



**CITY COUNCIL  
SPECIAL MEETING/JOINT PUBLIC HEARINGS WITH THE PLANNING  
COMMISSION**

**Wednesday, November 13, 2024 at 7:00 PM**  
Community Room, Salem Civic Center, 1001 Roanoke Boulevard  
Salem, Virginia 24153

**AGENDA**

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**1. Call to Order**

**A. Pledge of Allegiance**

**2. New Business**

**A. Special Exception Permit**

Hold a joint public hearing with the Planning Commission regarding the request of Jason N. and Jennifer C. Fountain, property owners, for the issuance of a Special Exception Permit to allow an accessory apartment on the property located at 621 North Broad Street, (Tax Map # 70-2-1). (Advertised in the November 1 and 4, 2024, issues of The Roanoke Times.)

**B. Amendment to the Zoning Ordinance**

Hold a joint public hearing with the Planning Commission regarding the request of Virginia Baptist Children's Home and Family Services d/b/a Hopetree Family Services (Salem CI) f/k/a The Virginia Baptist Children's Home f/k/a Baptist Orphanage of Virginia, property owner, for rezoning the properties located at 1000 block Red Lane and a portion of 860 Mount Vernon Lane (Tax Map #'s 41-1-1, 41-1-2, 41-1-3, 41-1-4, 41-1-5, 41-1-6, and a portion of 44-3-10) from RSF Residential Single Family District to PUD Planned Unit District with proffered conditions. (Advertised in the November 1 and 4, 2024, issues of *The Roanoke Times*.)

**3. Adjournment**



Item #: 2.A.

AT A SPECIAL MEETING/JOINT PUBLIC HEARING OF THE COUNCIL OF THE CITY OF SALEM WITH PLANNING COMMISSION, DURING THEIR REGULAR MEETING, HELD IN THE COMMUNITY ROOM, SALEM CIVIC CENTER, 1001 ROANOKE BOULEVARD, SALEM, VIRGINIA, 24153

**MEETING DATE:** November 13, 2024

**AGENDA ITEM:** **Special Exception Permit**  
Hold a joint public hearing with the Planning Commission regarding the request of Jason N. and Jennifer C. Fountain, property owners, for the issuance of a Special Exception Permit to allow an accessory apartment on the property located at 621 North Broad Street, (Tax Map # 70-2-1). (Advertised in the November 1 and 4, 2024, issues of The Roanoke Times.)

**SUBMITTED BY:** Max Dillon, Planner

**SUMMARY OF INFORMATION:**

621 North Broad Street is 0.322-acre parcel that sits within the RSF Residential Single Family zoning district. The property owners are pursuing a Special Exception Permit to allow for an accessory apartment to be constructed in an attached garage. In order to qualify as an accessory apartment, that space must be structurally attached to (or within) a primary dwelling unit.

While there is a canopy currently extending towards the existing detached garage, the current garage on the property is not *structurally* attached to the principal dwelling and thus not a candidate for an accessory apartment. The proposed building plans and elevations display an attached garage (structurally connecting the primary dwelling to the existing garage by way of a breezeway), with a proposed renovation allocating approximately 625 square feet of finished living space for the planned accessory apartment.

According to Salem's zoning ordinance, accessory apartments are permitted by Special Exception Permit in the RSF Residential Single Family zoning district, and are subject to the following Use and Design Standards (Section 106-304.1). The relevant details of the applicant's proposal are included in bold.



1. An accessory apartment shall only be considered accessory to a detached single family dwelling. **(applicant satisfies this requirement)**
2. At the completion of construction, no accessory apartment shall contain more than 40 percent of the finished floor area of the principal dwelling. **(accessory apartment = 625 square feet, principal dwelling = 1,893 square feet)**
3. No accessory apartment shall contain less than 300 square feet of finished floor area, or more than 1,000 square feet of finished floor area. **(625 square feet)**
4. Only one accessory apartment shall be allowed per lot or per principal dwelling. **(applicant satisfies this requirement – no existing accessory apartments on the parcel)**
5. The owner of the principal dwelling shall reside on the property and the accessory apartment shall only be occupied by a family member of the owner of the principal dwelling. **(applicant satisfies this requirement – the property owners will reside the principal dwelling, and the accessory apartment will be utilized for multi-generational living)**
6. No separate utility services shall be allowed for the accessory apartment. **(applicant satisfies this requirement)**

**FISCAL IMPACT:**

N/A

**STAFF RECOMMENDATION:**

Hold a joint public hearing with the Planning Commission on this item.

**ATTACHMENTS:**

1. Special Exception Permit application
2. Proposed building plans and elevations
3. 621 North Broad Street receipt
4. Affidavit



**City of Salem**  
**Special Exception or Use Not Provided For Application**

**Pre-application Meeting (optional)**

- Meetings with the Community Development Staff are recommended prior to submittal of a Special Exception/Use Not Provided For Permit application. Please bring a plat to the meeting with a sketch of your proposal.

**Application Submittal**

- The application deadline is the first of the month for inclusion on the following month's agenda. If the first falls on a weekend or holiday, the application deadline will be the following business day.
- When submitting an application be sure to include the following: a complete application, plat of the subject property, legal description that includes metes and bounds, and supplementary information to support the request (such as conceptual plans and building elevations). Please note incomplete applications will not be accepted and will be returned to the applicant.
- The application fee is due at time of submittal. The applicant will be notified to submit the required legal ad fees prior to the meeting. (See Page 4)
- PLEASE NOTE: As per 106-524.1(A) of the City of Salem Zoning Ordinance no application shall be accepted for a lot or parcel that does not comply with the minimum lot area, width, or frontage requirements of the zoning district or applicable use and design standards. A variance from the Board of Zoning Appeals must be obtained prior to the submission of a Special Exception/Use Not Provided For application.

**Application Distribution for City Review**

- Complete applications may be routed to City departments for review.

**Staff/Applicant Meeting**

- The staff may contact the applicant to schedule a meeting to discuss comments provided by reviewing agencies, to request additional information or plan revisions, and to negotiate proffers.

**Planning Commission**

- Revised conceptual plans and draft proffers must be submitted prior to the Planning Commission meeting. Proffers and conceptual plans may be revised in accordance with Staff's recommendations, and revisions incorporating the staff's recommendations must be submitted prior to the Planning Commission meeting.
- A staff report and recommendation are included in the Planning Commission packet.
- The Planning Commission meets on the 1<sup>st</sup> Wednesday after the 1<sup>st</sup> City Council meeting of the month.
- Following a public hearing on the Special Exception/Use Not Provided For Permit case, the Planning Commission may recommend approval, approval with conditions, denial, or deferral of the application.

**City Council**

- A staff report containing the recommendation of the Planning Commission and Staff is sent to the City Council prior to the meeting.
- The City Council typically hears Special Exception/Use Not Provided For Permit cases on the 4th Monday of every month.
- Following a public hearing on the case, the City Council may vote to approve, deny, defer the application to another meeting, or remand the application back to the Planning Commission for further consideration.

**ATTACHMENTS - For ALL REQUESTS you must submit the following electronically:**

- a. **A fully completed signed application.**
- b. **Acknowledgement of Application Fee Payment Procedure** (Page 4)
- c. **A plat of the subject property**, which accurately reflects the current property boundaries, is drawn to scale, and shows existing structures. (Typically, available from the City Clerk's Office.)
- d. **Responses to questions on Page 5**
- e. **Historic Impact Information** (if any)
- f. **For applications requiring plans**, please submit electronically only. No hard copies will be accepted.
- g. **Check here** if the conceptual plan will serve as the preliminary plat. [LX](#)

**NOTE:** Elevations will be required with new development.

**TO THE APPLICANT:**

It is the policy of the City of Salem City Council, the City of Salem Planning Commission, and City of Salem Board of Zoning Appeals to require a property to be posted when a zoning action is being considered. Such a posting notifies the general public of an impending action and the location being considered.

It is incumbent on you, the applicant, to ensure the sign is in the proper location and remains there until an action has taken place. Consequently, the procedure for posting is as follows:

1. The Community Development Staff will post the sign on your property.
2. You should check the location of the sign to make certain it is in the right place on your property. If it is not, notify the Community Development Office as soon as possible.
3. You should check periodically to ensure the safety of the sign. If it is stolen or otherwise harmed, notify the Community Development Office as soon as possible.

In submitting this Special Exception/Use Not Provided For Permit application, you hereby grant permission to the agents and employees of the City of Salem to enter the referenced property for the purposes of processing and reviewing the above application.

Should you have any questions regarding this policy, please contact a member of Community Development.

## City of Salem Community Development Application

## Request for SPECIAL EXCEPTION/USE NOT PROVIDED FOR PERMIT

Case #: \_\_\_\_\_

## APPLICANT INFORMATION

Owner: Jason and Jenn FountainContact Name: Dolly-Davis DollbergAddress: 621 North Broad Street, Salem, VA 24153Telephone No. 540 793-3339

Fax No. \_\_\_\_\_

Email Address dolly@architecturaldesignservices.net

Applicant/Contract Purchaser: \_\_\_\_\_

Contact Name: \_\_\_\_\_

Address: \_\_\_\_\_

Telephone No. \_\_\_\_\_

Fax No. \_\_\_\_\_

Email Address \_\_\_\_\_

## PARCEL INFORMATION

For multiple parcels, please attach a page ☐(Tax ID #'s) 70-2-1Deed Book 070004559(s)/0 Page \_\_\_\_\_

Subdivision \_\_\_\_\_

Location Description (Street Address, if applicable) \_\_\_\_\_

Total Area (acres/square feet) \_\_\_\_\_

Current Zoning \_\_\_\_\_

Requested Use ☐ Special Exception ☐ Use Not Provided For \_\_\_\_\_SIGNATURE OF OWNER ☐CONTRACT PURCHASER ☐(attach contract) ☐LESSEE ☐

As owner or authorized agent of this property, I hereby certify that this application is complete and accurate to the best of my knowledge, and I hereby grant permission to the agents and employees of the City of Salem to enter the property for the purposes of processing and reviewing this request.

Signature Dolly-Davis Dollberg

Print Name \_\_\_\_\_

Date \_\_\_\_\_

9/30/2024

Signature Jason FountainPrint Name Jason FountainSignature Jenn Fountain

Date \_\_\_\_\_

Jennifer Fountain

## QUESTIONS/ LETTERS/ SHOULD BE FORWARDED TO THE FOLLOWING\*\*:

Name Architectural Design Services c/o Dolly DollbergAddress: 4421 Bandy Rd  
Roanoke, VA 24104Telephone No. 540 793-3339

Fax No. \_\_\_\_\_

Email Address \_\_\_\_\_

dolly@architecturaldesignservices.net

\*\*It is the responsibility of the contact person to provide copies of all correspondence to other interested parties to the application.

ACKNOWLEDGEMENT OF APPLICATION FEE PAYMENT PROCEDURE

Application fees must be submitted at the time of submittal. I hereby acknowledge that this application is not complete until the payment for all applicable fees has been received by the City of Salem Community Development Department. I acknowledge that I am responsible for ensuring that such fees are received by the City of Salem. I further acknowledge that any application fee submitted after the deadline shall result in the application being considered filed for the next month's meetings.

Signature of applicant/authorized agent **Dolly-Davis Dollberg** Digitally signed by Dolly-Davis Dollberg  
DN: cn=US, o=architectural design services,  
c=Dolly-Davis Dollberg,  
E=dolly@architecturalservices.net  
Reason: I have reviewed this document  
Location: your signing location here  
Date: 2024.09.30 16:36:49-04'00'  
Foxit PhantomPDF Version: 10.1.9 Date: \_\_\_\_\_

Print Name: \_\_\_\_\_

Signature of owner/authorized agent Jason Fountain Jennifer Fountain 9/30/2024  
Jason and  
Jennifer  
Print Name: Fountain

If you would like your correspondence emailed and/or faxed, please make selections, and provide the information below:

☒ Email dolly@architecturalservices.net ☐ Fax: \_\_\_\_\_

|                                                                                                              |
|--------------------------------------------------------------------------------------------------------------|
| FEES:                                                                                                        |
| All application fees must be paid at the time of submittal. Please make checks payable to the City of Salem: |
| Special Exception/Use Not Provided For/Use Not Provided For Permit application fee:                          |
| \$500                                                                                                        |

FOR STAFF USE ONLY

|                 |       |                       |                              |                             |
|-----------------|-------|-----------------------|------------------------------|-----------------------------|
| Staff Reviewer: | _____ | Application Complete? | <input type="checkbox"/> YES | <input type="checkbox"/> NO |
| Date:           | _____ |                       |                              |                             |

**PLEASE RESPOND FOR ALL SPECIAL EXCEPTION/USE NOT PROVIDED FOR APPLICATIONS:**

1. This Special Exception/Use Not Provided For is being requested in order to?

Renovate and existing garage structure into an attached ADU - accessory apartment. This is intended to serve as a residential unit for the aging parents of the owner/occupants of this property.

2. Describe how you plan to develop the property for the proposed use and any associated uses.

The main structure will be renovated and an addition will be constructed to provide new master bedroom, living room, covered porch and basement storage space. A pool, utility shed will be constructed behind main structure and proposed "Accessory Apartment" (AA). The existing garage will be renovated into a one bedroom AA for aging family members and single car garage. The main house structure and the AA will be connected structurally with roof covering raised deck, lower deck and walkway.

3. Describe why the proposed use or exception is desirable and appropriate for the area. What measures will be taken to assure that the proposed use or exception will not have a negative impact on the surrounding vicinity? (This could include traffic or environmental impacts.)

The proposed use will allow the aging in place of the owner's parents allowing a family based care and monitoring of aging parents to maintain a cohesive multi-generational family unit. The investment in property will raise adjacent property owners values as an added benefit. No negative impact perceived.

4. Is the subject property located within the Floodplain District? ☐ YES ☒ NO If yes, describe the proposed measures for meeting the standards of the Floodplain Ordinance.

5. Have you provided a conceptual plan of the proposed development, including general lot configurations and road locations? Are the proposed lot sizes compatible with existing parcel sizes in the area?

Yes, a conceptual design package containing plans, elevations and basic site plan are provided to identify all setbacks, dimensions and uses. The corner lot size has not changed and is compliance with existing codes of Salem.

6. Is the subject property listed as a historic structure or located within a historic district? ☐ YES ☒ NO

If yes, describe the proposed measures for meeting the standards of the Department of Historic Resources.



# FOUNTAIN RESIDENCE GARAGE AND ENTRANCE

3155 STONERIDGE ROAD

ROANOKE, VIRGINIA

## PROPOSED DESIGN DOCUMENTS

SEPTEMBER 23, 2024

### INDEX TO DRAWINGS

\* COVER SHEET

#### ARCHITECTURAL

\* A100 BASIC SITE PLAN

\* A101 EXISTING PLANS  
\* A102 FIRST FLOOR PLAN HOUSE  
\* A103 FIRST FLOOR PLAN APARTMENT  
\* A104 ROOF PLAN

\* A501 ELEVATIONS  
\* A502 ELEVATIONS



NOTE: ALL DESIGNS ARE PROPERTY OF ARCHITECTURAL DESIGN SERVICES, LLC  
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ARCHITECTURAL  
DESIGN SERVICES

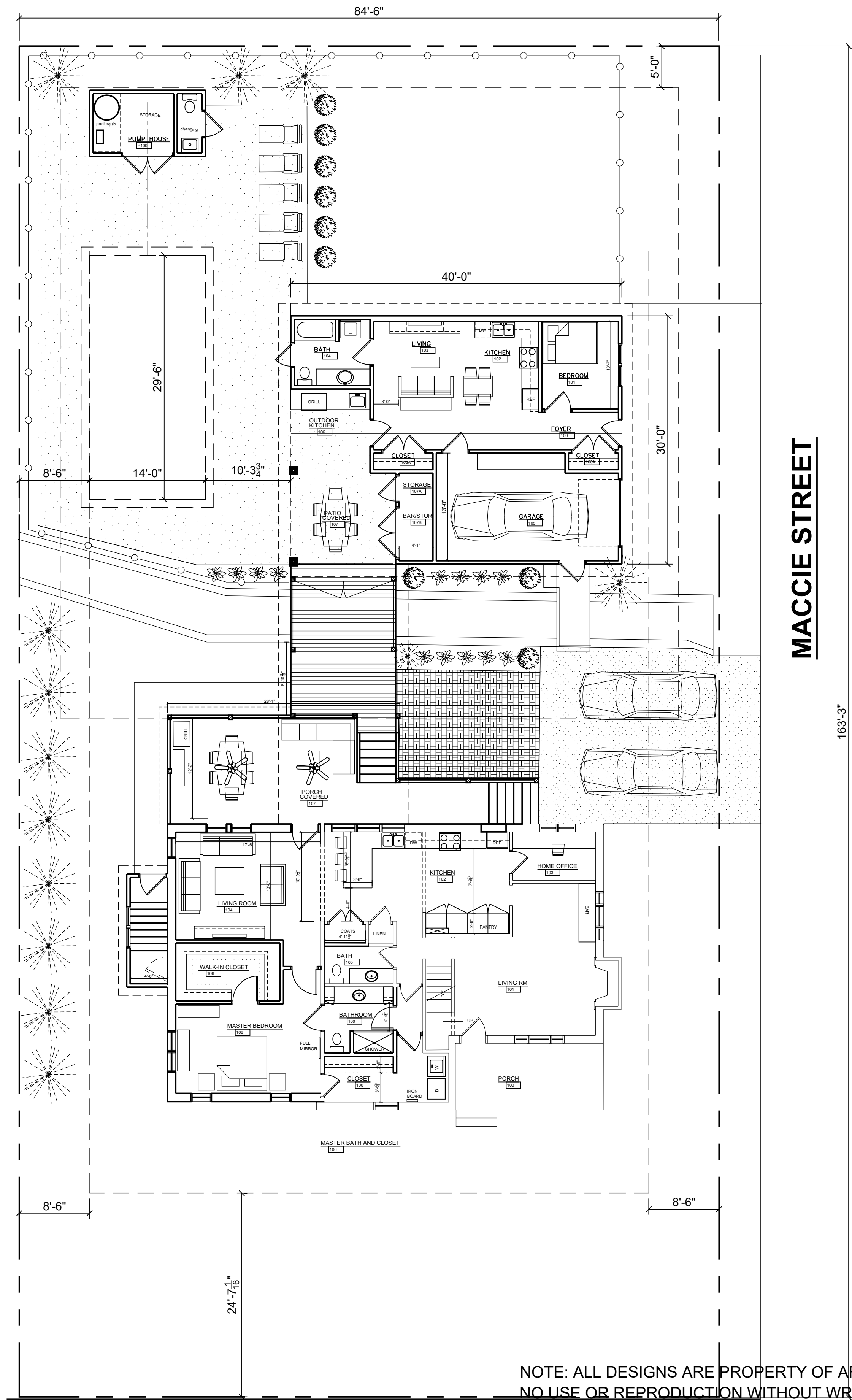
DOLLY-DAVIS DOLLBERG, PA

ARCHITECTURE • PLANNING • PROJECT MANAGEMENT

4421 BANDY RD, ROANOKE, VIRGINIA 24014

• 540.793.3339 DOLLY@ARCHITECTURALDESIGNSERVICES.NET •





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PLAN NORTH

PROPOSED SITE PLAN

SCALE: 3/32" = 1'-0"

1

NOTES



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FOUNTAIN RESIDENCE  
621 NORTH BROAD ST

SALEM, VIRGINIA

PROGRESS  
DRAWINGS FOR  
OWNER REVIEW

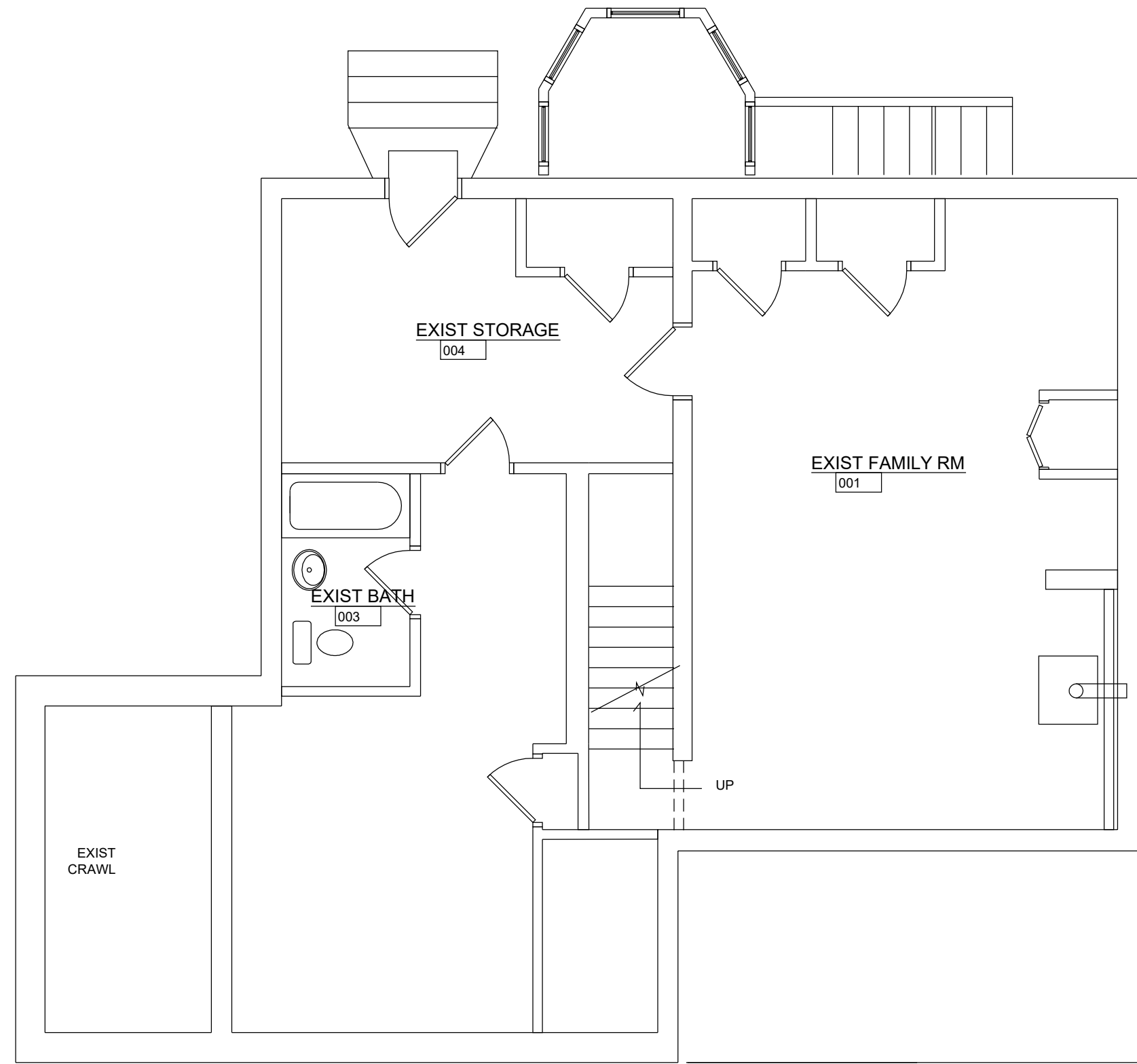
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| DATE                | SEPTEMBER 23, 2024 |
| PROJECT ARCHITECT   | DDD                |
| STRUCTURAL ENGINEER |                    |
| REVISIONS           | NUMBER DATE        |

SHEET TITLE

PROPOSED SITE  
PLAN

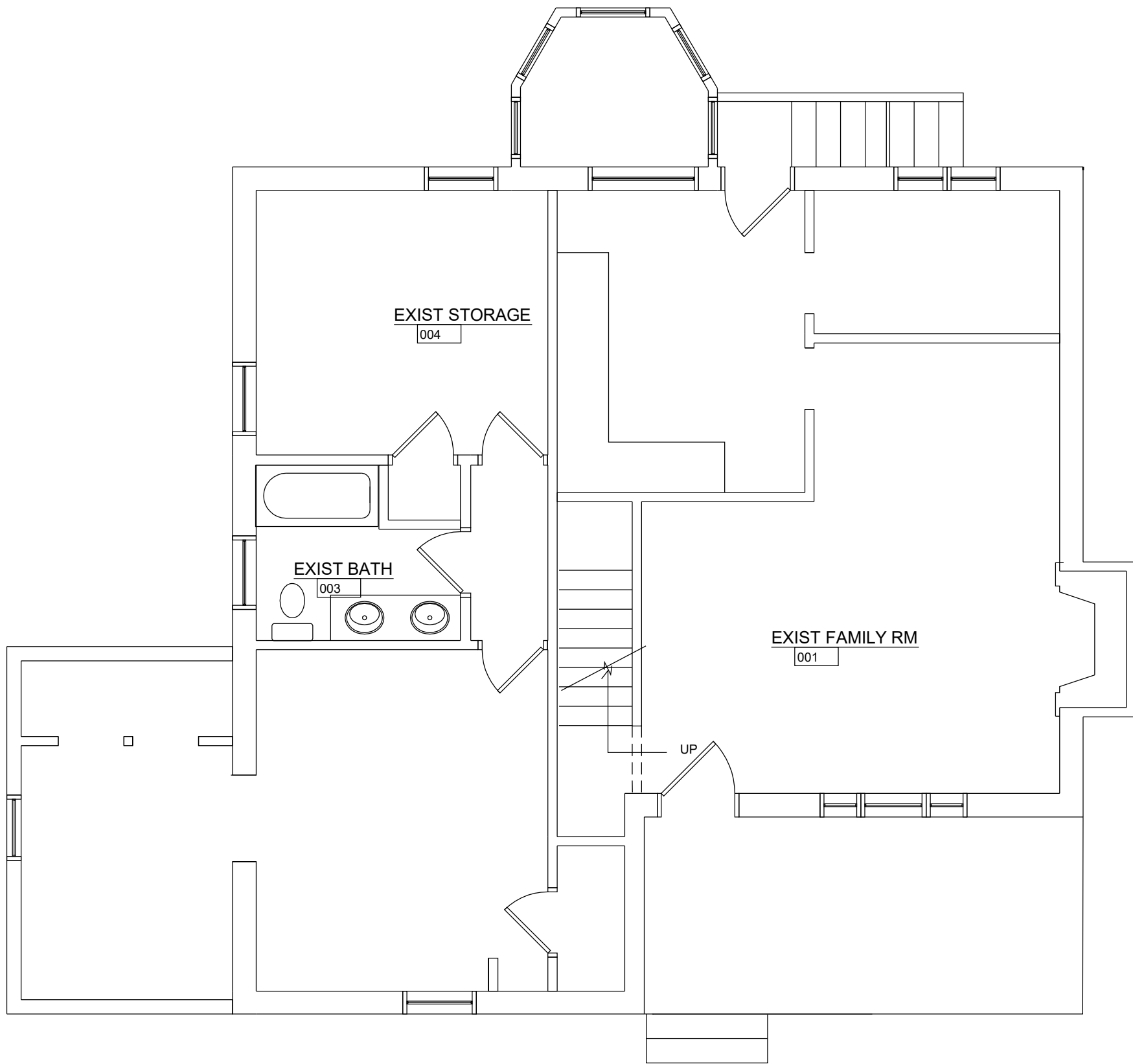
A100





**EXISTING BASEMENT**

TAKEN FROM BALZER DOES NOT ALIGN WITH OTHER FLOOR FIELD VERIFY



**EXISTING FIRST FLOOR**

TAKEN FROM BALZER DOES NOT ALIGN WITH OTHER FLOOR FIELD VERIFY

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FOUNTAIN RESIDENCE  
621 NORTH BROAD ST

SALEM, VIRGINIA

PROGRESS  
DRAWINGS FOR  
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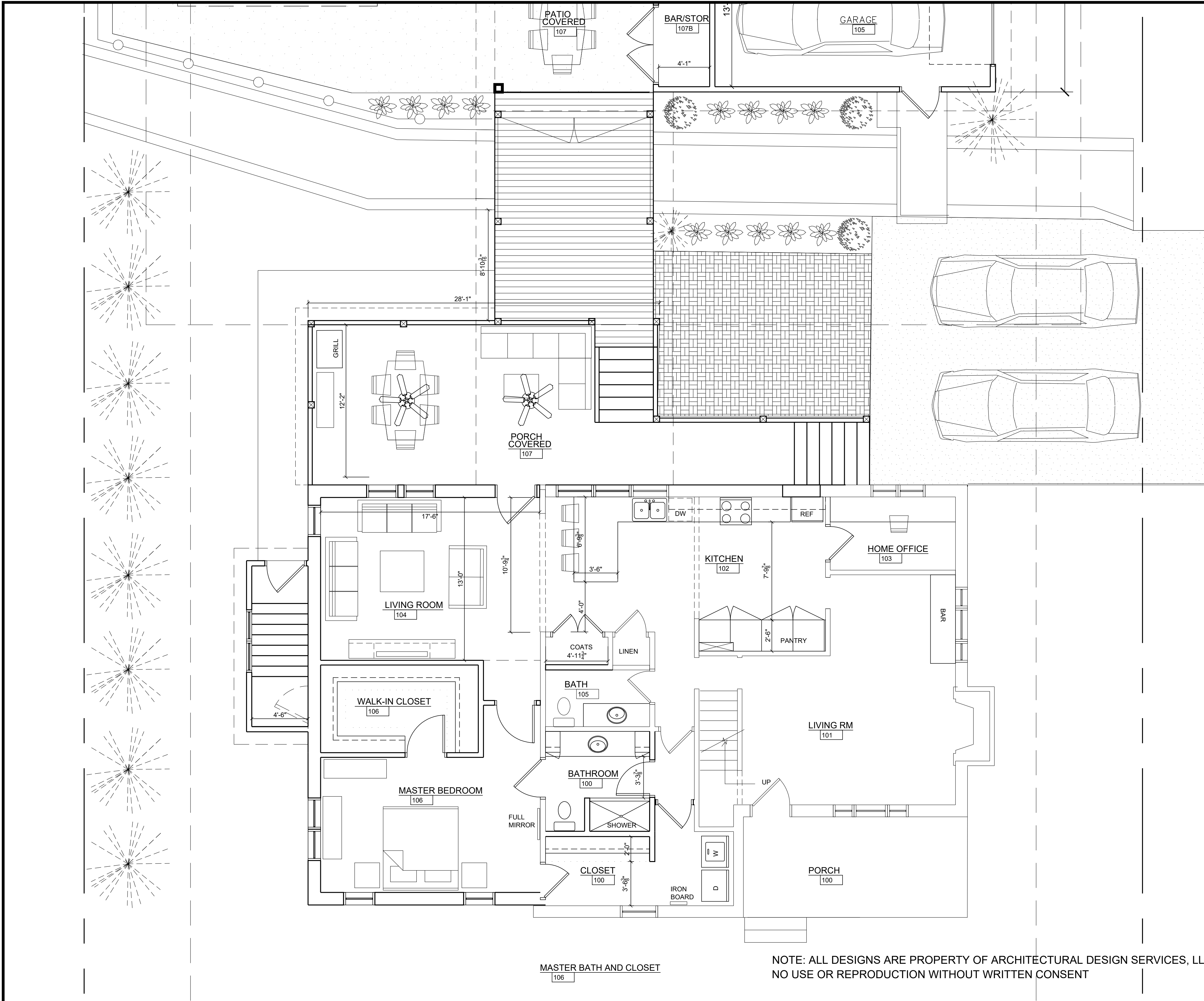
DATE SEPTEMBER 23, 2024  
PROJECT ARCHITECT DDD  
STRUCTURAL ENGINEER  
REVISIONS NUMBER DATE

SHEET TITLE

EXISTING FLOOR  
PLANS

A101





EXIST FLOOR PLANS

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FOUNTAIN RESIDENCE  
621 NORTH BROAD ST

SALEM, VIRGINIA

PROGRESS  
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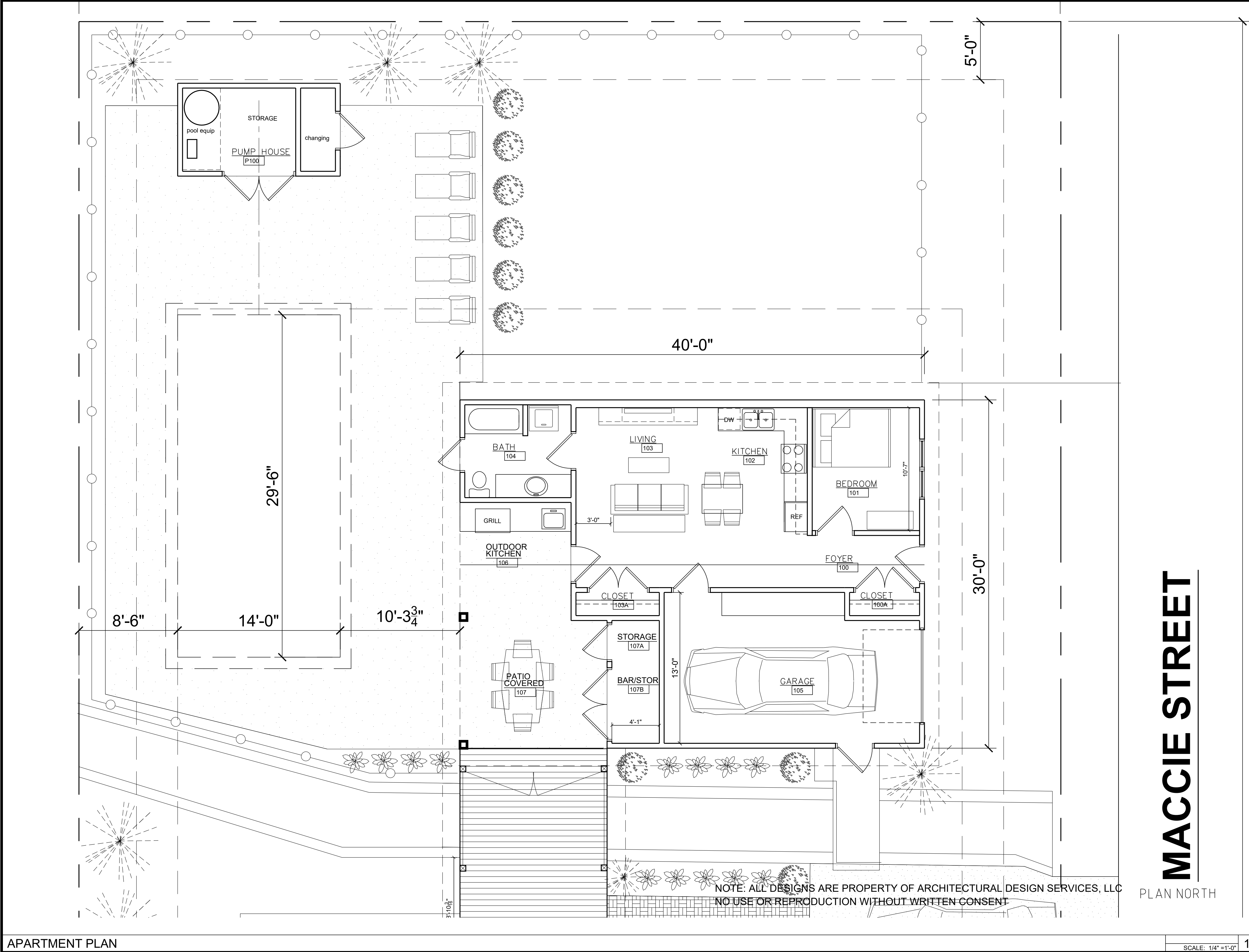
SHEET TITLE

FIRST FLOOR  
PLAN

A102

SCALE: 1/4" = 1'-0" 1





NOTES



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FOUNTAIN RESIDENCE  
621 NORTH BROAD ST  
SALEM, VIRGINIA

PROGRESS  
DRAWINGS FOR  
OWNER REVIEW

DATE: SEPTEMBER 23, 2024  
PROJECT ARCHITECT: DDD  
STRUCTURAL ENGINEER: DDD  
REVISIONS: NUMBER DATE

SHEET TITLE

APARTMENT PLAN

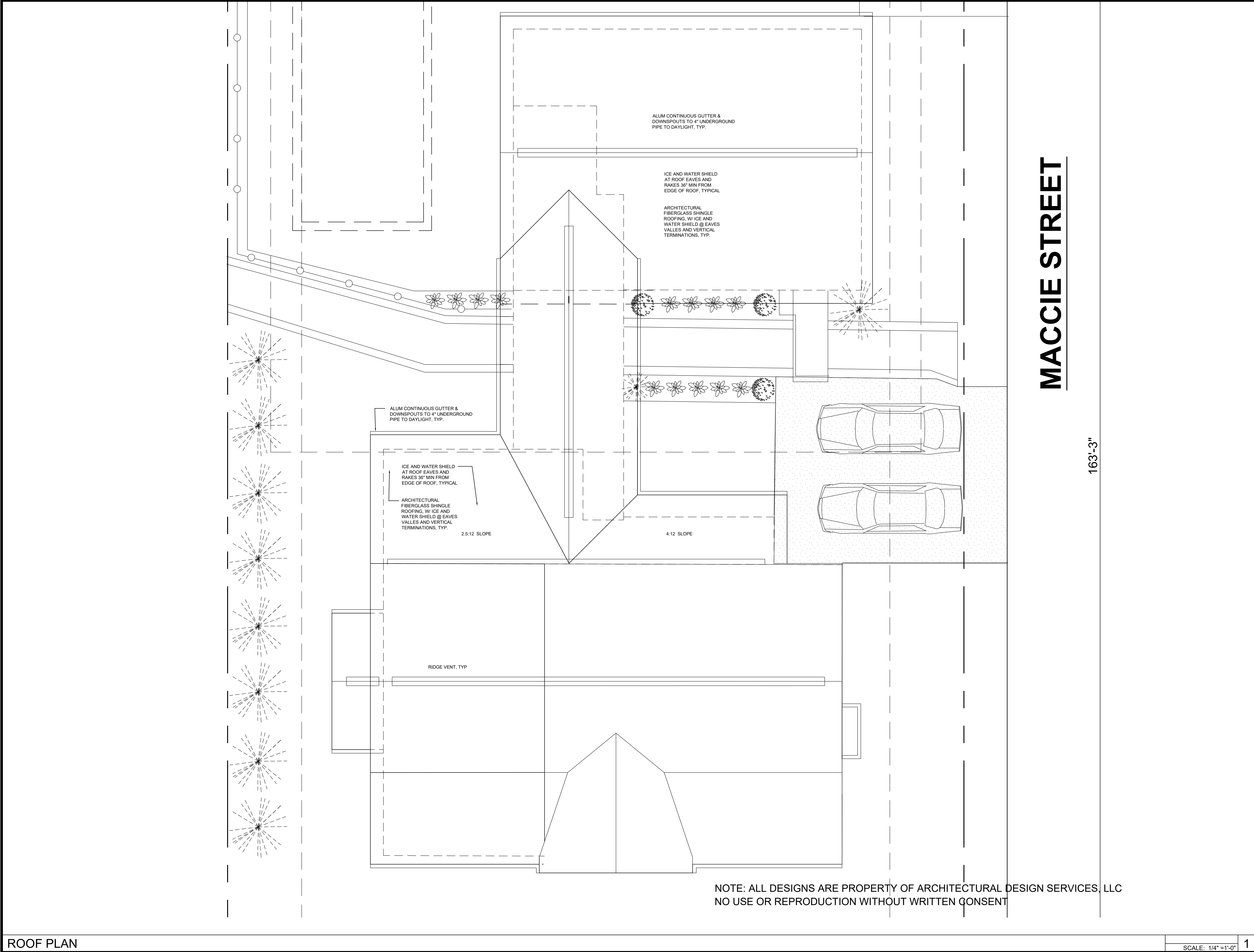
A103

APARTMENT PLAN

SCALE: 1/4" = 1'-0"

1





NOTES



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FOUNTAIN RESIDENCE  
621 NORTH BROAD ST  
  
SALEM, VIRGINIA

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DATE: SEPTEMBER 23, 2024  
PROJECT ARCHITECT: DDD  
STRUCTURAL ENGINEER: DDD  
REVISIONS: NUMBER DATE

SHEET TITLE

ROOF PLAN

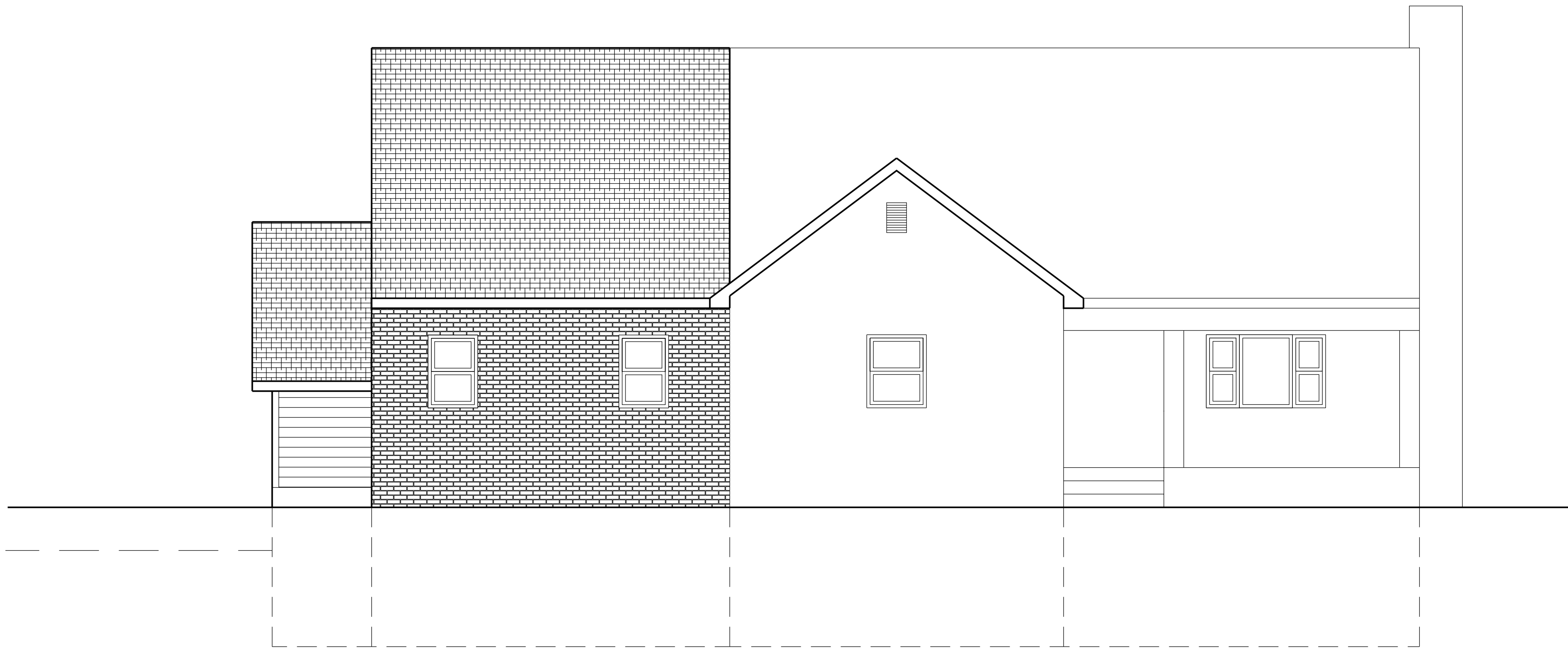
A104

ROOF PLAN

SCALE: 1/4" = 1'-0"

1

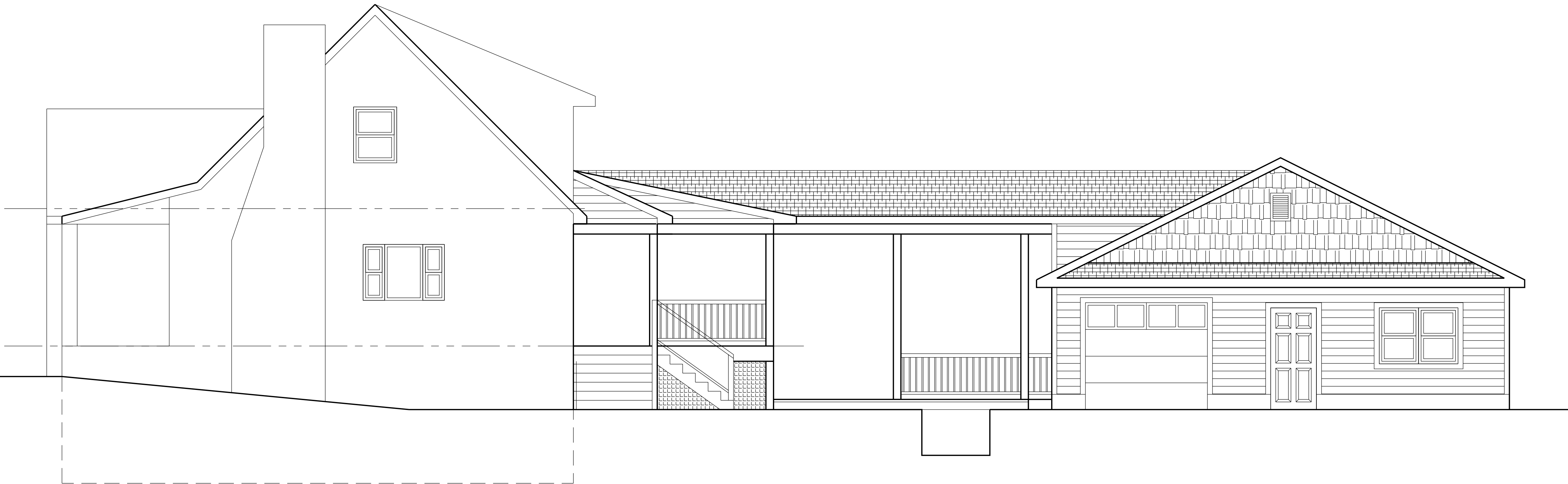




EXTERIOR ELEVATION - FRONT

SCALE: 1/4" = 1'-0"

1



EXTERIOR ELEVATION - LEFT

SCALE: 1/4" = 1'-0"

2

EXTERIOR ELEVATION - RIGHT

SCALE: 1/4" = 1'-0"

3

NOTES



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FOUNTAIN RESIDENCE  
621 NORTH BROAD ST

SALEM, VIRGINIA

PROGRESS  
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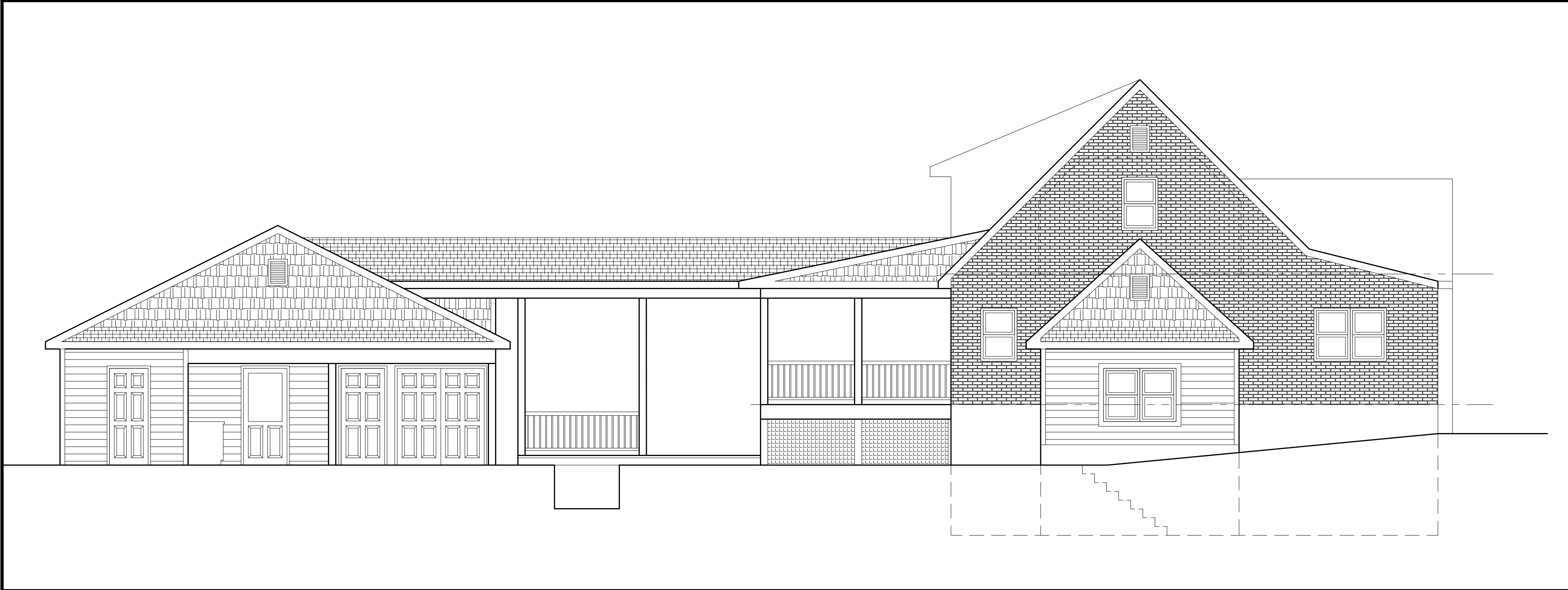
DATE: SEPTEMBER 23, 2024  
PROJECT ARCHITECT: DDD  
STRUCTURAL ENGINEER: DDD  
REVISIONS: NUMBER DATE

SHEET TITLE

ELEVATIONS

A501





EXTERIOR ELEVATION - LEFT

SCALE: 1/4" = 1'-0" 1



EXTERIOR ELEVATION - REAR

SCALE: 1/4" = 1'-0" 2

NOTES



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FOUNTAIN RESIDENCE  
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PROGRESS  
DRAWINGS FOR  
OWNER REVIEW

|                     |                    |
|---------------------|--------------------|
| DATE                | SEPTEMBER 23, 2024 |
| PROJECT ARCHITECT   | DDD                |
| STRUCTURAL ENGINEER |                    |
| REVISIONS           | NUMBER DATE        |

SHEET TITLE

ELEVATIONS

A502

**PAYMENT DATE**  
10/01/2024  
**COLLECTION STATION**  
Engineering/Inspections  
**RECEIVED FROM**  
Mr. and Mrs. Jason  
Fountain  
**DESCRIPTION**

**City of Salem**  
**P.O. Box 869**  
**Salem, VA 24153**

**BATCH NO.**  
2025-00001641  
**RECEIPT NO.**  
2025-00034068  
**CASHIER**  
Tammy Dunn

| PAYMENT CODE  | RECEIPT DESCRIPTION                                                                                                                                                                                                                               | TRANSACTION AMOUNT |
|---------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|
| CD LAND USE   | Land Use Application Fees<br>Special Exception fee for 621 N Broad Street                                                                                                                                                                         | \$500.00           |
|               | <div><div>Total Cash\$0.00</div><div>Total Check\$500.00</div><div>Total Charge\$0.00</div><div>Total Wire\$0.00</div><div>Total Other\$0.00</div><div>Total Remitted\$500.00</div><div>Change\$0.00</div><div>Total Received\$500.00</div></div> |                    |
| Total Amount: |                                                                                                                                                                                                                                                   | \$500.00           |
| Customer Copy |                                                                                                                                                                                                                                                   |                    |

**AFFADAVIT OF MAILING PURSUANT TO S15.2-2204  
CODE OF VIRGINIA**

**PLANNING COMMISSION  
NOVEMBER 13, 2024**

**ITEM #**

This is to certify that I mailed letters in reference to the Proposal to Permit Use request of Jason and Jennifer Fountain, property owners, for the issuance of a special exception permit to allow an accessory apartment on the property located at 621 North Broad Street (Tax Map # 70-2-1) to the following property owners and adjacent property owners on November 4, 2024 in the 2:00 p.m. mail:

JASON AND JENN FOUNTAIN  
21 N BROAD ST  
SALEM VA 24153

REBECCA B MULLINS  
702 N BROAD ST  
SALEM VA 24153

DAVID A DUNCAN  
CASEY N DUNCAN  
21 MACCIE ST  
SALEM VA 24153

JANNY HAROLD GARRETT  
330 ASHLEY DR  
SALEM VA 24101

RILEY NEWSOM  
703 N BROAD ST  
SALEM VA 24153

ELLEN M AGNER  
20 MACCIE ST  
SALEM VA 24153

ROLAND L LAZENBY  
224 CORONADO DR  
SALEM VA 24153

WILLIAM L REYNOLDS  
605 N BROAD ST  
SALEM VA 24153

LESTER E CROWDER  
613 N BROAD ST  
SALEM VA 24153

VILLIAMHART LLC  
08 PENDLETON DR  
SALEM VA 24153

JAMES C HUDSON  
CLIFTON R HUDSON  
606 N BROAD ST  
SALEM VA 24153

ARCHITECTURAL DESIGN SERVICES  
C/O DOLLY DOLLBERG  
4421 BANDY RD  
ROANOKE VA 24014

Signed *Jogetta R Prillaman* Date November 4, 2024

City of Salem  
Commonwealth of Virginia

The foregoing instrument was acknowledged before me this 4<sup>th</sup> day of November, 2024, by

*Jogetta R Prillaman*  
*Tammy R Dunn*  
Notary Public

My commission expires: October 31, 2028



## AFFIDAVIT OF PUBLICATION

State of Pennsylvania, County of Lancaster, ss:

Rachel Cozart, being first duly sworn, deposes and says: That (s)he is a duly authorized signatory of Column Software, PBC, duly authorized agent of The Roanoke Times, a newspaper printed and published in the City of Roanoke, County of Roanoke, State of Virginia, and that this affidavit is Page 1 of 2 with the full text of the sworn-to notice set forth on the pages that follow, and the hereto attached:

### **PUBLICATION DATES:**

Nov. 1, 2024, Nov. 4, 2024

**NOTICE ID:** wQ7jDBjOnRYQTp3rsrBU

**PUBLISHER ID:** COL-1000915

**NOTICE NAME:** NOTICE OF PUBLIC HEARING

**Publication Fee:** 1684.13

**Ad Size:** 2 X 78 L

**Category:** General Legal Notice

Under penalty of perjury, I, the undersigned affiant swear or affirm that the statements above are true and accurate to the best of my knowledge and belief.

*Rachel Cozart*

(Signed) \_\_\_\_\_

### **VERIFICATION**

State of Pennsylvania  
County of Lancaster

Commonwealth of Pennsylvania - Notary Seal  
Nicole Burkholder, Notary Public  
Lancaster County  
My commission expires March 30, 2027  
Commission Number 1342120

Subscribed in my presence and sworn to before me on this: 11/06/2024

*Nicole Burkholder*

Notary Public

Notarized remotely online using communication technology via Proof.



## NOTICE OF PUBLIC HEARING

### PLANNING COMMISSION OF THE CITY OF SALEM AND COUNCIL OF THE CITY OF SALEM

Notice is hereby given to all interested persons that the Planning Commission of the City of Salem, Virginia, and the Council of the City of Salem, Virginia, pursuant to Section 15.2-2204, Code of Virginia (1950), as amended, will hold a joint public hearing at a special meeting on November 13, 2024, at 7:00 p.m., in the Community Room, Salem Civic Center, 1001 Roanoke Boulevard, in the City of Salem, Virginia 24153, at which time citizens shall have the opportunity to be heard pursuant to Section 15.2-2285, Code of Virginia (1950), as amended and, the CODE OF THE CITY OF SALEM, VIRGINIA with respect to the following Rezoning Application:

1. Consider the request of Jason N. and Jennifer C. Fountain, property owners, for the issuance of a Special Exception Permit to allow an accessory apartment on the property located at 621 North Broad Street, (Tax Map # 70-2-1).
2. Consider the request of Virginia Baptist Children's Home and Family Services d/b/a HopeTree Family Services (Salem CI) f/k/a The Virginia Baptist Children's Home f/k/a Baptist Orphanage of Virginia, property owner, for rezoning the properties located at the 1000 block of Red Lane and a portion of 860 Mount Vernon Lane, Salem, Virginia 24153 (Tax Map Nos. 41-1-1, 41-1-2, 41-1-3, 41-1-4, 41-1-5, 41-1-6, and a portion of 44-3-10) from RSF Residential Single Family to PUD Planned Unit District.

#### Description of the Rezoning Application

- a. The owner of the property that is the subject of the Rezoning Application is: Virginia Baptist Children's Home and Family Services d/b/a HopeTree Family Services (Salem CI) f/k/a The Virginia Baptist Children's Home f/k/a Baptist Orphanage of Virginia.
- b. The property includes 62.318 acres; Tax Map Numbers: 41-1-1, 41-1-2, 41-1-3, 41-1-4, 41-1-5, 41-1-6 and a portion of 44-3-10. The street address of the property is: 1000 block of Red Lane and a portion of 860 Mount Vernon Lane, Salem, Virginia 24153.
- c. The Rezoning Application is substantially similar to the Rezoning Application filed on December 1, 2023, and approved by City Council on June 24, 2024.
- d. The Rezoning Application requests that the City of Salem ordain, reordain, amend, reamend, adopt and/or readopt the rezoning of the property from Residential Single Family (RSF) to Planned Unit District (PUD) as described in the Rezoning Application.
- e. The Rezoning Application provides for:
  1. The maximum number of residential units is 340.
  2. The maximum number of hotel rooms is 34.
  3. The maximum total square footage of retail and restaurant uses is 15,000 square feet.
  4. The maximum total square footage of office and other commercial uses (not including hotel and restaurant uses) is 35,000 square feet.
  5. The total unadjusted traffic generation for new uses on the site shall not exceed 4,037 trips per day.
  6. Significant open space areas retained on the property.

#### Notice of Intent

The Planning Commission gives notice of its intent to consider the applications and make recommendations to the City Council on November 13, 2024.

The City Council gives notice of its intent to consider the Rezoning Application on first reading and the Special Exception Permit on November 25, 2024, and consider the Rezoning Application on second reading and for adoption on December 9, 2024.

#### Documents Available for Examination

Copies of the applications and the proposed plans, ordinances, or amendments may be examined in the Office of Community Development, 21 South Bruffey Street, Salem, Virginia 24153.

PLANNING COMMISSION OF THE CITY OF SALEM AND  
THE COUNCIL OF THE CITY OF SALEM, VIRGINIA

BY:  
Christopher J. Dorsey  
Executive Secretary

BY:  
Robert Light  
Clerk of Council  
COL-1000915



Item #: 2.B.

AT A SPECIAL MEETING/JOINT PUBLIC HEARING OF THE COUNCIL OF THE CITY OF SALEM WITH PLANNING COMMISSION, DURING THEIR REGULAR MEETING, HELD IN THE COMMUNITY ROOM, SALEM CIVIC CENTER, 1001 ROANOKE BOULEVARD, SALEM, VIRGINIA, 24153

**MEETING DATE:** November 13, 2024

**AGENDA ITEM:** **Amendment to the Zoning Ordinance**  
Hold a joint public hearing with the Planning Commission regarding the request of Virginia Baptist Children's Home and Family Services d/b/a Hopetree Family Services (Salem CI) f/k/a The Virginia Baptist Children's Home f/k/a Baptist Orphanage of Virginia, property owner, for rezoning the properties located at 1000 block Red Lane and a portion of 860 Mount Vernon Lane (Tax Map #'s 41-1-1, 41-1-2, 41-1-3, 41-1-4, 41-1-5, 41-1-6, and a portion of 44-3-10) from RSF Residential Single Family District to PUD Planned Unit District with proffered conditions. (Advertised in the November 1 and 4, 2024, issues of The Roanoke Times.)

**SUBMITTED BY:** Mary Ellen Wines, Planning & Zoning Administrator

**SUMMARY OF INFORMATION:**

On August 30, 2024, HopeTree submitted a rezoning application to the Community Development Department. That application included the proffered PUD document and supporting documentation, with the only change to the proffered PUD document being an update to the formal name of the property owner. That application's supporting documentation can be found in the following attachments.

On October 25, 2024, HopeTree submitted an addendum to the August 30, 2024, application which contained a letter highlighting the addition of a supplemental phasing plan. That supplemental phasing plan replaced the previous phasing plan in the proffered PUD document, and it can be found on the pages labeled EX-A and EX-B.

To summarize, the complete list of changes from the previously approved PUD document to the proposed proffered PUD document include:

1. An update to the applicant's/property owner's name (Page 3)
2. An adjusted phasing plan (replacement of Page 25 with pages EX-A and EX-B).

On Monday, November 4, 2024, Planning and Zoning staff provided a list of clarifications for the applicant to address. On Tuesday, November 5, 2024, the applicant responded to that list. The details of those clarifications can be found in the following attachments.

**STAFF RECOMMENDATION:**

Hold a joint public hearing with the Planning Commission on this item.

**ATTACHMENTS:**

1. HopeTree Rezoning Narrative August 2024
2. HopeTree Rezoning Application August 2024
3. HopeTree Property Exhibit August 2024
4. HopeTree Property Ownership Exhibit August 2024
5. HopeTree Legal Description August 2024
6. HopeTree Traffic Study
7. HopeTree Traffic Impact Study - M & C Letter
8. Addendum Letter to PUD Application October 2024
9. Staff comments to applicant November 2024
10. Applicant response to staff comments November 2024
11. HopeTree final PUD document November 2024
12. Roanoke Times Affidavit
13. Affidavit

## **REZONING NARRATIVE**

The Owner, VIRGINIA BAPTIST CHILDREN'S HOME AND FAMILY SERVICES d/b/a HOPETREE FAMILY SERVICES (SALEM CI) f/k/a THE VIRGINIA BAPTIST CHILDREN'S HOME f/k/a BAPTIST ORPHANAGE OF VIRGINIA ("HopeTree" or "Owner"), provides this Rezoning Narrative as part of its new Rezoning Application.

Being part of the Salem community for over 100 years, HopeTree values its community partners in carrying out its mission "through God's love, [to] foster hope by empowering families, youth, and adults to lead fulfilling lives." To that end, HopeTree is committed to remaining as an integral part of this community for years to come as it works to fulfil those goals.

Due to litigation that was filed in July 2024, HopeTree is now aware of allegations of procedural concerns with the rezoning approval process from the previous rezoning application that HopeTree filed on December 1, 2023. The original application, dated November 30, 2023, was ultimately approved and adopted by City Council on June 24, 2024, as an amendment to Section 106-110, Article I, Chapter 106, of the Code of the City of Salem, Virginia. HopeTree does not wish for any uncertainties surrounding the procedural processes to detract from its efforts on behalf of those HopeTree serves.

For this reason, HopeTree is filing this new Rezoning Application to again request that the City of Salem approve the enclosed Rezoning plan. This new Application is substantially similar to the original application filed on December 1, 2023, as approved by City Council on June 24, 2024. HopeTree makes this filing to provide certainty in, and to show its community partners and supporters that it values the Salem community's perspective of, this rezoning process. HopeTree is optimistic that the community, Planning Commission, and City Council will support its future vision as defined in this filing.

By submitting this new Rezoning Application, HopeTree, as Owner, is requesting that the City of Salem ordain, reordain, amend, reamend, adopt and/or readopt Section 106-110, Article I, Chapter 106, of the Code of the City of Salem, Virginia, as outlined in this Rezoning Application. The Owner requests that in reviewing this new Rezoning Application, the City of Salem consider and include in its records, all the Planning Commission, City Staff, citizen comments, and any and all materials utilized in reviewing the similar rezoning application that Owner filed on December 1, 2023 (dated November 30, 2023).

As outlined in the PUD document, the vision for this property is to allow for the development of a fully integrated, mixed-use, pedestrian-oriented neighborhood woven into the campus of buildings and surrounding open space that exists on the property, while being sensitive to, and providing meaningful connections to, the surrounding neighborhoods in the community.

On behalf of the Owner, we are providing the narrative below as supplemental information to support the rezoning application and Planned Unit District (PUD) document with associated zoning information and guidelines for the development. This request is to rezone existing Tax Parcels 41-1-1, 41-1-2, 41-1-3, 41-1-4, 41-1-5, 41-1-6, and a portion of existing Tax Parcel 44-3-10 from RSF-Residential Single Family, to PUD-Planned Unit District for a proposed mixed-use neighborhood to be developed on the property.

### **Project Narrative**

The portion of the property that is proposed to be rezoned is approximately 62.318 acres along Red Lane and East Carrollton Avenue. The parcel is owned, operated, and occupied by Virginia Baptist Children's Home and Family Services d/b/a HopeTree Family Services (Salem CI) ("Owner"), formerly known as Virginia Baptist Children's Home. The property offers a wide range of ministries for at-risk children and youth and their families. These services include Treatment Foster Care, the Academy secondary educational

program, and Therapeutic Group Home. Facilities on the property also serve the needs of adults with intellectual disabilities and their families through the Developmental Disabilities Ministry.

Over the last several decades, the use of this property has changed significantly, mainly due to a changing regulatory environment surrounding the specific types of services that have occupied the Salem campus. At its peak, when the property was an orphanage, the campus was home to more than 400 youth ranging in age from 5 to 18. New regulations have discouraged the type of large-scale group home that existed on this campus in the past and have moved instead toward smaller-scale facilities that are integrated with the surrounding communities in which they are located. Because of limits from licensing bodies, the campus is now limited to housing no more than 16 youth residents ages 13 to 17. In the past, youth would live on the campus for years until they turned 18. Today, youth residents typically stay no more than 6 months before being moved to another setting or back to their home.

Care for youth and adults is moving away from a congregate, campus-style setting. Today, most services are offered in the communities in which they already live. As a result, the Owner no longer has a need for the large amount of property that exists at this site; however, there is a strong desire to stay true to their roots and maintain a presence in this location.

The Board of Directors has been discussing options for the Salem campus since 2007. Several recommendations have been considered over the years, including selling the Salem campus property and moving elsewhere, or selling a portion of property along the Red Lane frontage for development. The proposed rezoning request is a result of the Owner's desire to "do more" with the property and to create something that will benefit the Owner, the City of Salem, and its residents for years to come.

The proposed PUD rezoning and associated development will allow the Owner to remain on the property where they have so much history, while integrating existing services with the proposed development, which is in keeping with the intent of the new regulations. The Owner is currently teamed with a residential home builder (Stateson Homes) and commercial builder (Snyder & Associates), who are providing construction expertise on the project.

#### Existing Conditions

Existing improvements on the site include approximately 20 buildings of varying condition, drive aisles and parking areas, pool, tennis and basketball courts, two existing baseball fields near Red Lane, picnic shelter, above-ground stormwater management facility, and other miscellaneous improvements. The existing improvements have served various purposes for the Owner over the years and many of them are under-utilized or no longer utilized at all.

Many of the buildings are centered around the core area in the center of the site. Six of these buildings are currently vacant and will not be used again by the Owner, and were previously planned to be demolished. The proposed development envisions preserving as many of these structures as possible and converting them to residential or commercial uses that the entire community can benefit from. Utilizing the existing structures will preserve the unique character of the campus and allow this existing infrastructure to be repurposed for the intended new uses.

Existing topography is rolling with a ridge through the middle of the site running north to south that contains much of the existing development. There is an existing pond and two existing creeks on the property. One creek is on the west side to the south of the pond and the other creek is located in the southeast corner of the site. These features are anticipated to remain and have been incorporated into the Master Plan. There is a wooded area near the pond and creek along the western side of the property and this vegetation will be preserved to the extent practical.



The property has frontage on the public rights-of-way of Red Lane, East Carrollton Avenue, North Broad Street, and Mount Vernon Avenue. This property is designated for residential use on the City of Salem Future Land Use Map dated June 11, 2012. The property is surrounded by Interstate 81 to the north and existing residential development on other sides.

#### Community Vision

The intent of this project is to preserve the existing campus and buildings to the extent practical (including the buildings that were previously planned to be demolished) and provide new and infill development, where appropriate. Guiding principles of the project are to create a new community that minimizes traffic congestion, suburban sprawl, site grading, infrastructure costs, and preserves natural features and amenities. The plan for the proposed project is based on neighborhood design and development conventions which were widely used in the United States up until the 1940s and were based on the principles outlined throughout the PUD document.

A design charette was held in October 2022 to solicit input from, and engage with, adjacent property owners, City staff, elected City officials, and other stakeholders for the project. While engaging with the community during the development of the Master Plan, it was noted that the existing neighborhood lacks pedestrian amenities such as sidewalks or trails. Residents currently walk along Red Lane and the speed of traffic along this road was also cited as a major concern. It is the intent of the project to reduce vehicle trips and encourage pedestrian activity by limiting the width of vehicular drives, providing on-street parking where possible, and providing a network of sidewalks and trails throughout the property. In addition to these design principles, the project also proposes to install on-street parking along the frontage of Red Lane, which will slow traffic and provide additional parking opportunities, and to install a new sidewalk along the frontage of Red Lane to provide safe pedestrian accommodations for the surrounding community.

#### Density

The City of Salem has very limited land resources remaining to be developed and it is paramount to utilize these remaining land resources to their true potential. The proposed PUD plan allows for the property to be developed to its potential while also being sensitive to the existing community and its residents. These are guiding principles of this PUD plan.

The density of the development will be limited by what is allowed in the PUD document. The total number of residential units shall not exceed 340. Residential uses will make up the majority of the development with the proposed commercial uses and existing institutional uses being integrated into the overall development. The commercial uses within the development will be determined based on what this community can support but is anticipated to consist of smaller users that are integrated into the neighborhood at an appropriate scale and in thoughtful locations.

Approximately 40% of the property will be preserved either in a natural state or as public or private open space areas. This includes the large area on the west side of the site that contains the existing pond, creek, and natural vegetation. Several interior open space areas will be provided as well, including the proposed lawn area near the center of the site.

#### Development Guidelines

The development of the property will be governed by the PUD document. Lot development regulations, architectural standards, etc. are provided within the document and will be enforceable throughout the development. Allowable uses are outlined in the Use Table that is provided within the PUD document.

#### Roads

Roads and drive aisles internal to the development will be private. On-street parking will be a preferred parking solution for the development and will be utilized where practical. All proposed roads will be paved,

and we will work with the appropriate City staff to ensure that sufficient access for emergency and trash collection vehicles is provided. A network of sidewalks will be provided throughout the development to encourage pedestrian activity and connectivity, as this is a central theme of the project.

On-street parking and new sidewalk will be provided on Red Lane along the frontage of the property. The intent of these improvements is to slow traffic along this section of Red Lane, provide additional public parking opportunities, and to provide a dedicated pedestrian accommodation where one does not exist now. This section of Red Lane has a significant amount of pedestrian activity, and these improvements will serve existing and new residents.

#### Access

There are existing vehicular access points on Red Lane (2 locations) and East Carrollton Avenue (1 location). Additional access points are proposed along Red Lane, East Carrollton Avenue, and at the end of North Broad Street. One of the central themes within this development is to provide multiple access points to increase connectivity within the existing street grid pattern and to allow vehicular trips to be distributed to the existing road network more efficiently.

As requested by the City, a Traffic Study was prepared by Balzer and Associates, Inc., dated December 1, 2023, last revised February 1, 2024, that analyzes the development and impacts to three existing intersections (Red Lane/East Carrollton Avenue, East Carrollton Avenue/Mount Vernon Lane, and East Carrollton Avenue/North Broad Street) that are adjacent to the project. In addition to this, turn lane warrants have been analyzed for the existing and proposed entrances into the property. Traffic counts were conducted at two existing intersections to serve as the basis for the study. As outlined in the Traffic Study, the surrounding road network is sufficient to handle traffic from the proposed development and impacts to delay and level of service are minimal. The development does not meet any turn lane warrants at any of the proposed access points. Sight distance requirements will be required to be met with the final development plans.

The City of Salem Engineering Department sent the traffic study to a third party reviewer, Mattern & Craig. Mattern and Craig issued a comment letter dated December 20, 2023 requesting additional information and analysis. The comments were addressed, and Mattern & Craig issued a letter on February 20, 2024 indicating that the revised study addressed the concerns with the original study and that the study conforms with industry standards. A copy of this letter is included with the rezoning application.

#### Utilities

This project will be served by public water and sewer. As discussed with the City of Salem Water and Sewer Department, sufficient capacity exists within the existing public water and sewer systems to serve the proposed development.

Public water and sewer will be extended through the property to serve the existing and proposed buildings and replace the existing private utility systems that are currently in place. New public water mains are anticipated to provide additional interconnectivity and redundancy in the system, which will improve service to the property and the surrounding area.

#### Comprehensive Development Plan

This project is in conformance with many of the Goals and Objectives defined in the City of Salem's current Comprehensive Plan. The development pattern for this project is sensitive to the existing surrounding neighborhoods by centering the most intense uses near the core of the property furthest from the existing residential houses. The least intense residential uses are located around the perimeter of the property, closest to the existing roadways and existing residential homes. The variety of housing types acknowledges and addresses the need for new housing and varying types of housing in the City of Salem. The intent of the

project is to maximize the development potential of the most developable portions of the property and to preserve the most environmentally sensitive areas of the property. The preservation of open space, development of pedestrian amenities, and extensive landscaping will all enhance the neighborhood and directly address the goals of improving the beauty and appearance of the City of Salem and Preserving and Enhancing Open Space on Private properties.

#### Summary

The proposed development regulations and Master Plan are fully outlined in the PUD document, attached to this application. It is the intent that this be the official document that will guide the development of this property.

The Owner has repeatedly stated that its three main goals for the project are “to honor the history of the organization on this campus, to position us for the future, and to make our community proud.” We are extremely excited to submit this application for rezoning. This project provides an excellent opportunity for the City of Salem to gain a new mixed-use community that will serve existing and future residents of Salem. The proposed project will provide many different housing types, while being sensitive to the surrounding residential neighborhoods, preserving important natural features, and providing services and amenities that will benefit the entire community.

**Pre-application Meeting (optional)**

- Meetings with the Community Development Staff are recommended prior to submittal of a rezoning application. Please bring a plat to the meeting with a sketch of your proposal.

**Application Submittal**

- The application deadline is the first of the month for inclusion on the following month's agenda. If the first falls on a weekend or holiday, the application deadline will be the following business day.
- When submitting an application be sure to include the following: a complete application, plat of the subject property, legal description that includes metes and bounds, and supplementary information to support the request (such as conceptual plans and building elevations). Please note: incomplete applications will not be accepted and will be returned to the applicant.
- The application fee is due at time of submittal. (See Page 4)
- PLEASE NOTE: As per 106-520(C) of the City of Salem Zoning Ordinance no application shall be accepted for a lot or parcel that does not comply with the minimum lot area, width, or frontage requirements of the requested zoning district. A variance from the Board of Zoning Appeals must be obtained prior to the submission of a rezoning application.

**Application Distribution for City Review**

- Complete applications may be routed to City departments for review.

**Staff/Applicant Meeting**

- The staff may contact the applicant to schedule a meeting to discuss comments provided by reviewing agencies, to request additional information or plan revisions, and to negotiate proffers.

**Planning Commission**

- Revised conceptual plans and draft proffers must be submitted prior to the Planning Commission meeting. Proffers and conceptual plans may be revised in accordance with Staff's recommendations, and revisions incorporating the staff's recommendations must be submitted prior to the Planning Commission meeting.
- A staff report and recommendation is included in the Planning Commission packet. The packet is distributed approximately 1 week prior to the Planning Commission meeting.
- The Planning Commission meets on the 1<sup>st</sup> Wednesday after the 1<sup>st</sup> City Council meeting of the month.
- Following a public hearing on the rezoning case, the Planning Commission may recommend approval, approval with revisions to the proffers, denial, or deferral of the application.

**City Council**

- Signed and notarized final proffers must be submitted prior to the City Council meeting.
- A staff report containing the recommendation of the Planning Commission and Staff is sent to the City Council prior to the meeting.
- The City Council typically hears rezoning cases on the 4th Monday of every month. Cases are usually heard by Council at the meeting following the Planning Commission meeting.
- Following a public hearing on the case, the City Council may vote to approve, approve with proffered conditions, deny, defer the application to another meeting, or remand the application back to the Planning Commission for further consideration.

**ATTACHMENTS - For ALL REQUESTS you must submit the following electronically:**

- a. **A fully completed signed application.**
- b. **Acknowledgement of Application Fee Payment Procedure** (Page 4)
- c. **Signed Proffer Statement if applicable** (Pages 6 & 7)
- d. **A plat of the subject property**, which accurately reflects the current property boundaries, is drawn to scale, and shows existing structures. (Typically, available from the City Clerk's Office.)
- e. **Responses to questions on Page 5**
- f. **Historic Impact Information** (if any)
- g. **For applications requiring plans**, please submit electronically only. No hard copies will be accepted.
- h. **Check here** if the conceptual plan will serve as the preliminary plat. ☐

**NOTE:** Elevations will be required with new development.

**TO THE APPLICANT:**

It is the policy of the City of Salem City Council, the City of Salem Planning Commission, and City of Salem Board of Zoning Appeals to require a property to be posted when a zoning action is being considered. Such a posting notifies the general public of an impending action and the location being considered.

It is incumbent on you, the applicant, to ensure the sign is in the proper location and remains there until an action has taken place. Consequently, the procedure for posting is as follows:

1. The Community Development Staff will post the sign on your property.
2. You should check the location of the sign to make certain it is in the right place on your property. If it is not, notify the Community Development Office as soon as possible.
3. You should check periodically to ensure the safety of the sign. If it is stolen or otherwise harmed, notify the Community Development Office as soon as possible.

In submitting this rezoning application, you hereby grant permission to the agents and employees of the City of Salem to enter the referenced property for the purposes of processing and reviewing the above application.

Should you have any questions regarding this policy, please contact a member of Community Development.



## City of Salem Community Development Application

### Request for REZONING or CONDITIONAL REZONING

Case #: \_\_\_\_\_

| APPLICANT INFORMATION                                                                                                                                                                                                                                                                                                                  |                                                                                                                                            |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Owner: VIRGINIA BAPTIST CHILDREN'S HOME AND FAMILY SERVICES d/b/a HOPETREE FAMILY SERVICES<br/> <small>(SALEM CI) f/k/a THE VIRGINIA BAPTIST CHILDREN'S HOME f/k/a BAPTIST ORPHANAGE OF VIRGINIA</small></p> <p>Contact Name: Jon Morris, President &amp; CEO of HopeTree Family Services</p> <p>Address: 860 Mount Vernon Lane</p> | <p>Telephone No. (540) 389-5468</p> <p>Fax No. _____</p> <p>Email Address <a href="mailto:jonm@hopetreefs.org">jonm@hopetreefs.org</a></p> |
| <p>Applicant/Contract Purchaser: Owner (see above), submitted by Owner's Agent, Jon Morris, President and CEO</p> <p>Contact Name: _____</p> <p>Address: _____</p>                                                                                                                                                                     | <p>Telephone No. _____</p> <p>Fax No. _____</p> <p>Email Address _____</p>                                                                 |

| PARCEL INFORMATION                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                  | For <u>multiple</u> parcels, please attach a page <input type="checkbox"/> |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|
| <p>(Tax ID #'s) 41-1-1, 41-1-2, 41-1-3, 41-1-4<br/>           41-1-5, 41-1-6, portion of 44-3-10</p> <p>Deed Book 210003146 Page _____</p> <p>Subdivision _____</p> <p>Location Description (Street Address, if applicable) _____<br/>           860 Mount Vernon Lane</p> | <p>Total Area (acres/square feet) 62.318 acres</p> <p>Current Zoning RSF</p> <p>Requested Zoning PUD</p> <p>Requested Use Mixed-Use</p> <p>Current Use Institutional</p> <p><input type="checkbox"/> Conditional Zoning Request: See Attached Proffer sheets</p> |                                                                            |

| SIGNATURE OF OWNER <input checked="" type="checkbox"/> CONTRACT PURCHASER <input type="checkbox"/> (attach contract) <input checked="" type="checkbox"/> AGENT OF OWNER                                                                                                                                            |                                       |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------|
| <p>As owner or authorized agent of this property, I hereby certify that this application is complete and accurate to the best of my knowledge, and I hereby grant permission to the agents and employees of the City of Salem to enter the property for the purposes of processing and reviewing this request.</p> |                                       |
| <p>Signature </p> <p>Print Name Jon Morris, President &amp; CEO</p> <p>Signature _____</p> <p>Print Name _____</p>                                                                                                                                                                                                 | <p>Date 8/30/24</p> <p>Date _____</p> |

| QUESTIONS/ LETTERS/ SHOULD BE FORWARDED TO THE FOLLOWING**:                                                                                                    |                                                                                                                                            |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Name Jon Morris</p> <p>Address: HopeTree Family Services<br/>           860 Mount Vernon Lane<br/>           Salem, VA 24153</p>                            | <p>Telephone No. (540) 389-5468</p> <p>Fax No. _____</p> <p>Email Address <a href="mailto:jonm@hopetreefs.org">jonm@hopetreefs.org</a></p> |
| <p><small>**It is the responsibility of the contact person to provide copies of all correspondence to other interested parties to the application.</small></p> |                                                                                                                                            |

## ACKNOWLEDGEMENT OF APPLICATION FEE PAYMENT PROCEDURE

Application fees must be submitted at the time of submittal. I hereby acknowledge that this application is not complete until the payment for all applicable fees has been received by the City of Salem Community Development Department. I acknowledge that I am responsible for ensuring that such fees are received by the City of Salem. I further acknowledge that any application fee submitted after the deadline shall result in the application being considered filed for the next month's meetings.

Signature of applicant/authorized agent \_\_\_\_\_

Date: \_\_\_\_\_

8/30/2024

Print Name: Jon Morris, President & CEO

Signature of applicant/authorized agent \_\_\_\_\_

Date: \_\_\_\_\_

Print Name: \_\_\_\_\_

If you would like your correspondence emailed and/or faxed, please make selections, and provide the information below:

☐ Email \_\_\_\_\_

☐ Fax: \_\_\_\_\_

### FEES:

All application fees must be paid at the time of submittal. Please make checks payable to the City of Salem:

**Rezoning application fee**

**\$1,000**

### FOR STAFF USE ONLY

Staff Reviewer: \_\_\_\_\_

Application Complete? ☐ YES ☐ NO

Date: \_\_\_\_\_

**PLEASE RESPOND FOR ALL REZONING APPLICATIONS:**

1. What is the Future Land Use Designation for the subject property? Residential
2. Describe in detail the proposed use of the property. See attached narrative.  
\_\_\_\_\_  
\_\_\_\_\_
3. List any sensitive environmental or unique features on the property. Are there any high voltage transmission lines, public utility lines, or others? See attached narrative.  
\_\_\_\_\_  
\_\_\_\_\_
4. Is the subject property located within the Floodplain District? ☐ YES ☒ NO If yes, describe the proposed measures for meeting the standards of the Floodplain Ordinance. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
5. Is the subject property listed as a historic structure or located within a historic district? ☐ YES ☒ NO  
If yes, describe the proposed measures for meeting the standards of the Department of Historic Resources.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
6. Have you provided a conceptual plan of the proposed development, including general lot configurations and road locations? Are the proposed lot sizes compatible with existing parcel sizes in the area? Conceptual Master Plan  
is provided within the P.U.D. guidelines illustrating the general layout of streets, development areas, etc. and the  
P.U.D. document sets forth development requirements.

**PLEASE RESPOND FOR COMMERCIAL REZONING APPLICATIONS**

1. What provisions will be made to ensure safe and adequate access to the subject property? See attached narrative.  
\_\_\_\_\_  
\_\_\_\_\_
2. How will the traffic impact of this development be addressed? See attached narrative and traffic study.  
\_\_\_\_\_  
\_\_\_\_\_
3. Describe why the proposed use is desirable and appropriate for the area. What measure will be taken to assure that the proposed use will not have a negative impact on the surrounding vicinity? See attached narrative.  
\_\_\_\_\_  
\_\_\_\_\_
4. What type of signage is proposed for the site? Signage to be determined and will be developed in accordance with City Code.
5. Have architectural/building elevations been submitted with this application? See P.U.D. document.



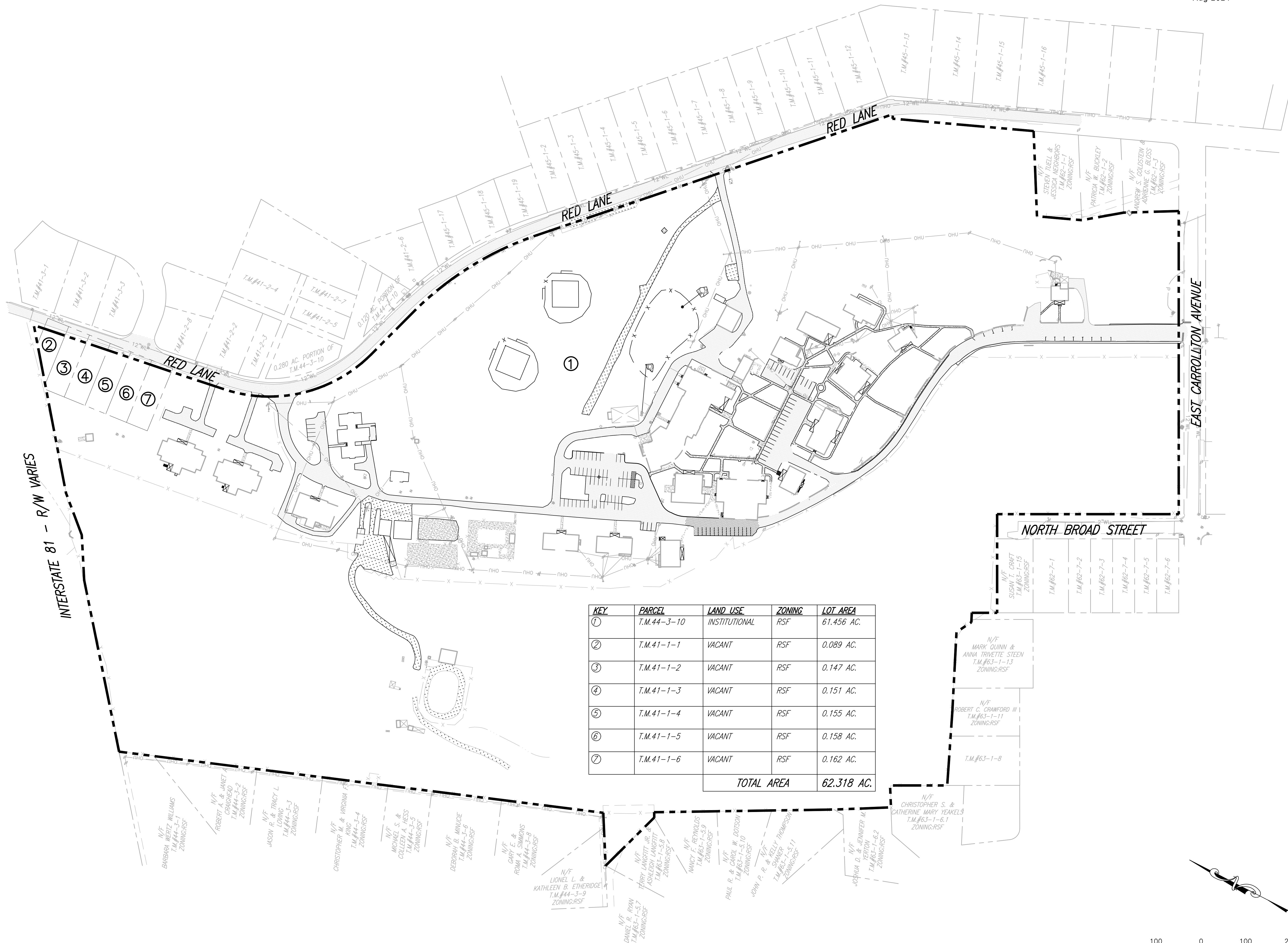
**BALZER  
& ASSOCIATES**  
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ENGINEERS / SURVEYORS

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1208 Corporate Circle  
Roanoke, VA 24018  
540.772.9580

Aug 2024



HOPETREE PLANNED USE DISTRICT

PROPERTY EXHIBIT

CITY OF SALEM, VIRGINIA  
MOUNT VERNON AVENUE

DRAWN BY AAB  
DESIGNED BY CPB  
CHECKED BY CPB  
DATE 8/30/2024  
SCALE 1" = 100'  
REVISIONS

**EX-A**  
PROJECT NO. 04220029.00





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PRELIMINARY

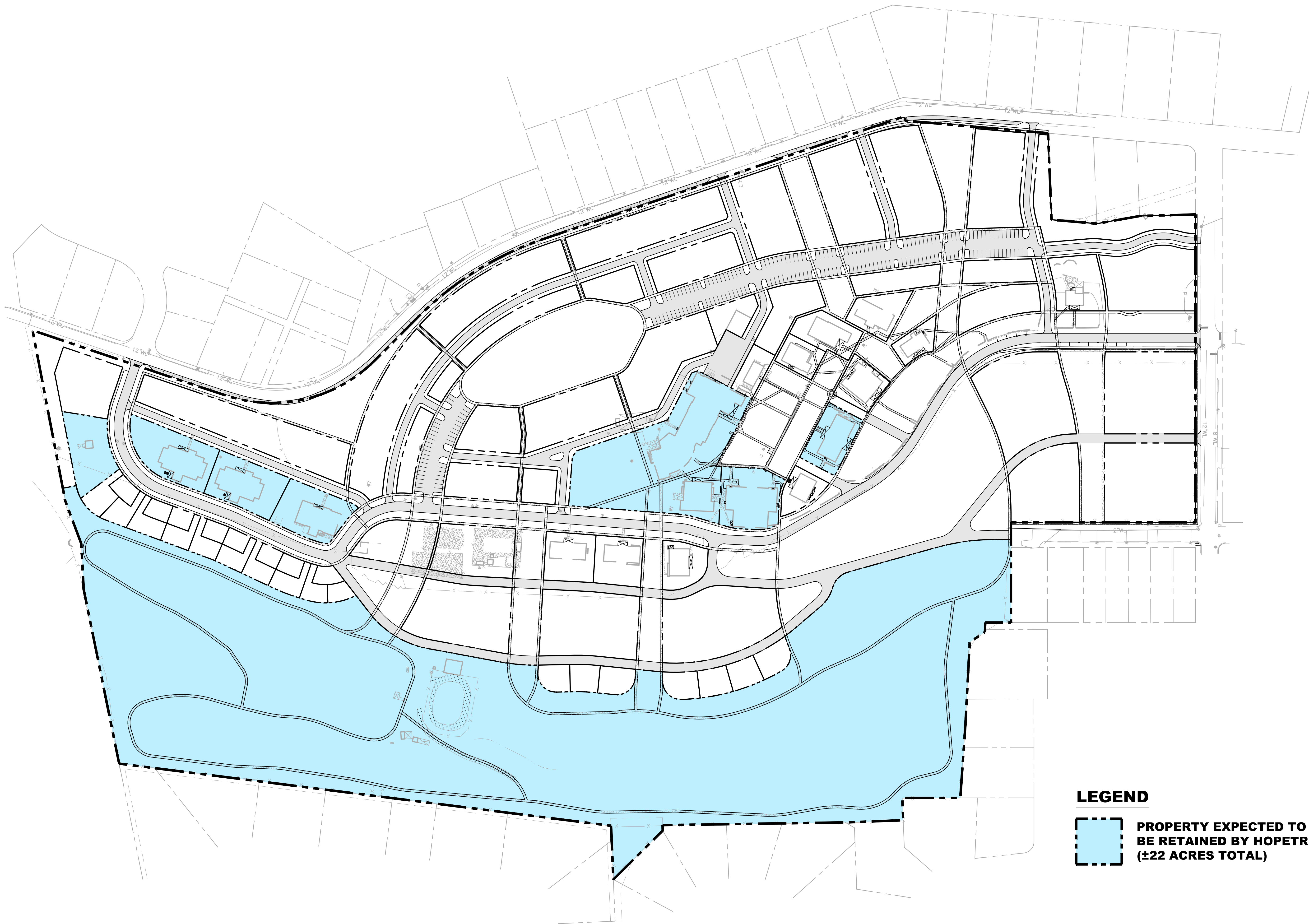
HOPETREE

PROPERTY OWNERSHIP EXHIBIT

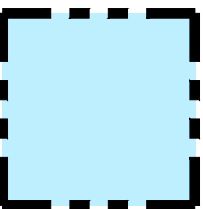
CITY OF SALEM, VIRGINIA  
MOUNT VERNON AVENUE

|             |           |
|-------------|-----------|
| DRAWN BY    | AAB       |
| DESIGNED BY | CPB       |
| CHECKED BY  | CPB       |
| DATE        | 2/9/2024  |
| SCALE       | 1" = 100' |
| REVISIONS   |           |

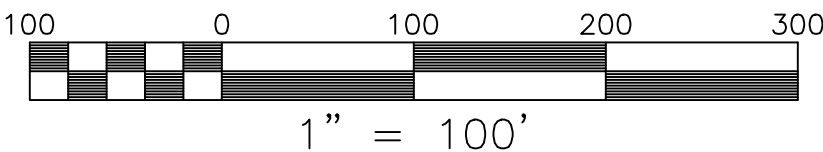
**EX-A**  
PROJECT NO. 04220029.00



**LEGEND**



**PROPERTY EXPECTED TO  
BE RETAINED BY HOPETREE  
(±22 ACRES TOTAL)**





## **LEGAL DESCRIPTION OF PROPERTY TO BE REZONED**

Beginning at a point at the intersection of the North line of West Carrollton Avenue and the East line of North Broad Street,  
 thence along the East line of North Broad Street N 27°07'26" W a distance of 405.00' to a point at the terminus of North Broad Street;  
 thence S 62°50'44" W a distance of 220.00' to a point;  
 thence N 27°07'26" W a distance of 56.58' to a point;  
 thence S 65°21'08" W a distance of 20.97' to a point;  
 thence N 60°42'55" W a distance of 39.80' to a point;  
 thence S 65°51'41" W a distance of 177.30' to a point;  
 thence S 66°49'50" W a distance of 165.36' to a point;  
 thence N 27°06'48" W a distance of 127.34' to a point;  
 thence S 60°36'41" W a distance of 49.06' to a point;  
 thence N 29°18'28" W a distance of 127.22' to a point;  
 thence N 27°59'13" W a distance of 401.04' to a point;  
 thence S 61°59'55" W a distance of 12.00' to a point;  
 thence N 71°49'41" W a distance of 152.51' to a point;  
 thence N 60°22'31" E a distance of 118.03' to a point;  
 thence N 19°56'17" W a distance of 1088.42' to a point on the South line of Interstate 81;  
 thence along the South line of Interstate 81 N 51°21'30" E a distance of 390.06' to a point;  
 thence N 59°46'44" E a distance of 100.89' to a point;  
 thence N 42°21'32" E a distance of 100.52' to a point;  
 thence N 52°01'06" E a distance of 380.85' to a point at the intersection of the South line of Interstate 81 and the West line of Red Lane;  
 thence along the West line of Red Lane S 08°26'28" E a distance of 365.95' to a point;  
 thence S 08°55'13" E a distance of 83.12' to a point;  
 thence with a curve turning to the left with an arc length of 353.82', with a radius of 320.00', with a chord bearing of S 40°35'45" E, with a chord length of 336.07', to a point;  
 thence S 72°16'18" E a distance of 141.44' to a point;  
 thence with a non-tangent curve turning to the right with an arc length of 318.24', with a radius of 710.00', with a chord bearing of S 58°42'30" E, with a chord length of 315.58', to a point;  
 thence S 45°54'08" E a distance of 839.41' to a point ;  
 thence S 67°53'11" W a distance of 9.99' to a point;  
 thence S 22°06'49" E a distance of 315.70' to a point;  
 thence leaving the West line of Red Lane S 60°35'11" W a distance of 190.10' to a point;  
 thence S 22°06'49" E a distance of 100.00' to a point;  
 thence S 37°19'34" E a distance of 95.13' to a point;  
 thence S 28°44'42" E a distance of 122.90' to a point on the North line of West Carrollton Avenue;  
 thence along the North line of West Carrollton Avenue S 62°51'48" W a distance of 676.02' to a point;  
 which is the point of beginning,  
 having an area of 2,714,568 square feet, 62.318 acres, being known as part of tax map number 44-3-10 and lying in the City of Salem, Virginia.



# HOPETREE PLANNED UNIT DEVELOPMENT

## Traffic Impact Study

**B&A Project #04220029.00**

Date: December 1, 2023

Revised: February 2, 2024

Planners | Architects | Engineers | Surveyors

1208 Corporate Circle, Roanoke, VA 24018

[www.balzer.cc](http://www.balzer.cc)

**TRAFFIC STUDY  
FOR**

**HOPETREE PLANNED  
UNIT DEVELOPMENT**

TAX MAP #: 44-3-10

**860 MOUNT VERNON LANE  
CITY OF SALEM, VIRGINIA**

**B&A PROJECT #04220029.00**

**DATE: December 1, 2023  
REVISED: February 2, 2024**



**PLANNERS ARCHITECTS ENGINEERS SURVEYORS**

1208 Corporate Circle Roanoke, Virginia 24018 Phone: (540) 772-9580



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## **1. Introduction**

HopeTree Family Services is proposing to rezone 62.318 acres of land located along Red Lane in the City of Salem (see Appendix A for vicinity map). The property is proposed to be rezoned from RSF, Residential Single Family, to PUD, Planned Unit Development. The P.U.D. Land Use Plan, prepared by Civic by Design, is included in Appendix B. The development will have a mix of residential and commercial use types. The maximum number of residential units allowed for this development is 340 and these are assumed to be broken down by type as outlined in the list below. Residential and commercial uses will be determined by market conditions and opportunities available at the time of development. The list below outlines the uses that have been assumed for the purposes of this traffic study.

- 115 Single-Family Detached Dwelling Units
- 140 Single-Family Attached Dwelling Units
- 85 Multi-Family Dwelling Units
- 60 Total Hotel Rooms
- 15,000 s.f. of Total General Office Space
- 7,500 s.f. of Total Restaurant Space

The breakdown of uses above is based on what is considered to be a reasonable and conservative expectation for the development based on the P.U.D. Land Use Plan. The actual breakdown will differ from these assumptions. It is recommended that projected trip generation be tracked as the development progresses for comparison to the traffic study. If the actual development results in significantly more traffic than what is included in these assumptions, then it may be necessary to update this study.

The site is located on the west side of Red Lane with East Carrollton Avenue to the south and Interstate 81 to the north. The property is described as City of Salem Tax Parcel #44-3-10. The development has several proposed existing and proposed entrances on Red Lane, East Carrollton Avenue, and North Broad Street.



As discussed with the City of Salem, the following intersections will be analyzed to determine levels of service with the proposed development:

- Red Lane and East Carrollton Avenue (Unsignalized)
- East Carrollton Avenue and Mount Vernon Lane (Unsignalized)
- East Carrollton Avenue and North Broad Street (Unsignalized)

All roads in the direct vicinity of the project are two-lane local roads that provide access between mostly residential areas. A mix of residential building types is present in this area, including single-family, two-family, townhome, and multi-family units. Roanoke College is located approximately 0.25 miles from the site to the southeast. The Main Street and downtown Salem commercial corridor is located approximately 0.7 miles south of the site. There are also two golf courses located in this area, Hanging Rock Golf Course to the north and Salem Municipal Golf Course to the west. Red Lane is utilized as a connection between downtown Salem, Hanging Rock Golf Course, and existing residential developments to the north. The speed limit on all of the local roads in the direct vicinity of the project is 25 mph.

Three scenarios will be considered: Existing Condition 2023, Background Condition 2028, and Buildout Condition 2028 to determine the effects of the background traffic growth and the proposed development on the levels of service at the existing intersections.

Level of service (LOS) for unsignalized intersections is evaluated based on control delay per vehicle and the driver's perception of those conditions. Control delay is the portion of the total delay attributed to the control at the intersection. Table 1 depicts the LOS scale with corresponding control delay per vehicle, with LOS "A" representing the best operating conditions and LOS "F" representing the worst.

| <b>Level of Service Criteria for Unsignalized Intersections</b> |                                      |
|-----------------------------------------------------------------|--------------------------------------|
| <b>Level Of Service</b>                                         | <b>Avg. Control Delay (Sec./Veh)</b> |
| <b>A</b>                                                        | <b>≤ 10</b>                          |
| <b>B</b>                                                        | <b>&gt; 10 – 15</b>                  |
| <b>C</b>                                                        | <b>&gt; 15 – 25</b>                  |
| <b>D</b>                                                        | <b>&gt; 25 – 35</b>                  |
| <b>E</b>                                                        | <b>&gt; 35 – 50</b>                  |
| <b>F</b>                                                        | <b>≥ 50</b>                          |

Table 1: LOS Criteria for Unsignalized Intersections (HCM)

The *Synchro 11* software was used for traffic modeling and analysis. This study was undertaken by Balzer and Associates, Inc. to:

- determine the total number of vehicle trips generated by the potential development to be added to the adjacent street network;
- determine the impacts to level of service and queue lengths at the existing intersections as a result of the background traffic growth and from the proposed development;
- determine if any roadway or intersection improvements are warranted as a result of the proposed development;
- and to determine turn lane/taper requirements at the proposed entrances to the site.

## **2. Analysis of Existing Conditions**

The site is currently owned and operated by HopeTree Family Services and has been for many years. Changing regulations over the last several decades have greatly decreased the number of permanent residents that are allowed to be housed at the site at any one time. There are many existing buildings, some of which are still in use by HopeTree, and others that are no longer in use. Among other things, the site includes a school, group homes for children and adults, and offices where staff members work on-site.

Other improvements on-site include access drives and parking areas, pool and athletic courts, two existing baseball fields near Red Lane, and other miscellaneous improvements. There is an existing pond and two existing creeks located on the site as well and these will be preserved to the extent practical.

All intersections in the vicinity of the site are unsignalized. 2021 VDOT traffic count data is available for Red Lane just to the north of the site in Roanoke County, and this data is provided below as general background information.

### **2021 VDOT Traffic Count Data:**

Red Lane, Rte. 705 (from Salem/Roanoke County line to North Road)  
AADT = 1,100 vpd  
Directional Factor = not provided  
K Factor = not provided

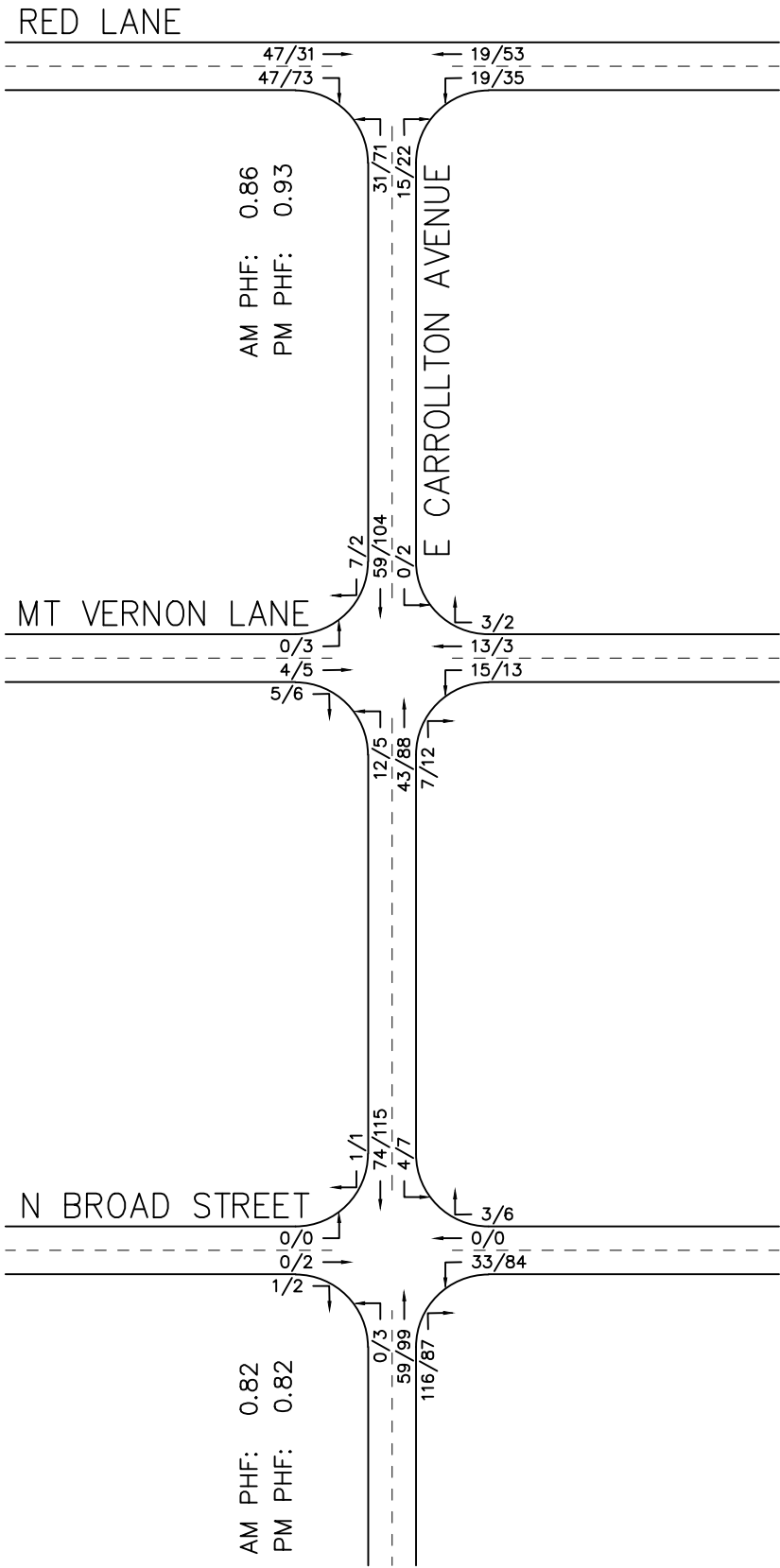
In addition to the VDOT published traffic count data, manual traffic counts were performed at two of the study intersections. Counts were performed at the Red Lane/East Carrollton Avenue intersection and the East Carrollton Avenue/North Broad Street intersection on Tuesday, October 3, 2023 from 7:00 AM – 9:00 AM and 4:00 PM – 6:00 PM to capture the AM and PM peak hours. All turning and through movements were counted to facilitate analysis of the intersections. The manual traffic count data for these intersections is provided in Appendix C.

After the first review of the traffic study, it was requested by the City of Salem that the intersection of East Carrollton Avenue/Mount Vernon Lane be added to the analysis. Traffic volumes for this intersection were derived from the previous counts that were obtained at the other two intersections. In addition, a site visit was made to observe traffic patterns at this intersection during the peak traffic times to inform the breakdown of turning movements at each approach. Figure 1 graphically depicts the existing peak hour traffic volumes at all intersections.

The *Synchro 11* software was used to analyze delay and level of service for existing weekday AM and PM peak hours. The *Synchro 11* results are included in Appendix E.

FIGURE 1: 2023 EXISTING TURNING MOVEMENTS

SITE



LEGEND

xx/xx: AM/PM Peak Hour Traffic

### **3. Analysis of Future Conditions Without Development**

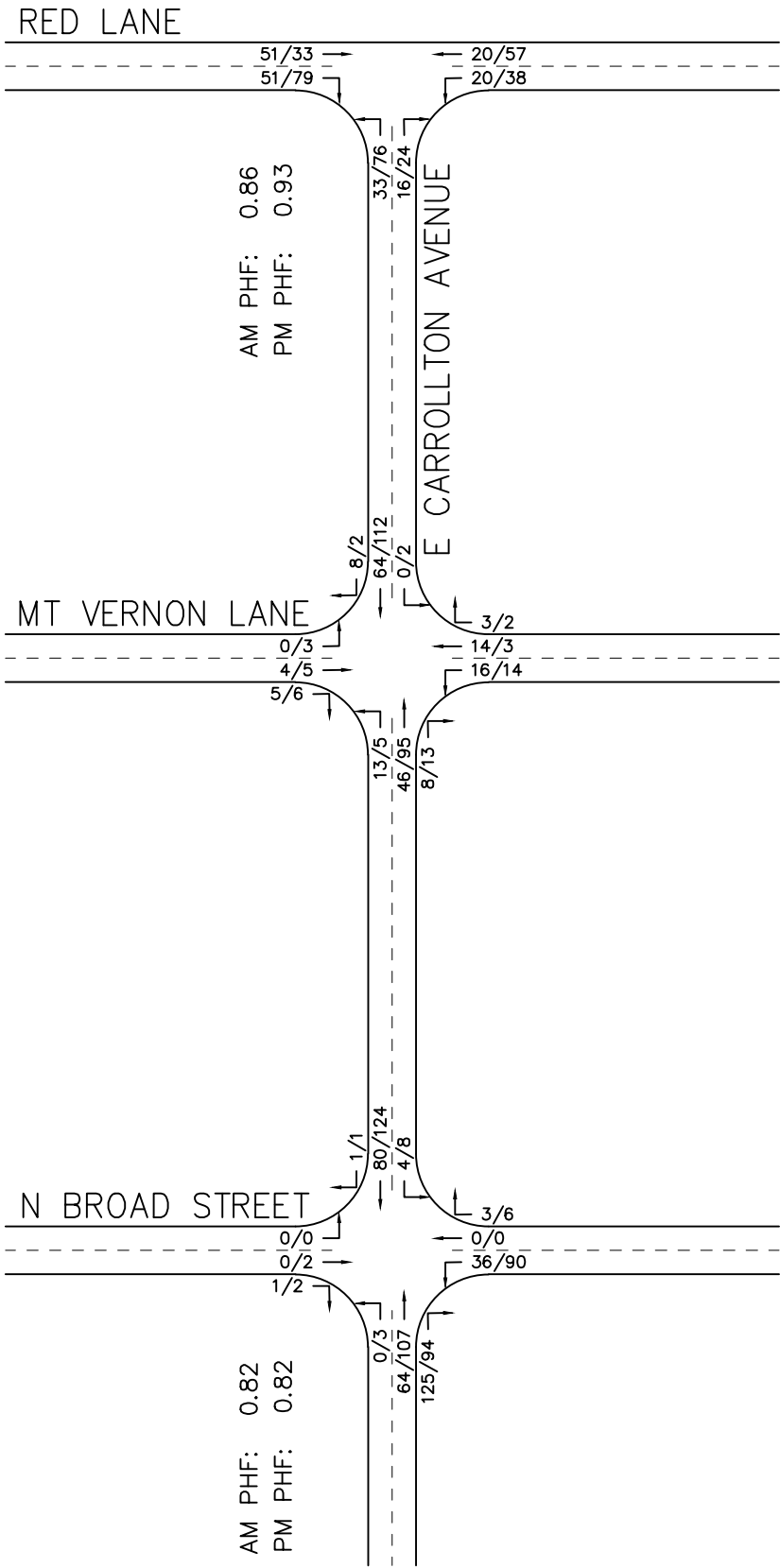
It is anticipated that the proposed development will be constructed and in use by the year 2028. To analyze the future conditions and obtain the projected background traffic volumes, an annual growth factor was applied to the existing traffic volumes. Based on historical VDOT traffic data, the average growth rate over the last 10 years or so has been approximately 1% on Red Lane and there has actually been a reduction in traffic volume over the last 5 years. To provide a conservative analysis, a 1.5% annual growth rate was applied to bring the existing traffic volumes from the current year of 2023 to the buildout year of 2028. Figure 2 graphically depicts the projected background traffic in the year 2028 with the growth rate applied.

The *Synchro 11* software was used to analyze delay and level of service for background weekday AM and PM peak hours. The *Synchro 11* results are included in Appendix E.



FIGURE 2: 2028 PROJECTED TURNING MOVEMENTS

SITE



LEGEND

xx/xx: AM/PM Peak Hour Traffic

#### 4. Trip Generation

Trip generation for this study was based on the anticipated and assumed uses outlined in the Introduction and information provided by the developer regarding the possible uses of the property. The policies and procedures found in the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 11<sup>th</sup> Edition*, were employed to determine the potential site generated traffic volumes for the proposed development for the average weekday and AM and PM peak hours. Trip generation calculations were performed using the equations provided in the ITE manual. Table 2 shows the potential site-generated traffic for this development.

|                                 |          |                      | Trip Generation |      |       |              |      |       |         |
|---------------------------------|----------|----------------------|-----------------|------|-------|--------------|------|-------|---------|
| Land Use                        |          |                      | AM Peak Hour    |      |       | PM Peak Hour |      |       | Weekday |
| Proposed Development            | ITE Code | Independent Variable | Enter           | Exit | Total | Enter        | Exit | Total | Total   |
| Single-Family Detached Housing  | 210      | 115 Dwelling Units   | 21              | 64   | 85    | 71           | 42   | 113   | 1,147   |
| Single-Family Attached Housing  | 215      | 140 Dwelling Units   | 17              | 50   | 67    | 47           | 33   | 80    | 1,016   |
| Multi-Family Housing (Low-Rise) | 220      | 85 Dwelling Units    | 12              | 37   | 49    | 36           | 21   | 57    | 620     |
| Hotel                           | 310      | 60 Rooms             | 13              | 10   | 23    | 8            | 9    | 17    | 227     |
| General Office                  | 710      | 15,000 s.f.          | 29              | 4    | 33    | 6            | 28   | 34    | 223     |
| Sit-Down Restaurants            | 932      | 7,500 s.f.           | 39              | 33   | 72    | 41           | 27   | 68    | 804     |
|                                 |          | Total                | 131             | 198  | 329   | 209          | 160  | 369   | 4,037   |

Table 2: Site-Generated Traffic

Please note that the table above does not include traffic volumes for the HopeTree school or office uses. These specific uses are already taking place on the site and will not be trips that are “added” to the street network. The addition of the other use types on-site may actually reduce some of the existing trips due to the fact that some of the existing trips may be redirected to or from the new facilities that are developed within the site.

The intent of the proposed development is to provide a cohesive, connected, walkable community where pedestrian connectivity is a primary focus and vehicular trips are secondary. Due to the nature of the development and the mix of residential, commercial, institutional, and other uses, a portion of the site-generated trips will be pedestrian trips and/or “internally

captured”. Internal capture reductions consider site trips “captured” within a mixed-use development, recognizing that trips from one land use can access another land use within a development without having to access the adjacent street system. It is well-documented that this type of pedestrian-friendly, mixed-use development will result in less traffic to the adjacent street network than what is calculated using traditional trip generation methods.

It should also be noted that ITE and VDOT both have methodologies for estimating trip generation reduction for mixed-use developments. These methodologies require a high level of detail about proposed uses that is not available at this time for this particular development. In addition, these methodologies also do not adequately account for other characteristics of this development that are expected to further reduce traffic. These include urban design principles such as proximity between uses interior and exterior to the development, proximity to Roanoke College and downtown, and the very nature of the development which is to prioritize pedestrian connectivity and walkability and de-emphasize vehicle trips.

Walkable mixed-use developments have been documented to reduce traffic dependent on factors such as location, density, mix of uses, etc. A report by the American Planning Association entitled “Getting Trip Generation Right: Eliminating the Bias Against Mixed Use Development,” indicates that, on average, conventional trip generation methods overestimate trip generation by 49 percent for typical mixed-use developments.

It is acknowledged that this development does not have all of the characteristics that would warrant a 49 percent reduction in traffic. However, it is expected to share many of the same characteristics such as density, diversification of uses, proximity between uses, and walkability. Based on the characteristics and initiatives of this P.U.D. development and utilizing engineering judgement, a 25% reduction was deemed to be reasonable for this project. Table 3 below shows the potential site-generated traffic for this development with the internal capture reduction applied.

|                                   |          |                      | Trip Generation |      |       |              |      |       |         |
|-----------------------------------|----------|----------------------|-----------------|------|-------|--------------|------|-------|---------|
| Land Use                          |          |                      | AM Peak Hour    |      |       | PM Peak Hour |      |       | Weekday |
| Proposed Development              | ITE Code | Independent Variable | Enter           | Exit | Total | Enter        | Exit | Total | Total   |
| Single-Family Detached Housing    | 210      | 115 Dwelling Units   | 16              | 48   | 64    | 53           | 32   | 85    | 860     |
| Single-Family Attached Housing    | 215      | 140 Dwelling Units   | 13              | 37   | 50    | 35           | 25   | 60    | 762     |
| Multi-Family Housing (Low-Rise)   | 220      | 85 Dwelling Units    | 9               | 28   | 37    | 27           | 16   | 43    | 465     |
| Hotel                             | 310      | 60 Rooms             | 10              | 8    | 18    | 6            | 7    | 13    | 170     |
| General Office                    | 710      | 15,000 s.f.          | 22              | 3    | 25    | 4            | 21   | 25    | 167     |
| High-Turnover Sit-Down Restaurant | 932      | 7,500 s.f.           | 29              | 25   | 54    | 31           | 20   | 51    | 603     |
|                                   |          | Total                | 99              | 149  | 248   | 156          | 121  | 277   | 3,027   |

Table 3: Site-Generated Traffic w/ 25% Reduction

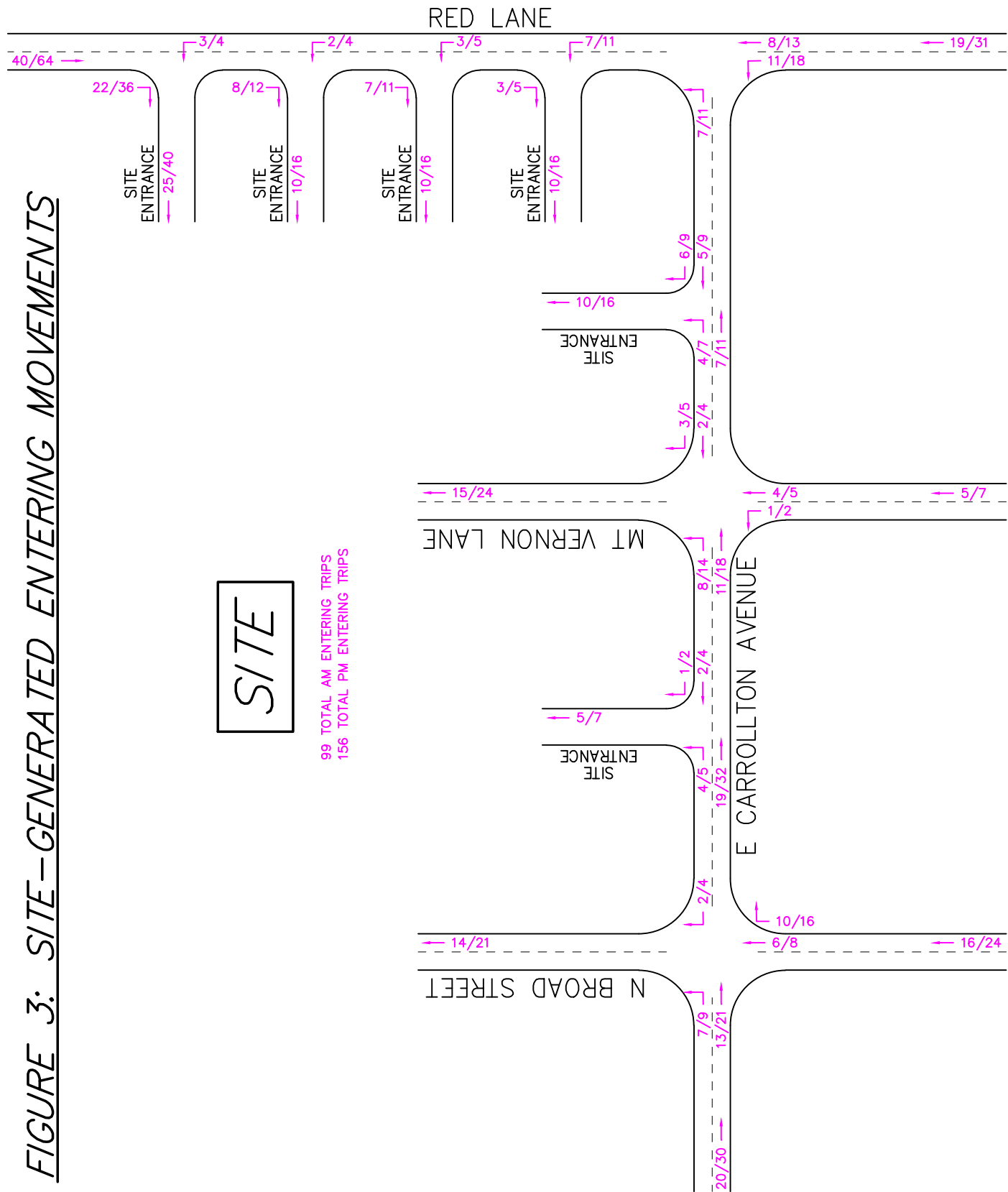
## **5. Site Traffic Distribution and Assignment**

The distribution of potential site generated traffic was completed by applying engineering judgement based on knowledge of the proposed uses, as well as the surrounding area. These assumptions were then applied to the site generated traffic to determine the ingress/egress movements at each entrance and in each direction. Traffic will enter to and exit from the site to the north toward I-81 or to the south or west to go toward downtown Salem. There are several entrances planned for the site in strategic locations to disperse traffic and efficiently distribute vehicles to the adjacent road system in an interconnected grid-type network that is similar to what already exists to the north of Main Street.

This development is proposed to have four access points on Red Lane, three access points on East Carrollton Avenue, and one access point on North Broad Street. The roadway network creates a network of streets within the development with a high level of interconnectivity both internally and externally to the existing streets.

After distribution of trips to the roadway, trips were distributed to each road and intersection based on the assumptions described above. Traffic assignment for traffic entering the development is shown graphically in Figure 3 and for traffic exiting the development is shown graphically in Figure 4.

FIGURE 3: SITE—GENERATED ENTERING MOVEMENTS

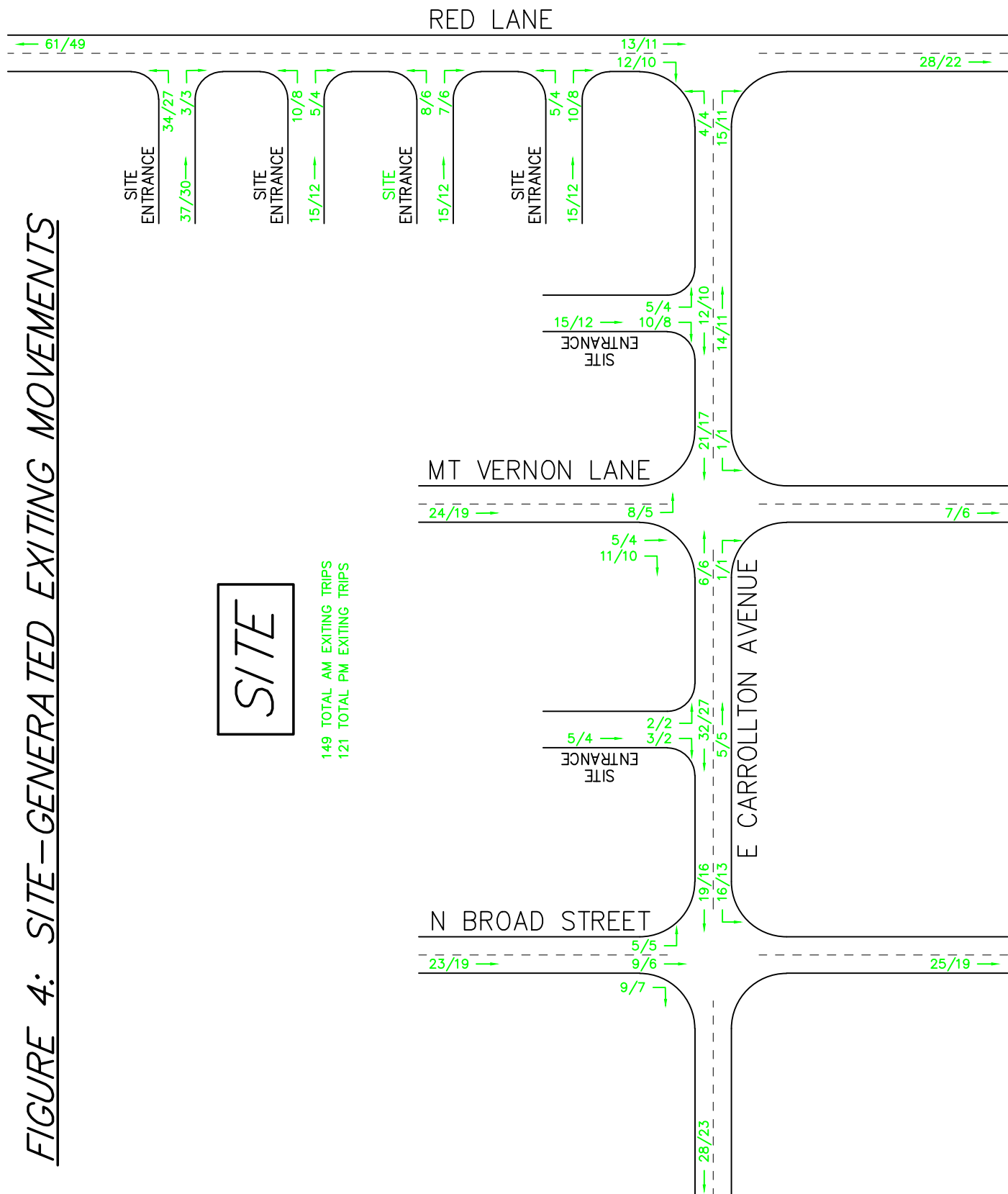


LEGEND

xx/xx: AM/PM Peak Hour Traffic



FIGURE 4: SITE—GENERATED EXITING MOVEMENTS



LEGEND

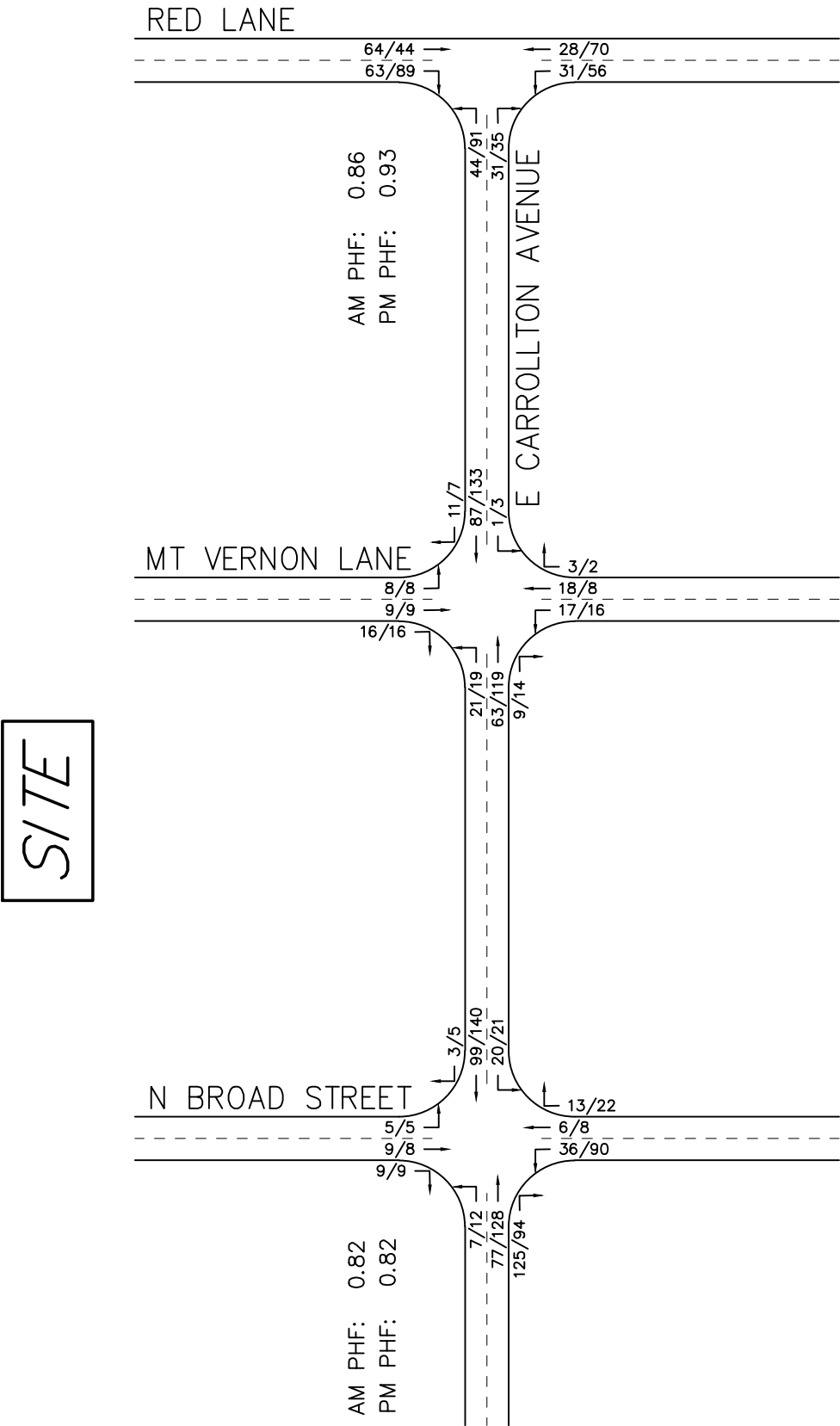
xx/xx: AM/PM Peak Hour Traffic

## **6. Analysis of Future Conditions With Development**

The buildout traffic was calculated by adding the 2028 background traffic (Figure 2) to the site-generated traffic (Figures 3 and 4). The 2028 buildout traffic for each of the study intersections is shown in Figure 5. The intersections were then modeled and evaluated using the *Synchro 11* software. Tables 4 and 5 provide a summary of the levels of service and delays calculated at each intersection for the 2023 Existing, 2028 Background, and 2028 Buildout conditions. The detailed *Synchro 11* reports are included in Appendix E.

As shown in the data, all approaches at the two study intersections will function at the same level of service in the Buildout condition as they do in the Existing and Background conditions, with minimal increases in delay. No further improvements are warranted or recommended as a result of the development traffic.

FIGURE 5: 2028 BUILDOUT TURNING MOVEMENTS



LEGEND

xx/xx: AM/PM Peak Hour Traffic

## Red Lane and East Carrollton Avenue

| CONDITION                        | LANE GROUP | AM PEAK HOUR     |                  | PM PEAK HOUR     |                  |
|----------------------------------|------------|------------------|------------------|------------------|------------------|
|                                  |            | LANE LOS (delay) | Max. Queue (ft.) | LANE LOS (delay) | Max. Queue (ft.) |
| <b>Existing 2023 Condition</b>   | NBLT       | A (7.4)          | 40               | A (7.9)          | 52               |
|                                  | EBLR       | A (7.4)          | 31               | A (7.9)          | 39               |
|                                  | SBTR       | A (7.2)          | 52               | A (7.3)          | 55               |
| <b>Background 2028 Condition</b> | NBLT       | A (7.5)          | 47               | A (7.9)          | 53               |
|                                  | EBLR       | A (7.5)          | 37               | A (8.0)          | 48               |
|                                  | SBTR       | A (7.3)          | 55               | A (7.4)          | 55               |
| <b>Buildout 2028 Condition</b>   | NBLT       | A (7.7)          | 46               | A (8.4)          | 56               |
|                                  | EBLR       | A (7.7)          | 37               | A (8.4)          | 44               |
|                                  | SBTR       | A (7.6)          | 57               | A (7.7)          | 62               |

Table 4: Red Lane & East Carrollton Avenue LOS & Queuing Analysis

## Mount Vernon Lane and East Carrollton Avenue

| CONDITION                        | LANE GROUP | AM PEAK HOUR     |                  | PM PEAK HOUR     |                  |
|----------------------------------|------------|------------------|------------------|------------------|------------------|
|                                  |            | LANE LOS (delay) | Max. Queue (ft.) | LANE LOS (delay) | Max. Queue (ft.) |
| <b>Existing 2023 Condition</b>   | NBLTR      | A (7.5)          | 34               | A (7.7)          | 34               |
|                                  | EBLTR      | A (7.5)          | 53               | A (7.8)          | 61               |
|                                  | WBLTR      | A (7.5)          | 55               | A (7.9)          | 68               |
|                                  | SBLTR      | A (7.0)          | 31               | A (7.4)          | 34               |
| <b>Background 2028 Condition</b> | NBLTR      | A (7.6)          | 43               | A (7.8)          | 32               |
|                                  | EBLTR      | A (7.5)          | 60               | A (7.9)          | 61               |
|                                  | WBLTR      | A (7.5)          | 52               | A (8.0)          | 70               |
|                                  | SBLTR      | A (7.1)          | 31               | A (7.4)          | 33               |
| <b>Buildout 2028 Condition</b>   | NBLTR      | A (7.8)          | 47               | A (8.1)          | 40               |
|                                  | EBLTR      | A (7.9)          | 62               | A (8.5)          | 66               |
|                                  | WBLTR      | A (7.9)          | 62               | A (8.4)          | 61               |
|                                  | SBLTR      | A (7.5)          | 45               | A (7.8)          | 44               |

Table 5: Mount Vernon Lane & East Carrollton Avenue LOS & Queuing Analysis

## North Broad Street and East Carrollton Avenue

| CONDITION                        | LANE GROUP | AM PEAK HOUR     |                  | PM PEAK HOUR     |                  |
|----------------------------------|------------|------------------|------------------|------------------|------------------|
|                                  |            | LANE LOS (delay) | Max. Queue (ft.) | LANE LOS (delay) | Max. Queue (ft.) |
| <b>Existing 2023 Condition</b>   | NBLTR      | B (10.3)         | 49               | B (12.1)         | 64               |
|                                  | EBL        | --               | 2                | A (7.5)          | 11               |
|                                  | WBL        | A (7.6)          | 22               | A (7.7)          | 27               |
|                                  | SBLTR      | A (8.7)          | 18               | B (10.3)         | 28               |
| <b>Background 2028 Condition</b> | NBLTR      | B (10.5)         | 46               | B (12.6)         | 77               |
|                                  | EBL        | --               | --               | A (7.5)          | 11               |
|                                  | WBL        | A (7.7)          | 15               | A (7.7)          | 23               |
|                                  | SBLTR      | A (8.7)          | 18               | B (10.5)         | 31               |
| <b>Buildout 2028 Condition</b>   | NBLTR      | B (11.6)         | 50               | B (14.8)         | 76               |
|                                  | EBL        | A (7.5)          | 12               | A (7.6)          | 41               |
|                                  | WBL        | A (7.8)          | 33               | A (7.8)          | 35               |
|                                  | SBLTR      | B (10.9)         | 34               | B (11.8)         | 47               |

Table 6: North Broad Street & East Carrollton Avenue LOS & Queuing Analysis

## **7. Turn Lane Warrants**

The analyses to determine turn lane requirements for the new development were completed by following the procedures and methodologies found in the *VDOT Road Design Manual, Volume I, Appendix F*. Turn lane warrants were analyzed based on the highest volumes for each roadway (Red Lane and East Carrollton Avenue) to show that the warrants are not met and will not be met for any of the intersections.

### ***Right-Turn Lane into Site from Red Lane***

#### **AM Peak Hour Analysis:**

- 22 Vehicles per Hour Turning Right into site from Red Lane
- Approach Volume =  $127 + 22 = 149$  VPH Red Lane
- Right-Turn Lane Requirement, as per *VDOT Road Design Manual, Appendix F: **Radius Required*** (please see Appendix D).

#### **PM Peak Hour Analysis:**

- 36 Vehicles per Hour Turning Right into site from Red Lane
- Approach Volume =  $133 + 36 = 169$  VPH Red Lane
- Right-Turn Lane Requirement, as per *VDOT Road Design Manual, Appendix F: **Radius Required*** (please see Appendix D).

### ***Left-Turn Lane into Site from Red Lane***

#### **AM Peak Hour Analysis:**

- 7 (9.7%) Vehicles per Hour Turning Left into site from Red Lane  
Posted Speed Limit = 25 mph
- Advancing Volume = 72 VPH
- Opposing Volume = 127 VPH
- Left-Turn Lane Requirement, as per *VDOT Road Design Manual, Appendix F: **None Required*** (please see Appendix D).

#### **PM Peak Hour Analysis:**

- 11 (6.8%) Vehicles per Hour Turning Left into site from Red Lane  
Posted Speed Limit = 25 mph
- Advancing Volume = 161 VPH
- Opposing Volume = 133 VPH
- Left-Turn Lane Requirement, as per *VDOT Road Design Manual, Appendix F: **None Required*** (please see Appendix D).



### ***Right-Turn Lane into Site from East Carrollton Avenue***

#### **AM Peak Hour Analysis:**

- 6 Vehicles per Hour Turning Right into site from East Carrollton Avenue
- Approach Volume = 122 VPH East Carrollton Avenue
- Right-Turn Lane Requirement, as per *VDOT Road Design Manual, Appendix F: Radius Required* (please see Appendix D).

#### **PM Peak Hour Analysis:**

- 9 Vehicles per Hour Turning Right into site from East Carrollton Avenue
- Approach Volume = 166 VPH East Carrollton Avenue
- Right-Turn Lane Requirement, as per *VDOT Road Design Manual, Appendix F: Radius Required* (please see Appendix D).

### ***Left-Turn Lane into Site from East Carrollton Avenue***

#### **AM Peak Hour Analysis:**

- 8 (8.4%) Vehicles per Hour Turning Left into site from East Carrollton Avenue  
Posted Speed Limit = 25 mph
- Advancing Volume = 95 VPH
- Opposing Volume = 122 VPH
- Left-Turn Lane Requirement, as per *VDOT Road Design Manual, Appendix F: None Required* (please see Appendix D).

#### **PM Peak Hour Analysis:**

- 14 (9.0%) Vehicles per Hour Turning Left into site from East Carrollton Avenue  
Posted Speed Limit = 25 mph
- Advancing Volume = 155 VPH
- Opposing Volume = 166 VPH
- Left-Turn Lane Requirement, as per *VDOT Road Design Manual, Appendix F: None Required* (please see Appendix D).

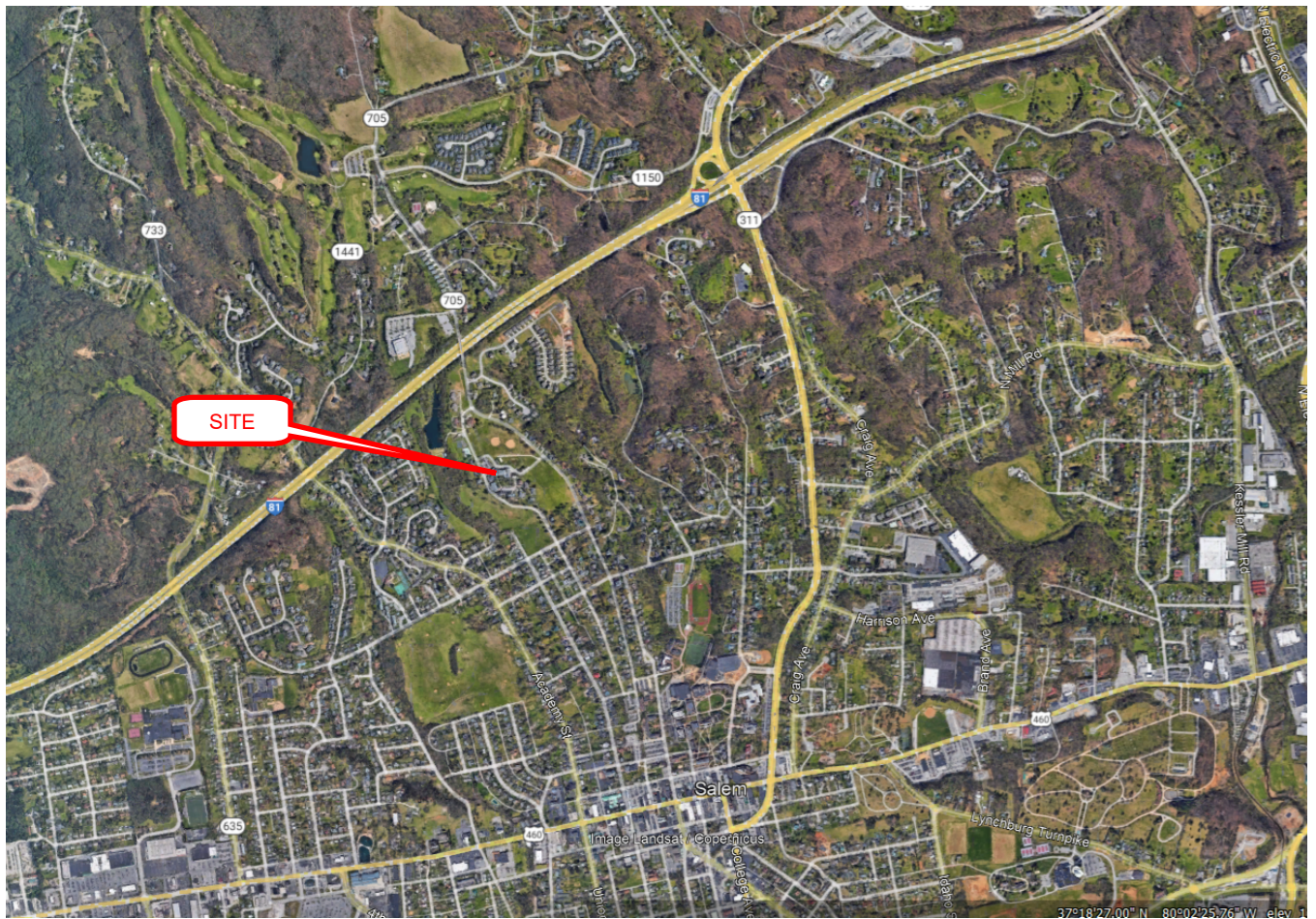
## **8. Conclusions**

Based on the data collected, the assumptions made, and the projected site-generated traffic, the results of the analysis are outlined below.

- The proposed development will generate additional traffic to the existing road network.
- The proposed development results in very minimal increases in delay and queue lengths at the study intersections and all approaches function at the same level of service in the Existing, Background, and Buildout scenarios.
- No turn lanes or tapers are warranted by the proposed development.

# **Appendix A**

## **Vicinity Map**



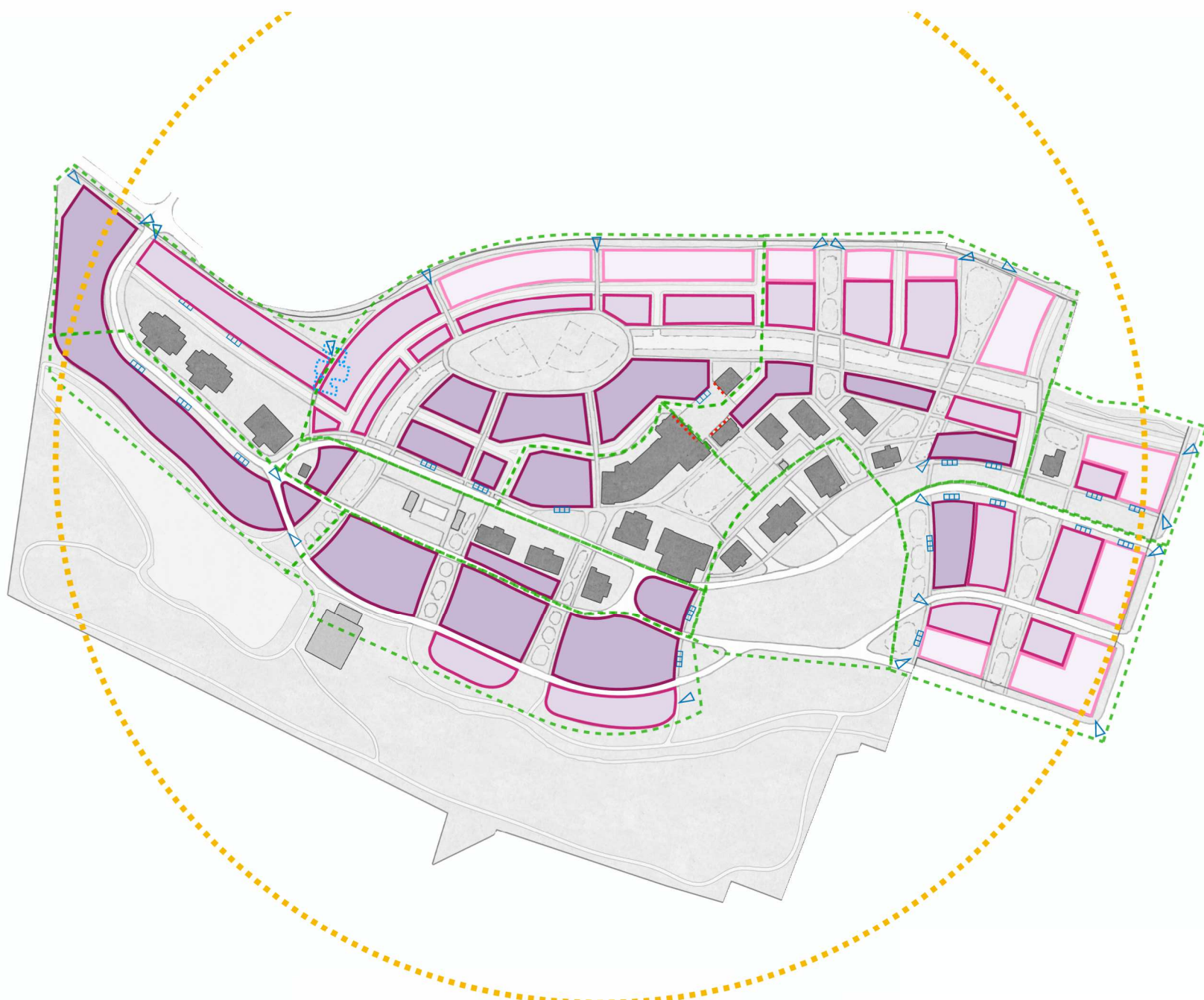
# **Appendix B**

## **P.U.D. Master Plan**



GENERAL NOTES:

- Building Types generally provide parking from rear alleys and lanes screened from frontages on lots.
- On-street parking shall be provided along all streets where practical.
- Each Block Group includes a minimum of three (3) building types.
- Each Block Group shall have 20% minimum of each of the building types used.
- A minimum of six (6) building types shall be used for the overall project.
- A maximum of five (5) of the same building types are allowed in a row.
- Commercial, Mixed-Use, & Live-Works are allowed in T-4 and T-5. See Uses Table.
- Land may be subdivided into separate ownership.



TRANSECT ZONES & BUILDING TYPES KEY  
(SEE SPECIFIC BUILDING TYPES FOR STANDARDS)

- E - ESTATE
- H - HOUSE / ADU
- C - COTTAGE / ADU
- PH - PAIR HOUSE / ADU
- T - TOWNHOUSE / ADU
- PC - POCKET / COTTAGE COURT
- TH-PU - TOWNHOUSE PARK-UNDER
- 3THE - 3-TOWNHOUSE ESTATE
- SF - STACKED FLAT
- LH - LOFT HOUSE
- MH- MEWS HOUSE
- TR - TREE HOUSE
- AH - MULTI-FAMILY HOUSE
- AB - MULTI-FAMILY BUILDING
- MXB - MIXED-USE BUILDING
- CV - CIVIC BUILDING SITE

TRANSECT ZONES  
w/ FRONTAGE LINES

- T5 - NEIGHBORHOOD CENTER
- T4 - NEIGHBORHOOD GENERAL
- T3 - NEIGHBORHOOD EDGE
- OPEN SPACE / NATURAL

STRUCTURE TO BE REMOVED

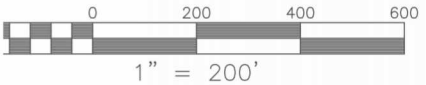
CIVIC SPACE RESERVES

- HISTORIC CORE BUILDINGS
- CIVIC BUILDINGS
- STREETS AND PARKING

REQUIREMENTS & DETAILS

- BLOCK GROUP
- RECOMMENDED GALLERY
- RECOMMENDED SHOPFRONT
- VISTA POINTS
- PEDESTRIAN SHED - 5 MINUTE WALK RADIUS

5.A land use plan designating specific use types for the site, both residential and non-residential use types, and establishing site development regulations, including setback, height, building coverage, lot coverage, and density requirements.



LAND USE PLAN

# **Appendix C**

## **Existing Traffic Data**



# TOTALS TURNING MOVEMENT COUNT - SUMMARY

Intersection of: North Broad Street  
and: Carrollton Avenue  
Location: Salem, Virginia

Counted by: VCU  
Date: October 03, 2023  
Weather: Sunny/Warm  
Entered by: SN

Tuesday

Star Rating: 4



| TIME        | TRAFFIC FROM NORTH<br>on: North Broad Street |      |      |      |       | TRAFFIC FROM SOUTH<br>on: North Broad Street |      |      |      |       | TRAFFIC FROM EAST<br>on: Carrollton Avenue |      |      |      |       | TRAFFIC FROM WEST<br>on: Carrollton Avenue |      |      |      |       | TOTAL<br>N + S<br>+<br>E + W |
|-------------|----------------------------------------------|------|------|------|-------|----------------------------------------------|------|------|------|-------|--------------------------------------------|------|------|------|-------|--------------------------------------------|------|------|------|-------|------------------------------|
|             | RIGHT                                        | THRU | LEFT | U-TN | TOTAL | RIGHT                                        | THRU | LEFT | U-TN | TOTAL | RIGHT                                      | THRU | LEFT | U-TN | TOTAL | RIGHT                                      | THRU | LEFT | U-TN | TOTAL |                              |
| AM          |                                              |      |      |      |       |                                              |      |      |      |       |                                            |      |      |      |       |                                            |      |      |      |       |                              |
| 7:00 - 7:15 | 1                                            | 2    | 0    | 0    | 3     | 0                                            | 0    | 3    | 0    | 3     | 0                                          | 11   | 2    | 0    | 13    | 20                                         | 5    | 0    | 0    | 25    | 44                           |
| 7:15 - 7:30 | 0                                            | 0    | 0    | 0    | 0     | 0                                            | 0    | 8    | 0    | 8     | 0                                          | 13   | 2    | 0    | 15    | 21                                         | 10   | 0    | 0    | 31    | 54                           |
| 7:30 - 7:45 | 0                                            | 0    | 0    | 0    | 0     | 1                                            | 0    | 4    | 0    | 5     | 1                                          | 18   | 2    | 0    | 21    | 50                                         | 13   | 0    | 0    | 63    | 89                           |
| 7:45 - 8:00 | 0                                            | 0    | 0    | 0    | 0     | 1                                            | 0    | 7    | 0    | 8     | 0                                          | 15   | 2    | 0    | 17    | 32                                         | 20   | 0    | 0    | 52    | 77                           |
| 8:00 - 8:15 | 0                                            | 0    | 0    | 0    | 0     | 0                                            | 0    | 13   | 0    | 13    | 0                                          | 25   | 0    | 0    | 25    | 15                                         | 18   | 0    | 0    | 33    | 71                           |
| 8:15 - 8:30 | 1                                            | 0    | 0    | 0    | 1     | 1                                            | 0    | 9    | 0    | 10    | 0                                          | 16   | 0    | 0    | 16    | 19                                         | 8    | 0    | 0    | 27    | 54                           |
| 8:30 - 8:45 | 0                                            | 1    | 0    | 0    | 1     | 1                                            | 0    | 7    | 0    | 8     | 0                                          | 7    | 0    | 0    | 7     | 25                                         | 11   | 0    | 0    | 36    | 52                           |
| 8:45 - 9:00 | 1                                            | 0    | 0    | 0    | 1     | 2                                            | 3    | 5    | 0    | 10    | 0                                          | 13   | 0    | 0    | 13    | 16                                         | 9    | 0    | 0    | 25    | 49                           |
| 2 Hr Totals | 3                                            | 3    | 0    | 0    | 6     | 6                                            | 3    | 56   | 0    | 65    | 1                                          | 118  | 8    | 0    | 127   | 198                                        | 94   | 0    | 0    | 292   | 490                          |
| 1 Hr Totals |                                              |      |      |      |       |                                              |      |      |      |       |                                            |      |      |      |       |                                            |      |      |      |       |                              |
| 7:00 - 8:00 | 1                                            | 2    | 0    | 0    | 3     | 2                                            | 0    | 22   | 0    | 24    | 1                                          | 57   | 8    | 0    | 66    | 123                                        | 48   | 0    | 0    | 171   | 264                          |
| 7:15 - 8:15 | 0                                            | 0    | 0    | 0    | 0     | 2                                            | 0    | 32   | 0    | 34    | 1                                          | 71   | 6    | 0    | 78    | 118                                        | 61   | 0    | 0    | 179   | 291                          |
| 7:30 - 8:30 | 1                                            | 0    | 0    | 0    | 1     | 3                                            | 0    | 33   | 0    | 36    | 1                                          | 74   | 4    | 0    | 79    | 116                                        | 59   | 0    | 0    | 175   | 291                          |
| 7:45 - 8:45 | 1                                            | 1    | 0    | 0    | 2     | 3                                            | 0    | 36   | 0    | 39    | 0                                          | 63   | 2    | 0    | 65    | 91                                         | 57   | 0    | 0    | 148   | 254                          |
| 8:00 - 9:00 | 2                                            | 1    | 0    | 0    | 3     | 4                                            | 3    | 34   | 0    | 41    | 0                                          | 61   | 0    | 0    | 61    | 75                                         | 46   | 0    | 0    | 121   | 226                          |
| PEAK HOUR   |                                              |      |      |      |       |                                              |      |      |      |       |                                            |      |      |      |       |                                            |      |      |      |       |                              |
| 7:30 - 8:30 | 1                                            | 0    | 0    | 0    | 1     | 3                                            | 0    | 33   | 0    | 36    | 1                                          | 74   | 4    | 0    | 79    | 116                                        | 59   | 0    | 0    | 175   | 291                          |
| PM          |                                              |      |      |      |       |                                              |      |      |      |       |                                            |      |      |      |       |                                            |      |      |      |       |                              |
| 4:00 - 4:15 | 0                                            | 1    | 0    | 0    | 1     | 2                                            | 0    | 8    | 0    | 10    | 0                                          | 24   | 0    | 0    | 24    | 19                                         | 17   | 0    | 0    | 36    | 71                           |
| 4:15 - 4:30 | 1                                            | 0    | 0    | 0    | 1     | 0                                            | 0    | 20   | 0    | 20    | 0                                          | 20   | 1    | 0    | 21    | 18                                         | 19   | 0    | 0    | 37    | 79                           |
| 4:30 - 4:45 | 0                                            | 0    | 0    | 0    | 0     | 0                                            | 1    | 12   | 0    | 13    | 0                                          | 34   | 1    | 0    | 35    | 15                                         | 20   | 0    | 0    | 35    | 83                           |
| 4:45 - 5:00 | 0                                            | 1    | 0    | 0    | 1     | 0                                            | 0    | 18   | 0    | 18    | 0                                          | 28   | 3    | 0    | 31    | 12                                         | 18   | 1    | 0    | 31    | 81                           |
| 5:00 - 5:15 | 1                                            | 1    | 0    | 0    | 2     | 2                                            | 0    | 25   | 0    | 27    | 0                                          | 35   | 0    | 0    | 35    | 19                                         | 25   | 1    | 0    | 45    | 109                          |
| 5:15 - 5:30 | 0                                            | 0    | 0    | 0    | 0     | 2                                            | 0    | 23   | 0    | 25    | 0                                          | 36   | 4    | 0    | 40    | 32                                         | 26   | 1    | 0    | 59    | 124                          |
| 5:30 - 5:45 | 1                                            | 1    | 0    | 0    | 2     | 0                                            | 0    | 16   | 0    | 16    | 1                                          | 20   | 1    | 0    | 22    | 17                                         | 23   | 0    | 0    | 40    | 80                           |
| 5:45 - 6:00 | 0                                            | 0    | 0    | 0    | 0     | 2                                            | 0    | 20   | 0    | 22    | 0                                          | 24   | 2    | 0    | 26    | 19                                         | 25   | 1    | 0    | 45    | 93                           |
| 2 Hr Totals | 3                                            | 4    | 0    | 0    | 7     | 8                                            | 1    | 142  | 0    | 151   | 1                                          | 221  | 12   | 0    | 234   | 151                                        | 173  | 4    | 0    | 328   | 720                          |
| 1 Hr Totals |                                              |      |      |      |       |                                              |      |      |      |       |                                            |      |      |      |       |                                            |      |      |      |       |                              |
| 4:00 - 5:00 | 1                                            | 2    | 0    | 0    | 3     | 2                                            | 1    | 58   | 0    | 61    | 0                                          | 106  | 5    | 0    | 111   | 64                                         | 74   | 1    | 0    | 139   | 314                          |
| 4:15 - 5:15 | 2                                            | 2    | 0    | 0    | 4     | 2                                            | 1    | 75   | 0    | 78    | 0                                          | 117  | 5    | 0    | 122   | 64                                         | 82   | 2    | 0    | 148   | 352                          |
| 4:30 - 5:30 | 1                                            | 2    | 0    | 0    | 3     | 4                                            | 1    | 78   | 0    | 83    | 0                                          | 133  | 8    | 0    | 141   | 78                                         | 89   | 3    | 0    | 170   | 397                          |
| 4:45 - 5:45 | 2                                            | 3    | 0    | 0    | 5     | 4                                            | 0    | 82   | 0    | 86    | 1                                          | 119  | 8    | 0    | 128   | 80                                         | 92   | 3    | 0    | 175   | 394                          |
| 5:00 - 6:00 | 2                                            | 2    | 0    | 0    | 4     | 6                                            | 0    | 84   | 0    | 90    | 1                                          | 115  | 7    | 0    | 123   | 87                                         | 99   | 3    | 0    | 189   | 406                          |
| PEAK HOUR   |                                              |      |      |      |       |                                              |      |      |      |       |                                            |      |      |      |       |                                            |      |      |      |       |                              |
| 5:00 - 6:00 | 2                                            | 2    | 0    | 0    | 4     | 6                                            | 0    | 84   | 0    | 90    | 1                                          | 115  | 7    | 0    | 123   | 87                                         | 99   | 3    | 0    | 189   | 406                          |

# TOTALS TURNING MOVEMENT COUNT - SUMMARY

Intersection of: Red Lane  
and: Carrollton Avenue  
Location: Salem, Virginia

Counted by: VCU  
Date: October 03, 2023  
Weather: Sunny/Warm  
Entered by: SN

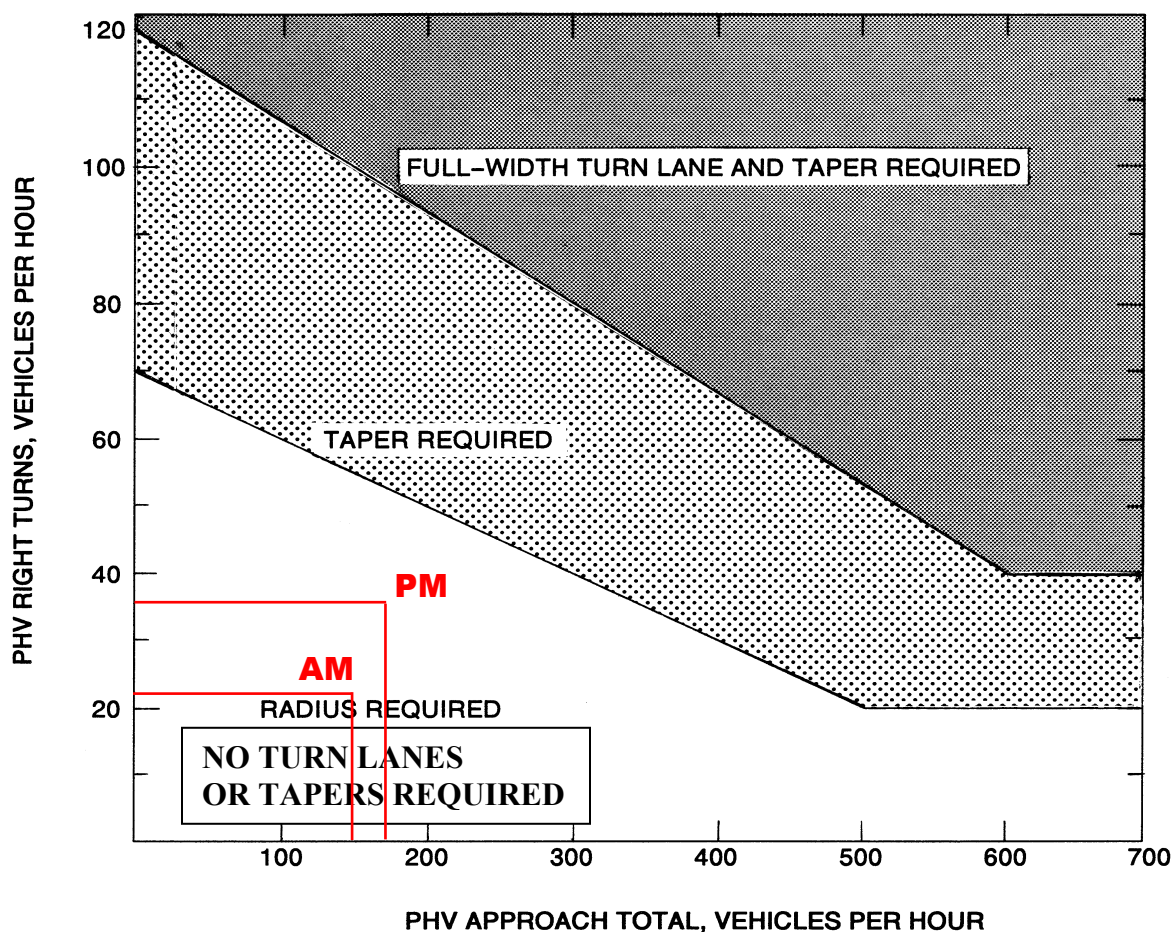
Tuesday  
Star Rating: 4



| TIME        | TRAFFIC FROM NORTH<br>on: Red Lane |      |      |      |       | TRAFFIC FROM SOUTH<br>on: Red Lane |      |      |      |       | TRAFFIC FROM EAST<br>on: |      |      |      |       | TRAFFIC FROM WEST<br>on: Carrollton Avenue |      |      |      |       | TOTAL<br>N + S<br>+<br>E + W |
|-------------|------------------------------------|------|------|------|-------|------------------------------------|------|------|------|-------|--------------------------|------|------|------|-------|--------------------------------------------|------|------|------|-------|------------------------------|
|             | RIGHT                              | THRU | LEFT | U-TN | TOTAL | RIGHT                              | THRU | LEFT | U-TN | TOTAL | RIGHT                    | THRU | LEFT | U-TN | TOTAL | RIGHT                                      | THRU | LEFT | U-TN | TOTAL |                              |
| AM          |                                    |      |      |      |       |                                    |      |      |      |       |                          |      |      |      |       |                                            |      |      |      |       |                              |
| 7:00 - 7:15 | 12                                 | 6    | 0    | 0    | 18    | 0                                  | 3    | 2    | 0    | 5     | 0                        | 0    | 0    | 0    | 0     | 3                                          | 0    | 2    | 0    | 5     | 28                           |
| 7:15 - 7:30 | 9                                  | 7    | 0    | 0    | 16    | 0                                  | 1    | 4    | 0    | 5     | 0                        | 0    | 0    | 0    | 0     | 2                                          | 0    | 9    | 0    | 11    | 32                           |
| 7:30 - 7:45 | 10                                 | 18   | 0    | 0    | 28    | 0                                  | 3    | 6    | 0    | 9     | 0                        | 0    | 0    | 0    | 0     | 3                                          | 0    | 8    | 0    | 11    | 48                           |
| 7:45 - 8:00 | 13                                 | 9    | 0    | 0    | 22    | 0                                  | 4    | 3    | 0    | 7     | 0                        | 0    | 0    | 0    | 0     | 6                                          | 0    | 7    | 0    | 13    | 42                           |
| 8:00 - 8:15 | 14                                 | 9    | 0    | 0    | 23    | 0                                  | 6    | 6    | 0    | 12    | 0                        | 0    | 0    | 0    | 0     | 4                                          | 0    | 13   | 0    | 17    | 52                           |
| 8:15 - 8:30 | 10                                 | 11   | 0    | 0    | 21    | 0                                  | 6    | 4    | 0    | 10    | 0                        | 0    | 0    | 0    | 0     | 2                                          | 0    | 3    | 0    | 5     | 36                           |
| 8:30 - 8:45 | 5                                  | 2    | 0    | 0    | 7     | 0                                  | 8    | 1    | 0    | 9     | 0                        | 0    | 0    | 0    | 0     | 3                                          | 0    | 9    | 0    | 12    | 28                           |
| 8:45 - 9:00 | 10                                 | 3    | 0    | 0    | 13    | 0                                  | 6    | 2    | 0    | 8     | 0                        | 0    | 0    | 0    | 0     | 2                                          | 0    | 10   | 0    | 12    | 33                           |
| 2 Hr Totals | 83                                 | 65   | 0    | 0    | 148   | 0                                  | 37   | 28   | 0    | 65    | 0                        | 0    | 0    | 0    | 0     | 25                                         | 0    | 61   | 0    | 86    | 299                          |
| 1 Hr Totals |                                    |      |      |      |       |                                    |      |      |      |       |                          |      |      |      |       |                                            |      |      |      |       |                              |
| 7:00 - 8:00 | 44                                 | 40   | 0    | 0    | 84    | 0                                  | 11   | 15   | 0    | 26    | 0                        | 0    | 0    | 0    | 0     | 14                                         | 0    | 26   | 0    | 40    | 150                          |
| 7:15 - 8:15 | 46                                 | 43   | 0    | 0    | 89    | 0                                  | 14   | 19   | 0    | 33    | 0                        | 0    | 0    | 0    | 0     | 15                                         | 0    | 37   | 0    | 52    | 174                          |
| 7:30 - 8:30 | 47                                 | 47   | 0    | 0    | 94    | 0                                  | 19   | 19   | 0    | 38    | 0                        | 0    | 0    | 0    | 0     | 15                                         | 0    | 31   | 0    | 46    | 178                          |
| 7:45 - 8:45 | 42                                 | 31   | 0    | 0    | 73    | 0                                  | 24   | 14   | 0    | 38    | 0                        | 0    | 0    | 0    | 0     | 15                                         | 0    | 32   | 0    | 47    | 158                          |
| 8:00 - 9:00 | 39                                 | 25   | 0    | 0    | 64    | 0                                  | 26   | 13   | 0    | 39    | 0                        | 0    | 0    | 0    | 0     | 11                                         | 0    | 35   | 0    | 46    | 149                          |
| PEAK HOUR   |                                    |      |      |      |       |                                    |      |      |      |       |                          |      |      |      |       |                                            |      |      |      |       |                              |
| 7:30 - 8:30 | 47                                 | 47   | 0    | 0    | 94    | 0                                  | 19   | 19   | 0    | 38    | 0                        | 0    | 0    | 0    | 0     | 15                                         | 0    | 31   | 0    | 46    | 178                          |
| PM          |                                    |      |      |      |       |                                    |      |      |      |       |                          |      |      |      |       |                                            |      |      |      |       |                              |
| 4:00 - 4:15 | 18                                 | 12   | 0    | 0    | 30    | 0                                  | 13   | 5    | 0    | 18    | 0                        | 0    | 0    | 0    | 0     | 7                                          | 0    | 13   | 0    | 20    | 68                           |
| 4:15 - 4:30 | 16                                 | 2    | 0    | 0    | 18    | 0                                  | 9    | 1    | 0    | 10    | 0                        | 0    | 0    | 0    | 0     | 5                                          | 0    | 15   | 0    | 20    | 48                           |
| 4:30 - 4:45 | 21                                 | 7    | 0    | 0    | 28    | 0                                  | 12   | 7    | 0    | 19    | 0                        | 0    | 0    | 0    | 0     | 5                                          | 0    | 18   | 0    | 23    | 70                           |
| 4:45 - 5:00 | 21                                 | 10   | 0    | 0    | 31    | 0                                  | 12   | 4    | 0    | 16    | 0                        | 0    | 0    | 0    | 0     | 3                                          | 0    | 15   | 0    | 18    | 65                           |
| 5:00 - 5:15 | 12                                 | 8    | 0    | 0    | 20    | 0                                  | 17   | 11   | 1    | 29    | 0                        | 0    | 0    | 0    | 0     | 7                                          | 0    | 18   | 0    | 25    | 74                           |
| 5:15 - 5:30 | 19                                 | 6    | 0    | 0    | 25    | 0                                  | 12   | 13   | 0    | 25    | 0                        | 0    | 0    | 0    | 0     | 7                                          | 0    | 20   | 0    | 27    | 77                           |
| 5:30 - 5:45 | 13                                 | 7    | 0    | 0    | 20    | 0                                  | 10   | 3    | 0    | 13    | 0                        | 0    | 0    | 0    | 0     | 2                                          | 0    | 14   | 0    | 16    | 49                           |
| 5:45 - 6:00 | 19                                 | 9    | 0    | 0    | 28    | 0                                  | 7    | 4    | 0    | 11    | 0                        | 0    | 0    | 0    | 0     | 7                                          | 0    | 13   | 0    | 20    | 59                           |
| 2 Hr Totals | 139                                | 61   | 0    | 0    | 200   | 0                                  | 92   | 48   | 1    | 141   | 0                        | 0    | 0    | 0    | 0     | 43                                         | 0    | 126  | 0    | 169   | 510                          |
| 1 Hr Totals |                                    |      |      |      |       |                                    |      |      |      |       |                          |      |      |      |       |                                            |      |      |      |       |                              |
| 4:00 - 5:00 | 76                                 | 31   | 0    | 0    | 107   | 0                                  | 46   | 17   | 0    | 63    | 0                        | 0    | 0    | 0    | 0     | 20                                         | 0    | 61   | 0    | 81    | 251                          |
| 4:15 - 5:15 | 70                                 | 27   | 0    | 0    | 97    | 0                                  | 50   | 23   | 1    | 74    | 0                        | 0    | 0    | 0    | 0     | 20                                         | 0    | 66   | 0    | 86    | 257                          |
| 4:30 - 5:30 | 73                                 | 31   | 0    | 0    | 104   | 0                                  | 53   | 35   | 1    | 89    | 0                        | 0    | 0    | 0    | 0     | 22                                         | 0    | 71   | 0    | 93    | 286                          |
| 4:45 - 5:45 | 65                                 | 31   | 0    | 0    | 96    | 0                                  | 51   | 31   | 1    | 83    | 0                        | 0    | 0    | 0    | 0     | 19                                         | 0    | 67   | 0    | 86    | 265                          |
| 5:00 - 6:00 | 63                                 | 30   | 0    | 0    | 93    | 0                                  | 46   | 31   | 1    | 78    | 0                        | 0    | 0    | 0    | 0     | 23                                         | 0    | 65   | 0    | 88    | 259                          |
| PEAK HOUR   |                                    |      |      |      |       |                                    |      |      |      |       |                          |      |      |      |       |                                            |      |      |      |       |                              |
| 4:30 - 5:30 | 73                                 | 31   | 0    | 0    | 104   | 0                                  | 53   | 35   | 1    | 89    | 0                        | 0    | 0    | 0    | 0     | 22                                         | 0    | 71   | 0    | 93    | 286                          |

# **Appendix D**

## **VDOT Turn Lane Worksheets**

**RED LANE RIGHT TURN WARRANT****FIGURE 3-26 WARRANTS FOR RIGHT TURN TREATMENT (2-LANE HIGHWAY)**

Appropriate Radius required at all Intersections and Entrances (Commercial or Private).

**LEGEND**

**PHV** - Peak Hour Volume (also Design Hourly Volume equivalent)

**Adjustment for Right Turns**

For posted speeds at or under 45 mph, PHV right turns > 40, and PHV total < 300.

Adjusted right turns = PHV Right Turns - 20

If PHV is not known use formula:  $PHV = ADT \times K \times D$

K = the percent of AADT occurring in the peak hour

D = the percent of traffic in the peak direction of flow

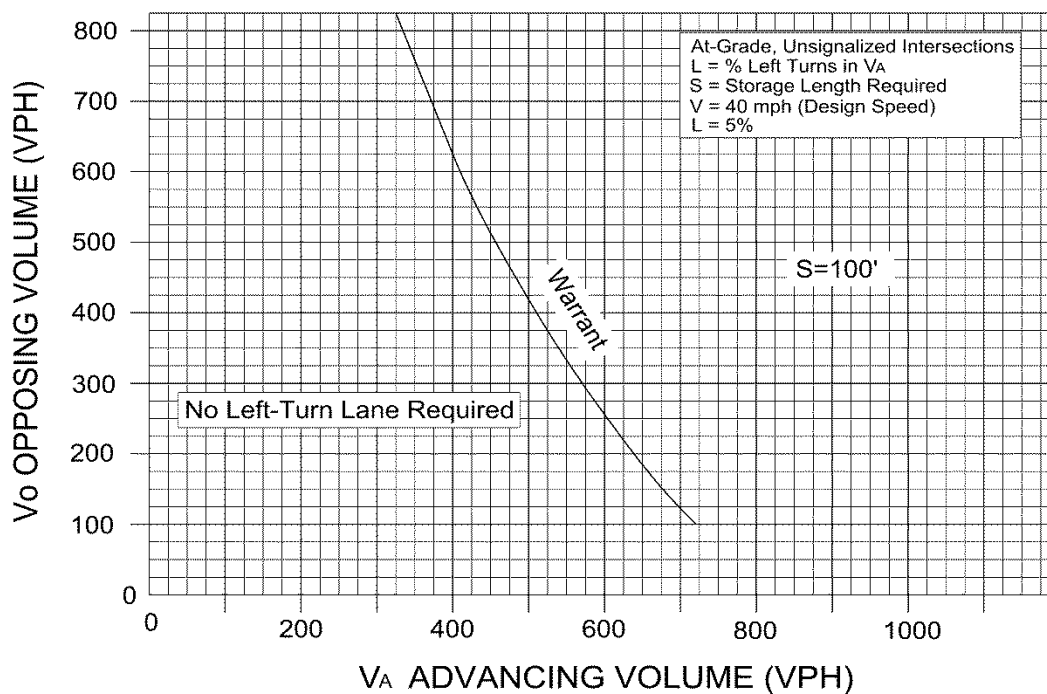
Note: An average of 11% for K x D will suffice.

When right turn facilities are warranted, see [Figure 3-1](#) for design criteria.\*

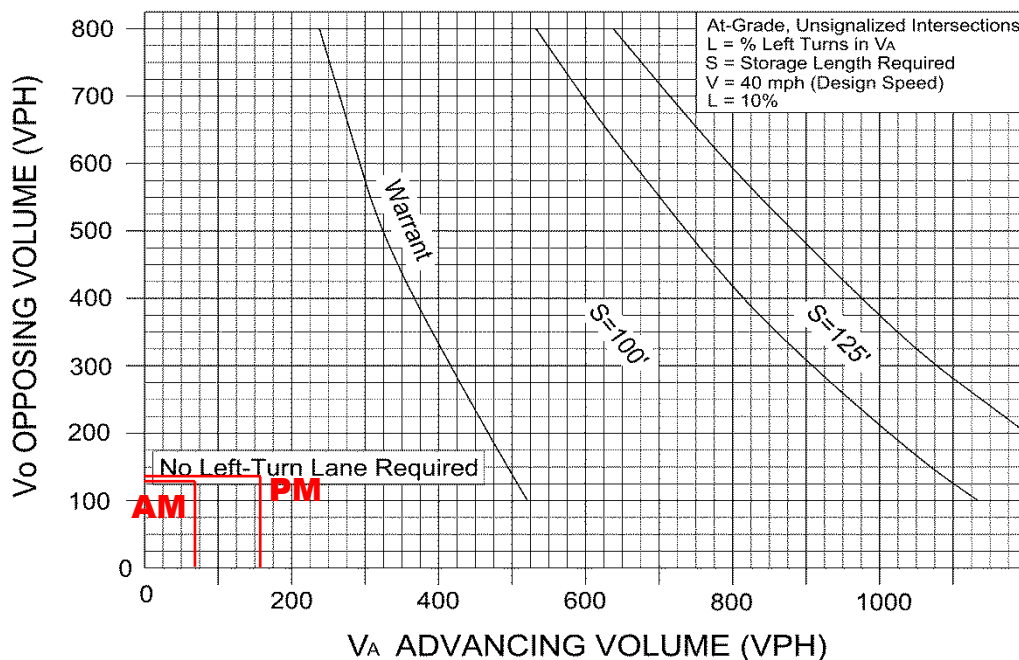
\* Rev. 1/15

## RED LANE LEFT TURN WARRANT

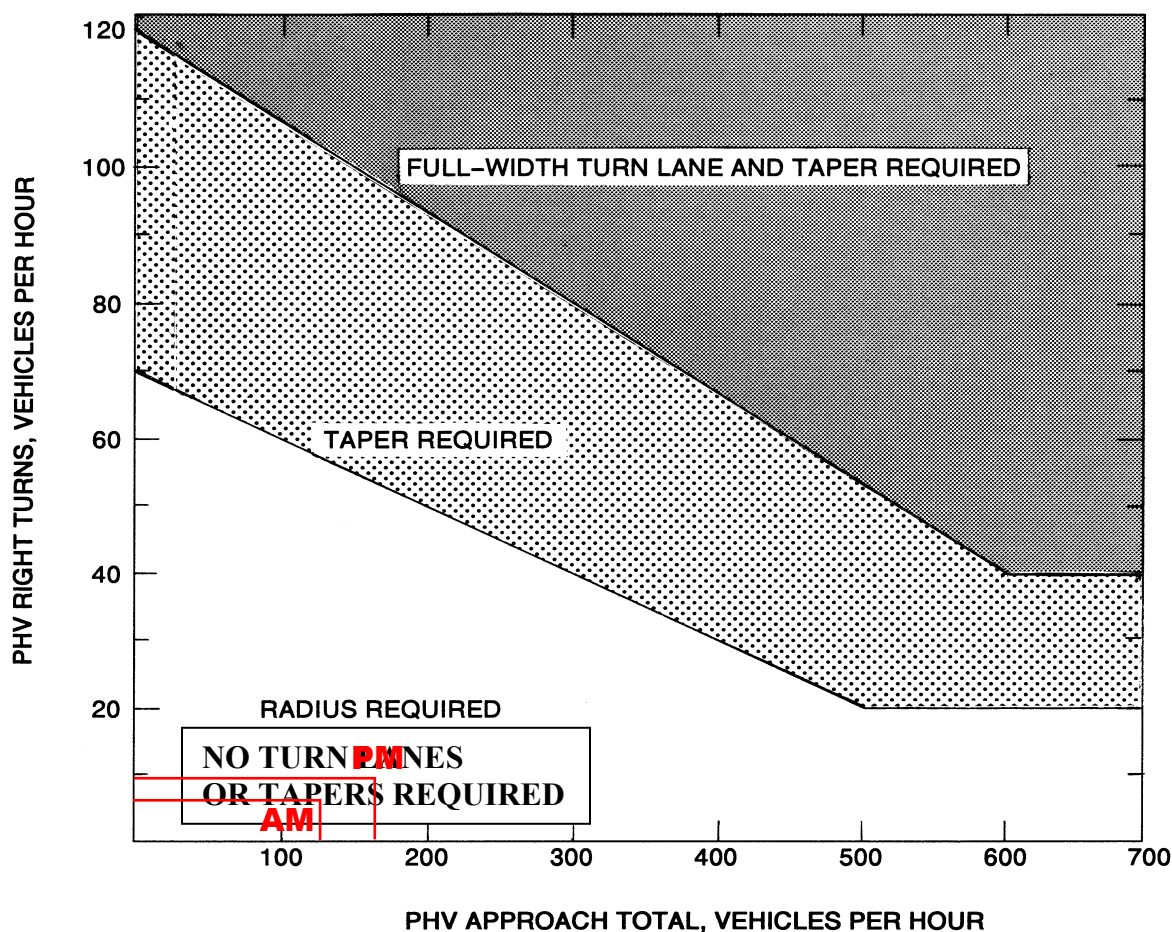
### WARRANT FOR LEFT-TURN STORAGE LANES ON TWO-LANE HIGHWAY



**FIGURE 3-4 WARRANT FOR LEFT TURN STORAGE LANES ON TWO LANE HIGHWAY**



**FIGURE 3-5 WARRANT FOR LEFT TURN STORAGE LANES ON TWO LANE HIGHWAY**

**EAST CARROLLTON AVENUE RIGHT TURN WARRANT****FIGURE 3-26 WARRANTS FOR RIGHT TURN TREATMENT (2-LANE HIGHWAY)**

Appropriate Radius required at all Intersections and Entrances (Commercial or Private).

**LEGEND**

**PHV** - Peak Hour Volume (also Design Hourly Volume equivalent)

**Adjustment for Right Turns**

For posted speeds at or under 45 mph, PHV right turns > 40, and PHV total < 300.

Adjusted right turns = PHV Right Turns - 20

If PHV is not known use formula:  $PHV = ADT \times K \times D$

K = the percent of AADT occurring in the peak hour

D = the percent of traffic in the peak direction of flow

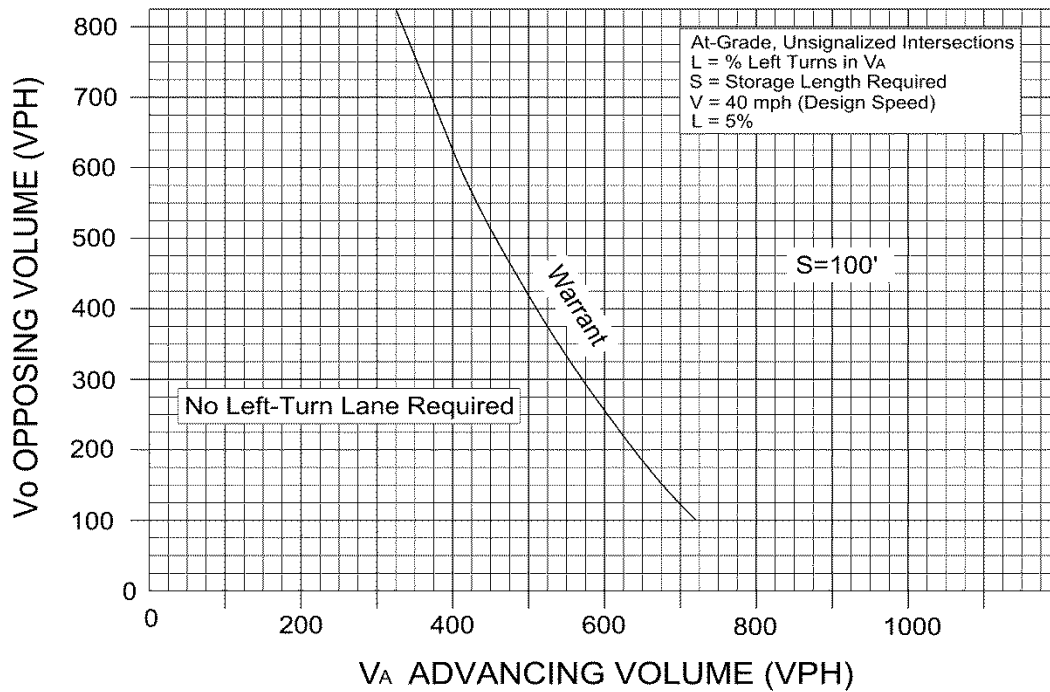
Note: An average of 11% for K x D will suffice.

When right turn facilities are warranted, see [Figure 3-1](#) for design criteria.\*

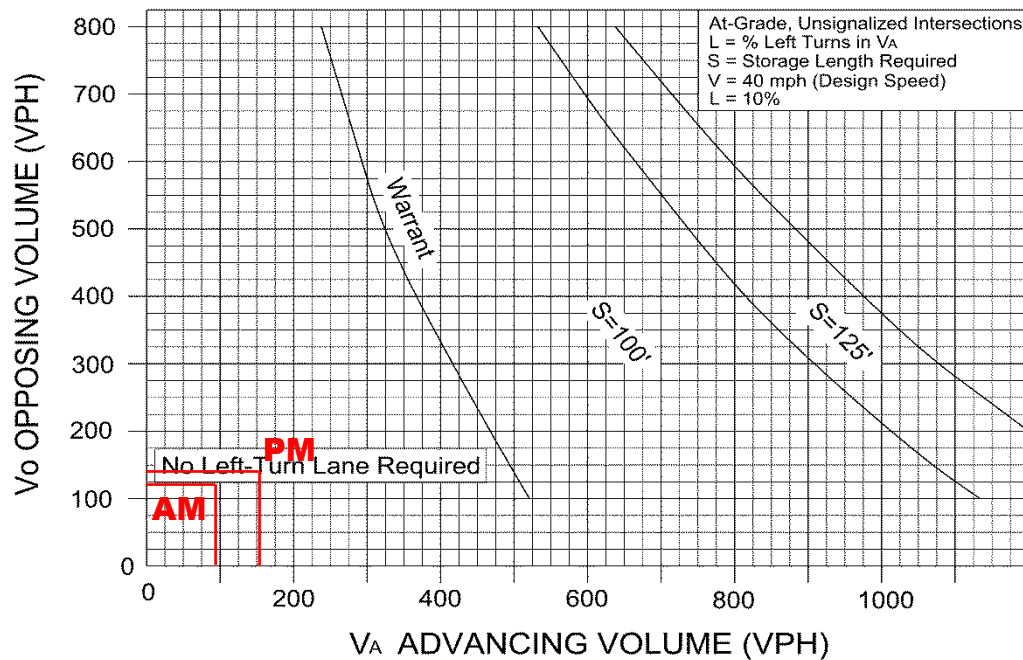
\* Rev. 1/15



# **EAST CARROLLTON AVENUE LEFT TURN WARRANT** **WARRANT FOR LEFT-TURN STORAGE LANES ON TWO-LANE HIGHWAY**



**FIGURE 3-4 WARRANT FOR LEFT TURN STORAGE LANES ON TWO LANE HIGHWAY**



**FIGURE 3-5 WARRANT FOR LEFT TURN STORAGE LANES ON TWO LANE HIGHWAY**



# **Appendix E**

## **Synchro 11 Intersection Analysis Data**

| Intersection              |     |
|---------------------------|-----|
| Intersection Delay, s/veh | 7.3 |
| Intersection LOS          | A   |

| Movement            | EBL                                                                               | EBR  | NBL  | NBT                                                                               | SBT                                                                               | SBR  |
|---------------------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
| Lane Configurations |  |      |      |  |  |      |
| Traffic Vol, veh/h  | 31                                                                                | 15   | 19   | 19                                                                                | 47                                                                                | 47   |
| Future Vol, veh/h   | 31                                                                                | 15   | 19   | 19                                                                                | 47                                                                                | 47   |
| Peak Hour Factor    | 0.86                                                                              | 0.86 | 0.86 | 0.86                                                                              | 0.86                                                                              | 0.86 |
| Heavy Vehicles, %   | 0                                                                                 | 0    | 0    | 0                                                                                 | 0                                                                                 | 0    |
| Mvmt Flow           | 36                                                                                | 17   | 22   | 22                                                                                | 55                                                                                | 55   |
| Number of Lanes     | 1                                                                                 | 0    | 0    | 1                                                                                 | 1                                                                                 | 0    |

| Approach                   | EB  | NB  | SB  |
|----------------------------|-----|-----|-----|
| Opposing Approach          |     | SB  | NB  |
| Opposing Lanes             | 0   | 1   | 1   |
| Conflicting Approach Left  | SB  | EB  |     |
| Conflicting Lanes Left     | 1   | 1   | 0   |
| Conflicting Approach Right | NB  |     | EB  |
| Conflicting Lanes Right    | 1   | 0   | 1   |
| HCM Control Delay          | 7.4 | 7.4 | 7.2 |
| HCM LOS                    | A   | A   | A   |

| Lane                   | NBLn1 | EBLn1 | SBLn1 |
|------------------------|-------|-------|-------|
| Vol Left, %            | 50%   | 67%   | 0%    |
| Vol Thru, %            | 50%   | 0%    | 50%   |
| Vol Right, %           | 0%    | 33%   | 50%   |
| Sign Control           | Stop  | Stop  | Stop  |
| Traffic Vol by Lane    | 38    | 46    | 94    |
| LT Vol                 | 19    | 31    | 0     |
| Through Vol            | 19    | 0     | 47    |
| RT Vol                 | 0     | 15    | 47    |
| Lane Flow Rate         | 44    | 53    | 109   |
| Geometry Grp           | 1     | 1     | 1     |
| Degree of Util (X)     | 0.051 | 0.061 | 0.113 |
| Departure Headway (Hd) | 4.178 | 4.102 | 3.728 |
| Convergence, Y/N       | Yes   | Yes   | Yes   |
| Cap                    | 854   | 867   | 959   |
| Service Time           | 2.218 | 2.155 | 1.764 |
| HCM Lane V/C Ratio     | 0.052 | 0.061 | 0.114 |
| HCM Control Delay      | 7.4   | 7.4   | 7.2   |
| HCM Lane LOS           | A     | A     | A     |
| HCM 95th-tile Q        | 0.2   | 0.2   | 0.4   |

| Intersection              |     |
|---------------------------|-----|
| Intersection Delay, s/veh | 7.5 |
| Intersection LOS          | A   |

| Movement            | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|---------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations |      | ↕    |      |      | ↕    |      |      | ↕    |      |      | ↕    |      |
| Traffic Vol, veh/h  | 12   | 43   | 7    | 0    | 59   | 7    | 15   | 13   | 3    | 0    | 4    | 5    |
| Future Vol, veh/h   | 12   | 43   | 7    | 0    | 59   | 7    | 15   | 13   | 3    | 0    | 4    | 5    |
| Peak Hour Factor    | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 |
| Heavy Vehicles, %   | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    |
| Mvmt Flow           | 15   | 52   | 9    | 0    | 72   | 9    | 18   | 16   | 4    | 0    | 5    | 6    |
| Number of Lanes     | 0    | 1    | 0    | 0    | 1    | 0    | 0    | 1    | 0    | 0    | 1    | 0    |

| Approach                   | EB  | WB  | NB  | SB |
|----------------------------|-----|-----|-----|----|
| Opposing Approach          | WB  | EB  | SB  | NB |
| Opposing Lanes             | 1   | 1   | 1   | 1  |
| Conflicting Approach Left  | SB  | NB  | EB  | WB |
| Conflicting Lanes Left     | 1   | 1   | 1   | 1  |
| Conflicting Approach Right | NB  | SB  | WB  | EB |
| Conflicting Lanes Right    | 1   | 1   | 1   | 1  |
| HCM Control Delay          | 7.5 | 7.5 | 7.5 | 7  |
| HCM LOS                    | A   | A   | A   | A  |

| Lane                   | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|------------------------|-------|-------|-------|-------|
| Vol Left, %            | 48%   | 19%   | 0%    | 0%    |
| Vol Thru, %            | 42%   | 69%   | 89%   | 44%   |
| Vol Right, %           | 10%   | 11%   | 11%   | 56%   |
| Sign Control           | Stop  | Stop  | Stop  | Stop  |
| Traffic Vol by Lane    | 31    | 62    | 66    | 9     |
| LT Vol                 | 15    | 12    | 0     | 0     |
| Through Vol            | 13    | 43    | 59    | 4     |
| RT Vol                 | 3     | 7     | 7     | 5     |
| Lane Flow Rate         | 38    | 76    | 80    | 11    |
| Geometry Grp           | 1     | 1     | 1     | 1     |
| Degree of Util (X)     | 0.045 | 0.085 | 0.09  | 0.012 |
| Departure Headway (Hd) | 4.251 | 4.052 | 4.013 | 3.899 |
| Convergence, Y/N       | Yes   | Yes   | Yes   | Yes   |
| Cap                    | 834   | 880   | 889   | 905   |
| Service Time           | 2.322 | 2.094 | 2.055 | 1.979 |
| HCM Lane V/C Ratio     | 0.046 | 0.086 | 0.09  | 0.012 |
| HCM Control Delay      | 7.5   | 7.5   | 7.5   | 7     |
| HCM Lane LOS           | A     | A     | A     | A     |
| HCM 95th-tile Q        | 0.1   | 0.3   | 0.3   | 0     |

| Intersection             |        |              |      |        |              |      |        |              |      |        |              |      |
|--------------------------|--------|--------------|------|--------|--------------|------|--------|--------------|------|--------|--------------|------|
| Int Delay, s/veh         | 1.4    |              |      |        |              |      |        |              |      |        |              |      |
| Movement                 | EBL    | EBT          | EBR  | WBL    | WBT          | WBR  | NBL    | NBT          | NBR  | SBL    | SBT          | SBR  |
| Lane Configurations      |        | <div>↕</div> |      |        | <div>↕</div> |      |        | <div>↕</div> |      |        | <div>↕</div> |      |
| Traffic Vol, veh/h       | 0      | 59           | 116  | 4      | 74           | 1    | 33     | 0            | 1    | 0      | 0            | 1    |
| Future Vol, veh/h        | 0      | 59           | 116  | 4      | 74           | 1    | 33     | 0            | 1    | 0      | 0            | 1    |
| Conflicting Peds, #/hr   | 0      | 0            | 0    | 0      | 0            | 0    | 0      | 0            | 0    | 0      | 0            | 0    |
| Sign Control             | Free   | Free         | Free | Free   | Free         | Free | Stop   | Stop         | Stop | Stop   | Stop         | Stop |
| RT Channelized           | -      | -            | None | -      | -            | None | -      | -            | None | -      | -            | None |
| Storage Length           | -      | -            | -    | -      | -            | -    | -      | -            | -    | -      | -            | -    |
| Veh in Median Storage, # | -      | 0            | -    | -      | 0            | -    | -      | 0            | -    | -      | 0            | -    |
| Grade, %                 | -      | 0            | -    | -      | 0            | -    | -      | 0            | -    | -      | 0            | -    |
| Peak Hour Factor         | 82     | 82           | 82   | 82     | 82           | 82   | 82     | 82           | 82   | 82     | 82           | 82   |
| Heavy Vehicles, %        | 0      | 0            | 0    | 0      | 0            | 0    | 0      | 0            | 0    | 0      | 0            | 0    |
| Mvmt Flow                | 0      | 72           | 141  | 5      | 90           | 1    | 40     | 0            | 1    | 0      | 0            | 1    |
|                          |        |              |      |        |              |      |        |              |      |        |              |      |
| Major/Minor              | Major1 |              |      | Major2 |              |      | Minor1 |              |      | Minor2 |              |      |
| Conflicting Flow All     | 91     | 0            | 0    | 213    | 0            | 0    | 244    | 244          | 143  | 244    | 314          | 91   |
| Stage 1                  | -      | -            | -    | -      | -            | -    | 143    | 143          | -    | 101    | 101          | -    |
| Stage 2                  | -      | -            | -    | -      | -            | -    | 101    | 101          | -    | 143    | 213          | -    |
| Critical Hdwy            | 4.1    | -            | -    | 4.1    | -            | -    | 7.1    | 6.5          | 6.2  | 7.1    | 6.5          | 6.2  |
| Critical Hdwy Stg 1      | -      | -            | -    | -      | -            | -    | 6.1    | 5.5          | -    | 6.1    | 5.5          | -    |
| Critical Hdwy Stg 2      | -      | -            | -    | -      | -            | -    | 6.1    | 5.5          | -    | 6.1    | 5.5          | -    |
| Follow-up Hdwy           | 2.2    | -            | -    | 2.2    | -            | -    | 3.5    | 4            | 3.3  | 3.5    | 4            | 3.3  |
| Pot Cap-1 Maneuver       | 1517   | -            | -    | 1369   | -            | -    | 714    | 661          | 910  | 714    | 605          | 972  |
| Stage 1                  | -      | -            | -    | -      | -            | -    | 865    | 782          | -    | 910    | 815          | -    |
| Stage 2                  | -      | -            | -    | -      | -            | -    | 910    | 815          | -    | 865    | 730          | -    |
| Platoon blocked, %       |        | -            | -    |        | -            | -    |        |              |      |        |              |      |
| Mov Cap-1 Maneuver       | 1517   | -            | -    | 1369   | -            | -    | 711    | 658          | 910  | 711    | 603          | 972  |
| Mov Cap-2 Maneuver       | -      | -            | -    | -      | -            | -    | 711    | 658          | -    | 711    | 603          | -    |
| Stage 1                  | -      | -            | -    | -      | -            | -    | 865    | 782          | -    | 910    | 812          | -    |
| Stage 2                  | -      | -            | -    | -      | -            | -    | 905    | 812          | -    | 864    | 730          | -    |
|                          |        |              |      |        |              |      |        |              |      |        |              |      |
|                          |        |              |      |        |              |      |        |              |      |        |              |      |
| Approach                 | EB     |              |      | WB     |              |      | NB     |              |      | SB     |              |      |
| HCM Control Delay, s     | 0      |              |      | 0.4    |              |      | 10.3   |              |      | 8.7    |              |      |
| HCM LOS                  |        |              |      |        |              |      | B      |              |      | A      |              |      |
|                          |        |              |      |        |              |      |        |              |      |        |              |      |
| Minor Lane/Major Mvmt    | NBLn1  | EBL          | EBT  | EBR    | WBL          | WBT  | WBR    | SBLn1        |      |        |              |      |
| Capacity (veh/h)         | 716    | 1517         | -    | -      | 1369         | -    | -      | 972          |      |        |              |      |
| HCM Lane V/C Ratio       | 0.058  | -            | -    | -      | 0.004        | -    | -      | 0.001        |      |        |              |      |
| HCM Control Delay (s)    | 10.3   | 0            | -    | -      | 7.6          | 0    | -      | 8.7          |      |        |              |      |
| HCM Lane LOS             | B      | A            | -    | -      | A            | A    | -      | A            |      |        |              |      |
| HCM 95th %tile Q(veh)    | 0.2    | 0            | -    | -      | 0            | -    | -      | 0            |      |        |              |      |

### Summary of All Intervals

| Run Number              | 1    | 2    | 3    | 4    | 5    | 6    | 7    |
|-------------------------|------|------|------|------|------|------|------|
| Start Time              | 7:15 | 7:15 | 7:15 | 7:15 | 7:15 | 7:15 | 7:15 |
| End Time                | 8:30 | 8:30 | 8:30 | 8:30 | 8:30 | 8:30 | 8:30 |
| Total Time (min)        | 75   | 75   | 75   | 75   | 75   | 75   | 75   |
| Time Recorded (min)     | 60   | 60   | 60   | 60   | 60   | 60   | 60   |
| # of Intervals          | 5    | 5    | 5    | 5    | 5    | 5    | 5    |
| # of Recorded Intervals | 4    | 4    | 4    | 4    | 4    | 4    | 4    |
| Vehs Entered            | 412  | 419  | 411  | 363  | 368  | 375  | 359  |
| Vehs Exited             | 411  | 418  | 405  | 364  | 369  | 380  | 354  |
| Starting Vehs           | 2    | 2    | 0    | 3    | 1    | 7    | 2    |
| Ending Vehs             | 3    | 3    | 6    | 2    | 0    | 2    | 7    |
| Travel Distance (mi)    | 87   | 89   | 85   | 77   | 80   | 79   | 77   |
| Travel Time (hr)        | 4.2  | 4.2  | 4.0  | 3.7  | 3.8  | 3.8  | 3.7  |
| Total Delay (hr)        | 0.8  | 0.9  | 0.8  | 0.7  | 0.8  | 0.7  | 0.7  |
| Total Stops             | 413  | 433  | 403  | 360  | 389  | 365  | 373  |
| Fuel Used (gal)         | 3.7  | 3.8  | 3.7  | 3.3  | 3.4  | 3.4  | 3.3  |

### Summary of All Intervals

| Run Number              | 8    | 9    | 10   | Avg  |
|-------------------------|------|------|------|------|
| Start Time              | 7:15 | 7:15 | 7:15 | 7:15 |
| End Time                | 8:30 | 8:30 | 8:30 | 8:30 |
| Total Time (min)        | 75   | 75   | 75   | 75   |
| Time Recorded (min)     | 60   | 60   | 60   | 60   |
| # of Intervals          | 5    | 5    | 5    | 5    |
| # of Recorded Intervals | 4    | 4    | 4    | 4    |
| Vehs Entered            | 384  | 396  | 396  | 385  |
| Vehs Exited             | 386  | 399  | 399  | 388  |
| Starting Vehs           | 8    | 5    | 3    | 0    |
| Ending Vehs             | 6    | 2    | 0    | 0    |
| Travel Distance (mi)    | 78   | 84   | 83   | 82   |
| Travel Time (hr)        | 3.7  | 4.0  | 4.0  | 3.9  |
| Total Delay (hr)        | 0.7  | 0.8  | 0.8  | 0.8  |
| Total Stops             | 355  | 373  | 399  | 386  |
| Fuel Used (gal)         | 3.4  | 3.6  | 3.6  | 3.5  |

### Interval #0 Information Seeding

|                                               |      |
|-----------------------------------------------|------|
| Start Time                                    | 7:15 |
| End Time                                      | 7:30 |
| Total Time (min)                              | 15   |
| Volumes adjusted by Growth Factors, Anti PHF. |      |
| No data recorded this interval.               |      |

### Interval #1 Information Recording

|                  |      |
|------------------|------|
| Start Time       | 7:30 |
| End Time         | 7:45 |
| Total Time (min) | 15   |

Volumes adjusted by PHF, Growth Factors.

| Run Number           | 1   | 2   | 3   | 4   | 5   | 6   | 7   |
|----------------------|-----|-----|-----|-----|-----|-----|-----|
| Vehs Entered         | 127 | 125 | 124 | 111 | 113 | 103 | 114 |
| Vehs Exited          | 125 | 122 | 119 | 106 | 108 | 106 | 109 |
| Starting Vehs        | 2   | 2   | 0   | 3   | 1   | 7   | 2   |
| Ending Vehs          | 4   | 5   | 5   | 8   | 6   | 4   | 7   |
| Travel Distance (mi) | 26  | 26  | 24  | 23  | 24  | 21  | 24  |
| Travel Time (hr)     | 1.3 | 1.3 | 1.1 | 1.1 | 1.2 | 1.0 | 1.2 |
| Total Delay (hr)     | 0.3 | 0.2 | 0.2 | 0.2 | 0.3 | 0.2 | 0.2 |
| Total Stops          | 128 | 120 | 106 | 108 | 129 | 99  | 113 |
| Fuel Used (gal)      | 1.2 | 1.1 | 1.1 | 1.0 | 1.0 | 0.9 | 1.0 |

### Interval #1 Information Recording

|                  |      |
|------------------|------|
| Start Time       | 7:30 |
| End Time         | 7:45 |
| Total Time (min) | 15   |

Volumes adjusted by PHF, Growth Factors.

| Run Number           | 8   | 9   | 10  | Avg |
|----------------------|-----|-----|-----|-----|
| Vehs Entered         | 102 | 120 | 104 | 114 |
| Vehs Exited          | 104 | 119 | 105 | 113 |
| Starting Vehs        | 8   | 5   | 3   | 0   |
| Ending Vehs          | 6   | 6   | 2   | 3   |
| Travel Distance (mi) | 21  | 25  | 21  | 24  |
| Travel Time (hr)     | 1.0 | 1.2 | 1.0 | 1.1 |
| Total Delay (hr)     | 0.2 | 0.2 | 0.2 | 0.2 |
| Total Stops          | 95  | 110 | 99  | 110 |
| Fuel Used (gal)      | 1.0 | 1.1 | 0.9 | 1.0 |



Interval #2 Information Recording

|                  |      |
|------------------|------|
| Start Time       | 7:45 |
| End Time         | 8:00 |
| Total Time (min) | 15   |

Volumes adjusted by Growth Factors, Anti PHF.

| Run Number           | 1   | 2   | 3   | 4   | 5   | 6   | 7   |
|----------------------|-----|-----|-----|-----|-----|-----|-----|
| Vehs Entered         | 90  | 90  | 85  | 71  | 94  | 99  | 81  |
| Vehs Exited          | 89  | 92  | 87  | 74  | 100 | 101 | 86  |
| Starting Vehs        | 4   | 5   | 5   | 8   | 6   | 4   | 7   |
| Ending Vehs          | 5   | 3   | 3   | 5   | 0   | 2   | 2   |
| Travel Distance (mi) | 19  | 19  | 18  | 15  | 20  | 21  | 18  |
| Travel Time (hr)     | 0.9 | 0.9 | 0.9 | 0.7 | 1.0 | 1.0 | 0.9 |
| Total Delay (hr)     | 0.2 | 0.2 | 0.2 | 0.1 | 0.2 | 0.2 | 0.2 |
| Total Stops          | 93  | 96  | 86  | 66  | 92  | 104 | 88  |
| Fuel Used (gal)      | 0.8 | 0.8 | 0.8 | 0.6 | 0.9 | 0.9 | 0.8 |

Interval #2 Information Recording

|                  |      |
|------------------|------|
| Start Time       | 7:45 |
| End Time         | 8:00 |
| Total Time (min) | 15   |

Volumes adjusted by Growth Factors, Anti PHF.

| Run Number           | 8   | 9   | 10  | Avg |
|----------------------|-----|-----|-----|-----|
| Vehs Entered         | 100 | 99  | 97  | 89  |
| Vehs Exited          | 105 | 103 | 97  | 94  |
| Starting Vehs        | 6   | 6   | 2   | 3   |
| Ending Vehs          | 1   | 2   | 2   | 0   |
| Travel Distance (mi) | 21  | 23  | 21  | 20  |
| Travel Time (hr)     | 1.0 | 1.1 | 1.0 | 0.9 |
| Total Delay (hr)     | 0.2 | 0.2 | 0.2 | 0.2 |
| Total Stops          | 102 | 113 | 100 | 92  |
| Fuel Used (gal)      | 0.9 | 1.0 | 0.9 | 0.8 |

### Interval #3 Information Recording

|                  |      |
|------------------|------|
| Start Time       | 8:00 |
| End Time         | 8:15 |
| Total Time (min) | 15   |

Volumes adjusted by Growth Factors, Anti PHF.

| Run Number           | 1   | 2   | 3   | 4   | 5   | 6   | 7   |
|----------------------|-----|-----|-----|-----|-----|-----|-----|
| Vehs Entered         | 119 | 98  | 94  | 96  | 92  | 96  | 81  |
| Vehs Exited          | 120 | 95  | 90  | 93  | 86  | 92  | 82  |
| Starting Vehs        | 5   | 3   | 3   | 5   | 0   | 2   | 2   |
| Ending Vehs          | 4   | 6   | 7   | 8   | 6   | 6   | 1   |
| Travel Distance (mi) | 24  | 21  | 20  | 20  | 19  | 19  | 18  |
| Travel Time (hr)     | 1.2 | 1.0 | 0.9 | 1.0 | 0.9 | 0.9 | 0.8 |
| Total Delay (hr)     | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
| Total Stops          | 109 | 109 | 94  | 95  | 93  | 88  | 86  |
| Fuel Used (gal)      | 1.0 | 0.9 | 0.9 | 0.9 | 0.8 | 0.8 | 0.7 |

### Interval #3 Information Recording

|                  |      |
|------------------|------|
| Start Time       | 8:00 |
| End Time         | 8:15 |
| Total Time (min) | 15   |

Volumes adjusted by Growth Factors, Anti PHF.

| Run Number           | 8   | 9   | 10  | Avg |
|----------------------|-----|-----|-----|-----|
| Vehs Entered         | 92  | 88  | 100 | 95  |
| Vehs Exited          | 88  | 86  | 101 | 93  |
| Starting Vehs        | 1   | 2   | 2   | 0   |
| Ending Vehs          | 5   | 4   | 1   | 1   |
| Travel Distance (mi) | 17  | 18  | 21  | 20  |
| Travel Time (hr)     | 0.8 | 0.9 | 1.0 | 0.9 |
| Total Delay (hr)     | 0.1 | 0.1 | 0.2 | 0.2 |
| Total Stops          | 71  | 76  | 99  | 92  |
| Fuel Used (gal)      | 0.8 | 0.8 | 0.9 | 0.8 |

#### Interval #4 Information Recording

|                  |      |
|------------------|------|
| Start Time       | 8:15 |
| End Time         | 8:30 |
| Total Time (min) | 15   |

Volumes adjusted by Growth Factors, Anti PHF.

| Run Number           | 1   | 2   | 3   | 4   | 5   | 6   | 7   |
|----------------------|-----|-----|-----|-----|-----|-----|-----|
| Vehs Entered         | 76  | 106 | 108 | 85  | 69  | 77  | 83  |
| Vehs Exited          | 77  | 109 | 109 | 91  | 75  | 81  | 77  |
| Starting Vehs        | 4   | 6   | 7   | 8   | 6   | 6   | 1   |
| Ending Vehs          | 3   | 3   | 6   | 2   | 0   | 2   | 7   |
| Travel Distance (mi) | 17  | 22  | 23  | 19  | 16  | 17  | 18  |
| Travel Time (hr)     | 0.8 | 1.1 | 1.1 | 0.9 | 0.7 | 0.8 | 0.8 |
| Total Delay (hr)     | 0.2 | 0.2 | 0.2 | 0.2 | 0.1 | 0.1 | 0.2 |
| Total Stops          | 83  | 108 | 117 | 91  | 75  | 74  | 86  |
| Fuel Used (gal)      | 0.8 | 1.0 | 1.0 | 0.8 | 0.7 | 0.7 | 0.8 |

#### Interval #4 Information Recording

|                  |      |
|------------------|------|
| Start Time       | 8:15 |
| End Time         | 8:30 |
| Total Time (min) | 15   |

Volumes adjusted by Growth Factors, Anti PHF.

| Run Number           | 8   | 9   | 10  | Avg |
|----------------------|-----|-----|-----|-----|
| Vehs Entered         | 90  | 89  | 95  | 86  |
| Vehs Exited          | 89  | 91  | 96  | 88  |
| Starting Vehs        | 5   | 4   | 1   | 1   |
| Ending Vehs          | 6   | 2   | 0   | 0   |
| Travel Distance (mi) | 18  | 17  | 20  | 19  |
| Travel Time (hr)     | 0.9 | 0.8 | 1.0 | 0.9 |
| Total Delay (hr)     | 0.2 | 0.1 | 0.2 | 0.2 |
| Total Stops          | 87  | 74  | 101 | 91  |
| Fuel Used (gal)      | 0.8 | 0.7 | 0.9 | 0.8 |

## Queuing and Blocking Report

### Existing AM

02/02/2024

#### Intersection: 2: Red Ln & Carrollton Ave

| Movement              | EB  | NB  | SB  |
|-----------------------|-----|-----|-----|
| Directions Served     | LR  | LT  | TR  |
| Maximum Queue (ft)    | 31  | 40  | 52  |
| Average Queue (ft)    | 25  | 22  | 32  |
| 95th Queue (ft)       | 43  | 46  | 48  |
| Link Distance (ft)    | 383 | 305 | 460 |
| Upstream Blk Time (%) |     |     |     |
| Queuing Penalty (veh) |     |     |     |
| Storage Bay Dist (ft) |     |     |     |
| Storage Blk Time (%)  |     |     |     |
| Queuing Penalty (veh) |     |     |     |

#### Intersection: 5: Broad St & Carrollton Ave

| Movement              | EB  | WB  | NB  | SB  |
|-----------------------|-----|-----|-----|-----|
| Directions Served     | LTR | LTR | LTR | LTR |
| Maximum Queue (ft)    | 2   | 22  | 49  | 18  |
| Average Queue (ft)    | 0   | 1   | 20  | 1   |
| 95th Queue (ft)       | 0   | 12  | 46  | 11  |
| Link Distance (ft)    | 292 | 373 | 621 | 370 |
| Upstream Blk Time (%) |     |     |     |     |
| Queuing Penalty (veh) |     |     |     |     |
| Storage Bay Dist (ft) |     |     |     |     |
| Storage Blk Time (%)  |     |     |     |     |
| Queuing Penalty (veh) |     |     |     |     |

#### Intersection: 8: Mt Vernon Ln & Carrollton Ave

| Movement              | EB  | WB  | NB  | SB  |
|-----------------------|-----|-----|-----|-----|
| Directions Served     | LTR | LTR | LTR | LTR |
| Maximum Queue (ft)    | 53  | 55  | 34  | 31  |
| Average Queue (ft)    | 29  | 28  | 20  | 10  |
| 95th Queue (ft)       | 50  | 47  | 44  | 33  |
| Link Distance (ft)    | 373 | 383 | 294 | 364 |
| Upstream Blk Time (%) |     |     |     |     |
| Queuing Penalty (veh) |     |     |     |     |
| Storage Bay Dist (ft) |     |     |     |     |
| Storage Blk Time (%)  |     |     |     |     |
| Queuing Penalty (veh) |     |     |     |     |

#### Network Summary

Network wide Queuing Penalty: 0

| Intersection              |     |
|---------------------------|-----|
| Intersection Delay, s/veh | 7.7 |
| Intersection LOS          | A   |

| Movement            | EBL                                                                               | EBR  | NBL  | NBT                                                                               | SBT                                                                               | SBR  |
|---------------------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
| Lane Configurations |  |      |      |  |  |      |
| Traffic Vol, veh/h  | 71                                                                                | 22   | 36   | 53                                                                                | 31                                                                                | 73   |
| Future Vol, veh/h   | 71                                                                                | 22   | 36   | 53                                                                                | 31                                                                                | 73   |
| Peak Hour Factor    | 0.93                                                                              | 0.93 | 0.93 | 0.93                                                                              | 0.93                                                                              | 0.93 |
| Heavy Vehicles, %   | 0                                                                                 | 0    | 0    | 0                                                                                 | 0                                                                                 | 0    |
| Mvmt Flow           | 76                                                                                | 24   | 39   | 57                                                                                | 33                                                                                | 78   |
| Number of Lanes     | 1                                                                                 | 0    | 0    | 1                                                                                 | 1                                                                                 | 0    |

| Approach                   | EB  | NB  | SB  |
|----------------------------|-----|-----|-----|
| Opposing Approach          |     | SB  | NB  |
| Opposing Lanes             | 0   | 1   | 1   |
| Conflicting Approach Left  | SB  | EB  |     |
| Conflicting Lanes Left     | 1   | 1   | 0   |
| Conflicting Approach Right | NB  |     | EB  |
| Conflicting Lanes Right    | 1   | 0   | 1   |
| HCM Control Delay          | 7.9 | 7.9 | 7.3 |
| HCM LOS                    | A   | A   | A   |

| Lane                   | NBLn1 | EBLn1 | SBLn1 |
|------------------------|-------|-------|-------|
| Vol Left, %            | 40%   | 76%   | 0%    |
| Vol Thru, %            | 60%   | 0%    | 30%   |
| Vol Right, %           | 0%    | 24%   | 70%   |
| Sign Control           | Stop  | Stop  | Stop  |
| Traffic Vol by Lane    | 89    | 93    | 104   |
| LT Vol                 | 36    | 71    | 0     |
| Through Vol            | 53    | 0     | 31    |
| RT Vol                 | 0     | 22    | 73    |
| Lane Flow Rate         | 96    | 100   | 112   |
| Geometry Grp           | 1     | 1     | 1     |
| Degree of Util (X)     | 0.113 | 0.118 | 0.116 |
| Departure Headway (Hd) | 4.243 | 4.264 | 3.727 |
| Convergence, Y/N       | Yes   | Yes   | Yes   |
| Cap                    | 835   | 829   | 946   |
| Service Time           | 2.316 | 2.349 | 1.81  |
| HCM Lane V/C Ratio     | 0.115 | 0.121 | 0.118 |
| HCM Control Delay      | 7.9   | 7.9   | 7.3   |
| HCM Lane LOS           | A     | A     | A     |
| HCM 95th-tile Q        | 0.4   | 0.4   | 0.4   |

| Intersection              |     |
|---------------------------|-----|
| Intersection Delay, s/veh | 7.8 |
| Intersection LOS          | A   |

| Movement            | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|---------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations |      | ↕    |      |      | ↕    |      |      | ↕    |      |      | ↕    |      |
| Traffic Vol, veh/h  | 5    | 88   | 12   | 2    | 104  | 2    | 13   | 3    | 2    | 3    | 5    | 6    |
| Future Vol, veh/h   | 5    | 88   | 12   | 2    | 104  | 2    | 13   | 3    | 2    | 3    | 5    | 6    |
| Peak Hour Factor    | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 |
| Heavy Vehicles, %   | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    |
| Mvmt Flow           | 6    | 107  | 15   | 2    | 127  | 2    | 16   | 4    | 2    | 4    | 6    | 7    |
| Number of Lanes     | 0    | 1    | 0    | 0    | 1    | 0    | 0    | 1    | 0    | 0    | 1    | 0    |

| Approach                   | EB  | WB  | NB  | SB  |
|----------------------------|-----|-----|-----|-----|
| Opposing Approach          | WB  | EB  | SB  | NB  |
| Opposing Lanes             | 1   | 1   | 1   | 1   |
| Conflicting Approach Left  | SB  | NB  | EB  | WB  |
| Conflicting Lanes Left     | 1   | 1   | 1   | 1   |
| Conflicting Approach Right | NB  | SB  | WB  | EB  |
| Conflicting Lanes Right    | 1   | 1   | 1   | 1   |
| HCM Control Delay          | 7.8 | 7.9 | 7.7 | 7.4 |
| HCM LOS                    | A   | A   | A   | A   |

| Lane                   | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|------------------------|-------|-------|-------|-------|
| Vol Left, %            | 72%   | 5%    | 2%    | 21%   |
| Vol Thru, %            | 17%   | 84%   | 96%   | 36%   |
| Vol Right, %           | 11%   | 11%   | 2%    | 43%   |
| Sign Control           | Stop  | Stop  | Stop  | Stop  |
| Traffic Vol by Lane    | 18    | 105   | 108   | 14    |
| LT Vol                 | 13    | 5     | 2     | 3     |
| Through Vol            | 3     | 88    | 104   | 5     |
| RT Vol                 | 2     | 12    | 2     | 6     |
| Lane Flow Rate         | 22    | 128   | 132   | 17    |
| Geometry Grp           | 1     | 1     | 1     | 1     |
| Degree of Util (X)     | 0.028 | 0.144 | 0.15  | 0.02  |
| Departure Headway (Hd) | 4.593 | 4.043 | 4.092 | 4.307 |
| Convergence, Y/N       | Yes   | Yes   | Yes   | Yes   |
| Cap                    | 784   | 881   | 871   | 836   |
| Service Time           | 2.593 | 2.097 | 2.143 | 2.308 |
| HCM Lane V/C Ratio     | 0.028 | 0.145 | 0.152 | 0.02  |
| HCM Control Delay      | 7.7   | 7.8   | 7.9   | 7.4   |
| HCM Lane LOS           | A     | A     | A     | A     |
| HCM 95th-tile Q        | 0.1   | 0.5   | 0.5   | 0.1   |

| Intersection             |        |       |      |        |       |      |        |       |      |        |      |      |
|--------------------------|--------|-------|------|--------|-------|------|--------|-------|------|--------|------|------|
| Int Delay, s/veh         | 3      |       |      |        |       |      |        |       |      |        |      |      |
| Movement                 | EBL    | EBT   | EBR  | WBL    | WBT   | WBR  | NBL    | NBT   | NBR  | SBL    | SBT  | SBR  |
| Lane Configurations      |        | ↕     |      |        | ↕     |      |        | ↕     |      |        | ↕    |      |
| Traffic Vol, veh/h       | 3      | 99    | 87   | 7      | 115   | 1    | 84     | 0     | 6    | 0      | 2    | 2    |
| Future Vol, veh/h        | 3      | 99    | 87   | 7      | 115   | 1    | 84     | 0     | 6    | 0      | 2    | 2    |
| Conflicting Peds, #/hr   | 0      | 0     | 0    | 0      | 0     | 0    | 0      | 0     | 0    | 0      | 0    | 0    |
| Sign Control             | Free   | Free  | Free | Free   | Free  | Free | Stop   | Stop  | Stop | Stop   | Stop | Stop |
| RT Channelized           | -      | -     | None | -      | -     | None | -      | -     | None | -      | -    | None |
| Storage Length           | -      | -     | -    | -      | -     | -    | -      | -     | -    | -      | -    | -    |
| Veh in Median Storage, # | -      | 0     | -    | -      | 0     | -    | -      | 0     | -    | -      | 0    | -    |
| Grade, %                 | -      | 0     | -    | -      | 0     | -    | -      | 0     | -    | -      | 0    | -    |
| Peak Hour Factor         | 82     | 82    | 82   | 82     | 82    | 82   | 82     | 82    | 82   | 82     | 82   | 82   |
| Heavy Vehicles, %        | 0      | 0     | 0    | 0      | 0     | 0    | 0      | 0     | 0    | 0      | 0    | 0    |
| Mvmt Flow                | 4      | 121   | 106  | 9      | 140   | 1    | 102    | 0     | 7    | 0      | 2    | 2    |
|                          |        |       |      |        |       |      |        |       |      |        |      |      |
| Major/Minor              | Major1 |       |      | Major2 |       |      | Minor1 |       |      | Minor2 |      |      |
| Conflicting Flow All     | 141    | 0     | 0    | 227    | 0     | 0    | 343    | 341   | 174  | 345    | 394  | 141  |
| Stage 1                  | -      | -     | -    | -      | -     | -    | 182    | 182   | -    | 159    | 159  | -    |
| Stage 2                  | -      | -     | -    | -      | -     | -    | 161    | 159   | -    | 186    | 235  | -    |
| Critical Hdwy            | 4.1    | -     | -    | 4.1    | -     | -    | 7.1    | 6.5   | 6.2  | 7.1    | 6.5  | 6.2  |
| Critical Hdwy Stg 1      | -      | -     | -    | -      | -     | -    | 6.1    | 5.5   | -    | 6.1    | 5.5  | -    |
| Critical Hdwy Stg 2      | -      | -     | -    | -      | -     | -    | 6.1    | 5.5   | -    | 6.1    | 5.5  | -    |
| Follow-up Hdwy           | 2.2    | -     | -    | 2.2    | -     | -    | 3.5    | 4     | 3.3  | 3.5    | 4    | 3.3  |
| Pot Cap-1 Maneuver       | 1455   | -     | -    | 1353   | -     | -    | 615    | 584   | 875  | 613    | 546  | 912  |
| Stage 1                  | -      | -     | -    | -      | -     | -    | 824    | 753   | -    | 848    | 770  | -    |
| Stage 2                  | -      | -     | -    | -      | -     | -    | 846    | 770   | -    | 820    | 714  | -    |
| Platoon blocked, %       |        | -     | -    |        | -     | -    |        |       |      |        |      |      |
| Mov Cap-1 Maneuver       | 1455   | -     | -    | 1353   | -     | -    | 606    | 578   | 875  | 603    | 541  | 912  |
| Mov Cap-2 Maneuver       | -      | -     | -    | -      | -     | -    | 606    | 578   | -    | 603    | 541  | -    |
| Stage 1                  | -      | -     | -    | -      | -     | -    | 822    | 751   | -    | 845    | 765  | -    |
| Stage 2                  | -      | -     | -    | -      | -     | -    | 835    | 765   | -    | 811    | 712  | -    |
|                          |        |       |      |        |       |      |        |       |      |        |      |      |
|                          |        |       |      |        |       |      |        |       |      |        |      |      |
| Approach                 | EB     |       |      | WB     |       |      | NB     |       |      | SB     |      |      |
| HCM Control Delay, s     | 0.1    |       |      | 0.4    |       |      | 12.1   |       |      | 10.3   |      |      |
| HCM LOS                  |        |       |      |        |       |      | B      |       |      | B      |      |      |
|                          |        |       |      |        |       |      |        |       |      |        |      |      |
| Minor Lane/Major Mvmt    | NBLn1  | EBL   | EBT  | EBR    | WBL   | WBT  | WBR    | SBLn1 |      |        |      |      |
| Capacity (veh/h)         | 619    | 1455  | -    | -      | 1353  | -    | -      | 679   |      |        |      |      |
| HCM Lane V/C Ratio       | 0.177  | 0.003 | -    | -      | 0.006 | -    | -      | 0.007 |      |        |      |      |
| HCM Control Delay (s)    | 12.1   | 7.5   | 0    | -      | 7.7   | 0    | -      | 10.3  |      |        |      |      |
| HCM Lane LOS             | B      | A     | A    | -      | A     | A    | -      | B     |      |        |      |      |
| HCM 95th %tile Q(veh)    | 0.6    | 0     | -    | -      | 0     | -    | -      | 0     |      |        |      |      |



### Summary of All Intervals

| Run Number              | 1    | 2    | 3    | 4    | 5    | 6    | 7    |
|-------------------------|------|------|------|------|------|------|------|
| Start Time              | 4:45 | 4:45 | 4:45 | 4:45 | 4:45 | 4:45 | 4:45 |
| End Time                | 6:00 | 6:00 | 6:00 | 6:00 | 6:00 | 6:00 | 6:00 |
| Total Time (min)        | 75   | 75   | 75   | 75   | 75   | 75   | 75   |
| Time Recorded (min)     | 60   | 60   | 60   | 60   | 60   | 60   | 60   |
| # of Intervals          | 5    | 5    | 5    | 5    | 5    | 5    | 5    |
| # of Recorded Intervals | 4    | 4    | 4    | 4    | 4    | 4    | 4    |
| Vehs Entered            | 550  | 568  | 518  | 505  | 500  | 529  | 506  |
| Vehs Exited             | 551  | 561  | 518  | 507  | 497  | 528  | 502  |
| Starting Vehs           | 9    | 3    | 4    | 7    | 4    | 6    | 7    |
| Ending Vehs             | 8    | 10   | 4    | 5    | 7    | 7    | 11   |
| Travel Distance (mi)    | 122  | 122  | 115  | 114  | 111  | 118  | 113  |
| Travel Time (hr)        | 6.0  | 5.9  | 5.6  | 5.6  | 5.5  | 5.7  | 5.5  |
| Total Delay (hr)        | 1.3  | 1.3  | 1.2  | 1.2  | 1.3  | 1.2  | 1.2  |
| Total Stops             | 658  | 628  | 623  | 629  | 611  | 640  | 604  |
| Fuel Used (gal)         | 5.3  | 5.3  | 5.0  | 4.9  | 4.9  | 5.2  | 4.8  |

### Summary of All Intervals

| Run Number              | 8    | 9    | 10   | Avg  |
|-------------------------|------|------|------|------|
| Start Time              | 4:45 | 4:45 | 4:45 | 4:45 |
| End Time                | 6:00 | 6:00 | 6:00 | 6:00 |
| Total Time (min)        | 75   | 75   | 75   | 75   |
| Time Recorded (min)     | 60   | 60   | 60   | 60   |
| # of Intervals          | 5    | 5    | 5    | 5    |
| # of Recorded Intervals | 4    | 4    | 4    | 4    |
| Vehs Entered            | 517  | 535  | 506  | 522  |
| Vehs Exited             | 509  | 540  | 509  | 523  |
| Starting Vehs           | 4    | 7    | 4    | 2    |
| Ending Vehs             | 12   | 2    | 1    | 5    |
| Travel Distance (mi)    | 115  | 118  | 111  | 116  |
| Travel Time (hr)        | 5.6  | 5.8  | 5.4  | 5.7  |
| Total Delay (hr)        | 1.2  | 1.3  | 1.2  | 1.2  |
| Total Stops             | 629  | 646  | 590  | 627  |
| Fuel Used (gal)         | 5.0  | 5.2  | 4.9  | 5.0  |

### Interval #0 Information Seeding

|                                               |      |
|-----------------------------------------------|------|
| Start Time                                    | 4:45 |
| End Time                                      | 5:00 |
| Total Time (min)                              | 15   |
| Volumes adjusted by Growth Factors, Anti PHF. |      |
| No data recorded this interval.               |      |

### Interval #1 Information Recording

|                  |      |
|------------------|------|
| Start Time       | 5:00 |
| End Time         | 5:15 |
| Total Time (min) | 15   |

Volumes adjusted by Growth Factors, Anti PHF.

| Run Number           | 1   | 2   | 3   | 4   | 5   | 6   | 7   |
|----------------------|-----|-----|-----|-----|-----|-----|-----|
| Vehs Entered         | 136 | 126 | 130 | 95  | 108 | 114 | 113 |
| Vehs Exited          | 137 | 123 | 128 | 97  | 110 | 115 | 116 |
| Starting Vehs        | 9   | 3   | 4   | 7   | 4   | 6   | 7   |
| Ending Vehs          | 8   | 6   | 6   | 5   | 2   | 5   | 4   |
| Travel Distance (mi) | 31  | 26  | 28  | 22  | 24  | 27  | 26  |
| Travel Time (hr)     | 1.5 | 1.3 | 1.4 | 1.1 | 1.2 | 1.3 | 1.2 |
| Total Delay (hr)     | 0.3 | 0.3 | 0.3 | 0.2 | 0.3 | 0.3 | 0.3 |
| Total Stops          | 170 | 132 | 148 | 122 | 128 | 147 | 133 |
| Fuel Used (gal)      | 1.3 | 1.1 | 1.2 | 1.0 | 1.0 | 1.1 | 1.1 |

### Interval #1 Information Recording

|                  |      |
|------------------|------|
| Start Time       | 5:00 |
| End Time         | 5:15 |
| Total Time (min) | 15   |

Volumes adjusted by Growth Factors, Anti PHF.

| Run Number           | 8   | 9   | 10  | Avg |
|----------------------|-----|-----|-----|-----|
| Vehs Entered         | 135 | 138 | 111 | 120 |
| Vehs Exited          | 134 | 143 | 108 | 120 |
| Starting Vehs        | 4   | 7   | 4   | 2   |
| Ending Vehs          | 5   | 2   | 7   | 3   |
| Travel Distance (mi) | 29  | 31  | 24  | 27  |
| Travel Time (hr)     | 1.4 | 1.5 | 1.1 | 1.3 |
| Total Delay (hr)     | 0.3 | 0.4 | 0.2 | 0.3 |
| Total Stops          | 159 | 169 | 124 | 142 |
| Fuel Used (gal)      | 1.3 | 1.4 | 1.0 | 1.2 |

### Interval #2 Information Recording

|                  |      |
|------------------|------|
| Start Time       | 5:15 |
| End Time         | 5:30 |
| Total Time (min) | 15   |

Volumes adjusted by PHF, Growth Factors, Anti PHF.

| Run Number           | 1   | 2   | 3   | 4   | 5   | 6   | 7   |
|----------------------|-----|-----|-----|-----|-----|-----|-----|
| Vehs Entered         | 168 | 150 | 138 | 148 | 158 | 159 | 152 |
| Vehs Exited          | 171 | 150 | 138 | 143 | 154 | 163 | 153 |
| Starting Vehs        | 8   | 6   | 6   | 5   | 2   | 5   | 4   |
| Ending Vehs          | 5   | 6   | 6   | 10  | 6   | 1   | 3   |
| Travel Distance (mi) | 38  | 32  | 30  | 32  | 35  | 35  | 33  |
| Travel Time (hr)     | 1.9 | 1.6 | 1.5 | 1.6 | 1.7 | 1.7 | 1.6 |
| Total Delay (hr)     | 0.4 | 0.3 | 0.3 | 0.4 | 0.4 | 0.4 | 0.4 |
| Total Stops          | 204 | 163 | 159 | 180 | 195 | 190 | 180 |
| Fuel Used (gal)      | 1.7 | 1.4 | 1.3 | 1.3 | 1.6 | 1.6 | 1.4 |

### Interval #2 Information Recording

|                  |      |
|------------------|------|
| Start Time       | 5:15 |
| End Time         | 5:30 |
| Total Time (min) | 15   |

Volumes adjusted by PHF, Growth Factors, Anti PHF.

| Run Number           | 8   | 9   | 10  | Avg |
|----------------------|-----|-----|-----|-----|
| Vehs Entered         | 144 | 155 | 160 | 152 |
| Vehs Exited          | 142 | 150 | 161 | 153 |
| Starting Vehs        | 5   | 2   | 7   | 3   |
| Ending Vehs          | 7   | 7   | 6   | 2   |
| Travel Distance (mi) | 32  | 33  | 35  | 34  |
| Travel Time (hr)     | 1.6 | 1.7 | 1.7 | 1.7 |
| Total Delay (hr)     | 0.4 | 0.4 | 0.4 | 0.4 |
| Total Stops          | 181 | 180 | 177 | 183 |
| Fuel Used (gal)      | 1.4 | 1.4 | 1.6 | 1.5 |

### Interval #3 Information Recording

|                  |      |
|------------------|------|
| Start Time       | 5:30 |
| End Time         | 5:45 |
| Total Time (min) | 15   |

Volumes adjusted by Growth Factors, Anti PHF.

| Run Number           | 1   | 2   | 3   | 4   | 5   | 6   | 7   |
|----------------------|-----|-----|-----|-----|-----|-----|-----|
| Vehs Entered         | 130 | 127 | 115 | 118 | 135 | 137 | 115 |
| Vehs Exited          | 131 | 125 | 114 | 124 | 133 | 131 | 111 |
| Starting Vehs        | 5   | 6   | 6   | 10  | 6   | 1   | 3   |
| Ending Vehs          | 4   | 8   | 7   | 4   | 8   | 7   | 7   |
| Travel Distance (mi) | 28  | 27  | 27  | 27  | 30  | 29  | 25  |
| Travel Time (hr)     | 1.4 | 1.3 | 1.3 | 1.3 | 1.5 | 1.4 | 1.2 |
| Total Delay (hr)     | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 |
| Total Stops          | 148 | 143 | 148 | 153 | 166 | 153 | 136 |
| Fuel Used (gal)      | 1.2 | 1.2 | 1.2 | 1.2 | 1.3 | 1.3 | 1.0 |

### Interval #3 Information Recording

|                  |      |
|------------------|------|
| Start Time       | 5:30 |
| End Time         | 5:45 |
| Total Time (min) | 15   |

Volumes adjusted by Growth Factors, Anti PHF.

| Run Number           | 8   | 9   | 10  | Avg |
|----------------------|-----|-----|-----|-----|
| Vehs Entered         | 114 | 104 | 111 | 119 |
| Vehs Exited          | 113 | 106 | 114 | 122 |
| Starting Vehs        | 7   | 7   | 6   | 2   |
| Ending Vehs          | 8   | 5   | 3   | 3   |
| Travel Distance (mi) | 25  | 23  | 25  | 27  |
| Travel Time (hr)     | 1.2 | 1.1 | 1.2 | 1.3 |
| Total Delay (hr)     | 0.3 | 0.2 | 0.3 | 0.3 |
| Total Stops          | 136 | 131 | 138 | 144 |
| Fuel Used (gal)      | 1.1 | 1.0 | 1.1 | 1.2 |

#### Interval #4 Information Recording

|                  |      |
|------------------|------|
| Start Time       | 5:45 |
| End Time         | 6:00 |
| Total Time (min) | 15   |

Volumes adjusted by Growth Factors.

| Run Number           | 1   | 2   | 3   | 4   | 5   | 6   | 7   |
|----------------------|-----|-----|-----|-----|-----|-----|-----|
| Vehs Entered         | 116 | 165 | 135 | 144 | 99  | 119 | 126 |
| Vehs Exited          | 112 | 163 | 138 | 143 | 100 | 119 | 122 |
| Starting Vehs        | 4   | 8   | 7   | 4   | 8   | 7   | 7   |
| Ending Vehs          | 8   | 10  | 4   | 5   | 7   | 7   | 11  |
| Travel Distance (mi) | 25  | 37  | 30  | 32  | 22  | 27  | 28  |
| Travel Time (hr)     | 1.2 | 1.8 | 1.5 | 1.5 | 1.1 | 1.3 | 1.4 |
| Total Delay (hr)     | 0.2 | 0.4 | 0.3 | 0.3 | 0.3 | 0.3 | 0.3 |
| Total Stops          | 136 | 190 | 168 | 174 | 122 | 150 | 155 |
| Fuel Used (gal)      | 1.1 | 1.6 | 1.3 | 1.4 | 1.0 | 1.2 | 1.2 |

#### Interval #4 Information Recording

|                  |      |
|------------------|------|
| Start Time       | 5:45 |
| End Time         | 6:00 |
| Total Time (min) | 15   |

Volumes adjusted by Growth Factors.

| Run Number           | 8   | 9   | 10  | Avg |
|----------------------|-----|-----|-----|-----|
| Vehs Entered         | 124 | 138 | 124 | 129 |
| Vehs Exited          | 120 | 141 | 126 | 129 |
| Starting Vehs        | 8   | 5   | 3   | 3   |
| Ending Vehs          | 12  | 2   | 1   | 5   |
| Travel Distance (mi) | 28  | 31  | 28  | 29  |
| Travel Time (hr)     | 1.4 | 1.5 | 1.4 | 1.4 |
| Total Delay (hr)     | 0.3 | 0.3 | 0.3 | 0.3 |
| Total Stops          | 153 | 166 | 151 | 157 |
| Fuel Used (gal)      | 1.2 | 1.4 | 1.2 | 1.3 |

## Queuing and Blocking Report

### Existing PM

02/02/2024

#### Intersection: 2: Red Ln & Carrollton Ave

| Movement              | EB  | NB  | SB  |
|-----------------------|-----|-----|-----|
| Directions Served     | LR  | LT  | TR  |
| Maximum Queue (ft)    | 39  | 52  | 55  |
| Average Queue (ft)    | 29  | 32  | 33  |
| 95th Queue (ft)       | 41  | 46  | 49  |
| Link Distance (ft)    | 383 | 305 | 460 |
| Upstream Blk Time (%) |     |     |     |
| Queuing Penalty (veh) |     |     |     |
| Storage Bay Dist (ft) |     |     |     |
| Storage Blk Time (%)  |     |     |     |
| Queuing Penalty (veh) |     |     |     |

#### Intersection: 5: Broad St & Carrollton Ave

| Movement              | EB  | WB  | NB  | SB  |
|-----------------------|-----|-----|-----|-----|
| Directions Served     | LTR | LTR | LTR | LTR |
| Maximum Queue (ft)    | 11  | 27  | 64  | 28  |
| Average Queue (ft)    | 0   | 1   | 34  | 4   |
| 95th Queue (ft)       | 6   | 10  | 56  | 20  |
| Link Distance (ft)    | 292 | 373 | 621 | 370 |
| Upstream Blk Time (%) |     |     |     |     |
| Queuing Penalty (veh) |     |     |     |     |
| Storage Bay Dist (ft) |     |     |     |     |
| Storage Blk Time (%)  |     |     |     |     |
| Queuing Penalty (veh) |     |     |     |     |

#### Intersection: 8: Mt Vernon Ln & Carrollton Ave

| Movement              | EB  | WB  | NB  | SB  |
|-----------------------|-----|-----|-----|-----|
| Directions Served     | LTR | LTR | LTR | LTR |
| Maximum Queue (ft)    | 61  | 68  | 34  | 34  |
| Average Queue (ft)    | 34  | 34  | 15  | 12  |
| 95th Queue (ft)       | 54  | 50  | 41  | 37  |
| Link Distance (ft)    | 373 | 383 | 294 | 364 |
| Upstream Blk Time (%) |     |     |     |     |
| Queuing Penalty (veh) |     |     |     |     |
| Storage Bay Dist (ft) |     |     |     |     |
| Storage Blk Time (%)  |     |     |     |     |
| Queuing Penalty (veh) |     |     |     |     |

#### Network Summary

Network wide Queuing Penalty: 0

| Intersection              |     |
|---------------------------|-----|
| Intersection Delay, s/veh | 7.4 |
| Intersection LOS          | A   |

| Movement            | EBL                                                                               | EBR  | NBL  | NBT                                                                               | SBT                                                                               | SBR  |
|---------------------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
| Lane Configurations |  |      |      |  |  |      |
| Traffic Vol, veh/h  | 33                                                                                | 16   | 20   | 20                                                                                | 51                                                                                | 51   |
| Future Vol, veh/h   | 33                                                                                | 16   | 20   | 20                                                                                | 51                                                                                | 51   |
| Peak Hour Factor    | 0.86                                                                              | 0.86 | 0.86 | 0.86                                                                              | 0.86                                                                              | 0.86 |
| Heavy Vehicles, %   | 0                                                                                 | 0    | 0    | 0                                                                                 | 0                                                                                 | 0    |
| Mvmt Flow           | 38                                                                                | 19   | 23   | 23                                                                                | 59                                                                                | 59   |
| Number of Lanes     | 1                                                                                 | 0    | 0    | 1                                                                                 | 1                                                                                 | 0    |

| Approach                   | EB  | NB  | SB  |
|----------------------------|-----|-----|-----|
| Opposing Approach          |     | SB  | NB  |
| Opposing Lanes             | 0   | 1   | 1   |
| Conflicting Approach Left  | SB  | EB  |     |
| Conflicting Lanes Left     | 1   | 1   | 0   |
| Conflicting Approach Right | NB  |     | EB  |
| Conflicting Lanes Right    | 1   | 0   | 1   |
| HCM Control Delay          | 7.5 | 7.5 | 7.3 |
| HCM LOS                    | A   | A   | A   |

| Lane                   | NBLn1 | EBLn1 | SBLn1 |
|------------------------|-------|-------|-------|
| Vol Left, %            | 50%   | 67%   | 0%    |
| Vol Thru, %            | 50%   | 0%    | 50%   |
| Vol Right, %           | 0%    | 33%   | 50%   |
| Sign Control           | Stop  | Stop  | Stop  |
| Traffic Vol by Lane    | 40    | 49    | 102   |
| LT Vol                 | 20    | 33    | 0     |
| Through Vol            | 20    | 0     | 51    |
| RT Vol                 | 0     | 16    | 51    |
| Lane Flow Rate         | 47    | 57    | 119   |
| Geometry Grp           | 1     | 1     | 1     |
| Degree of Util (X)     | 0.054 | 0.065 | 0.123 |
| Departure Headway (Hd) | 4.19  | 4.121 | 3.735 |
| Convergence, Y/N       | Yes   | Yes   | Yes   |
| Cap                    | 851   | 862   | 956   |
| Service Time           | 2.234 | 2.18  | 1.774 |
| HCM Lane V/C Ratio     | 0.055 | 0.066 | 0.124 |
| HCM Control Delay      | 7.5   | 7.5   | 7.3   |
| HCM Lane LOS           | A     | A     | A     |
| HCM 95th-tile Q        | 0.2   | 0.2   | 0.4   |



| Intersection              |     |  |  |  |  |  |  |  |  |  |  |  |
|---------------------------|-----|--|--|--|--|--|--|--|--|--|--|--|
| Intersection Delay, s/veh | 7.5 |  |  |  |  |  |  |  |  |  |  |  |
| Intersection LOS          | A   |  |  |  |  |  |  |  |  |  |  |  |

| Movement            | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|---------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations |      | ↕    |      |      | ↕    |      |      | ↕    |      |      | ↕    |      |
| Traffic Vol, veh/h  | 13   | 46   | 8    | 0    | 64   | 8    | 16   | 14   | 3    | 0    | 4    | 5    |
| Future Vol, veh/h   | 13   | 46   | 8    | 0    | 64   | 8    | 16   | 14   | 3    | 0    | 4    | 5    |
| Peak Hour Factor    | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 |
| Heavy Vehicles, %   | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    |
| Mvmt Flow           | 16   | 56   | 10   | 0    | 78   | 10   | 20   | 17   | 4    | 0    | 5    | 6    |
| Number of Lanes     | 0    | 1    | 0    | 0    | 1    | 0    | 0    | 1    | 0    | 0    | 1    | 0    |

| Approach                   | EB  | WB  | NB  | SB  |
|----------------------------|-----|-----|-----|-----|
| Opposing Approach          | WB  | EB  | SB  | NB  |
| Opposing Lanes             | 1   | 1   | 1   | 1   |
| Conflicting Approach Left  | SB  | NB  | EB  | WB  |
| Conflicting Lanes Left     | 1   | 1   | 1   | 1   |
| Conflicting Approach Right | NB  | SB  | WB  | EB  |
| Conflicting Lanes Right    | 1   | 1   | 1   | 1   |
| HCM Control Delay          | 7.5 | 7.5 | 7.6 | 7.1 |
| HCM LOS                    | A   | A   | A   | A   |

| Lane                   | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|------------------------|-------|-------|-------|-------|
| Vol Left, %            | 48%   | 19%   | 0%    | 0%    |
| Vol Thru, %            | 42%   | 69%   | 89%   | 44%   |
| Vol Right, %           | 9%    | 12%   | 11%   | 56%   |
| Sign Control           | Stop  | Stop  | Stop  | Stop  |
| Traffic Vol by Lane    | 33    | 67    | 72    | 9     |
| LT Vol                 | 16    | 13    | 0     | 0     |
| Through Vol            | 14    | 46    | 64    | 4     |
| RT Vol                 | 3     | 8     | 8     | 5     |
| Lane Flow Rate         | 40    | 82    | 88    | 11    |
| Geometry Grp           | 1     | 1     | 1     | 1     |
| Degree of Util (X)     | 0.048 | 0.092 | 0.098 | 0.012 |
| Departure Headway (Hd) | 4.278 | 4.058 | 4.019 | 3.924 |
| Convergence, Y/N       | Yes   | Yes   | Yes   | Yes   |
| Cap                    | 827   | 878   | 887   | 898   |
| Service Time           | 2.354 | 2.103 | 2.064 | 2.01  |
| HCM Lane V/C Ratio     | 0.048 | 0.093 | 0.099 | 0.012 |
| HCM Control Delay      | 7.6   | 7.5   | 7.5   | 7.1   |
| HCM Lane LOS           | A     | A     | A     | A     |
| HCM 95th-tile Q        | 0.2   | 0.3   | 0.3   | 0     |

| Intersection             |        |      |      |        |       |      |        |       |      |        |      |      |
|--------------------------|--------|------|------|--------|-------|------|--------|-------|------|--------|------|------|
| Int Delay, s/veh         | 1.4    |      |      |        |       |      |        |       |      |        |      |      |
| Movement                 | EBL    | EBT  | EBR  | WBL    | WBT   | WBR  | NBL    | NBT   | NBR  | SBL    | SBT  | SBR  |
| Lane Configurations      |        | ↕    |      |        | ↕     |      |        | ↕     |      |        | ↕    |      |
| Traffic Vol, veh/h       | 0      | 64   | 125  | 4      | 80    | 1    | 36     | 0     | 3    | 0      | 0    | 1    |
| Future Vol, veh/h        | 0      | 64   | 125  | 4      | 80    | 1    | 36     | 0     | 3    | 0      | 0    | 1    |
| Conflicting Peds, #/hr   | 0      | 0    | 0    | 0      | 0     | 0    | 0      | 0     | 0    | 0      | 0    | 0    |
| Sign Control             | Free   | Free | Free | Free   | Free  | Free | Stop   | Stop  | Stop | Stop   | Stop | Stop |
| RT Channelized           | -      | -    | None | -      | -     | None | -      | -     | None | -      | -    | None |
| Storage Length           | -      | -    | -    | -      | -     | -    | -      | -     | -    | -      | -    | -    |
| Veh in Median Storage, # | -      | 0    | -    | -      | 0     | -    | -      | 0     | -    | -      | 0    | -    |
| Grade, %                 | -      | 0    | -    | -      | 0     | -    | -      | 0     | -    | -      | 0    | -    |
| Peak Hour Factor         | 82     | 82   | 82   | 82     | 82    | 82   | 82     | 82    | 82   | 82     | 82   | 82   |
| Heavy Vehicles, %        | 0      | 0    | 0    | 0      | 0     | 0    | 0      | 0     | 0    | 0      | 0    | 0    |
| Mvmt Flow                | 0      | 78   | 152  | 5      | 98    | 1    | 44     | 0     | 4    | 0      | 0    | 1    |
|                          |        |      |      |        |       |      |        |       |      |        |      |      |
| Major/Minor              | Major1 |      |      | Major2 |       |      | Minor1 |       |      | Minor2 |      |      |
| Conflicting Flow All     | 99     | 0    | 0    | 230    | 0     | 0    | 263    | 263   | 154  | 265    | 339  | 99   |
| Stage 1                  | -      | -    | -    | -      | -     | -    | 154    | 154   | -    | 109    | 109  | -    |
| Stage 2                  | -      | -    | -    | -      | -     | -    | 109    | 109   | -    | 156    | 230  | -    |
| Critical Hdwy            | 4.1    | -    | -    | 4.1    | -     | -    | 7.1    | 6.5   | 6.2  | 7.1    | 6.5  | 6.2  |
| Critical Hdwy Stg 1      | -      | -    | -    | -      | -     | -    | 6.1    | 5.5   | -    | 6.1    | 5.5  | -    |
| Critical Hdwy Stg 2      | -      | -    | -    | -      | -     | -    | 6.1    | 5.5   | -    | 6.1    | 5.5  | -    |
| Follow-up Hdwy           | 2.2    | -    | -    | 2.2    | -     | -    | 3.5    | 4     | 3.3  | 3.5    | 4    | 3.3  |
| Pot Cap-1 Maneuver       | 1507   | -    | -    | 1350   | -     | -    | 694    | 646   | 897  | 692    | 586  | 962  |
| Stage 1                  | -      | -    | -    | -      | -     | -    | 853    | 774   | -    | 901    | 809  | -    |
| Stage 2                  | -      | -    | -    | -      | -     | -    | 901    | 809   | -    | 851    | 718  | -    |
| Platoon blocked, %       |        | -    | -    |        | -     | -    |        |       |      |        |      |      |
| Mov Cap-1 Maneuver       | 1507   | -    | -    | 1350   | -     | -    | 691    | 643   | 897  | 687    | 584  | 962  |
| Mov Cap-2 Maneuver       | -      | -    | -    | -      | -     | -    | 691    | 643   | -    | 687    | 584  | -    |
| Stage 1                  | -      | -    | -    | -      | -     | -    | 853    | 774   | -    | 901    | 806  | -    |
| Stage 2                  | -      | -    | -    | -      | -     | -    | 896    | 806   | -    | 848    | 718  | -    |
|                          |        |      |      |        |       |      |        |       |      |        |      |      |
|                          |        |      |      |        |       |      |        |       |      |        |      |      |
| Approach                 | EB     |      |      | WB     |       |      | NB     |       |      | SB     |      |      |
| HCM Control Delay, s     | 0      |      |      | 0.4    |       |      | 10.5   |       |      | 8.7    |      |      |
| HCM LOS                  |        |      |      |        |       |      | B      |       |      | A      |      |      |
|                          |        |      |      |        |       |      |        |       |      |        |      |      |
| Minor Lane/Major Mvmt    | NBLn1  | EBL  | EBT  | EBR    | WBL   | WBT  | WBR    | SBLn1 |      |        |      |      |
| Capacity (veh/h)         | 703    | 1507 | -    | -      | 1350  | -    | -      | 962   |      |        |      |      |
| HCM Lane V/C Ratio       | 0.068  | -    | -    | -      | 0.004 | -    | -      | 0.001 |      |        |      |      |
| HCM Control Delay (s)    | 10.5   | 0    | -    | -      | 7.7   | 0    | -      | 8.7   |      |        |      |      |
| HCM Lane LOS             | B      | A    | -    | -      | A     | A    | -      | A     |      |        |      |      |
| HCM 95th %tile Q(veh)    | 0.2    | 0    | -    | -      | 0     | -    | -      | 0     |      |        |      |      |

### Summary of All Intervals

| Run Number              | 1    | 2    | 3    | 4    | 5    | 6    | 7    |
|-------------------------|------|------|------|------|------|------|------|
| Start Time              | 7:15 | 7:15 | 7:15 | 7:15 | 7:15 | 7:15 | 7:15 |
| End Time                | 8:30 | 8:30 | 8:30 | 8:30 | 8:30 | 8:30 | 8:30 |
| Total Time (min)        | 75   | 75   | 75   | 75   | 75   | 75   | 75   |
| Time Recorded (min)     | 60   | 60   | 60   | 60   | 60   | 60   | 60   |
| # of Intervals          | 5    | 5    | 5    | 5    | 5    | 5    | 5    |
| # of Recorded Intervals | 4    | 4    | 4    | 4    | 4    | 4    | 4    |
| Vehs Entered            | 430  | 415  | 428  | 404  | 400  | 398  | 440  |
| Vehs Exited             | 424  | 409  | 426  | 405  | 397  | 399  | 434  |
| Starting Vehs           | 1    | 1    | 0    | 3    | 1    | 5    | 3    |
| Ending Vehs             | 7    | 7    | 2    | 2    | 4    | 4    | 9    |
| Travel Distance (mi)    | 88   | 87   | 92   | 84   | 85   | 85   | 94   |
| Travel Time (hr)        | 4.2  | 4.2  | 4.4  | 4.0  | 4.0  | 4.1  | 4.6  |
| Total Delay (hr)        | 0.8  | 0.8  | 0.9  | 0.7  | 0.8  | 0.8  | 0.9  |
| Total Stops             | 401  | 422  | 468  | 369  | 406  | 402  | 460  |
| Fuel Used (gal)         | 3.8  | 3.8  | 4.0  | 3.6  | 3.6  | 3.7  | 4.0  |

### Summary of All Intervals

| Run Number              | 8    | 9    | 10   | Avg  |
|-------------------------|------|------|------|------|
| Start Time              | 7:15 | 7:15 | 7:15 | 7:15 |
| End Time                | 8:30 | 8:30 | 8:30 | 8:30 |
| Total Time (min)        | 75   | 75   | 75   | 75   |
| Time Recorded (min)     | 60   | 60   | 60   | 60   |
| # of Intervals          | 5    | 5    | 5    | 5    |
| # of Recorded Intervals | 4    | 4    | 4    | 4    |
| Vehs Entered            | 394  | 424  | 426  | 416  |
| Vehs Exited             | 395  | 426  | 425  | 415  |
| Starting Vehs           | 3    | 5    | 1    | 0    |
| Ending Vehs             | 2    | 3    | 2    | 0    |
| Travel Distance (mi)    | 83   | 90   | 89   | 88   |
| Travel Time (hr)        | 4.0  | 4.3  | 4.3  | 4.2  |
| Total Delay (hr)        | 0.8  | 0.9  | 0.9  | 0.8  |
| Total Stops             | 396  | 423  | 417  | 418  |
| Fuel Used (gal)         | 3.6  | 4.0  | 3.9  | 3.8  |

### Interval #0 Information Seeding

|                                               |      |
|-----------------------------------------------|------|
| Start Time                                    | 7:15 |
| End Time                                      | 7:30 |
| Total Time (min)                              | 15   |
| Volumes adjusted by Growth Factors, Anti PHF. |      |
| No data recorded this interval.               |      |

### Interval #1 Information Recording

|                  |      |
|------------------|------|
| Start Time       | 7:30 |
| End Time         | 7:45 |
| Total Time (min) | 15   |

Volumes adjusted by PHF, Growth Factors.

| Run Number           | 1   | 2   | 3   | 4   | 5   | 6   | 7   |
|----------------------|-----|-----|-----|-----|-----|-----|-----|
| Vehs Entered         | 128 | 117 | 133 | 111 | 118 | 120 | 148 |
| Vehs Exited          | 126 | 116 | 129 | 109 | 114 | 121 | 145 |
| Starting Vehs        | 1   | 1   | 0   | 3   | 1   | 5   | 3   |
| Ending Vehs          | 3   | 2   | 4   | 5   | 5   | 4   | 6   |
| Travel Distance (mi) | 26  | 24  | 29  | 23  | 25  | 25  | 31  |
| Travel Time (hr)     | 1.3 | 1.2 | 1.4 | 1.1 | 1.2 | 1.2 | 1.5 |
| Total Delay (hr)     | 0.3 | 0.2 | 0.3 | 0.2 | 0.2 | 0.2 | 0.3 |
| Total Stops          | 119 | 117 | 149 | 94  | 119 | 115 | 139 |
| Fuel Used (gal)      | 1.1 | 1.1 | 1.3 | 1.0 | 1.0 | 1.1 | 1.4 |

### Interval #1 Information Recording

|                  |      |
|------------------|------|
| Start Time       | 7:30 |
| End Time         | 7:45 |
| Total Time (min) | 15   |

Volumes adjusted by PHF, Growth Factors.

| Run Number           | 8   | 9   | 10  | Avg |
|----------------------|-----|-----|-----|-----|
| Vehs Entered         | 124 | 130 | 120 | 121 |
| Vehs Exited          | 121 | 134 | 112 | 121 |
| Starting Vehs        | 3   | 5   | 1   | 0   |
| Ending Vehs          | 6   | 1   | 9   | 2   |
| Travel Distance (mi) | 26  | 29  | 24  | 26  |
| Travel Time (hr)     | 1.2 | 1.4 | 1.1 | 1.3 |
| Total Delay (hr)     | 0.3 | 0.3 | 0.2 | 0.3 |
| Total Stops          | 120 | 142 | 109 | 120 |
| Fuel Used (gal)      | 1.1 | 1.3 | 1.1 | 1.1 |

### Interval #2 Information Recording

|                  |      |
|------------------|------|
| Start Time       | 7:45 |
| End Time         | 8:00 |
| Total Time (min) | 15   |

Volumes adjusted by Growth Factors, Anti PHF.

| Run Number           | 1   | 2   | 3   | 4   | 5   | 6   | 7   |
|----------------------|-----|-----|-----|-----|-----|-----|-----|
| Vehs Entered         | 107 | 90  | 88  | 83  | 98  | 100 | 94  |
| Vehs Exited          | 105 | 88  | 87  | 83  | 101 | 101 | 98  |
| Starting Vehs        | 3   | 2   | 4   | 5   | 5   | 4   | 6   |
| Ending Vehs          | 5   | 4   | 5   | 5   | 2   | 3   | 2   |
| Travel Distance (mi) | 22  | 18  | 19  | 17  | 21  | 21  | 21  |
| Travel Time (hr)     | 1.0 | 0.9 | 0.9 | 0.8 | 1.0 | 1.0 | 1.0 |
| Total Delay (hr)     | 0.2 | 0.2 | 0.2 | 0.1 | 0.2 | 0.2 | 0.2 |
| Total Stops          | 102 | 87  | 98  | 67  | 106 | 105 | 100 |
| Fuel Used (gal)      | 0.9 | 0.8 | 0.8 | 0.7 | 0.9 | 0.9 | 0.9 |

### Interval #2 Information Recording

|                  |      |
|------------------|------|
| Start Time       | 7:45 |
| End Time         | 8:00 |
| Total Time (min) | 15   |

Volumes adjusted by Growth Factors, Anti PHF.

| Run Number           | 8   | 9   | 10  | Avg |
|----------------------|-----|-----|-----|-----|
| Vehs Entered         | 106 | 96  | 99  | 95  |
| Vehs Exited          | 111 | 95  | 102 | 95  |
| Starting Vehs        | 6   | 1   | 9   | 2   |
| Ending Vehs          | 1   | 2   | 6   | 1   |
| Travel Distance (mi) | 24  | 21  | 21  | 21  |
| Travel Time (hr)     | 1.1 | 1.0 | 1.0 | 1.0 |
| Total Delay (hr)     | 0.3 | 0.2 | 0.2 | 0.2 |
| Total Stops          | 123 | 101 | 101 | 99  |
| Fuel Used (gal)      | 1.0 | 0.9 | 0.9 | 0.9 |

### Interval #3 Information Recording

|                  |      |
|------------------|------|
| Start Time       | 8:00 |
| End Time         | 8:15 |
| Total Time (min) | 15   |

Volumes adjusted by Growth Factors, Anti PHF.

| Run Number           | 1   | 2   | 3   | 4   | 5   | 6   | 7   |
|----------------------|-----|-----|-----|-----|-----|-----|-----|
| Vehs Entered         | 110 | 100 | 99  | 107 | 92  | 94  | 110 |
| Vehs Exited          | 110 | 98  | 96  | 106 | 89  | 90  | 102 |
| Starting Vehs        | 5   | 4   | 5   | 5   | 2   | 3   | 2   |
| Ending Vehs          | 5   | 6   | 8   | 6   | 5   | 7   | 10  |
| Travel Distance (mi) | 21  | 21  | 22  | 22  | 19  | 20  | 23  |
| Travel Time (hr)     | 1.0 | 1.0 | 1.0 | 1.0 | 0.9 | 1.0 | 1.1 |
| Total Delay (hr)     | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
| Total Stops          | 89  | 104 | 110 | 100 | 89  | 101 | 118 |
| Fuel Used (gal)      | 0.9 | 0.9 | 1.0 | 0.9 | 0.8 | 0.8 | 0.9 |

### Interval #3 Information Recording

|                  |      |
|------------------|------|
| Start Time       | 8:00 |
| End Time         | 8:15 |
| Total Time (min) | 15   |

Volumes adjusted by Growth Factors, Anti PHF.

| Run Number           | 8   | 9   | 10  | Avg |
|----------------------|-----|-----|-----|-----|
| Vehs Entered         | 79  | 97  | 100 | 99  |
| Vehs Exited          | 73  | 97  | 105 | 97  |
| Starting Vehs        | 1   | 2   | 6   | 1   |
| Ending Vehs          | 7   | 2   | 1   | 3   |
| Travel Distance (mi) | 16  | 20  | 22  | 21  |
| Travel Time (hr)     | 0.8 | 0.9 | 1.0 | 1.0 |
| Total Delay (hr)     | 0.1 | 0.2 | 0.2 | 0.2 |
| Total Stops          | 73  | 89  | 95  | 100 |
| Fuel Used (gal)      | 0.7 | 0.9 | 0.9 | 0.9 |

#### Interval #4 Information Recording

|                  |      |
|------------------|------|
| Start Time       | 8:15 |
| End Time         | 8:30 |
| Total Time (min) | 15   |

Volumes adjusted by Growth Factors, Anti PHF.

| Run Number           | 1   | 2   | 3   | 4   | 5   | 6   | 7   |
|----------------------|-----|-----|-----|-----|-----|-----|-----|
| Vehs Entered         | 85  | 108 | 108 | 103 | 92  | 84  | 88  |
| Vehs Exited          | 83  | 107 | 114 | 107 | 93  | 87  | 89  |
| Starting Vehs        | 5   | 6   | 8   | 6   | 5   | 7   | 10  |
| Ending Vehs          | 7   | 7   | 2   | 2   | 4   | 4   | 9   |
| Travel Distance (mi) | 19  | 23  | 22  | 22  | 19  | 18  | 19  |
| Travel Time (hr)     | 0.9 | 1.1 | 1.1 | 1.1 | 0.9 | 0.9 | 0.9 |
| Total Delay (hr)     | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
| Total Stops          | 91  | 114 | 111 | 108 | 92  | 81  | 103 |
| Fuel Used (gal)      | 0.8 | 1.0 | 0.9 | 1.0 | 0.8 | 0.8 | 0.8 |

#### Interval #4 Information Recording

|                  |      |
|------------------|------|
| Start Time       | 8:15 |
| End Time         | 8:30 |
| Total Time (min) | 15   |

Volumes adjusted by Growth Factors, Anti PHF.

| Run Number           | 8   | 9   | 10  | Avg |
|----------------------|-----|-----|-----|-----|
| Vehs Entered         | 85  | 101 | 107 | 98  |
| Vehs Exited          | 90  | 100 | 106 | 97  |
| Starting Vehs        | 7   | 2   | 1   | 3   |
| Ending Vehs          | 2   | 3   | 2   | 0   |
| Travel Distance (mi) | 17  | 20  | 23  | 20  |
| Travel Time (hr)     | 0.8 | 0.9 | 1.1 | 1.0 |
| Total Delay (hr)     | 0.2 | 0.2 | 0.2 | 0.2 |
| Total Stops          | 80  | 91  | 112 | 100 |
| Fuel Used (gal)      | 0.7 | 0.9 | 1.0 | 0.9 |



## Queuing and Blocking Report

### Background AM

02/02/2024

#### Intersection: 2: Red Ln & Carrollton Ave

| Movement              | EB  | NB  | SB  |
|-----------------------|-----|-----|-----|
| Directions Served     | LR  | LT  | TR  |
| Maximum Queue (ft)    | 37  | 47  | 55  |
| Average Queue (ft)    | 26  | 22  | 33  |
| 95th Queue (ft)       | 44  | 46  | 48  |
| Link Distance (ft)    | 383 | 305 | 460 |
| Upstream Blk Time (%) |     |     |     |
| Queuing Penalty (veh) |     |     |     |
| Storage Bay Dist (ft) |     |     |     |
| Storage Blk Time (%)  |     |     |     |
| Queuing Penalty (veh) |     |     |     |

#### Intersection: 5: Broad St & Carrollton Ave

| Movement              | WB  | NB  | SB  |
|-----------------------|-----|-----|-----|
| Directions Served     | LTR | LTR | LTR |
| Maximum Queue (ft)    | 15  | 46  | 18  |
| Average Queue (ft)    | 1   | 24  | 1   |
| 95th Queue (ft)       | 11  | 47  | 9   |
| Link Distance (ft)    | 373 | 621 | 370 |
| Upstream Blk Time (%) |     |     |     |
| Queuing Penalty (veh) |     |     |     |
| Storage Bay Dist (ft) |     |     |     |
| Storage Blk Time (%)  |     |     |     |
| Queuing Penalty (veh) |     |     |     |

#### Intersection: 8: Mt Vernon Ln & Carrollton Ave

| Movement              | EB  | WB  | NB  | SB  |
|-----------------------|-----|-----|-----|-----|
| Directions Served     | LTR | LTR | LTR | LTR |
| Maximum Queue (ft)    | 60  | 52  | 43  | 31  |
| Average Queue (ft)    | 30  | 28  | 20  | 8   |
| 95th Queue (ft)       | 51  | 48  | 46  | 31  |
| Link Distance (ft)    | 373 | 383 | 294 | 364 |
| Upstream Blk Time (%) |     |     |     |     |
| Queuing Penalty (veh) |     |     |     |     |
| Storage Bay Dist (ft) |     |     |     |     |
| Storage Blk Time (%)  |     |     |     |     |
| Queuing Penalty (veh) |     |     |     |     |

#### Network Summary

Network wide Queuing Penalty: 0

| Intersection              |     |
|---------------------------|-----|
| Intersection Delay, s/veh | 7.8 |
| Intersection LOS          | A   |

| Movement            | EBL                                                                               | EBR  | NBL  | NBT                                                                               | SBT                                                                               | SBR  |
|---------------------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
| Lane Configurations |  |      |      |  |  |      |
| Traffic Vol, veh/h  | 76                                                                                | 24   | 38   | 57                                                                                | 33                                                                                | 79   |
| Future Vol, veh/h   | 76                                                                                | 24   | 38   | 57                                                                                | 33                                                                                | 79   |
| Peak Hour Factor    | 0.93                                                                              | 0.93 | 0.93 | 0.93                                                                              | 0.93                                                                              | 0.93 |
| Heavy Vehicles, %   | 0                                                                                 | 0    | 0    | 0                                                                                 | 0                                                                                 | 0    |
| Mvmt Flow           | 82                                                                                | 26   | 41   | 61                                                                                | 35                                                                                | 85   |
| Number of Lanes     | 1                                                                                 | 0    | 0    | 1                                                                                 | 1                                                                                 | 0    |

| Approach                   | EB | NB  | SB  |
|----------------------------|----|-----|-----|
| Opposing Approach          |    | SB  | NB  |
| Opposing Lanes             | 0  | 1   | 1   |
| Conflicting Approach Left  | SB | EB  |     |
| Conflicting Lanes Left     | 1  | 1   | 0   |
| Conflicting Approach Right | NB |     | EB  |
| Conflicting Lanes Right    | 1  | 0   | 1   |
| HCM Control Delay          | 8  | 7.9 | 7.4 |
| HCM LOS                    | A  | A   | A   |

| Lane                   | NBLn1 | EBLn1 | SBLn1 |
|------------------------|-------|-------|-------|
| Vol Left, %            | 40%   | 76%   | 0%    |
| Vol Thru, %            | 60%   | 0%    | 29%   |
| Vol Right, %           | 0%    | 24%   | 71%   |
| Sign Control           | Stop  | Stop  | Stop  |
| Traffic Vol by Lane    | 95    | 100   | 112   |
| LT Vol                 | 38    | 76    | 0     |
| Through Vol            | 57    | 0     | 33    |
| RT Vol                 | 0     | 24    | 79    |
| Lane Flow Rate         | 102   | 108   | 120   |
| Geometry Grp           | 1     | 1     | 1     |
| Degree of Util (X)     | 0.121 | 0.128 | 0.125 |
| Departure Headway (Hd) | 4.263 | 4.288 | 3.744 |
| Convergence, Y/N       | Yes   | Yes   | Yes   |
| Cap                    | 830   | 824   | 941   |
| Service Time           | 2.344 | 2.378 | 1.835 |
| HCM Lane V/C Ratio     | 0.123 | 0.131 | 0.128 |
| HCM Control Delay      | 7.9   | 8     | 7.4   |
| HCM Lane LOS           | A     | A     | A     |
| HCM 95th-tile Q        | 0.4   | 0.4   | 0.4   |

| Intersection              |     |
|---------------------------|-----|
| Intersection Delay, s/veh | 7.9 |
| Intersection LOS          | A   |

| Movement            | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|---------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations |      | ↕    |      |      | ↕    |      |      | ↕    |      |      | ↕    |      |
| Traffic Vol, veh/h  | 5    | 95   | 13   | 2    | 112  | 2    | 14   | 3    | 2    | 3    | 5    | 6    |
| Future Vol, veh/h   | 5    | 95   | 13   | 2    | 112  | 2    | 14   | 3    | 2    | 3    | 5    | 6    |
| Peak Hour Factor    | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 |
| Heavy Vehicles, %   | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    |
| Mvmt Flow           | 6    | 116  | 16   | 2    | 137  | 2    | 17   | 4    | 2    | 4    | 6    | 7    |
| Number of Lanes     | 0    | 1    | 0    | 0    | 1    | 0    | 0    | 1    | 0    | 0    | 1    | 0    |

| Approach                   | EB  | WB | NB  | SB  |
|----------------------------|-----|----|-----|-----|
| Opposing Approach          | WB  | EB | SB  | NB  |
| Opposing Lanes             | 1   | 1  | 1   | 1   |
| Conflicting Approach Left  | SB  | NB | EB  | WB  |
| Conflicting Lanes Left     | 1   | 1  | 1   | 1   |
| Conflicting Approach Right | NB  | SB | WB  | EB  |
| Conflicting Lanes Right    | 1   | 1  | 1   | 1   |
| HCM Control Delay          | 7.9 | 8  | 7.8 | 7.4 |
| HCM LOS                    | A   | A  | A   | A   |

| Lane                   | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|------------------------|-------|-------|-------|-------|
| Vol Left, %            | 74%   | 4%    | 2%    | 21%   |
| Vol Thru, %            | 16%   | 84%   | 97%   | 36%   |
| Vol Right, %           | 11%   | 12%   | 2%    | 43%   |
| Sign Control           | Stop  | Stop  | Stop  | Stop  |
| Traffic Vol by Lane    | 19    | 113   | 116   | 14    |
| LT Vol                 | 14    | 5     | 2     | 3     |
| Through Vol            | 3     | 95    | 112   | 5     |
| RT Vol                 | 2     | 13    | 2     | 6     |
| Lane Flow Rate         | 23    | 138   | 141   | 17    |
| Geometry Grp           | 1     | 1     | 1     | 1     |
| Degree of Util (X)     | 0.03  | 0.155 | 0.161 | 0.021 |
| Departure Headway (Hd) | 4.641 | 4.051 | 4.101 | 4.35  |
| Convergence, Y/N       | Yes   | Yes   | Yes   | Yes   |
| Cap                    | 776   | 878   | 867   | 828   |
| Service Time           | 2.642 | 2.111 | 2.159 | 2.351 |
| HCM Lane V/C Ratio     | 0.03  | 0.157 | 0.163 | 0.021 |
| HCM Control Delay      | 7.8   | 7.9   | 8     | 7.4   |
| HCM Lane LOS           | A     | A     | A     | A     |
| HCM 95th-tile Q        | 0.1   | 0.5   | 0.6   | 0.1   |

| Intersection             |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh         | 3.1  |      |      |      |      |      |      |      |      |      |      |      |
| Movement                 | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
| Lane Configurations      |      | ↕    |      |      | ↕    |      |      | ↕    |      |      | ↕    |      |
| Traffic Vol, veh/h       | 3    | 107  | 94   | 8    | 124  | 1    | 90   | 0    | 6    | 0    | 2    | 2    |
| Future Vol, veh/h        | 3    | 107  | 94   | 8    | 124  | 1    | 90   | 0    | 6    | 0    | 2    | 2    |
| Conflicting Peds, #/hr   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Sign Control             | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized           | -    | -    | None | -    | -    | None | -    | -    | None | -    | -    | None |
| Storage Length           | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| Veh in Median Storage, # | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Grade, %                 | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Peak Hour Factor         | 82   | 82   | 82   | 82   | 82   | 82   | 82   | 82   | 82   | 82   | 82   | 82   |
| Heavy Vehicles, %        | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Mvmt Flow                | 4    | 130  | 115  | 10   | 151  | 1    | 110  | 0    | 7    | 0    | 2    | 2    |

| Major/Minor          | Major1 |   |   | Major2 |   |   | Minor1 |     |     | Minor2 |     |     |
|----------------------|--------|---|---|--------|---|---|--------|-----|-----|--------|-----|-----|
| Conflicting Flow All | 152    | 0 | 0 | 245    | 0 | 0 | 370    | 368 | 188 | 371    | 425 | 152 |
| Stage 1              | -      | - | - | -      | - | - | 196    | 196 | -   | 172    | 172 | -   |
| Stage 2              | -      | - | - | -      | - | - | 174    | 172 | -   | 199    | 253 | -   |
| Critical Hdwy        | 4.1    | - | - | 4.1    | - | - | 7.1    | 6.5 | 6.2 | 7.1    | 6.5 | 6.2 |
| Critical Hdwy Stg 1  | -      | - | - | -      | - | - | 6.1    | 5.5 | -   | 6.1    | 5.5 | -   |
| Critical Hdwy Stg 2  | -      | - | - | -      | - | - | 6.1    | 5.5 | -   | 6.1    | 5.5 | -   |
| Follow-up Hdwy       | 2.2    | - | - | 2.2    | - | - | 3.5    | 4   | 3.3 | 3.5    | 4   | 3.3 |
| Pot Cap-1 Maneuver   | 1441   | - | - | 1333   | - | - | 590    | 564 | 859 | 589    | 524 | 900 |
| Stage 1              | -      | - | - | -      | - | - | 810    | 742 | -   | 835    | 760 | -   |
| Stage 2              | -      | - | - | -      | - | - | 833    | 760 | -   | 807    | 701 | -   |
| Platoon blocked, %   | -      | - | - | -      | - | - | -      | -   | -   | -      | -   | -   |
| Mov Cap-1 Maneuver   | 1441   | - | - | 1333   | - | - | 581    | 558 | 859 | 579    | 518 | 900 |
| Mov Cap-2 Maneuver   | -      | - | - | -      | - | - | 581    | 558 | -   | 579    | 518 | -   |
| Stage 1              | -      | - | - | -      | - | - | 808    | 740 | -   | 832    | 754 | -   |
| Stage 2              | -      | - | - | -      | - | - | 821    | 754 | -   | 798    | 699 | -   |

| Approach             | EB  | WB  | NB   | SB   |
|----------------------|-----|-----|------|------|
| HCM Control Delay, s | 0.1 | 0.5 | 12.6 | 10.5 |
| HCM LOS              |     |     | B    | B    |

| Minor Lane/Major Mvmt | NBLn1 | EBL   | EBT | EBR | WBL   | WBT | WBR | SBLn1 |
|-----------------------|-------|-------|-----|-----|-------|-----|-----|-------|
| Capacity (veh/h)      | 593   | 1441  | -   | -   | 1333  | -   | -   | 658   |
| HCM Lane V/C Ratio    | 0.197 | 0.003 | -   | -   | 0.007 | -   | -   | 0.007 |
| HCM Control Delay (s) | 12.6  | 7.5   | 0   | -   | 7.7   | 0   | -   | 10.5  |
| HCM Lane LOS          | B     | A     | A   | -   | A     | A   | -   | B     |
| HCM 95th %tile Q(veh) | 0.7   | 0     | -   | -   | 0     | -   | -   | 0     |

### Summary of All Intervals

| Run Number              | 1    | 2    | 3    | 4    | 5    | 6    | 7    |
|-------------------------|------|------|------|------|------|------|------|
| Start Time              | 4:15 | 4:15 | 4:15 | 4:15 | 4:15 | 4:15 | 4:15 |
| End Time                | 5:30 | 5:30 | 5:30 | 5:30 | 5:30 | 5:30 | 5:30 |
| Total Time (min)        | 75   | 75   | 75   | 75   | 75   | 75   | 75   |
| Time Recorded (min)     | 60   | 60   | 60   | 60   | 60   | 60   | 60   |
| # of Intervals          | 5    | 5    | 5    | 5    | 5    | 5    | 5    |
| # of Recorded Intervals | 4    | 4    | 4    | 4    | 4    | 4    | 4    |
| Vehs Entered            | 608  | 572  | 581  | 509  | 564  | 592  | 556  |
| Vehs Exited             | 608  | 567  | 579  | 507  | 564  | 593  | 547  |
| Starting Vehs           | 9    | 7    | 4    | 8    | 4    | 8    | 6    |
| Ending Vehs             | 9    | 12   | 6    | 10   | 4    | 7    | 15   |
| Travel Distance (mi)    | 135  | 124  | 129  | 115  | 126  | 132  | 125  |
| Travel Time (hr)        | 6.7  | 6.1  | 6.3  | 5.6  | 6.2  | 6.5  | 6.1  |
| Total Delay (hr)        | 1.5  | 1.4  | 1.4  | 1.3  | 1.4  | 1.4  | 1.4  |
| Total Stops             | 743  | 661  | 699  | 627  | 675  | 707  | 684  |
| Fuel Used (gal)         | 5.9  | 5.3  | 5.6  | 5.0  | 5.5  | 5.8  | 5.4  |

### Summary of All Intervals

| Run Number              | 8    | 9    | 10   | Avg  |
|-------------------------|------|------|------|------|
| Start Time              | 4:15 | 4:15 | 4:15 | 4:15 |
| End Time                | 5:30 | 5:30 | 5:30 | 5:30 |
| Total Time (min)        | 75   | 75   | 75   | 75   |
| Time Recorded (min)     | 60   | 60   | 60   | 60   |
| # of Intervals          | 5    | 5    | 5    | 5    |
| # of Recorded Intervals | 4    | 4    | 4    | 4    |
| Vehs Entered            | 573  | 574  | 563  | 566  |
| Vehs Exited             | 569  | 580  | 562  | 569  |
| Starting Vehs           | 4    | 6    | 4    | 3    |
| Ending Vehs             | 8    | 0    | 5    | 5    |
| Travel Distance (mi)    | 130  | 128  | 125  | 127  |
| Travel Time (hr)        | 6.4  | 6.3  | 6.1  | 6.2  |
| Total Delay (hr)        | 1.4  | 1.4  | 1.4  | 1.4  |
| Total Stops             | 718  | 697  | 672  | 684  |
| Fuel Used (gal)         | 5.8  | 5.6  | 5.4  | 5.5  |

### Interval #0 Information Seeding

|                                               |      |
|-----------------------------------------------|------|
| Start Time                                    | 4:15 |
| End Time                                      | 4:30 |
| Total Time (min)                              | 15   |
| Volumes adjusted by Growth Factors, Anti PHF. |      |
| No data recorded this interval.               |      |

### Interval #1 Information Recording

|                  |      |
|------------------|------|
| Start Time       | 4:30 |
| End Time         | 4:45 |
| Total Time (min) | 15   |

Volumes adjusted by Growth Factors, Anti PHF.

| Run Number           | 1   | 2   | 3   | 4   | 5   | 6   | 7   |
|----------------------|-----|-----|-----|-----|-----|-----|-----|
| Vehs Entered         | 150 | 125 | 145 | 112 | 120 | 134 | 120 |
| Vehs Exited          | 151 | 126 | 144 | 116 | 121 | 138 | 125 |
| Starting Vehs        | 9   | 7   | 4   | 8   | 4   | 8   | 6   |
| Ending Vehs          | 8   | 6   | 5   | 4   | 3   | 4   | 1   |
| Travel Distance (mi) | 33  | 26  | 32  | 26  | 27  | 32  | 29  |
| Travel Time (hr)     | 1.6 | 1.3 | 1.5 | 1.3 | 1.3 | 1.6 | 1.4 |
| Total Delay (hr)     | 0.4 | 0.3 | 0.3 | 0.3 | 0.3 | 0.4 | 0.3 |
| Total Stops          | 183 | 139 | 171 | 145 | 140 | 181 | 156 |
| Fuel Used (gal)      | 1.5 | 1.1 | 1.4 | 1.1 | 1.2 | 1.4 | 1.2 |

### Interval #1 Information Recording

|                  |      |
|------------------|------|
| Start Time       | 4:30 |
| End Time         | 4:45 |
| Total Time (min) | 15   |

Volumes adjusted by Growth Factors, Anti PHF.

| Run Number           | 8   | 9   | 10  | Avg |
|----------------------|-----|-----|-----|-----|
| Vehs Entered         | 143 | 148 | 130 | 132 |
| Vehs Exited          | 139 | 152 | 127 | 133 |
| Starting Vehs        | 4   | 6   | 4   | 3   |
| Ending Vehs          | 8   | 2   | 7   | 2   |
| Travel Distance (mi) | 31  | 34  | 29  | 30  |
| Travel Time (hr)     | 1.5 | 1.7 | 1.4 | 1.5 |
| Total Delay (hr)     | 0.3 | 0.4 | 0.3 | 0.3 |
| Total Stops          | 170 | 191 | 145 | 162 |
| Fuel Used (gal)      | 1.4 | 1.5 | 1.3 | 1.3 |

### Interval #2 Information Recording

|                  |      |
|------------------|------|
| Start Time       | 4:45 |
| End Time         | 5:00 |
| Total Time (min) | 15   |

Volumes adjusted by Growth Factors, Anti PHF.

| Run Number           | 1   | 2   | 3   | 4   | 5   | 6   | 7   |
|----------------------|-----|-----|-----|-----|-----|-----|-----|
| Vehs Entered         | 144 | 141 | 134 | 114 | 149 | 143 | 141 |
| Vehs Exited          | 145 | 138 | 134 | 110 | 149 | 142 | 140 |
| Starting Vehs        | 8   | 6   | 5   | 4   | 3   | 4   | 1   |
| Ending Vehs          | 7   | 9   | 5   | 8   | 3   | 5   | 2   |
| Travel Distance (mi) | 33  | 31  | 29  | 24  | 32  | 31  | 31  |
| Travel Time (hr)     | 1.6 | 1.5 | 1.4 | 1.2 | 1.6 | 1.5 | 1.5 |
| Total Delay (hr)     | 0.3 | 0.3 | 0.3 | 0.3 | 0.4 | 0.3 | 0.3 |
| Total Stops          | 178 | 170 | 160 | 132 | 181 | 178 | 168 |
| Fuel Used (gal)      | 1.4 | 1.3 | 1.2 | 1.1 | 1.4 | 1.3 | 1.4 |

### Interval #2 Information Recording

|                  |      |
|------------------|------|
| Start Time       | 4:45 |
| End Time         | 5:00 |
| Total Time (min) | 15   |

Volumes adjusted by Growth Factors, Anti PHF.

| Run Number           | 8   | 9   | 10  | Avg |
|----------------------|-----|-----|-----|-----|
| Vehs Entered         | 128 | 124 | 139 | 135 |
| Vehs Exited          | 134 | 123 | 139 | 135 |
| Starting Vehs        | 8   | 2   | 7   | 2   |
| Ending Vehs          | 2   | 3   | 7   | 2   |
| Travel Distance (mi) | 31  | 27  | 31  | 30  |
| Travel Time (hr)     | 1.5 | 1.4 | 1.5 | 1.5 |
| Total Delay (hr)     | 0.4 | 0.3 | 0.3 | 0.3 |
| Total Stops          | 176 | 153 | 166 | 166 |
| Fuel Used (gal)      | 1.4 | 1.2 | 1.3 | 1.3 |

### Interval #3 Information Recording

|                  |      |
|------------------|------|
| Start Time       | 5:00 |
| End Time         | 5:15 |
| Total Time (min) | 15   |

Volumes adjusted by Growth Factors, Anti PHF.

| Run Number           | 1   | 2   | 3   | 4   | 5   | 6   | 7   |
|----------------------|-----|-----|-----|-----|-----|-----|-----|
| Vehs Entered         | 146 | 119 | 128 | 126 | 139 | 145 | 128 |
| Vehs Exited          | 148 | 120 | 126 | 126 | 129 | 142 | 122 |
| Starting Vehs        | 7   | 9   | 5   | 8   | 3   | 5   | 2   |
| Ending Vehs          | 5   | 8   | 7   | 8   | 13  | 8   | 8   |
| Travel Distance (mi) | 33  | 25  | 30  | 28  | 32  | 32  | 29  |
| Travel Time (hr)     | 1.6 | 1.2 | 1.4 | 1.4 | 1.6 | 1.6 | 1.4 |
| Total Delay (hr)     | 0.4 | 0.3 | 0.3 | 0.3 | 0.4 | 0.3 | 0.3 |
| Total Stops          | 184 | 134 | 159 | 152 | 172 | 166 | 160 |
| Fuel Used (gal)      | 1.4 | 1.1 | 1.3 | 1.3 | 1.4 | 1.4 | 1.2 |

### Interval #3 Information Recording

|                  |      |
|------------------|------|
| Start Time       | 5:00 |
| End Time         | 5:15 |
| Total Time (min) | 15   |

Volumes adjusted by Growth Factors, Anti PHF.

| Run Number           | 8   | 9   | 10  | Avg |
|----------------------|-----|-----|-----|-----|
| Vehs Entered         | 131 | 130 | 124 | 133 |
| Vehs Exited          | 124 | 123 | 128 | 131 |
| Starting Vehs        | 2   | 3   | 7   | 2   |
| Ending Vehs          | 9   | 10  | 3   | 6   |
| Travel Distance (mi) | 30  | 28  | 27  | 29  |
| Travel Time (hr)     | 1.4 | 1.4 | 1.3 | 1.4 |
| Total Delay (hr)     | 0.3 | 0.3 | 0.3 | 0.3 |
| Total Stops          | 162 | 149 | 160 | 159 |
| Fuel Used (gal)      | 1.3 | 1.2 | 1.2 | 1.3 |



#### Interval #4 Information Recording

|                  |      |
|------------------|------|
| Start Time       | 5:15 |
| End Time         | 5:30 |
| Total Time (min) | 15   |

Volumes adjusted by PHF, Growth Factors.

| Run Number           | 1   | 2   | 3   | 4   | 5   | 6   | 7   |
|----------------------|-----|-----|-----|-----|-----|-----|-----|
| Vehs Entered         | 168 | 187 | 174 | 157 | 156 | 170 | 167 |
| Vehs Exited          | 164 | 183 | 175 | 155 | 165 | 171 | 160 |
| Starting Vehs        | 5   | 8   | 7   | 8   | 13  | 8   | 8   |
| Ending Vehs          | 9   | 12  | 6   | 10  | 4   | 7   | 15  |
| Travel Distance (mi) | 37  | 41  | 39  | 36  | 36  | 37  | 37  |
| Travel Time (hr)     | 1.8 | 2.1 | 1.9 | 1.8 | 1.8 | 1.8 | 1.8 |
| Total Delay (hr)     | 0.4 | 0.5 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 |
| Total Stops          | 198 | 218 | 209 | 198 | 182 | 182 | 200 |
| Fuel Used (gal)      | 1.6 | 1.8 | 1.7 | 1.6 | 1.6 | 1.7 | 1.6 |

#### Interval #4 Information Recording

|                  |      |
|------------------|------|
| Start Time       | 5:15 |
| End Time         | 5:30 |
| Total Time (min) | 15   |

Volumes adjusted by PHF, Growth Factors.

| Run Number           | 8   | 9   | 10  | Avg |
|----------------------|-----|-----|-----|-----|
| Vehs Entered         | 171 | 172 | 170 | 168 |
| Vehs Exited          | 172 | 182 | 168 | 169 |
| Starting Vehs        | 9   | 10  | 3   | 6   |
| Ending Vehs          | 8   | 0   | 5   | 5   |
| Travel Distance (mi) | 39  | 39  | 38  | 38  |
| Travel Time (hr)     | 1.9 | 1.9 | 1.9 | 1.9 |
| Total Delay (hr)     | 0.4 | 0.4 | 0.4 | 0.4 |
| Total Stops          | 210 | 204 | 201 | 199 |
| Fuel Used (gal)      | 1.7 | 1.7 | 1.6 | 1.7 |

## Queuing and Blocking Report

### Background PM

02/02/2024

#### Intersection: 2: Red Ln & Carrollton Ave

| Movement              | EB  | NB  | SB  |
|-----------------------|-----|-----|-----|
| Directions Served     | LR  | LT  | TR  |
| Maximum Queue (ft)    | 48  | 53  | 55  |
| Average Queue (ft)    | 30  | 32  | 33  |
| 95th Queue (ft)       | 41  | 49  | 47  |
| Link Distance (ft)    | 383 | 305 | 460 |
| Upstream Blk Time (%) |     |     |     |
| Queuing Penalty (veh) |     |     |     |
| Storage Bay Dist (ft) |     |     |     |
| Storage Blk Time (%)  |     |     |     |
| Queuing Penalty (veh) |     |     |     |

#### Intersection: 5: Broad St & Carrollton Ave

| Movement              | EB  | WB  | NB  | SB  |
|-----------------------|-----|-----|-----|-----|
| Directions Served     | LTR | LTR | LTR | LTR |
| Maximum Queue (ft)    | 11  | 23  | 77  | 31  |
| Average Queue (ft)    | 0   | 1   | 35  | 4   |
| 95th Queue (ft)       | 6   | 10  | 56  | 20  |
| Link Distance (ft)    | 292 | 373 | 621 | 370 |
| Upstream Blk Time (%) |     |     |     |     |
| Queuing Penalty (veh) |     |     |     |     |
| Storage Bay Dist (ft) |     |     |     |     |
| Storage Blk Time (%)  |     |     |     |     |
| Queuing Penalty (veh) |     |     |     |     |

#### Intersection: 8: Mt Vernon Ln & Carrollton Ave

| Movement              | EB  | WB  | NB  | SB  |
|-----------------------|-----|-----|-----|-----|
| Directions Served     | LTR | LTR | LTR | LTR |
| Maximum Queue (ft)    | 61  | 70  | 32  | 33  |
| Average Queue (ft)    | 36  | 34  | 14  | 11  |
| 95th Queue (ft)       | 54  | 51  | 39  | 35  |
| Link Distance (ft)    | 373 | 383 | 294 | 364 |
| Upstream Blk Time (%) |     |     |     |     |
| Queuing Penalty (veh) |     |     |     |     |
| Storage Bay Dist (ft) |     |     |     |     |
| Storage Blk Time (%)  |     |     |     |     |
| Queuing Penalty (veh) |     |     |     |     |

#### Network Summary

Network wide Queuing Penalty: 0

| Intersection              |     |
|---------------------------|-----|
| Intersection Delay, s/veh | 7.7 |
| Intersection LOS          | A   |

| Movement            | EBL                                                                               | EBR  | NBL  | NBT                                                                               | SBT                                                                               | SBR  |
|---------------------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
| Lane Configurations |  |      |      |  |  |      |
| Traffic Vol, veh/h  | 44                                                                                | 31   | 31   | 28                                                                                | 64                                                                                | 63   |
| Future Vol, veh/h   | 44                                                                                | 31   | 31   | 28                                                                                | 64                                                                                | 63   |
| Peak Hour Factor    | 0.86                                                                              | 0.86 | 0.86 | 0.86                                                                              | 0.86                                                                              | 0.86 |
| Heavy Vehicles, %   | 0                                                                                 | 0    | 0    | 0                                                                                 | 0                                                                                 | 0    |
| Mvmt Flow           | 51                                                                                | 36   | 36   | 33                                                                                | 74                                                                                | 73   |
| Number of Lanes     | 1                                                                                 | 0    | 0    | 1                                                                                 | 1                                                                                 | 0    |

| Approach                   | EB  | NB  | SB  |
|----------------------------|-----|-----|-----|
| Opposing Approach          |     | SB  | NB  |
| Opposing Lanes             | 0   | 1   | 1   |
| Conflicting Approach Left  | SB  | EB  |     |
| Conflicting Lanes Left     | 1   | 1   | 0   |
| Conflicting Approach Right | NB  |     | EB  |
| Conflicting Lanes Right    | 1   | 0   | 1   |
| HCM Control Delay          | 7.7 | 7.7 | 7.6 |
| HCM LOS                    | A   | A   | A   |

| Lane                   | NBLn1 | EBLn1 | SBLn1 |
|------------------------|-------|-------|-------|
| Vol Left, %            | 53%   | 59%   | 0%    |
| Vol Thru, %            | 47%   | 0%    | 50%   |
| Vol Right, %           | 0%    | 41%   | 50%   |
| Sign Control           | Stop  | Stop  | Stop  |
| Traffic Vol by Lane    | 59    | 75    | 127   |
| LT Vol                 | 31    | 44    | 0     |
| Through Vol            | 28    | 0     | 64    |
| RT Vol                 | 0     | 31    | 63    |
| Lane Flow Rate         | 69    | 87    | 148   |
| Geometry Grp           | 1     | 1     | 1     |
| Degree of Util (X)     | 0.081 | 0.1   | 0.156 |
| Departure Headway (Hd) | 4.273 | 4.138 | 3.808 |
| Convergence, Y/N       | Yes   | Yes   | Yes   |
| Cap                    | 831   | 854   | 932   |
| Service Time           | 2.339 | 2.223 | 1.87  |
| HCM Lane V/C Ratio     | 0.083 | 0.102 | 0.159 |
| HCM Control Delay      | 7.7   | 7.7   | 7.6   |
| HCM Lane LOS           | A     | A     | A     |
| HCM 95th-tile Q        | 0.3   | 0.3   | 0.6   |

| Intersection              |     |  |  |  |  |  |  |  |  |  |  |  |
|---------------------------|-----|--|--|--|--|--|--|--|--|--|--|--|
| Intersection Delay, s/veh | 7.8 |  |  |  |  |  |  |  |  |  |  |  |
| Intersection LOS          | A   |  |  |  |  |  |  |  |  |  |  |  |

| Movement            | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|---------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations |      | ↕    |      |      | ↕    |      |      | ↕    |      |      | ↕    |      |
| Traffic Vol, veh/h  | 21   | 63   | 9    | 1    | 87   | 11   | 17   | 18   | 3    | 8    | 9    | 16   |
| Future Vol, veh/h   | 21   | 63   | 9    | 1    | 87   | 11   | 17   | 18   | 3    | 8    | 9    | 16   |
| Peak Hour Factor    | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 |
| Heavy Vehicles, %   | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    |
| Mvmt Flow           | 26   | 77   | 11   | 1    | 106  | 13   | 21   | 22   | 4    | 10   | 11   | 20   |
| Number of Lanes     | 0    | 1    | 0    | 0    | 1    | 0    | 0    | 1    | 0    | 0    | 1    | 0    |

| Approach                   | EB  | WB  | NB  | SB  |
|----------------------------|-----|-----|-----|-----|
| Opposing Approach          | WB  | EB  | SB  | NB  |
| Opposing Lanes             | 1   | 1   | 1   | 1   |
| Conflicting Approach Left  | SB  | NB  | EB  | WB  |
| Conflicting Lanes Left     | 1   | 1   | 1   | 1   |
| Conflicting Approach Right | NB  | SB  | WB  | EB  |
| Conflicting Lanes Right    | 1   | 1   | 1   | 1   |
| HCM Control Delay          | 7.9 | 7.9 | 7.8 | 7.5 |
| HCM LOS                    | A   | A   | A   | A   |

| Lane                   | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|------------------------|-------|-------|-------|-------|
| Vol Left, %            | 45%   | 23%   | 1%    | 24%   |
| Vol Thru, %            | 47%   | 68%   | 88%   | 27%   |
| Vol Right, %           | 8%    | 10%   | 11%   | 48%   |
| Sign Control           | Stop  | Stop  | Stop  | Stop  |
| Traffic Vol by Lane    | 38    | 93    | 99    | 33    |
| LT Vol                 | 17    | 21    | 1     | 8     |
| Through Vol            | 18    | 63    | 87    | 9     |
| RT Vol                 | 3     | 9     | 11    | 16    |
| Lane Flow Rate         | 46    | 113   | 121   | 40    |
| Geometry Grp           | 1     | 1     | 1     | 1     |
| Degree of Util (X)     | 0.058 | 0.131 | 0.138 | 0.048 |
| Departure Headway (Hd) | 4.536 | 4.164 | 4.107 | 4.26  |
| Convergence, Y/N       | Yes   | Yes   | Yes   | Yes   |
| Cap                    | 794   | 849   | 861   | 846   |
| Service Time           | 2.538 | 2.249 | 2.191 | 2.261 |
| HCM Lane V/C Ratio     | 0.058 | 0.133 | 0.141 | 0.047 |
| HCM Control Delay      | 7.8   | 7.9   | 7.9   | 7.5   |
| HCM Lane LOS           | A     | A     | A     | A     |
| HCM 95th-tile Q        | 0.2   | 0.5   | 0.5   | 0.2   |

| Intersection             |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh         | 2.6  |      |      |      |      |      |      |      |      |      |      |      |
| Movement                 | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
| Lane Configurations      |      | ↕    |      |      | ↕    |      |      | ↕    |      |      | ↕    |      |
| Traffic Vol, veh/h       | 7    | 77   | 125  | 20   | 99   | 3    | 36   | 6    | 13   | 5    | 8    | 9    |
| Future Vol, veh/h        | 7    | 77   | 125  | 20   | 99   | 3    | 36   | 6    | 13   | 5    | 8    | 9    |
| Conflicting Peds, #/hr   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Sign Control             | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized           | -    | -    | None | -    | -    | None | -    | -    | None | -    | -    | None |
| Storage Length           | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| Veh in Median Storage, # | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Grade, %                 | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Peak Hour Factor         | 82   | 82   | 82   | 82   | 82   | 82   | 82   | 82   | 82   | 82   | 82   | 82   |
| Heavy Vehicles, %        | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Mvmt Flow                | 9    | 94   | 152  | 24   | 121  | 4    | 44   | 7    | 16   | 6    | 10   | 11   |

| Major/Minor          | Major1 |   |   | Major2 |   |   | Minor1 |     |     | Minor2 |     |     |
|----------------------|--------|---|---|--------|---|---|--------|-----|-----|--------|-----|-----|
| Conflicting Flow All | 125    | 0 | 0 | 246    | 0 | 0 | 370    | 361 | 170 | 371    | 435 | 123 |
| Stage 1              | -      | - | - | -      | - | - | 188    | 188 | -   | 171    | 171 | -   |
| Stage 2              | -      | - | - | -      | - | - | 182    | 173 | -   | 200    | 264 | -   |
| Critical Hdwy        | 4.1    | - | - | 4.1    | - | - | 7.1    | 6.5 | 6.2 | 7.1    | 6.5 | 6.2 |
| Critical Hdwy Stg 1  | -      | - | - | -      | - | - | 6.1    | 5.5 | -   | 6.1    | 5.5 | -   |
| Critical Hdwy Stg 2  | -      | - | - | -      | - | - | 6.1    | 5.5 | -   | 6.1    | 5.5 | -   |
| Follow-up Hdwy       | 2.2    | - | - | 2.2    | - | - | 3.5    | 4   | 3.3 | 3.5    | 4   | 3.3 |
| Pot Cap-1 Maneuver   | 1474   | - | - | 1332   | - | - | 590    | 569 | 879 | 589    | 517 | 933 |
| Stage 1              | -      | - | - | -      | - | - | 818    | 748 | -   | 836    | 761 | -   |
| Stage 2              | -      | - | - | -      | - | - | 824    | 760 | -   | 806    | 694 | -   |
| Platoon blocked, %   | -      | - | - | -      | - | - | -      | -   | -   | -      | -   | -   |
| Mov Cap-1 Maneuver   | 1474   | - | - | 1332   | - | - | 563    | 554 | 879 | 561    | 504 | 933 |
| Mov Cap-2 Maneuver   | -      | - | - | -      | - | - | 563    | 554 | -   | 561    | 504 | -   |
| Stage 1              | -      | - | - | -      | - | - | 812    | 743 | -   | 830    | 747 | -   |
| Stage 2              | -      | - | - | -      | - | - | 788    | 746 | -   | 778    | 689 | -   |

| Approach             | EB  | WB  | NB   | SB   |
|----------------------|-----|-----|------|------|
| HCM Control Delay, s | 0.2 | 1.3 | 11.6 | 10.9 |
| HCM LOS              |     |     | B    | B    |

| Minor Lane/Major Mvmt | NBLn1 | EBL   | EBT | EBR | WBL   | WBT | WBR | SBLn1 |
|-----------------------|-------|-------|-----|-----|-------|-----|-----|-------|
| Capacity (veh/h)      | 614   | 1474  | -   | -   | 1332  | -   | -   | 639   |
| HCM Lane V/C Ratio    | 0.109 | 0.006 | -   | -   | 0.018 | -   | -   | 0.042 |
| HCM Control Delay (s) | 11.6  | 7.5   | 0   | -   | 7.8   | 0   | -   | 10.9  |
| HCM Lane LOS          | B     | A     | A   | -   | A     | A   | -   | B     |
| HCM 95th %tile Q(veh) | 0.4   | 0     | -   | -   | 0.1   | -   | -   | 0.1   |

### Summary of All Intervals

| Run Number              | 1    | 2    | 3    | 4    | 5    | 6    | 7    |
|-------------------------|------|------|------|------|------|------|------|
| Start Time              | 7:15 | 7:15 | 7:15 | 7:15 | 7:15 | 7:15 | 7:15 |
| End Time                | 8:30 | 8:30 | 8:30 | 8:30 | 8:30 | 8:30 | 8:30 |
| Total Time (min)        | 75   | 75   | 75   | 75   | 75   | 75   | 75   |
| Time Recorded (min)     | 60   | 60   | 60   | 60   | 60   | 60   | 60   |
| # of Intervals          | 5    | 5    | 5    | 5    | 5    | 5    | 5    |
| # of Recorded Intervals | 4    | 4    | 4    | 4    | 4    | 4    | 4    |
| Vehs Entered            | 554  | 584  | 531  | 514  | 533  | 592  | 558  |
| Vehs Exited             | 553  | 581  | 526  | 516  | 530  | 591  | 560  |
| Starting Vehs           | 3    | 0    | 5    | 4    | 3    | 6    | 7    |
| Ending Vehs             | 4    | 3    | 10   | 2    | 6    | 7    | 5    |
| Travel Distance (mi)    | 118  | 125  | 114  | 108  | 111  | 127  | 119  |
| Travel Time (hr)        | 5.7  | 6.1  | 5.6  | 5.3  | 5.4  | 6.2  | 5.8  |
| Total Delay (hr)        | 1.2  | 1.3  | 1.2  | 1.1  | 1.1  | 1.4  | 1.2  |
| Total Stops             | 580  | 636  | 597  | 522  | 555  | 654  | 599  |
| Fuel Used (gal)         | 5.2  | 5.6  | 5.0  | 4.7  | 4.8  | 5.6  | 5.1  |

### Summary of All Intervals

| Run Number              | 8    | 9    | 10   | Avg  |
|-------------------------|------|------|------|------|
| Start Time              | 7:15 | 7:15 | 7:15 | 7:15 |
| End Time                | 8:30 | 8:30 | 8:30 | 8:30 |
| Total Time (min)        | 75   | 75   | 75   | 75   |
| Time Recorded (min)     | 60   | 60   | 60   | 60   |
| # of Intervals          | 5    | 5    | 5    | 5    |
| # of Recorded Intervals | 4    | 4    | 4    | 4    |
| Vehs Entered            | 594  | 567  | 537  | 556  |
| Vehs Exited             | 595  | 569  | 537  | 556  |
| Starting Vehs           | 7    | 6    | 4    | 2    |
| Ending Vehs             | 6    | 4    | 4    | 2    |
| Travel Distance (mi)    | 127  | 121  | 115  | 119  |
| Travel Time (hr)        | 6.2  | 5.9  | 5.7  | 5.8  |
| Total Delay (hr)        | 1.3  | 1.2  | 1.2  | 1.2  |
| Total Stops             | 637  | 626  | 603  | 600  |
| Fuel Used (gal)         | 5.5  | 5.3  | 5.0  | 5.2  |

### Interval #0 Information Seeding

|                                               |      |
|-----------------------------------------------|------|
| Start Time                                    | 7:15 |
| End Time                                      | 7:30 |
| Total Time (min)                              | 15   |
| Volumes adjusted by Growth Factors, Anti PHF. |      |
| No data recorded this interval.               |      |

### Interval #1 Information Recording

|                                          |      |
|------------------------------------------|------|
| Start Time                               | 7:30 |
| End Time                                 | 7:45 |
| Total Time (min)                         | 15   |
| Volumes adjusted by PHF, Growth Factors. |      |

| Run Number           | 1   | 2   | 3   | 4   | 5   | 6   | 7   |
|----------------------|-----|-----|-----|-----|-----|-----|-----|
| Vehs Entered         | 178 | 159 | 187 | 156 | 163 | 161 | 173 |
| Vehs Exited          | 175 | 153 | 186 | 153 | 161 | 157 | 173 |
| Starting Vehs        | 3   | 0   | 5   | 4   | 3   | 6   | 7   |
| Ending Vehs          | 6   | 6   | 6   | 7   | 5   | 10  | 7   |
| Travel Distance (mi) | 37  | 33  | 39  | 31  | 34  | 34  | 37  |
| Travel Time (hr)     | 1.8 | 1.6 | 1.9 | 1.5 | 1.7 | 1.6 | 1.8 |
| Total Delay (hr)     | 0.4 | 0.3 | 0.4 | 0.3 | 0.4 | 0.4 | 0.4 |
| Total Stops          | 180 | 166 | 208 | 144 | 181 | 179 | 176 |
| Fuel Used (gal)      | 1.6 | 1.5 | 1.8 | 1.4 | 1.5 | 1.5 | 1.6 |

### Interval #1 Information Recording

|                                          |      |
|------------------------------------------|------|
| Start Time                               | 7:30 |
| End Time                                 | 7:45 |
| Total Time (min)                         | 15   |
| Volumes adjusted by PHF, Growth Factors. |      |

| Run Number           | 8   | 9   | 10  | Avg |
|----------------------|-----|-----|-----|-----|
| Vehs Entered         | 172 | 177 | 148 | 167 |
| Vehs Exited          | 168 | 178 | 147 | 165 |
| Starting Vehs        | 7   | 6   | 4   | 2   |
| Ending Vehs          | 11  | 5   | 5   | 3   |
| Travel Distance (mi) | 36  | 37  | 31  | 35  |
| Travel Time (hr)     | 1.8 | 1.8 | 1.5 | 1.7 |
| Total Delay (hr)     | 0.4 | 0.4 | 0.3 | 0.4 |
| Total Stops          | 187 | 177 | 160 | 175 |
| Fuel Used (gal)      | 1.6 | 1.6 | 1.3 | 1.5 |

### Interval #2 Information Recording

|                  |      |
|------------------|------|
| Start Time       | 7:45 |
| End Time         | 8:00 |
| Total Time (min) | 15   |

Volumes adjusted by Growth Factors, Anti PHF.

| Run Number           | 1   | 2   | 3   | 4   | 5   | 6   | 7   |
|----------------------|-----|-----|-----|-----|-----|-----|-----|
| Vehs Entered         | 121 | 130 | 109 | 110 | 129 | 129 | 132 |
| Vehs Exited          | 122 | 130 | 107 | 114 | 131 | 136 | 134 |
| Starting Vehs        | 6   | 6   | 6   | 7   | 5   | 10  | 7   |
| Ending Vehs          | 5   | 6   | 8   | 3   | 3   | 3   | 5   |
| Travel Distance (mi) | 26  | 28  | 23  | 25  | 27  | 28  | 29  |
| Travel Time (hr)     | 1.3 | 1.4 | 1.1 | 1.2 | 1.3 | 1.4 | 1.4 |
| Total Delay (hr)     | 0.3 | 0.3 | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 |
| Total Stops          | 138 | 147 | 125 | 114 | 126 | 145 | 150 |
| Fuel Used (gal)      | 1.1 | 1.2 | 1.0 | 1.1 | 1.2 | 1.3 | 1.2 |

### Interval #2 Information Recording

|                  |      |
|------------------|------|
| Start Time       | 7:45 |
| End Time         | 8:00 |
| Total Time (min) | 15   |

Volumes adjusted by Growth Factors, Anti PHF.

| Run Number           | 8   | 9   | 10  | Avg |
|----------------------|-----|-----|-----|-----|
| Vehs Entered         | 157 | 139 | 122 | 126 |
| Vehs Exited          | 159 | 141 | 125 | 129 |
| Starting Vehs        | 11  | 5   | 5   | 3   |
| Ending Vehs          | 9   | 3   | 2   | 2   |
| Travel Distance (mi) | 34  | 31  | 27  | 28  |
| Travel Time (hr)     | 1.7 | 1.5 | 1.3 | 1.4 |
| Total Delay (hr)     | 0.4 | 0.3 | 0.3 | 0.3 |
| Total Stops          | 176 | 167 | 139 | 143 |
| Fuel Used (gal)      | 1.5 | 1.3 | 1.2 | 1.2 |



### Interval #3 Information Recording

|                  |      |
|------------------|------|
| Start Time       | 8:00 |
| End Time         | 8:15 |
| Total Time (min) | 15   |

Volumes adjusted by Growth Factors, Anti PHF.

| Run Number           | 1   | 2   | 3   | 4   | 5   | 6   | 7   |
|----------------------|-----|-----|-----|-----|-----|-----|-----|
| Vehs Entered         | 143 | 139 | 116 | 114 | 123 | 141 | 129 |
| Vehs Exited          | 141 | 140 | 117 | 112 | 118 | 138 | 133 |
| Starting Vehs        | 5   | 6   | 8   | 3   | 3   | 3   | 5   |
| Ending Vehs          | 7   | 5   | 7   | 5   | 8   | 6   | 1   |
| Travel Distance (mi) | 30  | 30  | 27  | 24  | 26  | 30  | 27  |
| Travel Time (hr)     | 1.5 | 1.5 | 1.3 | 1.2 | 1.2 | 1.5 | 1.3 |
| Total Delay (hr)     | 0.3 | 0.3 | 0.3 | 0.2 | 0.3 | 0.3 | 0.3 |
| Total Stops          | 144 | 150 | 138 | 119 | 126 | 161 | 135 |
| Fuel Used (gal)      | 1.3 | 1.4 | 1.1 | 1.0 | 1.1 | 1.3 | 1.1 |

### Interval #3 Information Recording

|                  |      |
|------------------|------|
| Start Time       | 8:00 |
| End Time         | 8:15 |
| Total Time (min) | 15   |

Volumes adjusted by Growth Factors, Anti PHF.

| Run Number           | 8   | 9   | 10  | Avg |
|----------------------|-----|-----|-----|-----|
| Vehs Entered         | 133 | 127 | 142 | 130 |
| Vehs Exited          | 135 | 124 | 140 | 129 |
| Starting Vehs        | 9   | 3   | 2   | 2   |
| Ending Vehs          | 7   | 6   | 4   | 1   |
| Travel Distance (mi) | 28  | 27  | 30  | 28  |
| Travel Time (hr)     | 1.4 | 1.3 | 1.5 | 1.4 |
| Total Delay (hr)     | 0.3 | 0.3 | 0.4 | 0.3 |
| Total Stops          | 137 | 148 | 159 | 141 |
| Fuel Used (gal)      | 1.3 | 1.2 | 1.3 | 1.2 |

#### Interval #4 Information Recording

|                  |      |
|------------------|------|
| Start Time       | 8:15 |
| End Time         | 8:30 |
| Total Time (min) | 15   |

Volumes adjusted by Growth Factors, Anti PHF.

| Run Number           | 1   | 2   | 3   | 4   | 5   | 6   | 7   |
|----------------------|-----|-----|-----|-----|-----|-----|-----|
| Vehs Entered         | 112 | 156 | 119 | 134 | 118 | 161 | 124 |
| Vehs Exited          | 115 | 158 | 116 | 137 | 120 | 160 | 120 |
| Starting Vehs        | 7   | 5   | 7   | 5   | 8   | 6   | 1   |
| Ending Vehs          | 4   | 3   | 10  | 2   | 6   | 7   | 5   |
| Travel Distance (mi) | 24  | 34  | 25  | 28  | 25  | 35  | 26  |
| Travel Time (hr)     | 1.2 | 1.7 | 1.2 | 1.4 | 1.2 | 1.7 | 1.3 |
| Total Delay (hr)     | 0.2 | 0.4 | 0.3 | 0.3 | 0.2 | 0.4 | 0.3 |
| Total Stops          | 118 | 173 | 126 | 145 | 122 | 169 | 138 |
| Fuel Used (gal)      | 1.1 | 1.5 | 1.0 | 1.2 | 1.1 | 1.6 | 1.1 |

#### Interval #4 Information Recording

|                  |      |
|------------------|------|
| Start Time       | 8:15 |
| End Time         | 8:30 |
| Total Time (min) | 15   |

Volumes adjusted by Growth Factors, Anti PHF.

| Run Number           | 8   | 9   | 10  | Avg |
|----------------------|-----|-----|-----|-----|
| Vehs Entered         | 132 | 124 | 125 | 134 |
| Vehs Exited          | 133 | 126 | 125 | 131 |
| Starting Vehs        | 7   | 6   | 4   | 1   |
| Ending Vehs          | 6   | 4   | 4   | 2   |
| Travel Distance (mi) | 28  | 27  | 27  | 28  |
| Travel Time (hr)     | 1.4 | 1.3 | 1.3 | 1.4 |
| Total Delay (hr)     | 0.3 | 0.3 | 0.3 | 0.3 |
| Total Stops          | 137 | 134 | 145 | 141 |
| Fuel Used (gal)      | 1.2 | 1.2 | 1.2 | 1.2 |

Intersection: 2: Red Ln & Carrollton Ave

| Movement              | EB  | NB  | SB  |
|-----------------------|-----|-----|-----|
| Directions Served     | LR  | LT  | TR  |
| Maximum Queue (ft)    | 37  | 46  | 57  |
| Average Queue (ft)    | 27  | 27  | 35  |
| 95th Queue (ft)       | 43  | 47  | 52  |
| Link Distance (ft)    | 383 | 305 | 460 |
| Upstream Blk Time (%) |     |     |     |
| Queuing Penalty (veh) |     |     |     |
| Storage Bay Dist (ft) |     |     |     |
| Storage Blk Time (%)  |     |     |     |
| Queuing Penalty (veh) |     |     |     |

Intersection: 5: Broad St & Carrollton Ave

| Movement              | EB  | WB  | NB  | SB  |
|-----------------------|-----|-----|-----|-----|
| Directions Served     | LTR | LTR | LTR | LTR |
| Maximum Queue (ft)    | 12  | 33  | 50  | 34  |
| Average Queue (ft)    | 1   | 4   | 28  | 16  |
| 95th Queue (ft)       | 7   | 22  | 49  | 41  |
| Link Distance (ft)    | 292 | 373 | 621 | 370 |
| Upstream Blk Time (%) |     |     |     |     |
| Queuing Penalty (veh) |     |     |     |     |
| Storage Bay Dist (ft) |     |     |     |     |
| Storage Blk Time (%)  |     |     |     |     |
| Queuing Penalty (veh) |     |     |     |     |

Intersection: 8: Mt Vernon Ln & Carrollton Ave

| Movement              | EB  | WB  | NB  | SB  |
|-----------------------|-----|-----|-----|-----|
| Directions Served     | LTR | LTR | LTR | LTR |
| Maximum Queue (ft)    | 62  | 62  | 47  | 45  |
| Average Queue (ft)    | 33  | 32  | 22  | 22  |
| 95th Queue (ft)       | 53  | 50  | 46  | 47  |
| Link Distance (ft)    | 373 | 383 | 294 | 364 |
| Upstream Blk Time (%) |     |     |     |     |
| Queuing Penalty (veh) |     |     |     |     |
| Storage Bay Dist (ft) |     |     |     |     |
| Storage Blk Time (%)  |     |     |     |     |
| Queuing Penalty (veh) |     |     |     |     |

Network Summary

|                                 |
|---------------------------------|
| Network wide Queuing Penalty: 0 |
|---------------------------------|

| Intersection              |     |
|---------------------------|-----|
| Intersection Delay, s/veh | 8.2 |
| Intersection LOS          | A   |

| Movement            | EBL                                                                               | EBR  | NBL  | NBT                                                                               | SBT                                                                               | SBR  |
|---------------------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|
| Lane Configurations |  |      |      |  |  |      |
| Traffic Vol, veh/h  | 91                                                                                | 35   | 56   | 70                                                                                | 44                                                                                | 89   |
| Future Vol, veh/h   | 91                                                                                | 35   | 56   | 70                                                                                | 44                                                                                | 89   |
| Peak Hour Factor    | 0.93                                                                              | 0.93 | 0.93 | 0.93                                                                              | 0.93                                                                              | 0.93 |
| Heavy Vehicles, %   | 0                                                                                 | 0    | 0    | 0                                                                                 | 0                                                                                 | 0    |
| Mvmt Flow           | 98                                                                                | 38   | 60   | 75                                                                                | 47                                                                                | 96   |
| Number of Lanes     | 1                                                                                 | 0    | 0    | 1                                                                                 | 1                                                                                 | 0    |

| Approach                   | EB  | NB  | SB  |
|----------------------------|-----|-----|-----|
| Opposing Approach          |     | SB  | NB  |
| Opposing Lanes             | 0   | 1   | 1   |
| Conflicting Approach Left  | SB  | EB  |     |
| Conflicting Lanes Left     | 1   | 1   | 0   |
| Conflicting Approach Right | NB  |     | EB  |
| Conflicting Lanes Right    | 1   | 0   | 1   |
| HCM Control Delay          | 8.4 | 8.4 | 7.7 |
| HCM LOS                    | A   | A   | A   |

| Lane                   | NBLn1 | EBLn1 | SBLn1 |
|------------------------|-------|-------|-------|
| Vol Left, %            | 44%   | 72%   | 0%    |
| Vol Thru, %            | 56%   | 0%    | 33%   |
| Vol Right, %           | 0%    | 28%   | 67%   |
| Sign Control           | Stop  | Stop  | Stop  |
| Traffic Vol by Lane    | 126   | 126   | 133   |
| LT Vol                 | 56    | 91    | 0     |
| Through Vol            | 70    | 0     | 44    |
| RT Vol                 | 0     | 35    | 89    |
| Lane Flow Rate         | 135   | 135   | 143   |
| Geometry Grp           | 1     | 1     | 1     |
| Degree of Util (X)     | 0.168 | 0.169 | 0.158 |
| Departure Headway (Hd) | 4.451 | 4.478 | 3.967 |
| Convergence, Y/N       | Yes   | Yes   | Yes   |
| Cap                    | 807   | 803   | 907   |
| Service Time           | 2.466 | 2.496 | 1.982 |
| HCM Lane V/C Ratio     | 0.167 | 0.168 | 0.158 |
| HCM Control Delay      | 8.4   | 8.4   | 7.7   |
| HCM Lane LOS           | A     | A     | A     |
| HCM 95th-tile Q        | 0.6   | 0.6   | 0.6   |

| Intersection              |     |
|---------------------------|-----|
| Intersection Delay, s/veh | 8.4 |
| Intersection LOS          | A   |

| Movement            | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
|---------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Lane Configurations |      | ↕    |      |      | ↕    |      |      | ↕    |      |      | ↕    |      |
| Traffic Vol, veh/h  | 19   | 119  | 14   | 3    | 133  | 7    | 16   | 8    | 2    | 8    | 9    | 16   |
| Future Vol, veh/h   | 19   | 119  | 14   | 3    | 133  | 7    | 16   | 8    | 2    | 8    | 9    | 16   |
| Peak Hour Factor    | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 | 0.82 |
| Heavy Vehicles, %   | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    | 2    |
| Mvmt Flow           | 23   | 145  | 17   | 4    | 162  | 9    | 20   | 10   | 2    | 10   | 11   | 20   |
| Number of Lanes     | 0    | 1    | 0    | 0    | 1    | 0    | 0    | 1    | 0    | 0    | 1    | 0    |

| Approach                   | EB  | WB  | NB  | SB  |
|----------------------------|-----|-----|-----|-----|
| Opposing Approach          | WB  | EB  | SB  | NB  |
| Opposing Lanes             | 1   | 1   | 1   | 1   |
| Conflicting Approach Left  | SB  | NB  | EB  | WB  |
| Conflicting Lanes Left     | 1   | 1   | 1   | 1   |
| Conflicting Approach Right | NB  | SB  | WB  | EB  |
| Conflicting Lanes Right    | 1   | 1   | 1   | 1   |
| HCM Control Delay          | 8.5 | 8.4 | 8.1 | 7.8 |
| HCM LOS                    | A   | A   | A   | A   |

| Lane                   | NBLn1 | EBLn1 | WBLn1 | SBLn1 |
|------------------------|-------|-------|-------|-------|
| Vol Left, %            | 62%   | 12%   | 2%    | 24%   |
| Vol Thru, %            | 31%   | 78%   | 93%   | 27%   |
| Vol Right, %           | 8%    | 9%    | 5%    | 48%   |
| Sign Control           | Stop  | Stop  | Stop  | Stop  |
| Traffic Vol by Lane    | 26    | 152   | 143   | 33    |
| LT Vol                 | 16    | 19    | 3     | 8     |
| Through Vol            | 8     | 119   | 133   | 9     |
| RT Vol                 | 2     | 14    | 7     | 16    |
| Lane Flow Rate         | 32    | 185   | 174   | 40    |
| Geometry Grp           | 1     | 1     | 1     | 1     |
| Degree of Util (X)     | 0.043 | 0.22  | 0.207 | 0.051 |
| Departure Headway (Hd) | 4.848 | 4.263 | 4.279 | 4.519 |
| Convergence, Y/N       | Yes   | Yes   | Yes   | Yes   |
| Cap                    | 739   | 847   | 842   | 793   |
| Service Time           | 2.871 | 2.268 | 2.284 | 2.541 |
| HCM Lane V/C Ratio     | 0.043 | 0.218 | 0.207 | 0.05  |
| HCM Control Delay      | 8.1   | 8.5   | 8.4   | 7.8   |
| HCM Lane LOS           | A     | A     | A     | A     |
| HCM 95th-tile Q        | 0.1   | 0.8   | 0.8   | 0.2   |

| Intersection             |      |      |      |      |      |      |      |      |      |      |      |      |
|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Int Delay, s/veh         | 4.2  |      |      |      |      |      |      |      |      |      |      |      |
| Movement                 | EBL  | EBT  | EBR  | WBL  | WBT  | WBR  | NBL  | NBT  | NBR  | SBL  | SBT  | SBR  |
| Lane Configurations      |      | ↕    |      |      | ↕    |      |      | ↕    |      |      | ↕    |      |
| Traffic Vol, veh/h       | 12   | 128  | 94   | 21   | 140  | 5    | 90   | 8    | 22   | 5    | 9    | 9    |
| Future Vol, veh/h        | 12   | 128  | 94   | 21   | 140  | 5    | 90   | 8    | 22   | 5    | 9    | 9    |
| Conflicting Peds, #/hr   | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Sign Control             | Free | Free | Free | Free | Free | Free | Stop | Stop | Stop | Stop | Stop | Stop |
| RT Channelized           | -    | -    | None | -    | -    | None | -    | -    | None | -    | -    | None |
| Storage Length           | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    | -    |
| Veh in Median Storage, # | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Grade, %                 | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    | -    | 0    | -    |
| Peak Hour Factor         | 82   | 82   | 82   | 82   | 82   | 82   | 82   | 82   | 82   | 82   | 82   | 82   |
| Heavy Vehicles, %        | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Mvmt Flow                | 15   | 156  | 115  | 26   | 171  | 6    | 110  | 10   | 27   | 6    | 11   | 11   |

| Major/Minor          | Major1 |   |   | Major2 |   |   | Minor1 |     |     | Minor2 |     |     |
|----------------------|--------|---|---|--------|---|---|--------|-----|-----|--------|-----|-----|
| Conflicting Flow All | 177    | 0 | 0 | 271    | 0 | 0 | 481    | 473 | 214 | 488    | 527 | 174 |
| Stage 1              | -      | - | - | -      | - | - | 244    | 244 | -   | 226    | 226 | -   |
| Stage 2              | -      | - | - | -      | - | - | 237    | 229 | -   | 262    | 301 | -   |
| Critical Hdwy        | 4.1    | - | - | 4.1    | - | - | 7.1    | 6.5 | 6.2 | 7.1    | 6.5 | 6.2 |
| Critical Hdwy Stg 1  | -      | - | - | -      | - | - | 6.1    | 5.5 | -   | 6.1    | 5.5 | -   |
| Critical Hdwy Stg 2  | -      | - | - | -      | - | - | 6.1    | 5.5 | -   | 6.1    | 5.5 | -   |
| Follow-up Hdwy       | 2.2    | - | - | 2.2    | - | - | 3.5    | 4   | 3.3 | 3.5    | 4   | 3.3 |
| Pot Cap-1 Maneuver   | 1411   | - | - | 1304   | - | - | 499    | 493 | 831 | 493    | 459 | 875 |
| Stage 1              | -      | - | - | -      | - | - | 764    | 708 | -   | 781    | 721 | -   |
| Stage 2              | -      | - | - | -      | - | - | 771    | 718 | -   | 747    | 669 | -   |
| Platoon blocked, %   | -      | - | - | -      | - | - | -      | -   | -   | -      | -   | -   |
| Mov Cap-1 Maneuver   | 1411   | - | - | 1304   | - | - | 471    | 476 | 831 | 457    | 443 | 875 |
| Mov Cap-2 Maneuver   | -      | - | - | -      | - | - | 471    | 476 | -   | 457    | 443 | -   |
| Stage 1              | -      | - | - | -      | - | - | 754    | 699 | -   | 771    | 705 | -   |
| Stage 2              | -      | - | - | -      | - | - | 733    | 702 | -   | 704    | 660 | -   |

| Approach             | EB  | WB | NB   | SB   |
|----------------------|-----|----|------|------|
| HCM Control Delay, s | 0.4 | 1  | 14.8 | 11.8 |
| HCM LOS              |     |    | B    | B    |

| Minor Lane/Major Mvmt | NBLn1 | EBL  | EBT | EBR | WBL  | WBT | WBR | SBLn1 |
|-----------------------|-------|------|-----|-----|------|-----|-----|-------|
| Capacity (veh/h)      | 512   | 1411 | -   | -   | 1304 | -   | -   | 554   |
| HCM Lane V/C Ratio    | 0.286 | 0.01 | -   | -   | 0.02 | -   | -   | 0.051 |
| HCM Control Delay (s) | 14.8  | 7.6  | 0   | -   | 7.8  | 0   | -   | 11.8  |
| HCM Lane LOS          | B     | A    | A   | -   | A    | A   | -   | B     |
| HCM 95th %tile Q(veh) | 1.2   | 0    | -   | -   | 0.1  | -   | -   | 0.2   |

### Summary of All Intervals

| Run Number              | 1    | 2    | 3    | 4    | 5    | 6    | 7    |
|-------------------------|------|------|------|------|------|------|------|
| Start Time              | 4:45 | 4:45 | 4:45 | 4:45 | 4:45 | 4:45 | 4:45 |
| End Time                | 6:00 | 6:00 | 6:00 | 6:00 | 6:00 | 6:00 | 6:00 |
| Total Time (min)        | 75   | 75   | 75   | 75   | 75   | 75   | 75   |
| Time Recorded (min)     | 60   | 60   | 60   | 60   | 60   | 60   | 60   |
| # of Intervals          | 5    | 5    | 5    | 5    | 5    | 5    | 5    |
| # of Recorded Intervals | 4    | 4    | 4    | 4    | 4    | 4    | 4    |
| Vehs Entered            | 757  | 750  | 729  | 730  | 679  | 735  | 724  |
| Vehs Exited             | 753  | 749  | 730  | 733  | 680  | 739  | 723  |
| Starting Vehs           | 7    | 7    | 7    | 9    | 5    | 10   | 10   |
| Ending Vehs             | 11   | 8    | 6    | 6    | 4    | 6    | 11   |
| Travel Distance (mi)    | 174  | 167  | 165  | 164  | 152  | 164  | 163  |
| Travel Time (hr)        | 8.8  | 8.4  | 8.3  | 8.2  | 7.6  | 8.2  | 8.2  |
| Total Delay (hr)        | 2.1  | 1.9  | 1.9  | 1.9  | 1.7  | 1.9  | 1.9  |
| Total Stops             | 997  | 941  | 925  | 911  | 852  | 916  | 913  |
| Fuel Used (gal)         | 7.8  | 7.5  | 7.3  | 7.3  | 6.7  | 7.3  | 7.2  |

### Summary of All Intervals

| Run Number              | 8    | 9    | 10   | Avg  |
|-------------------------|------|------|------|------|
| Start Time              | 4:45 | 4:45 | 4:45 | 4:45 |
| End Time                | 6:00 | 6:00 | 6:00 | 6:00 |
| Total Time (min)        | 75   | 75   | 75   | 75   |
| Time Recorded (min)     | 60   | 60   | 60   | 60   |
| # of Intervals          | 5    | 5    | 5    | 5    |
| # of Recorded Intervals | 4    | 4    | 4    | 4    |
| Vehs Entered            | 745  | 750  | 693  | 727  |
| Vehs Exited             | 738  | 752  | 689  | 730  |
| Starting Vehs           | 7    | 10   | 4    | 4    |
| Ending Vehs             | 14   | 8    | 8    | 6    |
| Travel Distance (mi)    | 162  | 166  | 151  | 163  |
| Travel Time (hr)        | 8.0  | 8.3  | 7.5  | 8.2  |
| Total Delay (hr)        | 1.8  | 1.9  | 1.7  | 1.8  |
| Total Stops             | 911  | 947  | 856  | 918  |
| Fuel Used (gal)         | 7.2  | 7.4  | 6.8  | 7.2  |

### Interval #0 Information Seeding

|                                               |      |
|-----------------------------------------------|------|
| Start Time                                    | 4:45 |
| End Time                                      | 5:00 |
| Total Time (min)                              | 15   |
| Volumes adjusted by Growth Factors, Anti PHF. |      |
| No data recorded this interval.               |      |

### Interval #1 Information Recording

|                  |      |
|------------------|------|
| Start Time       | 5:00 |
| End Time         | 5:15 |
| Total Time (min) | 15   |

Volumes adjusted by Growth Factors, Anti PHF.

| Run Number           | 1   | 2   | 3   | 4   | 5   | 6   | 7   |
|----------------------|-----|-----|-----|-----|-----|-----|-----|
| Vehs Entered         | 188 | 163 | 175 | 167 | 144 | 149 | 177 |
| Vehs Exited          | 187 | 167 | 174 | 168 | 140 | 152 | 177 |
| Starting Vehs        | 7   | 7   | 7   | 9   | 5   | 10  | 10  |
| Ending Vehs          | 8   | 3   | 8   | 8   | 9   | 7   | 10  |
| Travel Distance (mi) | 42  | 36  | 40  | 39  | 31  | 34  | 40  |
| Travel Time (hr)     | 2.2 | 1.8 | 2.0 | 1.9 | 1.5 | 1.7 | 2.0 |
| Total Delay (hr)     | 0.5 | 0.4 | 0.5 | 0.4 | 0.3 | 0.4 | 0.4 |
| Total Stops          | 245 | 195 | 224 | 218 | 175 | 189 | 218 |
| Fuel Used (gal)      | 1.9 | 1.7 | 1.8 | 1.7 | 1.4 | 1.5 | 1.8 |

### Interval #1 Information Recording

|                  |      |
|------------------|------|
| Start Time       | 5:00 |
| End Time         | 5:15 |
| Total Time (min) | 15   |

Volumes adjusted by Growth Factors, Anti PHF.

| Run Number           | 8   | 9   | 10  | Avg |
|----------------------|-----|-----|-----|-----|
| Vehs Entered         | 172 | 194 | 163 | 169 |
| Vehs Exited          | 169 | 198 | 156 | 167 |
| Starting Vehs        | 7   | 10  | 4   | 4   |
| Ending Vehs          | 10  | 6   | 11  | 3   |
| Travel Distance (mi) | 37  | 43  | 35  | 38  |
| Travel Time (hr)     | 1.9 | 2.1 | 1.7 | 1.9 |
| Total Delay (hr)     | 0.4 | 0.5 | 0.4 | 0.4 |
| Total Stops          | 210 | 239 | 188 | 212 |
| Fuel Used (gal)      | 1.7 | 1.9 | 1.6 | 1.7 |



### Interval #2 Information Recording

|                  |      |
|------------------|------|
| Start Time       | 5:15 |
| End Time         | 5:30 |
| Total Time (min) | 15   |

Volumes adjusted by PHF, Growth Factors, Anti PHF.

| Run Number           | 1   | 2   | 3   | 4   | 5   | 6   | 7   |
|----------------------|-----|-----|-----|-----|-----|-----|-----|
| Vehs Entered         | 228 | 214 | 203 | 212 | 227 | 217 | 214 |
| Vehs Exited          | 226 | 211 | 202 | 207 | 230 | 216 | 221 |
| Starting Vehs        | 8   | 3   | 8   | 8   | 9   | 7   | 10  |
| Ending Vehs          | 10  | 6   | 9   | 13  | 6   | 8   | 3   |
| Travel Distance (mi) | 51  | 47  | 46  | 46  | 51  | 47  | 50  |
| Travel Time (hr)     | 2.7 | 2.4 | 2.3 | 2.3 | 2.6 | 2.4 | 2.6 |
| Total Delay (hr)     | 0.7 | 0.6 | 0.5 | 0.5 | 0.7 | 0.6 | 0.6 |
| Total Stops          | 296 | 261 | 265 | 257 | 291 | 254 | 289 |
| Fuel Used (gal)      | 2.2 | 2.1 | 2.0 | 2.0 | 2.2 | 2.1 | 2.2 |

### Interval #2 Information Recording

|                  |      |
|------------------|------|
| Start Time       | 5:15 |
| End Time         | 5:30 |
| Total Time (min) | 15   |

Volumes adjusted by PHF, Growth Factors, Anti PHF.

| Run Number           | 8   | 9   | 10  | Avg |
|----------------------|-----|-----|-----|-----|
| Vehs Entered         | 214 | 220 | 198 | 214 |
| Vehs Exited          | 219 | 219 | 198 | 215 |
| Starting Vehs        | 10  | 6   | 11  | 3   |
| Ending Vehs          | 5   | 7   | 11  | 6   |
| Travel Distance (mi) | 47  | 49  | 44  | 48  |
| Travel Time (hr)     | 2.4 | 2.5 | 2.2 | 2.4 |
| Total Delay (hr)     | 0.6 | 0.6 | 0.5 | 0.6 |
| Total Stops          | 277 | 286 | 244 | 270 |
| Fuel Used (gal)      | 2.1 | 2.2 | 1.9 | 2.1 |

### Interval #3 Information Recording

|                  |      |
|------------------|------|
| Start Time       | 5:30 |
| End Time         | 5:45 |
| Total Time (min) | 15   |

Volumes adjusted by Growth Factors, Anti PHF.

| Run Number           | 1   | 2   | 3   | 4   | 5   | 6   | 7   |
|----------------------|-----|-----|-----|-----|-----|-----|-----|
| Vehs Entered         | 182 | 177 | 176 | 165 | 151 | 183 | 166 |
| Vehs Exited          | 187 | 172 | 172 | 168 | 147 | 183 | 159 |
| Starting Vehs        | 10  | 6   | 9   | 13  | 6   | 8   | 3   |
| Ending Vehs          | 5   | 11  | 13  | 10  | 10  | 8   | 10  |
| Travel Distance (mi) | 44  | 39  | 40  | 38  | 35  | 40  | 36  |
| Travel Time (hr)     | 2.2 | 1.9 | 2.0 | 1.9 | 1.7 | 2.0 | 1.8 |
| Total Delay (hr)     | 0.5 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 |
| Total Stops          | 248 | 227 | 217 | 214 | 203 | 231 | 208 |
| Fuel Used (gal)      | 2.0 | 1.8 | 1.8 | 1.7 | 1.5 | 1.8 | 1.6 |

### Interval #3 Information Recording

|                  |      |
|------------------|------|
| Start Time       | 5:30 |
| End Time         | 5:45 |
| Total Time (min) | 15   |

Volumes adjusted by Growth Factors, Anti PHF.

| Run Number           | 8   | 9   | 10  | Avg |
|----------------------|-----|-----|-----|-----|
| Vehs Entered         | 162 | 150 | 172 | 167 |
| Vehs Exited          | 156 | 149 | 176 | 168 |
| Starting Vehs        | 5   | 7   | 11  | 6   |
| Ending Vehs          | 11  | 8   | 7   | 6   |
| Travel Distance (mi) | 35  | 33  | 38  | 38  |
| Travel Time (hr)     | 1.7 | 1.6 | 1.9 | 1.9 |
| Total Delay (hr)     | 0.4 | 0.4 | 0.4 | 0.4 |
| Total Stops          | 187 | 189 | 224 | 214 |
| Fuel Used (gal)      | 1.5 | 1.5 | 1.7 | 1.7 |

#### Interval #4 Information Recording

|                  |      |
|------------------|------|
| Start Time       | 5:45 |
| End Time         | 6:00 |
| Total Time (min) | 15   |

Volumes adjusted by Growth Factors.

| Run Number           | 1   | 2   | 3   | 4   | 5   | 6   | 7   |
|----------------------|-----|-----|-----|-----|-----|-----|-----|
| Vehs Entered         | 159 | 196 | 175 | 186 | 157 | 186 | 167 |
| Vehs Exited          | 153 | 199 | 182 | 190 | 163 | 188 | 166 |
| Starting Vehs        | 5   | 11  | 13  | 10  | 10  | 8   | 10  |
| Ending Vehs          | 11  | 8   | 6   | 6   | 4   | 6   | 11  |
| Travel Distance (mi) | 37  | 45  | 40  | 41  | 35  | 43  | 36  |
| Travel Time (hr)     | 1.8 | 2.3 | 2.0 | 2.0 | 1.7 | 2.2 | 1.8 |
| Total Delay (hr)     | 0.4 | 0.5 | 0.5 | 0.4 | 0.3 | 0.5 | 0.4 |
| Total Stops          | 208 | 258 | 219 | 222 | 183 | 242 | 198 |
| Fuel Used (gal)      | 1.6 | 2.0 | 1.8 | 1.9 | 1.6 | 2.0 | 1.6 |

#### Interval #4 Information Recording

|                  |      |
|------------------|------|
| Start Time       | 5:45 |
| End Time         | 6:00 |
| Total Time (min) | 15   |

Volumes adjusted by Growth Factors.

| Run Number           | 8   | 9   | 10  | Avg |
|----------------------|-----|-----|-----|-----|
| Vehs Entered         | 197 | 186 | 160 | 175 |
| Vehs Exited          | 194 | 186 | 159 | 178 |
| Starting Vehs        | 11  | 8   | 7   | 6   |
| Ending Vehs          | 14  | 8   | 8   | 6   |
| Travel Distance (mi) | 42  | 41  | 34  | 40  |
| Travel Time (hr)     | 2.1 | 2.1 | 1.7 | 2.0 |
| Total Delay (hr)     | 0.5 | 0.5 | 0.4 | 0.4 |
| Total Stops          | 237 | 233 | 200 | 219 |
| Fuel Used (gal)      | 1.8 | 1.9 | 1.5 | 1.8 |

Intersection: 2: Red Ln & Carrollton Ave

| Movement              | EB  | NB  | SB  |
|-----------------------|-----|-----|-----|
| Directions Served     | LR  | LT  | TR  |
| Maximum Queue (ft)    | 44  | 56  | 62  |
| Average Queue (ft)    | 31  | 36  | 36  |
| 95th Queue (ft)       | 38  | 53  | 54  |
| Link Distance (ft)    | 383 | 305 | 460 |
| Upstream Blk Time (%) |     |     |     |
| Queuing Penalty (veh) |     |     |     |
| Storage Bay Dist (ft) |     |     |     |
| Storage Blk Time (%)  |     |     |     |
| Queuing Penalty (veh) |     |     |     |

Intersection: 5: Broad St & Carrollton Ave

| Movement              | EB  | WB  | NB  | SB  |
|-----------------------|-----|-----|-----|-----|
| Directions Served     | LTR | LTR | LTR | LTR |
| Maximum Queue (ft)    | 41  | 35  | 76  | 47  |
| Average Queue (ft)    | 3   | 5   | 39  | 17  |
| 95th Queue (ft)       | 21  | 24  | 64  | 44  |
| Link Distance (ft)    | 292 | 373 | 621 | 370 |
| Upstream Blk Time (%) |     |     |     |     |
| Queuing Penalty (veh) |     |     |     |     |
| Storage Bay Dist (ft) |     |     |     |     |
| Storage Blk Time (%)  |     |     |     |     |
| Queuing Penalty (veh) |     |     |     |     |

Intersection: 8: Mt Vernon Ln & Carrollton Ave

| Movement              | EB  | WB  | NB  | SB  |
|-----------------------|-----|-----|-----|-----|
| Directions Served     | LTR | LTR | LTR | LTR |
| Maximum Queue (ft)    | 66  | 61  | 40  | 44  |
| Average Queue (ft)    | 38  | 34  | 19  | 21  |
| 95th Queue (ft)       | 58  | 49  | 45  | 45  |
| Link Distance (ft)    | 373 | 383 | 294 | 364 |
| Upstream Blk Time (%) |     |     |     |     |
| Queuing Penalty (veh) |     |     |     |     |
| Storage Bay Dist (ft) |     |     |     |     |
| Storage Blk Time (%)  |     |     |     |     |
| Queuing Penalty (veh) |     |     |     |     |

Network Summary

|                                 |
|---------------------------------|
| Network wide Queuing Penalty: 0 |
|---------------------------------|

Randy W. Beckner  
Bradley C. Craig  
Wm. Thomas Austin  
James B. Voso  
Chad M. Thomas  
Jason A. Carder  
Brian R. Newman  
D. Jason Snapp  
Ryan P. Kincer



Edwin K. Mattern, Jr. (1949-1982)  
Gene R. Cress (1935-2014)  
Sam H. McGhee, III (1940-2018)  
Stewart W. Hubbell (Retired)  
J. Wayne Craig (Retired)  
Michael S. Agee (Retired)  
Steven A. Campbell (Retired)  
Randy L. Dodson (Retired)

February 20, 2024

Mr. William Simpson, Jr., PE  
Assistant Director/City Engineer  
City of Salem  
21 S Bruffey Street  
Salem, Virginia, 24153  
[wsimpson@salemva.gov](mailto:wsimpson@salemva.gov)

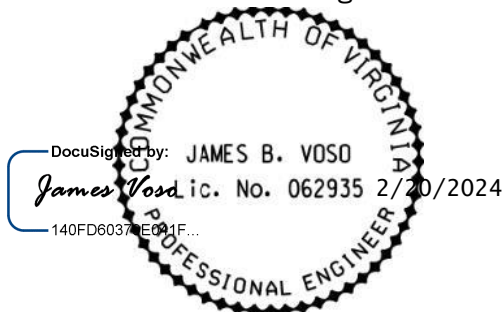
Re: Traffic Study Review  
HopeTree Planned Unit Development  
M&C Commission No. 4197-H  
GESG Contract No. 2021-018

Dear Mr. Simpson,

In response to our review of a traffic impact study prepared by Balzer & Associates, for the HopeTree Planned Unit Development, a revised study (and response to our review) was provided to us. We have reviewed the revised study (dated February 2, 2024), and the revised study appears to conform with VDOT and industry standard practices, and addresses our concerns with the original study.

If any additional information is needed on this subject at this time, please feel free to contact me directly via email at [jbvoso@matternandcraig.com](mailto:jbvoso@matternandcraig.com) or by telephone at 828-254-2201. Thank you for the opportunity to be of assistance to the City of Salem.

Sincerely,  
Mattern & Craig



James B. Voso, PE  
Traffic Engineer



October 25, 2024

City of Salem, Virginia  
Planning Commission  
114 North Broad  
Salem, Virginia 24153

**Re: Supplement to August 30, 2024 Rezoning Application Filed by Virginia Baptist Children's Home and Family Services d/b/a HopeTree Family Services (Salem CI)**

Dear Planning Commissioners:

Virginia Baptist Children's Home and Family Services d/b/a HopeTree Family Services (Salem CI) ("HopeTree") filed a Rezoning Application on August 30, 2024 (the "Application"). The Application is substantially similar to HopeTree's original application, dated November 30, 2023, that was approved by City Council on June 24, 2024.

In submitting the new Application, HopeTree is requesting that the City of Salem ordain, reordain, amend, reamend, adopt and/or readopt the HopeTree rezoning, as outlined in the Application, as supplemented by this letter with enclosures. HopeTree requests that in reviewing this Application, as supplemented herein, the City of Salem also consider, all the Planning Commission, City Staff, citizen comments, and any and all materials utilized in reviewing the similar rezoning application that HopeTree filed on December 1, 2023 (dated November 30, 2023).

We are aware that much prior work has gone into the review of the proposed HopeTree P.U.D., but we expect that this supplement will enhance the City's current review of the Application. We look forward to presenting the Application to the Planning Commission.

### **Proffer Statement**

The P.U.D., along with this supplement, are proffered pursuant to Salem Code §§ 106-228.4(B), 106-228.4(G), and 106-522.

### **Conformity with the City's Comprehensive Plan**

HopeTree's P.U.D. is consistent with several important elements of the City's Comprehensive Plan approved June 11, 2012.

The Goal under the "Housing and Neighborhoods" section of the Comprehensive Plan is "To maintain and enhance the character and quality of Salem's housing and neighborhoods." The Objectives to achieve this Goal recognize the need for new housing construction and in-fill development to make use of the vacant land in the City.

The "development or expansion of industrial and commercial business in Salem" is the Goal under the "Land Use and Community Appearance" section of the Comprehensive Plan. The HopeTree P.U.D. includes commercial uses to serve the needs of the existing and future residents on land that is currently underutilized.

The HopeTree P.U.D. includes significant new open space amenities which are consistent with the "Open Space" Goal of the Comprehensive Plan.

Further, we recognize that the City is in the process of developing an updated Comprehensive Plan. The City has solicited input on future housing needs in the City and issued a report earlier this year. The City's report included the following observations and conclusions:

- "In general, folks support the inclusion of higher density housing that is integrated in existing neighborhoods and promoted in new developments as a way to increase diversity and affordability."
- "...an openness to explore many types of housing such as patio homes, townhouses, small apartment buildings, townhouses , duplexes, and triplexes."

As shown in the Application, the HopeTree P.U.D. advances the housing needs that are being considered for the updated Comprehensive Plan.

### **Development Schedule and Phasing Plan**

HopeTree encloses a supplemental Development Schedule and Phasing Plan in the P.U.D. to further outline the Developer's plans for developing the HopeTree P.U.D. The Development Schedule and Phasing Plan states the location, extent, and sequence of the proposed development, as well as specifies the anticipated development of open space, recreational areas, and non-residential uses for the P.U.D. In the Notes accompanying the Development Schedule and Phasing Plan map, we have included an anticipated development schedule, based on the four phases of development, as well as information about key development and construction plans and approvals such as the Site Plan, Erosion and Sediment Control Plans, Stormwater Management Plans, and Subdivision Plats for each phase.

The Notes replace the prior phasing plans and provide greater detail about the development and provide the anticipated timeline for future development to occur.



## **Traffic Study**

A comprehensive traffic study was completed for the HopeTree P.U.D. The scope of the traffic counts and study were coordinated with the City of Salem engineering staff. Standard procedure for similar traffic studies that Balzer & Associates performs in this region (including those reviewed by the Virginia Department of Transportation) is to perform traffic counts for one day (Tuesday, Wednesday, or Thursday when school is in session) during these hours to capture the morning and evening peak hours. These traffic counts and procedures are standard and commonly accepted in the planning industry. Balzer performed manual traffic counts on October 3, 2023, from 7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m. at the Red Lane/Carrollton Avenue intersection and the Carrollton Avenue/Broad Street intersection.

The intersection of Carrollton Avenue/Mount Vernon Lane was added to the model based on the comments received from Mattern & Craig. Since this intersection was located between the two intersections that already had manual traffic count data, the volumes for this intersection were derived from the previously performed traffic counts. This intersection was also reviewed in the field to ensure that the volumes utilized were reasonable. Studying other intersections apart from those included would result in smaller and smaller impacts, because site-generated traffic disperses as it gets further from the site.

The Application strikes a balance between “flexibility in the design and development of land,” pursuant to Salem Code § 106-228.1(A), and the need to provide clarity and certainty in the amount of new traffic generation by the P.U.D. The traffic study was informed by the anticipated mix of uses on the P.U.D. and the overall level of development to occur on the P.U.D. While some of the proposed uses were updated after the traffic study was completed, this Application includes a proffered maximum on site-generated traffic. This cap is included in Note (G)(6) on page 7 of the HopeTree PUD Rezoning Application Document included in the Application (4,037 trips per day). This Note requires the Developer to calculate site-generated traffic as the project progresses to cap the site-generated traffic at 4,037 daily trips, which was the figure included in the traffic study. The anticipated vehicle trips will be finally determined as each phase and the corresponding uses of the P.U.D. are developed. As the build out of the P.U.D. occurs, the Developer and the City will coordinate on the volume of traffic associated with each new use. The proffered maximum will limit the development and provide assurances that the traffic assumptions prepared for the P.U.D. are honored as the P.U.D. is fully built out. The traffic study confirms that the levels of service at all intersections and roads will continue to function at the same levels with the proposed development.

## **Commercial Uses**

The creation of new commercial uses are an important element of the HopeTree P.U.D. and consistent with the goals of the Comprehensive Plan. The final locations and types of commercial uses will be determined based on the needs of the community. The Application states that “Shopfront and Mixed-Use Buildings are small to medium size traditional building types typically following the platting patterns of the historic main street” and that “ground level uses typically include retail shops, restaurants and cafes, and commercial.” The character of the anticipated non-residential, mixed-use, and commercial uses of the P.U.D. will align with the character of neighboring communities.

The proffered maximums for non-residential and commercial uses have been included to “encourage maximum flexibility in the design and development of land” that comprises the P.U.D., while also specifying the general character that the City can expect in such non-residential uses. As shown in the Master Plan and Land Use Plan in the P.U.D., the commercial uses will be built in the T4 and T5 Transect Zones and may be developed as part of Phases 1 through 4 of the P.U.D. shown on the Phasing Plan. Notably, the P.U.D. limits the maximum hotel rooms to 34, maximum square footage for retail and restaurant uses to 15,000 square feet, and up to 35,000 square feet of office and other commercial.

In addition, the Developer has limited the total number of site-generated traffic to 4,037 trips per day as a further restriction on the final level of development.

## **Open Space**

As further explained in the Application and Open Space Plan, at least 35% of the property will be preserved either in a natural state or as public or private open space areas. The final design of the open space areas will be determined by the needs of the residents, but space has been designated for athletic fields, a pond, creek, lawn area, greenways and natural vegetation. The preserved open space is a significant benefit of the HopeTree P.U.D. and will advance the open space goals of the Comprehensive Plan through private investment.

Sincerely,

A handwritten signature in black ink, appearing to read 'Jon Morris', with a stylized, elongated horizontal stroke extending to the right.

Jon Morris, President & CEO  
HopeTree Family Services

Enclosures

DATE: November 4, 2024  
TO: Chris Burns, Balzer & Associates  
FROM: Mary Ellen Wines, Planning & Zoning, City of Salem  
RE: Hopetree comments

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In response to the most recent Hopetree rezoning application and subsequent amended Planned Unit Development Document the following clarifications are requested.

1. Changes to the PUD document are on Page 3 (owner name) and the replacement of page 25 with pages EX-A and EX-B. Staff requests to substitute those 3 pages within the final approved version from June 2024.
2. Pages 8 and 9 Transect Zone 3 includes stacked flats. Page 13 Transect Zone 3 does not include stacked flats. Please verify which is true.
3. Page EX-B #7, Clarification required. Site plans shall be submitted in accordance with 106-400 and are not limited to just 7A and 7B as listed in the PUD document.
4. Page EX-B #9, Clarification required. All major subdivisions must be approved by the Planning Commission.
5. Page EX-B #14, Clarification required. No commercial structures (other than those used for Hopetree services) may be constructed until 20% of the residential units are completed. The exception is utilization of existing structures.
6. Clarification required. If the phasing plan does not coincide with the individual block groups, how do you intend to verify that the various development requirements (20% of each building type, minimum of three building types, etc.) are being met?
7. Page 33, definition of commercial outdoor sports and recreation states that it is limited to two existing ballfields in current or future locations/design. Clarification that if the ballfields are moved slightly within the current location area (as shown on page 6) that it will be allowed. Should the location of the two ballfields is to be moved outside this general area will not meet substantial conformance to the proposed plan and will have to be requested as an amendment through the public hearing process.

**From:** [Chris Burns](#)  
**To:** [Mary Ellen H Wines](#); [Maxwell S Dillon](#)  
**Cc:** [Jon Morris](#); [Todd Robertson](#)  
**Subject:** RE: [Ext.] HopeTree Rezoning Application - Supplemental Information  
**Date:** Tuesday, November 5, 2024 12:35:30 PM  
**Attachments:** [image001.png](#)  
[Phasing Plan Notes Updated 11-5-24.pdf](#)

---

Mary Ellen and Max,

Thanks for your time this morning. Please see responses to your comments below.

1. The applicant takes no exception to the City replacing the updated pages within the final approved version from June 2024. It is our understanding that a new date will be placed on the cover page to eliminate any confusion.
2. The intent is that the stacked flat building type is allowed within the T-3 zone as indicated in the text and graphics on Page 8, Page 9, and in the large graphic on Page 13. The inconsistency in the graphic on the left side of page 13 is an error. As discussed with the City, this will be noted and the stacked flat will be allowed in the T-3 zone. No revisions necessary.
3. Notes 7A and 7B have been clarified on EX-B to indicate that the infrastructure and erosion and sediment control/stormwater management plans will be included as part of the site plans and submitted pursuant to the relevant code section. Revised EX-B attached.
4. As discussed, this requirement is understood by the applicant and covered by Note #9 on phasing plan EX-B. No revisions necessary.
5. This requirement is understood by the applicant. Additional clarification added to Note #14 and this is also covered on Page 37 of the PUD document.
6. As discussed, it is understood that individual phases of development may not coincide with block groups as shown on Page 9 of the PUD document. If a block group will be partially developed with a phase, the developer shall provide the City with information about what other development is anticipated within that block group with future phases to demonstrate that all requirements can be met. Requirements will be confirmed when future plans are developed that completes that specific block group. No revisions necessary.
7. As discussed, it is noted and understood that the ballfields will need to be located generally where they are shown on Page 9 of the PUD document. Any significant deviation in the location of the ballfields would require an amendment to the PUD document. No revisions necessary.

Thanks,

**Chris Burns, PE**  
**Civil/LA Project Manager II / Associate Vice President**  
1208 Corporate Circle, Roanoke, VA 24018  
[Roanoke / Richmond / New River Valley / Shenandoah Valley](#)



# HOPETREE

## SALEM, VIRGINIA

# PUD REZONING APPLICATION



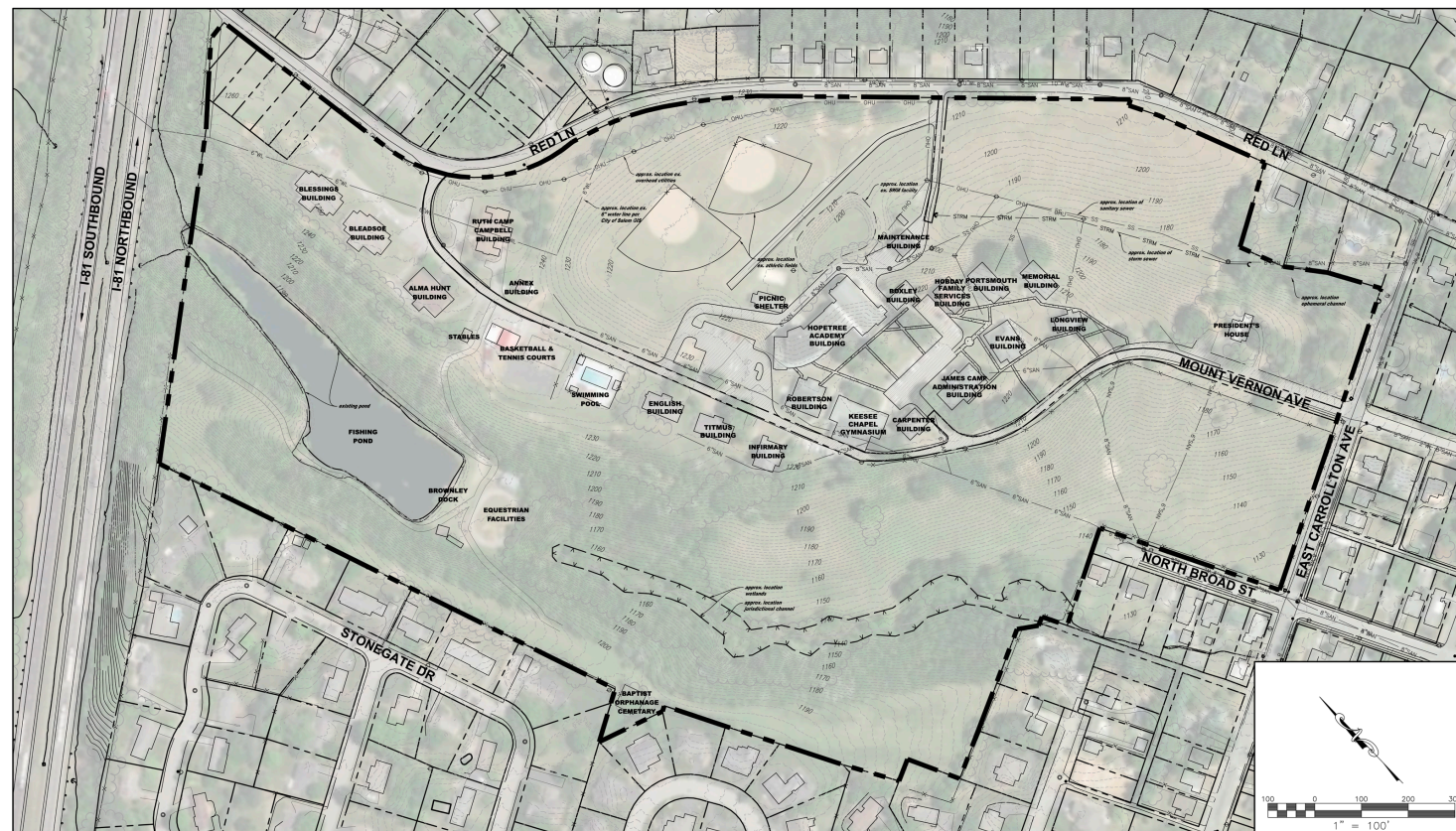
CITY OF SALEM VIRGINIA  
PUD APPLICATION  
PLANNING OBJECTIVES

*Per the Salem Zoning Application Sec. 106-228.4.*

*Application process: To initiate an amendment, the applicant shall complete a rezoning application. This information shall be accompanied by graphic and written information, which shall constitute a preliminary master plan. All information submitted shall be of sufficient clarity and scale to clearly and accurately identify the location, nature, and character of the proposed district. At a minimum this information shall include:*

- 1. A legal description and plat showing the site boundaries, and existing street lines, lot lines, and easements.*
- 2. Existing zoning, land use and ownership of each parcel proposed for the district.*
- 3. A general statement of planning objectives to be achieved by the PUD district, including a description of the character of the proposed development, the existing and proposed ownership of the site, the market for which the development is oriented, and objectives towards any specific manmade and natural characteristics located on the site.*
- 4. A description and analysis of existing site conditions, including information on topography, natural water courses, floodplains, unique natural features, tree cover areas, etc.*
- 5. A land use plan designating specific use types for the site, both residential and non-residential use types, and establishing site development regulations, including setback, height, building coverage, lot coverage, and density requirements.*
- 6. A circulation plan, including location of existing and proposed vehicular, pedestrian, bicycle, and other circulation facilities and location and general design of parking and loading facilities. General information on the trip generation, ownership and maintenance and proposed construction standards for these facilities should be included. A traffic impact analysis may be required by the administrator.*
- 7. A public services and utilities plan providing requirements for and provision of all utilities, sewers, and other facilities to serve the site.*
- 8. An open space plan, including areas proposed for passive and active recreational uses, natural and undisturbed areas, and proposed buffer areas proposed around the perimeter of the site. Information on the specific design and location of these areas and their ownership and maintenance should be included.*
- 9. Generalized statements pertaining to any architectural and community design guidelines shall be submitted in sufficient detail to provide information on building designs, orientations, styles, lighting plans, etc.*
- 10. A development schedule indicating the location, extent and sequence of proposed development. Specific information on development of the open space, recreational areas, and non-residential uses should be included.*





SITE & ZONING SUMMARY:

SITE ADDRESS:

OWNER:

OWNER ADDRESS:

TAX MAP NUMBERS:

EXISTING LOT SIZE:

EXISTING ZONING:

ZONING REQUIREMENTS:

MINIMUM LOT AREA: 9,000 SF

NIA MINIMUM LOT FRONTAGE: 75'

SETBACKS:

FRONT: 25' IF RIGHT-OF-WAY IS 50' PR GREATER  
50' FROM CENTERLINE IF RIGHT-OF-WAY IS LESS THAN  
50' IN WIDTH

SIDE: 10% OF LOT WIDTH, NOT REQUIRED TO EXCEED 25'

REAR: 25'

MAXIMUM HEIGHT: 45'

MAXIMUM BUILDING SIZE: NONE

CONCEPT PLAN NOTE:

1. THIS PLAN IS FOR CONCEPTUAL PLANNING PURPOSES AND HAS BEEN PREPARED USING COMPILED INFORMATION. A CURRENT FIELD SURVEY HAS NOT BEEN PERFORMED TO VERIFY ALL EXISTING CONDITIONS ON-SITE.

2. AERIAL IMAGERY SOURCED FROM GOOGLE EARTH,  
DATED NOVEMBER, 2019

## EXISTING SITE DESCRIPTION

### Existing Development

The site is currently developed with a network of private driveways and several existing buildings on the property. The center core of the site is located on top of a ridge and consists of many of the existing buildings, as well as supporting parking areas and other improvements. Some of the existing buildings are currently being utilized by HopeTree, while others are vacant. There are also two recreational fields located near Red Lane to the north of the center core.

The existing site has road frontage on East Carrollton Avenue, Red Lane, and North Broad Street. There is an existing private access drive (Mount Vernon Lane) from East Carrollton Avenue that accesses through the site and provides access to the center core before continuing through the site and back to Red Lane. A separate private access drive (Printers Lane) from Red Lane provides access to the recreational fields, as well as providing an additional connection to Mount Vernon Lane to the north of the center core. In addition to these private roads, there are also adult homes located at the north end of the property with driveways that access directly from Red Lane.

### Existing Topography

There is an existing ridge bisecting the property from north to south. The east side of the property slopes from this ridge and from Red Lane to an existing drainage swale and storm sewer system. There is an existing stormwater management detention pond located near the center core of the property that was constructed with a previous development project.

### Existing Natural Features/Floodplain

There is an existing pond located on the property in the northwest corner adjacent to Interstate 81. The pond discharges to an existing creek to the south that conveys stormwater from north to south toward the existing residential area at the end of North Broad Street. There is also an existing creek located at the southeast corner of the property that begins at the end of the existing storm sewer system that conveys water through the HopeTree property. This creek conveys runoff to an existing culvert under East Carrollton Avenue.

The property is not located within a FEMA-defined floodplain.

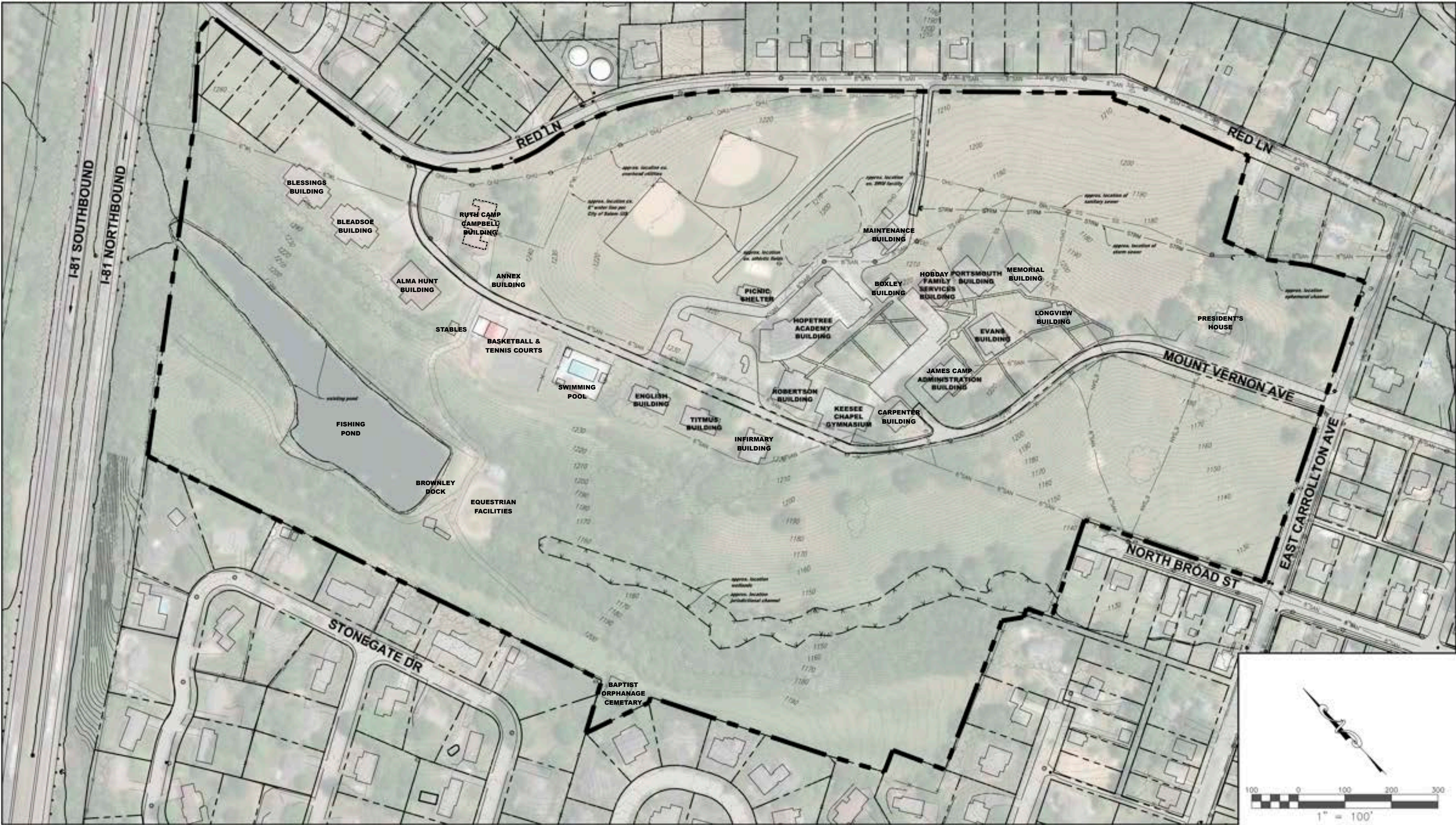
## Existing Vegetation

Much of the property that is not developed with buildings or pavement/hardscape is covered with a mix of managed turf and pasture. There is a large wooded area on the west side of the property around the pond and existing creek. There is a variation of other trees that are located throughout the property, with many of these being in the southeast corner of the site or along Red Lane.

BALZER AND ASSOCIATES

*4.A description and analysis of existing site conditions, including information on topography, natural water courses, floodplains, unique natural features, tree cover areas, etc.*





EXISTING SITE PLAN





Draft 9.25.22

© 3.7.24

## EXISTING SITE PLAN AERIAL





ILLUSTRATIVE MASTER PLAN WITH AERIAL



HOPETREE Master Planned TND Traditional Neighborhood Development

PLANNING OBJECTIVES

*Per the Salem Zoning Application Sec. 106-228.4. - Application process:*  
“ 3. A general statement of planning objectives to be achieved by the PUD district, including a description of the character of the proposed development, the existing and proposed ownership of the site, the market for which the development is oriented, and objectives towards any specific manmade and natural characteristics located on the site.”

The purpose of the Hopetree master plan is to allow for the development of fully integrated, mixed-use pedestrian oriented neighborhood woven into the existing Hopetree campus of buildings and surrounding open space while connecting to the surrounding neighborhoods where feasible.

The intent is to preserve the Hopetree campus and buildings and for new and infill development to minimize traffic congestion, suburban sprawl, site grading, infrastructure costs, and environmental degradation. The provisions of the Hopetree neighborhood are based on urban design and development conventions which were widely used in the United States since its founding until the 1940's and were based on the following principles:

- A. All neighborhoods have identifiable centers and edges.
- B. The center of the neighborhood is easily accessed by non-vehicular means from lots on the edges (i.e. approximately one-quarter-mile from center to edge, or a five-minute walk).
- C. Uses and housing types are mixed and in close proximity to one another.
- D. Street networks are interconnected and blocks are small.
- E. Civic buildings are given prominent sites throughout the neighborhood.

THE HOPETREE MASTER PLAN INCLUDES THE FOLLOWING DESIGN FEATURES:

- A. Neighborhood form.
  - 1. Dwellings at the edge of the neighborhood are roughly a five-minute walk or less to the center of the neighborhood.
  - 2. A great variety of housing types and price ranges is included in the neighborhood, with the highest density of housing located towards the center of the neighborhood.
  - 3. Within the neighborhood a mix of land uses is arranged to serve the needs of the residents in a convenient walking environment: open space/recreational areas, civic buildings, low and high density residential, retail/commercial, business/workplace, institutional, educational, and parking.
  - 4. The area of the overall master plan includes the existing core campus with the surrounding open areas divided into blocks, streets, lots, greenways, and open space.
  - 5. Similar land uses generally front across each street. Dissimilar land uses generally abut at rear lot lines. Corner lots which front on streets of dissimilar use generally observe the setback established on each fronting street.
  - 6. Along existing streets, new buildings are compatible with the general spacing of structures, building mass and scale, and street frontage relationships of existing buildings.
  - 7. The appearance of the neighborhood blends in with existing surrounding neighborhoods and feature the use of similar materials in construction.
  - 8. The facades of townhouses shall be varied by staggered front yards and variations in design and materials.

- B. Lots and buildings:
  - 1. New lots share a frontage line with a street or public space; lots fronting on a public space shall have access to a rear alley.
  - 2. Consistent build-to lines are established along all streets and public space frontages.
  - 3. All buildings, except accessory structures, have their main entrance opening on a street or public space.
  - 4. ~~No structure exceeds 3 stories in height in the Edge zone, and 4 stories in the General and Center zones.~~ Height of buildings shall be measured per the Salem code and shall not exceed 45' in any location. The height of any Accessory Building shall not exceed the principal structure on the lot.

- C. Streets, alleys and pathways:
  - 1. Designs permit comfortable use of the street by motorists, pedestrians and bicyclists. Pavement widths, design speeds, and number of motor travel lanes are minimized to enhance safety for motorists and non-motorists alike. The specific design of each street considers the building types which front on the street and the relationship of the street to the overall town street network. An extensive system of connected pathways is woven through the core campus extending to the perimeter.
  - 2. A combination of perimeter public streets and internal private streets provide access to all tracts and lots
  - 3. Streets and alleys connect where feasible at other streets within the neighborhood and connect to existing and projected streets outside the development. Cul-de-sac and dead-end streets are discouraged and should only occur where absolutely necessary due to natural conditions.
  - 4. Block faces do not have a length greater than 500 feet without dedicated alleys or pathways providing through access.
  - 5. To prevent the build-up of vehicular speed, disperse traffic flow, and create a sense of visual enclosure, long uninterrupted segments of straight streets are avoided.
  - 6. A continuous network of rear alleys is provided for the majority of lots.
  - 7. Existing and proposed utilities are underground and run along alleys wherever possible as well as some streets and greenways.
  - 8. Streets are organized according to a hierarchy based on function, size, capacity and design speed. Streets and rights-of-ways are therefore expected to differ in dimension. The proposed hierarchy of streets is indicated on the submitted master plan and each street type is separately detailed in the master plan.
  - 9. Every street, except alleys, has a sidewalk on at least one side that is at least five feet wide. In commercial areas, sidewalks shall be at least ten feet wide.

- D. Parking:
  - 1. On-street parking is provided on all streets where feasible. Occasional on-street parking may be accommodated without additional pavement width. For streets which serve workplace and storefront buildings, on-street parking is required and should be marked as such. On-street parking is parallel to the street unless the street lends itself to other parking layouts.
  - 2. Parking lots are generally located at the rear or at the side of buildings and screened from public rights-of-way and adjoining properties by land forms or evergreen vegetation .
  - 3. ~~To the extent practicable, adjacent parking lots are interconnected.~~
  - 4. Small and strategically placed parking areas are also provided.
  - 5. Parking areas are paved as required and all parking areas and traffic lanes shall be clearly marked.
  - 6. The number, width and location of curb cuts is such as to minimize traffic hazards, inconvenience and congestion.
  - 7. Off-street parking and loading requirements as outlined in the city's parking regulations may be used as guidance but there are no minimum parking standards.
  - 8. The master plan provides adequate parking and off-street loading areas for different areas of the development, based on the uses allowed and the density of development.
  - 9. In addition to landscaping provided for screening above, trees are planted around the perimeter and interior of parking lots to provide shade.

- E. Landscaping:
  - 1. Trees are planted within right-of-ways parallel to the street along all streets except alleys.
  - 2. Tree spacing is determined by species type selected from the City list of approved trees. Large maturing trees are generally planted a minimum of 30 feet and a maximum of 50 feet on center. Small and medium maturing trees are planted a minimum of ten feet and a maximum of 30 feet on center.
  - 3. Large maturing trees are generally planted along residential streets and along the street frontages and perimeter areas of parks, squares, greenbelts and civic structures.
  - 4. Small maturing trees are generally planted along non-residential streets, interior portions of parks, squares, greenbelts and civic lots. Storefronts are not obstructed by the planting pattern.
  - 5. The natural features of the landscape are incorporated into the landscaping plan.
  - 6. All plantings are with native or appropriate species (refer to the City list).
  - 7. Buffer requirements for property located on the perimeter of the neighborhood has setbacks and buffers that are consistent with the setbacks and buffers of the adjoining zoning district, including provisions for accessory buildings, but are a minimum of 10 feet.

- F. Sidewalks and Greenways:
  - 1. Sidewalks or greenway easements are proposed in locations shown on the master plan or proposed to connect to pedestrian facilities shown on the master plan.
  - 2. Existing sidewalks at the time of development or re-development in each phase are improved, repaired, or replaced as necessary.

- G. Uses:
  - 1. Maximum number of total residential units is 340.
  - 2. Maximum number of total hotel rooms is 34.
  - 3. Maximum total square footage of retail and restaurant uses is 15,000 s.f.
  - 4. Home occupations shall not be counted toward any maximum densities.

Permitted uses shall be based on the general category of use that has been established for a lot or group of lots as shown in the Use Table.

- 5. Maximum total square footage of Office and other Commercial (not including hotel/retail/restaurant) is 35,000 s.f.
  - 6. Traffic generation calculations for the development shall be provided to the City of Salem during the development review process based upon the actual new residential and non-residential uses that are developed on the site (excluding HopeTree operations). Total unadjusted traffic generation for new uses on the site shall not exceed 4,037 trips per day. Traffic generation calculations shall be performed as outlined in the ITE Trip Generation Manual.
  - 7. Accessory Dwelling Units (ADU's) that are developed on the site shall count as a separate unit toward the maximum number of total residential units.
- \*\*\*Maximum square footages denoted in this section are total square footages allowable, not building footprints (excluding HopeTree operations).

*3.A general statement of planning objectives to be achieved by the PUD district, including a description of the character of the proposed development, the existing and proposed ownership of the site, the market for which the development is oriented, and objectives towards any specific manmade and natural characteristics located on the site.*







GENERAL NOTES:

- Building Types generally provide parking from rear alleys and lanes screened from frontages on lots.
- On-street parking shall be provided along all streets where practical.
- Each Block Group includes a minimum of three (3) building types.
- Each Block Group shall have 20% minimum of each of the building types used.
- A minimum of six (6) building types shall be used for the overall project.
- A maximum of five (5) of the same building type attached consecutively.
- ~~Civic or~~ Historic Core Buildings may be converted to T5 - Neighborhood Center transect zone if the current use is discontinued.
- Land may be subdivided into separate ownership.

Building types do not apply to existing buildings.

Single-story mixed use buildings may be single use.

Existing buildings can be 100% non-residential use.

Minimum open space shall be 35% of total site area.



TRANSECT ZONES  
w/ FRONTAGE LINES

- T5** T5 - NEIGHBORHOOD CENTER
- T4** T4 - NEIGHBORHOOD GENERAL
- T3** T3 - NEIGHBORHOOD EDGE
- OPEN SPACE / NATURAL
- HISTORIC CORE BUILDINGS
- STRUCTURE TO BE REMOVED

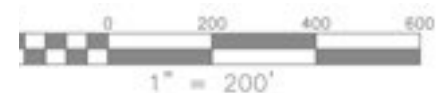
TRANSECT ZONES &  
BUILDING TYPES KEY  
(SEE SPECIFIC BUILDING  
TYPES FOR STANDARDS)

- E** E - ESTATE
- H** H - HOUSE / ADU
- C** C - COTTAGE / ADU
- PH** PH - PAIR HOUSE / ADU
- T** T - TOWNHOUSE / ADU
- PC** PC - POCKET / COTTAGE COURT
- TH-PU** TH-PU - TOWNHOUSE PARK-UNDER
- 3THE** 3THE - 3-TOWNHOUSE ESTATE
- SF** SF - STACKED FLAT
- LH** LH - LOFT HOUSE
- MH** MH - MEWS HOUSE
- TR** TR - TREE HOUSE
- AH** AH - MULTI-FAMILY HOUSE
- AB** AB - MULTI-FAMILY BUILDING
- MXB** MXB - MIXED-USE BUILDING
- CV** CV - HISTORIC CORE BUILDING SITE

REQUIREMENTS & DETAILS

- BLOCK GROUP**
- RECOMMENDED GALLERY**
- RECOMMENDED SHOPFRONT**
- VISTA POINTS**
- PEDESTRIAN SHED - 5 MINUTE WALK RADIUS**

5.A land use plan designating specific use types for the site, both residential and non-residential use types, and establishing site development regulations, including setback, height, building coverage, lot coverage, and density requirements.



LAND USE PLAN

The Purpose of Streets designed within Hopetree is to create a network with managed motor vehicle driver speeds that are compatible with safe, comfortable walking and bicycle mobility. Target Speeds are 20 miles per hour. Lane widths of 10 feet maximum and street trees planted between certain parking spaces and between the curb and sidewalk help manage driver speeds via lateral views and provide shade for travelers in summer months. Wet utilities are typically placed in the front of buildings and dry utilities are in the rear. Solid waste is collected in the rear lanes enhancing walkability in front.

HOPETREE THOROUGHFARE TYPES

The first number is the estimated pavement width and second is the estimated R.O.W. width but dimensions may vary as the design is engineered in more detail.

-  PARK ALLEE'  
ST 20-64
-  PLAZA  
PL VARIES
-  REAR LANE\*  
RL 14-30
-  PEDESTRIAN PATH\*\* 1  
PP 5/10
-  HILLSIDE LANE  
HL 20-20
-  MOUNT VERNON AVENUE IMPROVEMENTS\*  
MV 36-60
-  RED LANE IMPROVEMENTS\*  
RED - 28-60

\* On-street parking and a minimum 5' sidewalk shall be provided along Red Lane.

\*\* On existing thoroughfares dimensions and details may vary based on existing conditions and site constraints.

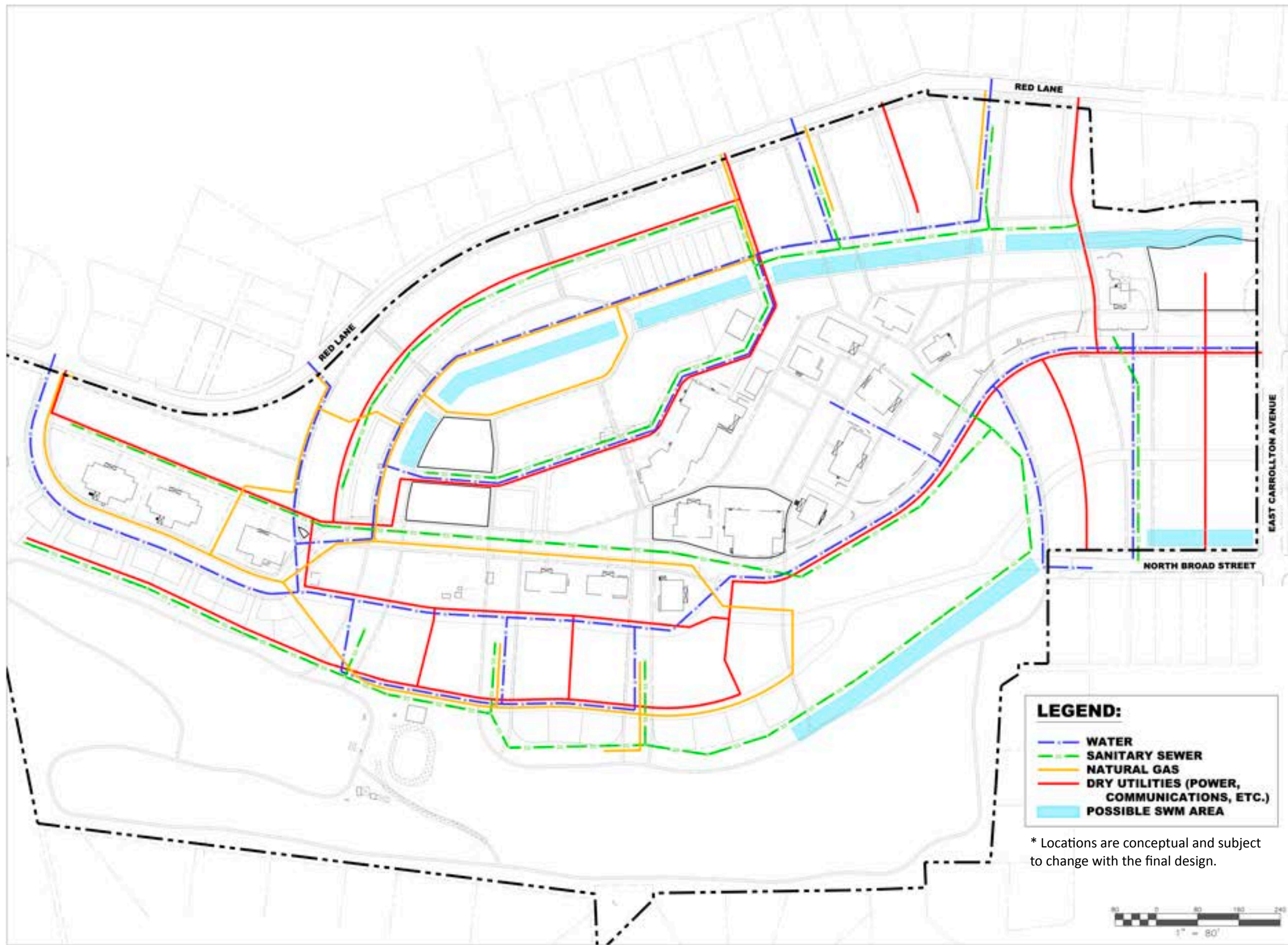
1- Pedestrian Paths will be open to the public, except as necessary for HopeTree events and therapeutic interactions.

6.A circulation plan, including location of existing and proposed vehicular, pedestrian, bicycle, and other circulation facilities and location and general design of parking and loading facilities. General information on the trip generation, ownership and maintenance and proposed construction standards for these facilities should be included. A traffic impact analysis may be required by the administrator.



CIRCULATION PLAN





7.A public services and utilities plan providing requirements for and provision of all utilities, sewers, and other facilities to serve the site.





8. An open space plan, including areas proposed for passive and active recreational uses, natural and undisturbed areas, and proposed buffer areas proposed around the perimeter of the site. Information on the specific design and location of these areas and their ownership and maintenance should be included.

## OPEN SPACE PLAN

SHOWING PARKS, GREENWAYS, GREEN FINGERS, TREE CANOPY, TREE PLANTINGS,  
,WATER FEATURES, & THE QUADRANGLE

**TRANSECT ZONES & BUILDING TYPES KEY  
(SEE SPECIFIC BUILDING TYPES FOR STANDARDS)**

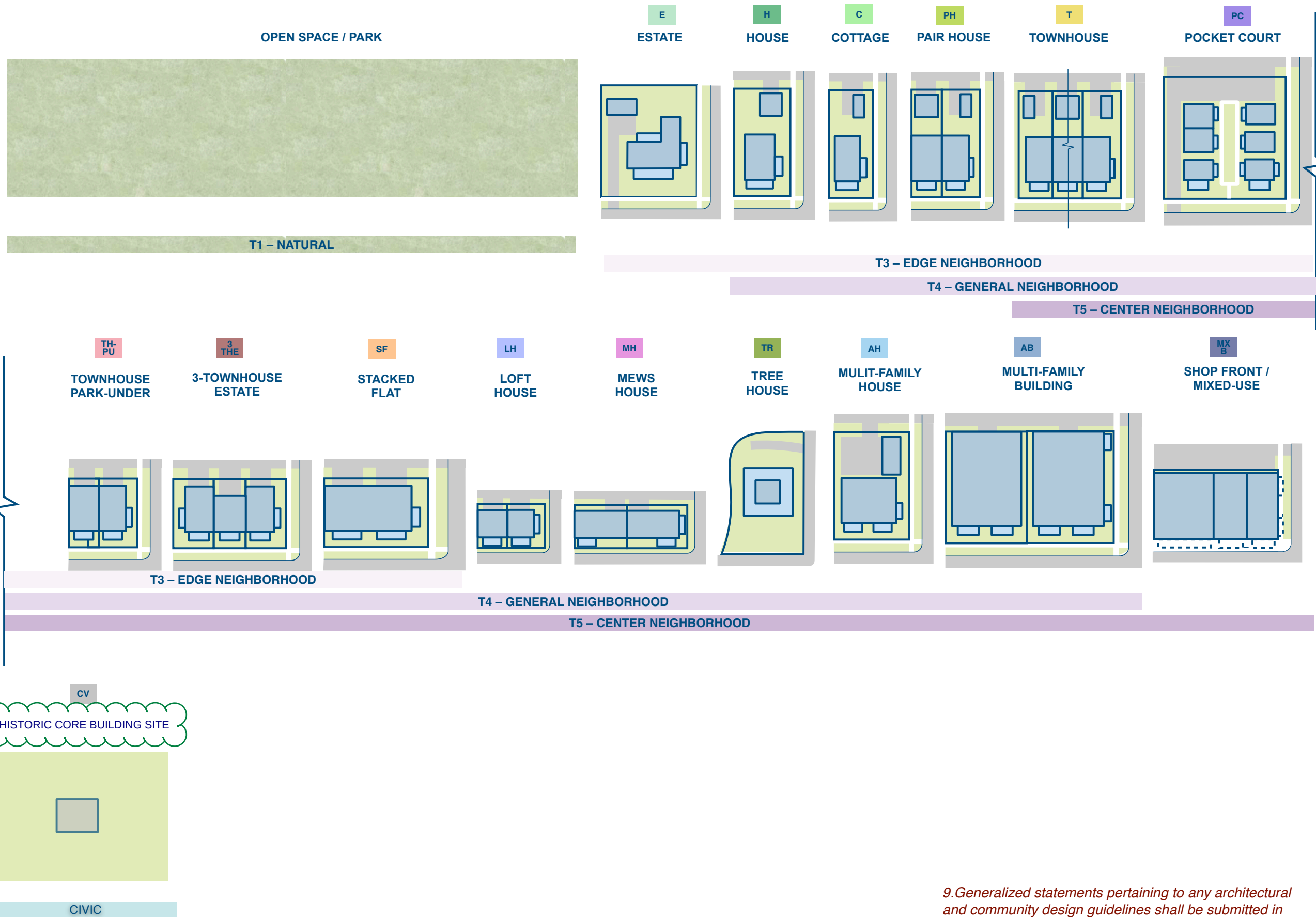
T3

T4

T5

|       |                                  |
|-------|----------------------------------|
| E     | E - ESTATE                       |
| H     | H - HOUSE / ADU                  |
| C     | C - COTTAGE / ADU                |
| PH    | PH - PAIR HOUSE / ADU            |
| T     | T - TOWNHOUSE / ADU              |
| PC    | PC - POCKET / COTTAGE COURT      |
| TH-PU | TH-PU - TOWNHOUSE PARK-UNDER     |
| 3THE  | 3THE - 3-TOWNHOUSE ESTATE        |
| SF    | SF - STACKED FLAT                |
| LH    | LH - LOFT HOUSE                  |
| MH    | MH- MEWS HOUSE                   |
| TR    | TR - TREE HOUSE                  |
| AH    | AH - MULTI-FAMILY HOUSE          |
| AB    | AB - MULTI-FAMILY BUILDING       |
| MXB   | MXB - MIXED-USE BUILDING         |
| CV    | CV - HISTORIC CORE BUILDING SITE |

Note: These standards do not apply to the existing buildings.



**HOUSING & BUILDING TYPES BY TRANSECT ZONES**

9. Generalized statements pertaining to any architectural and community design guidelines shall be submitted in sufficient detail to provide information on building designs, orientations, styles, lighting plans, etc.



TOWNHOUSE

NAME OF  
BUILDING TYPES

TOWNHOUSE

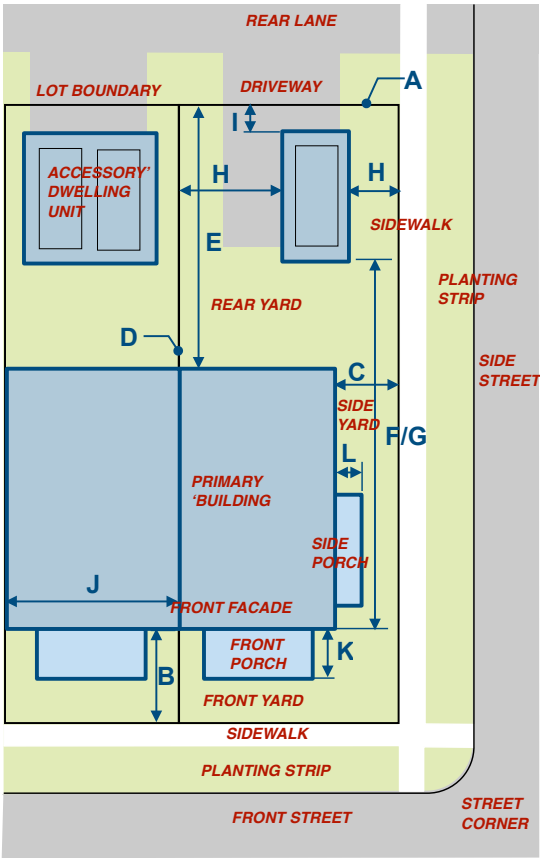
DESCRIPTION

A Townhouse is a single-family residence that shares a party wall with another of the same type and occupies the full frontage line on its own lot. For Townhouses, garages and/or parking is provided from the rear lane frontages while the primary townhouse front faces a street or public greenway. Townhouses in the Strolling District are permitted to have ground floor mixed-use.

|                                     |                         |
|-------------------------------------|-------------------------|
| Lot width x depth                   | 16' min. x 80' min. (A) |
| Setbacks                            |                         |
| Front                               | 10' min. (B)            |
| Front Corner                        | 10' min. (C)            |
| Side                                | 0' min. (D)             |
| Rear                                | 20' min. (E)            |
| Parking and Waste from Front Façade | 20' min. (F)            |
| Accessory Buildings from Front      | 40' min. (G)            |
| Accessory Buildings Side            | Align. (H)              |
| Accessory Buildings Rear            | 0' min. (I)             |
| Building Frontage at Setback        | 100 %' max. (J)         |
| Building Front Encroachments        | 5' max. (K)             |
| Building Side Encroachments         | 4' max. (L)             |
| Height                              |                         |
| Principle Building                  | 3.5 Stories max.        |
| First Floor Above Grade             | 1.5' min.               |
| Outbuilding                         | 2.5 Stories max.        |

LOT DIMENSIONS

DIMENSIONAL  
STANDARDS  
KEYED TO  
THE GRAPHIC  
PLAN



FORM-BASED  
GRAPHIC PLAN

SAMPLE  
STANDARDS  
TEMPLATE KEY

THIS IS A SAMPLE BUILDING TYPES TEMPLATE KEY FOR REFERENCE ONLY AS A GUILD TO THE BUILDING TYPES STANDARDS GRAPHICS INCLUDED IN THIS DOCUMENT. THE TEXT LABELS IN RED IDENTIFY THE SPECIFIC STANDARDS FEATURED ON THE GRAPHICS FOR EACH TYPE.

NOTE: THESE STANDARDS DO NOT APPLY TO THE EXISTING BUILDINGS.

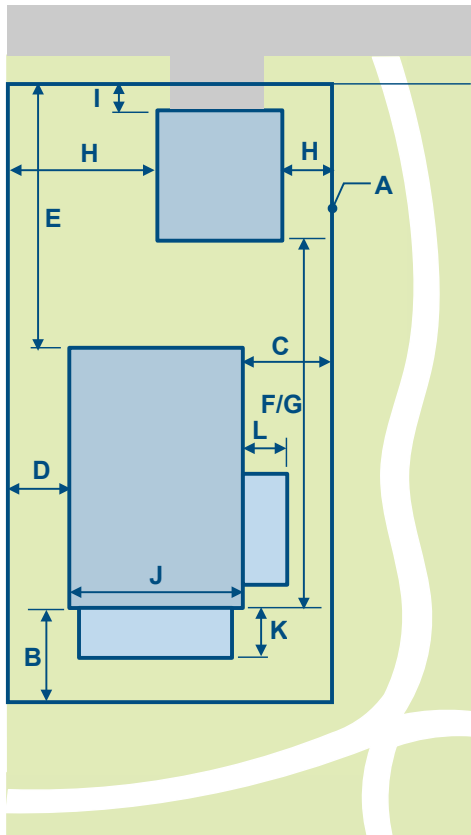
# GREENWAY OPTION

## GREENWAY OPTION — AVAILABLE OF ALL TYPES

A Greenway Option is for reference. Instead of fronting a street, the primary facade faces a public greenway connected to walks and trails while garages and/or parking is generally provided from a rear lane frontage. For each Type the Standards are the same.

### EXAMPLE of the HOUSE TYPE SHOWING the GREENWAY OPTION

|                                     |                          |
|-------------------------------------|--------------------------|
| Lot width x depth                   | 50' min. x 100' min. (A) |
| Setbacks                            |                          |
| Front                               | 20' min. (B)             |
| Front Corner                        | 15' min. (C)             |
| Side                                | 8' min. (D)              |
| Rear                                | 20' min. (E)             |
| Parking and Waste from Front Façade | 20' min. (F)             |
| Accessory Buildings from Front      | 40' min. (G)             |
| Accessory Buildings Side            | 5' min. (H)              |
| Accessory Buildings Rear            | 5' min. (I)              |
| Building Frontage at Setback        | 30' min. (J)             |
| Building Front Encroachments        | 12' max.(K)              |
| Building Side Encroachments         | 8' max. (L)              |
| Height                              |                          |
| Principle Building                  | Varied Stories max.      |
| First Floor Above Grade             | 1.5' min.                |
| Outbuilding                         | 2.5 Stories max.         |

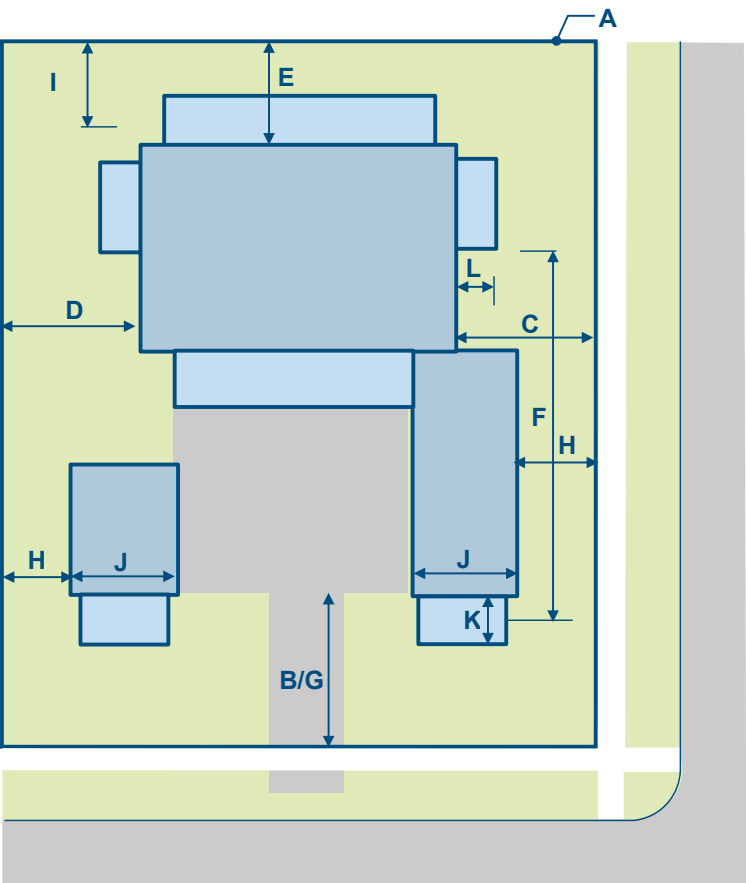
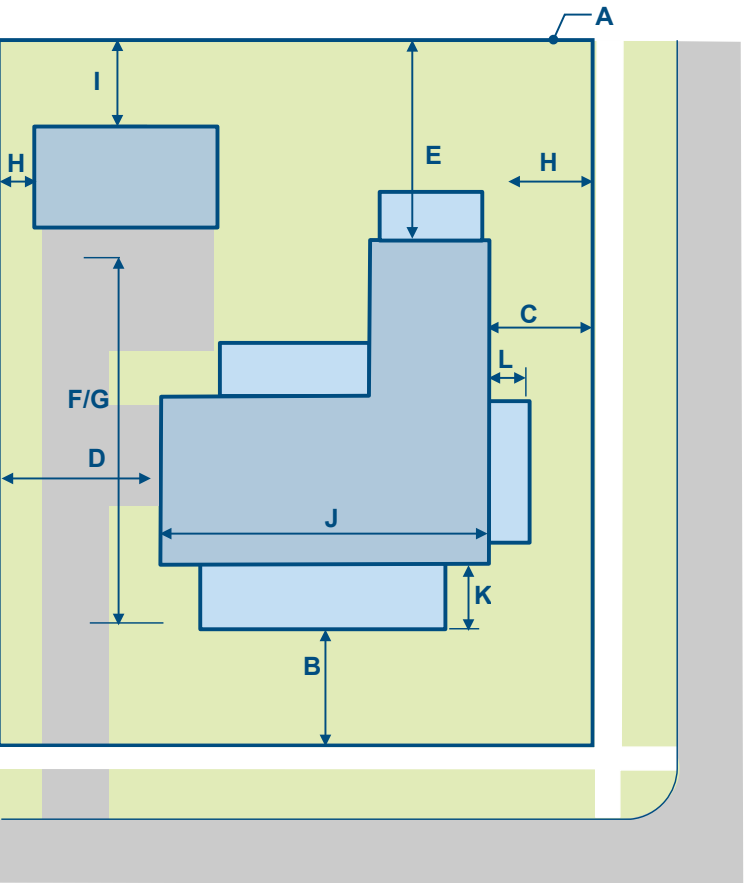


# ESTATE

## ESTATE

An Estate is a large single-family dwelling on a large lot of more suburban character, often shared by one or more ancillary buildings. The primary facade faces a street or public greenway where a porch and entry are prominent. Garages and/or parking is generally provided from the street frontage and is set back from the primary facade, side-loaded, or set forward side-loaded. Garage forward doors are not permitted to face the street.

|                                     |                          |
|-------------------------------------|--------------------------|
| Lot width x depth                   | 80' min. x 100' min. (A) |
| Setbacks                            |                          |
| Front                               | 25' min. (B)             |
| Front Corner                        | 20' min. (C)             |
| Side                                | 20' min. (D)             |
| Rear                                | 20' min. (E)             |
| Parking and Waste from Front Façade | 20' min. (F)             |
| Accessory Buildings from Front      | 25' min. (G)             |
| Accessory Buildings Side            | 10' min. (H)             |
| Accessory Buildings Rear            | 6' min. (I)              |
| Building Frontage at Setback        | 60 % max. (J)            |
| Building Front Encroachments        | 15' max.(K)              |
| Building Side Encroachments         | 12' max. (L)             |
| Height                              |                          |
| Principle Building                  | 3.5 Stories max.         |
| First Floor Above Grade             | 1.5' min.                |
| Outbuilding                         | 2.5 Stories max.         |



## BUILDING TYPE STANDARDS

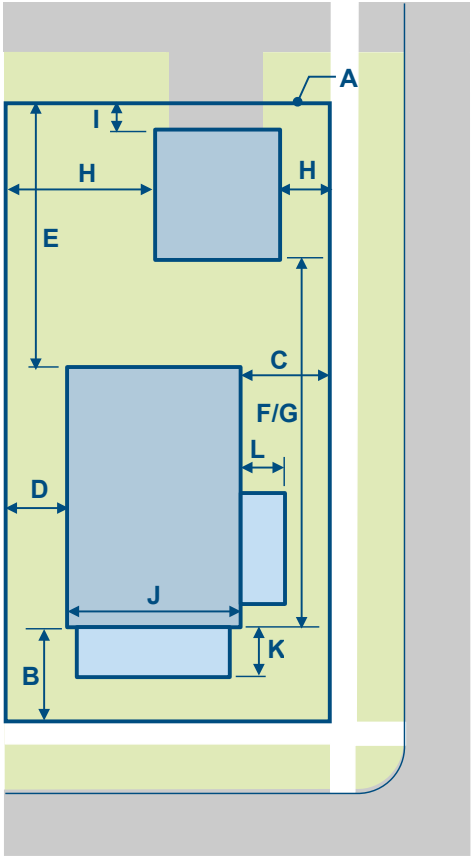


# HOUSE

## HOUSE

A House Type is a single-family residence on its own lot. For House the primary facade faces a public street or a greenway where a porch and entry are prominent. Garages and/or parking is generally provided from a rear lane or from the street frontage set back from the primary façade.

|                                     |                          |
|-------------------------------------|--------------------------|
| Lot width x depth                   | 50' min. x 100' min. (A) |
| Setbacks                            |                          |
| Front                               | 20' min. (B)             |
| Front Corner                        | 15' min. (C)             |
| Side                                | 8' min. (D)              |
| Rear                                | 20' min. (E)             |
| Parking and Waste from Front Façade | 20' min. (F)             |
| Accessory Buildings from Front      | 40' min. (G)             |
| Accessory Buildings Side            | 6' min. (H)              |
| Accessory Buildings Rear            | 6' min. (I)              |
| Building Frontage at Setback        | 30' min. (J)             |
| Building Front Encroachments        | 12' max.(K)              |
| Building Side Encroachments         | 8' max. (L)              |
| Height                              |                          |
| Principle Building                  | 3.5 Stories max.         |
| First Floor Above Grade             | 1.5' min.                |
| Outbuilding                         | 2.5 Stories max.         |

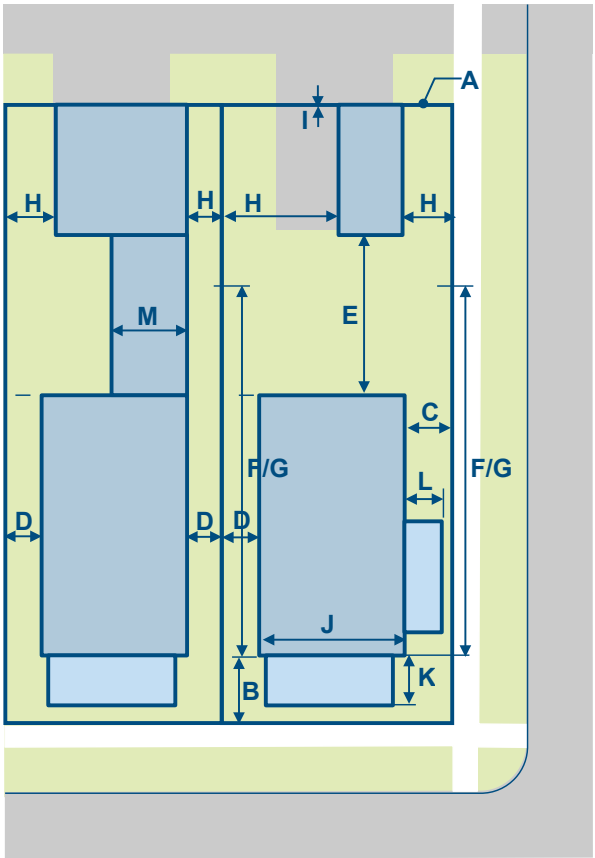


# COTTAGE

## COTTAGE

A Cottage is a smaller single-family residence on its own lot. For Cottages garages and/or parking is required to be provided from a rear lane while the primary house front faces a public street or greenway.

|                                     |                         |
|-------------------------------------|-------------------------|
| Lot width x depth                   | 30' min. x 65' min. (A) |
| Setbacks                            |                         |
| Front                               | 12' min. (B)            |
| Front Corner                        | 8' min. (C)             |
| Side                                | 5' min. (D)             |
| Rear                                | 30' min. (E)            |
| Parking and Waste from Front Façade | 40' min. (F)            |
| Accessory Buildings from Front      | 40' min. (G)            |
| Accessory Buildings Side            | Align (H)               |
| Accessory Buildings Rear            | 0' min. (I)             |
| Building Frontage at Setback        | 20' min. (J)            |
| Building Front Encroachments        | 10' max.(K)             |
| Building Side Encroachments         | 6' max. (L)             |
| Building Back Wing                  | 15' max. (M)            |
| Height                              |                         |
| Principle Building                  | 3.0 Stories max.        |
| First Floor Above Grade             | 1.5' min.               |
| Outbuilding                         | 2.0 Stories max.        |



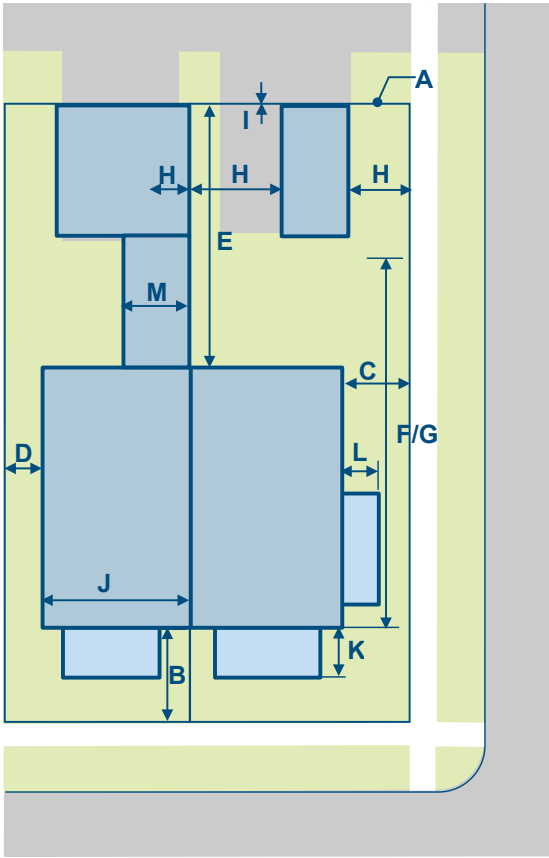
## BUILDING TYPE STANDARDS

# PAIR HOUSE

## PAIR HOUSE

A Pair House is a single-family residence that shares a party wall with one other of the same type, each on their own lot. Garages, ADUs and/or parking is provided from the rear lane while the primary front faces a street or public greenway.

|                                     |                         |
|-------------------------------------|-------------------------|
| Lot width x depth                   | 24' min. x 65' min. (A) |
| Setbacks                            |                         |
| Front                               | 15' min. (B)            |
| Front Corner                        | 10' min. (C)            |
| Side                                | 6' min. (D)             |
| Rear                                | 30' min. (E)            |
| Parking and Waste from Front Façade | 35' min. (F)            |
| Accessory Buildings from Front      | 40' min. (G)            |
| Accessory Buildings Side            | Align (H)               |
| Accessory Buildings Rear            | 0' min. (I)             |
| Building Frontage at Setback        | 20' min. (J)            |
| Building Front Encroachments        | 12' max.(K)             |
| Building Side Encroachments         | 6' max. (L)             |
| Building Back Wing                  | 15' max. (M)            |
| Height                              |                         |
| Principle Building                  | 3.5 Stories max.        |
| First Floor Above Grade             | 1.5' min.               |
| Outbuilding                         | 2 Stories max.          |

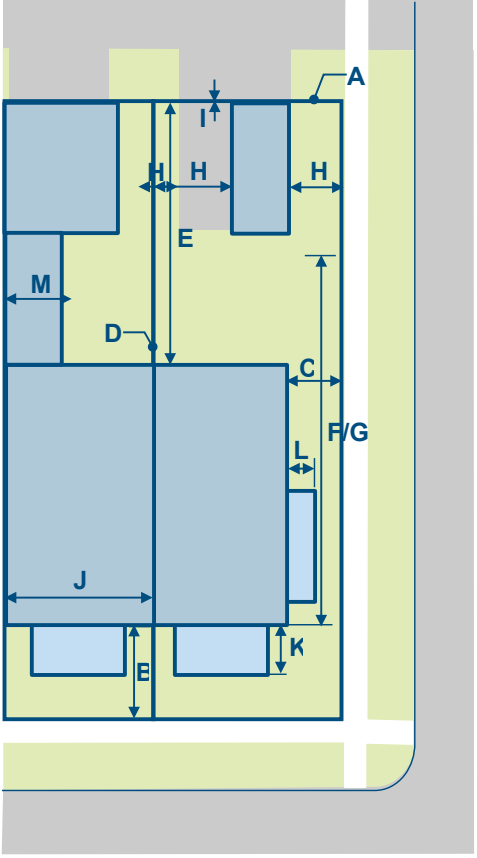


# TOWNHOUSE

## TOWNHOUSE

A Townhouse is a single-family residence that shares a party wall with another of the same type, with a minimum of three units in a row, and occupies the full frontage line on its own lot. For Townhouses, garages, ADUs, and/or parking is provided from the rear lane frontages while the primary townhouse front faces a street or public greenway. ~~Townhouses in the T-5 Neighborhood Center Strolling District are permitted to have ground floor mixed use.~~

|                                     |                         |
|-------------------------------------|-------------------------|
| Lot width x depth                   | 16' min. x 80' min. (A) |
| Setbacks                            |                         |
| Front                               | 10' min. (B)            |
| Front Corner                        | 8' min. (C)             |
| Side                                | 0' min. (D)             |
| Rear                                | 30' min. (E)            |
| Parking and Waste from Front Façade | 35' min. (F)            |
| Accessory Buildings from Front      | 40' min. (G)            |
| Accessory Buildings Side            | Align. (H)              |
| Accessory Buildings Rear            | 0' min. (I)             |
| Building Frontage at Setback        | 100 %' max. (J)         |
| Building Front Encroachments        | 8' max.(K)              |
| Building Side Encroachments         | 6' max. (L)             |
| Building Back Wing                  | 15' max. (M)            |
| Height                              |                         |
| Principle Building                  | 3.5 Stories max.        |
| First Floor Above Sidewalk Grade    | 1.5' min.               |
| Outbuilding                         | 2.5 Stories max.        |

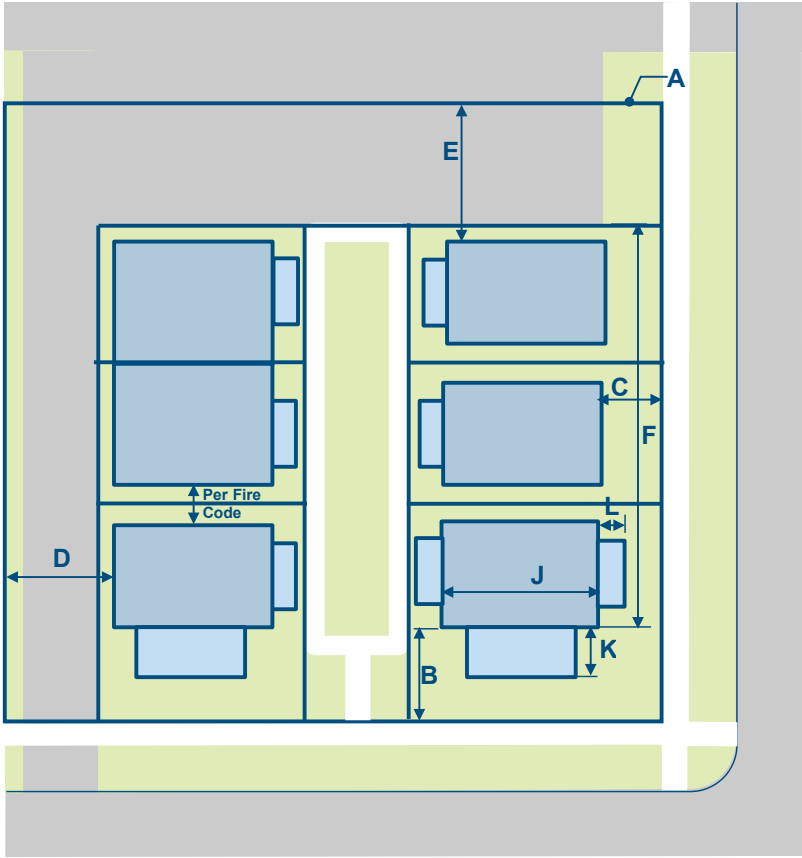


# POCKET COURT

## POCKET COURT

A Pocket Court is permitted with up to 8 units. Pocket Courts permit units that do not front a public vehicular right-of-way. Attached and detached houses can be grouped in pedestrian courts facing a mews, small common, green or garden, shared through an owners' association. A pocket court is often, but not always, arranged in a U-shape. The units are separated from the common area only by a sidewalk, path or other non-vehicular way. Parking is from rear lanes or alleys in attached or detached garages or open parking in a central location.

|                                     |                         |
|-------------------------------------|-------------------------|
| Lot width x depth (may rotate)      | 60' min. x 90' min. (A) |
| Setbacks                            |                         |
| Front                               | 5' min. (B)             |
| Front Corner                        | 10' min. (C)            |
| Side                                | 5' min. (D)             |
| Rear                                | 20' min. (E)            |
| Parking and Waste from Front Façade | 20' min. (F)            |
| Building Frontage at Setback        | 80 % max. (J)           |
| Building Front Encroachments        | 5' max. (K)             |
| Building Side Encroachments         | 5' max. (L)             |
| Height                              |                         |
| Principle Building                  | 2.5 Stories max.        |
| First Floor Above Grade             | 1.5' min.               |

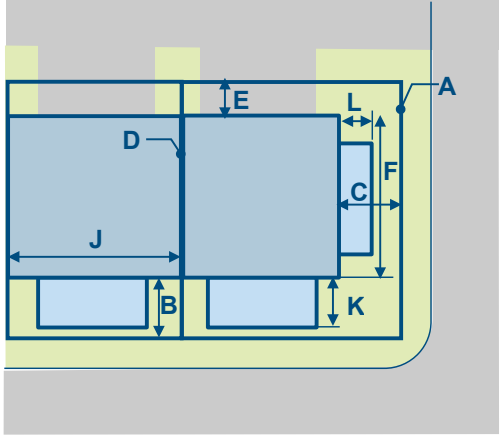


# LOFT

## LOFT

A Loft is a single-family residence that is detached or shares a party wall with another of the same type and occupies the full frontage line on its own lot. For Loft types, garages, and/or parking is provided adjacent or under the townhouse from the rear lane frontages while the primary townhouse front faces a lane, street, or public greenway. ~~Lofts in the T-5 Neighborhood Center Strolling District are permitted to have ground floor mixed use.~~

|                                     |                         |
|-------------------------------------|-------------------------|
| Lot width x depth                   | 20' min. x 30' min. (A) |
| Setbacks                            |                         |
| Front                               | 0' min. (B)             |
| Front Corner                        | 0' min. (C)             |
| Side                                | 0' min. (D)             |
| Rear                                | 0' min. (E)             |
| Parking and Waste from Front Façade | 20' min. (F)            |
| Building Frontage at Setback        | 90 % max. (J)           |
| Building Front Encroachments        | 8' max. (K)             |
| Building Side Encroachments         | 6' max. (L)             |
| Height                              |                         |
| Principle Building                  | 3.5 Stories max.        |
| First Floor Above Grade             | 1.5' min.               |
| Outbuilding                         | 2.5 Stories max.        |

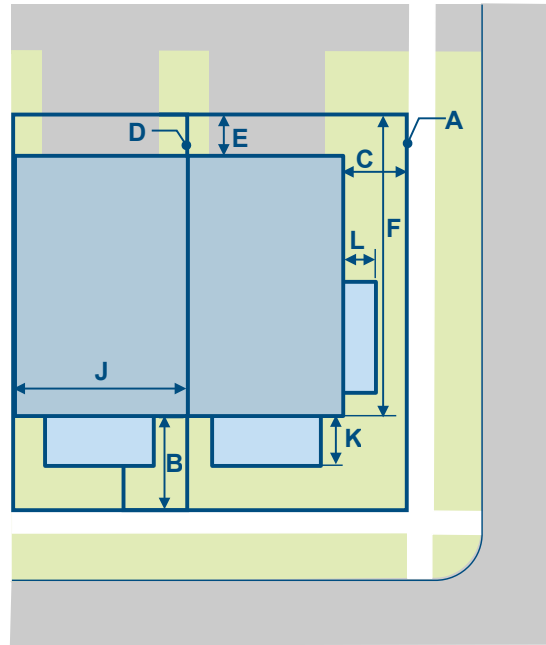


# TOWNHOUSE PARK-UNDER

## TOWNHOUSE PARK-UNDER

A Townhouse is a single-family residence that shares a party wall with another of the same type and occupies the full frontage line on its own lot. For Townhouse Park-Under types, garages, and/or parking is provided under the townhouse from the rear lane frontages while the primary townhouse front faces a street or public greenway. ~~Townhouses in the T-5 Neighborhood Center Strolling District are permitted to have ground floor mixed use.~~

|                                     |                         |
|-------------------------------------|-------------------------|
| Lot width x depth                   | 20' min. x 50' min. (A) |
| Setbacks                            |                         |
| Front                               | 10' min. (B)            |
| Front Corner                        | 8' min. (C)             |
| Side                                | 0' min. (D)             |
| Rear                                | 30' min. (E)            |
| Parking and Waste from Front Façade | 30' min. (F)            |
| Building Frontage at Setback        | 100 % max. (J)          |
| Building Front Encroachments        | 8' max.(K)              |
| Building Side Encroachments         | 6' max. (L)             |
| Height                              |                         |
| Principle Building                  | 3.5 Stories max.        |
| First Floor Above Grade             | 1.5' min.               |
| Outbuilding                         | 2.5 Stories max.        |

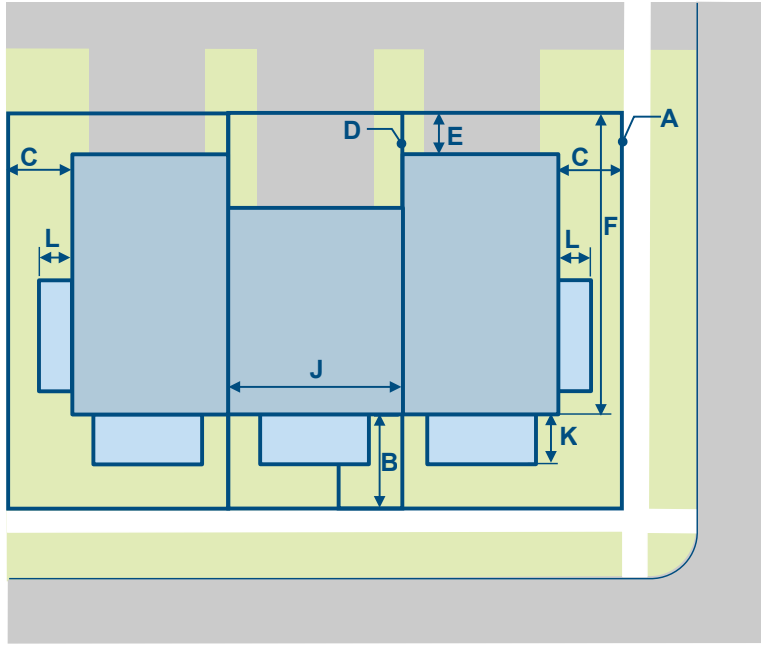


# 3-TOWNHOUSE ESTATE

## 3-TOWNHOUSE ESTATE

A 3-Townhouse Estate is a single-family residence that shares a party wall with two other of the same type with the building and architectural massing of a large house or estate. and occupies the full frontage line on its own lot. For 3-Townhouse Estate types, garages, and/or parking is provided under the townhouse from the rear lane frontages while the primary townhouse front faces a street or public greenway. ~~Townhouses in the T-5 Neighborhood Center Strolling District are permitted to have ground floor mixed use.~~

|                                     |                         |
|-------------------------------------|-------------------------|
| Lot width x depth                   | 24' min. x 50' min. (A) |
| Setbacks                            |                         |
| Front                               | 10' min. (B)            |
| Front Corner                        | 8' min. (C)             |
| Side                                | 0' min. (D)             |
| Rear                                | 30' min. (E)            |
| Parking and Waste from Front Façade | 30' min. (F)            |
| Building Frontage at Setback        | 100 % max. (J)          |
| Building Front Encroachments        | 8' max. (K)             |
| Building Side Encroachments         | 6' max. (L)             |
| Height                              |                         |
| Principle Building                  | 3.5 Stories max.        |
| First Floor Above Grade             | 1.5' min.               |
| Outbuilding                         | 2.5 Stories max.        |

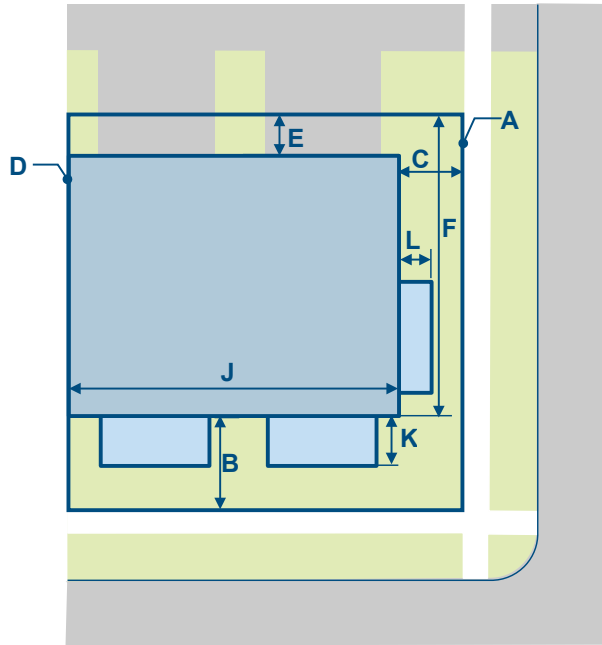


# STACKED-FLAT

## STACKED-FLAT

A Stacked-Flat is a single floor or town house residence that is stacked vertically with one above the other and occupies the full frontage line on a shared lot lot. For Staked-Flat types, garages, and/or parking is provided under or behind the building accessed from the rear lane frontages while the front faces a street or public greenway. ~~Stacked Flats in the T-5 Neighborhood Center are permitted to have ground floor mixed-use.~~

|                                     |                         |     |
|-------------------------------------|-------------------------|-----|
| Lot width x depth                   | 60' min. x 50' min. (A) |     |
| Setbacks                            |                         |     |
| Front                               | 10' min.                | (B) |
| Front Corner                        | 8' min.                 | (C) |
| Side                                | 0' min.                 | (D) |
| Rear                                | 30' min.                | (E) |
| Parking and Waste from Front Façade | 30' min.                | (F) |
| Building Frontage at Setback        | 80 % max.               | (J) |
| Building Front Encroachments        | 8' max.                 | (K) |
| Building Side Encroachments         | 6' max.                 | (L) |
| Height                              |                         |     |
| Principle Building                  | 4 Stories max.          |     |
| First Floor Above Grade             | 1.5' min.               |     |

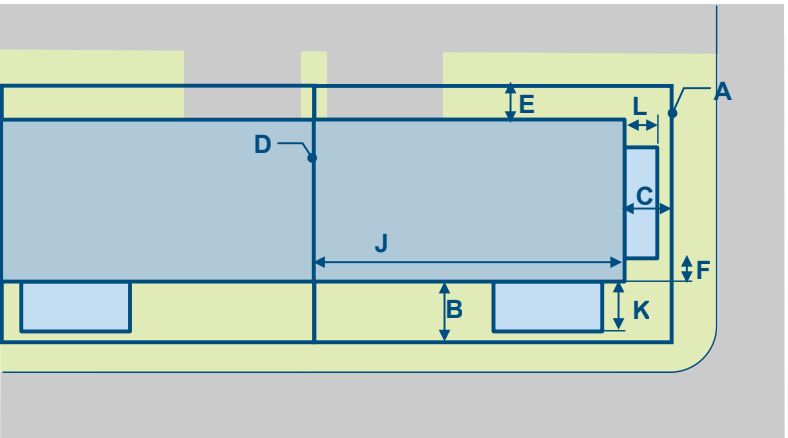


# MEWS HOUSE

## MEWS HOUSE

A Mews House is a single-family residence that is detached or shares a party wall with another of the same type and occupies the full frontage line on its own lot. Mews House types are generally wide and shallow. For Mews House types, garages, and/or parking is provided adjacent from the rear lane frontages screened from the frontage while the primary townhouse front faces a lane, street, or public greenway. ~~Mews Houses in the T-5 Neighborhood Center are permitted to have ground floor mixed-use.~~

|                                     |                         |     |
|-------------------------------------|-------------------------|-----|
| Lot width x depth                   | 50' min. x 30' min. (A) |     |
| Setbacks                            |                         |     |
| Front                               | 5' min.                 | (B) |
| Front Corner                        | 5' min.                 | (C) |
| Side                                | 5' min.                 | (D) |
| Rear                                | 5' min.                 | (E) |
| Parking and Waste from Front Façade | Screened                | (F) |
| Building Frontage at Setback        | 90 % max.               | (J) |
| Building Front Encroachments        | 8' max.                 | (K) |
| Building Side Encroachments         | 6' max.                 | (L) |
| Height                              |                         |     |
| Principle Building                  | 3.5 Stories max.        |     |
| First Floor Above Grade             | 1.5' min.               |     |
| Outbuilding                         | 2.5 Stories max.        |     |





MULTI-FAMILY HOUSE

MULTI-FAMILY HOUSE

A Multi-Family House is a multi-family residence with up to 8 units that is similar in scale, massing, and character with a large single-family house and intended to be compatible in form and adjacency. For Multi-Family Houses, garages, ADUs and/or parking is provided from the street and lane frontages while the primary front faces a street or public greenway. ~~Multi-Family Houses in the T-5 Neighborhood Center are permitted to have ground floor mixed-use.~~

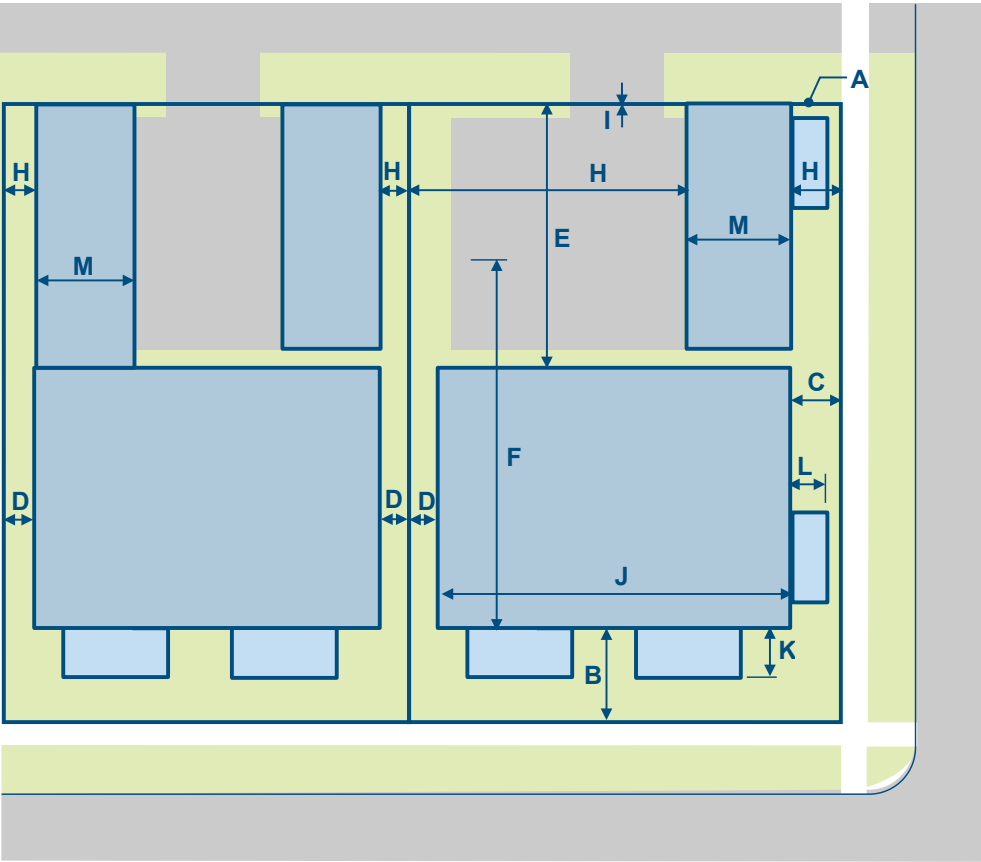
Lot width x depth 72' min. x 100' min. (A)

Setbacks

|                                     |           |     |
|-------------------------------------|-----------|-----|
| Front                               | 12' min.  | (B) |
| Front Corner                        | 6' min.   | (C) |
| Side                                | 8' min.   | (D) |
| Rear                                | 30' min.  | (E) |
| Parking and Waste from Front Façade | 45' min.  | (F) |
| Accessory Buildings from Front      | 60' min.  | (G) |
| Accessory Buildings Side            | Align     | (H) |
| Accessory Buildings Rear            | 0' min.   | (I) |
| Building Frontage at Setback        | 90 % max. | (J) |
| Building Front Encroachments        | 10' max.  | (K) |
| Building Side Encroachments         | 6' max.   | (L) |

Height

|                         |                  |
|-------------------------|------------------|
| Principle Building      | 3.5 Stories max. |
| First Floor Above Grade | 1.5' min.        |
| Outbuilding             | 2.5 Stories max. |



MULTI-FAMILY BUILDING

MULTI-FAMILY BUILDING

A Multi-Family Building is a multi-family residence with up to 16 units that is similar in scale, massing, and character with the frontage of a Multi-Family Building and intended to be compatible in form and adjacency. For Multi-Family Buildings, garages, ADUs and/or parking is provided in a rear common parking area and/or park-under garages screened from the street while the primary front faces a street or public greenway. ~~Multi-Family Buildings in the T-5 Neighborhood Center are permitted to have ground floor mixed-use.~~

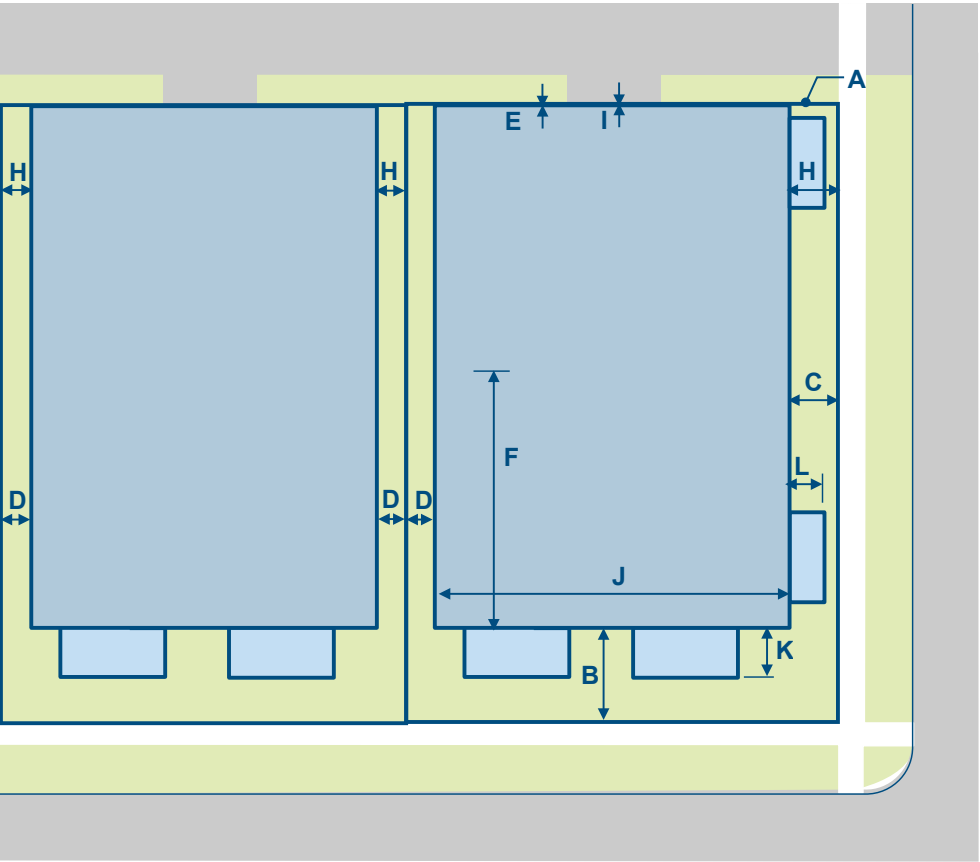
Lot width x depth 72' min. x 60' min. (A)

Setbacks

|                                     |           |     |
|-------------------------------------|-----------|-----|
| Front                               | 6' min.   | (B) |
| Front Corner                        | 6' min.   | (C) |
| Side                                | 6' min.   | (D) |
| Rear                                | 0' min.   | (E) |
| Parking and Waste from Front Façade | 45' min.  | (F) |
| Building Frontage at Setback        | 90 % max. | (J) |
| Building Front Encroachments        | 10' max.  | (K) |
| Building Side Encroachments         | 6' max.   | (L) |

Height

|                         |                  |
|-------------------------|------------------|
| Principle Building      | 4 Stories max.   |
| First Floor Above Grade | 1.5' min.        |
| Outbuilding             | 2.5 Stories max. |



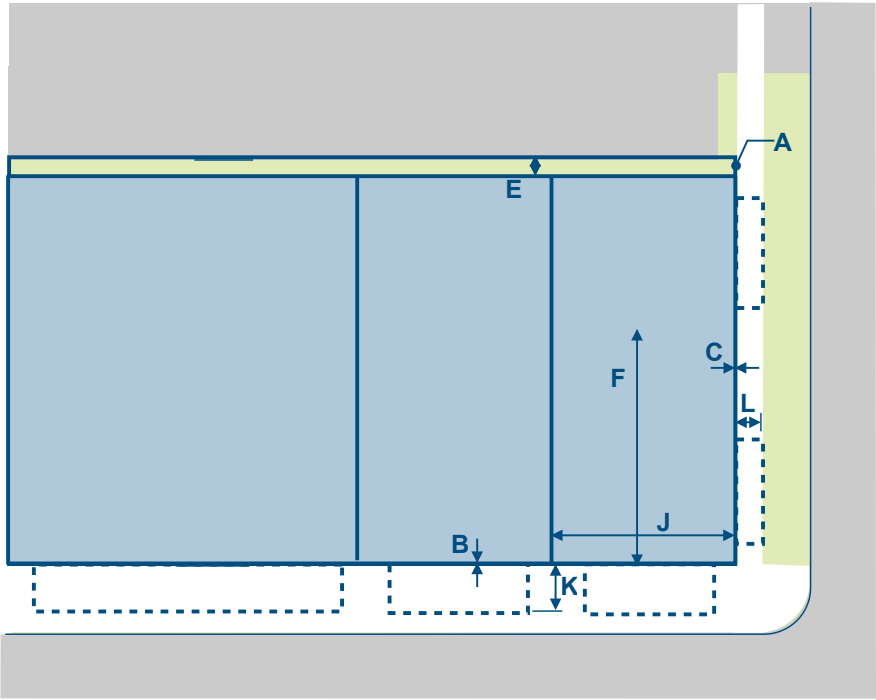
# SHOPFRONT / MIXED-USE

## SHOPFRONT / MIXED USE

Shopfront and Mixed-Use Buildings are small to medium size traditional building types typically following the platting patterns of the historic main street. Ground level uses typically include retail shops, restaurants and cafes, and commercial. Upper level uses typically include residential and/or commercial uses. Ground level facades are detailed with inviting storefronts with abundant windows and canopies, balconies, and/or awnings above. Parking is provided on-street and in shared screened parking areas or park-under accessed from a rear alley while the primary front faces the street or public green space. Refer to the Land Use Plan for recommended shopfront locations.

|                                              |                                  |
|----------------------------------------------|----------------------------------|
| Lot width x depth                            | 12' min. x 40' min. (A)          |
| Building Footprint                           | 5,000 sf building footprint max. |
| Setbacks                                     |                                  |
| Front                                        | 0' min. (B)                      |
| Front Corner                                 | 0' min. (C)                      |
| Side                                         | 0' min. (D)                      |
| Rear                                         | 0' min. (E)                      |
| Parking and Waste from Front Façade          | 20' min. (F)                     |
| Building Frontage at Setback                 | 80 % min. (J)                    |
| Building Front Encroachments Above 1st Level | 15' max. (K)                     |
| Building Side Encroachments Above 1st Level  | 8' max. (L)                      |
| Height                                       |                                  |
| Principle Building                           | 4 Stories max.                   |
| First Floor Above Grade                      | 0' min.                          |

Note: These standards do not apply to the existing buildings.

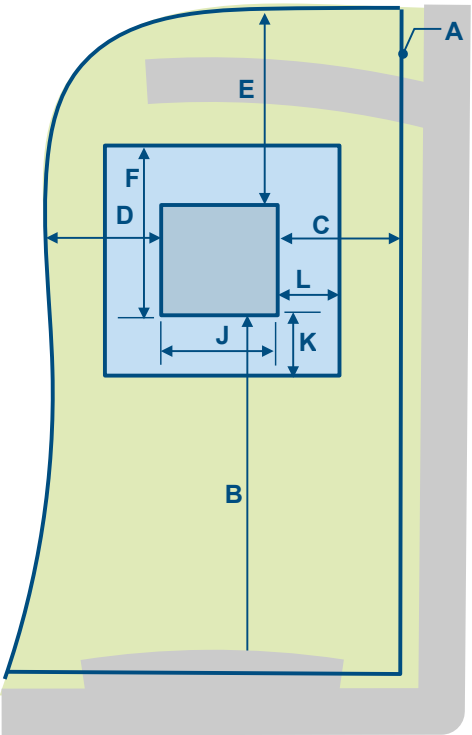


# TREEHOUSE

## TREEHOUSE

A Treehouse Type is a single-family dwelling. The small footprint is vertical in proportion and typically includes substantially deep cantilevered porches and balconies. Parking is generally provided along the street frontage or by driveways set back from the frontage.

|                                     |                                                                |
|-------------------------------------|----------------------------------------------------------------|
| Lot width x depth & max footprint   | 50' min. x 50' min. (A)<br>576 sq. ft. max. building footprint |
| Setbacks                            |                                                                |
| Front                               | 5' min. (B)                                                    |
| Front Corner                        | 12' min. (C)                                                   |
| Side                                | 12' min. (D)                                                   |
| Rear                                | 5' min. (E)                                                    |
| Parking and Waste from Front Façade | 20' min. (F)                                                   |
| Building Frontage at Setback        | 40 % max. (J)                                                  |
| Building Front Encroachments        | 15' max. (K)                                                   |
| Building Side & Rear Encroachments  | 12' max. (L)                                                   |
| Height                              |                                                                |
| Principle Building                  | 4 Stories max.                                                 |
| First Floor Above Grade             | 1.5' min.                                                      |
| Outbuilding                         | N/A                                                            |



# ACCESSORY BUILDING

## ACCESSORY BUILDING

- Accessory Structures are permitted in zones with residential uses. In all cases, garages and storage buildings should be located behind or set back from the principal dwelling. When the housing type does not include a garage, a storage building is recommended
- Garages: Garages should be located behind the principal dwelling. Construction of garages for houses should be optional.
- Accessory buildings are allowed everywhere that accessory building standards are called out in specific Building Types Standards including Estate, House, Cottage, Pair House, Town House, and Multi-Family House.
- Accessory Dwelling Unit: A secondary dwelling unit associated with a principal residence on a single lot is permitted. ADUs shall be a maximum of 50% of the square footage of the primary building footprint. An accessory unit is typically located over the detached garage of a townhouse or detached house. Refer to each Building Type for specific standards.
- See the Use Table for “accessory apartment” when attached to the principal residence.

Note: These standards do not apply to the existing buildings.

WALLS

**Walls** shall be in stone, brick, stucco, wood clapboard, board and batten, fiber cement, or vinyl, or polymeric.

**Walls** shall show no more than two materials above the foundation.

**Materials** shall change along a horizontal line, with the heavier material below the lighter.

**Siding** shall be of integral color, painted or stained.

**Arches and Piers** shall be brick, stone, or stucco.

**Posts** shall be pressure treated, wood, or protective wrapped with vinyl or PVC.

**Foundations** shall be enclosed with horizontal wood boards, wood louvers, stucco over block, stamped poured concrete, stone, or brick.

**Trim** shall be high grade lumber, pre-painted metal, polymeric, vinyl, or fiber cement board, and shall be 3.5 inches to 6 inches in width at corners and around corners.

**Wood**, if visible, shall be painted or stained with an opaque stain, except walking surfaces, which may be left natural.

Stucco shall be cement with smooth sand or pebble finish.

OPENINGS

**Doors** shall provide a clear width of not less than 32". Exterior doors shall have a maximum nominal width of 36" for single doors. If double doors are used, one leaf shall provide a minimum 32" clearance. Local compliance for fire egress and ADA standards takes precedent.

**Doors** shall be side-hinged swinging type (no sliders) at frontages.

**Doors** shall be painted.

**Windows** shall be made of wood, extruded aluminum, vinyl, or hollow steel frame and glazed with clear glass.

**Windows** shall be with a vertical or square proportion,

**Storm Windows and Screens**, shall cover the entire window area.

**Panes** shall be of square or vertical proportion.

**Shutters** shall be operable w/ shutter dogs, sized, and shaped to meet the associated openings.

ELEMENTS

**Porches and Colonnades** are generally covered and shall have their columns, and posts.

**Porches** shall have square or vertically proportioned intercolumniation. Porches may encroach into the setbacks.

**Railings** shall be made of metal, wood, or composite.

**Railings** shall have horizontal top and bottom rails centered on the balusters. The openings between balusters shall not exceed 4 inches. Bottom rails shall be raised above the level of the floor.

**Equipment** including HVAC and utility meters shall be screened and located away from the primary entries.

**Vista Points** where shown on the Land Use Plan are prominent locations including corners, deflections, and at the axial conclusion of a thoroughfare or public space. A building located at a Vista Point designated on a Regulating Plan is required to be designed in response to this location.

**Galleries** shall be aligned close to the frontage line with an attached cantilevered shed or lightweight colonnade overlapping the Sidewalk.

SUSTAINABILITY GUIDELINES

**Sites** should be disturbed as little as possible during construction. Natural drainage patterns shall be kept wherever feasible. Excavated soil shall be used for required contour line modifications and onsite backfill.

**Materials** should be locally sourced where feasible.

Use of **Recycled Materials** is encouraged.

**Building Shape** is recommended to be rectangular to allow breezes inside, cross-ventilation, and provide natural cooling.

**Landscaping** should encourage deciduous trees next to buildings to provide them with shade in summer and solar heating in winter.

**Building Shading** should be used selectively to minimize unwanted solar heat gain in the summer and maximize heat gains in the winter.

**Cross ventilation** is recommended to be provided through narrow floor plans with large, operable windows, porches and breezes.

**Paints** are recommended to have Low-VOC emissions.

**Stormwater Management** for guidance on stormwater management and the application of tools for paving, channeling, storage, and filtration including maintenance and costs refer to the; Light Imprint Handbook; Integrating Sustainability and Community Design.

ROOFS

**Roofs** shall be clad in galvanized metal, fiberglass/asphalt shingles, or slate.

**Roof Penetrations**, including vent stacks, shall be placed on the rear slope of the roof where feasible. Roof penetrations shall be finished to match the color of the roof.

**Mechanical** equipment including solar panels shall be screened and located away from frontages.

**Roof Slope** shall be between 6:12 and 12:12. Porch Slope shall be a minimum of 3:12.

**Gutters, Downspouts, and Projecting Drainpipes** shall be made of galvanized metal, copper, or painted aluminum in white or same color as building.

**Flashing** shall be galvanized/pre-painted metal or copper.

**Eaves** shall be continuous.

**Eaves** shall be either exposed with custom cut rafter tails, partially exposed with square-cut rafter tails, or closed soffits and on the front facade shall project 12 to 36 inches from the exterior wall sheathing to the outer edge of gutter.

**Rafter Tails** shall not exceed 6 inches in depth at the tip.

HEIGHT

**Height** of buildings shall be measured per the Salem code.

For residential dwellings the ground floor shall be a minimum of 18" above the back of curb measured at the front corners.

SIGNAGE

A Master Signage Plan and Sign Standards may be submitted prior to specific site plan submissions.

**General** to all zones:  
a. There shall be no signage permitted additional to that specified in this section. Temporary signage for builders is excluded.

**General and Edge zone**  
a. The address number, no more than 6 inches measured vertically, shall be attached to the building in proximity to the Principal Entrance or at a mailbox.

**Center zone**  
a. Blade signs, not to exceed 6 square ft. for each separate business entrance, may be attached to and should be perpendicular to the Facade, and shall clear 8 feet above the Sidewalk.  
b. A single external permanent sign band may be applied to the Facade of each building, providing that such sign not exceed 3 feet in height by any length.

9.Generalized statements pertaining to any architectural and community design guidelines shall be submitted in sufficient detail to provide information on building designs, orientations, styles, lighting plans, etc.





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& ASSOCIATES**  
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PRELIMINARY

HOPETREE P.U.D.

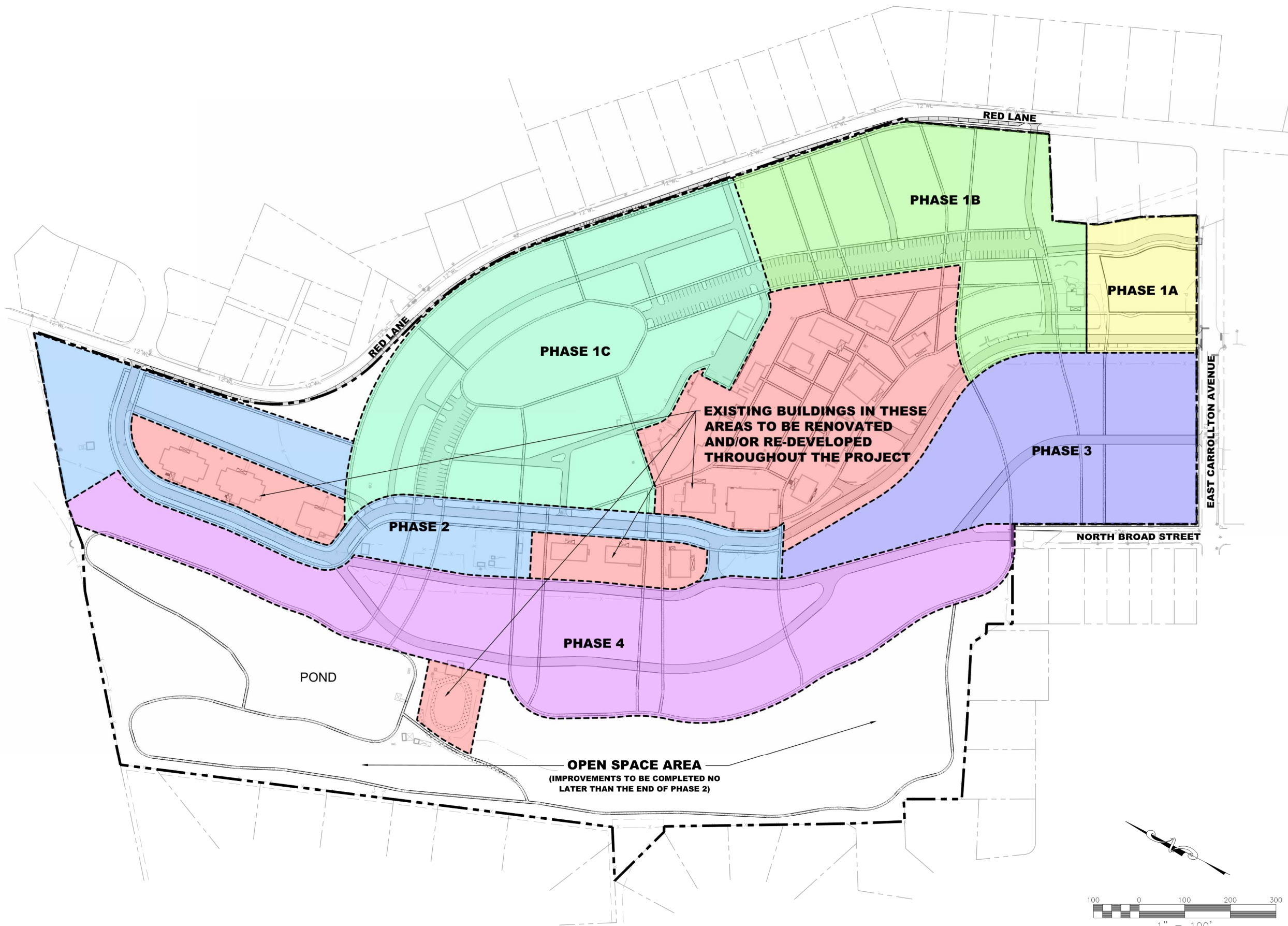
DEVELOPMENT SCHEDULE/PHASING PLAN

CITY OF SALEM, VIRGINIA  
MOUNT VERNON AVENUE

|             |            |
|-------------|------------|
| DRAWN BY    | LDS        |
| DESIGNED BY | CPB        |
| CHECKED BY  | CPB        |
| DATE        | 10/17/2024 |
| SCALE       | 1" = 100'  |
| REVISIONS   |            |

EX-A

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J:\22\040424\2024.00 HOPETREE MASTERPLAN\CD\Drawings\220204.00 Phasing Plan.dwg PLOTTED: 10/17/2024 2:59:48 PM



DEVELOPMENT SCHEDULE/PHASING PLAN NOTES:

1. DEVELOPMENT SCHEDULE/PHASING PLAN. THIS PHASING PLAN STATES THE EXPECTED DEVELOPMENT SCHEDULE BASED ON THE DEVELOPMENT AND CONSTRUCTION PLANS AND APPROVALS DESCRIBED IN THE NOTES BELOW. THE FINAL PHASING AND SEQUENCE OF DEVELOPMENT FOR THE HOPETREE PROJECT ARE SUBJECT TO THE ANTICIPATED REGULATORY APPROVALS LISTED BELOW.
2. CONTINUED HOPETREE OPERATIONS. THE PROJECT WILL BE DEVELOPED IN A MANNER THAT WILL ALLOW HOPETREE TO CONTINUE ITS OPERATIONS IN THE EXISTING BUILDINGS AND FACILITIES ON THE PROPERTY.
3. JUNE 24, 2024 CITY COUNCIL APPROVAL. THE SALEM CITY COUNCIL APPROVED THE HOPETREE P.U.D. REZONING ON JUNE 24, 2024.
4. SEVERAL PROPERTY OWNERS FILED LAWSUITS IN JULY 2024 CHALLENGING THE SALEM CITY COUNCIL'S APPROVAL OF THE REZONING FOR THE HOPETREE P.U.D.
5. AUGUST 30, 2024 REZONING APPLICATION. ON AUGUST 30, 2024, HOPETREE SUBMITTED TO THE CITY AN APPLICATION FOR THE REZONING OF THE HOPETREE PROPERTY THAT IS SUBSTANTIALLY SIMILAR TO THE REZONING APPROVED BY CITY COUNCIL ON JUNE 24, 2024. THIS APPLICATION ADDRESSES THE ISSUES RAISED IN THE LAWSUITS CHALLENGING THE CITY COUNCIL'S JUNE 24, 2024 APPROVAL OF THE REZONING.
6. SUPPLEMENT TO AUGUST 30, 2024 REZONING APPLICATION. THIS DEVELOPMENT SCHEDULE/PHASING PLAN SUPPLEMENTS THE AUGUST 30, 2024 APPLICATION. THE SCHEDULE AND SEQUENCE STATED IN THIS DEVELOPMENT SCHEDULE/PHASING PLAN ANTICIPATES THAT THE CITY COUNCIL WILL ACT ON THE AUGUST 30, 2024 REZONING APPLICATION BY THE END OF 2024.
7. SITE PLANS. IT IS ANTICIPATED THAT THERE WILL BE MULTIPLE SITE PLANS SUBMITTED BASED ON THIS ANTICIPATED PHASING. ASSUMING THAT THE AUGUST 30, 2024 REZONING APPLICATION IS APPROVED BY CITY COUNCIL BY THE END OF 2024, THE DEVELOPER ANTICIPATES SUBMITTING AN INITIAL SITE PLAN FOR PHASE 1 TO THE CITY PURSUANT TO SALEM CODE § 106–400 ET SEQ. BY DECEMBER 31, 2025. THE DEVELOPER ANTICIPATES THAT THE CITY WILL CONSIDER THE INITIAL SITE PLAN IN ACCORDANCE WITH ITS NORMAL REVIEW SCHEDULE. IN ADDITION TO THE INITIAL SITE PLAN, THE DEVELOPER ANTICIPATES SUBMITTING TO THE CITY INDIVIDUAL SITE PLANS FOR EACH PHASE. THE SITE PLANS FOR EACH PHASE WILL INCLUDE:
  - A. INFRASTRUCTURE CONSTRUCTION PLANS. AS PART OF THE INDIVIDUAL SITE PLANS FOR EACH PHASE, THE DEVELOPER ANTICIPATES SUBMITTING TO THE CITY CONSTRUCTION PLANS FOR INFRASTRUCTURE IMPROVEMENTS, PURSUANT TO SALEM CODE § 78–600 ET SEQ. THE INFRASTRUCTURE CONSTRUCTION PLANS WILL BE INCLUDED AS PART OF THE SITE PLANS FOR EACH PHASE AND WILL BE SUBMITTED PURSUANT TO SALEM CODE § 106–400 ET SEQ.
  - B. EROSION AND SEDIMENT CONTROL PLAN/STORMWATER MANAGEMENT PLAN. AS PART OF THE INDIVIDUAL SITE PLANS FOR EACH PHASE, THE DEVELOPER ALSO ANTICIPATES SUBMITTING TO THE CITY: (I) AN EROSION AND SEDIMENT CONTROL PLAN PURSUANT TO SALEM CODE §§ 30–92, 30–117, AND 30–138; AND A II) A STORMWATER MANAGEMENT PLAN PURSUANT TO SALEM CODE § 30–144. THE EROSION AND SEDIMENT CONTROL/STORMWATER MANAGEMENT PLAN WILL BE INCLUDED AS PART OF THE SITE PLANS FOR EACH PHASE AND WILL BE SUBMITTED PURSUANT TO SALEM CODE § 106–400 ET SEQ.
8. SURVEYING, LAYOUT AND STAKING. AFTER THE APPROVAL OF EACH INDIVIDUAL SITE PLAN FOR EACH PHASE, THE DEVELOPER ANTICIPATES UNDERTAKING THE SURVEYING, LAYOUT AND STAKING FOR THE CONSTRUCTION OF THE INFRASTRUCTURE IMPROVEMENTS FOR EACH PHASE. THE DEVELOPER ANTICIPATES THAT THE SURVEYING, LAYOUT, AND STAKING OF THE PHASE 1 AREA WILL TAKE PLACE IN 2026, DEPENDING ON THE CITY'S REVIEW AND APPROVAL OF THE SITE PLAN FOR PHASE 1.
9. SUBDIVISION PLAT. UPON THE APPROVAL OF THE INDIVIDUAL SITE PLAN FOR EACH PHASE, THE DEVELOPER ANTICIPATES SUBMITTING TO THE CITY A SUBDIVISION PLAT, IN PHASES CONSISTENT WITH THE PHASES SET FORTH BELOW, PURSUANT TO SALEM CODE §§ 78–204, 78–400, 78–402, 78–408, 78–408.6, 78–416.4, 78–421.1, 78–421.5, AND 78–421.7. THE DEVELOPER ANTICIPATES SUBMITTING THE SUBDIVISION PLAT FOR PHASE 1 BY MARCH 1, 2026. THE DEVELOPER ANTICIPATES THAT THE CITY WILL CONSIDER AND APPROVE THE SUBDIVISION PLAT FOR PHASE 1 SOON AFTER ITS SUBMISSION.
10. CONSTRUCTION OF INFRASTRUCTURE IMPROVEMENTS. THE DEVELOPER ANTICIPATES BEGINNING THE CONSTRUCTION OF INFRASTRUCTURE IMPROVEMENTS ACCORDING TO THE PHASE PLAN AND SEQUENCE SET FORTH BELOW, WITH THE FIRST CONSTRUCTION OF INFRASTRUCTURE IMPROVEMENTS FOR PHASE 1 TO BEGIN 2026.
11. CONSTRUCTION OF SITE FEATURES AND BUILDINGS. DURING AND AFTER THE CONSTRUCTION OF INFRASTRUCTURE IMPROVEMENTS FOR EACH PHASE, THE DEVELOPER ANTICIPATES BEGINNING THE CONSTRUCTION OF SITE FEATURES AND BUILDINGS FOR EACH SUBSEQUENT PHASE ACCORDING TO THE PHASE PLAN STATED BELOW. THE DEVELOPER ANTICIPATES BEGINNING CONSTRUCTION OF SITE FEATURES AND BUILDINGS IN PHASE 1 IN 2027.
12. PHASED DEVELOPMENT PLAN AND SCHEDULE. THE DEVELOPER ANTICIPATES THAT THE ESTIMATED DEVELOPMENT TIMEFRAMES FOR EACH PHASE, SUBJECT TO THE TIMING AND SEQUENCE OF THE REGULATORY APPROVALS OF PLANS OUTLINED ABOVE, WILL BE:
  - A. PHASE 1. PHASE 1 INCLUDES THREE SUBPHASES, PHASE 1A, 1B, AND 1C. THE DEVELOPER ANTICIPATES THAT PHASE 1A WILL BEGIN FIRST, FOLLOWED BY PHASES 1B AND 1C. SUBJECT TO THE ABOVE APPROVALS AND PLANS IN THE NOTES ABOVE, THE DEVELOPER ANTICIPATES THAT THE PHASE 1 DEVELOPMENT WILL TAKE FOUR YEARS FROM THE BEGINNING OF 2026 TO COMPLETE (2030).
  - B. PHASE 2. THE DEVELOPER ANTICIPATES BEGINNING THE DEVELOPMENT OF PHASE 2 UPON THE SUBSTANTIAL COMPLETION OF PHASE 1. THE DEVELOPMENT OF PHASE 2, INCLUDING THE PREPARATION OF APPROPRIATE SITE PLAN, SUBDIVISION PLAT, EROSION AND SEDIMENT CONTROL PLAN, STORMWATER MANAGEMENT PLAN, AND CONSTRUCTION PLANS, IS EXPECTED TO OVERLAP WITH THE CONSTRUCTION OF INFRASTRUCTURE IMPROVEMENTS, SITE FEATURES, AND BUILDINGS IN PHASE 1. SUBJECT TO THE ABOVE APPROVALS AND PLANS IN THE NOTES ABOVE, THE DEVELOPER ANTICIPATES THAT THE PHASE 2 DEVELOPMENT WILL TAKE THREE YEARS TO COMPLETE (APPROXIMATELY 2032).
  - C. PHASE 3. THE DEVELOPER ANTICIPATES BEGINNING THE DEVELOPMENT OF PHASE 3 UPON THE SUBSTANTIAL COMPLETION OF PHASE 2. THE DEVELOPMENT OF PHASE 3, INCLUDING THE PREPARATION OF APPROPRIATE SITE PLAN, SUBDIVISION PLAT, EROSION AND SEDIMENT CONTROL PLAN, STORMWATER MANAGEMENT PLAN, AND CONSTRUCTION PLANS, IS EXPECTED TO OVERLAP WITH THE CONSTRUCTION OF INFRASTRUCTURE IMPROVEMENTS, SITE FEATURES, AND BUILDINGS IN PHASE 2. SUBJECT TO THE ABOVE APPROVALS AND PLANS IN THE NOTES ABOVE, THE DEVELOPER ANTICIPATES THAT THE PHASE 3 DEVELOPMENT WILL TAKE THREE YEARS TO COMPLETE (APPROXIMATELY 2036).
  - D. PHASE 4. THE DEVELOPER ANTICIPATES BEGINNING THE DEVELOPMENT OF PHASE 4 UPON THE SUBSTANTIAL COMPLETION OF PHASE 3. THE DEVELOPMENT OF PHASE 4, INCLUDING THE PREPARATION OF APPROPRIATE SITE PLAN, SUBDIVISION PLAT, EROSION AND SEDIMENT CONTROL PLAN, STORMWATER MANAGEMENT PLAN, AND CONSTRUCTION PLANS, IS EXPECTED TO OVERLAP WITH THE CONSTRUCTION OF INFRASTRUCTURE IMPROVEMENTS, SITE FEATURES, AND BUILDINGS IN PHASE 3. SUBJECT TO THE ABOVE APPROVALS AND PLANS IN THE NOTES ABOVE, THE DEVELOPER ANTICIPATES THAT THE PHASE 4 DEVELOPMENT WILL TAKE THREE YEARS TO COMPLETE (APPROXIMATELY 2039).
  - E. DEPENDING ON THE EFFICIENCY OF THE DEVELOPMENT OF EACH PHASE, THE DEVELOPER ANTICIPATES THAT CERTAIN PHASES COULD BE COMPLETED CONCURRENTLY, SUBJECT TO THE ABOVE APPROVALS AND PLANS IN THE NOTES ABOVE.
13. OPEN SPACE AND RECREATION AREAS. OPEN SPACE AND RECREATION AREAS ARE LOCATED IN SEVERAL AREAS THROUGHOUT THE PROPERTY, AS SPECIFIED IN THE OPEN SPACE PLAN ON PAGE 12 OF THE HOPE TREE PUD REZONING APPLICATION DOCUMENT. THE PROJECT INCLUDES A LARGE AREA FOR OPEN SPACE AND RECREATION IN THE SOUTHERN PORTION OF THE P.U.D.. THIS LARGE AREA INCLUDES A POND AND AN EXISTING EQUINE FACILITY. THE P.U.D. ALSO INCLUDES VARIOUS OTHER OPEN SPACES THROUGHOUT EACH PHASE OF THE DEVELOPMENT. THE DEVELOPER ANTICIPATES THAT THE DEVELOPMENT OF SITE FEATURES IN THE OPEN SPACE AND RECREATION AREAS (TRAILS AND SIMILAR AMENITIES) WILL BE DEVELOPED AND COMPLETED AS EACH PHASE DEVELOPS AS OUTLINED ABOVE, BASED ON THE LOCATION OF EACH OPEN SPACE AND RECREATIONAL AREA.
14. NON–RESIDENTIAL DEVELOPMENT. THE DEVELOPER ANTICIPATES THAT NON–RESIDENTIAL DEVELOPMENT MAY START IN PHASE 1 AND SHALL CONTINUE BASED ON MARKET DEMAND THROUGH THE LIFE OF THE PROJECT. NO NEW COMMERCIAL STRUCTURES (OTHER THAN THOSE USED FOR HOPETREE SERVICES) MAY BE CONSTRUCTED UNTIL 20% OF THE RESIDENTIAL UNITS OF THE OVERALL DEVELOPMENT HAVE BEEN COMPLETED. THIS REQUIREMENT DOES NOT APPLY TO RENOVATION OF EXISTING STRUCTURES. THE SPECIFIC DEVELOPMENT LOCATIONS OF NON–RESIDENTIAL USES ARE SPECIFIED IN THE LAND USE PLAN ON PAGE 9 OF THE HOPETREE PUD REZONING APPLICATION DOCUMENT.
15. PARKING AND PEDESTRIAN IMPROVEMENTS. PARKING AREAS AND PEDESTRIAN IMPROVEMENTS FOR EACH PHASE WILL BE CONSTRUCTED DURING THE CONSTRUCTION OF THE INFRASTRUCTURE IMPROVEMENTS AND SITE FEATURES FOR EACH PHASE AS SHOWN ON THE APPROVED SITE PLAN, SUBDIVISION PLAT, AND CONSTRUCTION PLANS FOR EACH PHASE.
16. OTHER FACTORS. THE TIMING AND SEQUENCE OF THE HOPE TREE PROJECT MAY BE AFFECTED BY FACTORS SUCH AS MARKET CONDITIONS.



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PRELIMINARY

HOPETREE P.U.D.

DEVELOPMENT SCHEDULE/PHASING PLAN

CITY OF SALEM, VIRGINIA  
MOUNT VERNON AVENUE

|             |           |
|-------------|-----------|
| DRAWN BY    | LDS       |
| DESIGNED BY | CPB       |
| CHECKED BY  | CPB       |
| DATE        | 11/5/2024 |
| SCALE       | N/A       |
| REVISIONS   |           |

**EX-B**

PROJECT NO. 04220029.00

# The City of Salem Zoning Ordinance - Hopetree Uses & Definitions - Revised 03.18.2024

## Agriculture

| Use Type            | Historic<br>Core<br>Buildings | T3 | T4 | T5 | Open<br>Space /<br>Natural | Definition                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|---------------------|-------------------------------|----|----|----|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Agriculture         |                               |    |    |    |                            | The use of land for the production of food and fiber, including farming, dairying, pasturage, agriculture, horticulture, viticulture, and animal and poultry husbandry. A garden accessory to a residence shall not be considered agriculture. The keeping of a cow, pig, sheep, goat, chicken or similar animal shall constitute agriculture regardless of the size of the animal and regardless of the purpose for which it is kept.                         |
| Agritourism         |                               |    |    |    |                            | Any activity carried out on a farm or ranch that allows members of the general public, for recreational, entertainment, or educational purposes, to view or enjoy rural activities, including farming, wineries, ranching, historical, cultural, harvest-your-own activities, or natural activities and attractions.                                                                                                                                           |
| Farm stand          |                               |    |    |    |                            | An establishment for the seasonal retail sale of agricultural goods and merchandise primarily produced by the operator on the site, or on nearby property. Agricultural goods produced on other properties owned or leased by the operator may also be allowed provided a majority of the produce comes from land surrounding the wayside stand. This use type shall include agricultural products picked by the consumer.                                     |
| Forestry operations |                               |    |    |    |                            | The use of land for the raising and harvesting of timber, pulp woods and other forestry products for commercial purposes, including the temporary operation of a sawmill and/or chipper to process the timber cut from that parcel or contiguous parcels. Excluded from this definition shall be the cutting of timber associated with land development approved by the City of Salem, which shall be considered accessory to the development of the property. |
| Stable              |                               |    |    |    | √*                         | The boarding, keeping, breeding, pasturing or raising of horses, ponies, mules, donkeys or llamas by the owner or occupant of the property and/or their paying or non-paying guests. Included in this definition are riding academies. *HopeTree Equine Therapy to remain a viable use.                                                                                                                                                                        |
|                     |                               |    |    |    |                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                |



| Residential                     |                               |    |    |    |                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|---------------------------------|-------------------------------|----|----|----|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Use Type                        | Historic<br>Core<br>Buildings | T3 | T4 | T5 | Open<br>Space /<br>Natural | Definition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Accessory apartment             | √                             | √  | √  | √  |                            | A second dwelling unit within a detached single family dwelling which is clearly incidental and subordinate to the main dwelling unit.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Accessory Dwelling Unit         | √                             | √  | √  | √  |                            | Additional use type to include attached or detached accessory dwelling units.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Family day care home            | √                             | √  |    |    |                            | A single family dwelling in which more than five but less than ten individuals, are received for care, protection and guidance during only part of a 24 hour day. Individuals related by blood, legal adoption or marriage to the person who maintains the home shall not be counted towards this total. The care of five or less individuals for portions of a day shall be considered a home occupation.                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Home occupation                 | √                             | √  | √  | √  |                            | An accessory use of a dwelling unit for gainful employment involving the production, provision, or sale of goods and/or services.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Manufactured home               |                               |    |    |    |                            | A structure, transportable in one or more sections, which in the traveling mode is eight body feet or more in width or 40 body feet or more in length, or, when erected on site, is 320 or more square feet, and which is built on a permanent chassis and designed to be used as a dwelling with or without a permanent foundation. A manufactured home shall contain one dwelling unit. Some manufactured homes are also referred to as mobile homes.                                                                                                                                                                                                                                                                                                                                                                                  |
| Manufactured home, accessory    |                               |    |    |    |                            | A manufactured home that is subordinate to a single family dwelling on a single lot and meets the additional criteria contained in this chapter.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Manufactured home, emergency    |                               |    |    |    |                            | A manufactured home used temporarily for the period of reconstruction or replacement of an uninhabitable dwelling lost or destroyed by fire, flood, or other act of nature, or used temporarily as housing relief to victims of a federally declared disaster in accordance with the provisions of this chapter.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Manufactured home subdivision   |                               |    |    |    |                            | A ten acre or larger community of manufactured home dwellings with lots that are subdivided for individual ownership.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Manufactured home park          |                               |    |    |    |                            | A ten acre or larger tract of land intended to accommodate a manufactured home community of multiple spaces for lease or condominium ownership. A manufactured home park is also referred to as a mobile home park.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Multi-family dwelling           | √                             |    | √  | √  |                            | A building or portion thereof which contains three or more dwelling units for permanent occupancy, regardless of the method of ownership. Included in the use type would be garden apartments, low and high rise apartments, apartments for elderly housing and condominiums.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Residential human care facility | √                             | √  | √  | √  |                            | A building (1) used as a group home where not more than eight mentally ill, mentally retarded or other developmentally disabled persons, not related by blood or marriage, reside, with one or more resident counselors or other staff persons and for which the Virginia Department of Behavioral Health and Developmental Services is the licensing authority, pursuant to Virginia Code § 15.2-2291, or (2) used as a group home where not more than eight aged, infirm or disabled persons, not related by blood or marriage, reside with one or more resident counselors or other staff persons and for which the Department of Social Services is the licensing authority, pursuant to § Virginia Code § 15.2-2291(B). Excluded from this definition are drug or alcohol rehabilitation centers, half-way houses and similar uses. |

|                                        |   |   |   |   |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|----------------------------------------|---|---|---|---|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Single family dwelling detached        | √ | √ | √ | √ |  | A site built or modular building designed for or used exclusively as one dwelling unit for permanent occupancy. A single family dwelling which is surrounded by open space or yards on all sides, is located on its own individual lot, and which is not attached to any other dwelling by any means.                                                                                                                                                                                                                                                                                                                                                                                                               |
| Single family dwelling attached        | √ | √ | √ | √ |  | A site built or modular building designed for or used exclusively as one dwelling unit for permanent occupancy. Two single family dwellings sharing a common wall area, each on its own individual lot.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Temporary family health care structure | √ | √ | √ | √ |  | A transportable residential structure providing an environment facilitating a caregiver's provision of care for mentally or physically impaired person that (i) is primarily assembled at a location other than its site of installation, (ii) is limited to one occupant who shall be the mentally or physically impaired person, (iii) has no more than 300 gross square feet, (iv) complies with the applicable provisions of the Industrialized Building Safety Law and the Uniform Statewide Building Code, and (v) is not placed on a permanent foundation. For purposes of this definition "caregiver" and "mentally or physically impaired person" are as defined in § 15.2-2292.1 of the Code of Virginia. |
| Townhouse                              |   | √ | √ | √ |  | A grouping of three or more attached single family dwellings in a row in which each unit has its own front and rear access to the outside, no unit is located over another unit, and each unit is separated from any other unit by one or more common walls.                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Two family dwelling                    | √ | √ | √ | √ |  | The use of an individual lot for two dwelling units which share at least one common wall, each occupied by one family.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                                        |   |   |   |   |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

| Civic                                      |                               |    |    |    |                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|--------------------------------------------|-------------------------------|----|----|----|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Use Type                                   | Historic<br>Core<br>Buildings | T3 | T4 | T5 | Open<br>Space /<br>Natural | Definition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Administrative services                    |                               |    |    |    |                            | Governmental offices providing administrative, clerical or public contact services that deal directly with the citizen. Typical uses include federal, state, county, and city offices.                                                                                                                                                                                                                                                                                                                                                             |
| Assisted care residence                    |                               |    |    |    |                            | An establishment that provides shelter and services which may include meals, housekeeping, and personal care assistance primarily for the elderly. Residents are able to maintain a semi-independent life style, not requiring the more extensive care of a nursing home. Residents will, at a minimum, need assistance with at least one of the following: medication management, meal preparation, housekeeping, money management, or personal hygiene. At least one nurse's aid is typically on duty, with medical staff available when needed. |
| Camps                                      |                               |    |    |    | √*                         | A use which primarily provides recreational opportunities of an outdoor nature on a daily or overnight basis. Included in this use type would be scout camps, religious camps, children's camps, wilderness camps, and similar uses which are not otherwise specifically described in this chapter *Limited to special events of a temporary nature.                                                                                                                                                                                               |
| Cemetery                                   |                               |    |    |    | √*                         | Land used or dedicated to the burial of the dead, including columbariums, crematoriums, mausoleums, and necessary sales and maintenance facilities. Funeral Services use types shall be included when operated within the boundary of such cemetery. * There is small cemetery located on the edge of our pasture                                                                                                                                                                                                                                  |
| Clubs                                      | √                             |    |    | √  |                            | A use providing meeting, or social facilities for civic or social clubs, and similar organizations and associations, primarily for use by members and guests. Recreational facilities, unless otherwise specifically cited in this section, may be provided for members and guests as an accessory use. This definition shall not include fraternal or sororal organizations associated with colleges or universities. A Club does not include a building in which members reside.                                                                 |
| Community recreation                       | √                             |    |    | √  | √                          | A recreational facility for use solely by the residents and guests of a particular residential development, planned unit development, or residential neighborhood, including indoor and outdoor facilities. These facilities are usually proposed or planned in association with development and are usually located within or adjacent to such development.                                                                                                                                                                                       |
| Correction facilities                      |                               |    |    |    |                            | A public or privately operated use providing housing and care for individuals legally confined, designed to isolate those individuals from a surrounding community.                                                                                                                                                                                                                                                                                                                                                                                |
| Crisis center                              |                               |    |    |    |                            | A facility providing temporary protective sanctuary for victims of crime or abuse including emergency housing during crisis intervention for individuals, such as victims of rape, child abuse, or physical beatings.                                                                                                                                                                                                                                                                                                                              |
| Cultural services                          | √*                            |    |    | √* |                            | A library, museum, or similar public or quasi-public use displaying, preserving and exhibiting objects of community and cultural interest in one or more of the arts or sciences. **HopeTree Museum Specifically                                                                                                                                                                                                                                                                                                                                   |
| Educational facilities, college/university |                               |    |    |    |                            | An educational institution authorized by the Commonwealth of Virginia to award associate, baccalaureate or higher degrees.                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Educational facilities, primary/secondary  | √                             |    |    | √  |                            | A public, private or parochial school offering instruction at the elementary, junior and/or senior high school levels in the branches of learning and study required to be taught in the public schools of the Commonwealth of Virginia.                                                                                                                                                                                                                                                                                                           |



|                                           |   |  |  |   |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------------------------------------|---|--|--|---|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Guidance services                         | √ |  |  | √ |  | A use providing counseling, guidance, recuperative, or similar services for persons requiring rehabilitation assistance or therapy for only part of a 24 hour day. This use type shall not include facilities that dispense and/or administer controlled substances and/or pharmaceutical products for the treatment of drug addiction and substance abuse and/or mental health disorders. Non-medicinal counseling-based treatment of drug addiction and substance abuse and/or mental health disorders may be considered guidance services after review by the administrator. Facilities that do dispense and/or administer controlled substances and/or pharmaceutical products for the treatment of drug addiction and substance abuse and/or mental health disorders shall be considered an Outpatient mental health and substance abuse clinic. |
| Halfway House                             |   |  |  |   |  | An establishment providing residential accommodations, rehabilitation, counseling, and supervision to persons suffering from alcohol or drug addiction, to persons reentering society after being released from a correctional facility or other institution, or to persons suffering from similar disorders or circumstances.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Life care facility                        |   |  |  |   |  | A residential facility primarily for the continuing care of the elderly, providing for transitional housing progressing from independent living in various dwelling units, with or without kitchen facilities, and culminating in nursing home type care where all related uses are located on the same lot. Such facility may include other services integral to the personal and therapeutic care of the residents.                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Nursing home                              |   |  |  |   |  | A use providing bed care and in-patient services for persons requiring regular medical attention but excluding a facility providing surgical or emergency medical services and excluding a facility providing care for alcoholism, drug addiction, mental disease, or communicable disease. Nursing homes have doctors or licensed nurses on duty.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Park and ride facility                    |   |  |  |   |  | A publicly owned, short-term, parking facility for commuters.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Post office                               |   |  |  |   |  | Postal services directly available to the consumer operated by the United States Postal Service.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Public assembly                           |   |  |  |   |  | Facilities owned and operated by a public agency accommodating public assembly for sports, amusement, or entertainment purposes. Typical uses include auditoriums, sports stadiums, convention facilities, fairgrounds, and sales and exhibition facilities.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Public maintenance and service facilities |   |  |  |   |  | A public facility supporting maintenance, repair, vehicular or equipment servicing, material storage, and similar activities including street or sewer yards, equipment services centers, and similar uses having characteristics of commercial services or contracting or industrial activities.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Public parks and recreational areas       |   |  |  |   |  | Publicly-owned and operated parks, picnic areas, playgrounds, indoor or outdoor athletic facilities, greenways and open spaces.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Religious assembly                        | √ |  |  | √ |  | A use located in a permanent building and providing regular organized religious worship and related incidental activities, except primary or secondary schools and day care facilities.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Safety services                           |   |  |  |   |  | Facilities for the conduct of safety and emergency services for the primary benefit of the public, whether publicly or privately owned and operated, including police and fire protection services and emergency medical and ambulance services.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|                                           |   |  |  |   |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

| Office                                              |                               |    |    |    |                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-----------------------------------------------------|-------------------------------|----|----|----|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Use Type                                            | Historic<br>Core<br>Buildings | T3 | T4 | T5 | Open<br>Space /<br>Natural | Definition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Financial institutions                              | √                             |    |    | √* |                            | Provision of financial and banking services to consumers or clients. Walk-in and drive-in services to consumers are generally provided on site. Typical uses include banks, savings and loan associations, savings banks, credit unions, lending establishments and free-standing automatic teller machines. • <b>Walk-In Only</b>                                                                                                                                                                |
| General office                                      | √                             |    |    | √  |                            | Use of a site for business, professional, or administrative offices, excluding medical offices/clinic. Typical uses include real estate, insurance, management, travel, computer software or information systems research and development, or other business offices; organization and association offices; or law, architectural, engineering, accounting or other professional offices. Retail sales do not comprise more than an accessory aspect of the primary activity of a General Office. |
| Medical Office/clinic                               |                               |    |    |    |                            | A facility used for human health care of the body, such as medical, dental, therapeutic, chiropractic or similar consultation, diagnosis, and treatment by one or more practitioners licensed by the Commonwealth of Virginia. Medical offices/clinics provide outpatient care on a routine basis, and may offer minor surgical care, but do not provide overnight care or serve as a base for an ambulance service.                                                                              |
| Outpatient mental health and substance abuse clinic |                               |    |    |    |                            | An establishment which provides outpatient services primarily related to the diagnosis and treatment of mental health disorders, alcohol, or other drug or substance abuse disorders. Services include the dispensing and administering of controlled substances and pharmaceutical products by professional medical practitioners licensed by the Commonwealth of Virginia.                                                                                                                      |
| Laboratories                                        | √                             |    |    | √  |                            | Establishments primarily engaged in performing research or testing activities into technological matters. Typical uses include engineering and environmental laboratories, medical, optical, dental and forensic laboratories, x-ray services, and pharmaceutical laboratories only involved in research and development. Excluded are any laboratories which mass produce one or more products directly for the consumer market.                                                                 |
|                                                     |                               |    |    |    |                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

Commercial

| Use Type                          | Historic<br>Core<br>Buildings | T3 | T4 | T5 | Open<br>Space /<br>Natural | Definition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-----------------------------------|-------------------------------|----|----|----|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Adult business                    |                               |    |    |    |                            | Any adult bookstore, adult video store, adult model studio, adult motel, adult movie theater, adult nightclub, adult store, business providing adult entertainment, or any other establishment that regularly exploits an interest in matters relating to specified sexual activities or specified anatomical areas or regularly features live entertainment intended for the sexual stimulation or titillation of patrons, and as such terms are defined in Chapter 58 of this Code.                              |
| Agricultural services             |                               |    |    |    |                            | An establishment primarily engaged in providing services specifically for the agricultural community which is not directly associated with a farm operation. Included in this use type would be servicing of agricultural equipment, independent equipment operators, and other related agricultural services.                                                                                                                                                                                                     |
| Antique shops                     | √                             |    |    | √  |                            | A place offering primarily antiques for sale. An antique for the purposes of this chapter shall be a work of art, piece of furniture, decorative object, or the like, of or belonging to the past, at least 30 years old.                                                                                                                                                                                                                                                                                          |
| Assembly hall                     | √                             |    |    | √  |                            | A building, designed and used primarily for the meeting or assembly of a large group of people for a common purpose. Typical uses include meeting halls, union halls, bingo parlors, and catering or banquet facilities.                                                                                                                                                                                                                                                                                           |
| Athletic instruction services     | √                             |    |    | √  |                            | Establishments primarily engaged in providing indoor instruction and training in athletic sports that require high ceiling heights for the activity. Typical uses include gymnastics academies, baseball and softball training centers, tennis centers and golf centers.                                                                                                                                                                                                                                           |
| Automobile dealership, new        |                               |    |    |    |                            | The use of any building, land area or other premise for the display of new and used automobiles, trucks, vans, or motorcycles for sale or rent, including any warranty repair work and other major and minor repair service conducted as an accessory use.                                                                                                                                                                                                                                                         |
| Automobile dealership, used       |                               |    |    |    |                            | Any lot or establishment where three or more used motor vehicles, including automobiles, trucks, and motorcycles are displayed at one time for sale.                                                                                                                                                                                                                                                                                                                                                               |
| Automobile repair services, major |                               |    |    |    |                            | Repair of construction equipment, commercial trucks, agricultural implements and similar heavy equipment, including automobiles, where major engine and transmission repairs are conducted. This includes minor automobile repairs in conjunction with major automobile repairs. Typical uses include automobile and truck repair garages, transmission shops, radiator shops, body and fender shops, equipment service centers, machine shops and other similar uses where major repair activities are conducted. |
| Automobile repair services, minor |                               |    |    |    |                            | Repair of automobiles, noncommercial trucks, motorcycles, motor homes, recreational vehicles, or boats, including the sale, installation, and servicing of equipment and parts. Typical uses include tire sales and installation, wheel and brake shops, oil and lubrication services and similar repair and service activities where minor repairs and routine maintenance are conducted.                                                                                                                         |
| Automobile rental/leasing         |                               |    |    |    |                            | Rental of automobiles and light trucks and vans, includ-ing incidental parking and servicing of vehicles for rent or lease. Typical uses include auto rental agencies and taxicab dispatch areas.                                                                                                                                                                                                                                                                                                                  |
| Automobile parts/supply, retail   |                               |    |    |    |                            | Retail sales of automobile parts and accessories. Typical uses include automobile parts and supply stores which offer new and factory rebuilt parts and accessories, and include establishments which offer minor automobile repair services.                                                                                                                                                                                                                                                                      |

|                                          |    |  |  |   |    |                                                                                                                                                                                                                                                                                                                                                                                                                         |
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| Business support services                | √  |  |  | √ |    | Establishments or places of business engaged in the sale, rental or repair of office equipment, supplies and materials, or the provision of services used by office, professional and service establishments. Typical uses include office equipment and supply firms, small business machine repair shops, convenience printing and copying establishments, as well as temporary labor services.                        |
| Business or trade schools                |    |  |  |   |    | A use providing education or training in business, commerce, language, or other similar activity or occupational pursuit, and not otherwise defined as an educational facility, either primary and secondary, or college and university.                                                                                                                                                                                |
| Campgrounds                              |    |  |  |   |    | Facilities providing camping or parking areas and incidental services for travelers in recreational vehicles and/or tents.                                                                                                                                                                                                                                                                                              |
| Car wash                                 |    |  |  |   |    | Washing and cleaning of vehicles. Typical uses include automatic conveyor machines and self-service car washes.                                                                                                                                                                                                                                                                                                         |
| Commercial indoor amusement              |    |  |  |   |    | Establishments which provide multiple coin operated amusement or entertainment devices or machines as other than an incidental use of the premises. Such devices would include pinball machines, video games, and other games of skill or scoring, and would include pool and/or billiard tables, whether or not they are coin operated. Typical uses include game rooms, billiard and pool halls, and video arcades.   |
| Commercial indoor entertainment          |    |  |  |   |    | Predominantly spectator uses conducted within an enclosed building. Typical uses include motion picture theaters, and concert or music halls.                                                                                                                                                                                                                                                                           |
| Commercial indoor sports and recreation  |    |  |  |   |    | Predominantly non-instructional participant-based uses conducted within an enclosed building. Typical uses include bowling alleys, ice and roller skating rinks, indoor racquetball, swimming, and/or tennis facilities.                                                                                                                                                                                                |
| Commercial outdoor entertainment         |    |  |  |   |    | Predominantly spectator uses conducted in open or partially enclosed or screened facilities. Typical uses include sports arenas, motor vehicle or animal racing facilities, and outdoor amusement parks.                                                                                                                                                                                                                |
| Commercial outdoor sports and recreation | √* |  |  |   | √* | Predominantly participant uses conducted in open or partially enclosed or screened facilities. Typical uses include driving ranges, miniature golf, swimming pools, tennis courts, outdoor racquetball courts, motorized cart and motorcycle tracks, and motorized model airplane flying facilities. *Limited to two existing ballfields in current or future location/design.                                          |
| Communications services                  |    |  |  |   |    | Establishments primarily engaged in the provision of broadcasting and other information relay services accomplished through the use of electronic and telephonic mechanisms. Excluded from this use type are facilities classified as Utility Services - Major or Towers. Typical uses include television studios, telecommunication service centers, telegraph service offices or film and sound recording facilities. |
| Construction sales and services          |    |  |  |   |    | Establishments or places of business primarily engaged in retail or wholesale sale, from the premises, of materials used in the construction of buildings or other structures, but specifically excluding automobile or equipment supplies otherwise classified herein. Typical uses include building material stores and home supply establishments.                                                                   |
| Consumer repair services                 | √  |  |  | √ |    | Establishments primarily engaged in the provision of repair services to individuals and households, rather than businesses, but excluding automotive and equipment repair use types. Typical uses include appliance repair shops, shoe repair, watch or jewelry repair shops, or repair of musical instruments.                                                                                                         |
| Convenience store                        | √  |  |  | √ |    | Establishments primarily engaged in the provision of frequently or recurrently needed goods for household consumption, such as prepackaged food and beverages, and limited household supplies and hardware. Convenience stores shall not include fuel pumps or the selling of fuel for motor vehicles. Typical uses include neighborhood markets and country stores.                                                    |

|                            |   |  |  |   |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
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| Dance hall                 |   |  |  |   |  | Establishments in which more than ten percent of the total floor area is designed or used as a dance floor, or where an admission fee is directly collected, or some other form of compensation is obtained for dancing.                                                                                                                                                                                                                                         |
| Day care center            | √ |  |  | √ |  | Any facility operated for the purpose of providing care, protection and guidance to ten or more individuals during only part of a 24 hour day. This term includes nursery schools, preschools, day care centers for individuals, and other similar uses but excludes public and private educational facilities or any facility offering care to individuals for a full 24 hour period.                                                                           |
| Equipment sales and rental |   |  |  |   |  | Establishments primarily engaged in the sale or rental of tools, trucks, tractors, construction equipment, agricultural implements, and similar industrial equipment, and the rental of mobile homes. Included in this use type is the incidental storage, maintenance, and servicing of such equipment.                                                                                                                                                         |
| Flea market                |   |  |  |   |  | Businesses engaged in the outdoor sale of used or new items, involving regular or periodic display of merchandise for sale.                                                                                                                                                                                                                                                                                                                                      |
| Funeral services           |   |  |  |   |  | Establishments engaged in undertaking services such as preparing the dead for burial, and arranging and managing funerals. Typical uses include mortuaries and crematories.                                                                                                                                                                                                                                                                                      |
| Garden center              |   |  |  |   |  | Establishments or places of business primarily engaged in retail or wholesale (bulk) sale, from the premises, of trees, shrubs, seeds, fertilizers, pesticides, plants and plant materials primarily for agricultural, residential and commercial consumers. Such establishments typically sell products purchased from others, but may sell some material which they grow themselves. Typical uses include nurseries, plant stores and lawn and garden centers. |
| Gasoline station           |   |  |  |   |  | Any place of business with fuel pumps and gasoline storage tanks which provides fuels and oil for motor vehicles.                                                                                                                                                                                                                                                                                                                                                |
| Golf course                |   |  |  |   |  | A tract of land for playing golf, improved with tees, greens, fairways, hazards, and which may include clubhouses and shelters. Included would be executive or par 3 golf courses. Specifically excluded would be independent driving ranges and any miniature golf course.                                                                                                                                                                                      |
| Homestay inn               |   |  |  |   |  | A dwelling in which not more than five bedrooms are provided for overnight guests for compensation, on a daily or weekly basis, with or without meals. The owner or the owner's agent shall reside on the same parcel occupied by the homestay inn. A homestay inn may also be known as a bed and breakfast.                                                                                                                                                     |
| Hospital                   |   |  |  |   |  | A facility providing medical, psychiatric, or surgical service for sick or injured persons primarily on an in-patient basis and including ancillary facilities for outpatient and emergency treatment diagnostic services, training, research, administration, and services to patients, employees, or visitors.                                                                                                                                                 |
| Hotel/motel/motor lodge    | √ |  |  | √ |  | A building or group of attached or detached buildings containing lodging units intended primarily for rental or lease to transients by the day, week or month. Such uses generally provide additional services such as daily maid service, restaurants, meeting rooms and/or recreation facilities.                                                                                                                                                              |
| Kennel, commercial         |   |  |  |   |  | The boarding, breeding, raising, grooming or training of dogs, cats, or other household pets of any age not owned by the owner or occupant of the premises, and/or for commercial gain.                                                                                                                                                                                                                                                                          |
| Laundry                    |   |  |  |   |  | Establishments primarily engaged in the provision of laundering, cleaning or dyeing services other than those classified as Personal Services. Typical uses include bulk laundry and cleaning plants, diaper services, or linen supply services.                                                                                                                                                                                                                 |
| Manufactured home sales    |   |  |  |   |  | Establishments primarily engaged in the display, retail sale, rental, and minor repair of new and used manufactured homes, parts, and equipment.                                                                                                                                                                                                                                                                                                                 |



|                                        |    |  |  |    |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
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| Massage parlor                         |    |  |  |    |  | Establishments having a fixed place of business where any person other than a massage therapist, as licensed by the Virginia Board of Nursing, administers or gives any kind or character of massage, manipulation of the body or other similar procedure. Massage therapy as licensed by the Virginia Board of Nursing shall be considered a personal service. This definition shall not be construed to include a hospital, nursing home, medical clinic, or the office of a duly licensed physician, surgeon, physical therapist, chiropractor, osteopath, or a barber shop or beauty salon in which massages are administered only to the scalp, the face, the neck, or the shoulders, or an exercise club where massage is performed by a person of the same sex as the subject of the massage. |
| Microbrewery                           | √  |  |  | √  |  | An establishment engaged in the production of beer with a significant commercial component, such as a restaurant or retail store.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Microdistillery                        | √  |  |  | √  |  | An establishment engaged in the production of spirits with a significant commercial component, such as a restaurant or retail store.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Personal storage                       |    |  |  |    |  | A building designed to provide rental storage space in cubicles where each cubicle has a maximum floor area of 400 square feet. Each cubicle shall be enclosed by walls and ceiling and have a separate entrance for the loading and unloading of stored goods.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Pawn shop                              |    |  |  |    |  | A use engaged in the loaning of money on the security of property pledged in the keeping of the pawnbroker and the incidental sale of such property.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Personal improvement services          | √  |  |  | √  |  | Establishments primarily engaged in the provision of informational, instructional, personal improvements and similar services. Typical uses include driving schools, health or physical fitness centers (excluding athletic instruction services), reducing salons, dance studios, handicraft and hobby instruction.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Personal services                      | √  |  |  | √  |  | Establishments or places of business engaged in the provision of frequently or recurrently needed services of a personal nature. Typical uses include beauty and barber shops; grooming of pets; seamstresses, tailors, or shoe repairs; florists; and Laundromats and dry cleaning stations serving individuals and households.                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Recreational vehicle sales and service |    |  |  |    |  | Retail sales of recreational vehicles and boats, including service and storage of vehicles and parts and related accessories.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Restaurant*                            | √* |  |  | √* |  | An establishment engaged in the preparation and sale of food and beverages. Service to customers may be by counter or table service, or by take-out or delivery. * Walk-In Only.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Retail Sales                           | √  |  |  | √  |  | Sale or rental with incidental service of commonly used goods and merchandise for personal or household use but excludes those classified more specifically by these use type classifications.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Short-term lender                      |    |  |  |    |  | Establishments primarily engaged in short-term lending such as payday loans, car title loans, and refund anticipation loans.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Studio, fine arts                      | √  |  |  | √  |  | A building, or portion thereof, used as a place of work by a sculptor, artist, or photographer.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Truck stop                             |    |  |  |    |  | An establishment containing a mixture of uses which cater to the traveling public and in particular motor freight operators. A truck stop might include such uses as fuel pumps, restaurants, overnight accommodations, retail sales related to the motor freight industry, and similar uses.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Veterinary hospital/clinic             |    |  |  |    |  | Any establishment rendering surgical and medical treatment of animals. Boarding of animals shall only be conducted indoors, on a short term basis, and shall only be incidental to such hospital/clinic use, unless also authorized and approved as a commercial kennel.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|                                        |    |  |  |    |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

| Miscellaneous                       |                               |    |    |    |                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-------------------------------------|-------------------------------|----|----|----|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Use Type                            | Historic<br>Core<br>Buildings | T3 | T4 | T5 | Open<br>Space /<br>Natural | Definition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Amateur radio tower                 |                               |    |    |    |                            | A structure on which an antenna is installed for the purpose of transmitting and receiving amateur radio signals erected and operated by an amateur radio operator licensed by the Federal Communications Commission.                                                                                                                                                                                                                                                                                                             |
| Aviation facilities                 |                               |    |    |    |                            | Private or public land areas used or intended to be used for the take-off and landing of aircraft. Aviation facilities may include facilities for the operation, service, fueling, repair and/or storage of the aircraft.                                                                                                                                                                                                                                                                                                         |
| Mixed use                           | √                             |    |    | √  |                            | Mixed use is a single building or parcel wherein multiple uses such as residential and commercial share space.                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Outdoor gathering                   |                               |    |    |    |                            | Any temporary organized gathering expected to attract 500 or more people at one time in open spaces outside an enclosed structure. Included in this use type would be music festivals, church revivals, carnivals and fairs, and similar transient amusement and recreational activities not otherwise listed in this section. Such activities held on publicly owned land shall not be included within this use type.                                                                                                            |
| Parking facility, surface/structure |                               |    |    |    |                            | Use of a site for surface parking or a parking structure unrelated to a specific use which provides one or more parking spaces together with driveways, aisles, turning and maneuvering areas, incorporated landscaped areas, and similar features meeting the requirements established by this chapter. This use type shall not include parking facilities accessory to a permitted principal use.                                                                                                                               |
| Shooting range, outdoor             |                               |    |    |    |                            | The use of land for archery and the discharging of firearms for the purposes of target practice, skeet and trap shooting, mock war games, or temporary competitions, such as a turkey shoot. Excluded from this use type shall be general hunting, and the unstructured and nonrecurring discharging of firearms on private property with the property owner's permission if in compliance with the Code of the City of Salem.                                                                                                    |
| Tower                               |                               |    |    |    |                            | Any structure that is designed and constructed primarily for the purpose of supporting one or more antennas. The term includes but need not be limited to radio and television transmission towers, microwave towers, common-carrier towers, and cellular telephone and wireless communication towers. Tower types include, but are not limited to monopoles, lattice towers, wooden poles, and guyed towers. Excluded from this definition are amateur radio towers, which are otherwise defined.                                |
| Utility services, minor             | √                             | √  | √  | √  | √                          | Services which are necessary to support existing and future development within the immediate vicinity and involve only minor structures. Including in this use type are distribution lines and small facilities that are underground or overhead, such as transformers, relay and booster devices, and well, water and sewer pump stations. Also included are all major utility services owned and/or operated by the City of Salem, or any major utility services which were in existence prior to the adoption of this chapter. |
| Utility services, major             |                               |    |    |    |                            | Services of a regional nature which normally entail the construction of new buildings or structures such as generating plants and sources, electrical switching facilities and stations or substations, water towers and tanks, community waste water treatment plants, and similar facilities. Included in this definition are also electric, gas, and other utility transmission lines of a regional nature which are not otherwise reviewed and approved by the Virginia State Corporation Commission.                         |
|                                     |                               |    |    |    |                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

**Sec. 106-228. - Planned Unit district.**

**Sec. 106-228.1. - Statement of intent.**

- (A) *The intent of the Planned Unit District (PUD) is to encourage maximum flexibility in the design and development of land. PUD developments facilitate the adequate and economical provision of streets, utilities and other improvements, and allow for the management of the natural and scenic qualities of vacant land that is proposed for development. The PUD district allows a variety of housing options, as well as commercial, civic and office use types of a number and scale sufficient to serve the needs of the PUD residents.*

*(Ord. of 3-14-05(2))*

**Sec. 106-228.2. - Permitted uses.**

- (A) *Applications for planned unit districts may propose any residential, civic, and/or commercial use type as part of a planned unit district. All land uses proposed shall be shown on the preliminary and final master plans. as required by this chapter.*
- (B) *All use types proposed shall be reviewed by the Commission and Council pursuant to the provisions of this chapter. No use type may be allowed within the planned unit district unless approved by Council as part of the final master plan.*

*(Ord. of 3-14-05(2))*

**Sec. 106-228.3. - Development regulations.**

- (A) *Each planned unit development shall be subject to the following development standards.*
1. *Maximum gross density: Maximum gross density allowable in the planned unit district shall be established by Council by approval of the final master plan.*
  2. *Minimum common open space and/or recreational areas: 15 percent of the gross area of the planned unit district.*
  3. *Criteria for all required open space:*
    - a. *Minimum countable open space: 5,000 contiguous square feet*
    - b. *Minimum horizontal dimension: 50 feet, except that areas with a horizontal distance of not less than 20 feet shall be counted as open space provided such areas contain facilities such as, but not limited to, bikeways, exercise trails, tot lots, gazebos, picnic tables, etc.*
    - c. *Common open space shall not include proposed street rights-of-way, open parking areas, or driveways.*
    - d. *All common open space and/or recreational areas shall be of an appropriate nature and location to serve the residents of the planned unit district.*
  4. *The maximum area devoted to civic, office and commercial use types shall be established by Council by approval of the final master plan.*
    - a. *Commercial and office uses types shall be located, and shall be of a scale and location suitable to serve the needs of the residents of the planned unit district convenience.*
    - b. *Commercial, office, and civic use types shall be screened and landscaped so as to be compatible with adjoining residences.*
    - c. *Construction of commercial, office and civic use types shall not begin until 20 percent of the residential units of the total planned unit district have been completed.*
  5. *Minimum setback requirements shall be specifically established during the review and approval of the preliminary and final master plans. The following guidelines shall be used in establishing the building spacing and setbacks:*
    - a. *Building spacing shall provide privacy within each dwelling unit;*
    - b. *Building spacing shall ensure that each room has adequate light and air;*
    - c. *Areas between buildings used as service yards, storage of trash, or other utilitarian purposes should be designed so as to be compatible with adjoining dwellings;*
    - d. *Building spacing and design shall provide privacy for outdoor activity areas (patios, decks, etc.) associated with individual dwelling units.*
  6. *Streets in the planned unit district may be public in accordance with VDOT and city standards or may be private. In reviewing the planned unit development preliminary master plan, the commission may recommend, and the Council may approve, one or more private streets within the proposed district*

**Not Applicable for existing buildings.**



**Not Applicable due to campus arrangements of multiple buildings.**



*(Ord. of 3-14-05(2))*



**Sec. 106-228.4. - Application process.**

- (A) *Prior to submitting a formal application for review and approval under these provisions, the applicant shall meet with city staff to discuss the requirements of the planned unit district. The purpose of the meeting is to obtain a mutual understanding of the application requirements and process. The applicant is encouraged to submit information on the scope and nature of the proposal to allow staff to become familiar with the proposal in advance of this meeting.*
- (B) *Any application to rezone land to the PUD designation, shall constitute an amendment to the zoning ordinance. The written and graphic information submitted by the applicant as part of the application process shall constitute conditional zoning proffers. Once the Council has approved the final master plan, all accepted proffers shall constitute conditions pursuant to the provisions of this chapter.*
- (C) *To initiate an amendment, the applicant shall complete a rezoning application. This information shall be accompanied by graphic and written information, which shall constitute a preliminary master plan. All information submitted shall be of sufficient clarity and scale to clearly and accurately identify the location, nature, and character of the proposed district. At a minimum this information shall include:*
  - 1. *A legal description and plat showing the site boundaries, and existing street lines, lot lines, and easements.*
  - 2. *Existing zoning, land use and ownership of each parcel proposed for the district.*
  - 3. *A general statement of planning objectives to be achieved by the PUD district, including a description of the character of the proposed development, the existing and proposed ownership of the site, the market for which the development is oriented, and objectives towards any specific manmade and natural characteristics located on the site.*
  - 4. *A description and analysis of existing site conditions, including information on topography, natural water courses, floodplains, unique natural features, tree cover areas, etc.*
  - 5. *A land use plan designating specific use types for the site, both residential and non-residential use types, and establishing site development regulations, including setback, height, building coverage, lot coverage, and density requirements.*
  - 6. *A circulation plan, including location of existing and proposed vehicular, pedestrian, bicycle, and other circulation facilities and location and general design of parking and loading facilities. General information on the trip generation, ownership and maintenance and proposed construction standards for these facilities should be included. A traffic impact analysis may be required by the administrator.*
  - 7. *A public services and utilities plan providing requirements for and provision of all utilities, sewers, and other facilities to serve the site.*
  - 8. *An open space plan, including areas proposed for passive and active recreational uses, natural and undisturbed areas, and proposed buffer areas proposed around the perimeter of the site. Information on the specific design and location of these areas and their ownership and maintenance should be included.*
  - 9. *Generalized statements pertaining to any architectural and community design guidelines shall be submitted in sufficient detail to provide information on building designs, orientations, styles, lighting plans, etc.*
  - 10. *A development schedule indicating the location, extent and sequence of proposed development. Specific information on development of the open space, recreational areas, and non-residential uses should be included.*
- (D) *The completed rezoning application and supporting preliminary master plan materials shall be submitted to the planning commission for review and analysis. The commission shall review this information and make a report of its findings to the Council. The commission shall as part of its review hold a public hearing pursuant to § 15.2-2204 of the Code of Virginia, as amended.*
- (E) *The commission shall make a report of its findings to the Council within 90 days of the receipt of the materials, unless the applicant requests, or agrees to an extension of this time frame. The commission's report shall recommend approval, approval with modifications, or disapproval of the preliminary master plan. Failure of the commission to make a report of its findings to the Council within this period shall constitute a commission recommendation of approval.*
- (F) *If the commission recommends denial of the preliminary master plan, or approval with modification, the applicant shall, if requested, have 60 days to make any modifications. If the applicant desires to make any modifications to the preliminary master plan, the council's review and action shall be delayed until such changes are made and submitted for review.*
- (G) *The Council shall review the preliminary master plan, and act to approve or deny the plan within 90 days. Approval of the preliminary master plan shall constitute acceptance of the plan's provisions and concepts as proffers pursuant to the provisions of this chapter. The plan approved by the Council shall constitute the final master plan for the PUD.*

(Ord. of 3-14-05(2))



**Sec. 106-228.5. - Revisions to final master plan.**

- (A) Major revisions to the final master plan shall be reviewed and approved following the procedures and requirements for zoning map amendments contained in [section 106-520](#) of this chapter. Major revisions include, but are not limited to changes such as:
  - 1. Any increase in the density of the development;
  - 2. Substantial change in circulation or access;
  - 3. Substantial change in the mixture of dwelling unit types included in the project;
  - 4. Substantial changes in the mixture of land uses or an increase in the amount of land devoted to non-residential purposes;
  - 5. Reduction in the approved open space, landscaping or buffering;
  - 6. Substantial change in architectural or site design features of the development;
  - 7. Any other change that the administrator finds is a major divergence from the approved final master plan
- (B) All other changes in the final master plan shall be considered minor amendments. The administrator, upon receipt of a written request of the owner, may approve such minor amendments.
  - 1. A request which is disapproved by the administrator shall be considered a major amendment and shall be subject to the approval process outlined above for such amendments.

**Sec. 106-228.6. - Approval of preliminary and final site development plans.**

- (A) Following the approval of the final master plan, the applicant or its authorized agent, shall be required to submit preliminary and final site plans for approval.
- (B) It is the intent of this section that subdivision review under the subdivision regulations be carried out simultaneously with the review of a PUD under this section. The plans required under this section shall be submitted in a form which will satisfy the requirements of the subdivision regulations, as determined by the administrator.
- (C) Preliminary and final site plans submitted for review shall in compliance with the final master plan approved by the Council. The city shall review and approve or disapprove any final site plan within 60 days of its submittal.
- (D) No PUD shall be approved and no work shall be authorized on construction until all property included in the Final Master Plan is in common ownership.

(Ord. of 3-14-05(2))

**Sec. 106-228.6. - Approval of preliminary and final site development plans.**

- (A) Following the approval of the final master plan, the applicant or its authorized agent, shall be required to submit preliminary and final site plans for approval.
- (B) It is the intent of this section that subdivision review under the subdivision regulations be carried out simultaneously with the review of a PUD under this section. The plans required under this section shall be submitted in a form which will satisfy the requirements of the subdivision regulations, as determined by the administrator.
- (C) Preliminary and final site plans submitted for review shall in compliance with the final master plan approved by the Council. The city shall review and approve or disapprove any final site plan within 60 days of its submittal.
- (D) No PUD shall be approved and no work shall be authorized on construction until all property included in the Final Master Plan is in common ownership.

2024-03-14 10:00:00 AM



# HOPETREE

## SALEM, VIRGINIA

### PUD REZONING APPLICATION



## AFFIDAVIT OF PUBLICATION

State of Pennsylvania, County of Lancaster, ss:

Rachel Cozart, being first duly sworn, deposes and says: That (s)he is a duly authorized signatory of Column Software, PBC, duly authorized agent of The Roanoke Times, a newspaper printed and published in the City of Roanoke, County of Roanoke, State of Virginia, and that this affidavit is Page 1 of 2 with the full text of the sworn-to notice set forth on the pages that follow, and the hereto attached:

### **PUBLICATION DATES:**

Nov. 1, 2024, Nov. 4, 2024

**NOTICE ID:** wQ7jDBjOnRYQTp3rsrBU

**PUBLISHER ID:** COL-1000915

**NOTICE NAME:** NOTICE OF PUBLIC HEARING

**Publication Fee:** 1684.13

**Ad Size:** 2 X 78 L

**Category:** General Legal Notice

Under penalty of perjury, I, the undersigned affiant swear or affirm that the statements above are true and accurate to the best of my knowledge and belief.

*Rachel Cozart*

(Signed) \_\_\_\_\_

### **VERIFICATION**

State of Pennsylvania  
County of Lancaster

Commonwealth of Pennsylvania - Notary Seal  
Nicole Burkholder, Notary Public  
Lancaster County  
My commission expires March 30, 2027  
Commission Number 1342120

Subscribed in my presence and sworn to before me on this: 11/06/2024

*Nicole Burkholder*

Notary Public

Notarized remotely online using communication technology via Proof.

## NOTICE OF PUBLIC HEARING

### PLANNING COMMISSION OF THE CITY OF SALEM AND COUNCIL OF THE CITY OF SALEM

Notice is hereby given to all interested persons that the Planning Commission of the City of Salem, Virginia, and the Council of the City of Salem, Virginia, pursuant to Section 15.2-2204, Code of Virginia (1950), as amended, will hold a joint public hearing at a special meeting on November 13, 2024, at 7:00 p.m., in the Community Room, Salem Civic Center, 1001 Roanoke Boulevard, in the City of Salem, Virginia 24153, at which time citizens shall have the opportunity to be heard pursuant to Section 15.2-2285, Code of Virginia (1950), as amended and, the CODE OF THE CITY OF SALEM, VIRGINIA with respect to the following Rezoning Application:

1. Consider the request of Jason N. and Jennifer C. Fountain, property owners, for the issuance of a Special Exception Permit to allow an accessory apartment on the property located at 621 North Broad Street, (Tax Map # 70-2-1).
2. Consider the request of Virginia Baptist Children's Home and Family Services d/b/a HopeTree Family Services (Salem CI) f/k/a The Virginia Baptist Children's Home f/k/a Baptist Orphanage of Virginia, property owner, for rezoning the properties located at the 1000 block of Red Lane and a portion of 860 Mount Vernon Lane, Salem, Virginia 24153 (Tax Map Nos. 41-1-1, 41-1-2, 41-1-3, 41-1-4, 41-1-5, 41-1-6, and a portion of 44-3-10) from RSF Residential Single Family to PUD Planned Unit District.

#### Description of the Rezoning Application

- a. The owner of the property that is the subject of the Rezoning Application is: Virginia Baptist Children's Home and Family Services d/b/a HopeTree Family Services (Salem CI) f/k/a The Virginia Baptist Children's Home f/k/a Baptist Orphanage of Virginia.
- b. The property includes 62.318 acres; Tax Map Numbers: 41-1-1, 41-1-2, 41-1-3, 41-1-4, 41-1-5, 41-1-6 and a portion of 44-3-10. The street address of the property is: 1000 block of Red Lane and a portion of 860 Mount Vernon Lane, Salem, Virginia 24153.
- c. The Rezoning Application is substantially similar to the Rezoning Application filed on December 1, 2023, and approved by City Council on June 24, 2024.
- d. The Rezoning Application requests that the City of Salem ordain, reordain, amend, reamend, adopt and/or readopt the rezoning of the property from Residential Single Family (RSF) to Planned Unit District (PUD) as described in the Rezoning Application.
- e. The Rezoning Application provides for:
  1. The maximum number of residential units is 340.
  2. The maximum number of hotel rooms is 34.
  3. The maximum total square footage of retail and restaurant uses is 15,000 square feet.
  4. The maximum total square footage of office and other commercial uses (not including hotel and restaurant uses) is 35,000 square feet.
  5. The total unadjusted traffic generation for new uses on the site shall not exceed 4,037 trips per day.
  6. Significant open space areas retained on the property.

#### Notice of Intent

The Planning Commission gives notice of its intent to consider the applications and make recommendations to the City Council on November 13, 2024.

The City Council gives notice of its intent to consider the Rezoning Application on first reading and the Special Exception Permit on November 25, 2024, and consider the Rezoning Application on second reading and for adoption on December 9, 2024.

#### Documents Available for Examination

Copies of the applications and the proposed plans, ordinances, or amendments may be examined in the Office of Community Development, 21 South Bruffey Street, Salem, Virginia 24153.

PLANNING COMMISSION OF THE CITY OF SALEM AND  
THE COUNCIL OF THE CITY OF SALEM, VIRGINIA

BY:  
Christopher J. Dorsey  
Executive Secretary

BY:  
Robert Light  
Clerk of Council  
COL-1000915

**AFFADAVIT OF MAILING PURSUANT TO S15.2-2204  
CODE OF VIRGINIA**

**PLANNING COMMISSION  
NOVEMBER 13, 2024**

**ITEM #**

This is to certify that I mailed letters in reference to the rezoning request of Virginia Baptist Children's Home (dba HopeTree Family Services), property owner for rezoning the properties located at 1000 blk Red Ln and a portion of 860 Mount Vernon Lane (Tax Map #'s 41-1-1, 41-1-2, 41-1-3, 41-1-4, 41-1-5, 41-1-6, and a portion of 44-3-10), from RSF Residential Single Family to PUD Planned Unit District, to the following property owners and adjacent property owners on November 4, 2024, in the 2:00 p.m. mail:

MATTHEW H GREGORY  
10 W CARROLLTON AVE  
SALEM VA 24153

LETHA ELLA EARLY HOLMES – EST  
410 VANDERWALL  
PEACHTREE CITY GA 30269

VA BAPTIST CHILDRENS HOM  
PO BOX 849  
SALEM VA 24153-0849

LUKE E FELL  
ALLYSON R BRIMER  
1002 RED LN  
SALEM VA 24153

CHRISTOPHER M KING  
VIRGINIA KING  
1006 STONEGATE DR  
SALEM VA 24153

RICHARD M SNOW  
1009 STONEGATE DR  
SALEM VA 24153

JASON R LOVING  
TRACY L LOVING  
1010 STONEGATE DR  
SALEM VA 24153

LLOYD H ESTILL  
1015 STONEGATE DR  
SALEM VA 24153

ROBERT A CRAIGHEAD – EST  
1617 STRAWBERRY MTN DR  
ROANOKE VA 24018

JAMES HENRY COPLAND  
BRENDA SUE COPLAND  
102 NORTH OAKS DR  
SALEM VA 24153

BARBARA WERTZ WILLIAMS  
1020 STONEGATE DR  
SALEM VA 24153

JAMES EDWARD HARRISON  
TRACEY LEA HARRISON  
1024 STONEGATE DR  
SALEM VA 24153

RICK SURRATT  
103 NORTH OAKS DR  
SALEM VA 24153

OTIS KENNY  
BARBARA KENNY  
104 NORTH OAKS DR  
SALEM VA 24153

OLDE SALEM CONTRACTING  
PO BOX 2492  
SALEM VA 24153

WESLEY BRUSSEAU  
107 BARTLEY DR  
SALEM VA 24153

KEVIN J PERRY  
WENDY L PERRY  
108 BARTLEY DR  
SALEM VA 24153

KATHERINE GUIDRY HUTCHIS  
RICHARD RYAN HUTCHISON  
108 NORTH OAKS DR  
SALEM VA 24153

LARRY C BARKER  
CHRISTINE C BARKER  
8062 WINDWARD KEY DR  
CHESAPEAKE BEACH MD 20732

FELLOWSHIP COMMUNITY CHURCH  
HOLDINGS LLC  
PO BOX 2143  
SALEM VA 24153

MICHAEL M AKERS  
VICKI L AKERS  
1343 WALDHEIM RD  
SALEM VA 24153

ELIZABETH A HALL  
1814 BELLEVILLE RD SW  
ROANOKE VA 24015-2708

JAMES R WEEKS JR  
5938 VIEWPOINT AVE  
SALEM VA 24153

JASON R PICARD  
STEPHANIE PICARD  
18 E CARROLLTON AVE  
SALEM VA 24153

BRIAN J CORBETT  
18 W CARROLLTON AVE  
SALEM VA 24153

MARK QUINN STEEN  
ANNA TRIVETTE STEEN  
19 CORBETT ST  
SALEM VA 24153

STEVEN M HUGHES  
19 W CARROLLTON AVE  
SALEM VA 24153

RICHARD STEEN, TRST  
ELBERT R STEEN (EST) IRREV  
34 CORBETT ST  
SALEM VA 24153

STEPHEN P JANOSCHKA  
MACEL H JANOSCHKA  
200 BENTWOOD CT  
SALEM VA 24153

VALUE HOUSING PARTNERS  
5211 S CONCOURSE DR  
ROANOKE VA 24019

MARY FRANCES LESTER  
LIFE ESTATE  
204 BENTWOOD CT  
SALEM VA 24153

PATRICK A HERNDON  
EMILY Z HERNDON  
206 BENTWOOD CT  
SALEM VA 24153

RAYMOND J COWLING III  
208 BENTWOOD CT  
SALEM VA 24153

STUART W STOVALL  
209 BENTWOOD CT  
SALEM VA 24153

ROBERT B PEASLEE  
210 BENTWOOD CT  
SALEM VA 24153

MARC CHARLES HINRICHS  
SANDRA JO HINRICHS  
211 BENTWOOD CT  
SALEM VA 24153

WILLIAM B STADER  
APRIL L SECRIST  
217 BENTWOOD CT  
SALEM VA 24153

BRENDA L MONNETT  
26 CORBETT ST  
SALEM VA 24153

ROBERT C CRAWFORD III  
29 CORBETT ST  
SALEM VA 24153

LAURA W MORRIS  
30 CORBETT ST  
SALEM VA 24153

RICHARD D STEEN  
34 CORBETT ST  
SALEM VA 24153

JACQUELINE B RICHARDS  
REVOCABLE TRUST  
35 CORBETT ST  
SALEM VA 24153

ROCCO RIGANTI  
38 CORBETT ST  
SALEM VA 24153-2629

TIMMY D BARTON  
ANITA B BARTON  
40 CORBETT ST  
SALEM VA 24153

MATTHEW P WHEELING  
701 MT VERNON AVE  
SALEM VA 24153

JULIE KRISTINE PFEIFFER  
702 MT VERNON AVE  
SALEM VA 24153

NANCY ELLEN UTZ  
LIVING TRUST  
706 N BROAD ST  
SALEM VA 24153

MARVIN L PEDIGO  
1901 MAIN ST SW  
ROANOKE VA 24015-3019

ALLEN WAYNE TAYLOR  
707 RED LN  
SALEM VA 24153

RENITA ANNE JOHNSON  
709 MT VERNON AVE  
SALEM VA 24153

MICHAEL F COX  
710 MT VERNON AVE  
SALEM VA 24153

MICHAEL HAKKENBERG  
DAWN HAKKENBERG  
710 N BROAD ST  
SALEM VA 24153

TWO LANE HOLDINGS LLC  
409 N BROAD ST  
SALEM VA 24153

STEPHEN COFFMAN  
BONNIE MOULSE COFFMAN  
320 W MAIN ST UNIT 74  
SALEM VA 24153



MICHAEL E HALL REV DEC  
SUSAN E HALL REV DEC  
1383 WALDHEIM RD  
SALEM VA 24153

BRYAN K WARRINER  
MARY G WARRINER  
717 N BROAD ST  
SALEM VA 24153

MADELAINE ROSE SHREEMA  
718 N BROAD ST  
SALEM VA 24153

ROBERT L MAY  
718 RED LN  
SALEM VA 24153-0553

CARLOS B HART JR  
REVOCABLE TRUST  
720 MT VERNON AVE  
SALEM VA 24153

KARLA MURPHY  
721 MT VERNON AVE  
SALEM VA 24153

DAVID A WOHLFORD  
WHITNEY S WHOLFORD  
721 RED LN  
SALEM VA 24153

MICHAEL MCGEEVER  
MARGARET MCGEEVER  
800 RED LN  
SALEM VA 24153

GEORGE M HENRY  
PAULA J HENRY  
801 N BROAD ST  
SALEM VA 24153

ANDREW S GOLDSTEIN  
ADRIENNE G BLOSS  
801 RED LN  
SALEM VA 24153

LEON K GLASBY  
DEBORAH R GLASBY  
803 RED LN  
SALEM VA 24153

DONNA L MUSGRAVE  
805 HONEYSUCKLE RD  
SALEM VA 24153

DUFFY LIVING TRUST  
409 STONEWALL CIR  
SALEM VA 24153

MICHAEL N GETSI  
806 SCOTT CIR  
SALEM VA 24153

SETH R CHAMBERLAND  
808 RED LN  
SALEM VA 24153

CHRISTOPHER S YEAKEL  
MARY CATHERINE YEAKEL  
808 SCOTT CIR  
SALEM VA 24153

MELVIN LEE HARRIS  
JENNIFER HARRIS  
809 N BROAD ST  
SALEM VA 24153

MICHAEL D EVANS  
LISA DAWN EVANS  
809 SCOTT CIR  
SALEM VA 24153

JOSHUA D YERTON  
JENNIFER YERTON  
810 SCOTT CIR  
SALEM VA 24153

JOHN A FELDENZER  
KAREN C FELDENZER  
811 SCOTT CIR  
SALEM VA 24153

RICHARD H POLLARD  
812 SCOTT CIR  
SALEM VA 24153

GARY EDWARDS  
NANCY EDWARDS  
814 SCOTT CIR  
SALEM VA 24153

BRUCE P MILLIGAN  
ROSETTA L MILLIGAN  
815 N BROAD ST  
SALEM VA 24153

TRACEY L DEMPSEY  
JACOB A DEMPSEY  
818 RED LN  
SALEM VA 24153

ROBERT KENNETH ENGLAND II  
819 HONEYSUCKLE RD  
SALEM VA 24153

FRED A MUSNUG  
819 N BROAD ST  
SALEM VA 24153

DAVID B HILL  
819 N BROAD ST  
SALEM VA 24153

STEVEN TUELL  
JESSICA NEIGHBORS  
821 RED LN  
SALEM VA 24153

JAMES L GRESHAM  
JUDY S GRESHAM  
433 DEER RUN CIR  
SALEM VA 24153

RICHARD S BELOUS  
826 RED LN  
SALEM VA 24153

SAMUEL J WILLIAMS  
ELIZABETH WILLIAMS  
834 RED LN  
SALEM VA 24153

KEVIN L FLETCHER  
MELISSA H FLETCHER  
836 ACADEMY ST  
SALEM VA 24153

KEY POINT PROPERTIES LLC  
4709 BELFORD ST SW  
ROANOKE VA 24018

CASEY WALLACE WRIGHT  
AMANDA GURLEY WRIGHT  
842 ACADEMY ST  
SALEM VA 24153

BOBBY HAROLD BRANSON  
PO BOX 976  
SALEM VA 24153

NATHAN W WALLACE  
JESSICA E WALLACE  
851 HONEYSUCKLE RD  
SALEM VA 24153

THE BLISS PROPERTY TRUST  
8960 RIDGEMONT DR  
SANDY SPRINGS GA 30350

LETHA ELLA EARLY HOLMES  
ESTATE  
410 VANDERWALL  
PEACHTREE CITY GA 30269

ALMA HOLMES EDWARDS  
410 VANDERWALL  
PEACHTREE CITY GA 30269

LIONEL L ETHERIDGE  
KATHLEEN B ETHERIDGE  
956 STONEGATE DR  
SALEM VA 24153

SUSAN T CRAFT  
132 W CARROLLTON AVE  
SALEM VA 24153

MITCHELL D KERR  
904 RED LN  
SALEM VA 24153

TERESA MILBRODT  
TRISTAN PALMGREN  
910 RED LN  
SALEM VA 24153

ADVANTAGE BUILDERS LLC  
1618 CASCADE COURT  
SALEM VA 24153

MICHAEL BROWN KUMMER  
916 RED LN  
SALEM VA 24153

DAVID AND RICHIA GREGSTON  
REVOCABLE TRUST  
916 SADDLE DR  
SALEM VA 24153

KEVIN WARREN BAKER  
917 SADDLE DR  
SALEM VA 24153

TERENCE H CROWGEY  
MAEVE N CROWGEY  
920 SADDLE DR  
SALEM VA 24153

DANIEL R RYAN  
921 SADDLE DR  
SALEM VA 24153

RONALD E HUNT  
JOYCE ANN HUNT  
922 RED LN  
SALEM VA 24153

TERRY LANGFITT JR  
ASHLEIGH LANGFITT  
923 SADDLE DR  
SALEM VA 24153

ESTHER S VAUGHAN TRUSTEE  
VAUGHAN LIVING TRUST  
924 SADDLE DR  
SALEM VA 24153

NANCY F REYNOLDS  
925 SADDLE DR  
SALEM VA 24153

PAUL R DOTSON  
CAROL W DOTSON  
927 SADDLE DR  
SALEM VA 24153

ALEXANDER J SAKALAS  
928 RED LN  
SALEM VA 24153

DARLENE C WILEY  
928 SADDLE DR  
SALEM VA 24153

JOHN P R SHANER  
KELLY T SHANER  
929 SADDLE DR  
SALEM VA 24153

DAVID LOWE  
DEBORAH LOWE  
106 ROSELAND DR  
CHRISTIANSBURG VA 24073

ROBERT C SMITH III  
KRISTEN KAY SMITH  
931 SADDLE DR  
SALEM VA 24153

JONATHAN C OWEN  
LESLEY OWEN  
227 TAYLOR AVE  
SALEM VA 24153

VICTOR B DELAPP  
932 SADDLE DR  
SALEM VA 24153

MARY FRANCES BOWEN  
IRREVOCALBE TRUST  
5406 SNOW OWL DR  
ROANOKE VA 24018-0000

ADAM THOMAS ST PIERRE  
KAYLA DANIELLE BROWN  
936 RED LN  
SALEM VA 24153

FRANK W PRUSA JR  
MELINDA A PRUSA  
942 RED LN  
SALEM VA 24153

THOMAS J MARTIN  
PO BOX 628  
SALEM VA 24153-0628

DONALD S TUCK  
946 RED LN  
SALEM VA 24153

VALUE HOUSING PARTNERS LLC  
5211 SOUTH CONCOURSE DR  
ROANOKE VA 24019

HOLLIE YOUNG  
955 STONEGATE DR  
SALEM VA 24153

LIONEL L ETHERIDGE  
956 STONEGATE DR  
SALEM VA 24153

DEITRA D BAILEY  
958 RED LN  
SALEM VA 24153

CARL J LOWE  
971 STONEGATE DR  
SALEM VA 24153

GARY E SIMMONS  
ROMA A SIMMONS  
972 STONEGATE DR  
SALEM VA 24153

REGINALD ALAN LONG  
BETTY LONG  
338 WARWICK AVE  
SOUTH ORANGE NJ 07079

JEAN O WHEELING  
REV DEC OF TRUST  
987 STONEGATE DR  
SALEM VA 24153

DEBORAH B MINUCIE  
1914 OLD MILL DR  
SALEM VA 24153

MICHAEL S HAAS  
COLLEEN A HAAS  
996 STONEGATE DR  
SALEM VA 24153

ROANOKE COUNTY VA  
DEPT OF PLANNING  
REBECCA JAMES ZONING ADM  
5204 BERNARD DR 2<sup>ND</sup> FLOOR  
ROANOKE VA 24018

NORTH OAKS MASTER ASSO  
P O BOX 665  
VINTON VA 24179

EMERALD HILLS SEC 3  
HOMEOWNERS ASSOCIATION LLC  
P O BOX 1441  
SALEM VA 24153

MR JON MORRIS  
C/O HOPETREE FAMILY SERVICES  
860 MOUNT VERNON LANE  
SALEM VA 24153

Signed Ronetta R. Prillaman Date November 4, 2024

City of Salem  
Commonwealth of Virginia

The foregoing instrument was acknowledged before me this 4<sup>th</sup> day of November, 2024, by

Ronetta R. Prillaman  
Tammy R. Dunn  
Notary Public  
My commission expires: October 31, 2028

