



**The Town Of Clayton
Town Council Work Session Meeting Agenda
Tuesday, January 17, 2017 @ 6:30 PM
Council Chambers**

1. CALL TO ORDER

Pledge of Allegiance and Invocation

2. ADJUSTMENT OF THE AGENDA

3. CONSENT AGENDA

(Items on the consent agenda are considered routine in nature or have been thoroughly discussed at previous meetings. Any member of the Council may request to have an item removed from the consent agenda for further discussion.)

- a. Recommendation of Bob Satterfield for Appointment to Johnston County Economic Development Board
- b. Certificate of Sufficiency of Gordon Tract Annexation - 2016-223-ANX
[Certificate of Sufficiency - 2016-223-ANX Gordon](#)

POTENTIAL ACTION: Approval of Consent Agenda as Presented

4. ADMINISTRATIVE ITEMS

- a. Warranty Acceptance - Public Utilities/Pertinent Easements
 - AS & PC Medical Site @ Spring Branch[Warranty Acceptance Memo - AS & PC Medical Site Spring Branch](#)

POTENTIAL ACTION: Place on February 6, 2017 Consent Agenda

5. INTRODUCTIONS AND SPECIAL PRESENTATIONS

- a. New Employee Introductions:
 - Presenter:* Larry Bailey, Parks & Recreation Director
 - Stephen Browne, Parks Maintenance
 - Presenter:* James Warren, Wastewater Treatment Plant Superintendent
 - Kenneth Straub, Wastewater Plant Operator
 - Presenter:* Paul Vladyka, Fleet Service Supervisor
 - Steve Hoag, Vehicle Maintenance Technician
- b. Clayton Community Center Garden

Presenter: Stacy Beard, Public Information Officer
[Cover - Community Garden](#)

- c. Audit Report
Presenter: Ken Anderson, CPA
[Audit Information and Comments](#)

6. ITEMS SCHEDULED FOR THE REGULAR MEETING

- a. 2017-2018 Budget - Public Input
Presenter: Adam Lindsay, Town Manager
[Advertisement - Budget Public Input February 6, 2017](#)

POTENTIAL ACTION: Set Public Hearing for February 6, 2017

- b. Petition for Annexation - Gordon Properties - 2016-223-ANX
Presenter: David DeYoung, Planning Director
[Cover - 2016-223-ANX](#)
[Petition \(LLC\) 2016-223-ANX](#)
[Petition \(Partnership \) 2016-223-ANX](#)
[Map - Aerial - 2016-223-ANX](#)
[Map - NO Aerial - 2016-223-ANX](#)
[Legal Description - 2016-223-ANX](#)
[Plat - 2016-223-ANX](#)
[Public Notice - 2016-223-ANX](#)
[Resolution - Setting Date of Public Hearing 2016-223-ANX](#)

POTENTIAL ACTION: Set Public Hearing for February 6, 2017

- c. Special Use Permit - IGT Technology - 2016-227-SUP
Presenter: Planning Department
[Cover - SUP - IGT Technology - 2016-227-SUP](#)
[Application - 2016-227-SUP](#)
[Staff Report - 2016-227-SUP](#)
[Map- 2016-227-SUP](#)
[Site Plan - 2016-227-SUP](#)
[Revised Explanation of Project - 2016-227-SUP](#)
[Neighborhood Meeting Minutes - 2016-227-SUP](#)
[PB Recommendation - 2016-227-SUP](#)
[Public Notice - 2016-227-SUP](#)

POTENTIAL ACTION: Set Public Hearing for February 6, 2017

- d. Rezoning - The Village at Little Creek - 2016-172-RZ
Presenter: Planning Department
[Cover - Rezoning - The Village at Little Creek - 2016-172-RZ](#)
[Application - The Village at Little Creek - 2016-172-RZ](#)

[Staff Report - The Village at Little Creek - 2016-172-RZ](#)
[Map - The Village at Little Creek - 2016-172-RZ](#)
[Neighborhood Meeting - The Village at Little Creek - 2016-172-RZ](#)
[Public Notice - The Village at Little Creek - 2016-172-RZ](#)

POTENTIAL ACTION: Set Public Hearing for February 6, 2017

- e. Major Subdivision - The Village at Little Creek - 2016-173-SD
Presenter: Planning Department
[Cover - Major Subdivision - The Village at Little Creek - 2016-173-SD](#)
[Application - The Village at Little Creek - 2016-173-SD](#)
[Staff Report - The Village at Little Creek - 2016-173-SD](#)
[Staff Report Map- The Village at Little Creek - 2016-173-SD](#)
[Site Plan - The Village at Little Creek - 2016-173-SD](#)
[Grading Plan - 2016-173-SD](#)
[Neighborhood Meeting - The Village at Little Creek - 2016-173-SD](#)
[Traffic Impact Analysis - The Village at Little Creek - 2016-173-SD](#)
[TIA Report - The Village at Little Creek - 2016-173-SD](#)
[Public Notice - The Village at Little Creek - 2016-173-SD](#)

POTENTIAL ACTION: Set Public Hearing for February 6, 2017

- f. Award of Bid Recommendation - UV Disinfection System Improvements
Presenter: James Warren, Wastewater Treatment Plant Superintendent
[Cover -Award of Bid Recommendation - UV Disinfection System](#)
[Award Recommendation - UV Disinfection System Improvements](#)
[Resolution - Award of Bid - UV Disinfection Systems](#)

POTENTIAL ACTION: Place on February 6, 2017 Consent Agenda

7. ITEMS CONTINGENT FOR THE REGULAR MEETING

8. ITEMS FOR DISCUSSION

9. ITEMS REQUIRING ACTION

(In order for any action to be taken during a Work Session, a motion must be made and seconded to suspend the rule to allow action to be taken.)

10. OLD BUSINESS

11. STAFF REPORTS

- a. Town Manager
- b. Town Attorney
- c. Town Clerk

- d. Other Staff

12. OTHER BUSINESS

- a. Informal Discussion & Public Comment
- b. Council Comments

13. ADJOURNMENT

ANNEXATION PETITION #2016-223-ANX
Glen Laurel Rd., Vinson Rd., & Powhatan Rd. Properties
Multiple Parcels (total of 13)
Owners: CGC Properties LLC & Powhatan Rd. Limited Partnership
Contiguous; 61.30 +/- acres

CERTIFICATE OF SUFFICIENCY

To the Town Council of the Town of Clayton, North Carolina:

I, Kimberly A. Moffett, Town Clerk, do hereby certify that I have investigated the petition attached hereto and have found as a fact that said petition is signed by all owners of real property lying in the area described therein, in accordance with G.S. 160A-58.1.

In witness whereof, I have hereunto set my hand and affixed the seal of the Town of Clayton, this 17th day of January , 2017.

Kimberly A. Moffett, CMC, NCCMC
Town Clerk

TOWN OF CLAYTON OPERATIONS CENTER

"SERVICE"

ELECTRIC SERVICE
(919) 553-1530

VEHICLE MAINTENANCE
(919) 553-1530



"ENVIRONMENT"

PUBLIC WORKS
(919) 553-1530

WATER RECLAMATION
(919) 553-1535

MEMORANDUM

To: Kimberly Moffett, Town Clerk

From: Chris Rowland, Construction Project Administrator *CR*

Copy: Robert Brantly, E2S Design
Para Smith, Development Services Coordinator

Date: January 5, 2017

Re: AS & PC Medical Site @ Spring Branch

Please place the warranty acceptance request for the subject public utilities along with all pertinent easements on the next available agenda. Record drawings have been reviewed and accepted. Following acceptance, said utilities will be subject to a one-year warranty period. Upon expiration of the warranty period, a final inspection will be done and any deficient items corrected by the developer's contractor prior to final acceptance.



**TOWN OF CLAYTON
TOWN COUNCIL
AGENDA COVER SHEET**

AGENDA LOCATION:

Introductions & Special Presentations

Meeting Date:

January 17, 2017

ITEM TITLE:

Clayton Community Center Community Garden

DESCRIPTION:

In 2010, Town of Clayton Parks & Recreation and the N.C. Cooperative Extension teamed up to begin a community garden next to the Clayton Community Center on Amelia Church Road. More than 6 years later, that tiny spot of land behind the center is now a massive community garden...with multiple growing areas, a greenhouse, bee hives and produces a bounty of almost 3,000 lbs each year – that's more than a ton of fresh grown tomatoes, cucumbers, radishes, corn, squash, zucchini, peas and more – the majority of which goes to the local food bank, Clayton Area Ministries. It's also become a place where businesses and local organizations come for team-building and where dozens of blossoming gardeners attend 10-week classes to hone their horticulture skills to create beautiful gardens of their own. The Mayor & Town Council know this growing community garden would not be possible without the dedicated master gardeners and other volunteers who tend to this vibrant patch of land next to our recreation center. Council will formally recognize them and thank them for the time they've invested to nurture such a wonderful community asset.

POTENTIAL ACTION:

None

DEPARTMENT:

Public Information

PRESENTER:

Stacy Beard

ITEM HISTORY:

Date:

Action Taken:

Information Provided:

TO: Town of Clayton

FROM: Ken Anderson, CPA

DATE: January 17, 2017

RE: Available Fund Balance, Tax Collection Percentages and Other Audit Information

Fund Balance information as follows:

	<u>Unrestricted General</u>	<u>General</u>	<u>Water and Sewer</u>	<u>Electric</u>
Year End June 30, 2016 28 % - General	\$5,515,806	7,706,368	38,532,008	11,184,443
Year End June 30, 2015 25% - General	\$4,929,315	7,632,406	35,116,089	10,198,337
Year End June 30, 2014 44% - General	5,953,914	8,474,713	33,236,732	9,689,236
Year End June 30, 2013 39% - General	6,378,452	8,495,393	30,693,506	9,734,766
Year End June 30, 2012 39% - General	5,813,270	8,444,832	27,790,051	9,724,160
Year End June 30, 2011 32% - General	4,868,682	7,652,348	25,623,718	9,553,234

Property tax collection percentages are as follows:

	<u>Overall</u>	<u>Excluding Vehicle</u>	<u>Vehicle</u>
Year End June 30, 2016	99.98%	99.98%	100.00%
Year End June 30, 2015	99.93%	99.93%	99.98%
Year End June 30, 2014	99.69%	99.87%	98.17%
Year End June 30, 2013	98.88%	99.70%	89.42%
Year End June 30, 2012	98.62%	99.34%	89.85%
Year End June 30, 2011	98.53%	99.22%	90.27%

TOWN OF CLAYTON
AUDIT REPORT COMMENTS
JUNE 30, 2016

AUDIT REPORT

1. PAGE 1 **INDEPENDENT AUDITOR'S REPORT**
THE CITY RECEIVED AN UNMODIFIED OPINION ON THEIR JUNE 30, 2016 FINANCIAL STATEMENTS = GOOD REPORT
2. PAGE 19 **NET CHANGE IN FUND BALANCE GENERAL FUND**
CURRENT YEAR REVENUES EXCEEDED EXPENDITURES REVENUES BY \$73,962.
3. PAGE 23 **CHANGE IN FUND BALANCE - WATER & SEWER FUND**
CURRENT YEAR REVENUES EXCEEDED EXPENDITURES BY \$3,415,919.
4. PAGE 23 **CHANGE IN FUND BALANCE - ELECTRIC FUND**
CURRENT YEAR REVENUES EXCEEDED EXPENDITURES BY \$986,106.
5. PAGE 52-53 **CHANGES IN LONG TERM LIABILITIES - DEBT**
GOVERNMENTAL ACTIVITIES DEBT DECREASED FROM \$18,979,118 TO \$17,772,828 OR A CURRENT YEAR DECREASE FOR \$1,206,290.
BUSINESS TYPE ACTIVITIES DEBT INCREASED FROM \$7,727,620 TO \$11,851,929 OR A CURRENT YEAR INCREASED \$4,124,309.

THE TOWN WAS NOT SUBJECT TO A COMPLIANCE TYPE AUDIT FOR THE YEAR.

THE TOWN HAD NO BUDGET OVER- EXPENDITURES DURING THE YEAR

THE TOWN AUDIT REPORT WAS SUBMITTED TO THE LOCAL GOVERNMENT COMMISSION NOVEMBER 30, 2016 AND WAS ACCEPTED.



PUBLIC NOTICE

The Clayton Town Council will hold a public hearing on Monday, February 6, 2017, at 6:30 PM at Town Hall, 111 East Second Street, to receive public input on the upcoming 2017-2018 fiscal year budget for the Town of Clayton.

This is an open meeting and citizens are invited to attend.

Kimberly A. Moffett, CMC, Town Clerk
919-553-5002

Clayton News-Star

Please advertise on the following date:

January 25, 2017

Affidavit of publication required.



**TOWN OF CLAYTON
TOWN COUNCIL
AGENDA COVER SHEET**

AGENDA LOCATION:

Items Scheduled for Regular Meeting

Meeting Date:

January 17, 2017

ITEM TITLE:

Annexation – Gordon Properties – 2016-223-ANX

DESCRIPTION:

Voluntary petition for contiguous annexation for multiple parcels located at Glen Laurel Road, Vinson Road & Powhatan Road. Total of 13 parcels of 61.30 +/- acres. Owners requesting are CGC Properties LLC & Powhatan Road Limited Partnership.

POTENTIAL ACTION:

Set Public Hearing for February 6, 2017

DEPARTMENT:

Planning

PRESENTER:

David DeYoung

ITEM HISTORY:

Date:

Action Taken:

Information Provided:

Petitions for Voluntary Annexation

Maps

Legal Description



Town of Clayton
Planning Department
111 E. Second Street, Clayton, NC 27520
P.O. Box 879, Clayton, NC 27528
Phone: 919-553-5002
Fax: 919-553-1720

PETITION FOR VOLUNTARY ANNEXATION

VOLUNTARY ANNEXATION: Upon receipt of a valid petition signed by all of the owners of real property in the area described therein, the Town may annex an area either contiguous or not contiguous to its primary corporate limits when the area meets the standards set out under North Carolina General Statutes 160A-31 and 160A-58.1.

Applications are due by 5pm on the first working day of each month.

Request Information

☒ **Contiguous Annexation**

☐ **Non-Contiguous Annexation**

The following items must accompany an annexation petition:

To be completed by the applicant:	Included?	
	Yes	No
1. Petition for Annexation with original signatures	☒	☐
2. A boundary plat of the area to be annexed meeting requirements of the Plat Checklist (included in this application packet).	☒	☐
3. Legal Description (metes and bounds)	☒	☐

PROCESS:

Review by Staff: The Planning, Engineering and Public Works Departments review the annexation submission. Comments will be sent to the applicant.

Annexation Plat Submission: After the map and legal description are deemed sufficient by the Town, the applicant is required to submit two (2) Mylar annexation plats to the Planning Department.

Town Council Meeting: The Town Council will pass a resolution directing the Town Clerk to investigate the annexation petition. The Town Clerk will present to the Town Council a Certificate of Sufficiency indicating that the annexation petition is complete. A resolution setting the date of the public hearing is then approved.

Legal Advertisement: A legal advertisement will be published no more than 25 days and no less than 10 days prior to the date of the public hearing.

Public Hearing/Town Council Meeting: The Town Council will either adopt or deny an ordinance to extend the corporate limits of the Town of Clayton.

Recordation: If the annexation is approved by the Town Council, the Annexation Plats shall be recorded at the appropriate county Register of Deeds.

Petition for Voluntary Annexation Application – Property Information
COMPLETE IF A LIMITED LIABILITY COMPANY:

Submittal Date: 12-7-2016

Petition No.: ANX 2016-223

To the Town Council of the Town of Clayton, North Carolina:

1. I/We the undersigned owner(s)* of real property respectfully request that the area described in Paragraph 2 below be annexed to the Town of Clayton, North Carolina.

*If the owner of real property is a corporation or religious entity, attach a copy of the articles of incorporation describing who is/are authorized to sign with the petition.

2. The area to be annexed is contiguous, to the Town of Clayton, North Carolina and the boundaries of such territory are as provided in the boundary plat attached hereto.
3. If contiguous, this annexation will include all intervening rights-of-way for streets, railroads, and other areas as stated in G.S. 160A-31(f), unless otherwise stated in the annexation amendment.
4. Attached is a statement of the schedule for full development of the property to be annexed, which includes the type, number, and estimated value of planned improvements, if applicable.

Total acreage to be annexed:	<u>+/- 12.75 acres part of 61.30 acres total</u>
Existing housing units:	<u>12</u>
Population of acreage to be annexed:	<u>25</u>
Existing Zoning District*:	<u>R-8</u>
Proposed Town Zoning District*:	<u>R-8</u>
Reason for petitioner to annex:	<u>X</u> Receive Town Services
	<u> </u> Other (please specify): <u> </u>

5. I/We acknowledge that any zoning vested rights acquired pursuant to G.S. 160A-385.1 or G.S. 153A-344.1 must be declared and identified on this petition. I/We further acknowledge that failure to declare such rights on this petition shall result in a termination of vested rights previously acquired for the property. (If zoning vested rights are claimed, indicate below and attach proof.)

In witness whereof, CGC Properties, LLC a limited liability company, caused this instrument to be executed in its name by a member/manager pursuant to authority duly given, this 7 day of December, 2016.

Name of Limited Liability Company:

CGC Properties, LLC

By:

Charles D. [Signature]
Signature of Member/Manager

**STATE OF NORTH CAROLINA
COUNTY OF JOHNSTON**

Sworn and subscribed before me, Leannora K. Gordon, a Notary Public for the above State and County, this 7 day of December, 2016.



[Signature]
Notary Public

My Commission Expires: 11/23/2019

Voluntary Annexation Plat Checklist

#	Required Plat Items
1.	Fully dimensioned by metes and bounds, and the location of intersecting boundary lines of the existing town limits, labeled and distinctly marked. Include full right-of-way if the area on both sides is or will be in the corporate limits.
2.	Any utility easements with metes and bounds.
3.	Accurate locations and descriptions of all monuments, markers and control points.
4.	Ultimate right-of-way widths on all streets.
5.	Entitle "ANNEXATION MAP FOR THE TOWN OF CLAYTON" OR "SATELLITE ANNEXATION MAP FOR THE TOWN OF CLAYTON," as appropriate.
6.	Name of property owner(s).
7.	Name, seal, and registration of Professionally Licensed Surveyor (PLS).
8.	Date of the survey and map preparation; a north arrow indicating whether the index is true magnetic North Carolina grid (NAD 83 or NAD 27) or deed; graphic scale; and declination.
9.	Names of the township, county, and state.
10.	A detailed vicinity map.
11.	Include address of property if assigned.
12.	Show all contiguous or non-contiguous town limits.
13.	The following certification must be placed on the map near a border to allow the map to be sealed: Annexation # _____ I, David DeYoung, AICP, Planning Director, Clayton, North Carolina certify this is a true and exact map of annexation adopted the _____ day of _____, _____, by the Town Council. I set my hand and seal to the Town of Clayton, _____. Day/Month/Year _____ David DeYoung AICP
14.	Leave 2 inch by 2 inch space for the county Register of Deeds stamp on the plat. All final plats must be stamped and signed before they can be accepted by the Town.



Town of Clayton
Planning Department
111 E. Second Street, Clayton, NC 27520
P.O. Box 879, Clayton, NC 27528
Phone: 919-553-5002
Fax: 919-553-1720

PETITION FOR VOLUNTARY ANNEXATION

VOLUNTARY ANNEXATION: Upon receipt of a valid petition signed by all of the owners of real property in the area described therein, the Town may annex an area either contiguous or not contiguous to its primary corporate limits when the area meets the standards set out under North Carolina General Statutes 160A-31 and 160A-58.1.

Applications are due by 5pm on the first working day of each month.

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2. A boundary plat of the area to be annexed meeting requirements of the Plat Checklist (included in this application packet).	☒	☐
3. Legal Description (metes and bounds)	☒	☐

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Town Council Meeting: The Town Council will pass a resolution directing the Town Clerk to investigate the annexation petition. The Town Clerk will present to the Town Council a Certificate of Sufficiency indicating that the annexation petition is complete. A resolution setting the date of the public hearing is then approved.

Legal Advertisement: A legal advertisement will be published no more than 25 days and no less than 10 days prior to the date of the public hearing.

Public Hearing/Town Council Meeting: The Town Council will either adopt or deny an ordinance to extend the corporate limits of the Town of Clayton.

Recordation: If the annexation is approved by the Town Council, the Annexation Plats shall be recorded at the appropriate county Register of Deeds.

Petition for Voluntary Annexation Application – Property Information COMPLETE IF A PARTNERSHIP:

Submittal Date: 12-7-2016

Petition No.: ANX 2016-223

To the Town Council of the Town of Clayton, North Carolina:

1. I/We the undersigned owner(s)* of real property respectfully request that the area described in Paragraph 2 below be annexed to the Town of Clayton, North Carolina.

*If the owner of real property is a corporation or religious entity, attach a copy of the articles of incorporation describing who is/are authorized to sign with the petition.

2. The area to be annexed is contiguous, to the Town of Clayton, North Carolina and the boundaries of such territory are as provided in the boundary plat attached hereto.
3. If contiguous, this annexation will include all intervening rights-of-way for streets, railroads, and other areas as stated in G.S. 160A-31(f), unless otherwise stated in the annexation amendment.
4. Attached is a statement of the schedule for full development of the property to be annexed, which includes the type, number, and estimated value of planned improvements, if applicable.

Total acreage to be annexed:	<u>+/- 48.55 acres part of 61.30 acres total</u>
Existing housing units:	<u>1</u>
Population of acreage to be annexed:	<u>0</u>
Existing Zoning District*:	<u>AR</u>
Proposed Town Zoning District*:	<u>R-10 Open Space Subdivision</u>
Reason for petitioner to annex:	<u>X</u> Receive Town Services
	<u> </u> Other (please specify): <u> </u>

5. I/We acknowledge that any zoning vested rights acquired pursuant to G.S. 160A-385.1 or G.S. 153A-344.1 must be declared and identified on this petition. I/We further acknowledge that failure to declare such rights on this petition shall result in a termination of vested rights previously acquired for the property. (If zoning vested rights are claimed, indicate below and attach proof.)

In witness whereof, Powhatan Road Limited Partnership a partnership, caused this instrument to be executed in its name by a member/manager pursuant to authority duly given, this 7 day of December, 2016.

Name of Partnership: Powhatan Road Limited Partnership

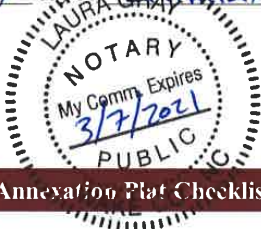
By:

Chad B. Raley
Signature of General Partner

**STATE OF NORTH CAROLINA
COUNTY OF JOHNSTON**

Sworn and subscribed before me, Laura Gray, a Notary Public for the above State and County, this 7 day of December, 2016.

SEAL

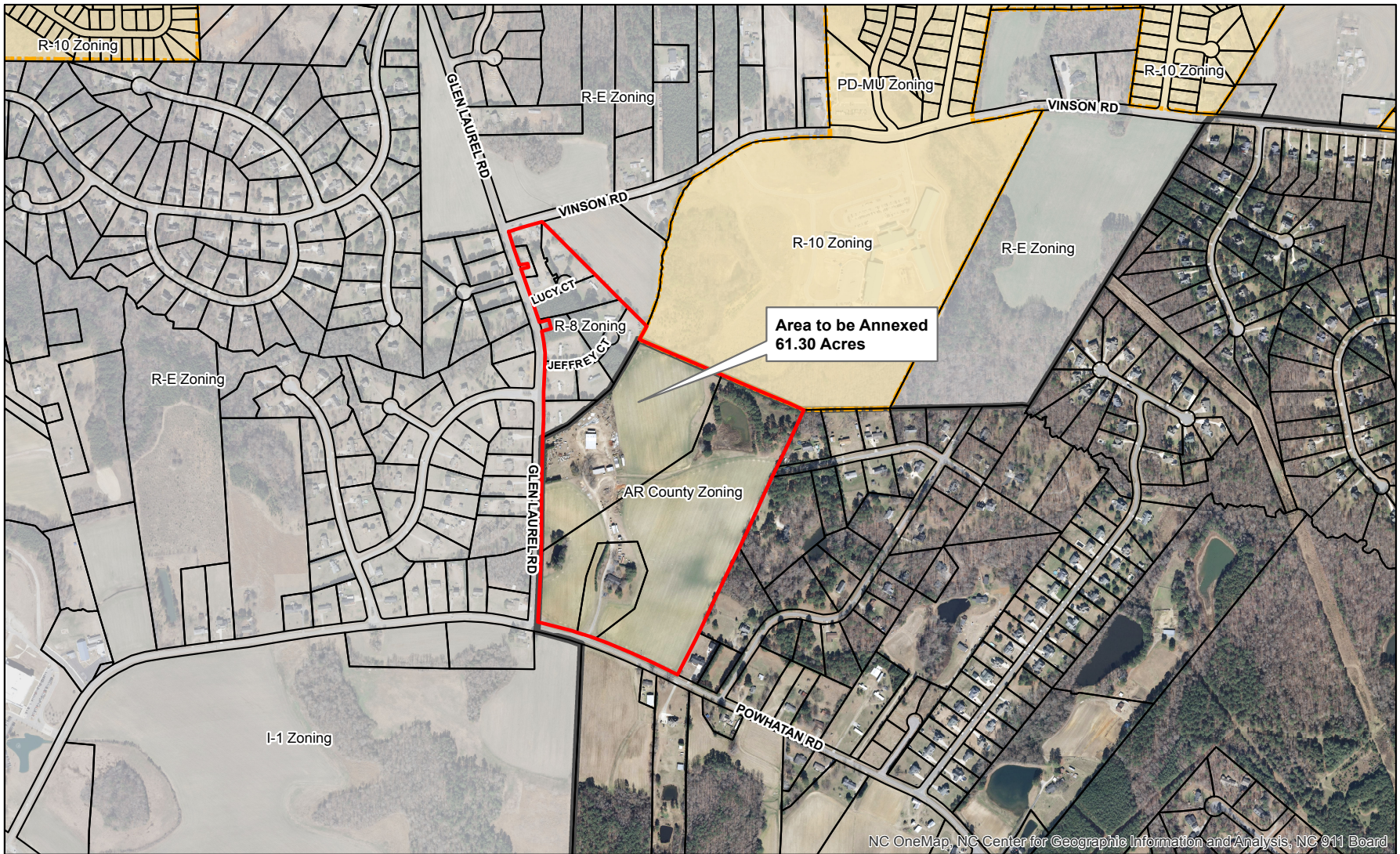


Laura Gray
Notary Public

My Commission Expires: 3/7/2021

Voluntary Annexation Plat Checklist

#	Required Plat Items
1.	Fully dimensioned by metes and bounds, and the location of intersecting boundary lines of the existing town limits, labeled and distinctly marked. Include full right-of-way if the area on both sides is or will be in the corporate limits.
2.	Any utility easements with metes and bounds.
3.	Accurate locations and descriptions of all monuments, markers and control points.
4.	Ultimate right-of-way widths on all streets.
5.	Entitle "ANNEXATION MAP FOR THE TOWN OF CLAYTON" OR "SATELLITE ANNEXATION MAP FOR THE TOWN OF CLAYTON," as appropriate.
6.	Name of property owner(s).
7.	Name, seal, and registration of Professionally Licensed Surveyor (PLS).
8.	Date of the survey and map preparation; a north arrow indicating whether the index is true magnetic North Carolina grid (NAD 83 of NAD 27) or deed; graphic scale; and declination.
9.	Names of the township, county, and state.
10.	A detailed vicinity map.
11.	Include address of property if assigned.
12.	Show all contiguous or non-contiguous town limits.
13.	The following certification must be placed on the map near a border to allow the map to be sealed: Annexation # _____ I, David DeYoung, AICP, Planning Director, Clayton, North Carolina certify this is a true and exact map of annexation adopted the _____ day of _____, _____, by the Town Council. I set my hand and seal to the Town of Clayton, _____. Day/Month/Year _____ David DeYoung AICP
14.	Leave 2 inch by 2 inch space for the county Register of Deeds stamp on the plat. All final plats must be stamped and signed before they can be accepted by the Town.



Legend

- Clayton Town Limits
- Clayton ETJ
- Parcels
- Area to be Annexed

Produced by: TOC Planning
December 7, 2016

Annexation Map

Applicant(s): CGC Properties, LLC & Powhatan Road Limited Partnership

Property Owner(s): CGC Properties, LLC & Powhatan Road Limited Partnership

Parcel Number(s) 05I04012, 05I04012A, 05I04012B, 05I04012C,
05I04012D, 05I04012E, 05I04012F, 05I04012G, 05I04012H,
05I04012I, 05E99007S, 05I04199R & 05E99007H

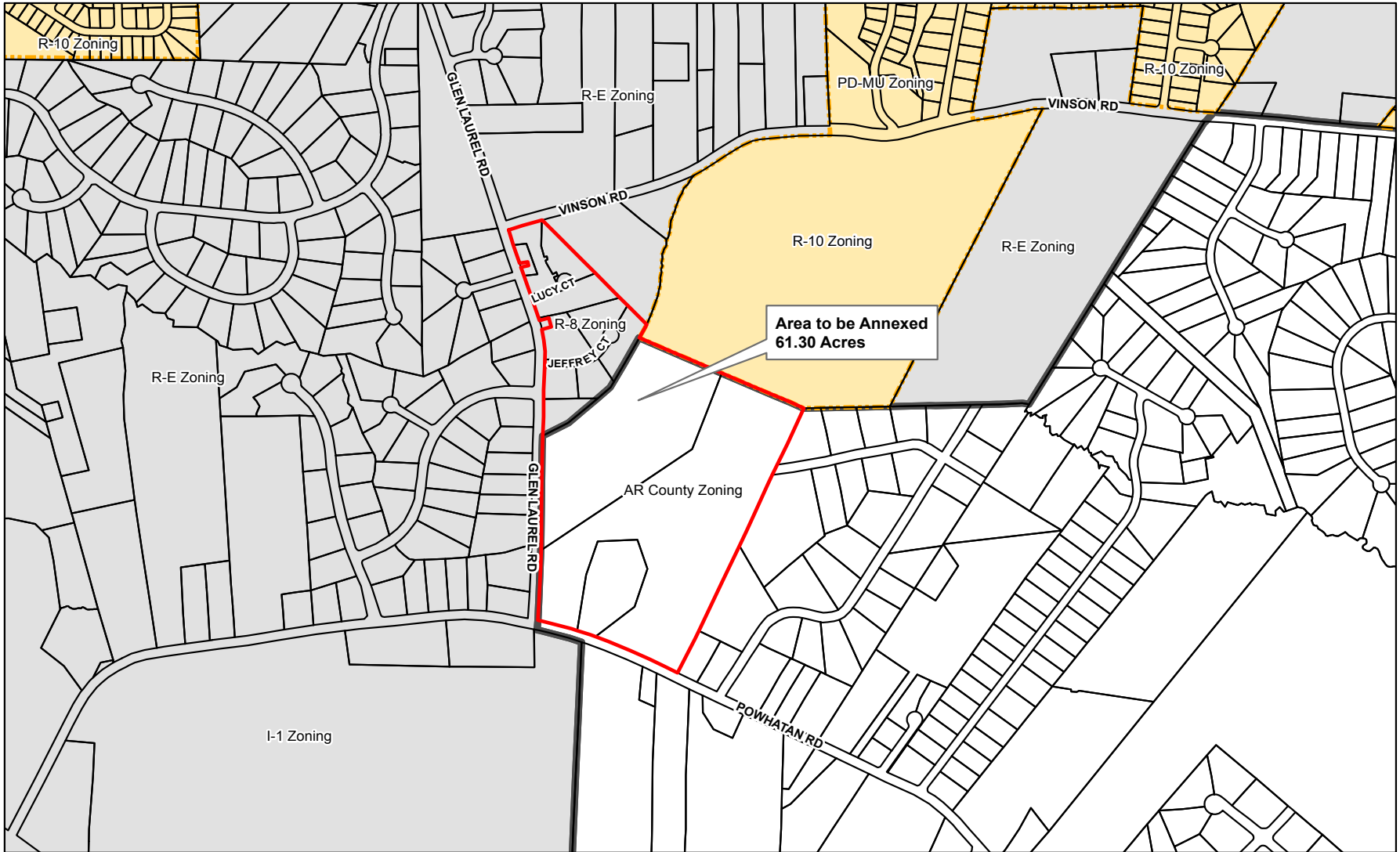
File Number(s): 2016-223-ANX



1 inch = 800 feet



Disclaimer: Town of Clayton assumes no legal responsibility for the information represented here.



Legend

- Clayton Town Limits
- Clayton ETJ
- Parcels
- Area to be Annexed

Produced by: TOC Planning
December 7, 2016

Annexation Map

Applicant(s): CGC Properties, LLC & Powhatan Road Limited Partnership

Property Owner(s): CGC Properties, LLC & Powhatan Road Limited Partnership

Parcel Number(s) 05I04012, 05I04012A, 05I04012B, 05I04012C,
05I04012D, 05I04012E, 05I04012F, 05I04012G, 05I04012H,
05I04012I, 05E99007S, 05I04199R & 05E99007H

File Number(s): 2016-223-ANX



1 inch = 800 feet



Disclaimer: Town of Clayton assumes no legal responsibility for the information represented here.

L E G A L D E S C R I P T I O N

LEGAL DESCRIPTION FOR Gordon Tract on Vinson, Glen Laurel and Powhatan Roads.

BEGINNING at a point where the Southern right-of-way line of Vinson Road (SR 1903) intersects the Eastern right-of-way line of Glen Laurel Road (SR 1902);

THENCE South 18 degrees 19 minutes 00 seconds East for a distance of 225.09 feet along the Eastern right-of-way of Glen Laurel Road to an iron pipe marking the Northwestern corner of a cemetery;

THENCE North 80 degrees 06 minutes 04 seconds East for a distance of 44.07 feet along the northern line of the cemetery to an iron pipe marking the Northeastern corner of the cemetery;

THENCE South 10 degrees 43 minutes 03 seconds East for a distance of 22.89 feet along the Eastern line of the cemetery to an iron pipe marking the Southeastern corner of the cemetery;

THENCE South 79 degrees 04 minutes 22 seconds West for a distance of 40.80 feet along the Southern line of the cemetery to an iron pipe on the Eastern right-of-way of Glen Laurel Road;

THENCE South 18 degrees 34 minutes 47 seconds East for a distance of 208.03 feet along the Eastern right-of-way of Glen Laurel Road to a point;

THENCE South 18 degrees 11 minutes 32 seconds East for a distance of 109.53 feet along the Eastern right-of-way of Glen Laurel Road to a point;

THENCE South 21 degrees 04 minutes 43 seconds East for a distance of 36.10 feet along the Eastern right-of-way of Glen Laurel Road to iron pipe marking the Northeastern corner of a Permanent Carolina Telephone Easement;

THENCE North 75 degrees 53 minutes 38 seconds East for a distance of 60.00 feet along the Northern line of Carolina Telephone to an iron pipe marking the Northeastern corner of Carolina Telephone;

THENCE South 13 degrees 50 minutes 37 seconds East for a distance of 60.00 feet along the Eastern line of Carolina Telephone to an Iron Pipe marking the Southeastern corner of Carolina Telephone;

THENCE South 75 degrees 53 minutes 38 seconds West for a distance of 60.00 feet along the Southern line of Carolina Telephone to an iron pipe in the Eastern right-of-way of Glen Laurel Road;

THENCE South 07 degrees 18 minutes 26 seconds East for a distance of 26.51 feet along the Eastern right-of-way of Glen Laurel Road to a point;

THENCE South 09 degrees 51 minutes 39 seconds East for a distance of 37.35 feet along the Eastern right-of-way of Glen Laurel Road to a point;

THENCE South 06 degrees 51 minutes 23 seconds East for a distance of 39.16 feet along the Eastern right-of-way of Glen Laurel Road to a point;

THENCE South 03 degrees 55 minutes 46 seconds East for a

distance of 41.76 feet along the Eastern right-of-way of Glen Laurel Road to point;

THENCE South 01 degrees 22 minutes 19 seconds East for a distance of 36.80 feet along the Eastern right-of-way of Glen Laurel Road to a point;

THENCE South 00 degrees 38 minutes 12 seconds West for a distance of 51.53 feet along the Eastern right-of-way of Glen Laurel Road to a point;

THENCE South 01 degrees 23 minutes 46 seconds West for a distance of 62.14 feet along the Eastern right-of-way of Glen Laurel Road to a point;

THENCE South 01 degrees 31 minutes 26 seconds West for a distance of 476.21 feet along the Eastern right-of-way of Glen Laurel Road to a point;

THENCE South 01 degrees 01 minutes 27 seconds West for a distance of 69.95 feet along the Eastern right-of-way of Glen Laurel Road to a point;

THENCE South 00 degrees 52 minutes 05 seconds West for a distance of 604.16 feet along the Eastern right-of-way of Glen Laurel Road TO A POINT;

THENCE South 02 degrees 04 minutes 33 seconds West for a distance of 204.98 feet along the Eastern right-of-way of Glen Laurel Road TO A POINT;

THENCE South 03 degrees 31 minutes 41 seconds West for a distance of 46.96 feet along the Eastern right-of-way of Glen Laurel Road TO A POINT;

THENCE South 00 degrees 22 minutes 48 seconds East for a distance of 75.51 feet along the Eastern right-of-way of Glen Laurel Road TO A POINT;

THENCE along a curve to the left having a radius of 65.00 feet and an arc length of 86.35 feet, being subtended by a chord of South 38 degrees 26 minutes 10 seconds East for a distance of 80.14 feet TO A POINT in the Northern right-of-way of Powhatan Road (SR 1901);

THENCE South 76 degrees 29 minutes 33 seconds East for a distance of 70.77 feet along the Northern right-of-way of Powhatan Road TO A POINT;

THENCE South 74 degrees 35 minutes 59 seconds East for a distance of 52.64 feet along the Northern right-of-way of Powhatan Road TO A POINT;

THENCE South 73 degrees 39 minutes 33 seconds East for a distance of 51.90 feet along the Northern right-of-way of Powhatan Road TO A POINT;

THENCE South 72 degrees 02 minutes 36 seconds East for a distance of 51.00 feet along the Northern right-of-way of Powhatan Road TO A POINT;

THENCE South 70 degrees 03 minutes 52 seconds East for a distance of 52.44 feet along the Northern right-of-way of Powhatan Road TO A POINT;

THENCE South 68 degrees 39 minutes 11 seconds East for a distance of 101.36 feet along the Northern right-of-way of Powhatan Road TO A POINT;

THENCE South 67 degrees 16 minutes 26 seconds East for a distance of 99.51 feet along the Northern right-of-way of Powhatan

Road TO A POINT;

THENCE South 65 degrees 36 minutes 31 seconds East for a distance of 105.28 feet along the Northern right-of-way of Powhatan Road TO A POINT;

THENCE South 64 degrees 01 minutes 38 seconds East for a distance of 281.33 feet along the Northern right-of-way of Powhatan Road TO AN EXISTING CONCRETE MONUMENT;

THENCE leaving the Northern right-of-way of Powhatan Road and going along the lines of Derek B. Evans, Larry Bailey and Ricky Avate North 24 degrees 45 minutes 42 seconds East for a distance of 1360.00 feet TO AN EXISTING IRON PIPE marking the Western end of the Southern right-of-way line of Green Path (SR 2014) and a corner of Ricky Avate;

THENCE North 24 degrees 43 minutes 12 seconds East for a distance of 456.75 feet to an iron pipe, a corner with Kimberly S. Bowles and Johnston County;

THENCE North 65 degrees 45 minutes 22 seconds West for a distance of 1101.22 feet along the line of Johnston County to an iron pipe, another corner with Johnston County;

THENCE North 28 degrees 58 minutes 15 seconds East for a distance of 99.74 feet to an iron pipe, a corner with Johnston County and Eugene D. Woodall;

THENCE North 44 degrees 31 minutes 07 seconds West for a distance of 912.28 feet along the line of Woodall to a point in the Southern right-of-way line of Vinson Road;

THENCE South 74 degrees 58 minutes 56 seconds West for a distance of 213.88 feet along the Southern right-of-way line of Vinson Road to the place and point of beginning;

Together with and subject to covenants, easements, and restrictions of record.

Said property contains 61.30 acres more or less.

PUBLIC NOTICE

The Clayton Town Council has called a public hearing at 6:30 PM on Monday, February 6, 2017, at Town Hall, 111 E. Second Street, on the question of annexing the following described contiguous area, requested by annexation petition 2016-223-ANX filed pursuant to G.S. 160A-31:

The area proposed for annexation is described as the following: Lying and being in Clayton Township, Johnston County, North Carolina and being more particularly described as follows:

BEGINNING at a point where the Southern right-of-way line of Vinson Road (SR 1903) intersects the Eastern right-of-way line of Glen Laurel Road (SR 1902); **THENCE** South 18 degrees 19 minutes 00 seconds East for a distance of 225.09 feet along the Eastern right-of-way of Glen Laurel Road to an iron pipe marking the Northwestern corner of a cemetery; **THENCE** North 80 degrees 06 minutes 04 seconds East for a distance of 44.07 feet along the northern line of the cemetery to an iron pipe marking the Northeastern corner of the cemetery; **THENCE** South 10 degrees 43 minutes 03 seconds East for a distance of 22.89 feet along the Eastern line of the cemetery to an iron pipe marking the Southeastern corner of the cemetery; **THENCE** South 79 degrees 04 minutes 22 seconds West for a distance of 40.80 feet along the Southern line of the cemetery to an iron pipe on the Eastern right-of-way of Glen Laurel Road; **THENCE** South 18 degrees 34 minutes 47 seconds East for a distance of 208.03 feet along the Eastern right-of-way of Glen Laurel Road to a point; **THENCE** South 18 degrees 11 minutes 32 seconds East for a distance of 109.53 feet along the Eastern right-of-way of Glen Laurel Road to a point; **THENCE** South 21 degrees 04 minutes 43 seconds East for a distance of 36.10 feet along the Eastern right-of-way of Glen Laurel Road to iron pipe marking the Northeastern corner of a Permanent Carolina Telephone Easement; **THENCE** North 75 degrees 53 minutes 38 seconds East for a distance of 60.00 feet along the Northern line of Carolina Telephone to an iron pipe marking the Northeastern corner of Carolina Telephone; **THENCE** South 13 degrees 50 minutes 37 seconds East for a distance of 60.00 feet along the Eastern line of Carolina Telephone to an Iron Pipe marking the Southeastern corner of Carolina Telephone; **THENCE** South 75 degrees 53 minutes 38 seconds West for a distance of 60.00 feet along the Southern line of Carolina Telephone to an iron pipe in the Eastern right-of-way of Glen Laurel Road; **THENCE** South 07 degrees 18 minutes 26 seconds East for a distance of 26.51 feet along the Eastern right-of-way of Glen Laurel Road to a point; **THENCE** South 09 degrees 51 minutes 39 seconds East for a distance of 37.35 feet along the Eastern right-of-way of Glen Laurel Road to a point; **THENCE** South 06 degrees 51 minutes 23 seconds East for a distance of 39.16 feet along the Eastern right-of-way of Glen Laurel Road to a point; **THENCE** South 03 degrees 55 minutes 46 seconds East for a distance of 41.76 feet along the Eastern right-of-way of Glen Laurel Road to point; **THENCE** South 01 degrees 22 minutes 19 seconds East for a distance of 36.80 feet along

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This is an open meeting and the public is invited to attend.

**Kimberly A. Moffett, CMC
Town Clerk
Town of Clayton
919-553-5002 ext. 5004**

Clayton News-Star

Please advertise on the following date:

January 25, 2017

Affidavit of publication required.

ANNEXATION PETITION 2016-223-ANX
Glen Laurel Rd., Vinson Rd. & Powhatan Rd. Properties
Multiple Parcels (total of 13)
Owners: CGC Properties LLC & Powhatan Rd Limited Partnership
Contiguous; 61.30 +/- acres

TOWN OF CLAYTON
RESOLUTION FIXING DATE OF PUBLIC HEARING ON QUESTION
OF ANNEXATION PURSUANT TO G. S.160A-31

WHEREAS, a petition requesting annexation of the contiguous area described herein has been received; and

WHEREAS, the Town Council has by resolution directed the Town Clerk to investigate the sufficiency of the petition; and

WHEREAS, certification by the Town Clerk as to the sufficiency of the petition has been made;

NOW, THEREFORE, BE IT RESOLVED, by the Town Council of the Town of Clayton, North Carolina that:

Section 1. A public hearing on the question of annexation of the contiguous area described herein will be held at Town Hall at 6:30 PM on Monday, February 6, 2017.

Section 2. Lying and being in Clayton Township, Johnston County, North Carolina and being more particularly described as follows:

BEGINNING at a point where the Southern right-of-way line of Vinson Road (SR 1903) intersects the Eastern right-of-way line of Glen Laurel Road (SR 1902); **THENCE** South 18 degrees 19 minutes 00 seconds East for a distance of 225.09 feet along the Eastern right-of-way of Glen Laurel Road to an iron pipe marking the Northwestern corner of a cemetery; **THENCE** North 80 degrees 06 minutes 04 seconds East for a distance of 44.07 feet along the northern line of the cemetery to an iron pipe marking the Northeastern corner of the cemetery; **THENCE** South 10 degrees 43 minutes 03 seconds East for a distance of 22.89 feet along the Eastern line of the cemetery to an iron pipe marking the Southeastern corner of the cemetery; **THENCE** South 79 degrees 04 minutes 22 seconds West for a distance of 40.80 feet along the Southern line of the cemetery to an iron pipe on the Eastern right-of-way of Glen Laurel Road; **THENCE** South 18 degrees 34 minutes 47 seconds East for a distance of 208.03 feet along the Eastern right-of-way of Glen Laurel Road to a point; **THENCE** South 18 degrees 11 minutes 32 seconds East for a distance of 109.53

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Vinson Road; THENCE South 74 degrees 58 minutes 56 seconds West for a
distance of 213.88 feet along the Southern right-of-way line of Vinson Road to
the place and point of beginning; Said property contains 61.30 acres more or
less.

Section 3. Notice of the public hearing shall be published once in the Clayton
News-Star, a newspaper having general circulation in the Town of Clayton, at
least ten days prior to the date of the public hearing.

Duly adopted this 17th day of January 2017 while in regular session.

Jody L. McLeod,
Mayor

ATTEST:

Kimberly A. Moffett, CMC, NCCMC
Town Clerk



**TOWN OF CLAYTON
TOWN COUNCIL
AGENDA COVER SHEET**

AGENDA LOCATION:

Items Scheduled for Regular Meeting

Meeting Date:

January 17, 2017

ITEM TITLE:

Special Use Permit – IGT Technology – 2016-227-SUP

DESCRIPTION:

Applicant is requesting special use permit to operate the use of Warehouse, Freight Movement in an existing building located in a Special Use District.

POTENTIAL ACTION:

Set Public Hearing for February 6, 2017

DEPARTMENT:

Planning

PRESENTER:

Jay McLeod

ITEM HISTORY:

Date:

Action Taken:

Information Provided:

Application

Staff Report

Map

Site Plan

Neighborhood Meeting Info

Revised Explanation of Project



TOWN OF CLAYTON

Planning Department

111 E. Second Street, Clayton, NC 27520

P.O. Box 879, Clayton, NC 27528

Phone: 919-553-5002

Fax: 919-553-1720

SPECIAL USE APPLICATION

Pursuant to Article 7, Section 155.711 of the Unified Development Code, an owner of land within the jurisdiction of the Town (or a duly authorized agent) may petition the Town Council to allow a Special Use. Special Uses are uses that may be appropriate in a particular district, but have the potential to create incompatibilities with adjacent uses.

Application Fee: \$400.00.

Advertisement Fee: \$100.00.

All fees are due when the application is submitted.

Please note that Section 155.702(B) of the Unified Development Code requires a Neighborhood Meeting for all Special Use Permit applications.

APPLICATION TYPE

☒ New Special Use Permit

☐ Major Modification to an approved SUP

Permit Modified: _____

SITE INFORMATION

Name of Project: Ashley Furniture Building Acreage of Property: 8.33

Parcel ID Number: 05I04017 Tax ID: 166800-84-0769

Deed Book: 4124 Deed Page(s): 490

Address/Location: 9257 US Hwy 70 Bus

Clayton NC 27520

Existing Use: Warehousing Proposed Use: Warehousing

Is project within a Planned Development? ☒ No ☐ Yes

Planned Development District (if applicable): _____

Is project within an Overlay District: ☐ No ☒ Yes

Overlay District (if applicable): SUD

OFFICE USE ONLY

Date Received:	RECEIVED OCT 31 2016	Amount Paid: <u>\$500.00</u>	Permit Number: <u>2016-227-SUP</u>
TOWN OF CLAYTON PLANNING DEPARTMENT		Page 1 of 9	

PROPERTY OWNER INFORMATIONName: Mooring Capital Fund LLCMailing Address: 8609 Westwood Center Drive Ste 450 Vienna VA 22182Phone Number: 703-917-4488

Fax: _____

Email Address: lulrich@mooringfinancial.com**APPLICANT INFORMATION**Applicant: Cameron D. SullivanMailing Address: 104 N. Fayetteville Street Clayton NC 27520Phone Number: 919-585-5501Fax: 919-573-0798Contact Person: Cameron D. SullivanEmail Address: cds@mwhlaw.lawyer**REQUIRED INFORMATION (to be submitted with the application)***The following items must accompany a Conditional Use Permit (CUP) application.*

To be completed by the applicant:			To be completed by staff:		
	Yes	N/A	Yes	No	N/A
1. A pre-application conference was held with Town of Clayton staff. Date: _____	☐	☒			
2. Review Fee (\$400) and Application Fee (\$100)	☒	☐			
3. Completed application (9 copies)	☒	☐			
4. Owner's Consent Form (9 copies)	☒	☐			
5. Adjacent property owners list (9 copies)	☒	☐			
6. Wastewater allocation request OR verification of wastewater allocation (9 copies)	☐	☒			
7. Signed and sealed traffic impact analysis (2 copies)	☐	☒			
8. If applicant is concurrently applying for site plan approval, a copy of the proposed site plan.	☒	☐			
9. Neighborhood meeting notice letter (9 copies) <i>See sample letter and meeting requirements included in this packet</i>	May be provided at time of submittal if meeting date is known – otherwise must be submitted by email or mail on date the letter is mailed out.				
10. Set of stamped, addressed envelopes using the adjacent property owners list	May be provided at time of submittal OR no later than 25 days prior to the Town Council meeting.				
11. Neighborhood meeting summary form (9 copies) <i>Form is included in this packet</i>	Must be submitted after neighborhood meeting is held and at least 10 days prior to Planning Board meeting.				

Note: More information may be requested by the Planning Department depending on the project

REQUIRED FINDINGS OF FACT

Section 155.711(1) of the Unified Land Development Code requires applications for a Special Use to address the following findings. The burden of proof is on the applicant and failure to adequately address the findings may result in denial of the application. Please attach additional pages if necessary.

1. That the application will not materially endanger the public health or safety if located where proposed, and developed according to the plans as submitted and approved.

The building is already in place and will not be modified. The use will be warehousing of lottery machines. There will be no risk to public safety or health.

2. That the application meets all required specifications and conforms to the standards and practices of sound land use planning and the Town Code of Ordinances and other applicable regulations.

The warehousing use is allowed as a conditional use under the current zoning.

3. That the application will not substantially injure the value of adjoining or abutting property, and will not be detrimental to the use or development of adjacent properties or other neighborhood uses.

There will be no impact on the adjoining properties. The use will be contained in the existing building and will not be noticeable to surrounding neighbors.

4. That the application will not adversely affect the adopted plans and policies of the Town, or violate the character of existing standards for development of the adjacent properties.

The building is already in place. The use will be allowed under the current zoning as a conditional use.

EXPLANATION OF PROJECT

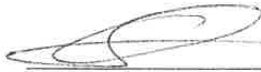
Please provide detailed information concerning all requests. Attach additional sheets if necessary.

The building is being leased by a warehousing company that takes in lottery machines, repackages them and ships them back out. The building already exists on the property, the use is the only change. This use is similar in nature as previous uses by furniture companies.

APPLICANT AFFIDAVIT

I/We, the undersigned, do hereby make application and petition to the Town Council of the Town of Clayton to approve the subject Special Use Permit. I hereby certify that I have full legal right to request such action and that the statements or information made in any paper or plans submitted herewith are true and correct to the best of my knowledge. I understand this application, related material and all attachments become official records of the Planning Department of the Town of Clayton, North Carolina, and will not be returned.

Cameron D Sullivan
Print Name


Signature of Applicant

10/27/16
Date

ADJOINING PROPERTY OWNERS LIST

Project Name: Ashley Furniture Building

The following are all the persons, firms, or corporations owning property within 100 feet and immediately adjacent to the property (including across street rights of way) subject to this request. Where the subject property immediately adjoins a public or private right-of-way, landscape or riparian buffer, commonly-owned private area, public property, or homeowners' association property, then letters of notification shall be sent to adjoining property owners as if they directly abut the subject property. Please use a separate sheet if necessary.

It is the responsibility of the applicant to correctly identify the current owner, based upon records in the Johnston County GIS Office, for all property owners of land within the required public notice radius.

PARCEL NUMBER	NAME	ADDRESS
05A01013	Little Creek Eleven LLC	1255 Creekshire Way, Winston Salem NC 27103
05A01029E	Bobby Hardee	2019 Hardee Lane Clayton NC 27520
05A01029F	Randall Hardee	2021 Hardee Lane Clayton NC 27520
05A01029M	Randall Hardee	2021 Hardee Lane Clayton NC 27520
05A01029K	Bobby Hardee	2019 Hardee Lane Clayton NC 27520
05A01029H	Bobby Hardee	2019 Hardee Lane Clayton NC 27520
05A0029A	Garrett Pope	2000 Hardee Lane, Clayton NC 27520
05A01029	Bobby Hardee	2019 Hardee Lane Clayton NC 27520
05A01027	Frances Gupton	PO Box 445 Clayton NC 27526



**TOWN OF CLAYTON
Planning Department**

111 E. Second Street, Clayton, NC 27520
P.O. Box 879, Clayton, NC 27528
Phone: 919-553-5002

OWNER'S CONSENT FORM

Consent is required from the property owner(s) if an agent will act on their behalf. A separate form is required from each owner. Consent is valid for one year from date of notary, unless otherwise specified. All fields must be completed.

Project Name: Ashley Furniture Building Address or PIN #: 05104017

AGENT/APPLICANT INFORMATION:

Cameron D. Sullivan 104 N. Fayetteville Street
(Name - type, print clearly) (Address)
Clayton, NC 27520
(City, State, Zip)

I hereby give **CONSENT** to the above referenced agent/applicant to act on my behalf, to submit applications and all required materials and documents, and to attend and represent me at all meetings and public hearings pertaining to the following processes (*list applicable requests below*):

Rezoning Application for the above property _____

Furthermore, I hereby give consent to the party designated above to agree to all terms and conditions which may arise as part of the approval of this application.

I hereby certify that I have authority to execute this consent form as/on behalf of the property owner. I understand that any false, inaccurate or incomplete information provided by me or my agent will result in the denial, revocation or administrative withdrawal of this application, request, approval or permits. I further agree to all terms and conditions which may be imposed as part of the approval of this application.

OWNER AUTHORIZATION:

Liz Ulrich meoring Capital Fund, LLC
(Name - type, print clearly) (Address)
8609 Westwood Center Dr. Ste 450
Vienna, VA 22182
(City, State, Zip)

STATE OF Virginia
COUNTY OF Fairfax

Sworn and subscribed before me Diane Lyn Lunsford, a Notary Public for the above State and County, this
the 22nd day of September, 2016.

SEAL

Diane Lyn Lunsford
Notary Public
My Commission
Expires: 5/31/2017

DIANE LYN LUNSFORD
NOTARY PUBLIC
REG. #292229
COMMONWEALTH OF VIRGINIA
MY COMMISSION EXPIRES MAY 31, 2017

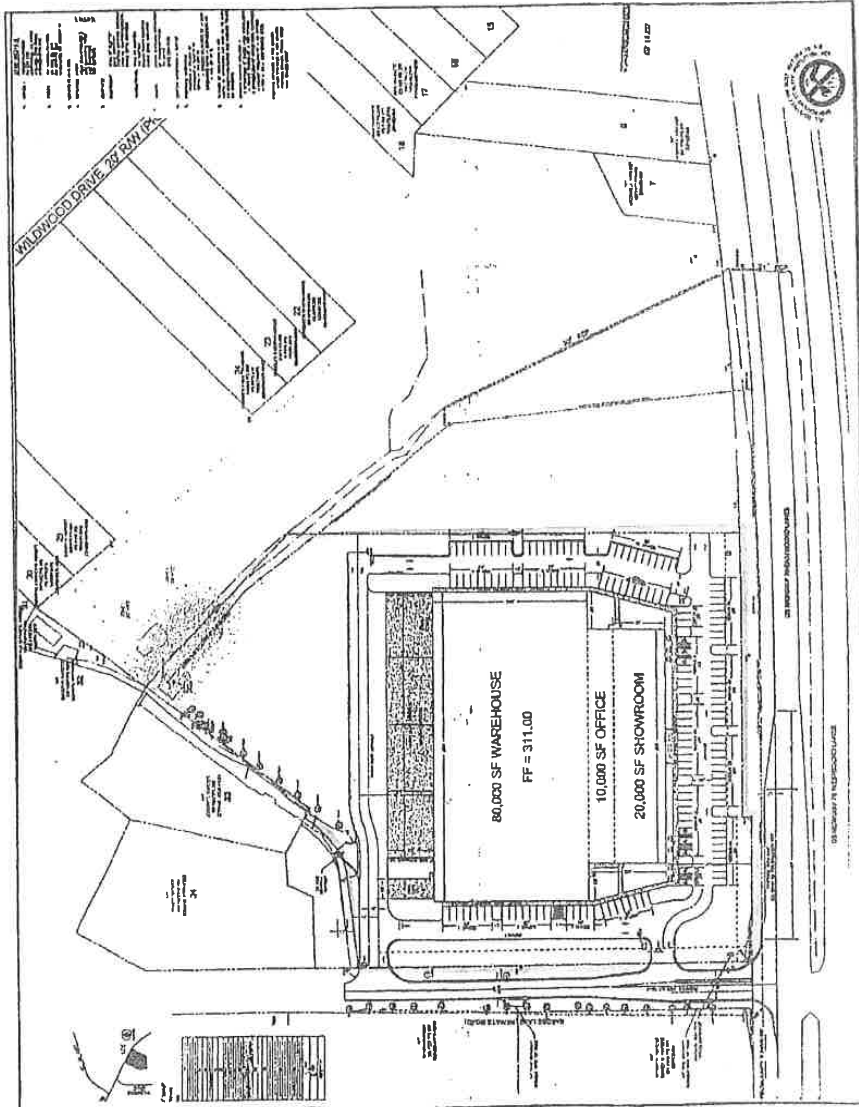
version 10-15-2015

Page 10 of 10

EXHIBIT A

Showroom/Office/Warehouse, US Highway 70, Clayton

Site Plan





Town of Clayton
Planning Department
111 E. Second Street, Clayton, NC 27520
P.O. Box 879, Clayton, NC 27528
Phone: 919-553-5002
Fax: 919-553-1720

December 20, 2016

STAFF REPORT

Application Number: 2016-227-SUP

Project Name: IGT Technology- 9257 US 70 HWY BUS W, Special Use Permit

NC PIN / Tag #: 166800-84-0769 / 05I04017
Town Limits/ETJ: Town Limits
Overlay: Thoroughfare Overlay
Applicant: Cameron D. Sullivan
Owner: Mooring Capital Fund, LLC
Location: 9257 US 70 BUS HWY

Public Noticing:

- Neighborhood meeting December 8, 2016
- Sign posted December 9, 2016
- Newspaper ad published February 1, 2017 & January 25, 2017

REQUEST: The applicant is requesting a special use permit to operate the use of Warehouse, Freight Movement in an existing building located in a Special Use District.

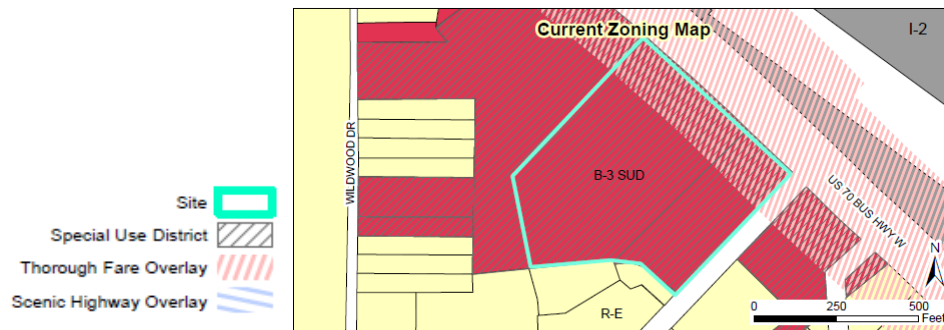
SITE DATA:

Acreage: 8.33 acres
Existing Use: The front 30,000 square feet contains the use of Indoor Entertainment (Nick's Flippin Kids), and the remaining 80,000 square feet of the building is vacant.



ADJACENT ZONING AND LAND USES:

Direction	Zoning	Existing Use
North	Highway-Business (B-3)	Vacant
South	Residential-Estate (R-E)	Single-Family Residences
East	Highway-Business (B-3)	Commercial
West	Highway-Business (B-3)	Single-Family Residences



DEVELOPMENT DATA:

Proposed Uses: Warehouse, Freight Movement

Buildings: 1 building, existing

Fire Protection: Town of Clayton

Access/Streets: Access is provided via 2 full-access existing driveways located off of Hardee Lane. There are also two stub-outs located on the Northern portion of the lot. These stub-outs connect to the undeveloped adjacent property.

Water/Sewer Provider: Town of Clayton

Electric Provider: Town of Clayton

STAFF ANALYSIS:

Overview

The applicant is requesting a Special Use Permit to operate a warehousing business in an existing and vacant building. The company is proposing to lease 40,000 square feet of the building to conduct their operations, which is primarily the repackaging and shipping of lottery machines. There will be 40,000 square feet of the building that will remain vacant, and the remaining 30,000 square feet (the storefront facing US Hwy 70 Bus.) is occupied by Nick's Flippin' Kids gymnastics facility. The applicant is proposing to operate the warehousing business temporarily within the structure, with the lease ending in April 30, 2017.

The property is zoned B-3 SUD (Highway Business Special Use District). This use is permitted outright within the B-3 zoning district, but the Special Use Overlay requires new use applications to go through the special use process in order to be permitted.

Background & History

In 2007, a Special Use Permit was granted for this site (SUP 07-03) to allow Ashley Furniture Store and Distribution Center to locate on the site. A Major Site Plan was also approved during this time. The building later was converted into Chloe's Furniture Store, which closed in 2013 leaving the 110,000 square foot building vacant. In 2015, Nick's Flippin Kids obtained a Special Use Permit in order to operate a gymnastics facility within the front 30,000 square feet of the building.

Associated Site Plan

Since the applicant is requesting to locate in an existing building, and no changes are proposed to be made to the property, the applicant has submitted the existing site plan which was approved in 2007 for the Ashley Furniture Store. Staff has reviewed the existing plan and has determined that no changes are needed to the site to meet code requirements. The applicant has noted on the site plan which portions of the facility the business is proposing to occupy.

Landscaping, Buffering, Screening

The site has existing landscaping that is in compliance with UDC requirements. Street yard trees and shrubs are provided along Highway 70, a Class "A" buffer is provided along Hardee Lane, and a Class "C" landscape buffer is provided along the southern property line, which is where the property abuts parcels zoned R-E (Residential-Estate). The applicant will be required to maintain the existing landscaping as well as replace any missing plant material as shown on the original site plan approval. Any future dumpsters that are added to the site shall be screened entirely from view, as required within the UDC (155.402(G)(2)).

Signs

The applicant has not submitted any proposed signage for the subject property. All signs will be reviewed separately through the Planning Department and will be required to adhere to UDC requirements.

Architecture

No exterior changes are being made to the existing building. The existing architecture of the building is acceptable to staff.

Consistency with Adopted Plans:

- **Comprehensive Plan 2040**

The 2040 Comprehensive Plan designates this parcel of land, as well as surrounding parcels, as "Low Density Residential". However, the existing site is currently zoned B-3 SUD and will ultimately be used for commercial purposes because of the existing facilities. While the proposed use is not consistent with the future land use map, it is consistent with Objective LU1.2 of the plan which encourages the redevelopment or adaptive reuse of under-utilized commercial development. The subject parcel has been primarily vacant for some time, and the proposed use is similar to that of the previous use of the building which was a furniture store with warehousing.

- **Unified Development Code**

The proposed development is consistent and meets the applicable requirements of the Unified Development Code (UDC).

FINDINGS

When considering a Special Use Permit application, the Town Council shall consider specific Findings of Fact. A Special Use which fails to meet any of these Findings shall be deemed adverse to the public interest and shall not be approved. The applicant has adequately addressed the Findings of Fact expressly established by Chapter 155.711(I) of the UDC, and these Findings are accepted as part of the completed application.

CONSIDERATIONS:

- The Town Council approves Special Use Permits. The Planning Board shall make a recommendation to the Town Council.
-

CONDITIONS OF APPROVAL:

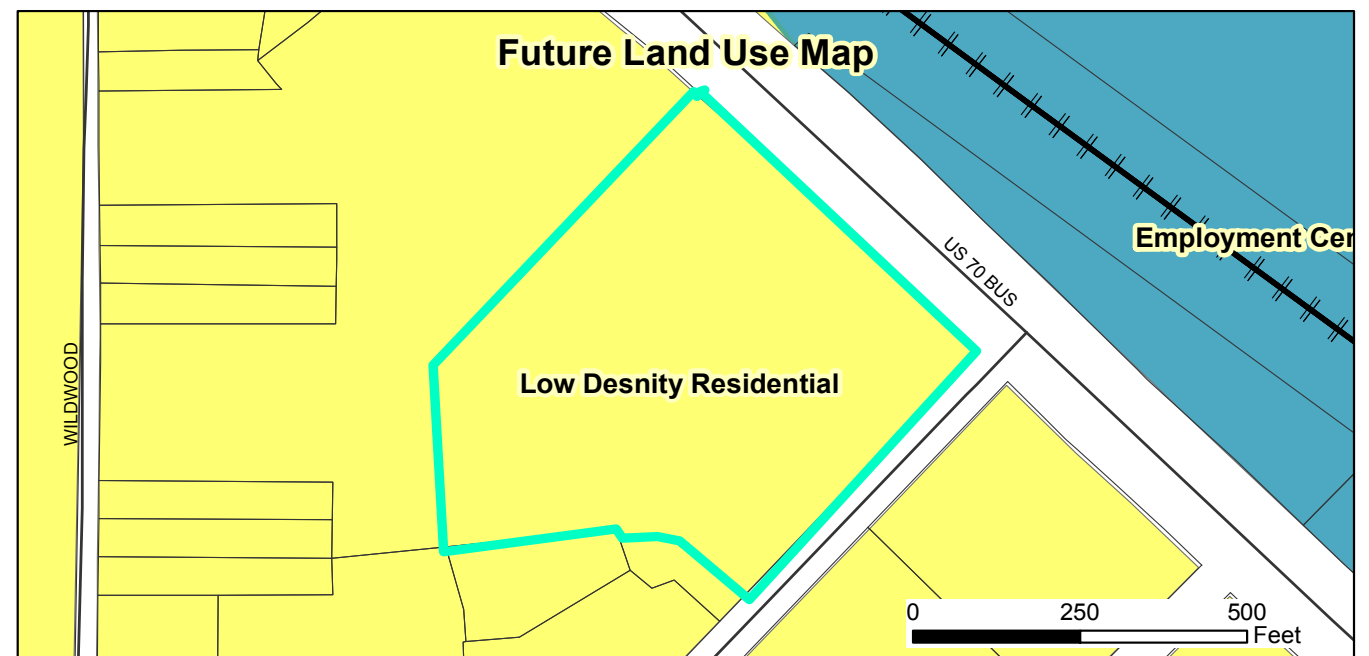
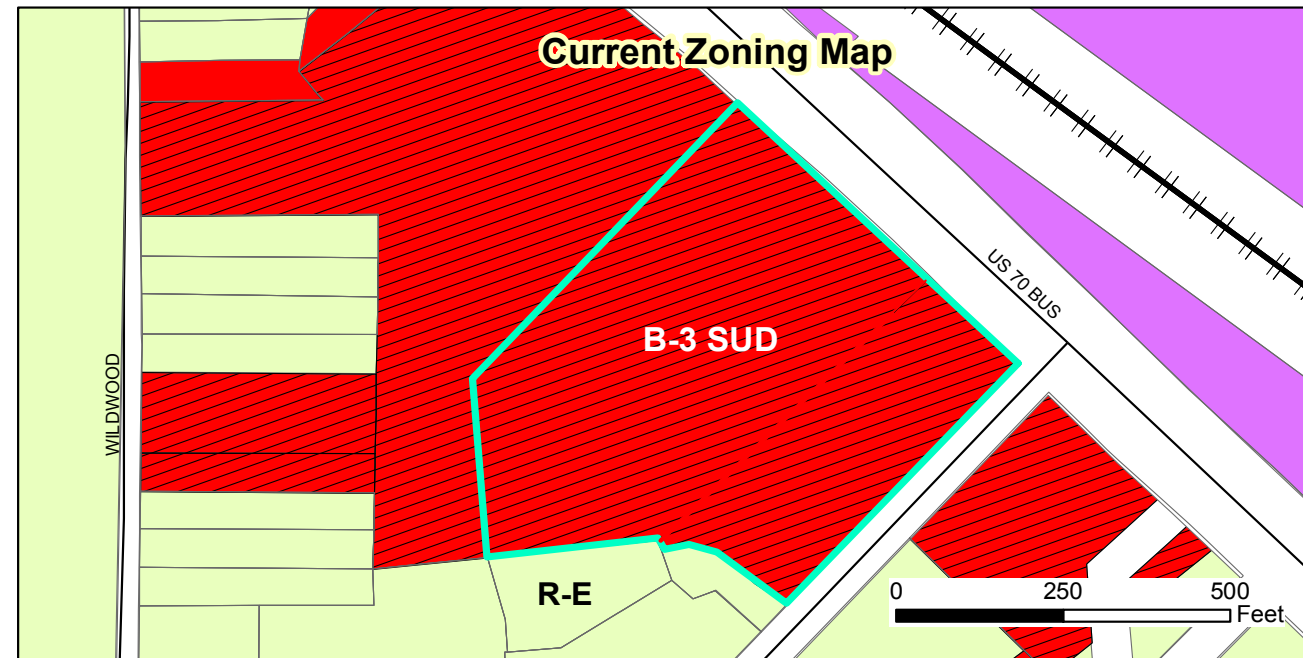
1. All dumpsters shall be screened entirely from view, as required within the Unified Development Code (155.402(G)(2)).
-

RECOMMENDATION:

Staff is recommending approval with conditions of the above referenced Special Use Permit.

ATTACHMENTS:

- 1) Application
- 2) Staff Report Map
- 3) Site Plan
- 4) Neighborhood Meeting Materials



2016-227-SUP IGT Technology- 9257 US HWYBUS W
Request: Special Use request to operate a manufacturing operation on the site
 Applicant: Cameron D. Sullivan
 Property Owner: Mooring Capital Fund LLC
 Parcel ID: 166800-84-0769
 Tag #: 05104017

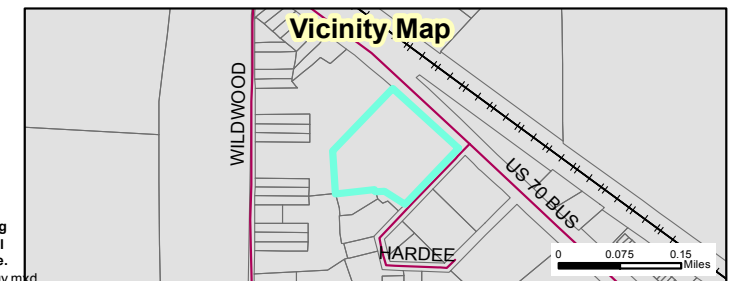


Parcels 
 Roads 
 Site 

11/30/16

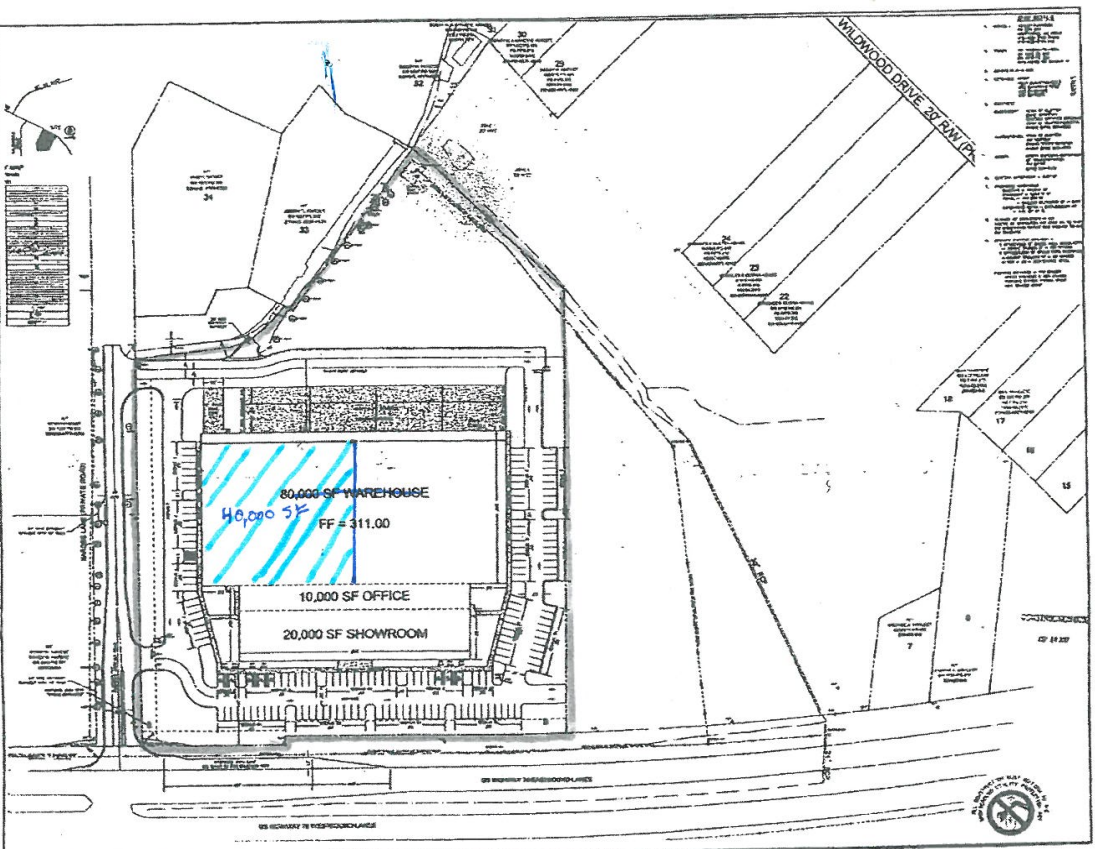
Produced by: TOC Planning
 Disclaimer: Town of Clayton assumes no legal responsibility for the information represented here.

Document Path: O:\PLANNING\SPECIAL USE\2016\2016-227-SUP IGT Technology - 9257 US Hwy Bus W\Maps\StaffReportMap- 2016-227-SUP IGT Technology.mxd



Site Plan

Showroom/Office/Warehouse, US Highway 70, Clayton



EXPLANATION OF PROJECT

Please provide detailed information concerning all requests. Attach additional sheets if necessary.

The building is being leased by a warehousing company that takes in lottery machines, repackages them and ships them back out. The building already exists on the property, the use is the only change. This use is similar in nature as previous uses by furniture companies. IFA-Tech has been > 400

Current breast. Their lease will expire April 30, 2017.

APPLICANT AFFIDAVIT

I/We, the undersigned, do hereby make application and petition to the Town Council of the Town of Clayton to approve the subject Special Use Permit. I hereby certify that I have full legal right to request such action and that the statements or information made in any paper or plans submitted herewith are true and correct to the best of my knowledge. I understand this application, related material and all attachments become official records of the Planning Department of the Town of Clayton, North Carolina, and will not be returned.

Cancer O Sullivan
Print Name


Signature of Applicant

10/27/16
Date



Joshua M. Whitaker
jmw@mwhlaw.lawyer

Damion L. McCullers
dlm@mwhlaw.lawyer

Joseph Hamer
jth@mwhlaw.lawyer

Ashley M. Pinner
amp@mwhlaw.lawyer

Cameron D. Sullivan
cds@mwhlaw.lawyer

Offices:

Garner:
216 US Highway 70 West
Garner, NC 27529

Clayton:
104 N. Fayetteville St.
Clayton, NC 27520

Phone: (919) 585-5501

Fax: (919) 573-0798

www.mwhlaw.lawyer



Wednesday, November 23, 2016

Dear Clayton Area Property Owner

The purpose of this letter is to notify you of an application filed with the Town of Clayton for a land use change involving property adjacent to, or in close proximity to, property shown in your ownership by Johnston County tax records. Per Town of Clayton regulations, a Neighborhood Meeting will be held to provide information to area residents about the nature of the proposal. A representative of the applicant will be present to explain their application, answer questions, and solicit comments.

Meeting Date: December 8th, 2016

Meeting Time :6:00pm

Meeting Location: McCullers, Whitaker & Hamer, PLLC 104 N. Fayetteville Street, Clayton NC 27520.

Type of Application: Special Use District.

Project/proposal property address: 9257 US Hwy 70 Bus Clayton NC 27520 (Ashley Furniture Building)

Description of Project/proposal: Obtain the required Special Use Permit for the current use.

At minimum, the following will be available for your inspection at the Neighborhood Meeting:

1. A copy of the project application
2. A map at a scale that is appropriate to the project and shows neighboring properties and road.
3. A map, drawing or other depiction of the proposed land use change or development proposal.

A map is enclosed with this letter showing the location of the property that is subject to this application for land use change and/or development proposal.

If you have any questions prior to or after this meeting, you may contact us at (919) 585-5501. You may also contact the planning department at 919-552-5002.

Sincerely,

Cameron D. Sullivan

Cc: Town of Clayton Planning Dept.

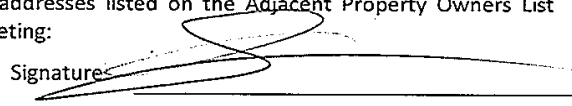
NEIGHBORHOOD MEETING SUMMARY FORM

FILL OUT THE FOLLOWING:

Application: Ashley Furniture Building

Date of Mailing: 11/23/2016

I hereby attest that letters were mailed to the addresses listed on the Adjacent Property Owners List (attached) ten days prior to the Neighborhood Meeting:

Printed Name: Cameron D. Sullivan Signature: 

Date of Meeting: 12/08/2016

Time of Meeting: 6:00PM

Location of Meeting: 104 N Fayetteville Street, Clayton NC 27520

Meeting Summary/Minutes: provide a summary of the discussion held at the meeting, including issues raised and any resolution discussed, and any changes made to the application as a result of the meeting.

Robert Niesel from IGT and Cameron Sullivan were ready at 6:00pm
at the meeting location. We waited until 6:45pm before calling the meeting
as none of the property owners or anyone else were present.

Please write clearly (or submit a typed summary). Use additional sheets if necessary.

NEIGHBORHOOD MEETING ATTENDANCE ROSTER

Project: Ashley Furniture Building

Application: SUP

Location/Date: 104 N. Fayetteville Street Clayton NC 27520 6:00pm

	NAME	ADDRESS
1	Cameron D Sullivan	104 N Fayetteville St. Clayton NC 27520
2	Robert Niesel	3100 Hawthoods, Raleigh, NC 27604
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**TOWN OF CLAYTON
PLANNING BOARD WRITTEN RECOMMENDATION
SPECIAL USE PERMIT:**

**IGT TECHNOLOGY
2016-227-SUP**

On December 20, 2016 the Planning Board heard the above-referenced request and made the following vote:

Recommendation to the Town Council to

☒ approve the request;

☐ approve the request with the following modified or added conditions:

☐ deny the request.

Recommendation(s) made this 20th day of December 2016 while in regular session.

Signed:



Frank Price, Planning Board Chair

PUBLIC NOTICE

In accordance with NC GS 160A-364, the Clayton Town Council will hold an evidentiary hearing on February 6, 2017, at 6:30 PM at Town Hall, 111 East Second Street, to consider the following:

- IGT Technology Special Use Permit, 2016-227-SUP. Request to obtain a special use permit to allow the use of Warehouse, Freight Movement to operate in an existing building located within a Special Use District. The property is located at 9257 US HWY 70 BUS. Parcel number: 166800-84-0769. TAG #: 05I04017

During an evidentiary hearing, the Clayton Town Council must make findings of fact based upon sworn testimony and other credible evidence. Citizens may give testimony in an evidentiary hearing after they have taken an oath.

This is an open meeting and the public is invited to attend.

Haley Hogg, Planner
919-553-5002

The Clayton News Star

Please advertise on the following dates:

January 25, 2017

February 1, 2017

Affidavit of publication required.



**TOWN OF CLAYTON
TOWN COUNCIL
AGENDA COVER SHEET**

AGENDA LOCATION:

Items for Regular Meeting

Meeting Date:

January 17, 2017

ITEM TITLE:

The Village at Little Creek Rezoning 2016-172-RZ

DESCRIPTION:

Applicant is requesting to rezone 22.44 acres of land from Residential-Estate (R-E) to Residential-8 (R-8). Request is only for the southern parcel to allow 8,000 SF single family residential lots or 6,000SF single family residential lots if lots are developed as part of an Open Space Subdivision. Property is currently located within ETJ and would be required to annex to receive water and sewer services. Rezoning is running concurrently with Major Subdivision application 2016-173-SD to develop both subject parcel and parcel located to the north, which is already zoned R-8, into a 154 single family open space subdivision

POTENTIAL ACTION:

Set Public Hearing for February 6, 2017

DEPARTMENT:

Planning

PRESENTER:

Jay McLeod

ITEM HISTORY:

Date:

Action Taken:

Information Provided:

Application
Staff Report



TOWN OF CLAYTON

Planning Department

111 E. Second Street, Clayton, NC 27520

P.O. Box 879, Clayton, NC 27528

Phone: 919-553-5002

Fax: 919-553-1720

REZONING APPLICATION

Pursuant to Article 7, Section 155.704 of the Unified Development Code, an owner of land within the jurisdiction of the Town (or a duly authorized agent) may petition the Town Council to amend the Official Zoning Map.

Application Fees: **Standard Rezoning Fee: \$500.00**
Rezoning to Planned Development District Fee: \$1,000.00 + \$5.00 acre
Advertisement Fee: \$100.00
All fees are due when the application is submitted.

Note on Planned Developments: Requests to rezone to a Planned Development District must be accompanied by a Master Plan submittal. Master Plans are approved as Preliminary Subdivision Plats – please submit a concurrent Preliminary Subdivision Plat application and Master Plan.

SITE INFORMATION

Name of Project: The Village at Little Creek Acreage of Property: 44.25
County Tag Number: _____ NC PIN: 165812-85-9742, 94-4736
Address/Location: Dairy Road south of Brittany Woods S/D
Existing Zoning District: R8/RE
Proposed Zoning District: R8

APPLICANT INFORMATION

Applicant: Triangle Real Estate Co.
Mailing Address: 113 Duncansby Ct., Cary, NC 27511
Phone Number: (919) 522-5626 Fax: _____
Contact Person: Bill Zahn
Email Address: billzahn@bellsouth.net

FOR OFFICE USE ONLY

Date Received: 8/19/16 Amount Paid: _____ File Number: 2016-172RZ

PROPERTY OWNER INFORMATION

Name: Dairy Road 1, LLC

Mailing Address: 5121 Kingdom Way, Raleigh, NC 27607

Phone Number: _____ Fax: _____

Email Address: _____

EXPLANATION OF PROJECT

Please provide detailed information concerning all requests. Attach additional sheets if necessary.

REQUIRED INFORMATION (to be submitted with the application)

The following items must accompany a Rezoning application.

To be completed by the applicant:			For staff use only:		
Submit 9 copies of all materials unless otherwise noted or directed by staff	Yes	N/A	Yes	No	N/A
1. A pre-application conference was held with Town of Clayton staff. Date: _____	☐	☐			
2. Review Fee (\$500 for standard rezoning <u>OR</u> \$1,000 + \$5.00/acre for Planned Developments) and Advertisement Fee (\$100)	☐				
3. Completed application	☐				
4. Owner's Consent Form <i>Required if applicant is not property owner.</i>	☐	☐			
5. A signed and sealed boundary survey (not more than a year old unless otherwise approved by the Planning Department).	☐				
6. <i>If property to be rezoned is a portion of a parcel:</i> - Property legal description typed (10 pt. font or greater, and also submitted electronically in MS Word format.) - Plat showing property to be rezoned, matching legal description.	☐ ☐	☐ ☐			
7. Adjacent property owners list	☐	☐			
8. Neighborhood meeting notice letter (1 copy) <i>See sample letter and meeting requirements included in this packet</i>	☐				
9. Neighborhood meeting summary form (1 copy) <i>Included in this packet</i>			Must be submitted after neighborhood meeting is held and at least 10 days prior to Planning Board meeting.		
10. Stamped, addressed, empty envelopes with no return address, using the adjacent property owner list (1 set) <i>This for a public notice of the public hearing mailed by the Town – thus, neighbors will receive both a neighborhood meeting letter from the applicant, and a notice of the hearing from the Town.</i>	☐				

APPROVAL CRITERIA

All applications for a Rezoning must address the following findings:

1. Consistency with the adopted plans of the Town.
Current zoning of one parcel in the tract is R8, this zoning classification is requested for the adjoining tract. Zoning of the development north of the proposed development is R8.

2. Suitability of the subject property for uses permitted by the current vs. the proposed district.
The parcel is well suited topographically for a residential development. Buffers and wetlands adjacent to the site allow for generous open spaces and extensions to Town greenways.

3. Whether the proposed change tends to improve the balance of uses, or meets specific demand in the Town.
There is a current demand for housing in Clayton. This parcel is divided by the proposed Southern Connector making future commercial uses on the property possible and probable. A residential development with no commercial components fits better with the current trends of the area.

4. The capacity of adequate public facilities and services including schools, roads, recreation facilities, wastewater treatment, potable water supply and stormwater drainage facilities is available for the proposed use.
All will be designed during construction plan design phase of the development. We are unaware of any existign utilities that are not adequate to serve the proposed development.

5. It has been determined that the legal purposes for which zoning exists are not violated.
The development team has indicated that there are no zoning conditions that would be violated if this request is approved.

6. It has been determined that there will be no adverse effect upon adjoining property owners unless such effect can be justified by the overwhelming public good or welfare.
We know of none.

7. It has been determined that no one property owner or small group of property owners will benefit materially from the change to the detriment of the general public.
No existing property owners will benefit, at the detriment to other property owners, from the approval of this request or the development of this property.

APPLICANT AFFIDAVIT

I/We, the undersigned, do hereby make application and petition to the Town Council of the Town of Clayton to amend the Zoning Ordinance and change the Official Zoning Map of the Town of Clayton as requested. I hereby certify that I have full legal right to request such action and that the statements or information made in any paper or plans submitted herewith are true and correct to the best of my knowledge. I understand this application, related material and all attachments become official records of the Planning Department of the Town of Clayton, North Carolina, and will not be returned.

William F. Zoh
Print Name

William F. Zoh
Signature of Applicant

8/6/18
Date



Town of Clayton
Planning Department
111 E. Second Street, Clayton, NC 27520
P.O. Box 879, Clayton, NC 27528
Phone: 919-553-1545
Fax: 919-553-1720

Planning Board
September 26, 2016

STAFF REPORT

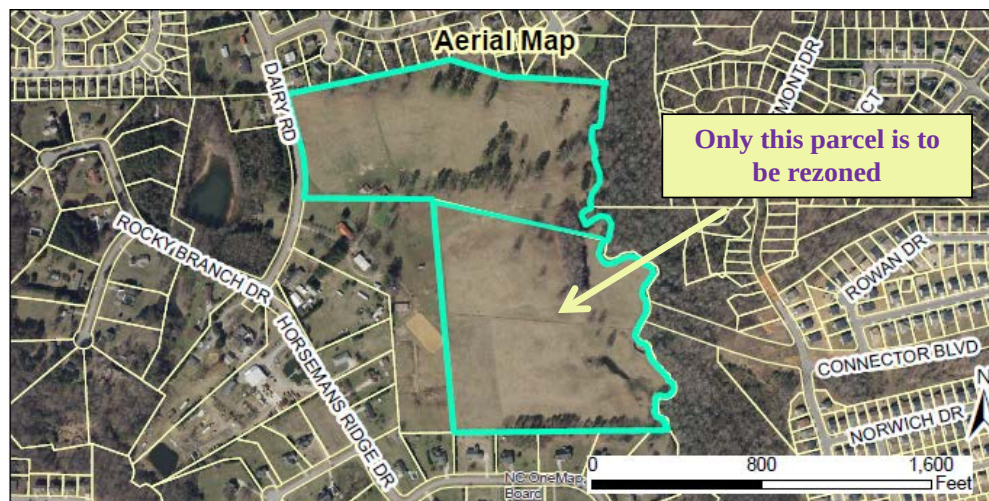
Application Number: 2016-172-RZ
Project Name: The Village at Little Creek Subdivision Rezoning

NC PIN / Tag #: 165816-94-4736/05H03024
Town Limits/ETJ: ETJ
Overlay: None
Applicant: Triangle Real Estate Co. c/o Bill Zahn
Owner: Dairy Road LLC
Location: Off of Dairy Road, south of Brittany Woods Subdivision

Public Noticing:

- Neighborhood meeting August 11, 2016
- Sign posted prior to September 16, 2016
- Letters mailed prior to October 28, 2016
- Newspaper ad posted October 26, 2016 and November 2, 2016

REQUEST: Rezoning from Residential-Estate (R-E) to Residential-8 (R-10)

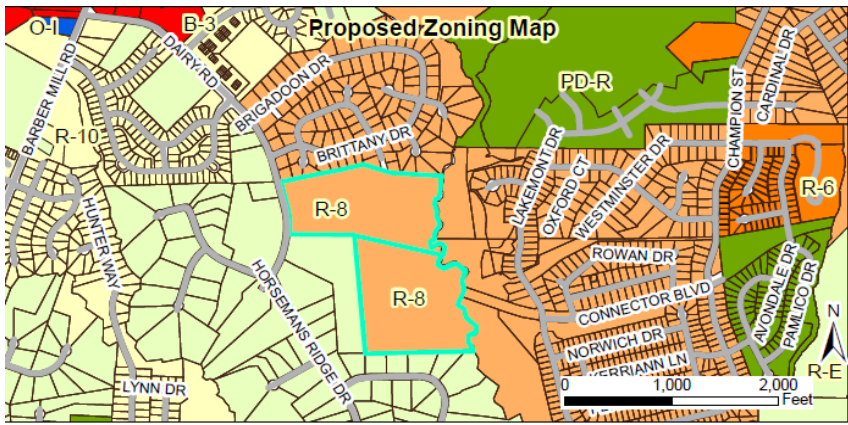


SITE DATA:

Acreage: 22.44 acres (southern parcel only)
Existing Use: Agricultural

ADJACENT ZONING AND LAND USES:

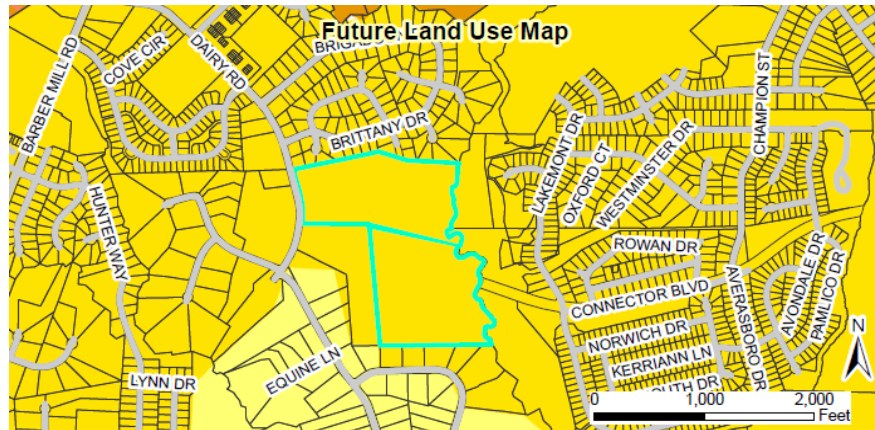
Direction	Zoning	Existing Use
North	Residential-8 (R-8)	Single-family residential
South	Residential-Estate (R-E)	Single-family residential
East	Residential-8 (R-8)	Single-family residential
West	Residential-Estate (R-E)	Single-family residential



STAFF ANALYSIS AND COMMENTARY:

Overview

The applicant is requesting to rezone 22.44 acres of land from Residential-Estate (R-E) to Residential-8 (R-8). This rezoning request is only for the southern parcel shown on the staff report maps. The change to Residential-8 (R-8) zoning district allows 8,000 SF single-family residential lots, or 6,000 SF single-family residential lots if the lots are developed as part of an Open Space subdivision. This property is currently located within the Town’s Extraterritorial Planning Jurisdiction (ETJ), and would be required to annex in order to receive water and sewer services. This rezoning request is running concurrently with a Major Subdivision application (2016-173-SD) to develop both the subject parcel and the parcel located to the north, which is already zoned Residential-8 (R-8), into a 154 lot single-family open space subdivision.



Compatibility with Surrounding Land Uses

The proposed rezoning is compatible with surrounding land uses, which are primarily single-family residential lots (north, south, and west) or vacant properties (east).

Consistency with the Comprehensive Plan 2040

The Future Land Use for this area is envisioned as Medium Density Residential, which accommodates the Residential-8 (R-8) zoning district.

CONSIDERATIONS:

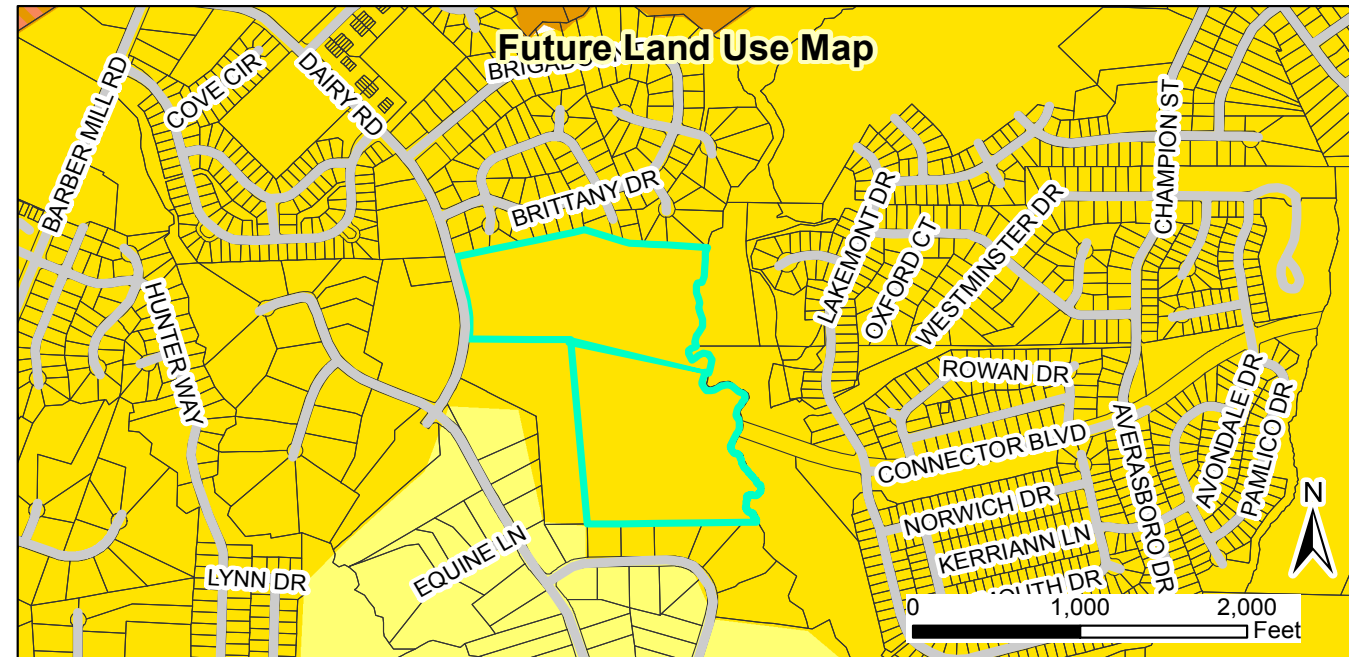
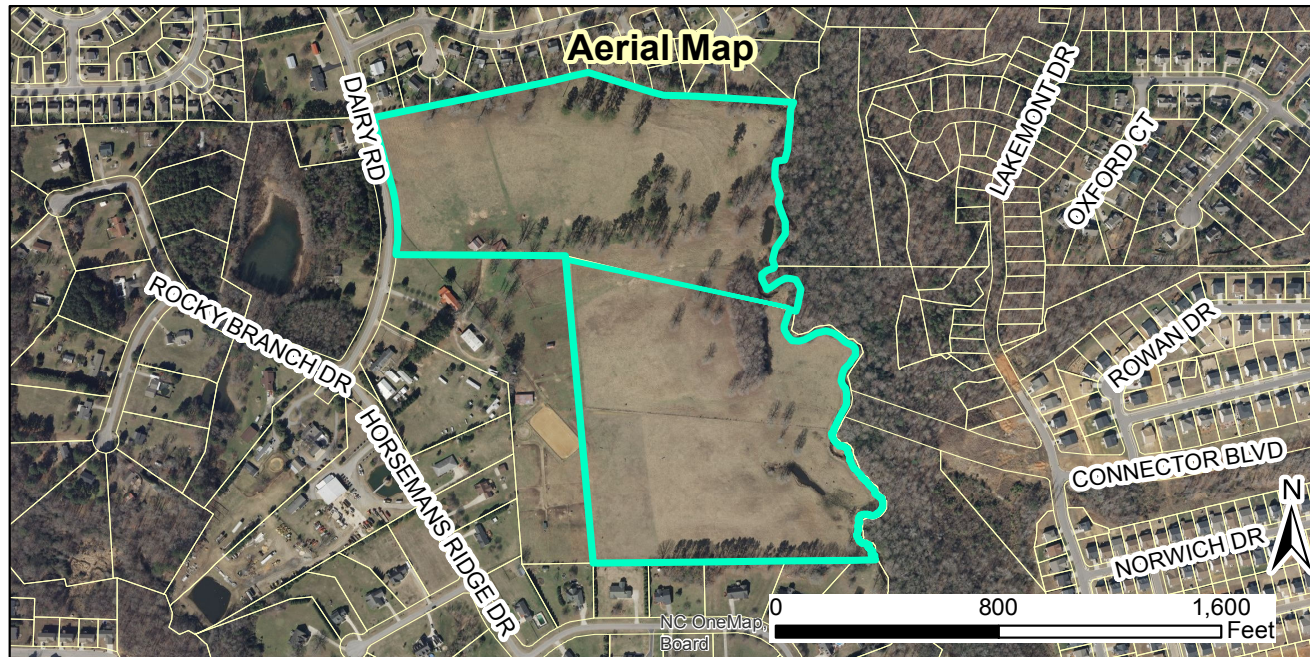
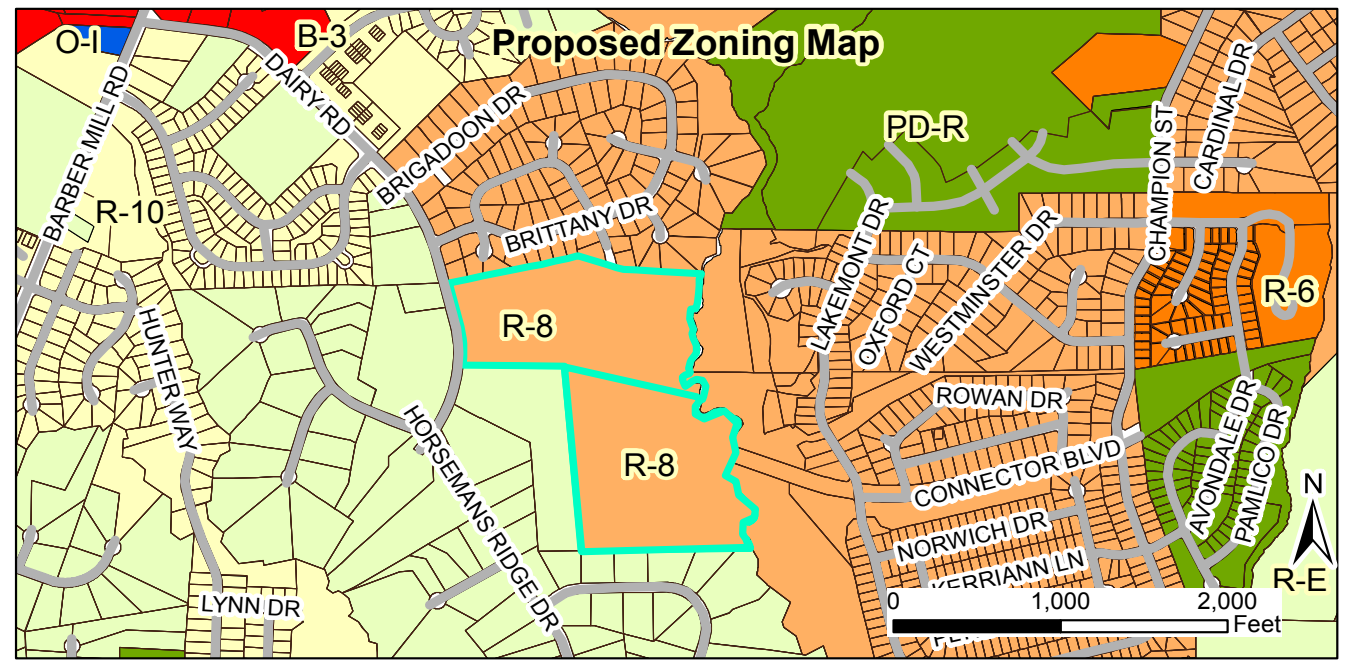
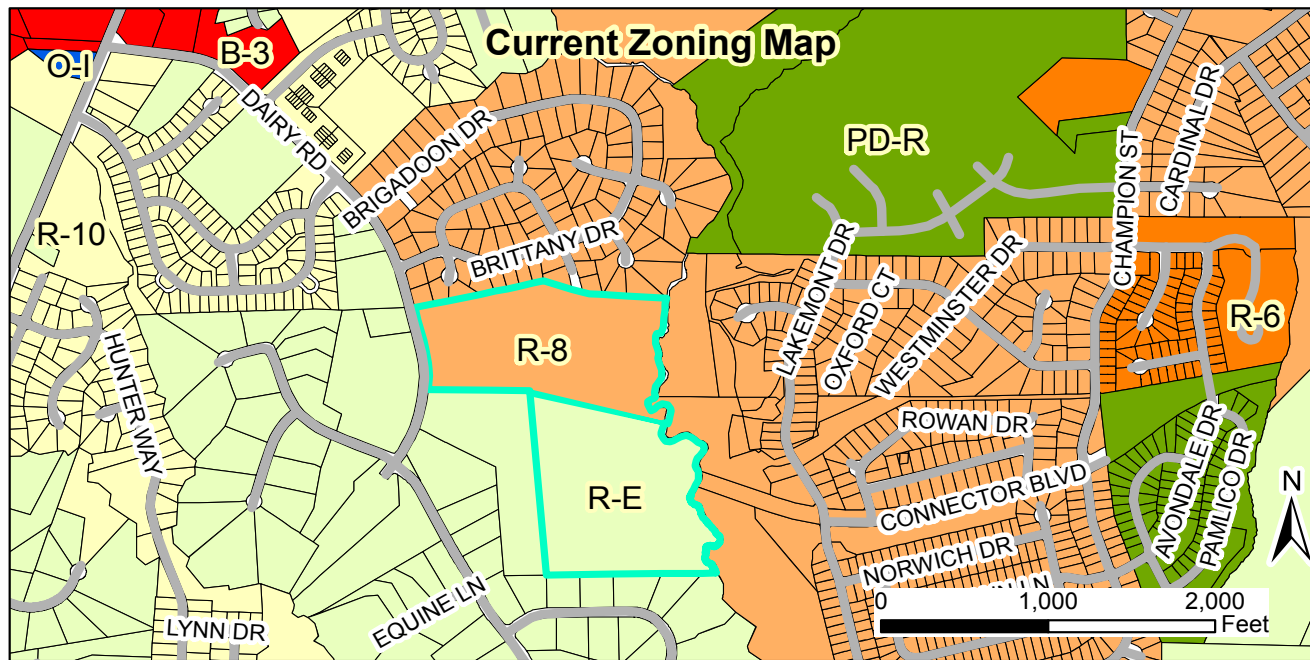
- Rezoning is decided by the Town Council. The Planning Board shall make a recommendation to the Town Council.
- When adopting or rejecting the rezoning, the Town Council shall approve a statement describing whether its action is consistent with adopted plans and/or policies of the Town and explaining why the Council considers the action taken to be reasonable and in the public interest.

STAFF RECOMMENDATION:

Staff is recommending approval of the rezoning of the subject parcel.

ATTACHMENTS:

- 1) Staff Report Map
- 2) Application
- 3) Neighborhood Meeting Materials



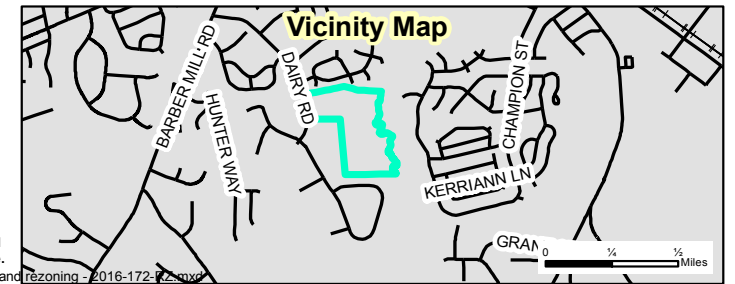
2016-173-SD and 2016-172-RZ: The Village at Little Creek Subdivision and Rezoning
Request: Create a ±150 lot subdivision on a site proposed to be rezoned to R-8.

Applicant: Triangel Real Estate Co. c/o Bill Zahn
 Property Owners: Dairy Road I LLC
 Parcel ID: 165812-85-9742, 165816-94-4736
 Tag #: 05h04002a, 05h03024



- Site
- Special Use District
- Thorough Fare Overlay
- Scenic Highway Overlay
- Railroads

Disclaimer: Town of Clayton assumes no legal responsibility for the information represented here.



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July 27, 2016

Dear Clayton Area Property Owner,

The purpose of this letter is to notify you of an application filed with the Town of Clayton for a land use proposal involving property adjacent to, or in close proximity to, property shown in your ownership by Johnston County tax records. Per Town of Clayton regulations, a neighborhood meeting will be held to provide information to area residents about the nature of the proposal. A representative of the applicant will be present to explain their application, answer questions, and solicit comments.

Meeting Date: August 11, 2016

Location: Town Hall – York Room
111 East Second Street
Clayton, NC 27520

Time: 6:30pm

Type of Application: Preliminary Single-Family Subdivision Approval

General Description: 44.25 acres (see attached subject property)

If you have any questions prior to or after this meeting, you may contact us at 919-714-7131.

Sincerely,



Andrew Moss Withers

Cc: Clayton Planning Department

Page 62 of 211

NEIGHBORHOOD MEETING SUMMARY FORM

FILL OUT THE FOLLOWING:

Date of Mailing: July 27, 2016

I hereby attest that letters were mailed to the addresses listed on the Adjacent Property Owners List (attached):

Printed Name: Karah Jennings

Signature: 

Date of Meeting: August 11, 2016

Time of Meeting: 6:30-8:30pm

Location of Meeting: The Clayton Center - York Room

Meeting Summary/Minutes: *provide a summary of the discussion held at the meeting, including issues raised and any changes made by the applicant as a result of the meeting.* 24 in attendance total of which 19 were residents

R-8 proposed 3.4 units/acre with two parks dedicated to Town of Clayton

Considering 1,450-3000sf homes, neighbor compared to Brittany Woods. Discussed that it would be public water and sewer.

Provided those in attendance with copy of proposed plan under review and subject to revision/comments

New development will have HOA, unknown additional amenities. Observe open and green space.

Question on water runoff discussed- proposed plan includes designed bioretention areas for stormwater management

Resource conservation areas maintained by HOA. Joseph Brown concerned by water flow

Question on the effect of natural springs- explained development mimics ground contours rather than level grading

All neighbors on Horsemans Ridge are on septic and wells in county

Informed residents that TRC meeting would take place on 8/17/16, would be phased takedown, a 1 to 2 year development

Sidewalks likely on both sides of Dairy Rd connector

Residents brought up questions on traffic within development explained in process of traffic study and looking at offsite improvement

Explained that it was requested in plan that Marion Rd in Brittany Woods would connect into this development

Approximately \$50,000-\$60,000 in development costs per lot, 6000sf minimum lot size

Explained utilities would be in public right of way and designated easements

Addressed questions from Slyvie Rodriguez regarding water and connectivity

Discussed buffers in place and that those were being reviewed with TRC. Plans shown meet initial criteria with 20ft type c buffer

Please write clearly (or submit a typed summary), and use additional sheets if necessary.

01/06/2016

Page 16 of 23

NEIGHBORHOOD MEETING ATTENDANCE ROSTER

Applicant: The Village at Little Creek

Location/Date: Clayton Center, 8/11/2016

	NAME	ADDRESS
1	Doag Carey 2857	Horseman's Ridge No Email
2	William Hairston	2804 Brittany Dr. whairst@gmail.com
3	GARY STALLINGS	2748 Horseman's Dr. gstallings2@gmail.com
4	STAN & ELAINE LEE	605 DAIRY RD. ELEE + EL 34 @ Group 1 . Com
5	Selena Dailey	467 Dairy Rd. Selena-Dailey1@gmail.com
6	Joe & Debbie Brown	2849 Horseman's Ridge Jdbb79@gmail.com
7	Matt Brubaker	4840 Winterville Dr. Raleigh NC 27613
8	JACKIE & JUDY LASCORE	2861 HORSEMAN'S RIDGE DR. CLAYTON
9	Sylvie Connors (Rodriguez)	304 Marion Dr. (sylvie.rodriguez@gmail.com)
10	Hubert Brady	649 Dairy Rd
11	George Hielscher	2825 Horseman's Ridge Dr. Clayton NC 27520 georgehielscher@carrr.com
12	Chad Brady	2748 Horseman's Ridge Drive chadbrady@nc.rr.com (wildlife)
13	Mary Johnson	2865 Horseman's Ridge Dr. browneyes6169@gmail.com
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ADJACENT PROPERTY OWNERS						
Name	PIN	Address	Deed Book	Page	Zoning	GIS Area, Ac.
✓ Selena Dailey	1658-12-85-1839	467 Dairy Road, Clayton, NC 27520	4455	402	R8	0.32
Lee Chaung Lau	1658-12-85-2941	904 Skimmer Cove, Hampstead, NC 28443	2884	290	R8	0.32
Johnny Sanchez	1658-12-85-3963	13 Leah Circle, Clayton, NC 27520	3882	988	R8	0.32
✓ William Hairston	1658-12-85-4988	2408 Brittany Drive, Clayton, NC 27520	3845	743	R8	0.41
Nandram Jaiprashad	1658-12-86-5080	2608 Brittany Drive, Clayton, NC 27520	3139	239	R8	0.31
Joey Emery	1658-12-86-6061	2808 Brittany Drive, Clayton, NC 27520	4213	254	R8	0.29
Robert Browning	1658-12-86-7043	65 Glen Road, Ste. 182, Garner, NC 27529	2012	342	R8	0.29
Rebecca Buckman	1658-12-86-8015	2812 Brittany Drive, Clayton, NC 27520	4124	338	R8	0.27
✓ Sylvie Rodriguez	1658-12-86-9041	304 Marrian Drive, Clayton, NC 27520	3358	731	R8	0.33
Rufus Gilliam	1658-12-95-1955	305 Marrian Drive, Clayton, NC 27520	3247	939	R8	0.3
American Homes 4 Rent	1658-12-96-2034	30601 Agoura Rd., Agoura Hills, CA 91301	4568	687	R8	0.47
CHCS Properties, LLC	1658-12-95-3906	PO Box 841953 Charlotte, NC 28289	2998	466	R8	0.38
RREF ST NC, LLC	1658-12-95-4926	730 NW 107th Ave. Ste. 400, Miami, FL 33172	4494	162	R8	0.58
Kevin Chisek	1658-12-96-5052	113 Darfield Ct., Clayton, NC 27520	4628	672	R8	0.89
Town of Clayton	1658-12-95-8709	231 E. Second St., Clayton, NC 27520	1496	275	R8	5.43
Town of Clayton	1668-12-05-0100	231 E. Second St., Clayton, NC 27520	1496	275	R8	4.39
Town of Clayton	1668-13-03-5825	231 E. Second St., Clayton, NC 27520	1496	275	R8	13.26
Joseph Brown	1658-16-93-7999	2849 Horsemans Ridge, Clayton, NC 27520	2174	100	RE	2.2
David Pittman	1658-16-94-6018	2853 Horsemans Ridge, Clayton, NC 27520	1325	729	RE	1.03
✓ Douglas Carey	1658-16-94-4009	2857 Horsemans Ridge, Clayton, NC 27520	4608	123	RE	1.16
✓ William Inscore	1658-16-94-1078	2861 Horsemans Ridge, Clayton, NC 27520	3887	304	RE	0.92
✓ Mary Johnson	1658-16-84-9078	2865 Horsemans Ridge, Clayton, NC 27520			RE	0.92
Terry Rhodes	1658-16-84-7088	2869 Horsemans Ridge, Clayton, NC 27520	3849	57	RE	0.92
✓ Stanley Lee	1658-16-85-5188	605 Dairy Road, Clayton, NC 27520	3387	241	RE	9.81

PUBLIC NOTICE

In accordance with NC GS 160A-384 and NC GS 160A-364, the Clayton Town Council will hold a public hearing on Monday, February 6, 2017 at 6:30 PM at Town Hall, 111 East Second Street, to consider the following:

- The Village at Little Creek Rezoning, 2016-172-RZ. The request is to rezone a parcel from Residential Estate (R-E) to Residential-8 (R-8). Parcel number: 165816-94-4736. TAG #: 05H03024
- The Village at Little Creek Preliminary Plat (Major Subdivision), 2016-173-SD. The request is to develop 154 single-family residential lots. Parcel numbers: 165812-85-9742 and 165816-94-4736. TAG #s: 05H04002A and 05H03024

For Rezoning, the Clayton Town Council reserves the right to approve the request as presented or any portion of the request without necessity of withdrawal or modification of the application or additional public hearing on the matter. Likewise, the Town Council may designate approval to the district requested or another district or districts without modification of the request or additional public hearing.

For Preliminary Plats (major subdivisions), the Clayton Town Council must make findings of fact based upon sworn testimony and other credible evidence during an evidentiary hearing. Citizens may give testimony in an evidentiary hearing after they have taken an oath.

This is an open meeting and the public is invited to attend.

Jay McLeod, Planner
919-553-5002

The Clayton News Star

Please advertise on the following dates:
January 25, 2017
February 1, 2017

Affidavit of publication required.



**TOWN OF CLAYTON
TOWN COUNCIL
AGENDA COVER SHEET**

AGENDA LOCATION:

Items for Regular Meeting

Meeting Date:

January 17, 2017

ITEM TITLE:

The Village at Little Creek Subdivision 2016-173-SD

DESCRIPTION:

Applicant is requesting to develop an Open Space R-8 single family residential subdivision on 44.25 acres. Proposed 154 lots with minimum size of 6,000 SF. Southern part of property is currently in ETJ and will need to annex to receive water and sewer services. As part of development, applicant is proposing to reserve ROW for future Southern Connector which will run directly through the middle of the two subject properties. Until such time Southern Connector is fully developed, the only access to the southern portion would be through the northern portion, which will have two access points.

POTENTIAL ACTION:

Set Public Hearing for February 6, 2017

DEPARTMENT:

Planning

PRESENTER:

Jay McLeod

ITEM HISTORY:

Date:

Action Taken:

Information Provided:

Application
Staff Report
Map
Neighborhood
Meeting Information
Site Plan
TIA



TOWN OF CLAYTON

Planning Department

111 E. Second Street, Clayton, NC 27520

P.O. Box 879, Clayton, NC 27528

Phone: 919-553-5002

Fax: 919-553-1720

SUBDIVISION: MAJOR SUBDIVISION (Preliminary Subdivision Plat)

Pursuant to Article 7, §155.706 of the Unified Development Code (UDC), an owner of land within the jurisdiction of the Town (or a duly authorized agent) may petition the Town of Clayton to approve a subdivision of land. Please complete all fields in this application and submit to the Planning Department with all required materials.

Application Fees: **Major Preliminary Subdivision Plat Fee: \$400.00 + \$5.00 per lot**

Advertisement Fee: \$100.00

Modifications to Approved Plans Fee:

Major Modification: \$400.00 + \$5.00 per lot modified

Minor Modification: \$200.00 + \$5.00 per lot modified

See §155.706(F) of the UDC for a definition of Major vs. Minor Subdivisions.

See §155.706(I) for Preliminary Plat approval (major subdivision) process/approval information.

See §155.203(F), (G), and (H) for information on Conventional vs. Open Space Subdivisions.

See §155.706(N) for information on minor and major modifications.

See UDC Article 6 for Subdivision Standards.

SITE INFORMATION

☒ New Major Subdivision

Conventional: _____ Open Space: X

☐ Modification to Approved Preliminary Plat

Major: _____ Minor: _____

☐ New Subdivision Master Plan

Name of Project: The Village at Little Creek Acreage of Property: 44.25 ac.

Tag #: _____ NC PIN: 165812-85-9742, 94-4736

Location: Dairy Road south of Brittany Woods S/D

Number of Lots (existing): 0 (Proposed) 150 Min Lot Size: 6,000 SF

Zoning District: R8/RE

Electric Provider: Clayton

☐ Septic

☐ Well

Wastewater: ☒ Sewer (check one)

Water: ☒ Public/Private Water (check one)

Recreation/Open Space Requirement: ☐ Fee in lieu ☒ Land Dedication – Acreage: 9.13

FOR OFFICE USE ONLY

Date Received: 8/19/16

Amount Paid: _____

File Number: 2016-173-SD

01/06/2016

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PROPERTY OWNER INFORMATION

Name: Dairy Road 1, LLC

Mailing Address: 5121 Kingdom Way, Raleigh, NC 27607

Phone Number: Fax:

Email Address:

APPLICANT INFORMATION

Applicant: Triangle Real Estate Co.

Mailing Address: 113 Duncansby Ct., Cary, NC 27511

Phone Number: (919) 522-5626 Fax:

Contact Person: Bill Zahn

Email Address: billzahn@bellsouth.net

REQUIRED INFORMATION (to be submitted with the application)*The following items must accompany the application:*

To be completed by the applicant:			To be completed by staff:		
<i>Submit 9 copies of all materials unless otherwise noted or directed by staff</i>	Yes	N/A	Yes	No	N/A
1. A pre-application meeting was held with Town Staff. Date: 5/26/16	☒				
2. Completed Application	☒				
3. Review Fee and Advertisement Fee	☒				
4. Findings of Fact, signed <i>Not required for minor modifications. Form is included in this packet.</i>	☐	☐			
5. Owner's Consent Form <i>Required if applicant is not the property owner. Included in this packet</i>	☐	☐			
6. Preliminary Plat Subdivision Requirements Checklist form, completed and signed <i>Checklist is included in this packet</i>	☐				
7. Plat sheet(s) meeting requirements of the Requirements Checklist	☐	☐			
8. If subdivision waivers are requested, applicant must attach a separate typed document requesting the waivers. The document must specifically list the waivers requested, including Code references, and must address the 4 considerations outlined in §155.706(l)(7).	☐	☐			
9. Adjacent Property Owners List	☒	☐			
10. Road Name Application <i>Included in this packet</i>	☐	☐			
11. Wastewater allocation request OR verification of wastewater allocation <i>Letter format, to the attention of the Town Manager.</i>	☐	☐			

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12. A signed and sealed Traffic Impact Analysis (required for projects which generate at least 100 vehicle trips at peak hour. See §155.708 of the UDC)	☐	☐			
13. Neighborhood Meeting Notice Letter* (1 copy) See sample letter and meeting requirement, included in this packet. *Not required for minor modifications or subdivisions *Not required for subdivisions that are part of an approved planned development	☐	☐			
14. Neighborhood Meeting summary form* Included in this packet – NOT submitted with application. *Not required for minor modifications or subdivisions *Not required for subdivisions that are part of an approved planned development		☐	Must be submitted after neighborhood meeting is held and at least 10 days prior to Planning Board meeting.		
15. Stamped, addressed, empty envelopes with no return address, using the adjacent property owner list. *Not required for minor modifications This for a public notice of the public hearing mailed by the Town – thus, neighbors will receive both a neighborhood meeting letter from the applicant, and a notice of the hearing from the Town.	☐				

EXPLANATION OF PROJECT

Please provide detailed information concerning all requests. Attach additional sheets if necessary.

This is a 44.25 vacant/agricultural tract currently zoned RE/R8. The northern portion of the site appears to be within the City limits, and the southern portion in the Clayton ETJ. A major R/W for the future Southern Connector crosses the project. The project has 150 residential lots proposed with a minimum lot size of 6,000 sf. We have met several times with planning staff to prepare a development plan that meets the requirements of the Clayton UDO for a residential major subdivision utilizing large amounts of open space and park areas integrated into the development. Two proposed park areas are shown on the plan and are designed using the "Open Square" park concept. Rights of way throughout the site are 50' with 27' B-B street sections with the exception of the Southern Connector, which is a 100' R/W, and a proposed divided boulevard street in a 60' R/W with a 10' center landscape median.

APPLICANT AFFIDAVIT

I/We, the undersigned, do hereby make application and petition to the Planning Board of the Town of Clayton to approve the subject Subdivision. I hereby certify that I have full legal right to request such action and that the statements or information made in any paper or plans submitted herewith are true and correct to the best of my knowledge. I understand this application, related material and all attachments become official records of the Planning Department of the Town of Clayton, North Carolina, and will not be returned.

William Zabo
Print Name

William Zabo
Signature of Applicant

8/16/16
Date

01/06/2016

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FINDINGS OF FACT

Section 155.706(I)(10) of the Unified Development Code requires that certain findings must be made by the Town Council before a Major Subdivision may be approved. Outline below (you may attach additional sheets) how the application addresses each of the following findings:

- (1) That the subdivision meets all required specifications of the town Subdivision Regulations and conforms to the town Unified Development Code.

The plans have been designed in accordance with the Town Subdivision Regulations and UDO and have been submitted for review by Town staff to ensure compliance with Town regulations and ordinances.

- (2) That the subdivision will not be detrimental to the use or orderly development of other properties in the surrounding area and will not violate the character of existing standards for development of properties in the surrounding area.

The project is designed to be in harmony with adjacent developments, and includes protection of environmental features such as streams and wetlands. In addition, new park areas are proposed for dedication to the Town for use by all Town residents. Perimeter buffers and buffers against the Southern Connector will provide a visual barrier between the proposed development, neighboring properties, and from adjacent rights of way.

- (3) That the subdivision design will provide for the distribution of traffic in a manner that will avoid or mitigate congestion within the immediate area, will provide for the unified and orderly use of or extension of public infrastructure, and will not materially endanger the environment, public health, safety, or the general welfare.

Primarily the proposed Southern Connector will provide for increased traffic distribution in the area. Streets have been laid out to allow connectivity among neighboring properties and within the development. A boulevard-type street with center landscaped median will serve as the main entrance to the project and will facilitate traffic flow throughout the neighborhood. As designed the roadway network proposed will not endanger the public health, safety, or welfare of the residents of the development or those travelling through the neighborhood.

- (4) That the subdivision will not adversely affect the general plans for the orderly growth and development of the town and is consistent with the planning policies adopted by the Town Council.

The development is designed around the proposed Southern Connector, whose alignment has been established by the Town and neighboring developments. The residential development is consistent with land uses in the area, and does not inject non-residential uses into a primarily residential-only area of the Town.

Project Name: The Village at Little Creek

William Zehn
Print Name

William Zehn
Signature of Applicant

8/16/16
Date

01/06/2016

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NEIGHBORHOOD MEETING INFORMATION

NOTE: *Neighborhood meetings are not required for developments that are part of an approved Planned Development Master Plan.*

Purpose:

The purpose of the neighborhood meeting shall be to inform the neighborhood of the nature of the proposed land use and development features, answer questions, respond to concerns, and solicit comments.

Meeting Date:

The meeting must be held at least ten (10) calendar days prior to the Planning Board meeting.

Meeting Time & Location:

The meeting must be held no earlier than 6:00 pm Monday through Friday, and must be held in a location generally accessible to residents within close proximity of the request.

Meeting Notice Mailing requirements:

1. The applicant must contact all adjacent property owners via first class mailing (see sample letter).
2. The mailing must include all the persons, firms, or corporations owning property within 100 feet and immediately adjacent to the subject property. Where the subject property immediately adjoins a public or private right-of-way, landscape or riparian buffer, commonly-owned private area, public property, or homeowners' association property, then letters of notification shall be sent to adjoining property owners as if they directly abut the subject property.
3. The notice must be mailed at least ten (10) calendar days but not more than twenty-five (25) days prior to the date of the neighborhood meeting.

Information provided to Planning Department:

Alert the Planning Department when the date, location, and time are determined. Planning staff may attend the neighborhood meeting to answer process/code questions.

Return the following items to the Planning Department at least ten (10) calendar days prior to the Planning Board meeting in electronic or hard copy format:

- ☐ Neighborhood Meeting Summary Form
- ☐ Copy of the letter mailed
- ☐ Mailing list
- ☐ Attendance roster

- ☐ Stamped, addressed, empty envelopes with no return address, using the same addresses as used for the neighborhood meeting notification. (If not already submitted with the application). *This for a public notice of the public hearing mailed by the Town – thus, neighbors will receive both a neighborhood meeting letter from the applicant, and a notice of the hearing from the Town.*

ADJACENT PROPERTY OWNERS LIST

Project Name: _____

The following are all the persons, firms, or corporations owning property within 100 feet and immediately adjacent to the property (including across street rights of way) subject to this request. Where the subject property immediately adjoins a public or private right-of-way, landscape or riparian buffer, commonly-owned private area, public property, or homeowners' association property, then letters of notification shall be sent to adjoining property owners as if they directly abut the subject property. Please use a separate sheet if necessary

It is the responsibility of the applicant to correctly identify the current owner, based upon records in the Johnston County GIS Office, for all property owners of land within the required public notice radius.

PARCEL NUMBER	NAME	ADDRESS

SAMPLE NEIGHBORHOOD MEETING LETTER - PLACE ON AGENT OR OWNER LETTERHEAD

Date _____

Dear Clayton Area Property Owner:

The purpose of this letter is to notify you of an application filed with the Town of Clayton for a land use proposal involving property adjacent to, or in close proximity to, property shown in your ownership by Johnston County tax records. Per Town of Clayton regulations, a neighborhood meeting will be held to provide information to area residents about the nature of the proposal. A representative of the applicant will be present to explain their application, answer questions, and solicit comments.

Meeting Date: _____

Location: _____

Time: _____

Type of Application: _____

General Description [*Provide information about the project that could assist those reviewing this letter, such as a brief description, layout or map*]

If you have any questions prior to or after this meeting, you may contact us at **Insert phone number of applicant**

Sincerely,

Applicant

cc: Clayton Planning Dept.

NEIGHBORHOOD MEETING ATTENDANCE ROSTER

Applicant: _____

Location/Date: _____

	NAME	ADDRESS
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MAJOR SUBDIVISION – PRELIMINARY PLAT REQUIREMENTS CHECKLIST

The applicant is responsible for completing this checklist. Please sign and submit with the completed application.

To be completed by the applicant:			Staff:
	Yes	N/A	
GENERAL (ALL SHEETS):			
1. Plans are a maximum of 24" x 36", folded to an 8.5" x 11" format, with a scale no smaller than 1 inch = 100 feet (scale of 1" = 20' to 60' preferred).	☒	☐	
2. Separate sheets for each: Subdivision Plan, Preliminary Engineering Plan, Existing Conditions. Information in this checklist should be placed on the appropriate sheet. (Additional sheets may be required depending on scope of the project).	☒	☐	
3. Multiple sheets are consecutively numbered (e.g. Sheet 1 of 4).			
4. Engineer/Surveyor Logo Box (name, address, phone number, fax, and e-mail, if applicable)	☒	☐	
5. Name of subdivision (including phase numbers if applicable) and plan type (Subdivision, Final Plat, Exempt Plat, or Recombination).	☒	☐	
6. Revision Date	☒	☐	
PRELIMINARY PLAN SHEET:			
7. Name of township, county, and state in which the property is located.	☒	☐	
8. Vicinity sketch/map.	☒	☐	
9. Surveyor or professional engineer's name and seal.	☒	☐	
10. Date of survey and plat preparation.	☒	☐	
11. Provide the following project data in <u>Tabular</u> form:			
- Area of tract in square feet and acres	☒	☐	
- Parcel Identification # (and/or Tag #)	☒	☐	
- Owner's name and address	☒	☐	
- Within Town limits or ETJ	☒	☐	
- Zoning District	☒	☐	
- Overlay District (if applicable)	☒	☐	
- Indicate if the site is within a Watershed Protection Overlay	☒	☐	
- Total Number of Lots	☒	☐	
- Number of lots per acre (density)	☒	☐	
- Acreage in Resource Conservation Areas (UDC §155.500)	☒	☐	
- Annexation # (if applicable)	☐	☒	
- FEMA designated flood plain and floodway (include FIRM panel reference number and effective date) or certification that no flood plain exists within the subdivision.	☒	☐	
- Electric Provider			
- Water Provider (or indicate if well)	☒	☐	

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To be completed by the applicant:			Staff:
	Yes	N/A	
- Sewer Provider (or indicate if septic)	☒	☐	
- Impervious (existing and proposed, square feet and %) – provide impervious for overall development and per lot	☐	☐	
- Maximum allowed impervious	☐	☐	
- Existing Use	☒	☐	
- Proposed Use	☒	☐	
12. An accurately positioned north arrow indicating true north, magnetic north, North Carolina grid ("NAD 83" or "NAD 27"), or is referenced to old deed or plat bearings. If the north index is magnetic or referenced to an old deed or plat bearings, the date and the source (if known) the index was originally determined is clearly indicated.	☒	☐	
13. The exact course and distance of every boundary line of the tract to be subdivided, fully dimensioned (metes and bounds) along with the location of intersecting boundary lines of adjoining lands in accordance with the North Carolina General Statutes § 47-30 – Plats and subdivisions; mapping requirements.	☒	☐	
14. Accurate location and description of all monuments, markers and control points.	☒	☐	
15. Show the 100 year flood plain, riparian buffer, wetlands, and any Resource Conservation Areas on all sheets.	☒	☐	
16. Blocks numbered consecutively throughout entire subdivision with lots numbered consecutively in each block. Lot numbers shall be placed in a circle or labeled "Lot __".	☒	☐	
17. Phase lines. Phases are clearly labeled.	☐	☒	
18. The name and location of all adjoining subdivisions and adjoining lot property lines drawn with dotted lines at the same scale. Include the names of adjacent landowners.	☒	☐	
19. Location and width of all existing and proposed rights-of-way, Resource Conservation Areas, easements and areas dedicated to public use with the purpose of each stated.	☒	☐	
20. Location of safe sight triangles at project ingress/egress points, or as required.	☒	☐	
21. Minimum building setbacks /envelope are noted.	☒	☐	
22. All dimensional standards are shown in table format. Dimensional standards shall include: min. lot size, min. lot width, max building coverage, max impervious surface (entire subdivision), max impervious surface (per lot, in %), density, max height, and min dwelling unit size.	☒	☐	
23. Location of all existing and proposed easements, labeled as "public" or "private" and labeled with easement type.	☒	☐	
24. Width and type of any buffers and easements.	☒	☐	
25. Indicate the boundaries of any utility or greenway easements dedicated to the Town of Clayton and label "To Be Dedicated to the Town of Clayton."	☒	☐	
26. Proposed streets are labeled, named and dimensioned. Correct street cross	☒	☐	

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To be completed by the applicant:			Staff:
	Yes	N/A	
section detail provided. Label street type based on definitions in §155.602(D). If streets are private: - All private streets shall be maintained by a designated responsible party. The party shall be noted on the plat. - Streets are labeled "Private Streets – No Town Maintenance." Street names must be approved by Town of Clayton via a Road Name Application.	☒ ☐	☐ ☒	
27. Lengths of all cul-de-sacs.	☒	☐	
28. Identify proposed traffic control signs and striping.	☐	☐	
29. Location, purpose and dimensions of non-residential areas (such as parks, playgrounds, open space, churches, school sites, etc.) - All open space, parks, and similar common areas shall be maintained by a designated responsible party. The party shall be noted on the plat.	☒	☐	
30. Resource Conservation Areas must be shown and dimensioned on the plat. The following note must also be provided: "The Resource Conservation Area shown hereon is provided per the requirements of Article 5 of the Town of Clayton's Unified Development Code. This Resource Conservation Area must be preserved in perpetuity per the standards of the Unified Development Code"	☒	☐	
31. Proposed stormwater retention/detention features and dimensions. If fenced, include fence location.	☐	☐	
32. Existing and proposed sidewalk system, access ramps, and crosswalks.	☒	☐	
33. Identify alternative modes of transportation including school stops, pedestrian connections, bicycle paths and bicycle racks.	☐	☐	
34. Show how streets are connected to property lines ("stub-out" streets) to provide for cross-connectivity and development on adjacent parcels. Show cross-access easements.	☒	☐	
35. Location of clustered mailboxes.	☐	☐	
36. Location and orientation of freestanding signs (signage is permitted separately).	☒	☐	
LANDSCAPING PLAN SHEET (See §155.402 for Landscaping Requirements)			
37. Show location, width, and type of all landscape buffers.	☒	☐	
38. Provide a plant list summary table which includes: - A planting key identifying the various planting elements - The quantity of each type of plant material proposed - The size, height, caliper and spacing of plant material proposed - The Botanical and common names of plant material proposed	☐	☐	
39. If common landscaped areas are provided, provide an irrigation note to read as follows: "All landscaped areas shall be provided with an automatically operated irrigation system that will adequately cover all living plant material, such system shall include a rain sensor." (If irrigation will not be utilized, drought-tolerant	☐	☐	

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To be completed by the applicant:			Staff:
	Yes	N/A	
species must be used).			
40. Location, species, and caliper of any existing trees that will remain on site. If used to meet planting requirements, make note of what requirements are fulfilled by the preserved trees.	☐	☒	
EXISTING CONDITIONS SHEET:			
41. On the existing conditions sheet, provide topography with two-foot contour intervals, showing the location of any natural features such as water courses, wooded areas, steep slopes (above 25%), or other geological features.	☒	☐	
42. Location of all existing buildings and structures, water/sewer/gas infrastructure, underground structures, easements, or other existing features.	☒	☐	
43. Existing structures, existing streets and roadway improvements, and existing utilities within 100 feet of the site.	☒	☐	
44. Label adjacent property acreage, owners, and zoning districts.	☒	☐	
45. Label subject parcel property owner, acreage, and zoning.	☒	☐	
PRELIMINARY ENGINEERING PLAN SHEET:			
46. Show subdivision layout, streets, and all pertinent information from subdivision plat sheet.	☒	☐	
47. Identify curb radii for all internal and external vehicular use areas.	☒	☐	
48. Location of all existing and proposed utilities (water, sewer, electric, natural gas, etc.).	☒	☐	
49. Location of all existing and proposed drainage structures.	☐	☐	
50. Location of all existing and proposed fire hydrants.	☒	☐	
51. Location of all existing and proposed easements, labeled as "public" or "private."	☒	☐	
52. Show street cross-sections.	☒	☐	
53. Indicate method of slope stabilization measures for all slopes steeper than 2.5:1.	☐	☒	
54. Identify the proposed storm water management system with location of inlets, piping and positive outfall along with typical section and top surface area of storm water retention/detention pond, including soil types, slope, bottom and top elevations, and finish floor elevations.	☐	☐	
OTHER			
55. If subdivision includes townhomes, include architectural elevations sheet, noting construction materials, finishes and colors, height, and number of stories.	☐	☒	
56. Any other information considered by either the applicant or the Town to be pertinent to the review.	☐	☐	

Signed by Applicant:



Date:



01/06/2016

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Town of Clayton
Planning Department
111 E. Second Street, Clayton, NC 27520
P.O. Box 879, Clayton, NC 27528
Phone: 919-553-5002
Fax: 919-553-1720

*Planning Board
September 26, 2016*

STAFF REPORT

Application Number: 2016-173-SD
Project Name: The Village at Little Creek Major Subdivision

NC PIN / Tag #: 165812-85-9742/05H04002A & 165816-94-4736/05H03024
Town Limits/ETJ: Town Limits (northern parcel), ETJ (southern parcel)
Overlay: None
Applicant: Triangle Real Estate Co. c/o Bill Zahn
Owner: Dairy Road LLC
Location: Off of Dairy Road, located south of Brittany Woods Subdivision

Public Noticing:

- Neighborhood meeting August 11, 2016
- Sign posted prior to September 16, 2016
- Letters mailed prior to October 28, 2016
- Newspaper ad posted October 26, 2016 and November 2, 2016

REQUEST: To develop 154 single-family residential lots as a part of an Open Space subdivision

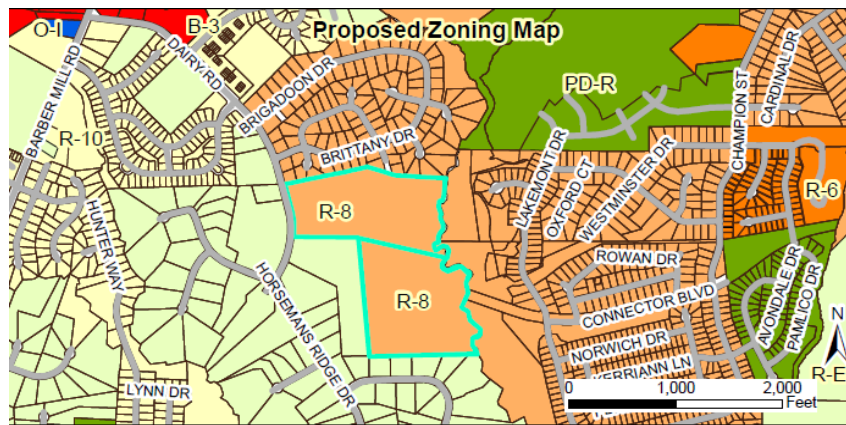


SITE DATA:

Acreage: 44.25 acres
Existing Use: Agricultural

ADJACENT ZONING AND LAND USES:

Direction	Zoning	Existing Use
North	Residential-8 (R-8)	Single-family residential
South	Residential-Estate (R-E)	Single-family residential
East	Residential-8 (R-8)	Single-family residential
West	Residential-Estate (R-E)	Single-family residential

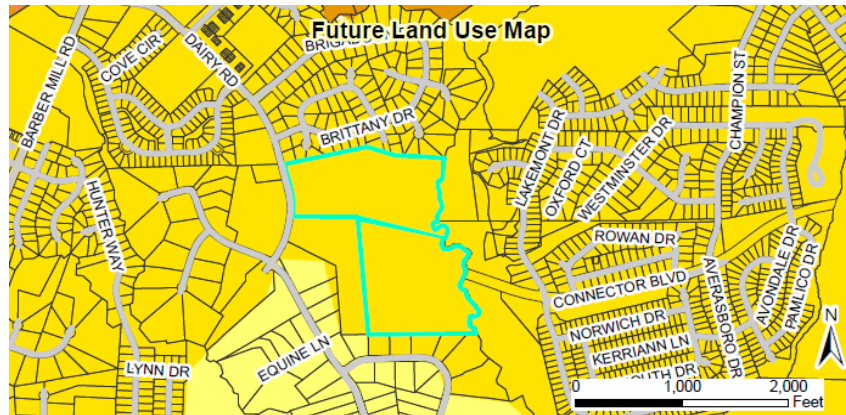


DEVELOPMENT DATA:

Proposed Uses: Single-family residential subdivision
Buildings: 154 dwelling units
Density/Intensity: 3.48 units per acre
Required Parking: 2 spaces per unit
Proposed Parking: 2 spaces per unit
Access/Streets: Two access points to the northern portion, one from Dairy Road and the second via a stub out from Marrian Drive. Access to the southern portion of the development will be from the northern portion going south via a connection through the future Southern Connector.

Overview

- **2040 Comprehensive Plan**
The Future Land Use for this area is envisioned as Medium Density Residential, which is consistent with developments such as this one.
- **Unified Development Code**
The proposed development is generally consistent with the requirements of the Unified Development Code (UDC).



Compatibility with Surrounding Land Uses

There is a single-family residential subdivision (Brittany Woods subdivision) located to the north of these properties, which has minimum lot sizes of 8,000 square feet. The properties directly east are currently vacant but are zoned Residential-8, meaning that they will be of similar density when developed in the future. To the south and west, the subject properties are bordered by single-family residences that are zoned Residential-Estate.

Landscaping and Buffering

The applicant is proposing to provide one street tree per lot, as required by the Town of Clayton's Unified Development Code. The applicant is also proposing a Class "C" landscape buffer to be provided along all property lines, including along the future Southern Connector. All Class "C" landscape buffers shall include a wall, opaque fence, evergreen hedge, berm, or combination thereof with a minimum height of six feet at installation, as required by the Unified Development Code.

Mail Kiosk

The applicant is proposing to add two mail kiosks within the development, with one located in the northern portion, and one located in the southern portion. The mail kiosks are proposed to be located in areas that are accessible by all residents, and shall be required to meet ADA requirements for parking accessibility.

Access/Streets

Access to the subdivision is proposed with one entrance off of Dairy Road, and a second entrance via a connection to an existing stub-out from Marrian Drive, which is located to the north as a part of the Brittany Woods subdivision. The applicant is proposing that the southern portion of the development be accessed through the northern portion until the Southern Connector is fully developed.

Multi-Modal Access/Recreation

Sidewalks are proposed along both sides of the street throughout the development. The applicant is required to provide sidewalks on both sides of the street, which includes continuous sidewalks along the entire length of all cul-de-sacs (see condition of approval). The applicant is also proposing a 10' greenway trail located along the Future Southern Connector. Additionally, the applicant is proposing a dog park to be located within the subdivision, along with two community parks that will include playground equipment, a picnic shelter, and community grills for residents to use.

Traffic Impact Analysis

A traffic impact analysis was prepared for this development by Gannett Fleming. The analysis indicates a minor increase in traffic at the intersections of Barber Mill Rd/Hwy 42 W and Guy Rd/Hwy 42 W. Since these intersections are both included in the Johnston County Comprehensive Transportation Plan, as well as the State Transportation Improvement Program (STIP) 2016-2025, the study found that it would be unreasonable to expect the developer to make improvements. The critical improvement would be to the intersection of Barber Mill/Hwy 42 W, which should be improved with NCDOT's widening of Hwy 42 W.

The TIA did recommend that the developer accommodate land for the Clayton Southern Connector. It is also recommended that a left-turn lane and right-turn lane be added off of Dairy Road to access the development. The entrance of the development off of Dairy Road is recommended to have both a right-turn and left-turn lane included. Staff concurs with these improvements.

CONSIDERATIONS:

- The applicant is requesting Preliminary Subdivision Plat approval for a 154 lot single-family residential subdivision.
- This plan is subject to final approval by Town Council.

FINDINGS:

The applicant has addressed the Major Subdivision Approval Criteria outlined in UDC Section 155.706.

CONDITIONS:

If approved, staff recommends the following conditions be applied to the approval of the preliminary subdivision plan:

1. Following Board approvals, three copies of the final Preliminary Subdivision Plan meeting the requirements of the Conditions of Approval shall be submitted to the Planning Department for final approval. The conditions of approval shall be recorded on the plans before final approval is granted.
2. All development fees shall be paid prior to final plat recordation.
3. The final plat and subsequent development of the site shall be consistent with the specifications of the approved Preliminary Subdivision Plan. Modifications shall require additional approvals pursuant to Section 155.706 of the Unified Development Code.
4. All signs shall require review/approval pursuant to UDC Section 155.713.
5. A homeowners' association document (if applicable) shall be reviewed by staff and recorded prior to final plats. Such document shall assure responsibility for maintenance of all common facilities and provide adequate means for funding to do so.

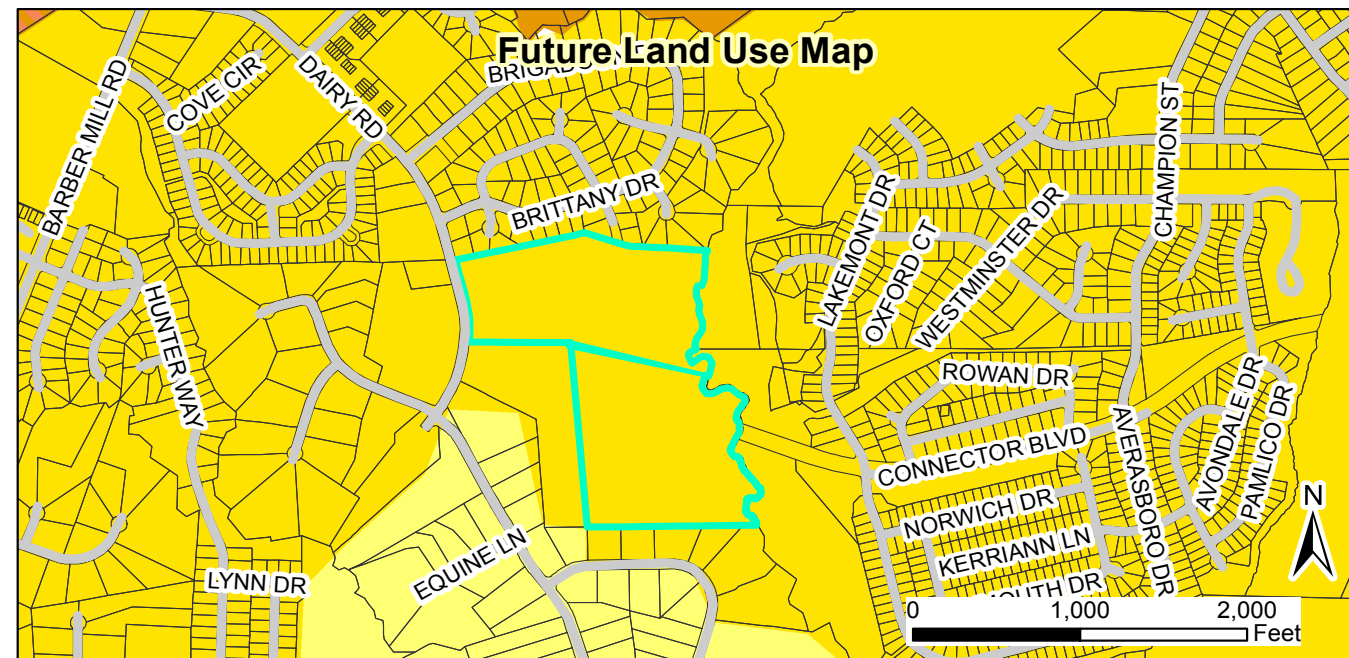
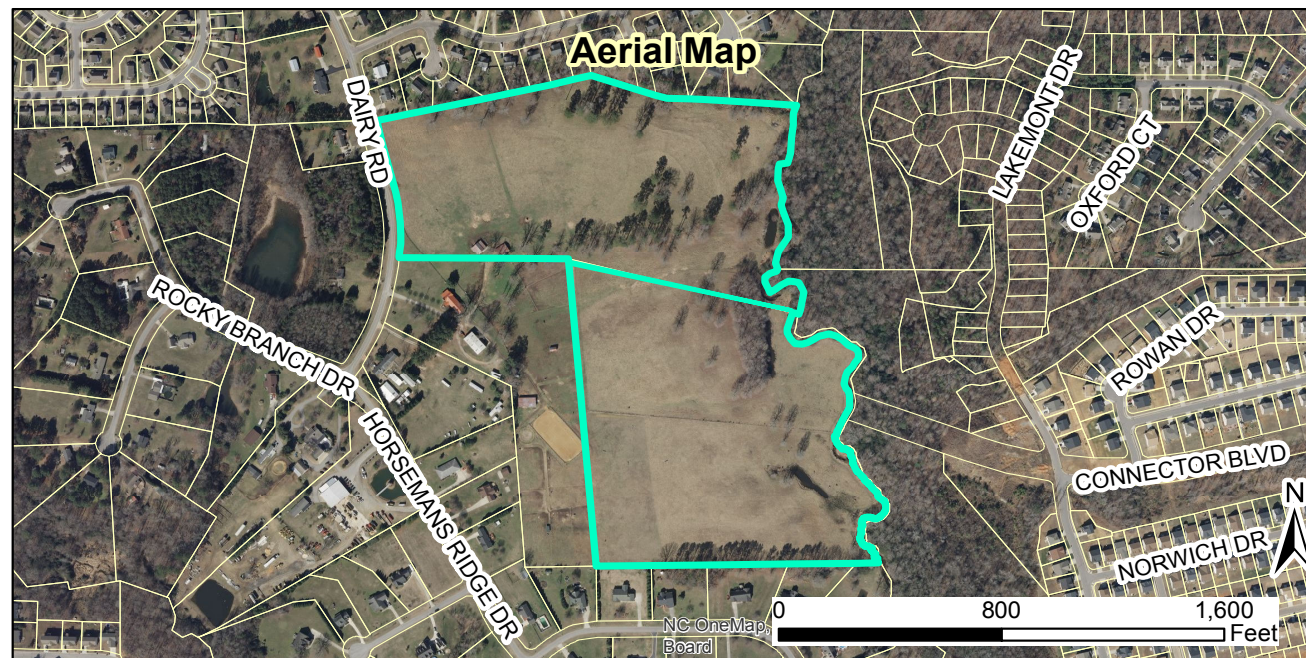
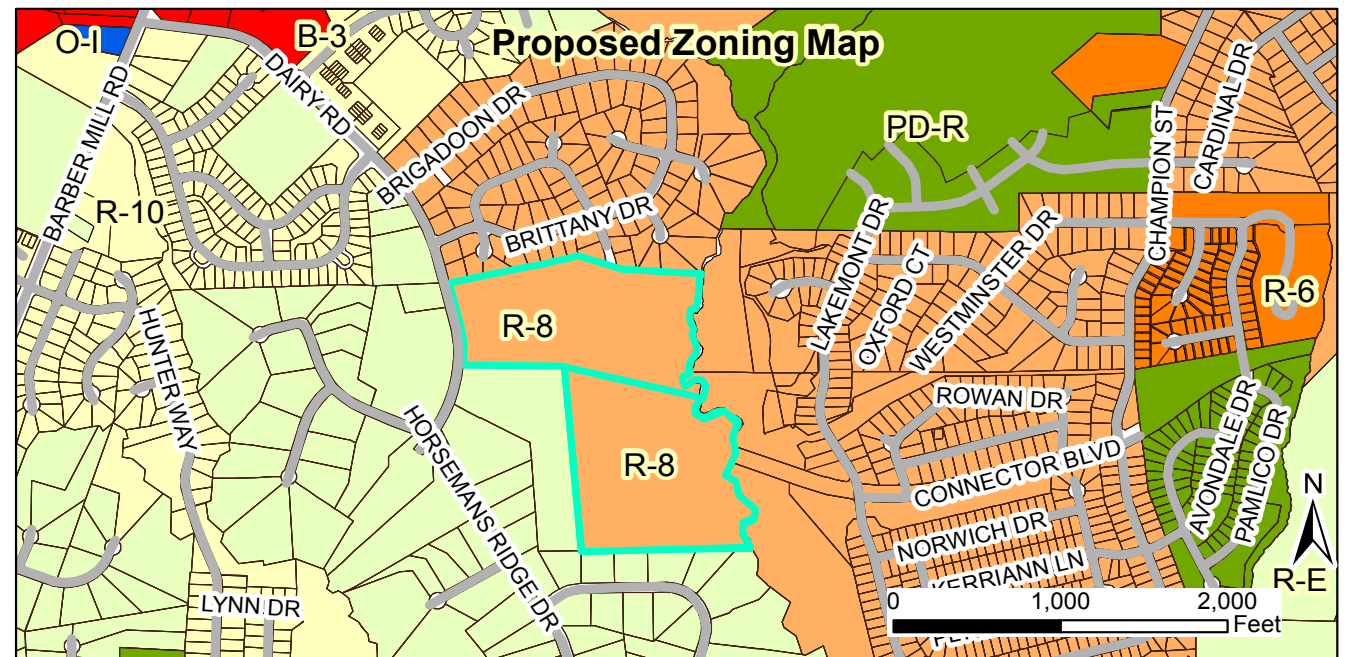
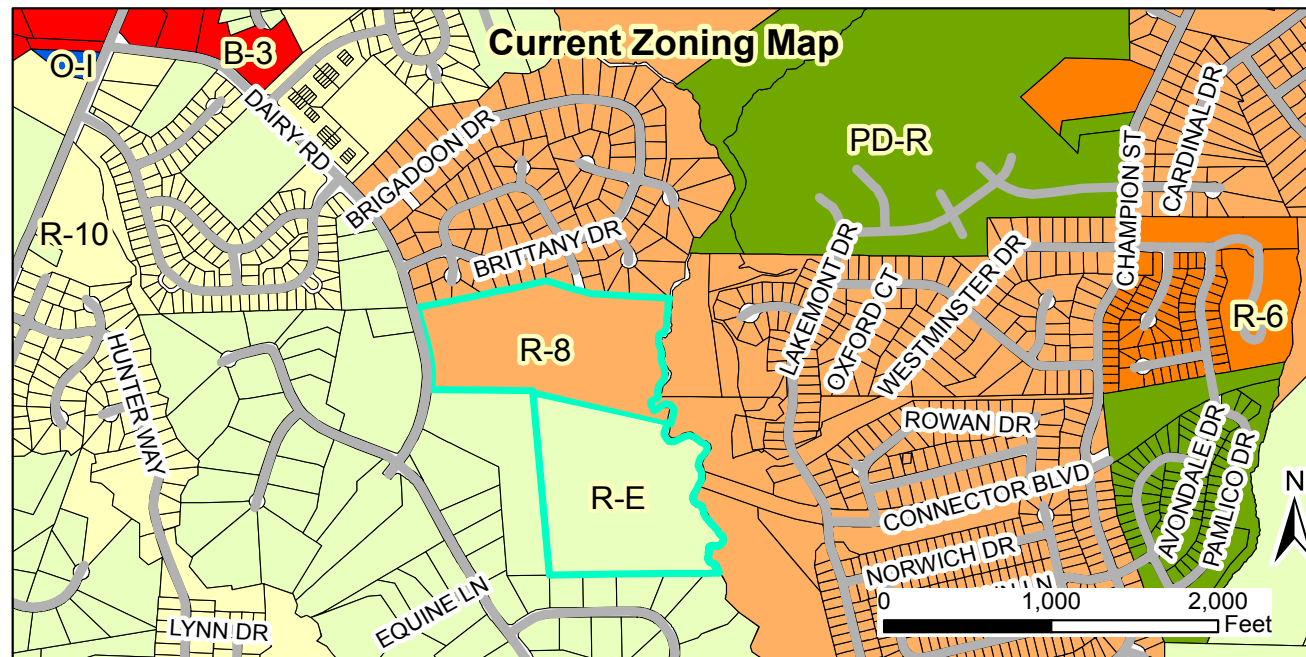
6. Resource Conservation Areas as defined in Article 5 of the Unified Development Code shall remain undisturbed pursuant to standards of Article 5, and shall be shown on all plats as being permanently set aside pursuant to 155.500(C).
7. Prior to grading and construction activities, tree protection fencing shall be installed around all resource conservation areas. Once the tree protection fence is installed, it must be inspected by the Planning Department before construction activities begin.
8. All sidewalks and greenways shall be bonded or constructed prior to plat recordation, with the exception that the sidewalk in front of residential units must be installed prior to the issuance of a Certificate of Occupancy of the unit.
9. No more than 75 certificates of occupancy may be issued within the subdivision until the required secondary access has been constructed or bonded for construction.
10. A Road Name Approval Application shall be submitted to the Planning Department prior to final plat approval.
11. Street trees for residential lots shall be installed prior to the issuance of a certificate of occupancy for the unit.
12. All off-site roadway improvements recommended by the Traffic Study, NCDOT Congestion Management, NCDOT Division 4, and the Town shall be installed prior to the issuance of the first certificate of occupancy for the development.
13. Crosswalks shall be provided at all sidewalk crossings throughout the development.
14. Continuous sidewalks shall be provided along the entire length of all cul-de-sacs within the development.
15. The Right-of-Way (ROW) dedication for the Southern Connector shall occur at final plat approval.
16. An Annexation application shall be submitted to the Town for the southern parcel of the development prior to the commencement of construction activity.
17. All Class "C" landscape buffers shall include a wall, opaque fence, evergreen hedge, berm, or combination thereof with a minimum height of six feet at installation, as required by the Unified Development Code.

STAFF RECOMMENDATION:

Staff is recommending approval with conditions of the proposed preliminary subdivision plat of the subject parcel.

ATTACHMENTS:

- 1.) Staff report
- 2.) Maps
- 3.) Application
- 4.) Neighborhood Meeting Materials
- 5.) Site Plan
- 6.) TIA Recommendations



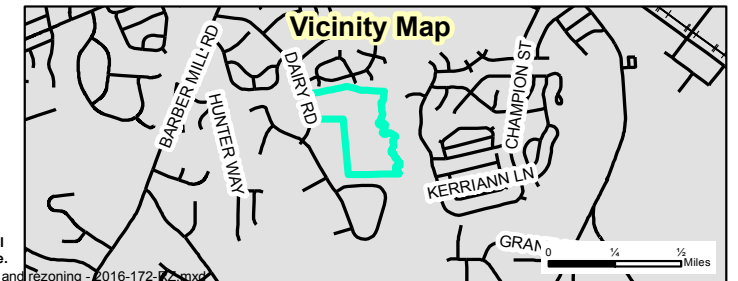
2016-173-SD and 2016-172-RZ: The Village at Little Creek Subdivision and Rezoning
Request: Create a ±150 lot subdivision on a site proposed to be rezoned to R-8.

Applicant: Triangel Real Estate Co. c/o Bill Zahn
 Property Owners: Dairy Road I LLC
 Parcel ID: 165812-85-9742, 165816-94-4736
 Tag #: 05h04002a, 05h03024

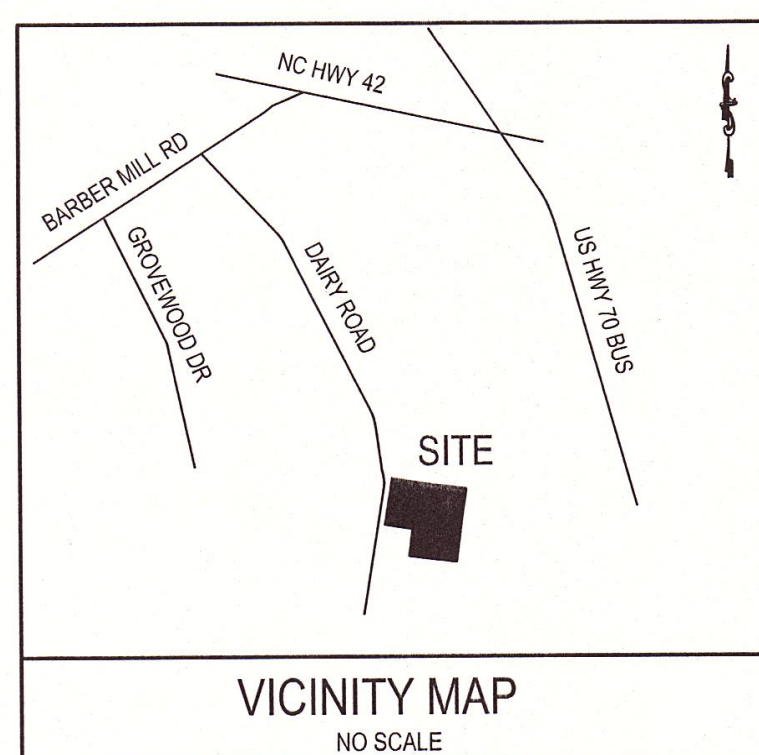


- Site
- Special Use District
- Thorough Fare Overlay
- Scenic Highway Overlay
- Railroads

Disclaimer: Town of Clayton assumes no legal responsibility for the information represented here.



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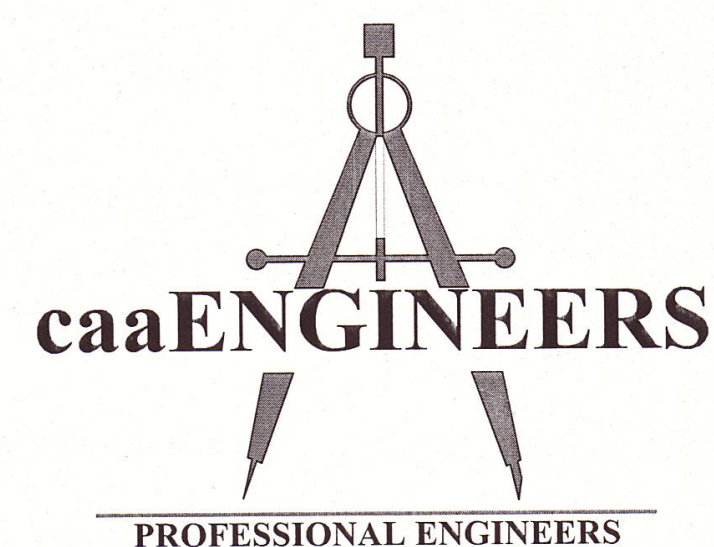
Master Site Plan Submittal

The Village at Little Creek Subdivision

Dairy Road
Clayton, North Carolina

Triangle Real Estate Co.

113 Duncansby Court
Cary, NC 27511
(919) 522-5626



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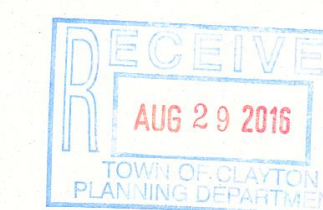
Professional Engineers

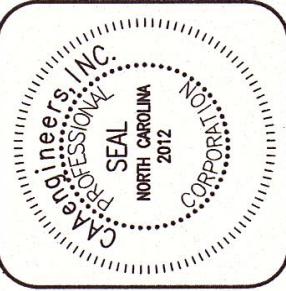
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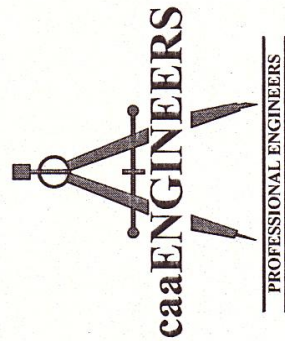
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SHEET	DESCRIPTION
C0	Cover Sheet
C1	Existing Conditions
C2	Existng COnditions
C3	Design Notes
C4	Overall Master Plan
C5	Northern Area Site Plan
C6	Southern Area Site Plan
C7	Utility Plan
C8	Landscape Plan
C9	Open Space Plan





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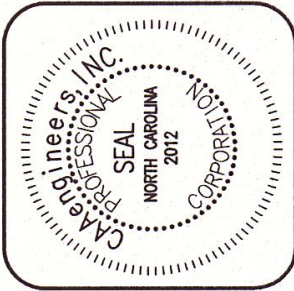
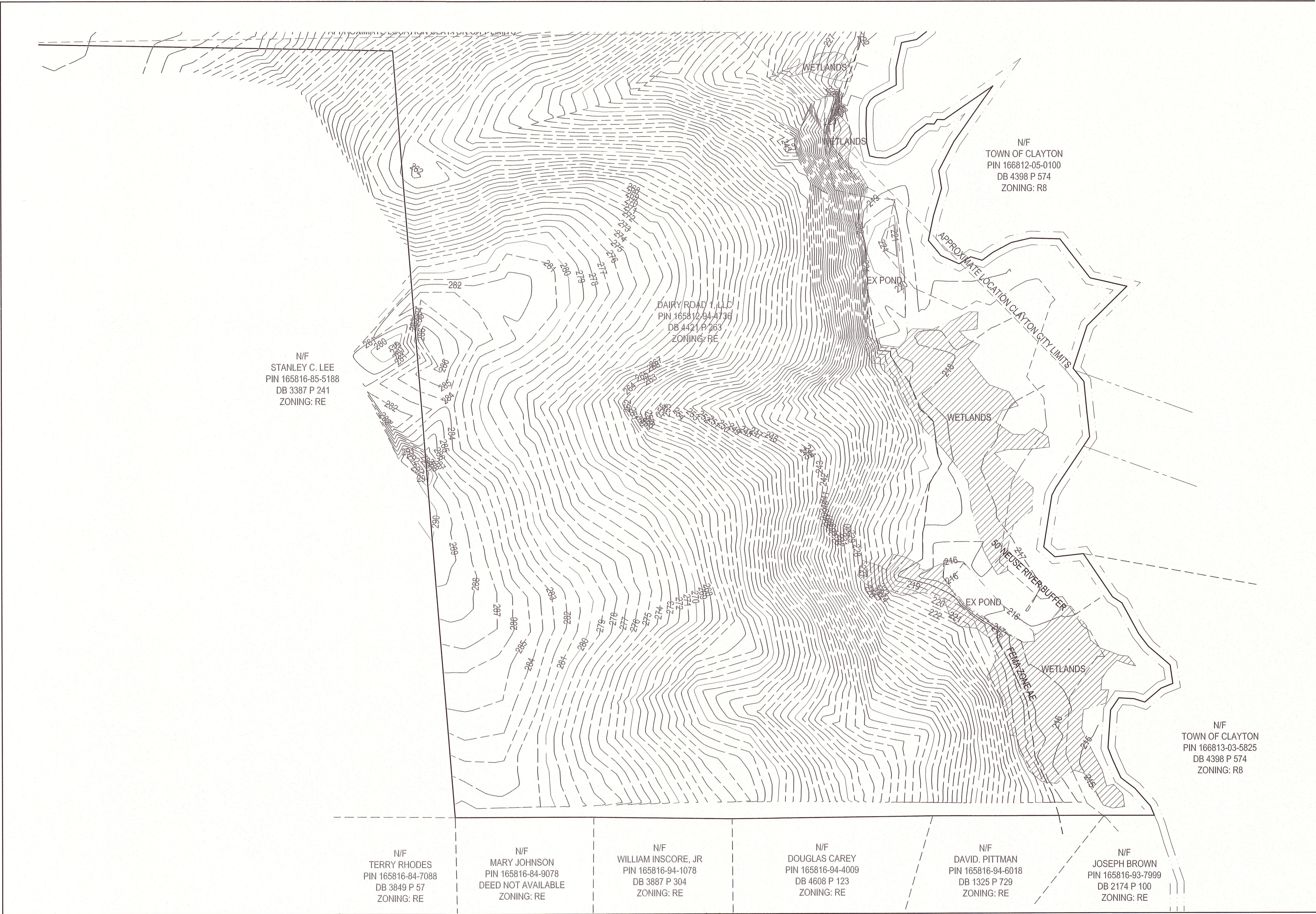
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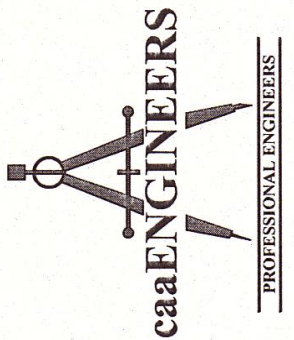
Existign Conditions
The Village at Little Creek
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Clayton, Johnston County, North Carolina

Job No. 15004
Dwg No. **C1**





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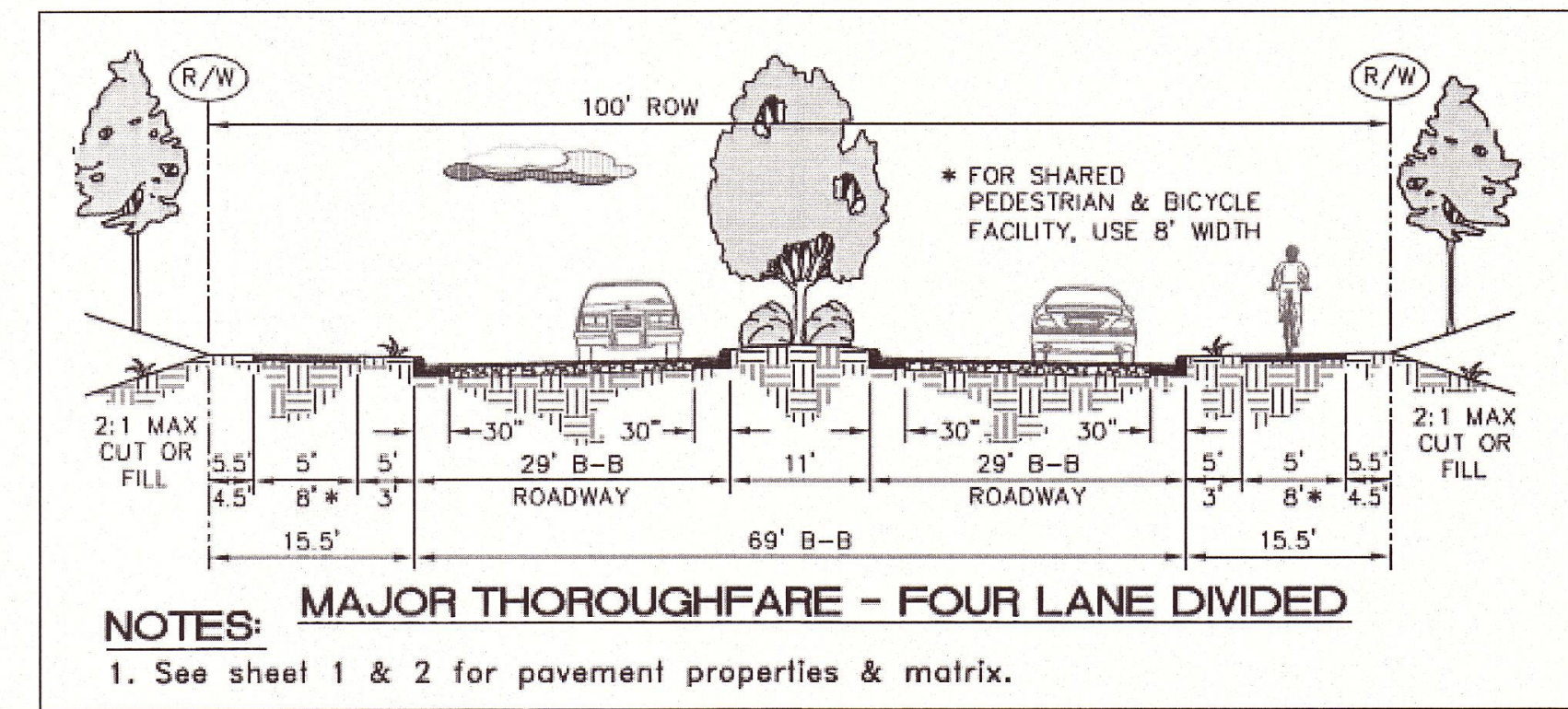
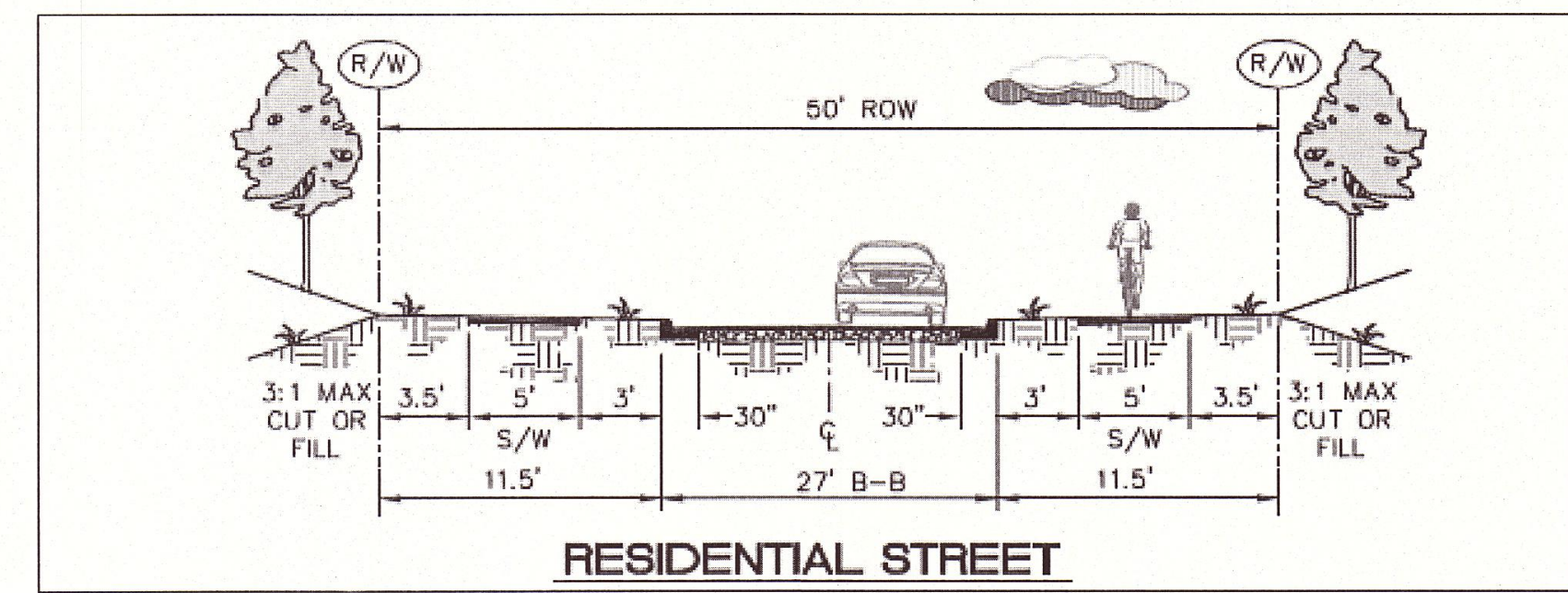
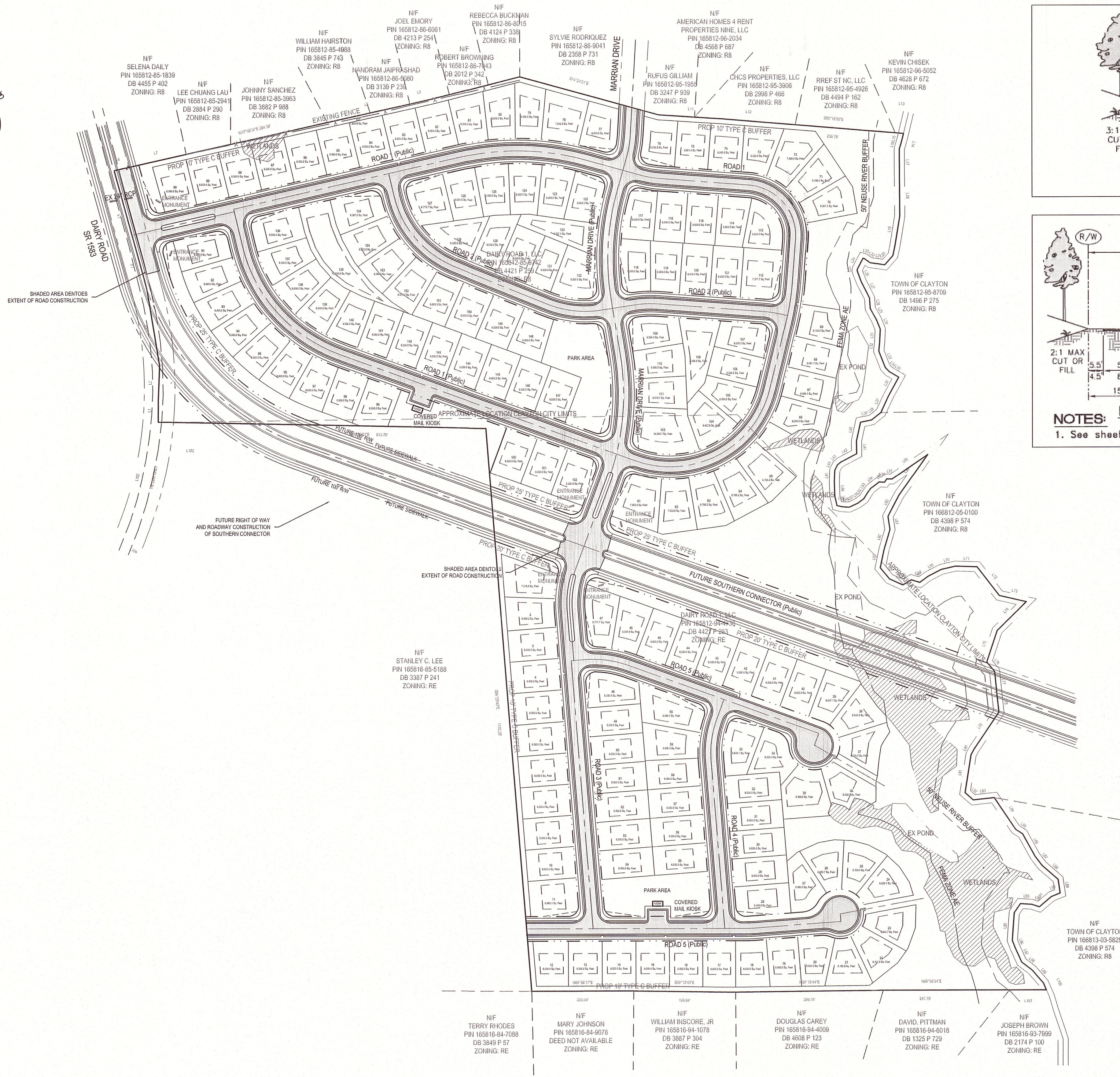


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PRELIMINARY PLANS
NOT FOR CONSTRUCTION

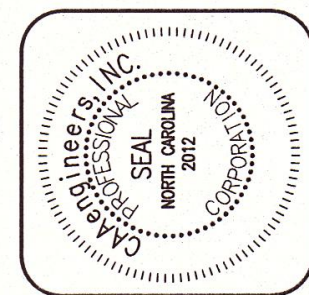
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The Village at Little Creek
Triangle Real Estate Co.
Clayton, Johnston County, North Carolina

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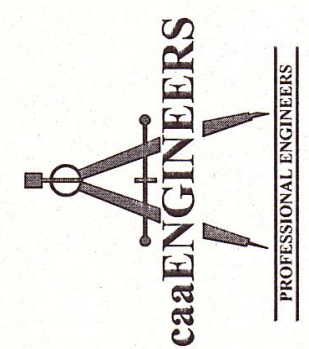


NOTES: MAJOR THOROUGHFARE - FOUR LANE DIVIDED

1. See sheet 1 & 2 for pavement properties & matrix.



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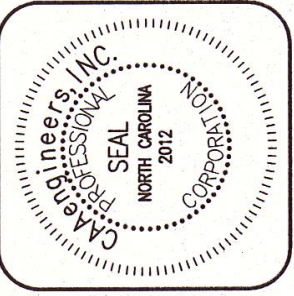


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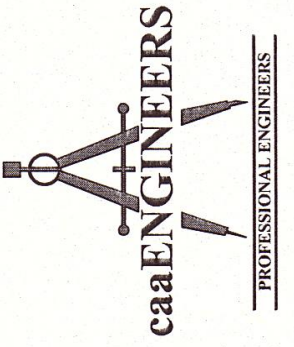
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Overall Master Plan
The Village at Little Creek
Triangle Real Estate Co.
Clayton, Johnston County, North Carolina

Job No. 15004
Dwg No. **C4**



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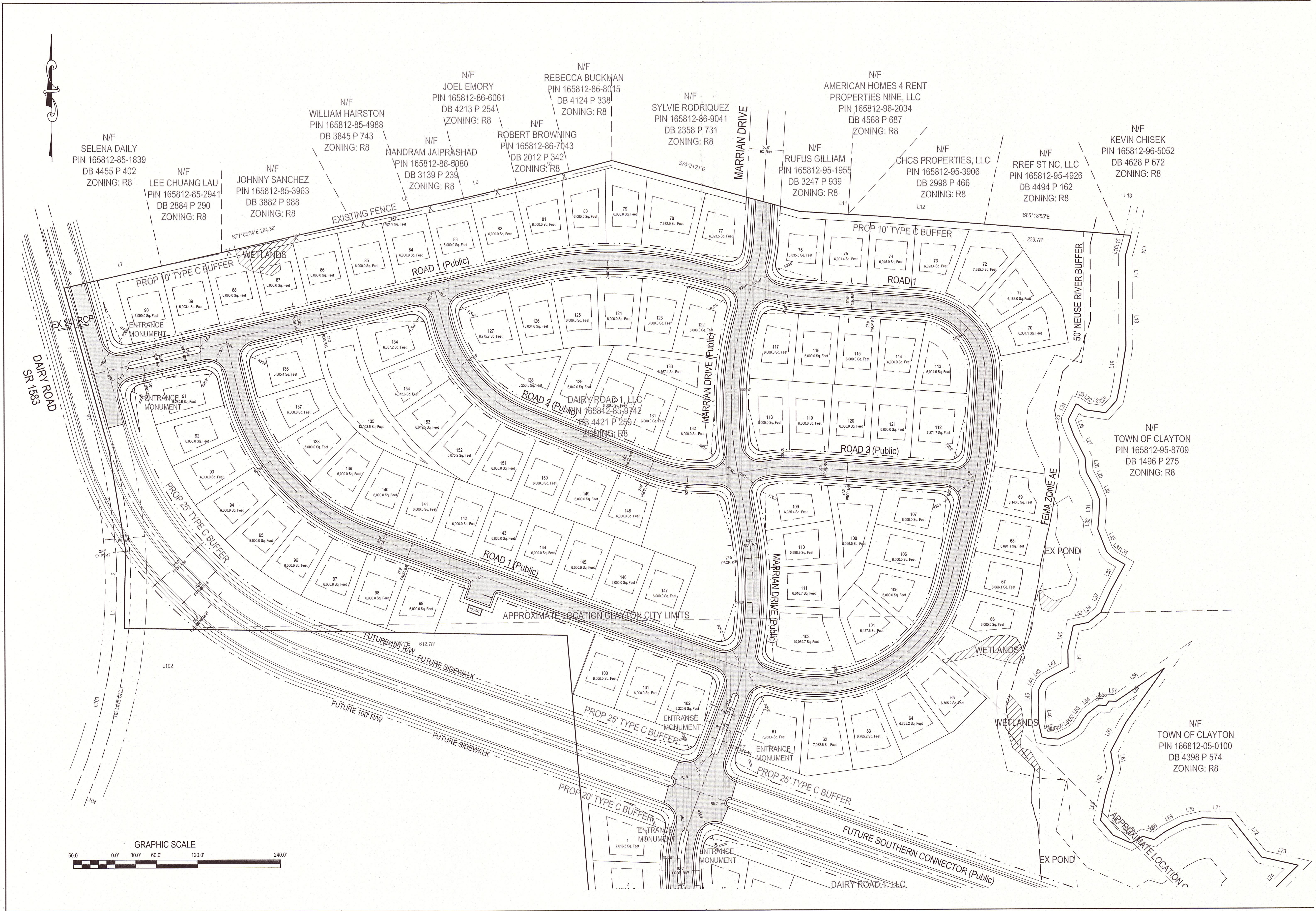


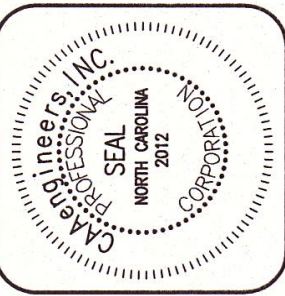
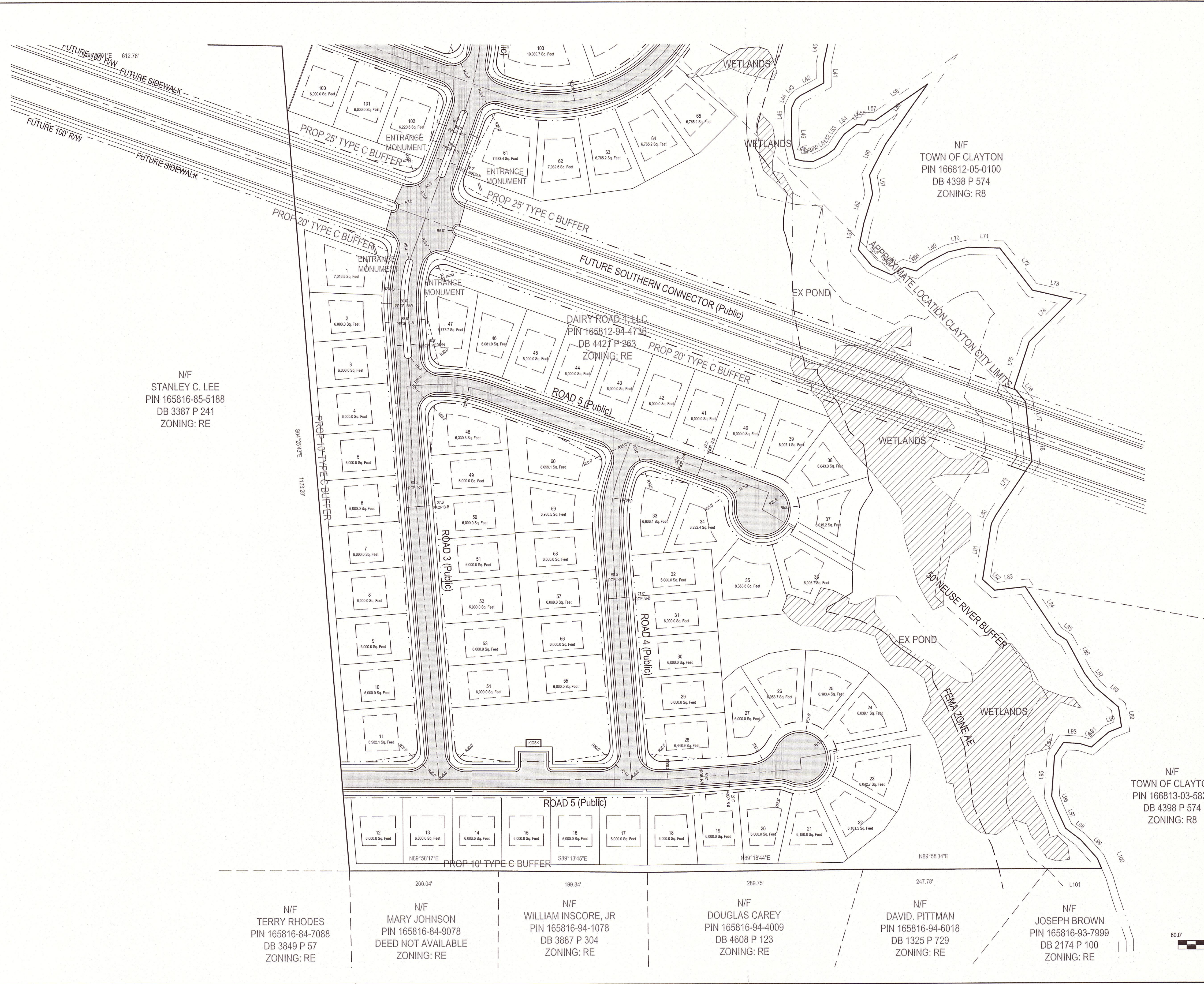
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PRELIMINARY PLANS
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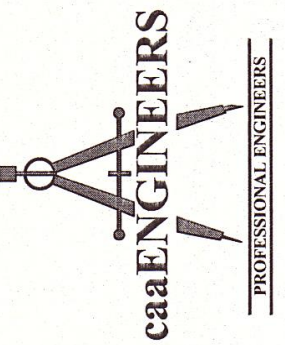
Northern Area Site Plan
The Village at Little Creek
Triangle Real Estate Co.
Clayton, Johnston County, North Carolina

Job No. 15004
Draw No. **C5**





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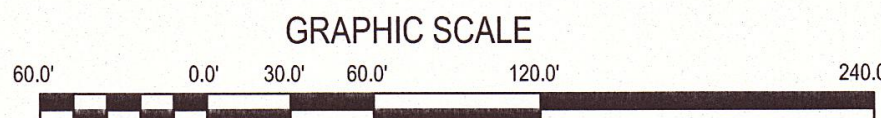


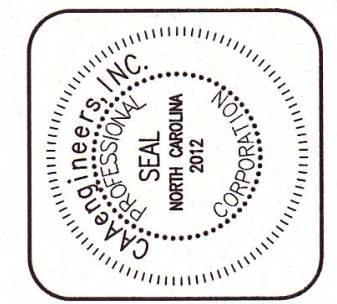
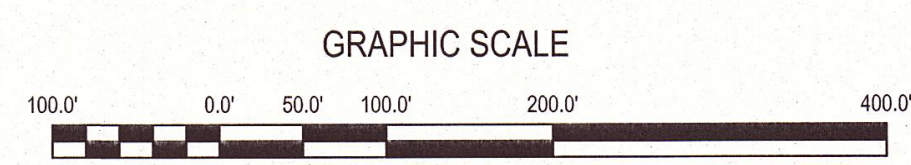
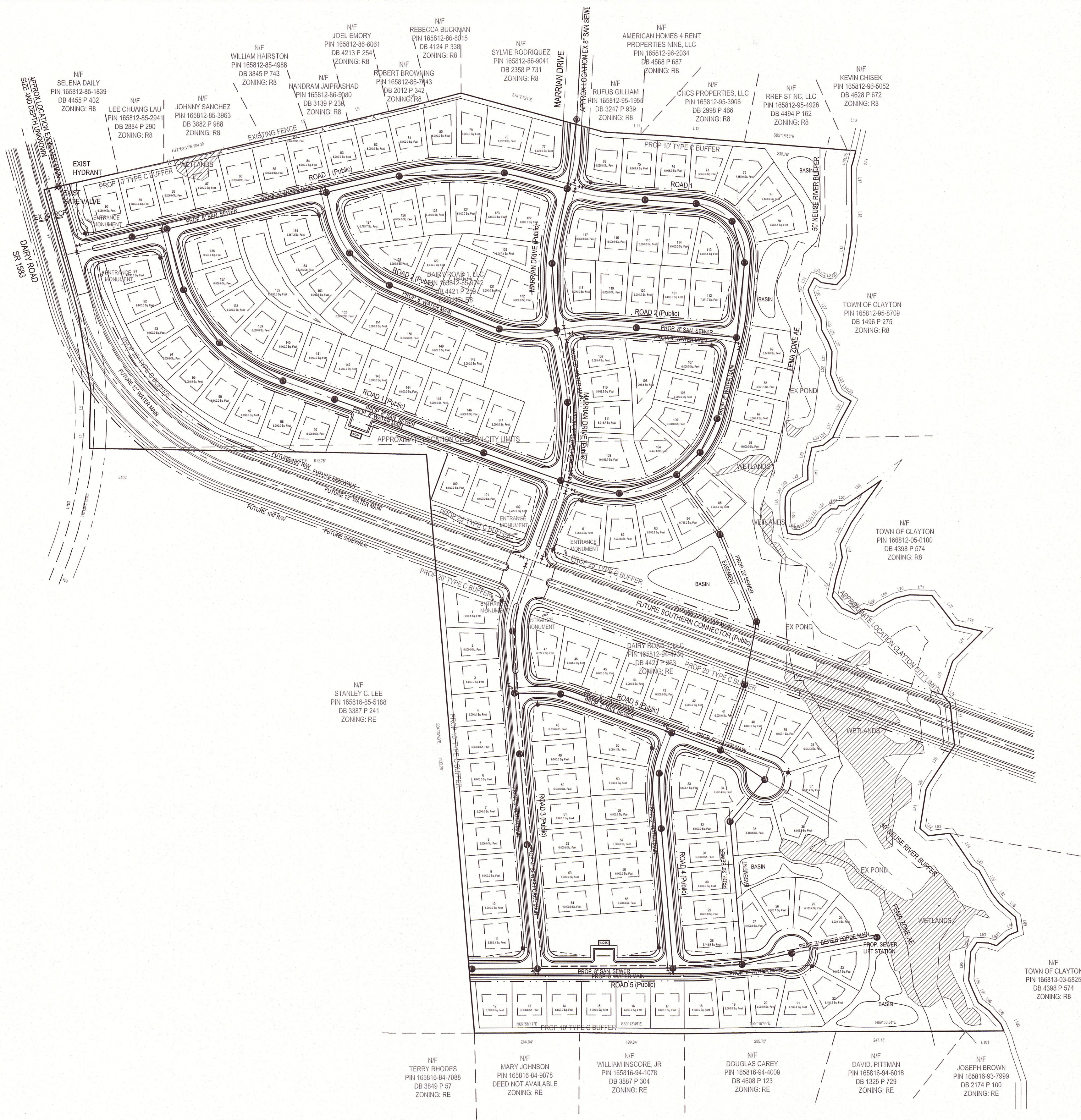
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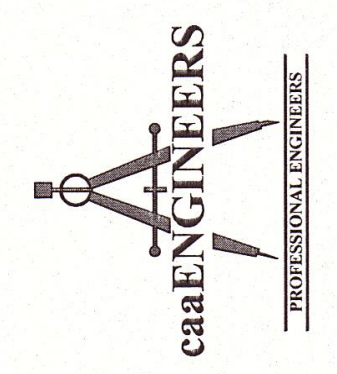
Southern Area Site Plan
The Village at Little Creek
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Clayton, Johnston County, North Carolina

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Dwg No. **C6**





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2	02/02/11	TIC Review	MAC	
3	Date	Comment	By	
4	Date	Comment	By	
5	Date	Comment	By	
6	Date	Comment	By	
7	Date	Comment	By	
8	Date	Comment	By	
9	Date	Comment	By	

PRELIMINARY PLANS
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Utility Plan
The Village at Little Creek
Triangle Real Estate Co.
Clayton, Johnston County, North Carolina

Job No. 15004
Dwg No. **C7**



TYPICAL PARK GRILL

OPEN SPACE CALCULATIONS			
	Area, Ac	% of Site	% NSA
Site Area	44.25	100.00%	
RCA	6.34	14.33%	
Net Site Area	37.91	85.67%	
Open Space Required	4.74	10.71%	12.50%
Half Southern Connector R/W	1.7	3.84%	
Open Space Park Areas	1.03	2.33%	
Open Space	2.31	5.22%	
Total Open Space	5.04	11.39%	13.29%

- Open Space Notes**
1. Riparian Buffer areas shown on this plan and all Resource Conservation Areas shall remain undisturbed in accordance with Article 5 of the Town of Clayton Unified Development Code.
 2. Orange tree protection fencing shall be required along the perimeter of the 50' riparian buffer and all other Resource Conservation Areas during construction to ensure it is not encroached upon.

RESOURCE CONSERVATION AREA DATA		
	Area, Ac	% of Site
Riparian Buffer Areas	3.44	7.77%
Wetlands	1.85	4.18%
Open Water	0.52	1.18%
Floodplain	5.68	12.84%
Total RCA	6.34	14.33% Areas overlap



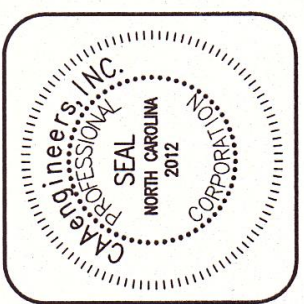
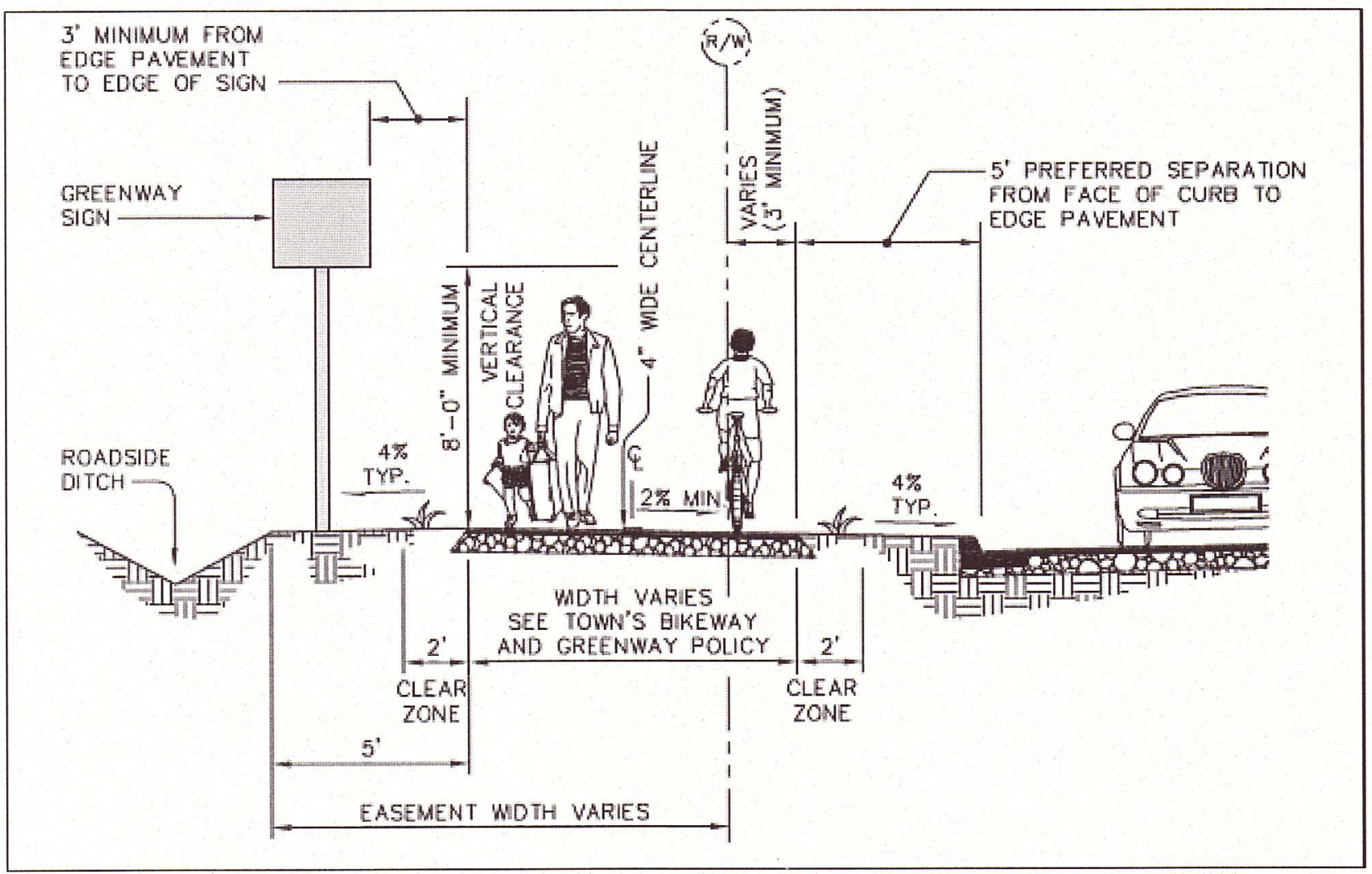
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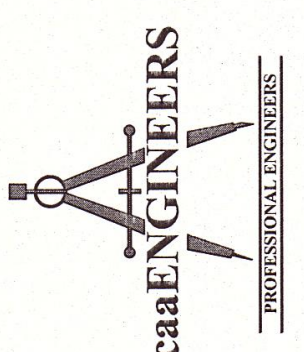
TYPICAL PICNIC SHELTER



TYPICAL GAZEBO PICNIC SHELTER



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1	07/20/2018	Submitted Drawings
2	08/02/2018	TCC Revisions
3	08/02/2018	Comments
4	08/02/2018	Comments
5	08/02/2018	Comments
6	08/02/2018	Comments
7	08/02/2018	Comments
8	08/02/2018	Comments

PRELIMINARY PLANS
NOT FOR CONSTRUCTION

Open Space Plan
The Village at Little Creek
Triangle Real Estate Co.
Clayton, Johnston County, North Carolina

Job No. 15004
Dwg No. **C9**



SHADED AREA DENTOTES
EXTENT OF ROAD CONSTRUCTION

FUTURE RIGHT OF WAY
AND ROADWAY CONSTRUCTION
OF SOUTHERN CONNECTOR

SHADED AREA DENTOTES
EXTENT OF ROAD CONSTRUCTION

N/F
STANLEY C. LEE
PIN 165016-85-5188
DB 3387 P 241
ZONING: RE

N/F
TERRY RHODES
PIN 165816-84-7088
DB 3849 P 57
ZONING: RE

N/F
MARY JOHNSON
PIN 165816-84-9078
DEED NOT AVAILABLE
ZONING: RE

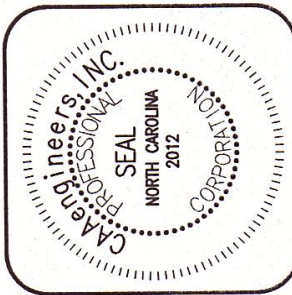
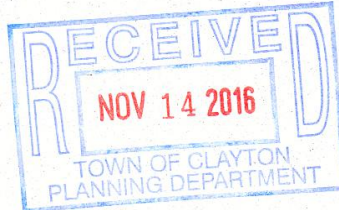
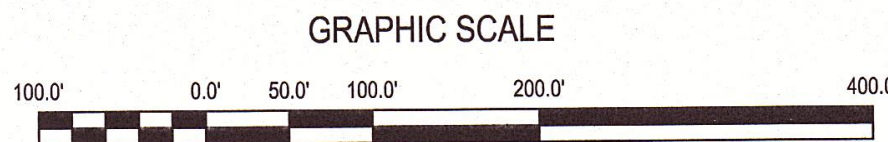
N/F
WILLIAM INSCORE, JR.
PIN 165816-84-1078
DB 3887 P 304
ZONING: RE

N/F
DOUGLAS CAREY
PIN 165816-94-4009
DB 4608 P 123
ZONING: RE

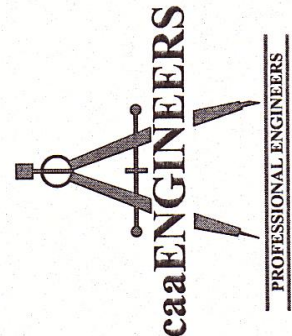
N/F
DAVID PITTMAN
PIN 165816-94-6018
DB 1325 P 729
ZONING: RE

N/F
JOSEPH BROWN
PIN 165816-93-7899
DB 2174 P 100
ZONING: RE

N/F
TOWN OF CLAYTON
PIN 166813-03-5825
DB 4398 P 574
ZONING: RB



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1	07/02/2016	Submittal Drawings	MAC
2	08/02/2016	TTC Revisions	MAC
3	11/10/2016	Preliminary Grading Plan	By
4	Date	Comment	By
5	Date	Comment	By
6	Date	Comment	By
7	Date	Comment	By
8	Date	Comment	By

PRELIMINARY PLANS
NOT FOR CONSTRUCTION

Preliminary Grading Plan
The Village at Little Creek
Triangle Real Estate Co.
Clayton, Johnston County, North Carolina

Job No. 15004
Dwg No.

C10

July 27, 2016

Dear Clayton Area Property Owner,

The purpose of this letter is to notify you of an application filed with the Town of Clayton for a land use proposal involving property adjacent to, or in close proximity to, property shown in your ownership by Johnston County tax records. Per Town of Clayton regulations, a neighborhood meeting will be held to provide information to area residents about the nature of the proposal. A representative of the applicant will be present to explain their application, answer questions, and solicit comments.

Meeting Date: August 11, 2016

Location: Town Hall – York Room
111 East Second Street
Clayton, NC 27520

Time: 6:30pm

Type of Application: Preliminary Single-Family Subdivision Approval

General Description: 44.25 acres (see attached subject property)

If you have any questions prior to or after this meeting, you may contact us at 919-714-7131.

Sincerely,



Andrew Moss Withers

Cc: Clayton Planning Department

Page 102 of 211

NEIGHBORHOOD MEETING SUMMARY FORM

FILL OUT THE FOLLOWING:

Date of Mailing: July 27, 2016

I hereby attest that letters were mailed to the addresses listed on the Adjacent Property Owners List (attached):

Printed Name: Karah Jennings

Signature: 

Date of Meeting: August 11, 2016

Time of Meeting: 6:30-8:30pm

Location of Meeting: The Clayton Center - York Room

Meeting Summary/Minutes: *provide a summary of the discussion held at the meeting, including issues raised and any changes made by the applicant as a result of the meeting.* 24 in attendance total of which 19 were residents

R-8 proposed 3.4 units/acre with two parks dedicated to Town of Clayton

Considering 1,450-3000sf homes, neighbor compared to Brittany Woods. Discussed that it would be public water and sewer.

Provided those in attendance with copy of proposed plan under review and subject to revision/comments

New development will have HOA, unknown additional amenities. Observe open and green space.

Question on water runoff discussed- proposed plan includes designed bioretention areas for stormwater management

Resource conservation areas maintained by HOA. Joseph Brown concerned by water flow

Question on the effect of natural springs- explained development mimics ground contours rather than level grading

All neighbors on Horsemans Ridge are on septic and wells in county

Informed residents that TRC meeting would take place on 8/17/16, would be phased takedown, a 1 to 2 year development

Sidewalks likely on both sides of Dairy Rd connector

Residents brought up questions on traffic within development explained in process of traffic study and looking at offsite improvement

Explained that it was requested in plan that Marion Rd in Brittany Woods would connect into this development

Approximately \$50,000-\$60,000 in development costs per lot, 6000sf minimum lot size

Explained utilities would be in public right of way and designated easements

Addressed questions from Slyvie Rodriguez regarding water and connectivity

Discussed buffers in place and that those were being reviewed with TRC. Plans shown meet initial criteria with 20ft type c buffer

Please write clearly (or submit a typed summary), and use additional sheets if necessary.

01/06/2016

Page 16 of 23

NEIGHBORHOOD MEETING ATTENDANCE ROSTER

Applicant: The Village at Little Creek

Location/Date: Clayton Center, 8/11/2016

	NAME	ADDRESS
1	Doag Carey 2857	Horseman's Ridge No Email
2	William Hairston	2804 Brittany Dr. whairst@gmail.com
3	GARY STALLINGS	2748 Horseman's Dr. gstallings2@gmail.com
4	STAN & ELAINE LEE	605 DAIRY RD. ELEE + EL 34 @ Group 1 . Com
5	Selena Dailey	467 Dairy Rd. Selena - Dailey 1 Pm . Com
6	Joe & Debbie Brown	2849 Horseman's Ridge Jdb679 @ embargmail . Com
7	Matt Brubaker	4840 Winterville Dr. Raleigh NC 27613
8	JACKIE & JUDY LISCORE	2861 HORSEMAN'S RIDGE DR. CLAYTON
9	Sylvie Connors (Rodriguez)	304 Marion Dr. (sylvie.rodriguez@gmail)
10	Hubert Brady	649 Dairy Rd
11	George Hielscher	2825 Horseman's Ridge Dr. Clayton NC 27520 georgehielscher@carrr.com
12	Chad Brady	2749 Horseman's Ridge Drive chadbrady@nc.rr.com (wildlife)
13	Mary Johnson	2865 Horseman's Ridge Dr. browneyes6169@gmail.com
14		
15		
16		
17		
18		
19		
20		

ADJACENT PROPERTY OWNERS						
Name	PIN	Address	Deed Book	Page	Zoning	GIS Area, Ac.
✓ Selena Dailey	1658-12-85-1839	467 Dairy Road, Clayton, NC 27520	4455	402	R8	0.32
Lee Chaung Lau	1658-12-85-2941	904 Skimmer Cove, Hampstead, NC 28443	2884	290	R8	0.32
Johnny Sanchez	1658-12-85-3963	13 Leah Circle, Clayton, NC 27520	3882	988	R8	0.32
✓ William Hairston	1658-12-85-4988	2408 Brittany Drive, Clayton, NC 27520	3845	743	R8	0.41
Nandram Jaiprakash	1658-12-86-5080	2608 Brittany Drive, Clayton, NC 27520	3139	239	R8	0.31
Joey Emery	1658-12-86-6061	2808 Brittany Drive, Clayton, NC 27520	4213	254	R8	0.29
Robert Browning	1658-12-86-7043	65 Glen Road, Ste. 182, Garner, NC 27529	2012	342	R8	0.29
Rebecca Buckman	1658-12-86-8015	2812 Brittany Drive, Clayton, NC 27520	4124	338	R8	0.27
✓ Sylvie Rodriguez	1658-12-86-9041	304 Marrian Drive, Clayton, NC 27520	3358	731	R8	0.33
Rufus Gilliam	1658-12-95-1955	305 Marrian Drive, Clayton, NC 27520	3247	939	R8	0.3
American Homes 4 Rent	1658-12-96-2034	30601 Agoura Rd., Agoura Hills, CA 91301	4568	687	R8	0.47
CHCS Properties, LLC	1658-12-95-3906	PO Box 841953 Charlotte, NC 28289	2998	466	R8	0.38
RREF ST NC, LLC	1658-12-95-4926	730 NW 107th Ave. Ste. 400, Miami, FL 33172	4494	162	R8	0.58
Kevin Chisek	1658-12-96-5052	113 Darfield Ct., Clayton, NC 27520	4628	672	R8	0.89
Town of Clayton	1658-12-95-8709	231 E. Second St., Clayton, NC 27520	1496	275	R8	5.43
Town of Clayton	1668-12-05-0100	231 E. Second St., Clayton, NC 27520	1496	275	R8	4.39
Town of Clayton	1668-13-03-5825	231 E. Second St., Clayton, NC 27520	1496	275	R8	13.26
Joseph Brown	1658-16-93-7999	2849 Horsemans Ridge, Clayton, NC 27520	2174	100	RE	2.2
David Pittman	1658-16-94-6018	2853 Horsemans Ridge, Clayton, NC 27520	1325	729	RE	1.03
✓ Douglas Carey	1658-16-94-4009	2857 Horsemans Ridge, Clayton, NC 27520	4608	123	RE	1.16
✓ William Inscore	1658-16-94-1078	2861 Horsemans Ridge, Clayton, NC 27520	3887	304	RE	0.92
✓ Mary Johnson	1658-16-84-9078	2865 Horsemans Ridge, Clayton, NC 27520			RE	0.92
Terry Rhodes	1658-16-84-7088	2869 Horsemans Ridge, Clayton, NC 27520	3849	57	RE	0.92
✓ Stanley Lee	1658-16-85-5188	605 Dairy Road, Clayton, NC 27520	3387	241	RE	9.81



THE VILLAGE AT LITTLE CREEK TRAFFIC IMPACT ANALYSIS



Submitted to:

PREFERRED PIEDMONT FUND 1, LLC
5121 KINGDOM WAY SUITE 200
RALEIGH, NC 27607

Submitted by:



Gannett Fleming

*Excellence Delivered **As Promised***

SEPTEMBER 15, 2016

TRAFFIC IMPACT ANALYSIS

For
The Village at Little Creek
Clayton, North Carolina

Prepared For:
Preferred Piedmont Fund 1, LLC
5121 Kingdom Way Suite 200
Raleigh, NC 27607

Prepared By:



Gannett Fleming

*Excellence Delivered **As Promised***

2610 Wycliff Road Suite 102
Raleigh NC 27607
919-420-7660
NC Licensure No. F-0270

September 15, 2016

(Gannett Fleming Project No. 061946)

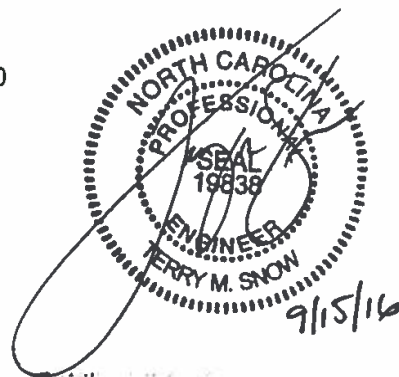


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Executive Summary

1.0 INTRODUCTION

Preferred Piedmont Fund 1, LLC. is proposing to develop a 154 lot single family residential subdivision, known as Village at Little Creek, in an undeveloped tract of land along the east side of Dairy Road south of Brittany Drive in Clayton, North Carolina as shown on Figure 1.

According to the proposed Sketch Plan (see Figure 2), developed by caaEngineers, Inc., direct access to the proposed subdivision that is planned on Dairy Road via a street connection approximately 510 feet south of Brittany Drive. When the Clayton Southern Connector is constructed at some point in the future, the proposed development will have a second point of access as the Clayton Southern Connector will bisect the planned residential development as shown on Figure 2.

1.1 Trip Generation

The amount of traffic generated by a new development is a function of the size and type of development. Once the proposed land use data for the site are known, the number of trips generated by the development can be estimated. Trip generation data for this report was determined in accordance with the procedures outlined in the Institute of Transportation Engineers (ITE) report entitled *Trip Generation*³. Table 1 below illustrates the number of daily, AM peak hour, and PM peak hour trips expected to be generated by the proposed development.

Table 1 - ITE Trip Generation Summary											
						AM			PM		
	LU Code	Description	Density	Units	Daily	In	Out	Total	In	Out	Total
	210	Single Family Homes	154	units	1562	31	89	120	100	56	156
Total			154		1562	31	89	120	100	56	156

Traffic impact is determined by estimating the total number of daily vehicle trips, as well as the number of peak hour vehicle trips. Table 1 indicates the proposed subdivision will generate approximately 1,562 total trips per day at full buildout. There are projected to be approximately 120 trips entering and exiting the site during the AM peak hour and 156 trips entering and exiting the site during the PM peak hour.

1.2 Capacity Analysis

Capacity analyses were performed for 2016 existing conditions, 2020 No Build, and 2020 Buildout conditions for the following intersection:

- Barber Mill Road/Dairy Road (unsignalized)
- Barber Mill Road/NC 42 (signalized)
- Guy Road/NC 42 (signalized)
- Dairy Road/Site Access (unsignalized)

A summary of the Highway Capacity Software Analysis analyzed using Synchro version 7.0/HCM 2010 is shown in the following table:

Intersection	2016 Existing		2020 No-Build		2020 Build	
	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
Guy Road / NC 42	C (25.2)	C (21.1)	C (21.8)	C (23.5)	C (23.2)	C (24.5)
Barber Mill Road / NC 42	F (113.1)	D (53.3)	F (100.5)	F (101.4)	F (122.8)	F (135.7)
Barber Mill Road / Dairy Road	# (3.8) B (13.8) WB	# (3.3) B (12.0) WB	# (3.4) B (12.9) WB	# (3.3) B (13.2) WB	# (5.3) C (15.1) WB	# (4.9) C (16.2) WB
Dairy Road / Site Access	- -	- -	- -	- -	# (5.5) A (9.0) WB	# (4.4) A (9.1) WB
#	Total Intersection Delay in seconds/vehicle/Approach Delay seconds/vehicle					
	Unsignalized Analysis					
	Signalized Analysis					
	N/A					

1.3 Recommended Improvements

To mitigate the traffic-related impacts caused by the Village at Little Creek residential development and to provide for safe, efficient, and reliable traffic flow, Gannett Fleming recommends the following:

Dairy Road/Site Access - Construct the driveway to provide for two way operation with one inbound lane and one outbound lane in accordance with the standards as outlined in the Policy on Street and Driveway Access to North Carolina Highways.

Barber Mill Road/NC 42 Intersection – Due to the existing level of congestion on NC 42 and particularly at the Barber Mill Road/NC 42 intersection, it is unreasonable to expect the developer of the Village at Little Creek to construct off-site improvements to bring this intersection up to an acceptable level of service. The percent increase in traffic at this intersection caused by the Village at Little Creek is morning and afternoon peak hours is predicted to be approximately 7%. The percent increase in the westbound left, eastbound right, northbound left, and northbound right lane groups will be more than 7%. Dual westbound left-turn lanes and northbound right-turn lanes

would be ideal but this cannot be accomplished without significant widening of NC 42 and Barber Mill Road to accept the additional turning lanes. The need for improvements to NC 42 is well documented by the *Johnston County Comprehensive Transportation Plan*¹ and the *State Transportation Improvement Program (STIP) 2016-2025*² R-3410. Therefore, no improvements at this intersection is recommended to mitigate the minor impact caused by the proposed Village at Little Creek development.

Guy Road/NC 42 Intersection – Due to the existing level of congestion on NC 42, it is also unreasonable to expect the developer of the Village at Little Creek to construct off-site improvements to improve operations at this intersection. This intersection is predicted to operate at LOS C in the future with and without the Village at Little Creek development. The percent increase in traffic at this intersection caused by the Village at Little Creek is morning and afternoon peak hours is predicted to be approximately 4%. The percent increase in the southbound left, eastbound right, eastbound through, and westbound through lane groups will be more than 4%. The need for improvements to NC 42 is well documented by the *Johnston County Comprehensive Transportation Plan*¹ and the *State Transportation Improvement Program (STIP) 2016-2025*² R-3410 and improvements to Guy Road is also included in the *Johnston County Comprehensive Transportation Plan*¹. Therefore, no improvements at this intersection is recommended to mitigate the minor impact caused by the proposed Village at Little Creek development.

Barber Mill Road/Dairy Road – The Barber Mill Road/Dairy Road intersection is predicted to operate at LOS C during the future 2020 Build condition. The Village of Little Creek development will add traffic to this intersection. However, the intersection has the capacity to accommodate the additional site traffic. Therefore, no improvements at this intersection is recommended to mitigate the minor impact caused by the proposed Village at Little Creek development.

Clayton Southern Connector (R-3618) – The *Johnston County Comprehensive Transportation Plan*¹ and the *State Transportation Improvement Program (STIP) 2016-2025*² R-3410 include the Clayton Southern Connector as a future need and identified project. The alignment for the Clayton Southern Connector bisects the Village at Little Creek as shown on Figure 2 – Sketch Plan. It is recommended that the developer continue to develop a master development plan to accommodate land for the Clayton Southern Connector right-of-way, continue to plan for a second point of access which will be on the Clayton Southern Connector, and work closely with NCDOT and the Town of Clayton to advocate for funding and prioritization for the Clayton Southern Connector and improvements to NC 42 and Guy Road.

1.4 Conclusions

This study shows that the proposed Village at Little Creek residential development will have an overall minimal impact on the traffic operations at the study area intersections; however, the impact will be mitigated by the recommended improvements. The proposed development will not negatively impact the health, safety, and welfare of the travelling public.

1.0 Introduction

Preferred Piedmont Fund 1, LLC. is proposing to develop a 154 lot single family residential subdivision, known as Village at Little Creek, in an undeveloped tract of land along the east side of Dairy Road south of Brittany Drive in Clayton, North Carolina as shown on Figure 1.

According to the proposed Sketch Plan (see Figure 2), developed by caaEngineers, Inc., direct access to the proposed subdivision that is planned on Dairy Road via a street connection approximately 510 feet south of Brittany Drive. When the Clayton Southern Connector is constructed at some point in the future, the proposed development will have a second point of access as the Clayton Southern Connector will bisect the planned residential development as shown on Figure 2.



Looking southeast from Dairy Road
at the proposed site

The purpose of this report is to evaluate the traffic impacts from the proposed 154 lot single family residential subdivision and to recommend transportation improvements, if needed, to mitigate congestion that may result from the additional site traffic. This report presents trip generation, trip distribution, traffic analyses, and recommendations for transportation improvements needed to meet anticipated traffic demands. This report examines the 2016 Existing condition, 2020 No-Build condition, and 2020 Build condition.



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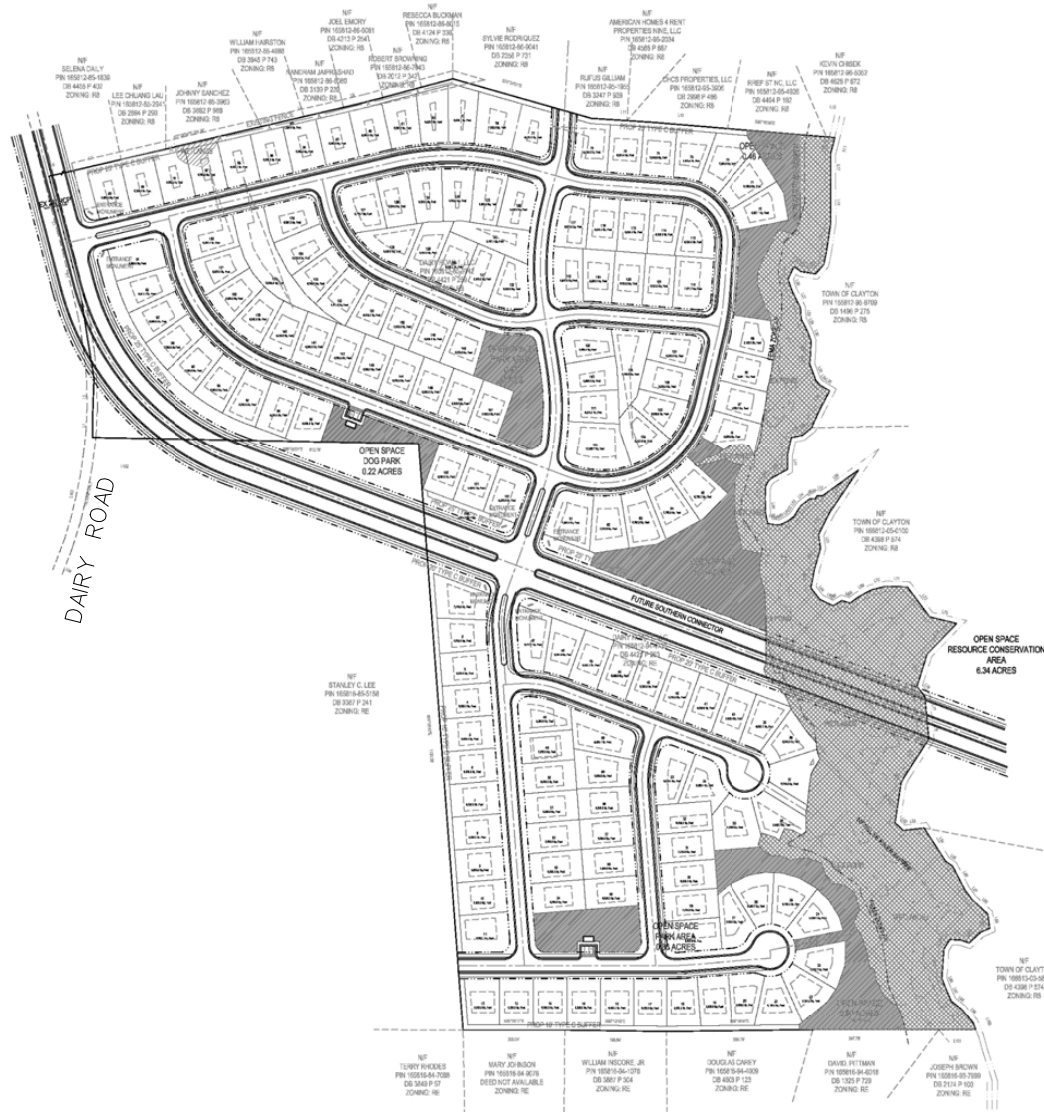
2610 Wycliff Road
Suite 102
Raleigh NC 27607-3073
(919) 420-7660
NC Lic. No. F-0270

TRAFFIC IMPACT ANALYSIS
VILLAGE AT LITTLE CREEK
CLAYTON, NC

FIGURE 1

PROJECT LOCATION

SCALE:
NONE



PREPARED BY:
cagENGINEERS, Inc.
SEPTEMBER 2016

PLANS PREPARED BY:



Gannett Fleming
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TRAFFIC IMPACT ANALYSIS
VILLAGE AT LITTLE CREEK
CLAYTON, NC

FIGURE 2

SKETCH PLAN

SCALE:
NONE

2.0 Inventory of Traffic Conditions

2.1 Study Area

The Town of Clayton and the North Carolina Department of Transportation (NCDOT) Division 4/District 3 requested the following intersections be analyzed to determine the associated impacts from the proposed subdivision:

- Barber Mill Road/Dairy Road (unsignalized)
- Barber Mill Road/NC 42 (signalized)
- Guy Road/NC 42 (signalized)
- Dairy Road/Site Access (unsignalized)

2.2 Existing Conditions

A description of transportation facilities in the general vicinity of this proposed development is as follows:

NC 42 (locally known as South Lombard Street) is a regional east-west roadway which connects Fuquay-Varina from the west to Clayton to the east. NC 42 is generally a two-lane 24' wide ribbon pavement roadway east of Regency Park Drive and west of Guy Road. Between Guy Road and Regency Park Drive, NC 42 is a three-lane facility with one lane in each direction and a two-way center left-turn lane. Within the study area, there are two signalized intersections along NC 42 at Guy Road and Barber Mill Road.

NC 42 is classified as a Major Thoroughfare on the *Johnston County Comprehensive Transportation Plan*¹, adopted July 7, 2011. The *Johnston County Comprehensive Transportation Plan*¹ identifies NC 42 as a boulevard which needs improvement. The land uses along NC 42 are a mixture of residential, office, retail, and institutional. West Clayton Elementary School is located in the northeast quadrant of the NC 42/Barber Mill Road intersection.

The speed limit along NC 42 is posted at 35 miles per hour (mph). In 2013, NCDOT reported an Average Annual Daily Traffic volume (AADT) of 18,000 vehicles per day (vpd) on NC 42 just east of Barber Mill Road.



NC 42 looking eastbound at the Barber
Mill Road signalized intersection

Traffic along NC 42 was observed to be fairly congested during the morning and afternoon peak hours, specifically from 2:45-4:00pm when the West Clayton Elementary School was dismissing. During this period, parents wishing to pick children up from school was observed to be queuing back on NC 42 thereby limiting the mobility of eastbound and westbound traffic.

Guy Road (SR 1551) is a locally important roadway which connects Old US 70 in northwest Clayton to NC 42. Guy Road is generally a three-lane facility with one lane in each direction with a two-way center left-turn lane from NC 42 to Winston Road where it transitions to a two-lane 24' wide ribbon pavement roadway. Within the study area, the intersection of Guy Road and NC 42 is signalized.

Guy Road is classified as a Major Thoroughfare on the *Johnston County Comprehensive Transportation Plan*¹ and is identified as a boulevard which needs improvement. The land uses along Guy Road are a mixture of residential, office, retail, and institutional. Clayton Middle School is located on Guy Road approximately 0.6 miles northwest of the NC 42 intersection.



Guy Road looking southeast at the
NC 42 intersection

The speed limit along Guy Road is posted at 35 mph in the project study area. In 2014, NCDOT reported an AADT of 13,000 vpd on Guy Road just northwest of NC 42.

Barber Mill Road (SR 1555) is a regional north-south roadway which SR 1010 in the Willow Springs area to NC 42 in Clayton. Barber Mill Road is a three lane facility with a two-way center left-turn lane from the NC 42 signalized intersection to approximately 1200 feet south where it narrows to a two lane facility.

Barber Mill Road is classified as a Minor Thoroughfare on the *Johnston County Comprehensive Transportation Plan*¹. The land uses along Barber Mill Road are a mixture of residential, retail, agricultural, and industrial. West Clayton Elementary School is located in the northeast quadrant of the NC 42/Barber Mill Road intersection.



Barber Mill Road looking southwest
at the Dairy Road intersection

The speed limit along Barber Mill Road is posted at 45 miles per hour (mph). In 2013, NCDOT reported an AADT of 8,300 vpd on Barber Mill Road south of NC 42.

Dairy Road (SR 1583) is a local facility which serves as an access for residential, senior care facilities, and agricultural land uses in southern Clayton. Dairy Road is generally a two-lane ribbon pavement roadway with an unsignalized intersection at Barber Mill Road. The proposed Village at Little Creek residential development is planned to have a street access on Dairy Road.



Dairy Road looking southeast at the
proposed development access location

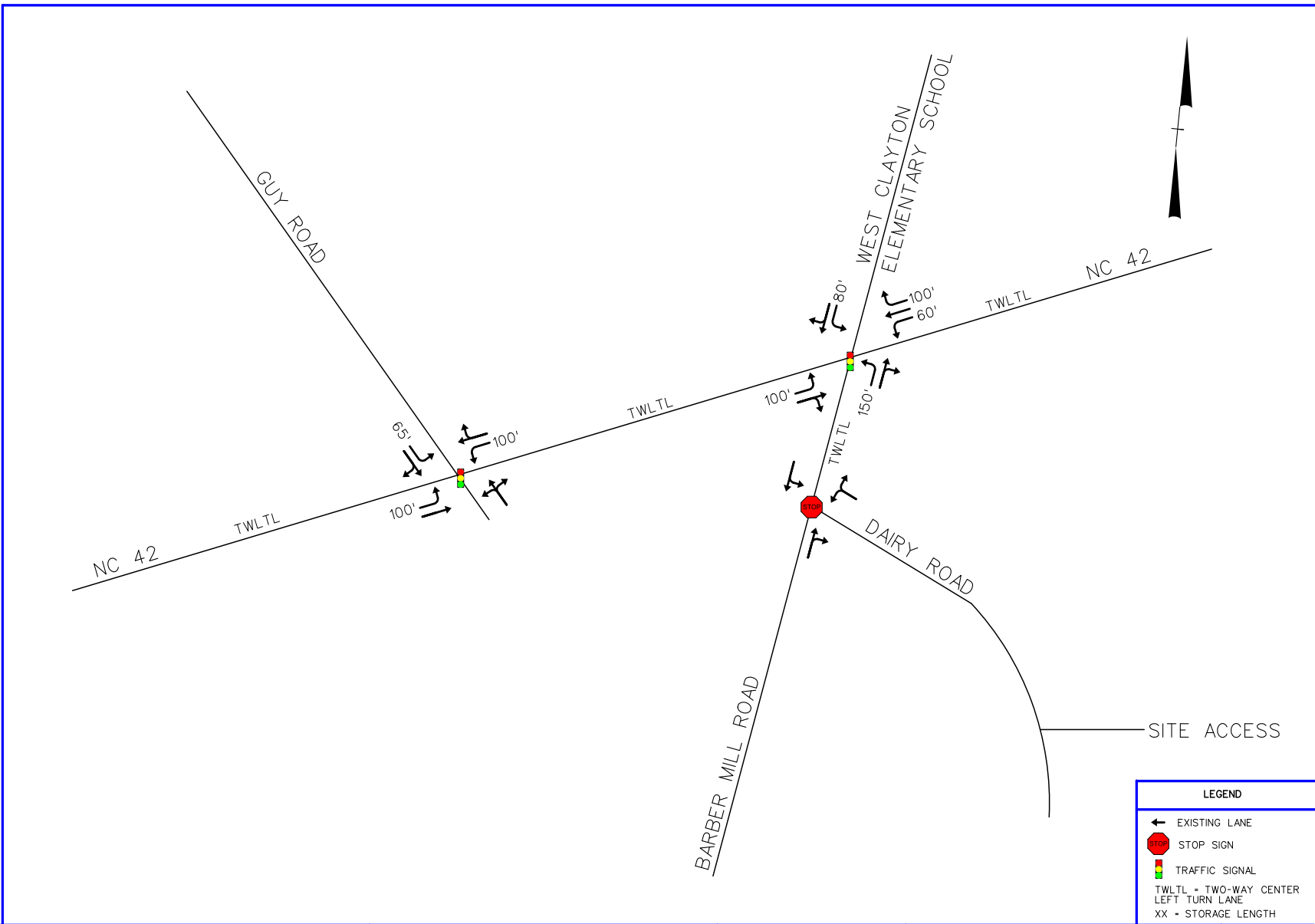
The speed limit along Dairy Road is posted at 35 mph. On September 8, 2016, National Data & Surveying Services performed a 24-hour traffic count near the proposed site access and found that approximately 700 vpd travel Dairy Road.

The existing lane configurations and traffic control for the study area intersections are shown in Figure 3.

2.3 Projected Transportation Improvements

Based on discussions with Town of Clayton and NCDOT, there are several major projects in the study area which are planned but none are to be constructed by the design year of 2020. R-3410 is the widening of NC 42 from NC 50 to US 70 Business. According to the *State Transportation Improvement Program (STIP) 2016-2025*², right-of-way and utility acquisition is scheduled for FY 2024-2025 while construction is scheduled for FY 2023-2025.

The Clayton Southern Connector, R-3618, is planned to be constructed from Shotwell Road to NC 42 East. The Clayton Southern Connector is proposed to bisect the Village at Little Creek. According to the *State Transportation Improvement Program (STIP) 2016-2025*², right-of-way and utility acquisition is scheduled for FY 2024-2025. Construction is currently unfunded and not scheduled.



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TRAFFIC IMPACT ANALYSIS
 VILLAGE AT LITTLE CREEK
 CLAYTON, NC

FIGURE 3

EXISTING LANE CONFIGURATIONS
 AND TRAFFIC CONTROL

SCALE:
 NONE

3.0 Traffic Generation & Distribution

The amount of traffic generated by a new development is a function of the size and type of development. Once the proposed land use data for the site are known, the number of trips generated by the development can be estimated. Trip generation data for this report was determined in accordance with the procedures outlined in the Institute of Transportation Engineers (ITE) report entitled *Trip Generation*³. Table 1 below illustrates the number of daily, AM peak hour, and PM peak hour trips expected to be generated by the proposed development.

Table 1 - ITE Trip Generation Summary

	LU Code	Description	Density	Units	Daily	AM			PM		
						In	Out	Total	In	Out	Total
	210	Single Family Homes	154	units	1562	31	89	120	100	56	156
Total			154		1562	31	89	120	100	56	156

Traffic impact is determined by estimating the total number of daily vehicle trips, as well as the number of peak hour vehicle trips. Table 1 indicates the proposed subdivision will generate approximately 1,562 total trips per day at full buildout. There are projected to be approximately 120 trips entering and exiting the site during the AM peak hour and 156 trips entering and exiting the site during the PM peak hour.

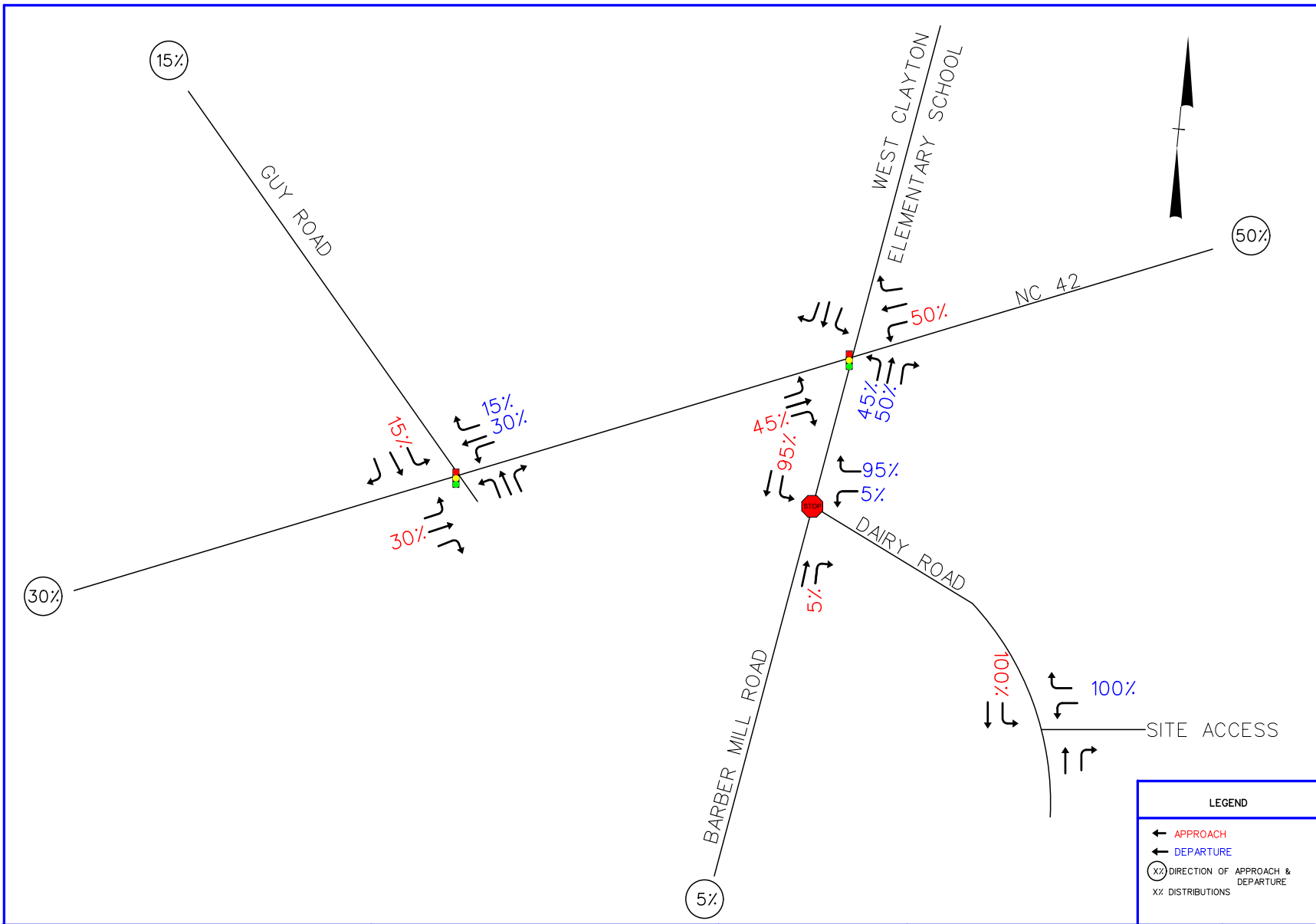
Pass-by trips are attracted to retail land uses within a development from traffic passing the site on an adjacent roadway which offers direct access to the retail uses. Internal capture rate is the percentage reduction applicable to the overall trip generation estimates for individual land uses within a multi-use or mixed use development. For this type of residential development, neither pass-by trips nor internal capture apply.

4.0 Traffic Distribution

In order to properly determine the impact of the traffic generated by the proposed development, it is necessary to determine the distribution of traffic to and from the development. These percentages are based on the projected traffic patterns and population/ employment centers in the area and mutually agreed upon by the Town of Clayton and NCDOT.

Table 2 – Traffic Distribution	
Facility	Directions of Approach and Departure
NC 42 (east)	50%
NC 42 (west)	30%
Barber Mill Road (south)	5%
Guy Road	15%

The project traffic distribution is shown in Figure 4.



PLANS PREPARED BY:  Gannett Fleming Excellence Delivered <i>As Promised</i>	2610 Wycliff Road Suite 102 Raleigh NC 27607-3073 (919) 420-7660 NC Lic. No. F-0270	TRAFFIC IMPACT ANALYSIS VILLAGE AT LITTLE CREEK CLAYTON, NC	FIGURE 4	DIRECTION OF APPROACH AND DEPARTURE	SCALE: NONE
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5.0 Projected Traffic Volumes

5.1 Existing Traffic

The morning and afternoon peak hour turning movement traffic counts at the study area intersections were performed by National Data & Surveying Services on September 8, 2016. The AM (7-9am) and PM (2:30-6:00pm) traffic counts were performed at NC 42/Guy Road and NC 42/Barber Mill Road intersections to make sure the peak school traffic was included. The Barber Mill Road/Dairy Road AM and PM peak hour traffic counts were performed from AM (7-9am) and PM (4-6pm).

On September 8, 2016, National Data & Surveying Services performed a 24-hour traffic count near the proposed site access and found that approximately 700 vpd travel Dairy Road.

The 2016 existing AM and PM peak hour traffic volumes are shown in Figure 5. The turning movement traffic counts and the 24-hour traffic count are included in Appendix A. Per the “NCDOT Congestion Management Capacity Analysis Guidelines” recommendations, existing allowed movements that showed either a “0” or less than “4” were changed to reflect a peak hour volume of “4” to allow the analysis and simulation to process correctly.

5.2 Historical Traffic Growth

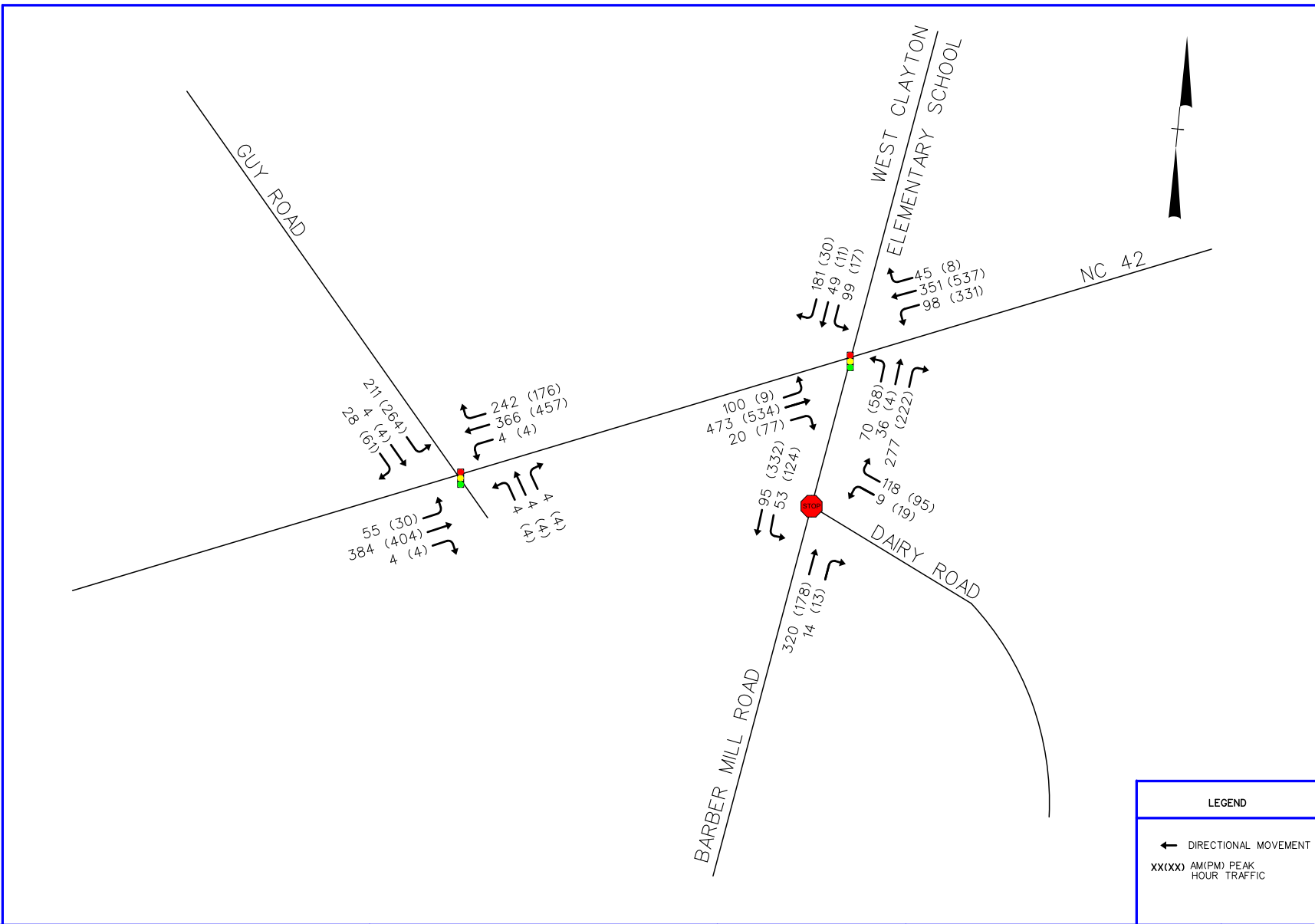
Historical traffic growth is the increase in traffic volumes due to usage increases and non-specific growth throughout the area. To account for normal increases in traffic as well as smaller, undetermined development, the existing 2016 traffic volumes were grown by 3.0% per year compounded annually to 2020 to develop the 2020 No-Build traffic volumes. The 2020 No-Build AM and PM peak hour traffic volumes is illustrated in Figure 6 & 7 as “background traffic”.

5.3 Approved Development Traffic

Approved development traffic is traffic generated by specific approved but not yet constructed, developments within the vicinity of the subject project. Based on discussions with Town of Clayton and NCDOT, no major developments are approved for construction by 2020 in the immediate vicinity; therefore no approved developments were included in this analysis.

5.4 Total Traffic

To obtain total 2020 Buildout traffic volumes, the development traffic was added to the 2020 No-Build traffic volumes. The AM and PM peak-hour turning movements for the studied intersections were then calculated and analyzed for the build-out year. The 2020 Buildout traffic volumes for the AM and PM peak hours are illustrated in Figures 6 and 7, respectively.



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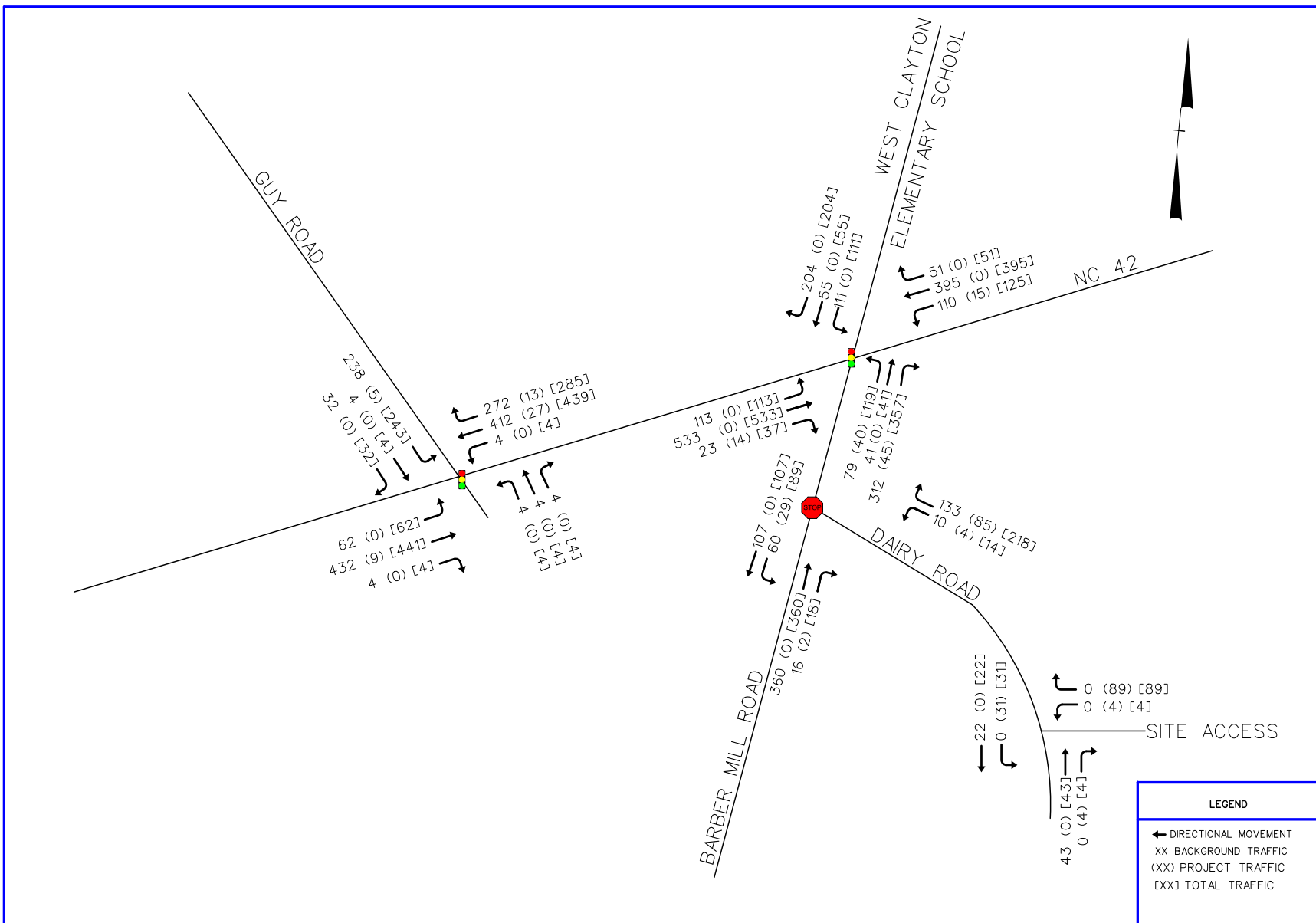
2610 Wycliff Road
 Suite 102
 Raleigh NC 27607-3073
 (919) 420-7660
 NC Lic. No. F-0270

TRAFFIC IMPACT ANALYSIS
 VILLAGE AT LITTLE CREEK
 CLAYTON, NC

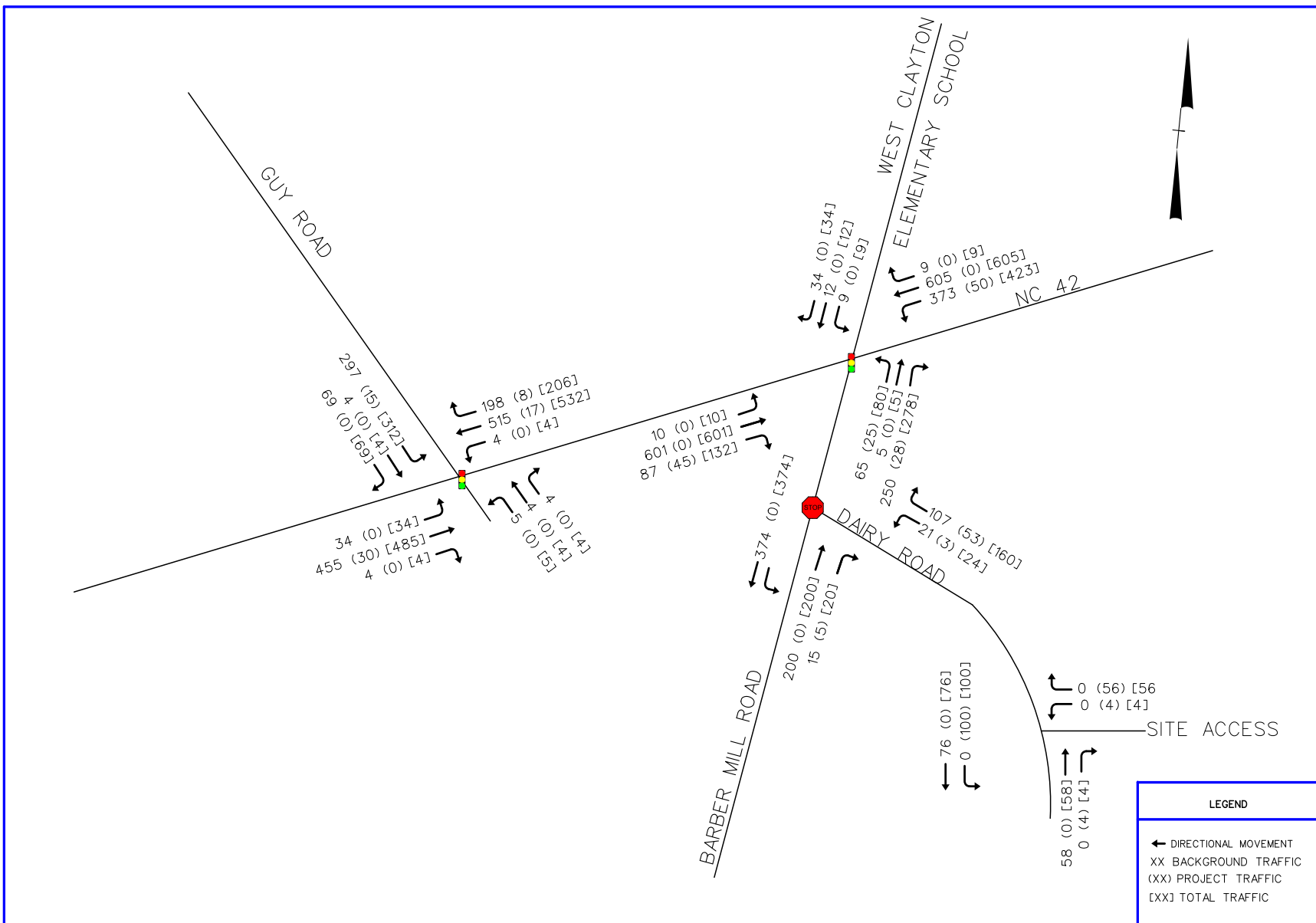
FIGURE 5

2016 EXISTING PEAK HOUR
 TRAFFIC VOLUMES

SCALE:
 NONE



PLANS PREPARED BY:  Gannett Fleming Excellence Delivered <i>As Promised</i> 2610 Wycliff Road Suite 102 Raleigh NC 27607-3073 (919) 420-7660 NC Lic. No. F-0270	TRAFFIC IMPACT ANALYSIS VILLAGE AT LITTLE CREEK CLAYTON, NC	FIGURE 6	2020 AM PEAK HOUR TRAFFIC	SCALE: NONE
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PLANS PREPARED BY:  Gannett Fleming Excellence Delivered <i>As Promised</i> 2610 Wycliff Road Suite 102 Raleigh NC 27607-3073 (919) 420-7660 NC Lic. No. F-0270	TRAFFIC IMPACT ANALYSIS VILLAGE AT LITTLE CREEK CLAYTON, NC	FIGURE 7	2020 PM PEAK HOUR TRAFFIC	SCALE: NONE
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6.0 Traffic Analysis

The study area intersections were analyzed using the methods outlined in the *Highway Capacity Manual*⁴ and Synchro Version 9.0 Software. The *Highway Capacity Manual*⁴ defines capacity as “the maximum rate of flow at which persons or vehicles can be reasonably expected to traverse a point or uniform section of a lane or roadway during a specified time period under prevailing roadway, traffic, and control conditions, usually expressed as vehicles per hour or persons per hour”.

Level of service (LOS) is a term used to represent different traffic conditions, and is defined as a “qualitative measure describing operational conditions within a traffic stream, and their perception by motorist/or passengers”. Level of Service varies from Level A, representing free flow, to Level F where traffic breakdown conditions are evident. Level B represents good progression with minimal congestion. At Level C, the number of vehicles stopping is significant, although many still pass through the intersection without stopping. Level D represents more congestion, but the overall operations are acceptable. At Level E, freedom to maneuver within the traffic stream is extremely difficult with driver frustration being generally high.

For signalized intersections, service levels pertain to each approach as well as an overall value. The unsignalized intersection analysis method in the *Highway Capacity Manual*⁴ assigns LOS values for each movement that yields the right-of-way, but not to the overall intersection. This movement is generally a secondary movement from a minor street. At an unsignalized intersection, the primary traffic on the main roadway is virtually uninterrupted. Therefore, the overall level of service is usually much greater than what is represented by the results of the minor street movements. Synchro Version 9.0 will calculate an amount of delay for the overall intersection, but will not assign a LOS value. Therefore, the overall intersection delay as well as the amount of delay on the minor street is reported in the summary tables of this report. Generally, Level of Service D is acceptable for signalized intersections in suburban areas during peak periods. With the current method of reporting levels of service for unsignalized intersections, it is not uncommon for some of the minor street movements to be operating at a LOS F during the peak hours.

Tables 3 and 3A present criteria of each level of service as indicated in the *Highway Capacity Manual*⁴.

Table 3 - Level of Service Criteria Signalized Intersections	
Level of Service	Stopped Delay Per Vehicle (sec)
A	≤ 10.0
B	> 10.0 and ≤ 20.0
C	> 20.0 and ≤ 35.0
D	> 35.0 and ≤ 55.0
E	> 55.0 and ≤ 80.0
F	> 80.0

Table 3A – Level of Service Criteria Unsignalized Intersections	
Level of Service	Average Total Delay (sec/veh)
A	≤ 10
B	> 10 and ≤ 15
C	> 15 and ≤ 25
D	> 25 and ≤ 35
E	> 35 and ≤ 50
F	> 50

Capacity analyses were performed for 2016 existing conditions, 2020 No-Build, and 2020 Buildout conditions for the following intersections:

- Barber Mill Road/Dairy Road (unsignalized)
- Barber Mill Road/NC 42 (signalized)
- Guy Road/NC 42 (signalized)
- Dairy Road/Site Access (unsignalized)

Synchro 9.0 calculated the AM and PM peak hour level of service and delay for the study area intersections using methods outlined in the *Highway Capacity Manual*⁴. All capacity analyses are included in Appendix B and are briefly summarized in the following sub-sections.

A model of the study area was developed using Synchro 9.0. Field data was entered into the model, including speed limits, lane geometry, and signal phasing/timing. Per the requirements of the “NCDOT Congestion Management Capacity Analysis Guidelines”:

- Only a leading phase sequence for protective/permissive phase left-turn movements was used for existing signalized intersections.
- When protected left-turns are required, only use protected phasing, not protected/permitting phasing for future left-turn lanes.
- Right-Turn-On-Red (RTOR) is not allowed.
- Field traffic counts were obtained, therefore the resultant Peak-Hour Factor (PHF) were used.

6.1 Barber Mill Road/Dairy Road

Barber Mill Road/Dairy Road intersection is currently an unsignalized T-intersection. The capacity analysis for the existing 2016 traffic condition revealed the intersection is currently operating at a high level of service in both the AM and PM peak hours. The westbound approach on Dairy Road is operating at LOS B with an overall approach delay of 13.8 seconds/vehicle during the morning peak hour and LOS B with an overall approach delay of 12.0 seconds/vehicle during the afternoon peak hours.

With normal traffic growth at 3% per year compounded annually, the westbound approach delays are expected to stay the consistent or increase slightly by 2020. In the 2020 No-Build condition, the westbound approach on Dairy Road is predicted to operate at LOS B with an overall approach delay of 12.9 seconds/vehicle during the morning peak hour and at LOS B with an overall approach delay of 13.2 seconds/vehicle during the afternoon peak hour.

The proposed Village at Little Creek residential development will add traffic to this intersection when the development is constructed and operational. Under the 2020 Build condition, the westbound approach is predicted to operate at LOS C with an overall approach delay of 15.1 seconds/vehicle during the morning peak hour and at LOS C with an overall lane delay of 16.2 seconds/vehicle during the afternoon peak hour.

Table 4 displays the Level of Service and Delay for the subject intersection for the 2016 Existing condition, 2020 No-Build condition, and 2020 Build condition.

Table 4 – Barber Mill Road/Dairy Road Traffic Analysis

Intersection	2016 Existing		2020 No-Build		2020 Build	
	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
Barber Mill Road / Dairy Road	# (3.8) B (13.8) WB	# (3.3) B (12.0) WB	# (3.4) B (12.9) WB	# (3.3) B (13.2) WB	# (5.3) C (15.1) WB	# (4.9) C (16.2) WB
#	Total Intersection Delay in seconds/vehicle/Approach Delay seconds/vehicle					
	Unsignalized Analysis					

6.2 Barber Mill Road/NC 42

Barber Mill Road/NC 42 intersection is currently a signalized four-leg intersection. The northern leg serves as the access for the access for West Clayton Elementary School. As noted previously in the Existing Conditions section of the report, traffic on NC 42 was observed to be quite congested during the morning and afternoon peak hours. The capacity analysis for the existing 2016 traffic condition reflected the observed congestion and revealed the intersection is currently operating at LOS F during the AM peak hour with an overall intersection delay of 113.1 seconds/vehicle and LOS D during the PM peak hour with an overall intersection delay of 53.3 seconds/vehicle. Given the fact that the *Johnston County Comprehensive Transportation Plan*¹ noted NC 42 needed improvements, the congestion on NC 42 and at the intersection was to be expected.

With normal traffic growth at 3% per year compounded annually, the intersection delays are expected to stay the consistent or increase slightly by 2020. In the 2020 No-Build traffic condition, the capacity analysis revealed the intersection is predicted to operate at LOS F during the AM peak hour with an overall intersection delay of 100.5 seconds/vehicle and LOS F during the PM peak hour with an overall intersection delay of 101.4 seconds/vehicle.

The proposed Village at Little Creek residential development will add traffic to this intersection when the development is constructed and operational. Under the 2020 Build condition, the intersection is predicted to operate at LOS F with an overall intersection delay of 122.8 seconds/vehicle during the morning peak hour and at LOS F with an overall intersection delay of 135.7 seconds/vehicle during the afternoon peak hour.

In order to provide a reasonably acceptable level of service at the Barber Mill Road/NC 42 intersection and on NC 42, NC 42 will need to be improved to a four-lane median divided facility with a dual westbound left turn lane. This need is reflected in the *Johnston County Comprehensive Transportation Plan*¹ and identified in the *State Transportation Improvement Program (STIP) 2016-2025*² as R-3410.

Table 5 displays the Level of Service and Delay for the subject intersection for the 2016 Existing condition, 2020 No-Build condition, and 2020 Build condition.

Table 5 – Barber Mill Road/NC 42 Traffic Analysis							
		2016 Existing		2020 No-Build		2020 Build	
Intersection		AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
Barber Mill Road / NC 42		F (113.1)	D (53.3)	F (100.5)	F (101.4)	F (122.8)	F (135.7)
#		Total Intersection Delay in seconds/vehicle/Approach Delay seconds/vehicle					
		Signalized Analysis					

6.3 Guy Road/NC 42

Guy Road/NC 42 intersection is currently a signalized four-leg intersection. As noted previously in the Existing Conditions section of the report, traffic on NC 42 was observed to be quite congested during the morning and afternoon peak hours. However, the congestion in the vicinity of Guy Road is less than observed at Barber Mill Road. The capacity analysis for the existing 2016 traffic condition reveals the intersection is currently operating at LOS C during the AM peak hour with an overall intersection delay of 25.2 seconds/vehicle and LOS C during the PM peak hour with an overall intersection delay of 21.1 seconds/vehicle.

With normal traffic growth at 3% per year compounded annually, the intersection delays are expected to stay the consistent or increase slightly by 2020. In the 2020 No-Build traffic condition, the capacity analysis revealed the intersection is predicted to operate at LOS C during the AM peak hour with an overall intersection delay of 21.8 seconds/vehicle and LOS C during the PM peak hour with an overall intersection delay of 23.4 seconds/vehicle.

The proposed Village at Little Creek residential development will add traffic to this intersection when the development is constructed and operational. Under the 2020 Build condition, the intersection is predicted to operate at LOS C with an overall intersection delay of 23.2 seconds/vehicle during the morning peak hour and at LOS C with an overall intersection delay of 24.5 seconds/vehicle during the afternoon peak hour.

Table 6 displays the Level of Service and Delay for the subject intersection for the 2016 Existing condition, 2020 No-Build condition, and 2020 Build condition.

Table 6 – Guy Road/NC 42 Traffic Analysis

Intersection	2016 Existing		2020 No-Build		2020 Build	
	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
Guy Road / NC 42	C (25.2)	C (21.1)	C (21.8)	C (23.5)	C (23.2)	C (24.5)
#	Total Intersection Delay in seconds/vehicle/Approach Delay seconds/vehicle					
	Signalized Analysis					

6.4 Dairy Road/Site Access

The Village at Little Creek residential development is planned to have access on Dairy Road approximately 500 feet south of Brittany Drive. This site access is planned to be a full movement access.

When the site is fully constructed under the 2020 Build condition, the westbound approach is predicted to operate at LOS A with an overall lane delay of 9.0 seconds/vehicle during the morning peak hour and at LOS A with an overall lane delay of 9.1 seconds/vehicle during the afternoon peak hour.

Left-turn and right-turn lane warrant analyses were conducted using NCDOT Warrant for Left and Right-Turn Lanes. Due to low volume of traffic on Dairy Road (700 vpd) and low generator for 154 residential units, neither the northbound right-turning movement nor the southbound left-turning movements met the warrants for left and right-turn lanes. The warrant analyses are included in Appendix B.

Table 7 displays the Level of Service and Delay for the subject intersection for the 2016 Existing conditions, 2020 No-Build conditions and 2020 Build Conditions.

Table 7 – Dairy Road/Site Access Traffic Analysis

Intersection	2016 Existing		2020 No-Build		2020 Build	
	AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
Dairy Road / Site Access	-	-	-	-	# (5.5) A (9.0) WB	# (4.4) A (9.1) WB
#	Total Intersection Delay in seconds/vehicle/Approach Delay seconds/vehicle					
	Unsignalized Analysis					
	N/A					

7.0 Recommendations

To mitigate the traffic-related impacts caused by the Village at Little Creek residential development and to provide for safe, efficient, and reliable traffic flow, Gannett Fleming recommends the following:

Dairy Road/Site Access - Construct the driveway to provide for two way operation with one inbound lane and one outbound lane in accordance with the standards as outlined in the Policy on Street and Driveway Access to North Carolina Highways.

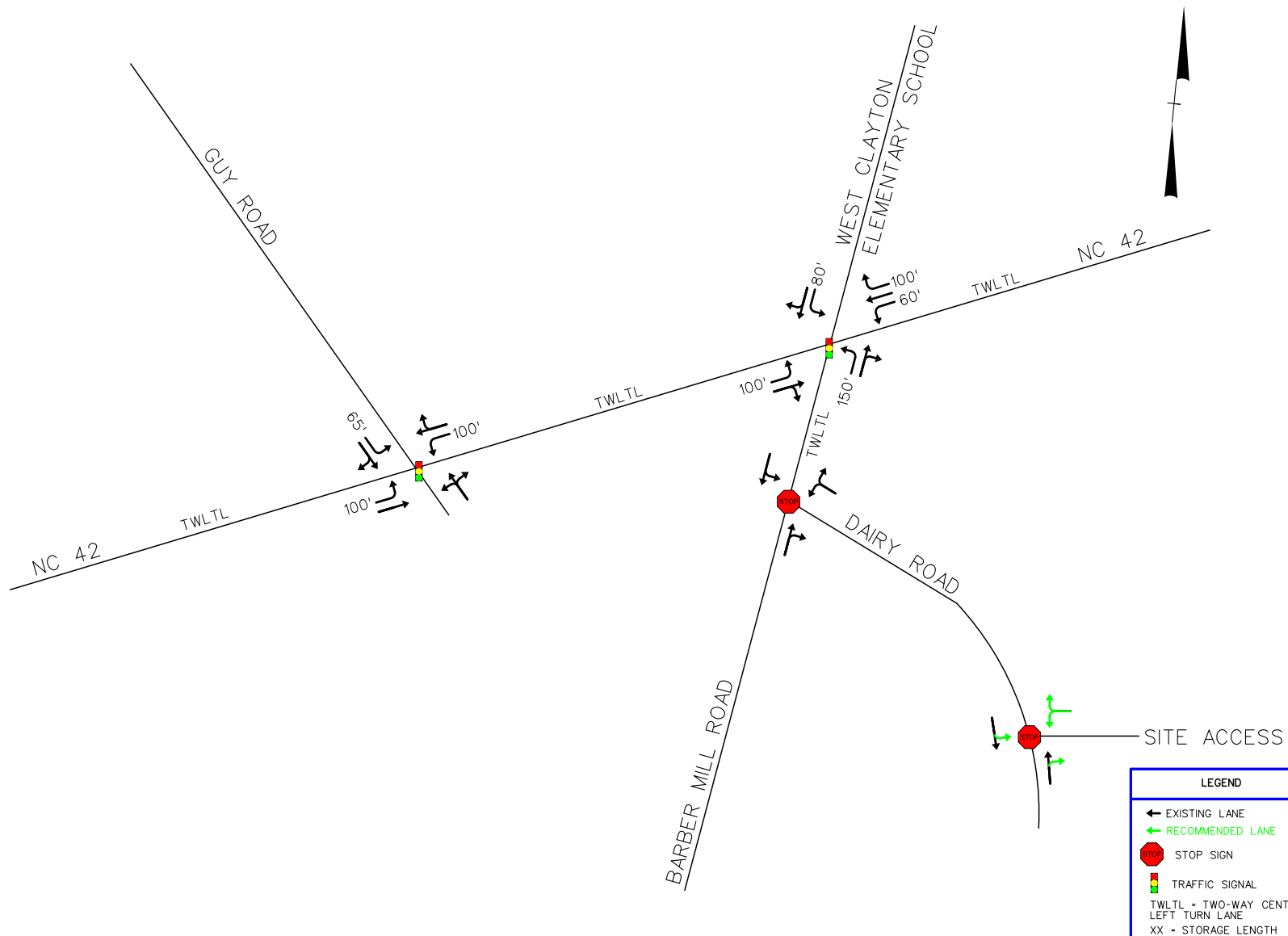
Barber Mill Road/NC 42 Intersection – Due to the existing level of congestion on NC 42 and particularly at the Barber Mill Road/NC 42 intersection, it is unreasonable to expect the developer of the Village at Little Creek to construct off-site improvements to bring this intersection up to an acceptable level of service. The percent increase in traffic at this intersection caused by the Village at Little Creek is morning and afternoon peak hours is predicted to be approximately 7%. The percent increase in the westbound left, eastbound right, northbound left, and northbound right lane groups will be more than 7%. Dual westbound left-turn lanes and northbound right-turn lanes would be ideal but this cannot be accomplished without significant widening of NC 42 and Barber Mill Road to accept the additional turning lanes. The need for improvements to NC 42 is well documented by the *Johnston County Comprehensive Transportation Plan*¹ and the *State Transportation Improvement Program (STIP) 2016-2025*² R-3410. Therefore, no improvements at this intersection is recommended to mitigate the minor impact caused by the proposed Village at Little Creek development.

Guy Road/NC 42 Intersection – Due to the existing level of congestion on NC 42, it is also unreasonable to expect the developer of the Village at Little Creek to construct off-site improvements to improve operations at this intersection. This intersection is predicted to operate at LOS C in the future with and without the Village at Little Creek development. The percent increase in traffic at this intersection caused by the Village at Little Creek is morning and afternoon peak hours is predicted to be approximately 4%. The percent increase in the southbound left, eastbound right, eastbound through, and westbound through lane groups will be more than 4%. The need for improvements to NC 42 is well documented by the *Johnston County Comprehensive Transportation Plan*¹ and the *State Transportation Improvement Program (STIP) 2016-2025*² R-3410 and improvements to Guy Road is also included in the *Johnston County Comprehensive Transportation Plan*¹. Therefore, no improvements at this intersection is recommended to mitigate the minor impact caused by the proposed Village at Little Creek development.

Barber Mill Road/Dairy Road – The Barber Mill Road/Dairy Road intersection is predicted to operate at LOS C during the future 2020 Build condition. The Village of Little Creek development will add traffic to this intersection. However, the intersection has the capacity to accommodate the additional site traffic. Therefore, no improvements at this intersection is recommended to mitigate the minor impact caused by the proposed Village at Little Creek development.

Clayton Southern Connector (R-3618) – The *Johnston County Comprehensive Transportation Plan*¹ and the *State Transportation Improvement Program (STIP) 2016-2025*² R-3410 include the Clayton Southern Connector as a future need and identified project. The alignment for the Clayton Southern Connector bisects the Village at Little Creek as shown on Figure 2 – Sketch Plan. It is recommended that the developer continue to develop a master development plan to accommodate land for the Clayton Southern Connector right-of-way, continue to plan for a second point of access which will be on the Clayton Southern Connector, and work closely with NCDOT and the Town of Clayton to advocate for funding and prioritization for the Clayton Southern Connector and improvements to NC 42 and Guy Road.

The recommended lane configurations and traffic control are shown on Figure 8.



PLANS PREPARED BY:
Gannett Fleming
 Excellence Delivered *As Promised* NC Lic. No. F-0270

2610 Wycliff Road
 Suite 102
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TRAFFIC IMPACT ANALYSIS
 VILLAGE AT LITTLE CREEK
 CLAYTON, NC

FIGURE 8

RECOMMENDED LANE CONFIGURATIONS
 AND TRAFFIC CONTROL

SCALE:
 NONE

8.0 Conclusions

This study shows that the proposed Village at Little Creek residential development will have an overall minimal impact on the traffic operations at the study area intersections; however, the impact will be mitigated by the recommended improvements. The proposed development will not negatively impact the health, safety, and welfare of the travelling public.

9.0 References

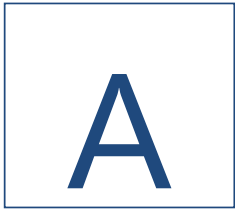
¹ *Johnston County Comprehensive Transportation Plan*, adopted July 7, 2011.

² *State Transportation Improvement Program 2016-2025*, North Carolina Department of Transportation, 2015.

³ *Trip Generation, 9th Edition*, Institute of Transportation Engineers.

⁴ *Highway Capacity Manual*, Special Report 209, Transportation Research Board, National Research Council, Washington, D.C., 1998.

Appendix A: Traffic Data





*Excellence Delivered **As Promised***

August 27, 2016

To: Jiles Harrell, PE, NCDOT District Engineer
Jay McLeod, Town of Clayton Senior Planner
Michael Crowley, PE, caaEngineers, Inc.
Bill Zahn, Triangle Real Estate Co.

From: Terry Snow, PE

Subject: **FINAL MEMORANDUM OF ASSUMPTIONS** for The Village at Little Creek
Traffic Impact Analysis (TIA), Clayton, NC

INTRODUCTION

On August 24, 2016 at 8:30am, a Scoping Meeting/Conference Call was held to discuss the parameters for a Traffic Impact Analysis which is needed for The Village at Little Creek which is proposed to be developed off Dairy Road in Clayton, North Carolina. The following participated in the Scoping Meeting/Conference Call:

- Jiles Harrell, PE, NCDOT District Engineer
- Jay McLeod, AICP, Town of Clayton Senior Planner
- Haley Hogg, CZO, Town of Clayton Planner
- Michael Crowley, PE, caaEngineers, Inc.
- Terry Snow, PE, Gannett Fleming, Inc.

During the Scoping Meeting/Conference Call, NCDOT and Town of Clayton staff provided guidance relative to the parameters by which the TIA would be developed by Gannett Fleming. The following summarizes these parameters and noteworthy points of emphasis.

Study Area Intersections

- Barber Mill Road/Dairy Road
- Barber Mill Road/NC 42
- Guy Road/NC 42
- Dairy Road/Site Access

Refer to attached Site Location Map.

AM & PM Peak Hour Turning Movement Counts

Jiles Harrell, PE, in consultation with Andy Brown, NCDOT Division 4 Traffic Engineer, requested that the afternoon peak hour traffic counts be extended to 30 min prior to when school lets out through the proposed 6 PM, upon which the true peak hour can be determined. This extended afternoon peak hour will need to be counted for Barber Mill Road/NC 42 and Guy Road/NC 42 intersections. Therefore, the traffic counts will be performed as follows:

AM (7-9am) & PM (2:30-6pm)

- Barber Mill Road/NC 42
- Guy Road/NC 42

AM (7-9am) & PM (4-6pm)

- Barber Mill Road/Dairy Road

A 24-hour tube average daily traffic count on Dairy Road will also be counted by Gannett Fleming.

Study Year Scenarios

- 2016 Existing Condition
- 2020 No-Build Condition
- 2020 Buildout Condition

Capacity Analysis

Capacity analysis, using Synchro/SimTraffic, will be performed for the AM and PM peak hours at the following intersections:

- Barber Mill Road/NC 42
- Guy Road/NC 42
- Barber Mill Road/Dairy Road

Trip Generation

The trip generation estimates for the proposed 154 single family residential development is as follows:

Table 1 - ITE Trip Generation Summary											
						AM			PM		
	LU Code	Description	Density	Units	Daily	In	Out	Total	In	Out	Total
	210	Single Family Homes	154	units	1562	31	89	120	100	56	156
Total			154		1562	31	89	120	100	56	156

Pass-by and internal capture are not applicable for residential development.

The Preliminary Site Plan provided by caaEngineers, Inc. which illustrates the plan for the 154 lot residential development is attached.

Growth Rates

Jay McCloud, AICP indicated traffic in the Clayton area has been growing at approximately 3% per year. Therefore 3% compounded annual growth rate is to be used on study area roadways.

Approved Developments

None was identified.

Approved Transportation Projects

R-3618 – Southern Connector

- Shotwell Court to NC 42 East
- Right-of-way and Utilities is scheduled for 2025 with Construction in future years.
- Total Funding: \$30,584,000
- Unfunded Amount: \$5,618,000
- R-3618 ROW bisects The Village at Little Creek

Since R-3618 is not expected to be constructed by design year 2020, this TIP project will not be considered in the analysis. However, a description of the TIP project and the proposed R-3618 alignment location will be discussed in the TIA.

Directions of Approach and Departure

The proposed AM and PM entering and exiting distributions are as follows:

Facility	Average Daily Traffic	Directions of Approach and Departure
NC 42 (east)	18,000 vpd	50%
NC 42 (west)	15,000 vpd	30%
Barber Mill Road (south)	8,300 vpd	5%
Guy Road	13,000 vpd	15%

Average Daily Traffic Counts (ADT's) were obtained from NCDOT Traffic Count Maps, 2012 – 2014. *Barber Mill Road had 8,300 vpd south of NC 42. Since Barber Mill Road does not have direct access to US 70 Bypass, it is highly unlikely that much Village of Little Creek will travel to/from Barber Mill Road (south). Therefore, only 5% of the site traffic was assumed to be accessing the site via Barber Mill Road from the south.

Auxiliary Turn Lane Analysis

NCDOT Left and Right Turn Lane Warrants will be used to determine the need for left and right-turn lanes are the proposed access on Dairy Road. Jiles Hammond, PE noted that his

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District typically looks at any driveway which accesses a roadway with 4,000 ADT or more will generally require auxiliary turn lanes. Since Dairy Road dead ends south of the proposed development, it is highly unlikely that Dairy Road carries 4,000 ADT but the TIA should address this issue.

Other Issues

The TIA will address Finding of Fact in the Conclusion section.

This concludes the FINAL Memorandum of Assumptions. Please review and provide your concurrence at our earliest convenience. If you have any questions, please feel free to contact me at tsnow@gfnet.com or 919.420.7660 (o) or 919.530.9268 (m).

cc: Project File

Project ID: 16-9390-001
Location: Barber Mill Rd_Wellspring Community Church Dwy & NC 42
City: Clayton

Day: Thursday
Date: 9/8/2016

Peak Start Times	
AM	7:00 AM
MD	12:00 AM
PM	2:30 PM

Groups Printed - Cars, PU, Vans - Heavy Trucks

	Mill Rd_Wellspring Community Church Northbound					Mill Rd_Wellspring Community Church Southbound					NC 42 Eastbound					NC 42 Westbound					
Start Time	Left	Thru	Rgt	Peds	App. Total	Left	Thru	Rgt	Peds	App. Total	Left	Thru	Rgt	Peds	App. Total	Left	Thru	Rgt	Peds	App. Total	Int. Total
7:00 AM	31	4	81	0	116	3	0	3	0	6	6	87	4	0	97	39	79	6	0	124	343
7:15 AM	41	3	75	0	119	3	1	10	0	14	10	94	3	0	107	23	111	6	0	140	380
7:30 AM	27	3	61	0	91	1	2	5	0	8	8	129	7	0	144	21	126	10	0	157	400
7:45 AM	19	4	65	0	88	3	0	2	0	5	12	97	7	0	116	33	102	8	0	143	352
Total	118	14	282	0	414	10	3	20	0	33	36	407	21	0	464	116	418	30	0	564	1475
8:00 AM	16	12	48	0	76	2	1	7	0	10	29	109	8	0	146	22	87	17	0	126	358
8:15 AM	17	15	68	0	100	28	11	45	0	84	39	120	6	0	165	22	75	11	0	108	457
8:30 AM	21	6	63	0	90	43	24	87	0	154	23	131	5	0	159	18	94	13	0	125	528
8:45 AM	16	3	48	0	67	26	13	42	0	81	9	113	1	0	123	36	95	4	0	135	406
Total	70	36	227	0	333	99	49	181	0	329	100	473	20	0	593	98	351	45	0	494	1749
BREAK																					
2:30 PM	14	0	64	0	78	3	0	0	0	3	1	104	9	0	114	52	107	2	0	161	356
2:45 PM	16	1	44	0	61	2	0	2	0	4	1	92	12	0	105	68	109	4	0	181	351
3:00 PM	18	3	35	0	56	0	0	3	0	3	12	124	11	0	147	45	114	11	0	170	376
3:15 PM	14	1	58	0	73	4	0	7	0	11	21	126	16	0	163	47	114	7	0	168	415
Total	62	5	201	0	268	9	0	12	0	21	35	446	48	0	529	212	444	24	0	680	1498
3:30 PM	8	3	63	0	74	5	0	2	0	7	2	140	7	0	149	51	95	1	0	147	377
3:45 PM	17	2	45	0	64	22	14	68	0	104	28	117	5	0	150	57	94	9	0	160	478
4:00 PM	13	3	49	0	65	29	20	66	0	115	1	116	8	0	125	62	123	2	0	187	492
4:15 PM	18	1	40	0	59	9	5	6	0	20	0	109	10	0	119	67	123	0	0	190	388
Total	56	9	197	0	262	65	39	142	0	246	31	482	30	0	543	237	435	12	0	684	1735
4:30 PM	14	1	47	0	62	6	2	6	0	14	2	124	16	0	142	63	129	1	0	193	411
4:45 PM	20	2	57	0	79	6	3	8	0	17	3	109	11	0	123	85	131	4	0	220	439
5:00 PM	16	0	44	0	60	6	3	10	0	19	2	151	20	0	173	83	136	3	0	222	474
5:15 PM	9	1	56	0	66	2	2	7	0	11	2	141	23	0	166	91	143	0	0	234	477
Total	59	4	204	0	267	20	10	31	0	61	9	525	70	0	604	322	539	8	0	869	1801
5:30 PM	13	1	65	0	79	3	3	5	0	11	2	133	23	0	158	72	127	1	0	200	448
5:45 PM	20	1	43	0	64	4	4	1	0	9	0	127	24	0	151	67	125	1	0	193	417
Total	33	2	108	0	143	7	7	6	0	20	2	260	47	0	309	139	252	2	0	393	865
Grand Total	398	70	1219	0	1687	210	108	392	0	710	213	2593	236	0	3042	1124	2439	121	0	3684	9123
Apprch %	23.6	4.1	72.3	0.0		29.6	15.2	55.2	0.0		7.0	85.2	7.8	0.0		30.5	66.2	3.3	0.0		
Total %	4.4	0.8	13.4	0.0	18.5	2.3	1.2	4.3	0.0	7.8	2.3	28.4	2.6	0.0	33.3	12.3	26.7	1.3	0.0	40.4	
Cars, PU, Vans	398	70	1219	0	1687	210	108	392	0	710	213	2593	236	0	3042	1124	2439	121	0	3684	9123
% Cars, PU, Vans	100.0	100.0	100.0	0.0	100.0	100.0	100.0	100.0	0.0	100.0	100.0	100.0	100.0	0.0	100.0	100.0	100.0	100.0	0.0	100.0	100.0
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
%Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Project ID: 16-9390-001
Location: Barber Mill Rd_Wellspring C
City: Clayton

PEAK HOURS

Day: Thursday
Date: 9/8/2016

AM

	Rd_Wellspring Community C Northbound				Rd_Wellspring Community C Southbound				NC 42 Eastbound				NC 42 Westbound				
Start Time	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Int. Total
Peak Hour Analysis from 07:00 AM to 09:00 AM																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
8:00 AM	16	12	48	76	2	1	7	10	29	109	8	146	22	87	17	126	358
8:15 AM	17	15	68	100	28	11	45	84	39	120	6	165	22	75	11	108	457
8:30 AM	21	6	63	90	43	24	87	154	23	131	5	159	18	94	13	125	528
8:45 AM	16	3	48	67	26	13	42	81	9	113	1	123	36	95	4	135	406
Total Volume	70	36	227	333	99	49	181	329	100	473	20	593	98	351	45	494	1749
% App. Total	21.0	10.8	68.2	100	30.1	14.9	55.0	100	16.9	79.8	3.4	100	19.8	71.1	9.1	100	
PHF	0.833				0.534				0.898				0.915				
Cars, PU, Vans	70	36	227	333	99	49	181	329	100	473	20	593	98	351	45	494	1749
% Cars, PU, Vans	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
%Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

PM

	Rd_Wellspring Community C Northbound				Rd_Wellspring Community C Southbound				NC 42 Eastbound				NC 42 Westbound				
Start Time	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Int. Total
Peak Hour Analysis from 02:30 PM to 06:00 PM																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
4:45 PM	20	2	57	79	6	3	8	17	3	109	11	123	85	131	4	220	439
5:00 PM	16	0	44	60	6	3	10	19	2	151	20	173	83	136	3	222	474
5:15 PM	9	1	56	66	2	2	7	11	2	141	23	166	91	143	0	234	477
5:30 PM	13	1	65	79	3	3	5	11	2	133	23	158	72	127	1	200	448
Total Volume	58	4	222	284	17	11	30	58	9	534	77	620	331	537	8	876	1838
% App. Total	20.4	1.4	78.2	100	29.3	19.0	51.7	100	1.5	86.1	12.4	100	37.8	61.3	0.9	100	
PHF	0.899				0.763				0.896				0.936				
Cars, PU, Vans	58	4	222	284	17	11	30	58	9	534	77	620	331	537	8	876	1838
% Cars, PU, Vans	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
%Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Turning Movement

Prepared by:
National Data & Surveying Services

Project ID: 16-9390-001

City: Clayton

Day: Thursday

Date: 9/8/2016

AM													
NS/EW Streets:	Barber Mill Rd_Wellspring Community Church Dwy			Barber Mill Rd_Wellspring Community Church Dwy			NC 42			NC 42			
NORTHBOUND				SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL 1	NT 0.5	NR 0.5	SL 1	ST 0.5	SR 0.5	EL 1	ET 0.5	ER 0.5	WL 1	WT 1	WR 1	TOTAL
7:00 AM	31	4	81	3	0	3	6	87	4	39	79	6	343
7:15 AM	41	3	75	3	1	10	10	94	3	23	111	6	380
7:30 AM	27	3	61	1	2	5	8	129	7	21	126	10	400
7:45 AM	19	4	65	3	0	2	12	97	7	33	102	8	352
8:00 AM	16	12	48	2	1	7	29	109	8	22	87	17	358
8:15 AM	17	15	68	28	11	45	39	120	6	22	75	11	457
8:30 AM	21	6	63	43	24	87	23	131	5	18	94	13	528
8:45 AM	16	3	48	26	13	42	9	113	1	36	95	4	406
TOTAL VOLUMES :	NL 188	NT 50	NR 509	SL 109	ST 52	SR 201	EL 136	ET 880	ER 41	WL 214	WT 769	WR 75	TOTAL 3224
APPROACH %'s :	25.17%	6.69%	68.14%	30.11%	14.36%	55.52%	12.87%	83.25%	3.88%	20.23%	72.68%	7.09%	
PEAK HR START TIME :	800 AM												TOTAL
PEAK HR VOL :	70	36	227	99	49	181	100	473	20	98	351	45	1749
PEAK HR FACTOR :	0.833			0.534			0.898			0.915			0.828

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 16-9390-001

Day: Thursday

City: Clayton

Date: 9/8/2016

NS/EW Streets:		PM												
		Barber Mill Rd_Wellspring Community Church Dwy			Barber Mill Rd_Wellspring Community Church Dwy			NC 42			NC 42			
		NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:		NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
		1	0.5	0.5	1	0.5	0.5	1	0.5	0.5	1	1	1	
	2:30 PM	14	0	64	3	0	0	1	104	9	52	107	2	356
	2:45 PM	16	1	44	2	0	2	1	92	12	68	109	4	351
	3:00 PM	18	3	35	0	0	3	12	124	11	45	114	11	376
	3:15 PM	14	1	58	4	0	7	21	126	16	47	114	7	415
	3:30 PM	8	3	63	5	0	2	2	140	7	51	95	1	377
	3:45 PM	17	2	45	22	14	68	28	117	5	57	94	9	478
	4:00 PM	13	3	49	29	20	66	1	116	8	62	123	2	492
	4:15 PM	18	1	40	9	5	6	0	109	10	67	123	0	388
	4:30 PM	14	1	47	6	2	6	2	124	16	63	129	1	411
	4:45 PM	20	2	57	6	3	8	3	109	11	85	131	4	439
	5:00 PM	16	0	44	6	3	10	2	151	20	83	136	3	474
	5:15 PM	9	1	56	2	2	7	2	141	23	91	143	0	477
	5:30 PM	13	1	65	3	3	5	2	133	23	72	127	1	448
	5:45 PM	20	1	43	4	4	1	0	127	24	67	125	1	417
TOTAL VOLUMES :		NL 210	NT 20	NR 710	SL 101	ST 56	SR 191	EL 77	ET 1713	ER 195	WL 910	WT 1670	WR 46	TOTAL 5899
APPROACH %'s :		22.34%	2.13%	75.53%	29.02%	16.09%	54.89%	3.88%	86.30%	9.82%	34.65%	63.59%	1.75%	
PEAK HR START TIME :		445 PM												TOTAL
PEAK HR VOL :		58	4	222	17	11	30	9	534	77	331	537	8	1838
PEAK HR FACTOR :		0.899			0.763			0.896			0.936			0.963

CONTROL : Signalized

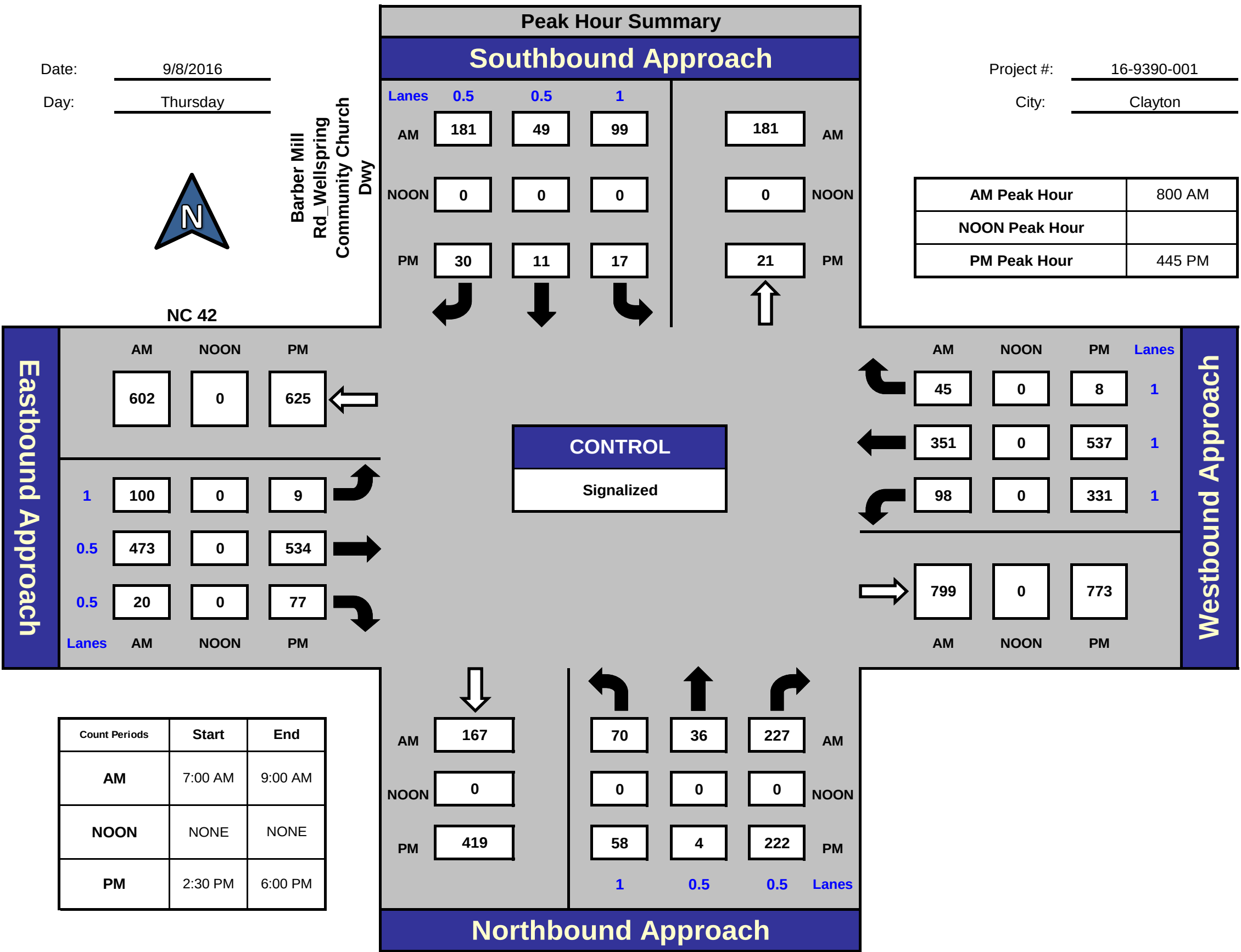
ITM Peak Hour Summary

Prepared by:

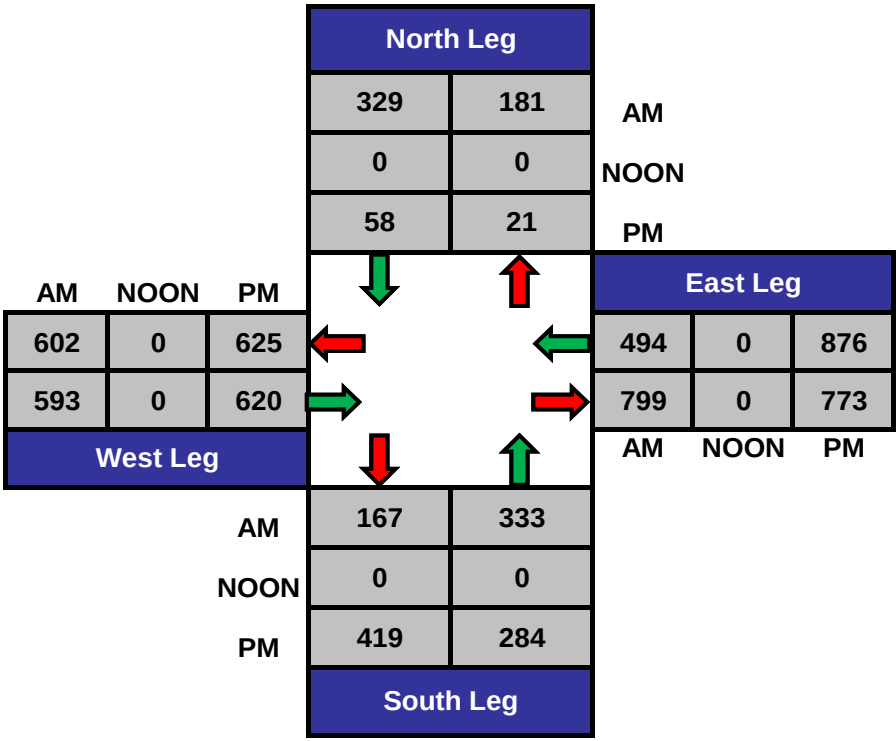


National Data & Surveying Services

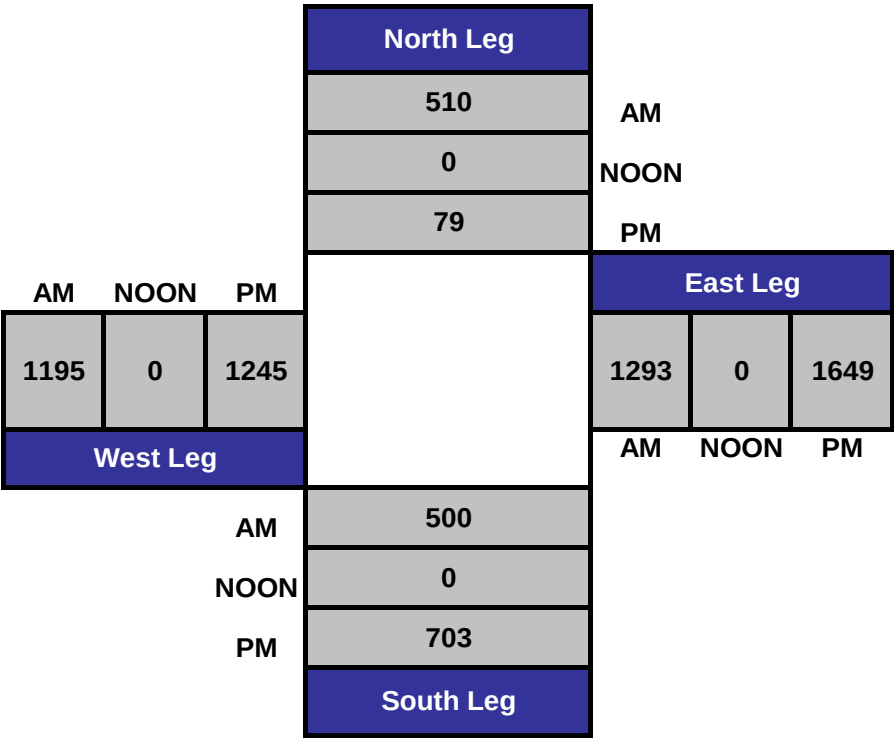
Barber Mill Rd Wellspring Community Church Dwy and NC 42 , Clayton



Total Ins & Outs



Total Volume Per Leg



Project ID: 16-9390-002
Location: Guy Rd & NC 42
City: Clayton

Day: Thursday
Date: 9/8/2016

Peak Start Times	
AM	7:00 AM
MD	12:00 AM
PM	2:30 PM

Groups Printed - Cars, PU, Vans - Heavy Trucks

Start Time	Guy Rd Northbound					Guy Rd Southbound					NC 42 Eastbound					NC 42 Westbound					Int. Total
	Left	Thru	Rgt	Peds	App. Total	Left	Thru	Rgt	Peds	App. Total	Left	Thru	Rgt	Peds	App. Total	Left	Thru	Rgt	Peds	App. Total	
7:00 AM	0	0	0	0	0	21	0	2	0	23	9	69	1	0	79	0	61	57	0	118	220
7:15 AM	1	0	1	0	2	30	0	7	0	37	18	75	0	0	93	1	84	93	0	178	310
7:30 AM	0	0	0	0	0	56	1	3	0	60	12	96	1	0	109	0	92	69	0	161	330
7:45 AM	0	0	0	0	0	37	1	6	0	44	18	86	0	0	104	0	75	44	0	119	267
Total	1	0	1	0	2	144	2	18	0	164	57	326	2	0	385	1	312	263	0	576	1127
8:00 AM	0	0	0	0	0	51	0	5	0	56	11	97	1	0	109	0	76	41	0	117	282
8:15 AM	0	0	0	0	0	85	0	9	0	94	17	92	0	0	109	0	75	49	0	124	327
8:30 AM	1	0	0	0	1	51	1	1	0	53	12	97	0	0	109	0	111	95	0	206	369
8:45 AM	0	0	0	0	0	24	1	13	0	38	15	98	0	0	113	0	104	57	0	161	312
Total	1	0	0	0	1	211	2	28	0	241	55	384	1	0	440	0	366	242	0	608	1290
BREAK																					
2:30 PM	1	0	0	0	1	33	0	10	0	43	11	80	0	0	91	0	87	40	0	127	262
2:45 PM	0	0	1	0	1	36	0	11	0	47	9	67	1	0	77	1	82	35	0	118	243
3:00 PM	0	0	0	0	0	41	0	3	0	44	5	110	0	0	115	0	84	46	0	130	289
3:15 PM	1	0	0	0	1	73	0	9	0	82	7	87	0	0	94	0	95	39	0	134	311
Total	2	0	1	0	3	183	0	33	0	216	32	344	1	0	377	1	348	160	0	509	1105
3:30 PM	4	0	0	0	4	64	0	14	0	78	13	103	0	0	116	0	83	20	0	103	301
3:45 PM	2	1	0	0	3	55	0	5	0	60	6	105	1	0	112	0	94	74	0	168	343
4:00 PM	1	4	0	0	5	44	1	15	0	60	7	87	0	0	94	0	118	85	0	203	362
4:15 PM	0	0	0	0	0	44	0	8	0	52	7	80	0	0	87	0	111	31	0	142	281
Total	7	5	0	0	12	207	1	42	0	250	33	375	1	0	409	0	406	210	0	616	1287
4:30 PM	1	0	0	0	1	43	0	11	0	54	12	102	0	0	114	0	117	43	0	160	329
4:45 PM	0	0	0	0	0	59	0	20	0	79	7	90	0	0	97	0	115	45	0	160	336
5:00 PM	1	2	0	0	3	56	0	15	0	71	8	120	0	0	128	0	120	48	0	168	370
5:15 PM	2	0	1	0	3	75	0	6	0	81	5	101	0	0	106	0	107	42	0	149	339
Total	4	2	1	0	7	233	0	52	0	285	32	413	0	0	445	0	459	178	0	637	1374
5:30 PM	1	0	0	0	1	74	0	20	0	94	10	93	0	0	103	0	115	41	0	156	354
5:45 PM	0	0	0	0	0	73	0	18	0	91	15	82	0	0	97	0	100	46	0	146	334
Total	1	0	0	0	1	147	0	38	0	185	25	175	0	0	200	0	215	87	0	302	688
Grand Total	16	7	3	0	26	1125	5	211	0	1341	234	2017	5	0	2256	2	2106	1140	0	3248	6871
Apprch %	61.5	26.9	11.5	0.0		83.9	0.4	15.7	0.0		10.4	89.4	0.2	0.0		0.1	64.8	35.1	0.0		
Total %	0.2	0.1	0.0	0.0	0.4	16.4	0.1	3.1	0.0	19.5	3.4	29.4	0.1	0.0	32.8	0.0	30.7	16.6	0.0	47.3	
Cars, PU, Vans	16	7	3	0	26	1125	5	211	0	1341	234	2017	5	0	2256	2	2106	1140	0	3248	6871
% Cars, PU, Vans	100.0	100.0	100.0	0.0	100.0	100.0	100.0	100.0	0.0	100.0	100.0	100.0	100.0	0.0	100.0	100.0	100.0	100.0	0.0	100.0	100.0
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
%Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Project ID: 16-9390-002
Location: Guy Rd & NC 42
City: Clayton

PEAK HOURS

Day: Thursday
Date: 9/8/2016

AM

	Guy Rd Northbound				Guy Rd Southbound				NC 42 Eastbound				NC 42 Westbound				
Start Time	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Int. Total
Peak Hour Analysis from 07:00 AM to 09:00 AM																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
8:00 AM	0	0	0	0	51	0	5	56	11	97	1	109	0	76	41	117	282
8:15 AM	0	0	0	0	85	0	9	94	17	92	0	109	0	75	49	124	327
8:30 AM	1	0	0	1	51	1	1	53	12	97	0	109	0	111	95	206	369
8:45 AM	0	0	0	0	24	1	13	38	15	98	0	113	0	104	57	161	312
Total Volume	1	0	0	1	211	2	28	241	55	384	1	440	0	366	242	608	1290
% App. Total	100.0	0.0	0.0	100	87.6	0.8	11.6	100	12.5	87.3	0.2	100	0.0	60.2	39.8	100	
PHF	0.250				0.641				0.973				0.738				
Cars, PU, Vans	1	0	0	1	211	2	28	241	55	384	1	440	0	366	242	608	1290
% Cars, PU, Vans	100.0	0.0	0.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	0.0	100.0	100.0	100.0	100.0
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
%Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

PM

	Guy Rd Northbound				Guy Rd Southbound				NC 42 Eastbound				NC 42 Westbound				
Start Time	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Int. Total
Peak Hour Analysis from 02:30 PM to 06:00 PM																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
4:45 PM	0	0	0	0	59	0	20	79	7	90	0	97	0	115	45	160	336
5:00 PM	1	2	0	3	56	0	15	71	8	120	0	128	0	120	48	168	370
5:15 PM	2	0	1	3	75	0	6	81	5	101	0	106	0	107	42	149	339
5:30 PM	1	0	0	1	74	0	20	94	10	93	0	103	0	115	41	156	354
Total Volume	4	2	1	7	264	0	61	325	30	404	0	434	0	457	176	633	1399
% App. Total	57.1	28.6	14.3	100	81.2	0.0	18.8	100	6.9	93.1	0.0	100	0.0	72.2	27.8	100	
PHF	0.583				0.864				0.848				0.942				
Cars, PU, Vans	4	2	1	7	264	0	61	325	30	404	0	434	0	457	176	633	1399
% Cars, PU, Vans	100.0	100.0	100.0	100.0	100.0	0.0	100.0	100.0	100.0	100.0	0.0	100.0	0.0	100.0	100.0	100.0	100.0
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
%Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Turning Movement

Prepared by:
National Data & Surveying Services

Project ID: 16-9390-002

City: Clayton

Day: Thursday

Date: 9/8/2016

AM													
NS/EW Streets:	Guy Rd			Guy Rd			NC 42			NC 42			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	0	1	0	1	0.5	0.5	1	1	0	1	0.5	0.5	
7:00 AM	0	0	0	21	0	2	9	69	1	0	61	57	220
7:15 AM	1	0	1	30	0	7	18	75	0	1	84	93	310
7:30 AM	0	0	0	56	1	3	12	96	1	0	92	69	330
7:45 AM	0	0	0	37	1	6	18	86	0	0	75	44	267
8:00 AM	0	0	0	51	0	5	11	97	1	0	76	41	282
8:15 AM	0	0	0	85	0	9	17	92	0	0	75	49	327
8:30 AM	1	0	0	51	1	1	12	97	0	0	111	95	369
8:45 AM	0	0	0	24	1	13	15	98	0	0	104	57	312
TOTAL VOLUMES :	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
APPROACH %'s :	2	0	1	355	4	46	112	710	3	1	678	505	2417
	66.67%	0.00%	33.33%	87.65%	0.99%	11.36%	13.58%	86.06%	0.36%	0.08%	57.26%	42.65%	
PEAK HR START TIME :	800 AM												TOTAL
PEAK HR VOL :	1	0	0	211	2	28	55	384	1	0	366	242	1290
PEAK HR FACTOR :	0.250			0.641			0.973			0.738			0.874

CONTROL : Signalized

Intersection Turning Movement

Prepared by:
National Data & Surveying Services

Project ID: 16-9390-002
City: Clayton
Day: Thursday
Date: 9/8/2016

PM													
NS/EW Streets:	Guy Rd			Guy Rd			NC 42			NC 42			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	0	1	0	1	0.5	0.5	1	1	0	1	0.5	0.5	
2:30 PM	1	0	0	33	0	10	11	80	0	0	87	40	262
2:45 PM	0	0	1	36	0	11	9	67	1	1	82	35	243
3:00 PM	0	0	0	41	0	3	5	110	0	0	84	46	289
3:15 PM	1	0	0	73	0	9	7	87	0	0	95	39	311
3:30 PM	4	0	0	64	0	14	13	103	0	0	83	20	301
3:45 PM	2	1	0	55	0	5	6	105	1	0	94	74	343
4:00 PM	1	4	0	44	1	15	7	87	0	0	118	85	362
4:15 PM	0	0	0	44	0	8	7	80	0	0	111	31	281
4:30 PM	1	0	0	43	0	11	12	102	0	0	117	43	329
4:45 PM	0	0	0	59	0	20	7	90	0	0	115	45	336
5:00 PM	1	2	0	56	0	15	8	120	0	0	120	48	370
5:15 PM	2	0	1	75	0	6	5	101	0	0	107	42	339
5:30 PM	1	0	0	74	0	20	10	93	0	0	115	41	354
5:45 PM	0	0	0	73	0	18	15	82	0	0	100	46	334
TOTAL VOLUMES :	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
APPROACH %'s :	14	7	2	770	1	165	122	1307	2	1	1428	635	4454
	60.87%	30.43%	8.70%	82.26%	0.11%	17.63%	8.53%	91.33%	0.14%	0.05%	69.19%	30.77%	
PEAK HR START TIME :	445 PM												TOTAL
PEAK HR VOL :	4	2	1	264	0	61	30	404	0	0	457	176	1399
PEAK HR FACTOR :	0.583			0.864			0.848			0.942			0.945

CONTROL : Signalized

ITM Peak Hour Summary

Prepared by:

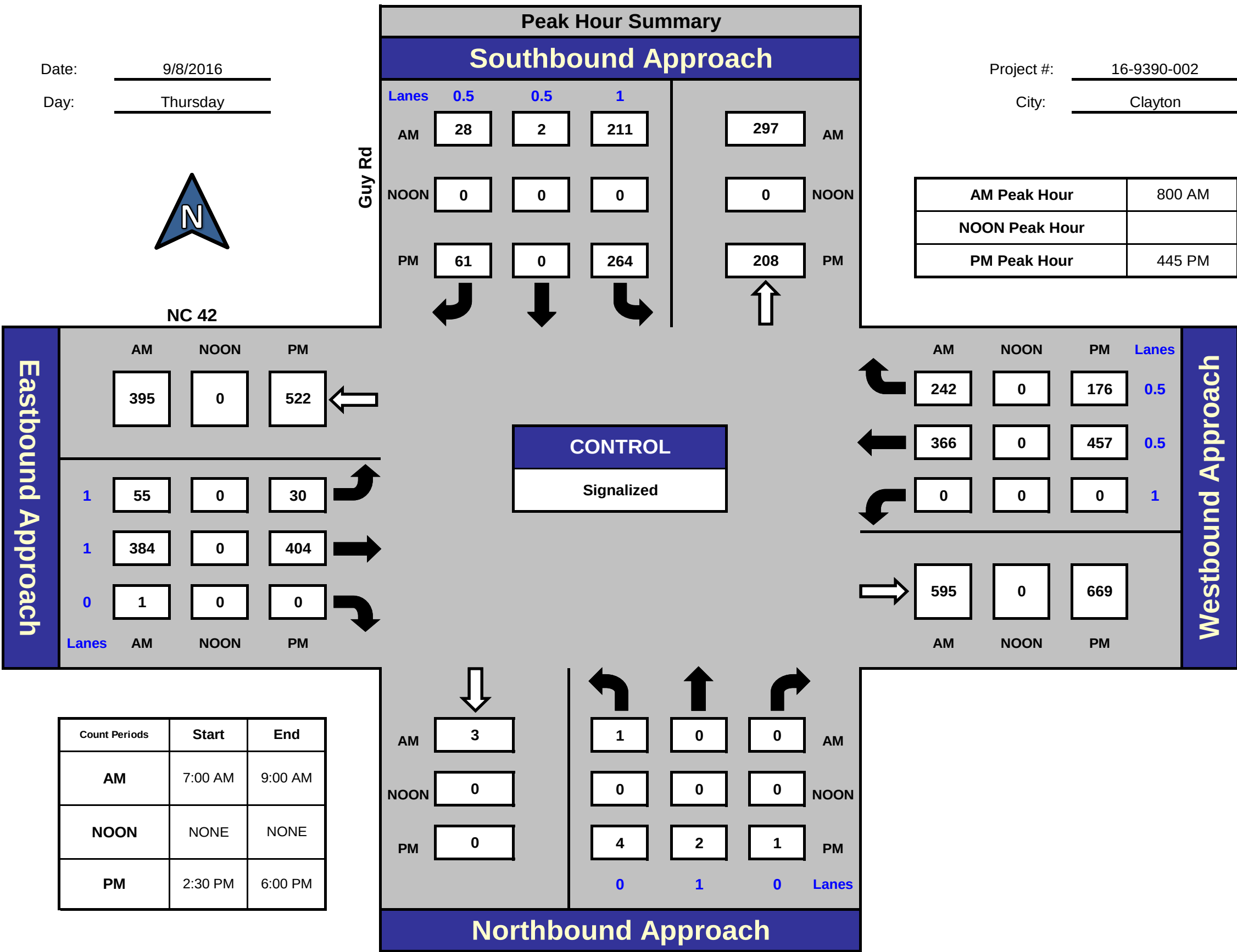


National Data & Surveying Services

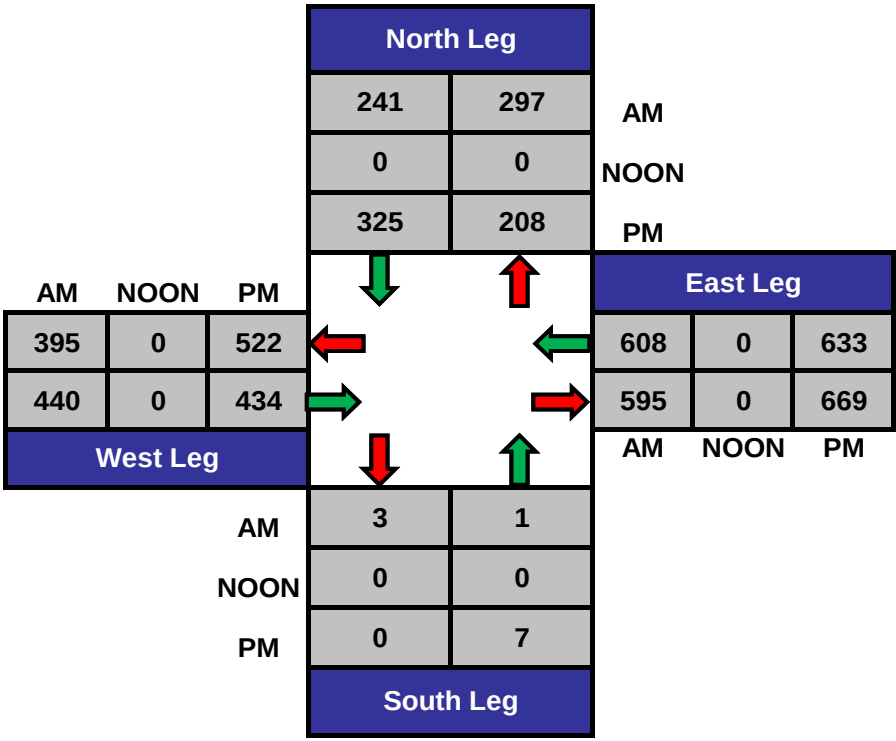
Guy Rd and NC 42 , Clayton

Date: 9/8/2016
Day: Thursday

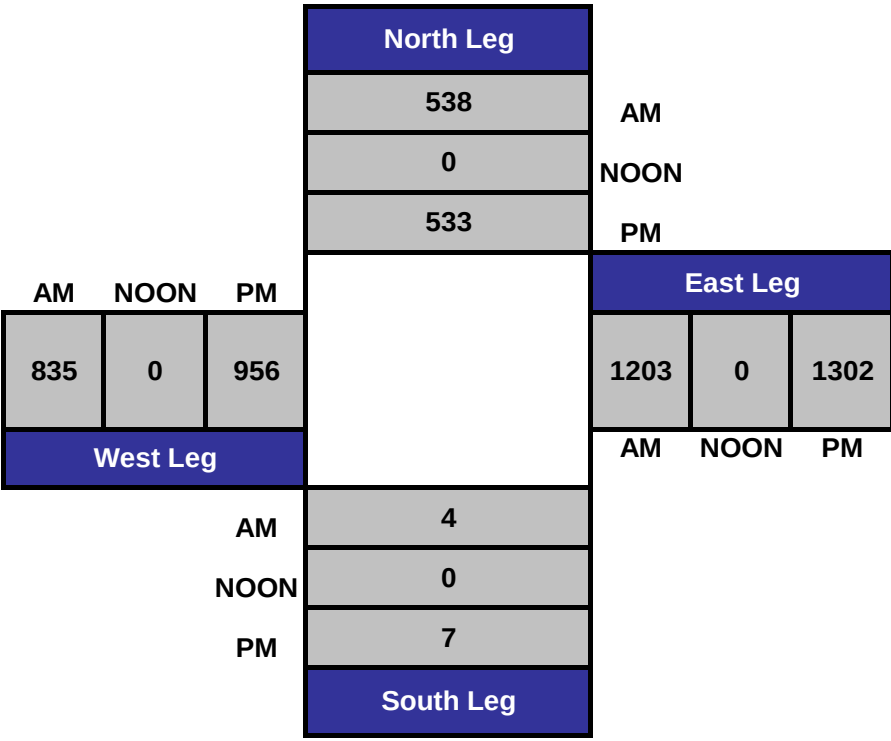
Project #: 16-9390-002
City: Clayton



Total Ins & Outs



Total Volume Per Leg



Project ID: 16-9390-003
Location: Barber Mill Rd & Dairy Rd
City: Clayton

Day: Thursday
Date: 9/8/2016

Peak Start Times	
AM	7:00 AM
MD	12:00 AM
PM	4:00 PM

Groups Printed - Cars, PU, Vans - Heavy Trucks

Start Time	Barber Mill Rd Northbound					Barber Mill Rd Southbound					Dairy Rd Eastbound					Dairy Rd Westbound					Int. Total
	Left	Thru	Rgt	Peds	App. Total	Left	Thru	Rgt	Peds	App. Total	Left	Thru	Rgt	Peds	App. Total	Left	Thru	Rgt	Peds	App. Total	
7:00 AM	0	72	3	0	75	21	26	0	0	47	0	0	0	0	0	4	0	43	0	47	169
7:15 AM	0	107	4	0	111	6	19	0	0	25	0	0	0	0	0	3	0	26	0	29	165
7:30 AM	0	66	4	0	70	11	24	0	0	35	0	0	0	0	0	1	0	20	0	21	126
7:45 AM	0	75	3	0	78	15	26	0	0	41	0	0	0	0	0	1	0	29	0	30	149
Total	0	320	14	0	334	53	95	0	0	148	0	0	0	0	0	9	0	118	0	127	609
8:00 AM	0	64	5	0	69	9	23	0	0	32	0	0	0	0	0	2	0	20	0	22	123
8:15 AM	0	81	5	0	86	9	32	0	0	41	0	0	0	0	0	0	0	27	0	27	154
8:30 AM	0	61	2	0	63	21	26	0	0	47	0	0	0	0	0	4	0	19	0	23	133
8:45 AM	0	53	5	0	58	20	32	0	0	52	0	0	0	0	0	1	0	16	0	17	127
Total	0	259	17	0	276	59	113	0	0	172	0	0	0	0	0	7	0	82	0	89	537
BREAK																					
4:00 PM	0	41	7	0	48	36	65	0	0	101	0	0	0	0	0	9	0	18	0	27	176
4:15 PM	0	47	3	0	50	20	67	0	0	87	0	0	0	0	0	1	0	17	0	18	155
4:30 PM	0	39	4	0	43	23	63	0	0	86	0	0	0	0	0	4	0	22	0	26	155
4:45 PM	0	44	3	0	47	25	77	0	0	102	0	0	0	0	0	5	0	26	0	31	180
Total	0	171	17	0	188	104	272	0	0	376	0	0	0	0	0	19	0	83	0	102	666
5:00 PM	0	44	4	0	48	35	85	0	0	120	0	0	0	0	0	2	0	18	0	20	188
5:15 PM	0	44	3	0	47	39	85	0	0	124	0	0	0	0	0	5	0	23	0	28	199
5:30 PM	0	46	3	0	49	25	85	0	0	110	0	0	0	0	0	7	0	28	0	35	194
5:45 PM	0	41	5	0	46	31	66	0	0	97	0	0	0	0	0	3	0	17	0	20	163
Total	0	175	15	0	190	130	321	0	0	451	0	0	0	0	0	17	0	86	0	103	744
Grand Total	0	925	63	0	988	346	801	0	0	1147	0	0	0	0	0	52	0	369	0	421	2556
Apprch %	0.0	93.6	6.4	0.0		30.2	69.8	0.0	0.0		0.0	0.0	0.0	0.0		12.4	0.0	87.6	0.0		
Total %	0.0	36.2	2.5	0.0	38.7	13.5	31.3	0.0	0.0	44.9	0.0	0.0	0.0	0.0	0.0	2.0	0.0	14.4	0.0	16.5	
Cars, PU, Vans	0	925	63	0	988	346	801	0	0	1147	0	0	0	0	0	52	0	369	0	421	2556
% Cars, PU, Vans	0.0	100.0	100.0	0.0	100.0	100.0	100.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	100.0	0.0	100.0	100.0
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
%Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Project ID: 16-9390-003

Location: Barber Mill Rd & Dairy Rd

City: Clayton

PEAK HOURS

Day: Thursday

Date: 9/8/2016

AM

	Barber Mill Rd Northbound				Barber Mill Rd Southbound				Dairy Rd Eastbound				Dairy Rd Westbound				
Start Time	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Int. Total
Peak Hour Analysis from 07:00 AM to 09:00 AM																	
Peak Hour for Entire Intersection Begins at 07:00 AM																	
7:00 AM	0	72	3	75	21	26	0	47	0	0	0	0	4	0	43	47	169
7:15 AM	0	107	4	111	6	19	0	25	0	0	0	0	3	0	26	29	165
7:30 AM	0	66	4	70	11	24	0	35	0	0	0	0	1	0	20	21	126
7:45 AM	0	75	3	78	15	26	0	41	0	0	0	0	1	0	29	30	149
Total Volume	0	320	14	334	53	95	0	148	0	0	0	0	9	0	118	127	609
% App. Total	0.0	95.8	4.2	100	35.8	64.2	0.0	100	0.0	0.0	0.0	0	7.1	0.0	92.9	100	
PHF	0.752				0.787				0.000				0.676				
Cars, PU, Vans	0	320	14	334	53	95	0	148	0	0	0	0	9	0	118	127	609
% Cars, PU, Vans	0.0	100.0	100.0	100.0	100.0	100.0	0.0	100.0	0.0	0.0	0.0	0.0	100.0	0.0	100.0	100.0	100.0
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
%Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

PM

	Barber Mill Rd Northbound				Barber Mill Rd Southbound				Dairy Rd Eastbound				Dairy Rd Westbound				
Start Time	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Int. Total
Peak Hour Analysis from 04:00 PM to 06:00 PM																	
Peak Hour for Entire Intersection Begins at 04:45 PM																	
4:45 PM	0	44	3	47	25	77	0	102	0	0	0	0	5	0	26	31	180
5:00 PM	0	44	4	48	35	85	0	120	0	0	0	0	2	0	18	20	188
5:15 PM	0	44	3	47	39	85	0	124	0	0	0	0	5	0	23	28	199
5:30 PM	0	46	3	49	25	85	0	110	0	0	0	0	7	0	28	35	194
Total Volume	0	178	13	191	124	332	0	456	0	0	0	0	19	0	95	114	761
% App. Total	0.0	93.2	6.8	100	27.2	72.8	0.0	100	0.0	0.0	0.0	0	16.7	0.0	83.3	100	
PHF	0.974				0.919				0.000				0.814				
Cars, PU, Vans	0	178	13	191	124	332	0	456	0	0	0	0	19	0	95	114	761
% Cars, PU, Vans	0.0	100.0	100.0	100.0	100.0	100.0	0.0	100.0	0.0	0.0	0.0	0.0	100.0	0.0	100.0	100.0	100.0
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
%Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Intersection Turning Movement

Prepared by:
National Data & Surveying Services

Project ID: 16-9390-003

City: Clayton

Day: Thursday

Date: 9/8/2016

AM														
NS/EW Streets:	Barber Mill Rd			Barber Mill Rd			Dairy Rd			Dairy Rd				
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND				
LANES:	NL 0	NT 1	NR 0	SL 0	ST 1	SR 0	EL 0	ET 0	ER 0	WL 0	WT 1	WR 0	TOTAL	
7:00 AM	0	72	3	21	26	0	0	0	0	4	0	43	169	
7:15 AM	0	107	4	6	19	0	0	0	0	3	0	26	165	
7:30 AM	0	66	4	11	24	0	0	0	0	1	0	20	126	
7:45 AM	0	75	3	15	26	0	0	0	0	1	0	29	149	
8:00 AM	0	64	5	9	23	0	0	0	0	2	0	20	123	
8:15 AM	0	81	5	9	32	0	0	0	0	0	0	27	154	
8:30 AM	0	61	2	21	26	0	0	0	0	4	0	19	133	
8:45 AM	0	53	5	20	32	0	0	0	0	1	0	16	127	
TOTAL VOLUMES :	NL 0	NT 579	NR 31	SL 112	ST 208	SR 0	EL 0	ET 0	ER 0	WL 16	WT 0	WR 200	TOTAL 1146	
APPROACH %'s :	0.00%	94.92%	5.08%	35.00%	65.00%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	7.41%	0.00%	92.59%		
PEAK HR START TIME :	700 AM													TOTAL
PEAK HR VOL :	0	320	14	53	95	0	0	0	0	9	0	118	609	
PEAK HR FACTOR :	0.752			0.787			0.000			0.676			0.901	

CONTROL : 1-way Stop(WB)

Intersection Turning Movement

Prepared by:
National Data & Surveying Services

Project ID: 16-9390-003

City: Clayton

Day: Thursday

Date: 9/8/2016

PM													
NS/EW Streets:	Barber Mill Rd			Barber Mill Rd			Dairy Rd			Dairy Rd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
LANES:	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
	0	1	0	0	1	0	0	0	0	0	1	0	
4:00 PM	0	41	7	36	65	0	0	0	0	9	0	18	176
4:15 PM	0	47	3	20	67	0	0	0	0	1	0	17	155
4:30 PM	0	39	4	23	63	0	0	0	0	4	0	22	155
4:45 PM	0	44	3	25	77	0	0	0	0	5	0	26	180
5:00 PM	0	44	4	35	85	0	0	0	0	2	0	18	188
5:15 PM	0	44	3	39	85	0	0	0	0	5	0	23	199
5:30 PM	0	46	3	25	85	0	0	0	0	7	0	28	194
5:45 PM	0	41	5	31	66	0	0	0	0	3	0	17	163
TOTAL VOLUMES :	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
APPROACH %'s :	0	346	32	234	593	0	0	0	0	36	0	169	1410
	0.00%	91.53%	8.47%	28.30%	71.70%	0.00%	#DIV/0!	#DIV/0!	#DIV/0!	17.56%	0.00%	82.44%	
PEAK HR START TIME :	445 PM												TOTAL
PEAK HR VOL :	0	178	13	124	332	0	0	0	0	19	0	95	761
PEAK HR FACTOR :	0.974			0.919			0.000			0.814			0.956

CONTROL : 1-way Stop(WB)

ITM Peak Hour Summary

Prepared by:

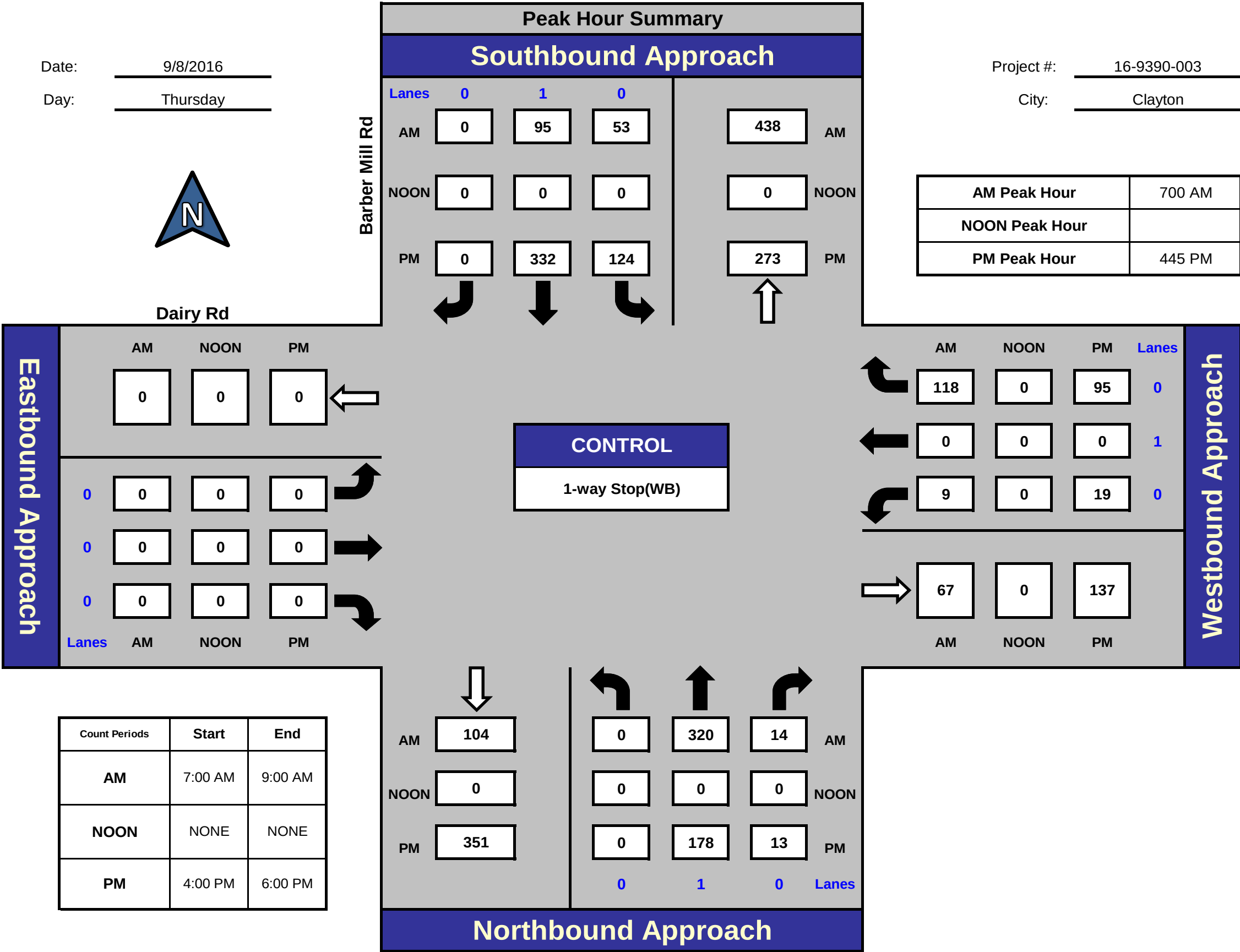


National Data & Surveying Services

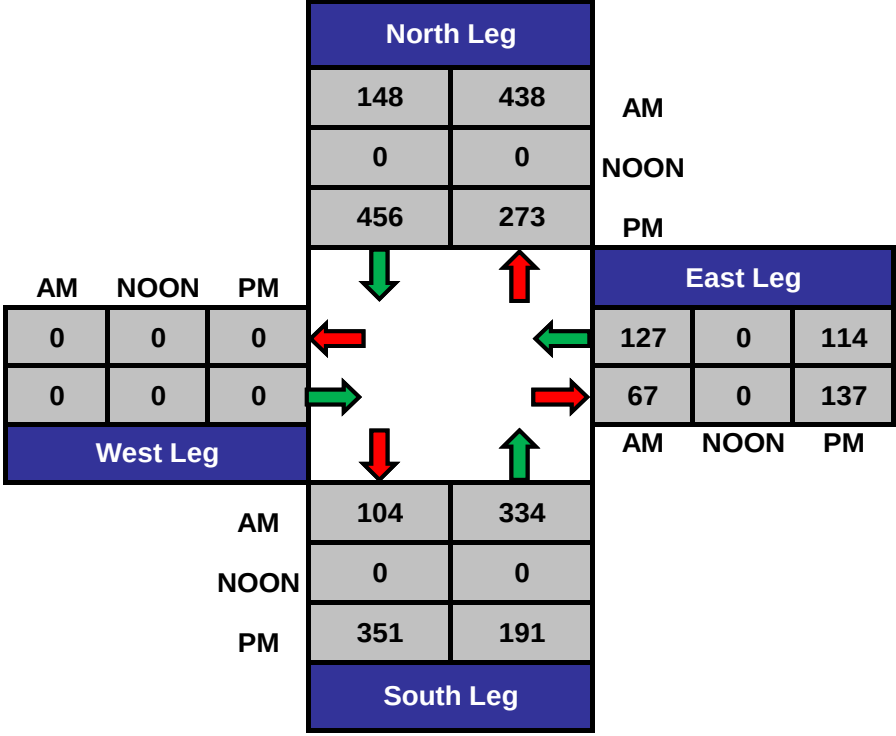
Barber Mill Rd and Dairy Rd , Clayton

Date: 9/8/2016
Day: Thursday

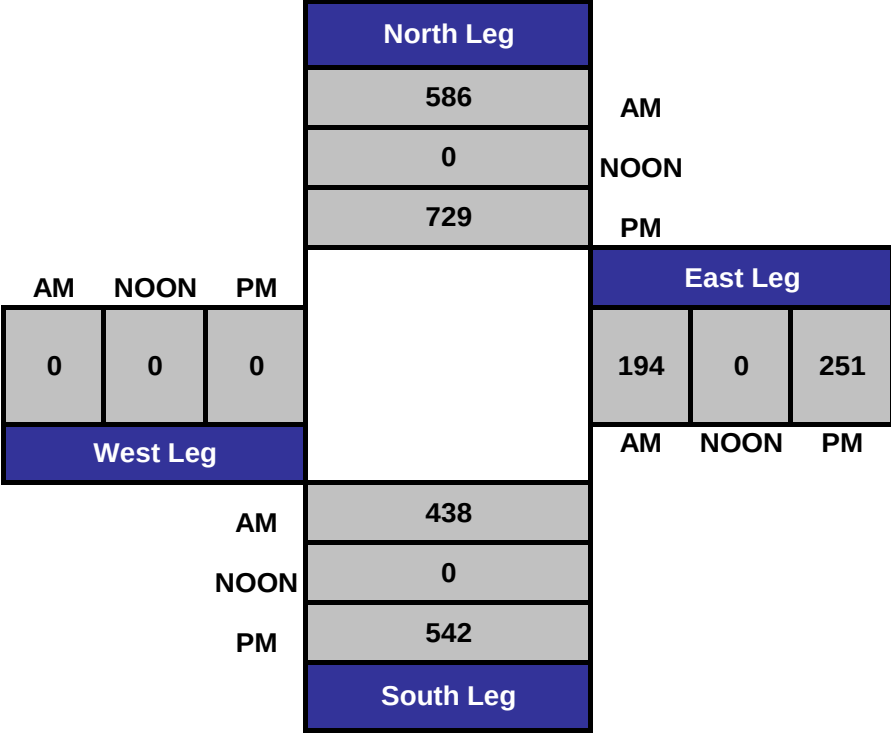
Project #: 16-9390-003
City: Clayton



Total Ins & Outs



Total Volume Per Leg



Appendix B: Capacity Software Output

B

2016 Existing Conditions

Village at Little Creek
Existing

1: Business Entrance/Guy Road (SR 1551) & NC 42 (Market St)

Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	55	384	4	4	366	242	4	4	4	211	4	28
Future Volume (vph)	55	384	4	4	366	242	4	4	4	211	4	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		6.5	6.5			6.5		6.5	6.5	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.94			0.95		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00			0.98		0.95	1.00	
Satd. Flow (prot)	1770	1860		1770	1752			1750		1770	1617	
Flt Permitted	0.14	1.00		0.47	1.00			0.92		0.73	1.00	
Satd. Flow (perm)	256	1860		881	1752			1633		1352	1617	
Peak-hour factor, PHF	0.97	0.97	0.97	0.74	0.74	0.74	0.25	0.25	0.25	0.64	0.64	0.64
Adj. Flow (vph)	57	396	4	5	495	327	16	16	16	330	6	44
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	57	400	0	5	822	0	0	48	0	330	50	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	40.1	40.1		40.1	40.1			24.0		24.0	24.0	
Effective Green, g (s)	40.1	40.1		40.1	40.1			24.0		24.0	24.0	
Actuated g/C Ratio	0.52	0.52		0.52	0.52			0.31		0.31	0.31	
Clearance Time (s)	6.5	6.5		6.5	6.5			6.5		6.5	6.5	
Vehicle Extension (s)	6.0	6.0		6.0	6.0			1.0		1.0	1.0	
Lane Grp Cap (vph)	133	967		458	911			508		420	503	
v/s Ratio Prot		0.22			c0.47						0.03	
v/s Ratio Perm	0.22			0.01				0.03		c0.24		
v/c Ratio	0.43	0.41		0.01	0.90			0.09		0.79	0.10	
Uniform Delay, d1	11.4	11.3		8.9	16.7			18.8		24.2	18.9	
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2	6.1	0.8		0.0	13.2			0.0		8.7	0.0	
Delay (s)	17.6	12.1		9.0	29.9			18.9		32.9	18.9	
Level of Service	B	B		A	C			B		C	B	
Approach Delay (s)		12.8			29.8			18.9			31.0	
Approach LOS		B			C			B			C	
Intersection Summary												
HCM 2000 Control Delay			25.2			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.86									
Actuated Cycle Length (s)			77.1			Sum of lost time (s)				13.0		
Intersection Capacity Utilization			74.9%			ICU Level of Service				D		
Analysis Period (min)			15									

c Critical Lane Group

Village at Little Creek
Existing

1: Business Entrance/Guy Road (SR 1551) & NC 42 (Market St)
Timing Plan: AM Peak

							
Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	57	400	5	822	48	330	50
v/c Ratio	0.43	0.42	0.01	0.91	0.09	0.79	0.10
Control Delay	21.9	12.2	7.8	30.9	24.0	43.3	24.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	21.9	12.2	7.8	30.9	24.0	43.3	24.1
Queue Length 50th (ft)	16	108	1	329	16	141	17
Queue Length 95th (ft)	48	162	5	330	14	198	37
Internal Link Dist (ft)		412		1284	35		307
Turn Bay Length (ft)	110		100			65	
Base Capacity (vph)	256	1852	878	1745	506	419	501
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.22	0.01	0.47	0.09	0.79	0.10
Intersection Summary							

Village at Little Creek 2: Barber Mill Rd (SR 1555)/W. Clayton Elem Sch & NC 42 (Market St)
Existing

Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	100	473	20	98	351	45	70	36	277	99	49	181
Future Volume (vph)	100	473	20	98	351	45	70	36	277	99	49	181
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.3	7.1		6.4	7.1	7.1	6.4	6.4		5.6	5.6	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.87		1.00	0.88	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1852		1770	1863	1583	1770	1615		1770	1643	
Flt Permitted	0.95	1.00		0.15	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1852		288	1863	1583	1770	1615		1770	1643	
Peak-hour factor, PHF	0.90	0.90	0.90	0.92	0.92	0.92	0.83	0.83	0.83	0.53	0.53	0.53
Adj. Flow (vph)	111	526	22	107	382	49	84	43	334	187	92	342
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	111	548	0	107	382	49	84	377	0	187	434	0
Turn Type	Prot	NA		pm+pt	NA	Perm	Split	NA		Split	NA	
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases				6		6						
Actuated Green, G (s)	10.5	34.9		39.5	31.5	31.5	18.7	18.7		19.5	19.5	
Effective Green, g (s)	10.5	34.9		39.5	31.5	31.5	18.7	18.7		19.5	19.5	
Actuated g/C Ratio	0.10	0.33		0.37	0.30	0.30	0.18	0.18		0.18	0.18	
Clearance Time (s)	7.3	7.1		6.4	7.1	7.1	6.4	6.4		5.6	5.6	
Vehicle Extension (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lane Grp Cap (vph)	174	606		217	550	467	310	283		323	300	
v/s Ratio Prot	c0.06	c0.30		0.04	0.21		0.05	c0.23		0.11	c0.26	
v/s Ratio Perm				0.14		0.03						
v/c Ratio	0.64	0.90		0.49	0.69	0.10	0.27	1.33		0.58	1.45	
Uniform Delay, d1	46.2	34.3		24.8	33.3	27.3	38.0	43.9		39.8	43.5	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	5.5	16.6		0.6	3.1	0.0	0.2	171.7		1.6	218.8	
Delay (s)	51.8	50.9		25.5	36.4	27.3	38.2	215.6		41.4	262.4	
Level of Service	D	D		C	D	C	D	F		D	F	
Approach Delay (s)		51.0			33.4			183.3			195.8	
Approach LOS		D			C			F			F	
Intersection Summary												
HCM 2000 Control Delay			113.1									F
HCM 2000 Volume to Capacity ratio			1.14									
Actuated Cycle Length (s)			106.6							26.4		
Intersection Capacity Utilization			78.0%									D
Analysis Period (min)			15									
c Critical Lane Group												

Village at Little Creek 2: Barber Mill Rd (SR 1555)/W. Clayton Elem Sch & NC 42 (Market St)
Existing

Timing Plan: AM Peak

									
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	111	548	107	382	49	84	377	187	434
v/c Ratio	0.64	0.91	0.49	0.69	0.10	0.27	1.34	0.58	1.45
Control Delay	63.8	54.5	24.3	41.2	28.6	42.6	209.5	49.2	253.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.8	54.5	24.3	41.2	28.6	42.6	209.5	49.2	253.8
Queue Length 50th (ft)	76	349	40	229	24	51	~346	121	~417
Queue Length 95th (ft)	134	#562	72	356	56	94	#504	113	#293
Internal Link Dist (ft)		1284		444			318		245
Turn Bay Length (ft)	100		60		100	150		80	
Base Capacity (vph)	294	665	392	664	564	310	282	323	299
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.38	0.82	0.27	0.58	0.09	0.27	1.34	0.58	1.45

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Village at Little Creek
Existing

3: Barber Mill Road (SR 1555) & Dairy Road
Timing Plan: AM Peak

Intersection						
Int Delay, s/veh	3.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	9	118	320	14	53	95
Future Vol, veh/h	9	118	320	14	53	95
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	68	68	75	75	79	79
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	13	174	427	19	67	120
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	690	436	0	0	445	0
Stage 1	436	-	-	-	-	-
Stage 2	254	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	411	620	-	-	1115	-
Stage 1	652	-	-	-	-	-
Stage 2	788	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	385	620	-	-	1115	-
Mov Cap-2 Maneuver	385	-	-	-	-	-
Stage 1	652	-	-	-	-	-
Stage 2	738	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	13.8	0		3		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	- 594	1115	-		
HCM Lane V/C Ratio	-	- 0.314	0.06	-		
HCM Control Delay (s)	-	- 13.8	8.4	0		
HCM Lane LOS	-	- B	A	A		
HCM 95th %tile Q(veh)	-	- 1.3	0.2	-		

Village at Little Creek
Existing

1: Business Entrance/Guy Road (SR 1551) & NC 42 (Market St)
Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	30	404	4	4	457	176	4	4	4	264	4	61
Future Volume (vph)	30	404	4	4	457	176	4	4	4	264	4	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		6.5	6.5			6.5		6.5	6.5	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.96			0.95		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00			0.98		0.95	1.00	
Satd. Flow (prot)	1770	1860		1770	1785			1750		1770	1602	
Flt Permitted	0.19	1.00		0.37	1.00			0.93		0.74	1.00	
Satd. Flow (perm)	351	1860		693	1785			1658		1385	1602	
Peak-hour factor, PHF	0.85	0.85	0.85	0.94	0.94	0.94	0.58	0.58	0.58	0.86	0.86	0.86
Adj. Flow (vph)	35	475	5	4	486	187	7	7	7	307	5	71
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	35	480	0	4	673	0	0	21	0	307	76	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	28.7	28.7		28.7	28.7			23.8		23.8	23.8	
Effective Green, g (s)	28.7	28.7		28.7	28.7			23.8		23.8	23.8	
Actuated g/C Ratio	0.44	0.44		0.44	0.44			0.36		0.36	0.36	
Clearance Time (s)	6.5	6.5		6.5	6.5			6.5		6.5	6.5	
Vehicle Extension (s)	6.0	6.0		6.0	6.0			1.0		1.0	1.0	
Lane Grp Cap (vph)	153	814		303	782			602		503	582	
v/s Ratio Prot		0.26			c0.38						0.05	
v/s Ratio Perm	0.10			0.01				0.01		c0.22		
v/c Ratio	0.23	0.59		0.01	0.86			0.03		0.61	0.13	
Uniform Delay, d1	11.5	13.9		10.4	16.6			13.4		17.1	13.9	
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2	2.2	2.1		0.0	10.8			0.0		1.5	0.0	
Delay (s)	13.6	16.0		10.4	27.4			13.5		18.6	14.0	
Level of Service	B	B		B	C			B		B	B	
Approach Delay (s)		15.9			27.3			13.5			17.7	
Approach LOS		B			C			B			B	
Intersection Summary												
HCM 2000 Control Delay		21.1			HCM 2000 Level of Service			C				
HCM 2000 Volume to Capacity ratio		0.75										
Actuated Cycle Length (s)		65.5			Sum of lost time (s)			13.0				
Intersection Capacity Utilization		66.9%			ICU Level of Service			C				
Analysis Period (min)		15										

c Critical Lane Group

Village at Little Creek
Existing

1: Business Entrance/Guy Road (SR 1551) & NC 42 (Market St)
Timing Plan: PM Peak

							
Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	35	480	4	673	21	307	76
v/c Ratio	0.23	0.59	0.01	0.86	0.04	0.61	0.13
Control Delay	15.0	16.9	9.5	28.8	16.8	26.0	17.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.0	16.9	9.5	28.8	16.8	26.0	17.3
Queue Length 50th (ft)	8	137	1	229	5	98	20
Queue Length 95th (ft)	25	196	5	359	14	#213	54
Internal Link Dist (ft)		412		1284	35		307
Turn Bay Length (ft)	110		100			65	
Base Capacity (vph)	350	1859	693	1785	600	502	580
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.26	0.01	0.38	0.04	0.61	0.13

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Village at Little Creek 2: Barber Mill Rd (SR 1555)/W. Clayton Elem Sch & NC 42 (Market St)
Existing

Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	9	534	77	331	537	8	58	4	222	17	11	30
Future Volume (vph)	9	534	77	331	537	8	58	4	222	17	11	30
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.3	7.1		6.4	7.1	7.1	6.4	6.4		5.6	5.6	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	1.00	0.85	1.00	0.85		1.00	0.89	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1827		1770	1863	1583	1770	1588		1770	1657	
Flt Permitted	0.95	1.00		0.08	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1827		148	1863	1583	1770	1588		1770	1657	
Peak-hour factor, PHF	0.90	0.90	0.90	0.94	0.94	0.94	0.90	0.90	0.90	0.76	0.76	0.76
Adj. Flow (vph)	10	593	86	352	571	9	64	4	247	22	14	39
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	10	679	0	352	571	9	64	251	0	22	53	0
Turn Type	Prot	NA		pm+pt	NA	Perm	Split	NA		Split	NA	
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases				6		6						
Actuated Green, G (s)	1.3	43.9		69.0	60.4	60.4	18.7	18.7		6.3	6.3	
Effective Green, g (s)	1.3	43.9		69.0	60.4	60.4	18.7	18.7		6.3	6.3	
Actuated g/C Ratio	0.01	0.39		0.61	0.53	0.53	0.17	0.17		0.06	0.06	
Clearance Time (s)	7.3	7.1		6.4	7.1	7.1	6.4	6.4		5.6	5.6	
Vehicle Extension (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lane Grp Cap (vph)	20	709		358	994	845	292	262		98	92	
v/s Ratio Prot	0.01	0.37		c0.16	0.31		0.04	c0.16		0.01	c0.03	
v/s Ratio Perm				c0.44		0.01						
v/c Ratio	0.50	0.96		0.98	0.57	0.01	0.22	0.96		0.22	0.58	
Uniform Delay, d1	55.6	33.7		36.2	17.7	12.3	40.9	46.8		51.1	52.1	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	7.0	23.4		42.7	0.5	0.0	0.1	43.3		0.4	5.3	
Delay (s)	62.6	57.1		78.9	18.2	12.4	41.0	90.1		51.5	57.4	
Level of Service	E	E		E	B	B	D	F		D	E	
Approach Delay (s)		57.2			41.1			80.2			55.7	
Approach LOS		E			D			F			E	
Intersection Summary												
HCM 2000 Control Delay			53.3									
HCM 2000 Volume to Capacity ratio			0.99									
Actuated Cycle Length (s)			113.1									
Intersection Capacity Utilization			81.6%									
Analysis Period (min)			15									
c Critical Lane Group												

Village at Little Creek 2: Barber Mill Rd (SR 1555)/W. Clayton Elem Sch & NC 42 (Market St)
Existing

Timing Plan: PM Peak

									
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	10	679	352	571	9	64	251	22	53
v/c Ratio	0.09	1.04	0.94	0.54	0.01	0.21	0.90	0.17	0.43
Control Delay	50.2	80.3	65.2	18.8	14.0	41.1	78.2	50.0	59.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.2	80.3	65.2	18.8	14.0	41.1	78.2	50.0	59.2
Queue Length 50th (ft)	7	~514	195	221	2	38	172	15	36
Queue Length 95th (ft)	25	#771	#397	455	13	81	#336	34	64
Internal Link Dist (ft)		1284		444			318		245
Turn Bay Length (ft)	100		60		100	150		80	
Base Capacity (vph)	296	655	375	1061	901	311	279	325	304
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.03	1.04	0.94	0.54	0.01	0.21	0.90	0.07	0.17

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Village at Little Creek
Existing

3: Barber Mill Road (SR 1555) & Dairy Road
Timing Plan: PM Peak

Intersection						
Int Delay, s/veh	3.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	19	95	178	13	124	332
Future Vol, veh/h	19	95	178	13	124	332
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	81	81	97	97	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	23	117	184	13	135	361
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	820	190	0	0	197	0
Stage 1	190	-	-	-	-	-
Stage 2	630	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	345	852	-	-	1376	-
Stage 1	842	-	-	-	-	-
Stage 2	531	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	303	852	-	-	1376	-
Mov Cap-2 Maneuver	303	-	-	-	-	-
Stage 1	842	-	-	-	-	-
Stage 2	466	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	12	0		2.1		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	654	1376	-	
HCM Lane V/C Ratio	-	-	0.215	0.098	-	
HCM Control Delay (s)	-	-	12	7.9	0	
HCM Lane LOS	-	-	B	A	A	
HCM 95th %tile Q(veh)	-	-	0.8	0.3	-	

2020 No-Build Conditions

Village at Little Creek
No-Build

1: Business Entrance/Guy Road (SR 1551) & NC 42 (Market St)
Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	62	432	4	4	412	272	4	4	4	238	4	32
Future Volume (vph)	62	432	4	4	412	272	4	4	4	238	4	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		6.5	6.5			6.5		6.5	6.5	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.94			0.95		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00			0.98		0.95	1.00	
Satd. Flow (prot)	1770	1860		1770	1752			1750		1770	1611	
Flt Permitted	0.16	1.00		0.39	1.00			0.94		0.75	1.00	
Satd. Flow (perm)	303	1860		732	1752			1680		1397	1611	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	69	480	4	4	458	302	4	4	4	264	4	36
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	69	484	0	4	760	0	0	12	0	264	40	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	35.1	35.1		35.1	35.1			23.2		23.2	23.2	
Effective Green, g (s)	35.1	35.1		35.1	35.1			23.2		23.2	23.2	
Actuated g/C Ratio	0.49	0.49		0.49	0.49			0.33		0.33	0.33	
Clearance Time (s)	6.5	6.5		6.5	6.5			6.5		6.5	6.5	
Vehicle Extension (s)	6.0	6.0		6.0	6.0			1.0		1.0	1.0	
Lane Grp Cap (vph)	149	915		360	862			546		454	524	
v/s Ratio Prot		0.26			c0.43						0.02	
v/s Ratio Perm	0.23			0.01				0.01		c0.19		
v/c Ratio	0.46	0.53		0.01	0.88			0.02		0.58	0.08	
Uniform Delay, d1	11.9	12.4		9.2	16.2			16.3		20.0	16.6	
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2	6.3	1.4		0.0	11.7			0.0		1.2	0.0	
Delay (s)	18.2	13.8		9.3	27.9			16.3		21.2	16.7	
Level of Service	B	B		A	C			B		C	B	
Approach Delay (s)		14.4			27.8			16.3			20.6	
Approach LOS		B			C			B			C	
Intersection Summary												
HCM 2000 Control Delay		21.8			HCM 2000 Level of Service			C				
HCM 2000 Volume to Capacity ratio		0.76										
Actuated Cycle Length (s)		71.3			Sum of lost time (s)			13.0				
Intersection Capacity Utilization		82.2%			ICU Level of Service			E				
Analysis Period (min)		15										

c Critical Lane Group

Village at Little Creek
No-Build

1: Business Entrance/Guy Road (SR 1551) & NC 42 (Market St)
Timing Plan: AM Peak

							
Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	69	484	4	760	12	264	40
v/c Ratio	0.47	0.53	0.01	0.89	0.02	0.58	0.08
Control Delay	22.9	14.4	8.2	29.3	21.2	29.3	21.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.9	14.4	8.2	29.3	21.2	29.3	21.1
Queue Length 50th (ft)	18	131	1	269	3	92	12
Queue Length 95th (ft)	56	209	5	436	18	#236	41
Internal Link Dist (ft)		412		1284	35		307
Turn Bay Length (ft)	110		100			65	
Base Capacity (vph)	304	1861	732	1751	560	466	538
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.23	0.26	0.01	0.43	0.02	0.57	0.07

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Village at Little Creek 2: Barber Mill Rd (SR 1555)/W. Clayton Elem Sch & NC 42 (Market St)
No-Build

Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	113	533	23	110	395	51	79	41	312	111	55	204
Future Volume (vph)	113	533	23	110	395	51	79	41	312	111	55	204
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.3	7.1		6.4	7.1	7.1	6.4	6.4		5.6	5.6	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.87		1.00	0.88	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1851		1770	1863	1583	1770	1616		1770	1643	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1851		1770	1863	1583	1770	1616		1770	1643	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	126	592	26	122	439	57	88	46	347	123	61	227
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	126	618	0	122	439	57	88	393	0	123	288	0
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases						6						
Actuated Green, G (s)	11.6	38.2		11.4	37.1	37.1	18.6	18.6		19.4	19.4	
Effective Green, g (s)	11.6	38.2		11.4	37.1	37.1	18.6	18.6		19.4	19.4	
Actuated g/C Ratio	0.10	0.34		0.10	0.33	0.33	0.16	0.16		0.17	0.17	
Clearance Time (s)	7.3	7.1		6.4	7.1	7.1	6.4	6.4		5.6	5.6	
Vehicle Extension (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lane Grp Cap (vph)	181	625		178	611	519	291	265		303	281	
v/s Ratio Prot	c0.07	c0.33		0.07	0.24		0.05	c0.24		0.07	c0.18	
v/s Ratio Perm						0.04						
v/c Ratio	0.70	0.99		0.69	0.72	0.11	0.30	1.48		0.41	1.02	
Uniform Delay, d1	49.0	37.2		49.1	33.4	26.5	41.5	47.2		41.7	46.8	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	9.0	32.7		8.4	3.4	0.0	0.2	236.5		0.3	60.2	
Delay (s)	58.1	70.0		57.5	36.8	26.5	41.8	283.8		42.0	107.1	
Level of Service	E	E		E	D	C	D	F		D	F	
Approach Delay (s)		67.9			39.9			239.5			87.6	
Approach LOS		E			D			F			F	
Intersection Summary												
HCM 2000 Control Delay			100.5									
HCM 2000 Volume to Capacity ratio			1.07									
Actuated Cycle Length (s)			113.1									
Intersection Capacity Utilization			84.4%									
Analysis Period (min)			15									
c Critical Lane Group												

Village at Little Creek 2: Barber Mill Rd (SR 1555)/W. Clayton Elem Sch & NC 42 (Market St)
 No-Build Timing Plan: AM Peak

									
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	126	618	122	439	57	88	393	123	288
v/c Ratio	0.70	0.99	0.69	0.72	0.11	0.30	1.48	0.40	1.02
Control Delay	69.0	72.0	68.7	42.0	28.5	45.9	269.8	47.3	106.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.0	72.0	68.7	42.0	28.5	45.9	269.8	47.3	106.7
Queue Length 50th (ft)	90	442	87	278	29	57	~391	80	~216
Queue Length 95th (ft)	154	#730	151	426	64	113	#625	148	#423
Internal Link Dist (ft)		1284		444			318		245
Turn Bay Length (ft)	100		60		100	150		80	
Base Capacity (vph)	277	624	291	624	531	291	266	304	282
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.99	0.42	0.70	0.11	0.30	1.48	0.40	1.02

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Village at Little Creek
No-Build

3: Barber Mill Road (SR 1555) & Dairy Road
Timing Plan: AM Peak

Intersection						
Int Delay, s/veh	3.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	10	133	360	16	60	107
Future Vol, veh/h	10	133	360	16	60	107
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	11	148	400	18	67	119
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	661	409	0	0	418	0
Stage 1	409	-	-	-	-	-
Stage 2	252	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	427	642	-	-	1141	-
Stage 1	671	-	-	-	-	-
Stage 2	790	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	400	642	-	-	1141	-
Mov Cap-2 Maneuver	400	-	-	-	-	-
Stage 1	671	-	-	-	-	-
Stage 2	740	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	12.9	0		3		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	616	1141	-	
HCM Lane V/C Ratio	-	-	0.258	0.058	-	
HCM Control Delay (s)	-	-	12.9	8.4	0	
HCM Lane LOS	-	-	B	A	A	
HCM 95th %tile Q(veh)	-	-	1	0.2	-	

Village at Little Creek
No-Build

1: Business Entrance/Guy Road (SR 1551) & NC 42 (Market St)
Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	455	4	4	515	198	5	4	4	297	4	69
Future Volume (vph)	34	455	4	4	515	198	5	4	4	297	4	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		6.5	6.5			6.5		6.5	6.5	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.96			0.96		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00			0.98		0.95	1.00	
Satd. Flow (prot)	1770	1861		1770	1785			1753		1770	1597	
Flt Permitted	0.14	1.00		0.37	1.00			0.92		0.75	1.00	
Satd. Flow (perm)	259	1861		689	1785			1640		1394	1597	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	38	506	4	4	572	220	6	4	4	330	4	77
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	38	510	0	4	792	0	0	14	0	330	81	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	36.3	36.3		36.3	36.3			23.9		23.9	23.9	
Effective Green, g (s)	36.3	36.3		36.3	36.3			23.9		23.9	23.9	
Actuated g/C Ratio	0.50	0.50		0.50	0.50			0.33		0.33	0.33	
Clearance Time (s)	6.5	6.5		6.5	6.5			6.5		6.5	6.5	
Vehicle Extension (s)	6.0	6.0		6.0	6.0			1.0		1.0	1.0	
Lane Grp Cap (vph)	128	922		341	885			535		455	521	
v/s Ratio Prot		0.27			c0.44						0.05	
v/s Ratio Perm	0.15			0.01				0.01		c0.24		
v/c Ratio	0.30	0.55		0.01	0.89			0.03		0.73	0.16	
Uniform Delay, d1	10.9	12.8		9.4	16.7			16.7		21.8	17.5	
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2	3.6	1.6		0.0	12.7			0.0		4.8	0.1	
Delay (s)	14.5	14.4		9.4	29.4			16.8		26.6	17.5	
Level of Service	B	B		A	C			B		C	B	
Approach Delay (s)		14.4			29.3			16.8			24.8	
Approach LOS		B			C			B			C	
Intersection Summary												
HCM 2000 Control Delay		23.5			HCM 2000 Level of Service			C				
HCM 2000 Volume to Capacity ratio		0.83										
Actuated Cycle Length (s)		73.2			Sum of lost time (s)			13.0				
Intersection Capacity Utilization		73.1%			ICU Level of Service			D				
Analysis Period (min)		15										

c Critical Lane Group

Village at Little Creek
No-Build

1: Business Entrance/Guy Road (SR 1551) & NC 42 (Market St)
Timing Plan: PM Peak

							
Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	38	510	4	792	14	330	81
v/c Ratio	0.30	0.55	0.01	0.90	0.03	0.73	0.16
Control Delay	17.0	14.9	8.2	30.5	21.8	36.3	22.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.0	14.9	8.2	30.5	21.8	36.3	22.2
Queue Length 50th (ft)	9	149	1	302	4	127	25
Queue Length 95th (ft)	30	222	5	458	20	#336	73
Internal Link Dist (ft)		412		1284	35		307
Turn Bay Length (ft)	110		100			65	
Base Capacity (vph)	259	1861	689	1785	533	453	519
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.15	0.27	0.01	0.44	0.03	0.73	0.16

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Village at Little Creek 2: Barber Mill Rd (SR 1555)/W. Clayton Elem Sch & NC 42 (Market St)
No-Build Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	601	87	373	605	9	65	5	250	19	12	34
Future Volume (vph)	10	601	87	373	605	9	65	5	250	19	12	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.3	7.1		6.4	7.1	7.1	6.4	6.4		5.6	5.6	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	1.00	0.85	1.00	0.85		1.00	0.89	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1827		1770	1863	1583	1770	1589		1770	1655	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1827		1770	1863	1583	1770	1589		1770	1655	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	668	97	414	672	10	72	6	278	21	13	38
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	11	765	0	414	672	10	72	284	0	21	51	0
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases						6						
Actuated Green, G (s)	1.3	43.9		18.7	60.4	60.4	18.7	18.7		6.3	6.3	
Effective Green, g (s)	1.3	43.9		18.7	60.4	60.4	18.7	18.7		6.3	6.3	
Actuated g/C Ratio	0.01	0.39		0.17	0.53	0.53	0.17	0.17		0.06	0.06	
Clearance Time (s)	7.3	7.1		6.4	7.1	7.1	6.4	6.4		5.6	5.6	
Vehicle Extension (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lane Grp Cap (vph)	20	709		292	994	845	292	262		98	92	
v/s Ratio Prot	0.01	c0.42		c0.23	0.36		0.04	c0.18		0.01	c0.03	
v/s Ratio Perm						0.01						
v/c Ratio	0.55	1.08		1.42	0.68	0.01	0.25	1.08		0.21	0.55	
Uniform Delay, d1	55.6	34.6		47.2	19.2	12.4	41.1	47.2		51.0	52.0	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	17.2	57.1		207.0	1.4	0.0	0.2	79.8		0.4	4.1	
Delay (s)	72.8	91.7		254.2	20.7	12.4	41.2	127.0		51.4	56.1	
Level of Service	E	F		F	C	B	D	F		D	E	
Approach Delay (s)		91.5			108.8			109.6			54.7	
Approach LOS		F			F			F			D	
Intersection Summary												
HCM 2000 Control Delay			101.4									
HCM 2000 Volume to Capacity ratio			1.12									
Actuated Cycle Length (s)			113.1									
Intersection Capacity Utilization			89.9%									
Analysis Period (min)			15									
c Critical Lane Group												

Village at Little Creek 2: Barber Mill Rd (SR 1555)/W. Clayton Elem Sch & NC 42 (Market St)
 No-Build Timing Plan: PM Peak

									
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	11	765	414	672	10	72	284	21	51
v/c Ratio	0.09	1.17	1.33	0.63	0.01	0.23	1.02	0.16	0.42
Control Delay	50.3	124.3	205.7	21.2	13.9	41.4	103.4	49.9	58.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.3	124.3	205.7	21.2	13.9	41.4	103.4	49.9	58.8
Queue Length 50th (ft)	7	~638	~376	283	3	43	~211	14	35
Queue Length 95th (ft)	26	#905	#588	#586	14	89	#393	39	74
Internal Link Dist (ft)		1284		444			318		245
Turn Bay Length (ft)	100		60		100	150		80	
Base Capacity (vph)	296	655	311	1061	902	311	279	325	303
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	1.17	1.33	0.63	0.01	0.23	1.02	0.06	0.17

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Village at Little Creek
No-Build

3: Barber Mill Road (SR 1555) & Dairy Road
Timing Plan: PM Peak

Intersection						
Int Delay, s/veh	3.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	21	107	200	15	140	374
Future Vol, veh/h	21	107	200	15	140	374
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	23	119	222	17	156	416
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	958	231	0	0	239	0
Stage 1	231	-	-	-	-	-
Stage 2	727	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	285	808	-	-	1328	-
Stage 1	807	-	-	-	-	-
Stage 2	478	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	241	808	-	-	1328	-
Mov Cap-2 Maneuver	241	-	-	-	-	-
Stage 1	807	-	-	-	-	-
Stage 2	405	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	13.2	0		2.2		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	- 583	1328	-		
HCM Lane V/C Ratio	-	- 0.244	0.117	-		
HCM Control Delay (s)	-	- 13.2	8.1	0		
HCM Lane LOS	-	- B	A	A		
HCM 95th %tile Q(veh)	-	- 1	0.4	-		

2020 Build-Out Conditions

Village at Little Creek
Build

1: Business Entrance/Guy Road (SR 1551) & NC 42 (Market St)
Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	62	441	4	4	439	285	4	4	4	243	4	32
Future Volume (vph)	62	441	4	4	439	285	4	4	4	243	4	32
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		6.5	6.5			6.5		6.5	6.5	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.94			0.95		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00			0.98		0.95	1.00	
Satd. Flow (prot)	1770	1860		1770	1753			1750		1770	1611	
Flt Permitted	0.14	1.00		0.39	1.00			0.94		0.75	1.00	
Satd. Flow (perm)	266	1860		726	1753			1680		1397	1611	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	69	490	4	4	488	317	4	4	4	270	4	36
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	69	494	0	4	805	0	0	12	0	270	40	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	38.6	38.6		38.6	38.6			23.9		23.9	23.9	
Effective Green, g (s)	38.6	38.6		38.6	38.6			23.9		23.9	23.9	
Actuated g/C Ratio	0.51	0.51		0.51	0.51			0.32		0.32	0.32	
Clearance Time (s)	6.5	6.5		6.5	6.5			6.5		6.5	6.5	
Vehicle Extension (s)	6.0	6.0		6.0	6.0			1.0		1.0	1.0	
Lane Grp Cap (vph)	135	950		371	896			531		442	509	
v/s Ratio Prot		0.27			c0.46						0.02	
v/s Ratio Perm	0.26			0.01				0.01		c0.19		
v/c Ratio	0.51	0.52		0.01	0.90			0.02		0.61	0.08	
Uniform Delay, d1	12.2	12.3		9.1	16.7			17.8		21.9	18.1	
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2	8.4	1.3		0.0	12.9			0.0		1.8	0.0	
Delay (s)	20.6	13.6		9.1	29.5			17.8		23.6	18.1	
Level of Service	C	B		A	C			B		C	B	
Approach Delay (s)		14.4			29.4			17.8			22.9	
Approach LOS		B			C			B			C	
Intersection Summary												
HCM 2000 Control Delay			23.2			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.79									
Actuated Cycle Length (s)			75.5			Sum of lost time (s)				13.0		
Intersection Capacity Utilization			82.5%			ICU Level of Service				E		
Analysis Period (min)			15									

c Critical Lane Group

Village at Little Creek
Build

1: Business Entrance/Guy Road (SR 1551) & NC 42 (Market St)
Timing Plan: AM Peak

							
Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	69	494	4	805	12	270	40
v/c Ratio	0.51	0.52	0.01	0.90	0.02	0.61	0.08
Control Delay	26.4	14.0	8.0	30.7	23.4	32.6	23.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	26.4	14.0	8.0	30.7	23.4	32.6	23.1
Queue Length 50th (ft)	20	143	1	316	4	105	13
Queue Length 95th (ft)	62	212	5	478	19	#268	44
Internal Link Dist (ft)		412		1284	35		307
Turn Bay Length (ft)	110		100			65	
Base Capacity (vph)	266	1861	726	1753	531	441	508
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.27	0.01	0.46	0.02	0.61	0.08

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Village at Little Creek 2: Barber Mill Rd (SR 1555)/W. Clayton Elem Sch & NC 42 (Market St)
Build Timing Plan: AM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	113	533	37	125	395	51	119	41	357	111	55	204
Future Volume (vph)	113	533	37	125	395	51	119	41	357	111	55	204
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.3	7.1		6.4	7.1	7.1	6.4	6.4		5.6	5.6	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.99		1.00	1.00	0.85	1.00	0.87		1.00	0.88	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1845		1770	1863	1583	1770	1612		1770	1643	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1845		1770	1863	1583	1770	1612		1770	1643	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	126	592	41	139	439	57	132	46	397	123	61	227
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	126	633	0	139	439	57	132	443	0	123	288	0
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases						6						
Actuated Green, G (s)	11.6	37.9		12.4	37.8	37.8	18.6	18.6		19.4	19.4	
Effective Green, g (s)	11.6	37.9		12.4	37.8	37.8	18.6	18.6		19.4	19.4	
Actuated g/C Ratio	0.10	0.33		0.11	0.33	0.33	0.16	0.16		0.17	0.17	
Clearance Time (s)	7.3	7.1		6.4	7.1	7.1	6.4	6.4		5.6	5.6	
Vehicle Extension (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lane Grp Cap (vph)	180	614		192	618	525	289	263		301	280	
v/s Ratio Prot	0.07	c0.34		c0.08	0.24		0.07	c0.27		0.07	c0.18	
v/s Ratio Perm						0.04						
v/c Ratio	0.70	1.03		0.72	0.71	0.11	0.46	1.68		0.41	1.03	
Uniform Delay, d1	49.4	37.9		49.0	33.2	26.3	43.0	47.6		42.1	47.2	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	9.2	44.5		10.9	3.2	0.0	0.4	324.0		0.3	61.4	
Delay (s)	58.6	82.4		59.9	36.4	26.4	43.5	371.6		42.4	108.6	
Level of Service	E	F		E	D	C	D	F		D	F	
Approach Delay (s)		78.5			40.7			296.3			88.8	
Approach LOS		E			D			F			F	
Intersection Summary												
HCM 2000 Control Delay			122.8									
HCM 2000 Volume to Capacity ratio			1.14									
Actuated Cycle Length (s)			113.8									
Intersection Capacity Utilization			88.8%									
Analysis Period (min)			15									
c Critical Lane Group												

Village at Little Creek 2: Barber Mill Rd (SR 1555)/W. Clayton Elem Sch & NC 42 (Market St)
 Build Timing Plan: AM Peak

									
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	126	633	139	439	57	132	443	123	288
v/c Ratio	0.70	1.03	0.72	0.71	0.11	0.46	1.68	0.41	1.03
Control Delay	69.6	82.9	70.2	41.4	28.3	49.8	354.7	47.8	108.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	69.6	82.9	70.2	41.4	28.3	49.8	354.7	47.8	108.6
Queue Length 50th (ft)	91	~496	100	279	29	88	~474	81	~225
Queue Length 95th (ft)	155	#776	167	426	64	159	#716	149	#425
Internal Link Dist (ft)		1284		444			318		245
Turn Bay Length (ft)	100		60		100	150		80	
Base Capacity (vph)	275	614	289	622	528	289	263	301	280
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.46	1.03	0.48	0.71	0.11	0.46	1.68	0.41	1.03

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Village at Little Creek
Build

3: Barber Mill Road (SR 1555) & Dairy Road
Timing Plan: AM Peak

Intersection						
Int Delay, s/veh	5.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	14	218	360	18	89	107
Future Vol, veh/h	14	218	360	18	89	107
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	16	242	400	20	99	119
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	727	410	0	0	420	0
Stage 1	410	-	-	-	-	-
Stage 2	317	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	391	642	-	-	1139	-
Stage 1	670	-	-	-	-	-
Stage 2	738	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	355	642	-	-	1139	-
Mov Cap-2 Maneuver	355	-	-	-	-	-
Stage 1	670	-	-	-	-	-
Stage 2	669	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	15.1	0		3.8		
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	612	1139	-	
HCM Lane V/C Ratio	-	-	0.421	0.087	-	
HCM Control Delay (s)	-	-	15.1	8.5	0	
HCM Lane LOS	-	-	C	A	A	
HCM 95th %tile Q(veh)	-	-	2.1	0.3	-	

Village at Little Creek
Build

4: Dairy Road & Site Access
Timing Plan: AM Peak

Intersection						
Int Delay, s/veh	5.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	89	43	4	31	22
Future Vol, veh/h	4	89	43	4	31	22
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	99	48	4	34	24
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	143	50	0	0	52	0
Stage 1	50	-	-	-	-	-
Stage 2	93	-	-	-	-	-
Critical Hdwy	7.12	6.22	-	-	4.12	-
Critical Hdwy Stg 1	6.12	-	-	-	-	-
Critical Hdwy Stg 2	6.12	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	826	1018	-	-	1554	-
Stage 1	963	-	-	-	-	-
Stage 2	914	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	812	1018	-	-	1554	-
Mov Cap-2 Maneuver	812	-	-	-	-	-
Stage 1	963	-	-	-	-	-
Stage 2	894	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	9	0		4.3		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	- 1007	1554	-		
HCM Lane V/C Ratio	-	- 0.103	0.022	-		
HCM Control Delay (s)	-	- 9	7.4	0		
HCM Lane LOS	-	- A	A	A		
HCM 95th %tile Q(veh)	-	- 0.3	0.1	-		

Village at Little Creek
Build

1: Business Entrance/Guy Road (SR 1551) & NC 42 (Market St)
Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	34	485	4	4	532	206	5	4	4	312	4	69
Future Volume (vph)	34	485	4	4	532	206	5	4	4	312	4	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.5	6.5		6.5	6.5			6.5		6.5	6.5	
Lane Util. Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Frt	1.00	1.00		1.00	0.96			0.96		1.00	0.86	
Flt Protected	0.95	1.00		0.95	1.00			0.98		0.95	1.00	
Satd. Flow (prot)	1770	1861		1770	1785			1753		1770	1597	
Flt Permitted	0.13	1.00		0.35	1.00			0.92		0.75	1.00	
Satd. Flow (perm)	245	1861		649	1785			1639		1394	1597	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	38	539	4	4	591	229	6	4	4	347	4	77
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	38	543	0	4	820	0	0	14	0	347	81	0
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			8			4	
Permitted Phases	2			6			8			4		
Actuated Green, G (s)	38.6	38.6		38.6	38.6			23.9		23.9	23.9	
Effective Green, g (s)	38.6	38.6		38.6	38.6			23.9		23.9	23.9	
Actuated g/C Ratio	0.51	0.51		0.51	0.51			0.32		0.32	0.32	
Clearance Time (s)	6.5	6.5		6.5	6.5			6.5		6.5	6.5	
Vehicle Extension (s)	6.0	6.0		6.0	6.0			1.0		1.0	1.0	
Lane Grp Cap (vph)	125	951		331	912			518		441	505	
v/s Ratio Prot		0.29			c0.46						0.05	
v/s Ratio Perm	0.16			0.01				0.01		c0.25		
v/c Ratio	0.30	0.57		0.01	0.90			0.03		0.79	0.16	
Uniform Delay, d1	10.7	12.7		9.1	16.7			17.8		23.5	18.6	
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2	3.9	1.7		0.0	12.7			0.0		8.3	0.1	
Delay (s)	14.5	14.4		9.1	29.4			17.8		31.8	18.6	
Level of Service	B	B		A	C			B		C	B	
Approach Delay (s)		14.4			29.3			17.8			29.3	
Approach LOS		B			C			B			C	
Intersection Summary												
HCM 2000 Control Delay		24.5			HCM 2000 Level of Service			C				
HCM 2000 Volume to Capacity ratio		0.86										
Actuated Cycle Length (s)		75.5			Sum of lost time (s)			13.0				
Intersection Capacity Utilization		75.3%			ICU Level of Service			D				
Analysis Period (min)		15										

c Critical Lane Group

Village at Little Creek
Build

1: Business Entrance/Guy Road (SR 1551) & NC 42 (Market St)
Timing Plan: PM Peak

							
Lane Group	EBL	EBT	WBL	WBT	NBT	SBL	SBT
Lane Group Flow (vph)	38	543	4	820	14	347	81
v/c Ratio	0.31	0.57	0.01	0.90	0.03	0.79	0.16
Control Delay	17.2	14.9	8.0	30.5	23.3	41.9	23.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.2	14.9	8.0	30.5	23.3	41.9	23.6
Queue Length 50th (ft)	10	163	1	322	4	145	27
Queue Length 95th (ft)	31	240	5	486	21	#378	76
Internal Link Dist (ft)		412		1284	35		307
Turn Bay Length (ft)	110		100			65	
Base Capacity (vph)	244	1861	650	1785	517	439	504
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.29	0.01	0.46	0.03	0.79	0.16

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Village at Little Creek 2: Barber Mill Rd (SR 1555)/W. Clayton Elem Sch & NC 42 (Market St)
Build

Timing Plan: PM Peak

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	601	132	423	605	9	80	5	278	19	12	34
Future Volume (vph)	10	601	132	423	605	9	80	5	278	19	12	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.3	7.1		6.4	7.1	7.1	6.4	6.4		5.6	5.6	
Lane Util. Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	0.97		1.00	1.00	0.85	1.00	0.85		1.00	0.89	
Flt Protected	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1812		1770	1863	1583	1770	1589		1770	1655	
Flt Permitted	0.95	1.00		0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1812		1770	1863	1583	1770	1589		1770	1655	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	11	668	147	470	672	10	89	6	309	21	13	38
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	11	815	0	470	672	10	89	315	0	21	51	0
Turn Type	Prot	NA		Prot	NA	Perm	Split	NA		Split	NA	
Protected Phases	5	2		1	6		3	3		4	4	
Permitted Phases						6						
Actuated Green, G (s)	1.3	43.9		18.7	60.4	60.4	18.7	18.7		6.3	6.3	
Effective Green, g (s)	1.3	43.9		18.7	60.4	60.4	18.7	18.7		6.3	6.3	
Actuated g/C Ratio	0.01	0.39		0.17	0.53	0.53	0.17	0.17		0.06	0.06	
Clearance Time (s)	7.3	7.1		6.4	7.1	7.1	6.4	6.4		5.6	5.6	
Vehicle Extension (s)	1.0	1.0		1.0	1.0	1.0	1.0	1.0		1.0	1.0	
Lane Grp Cap (vph)	20	703		292	994	845	292	262		98	92	
v/s Ratio Prot	0.01	c0.45		c0.27	0.36		0.05	c0.20		0.01	c0.03	
v/s Ratio Perm						0.01						
v/c Ratio	0.55	1.16		1.61	0.68	0.01	0.30	1.20		0.21	0.55	
Uniform Delay, d1	55.6	34.6		47.2	19.2	12.4	41.5	47.2		51.0	52.0	
Progression Factor	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	17.2	87.0		289.7	1.4	0.0	0.2	121.6		0.4	4.1	
Delay (s)	72.8	121.6		336.9	20.7	12.4	41.7	168.8		51.4	56.1	
Level of Service	E	F		F	C	B	D	F		D	E	
Approach Delay (s)		121.0			149.6			140.8			54.7	
Approach LOS		F			F			F			D	
Intersection Summary												
HCM 2000 Control Delay			135.7									
HCM 2000 Volume to Capacity ratio			1.23									
Actuated Cycle Length (s)			113.1									
Intersection Capacity Utilization			97.1%									
Analysis Period (min)			15									
c Critical Lane Group												

Village at Little Creek 2: Barber Mill Rd (SR 1555)/W. Clayton Elem Sch & NC 42 (Market St)
 Build Timing Plan: PM Peak

									
Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	11	815	470	672	10	89	315	21	51
v/c Ratio	0.09	1.25	1.51	0.63	0.01	0.29	1.13	0.16	0.42
Control Delay	50.3	158.5	278.7	21.2	13.9	42.2	134.4	49.9	58.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	50.3	158.5	278.7	21.2	13.9	42.2	134.4	49.9	58.8
Queue Length 50th (ft)	7	~714	~456	283	3	54	~256	14	35
Queue Length 95th (ft)	26	#987	#679	#586	14	105	#445	39	74
Internal Link Dist (ft)		1284		444			318		245
Turn Bay Length (ft)	100		60		100	150		80	
Base Capacity (vph)	296	650	311	1061	902	311	279	325	303
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.04	1.25	1.51	0.63	0.01	0.29	1.13	0.06	0.17

Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Village at Little Creek
Build

3: Barber Mill Road (SR 1555) & Dairy Road
Timing Plan: PM Peak

Intersection						
Int Delay, s/veh	4.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	24	160	200	20	235	374
Future Vol, veh/h	24	160	200	20	235	374
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	27	178	222	22	261	416
Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1171	233	0	0	244	0
Stage 1	233	-	-	-	-	-
Stage 2	938	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	213	806	-	-	1322	-
Stage 1	806	-	-	-	-	-
Stage 2	381	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	158	806	-	-	1322	-
Mov Cap-2 Maneuver	158	-	-	-	-	-
Stage 1	806	-	-	-	-	-
Stage 2	283	-	-	-	-	-
Approach	WB		NB		SB	
HCM Control Delay, s	16.2		0		3.2	
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	- 525	1322	-		
HCM Lane V/C Ratio	-	- 0.389	0.198	-		
HCM Control Delay (s)	-	- 16.2	8.4	0		
HCM Lane LOS	-	- C	A	A		
HCM 95th %tile Q(veh)	-	- 1.8	0.7	-		

Village at Little Creek
Build

4: Dairy Road & Site Access
Timing Plan: PM Peak

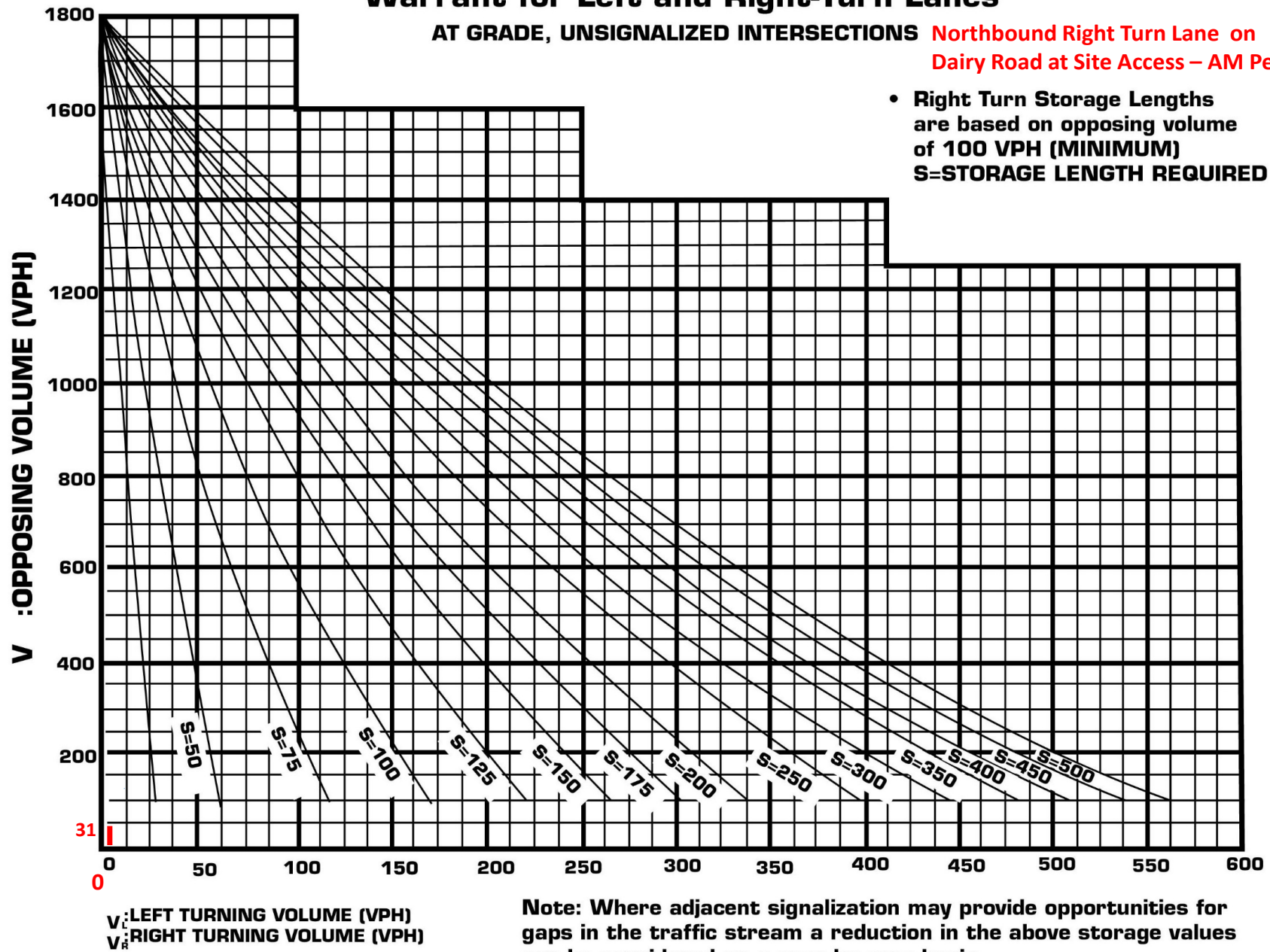
Intersection						
Int Delay, s/veh	4.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	56	58	4	100	76
Future Vol, veh/h	4	56	58	4	100	76
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	62	64	4	111	84
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	374	67	0	0	69	0
Stage 1	67	-	-	-	-	-
Stage 2	307	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	627	997	-	-	1532	-
Stage 1	956	-	-	-	-	-
Stage 2	746	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	579	997	-	-	1532	-
Mov Cap-2 Maneuver	579	-	-	-	-	-
Stage 1	956	-	-	-	-	-
Stage 2	689	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	9.1	0		4.3		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	951	1532	-	
HCM Lane V/C Ratio	-	-	0.07	0.073	-	
HCM Control Delay (s)	-	-	9.1	7.5	0	
HCM Lane LOS	-	-	A	A	A	
HCM 95th %tile Q(veh)	-	-	0.2	0.2	-	

Warrant for Left and Right-Turn Lanes

AT GRADE, UNSIGNALIZED INTERSECTIONS

Northbound Right Turn Lane on
Dairy Road at Site Access – AM Peak Hour

- Right Turn Storage Lengths are based on opposing volume of 100 VPH (MINIMUM)
S=STORAGE LENGTH REQUIRED



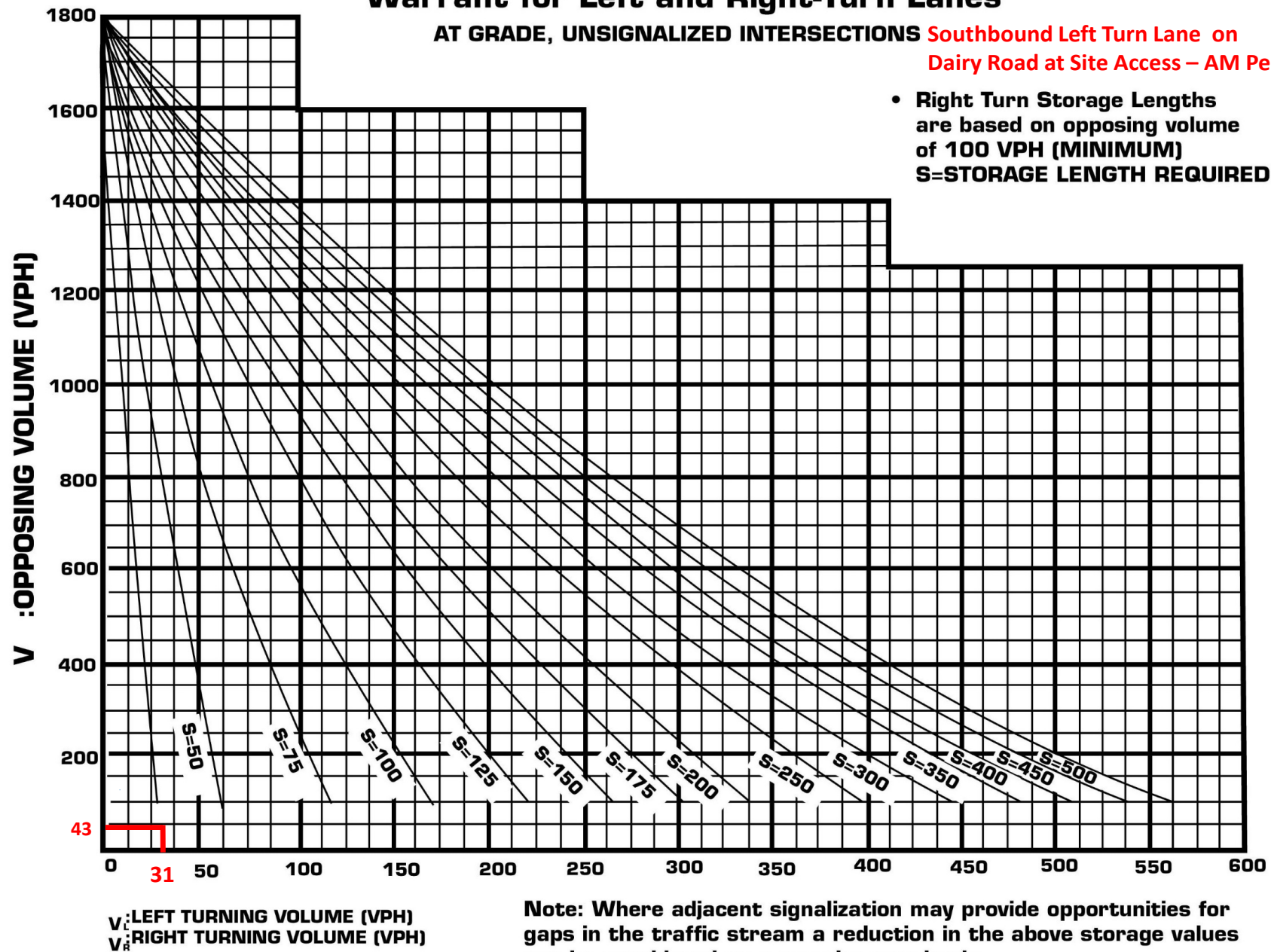
Warrant for Left and Right-Turn Lanes

AT GRADE, UNSIGNALIZED INTERSECTIONS

Southbound Left Turn Lane on

Dairy Road at Site Access – AM Peak Hour

- Right Turn Storage Lengths are based on opposing volume of 100 VPH (MINIMUM)
S=STORAGE LENGTH REQUIRED

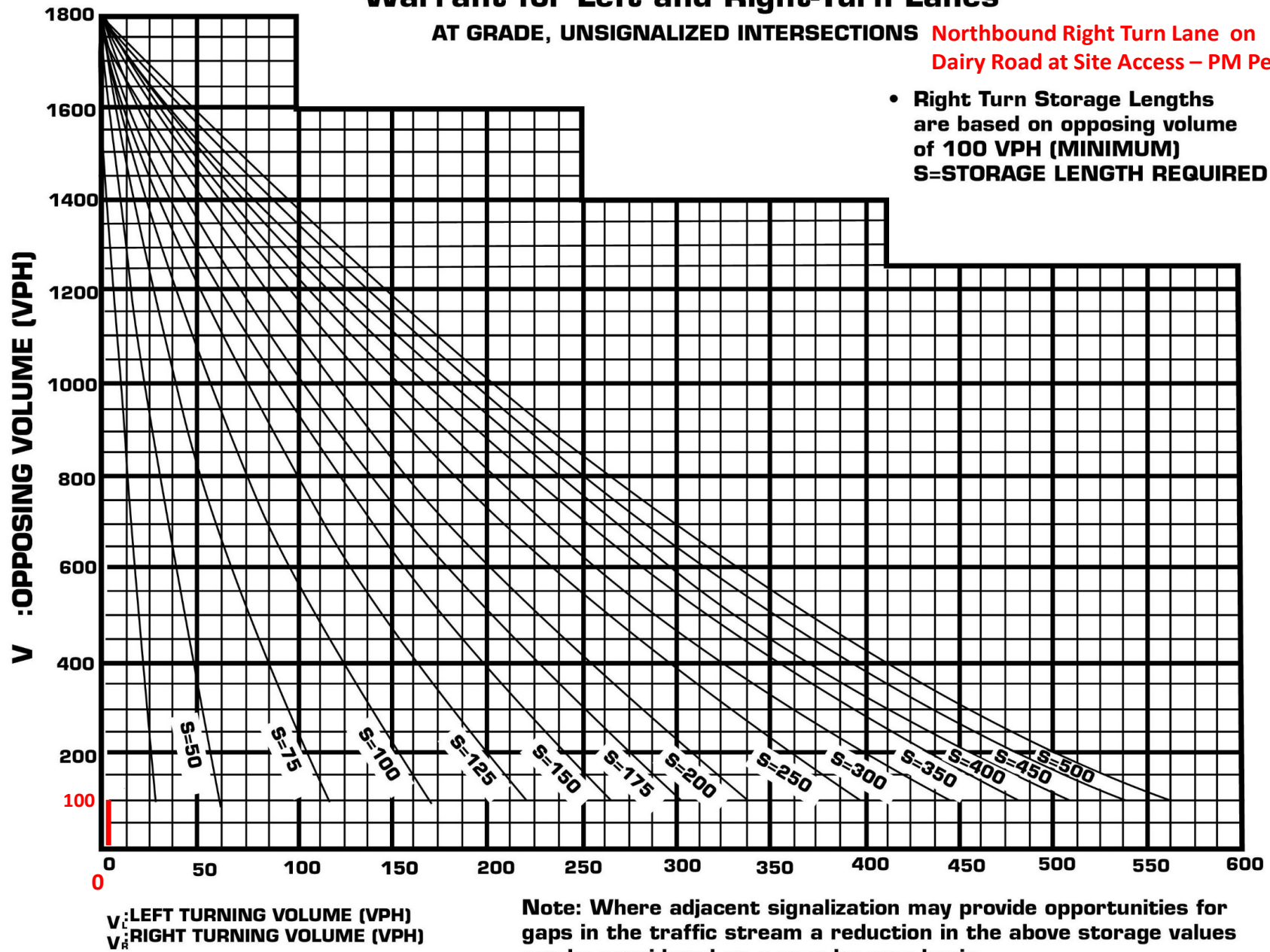


Warrant for Left and Right-Turn Lanes

AT GRADE, UNSIGNALIZED INTERSECTIONS

Northbound Right Turn Lane on
Dairy Road at Site Access – PM Peak Hour

- Right Turn Storage Lengths are based on opposing volume of 100 VPH (MINIMUM)
S=STORAGE LENGTH REQUIRED



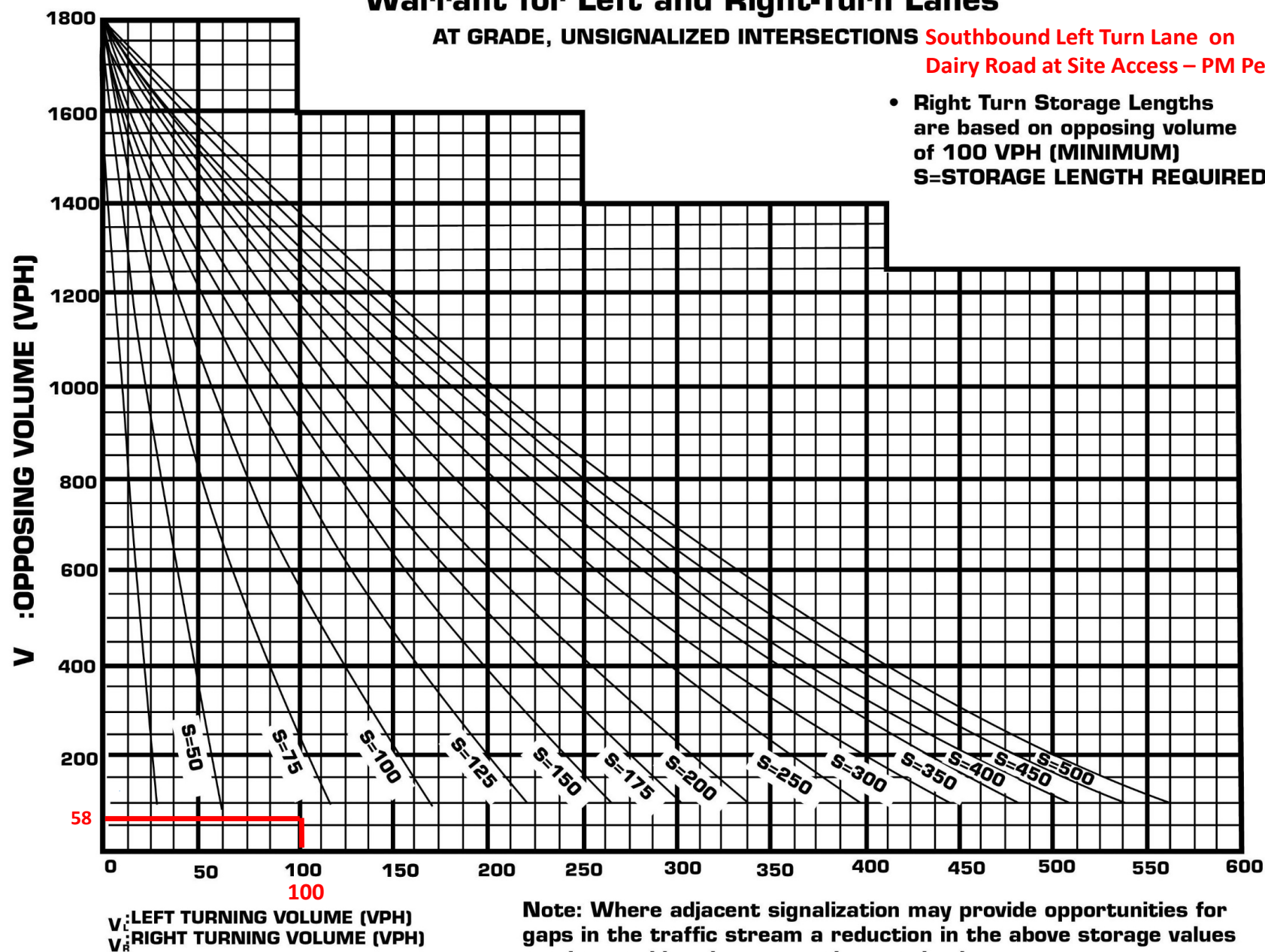
Warrant for Left and Right-Turn Lanes

AT GRADE, UNSIGNALIZED INTERSECTIONS

Southbound Left Turn Lane on

Dairy Road at Site Access – PM Peak Hour

- Right Turn Storage Lengths are based on opposing volume of 100 VPH (MINIMUM)
S=STORAGE LENGTH REQUIRED





Gannett Fleming

*Excellence Delivered **As Promised***

www.gannettfleming.com

2610 Wycliff Road, Suite 102
Raleigh, NC 27607
919-420-7660
tsnow@gfnet.com

Offices Worldwide

7.0 Recommendations

To mitigate the traffic-related impacts caused by the Village at Little Creek residential development and to provide for safe, efficient, and reliable traffic flow, Gannett Fleming recommends the following:

Dairy Road/Site Access - Construct the driveway to provide for two way operation with one inbound lane and one outbound lane in accordance with the standards as outlined in the Policy on Street and Driveway Access to North Carolina Highways.

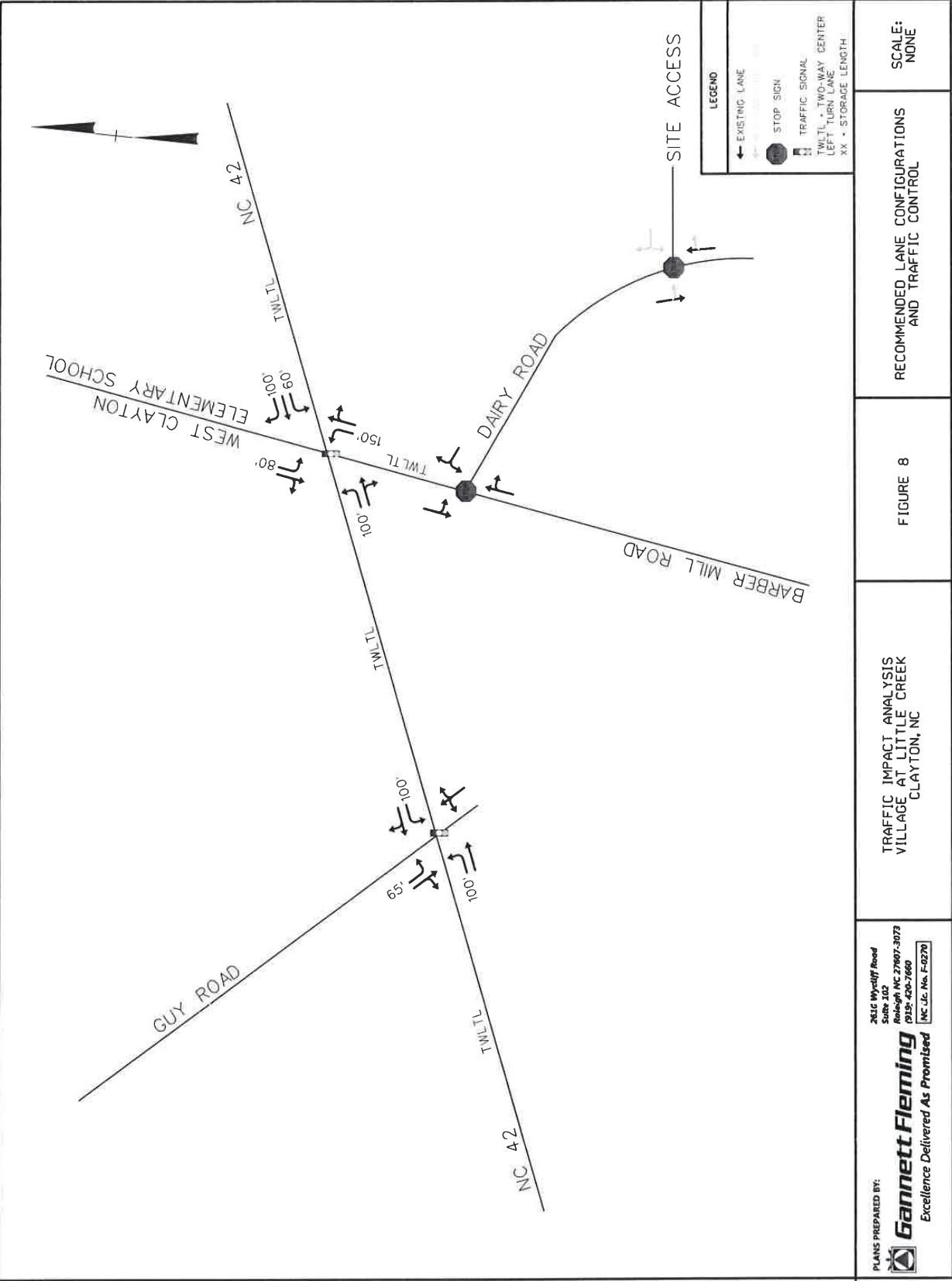
Barber Mill Road/NC 42 Intersection – Due to the existing level of congestion on NC 42 and particularly at the Barber Mill Road/NC 42 intersection, it is unreasonable to expect the developer of the Village at Little Creek to construct off-site improvements to bring this intersection up to an acceptable level of service. The percent increase in traffic at this intersection caused by the Village at Little Creek is morning and afternoon peak hours is predicted to be approximately 7%. The percent increase in the westbound left, eastbound right, northbound left, and northbound right lane groups will be more than 7%. Dual westbound left-turn lanes and northbound right-turn lanes would be ideal but this cannot be accomplished without significant widening of NC 42 and Barber Mill Road to accept the additional turning lanes. The need for improvements to NC 42 is well documented by the *Johnston County Comprehensive Transportation Plan*¹ and the *State Transportation Improvement Program (STIP) 2016-2025*² R-3410. Therefore, no improvements at this intersection is recommended to mitigate the minor impact caused by the proposed Village at Little Creek development.

Guy Road/NC 42 Intersection – Due to the existing level of congestion on NC 42, it is also unreasonable to expect the developer of the Village at Little Creek to construct off-site improvements to improve operations at this intersection. This intersection is predicted to operate at LOS C in the future with and without the Village at Little Creek development. The percent increase in traffic at this intersection caused by the Village at Little Creek is morning and afternoon peak hours is predicted to be approximately 4%. The percent increase in the southbound left, eastbound right, eastbound through, and westbound through lane groups will be more than 4%. The need for improvements to NC 42 is well documented by the *Johnston County Comprehensive Transportation Plan*¹ and the *State Transportation Improvement Program (STIP) 2016-2025*² R-3410 and improvements to Guy Road is also included in the *Johnston County Comprehensive Transportation Plan*¹. Therefore, no improvements at this intersection is recommended to mitigate the minor impact caused by the proposed Village at Little Creek development.

Barber Mill Road/Dairy Road – The Barber Mill Road/Dairy Road intersection is predicted to operate at LOS C during the future 2020 Build condition. The Village of Little Creek development will add traffic to this intersection. However, the intersection has the capacity to accommodate the additional site traffic. Therefore, no improvements at this intersection is recommended to mitigate the minor impact caused by the proposed Village at Little Creek development.

Clayton Southern Connector (R-3618) – The *Johnston County Comprehensive Transportation Plan*¹ and the *State Transportation Improvement Program (STIP) 2016-2025*² R-3410 include the Clayton Southern Connector as a future need and identified project. The alignment for the Clayton Southern Connector bisects the Village at Little Creek as shown on Figure 2 – Sketch Plan. It is recommended that the developer continue to develop a master development plan to accommodate land for the Clayton Southern Connector right-of-way, continue to plan for a second point of access which will be on the Clayton Southern Connector, and work closely with NCDOT and the Town of Clayton to advocate for funding and prioritization for the Clayton Southern Connector and improvements to NC 42 and Guy Road.

The recommended lane configurations and traffic control are shown on Figure 8.



8.0 Conclusions

This study shows that the proposed Village at Little Creek residential development will have an overall minimal impact on the traffic operations at the study area intersections; however, the impact will be mitigated by the recommended improvements. The proposed development will not negatively impact the health, safety, and welfare of the travelling public.

PUBLIC NOTICE

In accordance with NC GS 160A-384 and NC GS 160A-364, the Clayton Town Council will hold a public hearing on Monday, February 6, 2017 at 6:30 PM at Town Hall, 111 East Second Street, to consider the following:

- The Village at Little Creek Rezoning, 2016-172-RZ. The request is to rezone a parcel from Residential Estate (R-E) to Residential-8 (R-8). Parcel number: 165816-94-4736. TAG #: 05H03024
- The Village at Little Creek Preliminary Plat (Major Subdivision), 2016-173-SD. The request is to develop 154 single-family residential lots. Parcel numbers: 165812-85-9742 and 165816-94-4736. TAG #s: 05H04002A and 05H03024

For Rezoning, the Clayton Town Council reserves the right to approve the request as presented or any portion of the request without necessity of withdrawal or modification of the application or additional public hearing on the matter. Likewise, the Town Council may designate approval to the district requested or another district or districts without modification of the request or additional public hearing.

For Preliminary Plats (major subdivisions), the Clayton Town Council must make findings of fact based upon sworn testimony and other credible evidence during an evidentiary hearing. Citizens may give testimony in an evidentiary hearing after they have taken an oath.

This is an open meeting and the public is invited to attend.

Jay McLeod, Planner
919-553-5002

The Clayton News Star

Please advertise on the following dates:
January 25, 2017
February 1, 2017

Affidavit of publication required.



**TOWN OF CLAYTON
TOWN COUNCIL
AGENDA COVER SHEET**

AGENDA LOCATION:

Items Scheduled for Regular Meeting

Meeting Date:

January 17, 2017

ITEM TITLE:

Award of Bid Recommendation – UV Disinfection System Improvements

DESCRIPTION:

Included with agenda is bid tabulation for the UV Disinfection System Improvements project. The low bidder is George Rapper & Son Inc., from Garner NC with a low bid of \$244,000.

POTENTIAL ACTION:

Place on February 6, 2017 Consent Agenda

DEPARTMENT:

Public Works

PRESENTER:

James Warrant, WWTP Superintendent

ITEM HISTORY:

Date:

Action Taken:

Information Provided:



January 12, 2017

Mr. James Warren
LCWRF Superintendent
Town of Clayton
P.O. Box 879
Clayton, NC 27528-0879

Re: Recommendation of Award
UV Disinfection System Improvements
Clayton, North Carolina
TWC No. 2756-BL

Dear Mr. Warren:

Enclosed is the Bid Tabulation for the bids received January 10, 2017 for the UV Disinfection System Improvements project. The Low Bidder is George Raper & Son, Inc. from Garner, NC with a low Bid of \$244,000.00. The Low Bidder is properly licensed to perform the work in accordance with Chapter 87 of the North Carolina General Statutes.

In consideration of the available budget for the project, we recommend that the Town accept the low Bid for the UV Disinfection System Improvements in the amount of \$244,000.00 and award the Contract to George Raper & Son, Inc. We have prepared a Resolution to Award and included it for your use; however, please feel free to use the Town's standard resolution format if necessary.

Attached, please find three (3) copies of the Notice of Award for signature. Please have the Town Manager sign each document where indicated and return to our office with the executed Resolution of Award.

Should you have any questions or need additional information, please let us know.

Sincerely,

THE WOOTEN COMPANY



Charles W. Davis, P.E.

Enclosures

120 North Boylan Avenue
Raleigh NC 27603-1423

919.828.0531
fax 919.834.3589

**BID TABULATION
UV DISINFECTION SYSTEM IMPROVEMENTS
TOWN OF CLAYTON**

BID DATE/TIME: January 10, 2017 @ 2:00 P.M.

TWC No. 2756-BL

CONTRACTORS	LICENSE NO.	CLASS	BID BOND	ADD. 1	TOTAL LUMP SUM BID	REMARKS
A.C. SCHULTES OF CAROLINA, INC. 3887 South NC 41 Wallace, NC 28446	48474	UL: PU				No Bid.
CAROLINA CIVILWORKS, INC. P.O. Box 80337 Raleigh, NC 27623	74658	UL: UC	5%	✓	\$342,950.00	
GEORGE RAPER & SON, INC. P.O. Box 1247 Elizabeth City, NC 27906	7375	UL: UC	5%	✓	\$244,000.00	Apparent Low Bidder.
STATE UTILITY CONTRACTORS INC. P.O. Box 5019 Monroe, NC 28111	17793	UL: UC	5%	✓	\$252,800.00	
T.A. LOVING COMPANY 400 Patetown Road Goldsboro, NC 27530	325	UL:UC	5%	✓	\$397,000.00	

This is to certify that the bids tabulated herein were publicly opened and read aloud at 2:00 p.m. on the 10th day of January, 2017, in the Conference Room located at 653 Hwy 42 West, Clayton, North Carolina 27520, and that all said bids were accompanied by either a certified check or bidder's bond except as otherwise noted.

THE WOOTEN COMPANY

120 N. Boylan Avenue

Raleigh, NC 27603

License No. T-0145



10-JAN-17



Notice of Award

Project: UV Disinfection System Improvements	Date:
Owner: Town of Clayton	Owner's Contract No.: N/A
Contract: N/A	Engineer's Project No.: 2756-BL
Bidder: George Raper & Son, Inc.	
Bidder's Address: (send Certified Mail, Return Receipt Requested) P.O. Box 14029	
Raleigh, NC 27620	

You are notified that your Bid dated **January 10, 2017** for the above Contract has been considered. You are the Successful Bidder and are awarded a Contract for the following:

UV Disinfection System Improvements

The Contract Price of your Contract is **Two Hundred Forty Four Thousand & 00/100 Dollars (\$244,000.00)**.

Three (3) copies of the proposed Contract Documents (except Drawings) accompany this Notice of Award.

Three (3) sets of the Drawings will be delivered separately or otherwise made available to you immediately.

You must comply with the following conditions precedent within 10 days of the date you receive this Notice of Award.

1. Deliver to the Owner **three (3)** fully executed counterparts of the Contract Documents.
2. Deliver with the executed Contract Documents the Contract Bonds as specified in the Instructions to Bidders, General Conditions Paragraph 5.01, and Supplementary Conditions Paragraph SC-5.01.

Failure to comply with these conditions within the time specified will entitle Owner to consider you in default, annul this Notice of Award and declare your Bid security forfeited.

Within 10 days after you comply with the above conditions, Owner will return to you one fully executed counterpart of the Contract Documents.

Town of Clayton
Owner
By: _____
Authorized Signature

Adam J. Lindsay, Town Manager
Title

Copy to Engineer

Acceptance of Notice

Receipt of the above Notice of Award is hereby acknowledged by _____

this the _____ day of _____, 20____.

By: _____

Title: _____

2756-BL : 10/21/16

00510-1

Notice of Award

EJCDC No. C-510 (2007 Edition) Prepared by the Engineers' Joint Contract Documents Committee and endorsed by the Associated General Contractors of America and the Construction Specifications Institute.

**TOWN OF CLAYTON
RESOLUTION OF AWARD OF BID
FOR THE
UV DISINFECTION SYSTEM IMPROVEMENTS**

WHEREAS, the Town of Clayton requested by invitation for bids to be received for the UV Disinfection System Improvements project to be opened January 10, 2017; and

WHEREAS, the bids were publicly opened on the stated date; and

WHEREAS, the low Bidder is George Raper & Son, Inc. for the Bid Amount of \$244,000.00; and

WHEREAS, the Town of Clayton intends to construct the project in accordance with the plans and specifications.

NOW THEREFORE BE IT RESOLVED, BY THE CLAYTON TOWN COUNCIL
THAT the Town of Clayton awards the UV Disinfection System Improvements contract to George Raper & Son, Inc. in the amount of \$244,000.00.

Duly adopted this the 6th day of February, 2017 while in regular session.

Jody L. McLeod
Mayor

ATTEST:

Kimberly A. Moffett, CMC, NCCMC
Town Clerk