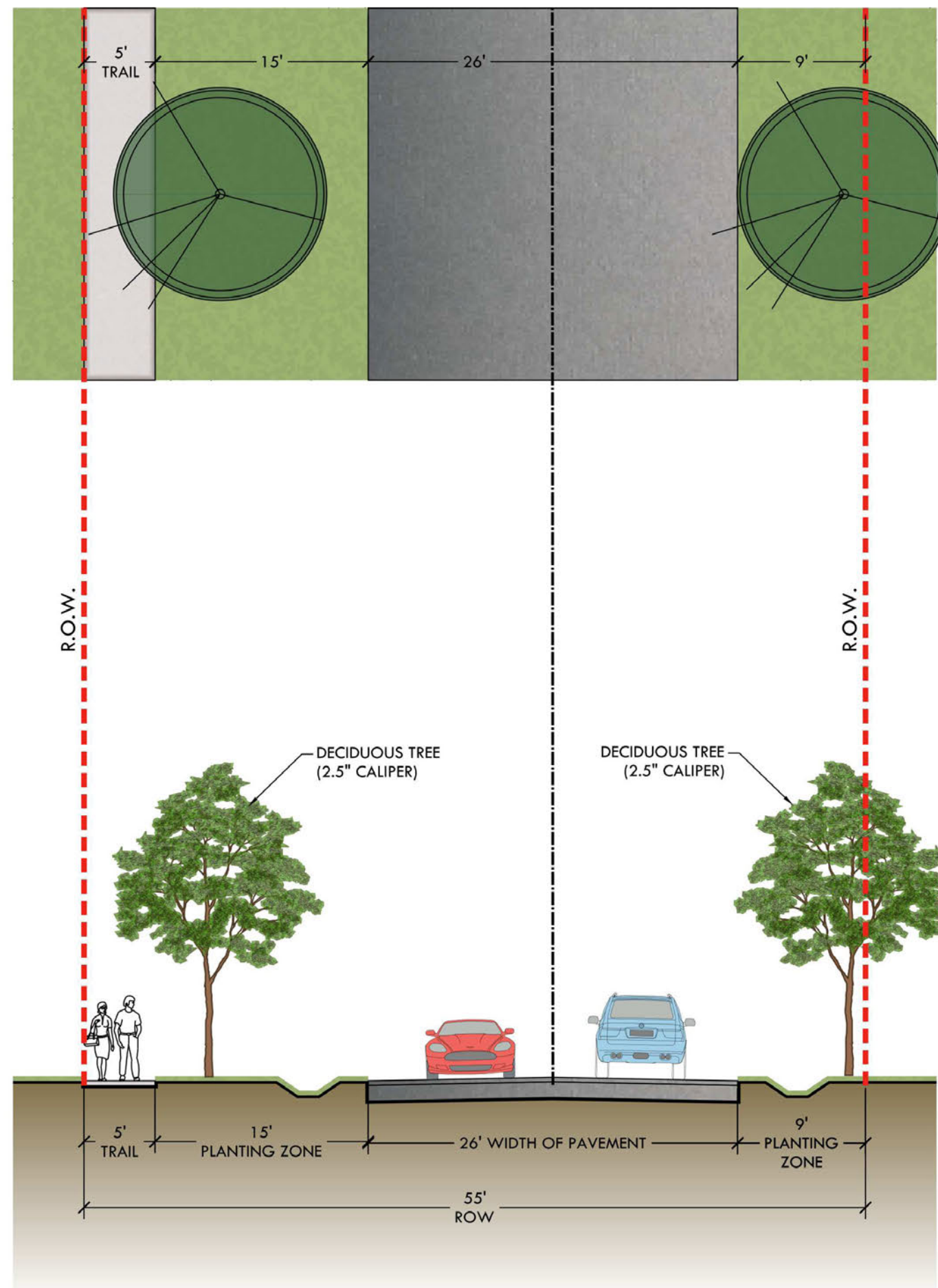


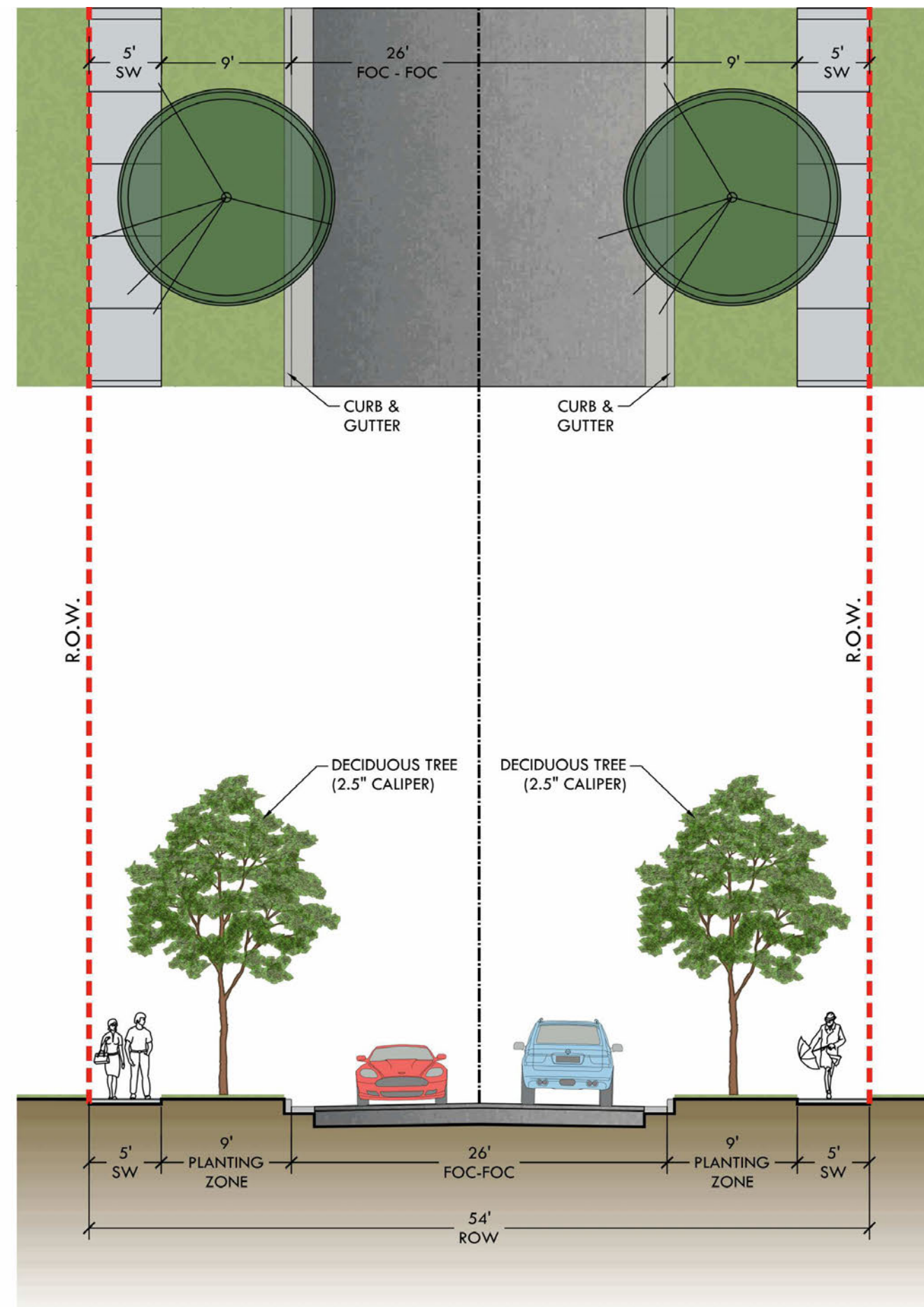


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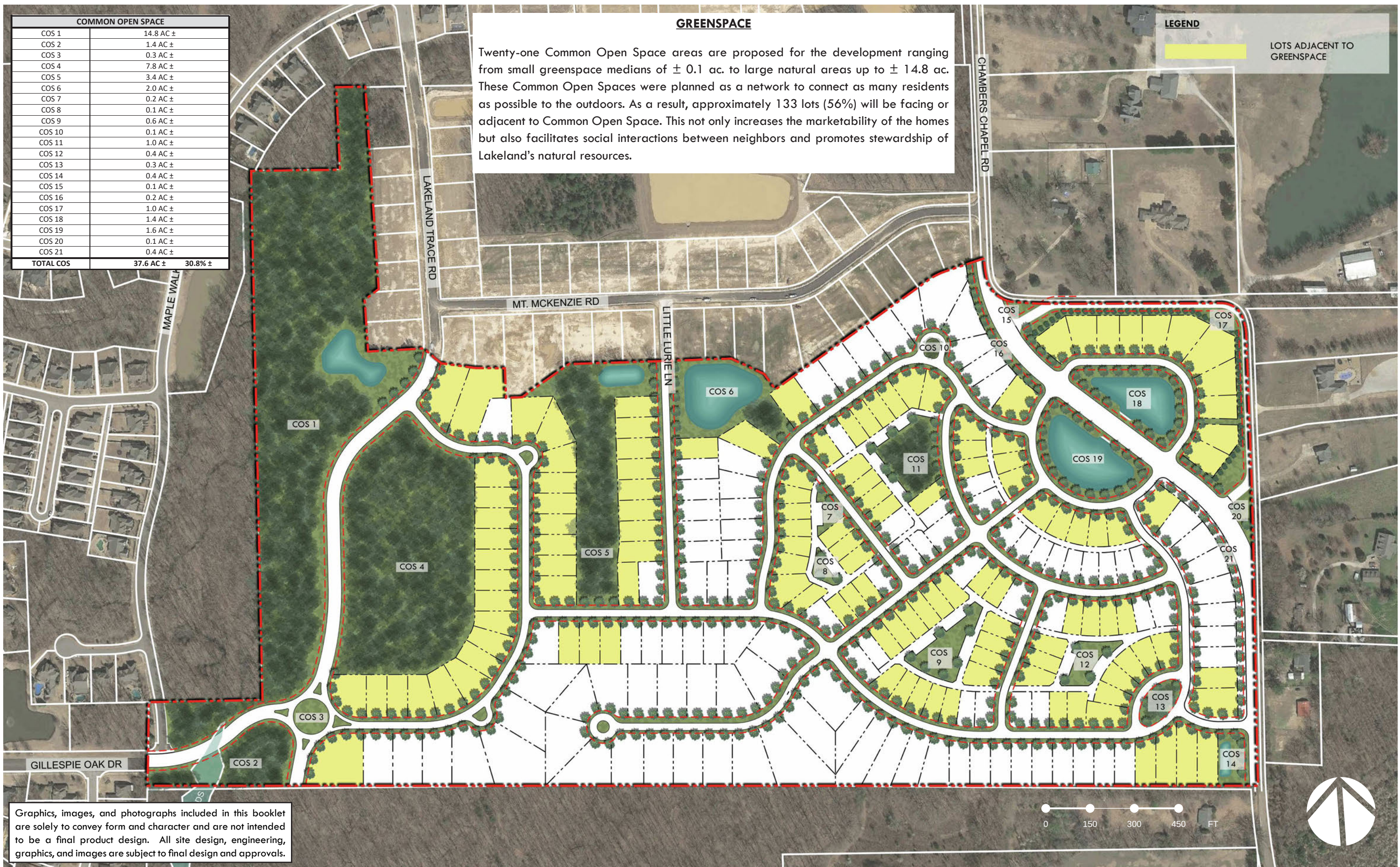
COMMON OPEN SPACE		
COS 1	14.8 AC ±	
COS 2	1.4 AC ±	
COS 3	0.3 AC ±	
COS 4	7.8 AC ±	
COS 5	3.4 AC ±	
COS 6	2.0 AC ±	
COS 7	0.2 AC ±	
COS 8	0.1 AC ±	
COS 9	0.6 AC ±	
COS 10	0.1 AC ±	
COS 11	1.0 AC ±	
COS 12	0.4 AC ±	
COS 13	0.3 AC ±	
COS 14	0.4 AC ±	
COS 15	0.1 AC ±	
COS 16	0.2 AC ±	
COS 17	1.0 AC ±	
COS 18	1.4 AC ±	
COS 19	1.6 AC ±	
COS 20	0.1 AC ±	
COS 21	0.4 AC ±	
TOTAL COS	37.6 AC ±	30.8% ±

GREENSPACE

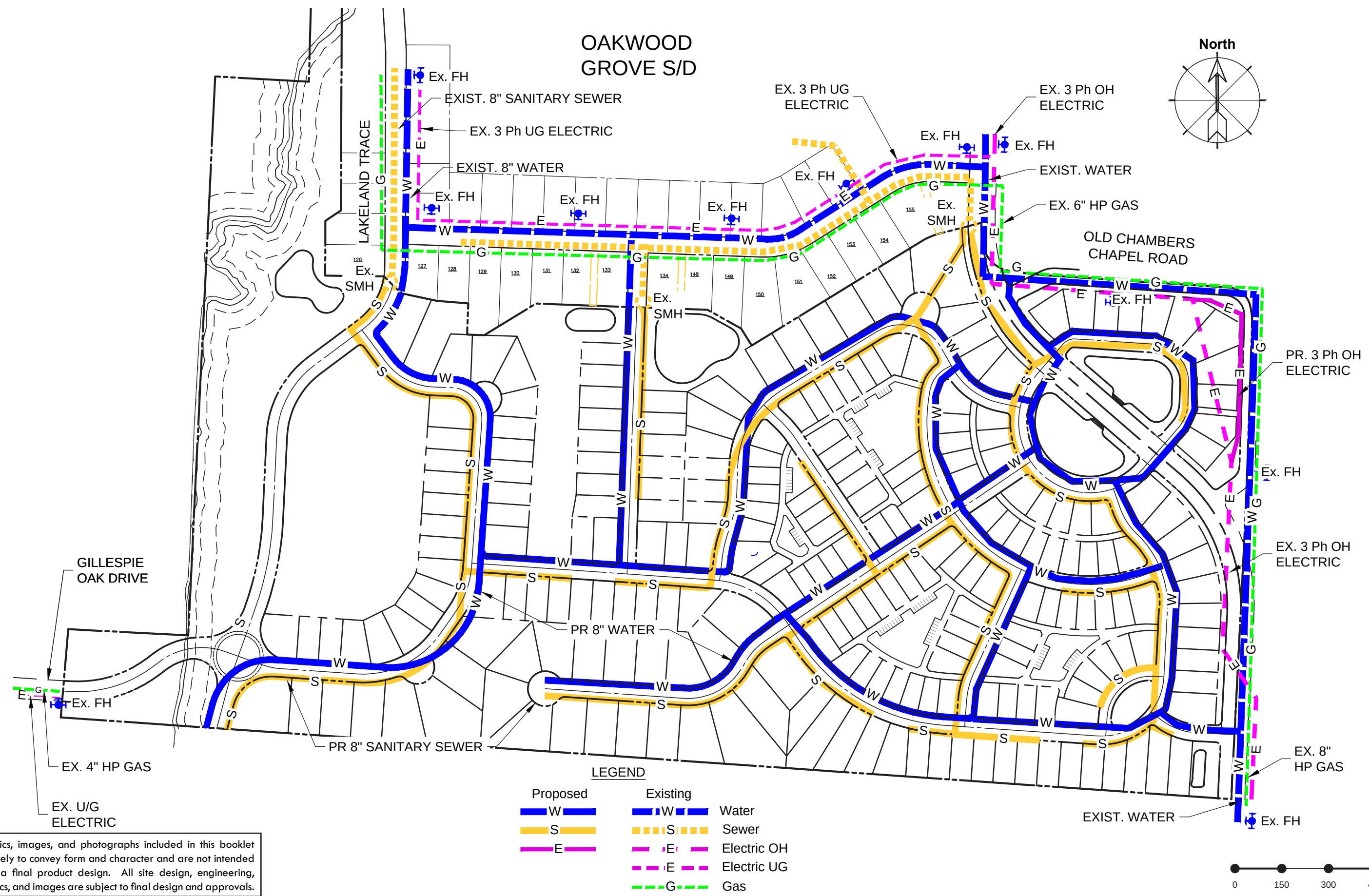
Twenty-one Common Open Space areas are proposed for the development ranging from small greenspace medians of ± 0.1 ac. to large natural areas up to ± 14.8 ac. These Common Open Spaces were planned as a network to connect as many residents as possible to the outdoors. As a result, approximately 133 lots (56%) will be facing or adjacent to Common Open Space. This not only increases the marketability of the homes but also facilitates social interactions between neighbors and promotes stewardship of Lakeland's natural resources.

LEGEND

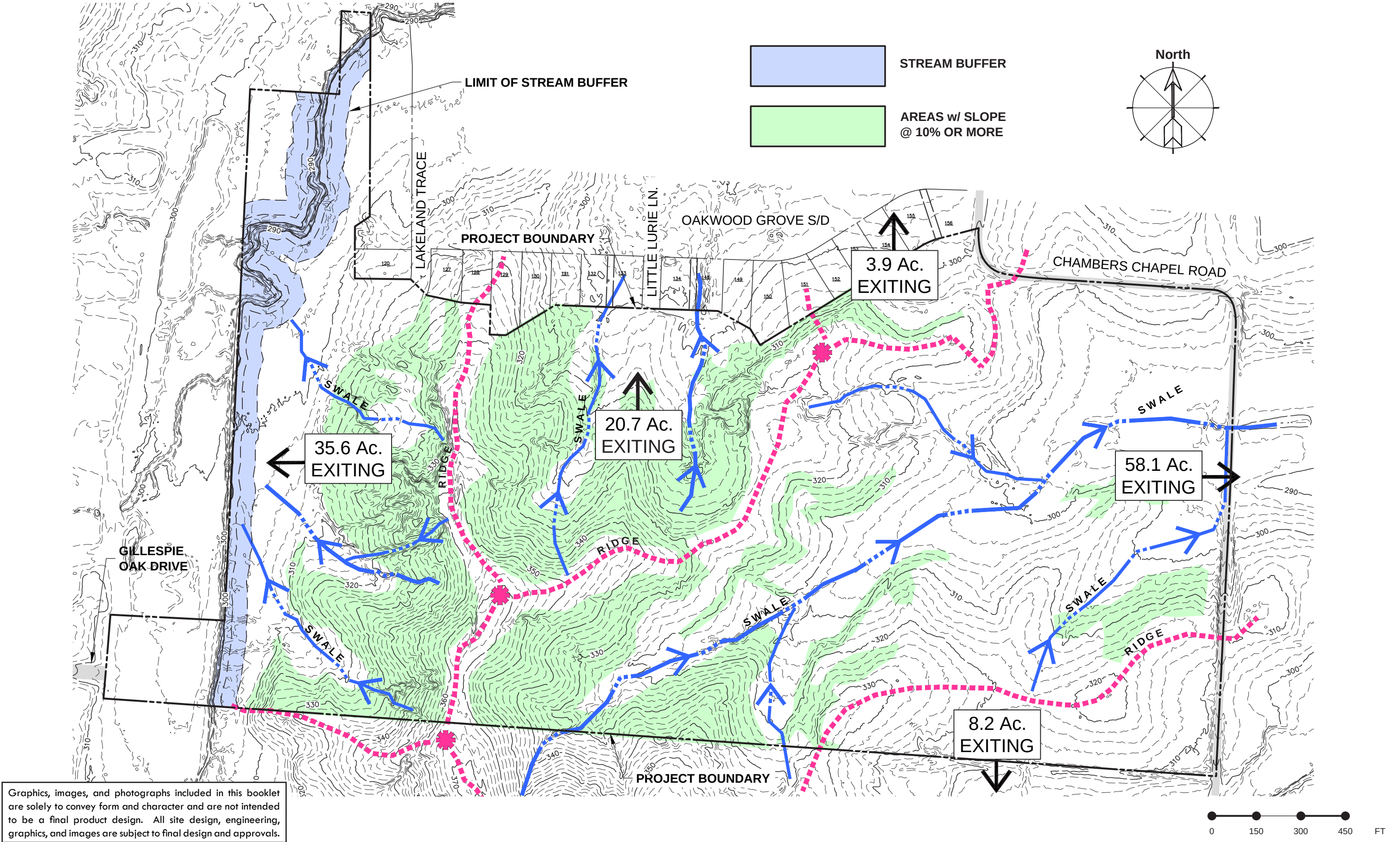
LOTS ADJACENT TO GREENSPACE



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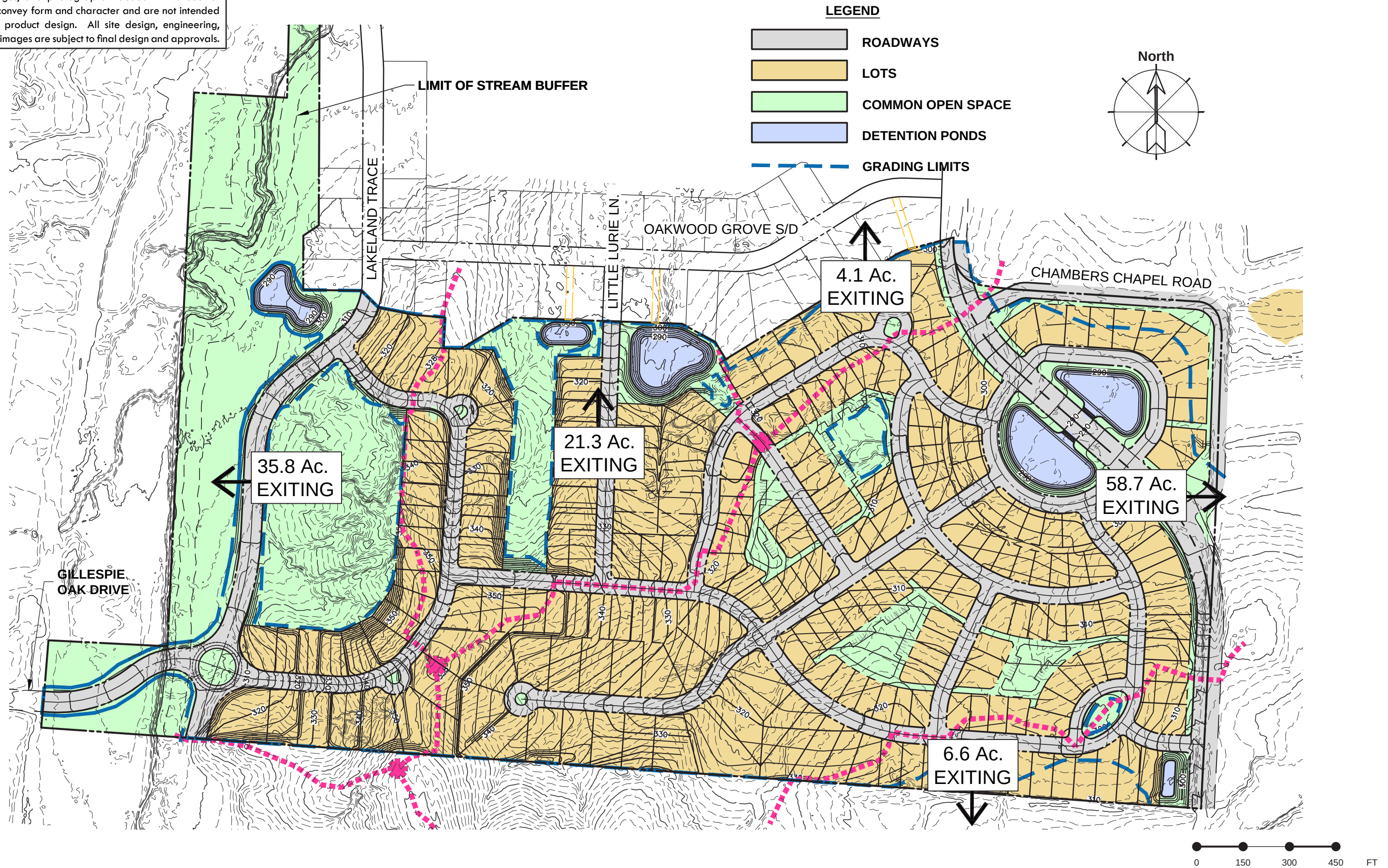


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Tree Density Calculation						
	Development Net Acreage		122.1	Ac.		
	Site Density Factor (SDF)		2442			
	Existing Density Factor (EDF)		7301.3			
	Replacement Density Factor (RDF)		0			
Summary of Data						
	Existing Trees (Arborist)		7178	Trees		
	Existing Trees (Not Survey Located)		516	Trees	Assumed Remove for Calculations	
	Existing Trees (On-Site)		7131	Trees		
	Trees to Remain (On-Site)		2078	Trees		
	Percent of Trees to Remain (On-Site)		29.1%			
	Existing Specimen Trees (On-Site)		533	Trees		
	Specimen Trees to Remain (On-Site)		140	Trees		
	Percent of Specimen Trees to Remain (On-Site)		26.3%			

LEGEND

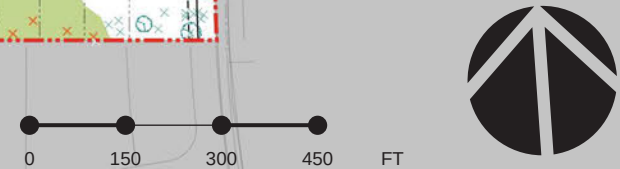
PROPOSED TREE SAVE AREAS
OUTSIDE LIMITS OF GRADING

SPECIMEN TREE SAVED

NON-SPECIMEN TREE SAVED

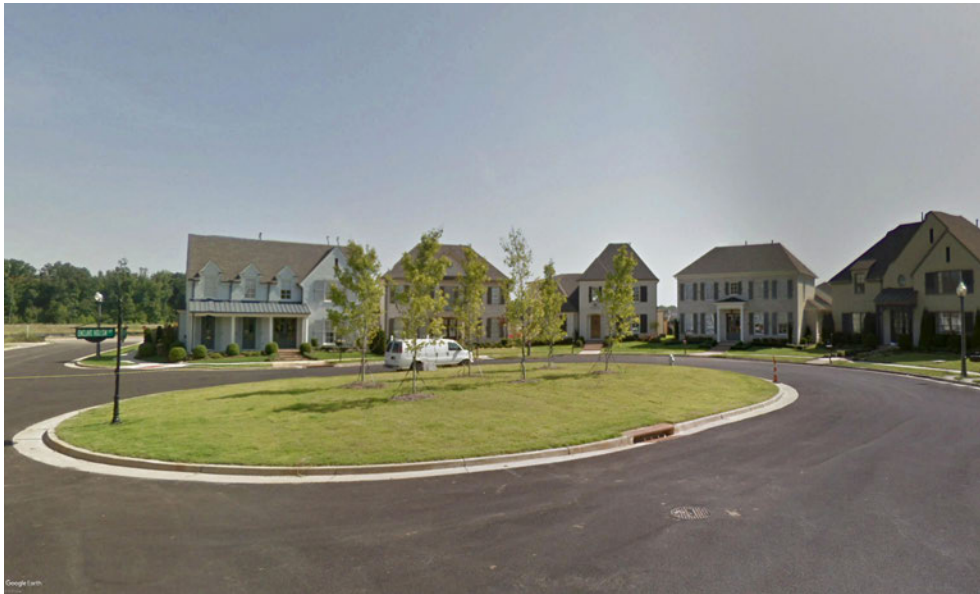
Note: A full tree survey and data chart of all trees is attached as a separate document.

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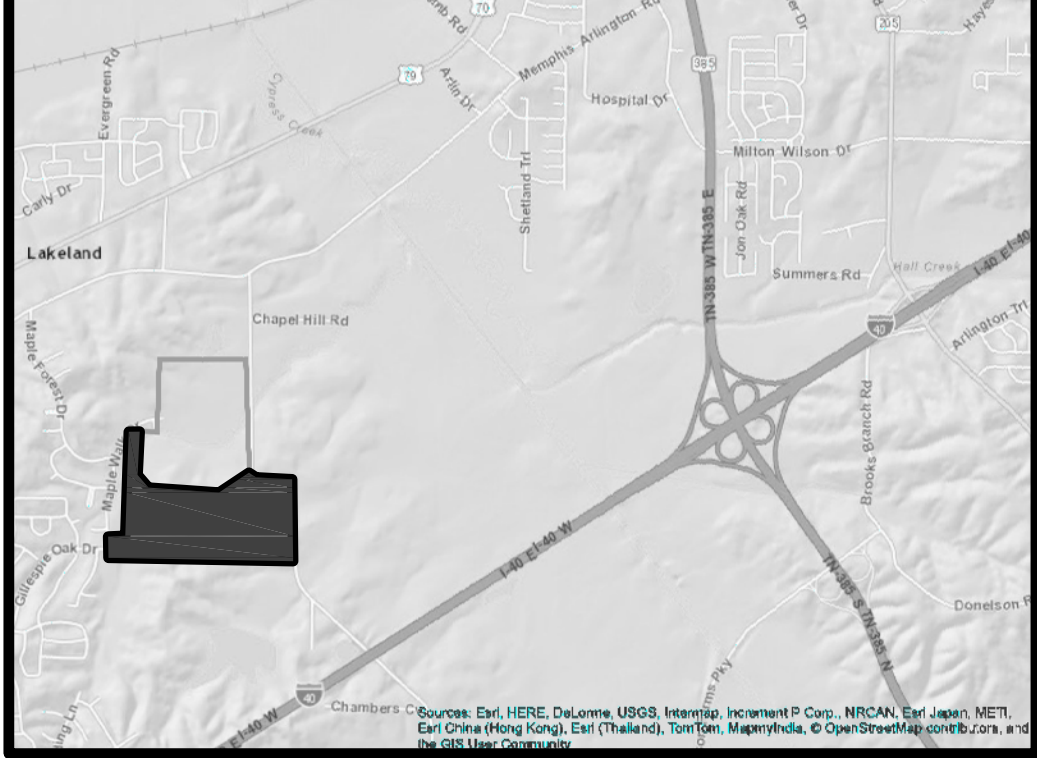
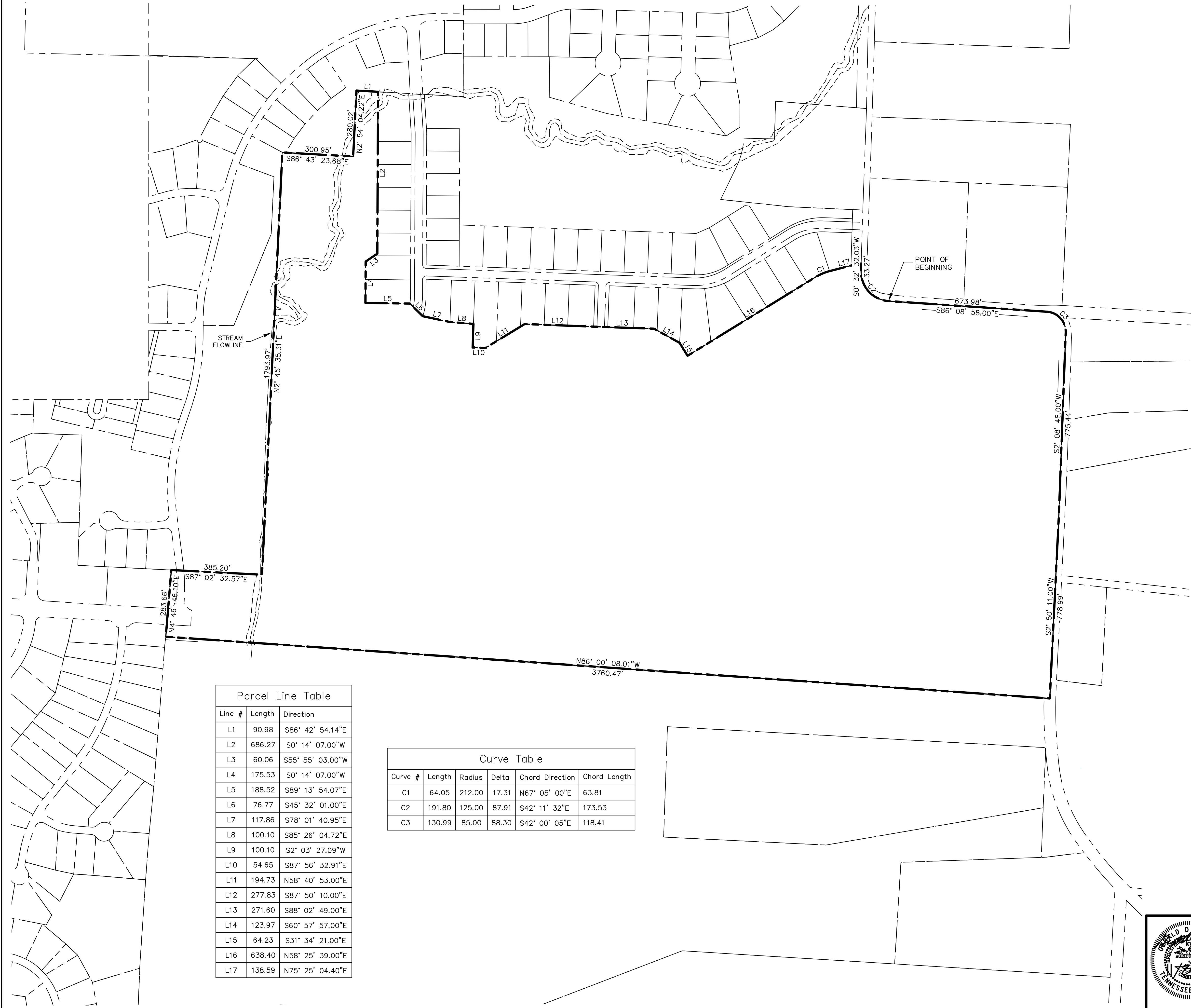




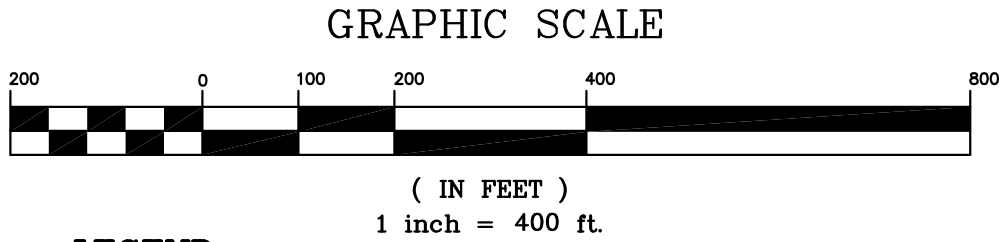








VICINITY MAP
NTS



LEGEND

- PROPERTY LINE
- EXISTING STREAM
- EXISTONG ROAD

LEGAL DESCRIPTION

Beginning at a point having coordinates of N:355803.91, E:861405.68 said point being in the centerline of Chambers Chapel Road 3990 feet South of the intersection of Chambers Chapel Road and Memphis Arlington Road; thence along the centerline of Chambers Chapel Road with a bearing of S 86°08'58" E a distance of 673.98 feet to a point; thence in a southeasterly direction with a tangent curve turning to the right with a radius of 85.00 feet, having a chord bearing of S 42°00'05" E and a chord distance of 118.41, having a central angle of 88°17'54" and an arc length of 130.99 to a point; thence with a bearing of S 02°08'48" W a distance of 775.44 feet to a point; thence with a bearing of S 02°50'11" W a distance of 778.99 feet to a point in the North line of the Bank of Bartlett Property (Instrument No. 11000708); thence along said north property line with a bearing of N 86°00'08" W a distance of 3760.47 feet to a point in the East property line of the Steven and Mikki Gibson Property (Instrument No. 06085432); thence with a bearing of N 04°46'46" E a distance of 283.66 feet to a point in the South property line of the Bruce and Alison Nelson property (Instrument No. 09104215); thence with a bearing of S 87°02'33" E a distance of 385.20 feet to a point in the East property line of the Grove at Lakeland Homeowners Association LLC (Instrument No. 14083333); thence following said property line with a bearing of N 02°45'35" E a distance of 1793.97 feet to a point; thence with a bearing of S 86°43'24" E a distance of 300.95 feet to a point; thence with a bearing of N 02°54'04" E a distance of 280.02 feet to a point; thence with a bearing of S 86°42'54" E a distance of 90.98 feet to a point in the West property line of the TFB LLC property (Instrument No. 16035351); thence along said property line in a southeasterly direction with a tangent curve turning to the right with a radius of 0.50 feet, having a chord bearing of S 43°14'24" E and a chord distance of 0.69, having a central angle of 86°57'01" and an arc length of 0.76 to a point; thence with a bearing of S 00°14'07" W a distance of 686.27 feet to a point; thence with a bearing of S 55°55'03" W a distance of 60.06 feet to a point; thence with a bearing of S 00°14'07" W a distance of 175.53 feet to a point; thence with a bearing of S 89°13'54" E a distance of 188.52 feet to a point; thence with a bearing of S 45°32'01" E a distance of 76.77 feet to a point; thence with a bearing of S 78°01'41" E a distance of 117.86 feet to a point; thence with a bearing of S 85°26'05" E a distance of 100.10 feet to a point; thence with a bearing of S 02°03'27" W a distance of 100.10 feet to a point; thence with a bearing of S 87°56'33" E a distance of 54.65 feet to a point; thence with a bearing of N 58°40'53" E a distance of 194.73 feet to a point; thence with a bearing of S 87°50'10" E a distance of 277.83 feet to a point; thence with a bearing of S 88°02'49" E a distance of 271.60 feet to a point; thence with a bearing of S 60°57'57" E a distance of 123.97 feet to a point; thence with a bearing of S 31°34'21" E a distance of 64.23 feet to a point; thence with a bearing of N 58°25'39" E a distance of 638.40 feet to a point; thence in a northeasterly direction with a tangent curve turning to the right with a radius of 212.00 feet, having a chord bearing of N 67°05'00" E and a chord distance of 63.81, having a central angle of 17°18'41" and an arc length of 64.05 to a point; thence with a bearing of N 75°25'04" E a distance of 138.59 feet to a point; thence with a bearing of S 00°32'32" W a distance of 33.27 feet to a point; thence in a southeasterly direction with a non-tangent curve turning to the left with a radius of 125.00 feet, having a chord bearing of S 42°11'32" E and a chord distance of 173.53, having a central angle of 87°54'51" and an arc length of 191.80 to the point of beginning.; containing 5505810.87 square feet or 126.396 acres.

The Northing and Easting coordinates as referred to in this description are relative to the Tennessee State Plane Coordinate System (North American Datum 1983).

Parcel Line Table			
Line #	Length	Direction	
L1	90.98	S86° 42' 54.14"E	
L2	686.27	S0° 14' 07.00"W	
L3	60.06	S55° 55' 03.00"W	
L4	175.53	S0° 14' 07.00"W	
L5	188.52	S89° 13' 54.07"E	
L6	76.77	S45° 32' 01.00"E	
L7	117.86	S78° 01' 40.95"E	
L8	100.10	S85° 26' 04.72"E	
L9	100.10	S2° 03' 27.09"W	
L10	54.65	S87° 56' 32.91"E	
L11	194.73	N58° 40' 53.00"E	
L12	277.83	S87° 50' 10.00"E	
L13	271.60	S88° 02' 49.00"E	
L14	123.97	S60° 57' 57.00"E	
L15	64.23	S31° 34' 21.00"E	
L16	638.40	N58° 25' 39.00"E	
L17	138.59	N75° 25' 04.40"E	

Curve Table					
Curve #	Length	Radius	Delta	Chord Direction	Chord Length
C1	64.05	212.00	17.31	N67° 05' 00"E	63.81
C2	191.80	125.00	87.91	S42° 11' 32"E	173.53
C3	130.99	85.00	88.30	S42° 00' 05"E	118.41



PROPERTY SURVEY		
CHAPEL WOODS SUBDIVISION LAKELAND, TENNESSEE		
TOTAL AREA: 126.40 Ac.	NUMBER OF LOTS: 214	
ZONING DISTRICT: R1, R2, OS2, OS5	WARD 64, BLOCK 51, PARCEL 483 AND 49	
DEVELOPER: EVOLVE BANK& TRUST 6070 POPLAR AVE. SUITE 200 MEMPHIS, TN 38119 PHONE: (901)334-0980	ENGINEER: LAWSON ENGINEERING AND CONSULTING, INC. 5909 POLK ST. ARLINGTON, TN 38002 PHONE: (901)383-3278 FAX: (901)867-5546	
100 YEAR FLOOD ELEVATION: N/A	FEMA MAP PANEL NUMBER: 47157C0215 G	FEMA MAP DATE: FEBRUARY 6, 2013
DATE: 11/8/17	SCALE: 1"=400'	SHEET 1

TRAFFIC IMPACT STUDY

CHAPEL LAKES PUD

(REVISED)

LAKELAND, TN

M. Lipinski, PE, Ph.D., PTOE



JUNE, 2021

Introduction

The objective of this study is to determine the traffic impacts of a proposed new residential development, Chapel Lakes PUD, in Lakeland, TN. Specifically, the study will address the future laneage needs and need for other improvements on Chambers Chapel Road resulting from this project. A previous study, Traffic Impact Study Oakwood Grove/Evolve Bank Site, which included this property, was completed in June, 2015.

The focus of this study will be on the changes to the amount and location of the traffic generated resulting from the modifications made to the previous plan. These modifications included revisions to the number of residential homes within the site and the location and number of access points to the development.

Base Assumptions

It is assumed that the assumptions made in the previous study regarding background traffic, future traffic growth, etc. will not change. Rather than repeat all that information, one is referred to the June, 2015 Traffic Impact Study. The only changes to be evaluated are those resulting from the modifications from the previous Evolve Bank Site to the Chapel Lakes PUD.

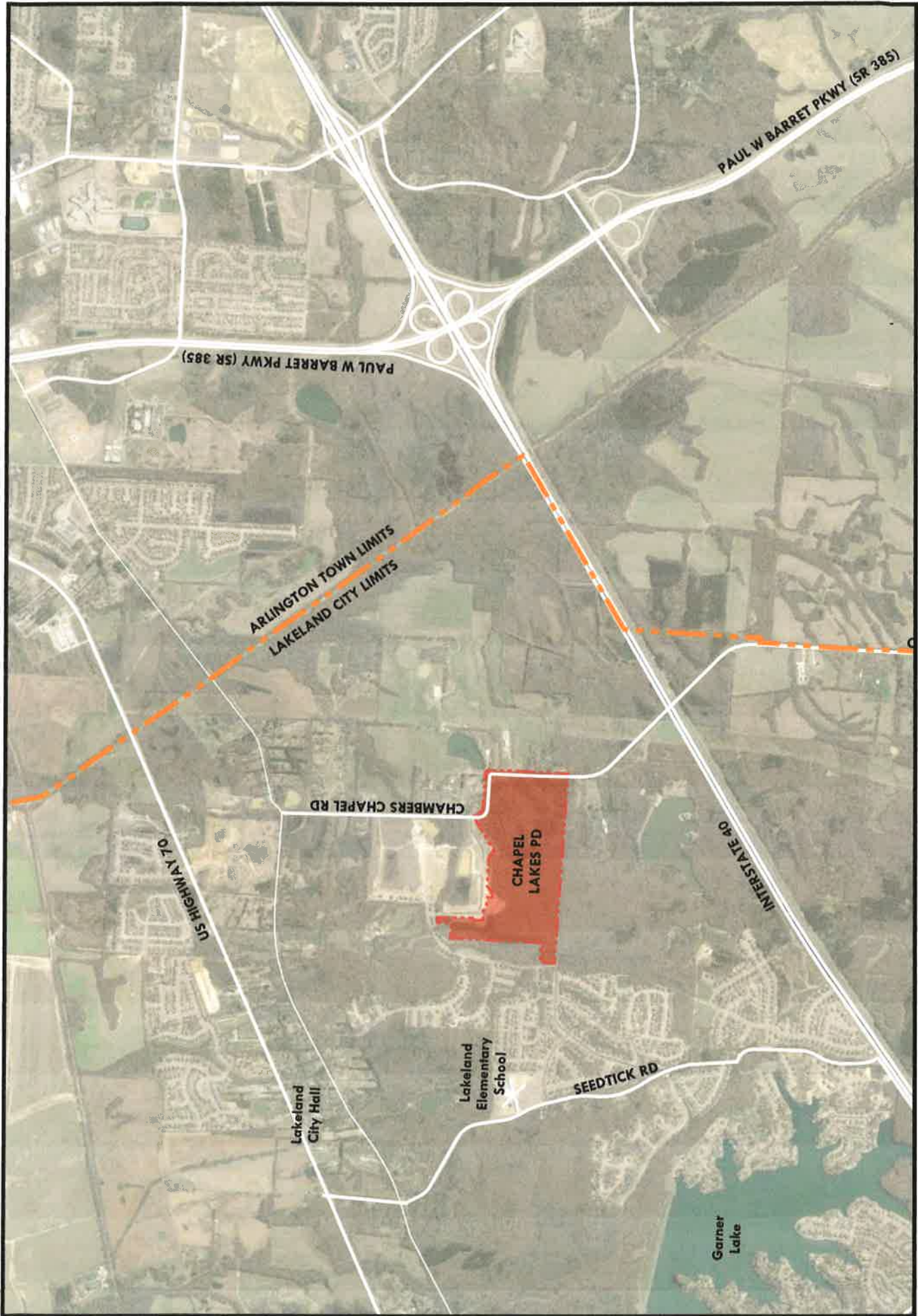
Design Year

The design year selected for traffic impact studies of this type is typically the year when full buildout of the site is anticipated. For this study, analyses were completed for two design years, 2025 and 2040. The year 2025 is the year when full built out is anticipated. The year 2040 was selected as development is in an area where future development is not expected for many years. One can refer to the City of Lakeland Pending Development map to see what is pending in the near term. Therefore, the design year for this study was assumed to be twenty years in the future. It is unusual for a traffic impact study to be based on long range projections. However, since one of the central issues to be addressed is the need for roadway widening and other improvements adjacent to and in the vicinity of the site, it was felt that the use of this planning horizon in the analysis would provide the necessary information to make a determination as to the contribution of the traffic generated at these sites to roadway improvement needs.

The Site

The development is to be located along Chambers Chapel Road south of Memphis Arlington Road and north of 1-40. The location of the site is shown in Figure 1. The site plan is shown in Figure 2. The development will consist of 270 single family homes.

Access will be provided by two drives on Chambers Chapel Road, both which will serve the homes on both sides of Chambers Chapel, one drive to the south serving the site on



NOT TO SCALE

CHAPEL LAKES PLANNED DEVELOPMENT

FIGURE 1: VICINITY MAP



the west side of Chambers Chapel, and one entrance drive on the west side of the property intersection with the existing Gillespie Oaks Drive.

Trip Generation

The number of trips generated by the proposed development was calculated using the trip generation rates for single family residential development in the ITE Trip Generation Manual (10th Edition, 2017). Table 1 contains the number of trip generated for each of the two parcels for the daily, am peak, and pm peak periods.

Directional Distribution

The proposed development is residential and both the am and pm peak hour trips will be primarily home to/from work and home to/from school. Given the surrounding roadway network and the connectivity to the major roadways, the following directional distribution of site-oriented trips was assumed:

- to/from the north 85%
- to/from the south 5%
- to/from the west 10%

This distribution was based on the assumption that commuters would be oriented to Memphis-Arlington Road to connect to I-40 that school-related trips would travel subdivision streets to reach Seed Tick Road and the school, and that only a small percentage of trips would travel to the south and Highway 64 and/or via other roadways to the Canada Road interchange . Figure 3 shows the percentage assignment of traffic to the various site access points.

Access Point Assignments

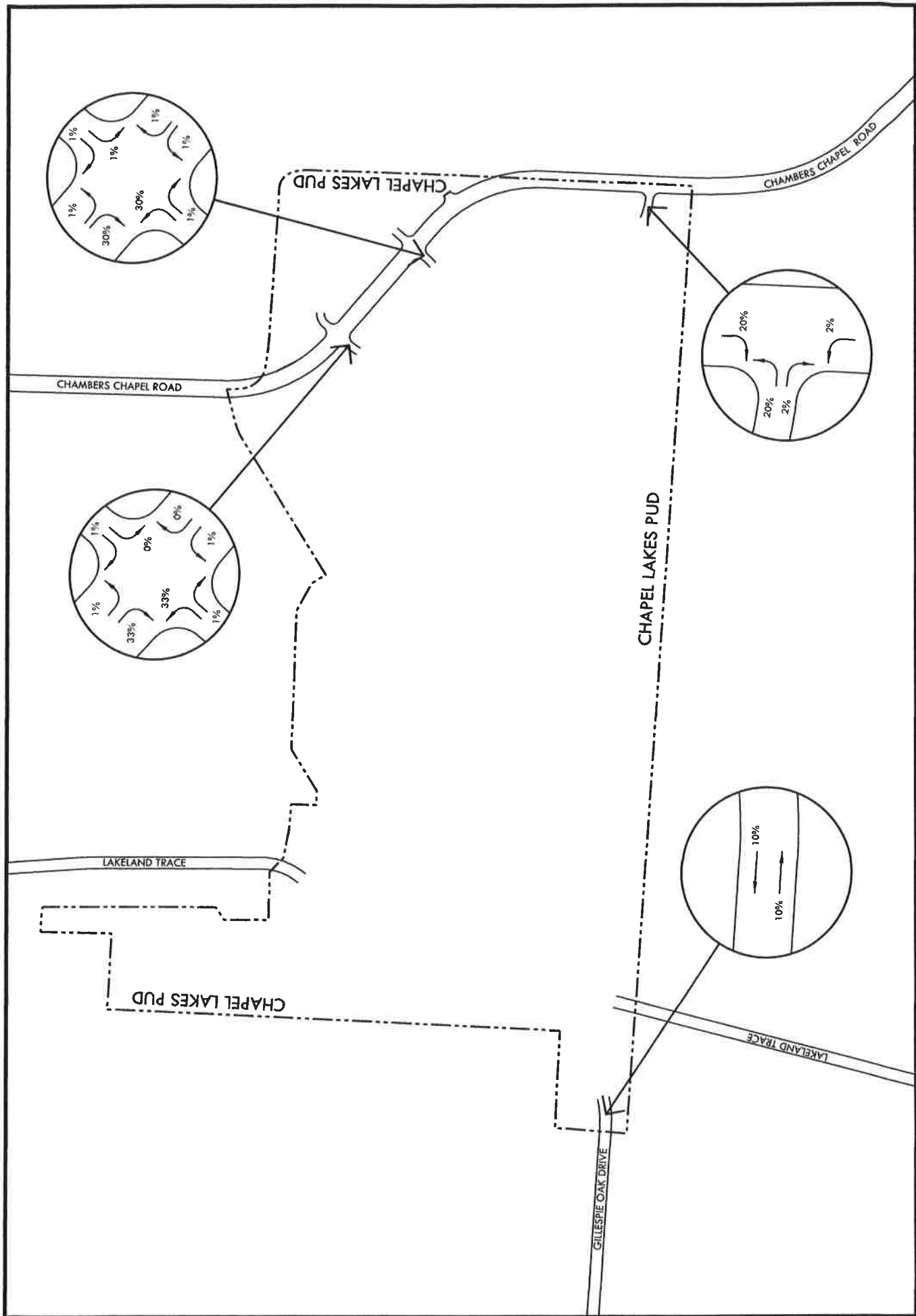
Based on the assumption mentioned above, projected site traffic for the am and pm peak periods was assigned to the entrance drives. Figures 4 and 5 contain driveway traffic assignments based on the location of the drives shown on the site plans.

Analysis of Driveway Operations

The operations at each of the site driveways on Chambers Chapel Road were evaluated using the Synchro, Version 11, analysis procedures. These are based on the Highway Capacity Manual procedures for unsignalized intersections. As mentioned previously, two design years were analyzed in this study. For the design year 2025, the background traffic volumes recorded in 2015 on Chambers Chapel Road were doubled. For the design year 2040 the growth assumptions made in the previous study were used. It is to be noted that traffic on Seed Tick Road and Memphis- Arlington Road increased by 28% from 2015 to 2018. The latest available traffic counts for those roads are in the Appendix. Figures 6 and 7 show the total traffic assignments at the three entrances to the Chapel Lakes site along Chambers Chapel Road for the design year 2025. Figures 8 and 9 show the total traffic assignments at the three entrances to the

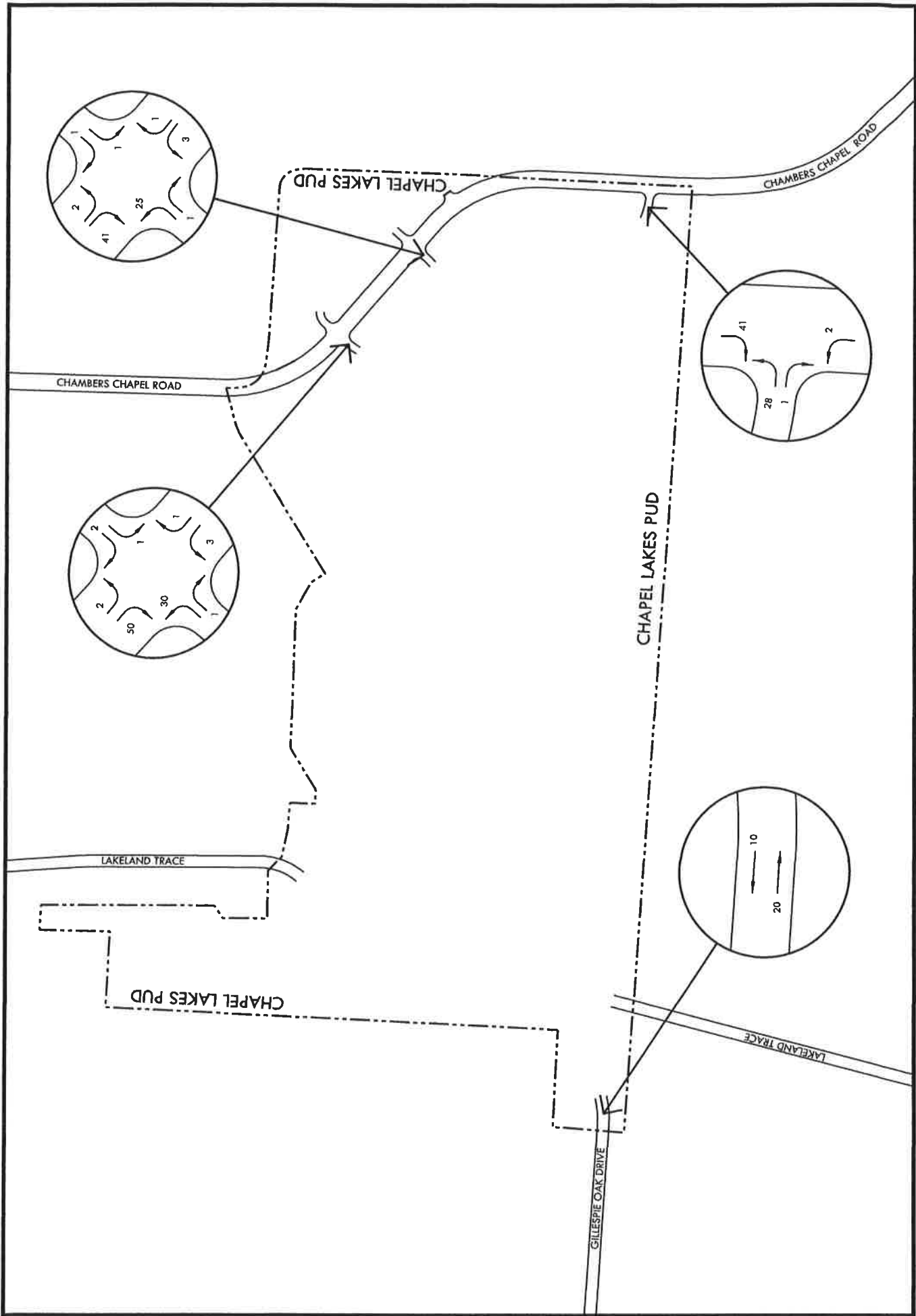
TABLE 1
TRIP GENERATION

Land Use	ITE Code	Basis	Units	Daily		AM		PM	
				IN	OUT	IN	OUT	IN	OUT
Single Family Residential	210	Homes	270	1296	1296	49	147	166	98

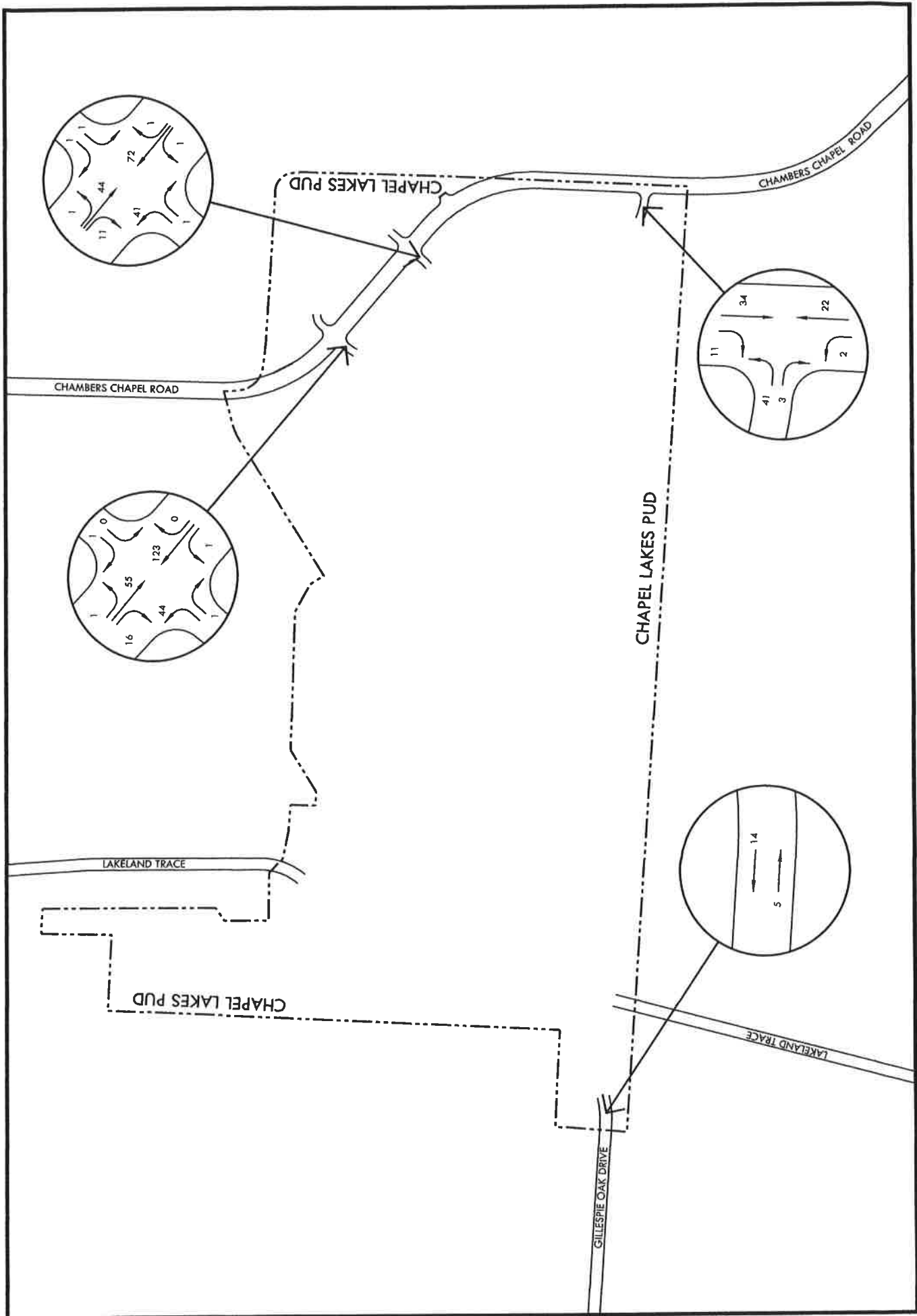


CHAPEL LAKES PLANNED DEVELOPMENT
FIGURE 3: PERCENTAGE ACCESS POINT ASSIGNMENTS



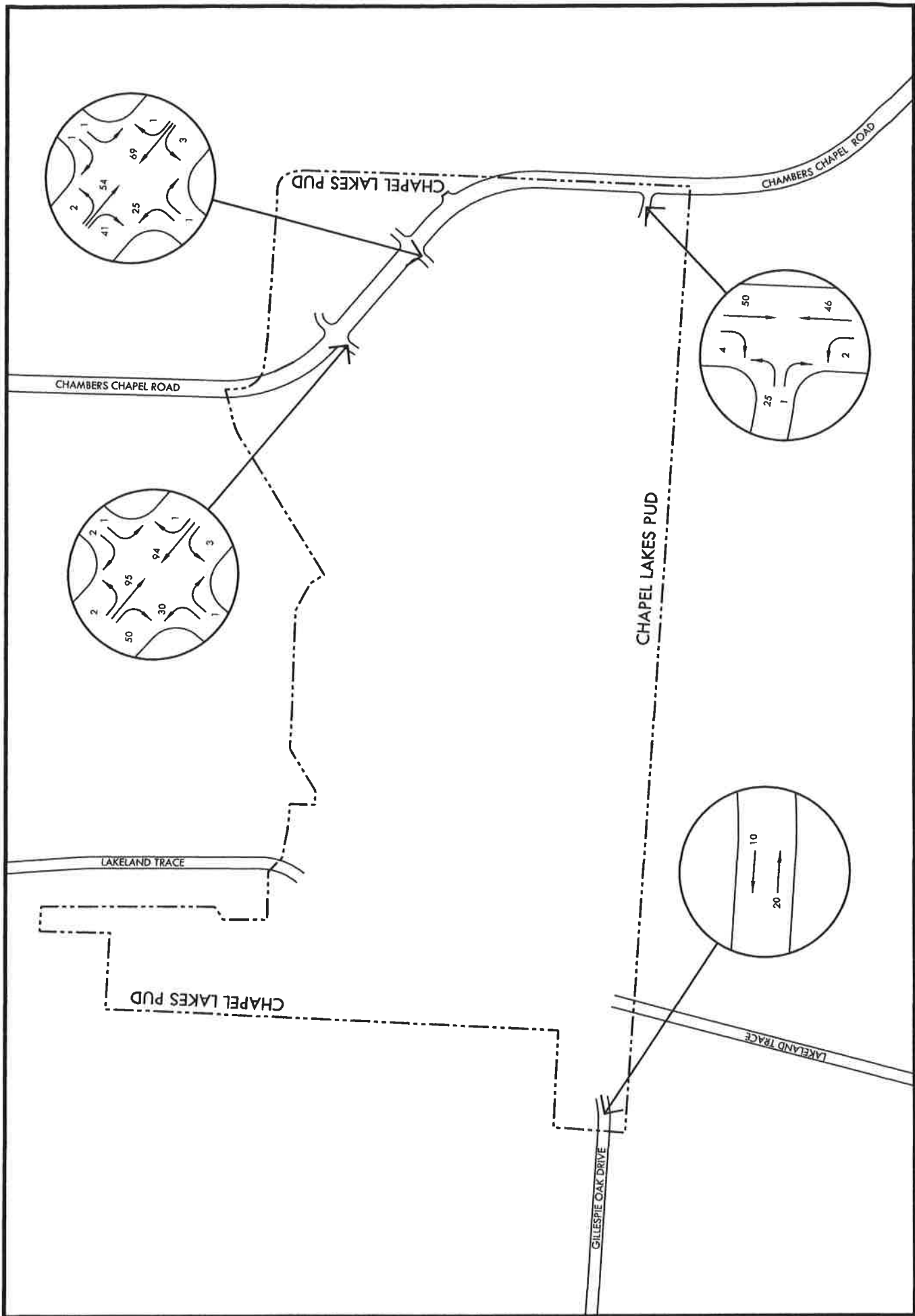


CHAPEL LAKES PLANNED DEVELOPMENT
FIGURE 5: PM PEAK SITE INTERSECTION ASSIGNMENTS 2040



CHAPEL LAKES PLANNED DEVELOPMENT

FIGURE 6: AM PEAK INTERSECTION VOLUMES 2025



CHAPEL LAKES PLANNED DEVELOPMENT
FIGURE 7: PM PEAK INTERSECTION VOLUMES 2025

Chapel Lakes site along Chambers Chapel Road for the design year 2040. The connection to the subdivision to the west were not analyzed because the projected volumes were not significant.

Intersection operation is defined by "level of service". Level of Service (LOS) is a quantitative measure that refers to the overall quality of flow at an intersection ranging from very good, represented by LOS 'A', to very poor, represented by LOS 'F'. For the purpose of this traffic study, LOS A-D was used to define acceptable peak hour operating conditions. Descriptions of the various levels of service are as follows:

LOS A is the highest level of service that can be achieved. Under this condition, intersection approaches appear quite open, turning movements are easily made, and nearly all drivers find freedom of operation. At signalized intersections, average delays are less than 10 seconds. At unsignalized intersections, average delays are less than 10 seconds.

LOS B represents stable operation. At signalized intersections, average vehicle delays are 10 to 20 seconds. At unsignalized intersections, average delays are 10 to 15 seconds.

LOS C still represents stable operation, but periodic backups of a few vehicles may develop behind turning vehicles. Most drivers begin to feel restricted, but not objectionably so. At signalized intersections, average vehicle delays are 20 to 35 seconds. At unsignalized intersections, average delays are 15 to 25 seconds.

LOS D represents increasing traffic restrictions as the intersection approaches instability. Delays to approaching vehicles may be substantial during short peaks within the peak period, but periodic clearance of long lines occurs, thus preventing excessive backups. At signalized intersections, average vehicle delays are 35 to 55 seconds. At unsignalized intersections, average delays are 25 to 35 seconds.

LOS E represents the capacity of the intersection. At signalized intersections, average vehicle delays are 55 to 80 seconds. At unsignalized intersections, average delays are 35 to 50 seconds.

LOS F represents jammed conditions where the intersection is over capacity and acceptable gaps for unsignalized intersections in the mainline traffic flow are minimal. At signalized intersections, average vehicle delays exceed 80 seconds. At unsignalized intersections, average delays exceed 50 seconds.

Table 2 contains a summary of the Level of Service (LOS) analysis for the three site drives for the design year 2025. All three drives will operate at an overall high level of service A with all critical movements also operating at LOS A.

TABLE 2
LEVEL OF SERVICE ANALYSIS
CHAPEL LAKES DRIVES 2025

Intersection	Control	Peak Hour	Eastbound		Northbound		Overall
			LT	LT	LT	LT	
CHAMBERS CHAPEL & NORTH DRIVE	2 WAY STOP	AM	LOS Delay Queue(ft)	A 10.1 5	A 0.1 0	A 2	A 2
		PM	LOS Delay Queue(ft)	A 7.5 0	A 7.5 2	A 1.3	A 1.3
				Eastbound LT	Northbound LT	Overall	
CHAMBERS CHAPEL & MIDDLE DRIVE	2 WAY STOP	AM	LOS Delay Queue(veh)	A 9.6 4	A 0.1 0	A 2.5	A 2.5
		PM	LOS Delay Queue(veh)	A 9.7 3	A 0.3 0	A 1.5	A 1.5
				Eastbound LT	Northbound LT	Overall	
CHAMBERS CHAPEL & SOUTH DRIVE	2 WAY STOP	AM	LOS Delay Queue(veh)	A 9.1 4	A 0.6 0	A 3.7	A 3.7
		PM	LOS Delay Queue(veh)	A 9.2 2	A 0.3 0	A 2	A 2
				Eastbound LT	Northbound LT	Overall	

Table 3 shows the level of service analysis for the three drives in the design year 2040. The overall LOS for each of the drives will remain at LOS A with the left turn movements from the site onto Chambers Chapel changing to LOS B.

Analysis of Intersection Operation

The one intersection impacted directly by the development is the intersection of Chambers Chapel Road and Memphis-Arlington Road. While the City of Lakeland Transportation Plan indicated that Chambers Chapel Road would eventually be extended to the north, it is listed in the Memphis MPO Long Range Transportation Plan as a "Vision" project, with a timeframe of post 2040. Therefore, this intersection was assumed to be a "tee" intersection. The growth in traffic assumed for this analysis was that assumed in the analysis of the operation at the driveway locations at the proposed developments along Chambers Chapel. Traffic increase on Memphis-Arlington was assumed to be 50 percent. As mentioned previously, historical and recent traffic counts indicated little growth in traffic on either Chambers Chapel Road or Memphis-Arlington Road. The assigned volumes for the AM and PM peaks are shown in Figures 10 and 11 for the design year 2025 and Figures 12 and 13 for the design year 2040.

Table 4 contains the level of service (LOS) summary for the Memphis-Arlington/Chambers Chapel Road intersection for both design years – 2025 and 2040. The overall LOS will be A for both peak periods in 2025 and will be at A for the 2040 AM peak and C for the 2040 PM peak. One movement, the northbound Chambers Chapel, will be at LOS E for the 2040 design year.

Mitigation Measures

The analysis of the Memphis-Arlington/Chambers Chapel intersection was based on very basic existing conditions - each approach was only 2 lanes and the northbound approach was stop controlled. Operations would be greatly improved with some simple treatments such as adding a lane to Chambers Chapel at the intersection. This improvement would result in a change in the northbound LOS from E to C (the left turn move would be at LOS D) and the overall LOS would be A.

Summary

The objective of this study was to determine the impact of the traffic generated by the new residential development, Chapel Lakes, on the surrounding roadway network. The study projected the amount of traffic to be generated by the development, assigned the traffic to site entrance points and the intersection of Chambers Chapel and Memphis-Arlington, and evaluated the level of service to be provided at these locations for two design years – 2025 and 2040.

Based on the analysis, the existing roadway network would operate at a high level of service at all locations in 2025. The traffic generated by the development would not

require any modifications to the existing roadway network in term of geometric design or control. In 2040 it is projected that the northbound Chambers Chapel approach in the PM peak period would function at LOS E and the overall LOS would be C. A minor improvement to add a second northbound lane to Chambers Chapel at the intersection would change the approach LOS to C and the overall intersection LOS to A.

TABLE 3
LEVEL OF SERVICE ANALYSIS
CHAPEL LAKES DRIVES 2040

Intersection	Control	Peak Hour	Eastbound		Northbound		Overall
			LT	LT	LT	LT	
CHAMBERS CHAPEL & NORTH DRIVE	2 WAY STOP	AM	LOS Delay Queue(ft)	B 12.3 7	A 0.1 0.1	A 1.3	
		PM	LOS Delay Queue(ft)	B 13.6 6	A 0.1 0.1	A 0.9	
			Eastbound		Northbound		Overall
				LT	LT		
CHAMBERS CHAPEL & MIDDLE DRIVE	2 WAY STOP	AM	LOS Delay Queue(ft)	B 11.6 6	A 0.1 0.1	A 1.4	
		PM	LOS Delay Queue(ft)	B 12.6 4	A 0.1 0.1	A 0.8	
			Eastbound		Northbound		Overall
				LT	LT		
CHAMBERS CHAPEL & SOUTH DRIVE	2 WAY STOP	AM	LOS Delay Queue(ft)	B 10.6 6	A 0.1 0	A 1.4	
		PM	LOS Delay Queue(ft)	B 11.2 2	A 0.1 0	A 0.7	

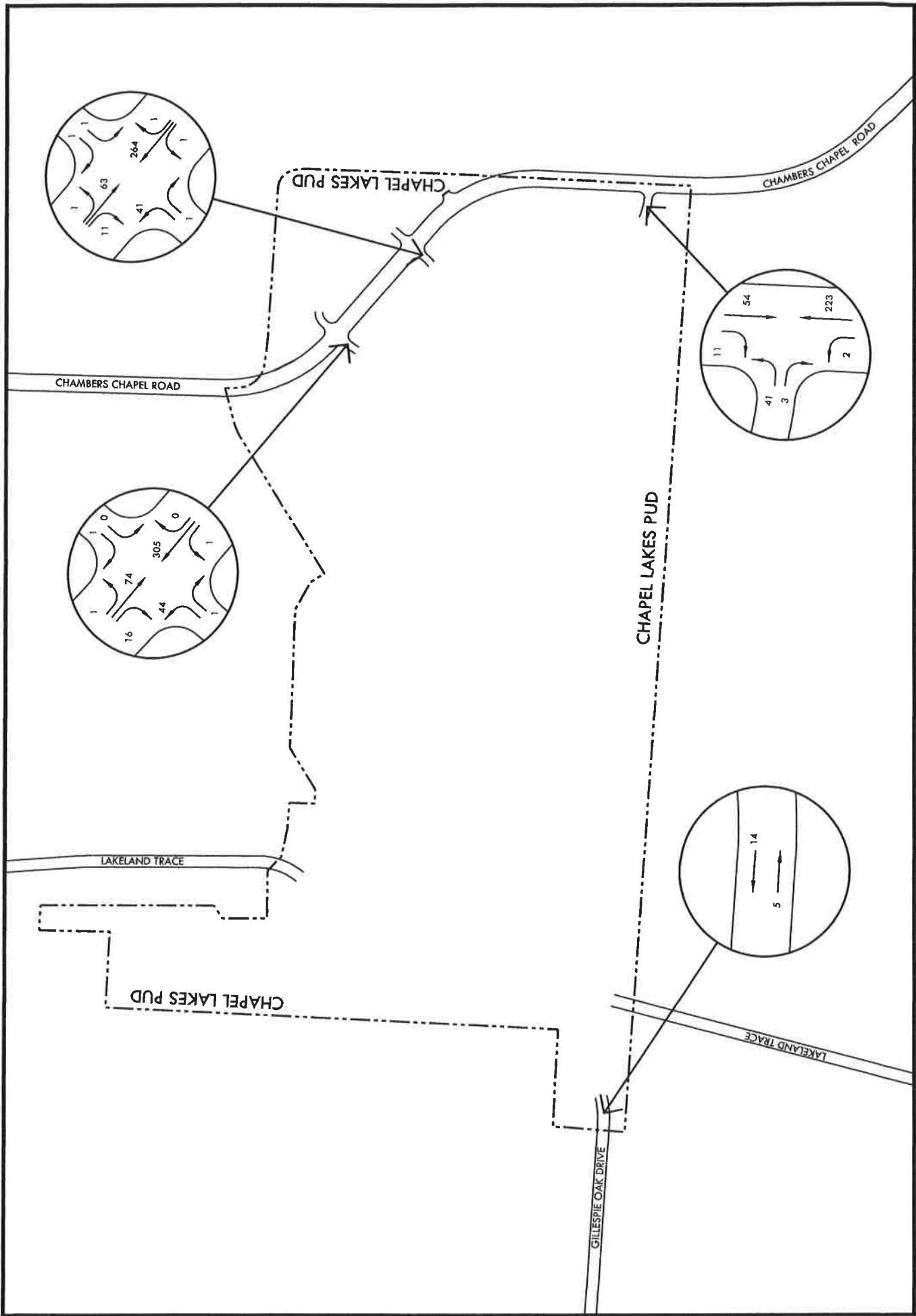
TABLE4
LEVEL OF SERVICE ANALYSIS
MEMPHIS ARLINGTON & CHAMBERS CHAPEL

2025

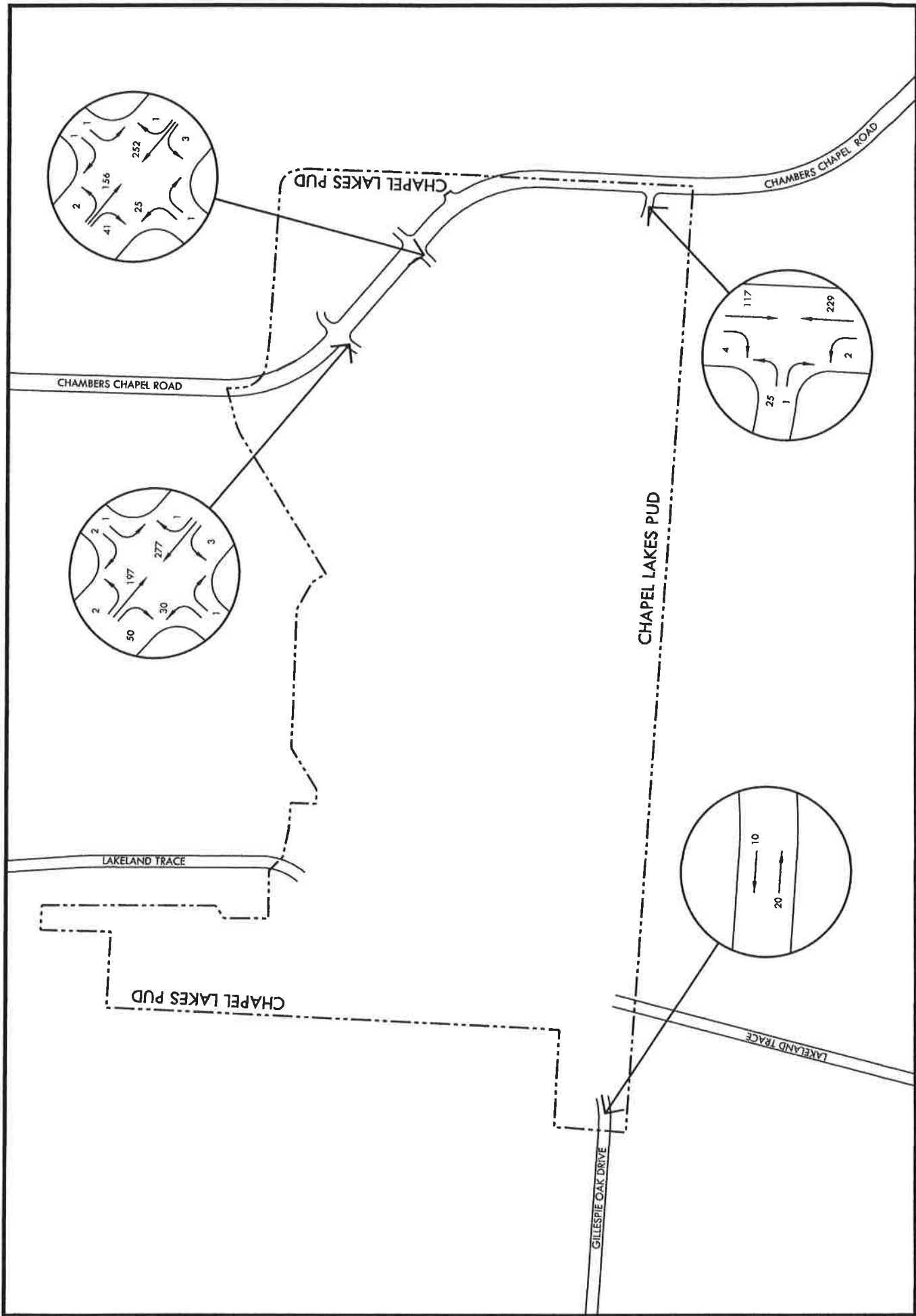
Intersection	Control	Peak Hour	Westbound		Northbound		Overall
			LT				
MEMPHIS ARLINGTON & CHAMBERS CHAPEL	2 WAY	AM	LOS	A	B	A	
			Delay	2.9	10.4	5.5	
			Queue(ft)	2	20		
	STOP	PM	LOS	A	B	A	
			Delay	2.9	11.8	4	
			Queue(ft)	5	19		

2040

Intersection	Control	Peak Hour	Westbound		Northbound		Overall
			LT				
MEMPHIS ARLINGTON & CHAMBERS CHAPEL	2 WAY	AM	LOS	A	C	A	
			Delay	3.4	17	10.6	
			Queue(veh)	4	170		
	STOP	PM	LOS	A	E	C	
			Delay	4.8	37.7	14.6	
			Queue(veh)	14	188		

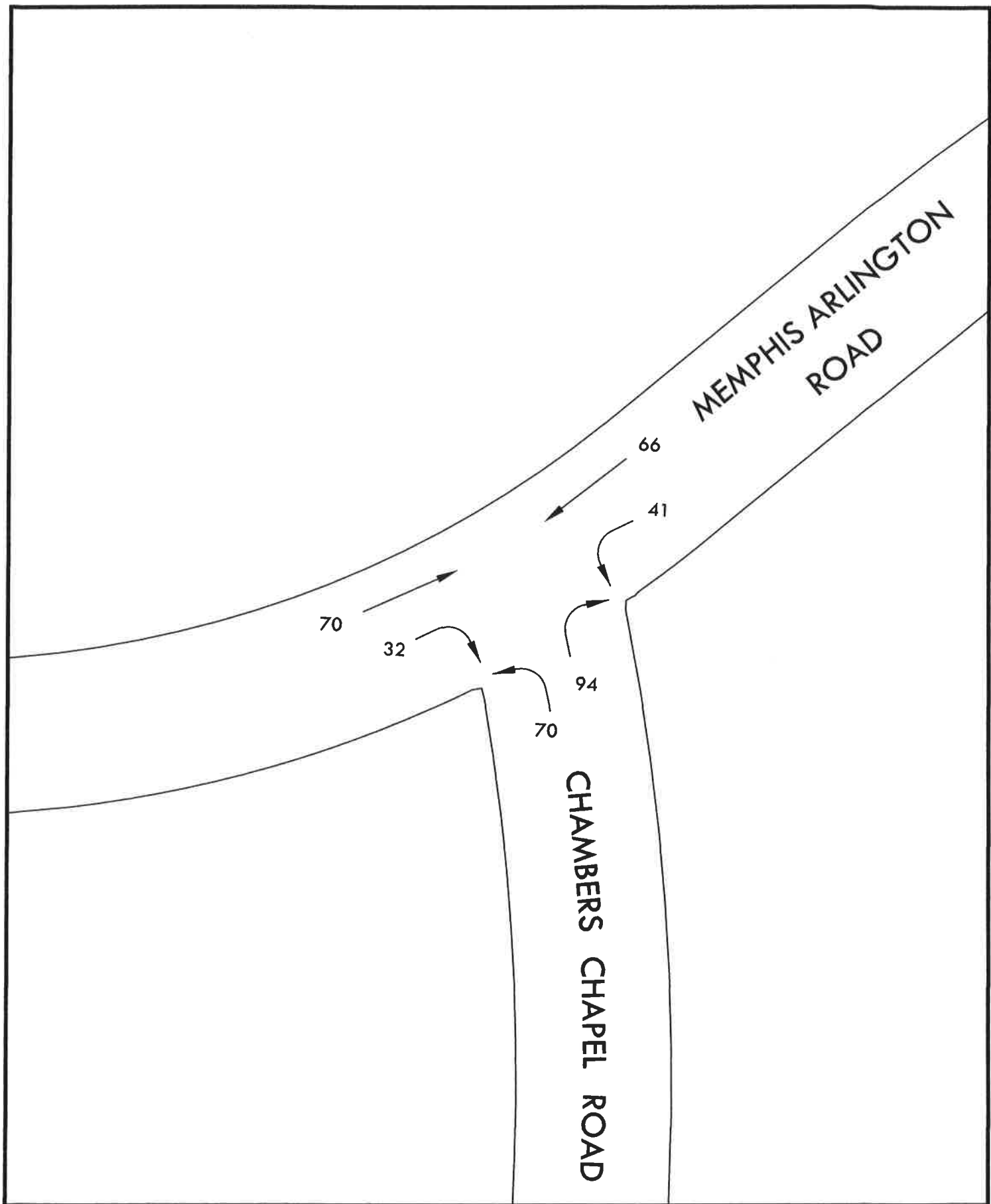


CHAPEL LAKES PLANNED DEVELOPMENT
FIGURE 8: AM PEAK INTERSECTION VOLUMES 2040



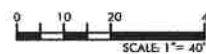
CHAPEL LAKES PLANNED DEVELOPMENT

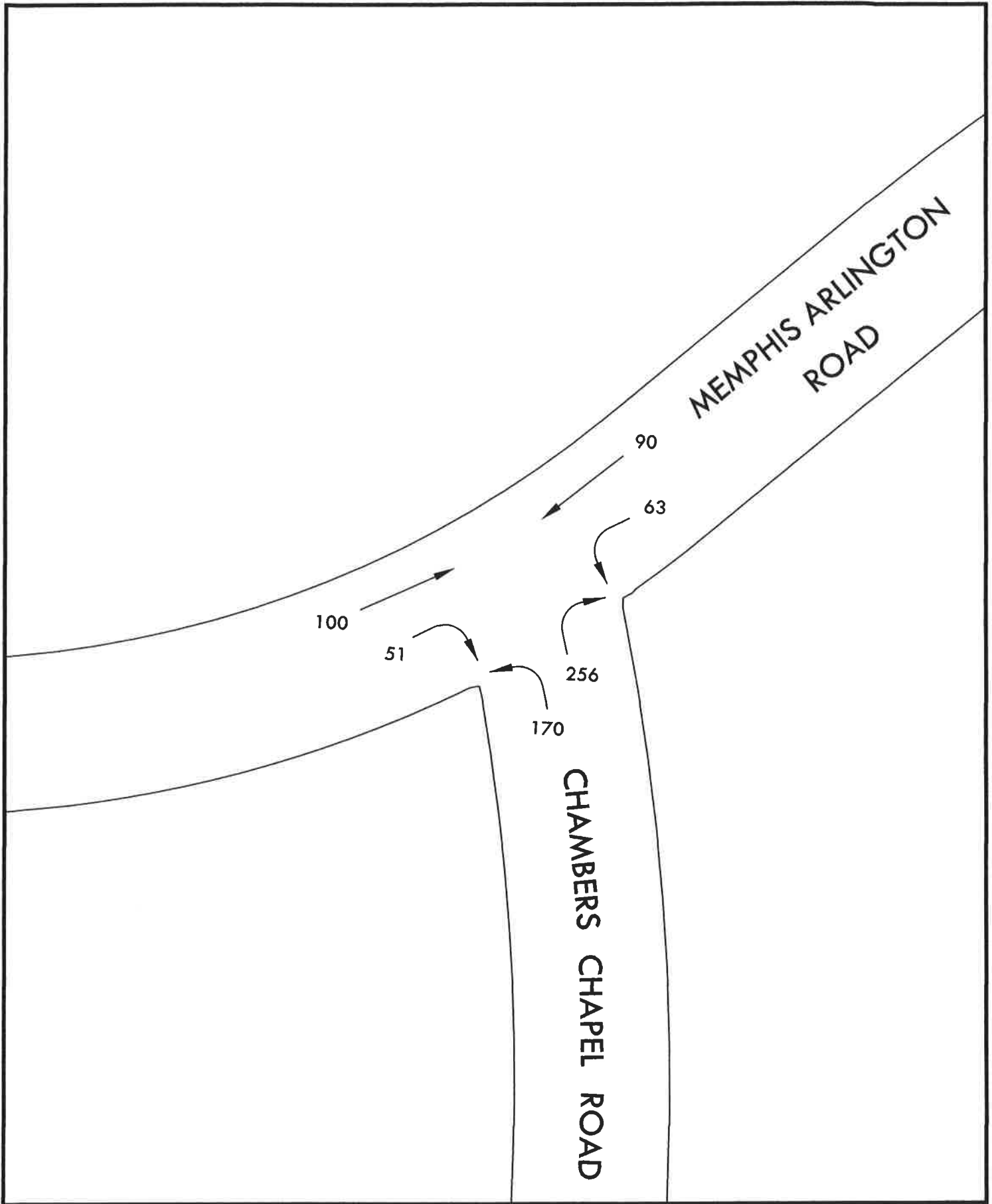
FIGURE 9: PM PEAK INTERSECTION VOLUMES 2040



CHAPEL LAKES PLANNED DEVELOPMENT

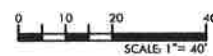
FIGURE 10: AM PEAK INTERSECTION ASSIGNMENT 2025

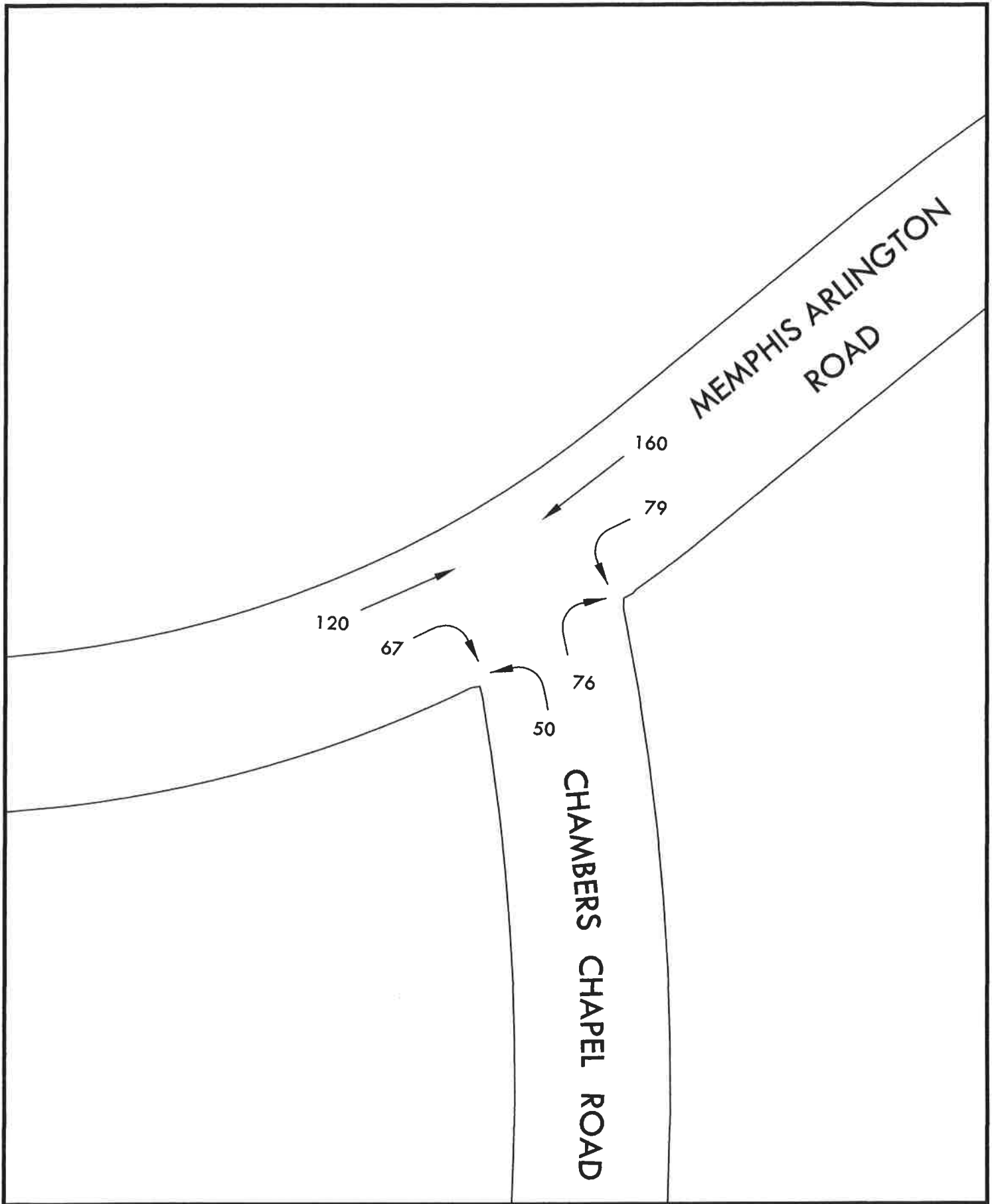




CHAPEL LAKES PLANNED DEVELOPMENT

FIGURE 11: AM PEAK INTERSECTION ASSIGNMENT 2040

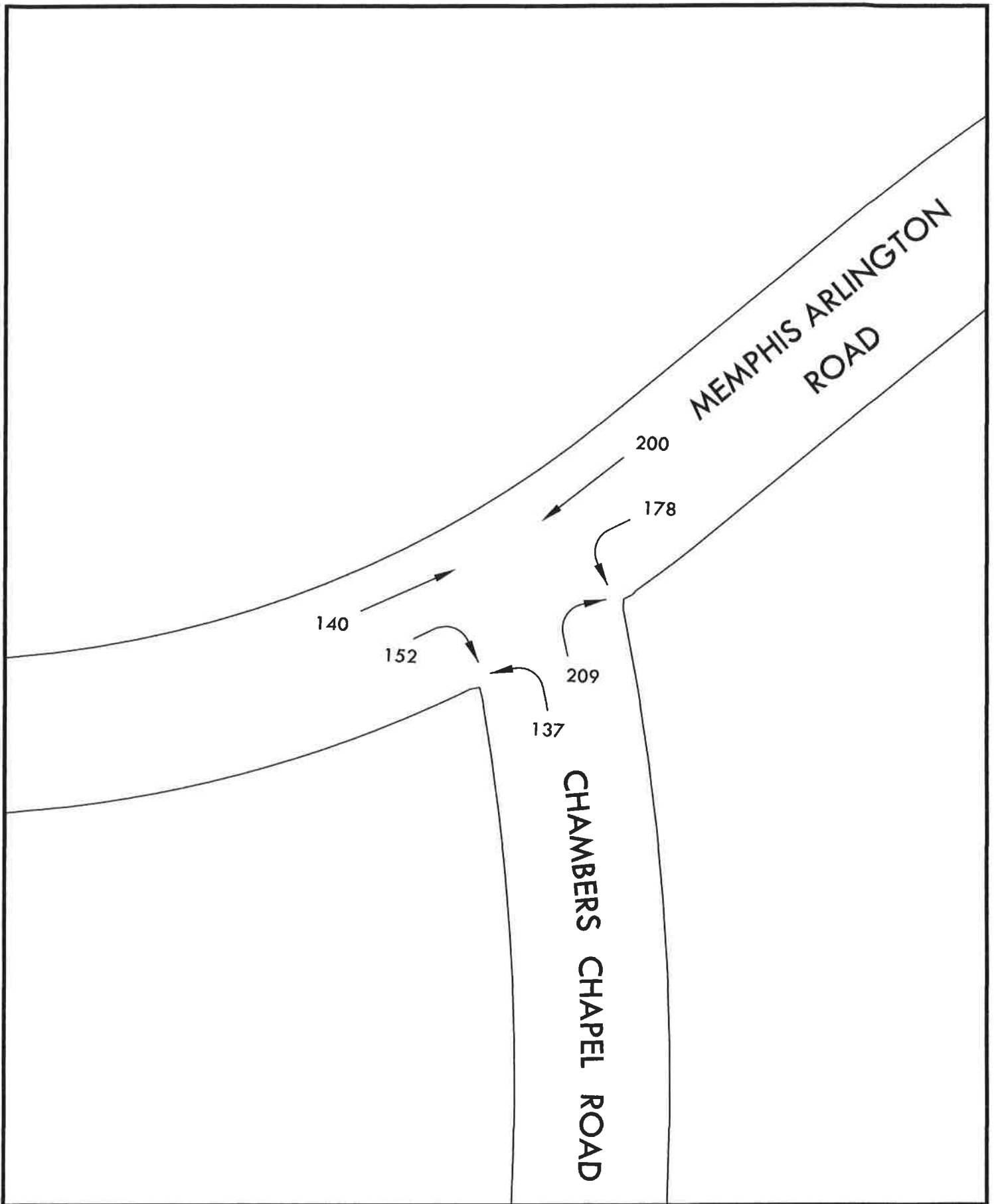




CHAPEL LAKES PLANNED DEVELOPMENT

FIGURE 12: PM PEAK INTERSECTION ASSIGNMENT 2025





CHAPEL LAKES PLANNED DEVELOPMENT

FIGURE 13: PM PEAK INTERSECTION ASSIGNMENT 2040



APPENDIX

Station Number: 000921
Shelby County, SEED TICK RD.
Route: 05429

AADT by year:

2018	= 2,058
2017	= 1,514
2016	= 1,644
2015	= 1,681
2014	= 1,601
2013	= 1,375
2012	= 1,337
2011	= 1,364
2010	= 1,493
2009	= 1,715
2008	= 1,465
2007	= 1,449
2006	= 1,364
2005 = 1,296	

Station Number: 000922
Shelby County, MEMPHIS-ARLINGTON RD.
Route: 0D889

AADT by year:

2018	= 1,761
2017	= 1,428
2016	= 1,330
2015	= 1,367
2014	= 1,286
2013	= 1,151
2012	= 1,154
2011	= 1,159
2010	= 1,231
2009	= 1,309
2008	= 1,131
2007	= 1,129
2006	= 1,210
2005 = 1,162	

South
Chapel Lakes North Drive and Chambers Chapel Road
PM Peak 2025

06/10/2021

Intersection						
Int Delay, s/veh	2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	W			↑	↑	
Traffic Vol, veh/h	25	1	2	46	50	4
Future Vol, veh/h	25	1	2	46	50	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	27	1	2	50	54	4

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	110	56	58	0	-	0
Stage 1	56	-	-	-	-	-
Stage 2	54	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	887	1011	1546	-	-	-
Stage 1	967	-	-	-	-	-
Stage 2	969	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	886	1011	1546	-	-	-
Mov Cap-2 Maneuver	886	-	-	-	-	-
Stage 1	966	-	-	-	-	-
Stage 2	969	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.2	0.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1546	-	890	-	-
HCM Lane V/C Ratio	0.001	-	0.032	-	-
HCM Control Delay (s)	7.3	0	9.2	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Chapel Lakes ^{South} North Drive and Chambers Chapel Road
PM Peak 2025

06/10/2021

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	25	1	2	46	50	4
Future Volume (Veh/h)	25	1	2	46	50	4
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	27	1	2	50	54	4
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	110	56	58			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	110	56	58			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	97	100	100			
cM capacity (veh/h)	886	1011	1546			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	28	52	58			
Volume Left	27	2	0			
Volume Right	1	0	4			
cSH	890	1546	1700			
Volume to Capacity	0.03	0.00	0.03			
Queue Length 95th (ft)	2	0	0			
Control Delay (s)	9.2	0.3	0.0			
Lane LOS	A	A				
Approach Delay (s)	9.2	0.3	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay		2.0				
Intersection Capacity Utilization		14.0%		ICU Level of Service		A
Analysis Period (min)		15				

Chapel Lakes ^{South} North Drive and Chambers Chapel Road
AM Peak 2025

06/10/2021

						
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	YT			↑	↑	
Traffic Volume (veh/h)	44	1	2	22	34	11
Future Volume (Veh/h)	44	1	2	22	34	11
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	48	1	2	24	37	12
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	71	43	49			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	71	43	49			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	95	100	100			
cM capacity (veh/h)	932	1027	1558			
Direction, Lane #	EB 1	NB 1	SB 1			
Volume Total	49	26	49			
Volume Left	48	2	0			
Volume Right	1	0	12			
cSH	934	1558	1700			
Volume to Capacity	0.05	0.00	0.03			
Queue Length 95th (ft)	4	0	0			
Control Delay (s)	9.1	0.6	0.0			
Lane LOS	A	A				
Approach Delay (s)	9.1	0.6	0.0			
Approach LOS	A					
Intersection Summary						
Average Delay		3.7				
Intersection Capacity Utilization		13.3%		ICU Level of Service		A
Analysis Period (min)		15				

Chapel Lakes Middle Drive and Chambers Chapel Road
PM Peak 2025

06/10/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (veh/h)	25	0	1	1	0	1	3	69	1	1	54	41
Future Volume (Veh/h)	25	0	1	1	0	1	3	69	1	1	54	41
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	27	0	1	1	0	1	3	75	1	1	59	45
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	166	166	82	166	188	76	104			76		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	166	166	82	166	188	76	104			76		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	97	100	100	100	100	100	100			100		
cM capacity (veh/h)	796	725	978	796	705	986	1488			1523		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	28	2	79	105								
Volume Left	27	1	3	1								
Volume Right	1	1	1	45								
cSH	801	881	1488	1523								
Volume to Capacity	0.03	0.00	0.00	0.00								
Queue Length 95th (ft)	3	0	0	0								
Control Delay (s)	9.7	9.1	0.3	0.1								
Lane LOS	A	A	A	A								
Approach Delay (s)	9.7	9.1	0.3	0.1								
Approach LOS	A	A										
Intersection Summary												
Average Delay			1.5									
Intersection Capacity Utilization			15.7%		ICU Level of Service				A			
Analysis Period (min)			15									

Chapel Lakes Middle Drive and Chambers Chapel Road
PM Peak 2025

06/10/2021

Intersection

Int Delay, s/veh 1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕			↕		
Traffic Vol, veh/h	25	0	1	1	0	1	3	69	1	1	54	41
Future Vol, veh/h	25	0	1	1	0	1	3	69	1	1	54	41
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	27	0	1	1	0	1	3	75	1	1	59	45

Major/Minor	Minor2		Minor1		Major1		Major2	
Conflicting Flow All	166	166	82	166	188	76	104	0
Stage 1	84	84	-	82	82	-	-	-
Stage 2	82	82	-	84	106	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-
Pot Cap-1 Maneuver	798	727	978	798	707	985	1488	-
Stage 1	924	825	-	926	827	-	-	-
Stage 2	926	827	-	924	807	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	796	725	978	796	705	985	1488	-
Mov Cap-2 Maneuver	796	725	-	796	705	-	-	-
Stage 1	922	824	-	924	825	-	-	-
Stage 2	923	825	-	922	806	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.7	9.1	0.3	0.1
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1488	-	-	802	880	1523	-	-
HCM Lane V/C Ratio	0.002	-	-	0.035	0.002	0.001	-	-
HCM Control Delay (s)	7.4	0	-	9.7	9.1	7.4	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-

Chapel Lakes North Drive and Chambers Chapel Road
PM Peak 2025

06/10/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	0	1	0	0	2	3	94	0	1	95	50
Future Volume (Veh/h)	30	0	1	0	0	2	3	94	0	1	95	50
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	33	0	1	0	0	2	3	102	0	1	103	54
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	242	240	130	241	267	102	157			102		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	242	240	130	241	267	102	157			102		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	95	100	100	100	100	100	100			100		
cM capacity (veh/h)	709	659	920	711	637	953	1423			1490		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	34	2	105	158								
Volume Left	33	0	3	1								
Volume Right	1	2	0	54								
cSH	714	953	1423	1490								
Volume to Capacity	0.05	0.00	0.00	0.00								
Queue Length 95th (ft)	4	0	0	0								
Control Delay (s)	10.3	8.8	0.2	0.1								
Lane LOS	B	A	A	A								
Approach Delay (s)	10.3	8.8	0.2	0.1								
Approach LOS	B	A										
Intersection Summary												
Average Delay			1.3									
Intersection Capacity Utilization			23.5%			ICU Level of Service				A		
Analysis Period (min)			15									

Chapel Lakes North Drive and Chambers Chapel Road
PM Peak 2025

06/10/2021

Intersection												
Int Delay, s/veh	1.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔			↔			↔			↔		
Traffic Vol, veh/h	30	0	1	0	0	2	3	94	0	1	95	50
Future Vol, veh/h	30	0	1	0	0	2	3	94	0	1	95	50
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	33	0	1	0	0	2	3	102	0	1	103	54

Major/Minor	Minor2		Minor1		Major1		Major2	
Conflicting Flow All	241	240	130	241	267	102	157	0
Stage 1	132	132	-	108	108	-	-	-
Stage 2	109	108	-	133	159	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-
Pot Cap-1 Maneuver	713	661	920	713	639	953	1423	-
Stage 1	871	787	-	897	806	-	-	-
Stage 2	896	806	-	870	766	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	709	659	920	711	637	953	1423	-
Mov Cap-2 Maneuver	709	659	-	711	637	-	-	-
Stage 1	869	786	-	895	804	-	-	-
Stage 2	892	804	-	868	765	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.3	8.8	0.2	0.1
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1423	-	-	714	953	1490	-	-
HCM Lane V/C Ratio	0.002	-	-	0.047	0.002	0.001	-	-
HCM Control Delay (s)	7.5	0	-	10.3	8.8	7.4	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0	0	-	-

Chapel Lakes ^{South} North Drive and Chambers Chapel Road
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Intersection

Int Delay, s/veh 3.7

Movement EBL EBR NBL NBT SBT SBR

Lane Configurations	W			↑	↑	
Traffic Vol, veh/h	44	1	2	22	34	11
Future Vol, veh/h	44	1	2	22	34	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	48	1	2	24	37	12

Major/Minor Minor2 Major1 Major2

Conflicting Flow All	71	43	49	0	-	0
Stage 1	43	-	-	-	-	-
Stage 2	28	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	933	1027	1558	-	-	-
Stage 1	979	-	-	-	-	-
Stage 2	995	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	932	1027	1558	-	-	-
Mov Cap-2 Maneuver	932	-	-	-	-	-
Stage 1	978	-	-	-	-	-
Stage 2	995	-	-	-	-	-

Approach EB NB SB

HCM Control Delay, s	9.1	0.6	0
HCM LOS	A		

Minor Lane/Major Mvmt NBL NBT EBLn1 SBT SBR

Capacity (veh/h)	1558	-	934	-	-
HCM Lane V/C Ratio	0.001	-	0.052	-	-
HCM Control Delay (s)	7.3	0	9.1	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Chapel Lakes Middle Drive and Chambers Chapel Road
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Intersection

Int Delay, s/veh 2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔			↔			↔			↔		
Traffic Vol, veh/h	41	0	1	1	0	1	1	72	1	1	44	11
Future Vol, veh/h	41	0	1	1	0	1	1	72	1	1	44	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	45	0	1	1	0	1	1	78	1	1	48	12

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	137	137	54	138	143	79	60	0	0	79	0	0
Stage 1	56	56	-	81	81	-	-	-	-	-	-	-
Stage 2	81	81	-	57	62	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	834	754	1013	833	748	981	1544	-	-	1519	-	-
Stage 1	956	848	-	927	828	-	-	-	-	-	-	-
Stage 2	927	828	-	955	843	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	831	752	1013	831	747	981	1544	-	-	1519	-	-
Mov Cap-2 Maneuver	831	752	-	831	747	-	-	-	-	-	-	-
Stage 1	955	847	-	926	827	-	-	-	-	-	-	-
Stage 2	925	827	-	953	842	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.6	9	0.1	0.1
HCM LOS	A	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1544	-	-	835	900	1519	-	-
HCM Lane V/C Ratio	0.001	-	-	0.055	0.002	0.001	-	-
HCM Control Delay (s)	7.3	0	-	9.6	9	7.4	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0	0	-	-

Chapel Lakes Middle Drive and Chambers Chapel Road
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Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (veh/h)	41	0	1	1	0	1	1	72	1	1	44	11
Future Volume (Veh/h)	41	0	1	1	0	1	1	72	1	1	44	11
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	45	0	1	1	0	1	1	78	1	1	48	12
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	138	137	54	138	142	78	60			79		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	138	137	54	138	142	78	60			79		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	95	100	100	100	100	100	100			100		
cM capacity (veh/h)	832	753	1013	832	748	982	1544			1519		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	46	2	80	61								
Volume Left	45	1	1	1								
Volume Right	1	1	1	12								
cSH	835	901	1544	1519								
Volume to Capacity	0.06	0.00	0.00	0.00								
Queue Length 95th (ft)	4	0	0	0								
Control Delay (s)	9.6	9.0	0.1	0.1								
Lane LOS	A	A	A	A								
Approach Delay (s)	9.6	9.0	0.1	0.1								
Approach LOS	A	A										
Intersection Summary												
Average Delay			2.5									
Intersection Capacity Utilization			15.1%		ICU Level of Service					A		
Analysis Period (min)			15									

Chapel Lakes North Drive and Chambers Chapel Road
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Intersection												
Int Delay, s/veh	2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↔			↔			↔			↔		
Traffic Vol, veh/h	44	0	1	0	0	1	1	123	0	1	55	16
Future Vol, veh/h	44	0	1	0	0	1	1	123	0	1	55	16
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	48	0	1	0	0	1	1	134	0	1	60	17

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	208	207	69	207	215	134	77	0	0	134	0	0
Stage 1	71	71	-	136	136	-	-	-	-	-	-	-
Stage 2	137	136	-	71	79	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	749	690	994	751	683	915	1522	-	-	1451	-	-
Stage 1	939	836	-	867	784	-	-	-	-	-	-	-
Stage 2	866	784	-	939	829	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	747	689	994	749	682	915	1522	-	-	1451	-	-
Mov Cap-2 Maneuver	747	689	-	749	682	-	-	-	-	-	-	-
Stage 1	938	835	-	866	783	-	-	-	-	-	-	-
Stage 2	864	783	-	937	828	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.1	8.9	0.1	0.1
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1522	-	-	751	915	1451	-	-
HCM Lane V/C Ratio	0.001	-	-	0.065	0.001	0.001	-	-
HCM Control Delay (s)	7.4	0	-	10.1	8.9	7.5	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0	0	-	-

Chapel Lakes North Drive and Chambers Chapel Road
AM Peak 2025

06/10/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Volume (veh/h)	44	0	1	0	0	1	1	123	0	1	55	16
Future Volume (Veh/h)	44	0	1	0	0	1	1	123	0	1	55	16
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	48	0	1	0	0	1	1	134	0	1	60	17
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	208	206	68	208	215	134	77			134		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	208	206	68	208	215	134	77			134		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	94	100	100	100	100	100	100			100		
cM capacity (veh/h)	748	689	995	748	682	915	1522			1451		
Direction, Lane #	EB 1	WB 1	NB 1	SB 1								
Volume Total	49	1	135	78								
Volume Left	48	0	1	1								
Volume Right	1	1	0	17								
cSH	752	915	1522	1451								
Volume to Capacity	0.07	0.00	0.00	0.00								
Queue Length 95th (ft)	5	0	0	0								
Control Delay (s)	10.1	8.9	0.1	0.1								
Lane LOS	B	A	A	A								
Approach Delay (s)	10.1	8.9	0.1	0.1								
Approach LOS	B	A										
Intersection Summary												
Average Delay			2.0									
Intersection Capacity Utilization			22.9%		ICU Level of Service				A			
Analysis Period (min)			15									

Chapel Lakes South Drive and Chambers Chapel Road
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Int Delay, s/veh 1.4

Lane Configurations	Y			↑	↑	
Traffic Vol, veh/h	41	3	2	228	54	11
Future Vol, veh/h	41	3	2	228	54	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	45	3	2	248	59	12

Conflicting Flow All	317	65	71	0	-	0
Stage 1	65	-	-	-	-	-
Stage 2	252	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	676	999	1529	-	-	-
Stage 1	958	-	-	-	-	-
Stage 2	790	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	675	999	1529	-	-	-
Mov Cap-2 Maneuver	675	-	-	-	-	-
Stage 1	958	-	-	-	-	-
Stage 2	788	-	-	-	-	-

HCM Control Delay, s 10.6 0.1 0
HCM LOS B

Capacity (veh/h)	1529	-	690	-	-
HCM Lane V/C Ratio	0.001	-	0.069	-	-
HCM Control Delay (s)	7.4	0	10.6	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Chapel Lakes South Drive and Chambers Chapel Road
AM Peak 2040

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	EB	WB	NB	SB	WB	EB
Lane Configurations	W			W	W	W
Traffic Volume (veh/h)	41	3	2	228	54	11
Future Volume (Veh/h)	41	3	2	228	54	11
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	45	3	2	248	59	12
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	317	65	71			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	317	65	71			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	93	100	100			
cM capacity (veh/h)	675	999	1529			
Volume Total	48	250	71			
Volume Left	45	2	0			
Volume Right	3	0	12			
cSH	689	1529	1700			
Volume to Capacity	0.07	0.00	0.04			
Queue Length 95th (ft)	6	0	0			
Control Delay (s)	10.6	0.1	0.0			
Lane LOS	B	A				
Approach Delay (s)	10.6	0.1	0.0			
Approach LOS	B					
Average Delay		1.4				
Intersection Capacity Utilization		23.6%		ICU Level of Service		A
Analysis Period (min)		15				

Chapel Lakes South Drive and Chambers Chapel Road
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Intersection

Int Delay, s/veh 0.8

Component	EBL	EBR	NBL	NBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	25	1	2	229	117	41
Future Vol, veh/h	25	1	2	229	117	41
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	27	1	2	249	127	45

Conflicting Flow All	402	149	172	0	-	0
Stage 1	149	-	-	-	-	-
Stage 2	253	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	604	898	1405	-	-	-
Stage 1	879	-	-	-	-	-
Stage 2	789	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	603	898	1405	-	-	-
Mov Cap-2 Maneuver	603	-	-	-	-	-
Stage 1	879	-	-	-	-	-
Stage 2	787	-	-	-	-	-

HCM Control Delay, s	11.2	0.1	0
HCM LOS	B		

Capacity (veh/h)	1405	-	611	-	-
HCM Lane V/C Ratio	0.002	-	0.046	-	-
HCM Control Delay (s)	7.6	0	11.2	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Chapel Lakes South Drive and Chambers Chapel Road
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Movement	PBI	EBF	NBL	NBT	SBT	SBR
Lane Configurations	Y			↑	↑	
Traffic Volume (veh/h)	25	1	2	229	117	41
Future Volume (Veh/h)	25	1	2	229	117	41
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	27	1	2	249	127	45
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	402	150	172			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	402	150	172			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	96	100	100			
cM capacity (veh/h)	603	897	1405			
Volume Total	28	251	172			
Volume Left	27	2	0			
Volume Right	1	0	45			
cSH	610	1405	1700			
Volume to Capacity	0.05	0.00	0.10			
Queue Length 95th (ft)	4	0	0			
Control Delay (s)	11.2	0.1	0.0			
Lane LOS	B	A				
Approach Delay (s)	11.2	0.1	0.0			
Approach LOS	B					
Average Delay			0.7			
Intersection Capacity Utilization			23.6%	ICU Level of Service	A	
Analysis Period (min)			15			

Chapel Lakes Middle Drive and Chambers Chapel Road
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Intersection

Int Delay, s/veh 1.3

Movement

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	41	0	1	1	0	1	1	264	1	1	63	11
Future Vol, veh/h	41	0	1	1	0	1	1	264	1	1	63	11
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	45	0	1	1	0	1	1	287	1	1	68	12

Stage

Conflicting Flow All	367	367	74	367	373	288	80	0	0	288	0	0
Stage 1	77	77	-	290	290	-	-	-	-	-	-	-
Stage 2	290	290	-	77	83	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	589	562	988	589	557	751	1518	-	-	1274	-	-
Stage 1	932	831	-	718	672	-	-	-	-	-	-	-
Stage 2	718	672	-	932	826	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	587	561	988	587	556	751	1518	-	-	1274	-	-
Mov Cap-2 Maneuver	587	561	-	587	556	-	-	-	-	-	-	-
Stage 1	931	830	-	717	671	-	-	-	-	-	-	-
Stage 2	716	671	-	930	825	-	-	-	-	-	-	-

HCM Control Delay, s

HCM Control Delay, s	11.6			10.5			0			0.1		
HCM LOS	B			B								

Capacity (veh/h)

Capacity (veh/h)	1518	-	-	593	659	1274	-	-	-	-	-	-
HCM Lane V/C Ratio	0.001	-	-	0.077	0.003	0.001	-	-	-	-	-	-
HCM Control Delay (s)	7.4	0	-	11.6	10.5	7.8	-	-	-	-	-	-
HCM Lane LOS	A	A	-	B	B	A	-	-	-	-	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0	0	-	-	-	-	-	-

Chapel Lakes Middle Drive and Chambers Chapel Road
AM Peak 2040

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	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SEB
Lane Configurations												
Traffic Volume (veh/h)	41	0	1	1	0	1	1	264	1	1	63	11
Future Volume (Veh/h)	41	0	1	1	0	1	1	264	1	1	63	11
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	45	0	1	1	0	1	1	287	1	1	68	12
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	366	366	74	366	372	288	80			288		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	366	366	74	366	372	288	80			288		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	92	100	100	100	100	100	100			100		
cM capacity (veh/h)	588	562	988	588	558	752	1518			1274		
Intersection Summary												
Volume Total	46	2	289	81								
Volume Left	45	1	1	1								
Volume Right	1	1	1	12								
cSH	594	660	1518	1274								
Volume to Capacity	0.08	0.00	0.00	0.00								
Queue Length 95th (ft)	6	0	0	0								
Control Delay (s)	11.6	10.5	0.0	0.1								
Lane LOS	B	B	A	A								
Approach Delay (s)	11.6	10.5	0.0	0.1								
Approach LOS	B	B										
Intersection Summary												
Average Delay			1.4									
Intersection Capacity Utilization			25.2%			ICU Level of Service				A		
Analysis Period (min)			15									

Chapel Lakes Middle Drive and Chambers Chapel Road
PM Peak 2040

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Intersection												
Int Delay, s/veh	0.8											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↕			↕			↕			↕		
Traffic Vol, veh/h	25	0	1	1	0	1	3	252	1	2	156	41
Future Vol, veh/h	25	0	1	1	0	1	3	252	1	2	156	41
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	27	0	1	1	0	1	3	274	1	2	170	45

Intersection												
Conflicting Flow All	478	478	192	478	499	274	214	0	0	275	0	0
Stage 1	196	196	-	281	281	-	-	-	-	-	-	-
Stage 2	282	282	-	197	218	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	498	486	850	498	473	765	1356	-	-	1288	-	-
Stage 1	806	739	-	726	678	-	-	-	-	-	-	-
Stage 2	725	678	-	805	723	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	495	484	850	495	471	765	1356	-	-	1288	-	-
Mov Cap-2 Maneuver	495	484	-	495	471	-	-	-	-	-	-	-
Stage 1	804	738	-	724	676	-	-	-	-	-	-	-
Stage 2	722	676	-	802	722	-	-	-	-	-	-	-

HCM Control Delay, s	12.6		11		0.1		0.1
HCM LOS	B		B				

Capacity (veh/h)	1356	-	-	503	601	1288	-	-
HCM Lane V/C Ratio	0.002	-	-	0.056	0.004	0.002	-	-
HCM Control Delay (s)	7.7	0	-	12.6	11	7.8	-	-
HCM Lane LOS	A	A	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0	0	-	-

Chapel Lakes Middle Drive and Chambers Chapel Road
PM Peak 2040

09/02/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	25	0	1	1	0	1	3	252	1	2	156	41
Future Volume (Veh/h)	25	0	1	1	0	1	3	252	1	2	156	41
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	27	0	1	1	0	1	3	274	1	2	170	45
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	478	478	192	478	500	274	215			275		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	478	478	192	478	500	274	215			275		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	95	100	100	100	100	100	100			100		
cM capacity (veh/h)	496	485	849	496	471	764	1355			1288		
Summary												
Volume Total	28	2	278	217								
Volume Left	27	1	3	2								
Volume Right	1	1	1	45								
cSH	503	601	1355	1288								
Volume to Capacity	0.06	0.00	0.00	0.00								
Queue Length 95th (ft)	4	0	0	0								
Control Delay (s)	12.6	11.0	0.1	0.1								
Lane LOS	B	B	A	A								
Approach Delay (s)	12.6	11.0	0.1	0.1								
Approach LOS	B	B										
Signal Summary												
Average Delay			0.8									
Intersection Capacity Utilization			25.2%			ICU Level of Service				A		
Analysis Period (min)			15									

Chapel Lakes North Drive and Chambers Chapel Road
AM Peak 2040

09/02/2020

Intersection

Int Delay, s/veh 1.3

	EB	EB	WB	WB	WB	WB	NB	NB				
Lane Configurations		↕		↕		↕		↕		↕		
Traffic Vol, veh/h	44	0	1	0	0	1	1	305	0	1	74	16
Future Vol, veh/h	44	0	1	0	0	1	1	305	0	1	74	16
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	48	0	1	0	0	1	1	332	0	1	80	17

Conflicting Flow All	425	425	89	426	434	332	98	0	-	332	0	0
Stage 1	91	91	-	334	334	-	-	-	-	-	-	-
Stage 2	334	334	-	92	100	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	540	521	969	539	515	710	1495	-	0	1227	-	-
Stage 1	916	820	-	680	643	-	-	-	0	-	-	-
Stage 2	680	643	-	915	812	-	-	-	0	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	538	520	969	538	514	710	1495	-	-	1227	-	-
Mov Cap-2 Maneuver	538	520	-	538	514	-	-	-	-	-	-	-
Stage 1	915	819	-	679	642	-	-	-	-	-	-	-
Stage 2	678	642	-	913	811	-	-	-	-	-	-	-

HCM Control Delay, s	12.3		10.1		0		0.1
HCM LOS	B		B				

Capacity (veh/h)	1495	-	543	710	1227	-	-
HCM Lane V/C Ratio	0.001	-	0.09	0.002	0.001	-	-
HCM Control Delay (s)	7.4	0	12.3	10.1	7.9	-	-
HCM Lane LOS	A	A	B	B	A	-	-
HCM 95th %tile Q(veh)	0	-	0.3	0	0	-	-

Chapel Lakes North Drive and Chambers Chapel Road
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	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBR
Movement											
Lane Configurations		↕			↕			↕			↕
Traffic Volume (veh/h)	44	0	1	0	0	1	1	305	0	1	74
Future Volume (Veh/h)	44	0	1	0	0	1	1	305	0	1	74
Sign Control		Stop			Stop			Free			Free
Grade		0%			0%			0%			0%
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	48	0	1	0	0	1	1	332	0	1	80
Pedestrians											
Lane Width (ft)											
Walking Speed (ft/s)											
Percent Blockage											
Right turn flare (veh)											
Median type								None			None
Median storage (veh)											
Upstream signal (ft)											
pX, platoon unblocked											
vC, conflicting volume	426	424	88	426	433	332	97			332	
vC1, stage 1 conf vol											
vC2, stage 2 conf vol											
vCu, unblocked vol	426	424	88	426	433	332	97			332	
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1	
tC, 2 stage (s)											
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2	
p0 queue free %	91	100	100	100	100	100	100			100	
cM capacity (veh/h)	538	521	970	538	515	710	1496			1227	
Volume Total	49	1	333	98							
Volume Left	48	0	1	1							
Volume Right	1	1	0	17							
cSH	543	710	1496	1227							
Volume to Capacity	0.09	0.00	0.00	0.00							
Queue Length 95th (ft)	7	0	0	0							
Control Delay (s)	12.3	10.1	0.0	0.1							
Lane LOS	B	B	A	A							
Approach Delay (s)	12.3	10.1	0.0	0.1							
Approach LOS	B	B									
Average Delay			1.3								
Intersection Capacity Utilization			32.5%							A	
Analysis Period (min)			15								

Chapel Lakes North Drive and Chambers Chapel Road
PM Peak 2040

09/02/2020

Intersection

Int Delay, s/veh 0.9

Movement EBL EBT EBR WBL WBT WBR NBL NBT NBR SBL SBT SBR

Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	30	0	1	1	0	2	3	277	1	2	197	50
Future Vol, veh/h	30	0	1	1	0	2	3	277	1	2	197	50
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	33	0	1	1	0	2	3	301	1	2	214	54

Conflicting Flow All	555	555	241	554	581	302	268	0	0	302	0	0
Stage 1	246	246	-	308	308	-	-	-	-	-	-	-
Stage 2	309	309	-	246	273	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	442	440	798	443	425	738	1296	-	-	1259	-	-
Stage 1	758	703	-	702	660	-	-	-	-	-	-	-
Stage 2	701	660	-	758	684	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	439	438	798	441	423	738	1296	-	-	1259	-	-
Mov Cap-2 Maneuver	439	438	-	441	423	-	-	-	-	-	-	-
Stage 1	756	702	-	700	658	-	-	-	-	-	-	-
Stage 2	697	658	-	755	683	-	-	-	-	-	-	-

HCM Control Delay, s 13.8 11 0.1 0.1
HCM LOS B B

Capacity (veh/h)	1296	-	-	445	603	1259	-	-
HCM Lane V/C Ratio	0.003	-	-	0.076	0.005	0.002	-	-
HCM Control Delay (s)	7.8	0	-	13.8	11	7.9	-	-
HCM Lane LOS	A	A	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0	0	-	-

Chapel Lakes North Drive and Chambers Chapel Road
PM Peak 2040

09/02/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	30	0	1	1	0	2	3	277	1	2	197	50
Future Volume (Veh/h)	30	0	1	1	0	2	3	277	1	2	197	50
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	33	0	1	1	0	2	3	301	1	2	214	54
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage (veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	554	553	241	554	580	302	268			302		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	554	553	241	554	580	302	268			302		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	93	100	100	100	100	100	100			100		
cM capacity (veh/h)	440	439	798	441	424	738	1296			1259		
Volume Total	34	3	305	270								
Volume Left	33	1	3	2								
Volume Right	1	2	1	54								
cSH	446	603	1296	1259								
Volume to Capacity	0.08	0.00	0.00	0.00								
Queue Length 95th (ft)	6	0	0	0								
Control Delay (s)	13.7	11.0	0.1	0.1								
Lane LOS	B	B	A	A								
Approach Delay (s)	13.7	11.0	0.1	0.1								
Approach LOS	B	B										
Average Delay			0.9									
Intersection Capacity Utilization			27.4%									
Analysis Period (min)			15									
ICU Level of Service										A		

Chapel Lakes

Mem - Arlington & Chambers Chapel AM Peak 2025

06/10/2021

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↗			↖	↗	↘
Traffic Volume (veh/h)	70	32	40	66	70	96
Future Volume (Veh/h)	70	32	40	66	70	96
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	76	35	43	72	76	104
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			111		252	94
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			111		252	94
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			97		89	89
cM capacity (veh/h)			1479		716	963
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	111	115	180			
Volume Left	0	43	76			
Volume Right	35	0	104			
cSH	1700	1479	841			
Volume to Capacity	0.07	0.03	0.21			
Queue Length 95th (ft)	0	2	20			
Control Delay (s)	0.0	2.9	10.4			
Lane LOS		A	B			
Approach Delay (s)	0.0	2.9	10.4			
Approach LOS			B			
Intersection Summary						
Average Delay		5.5				
Intersection Capacity Utilization		28.8%	ICU Level of Service	A		
Analysis Period (min)		15				

Chapel Lakes

Mem - Arlington & Chambers Chapel AM Peak 2025

06/10/2021

Intersection

Int Delay, s/veh 5.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↰			↱	↰	↱
Traffic Vol, veh/h	70	32	40	66	70	96
Future Vol, veh/h	70	32	40	66	70	96
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	76	35	43	72	76	104

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	111
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1479
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1479
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.8	10.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	840	-	-	1479	-
HCM Lane V/C Ratio	0.215	-	-	0.029	-
HCM Control Delay (s)	10.5	-	-	7.5	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.8	-	-	0.1	-

Chapel Lakes

Mem - Arlington & Chambers Chapel pm Peak 2025

06/10/2021

	→	↘	↙	←	↖	↗
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↰			↱	↰	↱
Traffic Volume (veh/h)	120	67	79	160	50	76
Future Volume (Veh/h)	120	67	79	160	50	76
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	130	73	86	174	54	83
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			203		512	166
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			203		512	166
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			94		89	91
cM capacity (veh/h)			1369		489	878
Direction, Lane #	EB 1	WB 1	NB 1			
Volume Total	203	260	137			
Volume Left	0	86	54			
Volume Right	73	0	83			
cSH	1700	1369	668			
Volume to Capacity	0.12	0.06	0.21			
Queue Length 95th (ft)	0	5	19			
Control Delay (s)	0.0	2.9	11.8			
Lane LOS		A	B			
Approach Delay (s)	0.0	2.9	11.8			
Approach LOS			B			
Intersection Summary						
Average Delay		4.0				
Intersection Capacity Utilization		40.6%	ICU Level of Service		A	
Analysis Period (min)		15				

Chapel Lakes

Mem - Arlington & Chambers Chapel pm Peak 2025

06/10/2021

Intersection

Int Delay, s/veh 3.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↗			↖	↗	↖
Traffic Vol, veh/h	120	67	79	160	50	76
Future Vol, veh/h	120	67	79	160	50	76
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	130	73	86	174	54	83

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	203
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1369
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1369
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.6	11.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	664	-	-	1369	-
HCM Lane V/C Ratio	0.206	-	-	0.063	-
HCM Control Delay (s)	11.8	-	-	7.8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.8	-	-	0.2	-

Chapel Lakes
Mem - Arlington & Chambers Chapel AM Peak 2040

09/01/2020



Lane Configurations	↑			↑	↑	
Traffic Volume (veh/h)	100	51	63	90	170	256
Future Volume (Veh/h)	100	51	63	90	170	256
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	109	55	68	98	185	278
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			164		370	136
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			164		370	136
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			95		69	70
cM capacity (veh/h)			1414		600	912
Volume Total	164	166	463			
Volume Left	0	68	185			
Volume Right	55	0	278			
cSH	1700	1414	755			
Volume to Capacity	0.10	0.05	0.61			
Queue Length 95th (ft)	0	4	107			
Control Delay (s)	0.0	3.4	17.0			
Lane LOS		A	C			
Approach Delay (s)	0.0	3.4	17.0			
Approach LOS			C			
Average Delay			10.6			
Intersection Capacity Utilization			51.7%	ICU Level of Service		A
Analysis Period (min)			15			

Chapel Lakes
Mem - Arlington & Chambers Chapel AM Peak 2040

09/01/2020

Int Delay, s/veh 10.6

Item	EB	WB	WB	WB	WB	WB
Lane Configurations	1			1	2	
Traffic Vol, veh/h	100	51	63	90	170	256
Future Vol, veh/h	100	51	63	90	170	256
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	109	55	68	98	185	278

Conflicting Flow All	0	0	164	0	371	136
Stage 1	-	-	-	-	136	-
Stage 2	-	-	-	-	235	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1414	-	630	913
Stage 1	-	-	-	-	890	-
Stage 2	-	-	-	-	804	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1414	-	598	913
Mov Cap-2 Maneuver	-	-	-	-	598	-
Stage 1	-	-	-	-	890	-
Stage 2	-	-	-	-	763	-

HCM Control Delay, s 0 3.2 17.1
HCM LOS C

Capacity (veh/h)	754	-	-	1414	-
HCM Lane V/C Ratio	0.614	-	-	0.048	-
HCM Control Delay (s)	17.1	-	-	7.7	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	4.3	-	-	0.2	-

Chapel Lakes
Mem-Arlington & Chambers Chapel PM Peak 2040

09/01/2020



Approach	EBT	EBL	WBL	WBT	NBL	NBR
Lane Configurations	↑			↑	↑	
Traffic Volume (veh/h)	140	152	178	200	137	209
Future Volume (Veh/h)	140	152	178	200	137	209
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	152	165	193	217	149	227
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			317		838	234
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			317		838	234
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			84		48	72
cM capacity (veh/h)			1243		284	805
Volume Total	317	410	376			
Volume Left	0	193	149			
Volume Right	165	0	227			
cSH	1700	1243	466			
Volume to Capacity	0.19	0.16	0.81			
Queue Length 95th (ft)	0	14	188			
Control Delay (s)	0.0	4.8	37.7			
Lane LOS		A	E			
Approach Delay (s)	0.0	4.8	37.7			
Approach LOS			E			
Average Delay			14.6			
Intersection Capacity Utilization			67.5%	ICU Level of Service		C
Analysis Period (min)			15			

Chapel Lakes
Mem-Arlington & Chambers Chapel PM Peak 2040

09/01/2020

Intersection

Int Delay, s/veh 15

Movement	EBT	EBP	WBL	WBT	NBL	NBP
Lane Configurations	1			1	2	
Traffic Vol, veh/h	140	152	178	200	137	209
Future Vol, veh/h	140	152	178	200	137	209
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	152	165	193	217	149	227

Conflicting Flow All	0	0	317	0	839	235
Stage 1	-	-	-	-	235	-
Stage 2	-	-	-	-	604	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1243	-	336	804
Stage 1	-	-	-	-	804	-
Stage 2	-	-	-	-	546	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1243	-	277	804
Mov Cap-2 Maneuver	-	-	-	-	277	-
Stage 1	-	-	-	-	804	-
Stage 2	-	-	-	-	449	-

HCM Control Delay, s 0 4 39.6
HCM LOS E

Capacity (veh/h)	459	-	-	1243	-
HCM Lane V/C Ratio	0.819	-	-	0.156	-
HCM Control Delay (s)	39.6	-	-	8.4	0
HCM Lane LOS	E	-	-	A	A
HCM 95th %tile Q(veh)	7.8	-	-	0.6	-

Chapel Lakes
Mem-Arlington & Chambers Chapel PM Peak 2040

with added lane
09/01/2020



Item	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↩			↩	↩	↩
Traffic Volume (veh/h)	140	152	178	200	137	209
Future Volume (Veh/h)	140	152	178	200	137	209
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	152	165	193	217	149	227
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage (veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			317		838	234
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			317		838	234
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			84		48	72
cM capacity (veh/h)			1243		284	805
Volume Total	317	410	149	227		
Volume Left	0	193	149	0		
Volume Right	165	0	0	227		
cSH	1700	1243	284	805		
Volume to Capacity	0.19	0.16	0.52	0.28		
Queue Length 95th (ft)	0	14	71	29		
Control Delay (s)	0.0	4.8	30.8	11.2		
Lane LOS		A	D	B		
Approach Delay (s)	0.0	4.8	19.0			
Approach LOS			C			
Average Delay			8.2			
Intersection Capacity Utilization			54.6%		ICU Level of Service	A
Analysis Period (min)			15			

Chapel Woods Tree Survey Report

Project Description

Mr. James Trent Crowley with Cummings, LLC requested the assistance of Urban Forestry in providing a tree survey for a development project in Lakeland Tennessee. The property is located within the Lakeland city limits near Chambers Chapel Road, more specifically within Shelby County Tennessee Parcels L0151 00483 and L0151 00049 consisting of approximately 126.4 acres, more or less. This tree survey is intended to assist Mr. Crowley in meeting part of the requirements of the City of Lakeland Tree Management Ordinance and to provide an accurate depiction of trees on the above-mentioned properties such that future tree removal and tree retention can be determined. The items performed in this Tree Survey were those specifically requested by Mr. Crowley and as described in the Lakeland Tree Management Ordinance. This tree survey was performed on the project area as depicted on a map provided by Lawson Engineering and Consulting, Inc. Pre-construction tree densities have been determined for the most of the property.

Tree Survey Methodology

The tree survey was completed using the tally method. Trees, generally 6 inches and greater in diameter at 4.5 feet above ground (DBH) were measured for diameter, identified to species, and given a brief visual inspection for condition of health and vigor. Each measured tree was assigned a unique number that was written on fluorescent green flagging and attached to the tree to facilitate location by surveyors. In certain areas of pine plantation, trees 10" DBH and greater were tallied to prevent map cluttering due to the high volume of stems.

Determination of Tree Density Units/Acre

Tree density units were determined using the data gathered from the tree survey. The City of Lakeland, TN provided a table from the Lakeland Tree Management Ordinance listing the density units for each size (dbh) tree. The specific density unit was assigned to each individual tree and then summed to provide a total for all trees located. These calculations give the density value of the trees as located on the project area prior to development. The trees that measured 6" dbh and greater represent a total of 25,694.9 density units.

As per the Lakeland Tree Management Ordinance, the required Site Density Factor for the project is 20 density units per acre. This dictates a Site Density Factor for the project of approximately 2,528 density units (126.4 acres * 20 density units/acre). The Lakeland Tree Management Ordinance calls for a calculation of the density of trees to be preserved on the site, termed the Existing Density Factor (EDF). This value can be calculated at a later date once proposed clearing and other proposed disturbance limits are known.

SDF	Pre-Const. DF	EDF	RDF
2,528	25,694.9	TBD	TBD

Forest Stand Description

The property is heavily wooded composed of mixed upland hardwood forest and pine plantation. The topography ranges from nearly level to very steep allowing a wide variety of species to occur. A total 33 species were found ranging from bottomland to dry site species and including 9 species of oak. The majority of the trees were in fair to good condition. There was some evidence of storm damage especially in the pines. The most common trees were pine (roughly 28%), sweetgum (roughly 28%), and oaks (roughly 22% when combining all 9 species). There were 552 trees that met the Lakeland Tree Management Ordinance qualifications for “specimen trees.” A total of 7,178 trees were tallied for this tree survey. The largest tree discovered was Cherrybark oak with a diameter of 64 inches.

Species	Count
Ash	76
Black cherry	115
Black gum	9
Black oak	9
Black walnut	3
Blackjack oak	2
Boxelder	4
Callery pear	1
Cedar	99
Cherrybark oak	778
Cottonwood	2
Dogwood	1
Elm	289
Hackberry	3
Honey locust	19
Hornbeam	2
Loblolly pine	1,999
Maple	196
Pecan	33
Persimmon	13
Pignut hickory	111
Post oak	96
River birch	17
Sassafras	19
Shagbark hickory	19
Southern red oak	461
Shumard oak	1
Sweetgum	2,033
Sycamore	152
Tulip poplar	399
Water oak	118
White oak	52
Willow oak	47

Statement of Contingent and Limiting Conditions Concerning the Use and Formation of Timber Cruise Information

1. Urban Forestry does not assume any liability for use of this tree survey information for any party other than Mr. James Trent Crowley.
2. The tree survey information gathered is based on conditions and observations apparent to Urban Forestry when the survey was done. Changes due to mortality, growth or other loss from environmental factors must be considered any time this information is used.
3. The data gathered and figures presented in this report are subject to sampling errors. These errors are a function of measurement and stand variability error and must be considered.
4. Urban Forestry did not conduct an investigation on a legal survey of the property and the only maps used to determine property lines were provided by Lawson Engineering and Consulting, Inc.
5. The information and figures presented in this tree survey report may be different from those gathered by others or from results of selling the property or clearing and harvesting trees. Urban Forestry does not guarantee the figures against such differences.
6. Urban Forestry will not duplicate this report for or discuss it with anyone other than Mr. Crowley or the City of Lakeland without the written or verbal authorization from Mr. Crowley.
7. Anyone using this report is advised to contact Urban Forestry before such use occurs.

Bobbi Hopper

Date

Arborist's Certification:

I, Eric Bridges, do hereby certify that the information presented in this Tree Survey Report is accurate and complete to the best of my knowledge based on the evidence, conditions, and observations apparent at the time of the survey.

Eric Bridges, Certified Arborist #SO-2670am

Date

July 9, 2021

Ms. Emily Harrell
City Engineer
City of Lakeland
10001 Highway 70
Lakeland, TN 38002

**RE: Chapel Lakes Planned Development
Outline Plan Submittal**

Dear Ms. Harrell,

The developer and design team reviewed the City of Lakeland's comments for our Outline Plan submittal April 15, 2021 and have provided the responses below. Along with modifications to the original submittal documents, we have included items 07 – Comment Response Letter (this document) and 08 – Summary of Exceptions to LDR. Please don't hesitate to contact us if we can provide any additional information ahead of the MPC meeting.

Changes to the comment responses applicable to the July 9 Resubmittal are noted below in RED.

Page 3: This is not yet a requirement but I believe it will go a long way with the MPC and BOC in helping them understand the development. The City is also working to codify this as a requirement. Provide a letter that states what sections of the LDR you are seeking relief from and why and where you are exceeding the LDRs. I can almost guarantee this questions will be asked at the MPC & BOC meeting. I would recommend this be done in a bulleted format so that it is easy for both boards to read. (Richard Donovan)

Response: This summary has been provided as 08 – Summary of Exceptions to LDR.

Page 10: This portion of the site is most very high or high proximity on the City's Conservation Preservation Index Map. I would expect numerous questions about the use of the land in this area. very high areas are required to be preserved. I would review Article II Section 11 in detail prior to the meeting. (Richard Donovan)

Response: The Conservation Priority Index Map is a high-level tool. When combined with our detailed site analysis and tree survey, it suggests that the high priority area for conservation is on the east side of Lakeland Trace Road, as opposed to the exact areas shown in the map. We have made our best effort to preserve this 7.8-acre area, which includes many trees and unique topography, while keeping adequate circulation through our site to improve traffic flow and connectivity of streets. We kindly request that the City allow the conceptual development plan, tree preservation plan, and other information that has been presented in the Outline Plan submittal to satisfy the requirements of Article II Section 11 of the ordinance, without the need for additional surveying. Please see the full justification in 08 – Summary of Exceptions to LDR.

Page 13: Add a table with the following data:

Zoning Acreage Percentage

R-1 AC. %

R-2 AC. %

R-3 AC. %

COS AC. %

Ensuring that PD meet the Neighborhood Type has become highly scrutinized. I will help if this information is simple and concise for the MPC. (Richard Donovan)

Response: A table has been added under the Site Data in the booklet.

Page 14: Strike the Max. Impervious and Semi-Previous Coverages these are in the process of being removed from the zoning ordinance. (Richard Donovan)

Response: This has been struck from the text.

Page 18: Add connection to existing 10ft trail from The Grove at north end of COS 1. Extend facilities south through COS1 to connect to Lakeland Trace and Gillespie Oak Dr. (Emily Harrell)

Response: We do not believe the connections described would be appropriate. The primary reason is that making the connection requires at least one stream crossing and putting the asphalt trail within the stream buffer. This would be subject to TDEC approval and may negatively impact the stream. Another reason is that the trail would be along the backside of the lots within the Oakwood Grove neighborhood. Without feedback from those residents, we cannot commit to adding public access in that location which may be a safety concern for them. There are already ample sidewalk connections throughout Chapel Lakes that would connect to the trail via Lakeland Trace Road without compromising the sensitive environment in COS 1 and potentially causing safety issues. There would not be a benefit to adding the proposed trails for either Chapel Lakes or the surrounding neighborhoods.

Page 18: Lets change this to a 5 foot sidewalk that wraps around the cove. This will prevent an odd transition to the sidewalk. (Richard Donovan)

Response: We have replaced the 10 ft sidewalk with a 5 ft sidewalk.

Page 18: Typical sections show sidewalk on both sides of all roadways (except rural section). Please include sidewalks on this plan where not shown.

Response: We have added sidewalk where not previously shown.

Page 20: Add "Common Open Space" needs to be clear the buffer will be in COS (Richard Donovan)

Response: We have added "Common Open Space" to the 86' ROW street section.

Page 20: 14ft median required (Emily Harrell)

Response: We have revised the median on Chambers Chapel Rd to be 14 ft.

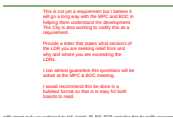
Page 22: Change this to a 5 sidewalk per the comment on the circulation plan. (Richard Donovan)

Response: We have replaced the 10 ft sidewalk with a 5 ft sidewalk.

Following is a copy of the original set of staff comments for your reference.

02_BOOKLET.pdf Markup Summary

3 (1)



Page Label: 3
Author: Richard Donovan

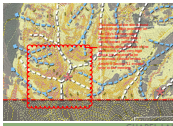
This is not yet a requirement but I believe it will go a long way with the MPC and BOC in helping them understand the development. The City is also working to codify this as a requirement.

Provide a letter that states what sections of the LDR you are seeking relief from and why and where you are exceeding the LDRs.

I can almost guarantee this questions will be asked at the MPC & BOC meeting.

I would recommend this be done in a bulleted format so that is is easy for both boards to read.

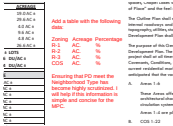
10 (1)



Page Label: 10
Author: Richard Donovan

This portion of the site is most very high or high proximity on the City's Conservation Preservation Index Map. I would expect numerous questions about the use of the land in this area. very high areas are required to be preserved. I would review Article II Section 11 in detail prior to the meeting.

13 (1)



Page Label: 13
Author: Richard Donovan

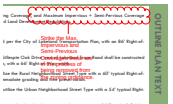
Add a table with the following data:

Zoning	Acreage	Percentage
R-1	AC.	%
R-2	AC.	%
R-3	AC.	%
COS	AC.	%

Ensuring that PD meet the Neighborhood Type has become highly scrutinized. I will help if this information is simple and concise for the MPC.

Strike the Max. Impervious and Semi-Previous Coverages these are in the process of being removed from the zoning ordinance.

14 (1)



Page Label: 14
Author: Richard Donovan

Strike the Max. Impervious and Semi-Previous Coverages these are in the process of being removed from the zoning ordinance.

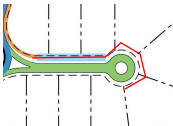
Add connection to existing 10ft trail from The Grove at north end of COS 1. Extend facilities south through COS1 to connect to Lakeland Trace and Gillespie Oak Dr.

18 (4)



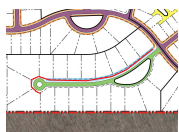
Page Label: 18
Author: EHarrell

Add connection to existing 10ft trail from The Grove at north end of COS 1. Extend facilities south through COS1 to connect to Lakeland Trace and Gillespie Oak Dr.



Page Label: 18
Author: Richard Donovan

Lets change this to a 5 foot sidewalk that wraps around the cove. This will prevent an odd transition to the sidewalk.



Page Label: 18
Author: Richard Donovan

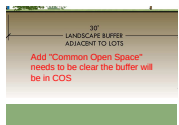
Lets change this to a 5 foot sidewalk that wraps around the cove. This will prevent an odd transition to the sidewalk.



Page Label: 18
Author: EHarrell

Typical sections show sidewalk on both sides of all roadways (except rural section). Please include sidewalks on this plan where not shown.

20 (2)



Page Label: 20
Author: Richard Donovan

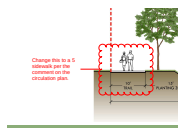
Add "Common Open Space" needs to be clear the buffer will be in COS



Page Label: 20
Author: EHarrell

14ft median required

22 (1)



Page Label: 22
Author: Richard Donovan

Change this to a 5 sidewalk per the comment on the circulation plan.

RE: Chapel Lakes Planned Development Outline Plan Submittal

The following lists the sections of the Lakeland Land Development Regulations that Chapel Lakes Planned Development is seeking exceptions from:

1. Section II. 3. Neighborhood Type II Requirements
 - a. Request to remove the requirement of minimum 20% R1 lots
2. Section II. 8. H. Street Type Standards: Rural Neighborhood Street
 - a. Request to utilize a 55' ROW (60' required) and a 5' sidewalk on one side (10' trail on one side required) for a Rural Neighborhood Street
3. Section III. 3. Building Type Standards: Residential Summary Table
 - a. Request to use a 5' rear setback (10' required) and 50' lot width (55' required) within the R3 Suburban Cottage areas
 - b. Request to not utilize maximum lot widths
4. Section II. 11. Conservation Area Requirements
 - a. Request to allow the tree survey and approximate Common Open Spaces presented in this Outline Plan submittal to satisfy the Conservation Area requirements of the LDR.

Below are justifications for each exception:

Changes to the justifications applicable to the July 9 Resubmittal are noted below in RED.

1. Request to provide less than 20% of lots as R1 lots
 - The development was planned using Traditional Neighborhood Development principles and with sensitivity to the unique natural features of the site. The area designated for R1 lots is along the south of the property as a transition to the R1 lots in the Estates of Chambers Chapel. The R3 areas with the rear-loaded Suburban Cottage lots are concentrated on the interior of the development, with an area along Lakeland Trace Road to reduce the number of driveways accessing that road (a request by the MPC). The R2 areas are primarily located on the perimeter of the site and along major streets.
 - Other Conservation Developments have not met the 20% requirement. The Grove, for example, has 13.7% R1 lots. This is a typical principle of conservation and cluster developments, where smaller lots are used to concentrate density in certain areas of the site in order to keep other areas as open space.
 - Additionally, Lakeland's neighborhood types map shows a small portion of the property is designated as Type III, which has no minimum percentage of R1 lots.
2. Request to utilize a 55' ROW (60' required) and a 5' sidewalk on one side (10' trail on one side required) for a Rural Neighborhood Street
 - The Rural Neighborhood Street type is only utilized in the two R1 Suburban Estate area cul-de-sacs. The street type originally showed the 10' trail requirement, but staff requested that this be changed to a 5' sidewalk in order to smoothly transition into the sidewalks along the rest of the development. The 15' planting strip already allows ample room for street trees and does not need to be expanded to 20', so we have reduced the total ROW width of this street type from 60' to 55' to account for the different in sidewalk width. This would allow even more flexibility for grading on the north side of the R1 area, where we are keeping as much ungraded as possible to maximize tree preservation.
3. Request to use a 5' rear setback (10' required) and 50' lot width (55' required) within the R3 Suburban Cottage areas; Request to not utilize maximum lot widths

- The slightly smaller rear setback and minimum lot widths allow the flexibility needed to fit lots and homes onto the challenging topography of the site while maximizing tree preservation. This rear setback and lot width are used regularly elsewhere in Lakeland (in the Urban Estate district) and other municipalities. With the current plan, most of the R3 lots will be at least 55' wide, and less than 10 lots are between 50' and 55' wide.
 - The development proposes bulk regulations that only require lots to meet a minimum lot width, with no maximums. **One of the primary reasons is to increase the width of R2 lots adjacent to Oakwood Grove to 100' minimum at the rear property line**, which exceeds the 70' minimum required by the LDR and is the 100' maximum allowed by the LDR.
4. Request to allow the tree survey and approximate Common Open Spaces presented in this Outline Plan submittal to satisfy the Conservation Area requirements of the LDR.
- **The Conservation Priority Index Map is a high-level tool. When combined with our detailed site analysis and tree survey, it suggests that the high priority area for conservation is on the east side of Lakeland Trace Road, as opposed to the exact areas shown in the map. We have made our best effort to preserve this 7.8-acre area, which includes many trees and unique topography, while keeping adequate circulation through our site to improve traffic flow and connectivity of streets.**
 - The City's Transportation Plan shows a connection between Gillespie Oaks Drive and Chambers Chapel Road as well as the extension of Lakeland Trace Road north-south through our site. These two road connections alone would require us to carve up the areas of High and Very High Priority. **However, we are still preserving large areas of COS (24.3 ac.) on both sides of Lakeland Trace Road.**
 - A few pieces of site data illustrate the results that we have been able to achieve with the development. The development is only required to have a Site Density Factor of 2442 based on the site acreage, but the existing trees we are keeping on site provide about **3x this requirement at 7301**, not even accounting for additional new trees that will be planted. With the current plan, we are able to preserve **±26.3%** of specimen trees on site, with some of the areas of Very High or High Conservation priority included.
 - The developer and design team have made our best effort to meet the intent of the ordinance with the most accurate information available for our specific site. **Chapel Lakes PD provides 30.8% ± COS through 21 COS areas.** We have achieved a much higher percentage of tree preservation and common open space than is typical for most developments. For example, the Estates at Chambers Chapel, which has a higher percentage of land within Very High and High Conservation priority than this property, was approved with only 18.9% of COS and no tree survey required. **Oakwood Grove was approved with 26% COS.** We kindly request that the City allow the conceptual development plan, tree preservation plan, and other information that has been presented in the Outline Plan submittal to satisfy the requirements of Article II Section 11 of the ordinance, without the need for additional surveying.