Town of Clayton
Town of Clayton Planning Board Agenda
Monday, February 25, 2019 @ 6:00 PM
Town Council Chambers

1. ROLL CALL

2. ADJUSTMENT OF THE AGENDA

3. APPROVAL OF MINUTES

a. January 28, 2019 Planning Board Meeting - DRAFT Minutes

4. REPORTS AND COMMENTS

5. OLD BUSINESS

6. NEW BUSINESS

a. Faith City Church and Daycare Conditional Use Permit **(Quasi-Judicial)**
2018-222-CUP
PIN #: 165801-29-0494 & 165801-29-0365
TAG #: 05G02053S & 05G02034X
Location: 581 Guy Road
Application - 2018-222-CUP - Faith City Child Develop. Ctr & Church
Staff Report 2018-222-CUP Faith City Church and Daycare
Staff Report Map - 2018-222-CUP - Faith City Church & Daycare CUP
Neighborhood Meeting Materials - 2018-222-CUP - Faith City Church & Child Care
Adjacent Property Letter - 2018-222-CUP - Faith City Church CUP
Newspaper Ad - 2018-222-CUP - Faith City Church & Daycare CUP
Shared Parking Agreement 2018-222-CUP Faith City Church
4th submittal- Site Plans-2018-222-CUP-Faith City Child Dev. PB

b. State Employees Credit Union Major Site Plan
2018-249-SP
PIN #: 167800-19-8807
TAG #: 05I04003X
Location: corner of Glen Laurel Rd and Hwy 42 East
Application - 2018-249-SP - State Employees Credit Union
Owners Consent Form - 2018-249-SP - State Employees Credit Union
Staff Report - 2018-249-SP - State Employees Credit Union Major Site Plan
Staff Report Map 2018-249-SP State Employees Major Site Plan
Neighborhood Meeting Materials- 2018-249-SP - State Employees Major Site Plan
Survey - 2018-249-SP - State Employees Credit Union
3rd Submittal Site Plan- 2018-249-SP- State Employees Credit Union

c. Creech Tract Rezoning
2018-92-RZ
PIN #: 165907-69-2203 & 165907-78-1039
TAG #: 05G01012A & 05G01012S
Location: off Shotwell Road and Old US Hwy 70; south of Highgate Subdivision
Application 2018-92-RZ Creech Tract Development
Owner's Consent 2018-92-RZ Creech Tract Development
Staff Report 2018-92-RZ Creech Tract Rezoning
Staff Report Map 2018-92-RZ Creech Rezoning
Survey 2018-92-RZ Creech Tract Rezoning
Neighborhood Meeting Materials - 2018-92-RZ - Creech Tract SD, RZ, SUP

d. Creech Tract Special Use Permit
2018-90-SUP
PIN #: 165907-69-2203 & 165907-78-1039
TAG #: 05G01012A & 05G01012S
Location: off Shotwell Road and Old US Hwy 70; south of Highgate Subdivision
Updated Application - 2018-91-SUP - Creech Tract Development
Owner's Consent 2018-91-SUP Creech Tract Development
Staff Report - 2018-91-SUP - Creech SUP-SD
Staff Report Maps 2018-91-SUP Creech Tract Special Use Permit
Neighborhood Meeting Materials - 2018-90-SD - Creech Tract SD, RZ, SUP

e. Creech Tract Preliminary Plat (Major Subdivision)
2018-90-SD
PIN #: 165907-69-2203 & 165907-78-1039
TAG #: 05G01012A & 05G01012S
Location: off Shotwell Road and Old US Hwy 70; south of Highgate Subdivision
Updated Application - 2018-90-SD - Creech Tract Development
Owner's Consent 2018-90-SD Creech Tract Development
Staff Report - 2018-90-SD - Creech Tract Preliminary Plat
Staff Report Maps 2018-90-SD Creech Preliminary Plat
Neighborhood Meeting Materials - 2018-90-SD - Creech Tract SD, RZ, SUP
Full TIA - 2018-90-SD - Creech SD
NCDOT Comments- 2018-90-SD - Creech SD
Traffic Engineer Letter - 2018-90-SD- Creech Tract
7th Submittal-Site Plan-2018-90-SD-Creech Tract Development

f. Barbour Tract Planned Development Rezoning
2018-231-PDD
PIN #: 166913-24-0652, 166913-24-0827, 166805-18-6162, 166914-34-7560, 166914-34-7451, 166914-34-7371, 166913-14-9727, 166914-24-8945, 166700-29-2835, 166914-34-2175
TAG #: 0599003F, 05005067B, 05005067H, 05H03189G, 05H03189F, 05H03189E, 05G02026Q, 05E99008H, 05E99008J, 05E99021V
Location: Off N. O'Neil Street, and Wilson St., Rosemary St, Mial St., and Oakdale Ave.; north of Cooper Academy
Application - 2018-231-PDD -Barbour Tract PDD
Owner's Consent Forms - 2018-231-PDD - Barbour Tract Rezoning
Staff Report 2018-231-PDD Barbour Tract Rezoning (2)
Staff Report Map 2018-231-PDD Barbour Tract

Neighborhood Meeting Materials - 2018-233-SD - Barbour Tract
PB Public Notice -2018-231-PDD - Barbour Tract PDD
Associated Site Plan -2018-233-SD- barbour Tract Master Plan

g. House Bill 436- Discussion Only
Strikethrough Copy- House Bill 436 OA

7. INFORMAL DISCUSSION AND PUBLIC COMMENT

8. ADJOURN

9. CALL TO ORDER

Town of Clayton
Planning Board Minutes
Monday, January 28, 2019 @ 6:00 PM
Town Council Chambers

BOARD MEMBERS PRESENT:
Andria Merritt
Stephen Powers
James Lipscomb
Marty Bizzell
Bob Ahlert
Frank Price
James Moore
George "Bucky" Coats

STAFF PRESENT:
Ms. Wullenwaber, Planning Director
Haley Hogg, Planner
Damiere Powell, Planner
Michael Grannis, Mayor Pro-Tem
Merrick Parrott, Town Attorney

MEMBERS ABSENT:
Ross Benson

1 CALL TO ORDER

a) Bob Ahlert called the meeting to order at 6:00 p.m.

2 ROLL CALL

a)

Board Member Ross Benson was not present.

3 ADJUSTMENT OF THE AGENDA

4 ADMINISTRATION OF OATH(S)

a) Oath of Office Administered to Planning Board Members:

- Robert Ahlert
- George "Bucky" Coats
- James Lipscomb
- James Moore

b)

Town Clerk, Kimberly Moffett administered the oaths.

5 ELECTION OF CHAIR & CO-CHAIR

a)

Board Member Stephen Powers nominated Robert Ahlert as Chair.

Motion: Board Member Powers
Second: Board Member Coats

Vote: Unanimous

b)

Board Member George "Bucky" Coats nominated Marty Bizzell for Co-Chair.

Motion: Board Member Coats
Second: Board Member Price
Vote: Unanimous

6 APPROVAL OF MINUTES

a) December 18, 2018 Planning Board Draft Minutes

ACTION: Approved with corrections made.

Motion: Board Member Price
Second: Board Member Powers
Vote: Unanimous

7 REPORTS AND COMMENTS

8 OLD BUSINESS

9 NEW BUSINESS

a) 2019-02-VAR 308 E. Front Street Variance (Quasi-Judicial)
NC PIN: 166917-12-9306
Tag: 05036081
Location: 308 E. Front Street

Town Attorney Merrick Parrott explained the Quasi-Judicial process. Clerk of the Board Chrissy Dunn gave the affirmation.

Ms. Wullenwaber presented this project. The applicant is requesting a variance to subdivide the property into 2 lots. The property is zoned R-6 which requires a minimum lot size of 6,000sqft. The request is for a minimum lot size of 5,512sqft which results in a lot size variance of 488sqft. In the existing block, majority of the lots are between 3,400-5600sqft. The surrounding blocks have similar lot sizes. This request would be consistent with the surrounding area and the applicant has addressed the Finding of Facts. Board Member Bizzell asked Ms. Wullenwaber about the old deed line, were the lots recombined at one time? Ms. Wullenwaber stated at one time it does look like it was but nothing confirmed. No further questions for staff.

The applicant Michael Pfeiffer was present and available for questions. Board Member Lipscomb asked about the driveway that it looks like it is located on the new lot and can the Board make a requirement for a driveway to be put on the existing lot? Mr. Pfeiffer stated that would be no problem. Board Member Bizzell asked about the old lot line and if the applicant recalls the history? Mr. Pfeiffer stated the properties were separate at one time. He said clearly there

is an imprint of an old structure. It looks like a foundation was there. It was such old records he could not find any further information. The previous owner was an out of state owner and he is local.

Board Member Bob Ahlert read the Findings of Facts.

ACTION: Approve the request with the conditions presented by staff.

Motion: Board Member Lipscomb
Second: Board Member Merritt
Vote: Unanimous

b) 2019-04-RZ Johnston Health Rezoning
NC PIN: 164800-75-2034
Tag: 05G03004E
Location: 2138 NC Hwy 42 W.

Board Member Marty Bizzell requested to recuse himself from this project.

Haley Hogg presented this project. The applicant is requesting to rezone 74.61 acres of land from Planned Development Mixed Use (PD-MU) to Office-Institutional (O-I). The request to rezone the parcels to O-I in order to prepare the corner parcel closest to Amelia Church Road for future development of medical offices. This request is consistent with the Comprehensive Plan 2040 and consistent with Surrounding Land Use. Staff is recommending approval. There were no questions for staff.

The applicant was present and discussed their plans on the rezoning. There were no questions for the applicant

ACTION: Recommendation to the Town Council to approve the request.

Motion: Board Member Lipscomb
Second: Board Member Powers
Vote: Unanimous

c) 2019-07-OA Downtown Overlay Ordinance

Planning Director Samantha Wullenwaber presented this project. The amendment seeks to amend the downtown overlay district requirements to encourage quality development in downtown. The original downtown overlay district was adopted in the fall of 2017. It became evident that the requirements were too stringent and prevented quality development in downtown. The planning department has been working with economic development and architect Tony Johnson, to amend the existing ordinance and make it easier for developers to build in downtown. The ordinance amendment also includes the addition of graphics for clarification. Staff recommends approval to council. There were questions to staff from the Board in reference to many of the amendments, from canopies/awnings, flags, to cross access parking, windows etc. All questions and concerns were addressed by staff and will be looked into making any changes. Ms. Wullenwaber stated she plans

on going door to door to explain the ordinance to the local businesses.

ACTION: Recommendation to the Town Council to approve the request.

Motion: Board Member Coats
Second: Board Member Merritt
Vote: Unanimous

10 INFORMAL DISCUSSION AND PUBLIC COMMENT

11 ADJOURN

a)

With there being nothing further, the meeting was adjourned at 6:47 p.m.

Motion: Board Member Coats
Second: Board Member Lipscomb
Vote: Unanimous

_____
Robert J. Ahlert, Chair

ATTEST:

_____
Chrissy Dunn, Clerk to the Board

TOWN OF CLAYTON
Planning Department
111 E. Second St., P.O. Box 879
Clayton, NC 27528
Phone: 919-553-5002
Fax: 919-553-1720

CONDITIONAL USE PERMIT APPLICATION COVER SHEET

Name of Project: Faith City Child Development Center & Faith Tabernacle Ministry Church **Date:** 11/13/18

Applicant Name: Faith Tabernacle Ministry/Vickie Foster

The following checklist to be completed by applicant:

[✔] Pre-Application Meeting on: July 25, 2018

[✔] Review fee

[✔] Advertisement Fee

[N/A] Associated site plan (separate application required for major site plans, must be submitted concurrently)

RECEIVED
NOV 26 2018
TOWN OF CLAYTON
PLANNING DEPARTMENT

11 copies of the following:

[✔] Completed Application

[✔] Owner's Consent Form

[✔] Adjacent Property Owner's List

[✔] Neighborhood Meeting Notice Letter (1 copy)

[✔] Set of stamped, addressed, empty envelopes for adjacent property owner notification

If required following Pre-Application Meeting:

[N/A] Wastewater Allocation Request Form

[N/A] Signed/sealed Traffic Impact Analysis (2 copies)

RECEIVED
NOV 29 2018
TOWN OF CLAYTON
PLANNING DEPARTMENT

David Foster
(919) 422-2013

Reviewed by: C Denn

TOWN OF CLAYTON
Planning Department
111 E. Second St., P.O. Box 879
Clayton, NC 27528
Phone: 919-553-5002
Fax: 919-553-1720

CONDITIONAL USE PERMIT APPLICATION

Application Fee: $400.00
Advertisement Fee: $200.00

☒ **New Conditional Use Permit** ☐ **Major Modification to an approved CUP**
Permit Modified: _____

SITE INFORMATION

Name of Project: Faith City Child Development Center/Faith Tabernacle Ministry Church

Acreage of Property: 1.33 **Zoning District:** B-2

County Tag #: 165801-290365 **NC Pin #:** 165801-29-0365

Address/Location: 581 Guy Road Clayton, NC 27520

Existing Use: Vacant **Proposed Use:** Child Care Center/Church

Is project within a Planned Development? ☐ Yes ☒ No **If yes, which:** _____

Is project within an Overlay District? ☐ Yes ☒ No **If yes, which:** _____

Is a site plan being concurrently submitted? ☒ **Yes** ☐ **No**

APPLICANT INFORMATION

Applicant: Faith Tabernacle Ministry/Vickie Foster
Mailing Address: 581 Guy Road Clayton, NC 27520
Phone Number: 919-369-4798 **Fax:** _____
Contact Person: Vickie Foster
Email Address: info@ftmchurch.org

OFFICE USE ONLY

Date Received: NOV 29 2018 Amount Paid: $600 File Number: 2018-222-CUP

PROPERTY OWNER INFORAMTION

Name: Mark Falbo

Mailing Address: 25 Interchange Way, Concord ON L4k5W3

Phone Number: _____ **Fax:** _____

Email Address: _____

EXPLANATION OF PROJECT

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

There will NOT be any significant changes to the property inside. We will move non structural walls to make offices larger for 3 classrooms.

The child development center accept 29 children between the ages of 2-5. The hours of operation will be 6:30 am to 6:00 pm.

There will be 3 or 4 staff for the child development center.

On the other side of the building, we will add additional offices for administrative staff. No structural walls will be necessary or impacted.

The church will be located in the warehouse portion of the building. We will make cosmetic changes to the warehouse portion and add an HVAC system.

Occasionally we have services on Saturdays. We typically have services on Wednesdays 7-8 and Sundays 10:30- am to 12:00 pm.

We will make cosmetic changes to the warehouse portion and add an HVAC system for church portion.

There will be no changes to the outside of the building.

REQUIRED FINDINGS OF FACT

Section 155.710(G) of the Unified Land Development Code requires applications for a Conditional 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 ultimately developed according to the plans as submitted.

There will be minor changes to the inside of the building. We will use the facility for a child care center and church.

There will not be any materially endanger the public health or safety if located where proposed and ultimately developed according to the plans as submitted.

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.

We currently are attached to the same building as a church. We currently meeting the Town Code of Ordinances.

We will meet 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.

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 minimum changes to the inside of the building. There will be no changes to the outside of the building.

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

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.

There will be minimum changes to the inside of the building. There will be no changes to the outside of the building.

This 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.

APPLICANT AFFIDAVIT

I/We, the undersigned, do hereby make application and petition to the Board of Adjustment of the Town of Clayton to approve the subject Conditional Use. 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.

Vickie Foster	[redacted] Vickie Foster 2018.11.06 14:11:01 -05'00'	11/13/18
Print Name	***Signature of Applicant***	***Date***

TOWN OF CLAYTON
Planning Department
111 E. Second St., P.O. Box 879
Clayton, NC 27528
Phone: 919-553-5002
Fax: 919-553-1720

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: Faith City Child Development Center/Church **Address or PIN #:** 581 Guy Road Clayton, NC 27520

AGENT/APPLICANT INFORMATION:

Vickie Foster
(Name - type, print clearly)

591 Guy Road
(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*):

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:

MARK FALBO
(Name - type, print clearly)

(Owner's Signature)

25 Interchange Way
(Address)
Concord ON L4K 5W3
(City, State, Zip)

~~STATE OF~~ PROVINCE OF ONTARIO
~~COUNTY OF~~ COUNTRY OF CANADA

Sworn and subscribed before me YALDA RIAHI, a Notary Public for the above State and County, this the 20th day of November, 2018.

Notary Public YALDA RIAHI

My Commission Expires: N/A

YALDA RIAHI NOTARY PUBLIC ONTARIO

This Hold Harmless form is required by Early Riser Enterprises LLC and Special Effects Flooring in order for parishioners of Faith Tabernacle Ministries to use Special Effects parking are for church services and activities.

In consideration for permission for Faith Tabernacle Ministries access to use of Special Effects parking area, Faith Tabernacle Ministries agrees to indemnify, hold harmless, defend, release, and forever discharge Early Riser Enterprises LLC and Special Effects Flooring , its officers, agents, and employees and waive any and all responsibility of same for any and all liabilities, claims, demands, actions, loss or expense (including attorney fees) ,or any damage of any kind imposed by law upon Early Riser and Special Effects for damages because of bodily injury, including death at any time resulting thereof, sustained by any person or persons, or on account of damages to property, including loss of use thereof, while utilizing Early Riser Enterprises LLC property.

Faith Tabernacle Ministries will indemnify Early Riser Enterprises LLC as additional insured to Faith Tabernacle Ministries liability Insurance coverage.

Member/manager
Early Riser Enterprises LLC

Pastor
Faith Tabernacle Ministries

CEO Special Effects Flooring

11-14-18
Date

11-14-18
Date

TOWN OF CLAYTON
Planning Department
111 E. Second St., P.O. Box 879
Clayton, NC 27520
Phone: 919-553-5002
Fax: 919-553-1720

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Project Name: Faith City Child Development Center/Church **Address or PIN #:** 581 Guy Road Clayton, NC 27520

AGENT/APPLICANT INFORMATION:

Vickie Foster
(Name - type, print clearly)

591 Guy Road
(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)*:

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:

MARK FALBO
(Name - type, print clearly)

25 Interchange Way
(Address)

(Owner's Signature)

Concord ON L4K 5W3
(City, State, Zip)

~~STATE OF~~ PROVINCE OF ONTARIO
~~COUNTY OF~~ COUNTRY OF CANADA

Sworn and subscribed before me YALDA RIAHI, a Notary Public for the above State and County, this the 20th day of November, 2018.

Notary Public YALDA RIAHI

My Commission Expires: N/A

YALDA RIAHI NOTARY PUBLIC ONTARIO

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
February 25, 2019

STAFF REPORT

Application Number: 2018-222-CUP
Project Name: Faith City Church and Daycare Church Conditional Use Permit

NC PIN/Tag:	165801-29-0494 / 05G02053S (tenant space) 165801-29-0365 / 05G02034X (common area)
Applicant:	Faith Tabernacle Ministry
Owners:	Mark Falbo
Project Location:	581 Guy Road (Moss Creek)
Neighborhood Meeting:	Held on February 11, 2019
Public Noticing:	Property posted February 8, 2019 Letters mailed February 13, 2019 Newspaper Ad published February 13, 2019 and February 20, 2019

REQUEST: The applicant is requesting a Conditional Use Permit to operate a church on the subject property, which is zoned Neighborhood-Business (B-2).

SITE DATA:

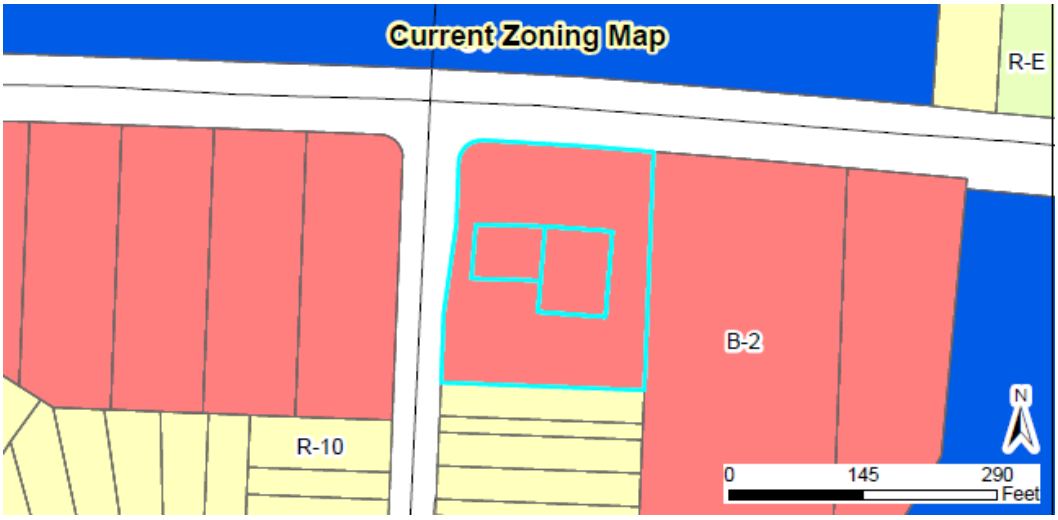
Acreage:	1.33 acres
Present Zoning:	Neighborhood-Business (B-2)
Existing Use:	Vacant

DEVELOPMENT DATA:

Proposed Uses:	Church (195 seats) / Daycare (29 children)
Square footage:	6,971 SF
Proposed Parking:	65 spaces (includes 19 spaces utilized via a shared parking agreement)
Required Parking:	Church = 65 spaces, Daycare = 6 spaces
Access/Streets:	Two access points off Pinecroft Drive, and two access points connecting to the property to the east (Special Effects Flooring)

ADJACENT ZONING AND LAND USES:

Direction	Zoning	Existing Use
North	Office-Institutional (O-I)	Apartments (Parkside)
South	Residential-10 (R-10)	Residential
East	Neighborhood Business (B-2)	Commercial (Special Effects Flooring)
West	Neighborhood Business (B-2)	Office



STAFF ANALYSIS AND COMMENTARY:

Overview
The applicant is requesting a Conditional Use Permit to operate the use of a church and daycare on the subject property, within an existing building. The property itself only encompasses one tenant space of the building, while the other space is subdivided off as its own parcel. Both tenant spaces share a common area that includes the shared parking area.

The church currently has existing offices located in the adjacent tenant space, and is now looking to expand into the new space to operate a church and daycare. The tenant space is 6,971 square feet, and will include 195 seats for the church. The daycare portion will include 29 children plus 4 employees and will only operate Monday-Friday from 7AM until 6PM.

The applicant is proposing to develop a 2,175 square foot playground to the south of the building, within the shared common area. A fence will be located around the playground, and the daycare will access the playground via an existing sidewalk. A handicap ramp and crosswalk will also be provided to provide ADA accessibility to the playground.

Parking
Due to the limited parking on-site, the applicant has submitted a shared parking agreement with this Conditional Use Permit application in order to accommodate the required number of parking spaces for the church use. The church requires 65 parking spaces, and the site only accommodates 48 spaces. The church has developed a shared parking agreement with the adjacent parcel to the east, which would allow the church to utilize 19 additional parking spaces on Sundays when the adjacent use (Special Effects Flooring) is not in operation. This would provide the church the number of spaces required by the UDC.

Staff has reviewed the shared parking agreement and is comfortable with the proposal. The adjacent tenant space in the building is an office use that only operates Monday-Friday, so the church use will not interfere with the parking needed for that business. Special Effects Flooring also operates only Monday-Friday (8am – 5 pm), so the 19 spaces on that site will be available on Sundays and Wednesday evenings when the church is in operation. The proposed daycare will operate Monday-Friday, but will only need 8 parking spaces per UDC requirements, which can be accommodated using the site's existing 48 spaces. The daycare will not operate on the weekends. Per UDC requirements, shared parking agreements are subject to Planning Director approval and must be reviewed by the Town Attorney (see condition of approval).

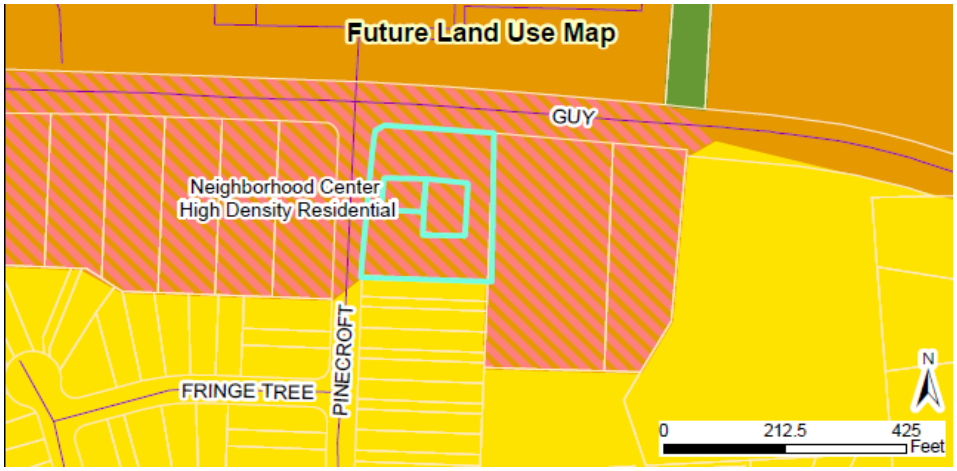
Access
The property is access via two existing access points off Pinecroft Drive. It is also accessed via an existing connection to the eastern property (Special Effects Flooring).

Landscaping/Screening
The landscaping on-site is existing and is proposed to remain. The applicant is not proposing to add any additional landscaping, with the exception of shrubs required around the dumpster enclosure. The dumpster enclosure is proposed to be re-located into an existing terminal island, and will be brought into current compliance with the

UDC by matching the materials of the primary structure when constructed. Shrubs will also be planted around the base of the enclosure as required within the UDC. The dumpster enclosure will be located a minimum of 50' from the southern property line, which is zoned residential, per the requirements of the UDC.

Consistency with the Unified Development Code
The proposed use and associated site plan is consistent with and meets the applicable requirements of the Unified Development Code (UDC).

Compatibility with Surrounding Land Uses
The proposed use is compatible with the surrounding land uses, which are primarily non-residential uses with the exception of the apartments across Guy Road and the single-family use to the south. The property has previously been utilized as non-residential in the past, so the proposed Conditional Use Permit for a church is not inconsistent with the character of the site or area.



CONSIDERATIONS:

- The Planning Board reviews and makes a final decision regarding Conditional Use Permits.

FINDINGS:

When considering a Conditional Use Permit application, The Planning Board shall consider specific Findings of Fact. A Conditional Use failing to meet any of these Findings shall be deemed adverse to the public interest and shall not be approved. The applicant has addressed the Findings expressly established by Chapter 155.710 (G) of the UDC. The applicant's Findings of Fact are incorporated into the record as an attachment to the Staff Report.

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

- **Applicant Response:** "There will be minor changes to the inside of the building. We will use the facility for a child care center and church. There will not be any materially endanger the public health or safety if located where proposed and ultimately developed according to the plans as submitted."

- **Staff Commentary:** The site is an existing commercial/office use. No changes are proposed to the exterior of the building, with the exception of relocating the dumpster enclosure and developing a playground for the daycare use.

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.

    - **Applicant Response:** "We currently are attached to the same building as a church. We currently are meeting the Town Code of Ordinance. We will meet all required specifications and conform to the standards and practices of sound land use planning and the Town Code of Ordinances and other applicable regulations."

    - **Staff Commentary:** The proposed use does meet the requirements of the UDC for this property in regards to parking requirements (with the shared parking agreement). The church already operates offices in the adjacent tenant space on the property. No changes are proposed with the exception of the playground addition and relocation of the dumpster. The development will meet the requirements of the current UDC for the dumpster enclosure and playground area.

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.

    - **Applicant Response:** "There will be minimum changes to the inside of the building. There will be no changes to the outside of the building. There will not be 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."

    - **Staff Commentary:** The building is existing, and has accommodated non-residential uses since it was developed originally.

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.

    - **Applicant Response:** "There will be minimum changes to the inside of the building. There will be no changes to the outside of the building. This 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."

    - **Staff Commentary:** Staff does not feel that the proposed use would adversely affect the adopted plans and policies of the Town.

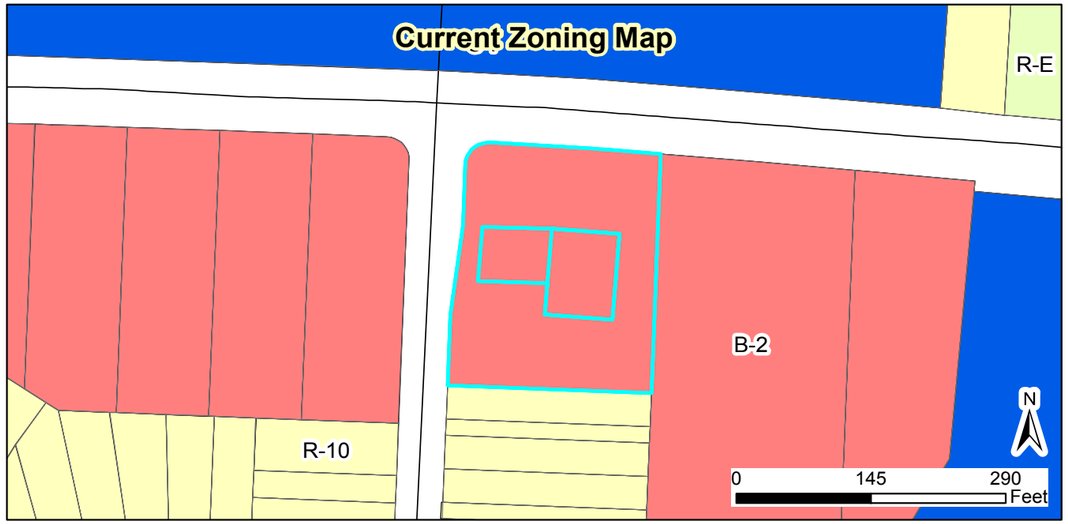
RECOMMENDED CONDITIONS:

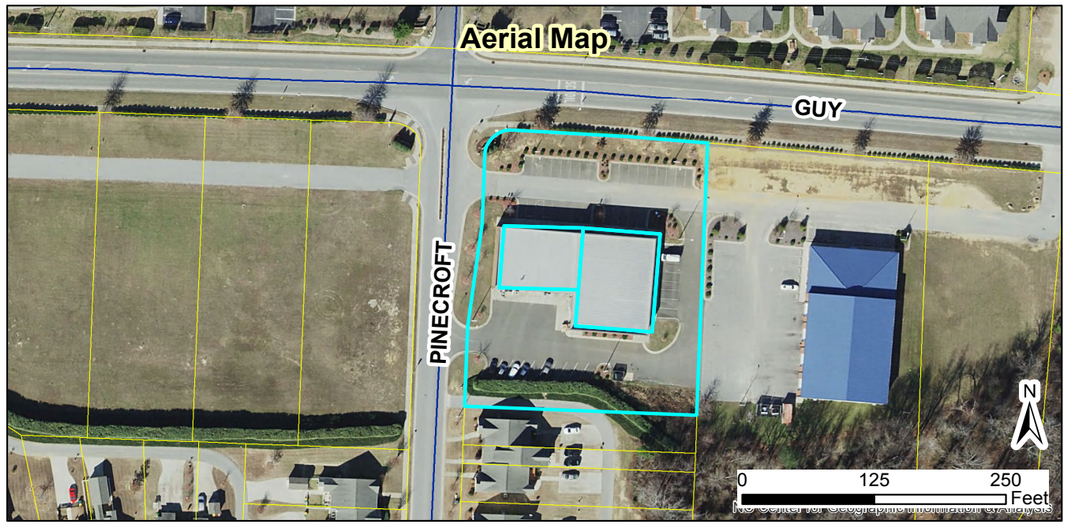
Staff recommends that if the Planning Board reaches positive conclusions on the required Findings of Fact, the approval of the petition be subject to the following conditions:

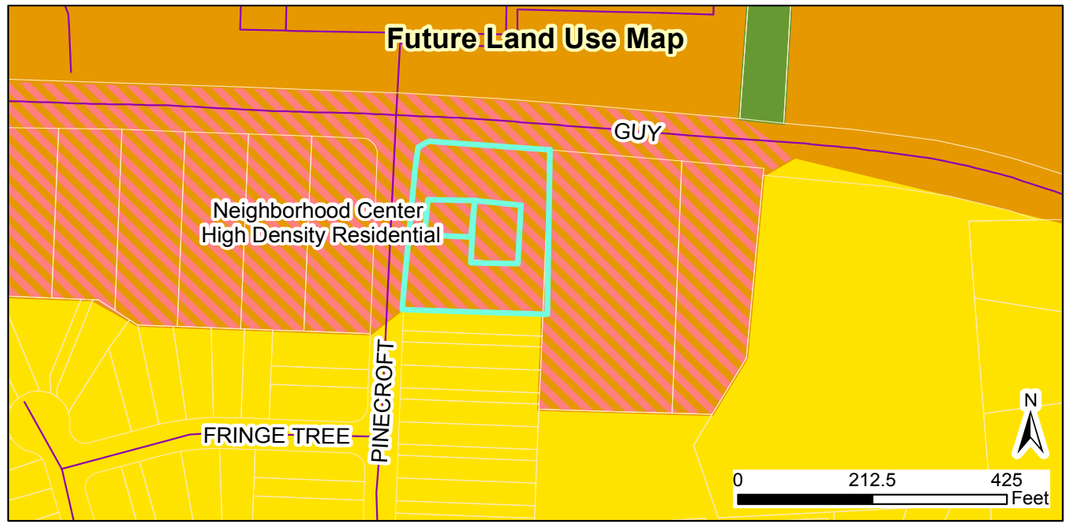
1. Three copies of the final site plan, meeting these conditions of approval, shall be submitted to the Planning Department for final review and approval. These conditions of approval shall be recorded on the final plan sets.
2. The final development of the site shall be consistent with the specifications of this application and its associated site plan. Modifications may require additional approvals pursuant to the requirements of the Unified Development Code section 155.710.
3. The dumpster enclosure shall match the materials of the primary building, as required within the Unified Development Code.
4. The shared parking agreement shall be reviewed by the Town Attorney as required within the Unified Development Code. Approval of this permit is contingent upon the Town Attorney and Planning Director approving the associated shared parking agreement with Faith City Church and Special Effects Flooring.

ATTACHMENTS:

1) Application
2) Maps
3) Neighborhood Meeting Materials
4) Site Plan
5) Adjacent Property Letter- Public Notice
6) Newspaper Ad- Public Notice







2018-222-CUP Faith City Child Development Center & Church
Conditional Use Permit
Request: Operate the use of a church and daycare on the property

Applicant: Faith Tabernacle Ministry
Property Owners: Mark Falbo
Parcel ID/TAG #: 165801-29-0494 / 05G02053S (tenant space)
165801-29-0365 / 05G02034X (common area)

Staff Report Map

2/13/2019

Produced by: TOC Planning

Disclaimer: Town of Clayton assumes no legal responsibility for the quality fo the data represented here.

Document Path: O:\PLANNING\CONDITIONAL USE\2018\2018-222-CUP Faith City Child Develop. Ctr & Church\Maps\2018-222-CUP Faith City CUP.mxd

Legend

- 100-yr Flood Zone
- Thoroughfare Overlay
- Scenic Highway Overlay
- Watershed Protection Overlay
- Site

January 24, 2019

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 or development proposal involving property adjacent to, or in close proximity to, property show 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 proposal. A representative of the applicant will be present to explain their application, answer questions, and solicit comments.

Meeting Date: February 11, 2019

Meeting Time: 7:00pm

Meeting Location: 591 Guy Road, Clayton, NC 27520

Type of Application: Conditional Use Permit

Project/Proposal Property address: 581 Guy Road, Clayton, NC 27520

Description of project/proposal: Child Development Center/Church

Upcoming public meetings for this application (Planning Board and/or Town Council:

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

A copy of the project application

A schedule of all upcoming public meetings for the application

A map at a scale that is appropriate to the project and shows neighboring properties and roads.

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 919-553-9755. You may also contact the Planning Department at 1919-553-5002.

Sincerely,

Vickie Foster

CC: Town of Clayton Planning Department

ADJACENT PROPERTY OWNERS LIST

Project Name: Faith City Child Development Center/FTM Church

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
05G02034X	INTEGRATED MANAGED CARE, LLC	1482 RIVER RD SE WINNABOW, NC 28479-5204
05G02055A	JEFFERY and Penny Adams	594 PINECROFT DR CLAYTON, NC 27520-6920
05G02055X	Linda Williams and Heather Thomas	597 Pinecroft Drive, Clayton, NC 27520-6919
05G02055W	Ruth A. Coker	585 Pinecroft Drive, Clayton, NC 27520-6919
05G02053S	AmarcJay-RE Holdings LLC	25 Interachange Way, Concord, ON L4K 5W3 Canada
05G02058Q	EARLY RISER ENTERPRISES LLC	171 LIVE OAK RD NEWPORT, NC 28570-5141
05G02055Y	Elaine P Woodard	3329 Bentwinds Bluffs Ln Fuquay Varina, NC 27526-4495
05G02053R	INTEGRATED MANAGED CARE LLC	1482 RIVER RD SE WINNABOW, NC 28479-0000
05G02058O	Charles Pourron and Joseph Barbour	PO Box 934 Clayton, NC 27520
05G02055Z	Janet Williams	605 PINECROFT DR Clayton, NC 27520
05G02009K	PARKSIDE VILLAGE INVESTORS LLC	1420 WALNUT ST STE 1011 Philadephia, PA 19102-4010

NEIGHBORHOOD MEETING ATTENDANCE ROSTER

Project: Faith City Child Development Center/FTM Church

Application: Conditional Use Permit

Location/Date: 581 Guy Road Clayton NC 27520

	NAME	ADDRESS
1	Gary R. Davies	541 Guy Rd, Clayton
2		
3		
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7		
8		
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10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		

NEIGHBORHOOD MEETING SUMMARY FORM

FILL OUT THE FOLLOWING:

Application: Conditional Use Permit Date of Mailing: January 24, 2019

Date of Meeting: February 11, 2019 Time of Meeting: 7:00pm

Location of Meeting: 591 Guy Road Clayton NC 27520

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, and that all required information was presented at the Meeting:

Printed Name: Vickie Foster Signature: Vickie Foster

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.*

We discussed the layout of the facility. We discussed the private driveway in the rear of our facility and the common driveway on the left of the facility. Gary Davies wanted to make sure he would still have access to the private driveway in the rear of the facility. He has delivery trucks coming through in the early morning hours. He wanted to make sure this would be safe for the children going to play in the playground.

We explained that children would be going to the play area mid-morning and afternoon. Teachers will accompany children to playground area at all times. Mr Gary Davies was not opposed to any of the plans.

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

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

February 13, 2019

NOTICE

SUBJECT: **Project:** 2018-222-CUP
Faith City Child Development Center and Church Conditional Use Permit

Address: 581 Guy Road

NC PIN/Tag: 165801-29-0494 / 05G02053S (tenant space)
165801-29-0365 / 05G02034X (common area)

Applicant: Faith Tabernacle Ministry

Dear Clayton Area Property Owner:

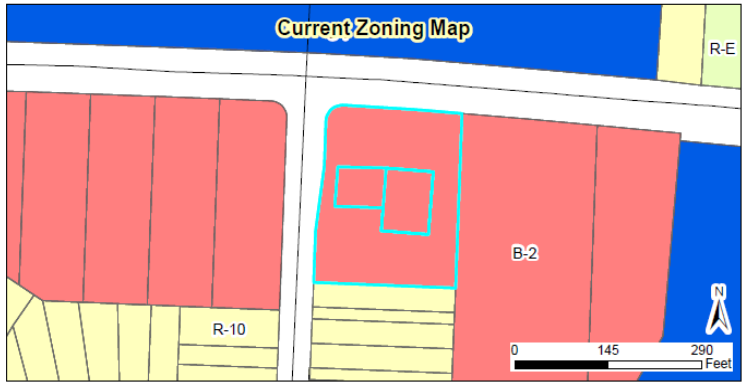
Notice is hereby given that the Clayton Planning Board will hold an evidentiary hearing on ***Monday, February 25, 2019 at 6:00 PM*** at Town Hall, 111 E Second Street, to consider the above referenced Conditional Use Permit application. The applicant is requesting issuance of a Conditional Use Permit to operate the use of a church on the subject property. Per the Unified Development Code, the use of a church is only permitted in the Neighborhood-Business (B-2) zoning district through the issuance of a Conditional Use Permit. Please see the map on the back of this letter.

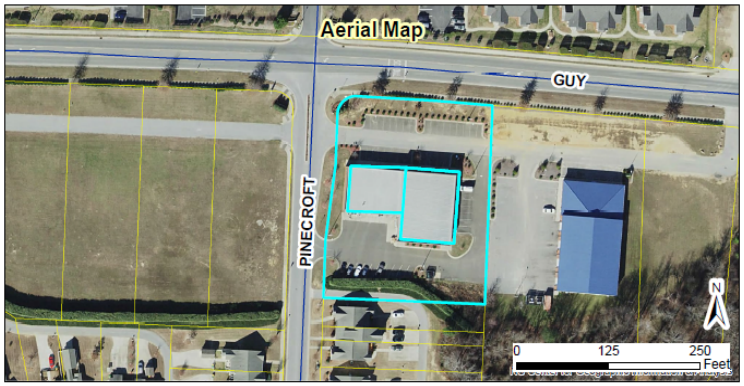
Based upon records in the Johnston County Tax Office, you are the owner of property that is within 100 feet of this request. You are invited to attend this meeting. During an evidentiary hearing, the Planning Board must make findings of fact based upon sworn testimony and other credible evidence. Citizens may give testimony in an evidentiary hearing after they have taken an oath. This is an open meeting and interested persons are invited to attend.

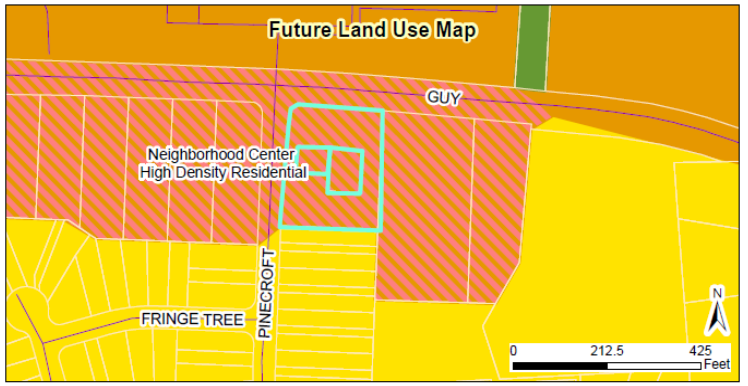
If you should need additional assistance or information, please contact the Planning Department at (919) 553-5002 or email at dpowell@townofclaytonnc.org.

Sincerely,

Haley Hogg, CZO
Planner







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Staff Report Map

2/13/2019
Produced by: TOC Planning
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Legend
- 100-yr Flood Zone
- Thoroughfare Overlay
- Scenic Highway Overlay
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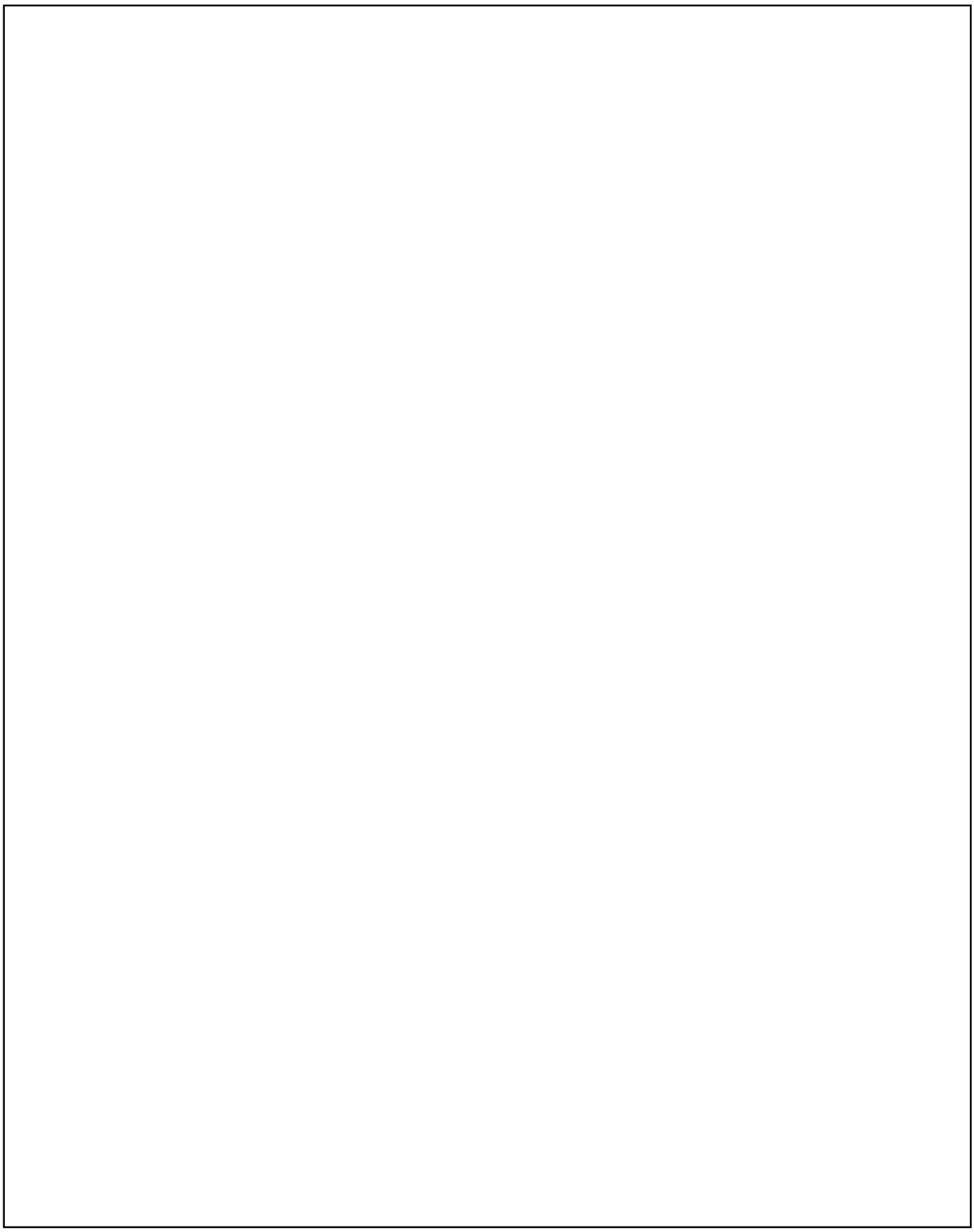


Public Notice

In accordance with NC GS 160A-364, the Clayton Planning Board will conduct an evidentiary hearing on Monday, February 25, 2019, at 6 PM in the Town Council Chambers in Town Hall located at 111 East Second Street to consider 2018-222-CUP Faith City Child Development Center & Church Conditional Use Permit. Request to allow the use of a church on the subject property, zoned Neighborhood-Business (B-2). Per UDC requirements, the use of a church requires a conditional use permit to be permitted. The property is located at 581 Guy Road; TAG # 05G02053S

During an evidentiary hearing, the Planning Board 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 interested persons are invited to attend.

Haley Hogg, Planner
919-553-5002

_____

The Johnstonian Newspaper

Please advertise on the following dates:
February 13, 2019
February 20, 2019

Dates are the two Wednesdays prior to the hearing

Affidavit of publication required.

Shared Parking Agreement

This Hold Harmless form is required by Early Riser Enterprises LLC and Special Effects Flooring In order for parishioners of Faith Tabernacle Ministry to use Special Effects parking are for church services and activities.

In consideration for permission for Faith Tabernacle Ministry access the use of Special Effects parking area which includes 19 parking spaces. Faith Tabernacle Ministry agrees to indemnify, hold harmless, defend, release, and forever discharge Early Riser Enterprises LLC and Special Effects Flooring, its officers, agents, and employees and waive any and all responsibility of same for any and all liabilities, claims, demands, actions, loss or expense (including attorney fees), or any damage of any kind imposed by law upon Early Riser and Special Effects for damages because of bodily injury, including death at any time resulting thereof, sustained by any person or persons, or on account of damages to property, including loss of us thereof, while utilizing Early Riser Enterprises LLC property.

Faith Tabernacle Ministry will indemnify Early Riser Enterprises LLC as additional insured to Faith Tabernacle Ministry Liability Insurance coverage.

Member/Manager
Early Riser Enterprises LLC

Pastor
Faith Tabernacle Ministry

CEO Special Effects Flooring

2/14/19
Date

2/14/19
Date

Shared Parking Agreement
Addendum

Special Effects Flooring – The parking agreement is with Special Effects Flooring and their location is adjacent to parcel – 19 SPACES TO BE UTILIZED)

Parcel/TAG numbers – **05602058Q**

Existing Use – **Flooring Dealership**

Hours of operation of existing uses: **Monday – Thursday 8:30-5; Friday 8:30-12; Saturday and Sunday Closed**

Anticipated peak parking and traffic demands (# of spaces) for each use: **5**

Type and size of the existing use: **Offices/Warehouse -11,000 SF**

Windsor Point Pharmacy (Intergrated Managed Care LLC) – ADJACENT TENANT

Parcel/TAG numbers – **05602053R**

Existing Use – **Private Pharmacy (Not open to the public)**

Hours of operation of existing uses: **Monday – Friday 8:00 am – 5:00 pm; Saturday and Sunday Closed**

Anticipated peak parking and traffic demands (# of spaces) for each use: **8**

Type and size of the existing use: **Offices/Warehouse -1,521 SF**

Faith Tabernacle Ministry – Current Location TO BE USED FOR OFFICE SPACE

Parcel/TAG numbers –

Existing Use – **Our Current Church (Facility will be used for office space)**

Hours of operation of existing uses: **Monday - Friday 10:00 am – 5:00 pm; Saturday and Sunday Closed**

Anticipated peak parking and traffic demands (# of spaces) for each use: **5**

Type and size of the existing use: **Offices/Warehouse -3000 SF**

PROPOSED FAITH CITY CHILD DEVELOPMENT CENTER & FTM CHURCH

Parcel/TAG numbers – **05602053S**

Proposed Use- Child Development Center

Proposed Child Development Center

Hours of operation of purpose uses:

Monday – Friday, 6:30 am– 6:00 pm; Saturday and Sunday Closed

Anticipated peak parking and traffic demands (# of spaces) for Child Development use:

10 Spaces

Type and size of the proposed child care use:

Daycare Class Square Footage: 871sq.ft

Daycare Office Area Square Footage (including offices, restrooms, kitchen and storage): 2998sq.ft

Proposed Use - Church

Hours of operation of Purposed uses:

Wednesday 7:00 pm; Sunday 10:30 am

Anticipated peak parking and traffic demands (# of spaces) for church use:

65 Spaces

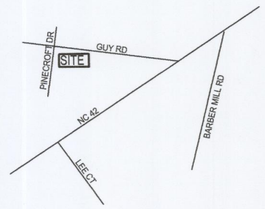
Type and size of the proposed church use:

Church - 3066 SF/ NUMBER OF SEATS: 195

Special Effects Flooring

Windsor Point Pharmacy

Faith Tabernacle Ministry



VICINITY MAP NTS

FAITH CITY CHILD DEVELOPMENT CENTER & FAITH TABERNACLE MINISTRY CHURCH

CONDITIONAL USE PERMIT AND MINOR SITE PLAN
2018-222-CUP

SITE DATA:
NAME OF PROJECT:
FAITH CITY CHILD DEVELOPMENT CENTER &
FAITH TABERNACLE MINISTRY CHURCH
LOT 0-8 NCPIN/TAG 165801-29-0494/05G020535
COMMON AREA NCPIN/TAG 165801-29-0365/05G02034X
AREA: 0.16 ACRES OR 6971.19 SF
PROPERTY IS WITHIN TOWN LIMITS
ZONING: B2
EXISTING USE: VACANT- OFFICE
PROPOSED USE: CHURCH & DAYCARE
NUMBER OF SEATS 195
EXISTING DENSITY:1
PROPOSED DENSITY:1
EXISTING GFA 6917SF
PROPOSED GFA 6917SF
FLOOR AREA RATIO: 100%
BUILDING COVERAGE 100%
PERVIOUS AREA CONDO 100%
IMPERVIOUS AREA CONDO 100%
BUILDING HEIGHT 1 STORY 18'
REQUIRED PARKING
CHURCH HOURS SUNDAY AM 9 TILL 12 AM
1 PER 3 SEATS OR 200SF PRINCIPAL AREA
195 SEATS OR 65 PARKING SPACES REQUIRED
DAYCARE MON-FRI 7AM-6PM
1 PER 5 PERSON (29 CHILDREN PLUS 4 EMPLOYEES)
6 SPACES REQUIRED
PHARMACY 8 AM - 5PM 1500SF
OFFICE USED BECAUSE NOTHING IS SOLD ONSITE
1 SPACE/300SF OR 5 SPACES
1 BIKE RACK REQUIRED

PROPOSED PARKING: (65) SHOWN
46 ONSITE
19 WITH SHARED PARKING AGREEMENT
MORE CAN BE
PLACED IN OVERFLOW

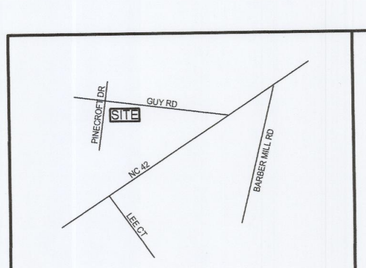
HANDICAP ACCESSIBLE 2 SPACES
LOADING SPACE IS EXISTING
ELECTRIC PROVIDER CP&L
WATER PROVIDER: TOWN OF CLAYTON
SEWER PROVIDER: TOWN OF CLAYTON

INDEX

SHEET 1 COVERSHEET
SHEET 2 EXISTING CONDITIONS SURVEY
SHEET 3 LANDSCAPING COMPLIANCE

RECEIVED
FEB 1 8 2019
TOWN OF CLAYTON
PLANNING DEPARTMENT

ALSEY J. GILBERT PLS
442 1/2 EAST MAIN ST.
CLAYTON NC 27520
PHONE 919/553-6104
FAX:919/553-3663



VICINITY MAP NTS

LEGEND:
EIP.....EXISTING IRON PIPE
IPS.....IRON PIPE SET
EIS.....EXISTING IRON STAKE
ISS.....IRON STAKE SET
R/W.....RIGHT OF WAY
PK.....PARKER KALON NAIL
ECM.....EXISTING CONC MONUMENT
CMS.....CONCRETE MONUMENT SET
FH.....FIRE HYDRANT
SCO.....SEWER CLEAN-OUT
TB.....TELEPHONE BOX
CB.....CABLE BOX
T.....TRANSFORMER
WM.....WATER METER
SSMH...SANITARY SEWER MANHOLE
N/F.....NOW OR FORMERLY
BC.....BACK OF CURB
A.....AREA LIGHT

C.....COMPUTED POINT
GM.....GEODETIC MONUMENT
RCP...REINFORCED CONCRETE PIPE
PARCEL BOUNDARY
RIGHT OF WAY
TIE LINE
FEATURE
STREAM (IE WATER COURSE)
NOT SURVEYED
POWER LINE
PRIVATE ACCESS EASEMENT

AREA BY COORDINATE METHOD
TITLE BY LAWYER
PROPERTY SUBJECT TO EASEMENT OF RECORD
ALL DISTANCES ARE HORIZONTAL EXCEPT GRID
TIE

I ALSEY J. GILBERT CERTIFY THAT THIS MAP WAS DRAWN UNDER MY SUPERVISION FROM AN ACTUAL SURVEY MADE UNDER MY SUPERVISION (DEED DESCRIPTION RECORDED IN BOOK 4808, PAGE 754 OR OTHER REFERENCE SOURCE); THAT THE BOUNDARIES NOT SURVEYED ARE INDICATED AS DRAWN FROM INFORMATION IN BOOK PB 70, PAGE 128 OR OTHER REFERENCE SOURCE PB 66 PG 92 ; THAT THE RATIO OF PRECISION OR POSITIONAL ACCURACY IS 1:35245 AND THIS MAP MEETS THE REQUIREMENTS OF THE STANDARDS OF PRACTICE FOR LAND SURVEYING IN NORTH CAROLINA (21 NCAC 56. 1600) THIS 29TH DAY OF DEC, 2018

PROFESSIONAL LAND SURVEYOR

NORTH CAROLINA PROFESSIONAL SEAL L-3701 LAND SURVEYOR ALSEY J. GILBERT

REVISED SITE DATA 1/31/19

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FAITH CITY CHILD DEVELOPMENT CENTER &
FAITH TABERNACLE MINISTRY CHURCH
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LOADING SPACE IS EXISTING
ELECTRIC PROVIDER CP&L
WATER PROVIDER: TOWN OF CLAYTON
SEWER PROVIDER: TOWN OF CLAYTON

NORTH FROM
NSRS 2011
NAD 83
GEIOD
12(A)(B)

GUY ROAD NCSR 1551 75' PUBLIC RIGHT OF WAY

1/2" EIP 2" BELOW GROUND
EXISTING 5' SIDEWALK
S 86°41'16" E 109.30'
S 85°23'04" E 75.63'
1/2" IPS FLUSH WITH GROUND
1/2" IPS FLUSH WITH GROUND
FIRE HYDRANT
EXISTING SIGN
N 47°44'16" E 35.71'
1/2" IPS FLUSH WITH GROUND
S 81°50'19" E 1086.76' GRID DISTANCE
NCGS "MOFF"
NSRS 2011 COORDINATES
N=689423.98'
E=2153245.40' (AS SHOT)
COMBINED FACTOR (0.99968485)
27.00'
67.09'
ASPHALT
25' PRIVATE ACCESS AND UTILITY EASEMENT
S 85°29'23" E 210.52'
6" WATER LINE
12.5'
12.5'
S 25°52'29" W 102.53'
55.20'
N 02°09'48" E 40.08'
H/C
H/C
S 84°17'19" E 21.02'
EXISTING H/C RAMP CONCRETE
N 85°32'55" W 75.10'
N 85°32'55" W 73.15'
41.24'
FF 345.00
Lot 0-7
0.10 acres
4521.02 sq ft
Lot 0-8
0.16 acres
6971.19 sq ft
S 04°27'05" W 60.20'
S 04°27'05" W 60.20'
S 04°27'05" W 95.30'
CONCRETE
ASPHALT
S 02°09'28" W 264.33'
ASPHALT
N 07°52'26" E 100.97'
S 85°32'55" E 75.10'
CONCRETE PAD
S 04°27'05" W 36.10'
73.15'
S 85°32'55" E
12.5'
12.5'
EARLY RISER ENTERPRISES LLC
DB 3065 PG 151
PB 66 PG 92
TP NO. 05G02058Q
ZONING B-2
BUILDING
6" WATER LINE
PINECROFT DRIVE VARIABLE WIDTH RIGHT OF WAY
S 02°09'48" W 336.76'
MAG NAIL SET
ASPHALT
1.06 ACRES REMAINNING IN COMMON AREA
77.20'
N 02°06'29" E
MANHOLE
S 87°50'12" E 109.65'
20'UTILITY EASEMENT 20' OFF PROPERTY LINE
15.00'
ASPHALT
20' PRIVATE ACCESS EASEMENT
N 87°50'12" W 220.34'
340
MANHOLE
5.00'
1/2" IPS FLUSH WITH GROUND
S 87°50'12" E 109.63'
TRANSFORMER
PAINTED "X" ON TRANSFORMER
N 02°09'05" E 184.00'
FROM NO. 4 REBAR WITH CAP
JANET WILLIAMS
DB 3295 PG 962
PB 66 PG 364
TP NO. 05G020552
ZONING R-10
Δ=90°00'00"
R=26.00'
L=40.84'
LC=36.77'
LCB=S 42°50'12" E
Δ=90°00'00"
R=46.00'
L=72.26'
LC=65.05'
LCB=S 42°50'12" E

OWNER: AMARICJAY-REHOLDINGS LLC
4575 WITMER INDUSTRIAL ESTATE
NIAGARA FALLS N.Y.

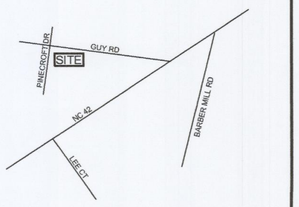
EXISTING CONDITIONS PLAT:
FAITH TABERNACLE MINISTRIES
LOT 0-7 AND COMMON AREA PB 70 PG 128 MOSS CREEK
CLAYTON TWP. JOHNSTON CO. NC
SCALE 1"=30' DATE 01/07/2016

0 30 60 90 120

SITE ADDRESS 561 GUY ROAD
CLAYTON NC

SHEET 2 OF 3

ALSEY J. GILBERT PLS
442 1/2 EAST MAIN ST.
CLAYTON NC 27520
PHONE 919/553-5104
FAX:919/553-3663



VICINITY MAP NTS

LANDSCAPING REQUIREMENTS:
SECTION 155.402
REQUIREMENTS:
BEING NO ADDITIONS OR IMPERVIOUS SURFACES IS BEING ADDED
NO NEW LANDSCAPING IS REQUIRED HOWEVER NEW ISLANDS AND MOVING OF DUMPSTER WILL REQUIRE NEW LANDSCAPING NELLIE STEVENS HOLLIES WILL BE ADDED AROUND DUMPSTER TO SCREEN FROM VIEW

ALL PARKING ROWS SHALL TERMINATE IN A LANDSCAPED ISLAND. ALL TERMINAL ISLANDS SHALL INCLUDE A MINIMUM OF ONE TREE WITH A MINIMUM CALIPER OF 2 1/2 INCHES.

THE PERIMETER OF ALL PARKING AREAS WITH FRONTAGE OR VISIBILITY FROM ANY PORTION OF A PUBLIC RIGHT OF WAY SHALL BE SCREENED TO A HEIGHT OF THREE FEET BY EITHER A BERM, CONTINUOUS LANDSCAPE HEDGE, DECORATIVE FENCE, DECORATIVE MASONARY WALL, OR ANY COMBINATION THEREOF.

ALL ROOF, GROUND AND WALL MOUNTED MECHANICAL EQUIPMENT INCLUDING, BUT NOT LIMITED TO AIR HANDLING EQUIPMENT, VENTS, COMPRESSORS, DUCT WORK, TRANSFORMERS AND ELEVATOR EQUIPMENT SHALL BE SCREEN FROM VIEW.

	QUANTITY	DESCRIPTION
CANOPY TREES		
	3	OAK TREES 20' IN HEIGHT 5" CALIPER
	5	BIRCH
UNDERSTORY TREES		
	13	FLOWER DOGWOOD 8' IN HEIGHT 1 1/2" CALIPER
SHRUBS		
	62	BUFORD HOLLIES 36" HEIGHT
	6	CAROLINA BOXWOOD
	8	CLEY JAPONICA
	3	NELLIE STEVENS HOLLY
	32	NELLIE STEVENS HOLLY HEDGE

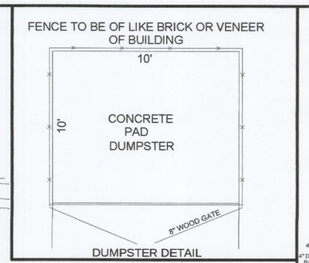
NEW LANDSCAPING AROUND IMPROVEMENTS

1-FLOWERING DOGWOOD
1- BIRCH
10 BUFORD HOLLIES
9 NELLIE STEVENS

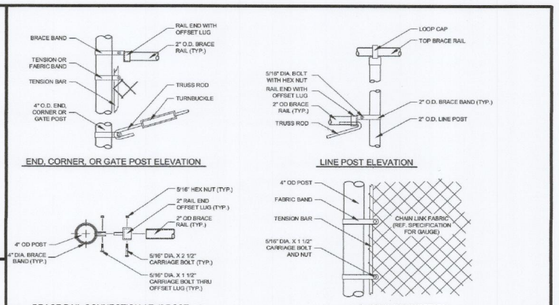
SITE DATA:
NAME OF PROJECT:
FAITH CITY CHILD DEVELOPMENT CENTER &
FAITH TABERNACLE MINISTRY CHURCH
LOT 0-8 NCPIN/TAG 165801-29-0494/05G020535
COMMON AREA NCPIN/TAG 165801-29-0365/05G02034X
AREA: 0.16 ac OR 6971.19 SF
PROPERTY IS WITHIN TOWN LIMITS
ZONING: B2
EXISTING USE: VACANT- OFFICE
PROPOSED USE: CHURCH & DAYCARE
NUMBER OF SEATS 195
EXISTING DENSITY:1
PROPOSED DENSITY:1
EXISTING GFA 6917SF
PROPOSED GFA 6917SF
FLOOR AREA RATIO: 100%
BUILDING COVERAGE:100%
PERVIOUS AREA CONDO 100%
IMPERVIOUS AREA CONDO 100%
BUILDING HEIGHT 1 STORY 18'
REQUIRED PARKING
CHURCH HOURS SUNDAY AM 9 TILL 12 AM
1 PER 3 SEATS OR 200SF PRINCIPAL AREA
195 SEATS OR 65 PARKING SPACES REQUIRED
DAYCARE MON-FRI 7AM-6PM
1 PER 5 PERSON (29 CHILDREN PLUS 4 EMPLOYEES)
6 SPACES REQUIRED
PHARMACY 8 AM - 5PM 1500SF
OFFICE USED BECAUSE NOTHING IS SOLD ONSITE
1 SPACE/300SF OR 5 SPACES
1 BIKE RACK REQUIRED

PROPOSED PARKING: (65) SHOWN
46 ONSITE
19 WITH SHARED PARKING AGREEMENT
MORE CAN BE
PLACED IN OVERFLOW

HANDICAP ACCESSIBLE 2 SPACES
LOADING SPACE IS EXISTING
ELECTRIC PROVIDER CP&L
WATER PROVIDER: TOWN OF CLAYTON
SEWER PROVIDER: TOWN OF CLAYTON



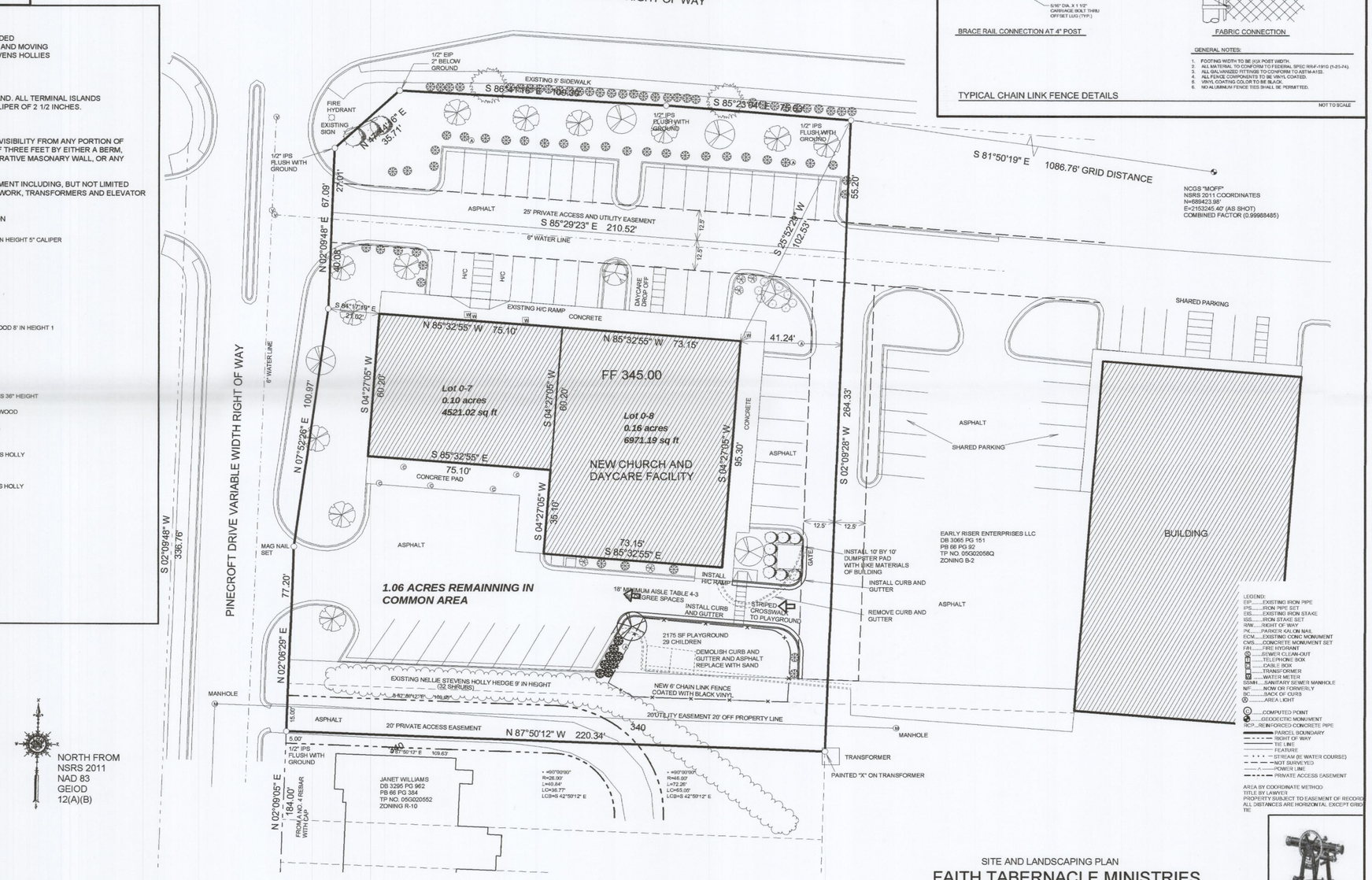
DUMPSTER DETAIL



GENERAL NOTES:
1. FOOTING WIDTH TO BE (4)X POST WIDTH.
2. ALL MATERIAL TO CONFORM TO FEDERAL SPEC RRF-191G (1-25-74).
3. ALL GALVANIZED FITTINGS TO CONFORM TO ASTM-A-153.
4. ALL FENCE COMPONENTS TO BE VINYL COATED.
5. VINYL COATING COLOR TO BE BLACK.
6. NO ALUMINUM FENCE TIES SHALL BE PERMITTED.

TYPICAL CHAIN LINK FENCE DETAILS

NOT TO SCALE



LEGEND:
EIP.....EXISTING IRON PIPE
IPS.....IRON PIPE SET
EIS.....EXISTING IRON STAKE
ISS.....IRON STAKE SET
R/W.....RIGHT OF WAY
PK.....PARKER-KALON NAIL
ECM.....EXISTING CONC MONUMENT
CMS.....CONCRETE MONUMENT SET
F/H.....FIRE HYDRANT
.....SEWER CLEAN-OUT
.....TELEPHONE BOX
.....CABLE BOX
.....TRANSFORMER
.....WATER METER
SSMH.....SANITARY SEWER MANHOLE
N/F.....NOW OR FORMERLY
BC.....BACK OF CURB
.....AREA LIGHT
.....COMPUTED POINT
.....GEODECTIC MONUMENT
RCP.....REINFORCED CONCRETE PIPE
PARCEL BOUNDARY
RIGHT OF WAY
TIE LINE
FEATURE
STREAM (E/ WATER COURSE)
NOT SURVEYED
POWER LINE
PRIVATE ACCESS EASEMENT

AREA BY COORDINATE METHOD
TITLE BY LAWYER
PROPERTY SUBJECT TO EASEMENT OF RECORD
ALL DISTANCES ARE HORIZONTAL EXCEPT GRID
TIE

preliminary plat: not for recordation, sales or conveyances

OWNER: AMARICJAY-REHOLDINGS LLC
4575 WITMER INDUSTRIAL ESTATE
NIAGARA FALLS N.Y.

SITE AND LANDSCAPING PLAN
FAITH TABERNACLE MINISTRIES
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TOWN OF CLAYTON
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111 E. Second St., P.O. Box 879
Clayton, NC 27528
Phone: 919-553-5002
Fax: 919-553-1720

MAJOR SITE PLAN APPLICATION COVER SHEET

Name of Project: SECU Clayton Branch **Date:** January 2, 2019

Applicant Name: Ballentine Associates, P.A.

The following checklist to be completed by applicant:

[✔] Pre-Application Meeting on: December 5, 2018

[✔] Review fee

[✔] Copy of plan sets in PDF on USB

11 copies of the following:

[✔] Completed Application

[✔] Owner's Consent Form

[✔] Adjacent Property Owner's List

[✔] Wastewater Allocation Request Form

[✔] Neighborhood Meeting Notice Letter (1 copy)

[✔] Stormwater Management Statement

[✔] Signed/Sealed Traffic Impact Analysis (if applicable)

11 copies of the plan set which includes the following:

[✔] Cover Sheet

[✔] Existing Conditions Sheet

[✔] Lighting Plan Sheet

[✔] Site Plan Sheet

[✔] Landscaping Plan Sheet

[✔] Preliminary Grading Plan Sheet

[✔] Preliminary Engineering Plan Sheet

[✔] Signed & Sealed Boundary Survey

[✔] Architectural Elevations Sheet

Reviewed by: Dillon W. Smith

TOWN OF CLAYTON
Planning Department
111 E. Second St., P.O. Box 879
Clayton, NC 27528
Phone: 919-553-5002
Fax: 919-553-1720

MAJOR SITE PLAN APPLICATION

Application Fee: $500.00

☒ **New Major Site Plan** ☐ **Major Modification to an approved site plan**
Permit Modified: _____

SITE INFORMATION

Name of Project: SECU Clayton Branch

Acreage of Property: 3.26 **Zoning District:** PD-MU

County Tag #: 05I04003X **NC Pin #:** 167800-19-8807

Address/Location: SE corner of NC Hwy 42 and Glen Laurel Rd

Existing Use: Vacant **Proposed Use:** Commercial

Is project within a Planned Development? ☒ Yes ☐ No **If yes, which:** 15-48-01-PDD

Is project within an Overlay District? ☒ Yes ☐ No **If yes, which:** Thoroughfare, Watershed Protection

Is a site plan being concurrently submitted? ☒ **Yes** ☐ **No**

APPLICANT INFORMATION

Applicant: Ballentine Associates, PA

Mailing Address: 221 Providence Road

Phone Number: 919-929-0481 x111 **Fax:** 919-489-2803

Contact Person: Dillon Smith

Email Address: dillons@bapa.eng.pro

OFFICE USE ONLY

Date Received: _____ Amount Paid: _____ File Number: _____

PROPERTY OWNER INFORMATION

Name: Shoppes at Glen Laurel, LLC

Mailing Address: 1004 Wake Forest Road, Raleigh, NC 27604 - Attn: C. Brantley Tillman, Jr.

Phone Number: 919-872-5702 **Fax:**

Email Address: Brantley@commprop.net

EXPLANATION OF PROJECT

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

State Employees' Credit Union is proposing to build a new branch building in the Town of Clayton. The 3.26 acre site is located at the southeastern corner of NC Hwy 42 and Glen Laurel Road and is better known as lot 4 of the Shoppes at Glen Laurel Subdivision (PB 87, PG 375). The one story branch building is approximately 10,000 square feet, 35'-9 3/8" tall and will have 1 drive-thru ATM lane, 5 drive-thru teller lanes and a 24' wide bypass lane. The site will have 78 parking spaces (including 4 accessible parking spaces), 2 bicycle parking spaces and an accessible route to the public right-of-way. The site will be pad-ready and is served adequately by essential public utilities, streets and fire.

MAJOR SITE PLAN REQUIREMENT CHECKLIST

PLAN FORMAT

These standards are established to provide information pertaining to the graphic and format presentation of plans. The following is required for all types of plans, except where otherwise noted:

- All plans and architectural elevations shall be limited to 24” x 36” in size, and folded to an 8.5” x 11” format.
- Plans are to be drawn at the same engineering scale of 1” = 20’; 30’; 40’; 50’; 60’ (architectural elevations and details are exempt from this requirement) with north oriented in the same direction.
- Plans may be drawn at an engineering scale of 1” = 100’, if approved by the Planning Department or the Technical Review Committee (TRC).

- Architectural plans and elevations shall be drawn at an architectural scale of 1" = 3/32', 3/16', 1/8', 1/4', or 3/8'.
- All drawings, except elevations, isometric drawings, and renderings, shall be in two dimensional plan views.
- All text shall be clear and legible.
- Line weight hierarchy on all plans shall be consistent with common drafting standards.
- Multiple sheets shall be consecutively numbered (e.g. Sheet 1 of 4).
- All numerical references shall be rounded up to a maximum of two decimal points.

PLAN ELEMENTS AND GRAPHIC DATA

The following items include general and project information. This information is required to be present on all plans, except where otherwise noted.

Provided		
Yes	**N/A**	
☑		Consultant Logo Box (name, address, phone number, fax, email, firm and license number)
☑		Project/Application Name
☑		Type of plan
☑		Signature and Professional Seal with date (landscape plans, engineering plans and surveys)
☑		Original/Submittal Date and Revision Date
☑		Sheet Number
☑		Vicinity Map
☑		North Arrow with NC Grid System
☑		Graphic Scale (engineering or architectural graphic and written scale)

SURVEY

Provided		
Yes	**N/A**	
☑		A signed and sealed boundary survey **(not more than a year old unless otherwise approved by the Planning Department)** with the bearings and distances of every property line shown. Distances shall be in feet or meters and decimals thereof. The number of decimal places shall be appropriate to the class of survey required. The survey must include any and all easements of record (referenced by Deed Book and Page) and must be prepared by a surveyor registered in the State of North Carolina.

EXISTING CONDITIONS SHEET

Provided		
Yes	**N/A**	
☑		The existing topographical conditions of the property with a two foot contour interval.
☑		The existing streets and roadway improvements (medians, landscaping, signage, driveways, etc.) within 100 feet of project boundary.
☑		The existing structures located on the subject property.
☑		The existing structures within 100 feet of project boundary.
☑		The existing utilities (including inverts of pipes, rim elevations, wells and septic tanks, etc.) within 100 feet of project site.

SITE PLAN

The items listed below are required to be delineated (in tabular format) on the site plan.

Provided		
Yes	**N/A**	
☑		Site data table
☑		Name of project (AKA names if applicable)
☑		Parcel identification number (and/or Tag number)
☑		Property size (acres and square feet)
☑		Property location (Town limits or ETJ)
☑		Existing zoning district
☑	☐	Proposed zoning district (if applicable)
☑	☐	Overlay (if applicable)
☑		Existing use
☑		Proposed use
☐	☑	Number of seats/students/fueling positions (as applicable).
☐	☑	Number of housing units proposed, per housing unit type.
☑		Existing density (number of units per acre)
☐	☑	Proposed density (number of units per acre)
☑		Existing intensity (gross floor area)
☑	☐	Proposed intensity (gross floor area)
☑		Floor area ratio
☑		Building coverage (as percentage of total site)

Provided		
Yes	**N/A**	
☑		Pervious surface area (square feet and as percentage of total site)
☑	☐	Impervious surface area (square feet and as percentage of total site)
☑	☐	Building height (number of stories and in feet)
☑	☐	Required parking (list requirement i.e. 1 space per 300 SF)
☑	☐	Proposed parking
☑	☐	Required/proposed handicap accessible parking
☐	☑	Required loading space(s)
☑	☐	Provide name of Electric Provider.
☑	☐	Provide name of Water Provider.
☑	☐	Provide name of Sewer Provider.

Other site plan elements:

Provided		
Yes	**N/A**	
☑		Identify adjacent property owners, their parcel ID number, current zoning and present use.
☐	☑	Identify the affected area for amendments to previously approved projects.
☑		Identify the location of lots, buildings and structures with finished floor elevations and applicable setbacks.
☑		Identify existing right of ways.
☑	☐	Identify Watershed Protection Areas.
☑	☐	Identify existing (public and private) easements.
☑	☐	Identify proposed (public and private) easements.
☑	☐	Identify Open Space/Common Areas.
☑		Identify and dimension clear sight triangle at project ingress/egress points.
☑		Identify driveways, curb and gutter, cross section with ROW.
☑	☐	Provide boundaries of Resource Conservation Areas (see UDC Section 155.500).
☑		Provide an off-street parking and loading layout (with details, dimensions and access location). Accessible parking requirements are listed in NCSBC Volume 1C, 1999 edition. Show traffic circulation arrows.
☑	☐	Provide queuing details for drive-up/drive-thru facilities (if applicable).
☑		Provide the locations and dimensions of existing and proposed sidewalks.
☑		Provide the location and details of refuse collection areas.
☑	☐	Provide the location, size and orientation of freestanding signs.

Provided		
Yes	N/A	
☐	☑	Identify the location and nature of all recreational facilities and common areas.
☑	☐	Identify alternative modes of transportation including school stops, pedestrian connections, bicycle paths and associated racks.
☐	☑	Identify proposed phasing (phasing lines) of construction.
☐	☑	Cul-de-sacs must be dimensioned.
☐	☑	Identify cluster mailbox unit (CBU) locations and details.

CONCEPTUAL ENGINEERING PLANS

Note: Conceptual engineering plans are deemed preliminary in nature. Review and approval of public infrastructure construction plans is a separate process performed by Public Works Engineering Division.

Provided		
Yes	N/A	
☑	☐	Identify proposed streets and roadways (public and private) with dimensions and cross sections.
☑	☐	Identify the curve radii for all internal and external vehicular use areas.
☑	☐	Identify access to the project.
☑	☐	Identify existing conditions and proposed grading plans.
☐	☑	Identify Tree Conservation Areas shown on grading plan.
☑	☐	Show proposed flow of traffic.
☑	☐	Identify proposed traffic control signs and striping.
☑	☐	Identify the proposed water distribution system (including size) with location of fire hydrants and point of connection.
☑	☐	Identify the proposed sanitary sewer collection system (including size) and point of connection. If a municipal sewer connection is not available, please provide documentation from Johnston County Department of Environmental health that the location of septic tank and drain field is acceptable.
☑	☐	Provide preliminary wastewater allocation calculation.
☐	☑	Identify proposed grease traps, if applicable.
☑	☐	Identify backflow prevention, if applicable.
☐	☑	If a pool is present, show drainage plan. Pumping to storm drain is not allowed.
☑	☐	Identify the Utility Plan.
☑	☐	Identify soil erosion control measures including impoundment structures.
☐	☑	Indicate method of slope stabilization measures for all slopes steeper than 2.5:1.

☑	☐	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.

Fire Rescue (information to be shown on conceptual engineering plans)

Provided		
Yes	**N/A**	
☑	☐	Identify fire hydrant distribution (distance of hose lay).
☐	☑	Identify the sprinkler connection locations and size, if applicable.
☑	☐	Identify fire lane designations and circulation around buildings (stripe fire lanes and show minimum stabilized access around all structures).
☑	☐	Identify the emergency evacuation route (access in and out of the property).
☑	☐	Identify fire apparatus turning radius, including streets and cul-de-sacs.
☑	☐	Verify the location of fire hydrants is not interfering with required landscaping (must be 24" clearance of landscaping from bottom of steam fitting).
☑	☐	Identify the Lock Box/Knox Box locations.
☑	☐	Identify placard locations for hazardous materials.

LANDSCAPE PLAN

Provided		
Yes	**N/A**	
☑		Provide a landscape plan identifying the location of all proposed landscaping (must be prepared by a landscape architect registered in North Carolina).
☑		Indicate the location, width and type of all required buffers.
☑		Indicate the location, width and type of landscaping within vehicular use areas.
☑		Indicate the location, width and type of landscaping used to screen drive-thru areas, service areas, loading areas, mechanical equipment and above ground utilities.
☑		Provide a plant list summary table which includes: 1. A planting key identifying the various planting elements 2. The quantity of each type of plant material proposed 3. The size, height, caliper and spacing of plant material proposed 4. The Botanical and common names of plant material proposed
☑		Verify/identify clear sight distances at project ingress/egress points.
☑		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 species must be used).

Provided		
Yes	**N/A**	
☑		Provide a landscape maintenance note which states: "All landscaped areas shall be maintained in an attractive and healthy condition. Dead or diseased plantings shall be removed and replaced in a timely fashion".
☑		Identify and list any existing plant material which will be used to satisfy landscape requirements.

LIGHTING PLAN

Provided		
Yes	**N/A**	
☑	☐	Conceptual Lighting Plan
☑	☐	Identify the light source and provide a detail of the fixture.
☑		Identify the proposed height of fixtures.

ARCHITECTURAL ELEVATIONS AND FLOORPLAN

Provided		
Yes	**N/A**	
☑		Provide floor plans, elevations, construction materials, finishes and colors, along with type of construction of all buildings per North Carolina Building Code prepared by a professional architect registered in North Carolina.
☑		Indicate the height and number of stories for each structure.
☑		Indicate the location and screening method for all roof mounted structures or equipment.

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 Major Site Plan. 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.

Dillon Smith	Dillon W. Smith	21 Dec 18
Print Name	***Signature of Applicant***	***Date***

TOWN OF CLAYTON
Planning Department
111 E. Second St., P.O. Box 879
Clayton, NC 27528
Phone: 919-553-5002
Fax: 919-553-1720

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: SECU Clayton Branch **Address or PIN #:** 167800-29-3708

AGENT/APPLICANT INFORMATION:

Dillon Smith
(Name - type, print clearly)

221 Providence Road
(Address)
Chapel Hill, NC 27514
(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***):

Major Site Plan Application
Zoning Compliance Permit
Neighborhood Meeting
Wastewater Allocation Request

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:

The Pines at Glen Laurel, LLC, Manager, Eric Brownlee
(Name - type, print clearly)

Eric V Brownlee
(Owner's Signature)

341 Kilmayne Drive
(Address)

Cary, NC 27511
(City, State, Zip)

STATE OF North Carolina
COUNTY OF Wayne

Sworn and subscribed before me Hannah L. Gicklens, a Notary Public for the above State and County, this the 27 day of December, 2018.

Hannah L Giddens
Notary Public

SEAL

Notary Public, North Carolina
County of Wayne
Hannah L. Giddens
My Commission Expires 8/28/23

My Commission Expires: 8/28/23

TOWN OF CLAYTON
Planning Department
111 E. Second St., P.O. Box 879
Clayton, NC 27528
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(Name - type, print clearly)

Eric V Brn
(Owner's Signature)

341 Kilmayne Drive
(Address)

Cary, NC 27511
(City, State, Zip)

STATE OF North Carolina
COUNTY OF Wayne

Sworn and subscribed before me Hannah L. Gicklens, a Notary Public for the above State and County, this the 27 day of December, 2018.

Hannah L Giddens
Notary Public

SEAL

Notary Public, North Carolina
County of Wayne
Hannah L. Giddens
My Commission Expires 8/28/23

My Commission Expires: 8/28/23

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
February 25, 2018

STAFF REPORT

Application Number: 2018-249-SP
Project Name: State Employees Credit Union Major Site Plan

NC PIN / Tag #: 167800-19-8807 / 05I04003X
Applicant: Ballentine Associates, PA
Owner: Shoppes at Glen Laurel, LLC
Location: Located at the corner of Glen Laurel Road and Hwy 42 East

Public Noticing:

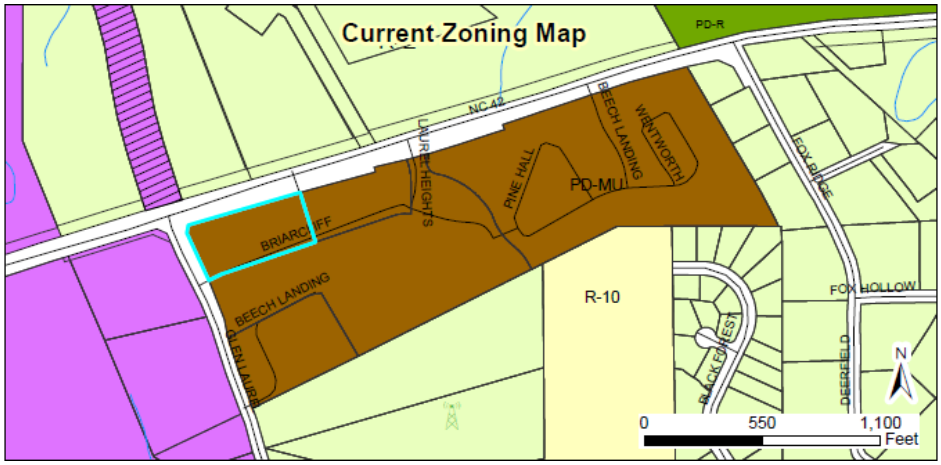
- Neighborhood meeting held on January 17, 2019
- Sign posted on February 8, 2019

REQUEST: The applicant is requesting major site plan approval to develop a 10,000 square foot bank on the subject property.

SITE DATA:
Acreage: 3.26 acres
Existing Use: Vacant

ADJACENT ZONING AND LAND USES:

Direction	Zoning	Existing Use
North	Residential-Estate (R-E)	Vacant
South	Planned Development Mixed Use (PD-MU)	Vacant/Self-Storage Facility
East	Planned Development Mixed Use (PD-MU)	Vacant/Apartments
West	Industrial-Heavy (I-2)	Industrial (Caterpillar)



DEVELOPMENT DATA:

Proposed Uses:	Financial Institution
Buildings:	1 building
Number of Stories:	1 story
Impervious Surface:	63% (80% maximum allowed per stormwater management plan for the associated master plan)
Required Parking:	1 space per 250 SF = 44 spaces
Proposed Parking:	73 spaces, including 4 handicap spaces
Access/Streets:	The site will be accessed via two internal streets within the 42 Mixed Use site. One access will be to the south off Briarcliff Drive, and the second access will be to the east off a future internal street (street A on the site plan).

STAFF ANALYSIS:

Overview

The applicant is requesting major site plan approval to develop a 10,000 square foot financial institution (bank) on the subject property. The property is zoned Planned Development-Mixed Use, and is a part of the NC HWY 42

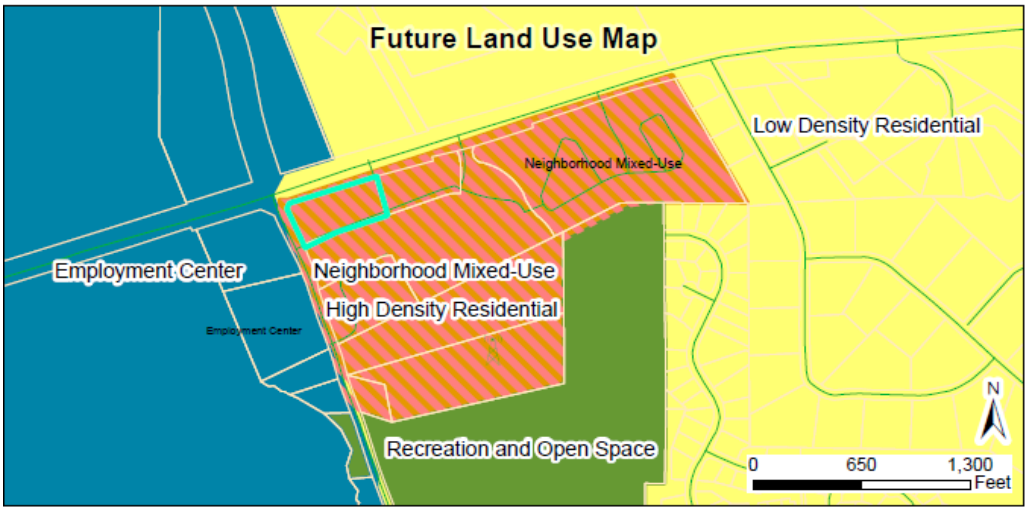
Mixed Use Master Plan. The proposed use is consistent with the parcel's designation within the master plan (commercial). The proposed development is also consistent with all dimensional standards and conditions of approval outlined in the associated master plan.

The site will be located at the corner of HWY 42 East and Glen Laurel Road. It will be accessed via two internal streets (Briarcliff Drive and Street A on the site plan). The drive thru will be located to the east of the building and will consist of 6 lanes, all of which provide the required amount of queuing to meet the requirements of the UDC. An additional drive-up ATM is also proposed to the west within the parking lot, which will include three queuing spaces.

Consistency with Adopted Plans:

- **Comprehensive Plan 2040**
  The property is designated as "Neighborhood Mixed Use/High Density Residential". The proposed development is consistent with this designation, which includes non-residential uses to serve the neighborhood.

- **Unified Development Code**
  The proposed development meets all requirements of the Unified Development Code (UDC).

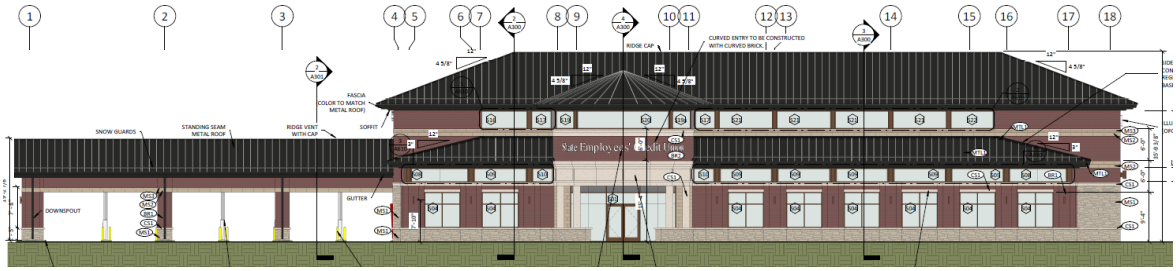


Landscaping and Screening
The subject property is located within the Thoroughfare Overlay District, which requires additional landscaping along US HWY 70 BUS. The development is also subject to requirements of a Class "C" landscape buffer, as it is located within a Planned Development. The applicant has provided sufficient plantings to meet these requirements. The development also meets the UDC's 20% minimum lot interior landscape requirement.

Multi-Modal Access
A 10' greenway trail is provided along Glen Laurel Road and HWY 42 East. The applicant is also providing sidewalk along the internal streets (Briarcliff Drive and Street A) which will allow connectivity to surrounding future development within the Planned Development. Sidewalks are also provided internally around the building, and connecting to the drive-up ATM to the west.

Garbage / Recycling
One dumpster is provided on the site to serve the development. This dumpster enclosure will match the materials of the building and include landscaping around the enclosure to meet all screening requirements of the UDC.

Architecture/Design
The building will front on HWY 42 East. The materials of the building will primarily be brick, with masonry stone features and a standing seam metal roof. The façade will include decorative features, such as a curved entry with brick, to enhance the overall appearance of the building.



CONSIDERATIONS:

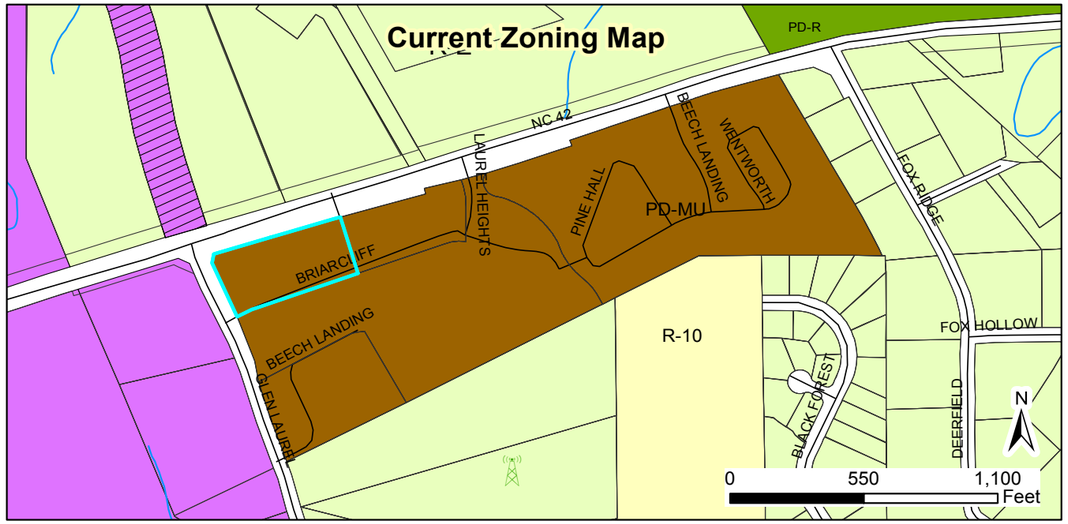
- The Planning Board shall make a final decision regarding Major Site Plans.

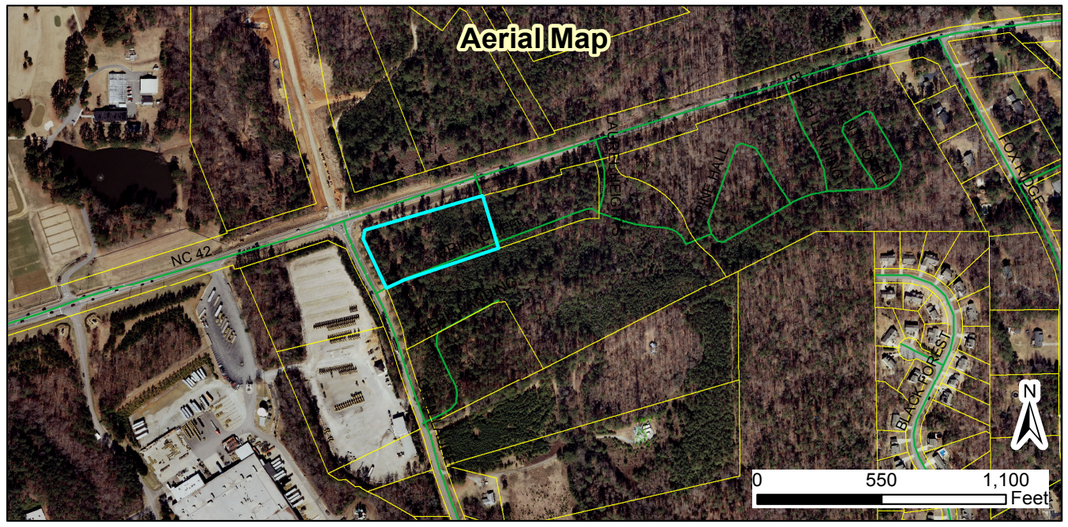
APPROVAL CRITERIA:

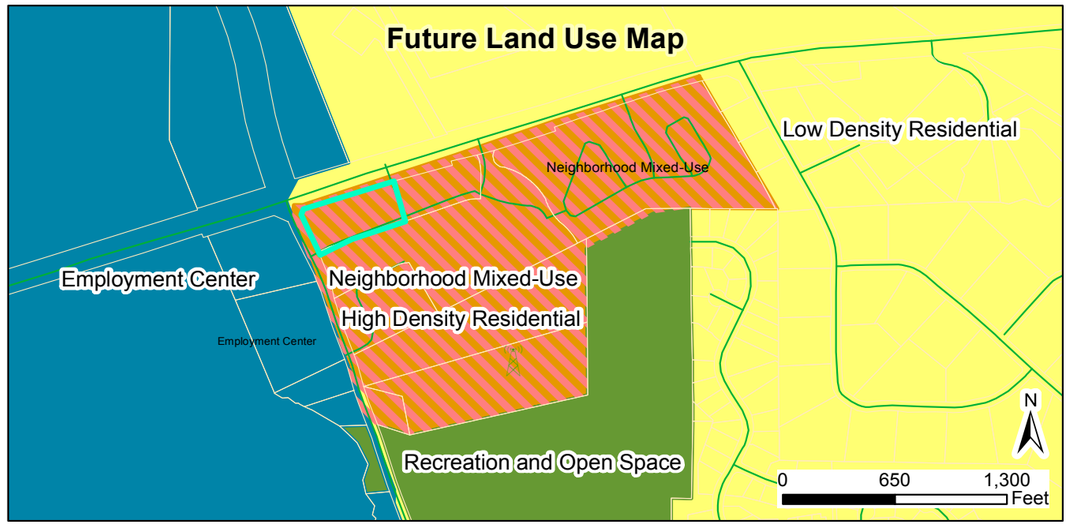
The applicant has addressed the Major Site Plan Approval Criteria outlined in the Unified Development Code. The applicant's responses are incorporated into the record as an attachment to the Staff Report.

ATTACHMENTS:

1) Staff report maps
2) Application
3) Neighborhood Meeting Materials
4) Site Plan
5) Survey
6) Associated master plan







2018-249-SP State Employees Credit Union Major Site Plan
Request: develop a 10,000 square foot financial institution
Applicant: Ballentine Associates, PA
Property Owners: Shoppes at Glen Laurel, LLC
Parcel ID: 167800-19-8807
Tag #: 05I04003X

Staff Report Map

02/15/2019

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

Document Path: O:\PLANNING\SITE PLANS\Major Site Plans\2018\2018-249-SP State Employees Credit Union\Staff Report Maps\2018-249-SP.mxd

Site

State Employees' Credit Union

December 27, 2018

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 development 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 proposal. A representative of the applicant will be present to explain their application, answer questions, and solicit comments.

Meeting Date: January 17, 2019 **Meeting Time:** 6:00 pm

Meeting Location: **Clayton Town Hall**

Type of Application: Major Site Plan

Project/proposal property address: SE corner of NC Hwy 42 and Glen Laurel Road

Description of project/proposal: 10,000 S.F. State Employees' Credit Union bank with 1 drive-thru ATM lane and 5 drive-thru teller lanes.

Upcoming public meetings for this Application: Planning Board – February 25, 2019

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

1. A copy of the project application.
2. A schedule of all upcoming public meetings for the application.
3. A map at a scale that is appropriate to the project and shows neighboring properties and roads.
4. 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 800-438-1104. You may also contact the Planning Department at 919-553-5002.

Sincerely,

State Employees' Credit Union

Cc: Town of Clayton Planning Department

512 Regency Dr . • Clayton, NC 27520 • 919.553.2400 • Fax 919.553.2798 • clayton@ncsecu.org • www.ncsecu.org

"Equal Employment/Affirmative Action Employer, M/F/D/V"

NEIGHBORHOOD MEETING SUMMARY FORM

FILL OUT THE FOLLOWING:

Application: Major Site Plan Date of Mailing: January 4, 2019

Date of Meeting: January 17, 2019 Time of Meeting: 6:00 PM

Location of Meeting: Clayton Town Hall

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, and that all required information was presented at the Meeting:

Printed Name: Dillon Smith Signature: Dillon W. Smith

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.*

No neighbors showed up for this meeting.

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

July 2018

ADJACENT PROPERTY OWNERS LIST

Project Name: SECU Clayton Branch

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
167800-29-4722	Shoppes at Glen Laurel, LLC	1004 WAKE FOREST RD, Raleigh, NC 27604-1358 Attn: C. Brantley Tillman, Jr.
167900-20-3003	Shoppes at Glen Laurel, LLC	1004 WAKE FOREST RD, Raleigh, NC 27604-1358 Attn: C. Brantley Tillman, Jr.
167800-19-2673	NC Keen Land, LLC	871 Cranes Gap RD, Carlisle, PA 17013-9633
167900-11-2193	James & Robert Hunt	1441 NC 42 East, Clayton, NC 27527
167900-11-5340	Kevin & Elizabeth Amigh	1423 NC 42 East, Clayton, NC 27527

July 2018

NEIGHBORHOOD MEETING ATTENDANCE ROSTER

Project: SECU Clayton Branch

Application: Major Site Plan

Location/Date: Clayton Town Hall / January 17, 2019

	NAME	ADDRESS
1	DILLON SMITH	221 PROVIDENCE RD, CHAPEL HILL, NC
2	Morgan O'Meara	512 Regency Drive, Clayton, NC
3	Brady Tilley	10041 Wake Forest Rd Raleigh NC
4		
5		
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20		

July 2018

7018 0680 0000 6242 4361

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at *www.usps.com®*.
CARLISLE, PA 17013

OFFICIAL USE

Certified Mail Fee $3.45	0580 20
Extra Services & Fees (check box, add fee as appropriate) $0.00	
☐ Return Receipt (hardcopy) $0.00	
☐ Return Receipt (electronic) $0.00	
☐ Certified Mail Restricted Delivery $0.00	
☐ Adult Signature Required $0.00	
☐ Adult Signature Restricted Delivery $	
Postage $0.50	
Total Postage and Fees $3.95	01/04/2019

Postmark Here

Sent To: NC Keen Land, LLC
Street and Apt. No., or PO Box No.: 871 Cranes Gap Rd.
City, State, ZIP+4®: Carlisle, PA 17013-9633

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7018 0680 0000 6242 4354

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
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For delivery information, visit our website at *www.usps.com®*.
CLAYTON, NC 27527

OFFICIAL USE

Certified Mail Fee $3.45	0580 20
Extra Services & Fees (check box, add fee as appropriate) $0.00	
☐ Return Receipt (hardcopy) $0.00	
☐ Return Receipt (electronic) $0.00	
☐ Certified Mail Restricted Delivery $0.00	
☐ Adult Signature Required $0.00	
☐ Adult Signature Restricted Delivery $	
Postage $0.50	
Total Postage and Fees $3.95	01/04/2019

Postmark Here

Sent To: Kevin & Elizabeth Amigh
Street and Apt. No., or PO Box No.: 1423 NC 42 East
City, State, ZIP+4®: Clayton, NC 27527

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7018 0680 0000 6242 4385

U.S. Postal Service™
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For delivery information, visit our website at *www.usps.com®*.
CLAYTON, NC 27527

OFFICIAL USE

Certified Mail Fee $3.45	0580 20
Extra Services & Fees (check box, add fee as appropriate) $0.00	
☐ Return Receipt (hardcopy) $0.00	
☐ Return Receipt (electronic) $0.00	
☐ Certified Mail Restricted Delivery $0.00	
☐ Adult Signature Required $0.00	
☐ Adult Signature Restricted Delivery $	
Postage $0.50	
Total Postage and Fees $3.95	01/04/2019

Postmark Here

Sent To: James & Robert Hunt
Street and Apt. No., or PO Box No.: 1441 NC 42 East
City, State, ZIP+4®: Clayton, NC 27527

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions

7018 0680 0000 6242 4378

U.S. Postal Service™
CERTIFIED MAIL® RECEIPT
Domestic Mail Only

For delivery information, visit our website at *www.usps.com®*.
RALEIGH, NC 27604

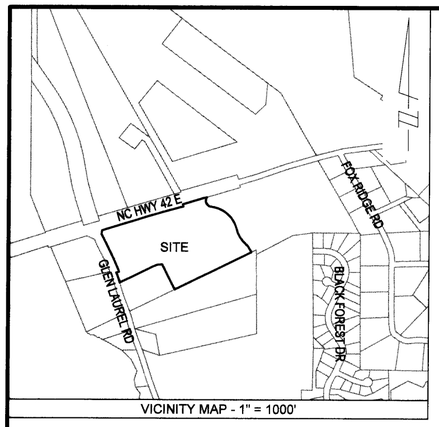
OFFICIAL USE

Certified Mail Fee $3.45	0580 20
Extra Services & Fees (check box, add fee as appropriate) $0.00	
☐ Return Receipt (hardcopy) $0.00	
☐ Return Receipt (electronic) $0.00	
☐ Certified Mail Restricted Delivery $0.00	
☐ Adult Signature Required $0.00	
☐ Adult Signature Restricted Delivery $	
Postage $0.50	
Total Postage and Fees $3.95	01/04/2019

Postmark Here

Sent To: Shoppes at Glen Laurel, LLC attn: Bradley Tillman
Street and Apt. No., or PO Box No.: 1004 Wake Forest Rd.
City, State, ZIP+4®: Raleigh, NC 27604-1358

PS Form 3800, April 2015 PSN 7530-02-000-9047 See Reverse for Instructions



VICINITY MAP - 1" = 1000'

NOTE:
1. AREAS BY COORDINATE GEOMETRY UNLESS SHOWN OTHERWISE.
2. ALL DISTANCES ARE HORIZONTAL GROUND DISTANCES.
3. ALL STREETS ARE PUBLIC RIGHTS-OF-WAY UNLESS SHOWN OTHERWISE.
4. OTHER INSTRUMENTS OF RECORD MAY AFFECT THIS PROPERTY.
5. NO TITLE SEARCH PERFORMED FOR THIS SURVEY.
6. NO NCGS MONUMENT WITHIN 2,000 FEET OF PROPERTY.
7. NO FEMA FLOOD HAZARD AREAS PER FIRM NUMBERS 3720167900K & 3720167800K DATED JUNE 20, 2018.
8. PROPERTY IS ZONED PD-MU (PLANNED DEVELOPMENT MIXED USE) FOR LOT 2 THOROUGHFARE OVERLAY 11 & WATERSHED PROTECTION
9. THE COORDINATES SHOWN ON THIS PLAT WERE DERIVED BY VRS (VIRTUAL REFERENCE STATION) GPS USING DUAL FREQUENCY RECEIVER. THIS METHOD RESULTS IN (NAD 1983/2011) - (CORS 96) POSITIONS AND NAVD 88 (MSL) ELEVATIONS USING THE CONTINUOUSLY OPERATING STATIONS MAINTAINED BY NORTH CAROLINA GEODETIC SURVEY.
10. SITE IS UNDER CONSTRUCTION.

NC GRID (NAD '83/2011)

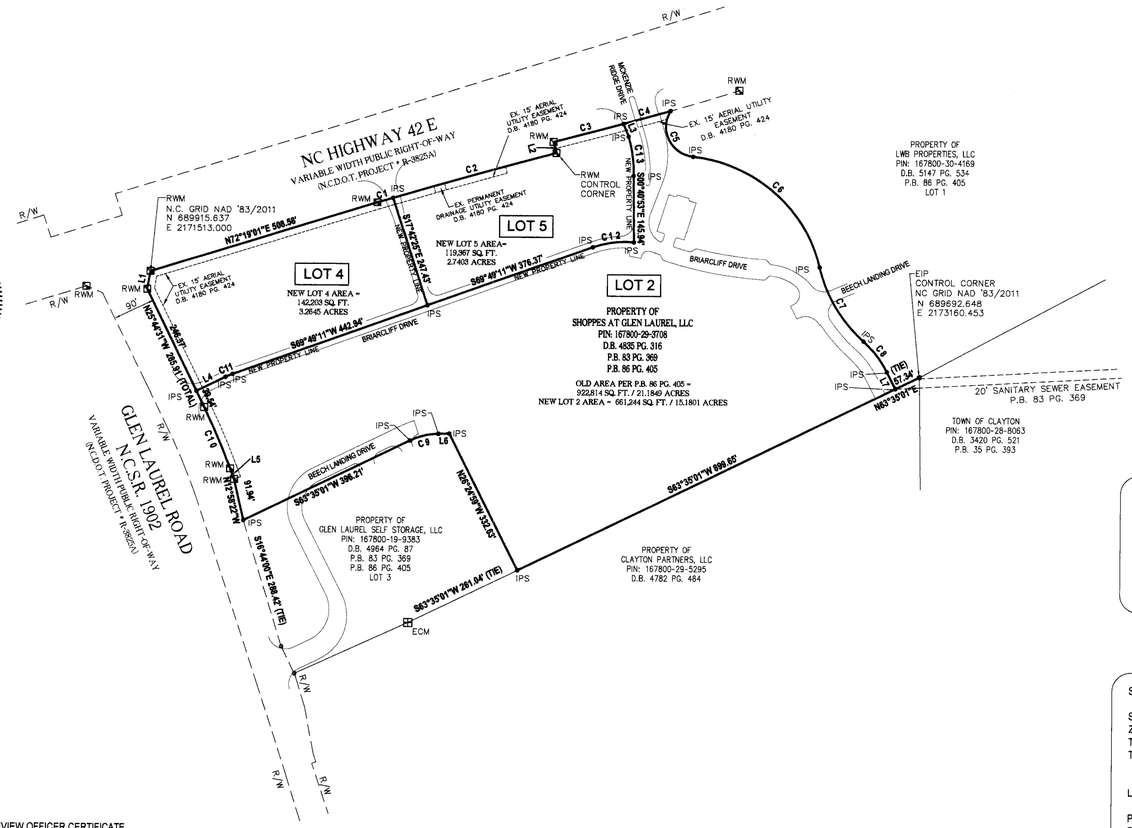
LEGEND
EIP = EXISTING IRON PIPE
RWM = RIGHT-OF-WAY MONUMENT
ECM = EXISTING CONCRETE MONUMENT
CP = CALCULATED POINT
IPS = IRON PIPE SET
R/W = RIGHT-OF-WAY
1430 DENOTES ADDRESS

CURVE TABLE

CURVE	RADIUS	LENGTH	CHORD DIRECTION	CHORD
C1	10976.87	35.07	N72°55'43"E	35.07
C2	10976.87	363.16	N73°58'05"E	363.14
C3	7949.47	154.88	N74°56'09"E	154.88
C4	7949.47	104.35	N74°00'06"E	104.35
C5	65.88	132.18	S26°14'34"E	111.10
C6	315.09	388.57	S48°23'28"E	364.42
C7	314.39	190.88	S30°27'23"E	187.96
C8	224.00	83.80	S37°08'00"E	83.31
C9	144.50	63.32	S76°00'19"W	62.82
C10	1511.32	144.93	N22°58'29"W	144.88
C11	150.00	16.33	S66°42'06"W	16.32
C12	200.00	89.40	S82°37'33"W	88.66
C13	270.00	86.82	N07°35'01"W	86.45

LINE TABLE

LINE	DIRECTION	DISTANCE
L1	N09°41'52"E	39.78
L2	N14°29'24"W	25.01
L3	N21°41'14"W	29.74
L4	N63°35'01"E	69.56
L5	N20°24'42"W	24.71
L6	S88°33'34"W	23.33
L7	S26°24'59"E	41.00



ZONING SETBACKS FOR COMMERCIAL RETAIL USE AS APPROVED BY MASTER PLAN 2015-48-01 PDD

STREET YARD:	30'
SIDE YARD:	20'
REAR:	20'
MAXIMUM BUILDING HEIGHT:	50'

SITE DATA TABLE

SITE PIN: 167800-29-3708
ZONING: PD-MU
TOTAL NUMBER OF EXISTING LOTS = 1
TOTAL NUMBER OF PROPOSED LOTS = 3

LOT 2 EXISTING AREA = 922,814 SQ. FT. / 21.1849 AC.

PROPOSED LOT 2 NEW AREA = 661,244 SQ. FT. / 15.1801 ACRES
PROPOSED LOT 4 AREA = 142,203 SQ. FT. / 3.2645 ACRES
PROPOSED LOT 5 AREA = 119,367 SQ. FT. / 2.7403 ACRES

OWNER:
LOT 2
THE SHOPPES AT GLEN LAUREL, LLC
c/o ERIC V. BROWNLEE
100 TOWNE CENTRE PLACE
SMITHFIELD, N.C. 27577

I, DAN GREGORY, CERTIFY THAT THIS PLAT WAS DRAWN UNDER MY SUPERVISION FROM AN ACTUAL SURVEY MADE UNDER MY SUPERVISION. DEED DESCRIPTION RECORDED IN BOOK_SEE_, PAGE_REFERENCES_; THAT THE BOUNDARIES NOT SURVEYED ARE CLEARLY INDICATED AS DRAWN FROM INFORMATION FOUND IN BOOK_SEE_, PAGE_REFERENCES_; THAT THE RATIO OF PRECISION AS CALCULATED IS 1:10,000+; THAT THIS PLAT WAS PREPARED IN ACCORDANCE WITH G.S. 47-30 AS AMENDED.

A. THAT THIS PLAT IS OF A SURVEY THAT CREATES A SUBDIVISION OF LAND WITHIN THE AREA OF A COUNTY OR MUNICIPALITY THAT HAS AN ORDINANCE THAT REGULATES PARCELS OF LAND;

WITNESS MY ORIGINAL SIGNATURE, LICENSE NUMBER AND SEAL THIS 6 DAY OF August, A.D., 2018.

DAN GREGORY, PLS L-5240

NORTH CAROLINA PROFESSIONAL SEAL L-5240 LAND SURVEYOR DAN GREGORY

CERTIFICATE OF FLOODWAY INFORMATION

PROPERTY SHOWN HEREON ___ IS _X_ IS NOT LOCATED IN A FEMA DESIGNATED FLOOD ZONE.

FLOOD HAZARD PANEL NO. 3720167900K & 3720167800K

EFFECTIVE DATE: JUNE 20, 2018

8/6/18
DATE DAN GREGORY P.L.S. NO. 5240

PLANNING DIRECTOR'S CERTIFICATE

I HEREBY CERTIFY THAT THIS RECORDED PLAT HAS BEEN FOUND TO COMPLY WITH THE SUBDIVISION ORDINANCE OF THE TOWN OF CLAYTON, NORTH CAROLINA, AND THAT THIS PLAT HAS BEEN APPROVED FOR RECORDING IN THE REGISTER OF DEEDS OF JOHNSTON COUNTY.

9-4-18 Lenard Williams
DATE PLANNING DIRECTOR – TOWN OF CLAYTON, NC

STATE OF NORTH CAROLINA, JOHNSTON COUNTY

THIS INSTRUMENT WAS PRESENTED FOR REGISTRATION AND RECORDING THIS 5th DAY OF September 20 18 AT 12:53:16 PM

Craig Olive BY Deputy
REGISTER OF DEEDS ~~ASST.~~ REG. OF DEEDS

REVIEW OFFICER CERTIFICATE

STATE OF NORTH CAROLINA
COUNTY OF JOHNSTON

I, Stephanie Ridder, REVIEW OFFICER OF JOHNSTON COUNTY, CERTIFY THAT THE MAP OR PLAT TO WHICH THIS CERTIFICATION IS AFFIXED MEETS ALL STATUTORY REQUIREMENTS FOR RECORDING.

9-5-18 Stephanie Ridder
DATE REVIEW OFFICER

CERTIFICATE OF OWNERSHIP AND DEDICATION

I HEREBY CERTIFY THAT I AM THE OWNER OF THE PROPERTY SHOWN AND DESCRIBED HEREON, WHICH IS LOCATED IN THE SUBDIVISION JURISDICTION OF THE TOWN OF CLAYTON AND THAT I HEREBY ADOPT THIS SUBDIVISION PLAN WITH MY FREE CONSENT, ESTABLISH MINIMUM SETBACK LINES, AND DEDICATE ALL STREETS, ALLEYS, PARKS AND OTHER SITES AND EASEMENTS TO PUBLIC OR PRIVATE USE AS NOTED.

8/13/2018 Eric V Brownlee
DATE OWNER

RECORDED IN PLAT BOOK 87 PAGE 375

SCALE: 1" = 200'

0 100 200 400 600 800

REV.	DATE	DESCRIPTION	BY
1	07-24-18	REVISED PER TOWN'S REVIEW COMMENTS	PM

BNK
BASS, NIXON & KENNEDY, INC.
CONSULTING ENGINEERS
• 6310 CHAPEL HILL ROAD, SUITE 250
RALEIGH, NORTH CAROLINA 27607
• TELEPHONE: (919)851-4422 OR (800)354-1879
FAX: (919)851-8968
• CERTIFICATION NUMBERS: NCBELS (C-0110); NCBLA (C-0267)

SURVEYED BY	GS
DRAWN BY	PM
CHECKED BY	DG
DATE	06-29-18

MINOR SUBDIVISION PLAT
FOR
THE SHOPPES AT GLEN LAUREL, LLC

CLAYTON TWSP JOHNSTON COUNTY NORTH CAROLINA

SHEET 1 OF 1

R:\2014\14262 - 1430 NC Hwy 42\SURVEY\14262LDD\dwg\14262 Minor Subd Plat.dwg, 8/6/2018 4:24:21 PM, pat martin

Received By:
Town of Clayton
2/19/19

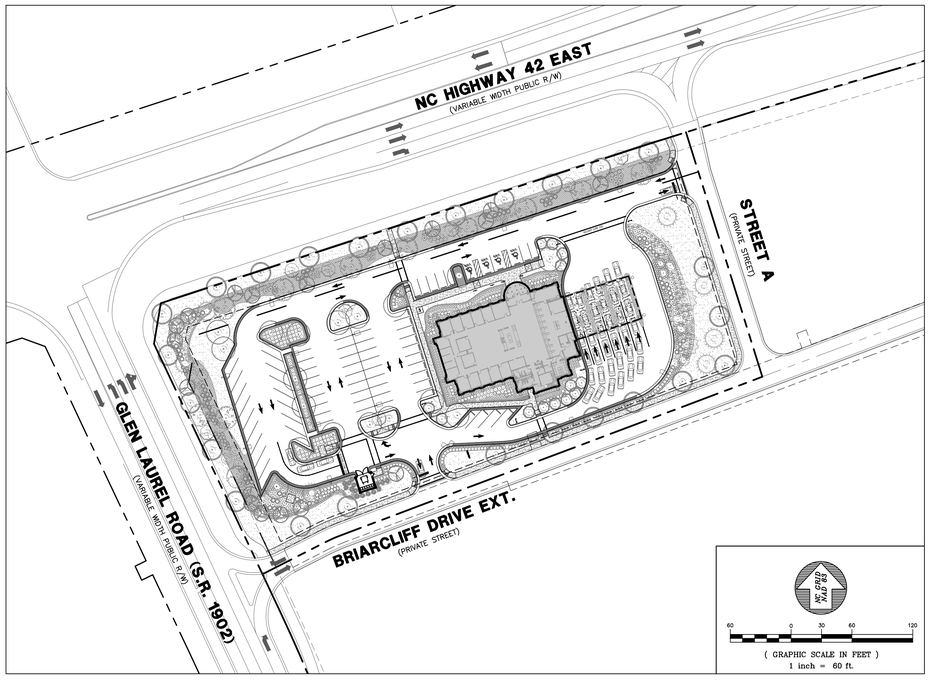
MAJOR SITE PLAN

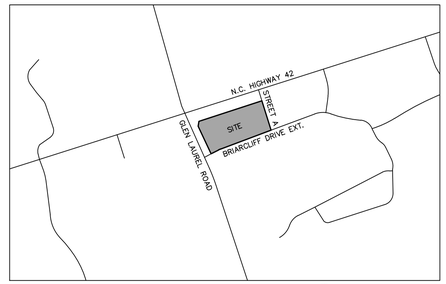
FOR

STATE EMPLOYEES' CREDIT UNION
CLAYTON BRANCH

CLAYTON, NORTH CAROLINA

SITE PLAN PROJECT NUMBER: 2018-249-SP





VICINITY MAP
SCALE: 1"=500'

NC 210
NC 42
NORTH

DRAWING LIST

SHEET	DRAWING TITLE	LATEST ISSUE DATE
G0001	COVER	18 FEB 19
C0101	EXISTING CONDITIONS PLAN	18 FEB 19
C1001	SITE PLAN	18 FEB 19
C1101	UTILITY PLAN	18 FEB 19
C1201	GRADING & DRAINAGE PLAN	18 FEB 19
C1210	STORM DRAINAGE PROFILES	18 FEB 19
C1301	EROSION CONTROL PLAN	18 FEB 19
C5001	SITE DETAILS	18 FEB 19
C5002	SITE DETAILS	18 FEB 19
C5003	SITE DETAILS	18 FEB 19
C5101	UTILITY DETAILS	18 FEB 19
C5102	UTILITY DETAILS	18 FEB 19
C5201	STORM DRAINAGE DETAILS	18 FEB 19
C5301	EROSION CONTROL DETAILS	18 FEB 19
L100	TREE PLANTING PLAN	18 FEB 19
L101	UNDERSTORY PLANTING PLAN	18 FEB 19
L200	PLANTING SCHEDULE AND NOTES	18 FEB 19
L201	LANDSCAPE DETAILS	18 FEB 19
SL100	SITE LIGHTING PLAN	18 FEB 19
SL200	SITE LIGHTING PLAN - PHOTOMETRICS	18 FEB 19
SL300	SITE LIGHTING DETAILS AND SCHEDULE	18 FEB 19
A110	FLOOR PLAN	18 FEB 19
A120	MEZZANINE PLAN	18 FEB 19
A200	EXTERIOR ELEVATIONS & DETAILS	18 FEB 19
A201	EXTERIOR ELEVATIONS & DETAILS	18 FEB 19

PROJECT OWNER / DEVELOPER:
State Employees' Credit Union

ARCHITECTURE / MEP:
SUMMIT DESIGN AND ENGINEERING SERVICES

SITE PLANNING / CIVIL ENGINEERING:
BALLENTINE ASSOCIATES, P.A.
221 PROVIDENCE ROAD, CHAPEL HILL, N.C. 27514
(919) 929 – 0481 (919) 489 – 4789

LANDSCAPE ARCHITECTURE / SITE LIGHTING:
LITTLE
DIVERSIFIED ARCHITECTURAL CONSULTING
410 BLACKWELL STREET, SUITE 10
DURHAM, NC 27701
(919) 474-2500

REVIEW DRAWING
NOT FOR CONSTRUCTION

BALLENTINE ASSOCIATES, P.A.
221 PROVIDENCE ROAD, CHAPEL HILL, N.C. 27514
(919) 929 – 0481 (919) 489 – 4789

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Ballentine Associates, P.A. CORPORATE SEAL C328 NORTH CAROLINA (Since 1921)

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 042542 18 FEB 19 VANESSA DARLON W. SMITH

NUM	REVISIONS	DATE
1	PER TRC REVIEW COMMENTS	31 JAN 19
2	PER TRC REVIEW COMMENTS	18 FEB 19

OWNER INFORMATION
STATE EMPLOYEES' CREDIT UNION
P.O. BOX 26807
RALEIGH, NC 27611

OWNERS REPRESENTATIVE:
MR. JAMIE APPLEQUIST
PH. (800) 438-1104
FAX
EMAIL Jamie.Applequist@ncsecu.org

ISSUED	DATE
MAJOR SITE PLAN SUBMITTAL #1	27 DEC 18
MAJOR SITE PLAN SUBMITTAL #2	31 JAN 19
MAJOR SITE PLAN SUBMITTAL #3	18 FEB 19

STATE EMPLOYEES' CREDIT UNION
CLAYTON BRANCH
CLAYTON, NORTH CAROLINA

MAJOR SITE PLAN

JOB NUMBER: 117001.05
DATE: 27 DEC 18
SCALE: AS NOTED
DRAWN BY: D.W.S.
REVIEWED BY: G.J.R.

SHEET
G0001

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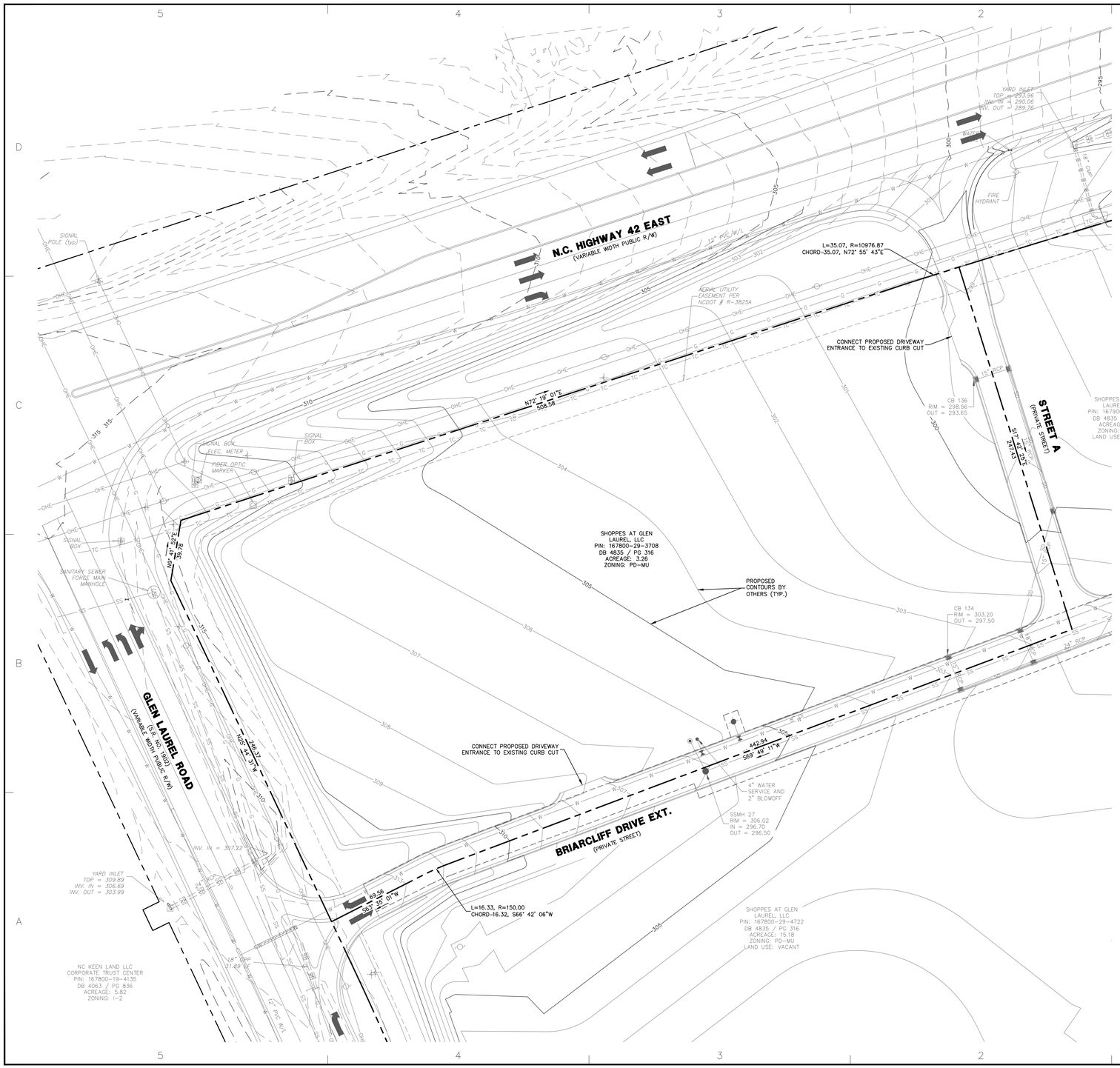

NOTES

1. EXISTING CONDITIONS SHOWN ARE BASED UPON CONSTRUCTION DOCUMENTS FOR THE GLEN LAUREL MIXED USED DEVELOPMENT, PROVIDED BY BNK CONSULTING ENGINEERS AND RAMEY KEMP & ASSOCIATES.
2. CONTRACTOR SHALL HAVE NORTH CAROLINA ONE CALL (1-800-632-4949). LOCATE ALL EXISTING UTILITIES PRIOR TO BEGINNING CONSTRUCTION. CONTRACTOR SHALL VERIFY THE DEPTH AND LOCATION OF ALL EXISTING UTILITIES AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES OR CONFLICTS PRIOR TO BEGINNING CONSTRUCTION.
3. THIS PLAN IS DIAGRAMMATIC AND REPRESENTS THE APPROXIMATE LOCATION OF UTILITIES UNLESS SPECIFICALLY DIMENSIONED. THE CONTRACTOR SHALL COORDINATE THE ACTUAL LOCATION OF UTILITIES TO AVOID CONFLICTS AND MEET MINIMUM SIZE, SLOPE, AND CODE REQUIREMENTS.

DRAWING LEGEND

SYMBOL/ABBREVIATION EXISTING	DESCRIPTION
	CATCH BASIN
	FIRE HYDRANT
	WATER VALVE
	SANITARY SEWER MANHOLE
	SANITARY SEWER CLEANOUT
TC	TELEPHONE CABLING LINE
OHE	OVERHEAD ELECTRIC LINE
W	WATER LINE
G	GAS LINE
SS	SANITARY SEWER LINE
SD	STORM DRAIN PIPE
	PROPERTY LINE
	RIGHT-OF-WAY LINE
	EASEMENT LINE
305	MAJOR CONTOUR
306	MINOR CONTOUR
305	PROPOSED MAJOR CONTOUR (BY OTHERS)
306	PROPOSED MINOR CONTOUR (BY OTHERS)

NC GRID NAD 83

EXISTING CONDITIONS PLAN

30 0 15 30 60
(GRAPHIC SCALE IN FEET)
1 inch = 30 ft.

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(919) 489 - 4789

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Ballentine Associates, P.A.
CORPORATE SEAL C328
NORTH CAROLINA
(Chapel Hill)

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 042543 18 FEB 19 DYLON W. SMITH

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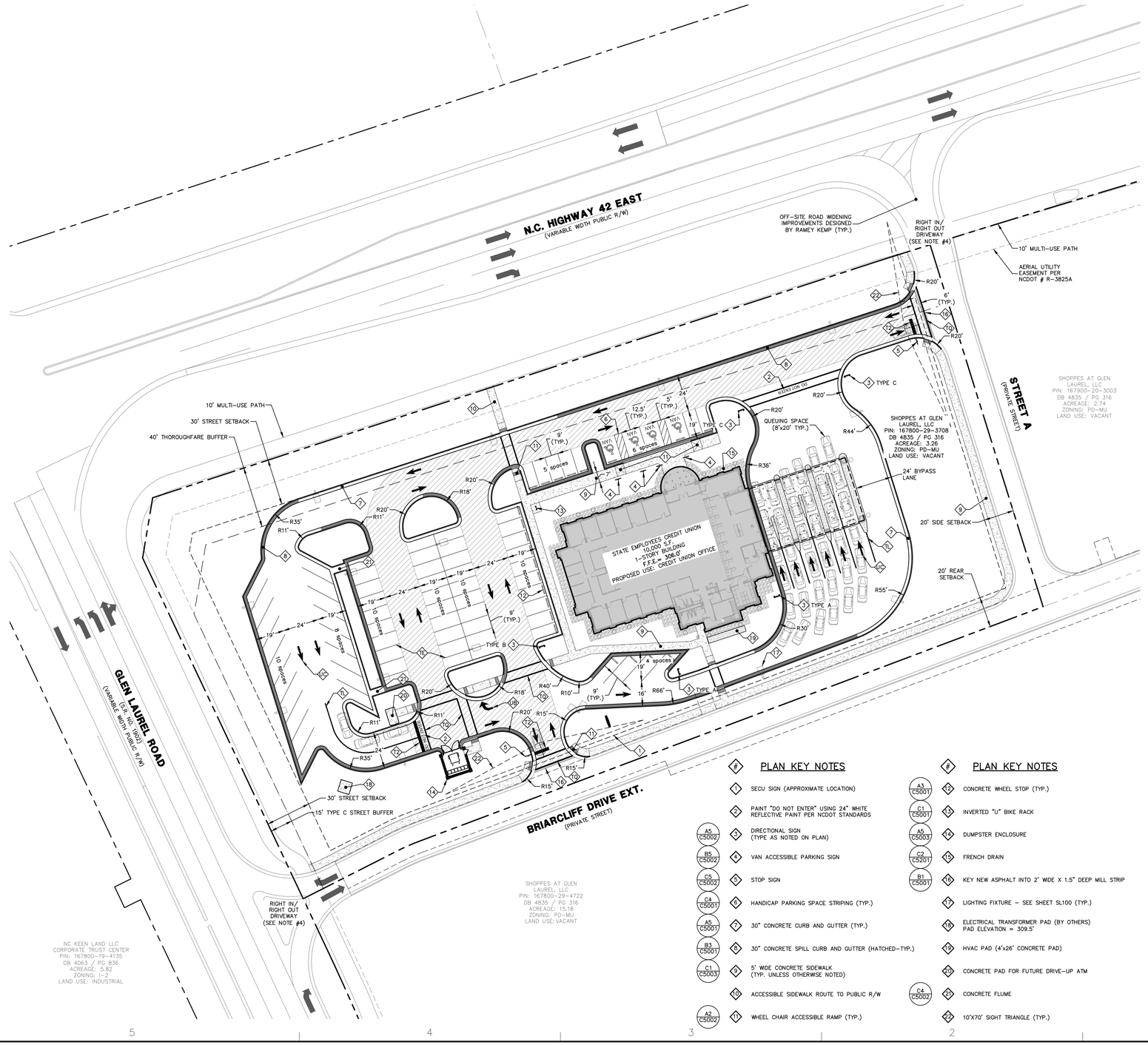
STATE EMPLOYEES' CREDIT UNION
CLAYTON BRANCH
CLAYTON, NORTH CAROLINA

MAJOR SITE PLAN

JOB NUMBER: 117001.05
DATE: 27 DEC 18
SCALE: AS NOTED
DRAWN BY: D.W.S.
REVIEWED BY: G.J.R.

SHEET
C0101



SITE DATA TABLE

PROJECT NAME:	STATE EMPLOYEES' CREDIT UNION
PROPERTY PIN NUMBER:	167800-29-3708
EXISTING PARCEL SIZE:	142,203 S.F. (3.26 AC.)
PROPERTY LOCATION:	CLAYTON TOWN LIMITS
CURRENT LAND OWNER:	SHOPPES AT GLEN LAUREL, LLC 1004 WAKE FOREST ROAD RALEIGH, N.C. 27604
CONTRACT PURCHASER:	STATE EMPLOYEES' CREDIT UNION P.O. BOX 26807 RALEIGH, N.C. 27611
DEED REFERENCE	D.B. 4835, PG. 316
PROPERTY ZONING:	PD-MU
OVERLAY DISTRICT:	THOROUGHFARE, WATERSHED PROTECTION
EXISTING USE:	VACANT
PROPOSED USE:	COMMERCIAL
BUILDING SETBACKS:	STREET = 30 FT. SIDE = 20 FT. REAR = 20 FT. MAXIMUM BUILDING HEIGHT = 50 FT.
EXISTING BUILDING SF:	0 S.F.
PROPOSED BUILDING SF:	10,000 S.F.
FLOOR AREA RATIO:	0.07
BUILDING COVERAGE:	7.0%
PERVIOUS SURFACE AREA:	52,568 S.F. (37.0%)
IMPERVIOUS SURFACE AREA:	MAXIMUM ALLOWED: 113,762 S.F. (80.0%)* PROPOSED: 89,635 S.F. (63.0%)
PROPOSED BUILDING HEIGHT:	1 STORY - 35'-9 3/8"
VEHICULAR PARKING SUMMARY:	REQUIRED: 1/250 S.F. = 44 SPACES PROPOSED: = 73 SPACES (INCLUDES ACCESSIBLE PARKING SPACES)
HANDICAP ACCESSIBLE PARKING SUMMARY:	REQUIRED: 4 SPACES (INCLUDING 1 VAN) PROPOSED: 4 SPACES (INCLUDING 4 VAN)
VEHICULAR DRIVE-THRU STACKING SUMMARY:	REQUIRED: 6/TELLER LANE = 30 SPACES PROPOSED: 6/TELLER LANE = 30 SPACES
BICYCLE PARKING SUMMARY:	REQUIRED: 1 RACK/100 AUTO SPACES PROPOSED: 1 RACK
ELECTRIC PROVIDER:	DUKE ENERGY
WATER/SEWER PROVIDER:	TOWN OF CLAYTON

* STORMWATER TREATMENT WITHIN THE GLEN LAUREL MIXED USE DEVELOPMENT HAS BEEN DESIGNED AND APPROVED FOR AN 80% IMPERVIOUS BUILD OUT ON THIS SITE.

NOTES

1. ALL DIMENSIONS SHOWN ARE MEASURED FROM THE FACE OF CURB.
2. ALL RADIAL DIMENSIONS SHOWN HEREON ARE 3' UNLESS OTHERWISE NOTED.
3. ALL SIDEWALK IS 5' WIDE UNLESS OTHERWISE NOTED.
4. RIGHT-IN/RIGHT-OUT AT BRIARCLIFF DRIVE EXTENSION AND STREET "A" WILL BE CONSTRUCTED AS PART OF "GLEN LAUREL MIXED USE BRIARCLIFF DRIVE EXTENSION" PROJECT.

PAVEMENT MARKING LEGEND

SEE DETAIL REFERENCE (A5 / C5003)

T2	WHITE STOPBAR (24"; 120 MIL)
TE	WHITE SOLID LANE LINE (4"; 120 MIL)
TL	WHITE SOLID LANE LINE (6"; 120 MIL)
TC	WHITE CROSSWALK LINE (8"; 125 MIL)
UB	RIGHT TURN ARROW (90 MIL)
UC	STRAIGHT ARROW (90 MIL)

PAVING LEGEND

- (A1 / C5001) HEAVY-DUTY ASPHALT
- (A1 / C5001) STANDARD DUTY ASPHALT
- (A1 / C5001) CONCRETE PAVEMENT

DRAWING LEGEND

SYMBOL/ABBREVIATION EXISTING	PROPOSED	DESCRIPTION
		PROPERTY LINE
		RIGHT-OF-WAY LINE
		ADJOINER PROPERTY LINE
		EASEMENT LINE
		SETBACK LINE
		BUFFER LINE

NC GRID NAD 83

SITE PLAN

30 0 15 30 60

(GRAPHIC SCALE IN FEET)
1 inch = 30 ft.

REVIEW DRAWING
NOT FOR CONSTRUCTION

PLAN KEY NOTES

#	
1	SECU SIGN (APPROXIMATE LOCATION)
2	PAINT "DO NOT ENTER" USING 24" WHITE REFLECTIVE PAINT PER NCDOT STANDARDS
3 (A5 / C5002)	DIRECTIONAL SIGN (TYPE AS NOTED ON PLAN)
4 (B5 / C5002)	VAN ACCESSIBLE PARKING SIGN
5 (C5 / C5002)	STOP SIGN
6 (C4 / C5001)	HANDICAP PARKING SPACE STRIPING (TYP.)
7 (A5 / C5001)	30" CONCRETE CURB AND GUTTER (TYP.)
8 (B3 / C5001)	30" CONCRETE SPILL CURB AND GUTTER (HATCHED-TYP.)
9 (C1 / C5003)	5' WIDE CONCRETE SIDEWALK (TYP. UNLESS OTHERWISE NOTED)
10	ACCESSIBLE SIDEWALK ROUTE TO PUBLIC R/W
11 (A2 / C5002)	WHEEL CHAIR ACCESSIBLE RAMP (TYP.)

PLAN KEY NOTES

#	
12 (A3 / C5001)	CONCRETE WHEEL STOP (TYP.)
13 (C1 / C5001)	INVERTED "U" BIKE RACK
14 (A5 / C5003)	DUMPSTER ENCLOSURE
15 (C2 / C5201)	FRENCH DRAIN
16 (B1 / C5001)	KEY NEW ASPHALT INTO 2' WIDE X 1.5" DEEP MILL STRIP
17	LIGHTING FIXTURE - SEE SHEET SL100 (TYP.)
18	ELECTRICAL TRANSFORMER PAD (BY OTHERS) PAD ELEVATION = 309.5'
19	HVAC PAD (4'x26' CONCRETE PAD)
20	CONCRETE PAD FOR FUTURE DRIVE-UP ATM
21 (C4 / C5002)	CONCRETE FLUME
22	10'X70' SIGHT TRIANGLE (TYP.)

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Ballentine Associates, P.A. CORPORATE SEAL C328 NORTH CAROLINA

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 042543 GREGORY J. RAMEY 15 FEB 19

NUM	REVISIONS	DATE
1	PER TRC REVIEW COMMENTS	31 JAN 19
2	PER TRC REVIEW COMMENTS	18 FEB 19

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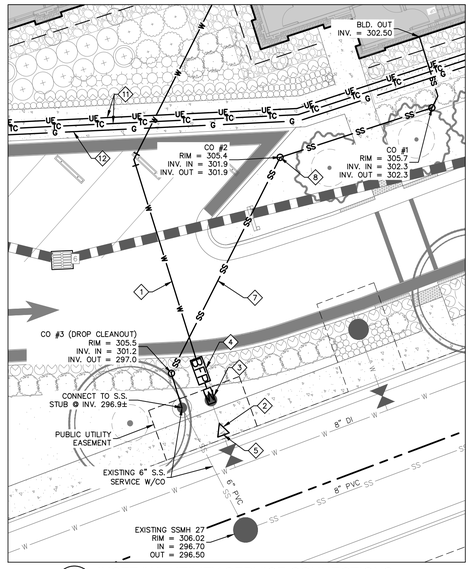
STATE EMPLOYEES' CREDIT UNION
CLAYTON BRANCH
CLAYTON, NORTH CAROLINA

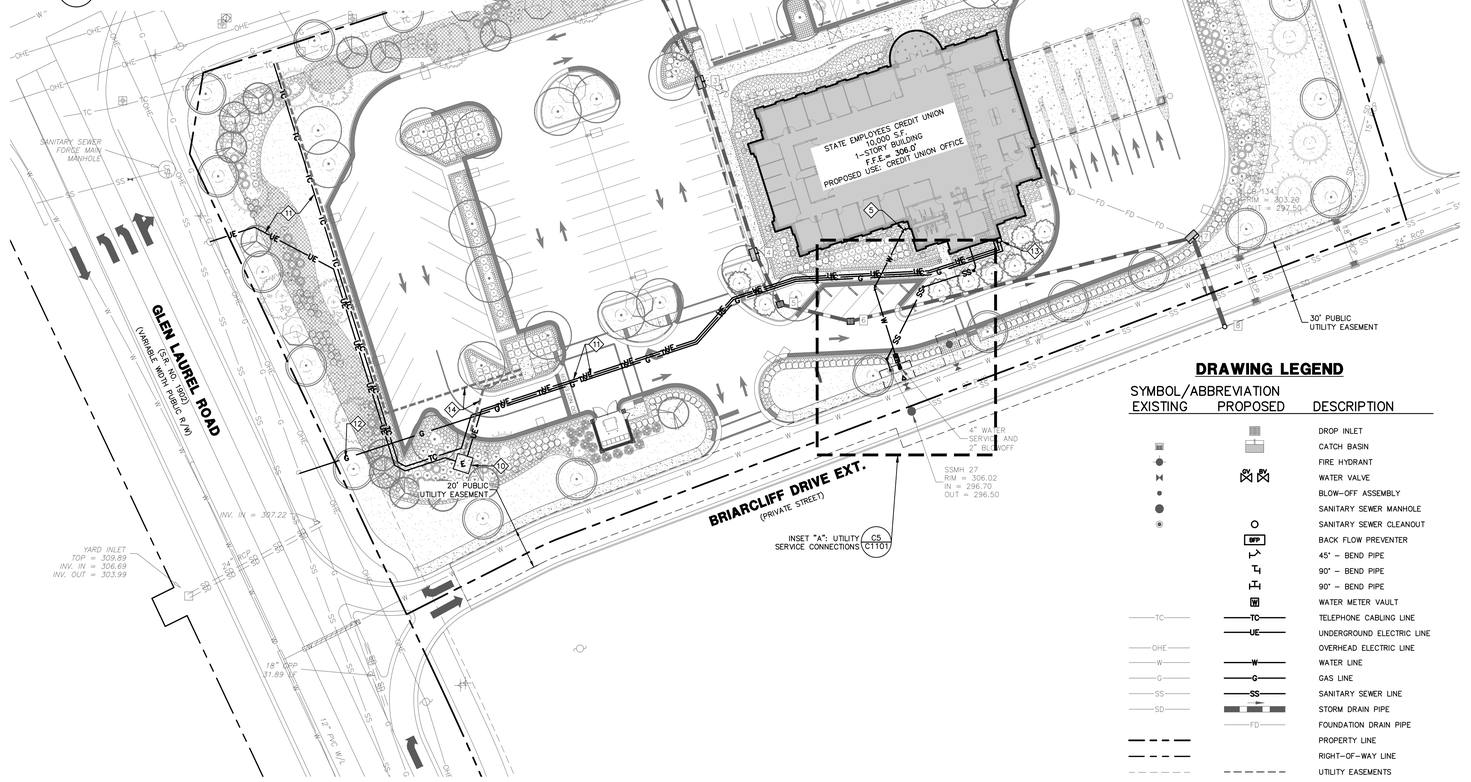
MAJOR SITE PLAN

JOB NUMBER: 117001.05
DATE: 27 DEC 18
SCALE: AS NOTED
DRAWN BY: D.W.S.
REVIEWED BY: G.J.R.

SHEET
C1001



C5 / C1101 INSET "A": UTILITY SERVICE CONNECTIONS
SCALE: 1" = 10'



UTILITY NOTES

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE TOWN OF CLAYTON WATER LINE AND SEWER LINE STANDARD CONSTRUCTION SPECIFICATIONS AND WITH APPLICABLE NC PLUMBING CODES.
2. PRIOR TO COMMENCING CONSTRUCTION, ALL PLAN APPROVALS AND WATER AND/OR SEWER PERMITS SHALL BE OBTAINED. THE TOWN ENGINEER SHALL REQUIRE THAT PRECONSTRUCTION CONFERENCE BE HELD AT TOWN HALL PRIOR TO COMMENCING CONSTRUCTION.
3. THE LOCATION OF THE EXISTING UTILITIES SHOWN SHALL BE CONSIDERED APPROXIMATE. CONTRACTOR SHALL LOCATE ALL EXISTING UTILITIES (PRIVATE AND PUBLIC) AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES OR CONFLICTS PRIOR TO BEGINNING CONSTRUCTION. THE CONTRACTOR SHALL PROTECT ALL EXISTING UTILITIES DURING CONSTRUCTION.
4. ALL ONSITE PRIVATE WATER AND SEWER TO BE MAINTAINED BY OWNER.
5. THE SITE CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANIES AND IRRIGATION CONTRACTOR AND INSTALL ALL REQUIRED CONDUITS.
6. WATER & SEWER:
   - 6.1. SITE CONTRACTOR SHALL CONTACT THE TOWN OF CLAYTON ENGINEERING AND INSPECTIONS AT (919) 553-5002 TO COORDINATE INSPECTION(S) OF WATER MAIN AND SEWER SERVICE INSTALLATIONS A MINIMUM OF 48 HOURS PRIOR TO THE INSTALLATION.
   - 6.2. SITE CONTRACTOR SHALL INSTALL THE WATER SERVICE (MIN. 3 FEET AND MAX. 6 FEET BELOW GRADE) FROM THE BLOWOFF ASSEMBLY ON BRIARCLIFF DRIVE AS SHOWN AND EXTEND TO WITHIN 5' OF THE BUILDING.
   - 6.3. ALL WATER MAINS SHALL HAVE METALLIC WARNING TAPE INSTALLED IN DITCH OVER MAINS AND TRACER WIRE INSTALLED ALONG TOP OF PIPE. SEE UTILITY DETAIL SHEET C5102, DETAIL REFERENCE C4.
   - 6.4. SITE CONTRACTOR SHALL INSTALL THE SANITARY SEWER SERVICE FROM THE EXISTING MANHOLE OFFSITE INCLUDING ALL CLEANOUT ASSEMBLIES AND EXTEND TO WITHIN 5' OF THE BUILDING.
   - 6.5. MINIMUM UTILITY VERTICAL SEPARATION DISTANCES:

     SANITARY SEWER MAINS AND STORM SEWER – 12"
     SANITARY SEWER MAINS AND WATER – 18"
     STORM SEWER AND WATER – 18"
7. ELECTRICAL:
   - 7.1. COORDINATE ELECTRICAL SERVICE DESIGN, LOCATION & CONNECTION WITH EDDIE M. WATKINS, DUKE ENERGY AT (919) 557-2605.
   - 7.2. ELECTRICAL CONTRACTOR SHALL INSTALL ELECTRICAL SERVICE AND 20 AMP GFCI RECEPTACLE FOR BACKFLOW PREVENTER HEATED ENCLOSURES. SITE CONTRACTOR SHALL COORDINATE WITH ELECTRICAL CONTRACTOR REGARDING THE LOCATION OF THE RECEPTACLES AND SHALL PROVIDE AND INSTALL HEAT TAPE.
8. GAS:
   - 8.1. GAS SERVICE TO BE DESIGNED, SIZED & INSTALLED BY PIEDMONT NATURAL GAS COMPANY.

PLAN KEY NOTES

1. 2" TYPE "K" COPPER DOMESTIC WATER LINE
2. 4" TO 2" REDUCER
3. A2 / C5101 — 2" DOMESTIC WATER METER
4. C3 / C5101 — REDUCED PRESSURE ASSEMBLY (RPA) BACKFLOW PREVENTER FOR 2" DOMESTIC WATER LINE (OUTSIDE)
5. A5 / C5101 — THRUST BLOCKING – INSTALL AT ALL TEES, TAPS & BENDS AS REQUIRED
6. C5 / C5101 — VERTICAL BEND, RODDING & BLOCKING (IF REQUIRED)
7. A4 / C5102 — 6" SDR 35 PVC SEWER SERVICE AT 1.0% MIN. (TYP.)
8. C2 / C5102 — SEWER LATERAL CLEANOUT (TYP.)
9. C4 / C5102 — TRACER WIRE – SEE NOTE #6.3
10. ELECTRIC TRANSFORMER PAD
11. UNDERGROUND ELECTRIC & TELECOM (APPROX. LOCATIONS)
12. GAS SERVICE LINE – SEE NOTE #8.1
13. GAS METER
14. A5 / C5102 — UTILITY CONDUIT

DRAWING LEGEND

SYMBOL/ABBREVIATION EXISTING	PROPOSED	DESCRIPTION
		DROP INLET
		CATCH BASIN
		FIRE HYDRANT
		WATER VALVE
		BLOW-OFF ASSEMBLY
		SANITARY SEWER MANHOLE
		SANITARY SEWER CLEANOUT
	BFP	BACK FLOW PREVENTER
		45° – BEND PIPE
		90° – BEND PIPE
		90° – BEND PIPE
	W	WATER METER VAULT
TC	TC	TELEPHONE CABLING LINE
UE	UE	UNDERGROUND ELECTRIC LINE
OHE		OVERHEAD ELECTRIC LINE
W	W	WATER LINE
G	G	GAS LINE
SS	SS	SANITARY SEWER LINE
SD		STORM DRAIN PIPE
	FD	FOUNDATION DRAIN PIPE
		PROPERTY LINE
		RIGHT-OF-WAY LINE
		UTILITY EASEMENTS

NAD 83 NC GRID

UTILITY PLAN

30 0 15 30 60
(GRAPHIC SCALE IN FEET)
1 inch = 30 ft.

REVIEW DRAWING
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Ballentine Associates P.A. CORPORATE SEAL C328 NORTH CAROLINA (Chapter 143)

NORTH CAROLINA PROFESSIONAL SEAL 042543 ENGINEER DYLON W. SMITH 18 FEB 19

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DRAWN BY: D.W.S.
REVIEWED BY: G.J.R.

SHEET
C1101

STRUCTURE TABLE

STR. ID	RIM ELEV.* (FT)	STRUCTURE TYPE
1	303.30	CB
2	303.30	CB
3	304.00	CB
4	304.40	CB
5	304.50	DI
6	304.20	DI
7	303.30	CB
8	297.00	PIPE END
10	301.09	CB
136	298.56	EX CB

PIPE TABLE

US STR	DS STR	DIAMETER (IN)	MATERIAL	US INV. ELEV. (FT)	DS INV. ELEV. (FT)	LENGTH (FT)	SLOPE (FT/FT)
1	2	15	RCP	300.30	300.15	20	0.0075
2	3	15	RCP	300.15	299.80	49	0.0071
3	4	18	RCP	299.80	299.15	87	0.0075
4	5	18	RCP	299.15	298.95	27	0.0073
5	6	18	RCP	298.95	298.75	36	0.0056
6	7	18	RCP	298.75	297.50	174	0.0072
7	8	24	RCP	297.50	297.00	46	0.0110
10	136	15	RCP	298.00	293.70	55	0.0782

*RIM ELEV. REFER TO:

CATCH BASIN	BOT OF CURB/TOP OF GRATE
DROP INLET	TOP OF CASTING
PIPE END	INVERT

GRADING AND STORM DRAINAGE NOTES

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE TOWN OF CLAYTON STANDARD CONSTRUCTION SPECIFICATIONS.
2. CONTRACTOR SHALL HAVE NORTH CAROLINA ONE CALL (1-800-632-4949). LOCATE ALL EXISTING UTILITIES PRIOR TO BEGINNING CONSTRUCTION. CONTRACTOR SHALL VERIFY THE DEPTH AND LOCATION OF ALL EXISTING UTILITIES AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES OR CONFLICTS PRIOR TO BEGINNING CONSTRUCTION.
3. ALL STORM DRAINAGE PIPING WITH INSIDE DIAMETER OF 15 INCHES AND LARGER SHALL BE CLASS III RCP.
4. THIS PLAN IS DIAGRAMMATIC AND REPRESENTS THE APPROXIMATE LOCATION OF UTILITIES UNLESS SPECIFICALLY DIMENSIONED. THE CONTRACTOR SHALL COORDINATE THE ACTUAL LOCATION OF UTILITIES TO AVOID CONFLICTS AND MEET MINIMUM SIZE, SLOPE, AND CODE REQUIREMENTS.
5. ALL SIDEWALKS SHALL BE CONSTRUCTED SUCH THAT THE LONGITUDINAL SLOPE DOES NOT EXCEED 5% AND THE CROSS-SLOPE DOES NOT EXCEED 2%.
6. NO PART OF ANY ACCESSIBLE PARKING SPACE OR ADJACENT ACCESSIBLE AISLE SHALL SLOPE GREATER THAN 2% IN ANY DIRECTION.
7. STORMWATER MANAGEMENT PROVIDED UNDER GLEN LAUREL MIXED-USE MASTER PLAN, PREPARED BY: BASS, NIXON, AND KENNEDY, INC. CONSULTING ENGINEERS AND APPROVED BY TOWN OF CLAYTON.

N.C. HIGHWAY 42 EAST
(VARIABLE WIDTH PUBLIC R/W)

STREET A
(PRIVATE STREET)

BRIARCLIFF DRIVE EXT.
(PRIVATE STREET)

STATE EMPLOYEES CREDIT UNION
10,000 S.F.
1-STORY BUILDING
F.F.E.= 306.0'
PROPOSED USE: CREDIT UNION OFFICE

STORM PROFILE: CB 1 TO PE 7 (A2 C1210)

STORM PROFILE: CB 8 TO CB 136 (B1 C1210)

CB 136
RIM = 298.56
OUT = 293.65

SSMH 27
RIM = 306.02
IN = 296.70
OUT = 296.50

CB 134
RIM = 303.20
OUT = 297.50

4" WATER SERVICE AND 2" BLOWOFF

PIPE TO BE INSTALLED AS PART OF "GLEN LAUREL MIXED USE BRIARCLIFF DRIVE EXTENSION" PROJECT.

SHOPPES AT GLEN LAUREL, LLC
PIN: 167800-29-4722
DB 4835 / PG 316
ACREAGE: 15.18
ZONING: PD-MU
LAND USE: VACANT

SHOPPES AT GLEN LAUREL, LLC
PIN: 167900-20-3003
DB 4835 / PG 316
ACREAGE: 2.74
ZONING: PD-MU
LAND USE: VACANT

DRAWING LEGEND

SYMBOL/ABBREVIATION EXISTING	PROPOSED	DESCRIPTION
		DROP INLET
		CATCH BASIN
		FIRE HYDRANT
		WATER VALVE
		SANITARY SEWER MANHOLE
		SANITARY SEWER CLEANOUT
TC	TC	TELEPHONE CABLING LINE
OHE	UE	UNDERGROUND ELECTRIC LINE
W	W	OVERHEAD ELECTRIC LINE
G	G	WATER LINE
SS	SS	GAS LINE
SD		SANITARY SEWER LINE
	FD	STORM DRAIN PIPE
		FOUNDATION DRAIN PIPE
		PROPERTY LINE
		RIGHT-OF-WAY LINE
		EASEMENT LINE
305	305	MAJOR CONTOUR
306	306	MINOR CONTOUR
305		PROPOSED MAJOR CONTOUR (BY OTHERS)
306		PROPOSED MINOR CONTOUR (BY OTHERS)

PLAN KEY NOTES

#	
1	STANDARD CONCRETE CATCH BASIN (CURB INLET) (TYP.)
2	DROP INLET (TYP.)
3	FRENCH DRAIN (TYP.)
4	CONNECT FRENCH DRAIN/FOOTING DRAIN TO STORM STRUCTURE W/ 8" SOLID HDPE AT 1% MIN. SLOPE (TYP.)

NC GRID NAD 83

GRADING & DRAINAGE PLAN

(GRAPHIC SCALE IN FEET)
1 inch = 20 ft.

REVIEW DRAWING
NOT FOR CONSTRUCTION

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(919) 929 - 2481 (919) 489 - 4789
CORPORATE LICENSE NUMBER: C-328

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Ballentine Associates P.A. CORPORATE SEAL C328 NORTH CAROLINA

NORTH CAROLINA PROFESSIONAL SEAL 042543 ENGINEER DILLON W. SMITH 18 FEB 19

NUM	REVISIONS	DATE
1	PER TRC REVIEW COMMENTS	31 JAN 19
2	PER TRC REVIEW COMMENTS	18 FEB 19

OWNER INFORMATION
STATE EMPLOYEES' CREDIT UNION
P.O. BOX 26807
RALEIGH, NC 27611

OWNERS REPRESENTATIVE:
MR. JAMIE APPLEQUIST
PH. (800) 438-1104
FAX
EMAIL Jamie.Applequist@ncsecu.org

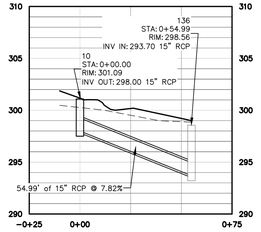
ISSUED	DATE
#1 MAJOR SITE PLAN SUBMITTAL	27 DEC 18
#2 MAJOR SITE PLAN SUBMITTAL	31 JAN 19
#3 MAJOR SITE PLAN SUBMITTAL	18 FEB 19

STATE EMPLOYEES' CREDIT UNION
CLAYTON BRANCH
CLAYTON, NORTH CAROLINA

MAJOR SITE PLAN

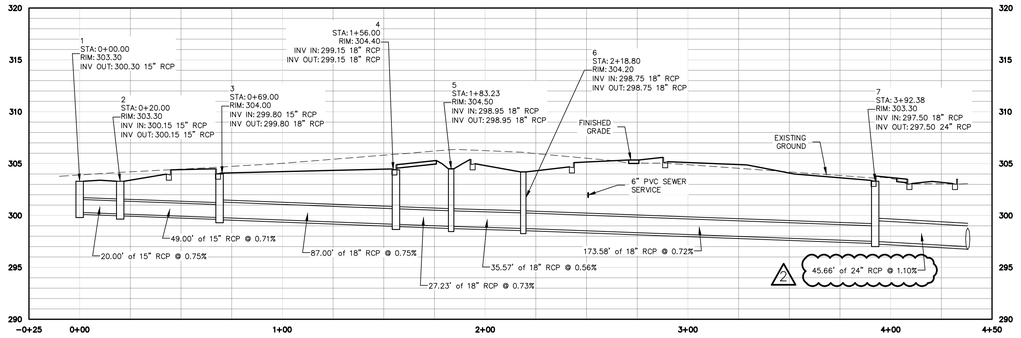
JOB NUMBER: 117001.05
DATE: 27 DEC 18
SCALE: AS NOTED
DRAWN BY: D.W.S.
REVIEWED BY: G.J.R.

SHEET
C1201



B1 / C1210 STORM PROFILE: CB 10 TO CB 136

SCALE: H: 1" = 30' V: 1" = 6'



A2 / C1210 STORM PROFILE: CB 1 TO PE 8

SCALE: H: 1" = 30' V: 1" = 6'

STORM DRAINAGE PROFILES

REVIEW DRAWING
NOT FOR CONSTRUCTION

BALLENTINE ASSOCIATES, P.A.
221 PROVIDENCE ROAD, CHAPEL HILL, N.C. 27514
(919) 929 - 0481 (919) 489 - 4789

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Ballentine Associates P.A. CORPORATE SEAL C328 NORTH CAROLINA

NORTH CAROLINA PROFESSIONAL SEAL 042543 ENGINEER GREGORY J. RAY 18 FEB 19

NUM	REVISIONS	DATE
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CLAYTON, NORTH CAROLINA

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REVIEWED BY: G.J.R.

SHEET
C1210

GROUND STABILIZATION REQUIREMENTS

(PER NPDES CONSTRUCTION STORMWATER GENERAL PERMIT NCG010000)

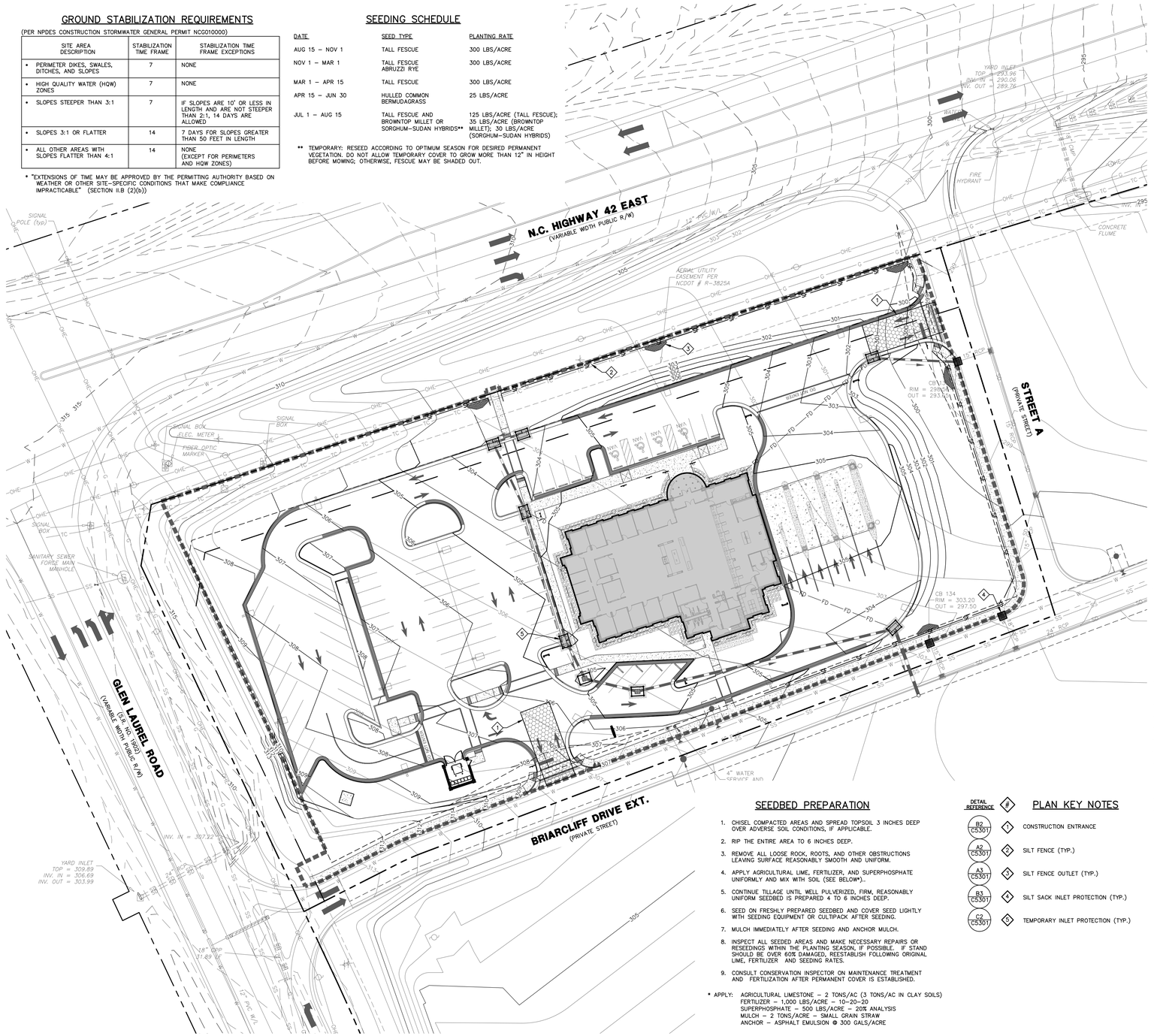
SITE AREA DESCRIPTION	STABILIZATION TIME FRAME	STABILIZATION TIME FRAME EXCEPTIONS
• PERIMETER DIKES, SWALES, DITCHES, AND SLOPES	7	NONE
• HIGH QUALITY WATER (HQW) ZONES	7	NONE
• SLOPES STEEPER THAN 3:1	7	IF SLOPES ARE 10' OR LESS IN LENGTH AND ARE NOT STEEPER THAN 2:1, 14 DAYS ARE ALLOWED
• SLOPES 3:1 OR FLATTER	14	7 DAYS FOR SLOPES GREATER THAN 50 FEET IN LENGTH
• ALL OTHER AREAS WITH SLOPES FLATTER THAN 4:1	14	NONE (EXCEPT FOR PERIMETERS AND HQW ZONES)

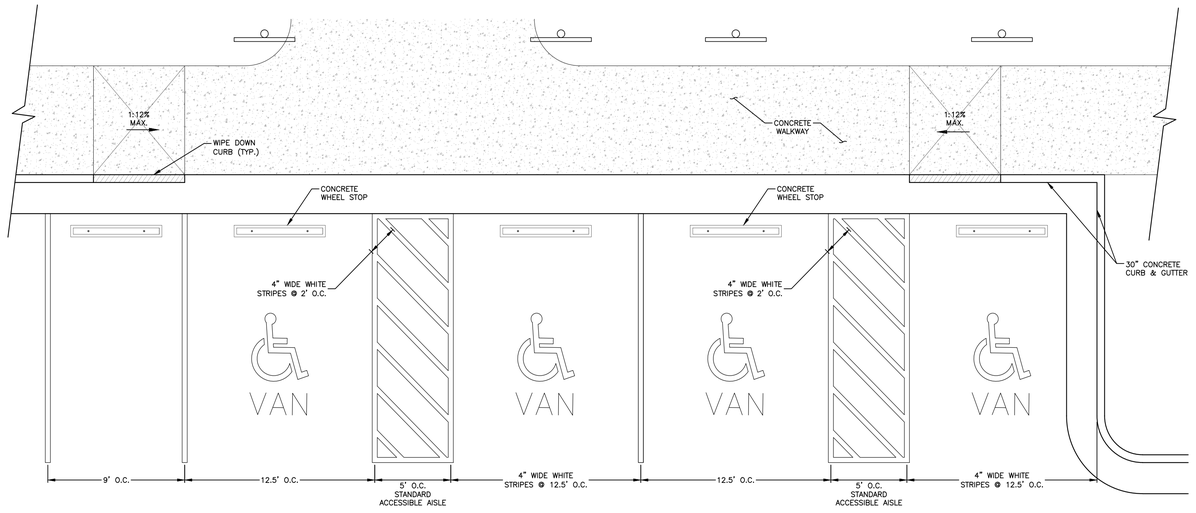
* "EXTENSIONS OF TIME MAY BE APPROVED BY THE PERMITTING AUTHORITY BASED ON WEATHER OR OTHER SITE-SPECIFIC CONDITIONS THAT MAKE COMPLIANCE IMPRACTICABLE" (SECTION II.B (2)(b))

SEEDING SCHEDULE

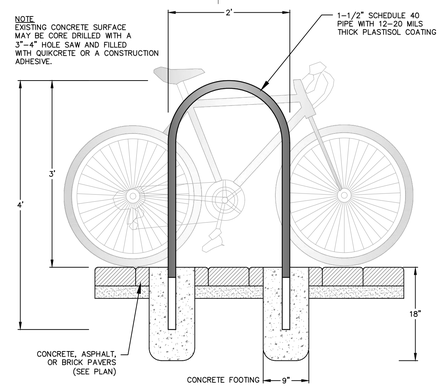
DATE	SEED TYPE	PLANTING RATE
AUG 15 – NOV 1	TALL FESCUE	300 LBS/ACRE
NOV 1 – MAR 1	TALL FESCUE ABRUZZI RYE	300 LBS/ACRE
MAR 1 – APR 15	TALL FESCUE	300 LBS/ACRE
APR 15 – JUN 30	HULLED COMMON BERMUDAGRASS	25 LBS/ACRE
JUL 1 – AUG 15	TALL FESCUE AND BROWNTOP MILLET OR SORGHUM-SUDAN HYBRIDS**	125 LBS/ACRE (TALL FESCUE); 35 LBS/ACRE (BROWNTOP MILLET); 30 LBS/ACRE (SORGHUM-SUDAN HYBRIDS)

** TEMPORARY: RESEED ACCORDING TO OPTIMUM SEASON FOR DESIRED PERMANENT VEGETATION. DO NOT ALLOW TEMPORARY COVER TO GROW MORE THAN 12" IN HEIGHT BEFORE MOWING; OTHERWISE, FESCUE MAY BE SHADED OUT.

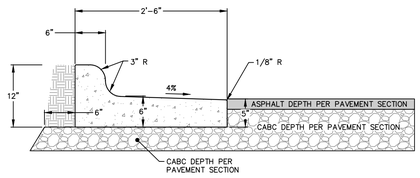




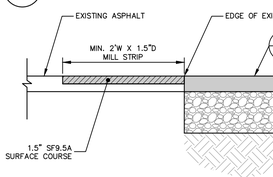
C4 / C5001 HANDICAP PARKING SPACE STRIPING
SCALE: 1" = 4'



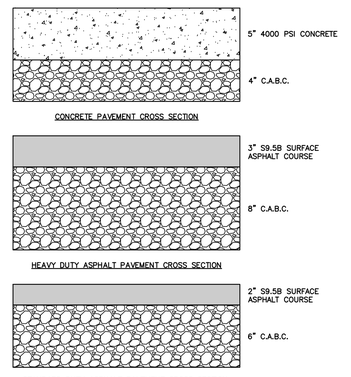
C1 / C5001 INVERTED "U" BIKE RACK
SCALE: 1" = 1'



B3 / C5001 30" CONCRETE SPILL CURB & GUTTER
SCALE: N.T.S.

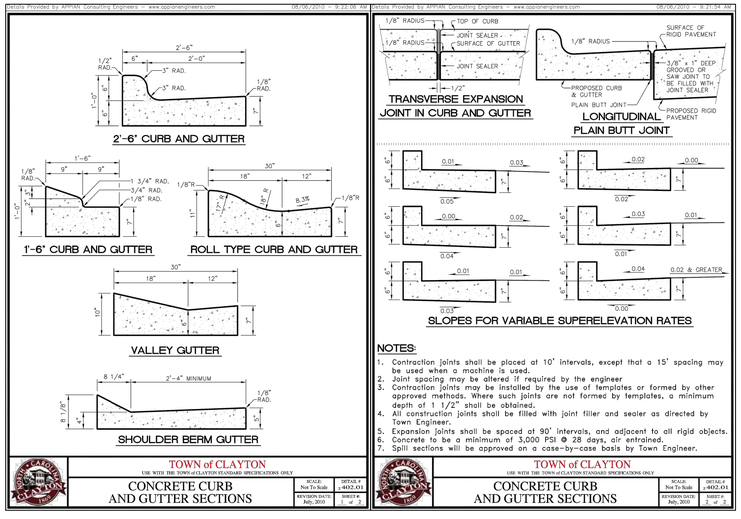


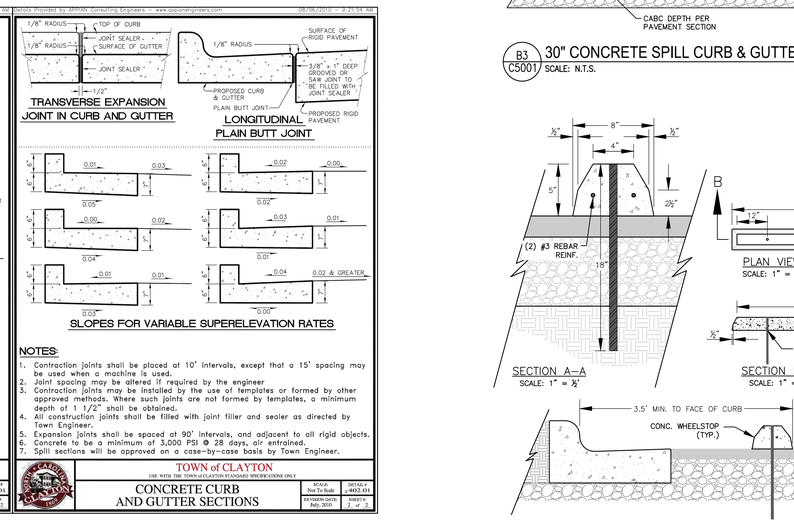
B1 / C5001 KEY NEW ASPHALT INTO 2' WIDE x 1-1/2" DEEP MILL STRIP
SCALE: 1" = 1'



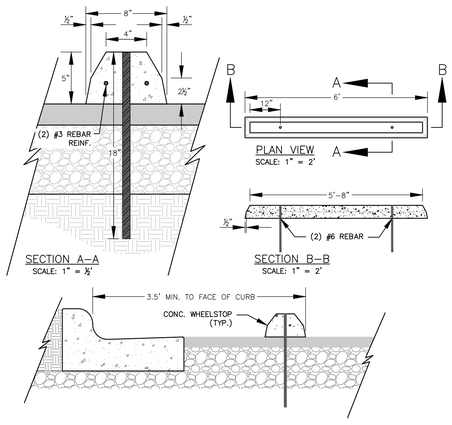
NOTES: PAVEMENT SECTIONS SHOWN ARE PRELIMINARY. FINAL PAVEMENT SECTIONS TO BE BASED UPON RECOMMENDATIONS PROVIDED BY THE OWNER'S GEOTECHNICAL ENGINEER.

A1 / C5001 PAVEMENT SECTIONS
SCALE: N.T.S.





A5 / C5001 30" CONCRETE CURB & GUTTER
SCALE: N.T.S.



A3 / C5001 CONCRETE WHEEL STOP
SCALE: N.T.S.

SITE DETAILS

REVIEW DRAWING
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Ballentine Associates P.A. CORPORATE SEAL C328 NORTH CAROLINA
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 042543 18 FEB 19 VINCENT DALTON W. SMITH

NUM	REVISIONS	DATE
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2	PER TRC REVIEW COMMENTS	18 FEB 19

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RALEIGH, NC 27611

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PH. (800) 438-1104
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EMAIL Jamie.Applequist@ncsecu.org

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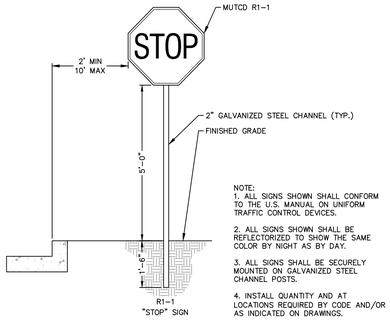
MAJOR SITE PLAN SUBMITTAL #2	31 JAN 19
MAJOR SITE PLAN SUBMITTAL #3	18 FEB 19
MAJOR SITE PLAN SUBMITTAL #4	01 MAR 19

STATE EMPLOYEES' CREDIT UNION
CLAYTON BRANCH
CLAYTON, NORTH CAROLINA

MAJOR SITE PLAN

JOB NUMBER: 117001.05
DATE: 27 DEC 18
SCALE: AS NOTED
DRAWN BY: D.W.S.
REVIEWED BY: G.J.R.

SHEET
C5001



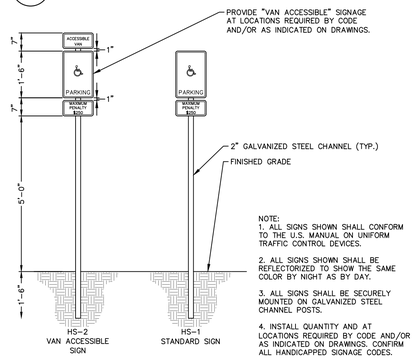
NOTE:
1. ALL SIGNS SHOWN SHALL CONFORM TO THE U.S. MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

2. ALL SIGNS SHOWN SHALL BE REFLECTORIZED TO SHOW THE SAME COLOR BY NIGHT AS BY DAY.

3. ALL SIGNS SHALL BE SECURELY MOUNTED ON GALVANIZED STEEL CHANNEL POSTS.

4. INSTALL QUANTITY AND AT LOCATIONS REQUIRED BY CODE AND/OR AS INDICATED ON DRAWINGS.

C5 C5002 STOP SIGN
SCALE: N.T.S.



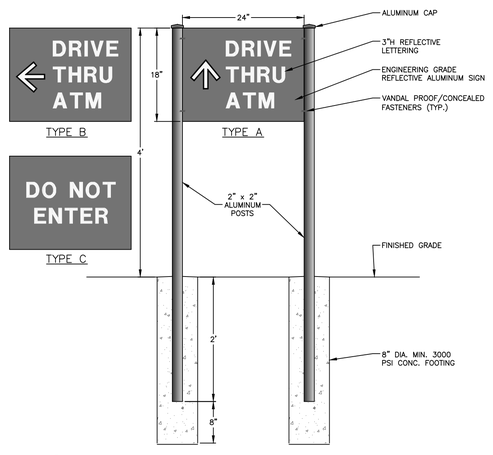
NOTE:
1. ALL SIGNS SHOWN SHALL CONFORM TO THE U.S. MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.

2. ALL SIGNS SHOWN SHALL BE REFLECTORIZED TO SHOW THE SAME COLOR BY NIGHT AS BY DAY.

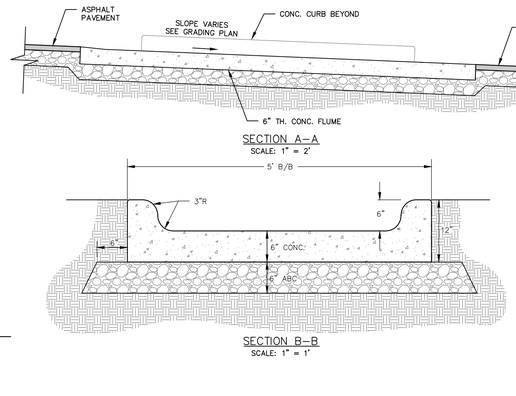
3. ALL SIGNS SHALL BE SECURELY MOUNTED ON GALVANIZED STEEL CHANNEL POSTS.

4. INSTALL QUANTITY AND AT LOCATIONS REQUIRED BY CODE AND/OR AS INDICATED ON DRAWINGS. CONFIRM ALL HANDICAPPED SIGNAGE CODES.

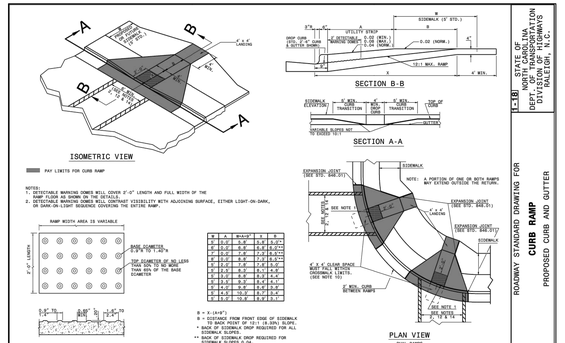
B5 C5002 HANDICAP SIGN
SCALE: N.T.S.



A5 C5002 DIRECTIONAL SIGN
SCALE: N.T.S.



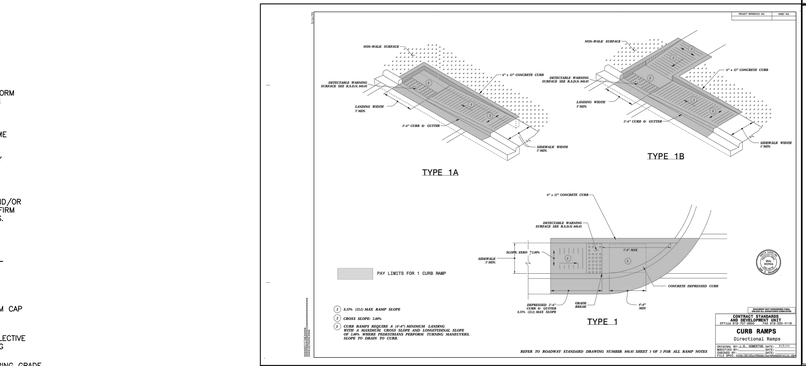
C4 C5002 CONCRETE FLUME
SCALE: N.T.S.

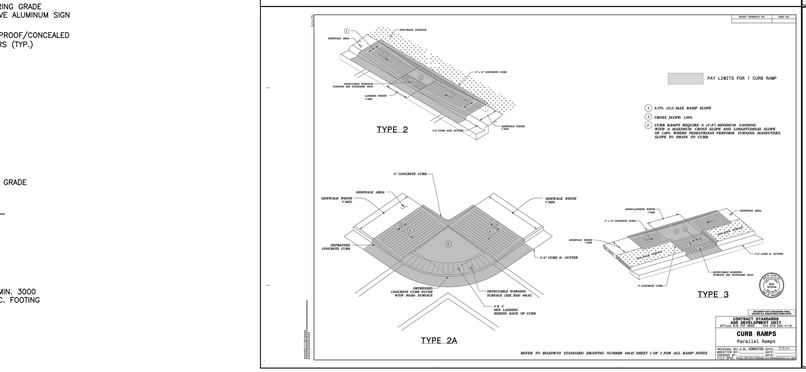


A	A	WIDTH*	X	B
4'-0.0"	4'-0"	5'-4"	4'-4.5"	
4'-0.0"	4'-0"	5'-4"	4'-4.5"	
4'-2.0"	4'-0"	5'-4"	4'-4.5"	
4'-4.0"	4'-0"	5'-4"	4'-4.5"	
4'-6.0"	4'-0"	5'-4"	4'-4.5"	
4'-8.0"	4'-0"	5'-4"	4'-4.5"	
4'-10.0"	4'-0"	5'-4"	4'-4.5"	
5'-0.0"	4'-0"	5'-4"	4'-4.5"	

B = X (4'4")
B = DISTANCE FROM FRONT EDGE OF SIDEWALK TO BACK POINT OF 12:1 (8.33%) SLOPE.
* BACK OF SIDEWALK DROP REQUIRED FOR ALL SIDEWALK SLOPES.
** BACK OF SIDEWALK DROP REQUIRED FOR SIDEWALK SLOPES 5.0%.

DETECTABLE WARNING DOMES





ROADWAY PLAN SYMBOL
CR
FOR PROPOSED CURB RAMP

PROPOSED CURB RAMP W/ LANDING
PROPOSED OR FUTURE SIDEWALK

ALLOWABLE LOCATIONS
DUAL RAMP RADII.....ANY

NOTES:
1. CONSTRUCT THE RAMP SURFACE TO BE STABLE, FIRM, AND SLIP RESISTANT. CONSTRUCT THE CURB RAMP TYPE AS SHOWN IN THE PAVEMENT MARKING PLANS OR AS DIRECTED BY THE ENGINEER.
2. LOCATE CURB RAMPS AND PLACE PEDESTRIAN CROSSWALK MARKINGS AS SHOWN IN THE PAVEMENT MARKING PLANS. WHEN FIELD ADJUSTMENTS REQUIRE MOVING CURB RAMPS OR MARKINGS AS SHOWN, CONTACT THE SIGNING AND DELINEATION UNIT OR LOCATE AS DIRECTED BY THE ENGINEER.
3. COORDINATE THE CURB RAMP AND THE PEDESTRIAN CROSSWALK MARKINGS SO A 4'x4' CLEAR SPACE AT THE BASE OF THE CURB RAMP WILL FALL WITHIN THE PEDESTRIAN CROSSWALK LINES.
4. SET BACK DISTANCE FROM INSIDE CROSSWALK MARKING TO NEAREST EDGE OF TRAVEL LANE IS 4' MINIMUM.
5. REFER TO THE PAVEMENT MARKING PLANS FOR STOP BAR LOCATIONS AT SIGNALIZED INTERSECTIONS. IF A PAVEMENT MARKING PLAN IS NOT PROVIDED, CONTACT THE SIGNAL DESIGN SECTION FOR THE STOP BAR LOCATIONS OR LOCATE AS DIRECTED BY THE ENGINEER.
6. TERMINATE PARKING A MINIMUM OF 20' BACK OF A PEDESTRIAN CROSSWALK.
7. CONSTRUCT CURB RAMPS A MINIMUM OF 4' WIDE.
8. CONSTRUCT THE RUNNING SLOPE OF THE RAMP 8.33% MAXIMUM.
9. ALLOWABLE CROSS SLOPE ON SIDEWALKS AND CURB RAMPS WILL BE 2% MAXIMUM.
10. CONSTRUCT THE SIDE FLARE SLOPE A MAXIMUM OF 10% MEASURED ALONG THE CURB LINE.
11. CONSTRUCT THE COUNTER SLOPE OF THE GUTTER OR STREET AT THE BASE OF THE CURB RAMP A MAXIMUM OF 5% AND MAINTAIN A SMOOTH TRANSITION.
12. CONSTRUCT LANDINGS FOR SIDEWALK A MINIMUM OF 4'x4' WITH A MAXIMUM SLOPE OF 2% IN ANY DIRECTION. CONSTRUCT LANDINGS FOR MEDIAN ISLANDS A MINIMUM OF 5'x5' WITH A MAXIMUM SLOPE OF 2% IN ANY DIRECTION.
13. TO USE A MEDIAN ISLAND AS A PEDESTRIAN REFUGE AREA, MEDIAN ISLANDS WILL BE A MINIMUM OF 6' WIDE. CONSTRUCT MEDIAN ISLANDS TO PROVIDE PASSAGE OVER OR THROUGHT THE ISLAND.
14. SMALL CHANNELIZATION ISLANDS THAT CAN NOT PROVIDE A 5'X5' LANDING AT THE TOP OF A RAMPS, WILL BE CUT THROUGH LEVEL WITH THE SURFACE STREET.
15. CURB RAMPS WITH RETURNED CURBS MAY BE USED ONLY WHERE PEDESTRIANS WOULD NOT NORMALLY WALK ACROSS THE RAMP. THE ADJACENT SURFACE IS PLANTING OR OTHER NON-WALKING SURFACE OR THE SIDE APPROACH IS SUBSTANTIALLY OBSTRUCTED.
16. PLACE A ½" EXPANSION JOINT WHERE THE CONCRETE CURB RAMP JOINS THE CURB AS SHOWN IN ROADWAY STANDARD DRAWING 848.01
17. PLACE ALL PEDESTRIAN PUSH BUTTON ACTUATORS AND CROSSING SIGNALS AS SHOWN IN THE PLANS OR AS SHOWN IN THE MUTCD.
18. CURB RAMPS THROUGH MEDIAN ISLANDS, SINGLE RAMPS AT DUAL CROSSWALKS OR LIMITED R/W SITUATIONS, WILL BE HANDLED BY SPECIAL DETAILS. CONTACT THE CONTRACT STANDARDS AND DEVELOPMENT UNIT FOR THE DETAILS OR FOR A SPECIAL DESIGN.

A2 C5002 WHEEL CHAIR ACCESSIBLE RAMP
SCALE: N.T.S.

SITE DETAILS

REVIEW DRAWING
NOT FOR CONSTRUCTION

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

1.18

ROADWAY STANDARD DRAWING FOR
CURB RAMP
PROPOSED CURB AND GUTTER

SHEET 1 OF 3
848.05

NUM	REVISIONS	DATE
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DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

1.18

ROADWAY STANDARD DRAWING FOR
CURB RAMP
PROPOSED CURB AND GUTTER

SHEET 2 OF 3
848.05

ISSUED	DATE
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MAJOR SITE PLAN SUBMITTAL #3	18 FEB 19

STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.

1.18

ROADWAY STANDARD DRAWING FOR
CURB RAMPS
NOTES

SHEET 3 OF 3
848.05

BALLENTINE ASSOCIATES, P.A.
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BALLENTINE ASSOCIATES P.A. CORPORATE SEAL C328 NORTH CAROLINA

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 042542 18 FEB 19 STEVEN W. SMITH

OWNER INFORMATION
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EMAIL jamie.applequist@ncsecu.org

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REVIEWED BY: G.J.R.

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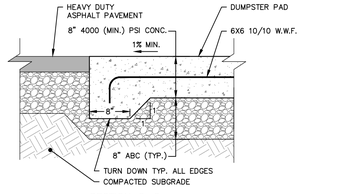
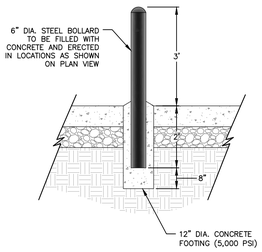
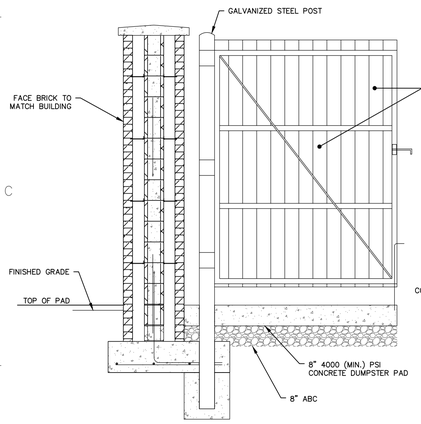
C5002



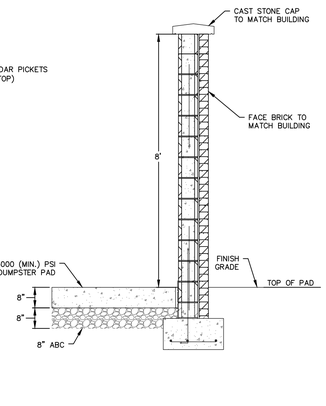
SECTION C–C
SCALE: 1" = 1'



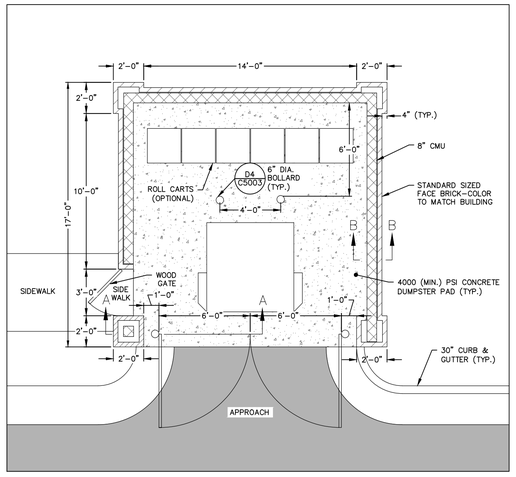
D4 C5003 6" DIA. PIPE BOLLARD
SCALE: 1" = 1'



SECTION A–A
SCALE: 1" = 2'



SECTION B–B
SCALE: 1" = 2'



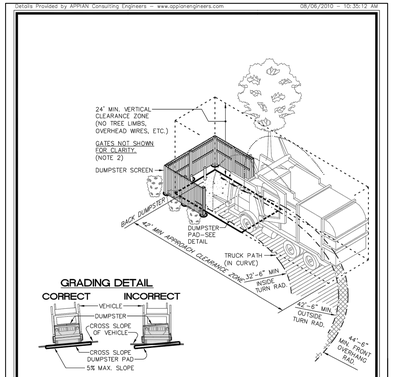
PLAN VIEW
SCALE: 1" = 4'

NOTES:

REFER TO TOWN OF CLAYTON STANDARD DETAIL NO. 409.01 (C3/C5003) FOR DUMPSTER SITE LAYOUT.

A5 C5003 DUMPSTER ENCLOSURE DETAILS
SCALE: AS SHOWN

Details Provided by APPIAN Consulting Engineers — www.appianengineers.com 08/06/2019 — 10:35:12 AM



NOTES:

1. Service vehicle must be able to enter service container, back up, and depart without having to make unnecessary maneuvers.
2. Screen enclosure shall not encroach on the first 10' of the approach pad. Front gates must have clear opening of not less than 10'. Gates will not be opened by the Town on collection days.

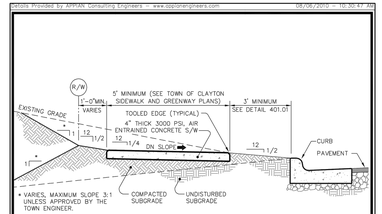
TOWN of CLAYTON
USE WITH THE TOWN of CLAYTON STANDARD SPECIFICATIONS ONLY

DUMPSTER SITE LAYOUT

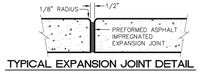
SCALE: Not To Scale
DETAIL # 409.01
REVISION DATE: July, 2010
SHEET # 1 of 1

C3 C5003 DUMPSTER SITE LAYOUT
SCALE: N.T.S.

Details Provided by APPIAN Consulting Engineers — www.appianengineers.com 08/06/2019 — 10:30:47 AM



TYPICAL SIDEWALK with UTILITY STRIP



TYPICAL EXPANSION JOINT DETAIL

NOTES:

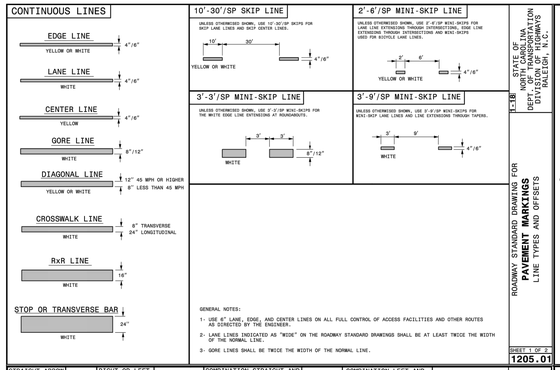
1. Provide 1" deep tooled traverse structural score joint with 1/8" radius at 5'–0" o.c.
2. 1/2" preformed asphalt impregnated expansion strip joints to be placed 40'–0" o.c. longitudinally, adjacent to curbs, when butting existing structures, concrete, or buildings, and at changes in width.

TOWN of CLAYTON
USE WITH THE TOWN of CLAYTON STANDARD SPECIFICATIONS ONLY

TYPICAL CONCRETE SIDEWALK AND EXPANSION JOINT DETAIL

SCALE: Not To Scale
DETAIL # 404.03
REVISION DATE: July, 2010
SHEET # 1 of 1

C1 C5003 CONCRETE SIDEWALK
SCALE: N.T.S.



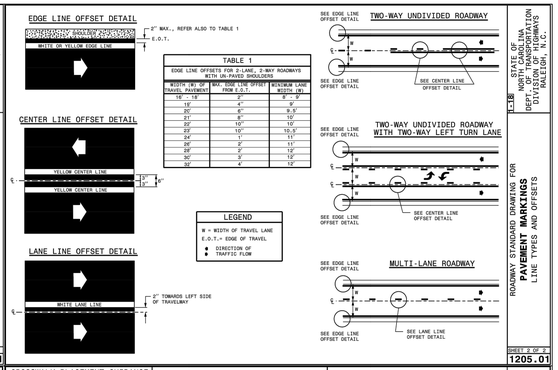
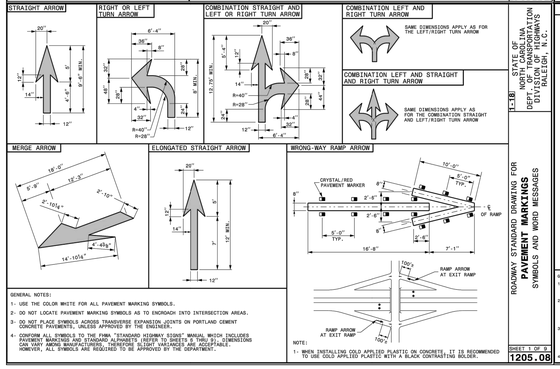


TABLE 1
EDGE LINE OFFSETS FOR 2-LANE, 2-WAY ROADWAYS WITH UN-PAVED SHOULDERS

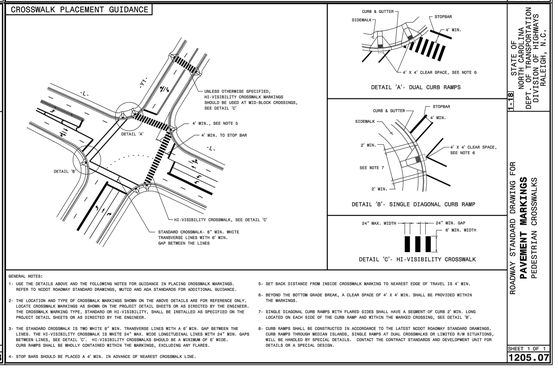
WIDTH (W) OF TRAVEL PAVEMENT	MIN. EDGE LINE OFFSET FROM E.O.T.	MINIMUM LANE WIDTH (W)
18' – 19'	2"	8' – 9'
19'	4"	9'
20'	6"	9.5'
21'	8"	10'
22'	10"	10'
23'	10"	10.5'
24'	1'	11'
25'	2'	11'
26'	3'	11'
27'	3'	12'
28'	4'	12'

ROADWAY STANDARD DRAWING FOR
PAVEMENT MARKINGS
LINE TYPES AND OFFSETS
SHEET 2 OF 2
1205.01
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.
C-18



GENERAL NOTES:
1- USE THE COLOR WHITE FOR ALL PAVEMENT MARKING SYMBOLS.
2- DO NOT LOCATE PAVEMENT MARKING SYMBOLS AS TO ENCROACH INTO INTERSECTION AREAS.
3- DO NOT PLACE SYMBOLS ACROSS TRANSVERSE EXPANSION JOINTS ON PORTLAND CEMENT CONCRETE PAVEMENTS, UNLESS APPROVED BY THE ENGINEER.
4- CONFORM ALL SYMBOLS TO THE FHWA "STANDARD HIGHWAY SIGNS" MANUAL MHCW. INCLUDES PAVEMENT MARKINGS AND STANDARD ALPHABETS. REFER TO SHEETS 8 THRU 21. DIMENSIONS CAN VARY AMONG MANUFACTURERS, THEREFORE SLIGHT VARIANCES ARE ACCEPTABLE. HOWEVER, ALL SYMBOLS ARE REQUIRED TO BE APPROVED BY THE DEPARTMENT.

ROADWAY STANDARD DRAWING FOR
PAVEMENT MARKINGS
SYMBOLS AND WORD MESSAGES
SHEET 1 OF 2
1205.08
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.
C-18



GENERAL NOTES:
1- USE THE DETAILS ABOVE AND THE FOLLOWING NOTES FOR GUIDANCE IN PLACING CROSSWALK MARKINGS. REFER TO NCDOT ROADWAY STANDARD DRAWINGS, MUTCD AND ADA STANDARDS FOR ADDITIONAL GUIDANCE.
2- THE LOCATION AND TYPE OF CROSSWALK MARKINGS SHOWN ON THE ABOVE DETAILS ARE FOR REFERENCE ONLY. THE ACTUAL LOCATION AND TYPE OF CROSSWALK MARKINGS SHALL BE AS SHOWN ON AS DIRECTED BY THE ENGINEER. THE CROSSWALK MARKING TYPE, STANDARD OR HI-VISIBILITY, SHALL BE INSTALLED AS SPECIFIED ON THE PROJECT DETAIL SHEETS OR AS DIRECTED BY THE ENGINEER.
3- THE STANDARD CROSSWALK IS TWO WHITE 6" MIN. TRANSVERSE LINES WITH A 6" MIN. GAP BETWEEN THE LINES. THE STANDARD CROSSWALK SHALL BE USED AT MID-BLOCK CROSSINGS, SEE DETAIL 'A', GAPS BETWEEN LINES, SEE DETAIL 'C'. HI-VISIBILITY CROSSWALKS SHOULD BE A MINIMUM OF 24" WIDE. CURB RAMPS SHALL BE WHOLLY CONTAINED WITHIN THE MARKINGS, EXCLUDING ANY FLARES.
4- STOP BARS SHOULD BE PLACED 4' MIN. IN ADVANCE OF NEAREST CROSSWALK LINE.
5- SET BACK DISTANCE FROM INSIDE CROSSWALK MARKING TO NEAREST EDGE OF TRAVEL IS 4' MIN.
6- BEYOND THE BOTTOM GRADE BREAK, A CLEAR SPACE OF 4' X 4' MIN. SHALL BE PROVIDED WITHIN THE MARKINGS.
7- SINGLE DIAGONAL CURB RAMPS WITH FLARED SIDES SHALL HAVE A SEGMENT OF CURB 2' MIN. LONG LOCATED ON EACH SIDE OF THE CURB RAMP AND WITHIN THE MARKED CROSSING, SEE DETAIL 'B'.
8- CURB RAMPS SHALL BE CONSTRUCTED IN ACCORDANCE TO THE LATEST NCDOT ROADWAY STANDARD DRAWING. SINGLE DIAGONAL CURB RAMPS, DUAL CURB RAMPS AT DUAL CROSSWALKS OR LIMITED R/W SITUATIONS, WILL BE HANDLED BY SPECIAL DETAILS. CONTACT THE CONTRACT STANDARDS AND DEVELOPMENT UNIT FOR DETAILS ON A SPECIAL DESIGN.

ROADWAY STANDARD DRAWING FOR
PAVEMENT MARKINGS
PEDESTRIAN CROSSWALKS
SHEET 1 OF 1
1205.07
STATE OF NORTH CAROLINA
DEPT. OF TRANSPORTATION
DIVISION OF HIGHWAYS
RALEIGH, N.C.
C-18

A2 C5003 PAVEMENT MARKINGS
SCALE: N.T.S.

SITE DETAILS

REVIEW DRAWING
NOT FOR CONSTRUCTION

BALLENTINE ASSOCIATES, P.A.
221 PROVIDENCE ROAD, CHAPEL HILL, N.C. 27514
(919) 929 - 5485 FAX (919) 489 F = 2789

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NORTH CAROLINA PROFESSIONAL SEAL 042543 ENGINEER DYLON W. SMITH 15 FEB 19

NUM	REVISIONS	DATE
1	PER TRC REVIEW COMMENTS	31 JAN 19
2	PER TRC REVIEW COMMENTS	18 FEB 19

ISSUED	DATE
MAJOR SITE PLAN SUBMITTAL #1	27 DEC 18
MAJOR SITE PLAN SUBMITTAL #2	31 JAN 19
MAJOR SITE PLAN SUBMITTAL #3	18 FEB 19

OWNER INFORMATION
STATE EMPLOYEES' CREDIT UNION
P.O. BOX 26807
RALEIGH, NC 27611

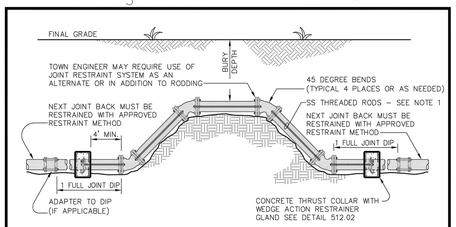
OWNERS REPRESENTATIVE:
MR. JAMIE APPLEQUIST
PH. (800) 438-1104
FAX
EMAIL Jamie.Applequist@ncsecu.org

STATE EMPLOYEES' CREDIT UNION
CLAYTON BRANCH
CLAYTON, NORTH CAROLINA

MAJOR SITE PLAN

JOB NUMBER: 117001.05
DATE: 27 DEC 18
SCALE: AS NOTED
DRAWN BY: D.W.S.
REVIEWED BY: G.J.R.

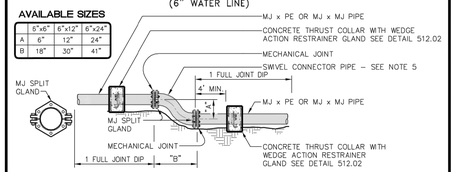
SHEET
C5003



ALTERNATE SWIVEL CONNECTOR
(6" WATER LINE)

AVAILABLE SIZES

	6"x6"	6"x12"	6"x24"
A	6"	12"	24"
B	18"	30"	41"



NOTES:
1. See Tie Rod Anchors Datum Chart, detail 512.06 for quantity & sizing of rodding.
2. The bypass is to be assembled above ground first.
3. Record all as-built lengths using the center lines of the pipes or bends as reference points.
4. Adapters vary in type according to the material of the existing water main.
5. Compact ductile iron (350 p.s.i.) fire hydrant offset connector pipe (AWWA C-110-ANSI A21.4) equal to or exceeding "GRADE LOK" as manufactured by: Assured Flow Sales, Inc., 1-(800)-388-0678

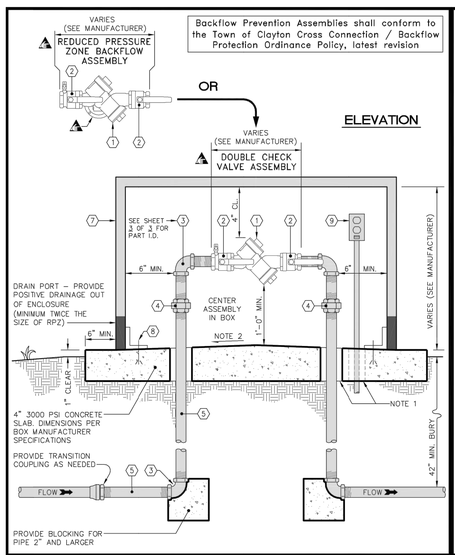
TOWN of CLAYTON
USE WITH THE TOWN of CLAYTON STANDARD SPECIFICATIONS ONLY

VERTICAL BEND, RODDING, and BLOCKING DETAIL

SCALE: Not To Scale | DETAIL # 512.04
REVISION DATE: July, 2010 | SHEET # 1 of 1

C5 / C5101 STD. NO. 512.04
VERTICAL BEND, RODDING AND BLOCKING
SCALE: N.T.S.

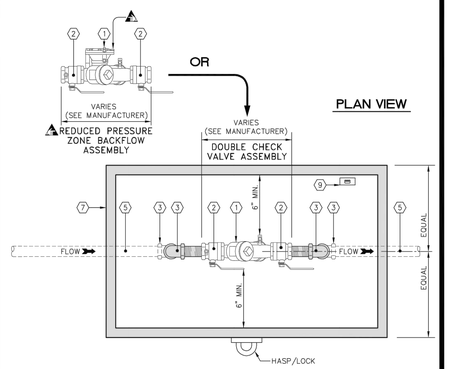
Backflow Prevention Assemblies shall conform to the Town of Clayton Cross Connection / Backflow Protection Ordinance Policy, latest revision



TOWN of CLAYTON
USE WITH THE TOWN of CLAYTON STANDARD SPECIFICATIONS ONLY

3/4" to 2" DCV, RPZ ASSEMBLY (ABOVE GROUND)

SCALE: Not To Scale | DETAIL # 519.07
REVISION DATE: July, 2010 | SHEET # 1 of 3



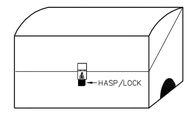
TOWN of CLAYTON
USE WITH THE TOWN of CLAYTON STANDARD SPECIFICATIONS ONLY

3/4" to 2" DCV, RPZ ASSEMBLY (ABOVE GROUND)

SCALE: Not To Scale | DETAIL # 519.07
REVISION DATE: July, 2010 | SHEET # 2 of 3

C3 / C5101 STD. NO. 519.07 - 3/4" TO 2" REDUCED PRESSURE ZONE BACKFLOW ASSEMBLY
SCALE: N.T.S.

TYPICAL ENCLOSURE



#	PART	MANUFACTURER MODEL / Cat. No.
1	BACKFLOW PREVENTION ASSEMBLY, AS APPLICABLE	SEE SPECS. 02510 1.10 and 2.2.2 – PRODUCTS
2	1/4 TURN FULL PORT BRONZE BALL SHUT-OFF VALVE	---
3	90° BRASS ELBOW	---
4	THREADED UNION	---
5	3/4" THRU 2 1/2" STAINLESS STEEL OR BRASS THREADED PIPE	---
6	OMITTED	---
7	INSULATED ENCLOSURE WITH LOCKING ACCESS AND HEATER (120 V, 1 PHASE 60 HZ) VERIFY FITTINGS WILL FIT INSIDE BOX BEFORE ORDERING	HOTBOX / HB.75 – HB3E (OR APPROVED EQUIVALENT) (NOTE 3)
8	STAINLESS STEEL ANCHOR BOLTS PER BOX MANUFACTURER RECOMMENCED SIZE AND SPACING	---
9	PROVIDE 120V RECEPTACLE ON GFCI NEAR PIPE RISER, SET MINIMUM 18" ABOVE FLOOR	UL STD. 943–NEMA 3R.

NOTES:
1. Provide minimum 1" annular clearance around all risers and electrical conduit.
2. Slope floor to drain to ports at both ends. Ensure positive surface grade away from enclosure.
3. Irrigation RPZ's that are removed from uninsulated & unheated enclosures to prevent freezing in the winter months must be capped off.
4. RPZ's may be located in building provided there are no other unprotected taps between the water main & the building.

TOWN of CLAYTON
USE WITH THE TOWN of CLAYTON STANDARD SPECIFICATIONS ONLY

3/4" to 2" DCV, RPZ ASSEMBLY (ABOVE GROUND)

SCALE: Not To Scale | DETAIL # 519.07
REVISION DATE: July, 2010 | SHEET # 3 of 3

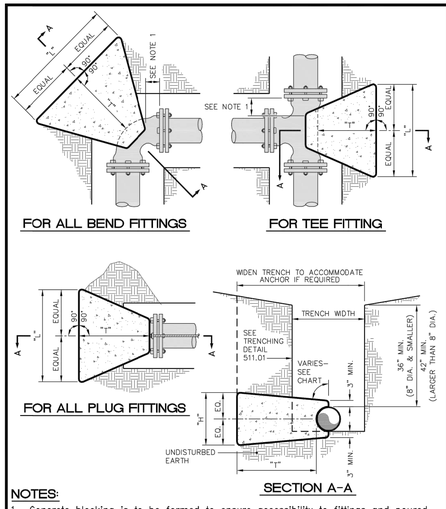
TEST PRESSURE = 150 P.S.I.

PIPE SIZE	TYPE FITTING	DIMENSIONS (Ft.) "L"	"H"	"T"	VOLUME CONCRETE CU. YD.
<4 INCHES	11 1/4°	---	---	---	---
	22 1/2°	1.00	1.00	1.50	0.06
	45°	1.00	1.00	1.50	0.06
	90°	1.00	1.00	2.50	0.09
	TEE / PLUG	1.00	1.00	2.00	0.07
4 INCHES	11 1/4°	1.00	1.00	2.50	0.09
	22 1/2°	1.00	1.00	2.50	0.09
	45°	1.00	1.00	2.50	0.09
	90°	1.50	1.50	2.50	0.15
	TEE / PLUG	1.50	1.50	2.00	0.12
6 INCHES	11 1/4°	1.50	1.50	2.50	0.15
	22 1/2°	1.50	1.50	2.50	0.15
	45°	1.50	1.50	2.50	0.15
	90°	2.00	2.00	3.00	0.28
	TEE / PLUG	2.00	2.00	2.50	0.23
8 INCHES	11 1/4°	2.00	2.00	2.50	0.23
	22 1/2°	2.00	2.00	2.50	0.23
	45°	2.00	2.00	2.75	0.25
	90°	3.00	2.00	3.00	0.39
	TEE / PLUG	3.00	2.00	2.50	0.32
12 INCHES	11 1/4°	2.00	2.00	3.00	0.28
	22 1/2°	2.00	2.00	3.00	0.28
	45°	3.00	2.50	3.00	0.47
	90°	4.50	3.00	3.50	0.94
	TEE / PLUG	4.50	3.00	3.00	0.81
16 INCHES	11 1/4°	2.00	2.00	3.00	0.28
	22 1/2°	3.00	2.00	3.00	0.39
	45°	4.00	3.00	3.50	0.84
	90°	6.50	3.50	3.50	1.54
	TEE / PLUG	6.50	3.50	3.00	1.32

TEST PRESSURE = 200 P.S.I.

PIPE SIZE	TYPE FITTING	DIMENSIONS (Ft.) "L"	"H"	"T"	VOLUME CONCRETE CU. YD.
<4 INCHES	11 1/4°	1.00	1.00	1.00	0.04
	22 1/2°	1.00	1.00	1.50	0.06
	45°	1.00	1.00	1.50	0.06
	90°	1.50	1.50	2.50	0.15
	TEE	1.50	1.50	2.00	0.12
4 INCHES	11 1/4°	1.00	1.00	2.50	0.09
	22 1/2°	1.00	1.00	2.50	0.09
	45°	1.50	1.50	2.50	0.15
	90°	1.50	1.50	2.50	0.15
	TEE	1.50	1.50	2.00	0.12
6 INCHES	11 1/4°	1.50	1.50	2.50	0.15
	22 1/2°	1.50	1.50	2.50	0.15
	45°	1.50	1.50	2.50	0.15
	90°	2.50	2.00	3.00	0.33
	TEE	2.50	2.00	2.50	0.28
8 INCHES	11 1/4°	2.00	2.00	2.50	0.23
	22 1/2°	2.00	2.00	2.50	0.23
	45°	2.00	2.00	2.50	0.23
	90°	4.00	2.00	3.00	0.50
	TEE	4.00	2.00	2.50	0.42
12 INCHES	11 1/4°	2.00	2.00	3.00	0.28
	22 1/2°	3.00	2.00	3.00	0.39
	45°	4.00	2.50	3.00	0.61
	90°	5.50	3.00	3.50	1.13
	TEE	5.50	3.00	3.00	0.97
16 INCHES	11 1/4°	2.00	2.00	3.00	0.28
	22 1/2°	4.00	2.00	3.00	0.50
	45°	5.50	3.00	3.50	1.13
	90°	7.50	4.00	3.50	2.01
	TEE	7.50	4.00	3.00	1.72

CHART NOTES:
1. If blocking excavation is in lightly compacted fill areas, or in areas where boulders or stumps have been removed, blocking size must be re-sized for the specific location/circumstance by a NC licensed Professional Engineer.
2. Blocking sizes shown in these tables assume the following:
   A. Blocking is constructed in residual soils as shown in detail.
   B. Soil bearing pressure = 2000 psf
   C. Velocity of flow = 15 fps.
3. This detail not applicable to reducing bends.
4. Neither the weight of the concrete blocking nor friction between concrete blocking and soil was added into blocking sizes computation. Therefore, blocking size is conservative.



NOTES:
1. Concrete blocking is to be formed to ensure accessibility to fittings and poured against undisturbed earth.
2. Fittings are to be completely wrapped with plastic, prior to pouring concrete.
3. Concrete to be minimum 3,000 psi. @ 28 days.

TOWN of CLAYTON
USE WITH THE TOWN of CLAYTON STANDARD SPECIFICATIONS ONLY

HORIZONTAL BLOCKING DETAIL for BENDS, TEE, & PLUG

SCALE: Not To Scale | DETAIL # 512-01
REVISION DATE: July, 2010 | SHEET # 1 of 2

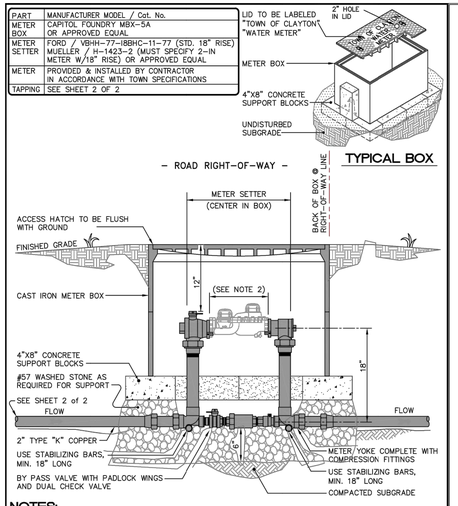
TOWN of CLAYTON
USE WITH THE TOWN of CLAYTON STANDARD SPECIFICATIONS ONLY

HORIZONTAL BLOCKING DETAIL for BENDS, TEE, & PLUG

SCALE: Not To Scale | DETAIL # 512-01
REVISION DATE: July, 2010 | SHEET # 2 of 2

A5 / C5101 STD. NO. 512.01 HORIZONTAL BLOCKING FOR BENDS, TEE, AND PLUG
SCALE: N.T.S.

PART	MANUFACTURER MODEL / Cat. No.
METER BOX	CAPITOL FOUNDRY MBX–5A OR APPROVED EQUAL
METER SETTER	FORD / VBHH–77–IBBHC–11–77 (STD. 18" RISE) MUELLER / H–1423–2 (MUST SPECIFY 2–IN METER W/18" RISE) OR APPROVED EQUAL
METER	PROVIDED & INSTALLED BY CONTRACTOR IN ACCORDANCE WITH TOWN SPECIFICATIONS
TAPPING	SEE SHEET 2 OF 2

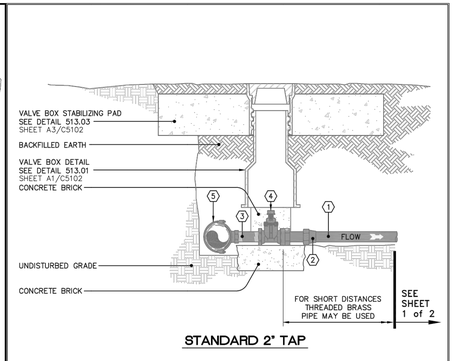


NOTES:
1. Contractor to place meter box in non–traffic area only.
2. Meter must be level across meter connections.
3. Ensure positive surface grade away from vault.

TOWN of CLAYTON
USE WITH THE TOWN of CLAYTON STANDARD SPECIFICATIONS ONLY

2" WATER METER SERVICE DETAIL

SCALE: Not To Scale | DETAIL # 519.03
REVISION DATE: JAN. 2013 | SHEET # 1 of 2



#	PART	MANUFACTURER MODEL / Cat. No.
1	TYPE "K" HARD DRAWN COPPER SERVICE	---
2	MALE THREAD x COMPRESSION ADAPTER	MUELLER H15428 OR APPROVED EQUAL
3	2" x 4" THREADED BRASS NIPPLE	---
4	2" THREADED IRON BODY GATE VALVE RESILIENT WEDGE	CLOW (M&H) / F6103 – AFC SERIES 2502 STAINLESS STEEL MUELLER – H–2360–8
5	BRONZE DOUBLE STRAP SADDLE	FORD 202B SERIES MUELLER BR2B SMITH–BLAIR 325–000 SERIES

NOTES:
1. All taps larger than 2" shall be made with Tapping sleeve and Valve (Detail 513.02)

TOWN of CLAYTON
USE WITH THE TOWN of CLAYTON STANDARD SPECIFICATIONS ONLY

2" WATER METER SERVICE DETAIL

SCALE: Not To Scale | DETAIL # 519.03
REVISION DATE: July, 2010 | SHEET # 2 of 3

A2 / C5101 STD. NO. 519.03
2" METER INSTALLATION AND VAULT
SCALE: N.T.S.

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CORPORATE SEAL C328 NORTH CAROLINA

NORTH CAROLINA PROFESSIONAL SEAL 042542 ENGINEER JOHN W. SMITH 15 FEB 19

NUM	REVISIONS	DATE
1	PER TRC REVIEW COMMENTS	31 JAN 19
2	PER TRC REVIEW COMMENTS	18 FEB 19

OWNER INFORMATION
STATE EMPLOYEES' CREDIT UNION
P.O. BOX 26807
RALEIGH, NC 27611

OWNERS REPRESENTATIVE:
MR. JAMIE APPLEQUIST
PH. (800) 438–1104
FAX
EMAIL Jamie.Applequist@ncsecu.org

ISSUED	DATE
MAJOR SITE PLAN SUBMITTAL #1	27 DEC 18
MAJOR SITE PLAN SUBMITTAL #2	31 JAN 19
MAJOR SITE PLAN SUBMITTAL #3	18 FEB 19

STATE EMPLOYEES' CREDIT UNION
CLAYTON BRANCH
CLAYTON, NORTH CAROLINA

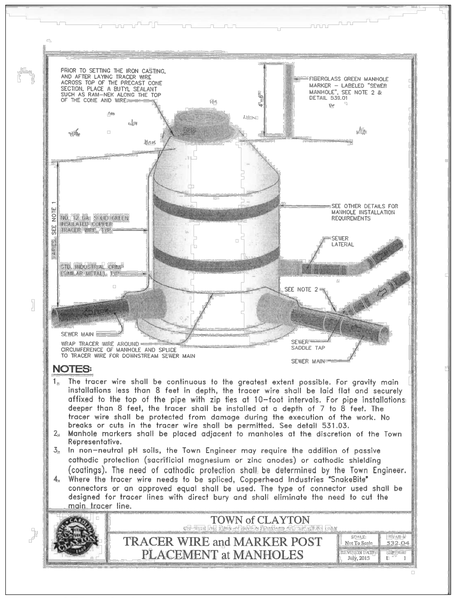
MAJOR SITE PLAN

JOB NUMBER: 117001.05
DATE: 27 DEC 18
SCALE: AS NOTED
DRAWN BY: D.W.S.
REVIEWED BY: G.J.R.

SHEET
C5101

UTILITY DETAILS

REVIEW DRAWING
↑NOT FOR CONSTRUCTION



NOTES:

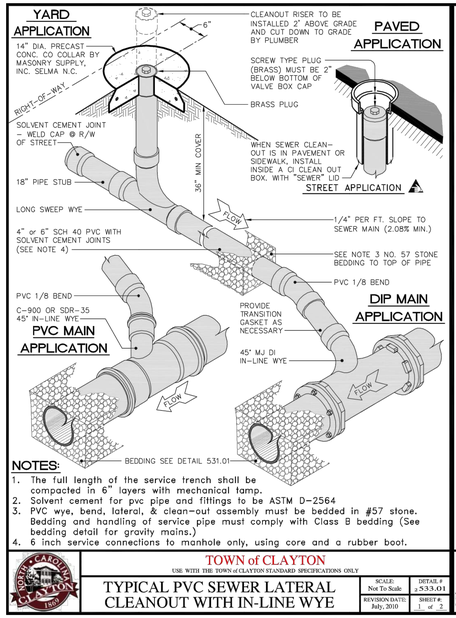
1. The tracer wire shall be continuous to the greatest extent possible. For gravity main installations less than 8 feet in depth, the tracer wire shall be laid flat and securely affixed to the top of the pipe with zip ties at 10-foot intervals. For pipe installations deeper than 8 feet, the tracer shall be installed at a depth of 7 to 8 feet. The tracer wire shall be protected from damage during the execution of the work. No breaks or cuts in the tracer wire shall be permitted. See detail 531.03.
2. Manhole markers shall be placed adjacent to manholes at the discretion of the Town Representative.
3. In non-neutral pH soils, the Town Engineer may require the addition of passive cathodic protection (sacrificial magnesium or zinc anodes) or cathodic shielding (coatings). The need of cathodic protection shall be determined by the Town Engineer.
4. Where the tracer wire needs to be spliced, Copperhead Industries "SnakeBite" connectors or an approved equal shall be used. The type of connector used shall be designed for tracer lines with direct bury and shall eliminate the need to cut the main tracer line.

TOWN of CLAYTON
USE WITH THE TOWN of CLAYTON STANDARD SPECIFICATIONS ONLY

TRACER WIRE and MARKER POST PLACEMENT at MANHOLES

SCALE:	DETAIL #:
Not To Scale	532.04
REVISION DATE:	SHEET #:
July, 2015	1 of 1

STD. NO 532.04
TRACER WIRE DETAIL
C4 / C5102 SCALE: N.T.S.



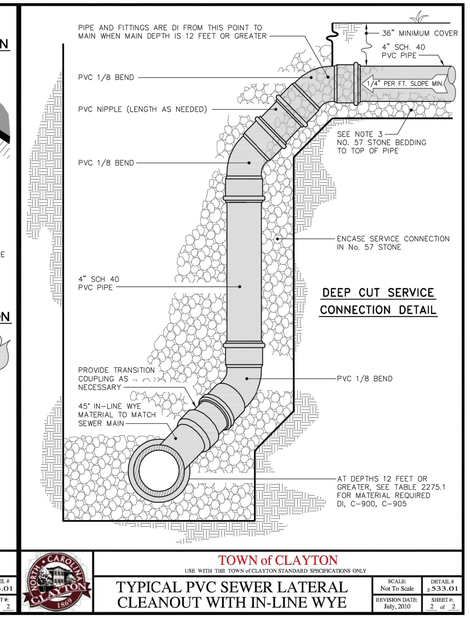
NOTES:

1. The full length of the service trench shall be compacted in 6" layers with mechanical tamp.
2. Solvent cement for pvc pipe and fittings to be ASTM D-2564
3. PVC wye, bend, lateral, & clean-out assembly must be bedded in #57 stone. Bedding and handling of service pipe must comply with Class B bedding (See bedding detail for gravity mains.)
4. 6 inch service connections to manhole only, using core and a rubber boot.

TOWN of CLAYTON
USE WITH THE TOWN of CLAYTON STANDARD SPECIFICATIONS ONLY

TYPICAL PVC SEWER LATERAL CLEANOUT WITH IN-LINE WYE

SCALE:	DETAIL #:
Not To Scale	533.01
REVISION DATE:	SHEET #:
July, 2010	1 of 2

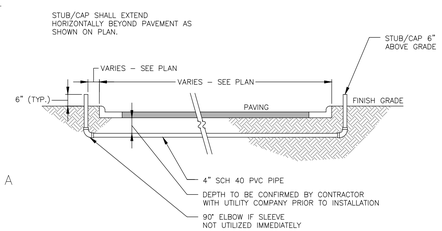


TOWN of CLAYTON
USE WITH THE TOWN of CLAYTON STANDARD SPECIFICATIONS ONLY

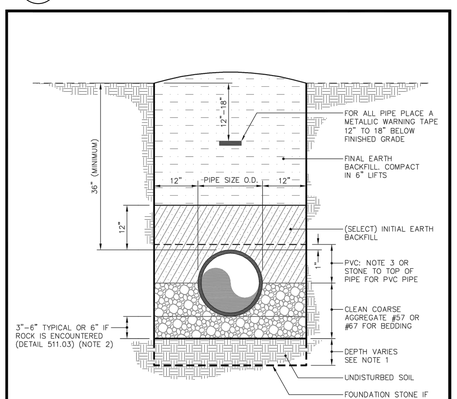
TYPICAL PVC SEWER LATERAL CLEANOUT WITH IN-LINE WYE

SCALE:	DETAIL #:
Not To Scale	533.01
REVISION DATE:	SHEET #:
July, 2010	2 of 2

STD. NO 533.01 - TYPICAL PVC SEWER LATERAL CLEANOUT WITH IN-LINE WYE
C2 / C5102 SCALE: N.T.S.



UTILITY CONDUIT
A5 / C5102 SCALE: N.T.S.



NOTES:

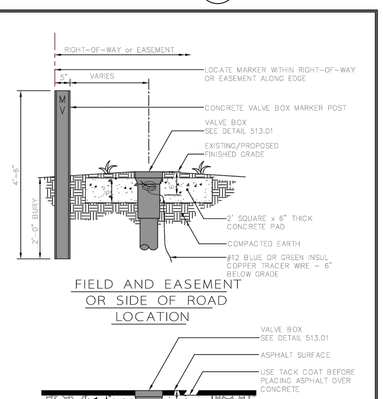
1. Foundation stone shall be required when soil conditions are unsuitable. See detail C01.02.
2. An additional 1 inch depth of bedding material will be required for each additional 2 feet of trench depth in excess of 16 feet up to a maximum of 12 inches.
3. Haunching depth for flexible wall pipe (C900 PVC and SDR35) shall be outside pipe diameter + 1 inch. Haunching shall be thoroughly compacted #57 or #67 stone.
4. Where rock is encountered, refer to detail 511.03 for subgrade preparation.
5. For all force mains, embedment to be Type 1 or 2 as shown on detail 511.02.

TOWN of CLAYTON
USE WITH THE TOWN of CLAYTON STANDARD SPECIFICATIONS ONLY

SANITARY SEWER PIPE LAYING CONDITIONS

SCALE:	DETAIL #:
Not To Scale	531.01
REVISION DATE:	SHEET #:
July, 2010	1 of 1

STD. NO. 531.01 - SANITARY SEWER PIPE LAYING CONDITIONS
A4 / C5102 SCALE: N.T.S.



NOTES:

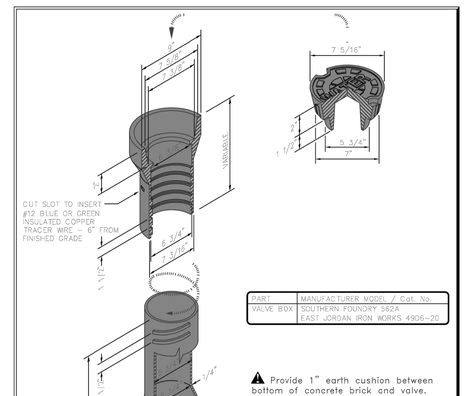
1. Concrete to be minimum 3,000 PSI @ 28 days.

TOWN of CLAYTON
USE WITH THE TOWN of CLAYTON STANDARD SPECIFICATIONS ONLY

VALVE, VALVE BOX, AND MARKER INSTALLATION DETAIL

SCALE:	DETAIL #:
Not To Scale	513.03
REVISION DATE:	SHEET #:
APRIL, 2014	1 of 1

STD. NO. 513.03 - VALVE, VALVE BOX, AND MARKER INSTALLATION DETAIL
A3 / C5102 SCALE: N.T.S.



NOTES:

1. Use heavy duty traffic lid marked "WATER" OR "SEWER".

TOWN of CLAYTON
USE WITH THE TOWN of CLAYTON STANDARD SPECIFICATIONS ONLY

STANDARD SCREW VALVE BOX DETAIL

SCALE:	DETAIL #:
Not To Scale	513.01
REVISION DATE:	SHEET #:
APRIL, 2014	1 of 1

STD. NO. 513.01
STANDARD SCREW VALVE BOX
A1 / C5102 SCALE: N.T.S.

UTILITY DETAILS

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Ballentine Associates P.A. CORPORATE SEAL C328 NORTH CAROLINA

NORTH CAROLINA PROFESSIONAL SEAL 042543 ENGINEER DILON W. SMITH 15 FEB 19

NUM	REVISIONS	DATE
1	PER TRC REVIEW COMMENTS	31 JAN 19
2	PER TRC REVIEW COMMENTS	18 FEB 19

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P.O. BOX 26807
RALEIGH, NC 27611

OWNERS REPRESENTATIVE:
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EMAIL Jamie.Applequist@ncseu.org

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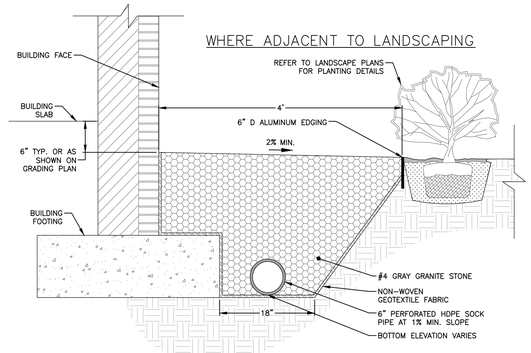
CLAYTON BRANCH
CLAYTON, NORTH CAROLINA

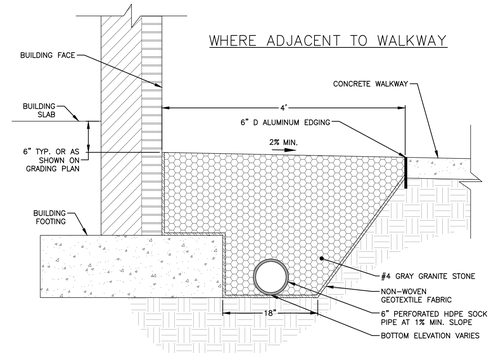
MAJOR SITE PLAN

JOB NUMBER: 117001.05
DATE: 27 DEC 18
SCALE: AS NOTED
DRAWN BY: D.W.S.
REVIEWED BY: G.J.R.

SHEET
C5102



C2 C5201 FRENCH DRAIN
SCALE: N.T.S.



Drainage Structures Notes:

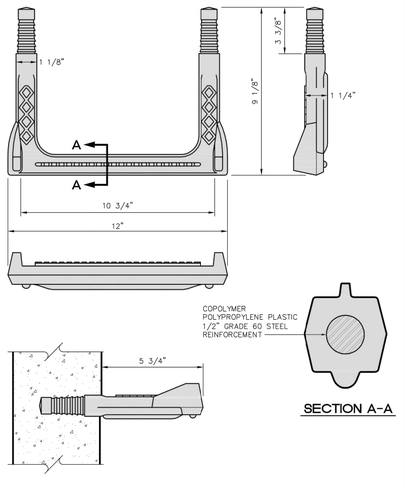
Unless more stringent requirements are called for on referenced NCDOT standard details, the following shall apply:

1. Boxes may be reinforced masonry, masonry, precast concrete or cast-in-place reinforced concrete.
2. Any non-standard box (non-standard meaning not shown in this manual), is to be designed by a NC Professional Engineer and approved by the Town Engineer.
3. The maximum height of an un-reinforced masonry drainage structure with 8" walls shall be limited to 8'-0" from invert of the outlet pipe to the top of the casting. Depths greater than 8'-0" shall have walls 12" thick. Basins over 12' in total depth shall be designed by a NC Professional Engineer and approved by the Town Engineer. Four inch walls are not allowed on drainage structures. Bottom slab on structures shall be reinforced when box depth exceeds 8 ft.
4. Steps are to be provided on all basins deeper than 36".
5. Steps are to be PS1-PF as manufactured by M. A. Industries or an approved equal. Locate on non-pipe walls. Steps shall meet OSHA requirements.
6. Mortar in masonry boxes is to be type M.
7. Clay brick structures are not allowed.
8. Concrete pipe is to be minimum class III.
9. Concrete building brick is to meet ASTM C-55, Grade N, Type 1 and must be NCDOT standard.
10. All cast-in-place or precast concrete drainage structures located in paved areas accessible to truck loadings to be designed to meet AASHTO HS 20-44 loading. See manufacturers details for wall, top and bottom thickness.
11. Inside of boxes shall allow for 6" of clearance on both sides of pipe. The dimension shown on the structures in this manual are minimum dimensions. For boxes with greater dimensions, either corbel walls, add a reinforced concrete top slab or lengthen box by adding additional grates & frames. Top and bottom slabs to be designed by NC Professional Engineer and approved by the Town Engineer for H20 loading.
12. Maximum horizontal span of an 8" thick wall shall not exceed 8' for boxes of 8 feet or less in depth and 10 feet for boxes 12 feet or less in depth.

TOWN of CLAYTON
USE WITH THE TOWN of CLAYTON STANDARD SPECIFICATIONS ONLY

DRAINAGE STRUCTURES NOTES	SCALE: Not To Scale	DETAIL # 634.02
	REVISION DATE: July, 2010	SHEET # 1 of 1

A5 C5201 DRAINAGE STRUCTURE NOTES
SCALE: N.T.S.

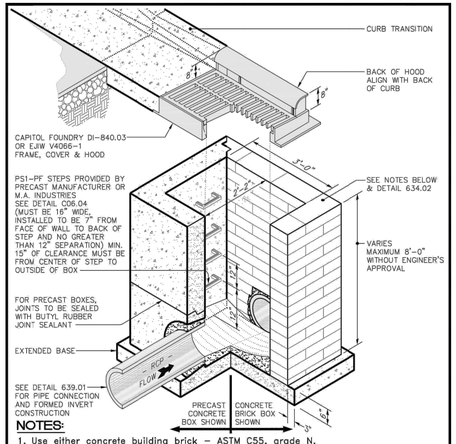


NOTES:
1. Step shown is PS1-PF by M.A. Industries Inc. Peachtree City, GA. alternate may be used provided they are approved by Town of Clayton.

TOWN of CLAYTON
USE WITH THE TOWN of CLAYTON STANDARD SPECIFICATIONS ONLY

POLYPROPYLENE PLASTIC STEP	SCALE: Not To Scale	DETAIL # 2 CO6.04
	REVISION DATE: July, 2010	SHEET # 1 of 1

A4 C5201 PLASTIC STEPS
SCALE: N.T.S.

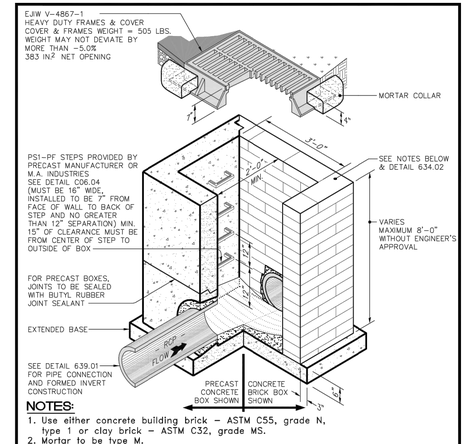


NOTES:
1. Use either concrete building brick – ASTM C55, grade N, type 1 or clay brick – ASTM C32, grade MS.
2. Mortar to be type M.
3. Concrete pipe to be class III
4. Precast boxes to conform to latest ASTM C-913
5. Precast boxes concrete strength to be a minimum 4,000 PSI at 28 days
6. See detail 634.02 for miscellaneous notes.
7. Top of precast box to be field adjusted using methods outlined in specifications.
8. This detail is a representation of the minimum standards for town of Clayton combination curb opening inlet & catch basin. Refer to NCDOT Std. Details 840.00, 840.01, 840.02, 840.03, 840.45, & 840.46 for additional details and requirements.

TOWN of CLAYTON
USE WITH THE TOWN of CLAYTON STANDARD SPECIFICATIONS ONLY

TYPICAL CATCH BASIN AND CURB INLET WITH HOOD	SCALE: Not To Scale	DETAIL # 633.02
	REVISION DATE: July, 2010	SHEET # 1 of 1

A3 C5201 CATCH BASIN
SCALE: N.T.S.



NOTES:
1. Use either concrete building brick – ASTM C55, grade N, type 1 or clay brick – ASTM C32, grade MS.
2. Mortar to be type M.
3. Concrete pipe to be class III
4. Precast boxes to conform to latest ASTM C-913
5. Precast boxes concrete strength to be a minimum 4,000 PSI at 28 days
6. See detail 634.02 for miscellaneous notes.
7. Top of precast box to be field adjusted using methods outlined in specifications.
8. This detail is a representation of the minimum standards for town of Clayton combination curb opening inlet & catch basin. Refer to NCDOT Std. Details 840.00, 840.14, 840.15, 840.16, 840.45, 840.46 & 840.52 for additional details and requirements. Other DOT catch basin standard details may be used with the approval of the Town Engineer. (i.e. In medians, ditches, & swales.)

TOWN of CLAYTON
USE WITH THE TOWN of CLAYTON STANDARD SPECIFICATIONS ONLY

TYPICAL DROP INLET DETAIL	SCALE: Not To Scale	DETAIL # 633.04
	REVISION DATE: July, 2010	SHEET # 1 of 1

A1 C5201 DROP INLET
SCALE: N.T.S.

STORM DRAINAGE DETAILS

REVIEW DRAWING NOT FOR CONSTRUCTION

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Ballentine Associates P.A. CORPORATE SEAL C328 NORTH CAROLINA Since 1921

NORTH CAROLINA PROFESSIONAL SEAL 042543 ENGINEER DALTON W. SMITH 18 FEB 19

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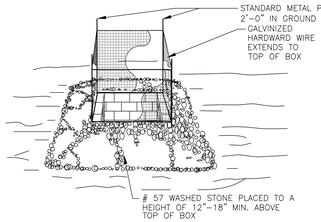
STATE EMPLOYEES' CREDIT UNION
CLAYTON BRANCH
CLAYTON, NORTH CAROLINA
MAJOR SITE PLAN

JOB NUMBER: 117001.05
DATE: 27 DEC 18
SCALE: AS NOTED
DRAWN BY: D.W.S.
REVIEWED BY: G.J.R.

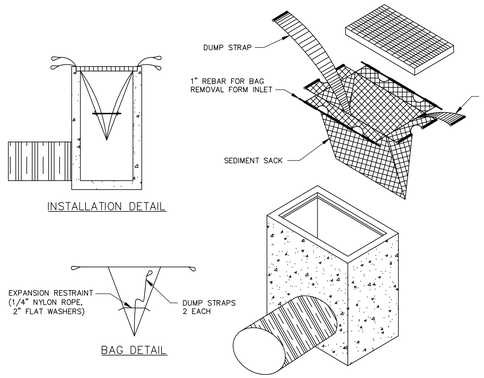
SHEET
C5201



MAINTENANCE FOR BLOCK & GRAVEL INLET PROTECTION:

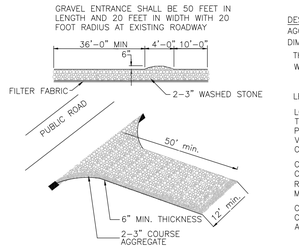
INSPECT THE BARRIER AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (½ INCH OR GREATER) RAINFALL AND MAKE REPAIRS AS NEEDED. REMOVE SEDIMENT AS NECESSARY TO PROVIDE ADEQUATE STORAGE VOLUME FOR SUBSEQUENT RAINS. WHEN THE CONTRIBUTING DRAINAGE AREA HAS BEEN ADEQUATELY STABILIZED, REMOVE ALL MATERIALS AND ANY UNSTABLE SOIL, AND EITHER SALVAGE OR DISPOSE OF IT PROPERLY. BRING THE DISTURBED AREA TO PROPER GRADE, THEN SMOOTH AND COMPACT IT. APPROPRIATELY STABILIZE ALL BARE AREAS AROUND THE INLET.

C2 C5301 **TEMPORARY INLET PROTECTION**
SCALE: N.T.S.



NOTES:
1. SOME MUNICIPALITIES DO NOT ALLOW GUTTER PROTECTION ON PUBLIC ROADS. SILT BAGS SHOULD BE USED WITH THESE CASES.
2. BAGS SHOULD BE CLEANED OUT AFTER EVERY RAIN EVENT AND/OR AS NEEDED.

B3 C5301 **STANDARD SILT SACK - INLET SEDIMENT CONTROL DEVICE**
SCALE: N.T.S.



DESIGN CRITERIA

AGGREGATE SIZE – USE 2-3 INCH WASHED STONE

DIMENSION OF GRAVEL PAD

THICKNESS – 6 INCHES MINIMUM

WIDTH – 12 FT. MINIMUM OR FULL WIDTH AT ACCESS POINTS OF THE VEHICULAR ENTRANCE AND EXIT AREA, WHICHEVER IS GREATER

LENGTH – 50 FT. MINIMUM.

LOCATION – LOCATE CONSTRUCTION ENTRANCES AND EXITS TO LIMIT SEDIMENT FROM LEAVING THE SITE AND TO PROVIDE FOR MAXIMUM UTILITY BY ALL CONSTRUCTION VEHICLES. AVOID STEEP GRADES AND ENTRANCES AT CURVES IN PUBLIC ROADS.

CONTRACTOR SHALL INSTALL ADDITIONAL GRAVEL CONSTRUCTION ENTRANCES NOT INDICATED ON THE PLANS REQUIRED FOR STAGING AND/OR BORROW AREAS AND MAINTAIN AT NO ADDITIONAL EXPENSE TO THE OWNER.

CONTRACTOR SHALL SUPPLEMENT AND MAINTAIN GRAVEL CONSTRUCTION ENTRANCES AT HIS EXPENSE UNTIL FINAL ACCEPTANCE.

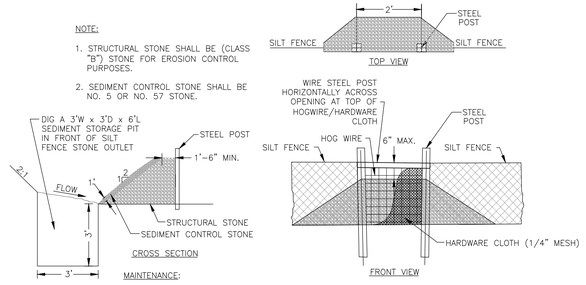
MAINTENANCE:

MAINTAIN THE GRAVEL PAD IN A CONDITION TO PREVENT MUD OR SEDIMENT FROM LEAVING THE CONSTRUCTION SITE. THIS MAY REQUIRE PERIODIC TOPDRESSING WITH 2-INCH STONE. AFTER EACH RAINFALL, INSPECT ANY STRUCTURE USED TO TRAP SEDIMENT AND CLEAN IT OUT AS NECESSARY. IMMEDIATELY REMOVE ALL OBJECTIONABLE MATERIALS SPILLED, WASHED, OR TRACKED ONTO PUBLIC ROADWAYS.

B2 C5301 **TEMPORARY CONSTRUCTION ENTRANCE**
SCALE: N.T.S.

NOTE:

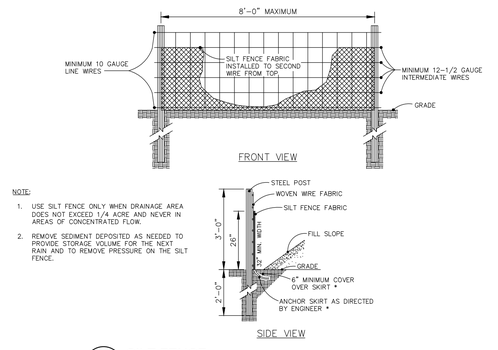
1. STRUCTURAL STONE SHALL BE (CLASS "B") STONE FOR EROSION CONTROL PURPOSES.
2. SEDIMENT CONTROL STONE SHALL BE NO. 5 OR NO. 57 STONE.



MAINTENANCE:

- INSPECT SILT FENCE STONE OUTLET AT LEAST ONCE A WEEK AND AFTER EACH RAINFALL. MAKE ANY REQUIRED REPAIRS IMMEDIATELY.
- REMOVE SEDIMENT DEPOSITS AS NECESSARY, RESTORE TO ITS ORIGINAL DIMENSIONS AND REPLACE STONE THAT IS IMPAIRED BY SEDIMENT.

A3 C5301 **TEMPORARY SILT FENCE STONE OUTLET**
SCALE: N.T.S.



NOTE:

1. USE SILT FENCE ONLY WHEN DRAINAGE AREA DOES NOT EXCEED 1/4 ACRE AND NEVER IN AREAS OF CONCENTRATED FLOW.
2. REMOVE SEDIMENT DEPOSITED AS NEEDED TO PROVIDE STORAGE VOLUME FOR THE NEXT RAIN AND TO REMOVE PRESSURE ON THE SILT FENCE.

A2 C5301 **SILT FENCE**
SCALE: N.T.S.

EROSION CONTROL DETAILS

REVIEW DRAWING
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Ballentine Associates P.A. CORPORATE SEAL C328 NORTH CAROLINA Chapel Hill

NORTH CAROLINA PROFESSIONAL SEAL 042543 ENGINEER JOHN W. SMITH 18 FEB 19

NUM	REVISIONS	DATE
1	PER TRC REVIEW COMMENTS	31 JAN 19
2	PER TRC REVIEW COMMENTS	18 FEB 19

OWNER INFORMATION
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ISSUED	DATE
MAJOR SITE PLAN SUBMITTAL #1	27 DEC 18
MAJOR SITE PLAN SUBMITTAL #2	31 JAN 19
MAJOR SITE PLAN SUBMITTAL #3	18 FEB 19

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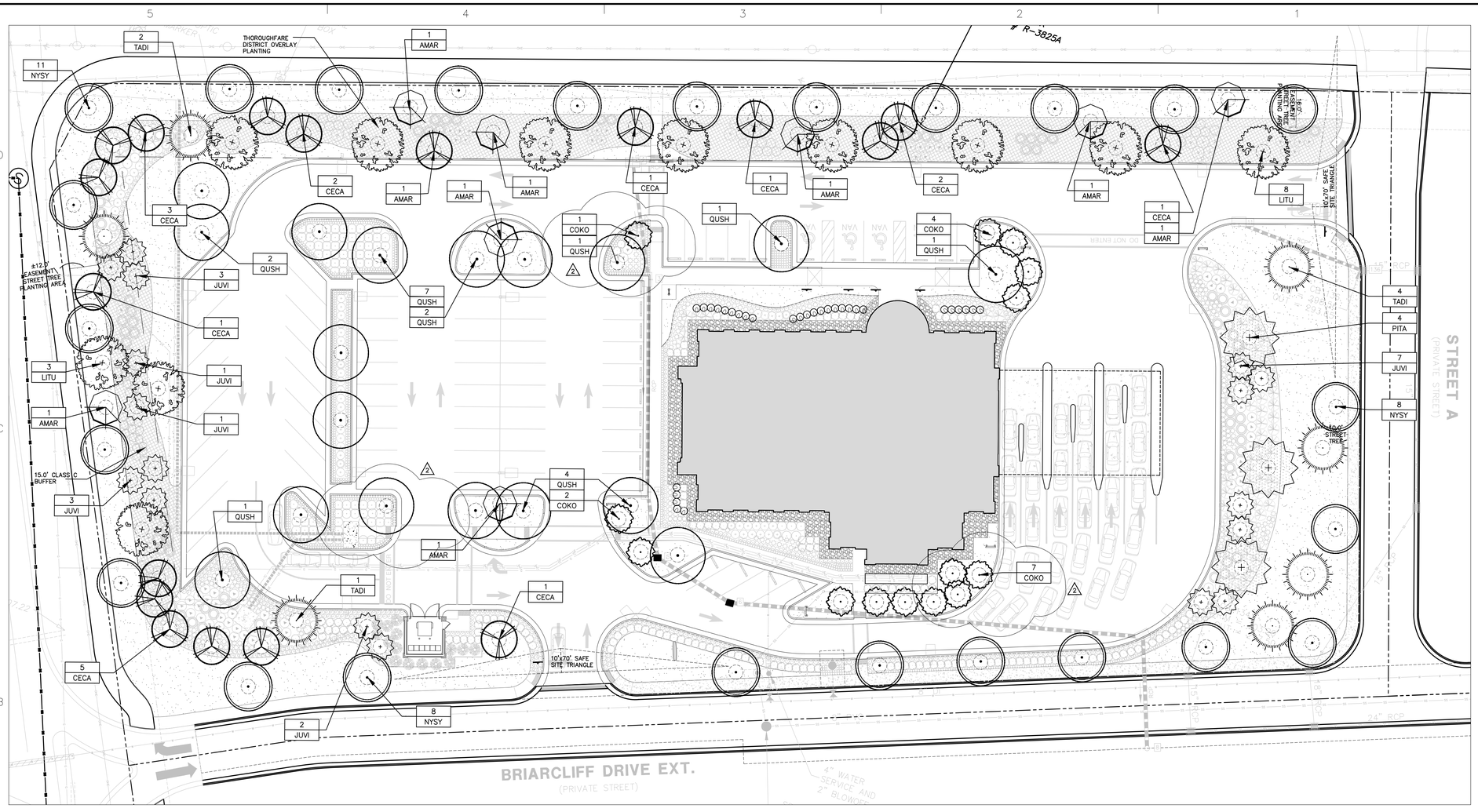
CLAYTON BRANCH
CLAYTON, NORTH CAROLINA

MAJOR SITE PLAN

JOB NUMBER: 117001.05
DATE: 27 DEC 18
SCALE: AS NOTED
DRAWN BY: D.W.S.
REVIEWED BY: G.J.R.

SHEET
C5301



TREE PLANTING LEGEND

- BLACK GUM (NYSY) [STREET TREES]
- SHUMARD OAK (QUSH) [PARKING LOT TREES]
- BALD CYPRESS (TADI) [BUFFER TREE]
- TULIP POPLAR (LITU) [BUFFER CANOPY TREE]
- LOBLOLLY PINE (PITA) [BUFFER CANOPY TREE]
- EASTERN REDBUD (CECA) [UNDERSTORY]
- SERCIVEBERRY (AMAR) [UNDERSTORY]
- FLOWERING DOGWOOD (COKO) [BUILDING ACCENT TREES]
- SOD
- TREE MULCH RING
- EASTERN RED CEDAR (JUVI) [UNDERSTORY]

NOTES

1. SEE SHEET L101 FOR UNDERSTORY PLANTING PLAN
2. SEE SHEET L200 FOR PLANTING SCHEDULE & NOTES
3. SEE SHEET L201 FOR PLANTING DETAILS
4. ALL DISTURBED AREAS NOT COVERED BY PLANT MATERIAL TO BE SEEDED WITH SOD OR GRASS SEED MIX PER SPECIFICATIONS
5. COORDINATE ALL PLANTING WITH THE ELECTRICAL PLANS
6. CCQ = CONTRACTOR TO COMPUTE

CALL BEFORE YOU DIG 1-800-632-4949 NORTH CAROLINA ONE CALL SYSTEM

CAUTION!!!
The locations and elevations of existing underground utilities as shown on this drawing are only APPROXIMATE. No guarantee is either expressed or implied as to the completeness of accuracy thereof. The contractor shall be exclusively responsible for determining the exact utility locations and elevations prior to the start of construction

NC GRID NAD 83

TREE PLANTING PLAN

20 0 10 20 40
(GRAPHIC SCALE IN FEET)
1 inch = 20 ft.

BALLENTINE ASSOCIATES, P.A.
LANDSCAPE ARCHITECTURE
2919 RIVA RIDGE ROAD, CHARLOTTE, NC 28214
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LICENSE # F-0467

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 885 2/18/19

NUM	REVISIONS	DATE
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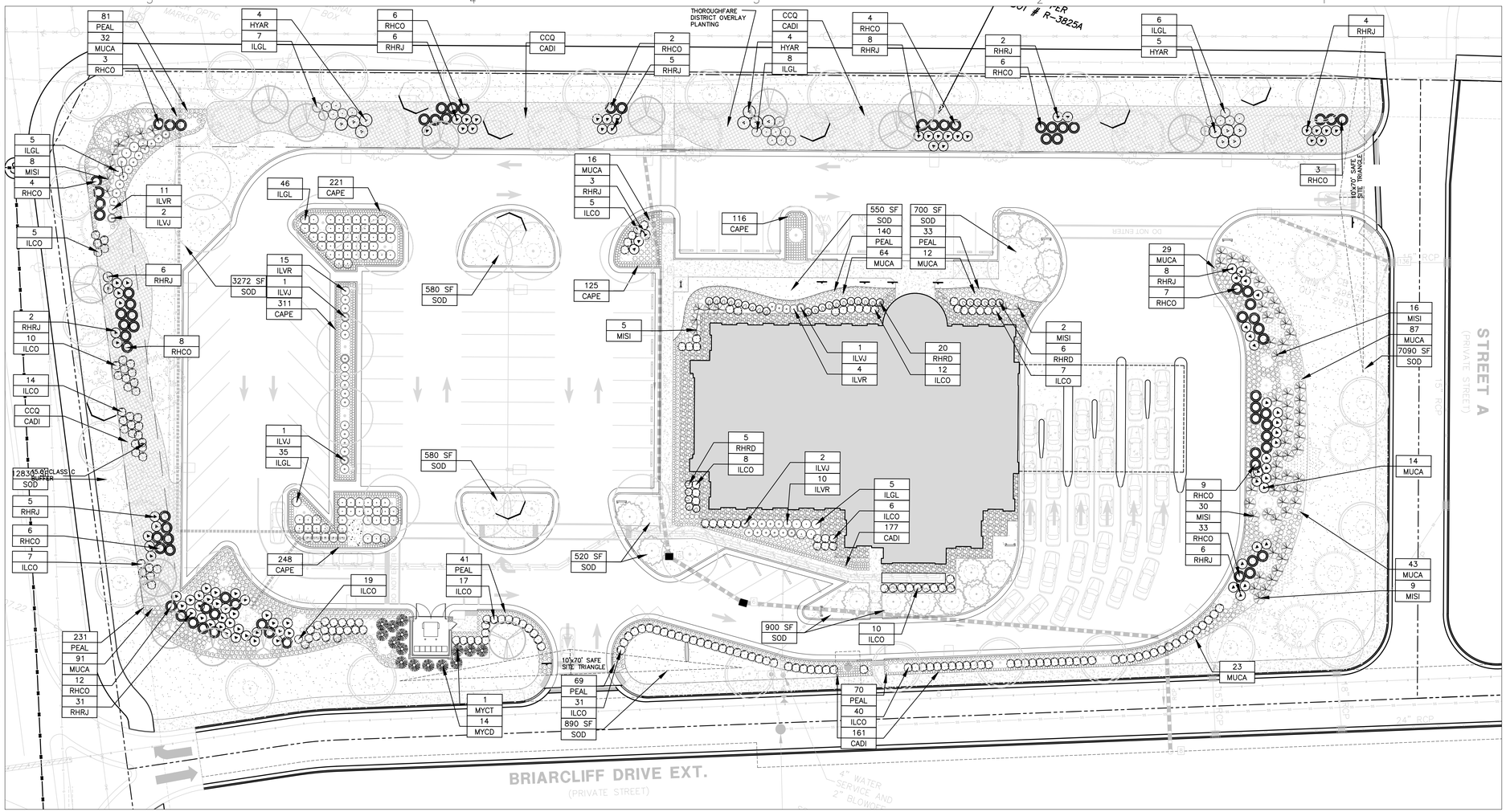
CLAYTON BRANCH
CLAYTON, NORTH CAROLINA

MAJOR SITE PLAN

JOB NUMBER: 101.12106.00
DATE: 27 DEC 18
SCALE: AS NOTED
DRAWN BY: RI, KS
REVIEWED BY: DP

SHEET
L100



UNDERSTORY PLANTING LEGEND

- CARISSA HOLLY
- SOUTHERN WAX MYRTLE DONS'S DWARF [F]
- SOUTHERN WAX MYRTLE TOM'S DWARF [M]
- COMPACT INKBERRY
- WINTERBERRY HOLLY – RED SPRITE [F]
- WINTERBERRY HOLLY – JIM DANDY [M]
- ANNABELLE SMOOTH HYDRANGEA
- AUTUMN TWIST AZALEA [PURPLE & WHITE]
- AUTUMN SWEETHEART AZALEA [PINK]
- AUTUMN CHIFFON AZALEA [WHITE & PINK]
- CHINESE SILVER GRASS
- PINK MUHLYGRASS
- LITTLE BUNNY FOUNTAIN GRASS
- CAREX [SUN & SHADE SPECIES]
- GROUNDCOVER FOR BUFFER PLANTING
- SOD

NOTES

1. SEE SHEET L100 FOR TREE PLANTING PLAN
2. SEE SHEET L200 FOR PLANTING SCHEDULE & NOTES
3. SEE SHEET L201 FOR PLANTING DETAILS
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UNDERSTORY PLANTING PLAN

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LANDSCAPE ARCHITECTURE • LAND PLANNING
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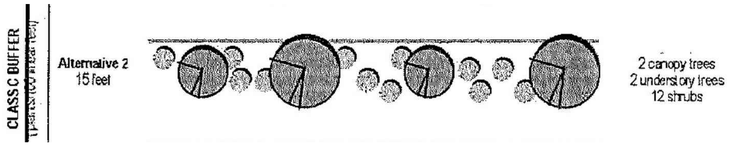

1. **Note:** **See description below describing the combined embankment and evergreen hedge used to meet the screening requirement.**

4 CLASS C BUFFER

SCALE: NOT TO SCALE

Part 1 . Site Interior Landscape Requirements

D.1.a. Twenty Percent of the total lot area shall be landscaped

Total Lot Area: 142,198.34 sf (3.26 ac)

20% = 28, 439.67 sf shall be landscaped

Provided = 28,483 sf (20%)

2 D.1.b. One canopy Tree, one understory tree, and two shrubs shall be planted for each 1,000 square feet of landscape area required

20% = 28,439.67 sf shall be landscaped therefore 29 "sets" of plants shall be required

Requirements	**Provided**
Canopy Trees = 29	**34 [Not including 'Street Trees', but does include extra trees in the 42E buffer)**
Understory Trees = 29	**29**
Shrubs = 57	**428**

D.2. Vehicular Use Areas: Parking areas in excess of 1,500 square feet of five spaces shall provide landscape areas in accordance with the requirements set forth in this section

a. Perimeter Screening

D.0.a.1. The perimeter of all parking areas and other vehicular use areas with frontage on or visibility from any portion of a public right-of-way shall be screened to a height of three feet

Provided: Parking and Drive through lanes are all screened with evergreen shrubs and trees continuously. Plants will be 36"min. on installation

Part 2. Perimeter Buffer - Glen Laurel Drive

Planned Development Buffers - Buffer type C Required **[Provided] Evergreens shrubs and trees that will be 36" min on installation combine with a 3' embankment to meet the hedge requirement. See grading plan for embankment. UDC requires 2 canopy trees, 2 understory trees and 12 shrubs per 100 LF, see detail Glen Laurel Buffer is 200LF.**

Requirements	**Provided**
Canopy Trees = 4	**4 [Not including 'Street Trees']**
Understory Trees=4	**13 [Not including 'Street Trees']**
Shrubs = 24	**73**

Part 2. Perimeter Buffer - 42E

E.0.a.2. 30' thoroughfare **district overlay requires 1 tree and 5 shrubs per 1000SF. requirement.**

Requirements	**Provided**
Trees = 16	**24 [Not including 'Street Trees']**
Shrubs = 80	**88**

Part 3. Street Yard Trees

F.1. Street yard trees shall be required along all rights of way at the rate of one canopy tree per lot or one canopy tree for every 40 linear feet (spaced a maximum of 50 feet apart)

Provided: Street Trees - Nyssa Sylvatica - have been been provided around the perimeter of the public sidewalk spaced 50' O.C. and 5' off the sidewalk. The buffer yard Canopy trees have been spaced between the Street Trees.

Part 4. Screening

G.2.a. Trash Collection Area - located on the rear side of the building and shall be effectively screen from view from adjacent properties of public rights-of-ways

G2.c. Enclosures shall be screened by landscaping utilizing evergreen shrubs that shall be maintained at a min. height of at least 36" within two years of planting

Provided: Evergreen shrubs (±60" high) create a screen around the trash enclosure.

All mechanical equipment shall be screened completely from view as required by the UDC. This includes any equipment that may not be shown on these plans.

2 CODE TABULATION

SCALE: NOT TO SCALE

1. MINIMUM TREE SIZE AT PLANTING IS 2.5-INCH CALIPER FOR SINGLE STEM CANOPY TREES AND 2-INCH CALIPER FOR UNDERSTORY SINGLE STEM TREES . SMALL MATURING MULTI-STEM TREES MUST BE TREE FORM, MAXIMUM 3 TO 5 TRUNKS, AND MINIMUM 8 FEET TALL.
2. UNLESS APPROVED BY CITY STAFF ALL REQUIRED TREES MUST HAVE SINGLE STEM TRUNKS WITH NO CO-DOMINANT TRUNKS BRANCHES. TREE TRUNKS SHALL BE STRAIGHT IN FORM AND FREE OF DAMAGE OR CRACKS. PRUNING CUTS SHALL BE CALLUSED OVER. BRANCH LENGTH SHALL BE TYPICAL FOR THE TREES AGE AND NOT BE BROKEN, DISEASED OR INJURED. ROOT FLARE SHALL BE LOCATED AT GRADE AND BE FREE FROM EXCESSIVE ADVENTITIOUS ROOT GROWTH.
3. ALL STRAPPING AND TOP ⅓ OF WIRE BASKET MUST BE CUT AWAY AND REMOVED FROM ROOT BALL PRIOR TO BACKFILLING PLANTING PIT. REMOVE TOP ⅓ OF THE BURLAP FROM ROOT BALL.
4. FOR NEW PLANTING AREAS, REMOVE ALL PAVEMENT, GRAVEL SUB-BASE AND CONSTRUCTION DEBRIS; REMOVE COMPACTED SOIL AND ADD 24" NEW TOPSOIL, OR TILL AND AMEND THE TOP 24" OF EXISTING SOIL TO MEET TOPSOIL/ PLANTING MIX STANDARDS FOR TREES WITHIN ENTIRE MINIMUM AREA OF 274 SQUARE FEET PER TREE.
5. LARGE MATURING TREES MAY NOT BE PLANTED WHERE THERE ARE OVERHEAD DISTRIBUTIONS OR TRANSMISSION LINES. IF TREES CONFLICT WITH POWER LINES OR SIGNS, CALL LANDSCAPE ARCHITECT TO RESOLVE BEFORE PLANTING.
6. COORDINATE ALL PLANTING WITH SITE LIGHTING PLAN.
7. ADJUST TREE PLANTING LOCATIONS TO AVOID UNDERGROUND UTILITIES. PLANT 15' FROM ALL UNDERGROUND UTILITIES (GAS, WATER, PHONE, AND ELECTRICAL LINES.)
8. ATTENTION LANDSCAPER: NOTIFY LANDSCAPE ARCHITECT OF ANY SIGN, POWER LINE, OR OTHER CONFLICTS BEFORE PLANTING NEW TREES.
9. ALL LANDSCAPE MATERIALS SHALL BE IN ACCORDANCE WITH THE 'AMERICAN STANDARD FOR NURSERY STOCK AND SHALL BE INSPECTED PRIOR TO PLANTING.
10. CONTRACTOR IS RESPONSIBLE TO REVIEW ALL UTILITY LOCATIONS PRIOR TO EXCAVATION OR MATERIAL INSTALLATION.
11. CONTRACTOR IS RESPONSIBLE FOR SOIL PREPARATION, ADDITIVE OF NUTRIENT AND FERTILIZATION PER TESTING AS OUTLINED IN SPECIFICATIONS.
12. IF ANY DISCREPANCIES OCCUR BETWEEN QUANTITIES OF MATERIAL SHOWN ON THE PLAN AND QUANTITIES LISTED IN THE PLANT LIST, THE QUANTITIES GRAPHICALLY SHOWN ON THE PLAN SHALL TAKE PRECEDENCE.
13. SOIL AMENDMENTS SHALL BE UNIFORMLY SPREAD AND ROTOTILLED INTO SOIL PER SPECIFICATIONS.
14. CONTRACTOR SHALL NOTIFY ARCHITECT OF ANY SOIL CONDITIONS THE CONTRACTOR CONSIDERS DETRIMENTAL TO PLANT GROWTH.
15. ALL PLANT BEDS AND NEW TREES SHALL BE MULCHED WITH 3" THICK LAYER OF DOUBLE HAMMERED HARDWOOD MULCH. DO NOT PLACE MULCH WITHIN 3 INCHES OF TRUNKS OR STEMS. ROOT FLARE SHALL BE VISIBLE AT BASE OF ALL PLANT MATERIAL.
16. CONTRACTOR IS RESPONSIBLE FOR THE SOIL PREPARATION AND SEEDING OF ALL NEW LAWN AND DISTURBED EXISTING LAWN AREAS.
17. IN ADDITION TO THE SOIL MIXTURE, LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND INSTALLING ANY NECESSARY SOIL AMENDMENTS, AS INDICATED BY SOIL TESTS, AS WELL AS, AN ADEQUATE DRAINAGE SYSTEM FOR PLANTING BEDS. LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR PROVIDING AN ENVIRONMENT SUITABLE FOR THE GROWTH OF HEALTHY PLANT MATERIAL. REFER TO PLANTING DETAILS FOR INFORMATION ON PLANTING BED PREPARATIONS.
18. ALL PLANT MATERIAL MUST BE PLANTED IN CORRELATION WITH THE APPROPRIATE GROWING SEASON OF INDIVIDUAL PLANT REQUIREMENTS. SOME PERENNIALS MAY REQUIRE A SPRING PLANTING IN ORDER TO SURVIVE A FULL WINTER DORMANCY.
19. PROVIDE QUALITY, SIZE, GENUS, SPECIES AND VARIETY OF EXTERIOR PLANTS INDICATED, COMPLYING WITH APPLICABLE REQUIREMENTS IN ANSI 260.1, 'AMERICAN STANDARD FOR NURSERY STOCK'
20. IT IS THE LANDSCAPE CONTRACTORS RESPONSIBILITY TO UNDERSTAND THE OVERALL CONSTRUCTION SCHEDULE AND PLAN PLANT DIGGING AND INSTALLATION ACCORDINGLY. IF THE LANDSCAPE CONTRACTOR IS REQUIRED TO RETURN TO THE SITE AT A LATER DATE DURING AN APPROPRIATE PLANTING SEASON, IT SHALL BE AT NO COST TO THE OWNER. LANDSCAPE CONTRACTOR WILL BE RESPONSIBLE TO REPAIR ANY DAMAGE CAUSED TO LAWNS, EXISTING LANDSCAPING OR PAVEMENTS AT NO COST TO THE OWNER.
21. ALL LANDSCAPING, SCREENING AND BUFFERING PLANTING SHALL COMPLY WITH THE CLAYTON, NC CODE OF ORDINANCES SECTION 155.402.
22. PLANT MAINTENANCE: THE RESPONSIBILITY FOR MAINTENANCE OF A PLANTED AREA SHALL REMAIN WITH THE OWNER, HIS OR HER SUCCESSORS, HEIRS, ASSIGNEES OR ANY CONSENTING GRANTEE. MAINTENANCE IS REQUIRED IN ORDER TO ENSURE THE PROPER FUNCTIONING OF A PLANTED AREA.
    - ALL PLANTINGS SHALL BE MAINTAINED IN AN ATTRACTIVE AND HEALTHY CONDITION. MAINTENANCE SHALL INCLUDE, BUT NOT BE LIMITED TO, WATERING (1ST YEAR OF ESTABLISHMENT), MULCHING, FERTILIZING AND PEST MANAGEMENT, MOWING, WEEDING, REMOVAL OF LITTER AND DEAD PLANT MATERIALS, AND NECESSARY PRUNING AND TRIMMING.
    -NECESSARY PRUNING AND TRIMMING SHALL BE IN ACCORDANCE WITH THE AMERICAN NATIONAL STANDARDS FOR TREE CARE OPERATIONS: TREE SHRUB AND OTHER WOOD PLANT MAINTENANCE -STANDARDS PRACTICES (PRUNING).
    -DEAD OR DISEASED PLANTINGS PLANTINGS SHALL BE REMOVED. REPLACEMENT PLANTINGS SHALL BE PROVIDED FOR ANY REQUIRED PLANTS WHICH DIE OR ARE REMOVED FOR ANY REASON AND SHALL MEET ALL MINIMUM STANDARDS AND CONFORM TO THE CLAYTON, NC CODE OF ORDINANCES SECTION 155.402
    -FAILURE TO MAINTAIN: IN THE EVEN THAT ANY OWNER OF A PLANTED AREA FAILS TO MAINTAIN THE PLANTED AREA ACCORDING TO THE TOWN OF CLAYTON'S STANDARDS, THE TOWN SHALL HAVE THE RIGHT TO RECOVER THE COST OF ENFORCEMENT, INCLUDING REASONABLE ATTORNEY FEES. THE TOWN MAY ALSO, FOLLOWING REASONABLE NOTICE AND A DEMAND THAT DEFICIENCY OF MAINTENANCE BE CORRECTED, ENTER THE PLANTED AREA TO TAKE MAINTENANCE ACTION. THE COST OF SUCH MAINTENANCE SHALL BE CHARGED TO THE PARTY HAVING THE PRIMARY RESPONSIBILITY FOR MAINTENANCE OF THE PLANTED AREA.
23. PLANT WARRANTY - THE LANDSCAPE CONTRACTOR SHALL PROVIDE A WARRANTY OF ALL PLANT MATERIAL AND INSTALLATION FOR ONE (1) YEAR FOLLOWING INSTALLATION.

3 PLANTING NOTES

SCALE: NOT TO SCALE

KEY	QUANTITY	BOTANICAL NAME	COMMON NAME	CALIPER/ SIZE	SPACING	REMARKS
TREES						
AMAR	9	AMELANCHIER ARBOREA	DOWNY SERVICEBERRY	2 1/2" CAL. (8'-10' HT)	AS SHOWN	B&B, MULTI-STEMMED, MATCHED SPECIMENS [BUFFER]
CECA	17	CERCIS CANADENSIS	EASTERN REDBUD	2 1/2" CAL. (8'-10' HT)	AS SHOWN	B&B, MATCHED SPECIMENS [BUFFER]
COKO	14	CORNUS KOUSA	KOUSA FLOWERING DOGWOOD	2 1/2" CAL. (8'-10' HT)	AS SHOWN	B&B, MATCHED SPECIMENS [PARKING LOT]
JUVI	17	JUNIPERUS VIRGINIANA 'BRODIE'	BRODIE EASTERN RED CEDAR	2" CAL. (8'-10' HT)	AS SHOWN	B&B, MATCHED SPECIMENS [BUFFER]
LITU	11	LIRIODENDRON TULIPIFERA	TULIP POPLAR	2 1/2" CAL. (10'-12' HT)	AS SHOWN	B&B, MATCHED SPECIMENS [BUFFER]
NYSY	27	NYSSA SYLVATICA	BLACK GUM	3" CAL. (10'-12' HT)	50 O.C.	B&B, MATCHED SPECIMENS [STREET TREES]
PITA	4	PINUS TAEDA	LOBLOLLY PINE	2 1/2" CAL. (10'-12' HT)	AS SHOWN	B&B, MATCHED SPECIMENS [BUFFER]
2 QUSH	19	QUERCUS SHUMARDII	SHUMARD OAK	3" CAL. (12'-14' HT)	AS SHOWN	B&B, MATCHED SPECIMENS [PARKING LOT]
TADI	7	TAXODIUM DISTICHUM 'SHAWNEE BRAVE'	SHAWNEE BRAVE BALD CYPRESS	2 1/2" CAL. (10'-12' HT)	AS SHOWN	B&B, MATCHED SPECIMENS
SHRUBS						
HYAR	13	HYDRANGEA ARBORESCENS 'ANNABELLE'	ANNABELLE SMOOTH HYDRANGEA	5 GAL (42-48" HT)	60" o.c.	CONTAINER
ILCQ	191	ILEX CORNUTA 'CARISSA'	CARISSA HOLLY	3 GAL (36" HT MIN PER UDC)	36" o.c.	CONTAINER
2 ILGL	112	ILEX GLABRA 'COMPACTA'	INKBERRY	3 GAL (36" HT MIN PER UDC)	42" o.c.	CONTAINER; 1 MALE PER 9 FEMALE PLANTS
ILVJ	7	ILEX VERTICILLATA ' JIM DANDY'	JIM DANDY WINTERBERRY [MALE]	3 GAL (30-36" HT)	42 o.c.	CONTAINER; 1 MALE PER 9 FEMALE PLANTS
ILVR	40	ILEX VERTICILLATA 'RED SPRITE'	RED SPRITE WINTERBERRY [FEMALE]	3 GAL (30-36" HT)	42 o.c.	CONTAINER
MYCD	14	MYRICA CERIFERA 'DON'S DWARF' [FEMALE]	DON'S DWARF WAXMYRTLE	5 GAL (42-48" HT)	60" o.c.	CONTAINER; 1 MALE PER 6-10 FEMALE PLANTS
MYCT	1	MYRICA CERIFERA 'TOM'S DWARF' [MALE]	TOM'S DWARF WAXMYRTLE	5 GAL (42-48" HT)	60" o.c.	CONTAINER; 1 MALE PER 6-10 FEMALE PLANTS
RHCO	103	RHODODENDRON 'CONLEP' PP12133	AUTUMN TWIST AZALEA	3 GAL (36" HT MIN PER UDC)	48" o.c.	CONTAINER; BICOLOR - PURPLE & WHITE
RHRD	31	RHODODENDRON 'ROBLED' PP15862	AUTUMN CHIFFON AZALEA	3 GAL (36" HT MIN PER UDC)	36" o.c.	CONTAINER; BICOLOR - WHITE & PINK
RHRJ	86	RHODODENDRON 'ROBLEJA' PP16249	AUTUMN SWEETHEART AZALEA	3 GAL (36" HT MIN PER UDC)	48" o.c.	CONTAINER; PINK
ORNAMENTAL GRASSES & GROUNDCOVERS						
CAPE	815	CAREX PENSYLVANICA	CAREX	1 GAL (MIN)	12" o.c.	CONTAINER, PARKING LOT ISLANDS
CADI	CCQ	CAREX DIVULSA	CAREX	3 1/2" POT (MIN 6 BIBB CLUMPS)	12-18" o.c.	BUFFER GROUNDCOVER [SUN]
MISI	70	MISCANTHUS SINENSIS 'GRACILLIMUS'	CHINESE SILVER GRASS	3 GAL	60" o.c.	CONTAINER
MUCA	411	MUHLENBERGIA CAPILLARIS	PINK MUHLYGRASS	2 GAL	30" o.c.	CONTAINER
PEAL	665	PENNISETUM ALOPECUROIDES 'LITTLE BUNNY'	DWARF FOUNTAIN GRASS	1 GAL (MIN)	12" o.c.	CONTAINER
SOD	CCQ	TURF TYPE TALL FESCUE				[SEED AS BID ALTERNATE]
MULCH	CCQ	MULCH				TREE MULCH RINGS, BUILDING & ACCENT PLANT BEDS

1 PLANT SCHEDULE

SCALE: NOT TO SCALE

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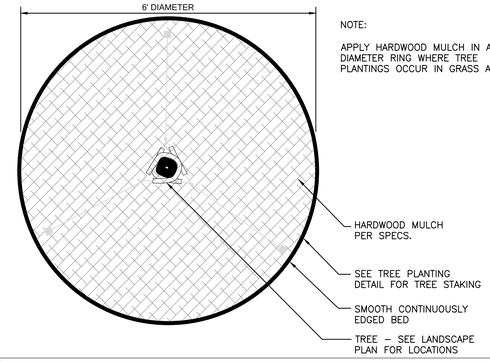
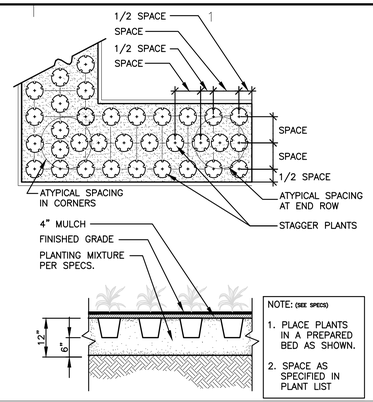
SHEET
L200



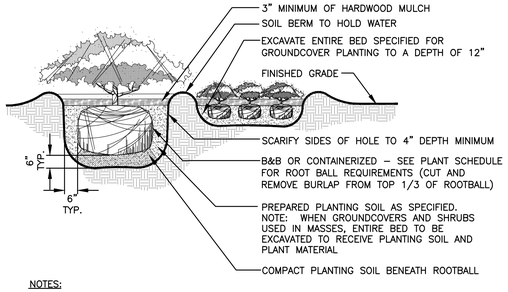
NOTE:

APPLY HARDWOOD MULCH IN A 6' DIAMETER RING WHERE TREE PLANTINGS OCCUR IN GRASS AREAS.

6 TREE MULCH RING
SCALE: NOT TO SCALE



5 GROUNDCOVER MASSING
SCALE: NOT TO SCALE

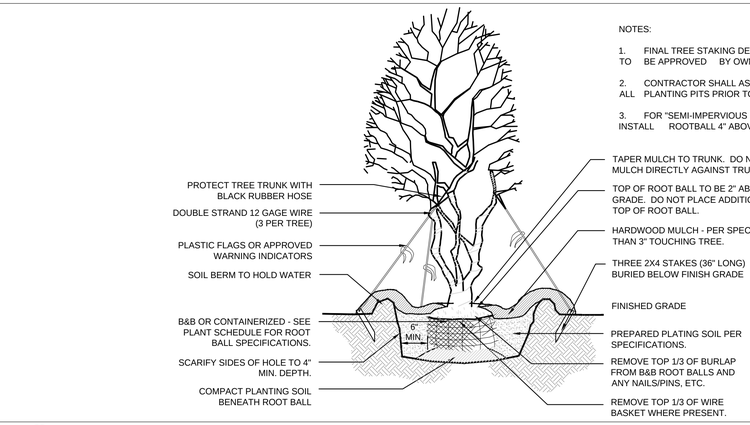


NOTES:

1. CONTRACTOR SHALL ASSURE PERCOLATION OF ALL PLANTING PITS PRIOR TO INSTALLATION.

2. IN SEMI-IMPERVIOUS SOIL CONDITIONS (AND FOR ALL AZALEA PLANTING), ROOTBALL ELEVATION SHALL BE 2" ABOVE FINISH GRADE. COORDINATE WITH LANDSCAPE ARCHITECT PRIOR TO SETTING ROOTBALL ELEVATIONS.

4 SHRUB & GROUNDCOVER
SCALE: NOT TO SCALE



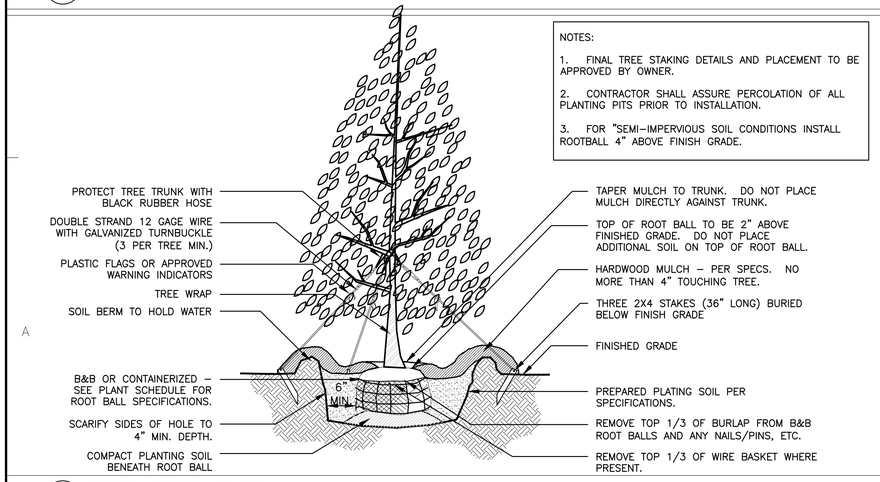
NOTES:

1. FINAL TREE STAKING DETAILS AND PLACEMENT TO BE APPROVED BY OWNER.

2. CONTRACTOR SHALL ASSURE PERCOLATION OF ALL PLANTING PITS PRIOR TO INSTALLATION.

3. FOR "SEMI-IMPERVIOUS SOIL CONDITIONS INSTALL ROOTBALL 4" ABOVE FINISH GRADE.

3 MULTISTEM TREE
SCALE: NOT TO SCALE



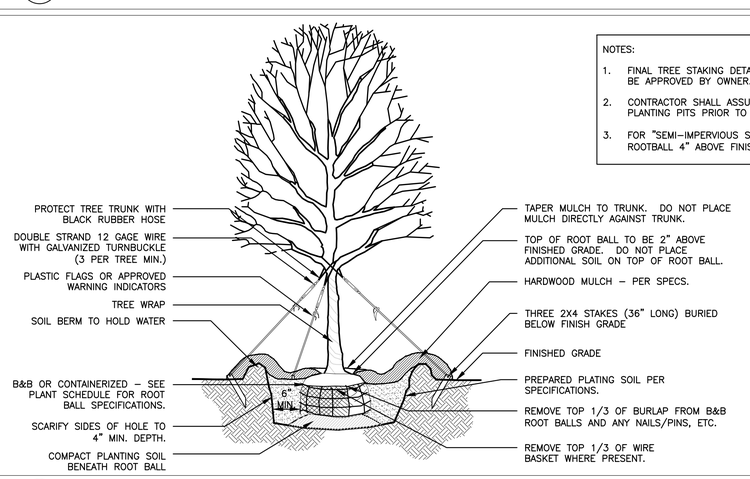
NOTES:

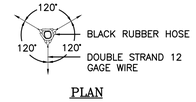
1. FINAL TREE STAKING DETAILS AND PLACEMENT TO BE APPROVED BY OWNER.

2. CONTRACTOR SHALL ASSURE PERCOLATION OF ALL PLANTING PITS PRIOR TO INSTALLATION.

3. FOR "SEMI-IMPERVIOUS SOIL CONDITIONS INSTALL ROOTBALL 4" ABOVE FINISH GRADE.

2 EVERGREEN TREE
SCALE: NOT TO SCALE





PLAN

1 LARGE MATURE TREE
SCALE: NOT TO SCALE

BALLENTINE ASSOCIATES, P.A.
LANDSCAPE ARCHITECTURE & PLANNING
221 PROVIDENCE ROAD, CHAPEL HILL, N.C. 27514
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LITTLE DIVERSIFIED ARCHITECTURAL CONSULTING
615 SOUTH COLLEGE STREET
CHARLOTTE, NC 28202
LICENSE # F-0467

NORTH CAROLINA BOARD OF EXAMINERS FOR ENGINEERING AND SURVEYING 885
2/19/19

NUM	REVISIONS	DATE
1	PER TRC REVIEW COMMENTS	31 JAN 19
2	PER TRC REVIEW COMMENTS	18 FEB 19

OWNER INFORMATION
STATE EMPLOYEES' CREDIT UNION
P.O. BOX 26807
RALEIGH, NC 27611

OWNERS REPRESENTATIVE:
MR. JAMIE APPLEQUIST
PH. (800) 438-1104
FAX
EMAIL jamie.applequist@ncsecu.org

ISSUED	DATE
MAJOR SITE PLAN SUBMITTAL #1	27 DEC 18
MAJOR SITE PLAN SUBMITTAL #2	31 JAN 19
MAJOR SITE PLAN SUBMITTAL #3	18 FEB 19

STATE EMPLOYEES' CREDIT UNION
CLAYTON BRANCH
CLAYTON, NORTH CAROLINA

MAJOR SITE PLAN

JOB NUMBER: 101.12106.00
DATE: 27 DEC 18
SCALE: AS NOTED
DRAWN BY: RI, KS
REVIEWED BY: DP

SHEET
L201

SITE LIGHTING PLAN

NC GRID NAD 83

20 0 10 20 40

(GRAPHIC SCALE IN FEET)
1 inch = 20 ft.

BALLENTINE ASSOCIATES, P.A.
LANDSCAPE ARCHITECTURE
701 Tyvola Road, Charlotte, NC 28217
(704) 525-1646 FAX (704) 525-1647

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CHARLOTTE, NC 28202
LICENSE # F-0467

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT SEAL 5111 MARK BALLENTINE

LIB.COM

NUM	REVISIONS	DATE
1	PER TRC REVIEW COMMENTS	31 JAN 19
2	PER TRC REVIEW COMMENTS	19 FEB 19

OWNER INFORMATION
STATE EMPLOYEES' CREDIT UNION
P.O. BOX 26807
RALEIGH, NC 27611

OWNERS REPRESENTATIVE:
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PH: (800) 438-1104
FAX
EMAIL: Jamie.Applequist@ncsecu.org

ISSUED	DATE
MAJOR SITE PLAN SUBMITTAL #1	27 DEC 18
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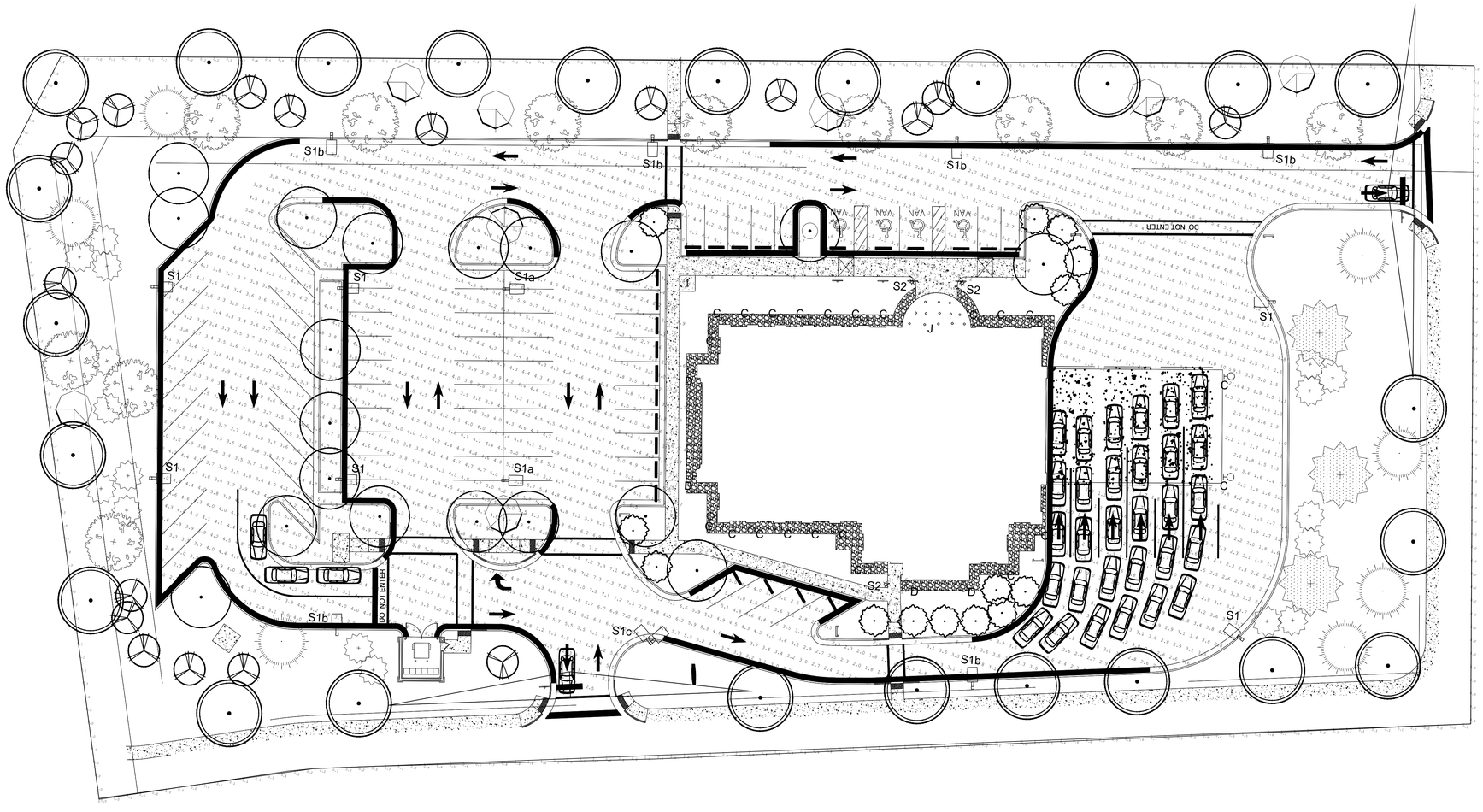
STATE EMPLOYEES' CREDIT UNION
CLAYTON BRANCH
CLAYTON, NORTH CAROLINA

MAJOR SITE PLAN

JOB NUMBER: 101.12106.00
DATE: 27 DEC 18
SCALE: AS NOTED
DRAWN BY: RI, KS
REVIEWED BY: DP

SHEET
SL100



SITE LIGHTING PLAN - PHOTOMETRICS

CALCULATIONS SUMMARY							
LABEL	CALC TYPE	UNITS	AVG	MAX	MIN	AVG/MIN	MAX/MIN
PARKING LOTS AND DRIVEWAY	ILLUMINANCE	Fc	3.91	21.8	0.7	5.59	31.1
PROPERTY LINE	ILLUMINANCE	Fc	0.35	1.2	0.0	NA	NA
SIDEWALK	ILLUMINANCE	Fc	4.17	38.6	1.5	2.78	25.7

NC GRID NAD 83

20 0 10 20 40

(GRAPHIC SCALE IN FEET)
1 inch = 20 ft.

BALLENTINE ASSOCIATES, P.A.
LANDSCAPE ARCHITECTURE
231 SOUTH I-85 ROAD, CHARLOTTE, NC 28214
(704) 393-0404 (FAX) 393-0405

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LICENSE # F-0467

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT SEAL 5111 Mike Ballentine

L.I.S.I.2017

NUM	REVISIONS	DATE
1	PER TRC REVIEW COMMENTS	31 JAN 19
2	PER TRC REVIEW COMMENTS	19 FEB 19

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STATE EMPLOYEES' CREDIT UNION
CLAYTON BRANCH
CLAYTON, NORTH CAROLINA

MAJOR SITE PLAN

JOB NUMBER: 101.12106.00
DATE: 27 DEC 18
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DRAWN BY: RI, KS
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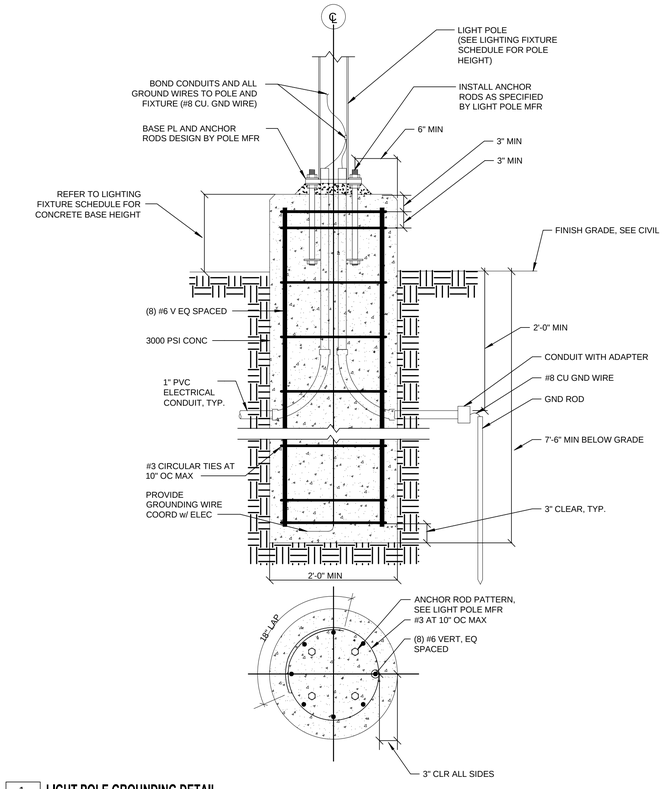
SHEET
SL200



1 SL300 **LIGHT POLE GROUNDING DETAIL**
NOT TO SCALE

GENERAL NOTES

A. WORKMANSHIP SHALL CONFORM TO NECA PUBLICATION 'STANDARDS OF INSTALLATION.'

B. INSTALLATION SHALL COMPLY WITH NATIONAL ELECTRICAL CODE, STATE AND ALL REQUIREMENTS OF THE LOCAL INSPECTOR (FURNISH INSPECTION CERTIFICATE), ALL WORK SHALL BE BY LICENSED ELECTRICAL CONTRACTOR.

C. THE ELECTRICAL CONTRACTOR SHALL COORDINATE ANY AND ALL WORK INVOLVED IN THE PROJECT, PRIOR TO INSTALLATION OF ELEC. EQUIPMENT, SO AS TO AVOID CONFLICTS DURING CONSTRUCTION AND TO ALLOW FOR OPTIMUM MAINTENANCE AND WORKING SPACE.

D. AS USED ON THESE DOCUMENTS, THE WORD 'PROVIDE' SHALL MEAN TO FURNISH AND INSTALL THE ITEM OR EQUIPMENT AND MAKE THE FINAL CONNECTION AS REQUIRED.

E. CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE SEISMIC REQUIREMENTS.

F. ALL UNDERGROUND RACEWAY ENTERING THE BUILDING, (I.E. THROUGH A FOUNDATION WALL OR THROUGH THE FLOOR) SHALL BE SEALED IN ACCORDANCE WITH NEC 225.27 AND 300.5(G). RACEWAY SEALS AND SEALANTS SHALL BE APPROVED AND LISTED FOR THE SPECIFIC APPLICATION AND MATERIALS.

G. ALL EQUIPMENT CONNECTED TO OR ASSOCIATED WITH THE ELECTRICAL SYSTEMS OR OTHERWISE INCLUDED IN THE SCOPE OF WORK SHALL BE LISTED AND LABELED BY A THIRD PARTY ACCEPTABLE TO THE AUTHORITY HAVING JURISDICTION.

LIGHTING FIXTURE SCHEDULE

SYMBOL	TYPE	IMAGE	DESCRIPTION	MANUFACTURER	MODEL	LAMP INFORMATION TYPE.	DRIVER	VOLT	APPARENT LOAD	MOUNTING	COMMENTS
	S1		LED POLE LIGHT W/ FORWARD THROW DISTRIBUTION, FULL CUTOFF, 1 HEAD PER POLE	LSI LIGHTING	SLM-LED-24LM-SIL-FT-UNV-40-70CRI-BLK	LED	0-10V DIMMING	UNV	188.8 VA	POLE	CONTRACTOR TO PROVIDE 26', 5" SQUARE, 07 GAUGE STEEL POLE BY LSI. POLE MOUNTED ON 2' TALL CONCRETE BASE.
	S1a		LED POLE LIGHT W/ FORWARD THROW DISTRIBUTION, FULL CUTOFF, 1 HEAD PER POLE	LSI LIGHTING	SLM-LED-24LM-SIL-FT-UNV-40-70CRI-BLK	LED	0-10V DIMMING	UNV	188.8 VA	POLE	CONTRACTOR TO PROVIDE 25', 5" SQUARE, 07 GAUGE STEEL POLE BY LSI. POLE MOUNTED ON 3' TALL CONCRETE BASE.
	S1b		LED POLE LIGHT W/ TYPE 3 DISTRIBUTION, FULL CUTOFF, 1 HEAD PER POLE	LSI LIGHTING	SLM-LED-24LM-SIL-3-UNV-40-70CRI-BLK	LED	0-10V DIMMING	UNV	188.8 VA	POLE	CONTRACTOR TO PROVIDE 26', 5" SQUARE, 07 GAUGE STEEL POLE BY LSI. POLE MOUNTED ON 2' TALL CONCRETE BASE.
	S1c		LED POLE LIGHT W/ TYPE 3 DISTRIBUTION, FULL CUTOFF, 2 HEADS PER POLE @ 90 DEGREES	LSI LIGHTING	SLM-LED-24LM-SIL-3-UNV-40-70CRI-BLK	LED	0-10V DIMMING	UNV	377.6 VA	POLE	CONTRACTOR TO PROVIDE 26', 5" SQUARE, 07 GAUGE STEEL POLE BY LSI. POLE MOUNTED ON 2' TALL CONCRETE BASE.
	S2		LED BOLLARD - 360 DEGREE DISTRIBUTION	LUMINIS	MA30-L1W18-R4-BKT	LED	0-10V DIMMING	UNV	18 VA	GROUND	
	D		LED WALL SCONCE	SPECIFIED BY OTHERS	SPECIFIED BY OTHERS (LUMINIS SY802-L2W30)	LED	0-10V DIMMING	UNV	62 VA	WALL	
	C		LED WALL SCONCE	SPECIFIED BY OTHERS	SPECIFIED BY OTHERS (LUMINIS SY302)	LED	0-10V DIMMING	UNV	24 VA	WALL	
	J		LED DOWNLIGHT	SPECIFIED BY OTHERS	SPECIFIED BY OTHERS (HUBBELL LF4LEDG4)	LED	0-10V DIMMING	UNV	16 VA	RECESSED	

BALLENTINE ASSOCIATES, P.A.
2901 PROVIDENCE ROAD, CHARLOTTE, NC 28211
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LICENSE # F-0467

NUM	REVISIONS	DATE
2	PER TRC REVIEW COMMENTS	31 JAN 19
1	PER TRC REVIEW COMMENTS	19 FEB 19

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EMAIL Jamie.Applequist@ncsecu.org

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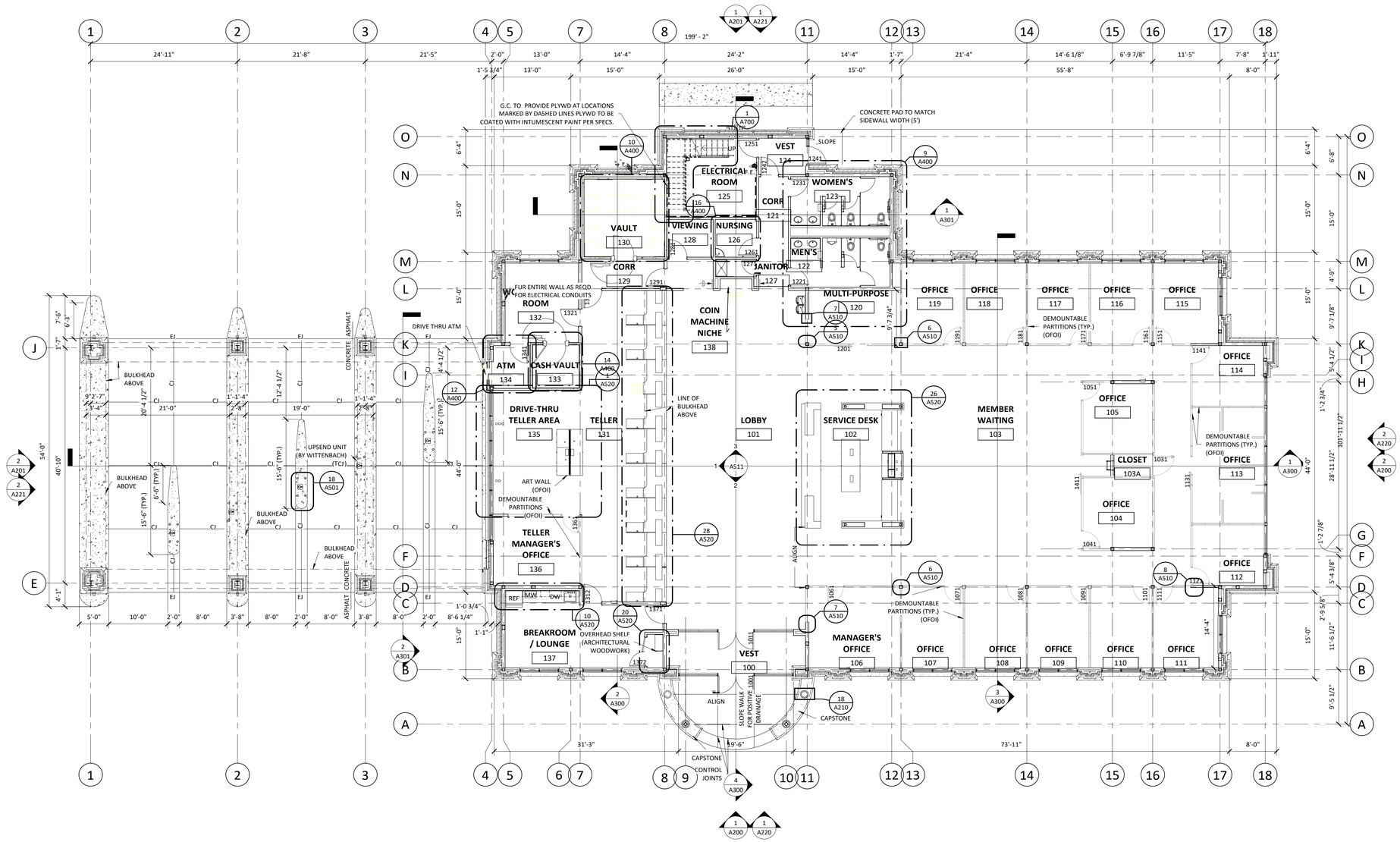
MAJOR SITE PLAN SUBMITTAL #2	31 JAN 19
MAJOR SITE PLAN SUBMITTAL #3	19 FEB 19

STATE EMPLOYEES' CREDIT UNION
CLAYTON BRANCH
CLAYTON, NORTH CAROLINA

MAJOR SITE PLAN

JOB NUMBER: 101.12106.00
DATE: 27 DEC 18
SCALE: AS NOTED
DRAWN BY: RI, KS
REVIEWED BY: DP

SHEET
SL300



1 FIRST FLOOR PLAN

1/8" = 1'-0"

SUMMIT
DESIGN AND ENGINEERING
Celebrating 10 Years
Licensed Professional Engineering Corporation
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Raleigh, NC 27609
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CERT. NO. C-2006
NORTH CAROLINA
RALEIGH

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ARCHITECT OF RECORD
BRIAN T. SHEPARD, AIA, NCARB, LEED

PROJECT MANAGER
BRIAN T. SHEPARD, AIA, NCARB, LEED

DRAWN BY JRJ | FIRST ISSUE DATE

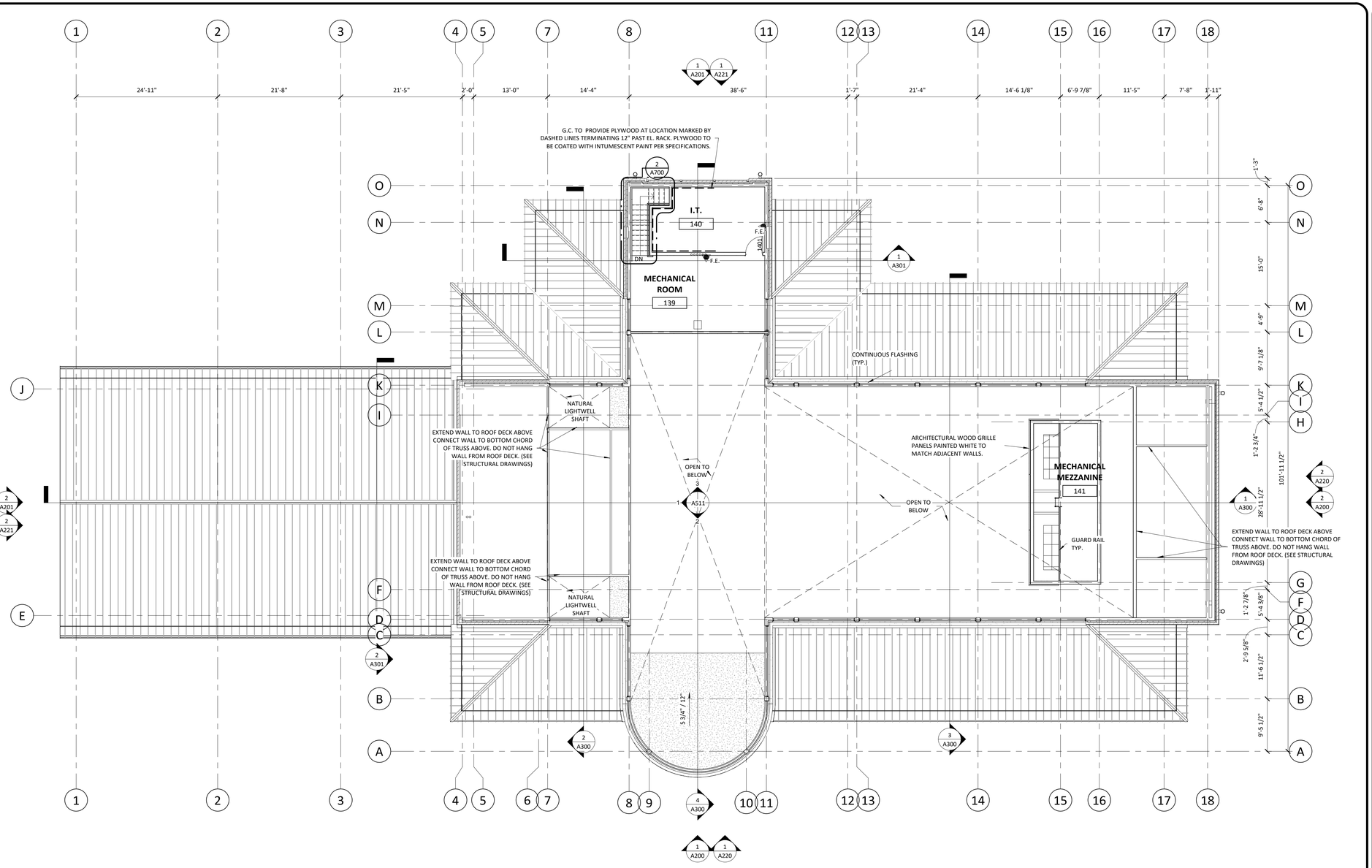
NO	REVISIONS	DATE	BY
A	ISSUED FOR PERMIT	xx/xx/20xx	JRJ

STATE EMPLOYEES' CREDIT UNION
CLAYTON BRANCH
STREET
CLAYTON, NC XXXXX

FLOOR PLAN

PROJECT NO.
XX-XXXX.403

SHEET NO.
A110



1 MEZZANINE FLOOR PLAN

1/8" = 1'-0"

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Greensboro
Licensed & Inspired - Technically Executed
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Raleigh, NC 27609
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NORTH CAROLINA
RALEIGH

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ARCHITECT OF RECORD
BRIAN T. SHEPARD, AIA, NCARB, LEED

PROJECT MANAGER
BRIAN T. SHEPARD, AIA, NCARB, LEED

DRAWN BY JRJ
FIRST ISSUE DATE

NO	REVISIONS	DATE	BY
A	ISSUED FOR PERMIT	xx/xx/20xx	JRJ

STATE EMPLOYEES' CREDIT UNION
CLAYTON BRANCH
STREET
CLAYTON, NC XXXXX

MEZZANINE PLAN

PROJECT NO.
XX-XXXX.403

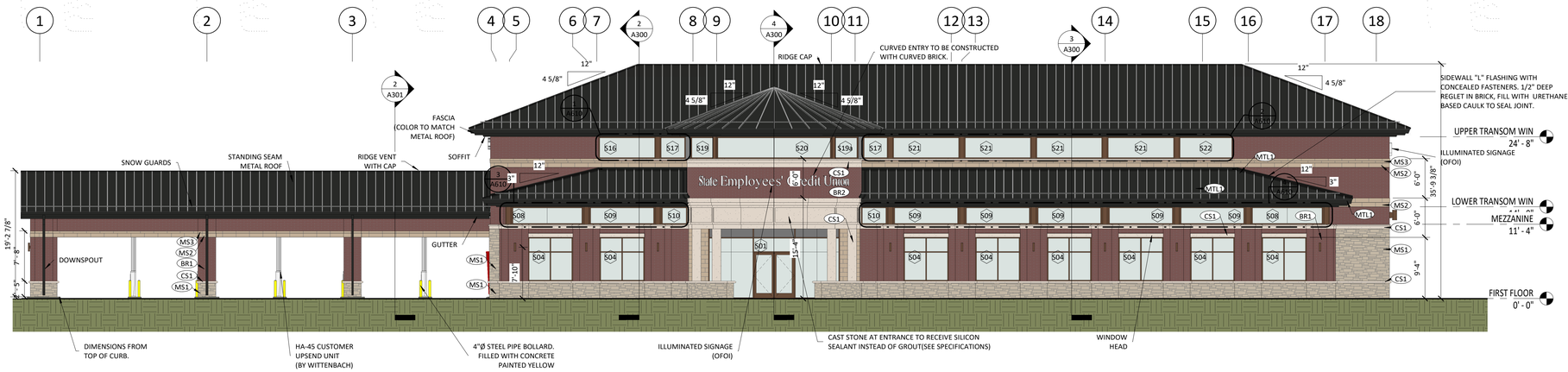
SHEET NO.
A120

EXTERIOR FINISH SCHEDULE

KEY	MATERIAL	MNFR.	ID	FINISH	COMMENTS
BR1	BRICK	LEE BRICK	#608	BEAUFORT	NORMAN SIZE W/ HOLCIM "SANTEE BLACK" TYPE S MORTAR
BR2	BRICK	LEE BRICK	#608	BEAUFORT	CURVED MODULAR SIZE W/ HOLCIM "SANTEE BLACK" TYPE S MORTAR
CS1	CAST STONE	ARRISCRAFT	ARRISCAST	CAFÉ	HOLCIM "COLUMBUS TAN" TYPE S MORTAR
MS1	FULL WIDTH MASONRY STONE	ARRISCRAFT	SHADOW STONE	JASPER	3-PC SHADOWSTONE W/ HOLCIM "FROSTY" TYPE S MORTAR
MS2	FULL WIDTH MASONRY STONE	ARRISCRAFT	8" RENAISSANCE	CAFÉ	HOLCIM "COLUMBUS TAN" TYPE S MORTAR
MS3	FULL WIDTH MASONRY STONE	ARRISCRAFT	4" RENAISSANCE	CAFÉ	HOLCIM "COLUMBUS TAN" TYPE S MORTAR
MS4	FULL WIDTH MASONRY STONE	ARRISCRAFT	12" RENAISSANCE	CAFÉ	HOLCIM "COLUMBUS TAN" TYPE S MORTAR
MTL1	STANDING SEAM METAL ROOF	SEE SPEC'S	SEE SPEC'S	SEE SPEC'S	CUSTOM COLOR MATCH TO IMETCO'S CHARCOAL

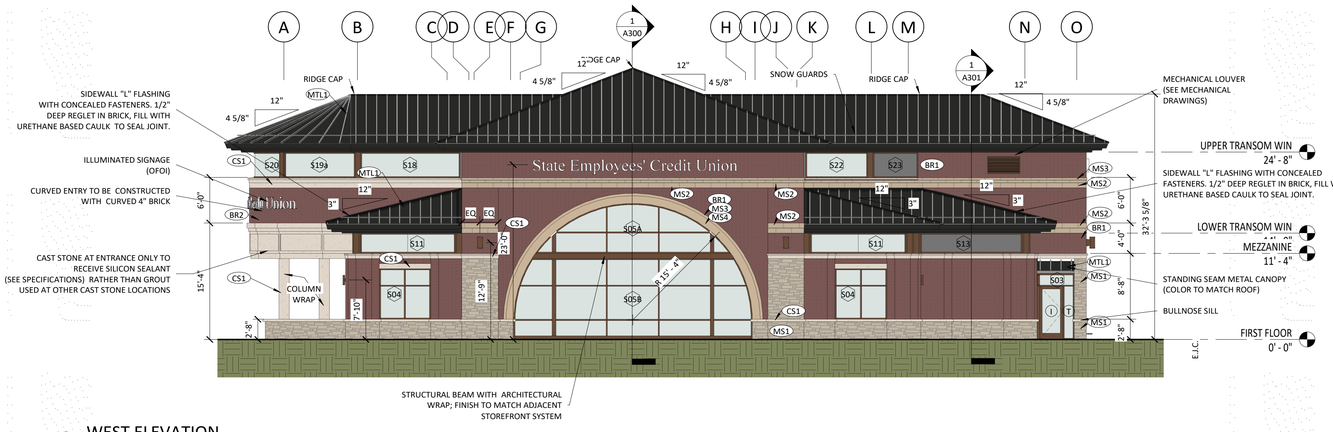
GENERAL NOTES:

1. ALL TRIM AND FLASHING TO MATCH ADJACENT SURFACE (UNO).
2. REFER TO SHEET A220 AND A221 EXPANSION JOINT LAYOUTS



1 NORTH ELEVATION

1/8" = 1'-0"



2 WEST ELEVATION

1/8" = 1'-0"

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RALEIGH

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ARCHITECT OF RECORD
BRIAN T. SHEPARD, AIA, NCARB, LEED

PROJECT MANAGER
BRIAN T. SHEPARD, AIA, NCARB, LEED

DRAWN BY JRJ
FIRST ISSUE DATE

NO	REVISIONS	DATE	BY
A	ISSUED FOR PERMIT	xx/xx/20xx	JRJ

STATE EMPLOYEES' CREDIT UNION
CLAYTON BRANCH
STREET
CLAYTON, NC XXXXX

EXTERIOR ELEVATIONS & DETAILS

PROJECT NO.
XX-XXXX.403

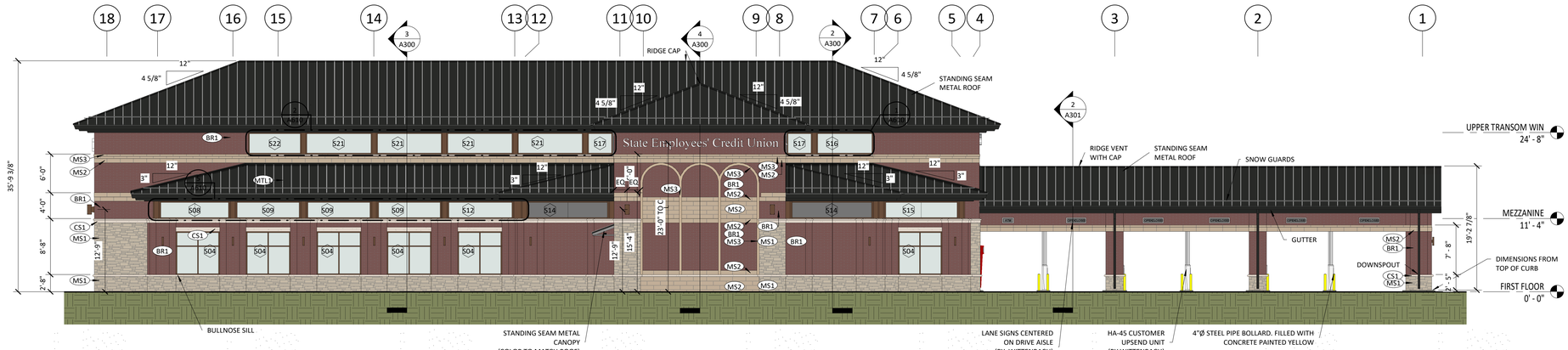
SHEET NO.
A200

EXTERIOR FINISH SCHEDULE

KEY	MATERIAL	MNFR.	ID	FINISH	COMMENTS
BR1	BRICK	LEE BRICK	#608	BEAUFORT	NORMAN SIZE W/ HOLCIM "SANTEE BLACK" TYPE S MORTAR
BR2	BRICK	LEE BRICK	#608	BEAUFORT	CURVED MODULAR SIZE W/ HOLCIM "SANTEE BLACK" TYPE S MORTAR
CS1	CAST STONE	ARRISCRAFT	ARRISCAST	CAFÉ	HOLCIM "COLUMBUS TAN" TYPE S MORTAR
MS1	FULL WIDTH MASONRY STONE	ARRISCRAFT	SHADOW STONE	JASPER	3-PC SHADOWSTONE W/ HOLCIM "FROSTY" TYPE S MORTAR
MS2	FULL WIDTH MASONRY STONE	ARRISCRAFT	8" RENAISSANCE	CAFÉ	HOLCIM "COLUMBUS TAN" TYPE S MORTAR
MS3	FULL WIDTH MASONRY STONE	ARRISCRAFT	4" RENAISSANCE	CAFÉ	HOLCIM "COLUMBUS TAN" TYPE S MORTAR
MS4	FULL WIDTH MASONRY STONE	ARRISCRAFT	12" RENAISSANCE	CAFÉ	HOLCIM "COLUMBUS TAN" TYPE S MORTAR
MTL1	STANDING SEAM METAL ROOF	SEE SPEC'S	SEE SPEC'S	SEE SPEC'S	CUSTOM COLOR MATCH TO IMETCO'S CHARCOAL

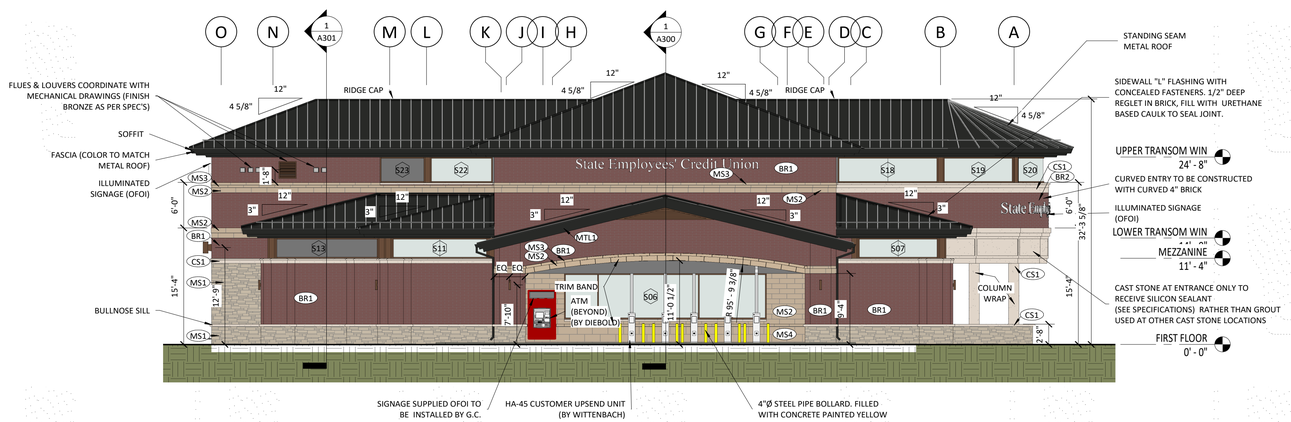
GENERAL NOTES:

1. ALL TRIM AND FLASHING TO MATCH ADJACENT SURFACE (UNO).
2. REFER TO SHEET A220 AND A221 EXPANSION JOINT LAYOUTS



1 SOUTH ELEVATION

1/8" = 1'-0"



2 EAST ELEVATION

1/8" = 1'-0"

SUMMIT
DESIGN AND ENGINEERING
Greensboro
License # C-2009
100 East Six Forks Road, Suite 300
Raleigh, NC 27609
Voice: (919) 322-0115 Fax: (919) 322-0116
www.SummitDE.net

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SUMMIT DESIGN AND ENGINEERING SERVICES PLLC
CERT. NO. S2006
NORTH CAROLINA
RALEIGH

PRELIMINARY NOT FOR CONSTRUCTION

ARCHITECT OF RECORD
BRIAN T. SHEPARD, AIA, NCARB, LEED

PROJECT MANAGER
BRIAN T. SHEPARD, AIA, NCARB, LEED

DRAWN BY JRJ
FIRST ISSUE DATE

NO	REVISIONS	DATE	BY
A.	ISSUED FOR PERMIT	xx/xx/20xx	JRJ

STATE EMPLOYEES' CREDIT UNION
CLAYTON BRANCH
STREET
CLAYTON, NC XXXXX

EXTERIOR ELEVATIONS & DETAILS

PROJECT NO.
XX-XXXX.403

SHEET NO.
A201

TOWN OF CLAYTON
Planning Department
111 E. Second St., 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: Creech Tract Development **Acreage of Property:** 38.88 acres (total)

County Tag Number: 05G01012A and 05G01012S **NC PIN:** 165907-69-2203 and 165907-78-1039

Address/Location: 1294 Shotwell Road Clayton, North Carolina 27528

Existing Zoning District: PD - MU

Proposed Zoning District: R -10

APPLICANT INFORMATION

Applicant: Dalton Engineering and Associates, P.A.

Mailing Address: Post Office Box 426 Clayton, North Carolina 27528

Phone Number: (919) 550 - 4740 **Fax:** (919) 550 - 4741

Contact Person: Jerry T. Dalton

Email Address: jdalton@daltonengineering.com

FOR OFFICE USE ONLY

Date Received: RECEIVED MAY 02 2018 TOWN OF CLAYTON PLANNING DEPARTMENT Amount Paid: $600 – File Number: 2018-92-RZ

PROPERTY OWNER INFORMATION

Name: Everland - Lee, L.L.C.

Mailing Address: 104 State Avenue Suite 103 Clayton, North Carolina 27520

Phone Number: (919) 971 - 5353 **Fax:** (919) 934 - 3100

Email Address: lannycliftonbuilder@gmail.com

EXPLANATION OF PROJECT

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

The Developer of subject parcels is requesting the rezoning of the 38.88 acres to R - 10, with the Rezoning Application to run concurrent with the Major Subdivision Application and Special Use Application for subject project.

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: 5/2/18	•				
2. Review Fee ($500 for standard rezoning OR $1,000 + $5.00/acre for Planned Developments) and Advertisement Fee ($100)	•				
3. Completed application	•				
4. Owner's Consent Form *Required if applicant is not property owner.*	•				
5. A signed and sealed boundary survey (not more than a year old unless otherwise approved by the Planning Department).	•				
6. *If property to be rezoned is a portion of a parcel:* - 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) *See sample letter and meeting requirements included in this packet*	•				
9. Neighborhood meeting summary form (1 copy) *Included in this packet*	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) *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.*	•				

APPROVAL CRITERIA

All applications for a Rezoning must address the following findings:

1. Consistency with the adopted plans of the Town.

   The Town of Clayton previously approved the rezoning of the subject parcels to a Planned Development use (PD - MU). The current Developer is seeking to develop the parcels for residential use only, and is requesting the parcels be rezoned to R - 10.

2. Suitability of the subject property for uses permitted by the current vs. the proposed district.

   The subject project would be developed as a multi-family, residential subdivision. Currently, there are residential subdivisions located directly adjacent to the parcels to the North (Highgate S/D) and the South (Lakewood Acres S/D). Currently, there is on-going construction of a multi-family project (Stallings Mill Apartments) to the South, also on Shotwell Road.

3. Whether the proposed change tends to improve the balance of uses, or meets specific demand in the Town.

   The proposed change would allow the subject parcels to be developed for residential use only. Currently, there are residential developments located directly adjacent to the proposed project on the North side and the South side of the project's acreage. There are no known commercial uses adjacent to the subject parcels.

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.

   The capacity of public facilities in the area is adequate to support the proposed use of the anticipated development. A Traffic Impact Analysis for the project has been reviewed and approved by the Town and N.C.D.O.T. The Town of Clayton would provide sanitary sewer and water service for the project. The project contains multiple stormwater detention facilities throughour the site.

5. It has been determined that the legal purposes for which zoning exists are not violated.

   The subject parcels are proposed to be zoned R - 10 and the project would comply with all zoning requirements of the Town of Clayton Unified Development Code.

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.

   The subject parcels are proposed to be zoned R - 10 and the project would comply with all zoning requirements of the Town of Clayton Unified Development Code. No adverse effects upon adjoining properties are expected.

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.

   The development of the subject parcels would be beneficial to the Town of Clayton as well as the surrounding area.

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.

Dalton Engineering and Associates, P.A.
Print Name

Jerry T. Dalton
Signature of Applicant

5/2/18
Date

TOWN OF CLAYTON
Planning Department
111 E. Second St., P.O. Box 879
Clayton, NC 27528
Phone: 919-553-5002
Fax: 919-553-1720

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: Creech Tract Development **Address or PIN #:** 165907-69-2203 and 165907-78-1039

AGENT/APPLICANT INFORMATION:

Dalton Engineering and Associates, P.A.
(Name - type, print clearly)

Post Office Box 426
(Address)
Clayton, North Carolina 27528
(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)*:

Major Subdivision Application
Special Use Application
Wastewater Allocation Request

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:

Everland - Lee, L.L.C.
(Name - type, print clearly)
(Owner's Signature)

104 State Avenue, Suite 103
(Address)
Clayton, North Carolina 27520
(City, State, Zip)

STATE OF North Carolina
COUNTY OF Johnston

Sworn and subscribed before me Jill M Howard, a Notary Public for the above State and County, this the 6 day of March, 2018.

SEAL

JILL M HOWARD NOTARY PUBLIC JOHNSTON CO., NC

Jill M Howard
Notary Public

My Commission Expires: November 12, 2022

January 2018

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
February 25, 2019

STAFF REPORT

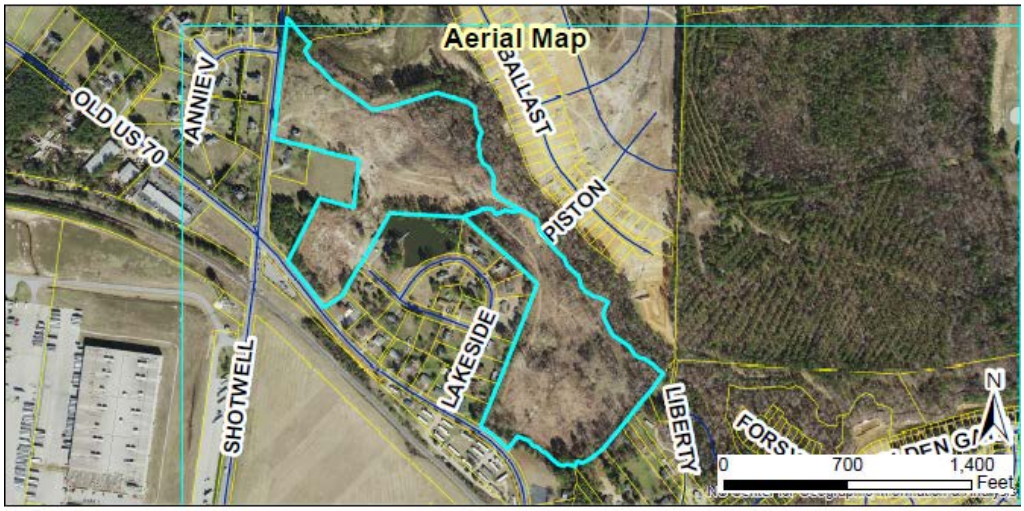
Application Number: 2018-92-RZ
Project Name: Creech Tract Rezoning

NC PIN / Tag #:	165907-69-2203 / 05G01012A, 165907-78-1039 / 05G01012S
Town Limits/ETJ:	Town Limits
Applicant:	Dalton Engineering and Associates
Owner:	Everland Lee LLC
Location:	Corner of Shotwell Road and Old US HWY 70, south of Highgate Subdivision

Public Noticing:

- Neighborhood meeting held October 12, 2019
- Signs Posted prior to January 18, 2018
- Letters mailed prior March 5, 2019
- Newspaper ad published March 6, 2019 and March 13, 2019

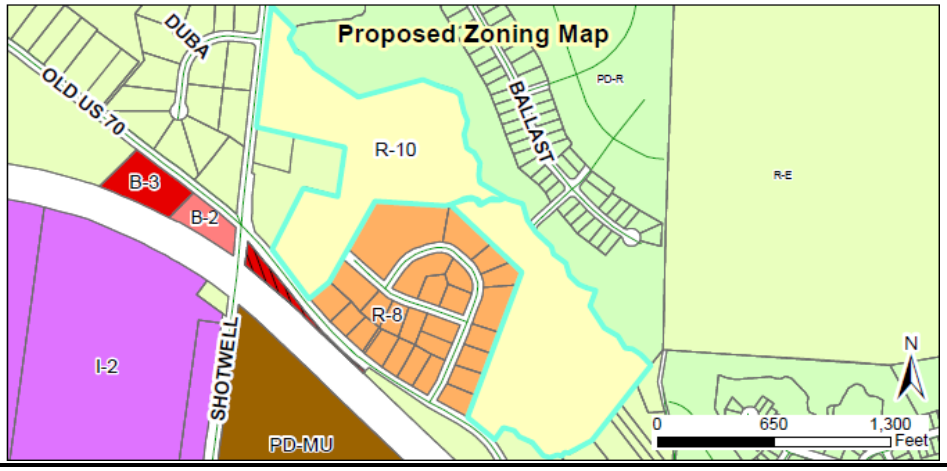
REQUEST: Request to rezone the subject property from Planned Development Mixed Use (PD-MU) to Residential-10 (R-10).



SITE DATA:
Acreage: 38.88 acres
Existing Uses: Vacant

ADJACENT ZONING AND LAND USES:

Direction	Zoning	Existing Use
North	Planned Development-Residential (PD-R)	Single-family residential (Highgate)
South	Residential-8 (R-8) and Planned Development Mixed Use (PD-MU)	Single-family residential and vacant
East	Planned Development-Residential (PD-R), Residential-8 (R-8)	Single-family residential
West	Residential-8 (R-8) and Residential-Estate (R-E)	Single-family residential

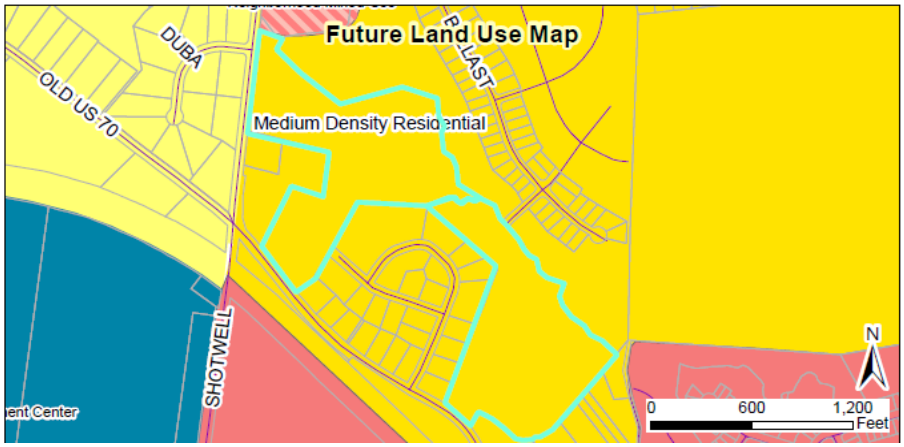


STAFF ANALYSIS AND COMMENTARY:

Overview
The applicant is requesting to rezone 38.88 acres of land from Planned Development-Mixed Use (PD-MU) to Residential-10 (R-10). These properties were zoned PD-MU as a part of the original Highgate Master Plan (15-27-01-SD). On the original master plan, the subject properties were noted as "future development" with no specific uses designated. These properties are now separate from the most recent Highgate Development, and the applicant is now requesting to rezone the properties to a standard residential zoning district. This application is running concurrently with a Preliminary Plat application and Special Use Permit application to develop townhomes on the subject properties.

Compatibility with Surrounding Land Uses
The proposed rezoning is compatible with surrounding land uses, which primarily consists of single-family residential uses.

Consistency with the 2040 Comprehensive Plan
The proposed rezoning is compatible with the 2040 Comprehensive Plan and Future Land Use Map, which designates this land as "Medium Density Residential". Medium density residential typically consists of neighborhoods that are located within closer proximity to commercial services and centers. Densities of three to five units per acre are typical within this designation.



CONSIDERATIONS:

- Rezonings are 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.
- If approved, this rezoning will result in a modification to amend the official zoning map for The Town of Clayton.

APPROVAL CRITERIA:

The applicant has addressed the Rezoning Approval Criteria outlined in §155.704. The applicant's responses are incorporated as an attachment to the Staff Report.

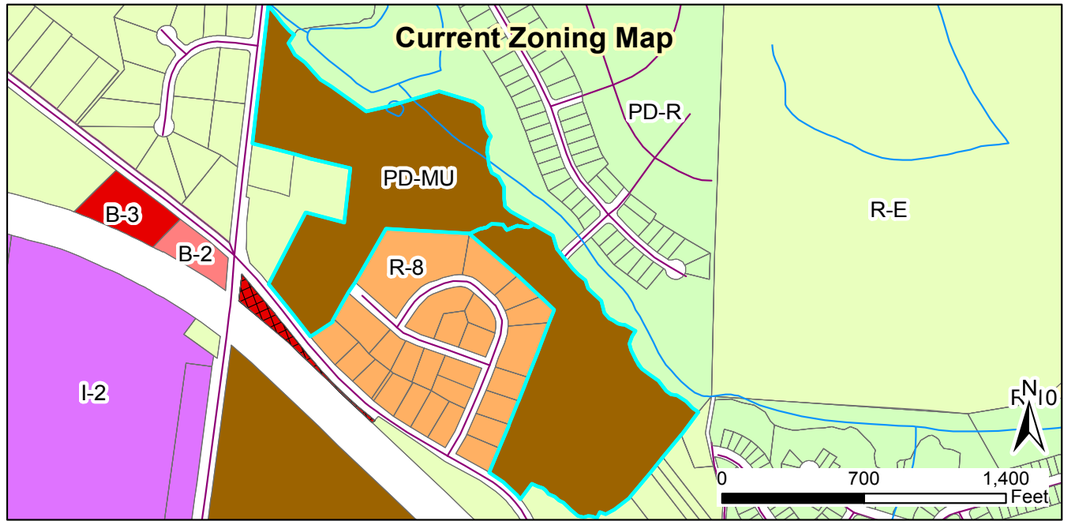
STAFF RECOMMENDATION:

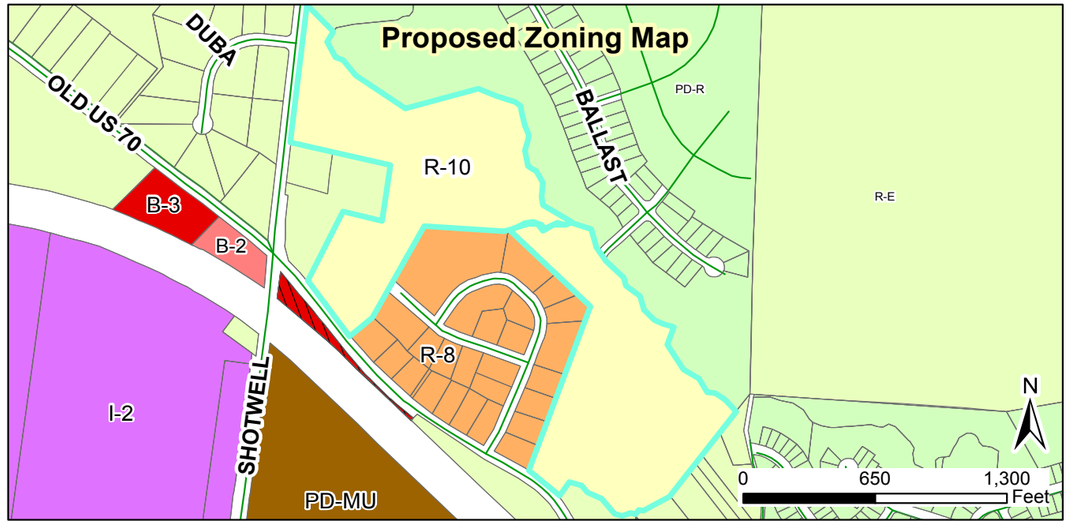
Staff is recommending ***approval*** of the rezoning of the subject parcel.

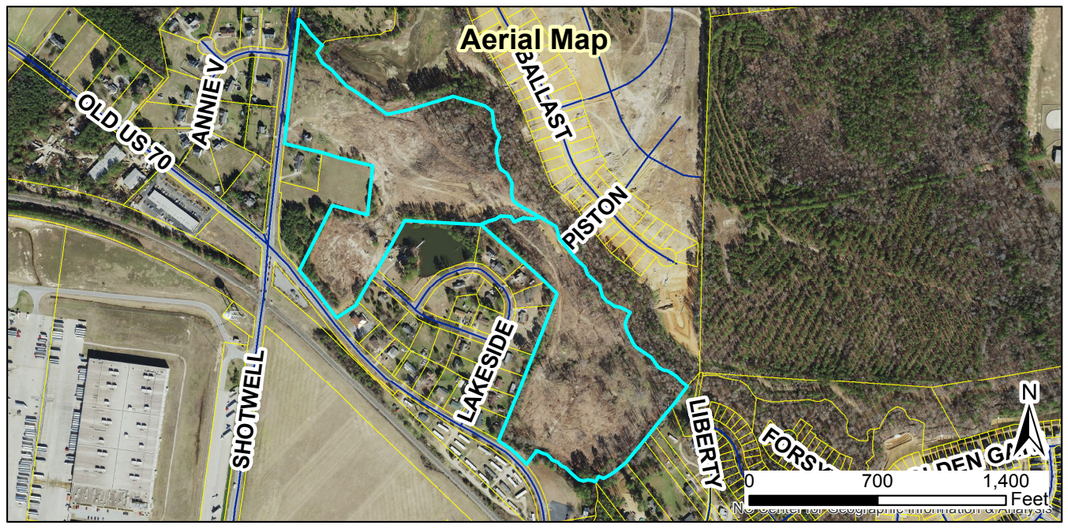
ATTACHMENTS:

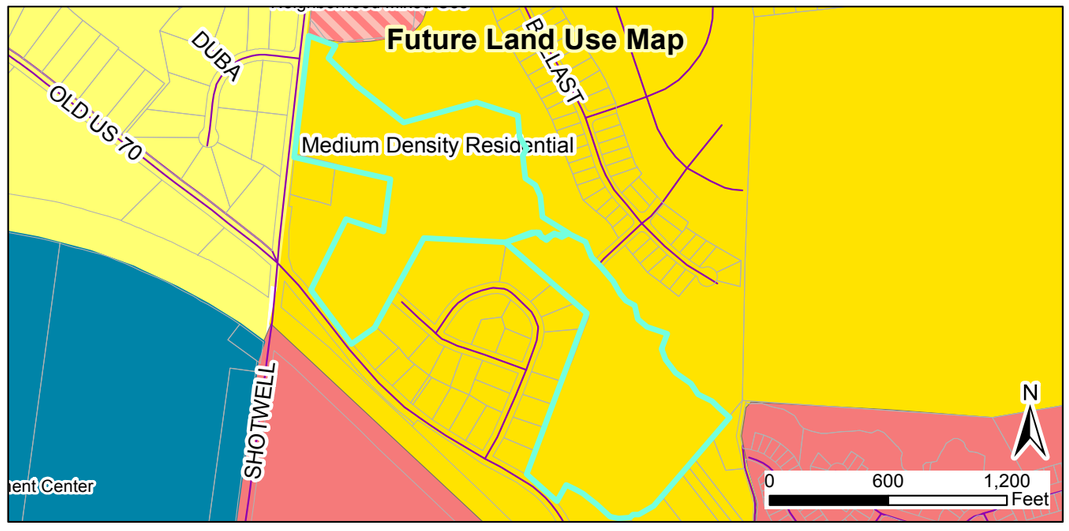
1) Staff Report Maps

2) Application
3) Survey
4) Neighborhood Meeting Materials
5) Consistency Statement









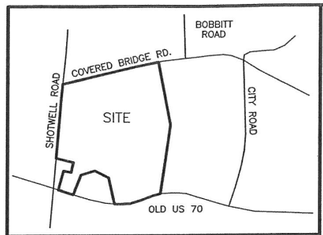
2018-92-RZ
Creech Tract Rezoning
Applicant: Dalton Engineering and Associates
Property Owner: Everland Lee, LLC
Parcel ID: 165907-69-2203 / 165907-78-1039
Tag #: 05G01012A / 05G01012S

Staff Report Map

01/22/2019
Produced by: TOC Planning
Disclaimer: Town of Clayton assumes no legal responsibility for the quality fo the data represented here.

Document Path: O:\PLANNING\REZONING\Rezoning\2018\2018-92-RZ Creech Tract Development\Staff Report Maps\2018-92-RZ.mxd

Legend
- 100-yr Flood Zone
- Thoroughfare Overlay
- Scenic Highway Overlay
- Watershed Protection Overlay
- Site



VICINITY MAP (NOT TO SCALE)

I, HEREBY CERTIFY THAT THIS RECORD PLAT HAS BEEN FOUND TO COMPLY WITH THE UNIFIED DEVELOPMENT CODE OF CLAYTON, NORTH CAROLINA, AND THAT THIS PLAT HAS BEEN APPROVED FOR RECORDING IN THE REGISTER OF DEEDS OF JOHNSTON COUNTY.

6-15-16 DATE — Beth Lamson PLANNING DIRECTOR

NUMBER	RADIUS	ARC LENGTH	CHORD DIRECTION	CHORD LENGTH
C1	590.00	204.00	N48°51'04"W	202.98
C2	4980.00	414.24	N74°12'47"E	414.12

NUMBER	DIRECTION	DISTANCE
L1	S13°21'36"E	24.95'
L2	S13°21'36"E	5.05'
L3	N76°35'46"E	376.37'
L4	N81°28'00"E	377.59'
L5	S01°55'28"W	3.87'
L6	S36°56'29"W	107.02'
L7	S51°39'15"W	92.36'
L8	S61°13'34"W	49.52'
L9	N66°41'55"W	29.01'
L10	S27°35'20"W	34.60'
L11	N68°23'08"W	25.79'
L12	N86°49'30"W	19.61'
L13	S72°01'18"W	22.88'
L14	N72°38'17"W	28.21'
L15	N48°53'22"W	45.85'
L16	N46°42'47"W	51.00'
L17	N63°10'51"W	24.08'
L18	N46°08'19"W	30.18'
L19	N66°28'14"W	33.06'
L20	N40°34'34"W	24.67'
L21	N50°14'15"W	16.98'
L22	N71°39'41"W	26.78'
L23	N66°38'31"W	32.49'
L24	S35°34'04"W	94.64'
L25	S29°44'34"E	37.13'
L26	N20°32'59"E	135.00'
L27	N20°39'02"E	125.01'
L28	N20°32'10"E	124.75'
L29	N20°55'30"E	125.05'
L30	N20°33'11"E	289.93'
L31	N19°53'59"E	90.38'
L32	N03°51'11"E	10.03'
L33	S29°55'55"W	308.10'
L34	S30°00'14"W	62.33'
L35	S29°56'38"W	165.30'
L36	S46°46'29"E	3.17'
L37	N44°49'59"E	12.99'
L38	S57°18'59"W	132.84'
L39	N76°00'26"W	200.00'
L40	S34°14'04"W	137.25'
L41	N12°41'51"W	211.58'
L42	N76°35'46"E	40.55'
L43	S75°26'48"W	275.03'
L44	S72°12'15"W	512.55'
L45	S71°49'48"W	538.36'
L46	S39°16'18"E	165.86'
L47	S46°24'35"E	247.60'
L48	S47°18'21"E	279.64'
L49	S08°29'02"W	222.28'
L50	S55°42'26"E	190.52'
L51	S25°51'41"E	156.68'
L52	S25°23'43"W	223.41'
L53	S13°58'13"W	247.86'
L54	S69°20'35"E	159.94'
L55	S04°34'00"E	467.42'
L56	S42°49'03"E	165.07'
L58	S38°00'20"E	28.94'

NUMBER	DIRECTION	DISTANCE
L59	S36°56'29"W	134.73'
L60	N53°34'40"W	35.77'
L61	N42°52'54"W	46.78'
L62	N56°20'46"W	56.17'
L63	N81°12'22"W	26.74'
L64	N55°43'45"W	28.73'
L65	N36°15'40"W	66.80'
L66	N55°23'44"W	55.30'
L67	N52°35'27"W	46.55'
L68	N39°02'00"W	23.43'
L69	N25°37'05"W	83.77'
L70	N14°57'37"W	35.32'
L71	N21°35'34"E	37.96'
L72	N29°23'47"E	33.93'
L73	N60°40'50"W	58.81'
L74	N81°07'58"W	19.66'
L75	N74°11'53"W	15.83'
L76	N54°50'11"W	31.09'
L77	N63°17'33"W	19.97'
L78	N39°44'17"W	34.90'
L79	N14°02'53"W	64.79'
L80	N47°21'50"W	65.44'
L81	N44°30'14"W	24.51'
L82	N17°28'08"W	42.98'
L83	N48°46'46"W	44.14'
L84	N42°06'39"W	44.83'
L85	N38°11'25"W	88.24'
L86	N37°49'37"W	34.76'
L87	N16°08'33"W	71.40'
L88	N59°25'24"W	239.48'
L89	N46°44'58"W	37.60'
L90	N07°48'33"W	38.90'
L91	N02°03'53"E	58.09'
L92	N28°10'28"W	61.27'
L93	N57°14'46"W	36.98'
L94	N20°33'22"W	42.04'
L95	N09°37'28"W	8.57'
L96	N06°35'52"W	37.48'
L97	N13°23'14"W	17.09'
L98	N05°35'56"E	24.91'
L99	N13°55'19"E	36.48'
L100	N23°55'38"E	22.53'
L101	N30°47'32"W	35.92'
L102	N24°35'06"W	25.32'
L103	N07°53'55"W	26.18'
L104	N06°46'35"W	65.81'
L105	N52°55'23"W	50.29'
L106	N72°02'07"W	160.10'
L107	S73°24'59"W	251.83'
L108	S77°33'35"W	122.47'
L109	N52°42'14"W	212.46'
L110	N57°07'44"W	64.85'
L111	N41°21'46"W	115.49'
L112	N51°05'36"W	63.12'
L113	N28°27'04"W	65.76'
L114	N34°27'14"E	81.41'
L115	N80°31'45"E	87.59'
L116	N85°13'47"E	218.15'
L117	N55°36'50"E	30.87'
L118	N83°11'59"E	33.53'
L119	N36°07'33"E	28.11'
L120	N05°54'14"E	83.13'
L121	N15°46'57"W	44.75'
L122	N14°20'35"W	67.39'
L123	N09°05'36"E	25.74'
L124	N17°40'36"W	205.96'
L125	N30°54'21"E	163.56'
L126	N27°24'42"E	66.31'
L127	N33°05'16"E	129.46'
L128	N86°59'23"E	49.80'
L129	S68°14'20"E	27.25'
L130	S23°17'34"E	15.23'
L131	N24°23'49"E	374.53'

NUMBER	DIRECTION	DISTANCE
L132	N57°20'40"E	123.00'
L133	N29°56'38"E	70.10'
L134	N29°56'38"E	268.50'
L135	N05°50'30"W	98.42'
L136	N23°05'16"E	117.94'
L137	N82°04'11"E	97.59'
L138	S88°46'22"E	199.59'
L139	S66°49'33"E	99.62'
L140	N60°06'12"E	92.62'
L141	N68°04'31"E	134.40'
L142	S86°25'29"E	89.64'
L143	S59°28'12"E	189.40'
L144	S35°07'57"E	155.97'
L145	S59°13'33"E	36.10'
L146	N30°57'18"E	2.78'
L147	S47°06'47"E	20.44'
L148	S30°57'18"W	18.49'
L149	N59°13'33"W	60.31'
L150	N35°07'57"W	155.92'
L151	N59°28'12"W	180.29'
L152	N86°25'29"W	80.32'
L153	S68°04'31"W	128.48'
L154	S60°06'12"W	101.21'
L155	N66°49'33"W	105.73'
L156	N88°46'22"W	194.11'
L157	S82°04'11"W	84.67'
L158	S23°05'16"W	101.47'
L159	S05°50'30"E	99.72'
L160	S29°56'38"W	177.81'
L161	S29°56'38"W	165.30'
L162	S43°28'12"W	12.85'
L163	S57°18'59"W	119.59'
L164	N38°00'20"W	20.09'

ADJOINING PROPERTY INFORMATION

1–CAROL A. FIFIELD
DB 1872 PG 597
PB 19 PG 153
PIN 165907–68–5693

2–CAROL A. FIFIELD
DB 1872 PG 597
PB 19 PG 153
PIN 165907–68–7520

3–DILLION D. BLACKMON
BOBBIE LOU BLACKMON
DB 708 PG 576
PB 10 PG 145
PIN 165907–68–7491

4–ALFRED RAY MOORE
AGNES MOORE
DB 802 PG 716
PB 10 PG 145
PIN 165907–68–7288

5–HELEN S. JONES
DB 1286 PG 415
PB 10 PG 145
PIN 165907–68–6095

6–WILLIAM R. BRITT, JR.
BETTY B. BRITT
DB 4571 PG 259
PB 10 PG 145
PIN 165907–67–6943

7–KERRY SCOTT CHESNUT
BARBARA CHESTNUT
DB 798 PG 411
PB 10 PG 145
PIN 165907–67–5892

8–NILOUS I. BANKS
DB 1745 PG 849
PB 10 PG 145
PIN 165907–67–5741

9–ZABIULLAH NAZARI
RAHIMA NAZARI
DB 3721 PG 145
PB 5 PG 3
PIN 165911–77–3010

10–MARTIN L. MOODY, JR.
DB 4760 PG 112
PB 5 PG 3
PIN 165911–77–3038

11–HECTOR M. PENA
DB 1468 PG 716
PB 5 PG 3
PIN 165911–77–3281

12–HECTOR PENA
DB 3767 PG 217
PIN 165912–77–5490

13–MICHAEL BEASLEY
DB 3082 PG 455
PB 5 PG 3
PIN 165912–77–6459

14–MICHAEL BEASLEY
DB 3082 PG 455
PB 5 PG 3
PIN 165912–77–6575

15–MICHAEL BEASLEY
DB 3082 PG 455
PB 5 PG 3
PIN 165908–77–7604

16–JOSE L. JUAREZ
DB 1939 PG 538
PB 5 PG 3
PIN 165908–77–7804

17–CASEY RANDALL BROWN
MEGHAN WAGNER BROWN
DB 4358 PG 960
PIN 175000–70–8270

18–RUPESH PRAJAPATI
CANDACE PRAJAPATI
DB 4552 PG 097
PIN 175000–70–8511

NOTES:

1) ALL DISTANCES SHOWN ARE HORIZONTAL GROUND DISTANCES
2) AREAS COMPUTED BY COORDINATE METHOD.
3) PROPERTY SUBJECT TO ALL EASEMENTS AND RESTRICTIONS OF RECORD.
4) NO. 5 REBAR IRON STAKES WITH CAPS SET AT ALL LOT CORNERS UNLESS OTHERWISE NOTED
5) GRID TIE BY GPS
6) ZONING: PD–MU
7) PARENT TRACT DEED DB 2916 PG 504
8) NC PIN NO. 165907–69–6977
9) PARCEL NO. 05G01012A

REFERENCES:

DB 479 PG 314	PB 37 PG 371
DB 424 PG 097	PB 1 PG 205
DB 285 PG 108	PB 63 PG 405
DB 137 PG 416	PB 19 PG 153
DB 109 PG 133	PB 41 PG 115
DB 1857 PG 298	PB 39 PG 415
DB 1359 PG 740	PB 6 PG 111
DB 2627 PG 560	PB 60 PG 088
DB 1633 PG 034	PB 61 PG 476
DB 1474 PG 176	PB 5 PG 003
DB 1233 PG 399	PB 66 PG 294–295
DB 2830 PG 892	
DB 2400 PG 665	
DB 1141 PG 108	
DB 771 PG 699	
DB 1495 PG 394	
DB 1399 PG 049	
DB 1343 PG 101	
DB 1408 PG 718	
DB 2088 PG 960	
DB 2093 PG 146	
DB 1359 PG 030	
DB 1994 PG 034	
DB 1514 PG 751	
DB 1954 PG 848	
DB 1418 PG 433	
DB 634 PG 517	
DB 1872 PG 597	
DB 708 PG 576	
DB 802 PG 716	
DB 1286 PG 415	
DB 742 PG 290	
DB 798 PG 411	
DB 1745 PG 849	
DB 1409 PG 496	
DB 2561 PG 253	
DB 1468 PG 716	
DB 731 PG 631	
DB 1204 PG 705	
DB 1939 PG 538	
DB 1387 PG 514	
DB 2758 PG 965	
DB 4571 PG 259	
DB 3721 PG 145	
DB 3767 PG 217	
DB 4760 PG 112	
DB 3082 PG 455	
DB 4358 PG 960	
DB 4552 PG 097	

LINE	BEARING	DISTANCE
L165	N47°45'02"W	28.90'
L166	N42°37'06"W	55.25'
L167	N36°31'29"W	40.80'
L168	N36°29'33"W	37.52'
L169	N39°49'46"W	20.49'
L170	N53°09'11"W	8.12'
L171	N64°35'03"E	52.03'
L172	N76°03'38"E	37.22'
L173	N51°32'43"E	29.63'
L174	S86°46'35"E	56.26'
L175	S37°29'54"E	34.83'
L176	N66°43'01"E	55.84'
L177	S81°50'31"E	54.64'
L178	N61°23'44"E	30.78'

CERTIFICATE OF OWNERSHIP AND DEDICATION

I HEREBY CERTIFY THAT I AM THE OWNER OF THE PROPERTY SHOWN AND DESCRIBED HEREON AND I HEREBY ADOPT THIS PLAN OF SUBDIVISION WITH MY FREE CONSENT, ESTABLISH MINIMUM BUILDING SETBACK LINES AND DEDICATE ALL STREETS, ALLEYS, WALKS, PARKS AND OTHER SITES AND EASEMENTS TO PUBLIC AND PRIVATE USE AS NOTED. FURTHERMORE, I DEDICATE ALL ELECTRICAL SYSTEMS AND ALL SEWER AND WATER LINES TO THE TOWN OF CLAYTON.

6/15/2016 DATE — Ron Lee OWNER

PROPERTY SHOWN HEREON_____IS__XXX__IS NOT LOCATED IN A FEMA DESIGNATED FLOOD ZONE.
FEMA FLOOD HAZARD PANEL NO. 3720175000 K
EFFECTIVE DATE: DECEMBER 5, 2005

THIS SURVEY:

- ■ 1) **CREATES A SUBDIVISION OF LAND WITHIN THE AREA OF A COUNTY OR MUNICIPALITY THAT HAS AN ORDINANCE THAT REGULATES PARCELS OF LAND.**
- ☐ 2) IS LOCATED IN A PORTION OF A COUNTY OR MUNICIPALITY THAT IS UNREGULATED AS TO AN ORDINANCE THAT REGULATES PARCELS OF LAND.
- ☐ 3) IS ONE OF THE FOLLOWING:
  - a) IS OF AN EXISTING PARCEL OR PARCELS OF LAND AND DOES NOT CREATE A NEW STREET OR CHANGE AN EXISTING STREET.
  - b) IS OF AN EXISTING BUILDING OR OTHER STRUCTURE, OR NATURAL FEATURE, SUCH AS A WATERCOURSE
  - c) IS A CONTROL SURVEY
- ☐ 4) IS OF ANOTHER CATEGORY SUCH AS THE RECOMBINATION OF EXISTING PARCELS, A COURT–ORDERED SURVEY OR OTHER EXCEPTION TO THE DEFINITION OF SUBDIVISION
- ☐ 5) FROM THE INFORMATION AVAILABLE, THE SURVEYOR IS UNABLE TO MAKE A DETERMINATION OF THE PROVISIONS (1) THROUGH (4).

6-15-16 DATE — SURVEYOR

SURVEYOR'S DISCLAIMER: NO ATTEMPT WAS MADE TO LOCATE ANY CEMETERIES, WETLANDS, HAZARDOUS MATERIAL SITES, UNDERGROUND UTILITIES OR ANY OTHER FEATURES ABOVE OR BELOW GROUND OTHER THAN THOSE SHOWN.

6-15-16 DATE — SURVEYOR

STATE OF NORTH CAROLINA, JOHNSTON COUNTY

I, CURK T. LANE, DO HEREBY CERTIFY THAT THIS PLAT WAS DRAWN UNDER MY SUPERVISION FROM AN ACTUAL SURVEY MADE UNDER MY SUPERVISION (DEED DESCRIPTION RECORDED IN BOOK 2916, PAGE 504, ETC.); THAT THE BOUNDARIES NOT SURVEYED ARE CLEARLY INDICATED AS DRAWN FROM INFORMATION FOUND IN BOOK 2916, PAGE 504; THAT THE RATIO OF PRECISION AS CALCULATED IS 1:10,000+; THAT THIS PLAT WAS PREPARED IN ACCORDANCE WITH G.S. 47–30 AS AMENDED. WITNESS MY ORIGINAL SIGNATURE, REGISTRATION NUMBER AND SEAL THIS 15 DAY OF June A.D., 2016

NORTH CAROLINA PROFESSIONAL SEAL L-3990 LAND SURVEYOR CURK T. LANE

SURVEYOR

L – 3990
LICENSE NUMBER

REVIEW OFFICER'S CERTIFICATE

I, Judith Spivey Taylor REVIEW OFFICER OF JOHNSTON COUNTY, NC CERTIFY THAT THE MAP OR PLAT TO WHICH THIS CERTIFICATION IS AFFIXED MEETS ALL STATUTORY REQUIREMENTS FOR RECORDING.

6/16/2016 DATE — REVIEW OFFICER

STATE OF NORTH CAROLINA, JOHNSTON COUNTY

THIS INSTRUMENT WAS PRESENTED FOR REGISTRATION AND RECORDING THIS 16 DAY OF June 20 16 AT 09:48:50 AM

CRAIG OLIVE REGISTER OF DEEDS — BY: Kelli Linda M. Neal DEPUTY REG. OF DEEDS

RECORDED IN PB 83 PG 117

OWNER: EVERLAND–LEE, LLC.
1294 SHOTWELL ROAD
CLAYTON, N.C. 27520

LEGEND

○ IPF	IRON PIPE FOUND
● IPS	IRON PIPE SET
□ CMF	CONCRETE MONUMENT FOUND
○ PKNF	PARKER–KALON NAIL FOUND
● PKNS	PARKER–KALON NAIL SET
● RRS	RAILROAD SPIKE
⊙ CC	CONTROL CORNER
CP	COMPUTED POINT
P/P	POWER POLE
O/HW	OVERHEAD POWER LINE
R/W	RIGHT OF WAY
S.F.	SQUARE FEET
AC	ACRE
DB	DEED BOOK
PB	PLAT BOOK
BOM	BOOK OF MAPS
PG	PAGE
LF	LINEAR FEET
1SS	LOT HAS OFFSITE SEWER
1SSL	OFFSITE SEWER LOT
1SR	RECOMBINATION LOT
100	STREET ADDRESS
– – – –	LINES NOT SURVEYED

SUBDIVISION PLAT FOR

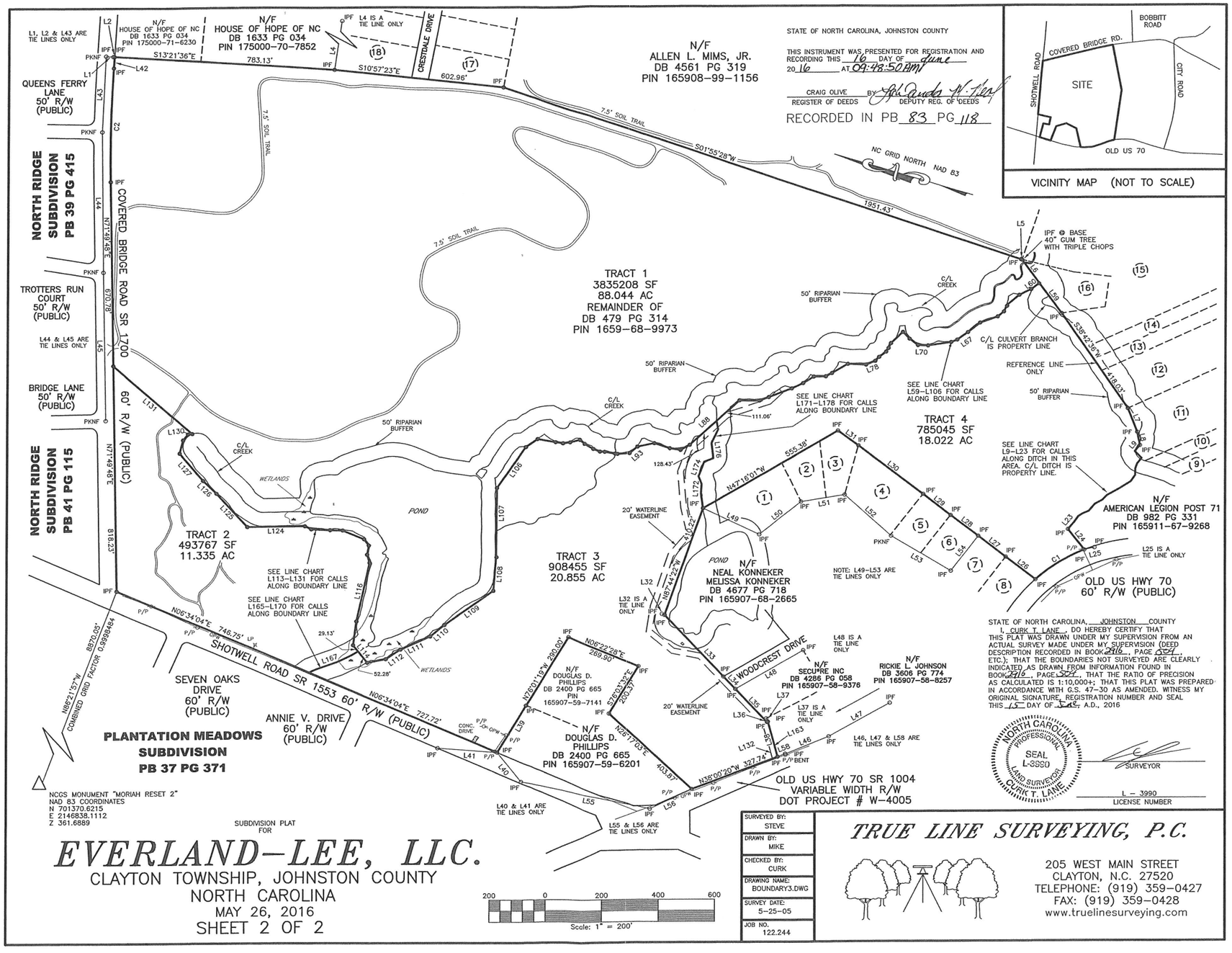
EVERLAND–LEE, LLC.

CLAYTON TOWNSHIP, JOHNSTON COUNTY
NORTH CAROLINA
MAY 26, 2016
SHEET 1 OF 2

SURVEYED BY:	STEVE
DRAWN BY:	MIKE
CHECKED BY:	CURK
DRAWING NAME:	BOUNDARY.DWG
SURVEY DATE:	5–25–05
JOB NO.	122.244

TRUE LINE SURVEYING, P.C.

205 WEST MAIN STREET
CLAYTON, N.C. 27520
TELEPHONE: (919) 359–0427
FAX: (919) 359–0428
www.truelinesurveying.com



STATE OF NORTH CAROLINA, JOHNSTON COUNTY

THIS INSTRUMENT WAS PRESENTED FOR REGISTRATION AND RECORDING THIS 16 DAY OF June 20 16 AT 09:48:50 AM

CRAIG OLIVE REGISTER OF DEEDS BY Linda W. Tew DEPUTY REG. OF DEEDS

RECORDED IN PB 83 PG 118

STATE OF NORTH CAROLINA, JOHNSTON COUNTY

I, CURK T. LANE, DO HEREBY CERTIFY THAT THIS PLAT WAS DRAWN UNDER MY SUPERVISION FROM AN ACTUAL SURVEY MADE UNDER MY SUPERVISION (DEED DESCRIPTION RECORDED IN BOOK 2016, PAGE 3541, ETC.); THAT THE BOUNDARIES NOT SURVEYED ARE CLEARLY INDICATED AS DRAWN FROM INFORMATION FOUND IN BOOK 2016, PAGE 3527, THAT THE RATIO OF PRECISION AS CALCULATED IS 1:10,000+; THAT THIS PLAT WAS PREPARED IN ACCORDANCE WITH G.S. 47-30 AS AMENDED. WITNESS MY ORIGINAL SIGNATURE, REGISTRATION NUMBER AND SEAL THIS 15 DAY OF June, A.D., 2016

NORTH CAROLINA PROFESSIONAL SEAL L-3990 LAND SURVEYOR CURK T. LANE

SURVEYOR

L - 3990
LICENSE NUMBER

SUBDIVISION PLAT FOR

EVERLAND-LEE, LLC.

CLAYTON TOWNSHIP, JOHNSTON COUNTY
NORTH CAROLINA
MAY 26, 2016
SHEET 2 OF 2

SURVEYED BY:	STEVE
DRAWN BY:	MIKE
CHECKED BY:	CURK
DRAWING NAME:	BOUNDARY3.DWG
SURVEY DATE:	5-25-05
JOB NO.	122.244

TRUE LINE SURVEYING, P.C.

205 WEST MAIN STREET
CLAYTON, N.C. 27520
TELEPHONE: (919) 359-0427
FAX: (919) 359-0428
www.truelinesurveying.com

Dalton Engineering
and Associates, P.A.

October 2, 2018

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 or development 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: **Friday, October 12, 2018**

Meeting Time: **6:30 PM**

Meeting Location: **Dalton Engineering & Associates, PA**
446 East Main Street
Clayton, NC 27520

Type of Application: **Major Subdivision Application, Special Use Permit Application and Rezoning Application**

Project/proposal property location: 1294 Shotwell Rd Clayton, NC 27520

Description of project/proposal: The Developer of the parcels has submitted a Major Subdivision Application, a Special Use Permit Application and a Rezoning Application to the Town to request the parcels be developed into a multi-family, residential (townhome) subdivision.

Upcoming public meetings for this application: Planning Board and Town Council

At a 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 roads.
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.

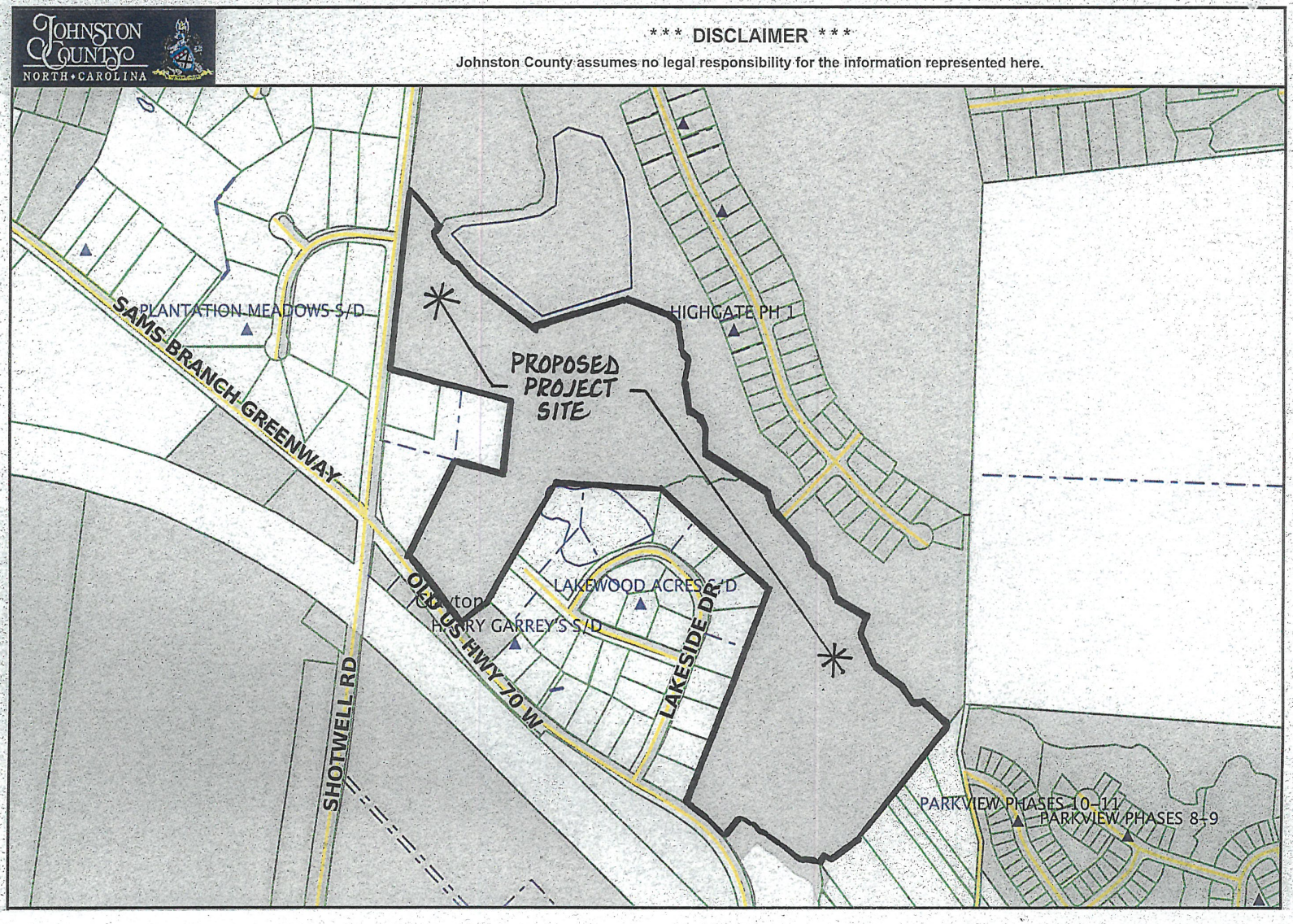
If you have any questions prior to or after this meeting, you may contact our office at (919) 550-4740. You may also contact the Town of Clayton Planning Department at (919) 553-5002.

Sincerely,

Jonathan Barnes
Dalton Engineering and Associates, P.A.

Cc: Town of Clayton Planning Department

446 East Main Street ▲ P.O. Box 426 ▲ Clayton, NC 27528 ▲ (919) 550-4740/Fax (919) 550-4741


JOHNSTON COUNTY
NORTH CAROLINA
*** DISCLAIMER ***
Johnston County assumes no legal responsibility for the information represented here.
PLANTATION MEADOWS S/D
SAMS BRANCH GREENWAY
PROPOSED PROJECT SITE
HIGHGATE PH 1
LAKEWOOD ACRES S/D
HARRY GARREY'S S/D
OLD US HWY 70 W
LAKESIDE DR
SHOTWELL RD
PARKVIEW PHASES 10-11
PARKVIEW PHASES 8-9

NEIGHBORHOOD MEETING SUMMARY FORM

FILL OUT THE FOLLOWING:

Application: Creech Tract Development Date of Mailing: 10/2/18

Date of Meeting: 10/12/18 Time of Meeting: 6:30 p.m.

Location of Meeting: Dalton Engineering and Assoc., P.A. 446 East Main Street Clayton, NC 27520

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, and that all required information was presented at the Meeting:

Printed Name: Jonathan Barnes Signature: [signature]

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.*

A total of fifteen (15) individuals attended the subject project's Neighborhood Meeting, including a Representative of the Applicant. Items that were discussed included the type of proposed development, the number of proposed dwelling units, locations of cross-connectivity, the landscape and perimeter buffering, the proposed roadway widening and turn lane improvements adjacent to the site entrances, etc. Following the Neighborhood Meeting, several participants chose to submit their comments by either mail or e-mail. Nine copies of each of the post-Meeting comments are attached (8 total). There have not been any changes made to the Creech Tract Development Subdivision Application as a result of the Neighborhood Meeting

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

NEIGHBORHOOD MEETING ATTENDANCE ROSTER

Project: Creech Tract Development

Application: Major Subdivision Application, Special Use Permit Application and Rezoning Application

Location/Date: Dalton Engineering and Assoc., P.A. 446 East Main Street Clayton, NC 27520 / 10/12/18

	NAME	ADDRESS
1	Barbara Beasley	164 Liberty Lane
2	Mike Beasley	164 Liberty Lane
3	Barbara Bank	101 Lakeside Dr.
4	Annie Ross	388 Ballast Point
5	Joe Ross	388 Ballast Point
6	Alfred Smoak	217 Lakeside Dr.
7	Hut Pe	152 LIBERTY LN
8	Doug Phillips	925 Thanksgiving Fire Rd Selma
9	Ann Phillips	" " "
10	Kenny Chestnut	103 Lakeside Dr.
11	Barbara Chestnut	103 Lakeside DR
12	Emmy Johnson	1414 Old US Hwy 70 W
13	Rickie Johnson	1414 Old US Hwy 70 W
14	Scott Smalley	2121 Powell Dr Clayton, NC
15	JONATHAN BARNES	446 EAST MAIN STREET CLAYTON, NC
16		
17		
18		
19		
20		

July 2018

NEIGHBORHOOD MEETING SUMMARY FORM

FILL OUT THE FOLLOWING:

Application: Major Subdivison Application, Special Use Permit Application and Rezoning Application

Date of Mailing: 10/2/18

Date of Meeting: 10/12/18

Time of Meeting: 6:30 p.m.

Location of Meeting: Dalton Engineering and Assoc., P.A. 446 East Main Street Clayton, NC 27520

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, and that all required information was presented at the Meeting:

Printed Name: Jonathan Barnes Signature: Jonathan Barnes

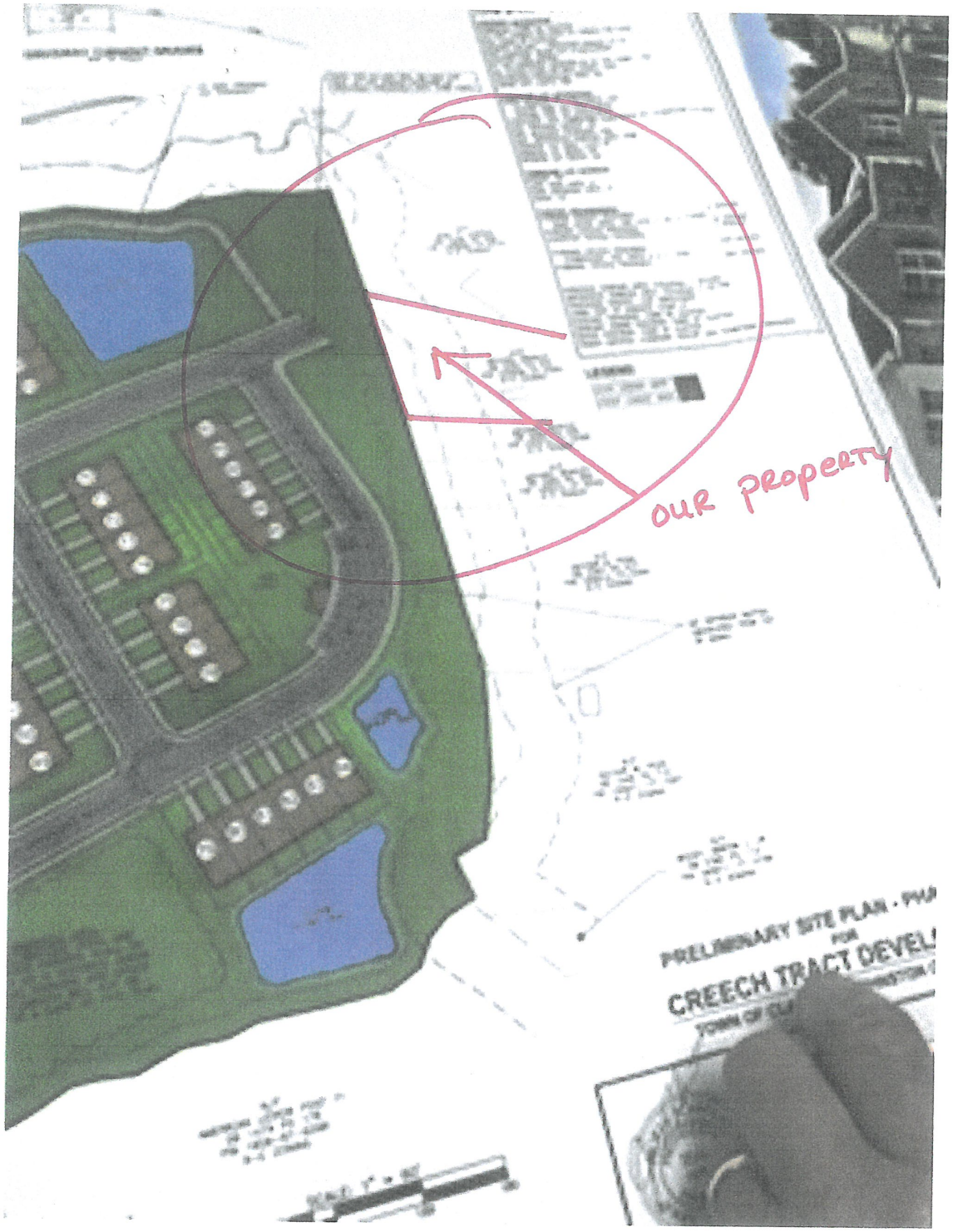
Meeting Summary/Minutes: *provide a summary of the discussion held at the meeting, including issues raised and any resolution discussed, and any changes made to the application as a result of the meeting.*

Our property is adjacent to both Parkview and Highgate Subdivisions. It appears by the design layout of both subdivisions that a future road to connect the two subdivisions had already been planned. This connector, according to the drafts, will come across our property and we will be losing land. We would like to understand if this is the future plans, and if so, why our property is part of the future road connector considering with better planning, a road connection could have been done without touching our property. If we are correct in our assessment, we would also like to understand why there has been no notification to us in regards to losing property, which is very disappointing.

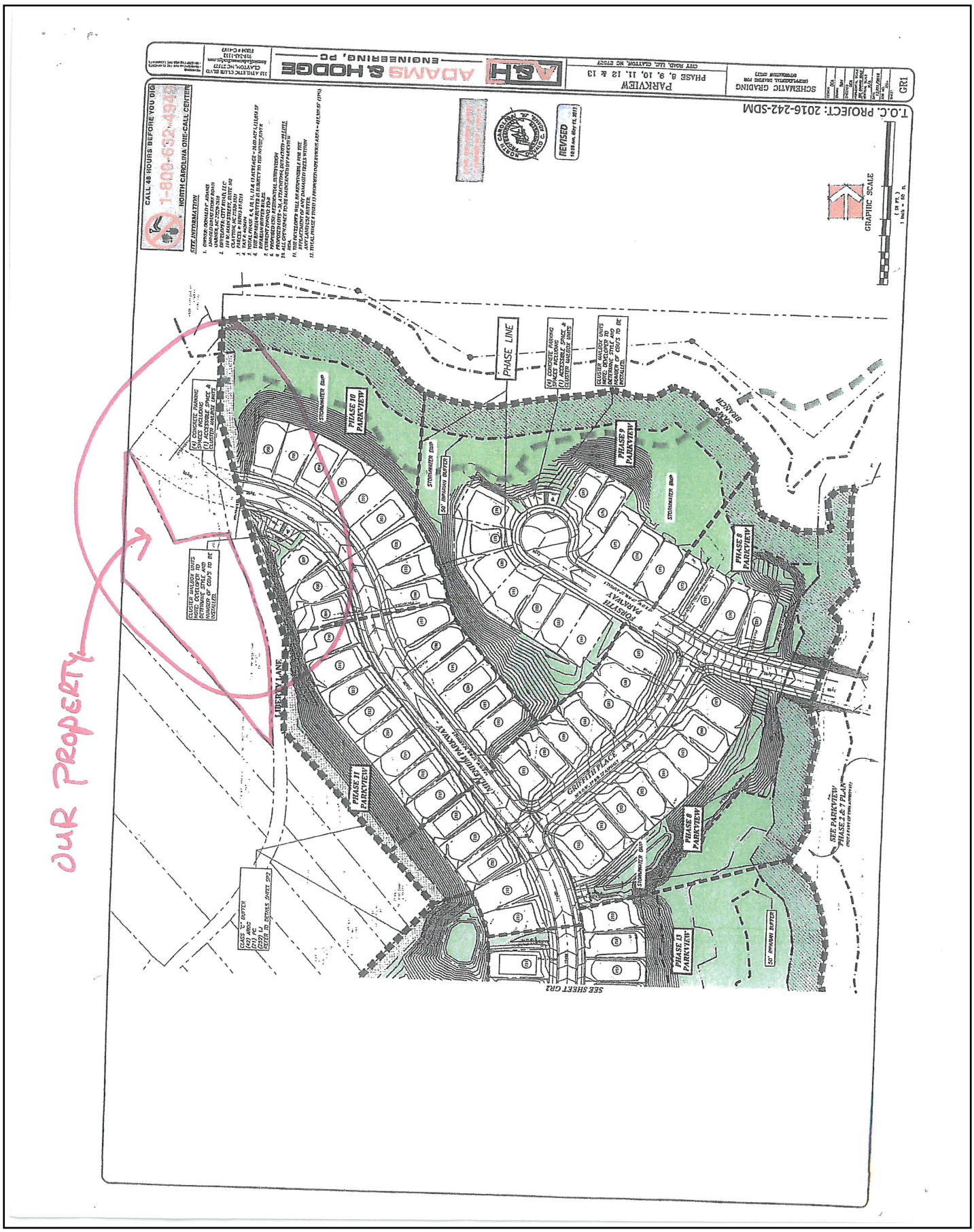
Please write clearly (or submit a typed summary). Use additional sheets if necessary.

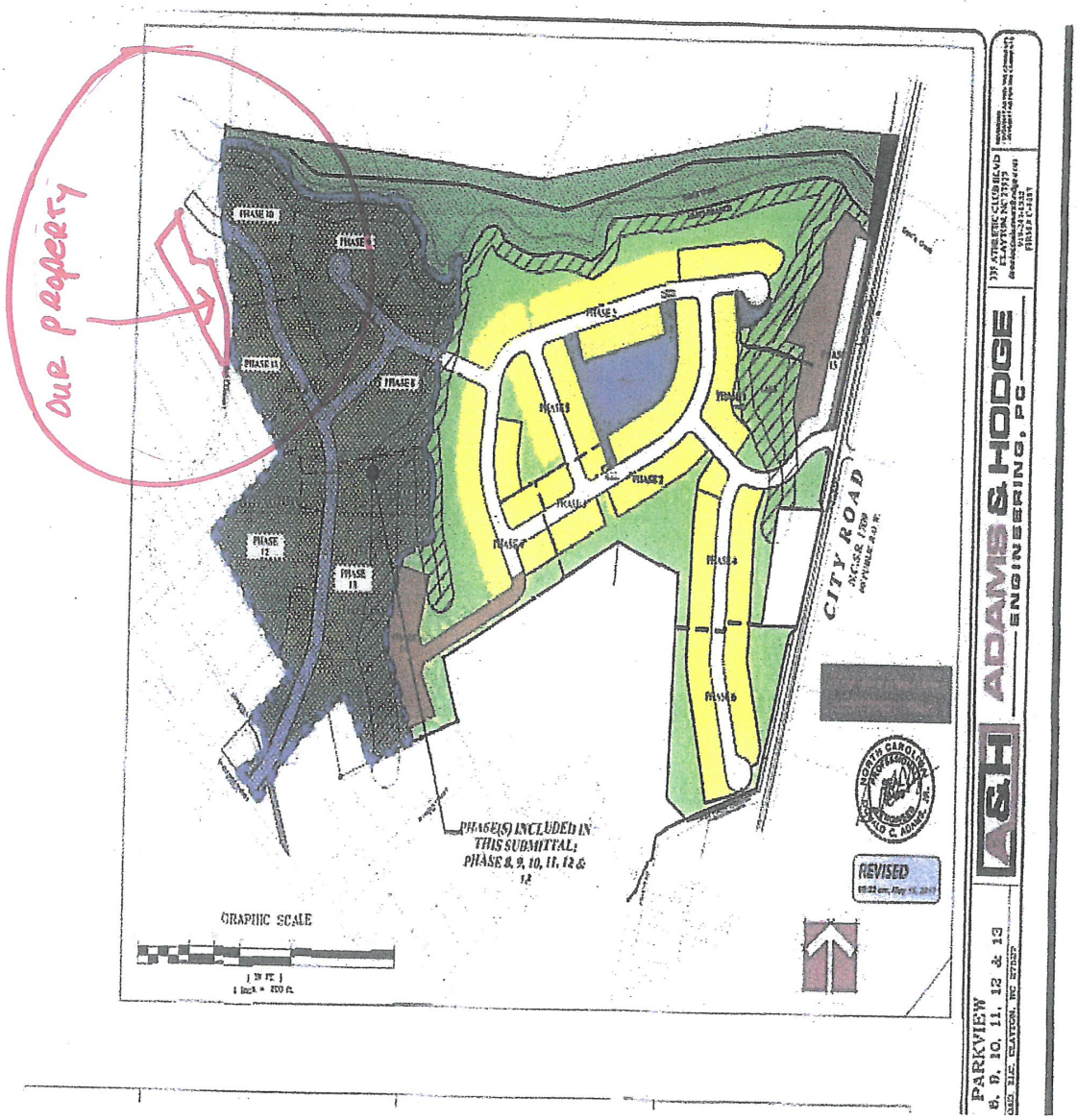
Mike & Barbara Beasley

July 2018



This plan appears to be taking our land.


T.O.C. PROJECT: 2016-242-SDM
PARKVIEW
PHASE 8, 9, 10, 11, 12 & 13
SCHEMATIC GRADING
GR1
REVISED
GRAPHIC SCALE
CALL 48 HOURS BEFORE YOU DIG
1-800-632-4949
NORTH CAROLINA ONE-CALL CENTER
SITE INFORMATION
PHASE LINE
PHASE 10 PARKVIEW
PHASE 9 PARKVIEW
PHASE 8 PARKVIEW
PHASE 11 PARKVIEW
PHASE 13 PARKVIEW
STORMWATER BMP
50' BUFFER
SEE SHEET GR2
SEE PARKVIEW PHASE 2 & 7 PLAN
OUR Property


our property
PHASE 10
PHASE 9
PHASE 11
PHASE 8
PHASE 12
PHASE 13
PHASE 1
PHASE 2
PHASE 3
PHASE 4
PHASE 5
PHASE 6
PHASE 7
CITY ROAD
PHASE(S) INCLUDED IN THIS SUBMITTAL: PHASE 8, 9, 10, 11, 12 & 13
GRAPHIC SCALE
REVISED
A&H
ADAMS & HODGE
ENGINEERING, PC
PARKVIEW
8, 9, 10, 11, 12 & 13

Jonathan Barnes

From: Kerry Chestnut [contact@chestnutphoto.com]
Sent: Thursday, October 11, 2018 12:36 PM
To: Jonathan Barnes
Subject: Project sight

Johnathan Barnes,

Thank you for asking for our input.

No one is inn the neighborhood is happy at the prospect of multi-unit housing. Our neighborhood is moderate individual housing and on the other side are new larger one and two story individual houses with the small exception of the older neighborhood next to the RR tracks.

The preference is, if it has to be developed, that it should be individual homes to the same level of the surrounding homes.

Also, if purchase of lots connected to ours could be purchased, what would be the price.

Thanks,

Kerry Chestnut

NEIGHBORHOOD MEETING SUMMARY FORM

FILL OUT THE FOLLOWING:

Application: Major Subdivison Application, Special Use Permit Application and Rezoning Application

Date of Mailing: 10/2/18

Date of Meeting: 10/12/18

Time of Meeting: 6:30 p.m.

Location of Meeting: Dalton Engineering and Assoc., P.A. 446 East Main Street Clayton, NC 27520

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, and that all required information was presented at the Meeting:

Printed Name: Jonathan Barnes Signature: [signature]

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.*

1. Property owner Rickie L. Johnson concerned about the access road near the property. Request additional turning lane length to help reduce the effect on church patrons.

2. Property owner Rickie L. Johnson concerned about the buffer adjoining the property. Request that the water easement not be considered as the 20ft. buffer required. I am requesting an additional 20 ft. buffer. This will prevent disturbing the landscaping on the property line.

3. Request the speed limit on Old US 70 change to 35 MPH.

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

4. Request a fixed buffer, Fencing or wall near adjoining Properties.

NEIGHBORHOOD MEETING 10/12/2018

Dalton Engineering and Assoc., P.A.

To: Samantha Wullenwabbr, Haley Hogg,

and

Planning Board

Our take-away from the meeting is that this is a very bad plan for this area:

1. Far too many townhomes for the space allowed.
2. Traffic survey needs to be made as this will add major traffic volume to this area.
3. An intersection in the middle of a curve that is already overloaded at rush-hours will create deadly situations.
4. Paving and concrete of this magnitude will create major watershed problems and will have major negative effect bordering neighborhoods (especially those with septic tanks).
5. Will destroy a natural spring.

These plans are not good for Clayton's growth as this will overcrowd this small area and will likely insure highway deaths by adding two hundred plus vehicles to already overcrowded rush-hours on two-lane highways.

It will also make a very noticeable reduction on clean air by removing so much plant-life.

This property could be developed by building individual houses with space for lawns and trees.

10/15/2018

Jonathan Barnes

From: Annie Ross [rossannie1402@gmail.com]
Sent: Monday, October 15, 2018 1:19 PM
To: Jonathan Barnes
Subject: Crèech Tract Proposal

I'm certainly glad I attended the recent meeting. I cannot believe that there is going to be a cut through the Highgate community, especially where it is going to be located.

Although I have only lived here for about a month and a half I have consistently found the Covered Bridge Rd and Shotwell intersection to be an area with great traffic concerns. Now I hear there is a possibility of another 189 households, not necessarily single persons, adding to the stressful intersection. I might add that I would certainly never make a left across Shotwell if I could avoid it to enter the proposed tract of town homes. The same goes for making a left across old Rt70, which is only available at one entrance anyway...and that entrance is on a curve.

Now with the far less than desirable egresses to the Creech Tract development I feel Highgate will be caught in the cross hairs. The residents of Creech Tract can cut through Highgate to avoid both Shotwell and the intersection of Covered Bridge by cutting through Highgate,both coming and going.

Unfortunately the proposed connecting road will enter the Highgate development in the worst possible area - right between the mail area and the pool/ fitness area where many of the eventual 229 households will be going each day. The chances for accidents plus the wear and tear of the road greatly concern me. The Highgate short cut will be used my many in my opinion and is an accident waiting to happen. Not only will it be used by residents but also by their visitors.

I sincerely hope this mishmash of likely trouble can be avoided. Make sure there is a good study taking into consideration all the growth that the surrounding Clayton area is experiencing on making this decision. I heard talk of light at Shotwell and Covered Bridge....again not a solution but only more reason for people to cut through Highgate.

I am thrilled that we moved to Clayton and looked at many houses before making our final decision. I would hope the board considers the effects on all the people, not just the dollars of the developer or increase in tax base if it is a bad decision for the town and its communities.

Annie Ross
388 Ballast Point
Clayton, NC 27520
252-622-8969

a

Sent from my iPad

Jonathan Barnes

From: Annie Ross [rossannie1402@gmail.com]
Sent: Monday, October 15, 2018 1:32 PM
To: Jonathan Barnes
Subject: Proposed Creech Tract Townhomes

I am deeply concerned about the new Townhomes development that will interact with the Highgate development. Highgate is to have 229 households. Now with Creech tract and it's additional 189 units that might be added, are the community services in place to handle all this growth?

There will certainly be an increase in students attending public schools, more sewers,lights and garbage needs. Do we have the support to deal with all this without it burdening existing residents unfairly? How is the developer helping with the new challenges?

Joe Ross
388 Ballast Point
Clayton, NC 27520
252-622-5040
Sent from my wife's iPad

NEIGHBORHOOD MEETING SUMMARY FORM

FILL OUT THE FOLLOWING:

Application: Major Subdivision Application, Special Use Permit Application and Rezoning Application
Lakeside Dr.

Date of Meeting: 10/12/18 Date of Mailing: 10/2/18

Location of Meeting: Dalton Engineering and Assoc., P.A. 446 East Main Street Clayton, NC 27520 Time of Meeting: 6:30 p.m.

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, and that all required information was presented at the Meeting:

Printed Name: Jonathan Barnes Signature: [signature]

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.*

(1) Concerns: Traffic on Old US 70 - Traffic is very heavy from 6:30 to 8:00 AM, and from 4:00 to 6:00 PM. It is very hard to exit off Lakeside Dr. to Old US. 70. The Entrance/Exit is Close to the Curve.

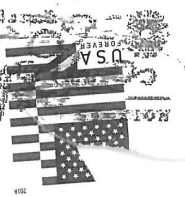
(2) Concern about the Noise. The only Noise Barrier is Trees between the Properties.

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

July 2018

101 Lakeside Dr
Clayton NC 27520

RALEIGH NC 275
Research Triangle Region
15 OCT 2018 PM 1 L



Dalton Engineering
Jonathan Barnes
PO Box 426
Clayton NC 27528-0426

Jonathan Barnes

From: Ann Phillips [APhillips86@nc.rr.com]
Sent: Friday, October 19, 2018 8:58 AM
To: Jonathan Barnes
Subject: Creech property
Attachments: Project Concerns- Shotwell.rtf

Mr Barnes,

Attached are our concerns pertaining to the Creech property development. Your patience and time are appreciated in presenting this to the neighborhood. Ann Phillips

NEIGHBORHOOD MEETING SUMMARY FORM

FILL OUT THE FOLLOWING:

Application: Major Subdivision Application, Special Use Permit Application and Rezoning Application

Date of Mailing: 10/2/18

Date of Meeting: 10/12/18

Time of Meeting: 6:30 p.m.

Location of Meeting: Dalton Engineering and Assoc., P.A. 446 East Main Street Clayton, NC 27520

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, and that all required information was presented at the Meeting:

Printed Name: Jonathan Barnes

Signature:

I have two concerns as follow regarding the proposed Creech Project adjoining my property located at 1274 Shotwell Road.

1-) It is my understanding that the project will have one road providing access to Old 70 and that this road will be an improved version of the one currently located in the curve just West of the American Legion building. The certain increase in traffic seeking access to Old 70 resulting from this project will make an already dangerous intersection even more dangerous. To eliminate having an existing paved stub adjoining my property which, at a future date, could be extended to Old 70 thereby providing additional egress from the Creech project, I request that the developer ***NOT*** place said stub on the rear portion of my property. Additionally, I request assurance from the Town of Clayton and/or NC DOT that there will be no subsequent attempt to confiscate any portion of my property via Eminent Domain in order to provide such additional egress from the property. If and when an increase in traffic accidents makes such additional egress necessary, purchase of my property should be subject to standard real estate negotiation.

2-) After reviewing the project plans provided by Dalton Engineering personnel, it appears that there is little or no recreational space allocated for utilization by residents of the dwellings to be built. Consequently, I request that the developers be required to either erect a fence or an elevated berm along those areas bordering my property. Said structure should be sufficient to eliminate unrestricted access to my property thereby preventing it from becoming an unauthorized community playground which could make me subject to law suit should accidents occur there.

Douglas Phillips
925 Thanksgiving Fire Road
Selma, NC 27576
919-351-0366 ddphillips@nc.rr.com

ADJACENT PROPERTY OWNERS LIST

Project Name: Creech Tract Development

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
165907-79-3983	Creech NC, LLC	448 Viking Dr Ste 220 Virginia Beach, VA 23452-7331
165907-58-4492	Gregory E Messick	6713 Kyle Stewart Ct North Las Vegas, NV 89086-1302
165907-59-6201	Douglas & Ann Phillips	925 Thanksgiving Fire Rd Selma, NC 27576
165907-59-3304	William & Doris Powell	146 Jameson Ave Woodland, NC 27897
165907-58-9325	Rickie L Johnson	1414 Old US 70 Hwy W Clayton, NC 27520
165907-59-3631	Royastine & Mary Bryant	2 Annie V Dr Clayton, NC 27520
165907-68-5693	Carol A Fifield	215 Lakeside Dr Clayton, NC 27520
165907-59-7141	Douglas & Ann Phillips	925 Thanksgiving Fire Rd Selma, NC 27576
165907-58-9376	SECU*RE Inc	119 N Salisbury St 10th Floor Raleigh, NC 27603
175000-50-8319	Everland-Lee LLC	104 State Ave Ste 103 Clayton, NC 27520
165907-59-3981	David & Erin Beck	1 Annie V Dr Clayton, NC 27520
165907-68-2793	Neal & Melissa Konneker	1413 Woodcrest Dr Clayton, NC 27520
165908-87-4986	Owner name not provided on Johnston County GIS	Owner address not provided on Johnston County GIS
165911-77-3189	Martin Moody, Jr.	41 Ocean Dr Clayton, NC 27520
165911-77-4352	Hector Pena	156 Liberty Lane Clayton, NC 27520
165908-77-7804	Jose Lisandro Juarez	181 Saint Jiles Dr Clayton, NC 27520
165908-77-6575	Michael Beasley	164 Liberty Lane Clayton, NC 27520

ADJACENT PROPERTY OWNERS LIST

Project Name: Creech Tract Development

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
165911-77-0431	American Legion Post 71	1300 Old US 70 Hwy W Clayton, NC 27520
165907-68-7491	Dillion & Bobbie Blackmon	207 Lakeside Dr Clayton, NC 27520
165907-68-7288	Alfred & Agnes Moore	203 Lakeside Dr Clayton, NC 27520
165907-67-5741	Nilous I Banks	101 Lakeside Dr Clayton, NC 27520
165907-67-5892	Kerry & Barbara Chestnut	103 Lakeside Dr Clayton, NC 27520
165912-77-6459	Michael Beasley	164 Liberty Lane Clayton, NC 27520
165908-77-7604	Michael Beasley	164 Liberty Lane Clayton, NC 27520
165912-77-5490	Hector Pena	156 Liberty Lane Clayton, NC 27520
165907-67-6943	Betty Britt	105 Lakeside Dr Clayton, NC 27520
165907-68-7520	Carol A Fifield	215 Lakeside Dr Clayton, NC 27520
165907-68-6095	Helen S Jones	109 Lakeside Dr Clayton, NC 27520
165907-68-2793	Neal & Melissa Konneker	1413 Woodcrest Dr Clayton, NC 27520
165907-67-3633	Avant-Garde Investments, LLC	5842 NC Highway 42 W Garner, NC 27529

TOWN OF CLAYTON
Planning Department
111 E. Second St., P.O. Box 879
Clayton, NC 27528
Phone: 919-553-5002
Fax: 919-553-1720

SPECIAL USE PERMIT APPLICATION

Application Fee: $400.00
Advertisement Fee: $200.00

☒ **New Special Use Permit** ☐ **Major Modification to an approved SUP**
Permit Modified: _____

SITE INFORMATION

Name of Project: Creech Tract Development

Acreage of Property: 38.88 acres (total) **Zoning District:** PD - MU

County Tag #: 5180947 and 5180950 **NC Pin #:** 165907-69-2203 and 165907-78-1039

Address/Location: 1294 Shotwell Road Clayton, North Carolina 27520

Existing Use: Vacant parcels **Proposed Use:** Multi-family residential subdivision

Is project within a Planned Development? ☐ **Yes** ☒ **No If yes, which:** _____

Is project within an Overlay District? ☐ **Yes** ☒ **No If yes, which:** _____

APPLICANT INFORMATION

Applicant: Dalton Engineering and Associates, P.A.
Mailing Address: Post Office Box 426 Clayton, North Carolina 27528
Phone Number: (919) 550 - 4740 **Fax:** (919) 550 - 4741
Contact Person: Jerry T. Dalton
Email Address: jdalton@daltonengineering.com

OFFICE USE ONLY

RECEIVED
JAN 23 2019
TOWN OF CLAYTON
PLANNING DEPARTMENT

Date Received: _____ Amount Paid: _____ File Number: _____

PROPERTY OWNER INFORAMTION

Name: Everland - Lee, L.L.C.

Mailing Address: 104 State Avenue, Suite 103 Clayton, North Carolina 27520

Phone Number: (919) 971 - 5353 **Fax:** (919) 934 - 3100

Email Address: lannycliftonbuilder@gmail.com

EXPLANATION OF PROJECT

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

The Developer is requesting approval to develop subject properties into a residential subdivision utilizing townhome dwellings. The proposed subdivision is located on two parcels which total 33.88 acres and would contain a total of 189 dwelling units. Access to the development would be provided at four (4) locations, including Old US Highway 70 West (2 entrances), Shotwell Road and the adjacent development - Highgate Subdivision. Improvements to the site include curb and gutter streets with sidewalk, a pair of mailbox kiosks and an amenities area with pool. Public water and sanitary sewer service would be provided by the Town of Clayton. The Town of Clayton would also act as the electrical provider for the proposed townhomes. All improvements are to meet Town of Clayton specifications.

REQUIRED FINDINGS OF FACT

Section 155.711(I) 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 subject project will provide proper distribution of traffic to avoid congestion to the public in the immediate area. The project meets the Town's requirements for the number of ingress / egress points and a Driveway Access Permit Application would be submitted to the Town and N.C.D.O.T. for review and approval prior to the commencement of construction. A paved asphalt 'stub-out' has been provided to the parcel to the North to assist with the future development of Highgate Subdivision. The project will utilize the extension of the Town of Clayton's existing infrastructure to provide services to the public that are desired and will not be an endangerment to the environment or the public.

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 subject properties are currently zoned PD - MU. A concurrent Rezoning Application has been submitted to the Town to request the parcels be zoned to R - 10. The proposed use of the parcels, lot sizes, minimum building setbacks and landscape and buffer requirements are reviewed and approved during the Special Use Application submittal process. The items listed are delineated and noted on the attached preliminary Subdivision Plan sheets.

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.

The proposed development of the subject properties is consistent with the overall development plan of the Town of Clayton. The requirements set by the Town of Clayton regarding lot size, housing / unit density, etc. will be revised as necessary during the Special Use Application submittal process. The proposed use is consistent with the concurrent Rezoning Application request.

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 subject project will compliment the surrounding properties and the proposed use is consistent with the existing surrounding residential development. Existing residential development is located directly adjacent to the project to the North (Highgate Subdivision) and the South (Lakewood Acres Subdivision). Additionally, there is currently on-going construction of a multi-family development to the South (Stallings Mill Apartments). The location of the subject project in relation to downtown Clayton will encourage continued residential growth and development of the surrounding properties.

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.

Jerry T. Dalton		1/22/19
Print Name	*Signature of Applicant*	*Date*

TOWN OF CLAYTON
Planning Department
111 E. Second St., P.O. Box 879
Clayton, NC 27528
Phone: 919-553-5002
Fax: 919-553-1720

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: Creech Tract Development **Address or PIN #:** 165907-69-2203 and 165907-78-1039

AGENT/APPLICANT INFORMATION:

Dalton Engineering and Associates, P.A.
(Name - type, print clearly)

Post Office Box 426
(Address)
Clayton, North Carolina 27528
(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)*:

Major Subdivision Application
Special Use Application
Wastewater Allocation Request

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:

Everland - Lee, L.L.C.
(Name - type, print clearly)
(Owner's Signature)

104 State Avenue, Suite 103
(Address)
Clayton, North Carolina 27520
(City, State, Zip)

STATE OF North Carolina
COUNTY OF Johnston

Sworn and subscribed before me Jill M Howard, a Notary Public for the above State and County, this the 6 day of March, 2018.

SEAL

JILL M HOWARD NOTARY PUBLIC JOHNSTON CO., NC

Jill M Howard
Notary Public

My Commission Expires: November 12, 2022

January 2018

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
February 25, 2019

STAFF REPORT

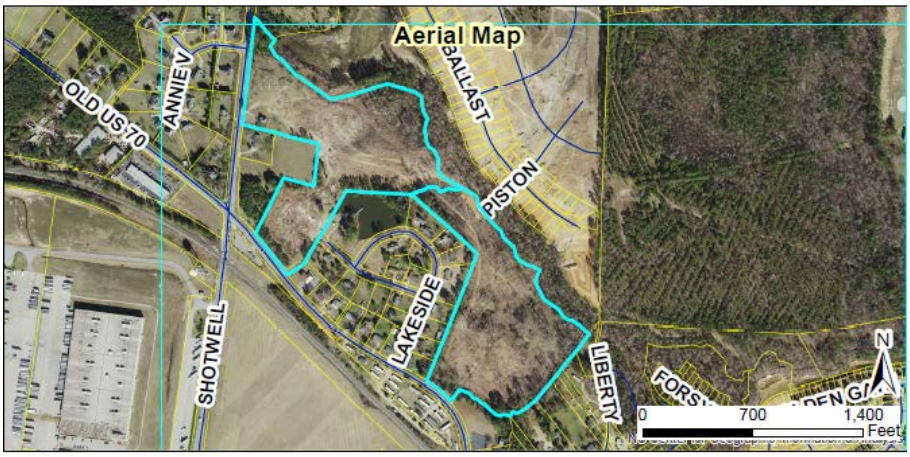
Application Number: 2018-90-SUP
Project Name: Creech Tract Special Use Permit

NC PIN / Tag #:	165907-69-2203 / 05G01012A, 165907-78-1039 / 05G01012S
Town Limits/ETJ:	Town Limits
Overlay:	None
Applicant:	Dalton Engineering and Associates
Owner:	Everland Lee LLC
Location:	Corner of Shotwell Road and Old US HWY 70, south of Highgate Subdivision

Public Noticing:

- Neighborhood meeting held October 12, 2018
- Signs Posted February 15, 2019
- Letters mailed March 5, 2019
- Newspaper ad published March 6, 2019 and March 13, 2019

REQUEST: Special Use Permit issuance to develop townhomes on the subject properties (189 total).

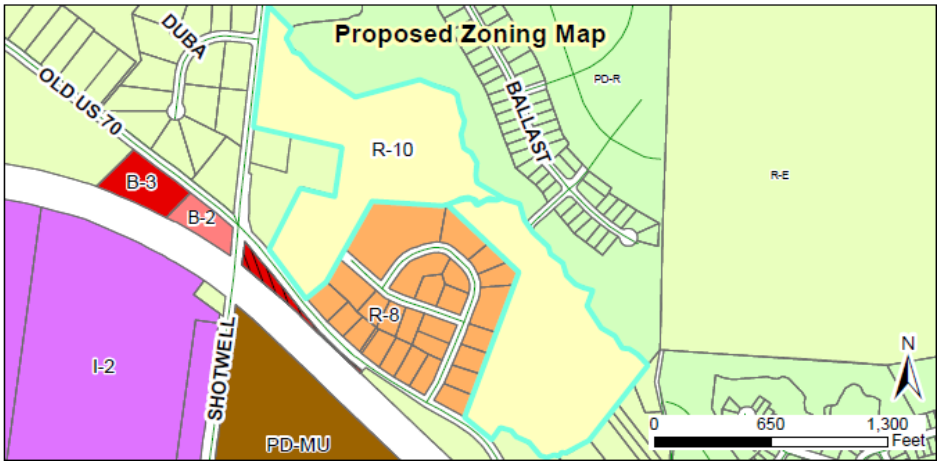


SITE DATA:

Acreage: 38.88 acres
Existing Use: Vacant

ADJACENT ZONING AND LAND USES:

Direction	Zoning	Existing Use
North	Planned Development-Residential (PD-R)	Single-family residential (Highgate)
South	Residential-8 (R-8) and Planned Development Mixed Use (PD-MU)	Single-family residential and vacant
East	Planned Development-Residential (PD-R), Residential-8 (R-8)	Single-family residential
West	Residential-8 (R-8) and Residential-Estate (R-E)	Single-family residential



DEVELOPMENT DATA:

Proposed Uses: Townhomes (189 units)

Density/Intensity: 4.86 units/acre

Impervious Surface: Maximum 80% per lot

Required Parking: 2 spaces/unit required= 378 spaces

Proposed Parking: 393 spaces

Access/Streets: The development will have two access points off Old US HWY 70, one off Shotwell Road, and one connecting to Highgate Subdivision.

STAFF ANALYSIS:

Overview
The applicant is requesting issuance of a Special Use Permit to develop 189 townhomes on the subject properties. The properties are currently zoned PD-MU but a rezoning request is running concurrently with this application requesting to rezone the parcels to R-10. Per UDC requirements, the use of townhomes requires a special use permit to be permitted in the R-10 zoning district. A preliminary plat application is also running concurrently with this application.

The Special Use Permit sets the dimensional standards for townhome developments. The applicant is proposing the following dimensional standards for the townhome lots, which staff has reviewed and deems acceptable for townhome development:

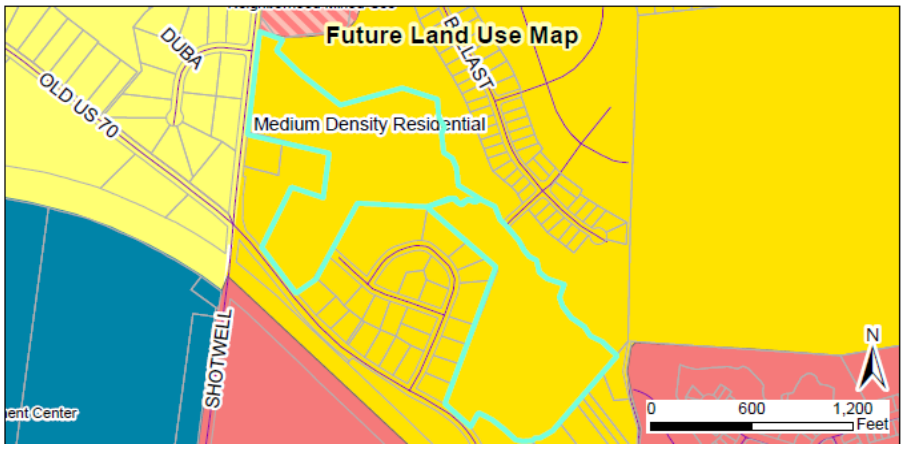
Dimensional Standards (Proposed)	
Min. Lot Size	1610 SF
Min. Lot Width	22’
Min. Lot Depth	70’
Max. Building Height	35’
Max. Building Coverage	75%
Max. Impervious Coverage per lot	80%

Proposed Setbacks	
Front	10’
Side (end unit)	5’
Side (interior unit)	0’
Rear	10’

Associated Site Plan
Pursuant to §155.711(D)(1), concurrent with a request for a special use permit, an applicant shall submit a site plan for review and approval. This site plan is processed as any other site plan (in this case as a Preliminary Plat application: 2018-90-SD) with a final decision made by the applicable reviewing body. The details of the site/subdivision plan are outlined partially herein, and in their entirety in the staff report for the associated Preliminary Plat application 2018-90-SD.

Consistency with Adopted Plans

- **Comprehensive Plan 2040**
  The future land use map designates this property as “Medium Density Residential”, which allows all residential housing types and densities up to 5 units per acre. The proposed development is consistent with this designation.



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

Compatibility with Surrounding Land Uses
The proposed use is a residential subdivision and is compatible with the surrounding land uses, which consist of single-family residences with higher density to the north (Highgate).

Findings of Fact
Applications for a Special Use Permit are required by the UDC 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 see below for the Findings of Fact, followed by the applicant's response included within the application and staff's comments.

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.*

   Applicant Response: "The subject project will provide proper distribution of traffic to avoid congestion to the public in the immediate area. The project meets the Town's requirements for the number of ingress/egress points and a driveway permit application would be submitted to the Town and NCDOT for review and approval prior to the commencement of construction. A paved asphalt stub out has been provided to the parcel to the north to assist with the future development of high gate subdivision. The project will utilize the extension of the Town of Clayton's existing infrastructure to provide services to the public that are desired and will not be an endangerment to the environment or the public."

   Staff Commentary: The associated development will be making required traffic improvements as outlined in the TIA. The development does meet the requirements for access points as a part of the associated preliminary plat application.

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.*

   Applicant Response: "The subject properties are currently zoned PD-MU. A concurrent rezoning application has been submitted to the Town to request the parcels be zoned to R-10. The proposed use of the parcels, lot sizes, minimum building setbacks, and landscape and buffer requirements are reviewed and approved during the Special Use application process. The items are delineated and noted on the attached preliminary subdivision plan sheets."

   Staff Commentary: The applicant has submitted an associated rezoning application. If approved, townhomes are permitted in the R-10 district via issuance of a special use permit. The dimensional standards of the townhomes are set through the special use permit process; the landscaping and buffer requirements are subject to requirements of the UDC.

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.*

   Applicant Response: "The proposed development of the subject properties is consistent with the overall development plan of the Town of Clayton. The requirements set by the Town of Clayton regarding lot size, housing/unit density, etc. will be revised as necessary during the special use application submitted process. The proposed us is consistent with the concurrent rezoning application request."

   Staff Commentary: Townhomes are permitted in the R-10 district via issuance of a special use permit. The dimensional standards of the townhomes are set through the special use permit process.

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.*

   Applicant Response: "The subject project will complement the surrounding properties and the proposed use is consistent with the existing surrounding residential development. Existing residential development is located directly adjacent to the project to the North (Highgate) and the South (Lakewood Acres). Additionally, there is currently on-going construction of a multi-family development to the South (stallings mill apartments). The location of the subject project in relation to downtown Clayton will encourage continued residential growth and development of the surrounding properties."

   Staff Commentary: The developments to the north and south are both single-family residential developments. Highgate subdivision to the north is higher in density. To the South along HWY 70 BUS, there is a multi-family apartment development.

CONSIDERATIONS:

- This plan is subject to final approval by Town Council.

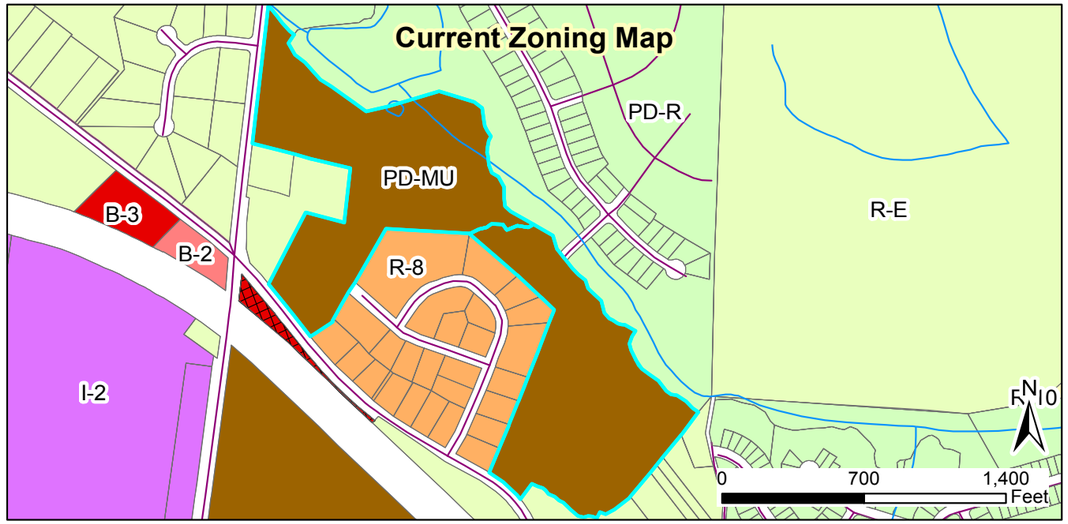
CONDITIONS:

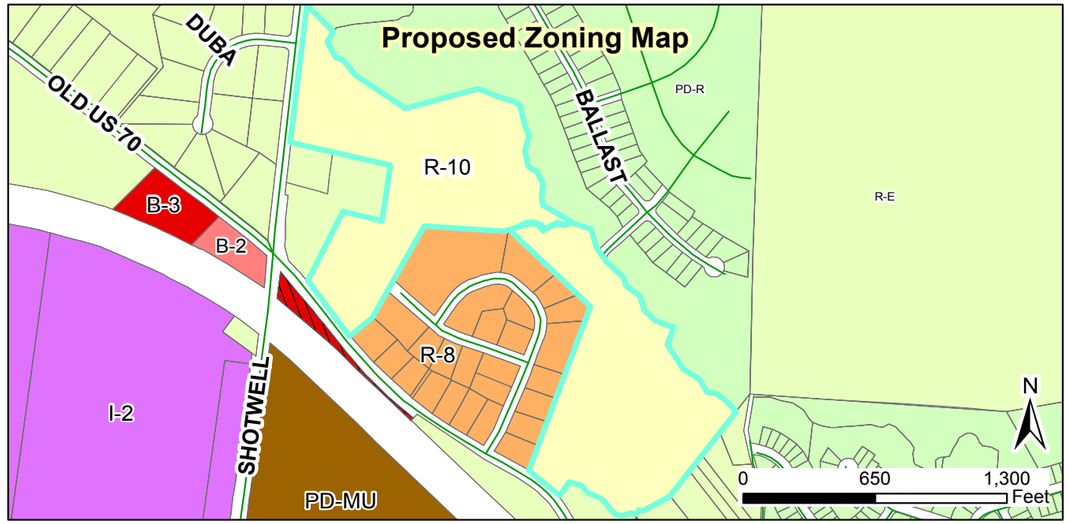
If approved, staff recommends the following conditions be applied to the approval of the Special Use Permit:

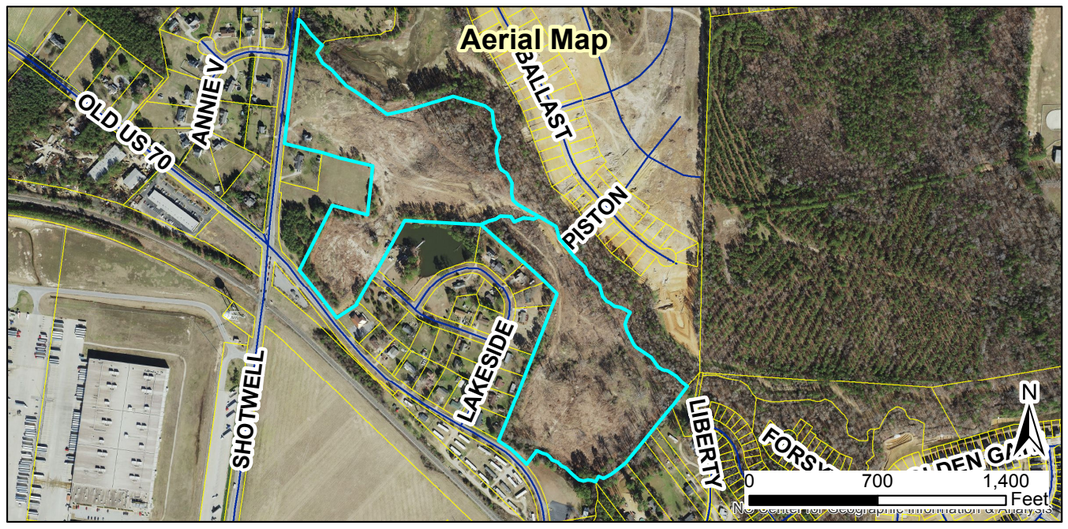
1. These conditions of approval, and any others associated with the Preliminary Plat (2018-90-SD) shall be recorded upon the final plan set, which must be submitted to the Planning Department for review and final approval.
2. This Special Use Permit shall be valid only for the 38.88 acres of land, outlined in the application and the associated preliminary plat (2018-90-SD). Any addition of land or units shall be subject to the modification criteria outlined in UDC Section 155.711.

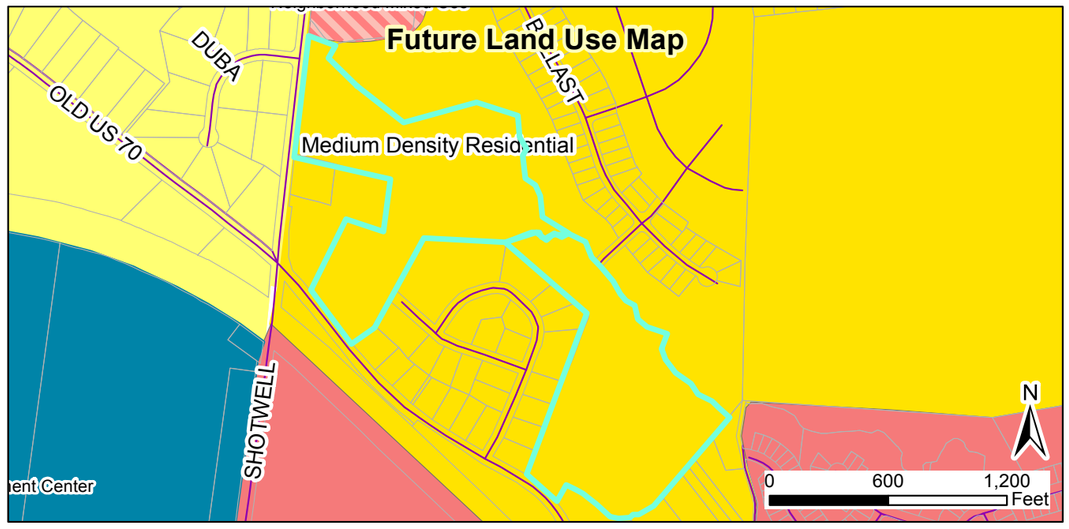
ATTACHMENTS:

1.) Staff Report Maps
2.) Application
3.) Owner's Consent Form
4.) Neighborhood Meeting Materials









2018-91-SUP
Creech Tract Special Use Permit
Applicant: Dalton Engineering and Associates
Property Owner: Everland Lee, LLC
Parcel ID: 165907-69-2203 / 165907-78-1039
Tag #: 05G01012A / 05G01012S

Staff Report Map

01/22/2019
Produced by: TOC Planning
Disclaimer: Town of Clayton assumes no legal responsibility for the quality fo the data represented here.

Legend
- 100-yr Flood Zone
- Thoroughfare Overlay
- Scenic Highway Overlay
- Watershed Protection Overlay
- Site

Document Path: O:\PLANNING\SPECIAL USE\2018\2018-91-SUP Creech Tract Development\staff report maps\2018-91-SUP.mxd

Dalton Engineering
and Associates, P.A.

October 2, 2018

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 or development 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: **Friday, October 12, 2018**

Meeting Time: **6:30 PM**

Meeting Location: **Dalton Engineering & Associates, PA**
446 East Main Street
Clayton, NC 27520

Type of Application: **Major Subdivision Application, Special Use Permit Application and Rezoning Application**

Project/proposal property location: 1294 Shotwell Rd Clayton, NC 27520

Description of project/proposal: The Developer of the parcels has submitted a Major Subdivision Application, a Special Use Permit Application and a Rezoning Application to the Town to request the parcels be developed into a multi-family, residential (townhome) subdivision.

Upcoming public meetings for this application: Planning Board and Town Council

At a 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 roads.
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.

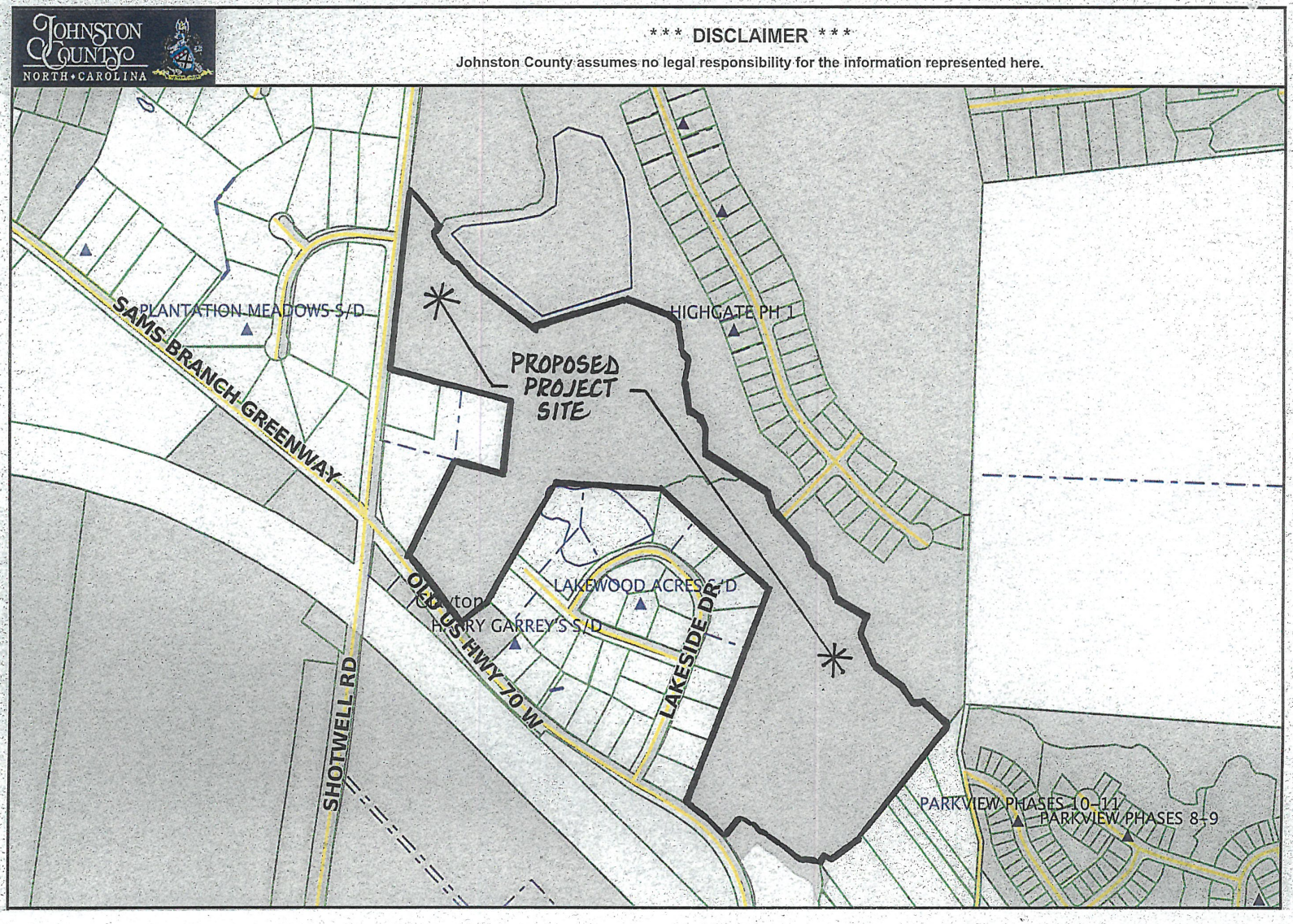
If you have any questions prior to or after this meeting, you may contact our office at (919) 550-4740. You may also contact the Town of Clayton Planning Department at (919) 553-5002.

Sincerely,

Jonathan Barnes
Dalton Engineering and Associates, P.A.

Cc: Town of Clayton Planning Department

446 East Main Street ▲ P.O. Box 426 ▲ Clayton, NC 27528 ▲ (919) 550-4740/Fax (919) 550-4741


JOHNSTON COUNTY
NORTH CAROLINA
*** DISCLAIMER ***
Johnston County assumes no legal responsibility for the information represented here.
PLANTATION MEADOWS S/D
SAMS BRANCH GREENWAY
PROPOSED PROJECT SITE
HIGHGATE PH 1
LAKEWOOD ACRES S/D
HENRY GARREY'S S/D
OLD US HWY 70 W
LAKESIDE DR
SHOTWELL RD
PARKVIEW PHASES 10-11
PARKVIEW PHASES 8-9

NEIGHBORHOOD MEETING SUMMARY FORM

FILL OUT THE FOLLOWING:

Application: Creech Tract Development Date of Mailing: 10/2/18

Date of Meeting: 10/12/18 Time of Meeting: 6:30 p.m.

Location of Meeting: Dalton Engineering and Assoc., P.A. 446 East Main Street Clayton, NC 27520

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, and that all required information was presented at the Meeting:

Printed Name: Jonathan Barnes Signature: [signature]

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.*

A total of fifteen (15) individuals attended the subject project's Neighborhood Meeting, including a Representative of the Applicant. Items that were discussed included the type of proposed development, the number of proposed dwelling units, locations of cross-connectivity, the landscape and perimeter buffering, the proposed roadway widening and turn lane improvements adjacent to the site entrances, etc. Following the Neighborhood Meeting, several participants chose to submit their comments by either mail or e-mail. Nine copies of each of the post-Meeting comments are attached (8 total). There have not been any changes made to the Creech Tract Development Subdivision Application as a result of the Neighborhood Meeting

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

NEIGHBORHOOD MEETING ATTENDANCE ROSTER

Project: Creech Tract Development

Application: Major Subdivision Application, Special Use Permit Application and Rezoning Application

Location/Date: Dalton Engineering and Assoc., P.A. 446 East Main Street Clayton, NC 27520 / 10/12/18

	NAME	ADDRESS
1	Barbara Beasley	164 Liberty Lane
2	Mike Beasley	164 Liberty Lane
3	Barbara Bank	101 Lakeside Dr.
4	Annie Ross	388 Ballast Point
5	Joe Ross	388 Ballast Point
6	Alfred Smoak	217 Lakeside Dr.
7	Hut R	152 LIBERTY LN
8	Doug Phillips	925 Thanksgiving Fire Rd Selma
9	Ann Phillips	" " "
10	Kenny Chestnut	103 Lakeside Dr.
11	Barbara Chestnut	103 Lakeside DR
12	Emmy Johnson	1414 Old US Hwy 70 W
13	Rickie Johnson	1414 Old US Hwy 70 W
14	Scott Smalley	2121 Powell Dr Clayton NC
15	JONATHAN BARNES	446 EAST MAIN STREET CLAYTON, NC
16		
17		
18		
19		
20		

July 2018

NEIGHBORHOOD MEETING SUMMARY FORM

FILL OUT THE FOLLOWING:

Application: Major Subdivison Application, Special Use Permit Application and Rezoning Application

Date of Mailing: 10/2/18

Date of Meeting: 10/12/18

Time of Meeting: 6:30 p.m.

Location of Meeting: Dalton Engineering and Assoc., P.A. 446 East Main Street Clayton, NC 27520

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, and that all required information was presented at the Meeting:

Printed Name: Jonathan Barnes Signature: [signature]

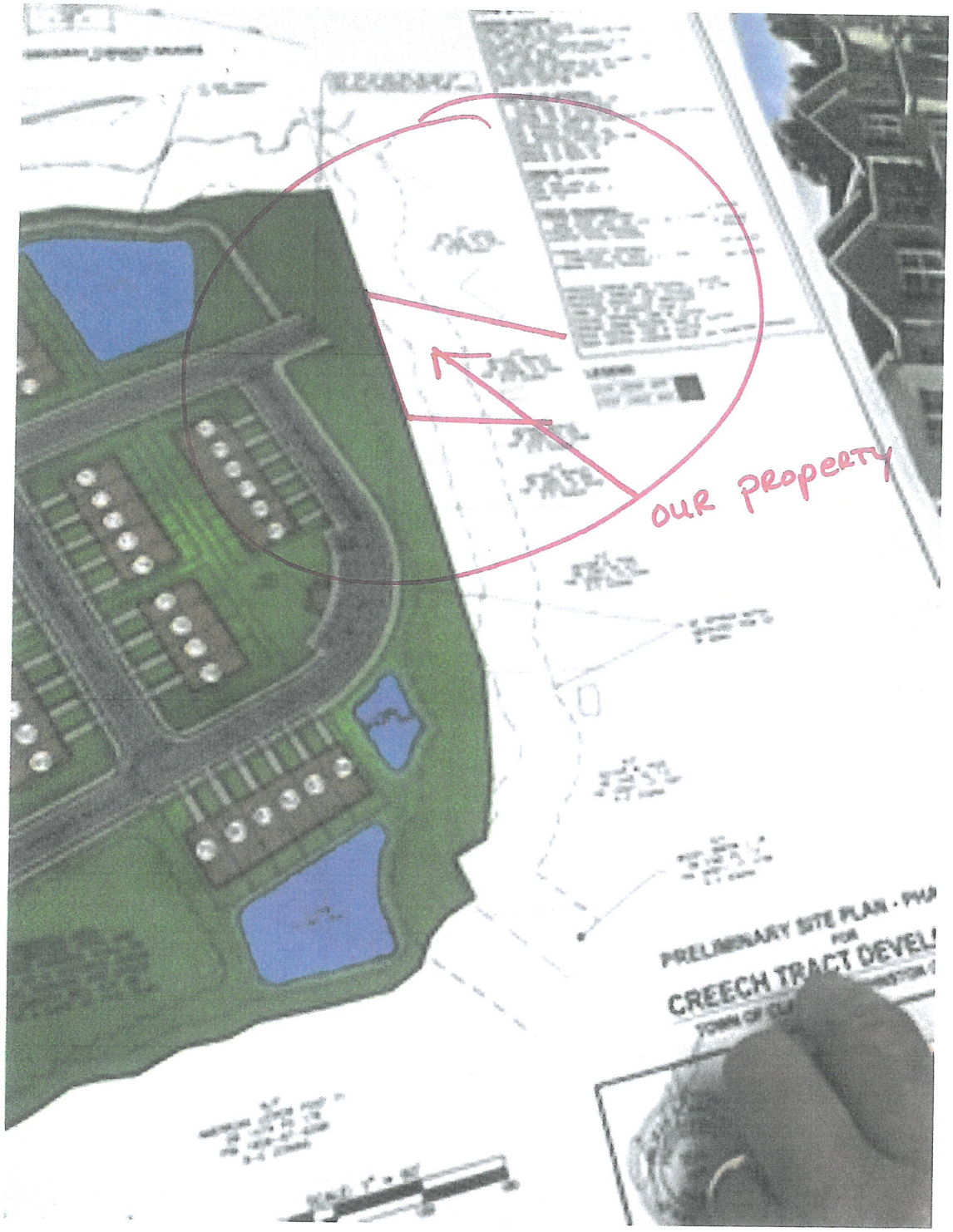
Meeting Summary/Minutes: *provide a summary of the discussion held at the meeting, including issues raised and any resolution discussed, and any changes made to the application as a result of the meeting.*

Our property is adjacent to both Parkview and Highgate Subdivisions. It appears by the design layout of both subdivisions that a future road to connect the two subdivisions had already been planned. This connector, according to the drafts, will come across our property and we will be losing land. We would like to understand if this is the future plans, and if so, why our property is part of the future road connector considering with better planning, a road connection could have been done without touching our property. If we are correct in our assessment, we would also like to understand why there has been no notification to us in regards to losing property, which is very disappointing.

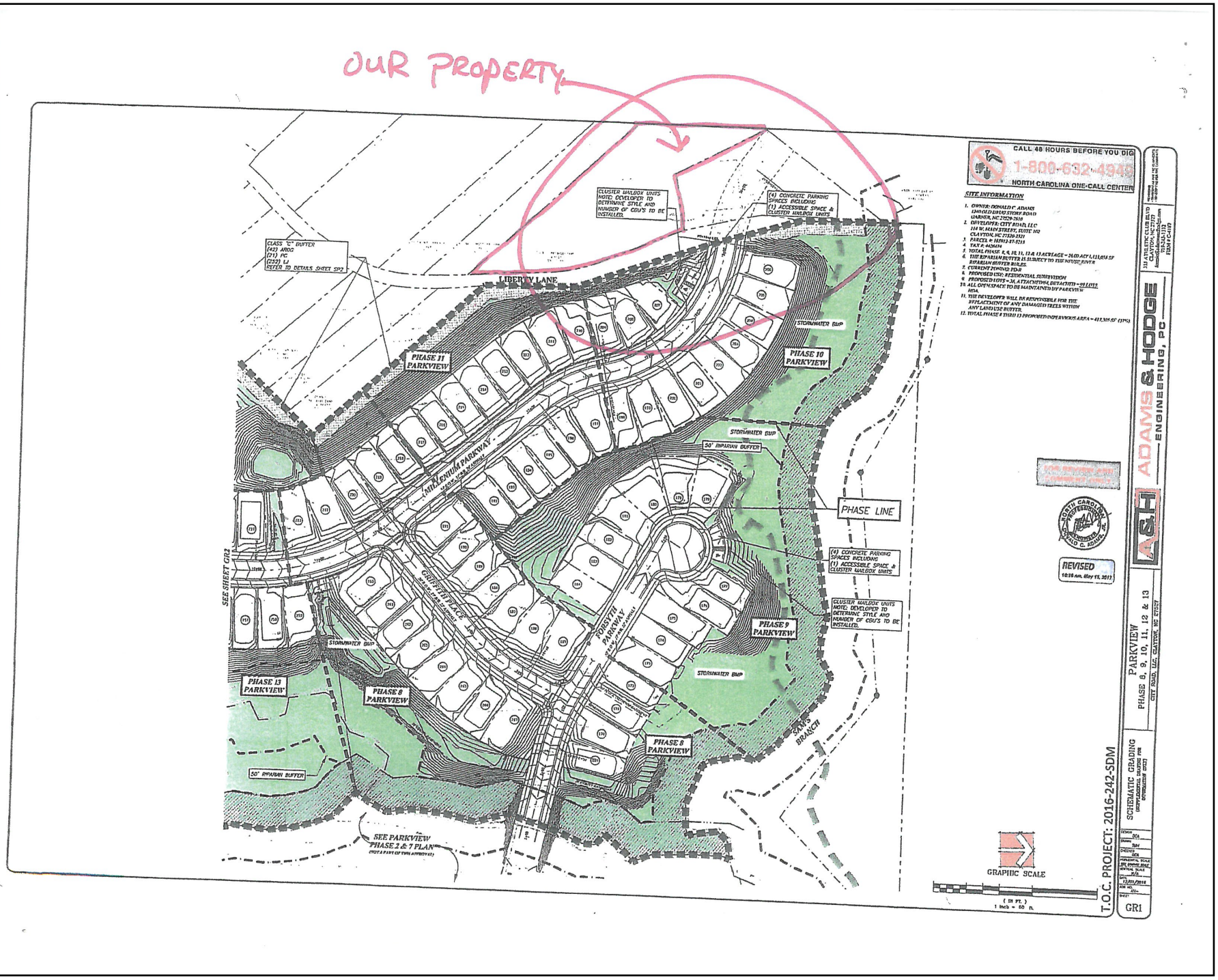
Please write clearly (or submit a typed summary). Use additional sheets if necessary.

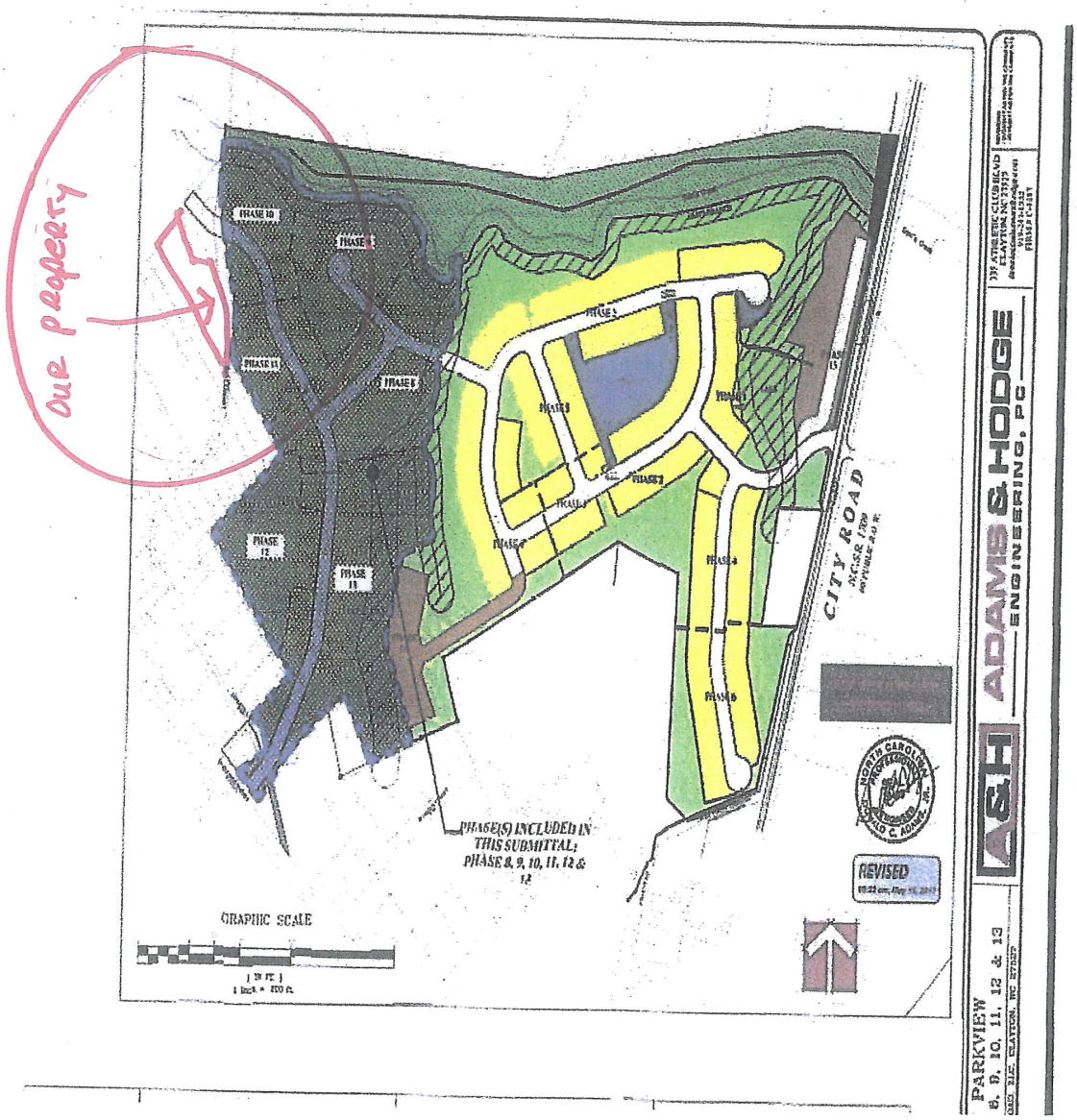
Mike & Barbara Beasley

July 2018



This plan appears to be taking our land.


OUR PROPERTY
CALL 48 HOURS BEFORE YOU DIG
1-800-632-4949
NORTH CAROLINA ONE-CALL CENTER
SITE INFORMATION
1. OWNER: DONALD C. ADAMS
1240 OLD BANKSTORE ROAD
GARNER, NC 27529-7010
2. DEVELOPER: CITY ROAD, LLC
114 W. MAIN STREET, SUITE 102
CLAYTON, NC 27520-2521
3. PARCEL #: 15911-37-2215
4. TAX #: 404434
5. TOTAL PHASE 8, 9, 10, 11, 12 & 13 ACREAGE = 26.03 AC± / 1,133,858 SF
6. THE RIPARIAN BUFFER IS SUBJECT TO THE NEUSE RIVER RIPARIAN BUFFER RULES.
7. CURRENT ZONING: PD-R
8. PROPOSED USE: RESIDENTIAL SUBDIVISION
9. PROPOSED LOTS = 74, ATTACHED(54), DETACHED) = 128 LOTS.
10. ALL OPEN SPACE TO BE MAINTAINED BY PARKVIEW HOA.
11. THE DEVELOPER WILL BE RESPONSIBLE FOR THE REPLACEMENT OF ANY DAMAGED TREES WITHIN ANY LANDUSE BUFFER.
12. TOTAL PHASE 8 THRU 13 PROPOSED IMPERVIOUS AREA = 417,305.0 SF (37%)
CLASS "C" BUFFER
(42) ARDG
(21) PC
(252) LJ
REFER TO DETAILS SHEET SP2
LIBERTY LANE
CLUSTER MAILBOX UNITS NOTE: DEVELOPER TO DETERMINE STYLE AND NUMBER OF CBU'S TO BE INSTALLED.
(4) CONCRETE PARKING SPACES INCLUDING (1) ACCESSIBLE SPACE & CLUSTER MAILBOX UNITS
PHASE 11 PARKVIEW
PHASE 10 PARKVIEW
PHASE 9 PARKVIEW
PHASE 8 PARKVIEW
PHASE 13 PARKVIEW
PHASE 8 PARKVIEW
STORMWATER BMP
50' RIPARIAN BUFFER
MILLENNIUM PARKWAY
GRIFFITH PLACE
FORSYTH PARKWAY
SAM'S BRANCH
PHASE LINE
SEE SHEET GR2
SEE PARKVIEW PHASE 2 & 7 PLAN
(NOT A PART OF THIS APPROVAL)
REVISED
10:39 am, May 11, 2017
GRAPHIC SCALE
1 INCH = 60 FT.
T.O.C. PROJECT: 2016-242-SDM
ADAMS & HODGE ENGINEERING, PC
114 ATHLETIC CLUB BLVD
CLAYTON, NC 27527
PHONE: 919-553-4182
FAX: 919-553-4189
PARKVIEW
PHASE 8, 9, 10, 11, 12 & 13
CITY ROAD, LLC, CLAYTON, NC 27527
SCHEMATIC GRADING
GR1


our property
PHASE 10
PHASE 9
PHASE 11
PHASE 8
PHASE 12
PHASE 13
PHASE 1
PHASE 2
PHASE 3
PHASE 4
PHASE 5
PHASE 6
PHASE 7
CITY ROAD
PHASE(S) INCLUDED IN THIS SUBMITTAL: PHASE 8, 9, 10, 11, 12 & 13
GRAPHIC SCALE
REVISED
A&H ADAMS & HODGE ENGINEERING, PC
PARKVIEW
8, 9, 10, 11, 12 & 13

Jonathan Barnes

From: Kerry Chestnut [contact@chestnutphoto.com]
Sent: Thursday, October 11, 2018 12:36 PM
To: Jonathan Barnes
Subject: Project sight

Johnathan Barnes,

Thank you for asking for our input.

No one is inn the neighborhood is happy at the prospect of multi-unit housing. Our neighborhood is moderate individual housing and on the other side are new larger one and two story individual houses with the small exception of the older neighborhood next to the RR tracks.

The preference is, if it has to be developed, that it should be individual homes to the same level of the surrounding homes.

Also, if purchase of lots connected to ours could be purchased, what would be the price.

Thanks,

Kerry Chestnut

NEIGHBORHOOD MEETING SUMMARY FORM

FILL OUT THE FOLLOWING:

Application: Major Subdivison Application, Special Use Permit Application and Rezoning Application

Date of Mailing: 10/2/18

Date of Meeting: 10/12/18

Time of Meeting: 6:30 p.m.

Location of Meeting: Dalton Engineering and Assoc., P.A. 446 East Main Street Clayton, NC 27520

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, and that all required information was presented at the Meeting:

Printed Name: Jonathan Barnes Signature: [signature]

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.*

1. Property owner Rickie L. Johnson concerned about the access road near the property. Request additional turning lane length to help reduce the effect on church patrons.

2. Property owner Rickie L. Johnson concerned about the buffer adjoining the property. Request that the water easement not be considered as the 20ft. buffer required. I am requesting an additional 20 ft. buffer. This will prevent disturbing the landscaping on the property line.

3. Request the speed limit on Old US 70 change to 35 MPH.

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

4. Request a fixed buffer, Fencing or wall near adjoining Properties.

NEIGHBORHOOD MEETING 10/12/2018

Dalton Engineering and Assoc., P.A.

To: Samantha Wullenwabbr, Haley Hogg,

and

Planning Board

Our take-away from the meeting is that this is a very bad plan for this area:

1. Far too many townhomes for the space allowed.
2. Traffic survey needs to be made as this will add major traffic volume to this area.
3. An intersection in the middle of a curve that is already overloaded at rush-hours will create deadly situations.
4. Paving and concrete of this magnitude will create major watershed problems and will have major negative effect bordering neighborhoods (especially those with septic tanks).
5. Will destroy a natural spring.

These plans are not good for Clayton's growth as this will overcrowd this small area and will likely insure highway deaths by adding two hundred plus vehicles to already overcrowded rush-hours on two-lane highways.

It will also make a very noticeable reduction on clean air by removing so much plant-life.

This property could be developed by building individual houses with space for lawns and trees.

10/15/2018

Jonathan Barnes

From: Annie Ross [rossannie1402@gmail.com]
Sent: Monday, October 15, 2018 1:19 PM
To: Jonathan Barnes
Subject: Crèech Tract Proposal

I'm certainly glad I attended the recent meeting. I cannot believe that there is going to be a cut through the Highgate community, especially where it is going to be located.

Although I have only lived here for about a month and a half I have consistently found the Covered Bridge Rd and Shotwell intersection to be an area with great traffic concerns. Now I hear there is a possibility of another 189 households, not necessarily single persons, adding to the stressful intersection. I might add that I would certainly never make a left across Shotwell if I could avoid it to enter the proposed tract of town homes. The same goes for making a left across old Rt70, which is only available at one entrance anyway...and that entrance is on a curve.

Now with the far less than desirable egresses to the Creech Tract development I feel Highgate will be caught in the cross hairs. The residents of Creech Tract can cut through Highgate to avoid both Shotwell and the intersection of Covered Bridge by cutting through Highgate,both coming and going.

Unfortunately the proposed connecting road will enter the Highgate development in the worst possible area - right between the mail area and the pool/ fitness area where many of the eventual 229 households will be going each day. The chances for accidents plus the wear and tear of the road greatly concern me. The Highgate short cut will be used my many in my opinion and is an accident waiting to happen. Not only will it be used by residents but also by their visitors.

I sincerely hope this mishmash of likely trouble can be avoided. Make sure there is a good study taking into consideration all the growth that the surrounding Clayton area is experiencing on making this decision. I heard talk of light at Shotwell and Covered Bridge....again not a solution but only more reason for people to cut through Highgate.

I am thrilled that we moved to Clayton and looked at many houses before making our final decision. I would hope the board considers the effects on all the people, not just the dollars of the developer or increase in tax base if it is a bad decision for the town and its communities.

Annie Ross
388 Ballast Point
Clayton, NC 27520
252-622-8969

a

Sent from my iPad

Jonathan Barnes

From: Annie Ross [rossannie1402@gmail.com]
Sent: Monday, October 15, 2018 1:32 PM
To: Jonathan Barnes
Subject: Proposed Creech Tract Townhomes

I am deeply concerned about the new Townhomes development that will interact with the Highgate development. Highgate is to have 229 households. Now with Creech tract and it's additional 189 units that might be added, are the community services in place to handle all this growth?

There will certainly be an increase in students attending public schools, more sewers,lights and garbage needs. Do we have the support to deal with all this without it burdening existing residents unfairly? How is the developer helping with the new challenges?

Joe Ross
388 Ballast Point
Clayton, NC 27520
252-622-5040
Sent from my wife's iPad

NEIGHBORHOOD MEETING SUMMARY FORM

FILL OUT THE FOLLOWING:

Application: Major Subdivision Application, Special Use Permit Application and Rezoning Application
Lakeside Dr.

Date of Meeting: 10/12/18 Date of Mailing: 10/2/18

Location of Meeting: Dalton Engineering and Assoc., P.A. 446 East Main Street Clayton, NC 27520 Time of Meeting: 6:30 p.m.

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, and that all required information was presented at the Meeting:

Printed Name: Jonathan Barnes Signature: [signature]

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.*

(1) Concerns: Traffic on Old US 70 - Traffic is very heavy from 6:30 to 8:00 AM, and from 4:00 to 6:00 PM. It is very hard to exit off Lakeside Dr. to Old US. 70. The Entrance/Exit is Close to the Curve.

(2) Concern about the Noise. The only Noise Barrier is Trees between the Properties.

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

July 2018

101 Lakeside Dr
Clayton NC 27520

RALEIGH NC 275
Research Triangle Region
15 OCT 2018 PM 1 L

Dalton Engineering
Jonathan Barnes
PO Box 426
27528-0426 Clayton NC 27520

Jonathan Barnes

From: Ann Phillips [APhillips86@nc.rr.com]
Sent: Friday, October 19, 2018 8:58 AM
To: Jonathan Barnes
Subject: Creech property
Attachments: Project Concerns- Shotwell.rtf

Mr Barnes,

Attached are our concerns pertaining to the Creech property development. Your patience and time are appreciated in presenting this to the neighborhood. Ann Phillips

NEIGHBORHOOD MEETING SUMMARY FORM

FILL OUT THE FOLLOWING:

Application: Major Subdivision Application, Special Use Permit Application and Rezoning Application

Date of Mailing: 10/2/18

Date of Meeting: 10/12/18

Time of Meeting: 6:30 p.m.

Location of Meeting: Dalton Engineering and Assoc., P.A. 446 East Main Street Clayton, NC 27520

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, and that all required information was presented at the Meeting:

Printed Name: Jonathan Barnes

Signature:

I have two concerns as follow regarding the proposed Creech Project adjoining my property located at 1274 Shotwell Road.

1-) It is my understanding that the project will have one road providing access to Old 70 and that this road will be an improved version of the one currently located in the curve just West of the American Legion building. The certain increase in traffic seeking access to Old 70 resulting from this project will make an already dangerous intersection even more dangerous. To eliminate having an existing paved stub adjoining my property which, at a future date, could be extended to Old 70 thereby providing additional egress from the Creech project, I request that the developer ***NOT*** place said stub on the rear portion of my property. Additionally, I request assurance from the Town of Clayton and/or NC DOT that there will be no subsequent attempt to confiscate any portion of my property via Eminent Domain in order to provide such additional egress from the property. If and when an increase in traffic accidents makes such additional egress necessary, purchase of my property should be subject to standard real estate negotiation.

2-) After reviewing the project plans provided by Dalton Engineering personnel, it appears that there is little or no recreational space allocated for utilization by residents of the dwellings to be built. Consequently, I request that the developers be required to either erect a fence or an elevated berm along those areas bordering my property. Said structure should be sufficient to eliminate unrestricted access to my property thereby preventing it from becoming an unauthorized community playground which could make me subject to law suit should accidents occur there.

Douglas Phillips
925 Thanksgiving Fire Road
Selma, NC 27576
919-351-0366 ddphillips@nc.rr.com

ADJACENT PROPERTY OWNERS LIST

Project Name: Creech Tract Development

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
165907-79-3983	Creech NC, LLC	448 Viking Dr Ste 220 Virginia Beach, VA 23452-7331
165907-58-4492	Gregory E Messick	6713 Kyle Stewart Ct North Las Vegas, NV 89086-1302
165907-59-6201	Douglas & Ann Phillips	925 Thanksgiving Fire Rd Selma, NC 27576
165907-59-3304	William & Doris Powell	146 Jameson Ave Woodland, NC 27897
165907-58-9325	Rickie L Johnson	1414 Old US 70 Hwy W Clayton, NC 27520
165907-59-3631	Royastine & Mary Bryant	2 Annie V Dr Clayton, NC 27520
165907-68-5693	Carol A Fifield	215 Lakeside Dr Clayton, NC 27520
165907-59-7141	Douglas & Ann Phillips	925 Thanksgiving Fire Rd Selma, NC 27576
165907-58-9376	SECU*RE Inc	119 N Salisbury St 10th Floor Raleigh, NC 27603
175000-50-8319	Everland-Lee LLC	104 State Ave Ste 103 Clayton, NC 27520
165907-59-3981	David & Erin Beck	1 Annie V Dr Clayton, NC 27520
165907-68-2793	Neal & Melissa Konneker	1413 Woodcrest Dr Clayton, NC 27520
165908-87-4986	Owner name not provided on Johnston County GIS	Owner address not provided on Johnston County GIS
165911-77-3189	Martin Moody, Jr.	41 Ocean Dr Clayton, NC 27520
165911-77-4352	Hector Pena	156 Liberty Lane Clayton, NC 27520
165908-77-7804	Jose Lisandro Juarez	181 Saint Jiles Dr Clayton, NC 27520
165908-77-6575	Michael Beasley	164 Liberty Lane Clayton, NC 27520

ADJACENT PROPERTY OWNERS LIST

Project Name: Creech Tract Development

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
165911-77-0431	American Legion Post 71	1300 Old US 70 Hwy W Clayton, NC 27520
165907-68-7491	Dillion & Bobbie Blackmon	207 Lakeside Dr Clayton, NC 27520
165907-68-7288	Alfred & Agnes Moore	203 Lakeside Dr Clayton, NC 27520
165907-67-5741	Nilous I Banks	101 Lakeside Dr Clayton, NC 27520
165907-67-5892	Kerry & Barbara Chestnut	103 Lakeside Dr Clayton, NC 27520
165912-77-6459	Michael Beasley	164 Liberty Lane Clayton, NC 27520
165908-77-7604	Michael Beasley	164 Liberty Lane Clayton, NC 27520
165912-77-5490	Hector Pena	156 Liberty Lane Clayton, NC 27520
165907-67-6943	Betty Britt	105 Lakeside Dr Clayton, NC 27520
165907-68-7520	Carol A Fifield	215 Lakeside Dr Clayton, NC 27520
165907-68-6095	Helen S Jones	109 Lakeside Dr Clayton, NC 27520
165907-68-2793	Neal & Melissa Konneker	1413 Woodcrest Dr Clayton, NC 27520
165907-67-3633	Avant-Garde Investments, LLC	5842 NC Highway 42 W Garner, NC 27529

TOWN OF CLAYTON
Planning Department
111 E. Second St., P.O. Box 879
Clayton, NC 27528
Phone: 919-553-5002
Fax: 919-553-1720

MAJOR SUBDIVISION (PRELIMINARY PLAT) APPLICATION

☒ **New Major Subdivision: $400.00 + $5.00 per lot**
- ☒ **Conventional**
- ☐ **Open Space**
- ☐ **Master Plan**

☐ **Modification to approved plan**
- ☐ **Major: $400.00 + $5.00 per lot modified**
- ☐ **Minor: $200.00 + $5.00 per lot modified**

Modified Plan: _____

Advertising Fee: $200.00

SITE INFORMATION

Name of Project: Creech Tract Development **Acreage of Property:** 33.88 acres (total)

Tag #: 05G01012A and 05G01012S **NC Pin #:** 165907-69-2203 and 165907-78-1039

Location: 1294 Shotwell Road Clayton, North Carolina 27520

Number of lots (Existing): 0 **(Proposed):** 189 **Min. Lot Size:** _____

Zoning District: PD - MU **Electric Provider:** Town of Clayton

Wastewater: ☐ *Septic* ☒ *Sewer* **Water:** ☐ *Well* ☒ *Public/Private Water*

Recreation/Open Space Requirement: ☐ *Fee in lieu* ☐ *Land Dedication – acreage:* _____

APPLICANT INFORMATION

Applicant: Dalton Engineering and Associates, P.A.

Mailing Address: Post Office Bpx 426 Clayton, North Carolina 27528

Phone Number: (919) 550 - 4740 **Fax:** (919) 550 - 4741

Contact Person: Jerry T. Dalton

Email Address: jdalton@daltonengineering.com

OFFICE USE ONLY

Date Received: _____ Amount Paid: _____ File Number: _____

RECEIVED
JAN 23 2019
TOWN OF CLAYTON
PLANNING DEPARTMENT

PROPERTY OWNER INFORAMTION

Name: Everland - Lee, L.L.C.

Mailing Address: 104 State Avenue, Suite 103 Clayton, North Carolina 27520

Phone Number: (919) 971 - 5353 **Fax:** (919) 934 - 3100

Email Address: lannycliftonbuilder@gmail.com

EXPLANATION OF PROJECT

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

The Developer is requesting approval to develop subject properties into a residential subdivision utilizing townhome dwellings. The proposed subdivision is located on two parcels which total 33.88 acres and would contain a total of 189 dweilling units. Access to the development would be provided at four (4) locations, including Old US Highway 70 West (2 entrances), Shotwell Road and the adjacent development - Highgate Subdivision. Improvements to the site include curb and gutter streets with sidewalk, a pair of mailbox kiosks and an amenities area with pool. Public water and sanitary sewer services would be provided by the Town of Clayton. The Town of Clayton would also act as the electrical provider for the proposed townhomes. All improvements are to meet Town of Clayton specifications.

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) Consistency with the adopted plans and policies of the Town..

The Major Subdivision Application for the Creech Tract Development would meet the required specifications of the Town's Subdivision Regulations for multi-family developments, as described in the Unified Development Code. The two parcels of property contained within the Subdivision Application are currently zoned PD - MU and a concurrent Rezoning Application is requesting the parcels be zoned R - 10. The subject project would compliment the surrounding properties and the proposed use is consistent with the existing surrounding residential development.

(2) The subdivision meets all required specifications of this chapter.

The Major Subdivision Application for the Creech Tract Development would meet the required specifications of the Town's Subdivision Regulations for multi-family developments, as described in the Unified Development Code. The subject project has been reviewed by the Town of Clayton's Technical Review Committee. The comments provided by the Technical Review Committee have been addressed on the current set of Creech Tract Development - Subdivision Plans.

(3) 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 subject project would compliment the surrounding properties and the proposed use is consistent with the existing surrounding residential development. Existing residential development is located directly adjacent to the proposed project to the North (Highgate Subdivision) and the South (Lakewood Acres Subdivision). Additionally, there is currently on-going construction of a multi-family development located to the South (Stallings Mill Apartments), at the intersection of Shotwell Road and US Highway 70 Business.

(4) 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.

The subject project will provide proper distribution of traffic to avoid congestion to the public in the immediate area. The project meets the Town's requirements for the number of ingress / egress points and a Driveway Access Permit Application would be submitted to the Town and N.C.D.O.T. for review and approval prior to the start of construction. The project will utilize the extension of the Town's existing infrastructure to provide services to the public that are desired and will not be an endangerment to the environment or the public.

Planned developments must also meet the Master Plan Approval Criteria in Section 155.705(J)

MAJOR SUBDIVISION PLAN CHECKLIST

Pursuant to Article 7, Section 155.706 of the Unified Development Code, applications requesting a public hearing or administrative approval process shall submit a plan set to the Planning Department. These plans may include Master Plan, Site Plan, Subdivision Plan, Regulating Plan, Architectural Elevations, Landscape Plan, Photometric/Lighting Plan, Engineering Plans, and Survey. The plan requirements shall be based on the type of development application or approval process.

PLAN FORMAT

These standards are established to provide information pertaining to the graphic and format presentation of plans. The following is required for all types of plans, except where otherwise noted:

- All plans and architectural elevations shall be limited to 24" x 36" in size, and **folded to an 8.5" x 11" format.**

- Plans are to be drawn at the same engineering scale of 1" = 20'; 30'; 40'; 50'; 60' (architectural elevations and details are exempt from this requirement) with north oriented in the same direction.
- Plans may be drawn at an engineering scale of 1" = 100', if approved by the Planning Department or the Technical Review Committee (TRC).
- Architectural plans and elevations shall be drawn at an architectural scale of 1" = 3/32', 3/16', 1/8', 1/4', or 3/8'.
- All drawings, except elevations, isometric drawings, and renderings, shall be in two dimensional plan views.
- All text shall be clear and legible.
- Line weight hierarchy on all plans shall be consistent with common drafting standards.
- Multiple sheets shall be consecutively numbered (e.g. Sheet 1 of 4).
- All numerical references shall be rounded up to a maximum of two decimal points.

PLAN ELEMENTS AND GRAPHIC DATA (TO BE ON ALL SHEETS)

The following items include general and project information. This information is required to be present on all plan sheets, except where otherwise noted.

Provided		
Yes	**N/A**	
☑		Consultant Logo Box (name, address, phone number, fax, and e-mail, firm and license number)
☑		Project/Application Name
☑		Type of Plan
☑		Signature and Professional Seal with date (landscape plans, architectural elevations, engineering plans, surveys)
☑		Original/Submittal Date and Revision Date
☑		Sheet Number
☑		Vicinity Map
☑		North Arrow with NC Grid System
☑		Graphic Scale (engineering or architectural graphic and written scale)

The following elements are specific to each property and application request, and shall be shown graphically on the specific plan types listed below. These graphics shall be supported by text, labeling, and dimensional information (width, length, and depth).

SURVEY

Provided		
Yes	N/A	
☑		A signed and sealed boundary survey **(not more than a year old unless otherwise approved by the Planning Department)** with the bearings and distances of every property line shown. Distances shall be in feet or meters and decimals thereof. The number of decimal places shall be appropriate to the class of survey required. The survey must include any and all easements of record (referenced by Deed Book and Page) and must be prepared by a surveyor registered in the State of North Carolina.

EXISTING CONDITIONS SHEET

Provided		
Yes	N/A	
☑		The existing topographical conditions of the property with a two foot contour interval showing the location of any natural features such as water courses, wooded areas, steep slopes (above 25%), or other geological features.
☑		The existing streets and roadway improvements (medians, landscaping, signage, driveways, etc.) within 100 feet of project boundary.
☑		The existing structures located on the subject property.
☑		The existing structures within 100 feet of project boundary.
☑		The existing utilities (including inverts of pipes, rim elevations, wells and septic tanks, etc.) within 100 feet of project site.
☑		Label subject parcel and adjacent property acreage, owners, and zoning districts.

PRELIMINARY SITE PLAN

The items listed below are required to be delineated (in a tabular format) on the site plan:

Provided		
Yes	N/A	
☑		Site data table in tabular form
☑		Name of project (AKA names if applicable)
☑		Parcel identification number (and/or Tag number)
☑		Property size (acres and square feet)
☑		Property location (Town limits or ETJ)
☑		Existing zoning district
☑	☐	Proposed zoning district (if applicable)
☐	☑	Overlay (if applicable)

Provided		
Yes	N/A	
☑		Existing use
☑		Proposed use
☐	☑	Number of seats/students/fueling positions (as applicable).
☑	☐	Number of housing units proposed, per housing unit type.
☑	☐	Proposed density (number of units per acre)
☑	☐	Proposed intensity (gross floor area)
☑		Building coverage (as percentage of total site)
☑	☐	Impervious surface area (square feet and as percentage of total site)
☑	☐	Building height (number of stories and in feet)
☑	☐	Required parking (list requirement i.e. 1 space per 300 SF)
☑	☐	Proposed parking
☑	☐	Required/proposed handicap accessible parking
☑	☐	Provide name of Electric Provider.
☑	☐	Provide name of Water Provider.
☑	☐	Provide name of Sewer Provider.
☑	☐	Max building height.

Other site plan elements:

Provided		
Yes	N/A	
☑		Identify adjacent property owners, their parcel ID number, current zoning and present use.
☐	☑	Put a bubble around the affected area for amendments to previously approved projects.
☑		Identify the location of lots, buildings and structures with finished floor elevations and applicable setbacks.
☑		Identify existing and future right of ways.
☑	☐	Identify Watershed Protection Areas.
☑	☐	Identify existing easements by type, and distinguish if public or private.
☑	☐	Identify proposed easements by type, and distinguish if public or private.
☑	☐	Identify Open Space/Common Areas, amenities.
☑		Identify clear sight triangle at project ingress/egress points with dimensions.
☑		Identify main entrance/access driveways, curb and gutter, cross section with ROW. Proposed driveway and setbacks must be shown.

Provided		
Yes	N/A	
☑	☐	Provide boundaries of Resource Conservation Areas (see UDC Section 155.500).
☑		Provide an off-street parking and loading layout (with details, dimensions and access location). Accessible parking requirements are listed in NCSBC Volume 1C, 1999 edition. Show traffic circulation arrows.
☐	☑	Provide queuing details for drive-up/drive-thru facilities (if applicable).
☑		Provide the locations and dimensions of existing and proposed sidewalks and accessible routes.
☑		Provide the location and details of refuse collection areas.
☑	☐	Provide the location, size and orientation of freestanding signs.
☑	☐	Identify proposed phasing (phasing lines) of construction on Phasing Plan sheet.
☑	☐	Cul-de-sacs must be dimensioned and meet Town of Clayton minimum design criteria.
☑	☐	Identify cluster mailbox unit (CBU) locations and details, including parking layout.

CONCEPTUAL ENGINEERING PLANS

Note: Conceptual engineering plans are deemed preliminary in nature. Review and approval of public infrastructure construction plans is a separate process performed by the Engineering Division.

Provided		
Yes	N/A	
☑	☐	Identify proposed streets and roadways (public and private) with dimensions and cross sections.
☑	☐	Identify the curve radii for all internal and external vehicular use areas.
☑	☐	Identify all access points to the project.
☑	☐	Identify existing conditions and proposed grading plans.
☑	☐	Identify Tree Conservation Areas shown on grading plan.
☑	☐	Show proposed flow of traffic.
☑	☐	Identify proposed traffic control signs and striping.
☑	☐	Identify the proposed water distribution system (including size) with location of fire hydrants and point of connection(s).
☑	☐	Identify the proposed sanitary sewer collection system (including size) and point of connection(s). If a municipal sewer connection is not available, please provide documentation from Johnston County Department of Environmental health that the location of septic tank and drain field is acceptable.
☑	☐	Provide preliminary wastewater allocation calculation.

Provided		
Yes	N/A	
☐	☑	Identify proposed grease traps.
☐	☑	Identify backflow prevention devices.
☑	☐	Identify slopes steeper than 2.5:1.
☑	☐	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.
☐	☑	Provide a Stormwater Management Statement.
☐	☑	Floodplain development permit required for this parcel – see Engineering Dept.

FIRE PLAN

Fire Rescue (information to be shown on conceptual engineering plans)

Provided		
Yes	N/A	
☑	☐	Identify fire hydrant distribution (distance of hose lay).
☐	☑	Identify the sprinkler connection locations and size.
☐	☑	Identify fire lane designations and circulation around buildings (stripe fire lanes and show minimum stabilized access around all structures).
☑	☐	Identify the emergency evacuation route (access in and out of the property).
☑	☐	Identify fire apparatus turning radius.
☑	☐	Verify the location of fire hydrants is not interfering with required landscaping (must be 24" clearance of landscaping from bottom of steam fitting).
☐	☑	Identify the Lock Box/Knox Box locations.
☐	☑	Identify placard locations for hazardous materials.

PHASING PLAN

Provided		
Yes	N/A	
☑		Provide a Phasing plan showing all proposed phases and phase titles, in different colors.

LANDSCAPE PLAN

Provided		
Yes	N/A	
☑		Provide a landscape plan identifying the location of all proposed landscaping (must be prepared by a landscape architect registered in North Carolina).
☑		Indicate the location, width and type of all required buffers.
☑		Indicate the location, width and type of landscaping within vehicular use areas.
☑		Indicate the location, width and type of landscaping used to screen drive-thru areas, service areas, loading areas, mechanical equipment and above ground utilities.
☑		Provide a plant list summary table which includes: 1. A planting key identifying the various planting elements 2. The quantity of each type of plant material proposed 3. The size, height, caliper and spacing of plant material proposed 4. The Botanical and common names of plant material proposed
☑		Verify/identify clear sight distances and safe-sight-triangles at project ingress/egress points.
☑		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 species must be used).
☑		Provide a landscape maintenance note which states: "All landscaped areas shall be maintained in an attractive and healthy condition. Dead or diseased plantings shall be removed and replaced in a timely fashion".
☑		Identify and list any existing plant material which will be used to satisfy landscape requirements.

LIGHTING PLAN

Provided		
Yes	N/A	
☐	☐	Conceptual Lighting Plan - any common lighting should not spill over to other properties.
☐	☐	Identify the light source and provide a detail of the fixture.
☐		Identify the proposed height of fixtures.

ARCHITECTURAL ELEVATIONS AND FLOORPLAN

Provided		
Yes	N/A	
☑		Provide floor plans, elevations, construction materials, finishes and colors, along with type of construction of all buildings per North Carolina Building Code prepared by a professional architect registered in North Carolina. This should be provided in color.
☑		Indicate the height and number of stories for each structure.
☑		Indicate the location and screening method for all roof mounted structures or equipment.

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 Major 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.

Jerry T. Dalton
Print Name

Signature of Applicant

1/22/19
Date

TOWN OF CLAYTON
Planning Department
111 E. Second St., P.O. Box 879
Clayton, NC 27528
Phone: 919-553-5002
Fax: 919-553-1720

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: Creech Tract Development **Address or PIN #:** 165907-69-2203 and 165907-78-1039

AGENT/APPLICANT INFORMATION:

Dalton Engineering and Associates, P.A.
(Name - type, print clearly)

Post Office Box 426
(Address)
Clayton, North Carolina 27528
(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)*:

Major Subdivision Application
Special Use Application
Wastewater Allocation Request

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:

Everland - Lee, L.L.C.
(Name - type, print clearly)
(Owner's Signature)

104 State Avenue, Suite 103
(Address)
Clayton, North Carolina 27520
(City, State, Zip)

STATE OF North Carolina
COUNTY OF Johnston

Sworn and subscribed before me Jill M Howard, a Notary Public for the above State and County, this the 6 day of March, 2018.

SEAL

JILL M HOWARD NOTARY PUBLIC JOHNSTON CO., NC

Jill M Howard
Notary Public

My Commission Expires: November 12, 2022

January 2018

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
February 25, 2019

STAFF REPORT

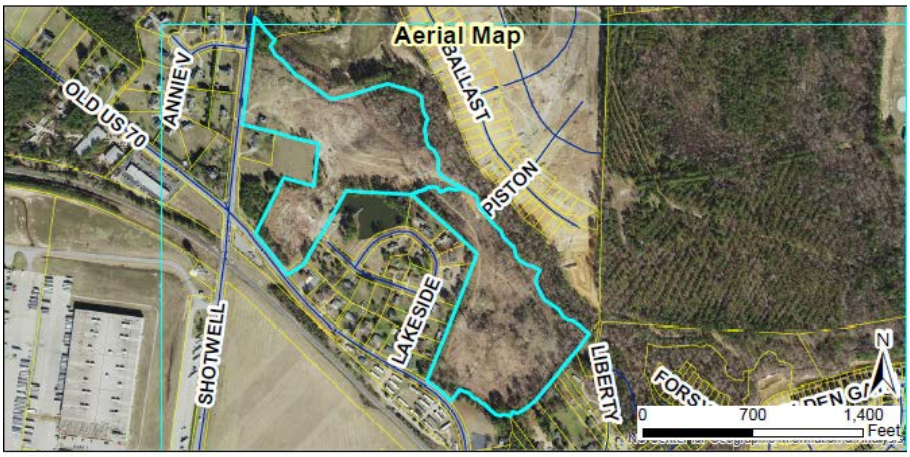
Application Number: 2018-90-SD
Project Name: Creech Tract Preliminary Plat

NC PIN / Tag #:	165907-69-2203 / 05G01012A, 165907-78-1039 / 05G01012S
Town Limits/ETJ:	Town Limits
Overlay:	None
Applicant:	Dalton Engineering and Associates
Owner:	Everland Lee LLC
Location:	Corner of Shotwell Road and Old US HWY 70, south of Highgate Subdivision

Public Noticing:

- Neighborhood meeting held October 12, 2018
- Signs Posted February 15, 2019
- Letters mailed March 5, 2019
- Newspaper ad published March 6, 2019 and March 13, 2019

REQUEST: Preliminary Plat approval to develop 189 townhomes on the subject property.

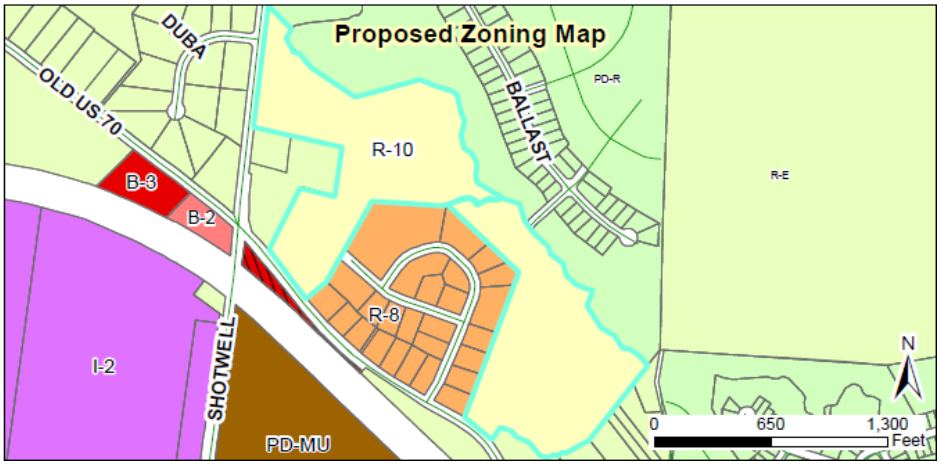


SITE DATA:

Acreage: 38.88 acres
Existing Use: Vacant

ADJACENT ZONING AND LAND USES:

Direction	Zoning	Existing Use
North	Planned Development-Residential (PD-R)	Single-family residential (Highgate)
South	Residential-8 (R-8) and Planned Development Mixed Use (PD-MU)	Single-family residential and vacant
East	Planned Development-Residential (PD-R), Residential-8 (R-8)	Single-family residential
West	Residential-8 (R-8) and Residential-Estate (R-E)	Single-family residential



DEVELOPMENT DATA:

Proposed Uses: Townhomes (189 units)

Density/Intensity: 4.86 units/acre

Impervious Surface: Maximum 80% per lot

Required Parking: 2 spaces/unit required= 378 spaces

Proposed Parking: 393 spaces

Access/Streets: The development will have two access points off Old US HWY 70, one off Shotwell Road, and one connecting to Highgate Subdivision.

STAFF ANALYSIS:

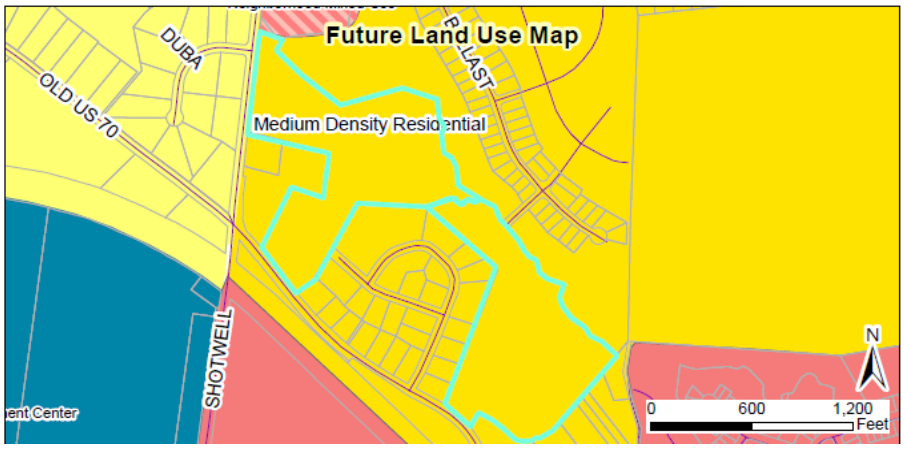
Overview
The applicant is requesting preliminary plat approval to develop 189 townhomes units on the subject properties. These properties are 38.88 acres total, and the proposed development would allow for 4.86 dwelling units per acre. The properties are currently zoned PD-MU, but an application has been submitted to rezone the properties to R-10. This rezoning application is running concurrently with the preliminary plat request. The applicant has also submitted a Special Use Permit application to allow the use of townhomes on the subject properties, and set the dimensional standards per lot.

The development will be split into two phases. There will be one access point off Shotwell, and two access points off OLD US HWY 70, one of which will be a right-in only due to the proximity to the intersection of Shotwell/Old US HWY 70. The development will also be accessible via a connection to Highgate Subdivision to the North. Additionally, the applicant will be constructing a portion of a connection to the eastern property line in order to provide future connectivity into Parkview Subdivision. This connection requires a stream crossing, and the applicant will pay fee-in-lieu for half of this stream crossing while the Town will construct the remainder when the connection is made in the future.

The townhomes throughout the development will be a mixture of front-loaded and alley-loaded units. All lots will have frontage on a public street though, as required by the UDC. An on-site amenity center will be located to the south, and greenway connections are provided to the northeast connecting to Highgate Subdivision.

<u>Consistency with Adopted Plans</u>

- **Comprehensive Plan 2040**
  The future land use map designates this property as "Medium Density Residential", which allows all residential housing types and densities up to 5 units per acre. The proposed development is consistent with this designation.



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

Compatibility with Surrounding Land Uses
The proposed use is a residential subdivision and is compatible with the surrounding land uses, which consist of single-family residences.

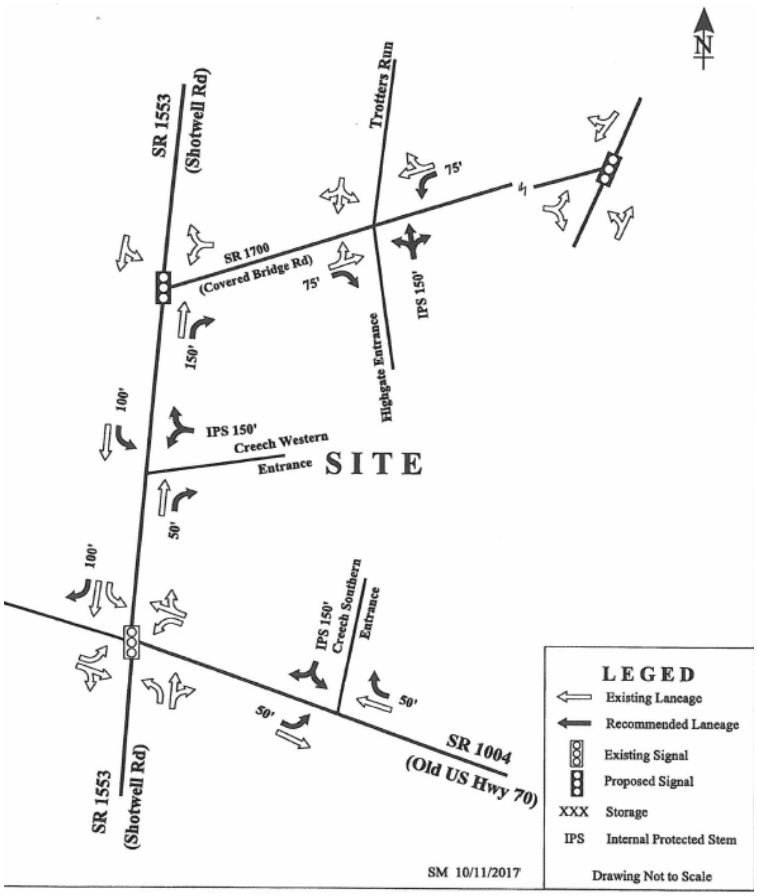
Landscaping and Buffering
The development is required to install a Class "A" landscape buffer along all property lines zoned R-E. The applicant is proposing to utilize existing vegetation in these locations to meet this buffer requirement. No buffer is required along property lines zoned R-8. However, the development will utilize existing vegetation along those property lines in order to mitigate any impact on adjacent residential uses. A Class "A" landscape buffer will be provided along Old US HWY 70 and Shotwell Road as required by the UDC.

Access/Streets
There will be two access points off Old US HWY 70, one of which will be a right-in only due to the proximity to the intersection. NCDOT is comfortable with this design, but staff does recommend that the median be extended in order to fully prevent anyone from making a left-turn at this location (see conditions of approval). A connection into Highgate Subdivision will also be provided to the North, and a full-access connection off Shotwell will be provided as well. The applicant is also providing a partial connection to the southeast, in order to eventually connect to Parkview Subdivision. This connection requires a stream crossing, so the applicant is proposing to pay fee-in-lieu for half of this crossing while the Town will develop the remainder.

Traffic
A joint TIA was done for this development in 2017 with Highgate Subdivision, which projected a 3% growth rate through 2021. The original TIA accounted for more townhomes than what is now proposed and only anticipated one access point off Old US HWY 70. However, the applicant has coordinated the new right-in only on Old US HWY 70 with NCDOT and they are comfortable with this modification.

The TIA recommends a new signal at Shotwell Road and Covered Bridge Road, as well as Covered Bridge Road and N. O'Neil Street intersections. Turn lanes are also recommended at all project entrances, with tapers as outlined in the TIA document. NCDOT has concurred with these Findings, and has added the following additional requirements:

- 100' Right-Turn Lane on Shotwell Road (at intersection of Shotwell/Covered Bridge Road)
- 150' internal protected stem at both full-access entrances
- 100' Right-Turn Lane on Shotwell Road (at intersection of Shotwell/Old US Hwy 70)



Multi-Modal Access
Interior sidewalks are located throughout the development on both sides of the streets, as required by the UDC. They are not located on alleys. Sidewalk will also be provided along Old US HWY 70 and a portion of Shotwell Road. Greenway connections into Highgate Subdivision are also provided.

Garbage / Recycling
Dumpsters will not be provided to serve the units. They will utilize curbside pickup instead.

Amenities
The development is proposing a pool house and pool area as an amenity center. This site plan has not been finalized yet and instead will be submitted as a separate minor site plan (see conditions of approval) if this preliminary plat is approved. The minor site plan approval will be subject to the dimensional standards set in this application. The townhomes meet all design requirements of the Unified Development Code.

Architecture/Design
The townhomes will also consist of vinyl shake siding. The front loaded units will include garages, which will be setback a minimum of 25' from the back of sidewalk to allow enough space for vehicles to park without interfering with the sidewalk. The proposed elevations meet all applicable requirements of the UDC.

Findings of Fact
The applicant has addressed the Major Subdivision Approval Criteria outlined in UDC Section 155.706. The applicant's Findings of Fact are incorporated into the record as an attachment to the Staff Report. The Findings of Fact for a Preliminary Plat (Major Subdivision) are outlined below, along with comments from staff.

1. ***Consistency with the adopted plans and policies of the Town.***

    - **Applicant Response*:*** "The Major Subdivision Application for the Creech Tract Development would meet the required specifications of the Town's Subdivision Regulations for multi-family developments, as described in the Unified Development Code. The two parcels of property contained within the Subdivision application are currently zoned PD-MU and a concurrent rezoning application is requesting the parcels be zoned R-10. The subject project would complement the surrounding properties and the proposed use is consistent with the existing surrounding residential development."

    - **Staff Commentary:** The applicant is requesting a rezoning to R-10, and the use of townhomes is permitted via issuance of a Special Use Permit. A Special Use Permit is also running concurrently with this application. The surrounding properties are primarily single-family residential.

2. ***The subdivision meets all required specifications of this chapter.***

    - **Applicant Response:** "The Major Subdivision Application for the Creech Tract Development would meet the required specifications of the Town's Subdivision Regulations for multi-family developments, as described in the Unified Development Code. The subject project has been reviewed by the Town's Technical Review Committee. The comments provided by the committee have been addressed on the current set of subdivision plans."

    - **Staff Commentary:** This application has been reviewed by the Town's TRC and has been deemed certified to meet code requirements to move forward in development review.

3. ***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.***

    - **Applicant Response:** "The subject project would complement the surrounding properties and the proposed use is consistent with the existing surrounding residential development. Existing residential development is located directly adjacent to the proposed project to the north (Highgate) and the South (lakewood acres). Additionally, there is a currently on-going construction of a multi-family development located to the South (Stallings Mill Apartments), at the intersection of Shotwell Road and US HWY 70 BUS.

- **Staff Commentary:** The surrounding adjacent properties are primarily developed for residential uses (single-family). Highgate subdivision does include higher density development.

4. ***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.***

    - **Applicant Response:** "The subject project will provide proper distribution of traffic to avoid congestion to the public in the immediate area. The project meets the Town's requirements for the number of ingress/egress points and a driveway access permit application would be submitted to the Town and NCDOT for review and approval prior to the start of construction. The project will utilize the extension of the Town's existing infrastructure to provide services to the public that are desired and will not be an endangerment to the environment or the public."

    - **Staff Commentary:** The project does meet the minimum access point requirement of the UDC. A TIA was done to show the traffic impacts of the development and recommend improvements. NCDOT and staff have both reviewed the TIA.

CONSIDERATIONS:

- This plan is subject to final approval by Town Council.
- This approval is subject to approval of 2018-91-SUP and 2018-92-RZ.

CONDITIONS:

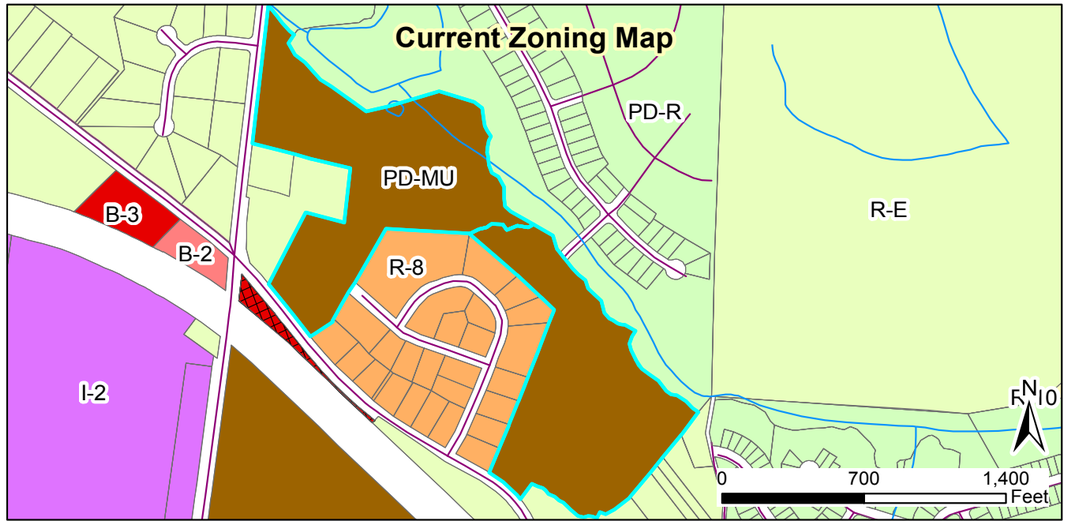
If approved, staff recommends the following conditions be applied to the approval of the preliminary subdivision:

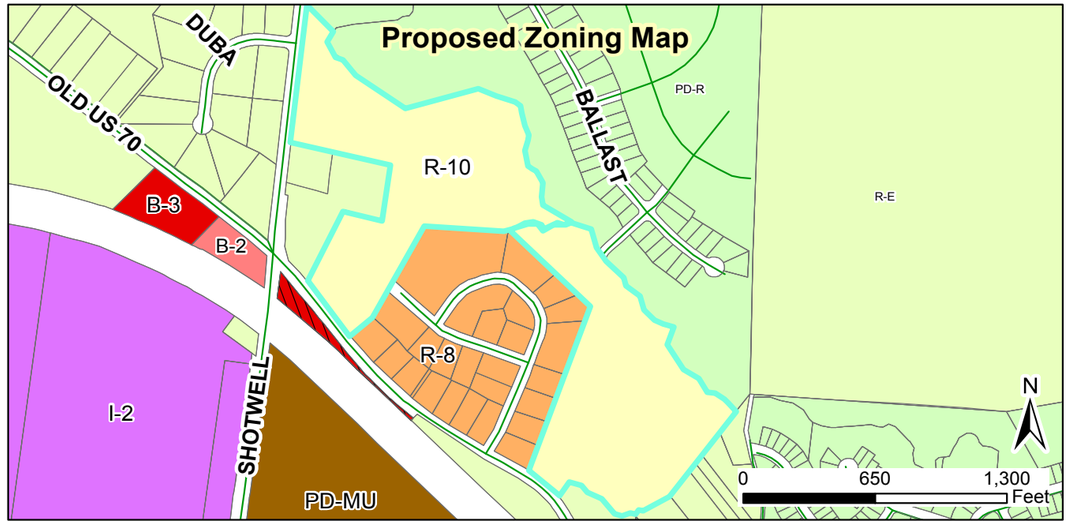
1. Following Board approvals, three copies of the Preliminary Plat meeting the Conditions of Approval shall be submitted to the Planning Department for final approval. The Conditions of Approval for the preliminary plat and associated applications shall be recorded on the cover sheet.
2. A separate minor site plan application shall be submitted for the amenity center.
3. All decorative traffic related signage shall be maintained solely by the developer or Homeowner's Association.
4. The median at the right-in only off Old US HWY 70 shall be extended for the entire length of the turn lane in order to prevent any left-turn movements at this location. Flexible bollards shall be installed in the median to further prevent any left hand turning movements.
5. No more than 75 building permits shall be issued within the subdivision until the required secondary access has been constructed.
6. All roadway and traffic improvements required by the Town and/or NCDOT shall be constructed or financially guaranteed prior to the platting of the phase of the development that will trigger their necessity. If no phase is specified, the improvements shall be required immediately.
7. The new traffic signals required at the intersections of Covered Bridge Road and N. O'Neil Street shall be installed prior to the completion of the subdivision.

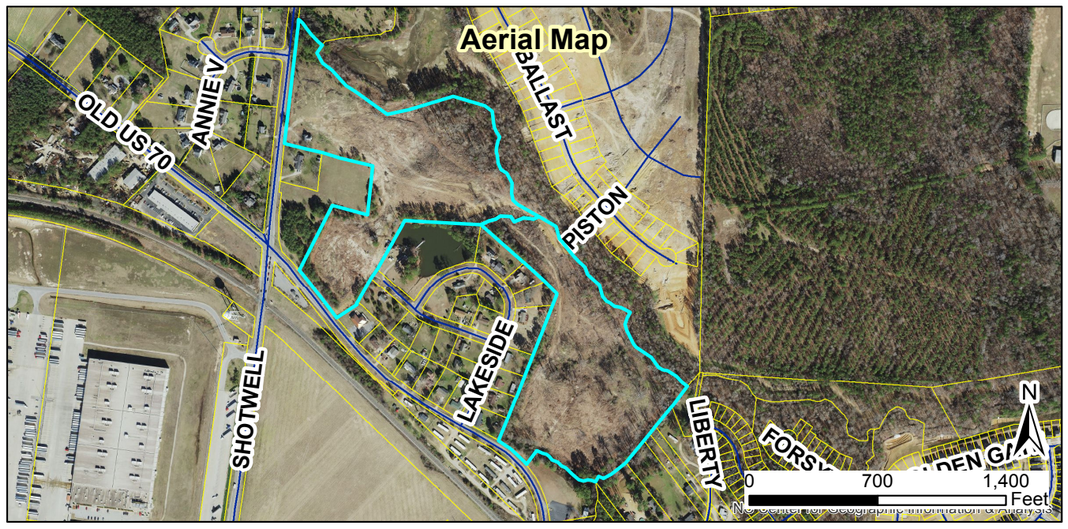
8. The traffic signal required at the intersection of Shotwell Road and Covered Bridge Road shall be installed prior to the completion of the subdivision.
9. Fee-in-lieu shall be paid at plat recordation for Phase 1 to provide for half of the proposed stream crossing to the east.
10. If another development contributes traffic to any required signal modifications, they will contribute to the cost of the improvements based on their impact at the intersection at the Town's discretion of determining such impact.
11. All required landscaping buffers or plantings shall be installed or bonded prior to the platting of the phase in which they occur.
12. Multi-use trails shall be constructed or bonded prior to the platting for the phase in which they occur.
13. All phases of the development shall consist of complete street sections; no mid-block phasing shall be permitted.
14. 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.

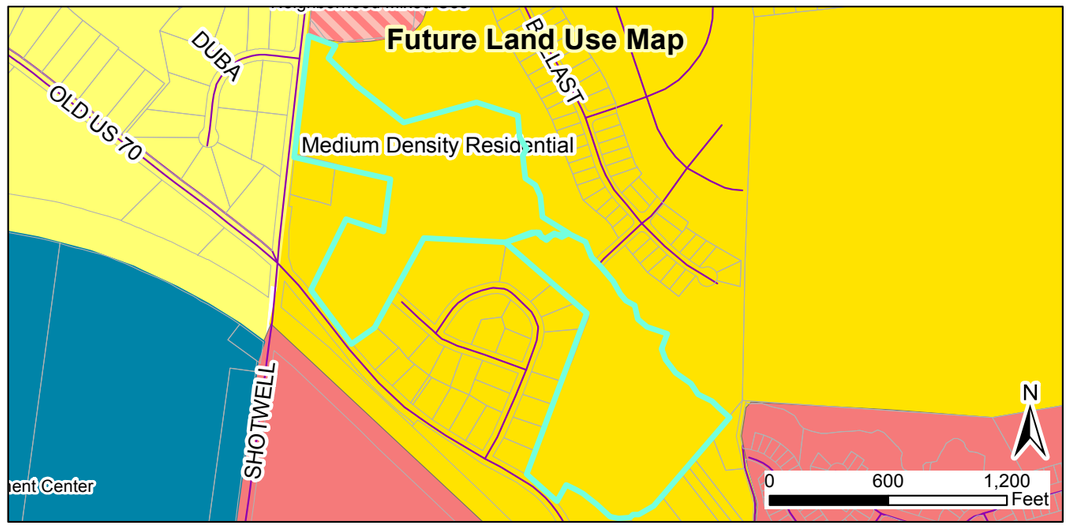
ATTACHMENTS:

1.) Staff Report Maps
2.) Application
3.) Neighborhood Meeting Materials
4.) Site Plan
5.) TIA
6.) NCDOT Congestion Management Comments
7.) Traffic Letter from Engineer









2018-90-SD
Creech Tract Preliminary Plat
Applicant: Dalton Engineering and Associates
Property Owner: Everland Lee, LLC
Parcel ID: 165907-69-2203 / 165907-78-1039
Tag #: 05G01012A / 05G01012S

Staff Report Map

01/22/2019
Produced by: TOC Planning
Disclaimer: Town of Clayton assumes no legal responsibility for the quality fo the data represented here.

Document Path: O:\PLANNING\SUBDIVISIONS\MAJOR SUBDIVISIONS\2018\2018-90-SD Creech Tract Development\staff report maps\2018-90-SD.mxd

Legend
- 100-yr Flood Zone
- Thoroughfare Overlay
- Scenic Highway Overlay
- Watershed Protection Overlay
- Site

Dalton Engineering
and Associates, P.A.

October 2, 2018

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 or development 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: **Friday, October 12, 2018**

Meeting Time: **6:30 PM**

Meeting Location: **Dalton Engineering & Associates, PA**
446 East Main Street
Clayton, NC 27520

Type of Application: **Major Subdivision Application, Special Use Permit Application and Rezoning Application**

Project/proposal property location: 1294 Shotwell Rd Clayton, NC 27520

Description of project/proposal: The Developer of the parcels has submitted a Major Subdivision Application, a Special Use Permit Application and a Rezoning Application to the Town to request the parcels be developed into a multi-family, residential (townhome) subdivision.

Upcoming public meetings for this application: Planning Board and Town Council

At a 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 roads.
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.

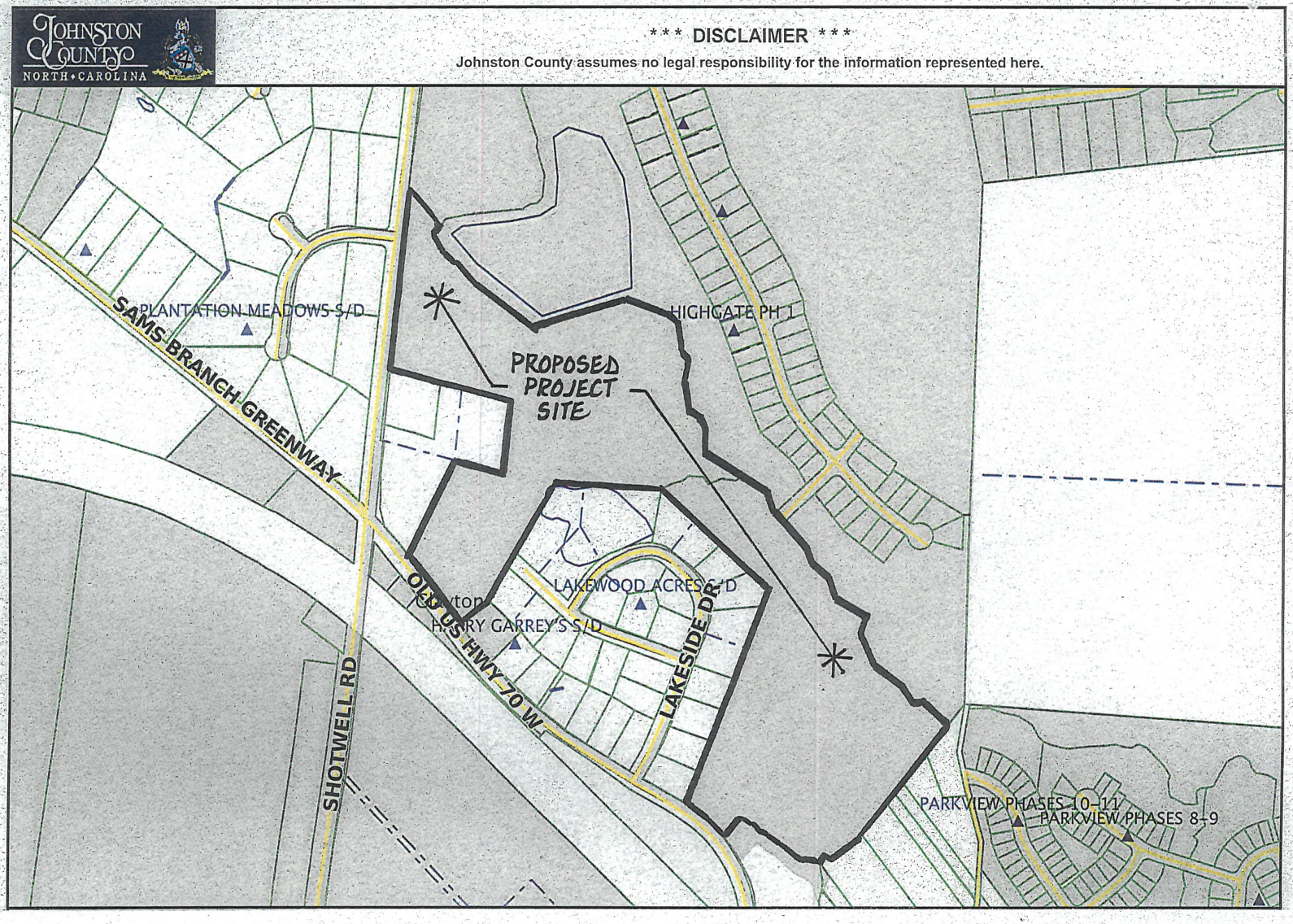
If you have any questions prior to or after this meeting, you may contact our office at (919) 550-4740. You may also contact the Town of Clayton Planning Department at (919) 553-5002.

Sincerely,

Jonathan Barnes
Dalton Engineering and Associates, P.A.

Cc: Town of Clayton Planning Department

446 East Main Street ▲ P.O. Box 426 ▲ Clayton, NC 27528 ▲ (919) 550-4740/Fax (919) 550-4741


JOHNSTON COUNTY
NORTH CAROLINA
*** DISCLAIMER ***
Johnston County assumes no legal responsibility for the information represented here.
PLANTATION MEADOWS S/D
SAMS BRANCH GREENWAY
PROPOSED PROJECT SITE
HIGHGATE PH 1
LAKEWOOD ACRES S/D
HENRY GARREY'S S/D
OLD US HWY 70 W
LAKESIDE DR
SHOTWELL RD
PARKVIEW PHASES 10-11
PARKVIEW PHASES 8-9

NEIGHBORHOOD MEETING SUMMARY FORM

FILL OUT THE FOLLOWING:

Application: Creech Tract Development Date of Mailing: 10/2/18

Date of Meeting: 10/12/18 Time of Meeting: 6:30 p.m.

Location of Meeting: Dalton Engineering and Assoc., P.A. 446 East Main Street Clayton, NC 27520

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, and that all required information was presented at the Meeting:

Printed Name: Jonathan Barnes Signature: [signature]

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.*

A total of fifteen (15) individuals attended the subject project's Neighborhood Meeting, including a Representative of the Applicant. Items that were discussed included the type of proposed development, the number of proposed dwelling units, locations of cross-connectivity, the landscape and perimeter buffering, the proposed roadway widening and turn lane improvements adjacent to the site entrances, etc. Following the Neighborhood Meeting, several participants chose to submit their comments by either mail or e-mail. Nine copies of each of the post-Meeting comments are attached (8 total). There have not been any changes made to the Creech Tract Development Subdivision Application as a result of the Neighborhood Meeting

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

NEIGHBORHOOD MEETING ATTENDANCE ROSTER

Project: Creech Tract Development

Application: Major Subdivision Application, Special Use Permit Application and Rezoning Application

Location/Date: Dalton Engineering and Assoc., P.A. 446 East Main Street Clayton, NC 27520 / 10/12/18

	NAME	ADDRESS
1	Barbara Beasley	164 Liberty Lane
2	Mike Beasley	164 Liberty Lane
3	Barbara Bank	101 Lakeside Dr.
4	Annie Ross	388 Ballast Point
5	Joe Ross	388 Ballast Point
6	Alfred Smoak	217 Lakeside Dr.
7	Hut R	152 LIBERTY LN
8	Doug Phillips	925 Thanksgiving Fire Rd Selma
9	Ann Phillips	" " "
10	Kenny Chestnut	103 Lakeside Dr.
11	Barbara Chestnut	103 Lakeside DR
12	Emmy Johnson	1414 Old US Hwy 70 W
13	Rickie Johnson	1414 Old US Hwy 70 W
14	Scott Smalley	2121 Powell Dr Clayton NC
15	JONATHAN BARNES	446 EAST MAIN STREET CLAYTON, NC
16		
17		
18		
19		
20		

July 2018

NEIGHBORHOOD MEETING SUMMARY FORM

FILL OUT THE FOLLOWING:

Application: Major Subdivison Application, Special Use Permit Application and Rezoning Application

Date of Mailing: 10/2/18

Date of Meeting: 10/12/18

Time of Meeting: 6:30 p.m.

Location of Meeting: Dalton Engineering and Assoc., P.A. 446 East Main Street Clayton, NC 27520

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, and that all required information was presented at the Meeting:

Printed Name: Jonathan Barnes

Signature: Jonathan Barnes

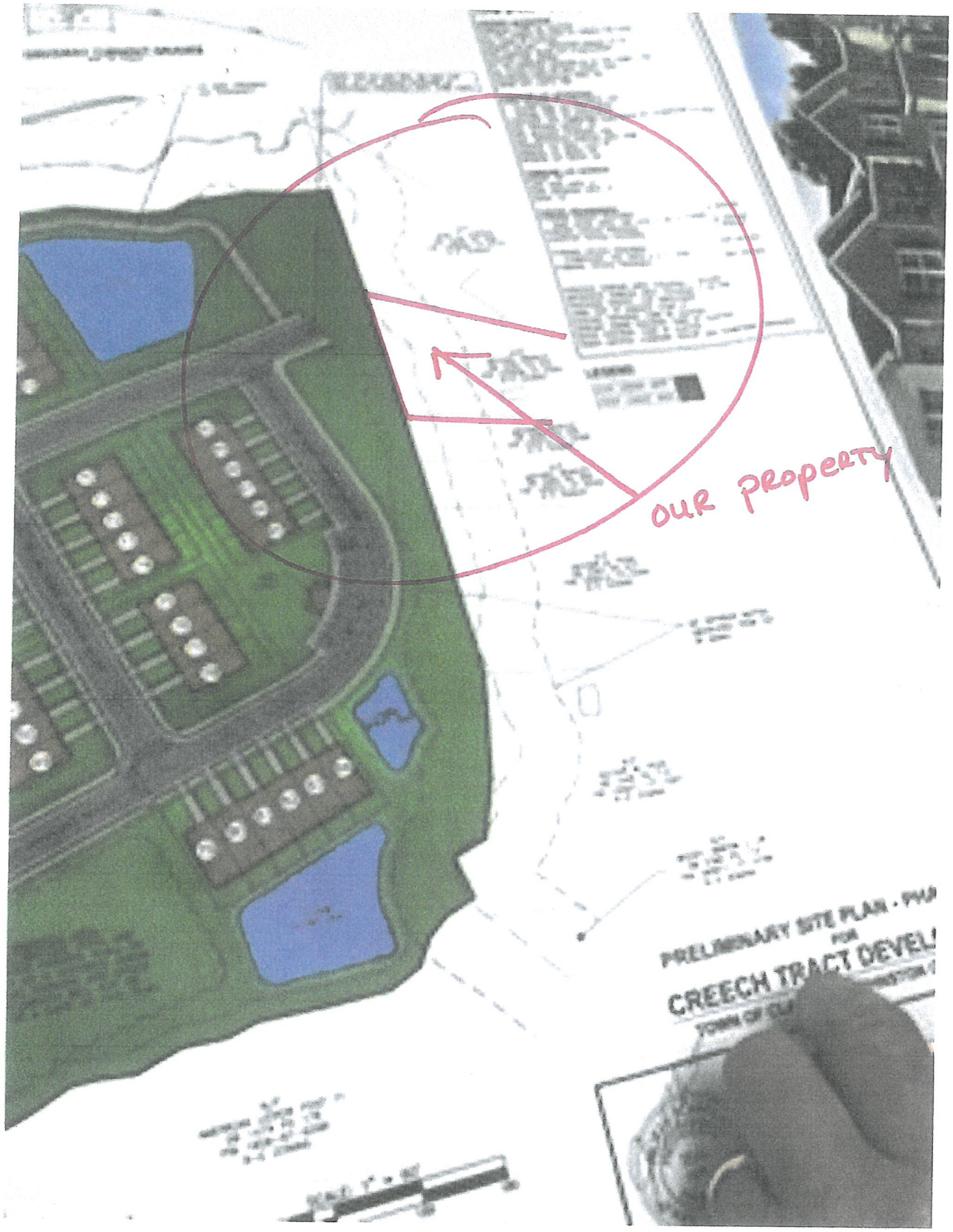
Meeting Summary/Minutes: *provide a summary of the discussion held at the meeting, including issues raised and any resolution discussed, and any changes made to the application as a result of the meeting.*

Our property is adjacent to both Parkview and Highgate Subdivisions. It appears by the design layout of both subdivisions that a future road to connect the two subdivisions had already been planned. This connector, according to the drafts, will come across our property and we will be losing land. We would like to understand if this is the future plans, and if so, why our property is part of the future road connector considering with better planning, a road connection could have been done without touching our property. If we are correct in our assessment, we would also like to understand why there has been no notification to us in regards to losing property, which is very disappointing.

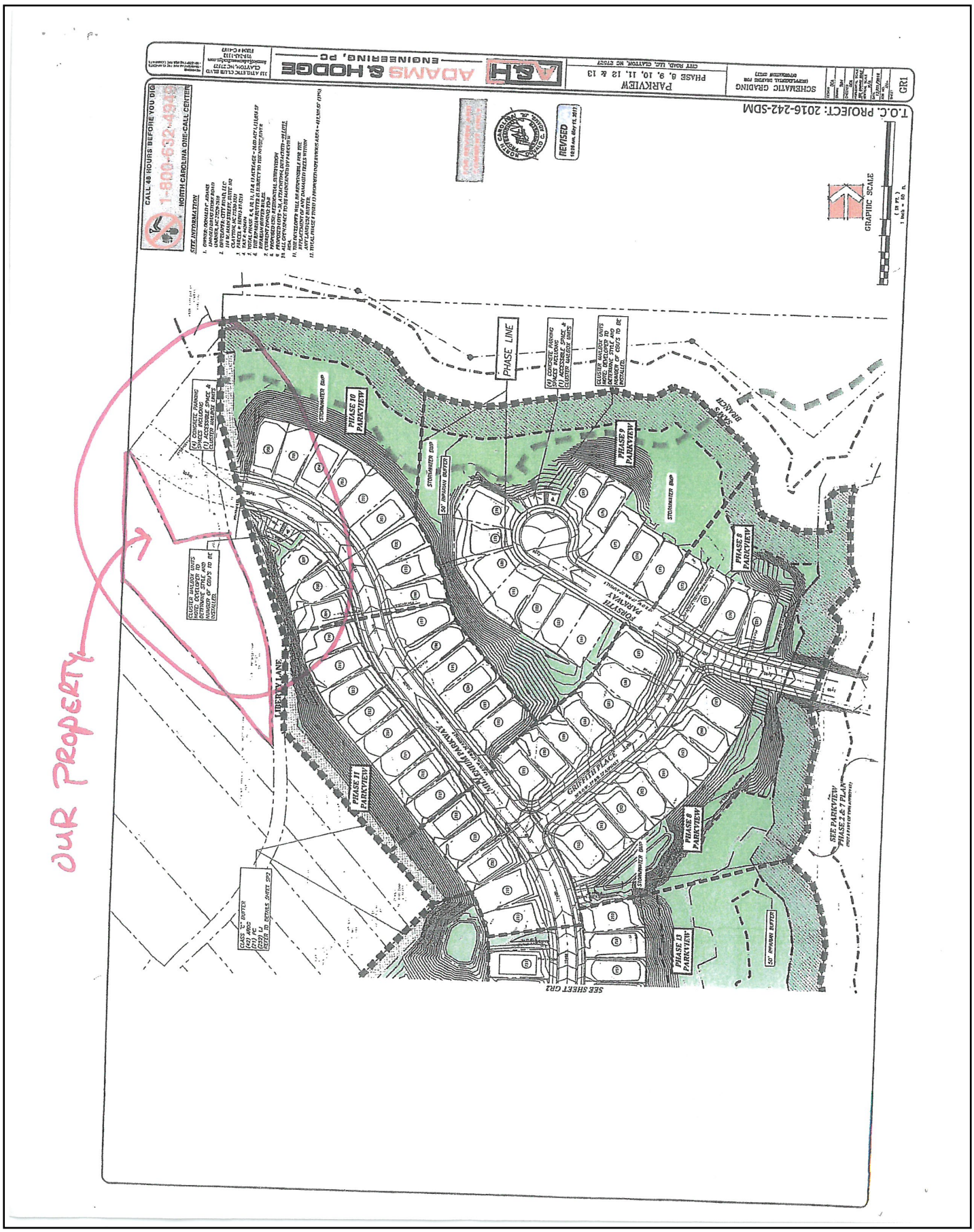
Please write clearly (or submit a typed summary). Use additional sheets if necessary.

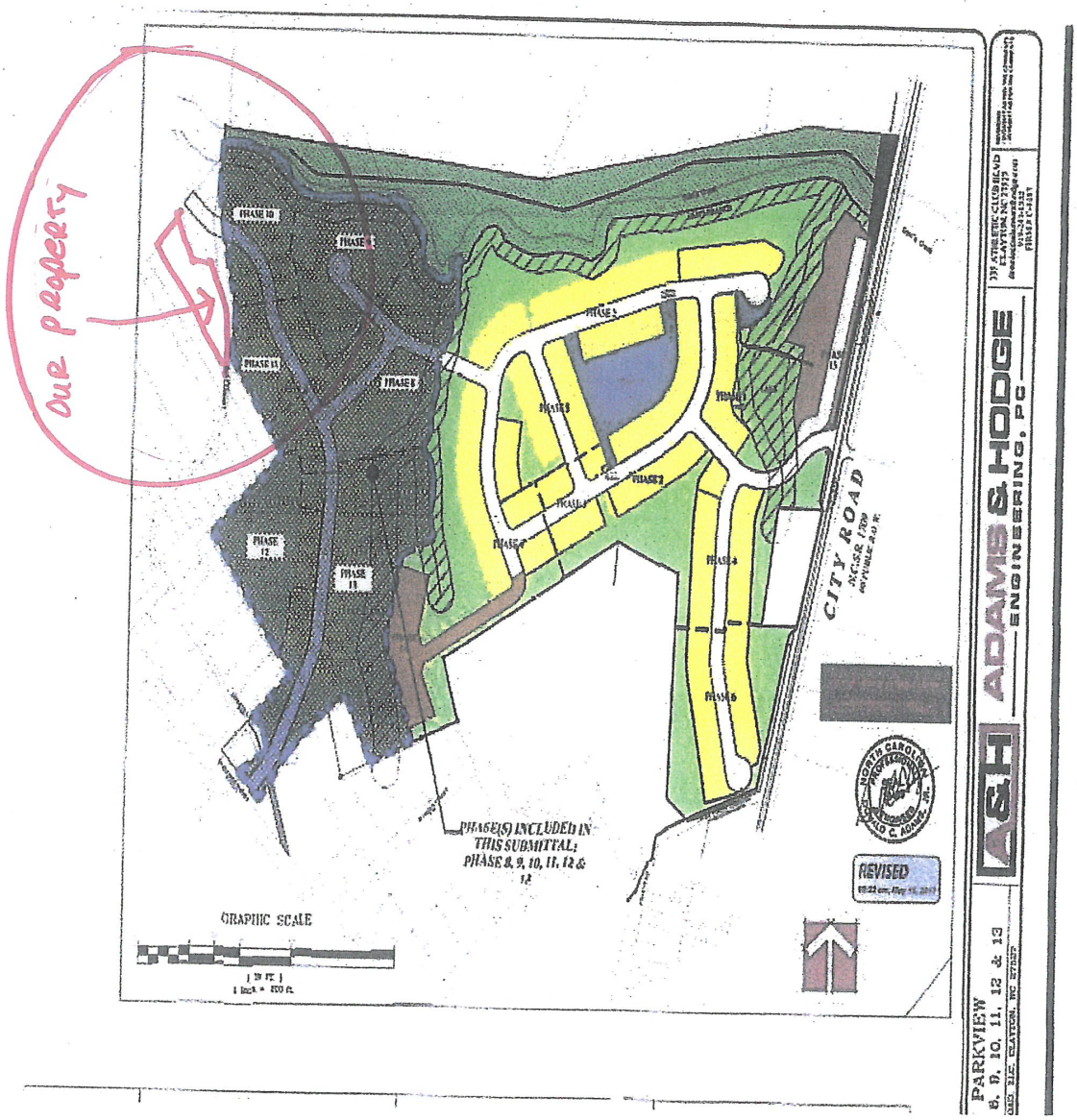
Mike & Barbara Beasley

July 2018



This plan appears to be taking our land.


OUR Property
T.O.C. PROJECT: 2016-242-SDM
PARKVIEW
PHASE 8, 9, 10, 11, 12 & 13
SCHEMATIC GRADING
GR1
ADAMS & HODGE
ENGINEERING, PC
CALL 48 HOURS BEFORE YOU DIG
1-800-632-4949
NORTH CAROLINA ONE-CALL CENTER
SITE INFORMATION
GRAPHIC SCALE
REVISED
PHASE LINE
PHASE 10 PARKVIEW
PHASE 9 PARKVIEW
PHASE 8 PARKVIEW
PHASE 11 PARKVIEW
PHASE 13 PARKVIEW
GRIFFITH PLACE
FORSYTH PARKWAY
LIBERTY LANE
SEE SHEET GR2
SEE PARKVIEW PHASE 2 & 7 PLAN


our property
PHASE 10
PHASE 9
PHASE 11
PHASE 8
PHASE 12
PHASE 13
PHASE 1
PHASE 2
PHASE 3
PHASE 4
PHASE 5
PHASE 6
PHASE 7
CITY ROAD
PHASE(S) INCLUDED IN THIS SUBMITTAL: PHASE 8, 9, 10, 11, 12 & 13
GRAPHIC SCALE
REVISED
A&H ADAMS & HODGE ENGINEERING, PC
PARKVIEW
8, 9, 10, 11, 12 & 13

Jonathan Barnes

From: Kerry Chestnut [contact@chestnutphoto.com]
Sent: Thursday, October 11, 2018 12:36 PM
To: Jonathan Barnes
Subject: Project sight

Johnathan Barnes,

Thank you for asking for our input.

No one is inn the neighborhood is happy at the prospect of multi-unit housing. Our neighborhood is moderate individual housing and on the other side are new larger one and two story individual houses with the small exception of the older neighborhood next to the RR tracks.

The preference is, if it has to be developed, that it should be individual homes to the same level of the surrounding homes.

Also, if purchase of lots connected to ours could be purchased, what would be the price.

Thanks,

Kerry Chestnut

NEIGHBORHOOD MEETING SUMMARY FORM

FILL OUT THE FOLLOWING:

Application: Major Subdivison Application, Special Use Permit Application and Rezoning Application

Date of Mailing: 10/2/18

Date of Meeting: 10/12/18

Time of Meeting: 6:30 p.m.

Location of Meeting: Dalton Engineering and Assoc., P.A. 446 East Main Street Clayton, NC 27520

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, and that all required information was presented at the Meeting:

Printed Name: Jonathan Barnes Signature: [signature]

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.*

1. Property owner Rickie L. Johnson concerned about the access road near the property. Request additional turning lane length to help reduce the effect on church patrons.

2. Property owner Rickie L. Johnson concerned about the buffer adjoining the property. Request that the water easement not be considered as the 20ft. buffer required. I am requesting an additional 20 ft. buffer. This will prevent disturbing the landscaping on the property line.

3. Request the speed limit on Old US 70 change to 35 MPH.

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

4. Request a fixed buffer, Fencing or wall near adjoining Properties.

NEIGHBORHOOD MEETING 10/12/2018

Dalton Engineering and Assoc., P.A.

To: Samantha Wullenwabbr, Haley Hogg,

and

Planning Board

Our take-away from the meeting is that this is a very bad plan for this area:

1. Far too many townhomes for the space allowed.
2. Traffic survey needs to be made as this will add major traffic volume to this area.
3. An intersection in the middle of a curve that is already overloaded at rush-hours will create deadly situations.
4. Paving and concrete of this magnitude will create major watershed problems and will have major negative effect bordering neighborhoods (especially those with septic tanks).
5. Will destroy a natural spring.

These plans are not good for Clayton's growth as this will overcrowd this small area and will likely insure highway deaths by adding two hundred plus vehicles to already overcrowded rush-hours on two-lane highways.

It will also make a very noticeable reduction on clean air by removing so much plant-life.

This property could be developed by building individual houses with space for lawns and trees.

10/15/2018

Jonathan Barnes

From: Annie Ross [rossannie1402@gmail.com]
Sent: Monday, October 15, 2018 1:19 PM
To: Jonathan Barnes
Subject: Crèech Tract Proposal

I'm certainly glad I attended the recent meeting. I cannot believe that there is going to be a cut through the Highgate community, especially where it is going to be located.

Although I have only lived here for about a month and a half I have consistently found the Covered Bridge Rd and Shotwell intersection to be an area with great traffic concerns. Now I hear there is a possibility of another 189 households, not necessarily single persons, adding to the stressful intersection. I might add that I would certainly never make a left across Shotwell if I could avoid it to enter the proposed tract of town homes. The same goes for making a left across old Rt70, which is only available at one entrance anyway...and that entrance is on a curve.

Now with the far less than desirable egresses to the Creech Tract development I feel Highgate will be caught in the cross hairs. The residents of Creech Tract can cut through Highgate to avoid both Shotwell and the intersection of Covered Bridge by cutting through Highgate,both coming and going.

Unfortunately the proposed connecting road will enter the Highgate development in the worst possible area - right between the mail area and the pool/ fitness area where many of the eventual 229 households will be going each day. The chances for accidents plus the wear and tear of the road greatly concern me. The Highgate short cut will be used my many in my opinion and is an accident waiting to happen. Not only will it be used by residents but also by their visitors.

I sincerely hope this mishmash of likely trouble can be avoided. Make sure there is a good study taking into consideration all the growth that the surrounding Clayton area is experiencing on making this decision. I heard talk of light at Shotwell and Covered Bridge....again not a solution but only more reason for people to cut through Highgate.

I am thrilled that we moved to Clayton and looked at many houses before making our final decision. I would hope the board considers the effects on all the people, not just the dollars of the developer or increase in tax base if it is a bad decision for the town and its communities.

Annie Ross
388 Ballast Point
Clayton, NC 27520
252-622-8969

a

Sent from my iPad

Jonathan Barnes

From: Annie Ross [rossannie1402@gmail.com]
Sent: Monday, October 15, 2018 1:32 PM
To: Jonathan Barnes
Subject: Proposed Creech Tract Townhomes

I am deeply concerned about the new Townhomes development that will interact with the Highgate development. Highgate is to have 229 households. Now with Creech tract and it's additional 189 units that might be added, are the community services in place to handle all this growth?

There will certainly be an increase in students attending public schools, more sewers,lights and garbage needs. Do we have the support to deal with all this without it burdening existing residents unfairly? How is the developer helping with the new challenges?

Joe Ross
388 Ballast Point
Clayton, NC 27520
252-622-5040
Sent from my wife's iPad

NEIGHBORHOOD MEETING SUMMARY FORM

FILL OUT THE FOLLOWING:

Application: Major Subdivision Application, Special Use Permit Application and Rezoning Application
LakeSide Dr.

Date of Meeting: 10/12/18 Date of Mailing: 10/2/18

Location of Meeting: Dalton Engineering and Assoc., P.A. 446 East Main Street Clayton, NC 27520 Time of Meeting: 6:30 p.m.

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, and that all required information was presented at the Meeting:

Printed Name: Jonathan Barnes Signature: [signature]

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.*

(1) Concerns: Traffic on Old US 70 - Traffic is very heavy from 6:30 to 8:00 AM, and from 4:00 to 6:00 PM. It is very hard to exit off LakeSide Dr. to Old US. 70. The Entrance/Exit is Close to the Curve.

(2) Concern about the Noise. The only Noise Barrier is Trees between the Properties.

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

July 2018

101 Lakeside Dr
Clayton NC 27520

RALEIGH NC 275
Research Triangle Region
15 OCT 2018 PM 1 L

Dalton Engineering
Jonathan Barnes
PO Box 426
Clayton NC 27520

Jonathan Barnes

From: Ann Phillips [APhillips86@nc.rr.com]
Sent: Friday, October 19, 2018 8:58 AM
To: Jonathan Barnes
Subject: Creech property
Attachments: Project Concerns- Shotwell.rtf

Mr Barnes,

Attached are our concerns pertaining to the Creech property development. Your patience and time are appreciated in presenting this to the neighborhood. Ann Phillips

NEIGHBORHOOD MEETING SUMMARY FORM

FILL OUT THE FOLLOWING:

Application: Major Subdivision Application, Special Use Permit Application and Rezoning Application

Date of Mailing: 10/2/18

Date of Meeting: 10/12/18

Time of Meeting: 6:30 p.m.

Location of Meeting: Dalton Engineering and Assoc., P.A. 446 East Main Street Clayton, NC 27520

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, and that all required information was presented at the Meeting:

Printed Name: Jonathan Barnes

Signature:

I have two concerns as follow regarding the proposed Creech Project adjoining my property located at 1274 Shotwell Road.

1-) It is my understanding that the project will have one road providing access to Old 70 and that this road will be an improved version of the one currently located in the curve just West of the American Legion building. The certain increase in traffic seeking access to Old 70 resulting from this project will make an already dangerous intersection even more dangerous. To eliminate having an existing paved stub adjoining my property which, at a future date, could be extended to Old 70 thereby providing additional egress from the Creech project, I request that the developer ***NOT*** place said stub on the rear portion of my property. Additionally, I request assurance from the Town of Clayton and/or NC DOT that there will be no subsequent attempt to confiscate any portion of my property via Eminent Domain in order to provide such additional egress from the property. If and when an increase in traffic accidents makes such additional egress necessary, purchase of my property should be subject to standard real estate negotiation.

2-) After reviewing the project plans provided by Dalton Engineering personnel, it appears that there is little or no recreational space allocated for utilization by residents of the dwellings to be built. Consequently, I request that the developers be required to either erect a fence or an elevated berm along those areas bordering my property. Said structure should be sufficient to eliminate unrestricted access to my property thereby preventing it from becoming an unauthorized community playground which could make me subject to law suit should accidents occur there.

Douglas Phillips
925 Thanksgiving Fire Road
Selma, NC 27576
919-351-0366 ddphillips@nc.rr.com

ADJACENT PROPERTY OWNERS LIST

Project Name: Creech Tract Development

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
165907-79-3983	Creech NC, LLC	448 Viking Dr Ste 220 Virginia Beach, VA 23452-7331
165907-58-4492	Gregory E Messick	6713 Kyle Stewart Ct North Las Vegas, NV 89086-1302
165907-59-6201	Douglas & Ann Phillips	925 Thanksgiving Fire Rd Selma, NC 27576
165907-59-3304	William & Doris Powell	146 Jameson Ave Woodland, NC 27897
165907-58-9325	Rickie L Johnson	1414 Old US 70 Hwy W Clayton, NC 27520
165907-59-3631	Royastine & Mary Bryant	2 Annie V Dr Clayton, NC 27520
165907-68-5693	Carol A Fifield	215 Lakeside Dr Clayton, NC 27520
165907-59-7141	Douglas & Ann Phillips	925 Thanksgiving Fire Rd Selma, NC 27576
165907-58-9376	SECU*RE Inc	119 N Salisbury St 10th Floor Raleigh, NC 27603
175000-50-8319	Everland-Lee LLC	104 State Ave Ste 103 Clayton, NC 27520
165907-59-3981	David & Erin Beck	1 Annie V Dr Clayton, NC 27520
165907-68-2793	Neal & Melissa Konneker	1413 Woodcrest Dr Clayton, NC 27520
165908-87-4986	Owner name not provided on Johnston County GIS	Owner address not provided on Johnston County GIS
165911-77-3189	Martin Moody, Jr.	41 Ocean Dr Clayton, NC 27520
165911-77-4352	Hector Pena	156 Liberty Lane Clayton, NC 27520
165908-77-7804	Jose Lisandro Juarez	181 Saint Jiles Dr Clayton, NC 27520
165908-77-6575	Michael Beasley	164 Liberty Lane Clayton, NC 27520

ADJACENT PROPERTY OWNERS LIST

Project Name: Creech Tract Development

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.

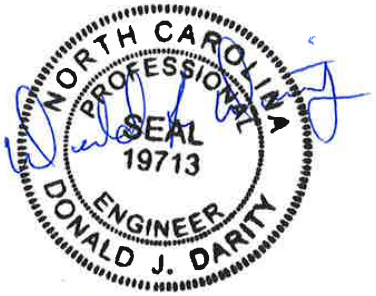
PARCEL NUMBER	NAME	ADDRESS
165911-77-0431	American Legion Post 71	1300 Old US 70 Hwy W Clayton, NC 27520
165907-68-7491	Dillion & Bobbie Blackmon	207 Lakeside Dr Clayton, NC 27520
165907-68-7288	Alfred & Agnes Moore	203 Lakeside Dr Clayton, NC 27520
165907-67-5741	Nilous I Banks	101 Lakeside Dr Clayton, NC 27520
165907-67-5892	Kerry & Barbara Chestnut	103 Lakeside Dr Clayton, NC 27520
165912-77-6459	Michael Beasley	164 Liberty Lane Clayton, NC 27520
165908-77-7604	Michael Beasley	164 Liberty Lane Clayton, NC 27520
165912-77-5490	Hector Pena	156 Liberty Lane Clayton, NC 27520
165907-67-6943	Betty Britt	105 Lakeside Dr Clayton, NC 27520
165907-68-7520	Carol A Fifield	215 Lakeside Dr Clayton, NC 27520
165907-68-6095	Helen S Jones	109 Lakeside Dr Clayton, NC 27520
165907-68-2793	Neal & Melissa Konneker	1413 Woodcrest Dr Clayton, NC 27520
165907-67-3633	Avant-Garde Investments, LLC	5842 NC Highway 42 W Garner, NC 27529

Traffic Impact Analysis
HighGate and Creech Developments
Clayton, NC

PREPARED FOR:

North Carolina Department of Transportation
Congestion Management – Eastern Region
750 N. Greenfield Parkway
Garner, NC 27529

PREPARED BY:



9-21-2017

moffatt & nichol
F-0105
4700 Falls of Neuse, Suite 300
Raleigh, NC 27609

September 21, 2017

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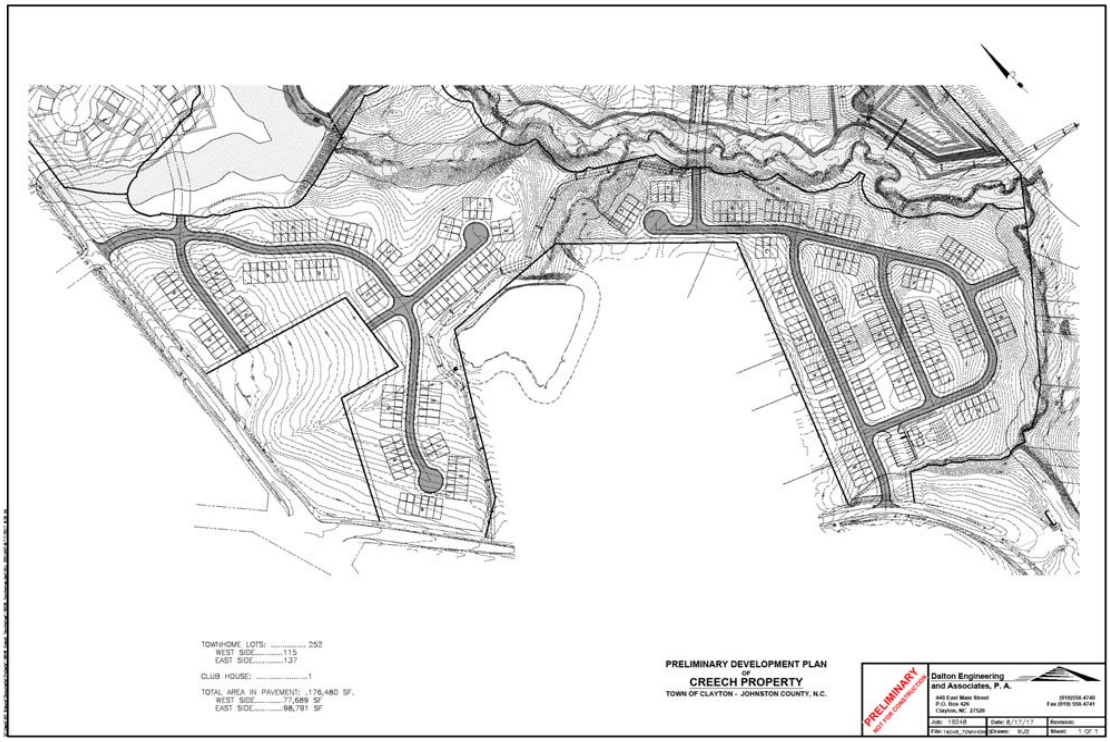
1. Introduction

1.1. Project Background

Two residential developments (Highgate and Creech Subdivisions) are being proposed in Clayton, North Carolina. A previous TIA was completed for the Highgate Subdivision (previously named Creech Subdivision) on May 25, 2015. A new site layout has been prepared for the Highgate Subdivision increasing the original 180 single-family detach homes to 229 single-family detach homes, see **Figure 1**. The most recent Creech site layout is also shown in **Figure 2**. Both the Highgate and Creech site layouts can be found in the Appendix. Since Highgate and Creech Subdivisions are in close proximity to each other with similar build out years, the decision was made to combine the TIAs. Both developments will also be interconnected to each other via internal roadway connections.

Figure 1: HighGate Site Layout

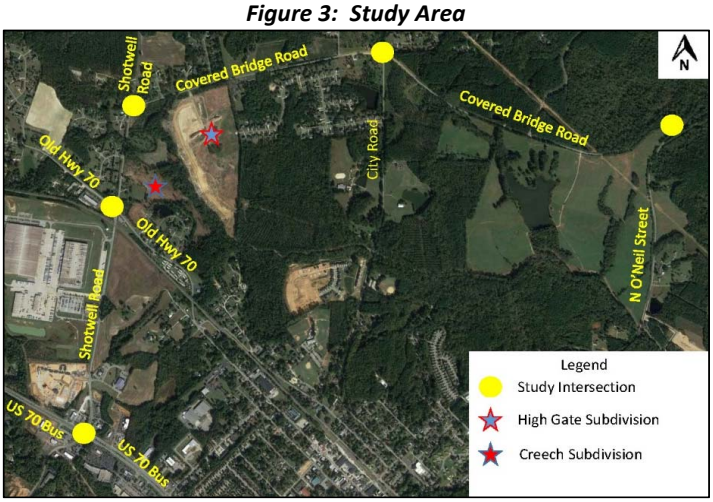
Figure 2: Creech Site Layout



1.2. Study Area

The developments are located adjacent to one another between Covered Bridge Road and Old US 70. The roadway that border the properties are Covered Bridge Road (SR 1700) to the north, Shotwell Road (SR 1553) to the west, and Old US 70 (SR 1004) to the south. In **Figure 3**, the study area is shown including the study intersections. The primary access to the Highgate subdivision is located on Covered Bridge Road across from Trotter's Run Court. The Creech development will have two vehicular accesses. One will be connected to Shotwell Road with the other being connected to Old US 70.

Figure 3: Study Area



The study intersections as required by the Town of Clayton are Shotwell Road at Covered Bridge Road, Shotwell Road at Old US 70, US 70 Business at Shotwell Road, Covered Bridge Road at City Road, and Covered Bridge Road at N. O'Neil Street. There are two existing signalized intersections, US 70 Business at Shotwell Road and Shotwell Road at Old US 70.

2. Methodology

Synchro 9 Build 911 will be used for the analysis of the intersections. Synchro is a macroscopic analysis and optimization software application and supplements the support of the Highway Capacity Manual (HCM). This study will use the Transportation Research Board's (TRB) HCM to analyze signal controlled intersections and unsignalized intersections. The TRB version of HCM software will be used instead of 2010 HCM due to the intersection of US 70 Business at Shotwell Road phasing that cannot be processed by Synchro with the 2010 HCM version. Level of Service (LOS) is the measurement to rank how well approaches and overall intersections function. LOS for intersections are based on control delay. HCM defines control delay as the increase in travel time due to traffic control device. **Table 1** and **Table 2** shows the levels of delay for signalized and unsignalized, respectively.

Table 1: LOS for Signalized Intersection

LOS	Control Delay (s/veh)
A	≤10
B	>10-20
C	>20-35
D	>35-55
E	>55-80
F	>80

Table 2: LOS for Unsignalized Intersection

LOS	Control Delay (s/veh)
A	≤10
B	>10-15
C	>15-25
D	>25-35
E	>35-50
F	>50

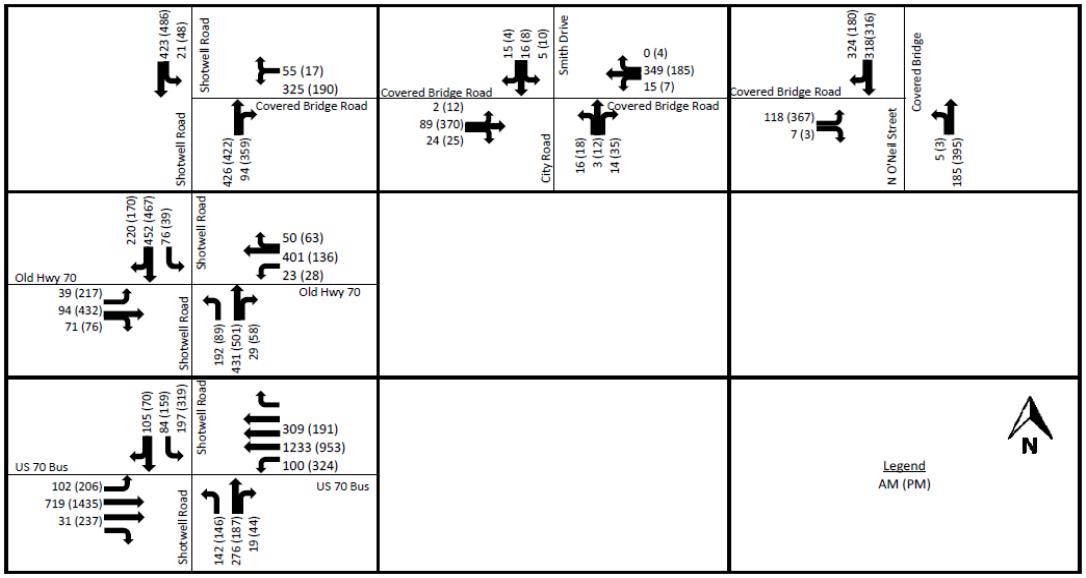
3. 2017 AM/PM Peak Hour Conditions

3.1. 2017 Peak Hour Traffic Volumes

Traffic counts were performed on 4/5/2017 while schools were in session for the study intersections. The new counts show an increase in volume compared to the previous TIA.

The intersection of Shotwell Drive at Covered Bridge Road was used as the master intersection for balancing. There is an imbalance between Old US 70 and US 70 Business on Shotwell Road. An imbalance was considered here, due to the large origin and destination locations between the two intersections. **Figure 4** shows the AM and PM balanced network. The traffic counts and the previous TIA Existing volume figures can be found in **Appendix A**.

Figure 4: Existing Balanced Volumes



3.2. Existing 2017 AM/PM Peak Hour Level of Service

Table 3 contains the existing level of service. As shown in **Table 3**, the intersections along Shotwell Road perform at LOS F for various movements. The westbound movement for Covered Bridge Road at Shotwell

Road in both the AM and PM peak hours operates at LOS F. The inability to find adequate gaps for westbound left turning vehicles on Covered Bridge Road due to the heavy northbound and southbound through movements on Shotwell Road is contributing to the heavy delays at this intersection.

Shotwell Road at Old Highway 70 also operates at LOS F during both peak hour periods. Heavy delays at this location could be attributed to westbound vehicles turning right off of US 70 Business onto Shotwell Road and continuing northward on Shotwell Road towards Knightdale.

The signal phasing at the intersection of US 70 Business at Shotwell Road prioritizes the westbound movement of US 70 Business in the AM peak hour. The overall operation at this intersection performs at a LOS D during the morning peak hour. During the PM peak hour, the intersection becomes saturated and thus all approaches perform at LOS E or worse including an overall performance of LOS F.

The intersection of Covered Bridge Road at City Road performs at an existing and acceptable LOS B and C in both the AM and PM peak hours, respectively.

During the PM peak hour, the eastbound left turn movement on Covered Bridge Road at North O'Neil Street performs at LOS F. This intersection is a Y-type intersection with Covered Bridge Road being the stem of the Y. There is an existing horizontal curve to the south along North O'Neil Street creating poor sight distance for left turning vehicles on Covered Bridge Road. The poor sight distance along with 367 left turning vehicles on Covered Bridge Road attributes to the heavy delays at this location. Existing signal timings and signal plan sheets can be found in **Appendix B**.

Table 3: Existing HCM Delay and LOS

Node	Intersection	Approach	AM		PM	
			Delay	LOS	Delay	LOS
1	Shotwell Road at Covered Bridge Road*	SB	0.7	A	1.7	A
		WB	270.4	F	205.6	F
2	Shotwell Road at Old Highway 70	SB	71.6	E	221.1	F
		WB	172.5	F	30.0	C
		NB	38.8	D	126.3	F
		EB	37.1	D	46.8	D
		Overall	80.9	F	119.5	F
3	Shotwell Road at US 70 Business	SB	85.7	F	172.7	F
		WB	36.3	D	112.2	F
		NB	116.0	F	125.7	F
		EB	34.4	C	65.9	E
		Overall	52.0	D	100.8	F
4	City Road at Covered Bridge Road*	SB	12.5	B	15.2	C
		NB	11.9	B	14.0	B
5	N O'Neil Street at Covered Bridge Road*	NB	0.3	A	0.1	A
		EB	18.9	C	173.0	F

***Stop Controlled Intersections**

Appendix C contains existing HCM sheets for the study intersections.

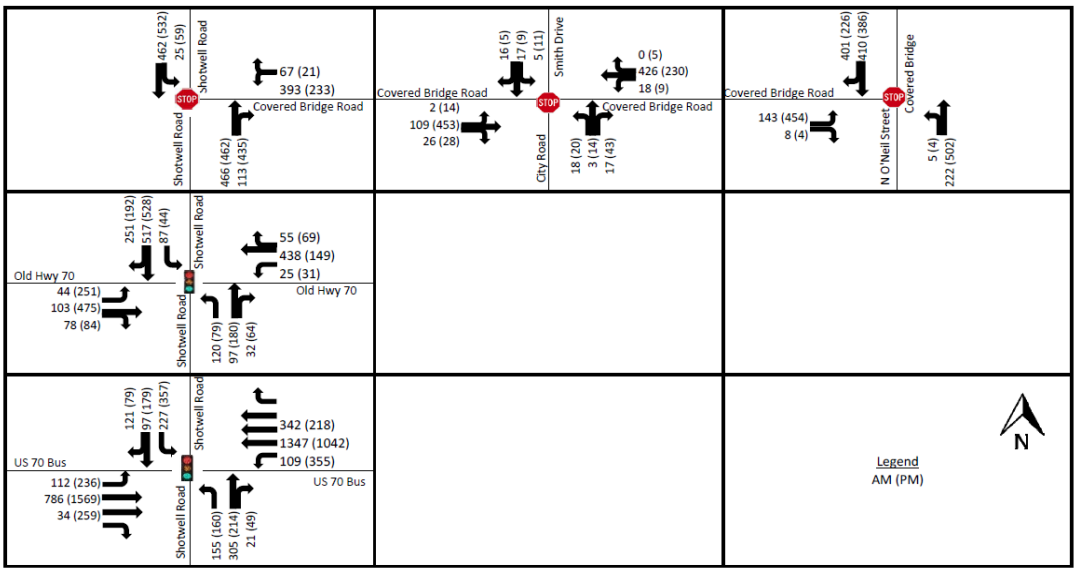
4. 2019 Background AM/PM Peak Hour Conditions

4.1. 2019 Background Peak Hour Traffic Volumes

Existing volumes were grown to 2019 Year with a 3% growth rate. This growth rate was agreed upon by NCDOT and the Town of Clayton.

Also, the Walton Acres traffic was taken into account for the future years. Walton Acres is a development that is located east of the Neuse River and North of Covered Bridge Road in Clayton, NC. **Figure 3** shows the No Build Volumes. **Appendix D** contains Walton Acres' site distribution volume sheets.

Figure 5: 2019 No Build Volumes



4.2. Background AM/PM Peak Hour Level of Service

NCDOT is not considering any improvements in the study area, so geometry in the model was not updated for the No Build scenario. As expected, the study intersections and approaches further degrade in 2019. In both AM and PM, the delay increases above 500 seconds for the westbound approach of Shotwell Road at Covered Bridge Road. The intersection has become oversaturated and cannot process the extra volume. In the AM, the LOS degrades to level F for the southbound approach of Shotwell Road at Old Highway 70. The existing signal at this location currently consists of protected left turns for all approaches. The protected left turn phasing does not allow any additional green time to be given towards the southbound through movement. In the PM, the eastbound movement on US 70 Business at Shotwell Road degrades to LOS F. This is expected with the increase of volume using US 70 Business. In the PM, the eastbound movement for N. O'Neil Street at Covered Bridge Road delay increases to greater than 500 seconds. The intersection has become oversaturated and cannot process the extra volume.

Table 4: 2019 No Build Delay and LOS

Node	Intersection	Approach	AM		PM	
			Delay	LOS	Delay	LOS
1	Shotwell Road at Covered Bridge Road*	SB	0.8	A	2.5	A
		WB	587.2	F	582.6	F
2	Shotwell Road at Old Highway 70	SB	134.4	F	355.6	F
		WB	260.1	F	33.1	C
		NB	47.4	D	218.9	F
		EB	42.4	D	71.7	E
		Overall	126.5	F	195.2	F
3	Shotwell Road at US 70 Business	SB	120.7	F	235.1	F
		WB	40.9	D	133.0	F
		NB	153.2	F	167.4	F
		EB	36.9	D	92.2	F
		Overall	64.4	E	131.6	F
4	City Road at Covered Bridge Road*	SB	14.1	B	18.4	C
		NB	13.2	B	16.9	C
5	N O'Neil Street at Covered Bridge Road*	NB	0.3	A	0.1	A
		EB	31.9	D	599.3	F

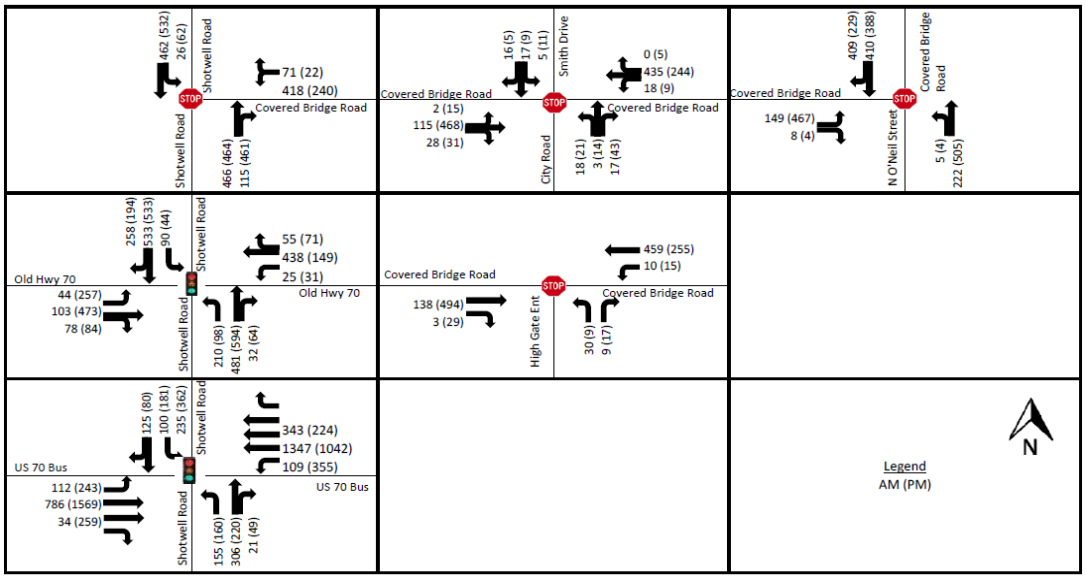
***Stop Controlled Intersections**

Appendix E contains 2019 No Build HCM sheets for the study intersections.

5. 2019 Site Trip Generation and Distribution

In 2019, phase 1 of Highgate will be the only section to be built from both developments. The development includes a total of 69 single family units. In the AM, there will be 13 ingress trips and 39 egress trips. In the PM, there will be 43 ingress trips and 26 egress trips. **Appendix F** contains site trip generation, and site distribution.

Figure 6: 2019 Build Volumes



6. 2019 Build Peak Hour Conditions

6.1. Build AM/PM Peak Hour Level of Service

As shown in **Table 5,** delays are slightly increased with the development proposed by 2019. The westbound movement for Shotwell Road at Covered Bridge Road increases in delay by 40 seconds or more. This delay increase is lower as compared to existing volumes versus 2019 volumes. The same is true for PM eastbound North O'Neil Street at Covered Bridge Road.

Table 5: 2019 Build Delay and LOS

Node	Intersection	Approach	No Build Conditions				Build Conditions			
			AM		PM		AM		PM	
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1	Shotwell Road at Covered Bridge Road*	SB	0.8	A	2.5	A	0.9	A	2.7	A
		WB	587.2	F	582.6	F	653.1	F	653.8	F
2	Shotwell Road at Old Highway 70	SB	134.4	F	355.6	F	148.6	F	366.5	F
		WB	260.1	F	33.1	C	260.1	F	33.7	C
		NB	47.4	D	218.9	F	47.4	D	237.3	F
		EB	42.4	D	71.7	E	42.4	D	69.7	E
		Overall	126.5	F	195.2	F	131.9	F	203.4	F
3	Shotwell Road at US 70 Business	SB	120.7	F	235.1	F	130.2	F	238.6	F
		WB	40.9	D	133.0	F	40.9	D	133.0	F
		NB	153.2	F	167.4	F	154.2	F	173.9	F
		EB	36.9	D	92.2	F	36.9	D	92.4	F
		Overall	64.4	E	131.6	F	65.9	E	132.8	F
4	City Road at Covered Bridge Road*	SB	14.1	B	18.4	C	14.3	B	19.1	C
		NB	13.2	B	16.9	C	13.4	B	17.6	C
5	N O'Neil Street at Covered Bridge Road*	NB	0.3	A	0.1	A	0.3	A	0.1	A
		EB	31.9	D	599.3	F	33.6	D	634.1	F

***Stop Controlled Intersections**

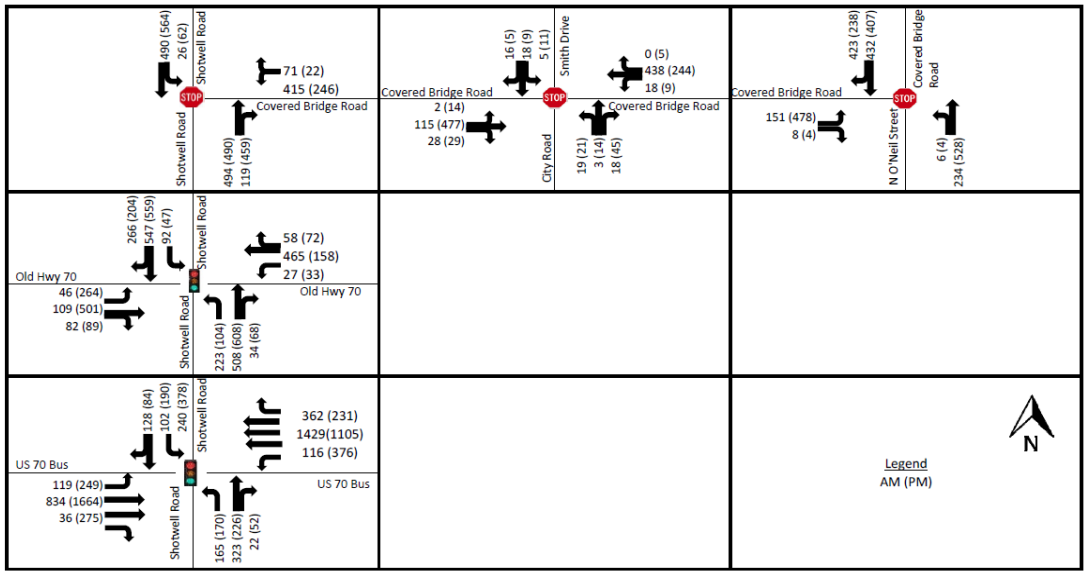
Appendix G contains 2019 Build HCM sheets for the study intersections.

7. 2021 Background AM/PM Peak Hour Conditions

7.1. 2019 Background Peak Hour Traffic Volumes

2019 volumes were grown to 2021 Year with a 3% growth rate. No other developments have been identified in the area.

Figure 7: 2021 No Build Volumes



7.2. Background AM/PM Peak Hour Level of Service

NCDOT is not considering any improvements in the study area, so geometry in the model was not updated for the No Build scenario. The level of service at the study intersections further degrades with the increase in volumes.

Table 6: 2021 No Build Delay and LOS

Node	Intersection	Approach	AM		PM	
			Delay	LOS	Delay	LOS
1	Shotwell Road at Covered Bridge Road*	SB	0.9	A	2.8	A
		WB	744.1	F	778.8	F
2	Shotwell Road at Old Highway 70	SB	176.5	F	408.6	F
		WB	285.4	F	35.2	D
		NB	60.2	E	259.9	F
		EB	39.7	D	80.9	F
		Overall	151.5	F	225.9	F
3	Shotwell Road at US 70 Business	SB	136.6	F	145.9	F
		WB	42.7	D	144.6	F
		NB	173.2	F	186.3	F
		EB	38.1	D	112.4	F
		Overall	70.1	E	134.1	F
4	City Road at Covered Bridge Road*	SB	14.8	B	19.7	C
		NB	13.8	B	17.8	C
5	N O'Neil Street at Covered Bridge Road*	NB	0.4	A	0.1	A
		EB	38.7	E	742.9	F

***Stop Controlled Intersections**

Appendix H contains 2021 No Build HCM sheets for the study intersections.

8. 2021 Site Trip Generation and Distribution

In 2021, all developments are anticipated to be built out. The Creech Development will include 252 townhouse lots. The Highgate Phase I development will include an additional 189 single family units. The Highgate Phase II development will include an additional 40 single family units. **Appendix I** contains 2021 site trip generation, and site distribution.

Figure 8: HighGate Site Trip Distribution Percentage

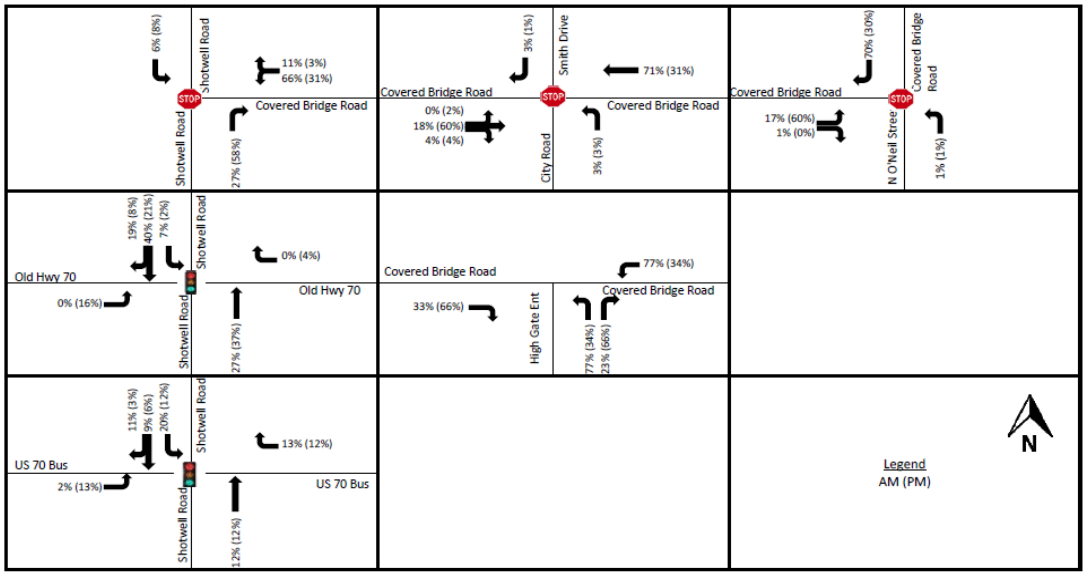


Figure 9: Creech Western Entrance Site Trip Distribution Percentage

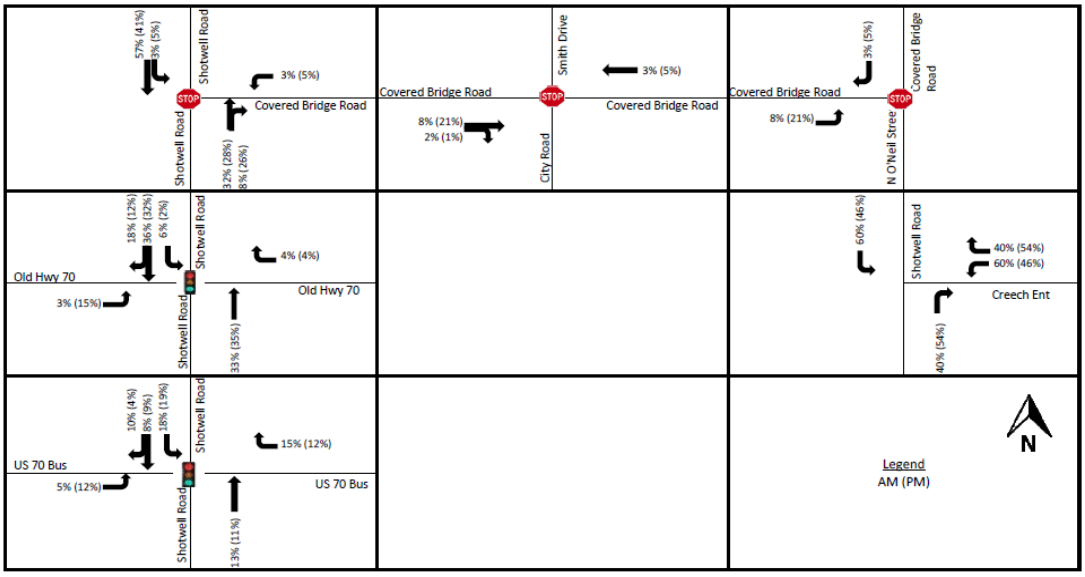


Figure 10: Creech Southern Entrance Site Trip Distribution Percentage

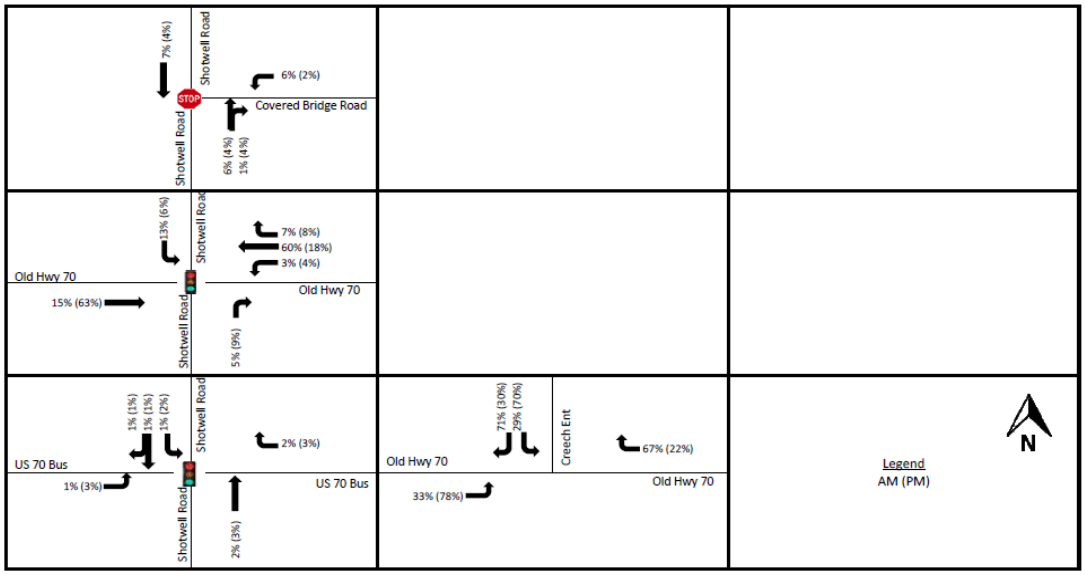
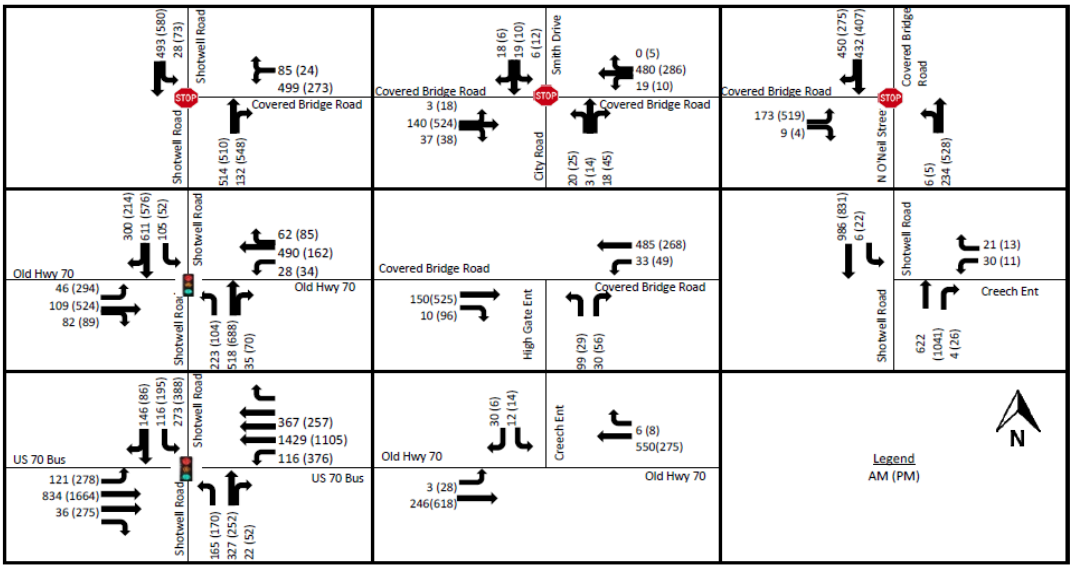


Figure 11: 2021 Build Volumes



9. 2021 Build Peak Hour Conditions

9.1. Build AM/PM Peak Hour Level of Service

As shown in **Table 7,** delays have increased with the proposed final development. The delay for the westbound movement of Covered Bridge Road at Shotwell Road increases significantly. The delay at Shotwell Road at Old Highway 70 increases by 37 seconds or less. The PM eastbound movement on North O'Neil Street at Covered Bridge Road increases to over 800 seconds.

Table 7: 2021 Build Delay and LOS

Node	Intersection	Approach	No Build Conditions				Build Conditions			
			AM		PM		AM		PM	
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1	Shotwell Road at Covered Bridge Road*	SB	0.9	A	2.8	A	0.9	A	3.7	A
		WB	744.1	F	778.8	F	>800	F	>800	F
2	Shotwell Road at Old Highway 70	SB	176.5	F	408.6	F	252.3	F	446.0	F
		WB	285.4	F	35.2	D	311.3	F	36.4	D
		NB	60.2	E	259.9	F	64.8	E	341.4	F
		EB	39.7	D	80.9	F	38.8	D	97.2	F
		Overall	151.5	F	225.9	F	190.2	F	265.7	F
3	Shotwell Road at US 70 Business	SB	136.6	F	145.9	F	186.5	F	277.9	F
		WB	42.7	D	144.6	F	42.9	D	144.4	F
		NB	173.2	F	186.3	F	177.4	F	219.1	F
		EB	38.1	D	112.4	F	38.2	D	113.4	F
		Overall	70.1	E	134.1	F	78.6	E	155.4	F
4	City Road at Covered Bridge Road*	SB	14.8	B	19.7	C	15.7	C	22.6	C
		NB	13.8	B	17.8	C	15.0	B	21.5	C
5	N O'Neil Street at Covered Bridge Road*	NB	0.4	A	0.1	A	0.4	A	0.2	A
		EB	38.7	E	742.9	F	49.3	E	>800	F

***Stop Controlled Intersections**

Appendix J contains 2021 Build HCM sheets for the study intersections.

10. 2019 Build Peak Hour Conditions with Improvements

10.1. Build with Improvements AM/PM Peak Hour Level of Service

As shown in **Table 8,** delays have been reduced by installing two new signals at Shotwell Road and Covered Bridge Road and at Covered Bridge Road and North O'Neil Street. Delays are also reduced by upgrading the existing signal at Shotwell Road and Old US 70. Installing a new signal at Shotwell Road and Covered Bridge Road allows more opportunity for westbound traffic on Covered Bridge Road to turn left. For the intersection of Shotwell Road at Old Highway 70, providing protected/permitted, Flashing Yellow Arrow left turn movements for the southbound, northbound, and eastbound approaches reduces the delays below the No Build scenario. The westbound was not included due to the close proximity to the railroad crossing and would affect the railroad preemption operations. Installing a new signal for North O'Neil Street at Covered Bridge Road increases the opportunity for the eastbound left turn movements on Covered Bridge Road to turn left.

Table 8: 2021 Build with Improvements Delay and LOS

Node	Intersection	Approach	No Build Conditions				Build with Improvements Conditions			
			AM		PM		AM		PM	
			Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
1	Shotwell Road at Covered Bridge Road**	SB	0.9	A	2.8	A	57.1	E	166.5	F
		WB	744.1	F	778.8	F	56.1	E	190.9	F
		NB	-	-	-	-	29.8	C	24.8	C
		Overall	-	-	-	-	46.7	D	95.4	F
2	Shotwell Road at Old Highway 70	SB	176.5	F	408.6	F	183.5	F	127.0	F
		WB	285.4	F	35.2	D	146.3	F	56.0	E
		NB	60.2	E	259.9	F	75.9	E	93.2	F
		EB	39.7	D	80.9	F	41.6	D	120.3	F
		Overall	151.5	F	225.9	F	130.3	F	107.9	F
3	Shotwell Road at US 70 Business	SB	136.6	F	145.9	F	186.5	F	277.9	F
		WB	42.7	D	144.6	F	42.9	D	144.4	F
		NB	173.2	F	186.3	F	177.4	F	219.1	F
		EB	38.1	D	112.4	F	38.2	D	113.4	F
		Overall	70.1	E	134.1	F	78.6	E	155.4	F
4	City Road at Covered Bridge Road*	SB	14.8	B	19.7	C	15.7	C	22.6	C
		NB	13.8	B	17.8	C	15.0	B	21.5	C
5	N O'Neil Street at Covered Bridge Road**	SB	-	-	-	-	19.8	B	34.5	C
		NB	0.4	A	0.1	A	6.0	A	20.1	C
		EB	38.7	E	742.9	F	34.2	C	42.7	D
		Overall	-	-	-	-	19.3	B	32.5	C

***Stop Controlled Intersections**

****Stop Control Changed to Signalized for Improvement Scenario**

Appendix K contains 2021 Build with Improvements HCM sheets for the study intersections.

11. Development Entrances

11.1. Development Entrances HCM

As **Table 9** shows, the HighGate entrance operates at LOS A.

Table 9: 2019 HighGate Entrance LOS

Intersection	Approach	2019 Build			
		AM		PM	
		Delay	LOS	Delay	LOS
HighGate Entrance	NB	13.5	B	0.7	A
	WB	0.2	A	14.1	B

As shown in **Table 10**, 2021 entrances do not impact the main roadway. The Creech western entrance delay is contained on the site. However, with the turn lane improvements on the main line delays are decreased for all approaches.

Table 10: 2021 Development Entrances LOS

Intersection	Approach	2021 Build				2021 Build with Improvements			
		AM		PM		AM		PM	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
HighGate Entrance	NB	18.5	C	17.4	C	18.4	A	17.4	C
	WB	0.8	A	1.4	A	0.5	A	1.4	A
Creech Western Entrance	SB	0.3	A	1.7	A	0.1	A	0.4	A
	WB	129.2	F	128.0	F	25.2	D	112.7	F
Creech Southern Entrance	SB	14.6	B	17.8	C	14.5	B	17.7	C
	EB	0.1	A	0.7	A	0.1	A	0.3	A

Appendix L contains Development Entrances' HCM sheets for the study intersections.

12. Conclusion and Recommendations

The Highgate Phase I development does not include a significant impact on the study intersections compared to the surrounding areas growth. As shown in Table 3 of the Existing 2017 LOS, the existing unsignalized intersections at Shotwell Road and Covered Bridge Road and at Covered Bridge Road and N. O'Neil Street are over capacity and operate at a LOS F during peak hour periods. The LOS continues to degrade for the 2019 No Build and 2021 No Build conditions. It is recommended that new traffic signals be installed at both intersections in order to alleviate the high levels of delay currently being experienced. These traffic signals are typically funded and installed with funding sources provided by NCDOT and/or the Town. It should be noted that funding sources for these type improvements are extremely limited and are prioritized on a Statewide basis. State funded improvements of this nature have been known to take six to eight years before funding becomes available. It is recommended that both development properties participate in a joint-use cost share to fund and install both signal installations prior to full build out in order to expedite the signal installations and reduce the overall delays.

The LOS operations at Shotwell Road and Covered Bridge Road will revert back to existing conditions with the installation of a new traffic signal.

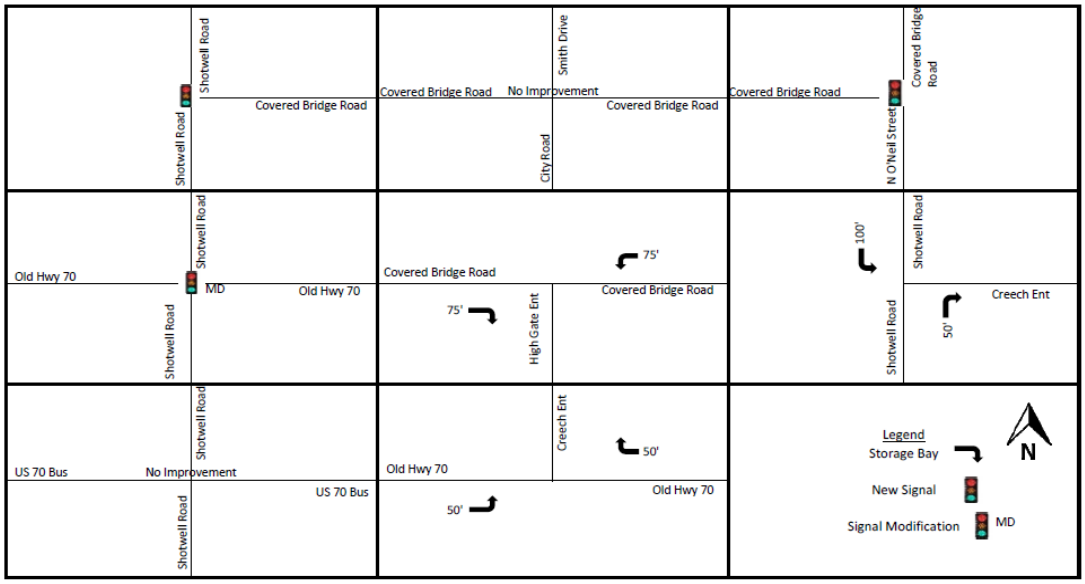
Additional immediate improvements may include revisions to the existing signal at the intersection of Shotwell Road at Old US 70. This improvement includes revising the existing protected only left turn

operations to protected-permitted, Flashing Yellow Arrow operations for the southbound, northbound, and eastbound left turn movements. Due to the relative availability of 4-section, Flashing Yellow Arrow signal heads from the Division 4 Traffic Services unit and minor installation changes, it is recommended that NCDOT-Division 4 complete the necessary changes at the signal of Shotwell Road and Old Highway 70. All other study intersections are anticipated to perform at acceptable levels of service for the Background and Build Out (2021) scenarios.

Improvements at the development entrances includes 75' full storage bays for both the westbound left turn lane and eastbound right turn lane on Covered Bridge Road at the HighGate Entrance. The Creech Entrance on Shotwell Road will require a 50' full storage bay for the northbound right turn lane, and a 100' full storage bay for the southbound left turn lane. The Creech Entrance on Old Highway 70 will require a 50' full storage bay for the eastbound left turn lane and a 50' full storage bay for the westbound right turn lane. The storage bay lengths were obtained from the graph for "Warrant for Left and Right Turn Lanes" in the NCDOT "*Policy on Street and Driveway Access to NC Highways" dated July 2003.* All taper lengths will be determined from the "Recommended Treatment for Turn Lanes" graph also found in the above mentioned driveway manual.

Please keep in mind that Moffatt & Nichol has qualified staff to prepare the new and upgraded traffic signal designs at all improvement locations. Our staff includes individuals that have prepared over one thousand traffic signal design plans along the east coast and has an excellent reputation with NCDOT-Division 4 staff as well as the review staff with the NCDOT-Signals Section, Signals Management Section and ITS Section. We can provide the general signal plan layout, electrical details and signal communication plans in a timely manner including the initiation of the Traffic Signal Agreement process and execution. It is recommended that all design plan preparations be funded by the development properties in order to expedite the design process and secure licensed signal contractors for the two new signal installations.

Figure 12: Project Improvements



Appendix

A

Turning Movement Counts and Creech TIA Volume Figures

Traffic Counts

GreenLight
Traffic Services, Inc.

Post Office 1364

Garner, North Carolina 27529-1364

919-632-1779

Benny R. Johnson, President

Count #SITE 3

Intersection: SHOTWELL RD AND COVERED BRIDGE RD

Division: 5 **County:** Johnston **City / Town** CLAYTON

Date and Time of Count: 4/5/2017 Choose an item.

VIDEO TIME USED: 7:00 AM – 9:00 AM (04-05) 4:00PM – 6:00 PM (04-09)

Counted by: Michael Johnson **Processed by:** Michael Johnson

School in Session: ☒Yes ☐No **Weather Conditions:** 74- High / 49-Lo/ Prep 0.20" 0.80 Sky Cover

Total Volume: 5,016

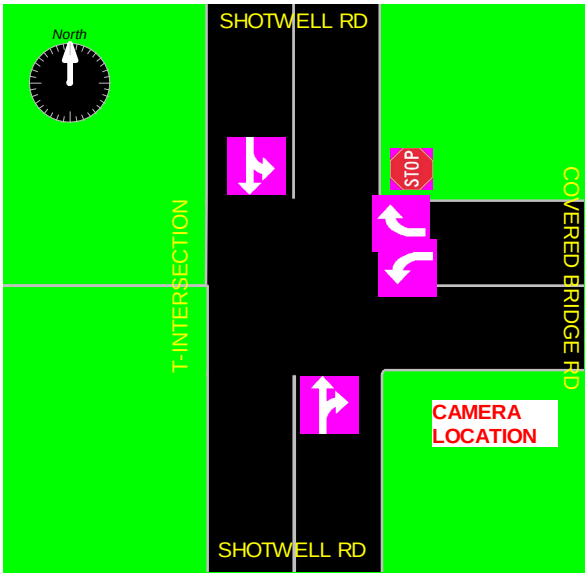
Method Used: Jamar DB-400 Electronic Count Board **Equipment Operating Properly:** ☒Yes

Type of Count: Turning Movement

Area Lighting: Street Lights **Intersection controlled by:** Stop Sign

Construction Present: ☐ Yes ☒ No **Disabled Pedestrians Observed:** ☐ Yes ☒ No

Traffic Problem Observed: ☐ Yes ☒ No **If Yes Describe:**



GreenLight
Traffic Services, Inc.
Post Office 1364
Garner, North Carolina 27529-1364
919-632-1779
Benny R. Johnson, President

Count Number SITE 3

Additional Pictures

Intersection: SHOTWELL RD AND COVERED BRIDGE RD

Southbound Approach SHOTWELL RD

Stop Sign Within 300' : NO

Traffic Signal Within 300': NO

Railroad Within 300' : YES **If Yes** **Feet** 200'

Southbound SHOTWELL RD

Intersection: SHOTWELL RD AND COVERED BRIDGE RD

Northbound Approach: SHOTWELL RD

Stop Sign Within 300' : NO

Traffic Signal Within 300' :NO

Railroad Within 300' : NO **If Yes** **Feet**

Northbound SHOTWELL RD

Intersection: SHOTWELL RD AND COVERED BRIDGE RD

Westbound Approach: COVERED BRIDGE RD

Stop Sign Within 300' : NO

Traffic Signal Within 300': NO

Railroad Within 300' : NO **If Yes** Feet

Westbound COVERED BRIDGE RD

Intersection: SHOTWELL RD AND COVERED BRIDGE RD

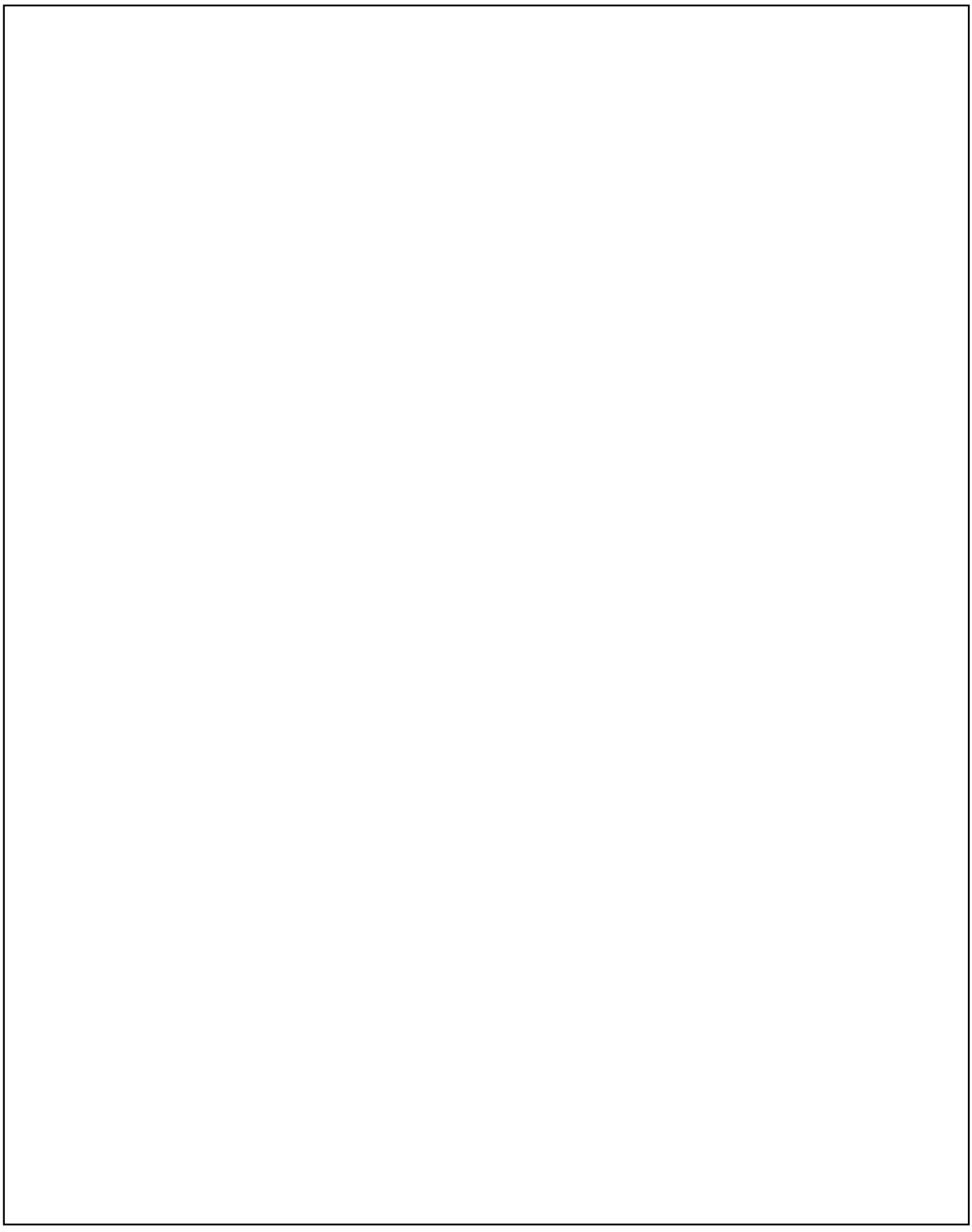
Eastbound Approach: T-INTERSECTION

Stop Sign Within 300' : NO

Traffic Signal Within 300': NO

Railroad Within 300': NO **If Yes** Feet

Eastbound T-INTERSECTION



GREENLIGHT TRAFFIC SERVICES

PO BOX 1364
GARNER, NC 27529
919-632-1779
Benny R. Johnson, President

SHOTWELL AND COVERED BRIDGE RD
JOHNSTON CO CLAYTON
Weather: RAIN
Counted By: MICHAEL JOHNSON

File Name : SITE 3
Site Code : SITE 3
Start Date : 4/5/2017
Page No : 1

Groups Printed- ALL VEHICLES

	SHOTWELL RD SOUTHBOUND					COVERED BRIDGE RD WESTBOUND					SHOTWELL RD NORTHBOUND					T-INTERSECTION EASTBOUND					
Start Time	Left	Thru	X	Peds	App. Total	Left	X	Right	Peds	App. Total	X	Thru	Right	Peds	App. Total	X	X	X	Peds	App. Total	Int. Total
06:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:00 AM	4	92	0	0	96	93	0	25	0	118	0	115	25	0	140	0	0	0	0	0	354
07:15 AM	5	127	0	0	132	73	0	11	0	84	0	99	17	0	116	0	0	0	0	0	332
07:30 AM	7	109	0	0	116	82	0	8	0	90	0	106	25	0	131	0	0	0	0	0	337
07:45 AM	5	95	0	0	100	77	0	11	0	88	0	106	27	0	133	0	0	0	0	0	321
Total	21	423	0	0	444	325	0	55	0	380	0	426	94	0	520	0	0	0	0	0	1344
08:00 AM	4	75	0	0	79	73	0	12	0	85	0	62	35	0	97	0	0	0	0	0	261
08:15 AM	2	69	0	0	71	64	0	10	0	74	0	74	25	0	99	0	0	0	0	0	244
08:30 AM	1	81	0	0	82	86	0	10	0	96	0	66	26	0	92	0	0	0	0	0	270
08:45 AM	1	72	0	0	73	71	0	5	0	76	0	44	28	0	72	0	0	0	0	0	221
Total	8	297	0	0	305	294	0	37	0	331	0	246	114	0	360	0	0	0	0	0	996
09:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

GREENLIGHT TRAFFIC SERVICES

PO BOX 1364
GARNER, NC 27529
919-632-1779
Benny R. Johnson, President

SHOTWELL AND COVERED BRIDGE RD
JOHNSTON CO CLAYTON
Weather: RAIN
Counted By: MICHAEL JOHNSON

File Name : SITE 3
Site Code : SITE 3
Start Date : 4/5/2017

Groups Printed- ALL VEHICLES

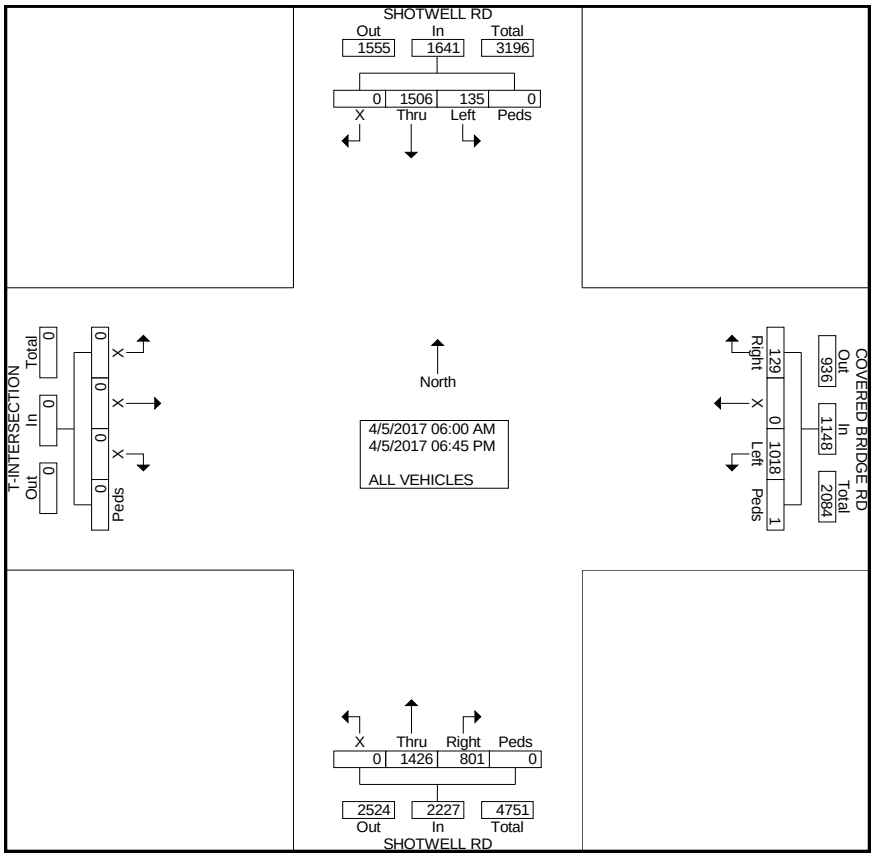
	SHOTWELL RD SOUTHBOUND					COVERED BRIDGE RD WESTBOUND					SHOTWELL RD NORTHBOUND					T-INTERSECTION EASTBOUND					
Start Time	Left	Thru	X	Peds	App. Total	Left	X	Right	Peds	App. Total	X	Thru	Right	Peds	App. Total	X	X	X	Peds	App. Total	Int. Total
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00 PM	13	56	0	0	69	58	0	4	0	62	0	80	49	0	129	0	0	0	0	0	260
04:15 PM	13	73	0	0	86	61	0	9	1	71	0	62	63	0	125	0	0	0	0	0	282
04:30 PM	14	81	0	0	95	61	0	5	0	66	0	80	68	0	148	0	0	0	0	0	309
04:45 PM	18	90	0	0	108	29	0	2	0	31	0	110	54	0	164	0	0	0	0	0	303
Total	58	300	0	0	358	209	0	20	1	230	0	332	234	0	566	0	0	0	0	0	1154
05:00 PM	17	82	0	0	99	45	0	6	0	51	0	89	94	0	183	0	0	0	0	0	333
05:15 PM	7	61	0	0	68	54	0	5	0	59	0	76	102	0	178	0	0	0	0	0	305
05:30 PM	12	200	0	0	212	40	0	1	0	41	0	125	89	0	214	0	0	0	0	0	467
05:45 PM	12	143	0	0	155	51	0	5	0	56	0	132	74	0	206	0	0	0	0	0	417
Total	48	486	0	0	534	190	0	17	0	207	0	422	359	0	781	0	0	0	0	0	1522
06:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	135	1506	0	0	1641	1018	0	129	1	1148	0	1426	801	0	2227	0	0	0	0	0	5016
Apprch %	8.2	91.8	0	0		88.7	0	11.2	0.1		0	64	36	0		0	0	0	0		
Total %	2.7	30	0	0	32.7	20.3	0	2.6	0	22.9	0	28.4	16	0	44.4	0	0	0	0	0	

GREENLIGHT TRAFFIC SERVICES

PO BOX 1364
GARNER, NC 27529
919-632-1779
Benny R. Johnson, President

SHOTWELL AND COVERED BRIDGE RD
JOHNSTON CO CLAYTON
Weather: RAIN
Counted By: MICHAEL JOHNSON

File Name : SITE 3
Site Code : SITE 3
Start Date : 4/5/2017
Page No : 3



GREENLIGHT TRAFFIC SERVICES

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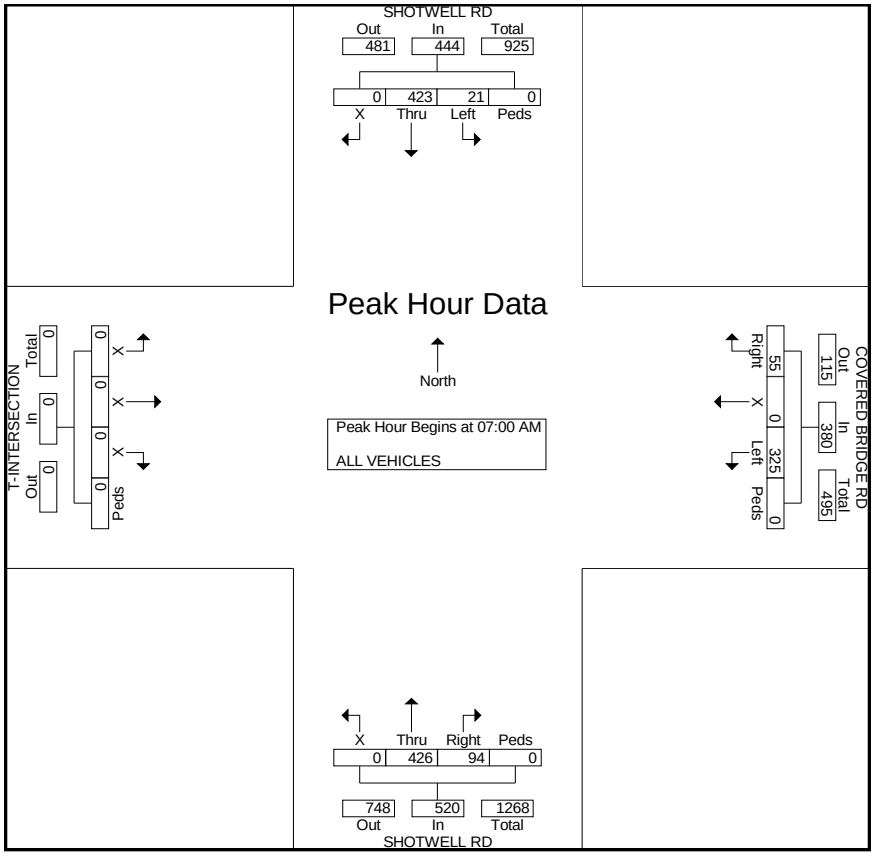
SHOTWELL AND COVERED BRIDGE RD
JOHNSTON CO CLAYTON
Weather: RAIN
Counted By: MICHAEL JOHNSON

File Name : SITE 3
Site Code : SITE 3
Start Date : 4/5/2017
Page No : 4

	SHOTWELL RD SOUTHBOUND					COVERED BRIDGE RD WESTBOUND					SHOTWELL RD NORTHBOUND					T-INTERSECTION EASTBOUND					
Start Time	Left	Thru	X	Peds	App. Total	Left	X	Right	Peds	App. Total	X	Thru	Right	Peds	App. Total	X	X	X	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 12:30 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	4	92	0	0	96	**93**	0	**25**	0	**118**	0	**115**	25	0	**140**	0	0	0	0	0	**354**
07:15 AM	5	**127**	0	0	**132**	73	0	11	0	84	0	99	17	0	116	0	0	0	0	0	332
07:30 AM	**7**	109	0	0	116	82	0	8	0	90	0	106	25	0	131	0	0	0	0	0	337
07:45 AM	5	95	0	0	100	77	0	11	0	88	0	106	**27**	0	133	0	0	0	0	0	321
Total Volume	21	423	0	0	444	325	0	55	0	380	0	426	94	0	520	0	0	0	0	0	1344
% App. Total	4.7	95.3	0	0		85.5	0	14.5	0		0	81.9	18.1	0		0	0	0	0		
PHF	.750	.833	.000	.000	.841	.874	.000	.550	.000	.805	.000	.926	.870	.000	.929	.000	.000	.000	.000	.000	.949



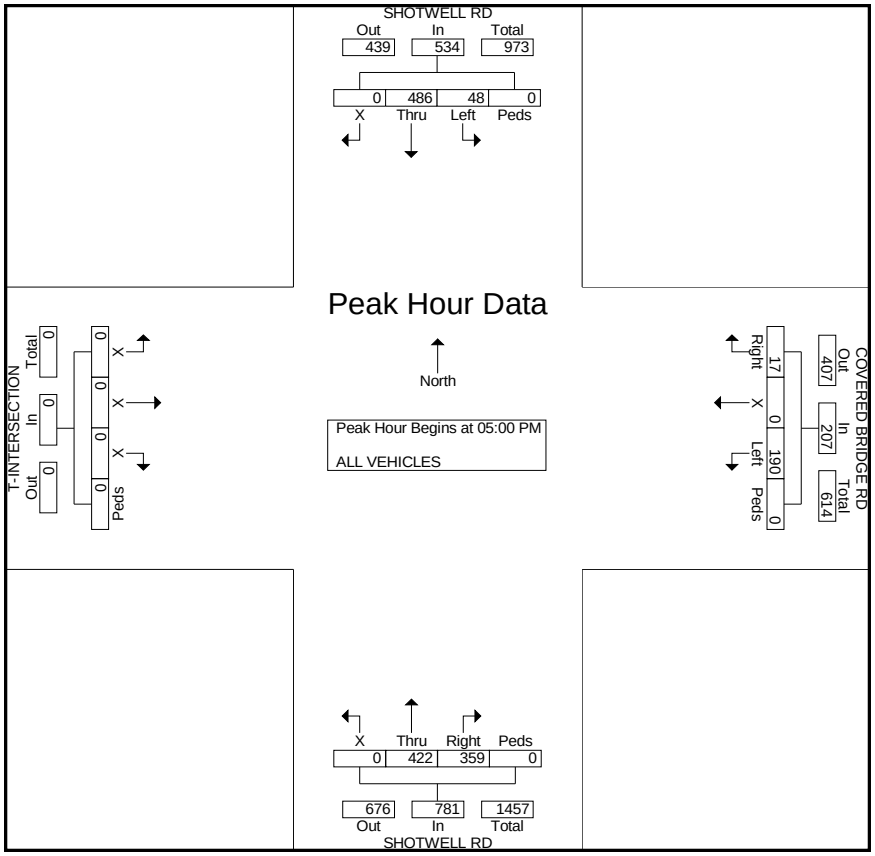
GREENLIGHT TRAFFIC SERVICES

PO BOX 1364
GARNER, NC 27529
919-632-1779
Benny R. Johnson, President

SHOTWELL AND COVERED BRIDGE RD
JOHNSTON CO CLAYTON
Weather: RAIN
Counted By: MICHAEL JOHNSON

File Name : SITE 3
Site Code : SITE 3
Start Date : 4/5/2017
Page No : 5

	SHOTWELL RD SOUTHBOUND					COVERED BRIDGE RD WESTBOUND					SHOTWELL RD NORTHBOUND					T-INTERSECTION EASTBOUND					
Start Time	Left	Thru	X	Peds	App. Total	Left	X	Right	Peds	App. Total	X	Thru	Right	Peds	App. Total	X	X	X	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:45 PM to 06:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	**17**	82	0	0	99	45	0	**6**	0	51	0	89	94	0	183	0	0	0	0	0	333
05:15 PM	7	61	0	0	68	**54**	0	5	0	**59**	0	76	**102**	0	178	0	0	0	0	0	305
05:30 PM	12	**200**	0	0	**212**	40	0	1	0	41	0	125	89	0	**214**	0	0	0	0	0	**467**
05:45 PM	12	143	0	0	155	51	0	5	0	56	0	**132**	74	0	206	0	0	0	0	0	417
Total Volume	48	486	0	0	534	190	0	17	0	207	0	422	359	0	781	0	0	0	0	0	1522
% App. Total	9	91	0	0		91.8	0	8.2	0		0	54	46	0		0	0	0	0		
PHF	.706	.608	.000	.000	.630	.880	.000	.708	.000	.877	.000	.799	.880	.000	.912	.000	.000	.000	.000	.000	.815



GREENLIGHT TRAFFIC SERVICES
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Benny R. Johnson, President

SHOTWELL AND COVERED BRIDGE RD
JOHNSTON CO CLAYTON
Weather: RAIN
Counted By: MICHAEL JOHNSON

File Name : SITE 3
Site Code : SITE 3
Start Date : 4/5/2017
Page No : 6

Southbound SHOTWELL RD

GREENLIGHT TRAFFIC SERVICES
PO BOX 1364
GARNER, NC 27529
919-632-1779
Benny R. Johnson, President

SHOTWELL AND COVERED BRIDGE RD
JOHNSTON CO CLAYTON
Weather: RAIN
Counted By: MICHAEL JOHNSON

File Name : SITE 3
Site Code : SITE 3
Start Date : 4/5/2017
Page No : 7

Westbound COVERED BRIDGE RD

GREENLIGHT TRAFFIC SERVICES
PO BOX 1364
GARNER, NC 27529
919-632-1779
Benny R. Johnson, President

SHOTWELL AND COVERED BRIDGE RD
JOHNSTON CO CLAYTON
Weather: RAIN
Counted By: MICHAEL JOHNSON

File Name : SITE 3
Site Code : SITE 3
Start Date : 4/5/2017
Page No : 8

Northbound SHOTWELL RD

GREENLIGHT TRAFFIC SERVICES
PO BOX 1364
GARNER, NC 27529
919-632-1779
Benny R. Johnson, President

SHOTWELL AND COVERED BRIDGE RD
JOHNSTON CO CLAYTON
Weather: RAIN
Counted By: MICHAEL JOHNSON

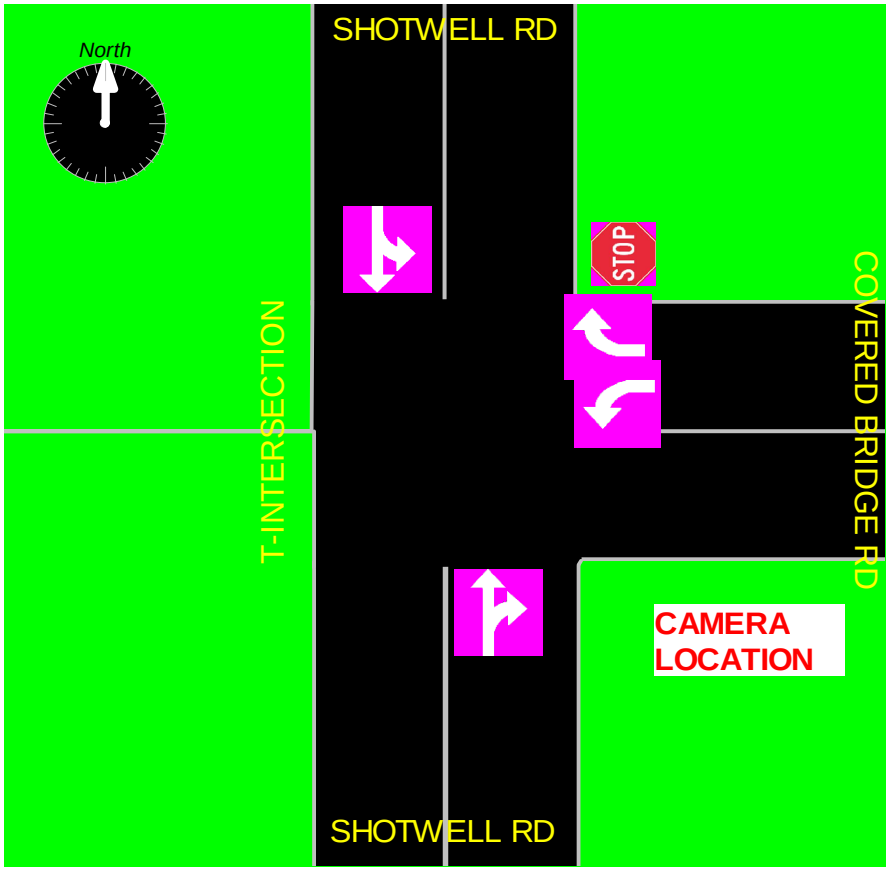
File Name : SITE 3
Site Code : SITE 3
Start Date : 4/5/2017
Page No : 9

Eastbound T-INTERSECTION

GREENLIGHT TRAFFIC SERVICES
PO BOX 1364
GARNER, NC 27529
919-632-1779
Benny R. Johnson, President

SHOTWELL AND COVERED BRIDGE RD
JOHNSTON CO CLAYTON
Weather: RAIN
Counted By: MICHAEL JOHNSON

File Name : SITE 3
Site Code : SITE 3
Start Date : 4/5/2017
Page No : 10



GreenLight
Traffic Services, Inc.

Post Office 1364

Garner, North Carolina 27529-1364

919-632-1779

Benny R. Johnson, President

Count #SITE 2

Intersection: SHOTWELL RD AND OLD US 70

Division: 5 **County:** Johnston **City / Town** CLAYTON

Date and Time of Count: 4/5/2017 Choose an item.

VIDEO TIME USED: 7:00 AM – 9:00 AM (04-05) 4:00PM – 6:00 PM (04-09)

Counted by: Michael Johnson **Processed by:** Michael Johnson

School in Session: ☒Yes ☐No **Weather Conditions:** 74- High / 49-Lo/ Prep 0.20" 0.80 Sky Cover

Total Volume: 7,382

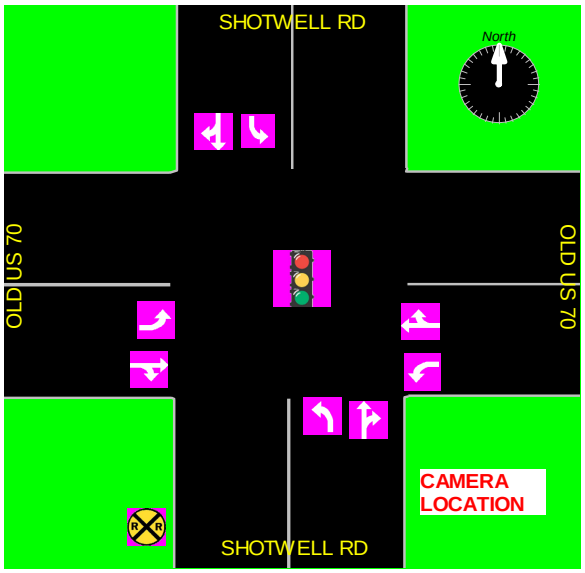
Method Used: Jamar DB-400 Electronic Count Board **Equipment Operating Properly:** ☒Yes

Type of Count: Turning Movement

Area Lighting: Street Lights **Intersection controlled by:** Traffic Signal

Construction Present: ☐ Yes ☒ No **Disabled Pedestrians Observed:** ☐ Yes ☒ No

Traffic Problem Observed: ☐ Yes ☒ No **If Yes Describe:**



GreenLight
Traffic Services, Inc.
Post Office 1364
Garner, North Carolina 27529-1364
919-632-1779
Benny R. Johnson, President

Count Number SITE 2

Additional Pictures

Intersection: SHOTWELL RD AND OLD US 70

Southbound Approach SHOTWELL RD

Stop Sign Within 300' : NO

Traffic Signal Within 300': NO

Railroad Within 300' : YES **If Yes** Feet 200'

Southbound SHOTWELL RD

Intersection: SHOTWELL RD AND OLD US 70

Northbound Approach: SHOTWELL RD

Stop Sign Within 300' : NO

Traffic Signal Within 300' :NO

Railroad Within 300' : NO **If Yes** **Feet**

Northbound SHOTWELL RD

Intersection: SHOTWELL RD AND OLD US 70

Westbound Approach: OLD US 70

Stop Sign Within 300' : NO

Traffic Signal Within 300': NO

Railroad Within 300' : NO **If Yes** Feet

Westbound OLD US 70

Intersection: SHOTWELL RD AND OLD US 70

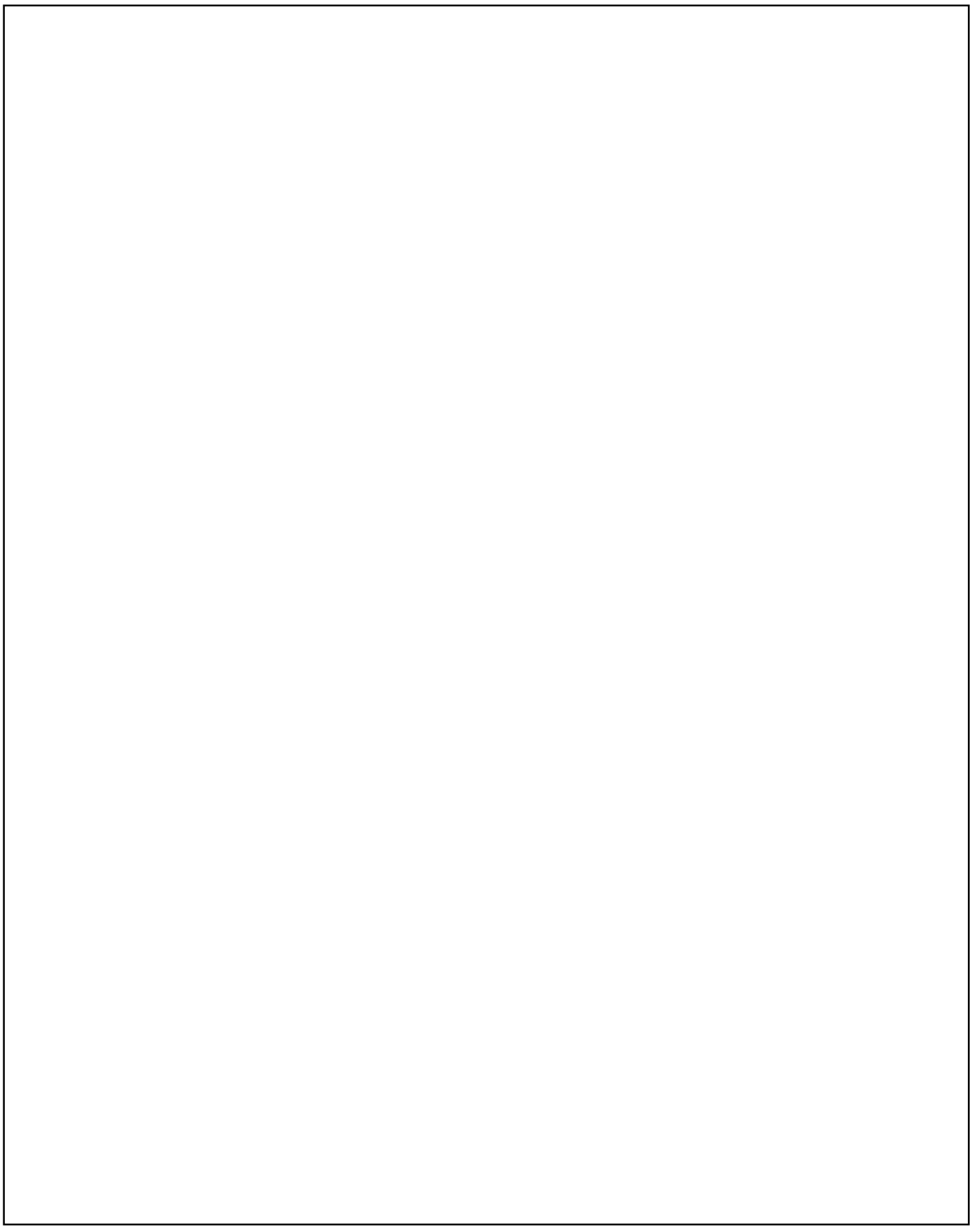
Eastbound Approach: OLD US 70

Stop Sign Within 300' : NO

Traffic Signal Within 300': NO

Railroad Within 300': NO **If Yes** Feet

Eastbound OLD US 70



GREENLIGHT TRAFFIC SERVICES

PO BOX 1364
GARNER, NC 27529
919-632-1779
Benny R. Johnson, President

SHOTWELL RD AND OLD US 70
JOHNSTON CO CLAYTON
Weather: RAIN
Counted By: MICHAEL JOHNSON

File Name : SITE 2
Site Code : SITE 2
Start Date : 4/5/2017
Page No : 1

Groups Printed- ALL VEHICLES

	SHOTWELL RD SOUTHBOUND					OLD US 70 WESTBOUND					SHOTWELL RD NORTHBOUND					OLD US 70 EASTBOUND					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:00 AM	26	90	69	0	185	5	106	18	0	129	39	103	9	0	151	19	25	15	0	59	524
07:15 AM	11	122	67	0	200	5	118	10	0	133	50	102	3	0	155	4	25	12	0	41	529
07:30 AM	20	117	54	0	191	7	112	11	0	130	60	116	7	0	183	4	27	29	0	60	564
07:45 AM	19	123	30	0	172	6	65	11	0	82	43	110	10	0	163	12	17	15	0	44	461
Total	76	452	220	0	748	23	401	50	0	474	192	431	29	0	652	39	94	71	0	204	2078
08:00 AM	13	110	25	0	148	10	24	13	0	47	24	74	10	0	108	10	18	16	0	44	347
08:15 AM	8	100	25	0	133	18	37	12	0	67	23	80	13	0	116	7	26	22	0	55	371
08:30 AM	12	112	43	0	167	12	22	7	0	41	29	83	17	0	129	2	20	12	0	34	371
08:45 AM	14	113	16	0	143	7	29	7	0	43	18	61	10	0	89	4	16	20	0	40	315
Total	47	435	109	0	591	47	112	39	0	198	94	298	50	0	442	23	80	70	0	173	1404
09:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

GREENLIGHT TRAFFIC SERVICES

PO BOX 1364
GARNER, NC 27529
919-632-1779
Benny R. Johnson, President

SHOTWELL RD AND OLD US 70
JOHNSTON CO CLAYTON
Weather: RAIN
Counted By: MICHAEL JOHNSON

File Name : SITE 2
Site Code : SITE 2
Start Date : 4/5/2017
Page No : 2

Groups Printed- ALL VEHICLES

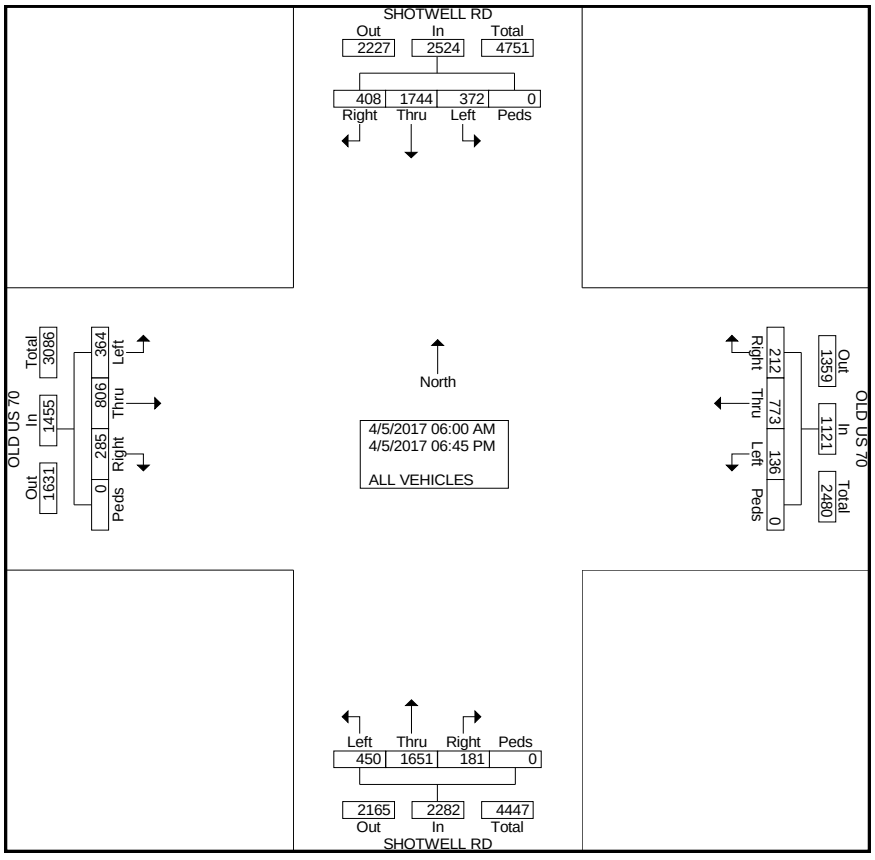
	SHOTWELL RD SOUTHBOUND					OLD US 70 WESTBOUND					SHOTWELL RD NORTHBOUND					OLD US 70 EASTBOUND					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00 PM	15	88	11	0	114	8	38	18	0	64	18	98	6	0	122	13	38	13	0	64	364
04:15 PM	13	111	10	0	134	6	27	10	0	43	16	87	12	0	115	28	54	20	0	102	394
04:30 PM	21	106	15	0	142	14	33	11	0	58	22	113	13	0	148	24	48	19	0	91	439
04:45 PM	30	85	4	0	119	10	26	21	0	57	19	123	13	0	155	20	60	16	0	96	427
Total	79	390	40	0	509	38	124	60	0	222	75	421	44	0	540	85	200	68	0	353	1624
05:00 PM	27	93	7	0	127	3	38	16	0	57	21	129	12	0	162	38	70	14	0	122	468
05:15 PM	25	85	5	0	115	8	47	24	0	79	29	120	17	0	166	34	80	15	0	129	489
05:30 PM	68	157	15	0	240	9	25	12	0	46	20	127	15	0	162	75	142	25	0	242	690
05:45 PM	50	132	12	0	194	8	26	11	0	45	19	125	14	0	158	70	140	22	0	232	629
Total	170	467	39	0	676	28	136	63	0	227	89	501	58	0	648	217	432	76	0	725	2276
06:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	372	1744	408	0	2524	136	773	212	0	1121	450	1651	181	0	2282	364	806	285	0	1455	7382
Apprch %	14.7	69.1	16.2	0		12.1	69	18.9	0		19.7	72.3	7.9	0		25	55.4	19.6	0		
Total %	5	23.6	5.5	0	34.2	1.8	10.5	2.9	0	15.2	6.1	22.4	2.5	0	30.9	4.9	10.9	3.9	0	19.7	

GREENLIGHT TRAFFIC SERVICES

PO BOX 1364
GARNER, NC 27529
919-632-1779
Benny R. Johnson, President

SHOTWELL RD AND OLD US 70
JOHNSTON CO CLAYTON
Weather: RAIN
Counted By: MICHAEL JOHNSON

File Name : SITE 2
Site Code : SITE 2
Start Date : 4/5/2017
Page No : 3



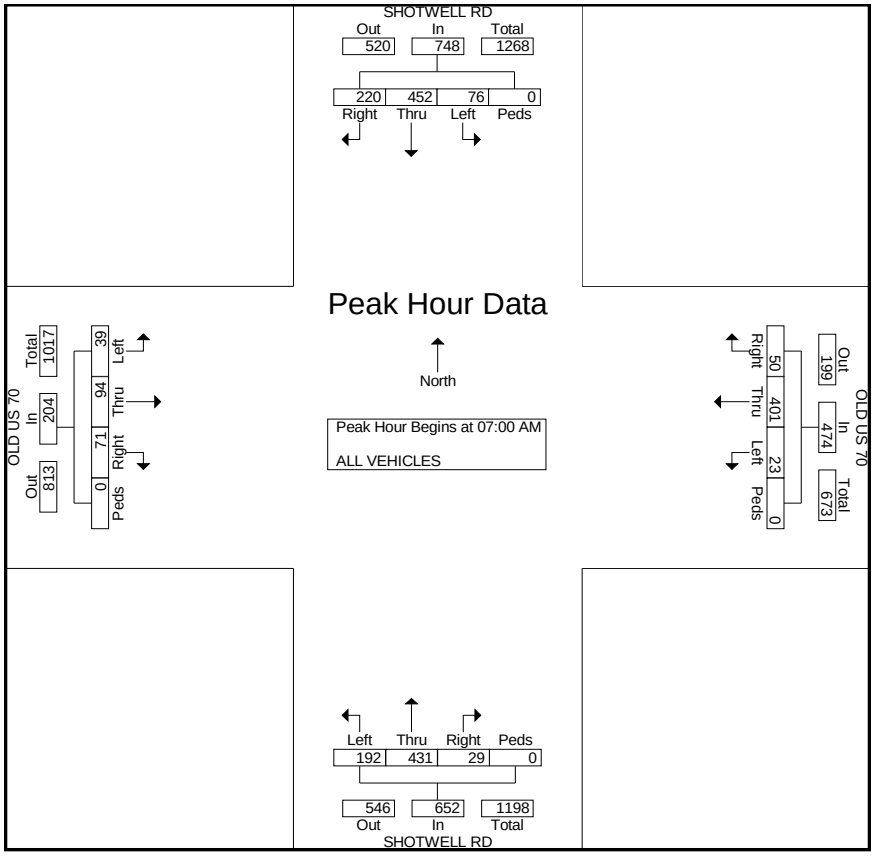
GREENLIGHT TRAFFIC SERVICES

PO BOX 1364
GARNER, NC 27529
919-632-1779
Benny R. Johnson, President

SHOTWELL RD AND OLD US 70
JOHNSTON CO CLAYTON
Weather: RAIN
Counted By: MICHAEL JOHNSON

File Name : SITE 2
Site Code : SITE 2
Start Date : 4/5/2017
Page No : 4

	SHOTWELL RD SOUTHBOUND					OLD US 70 WESTBOUND					SHOTWELL RD NORTHBOUND					OLD US 70 EASTBOUND					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 12:30 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	**26**	90	**69**	0	185	5	106	**18**	0	129	39	103	9	0	151	**19**	25	15	0	59	524
07:15 AM	11	122	67	0	**200**	5	**118**	10	0	**133**	50	102	3	0	155	4	25	12	0	41	529
07:30 AM	20	117	54	0	191	**7**	112	11	0	130	**60**	**116**	7	0	**183**	4	**27**	**29**	0	**60**	**564**
07:45 AM	19	**123**	30	0	172	6	65	11	0	82	43	110	**10**	0	163	12	17	15	0	44	461
Total Volume	76	452	220	0	748	23	401	50	0	474	192	431	29	0	652	39	94	71	0	204	2078
% App. Total	10.2	60.4	29.4	0		4.9	84.6	10.5	0		29.4	66.1	4.4	0		19.1	46.1	34.8	0		
PHF	.731	.919	.797	.000	.935	.821	.850	.694	.000	.891	.800	.929	.725	.000	.891	.513	.870	.612	.000	.850	.921



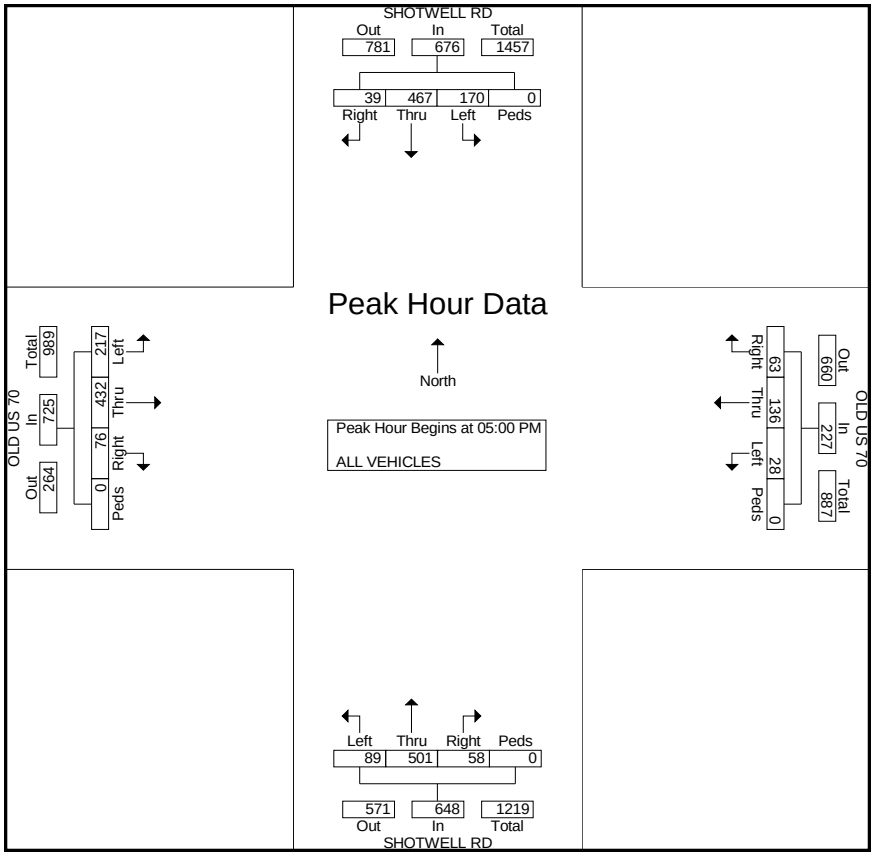
GREENLIGHT TRAFFIC SERVICES

PO BOX 1364
GARNER, NC 27529
919-632-1779
Benny R. Johnson, President

SHOTWELL RD AND OLD US 70
JOHNSTON CO CLAYTON
Weather: RAIN
Counted By: MICHAEL JOHNSON

File Name : SITE 2
Site Code : SITE 2
Start Date : 4/5/2017
Page No : 5

	SHOTWELL RD SOUTHBOUND					OLD US 70 WESTBOUND					SHOTWELL RD NORTHBOUND					OLD US 70 EASTBOUND					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:45 PM to 06:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	27	93	7	0	127	3	38	16	0	57	21	**129**	12	0	162	38	70	14	0	122	468
05:15 PM	25	85	5	0	115	8	**47**	**24**	0	**79**	**29**	120	**17**	0	**166**	34	80	15	0	129	489
05:30 PM	**68**	**157**	**15**	0	**240**	**9**	25	12	0	46	20	127	15	0	162	**75**	**142**	**25**	0	**242**	**690**
05:45 PM	50	132	12	0	194	8	26	11	0	45	19	125	14	0	158	70	140	22	0	232	629
Total Volume	170	467	39	0	676	28	136	63	0	227	89	501	58	0	648	217	432	76	0	725	2276
% App. Total	25.1	69.1	5.8	0		12.3	59.9	27.8	0		13.7	77.3	9	0		29.9	59.6	10.5	0		
PHF	.625	.744	.650	.000	.704	.778	.723	.656	.000	.718	.767	.971	.853	.000	.976	.723	.761	.760	.000	.749	.825



GREENLIGHT TRAFFIC SERVICES
PO BOX 1364
GARNER, NC 27529
919-632-1779
Benny R. Johnson, President

SHOTWELL RD AND OLD US 70
JOHNSTON CO CLAYTON
Weather: RAIN
Counted By: MICHAEL JOHNSON

File Name : SITE 2
Site Code : SITE 2
Start Date : 4/5/2017
Page No : 6

Southbound SHOTWELL RD

GREENLIGHT TRAFFIC SERVICES
PO BOX 1364
GARNER, NC 27529
919-632-1779
Benny R. Johnson, President

SHOTWELL RD AND OLD US 70
JOHNSTON CO CLAYTON
Weather: RAIN
Counted By: MICHAEL JOHNSON

File Name : SITE 2
Site Code : SITE 2
Start Date : 4/5/2017
Page No : 7

Westbound OLD US 70

GREENLIGHT TRAFFIC SERVICES
PO BOX 1364
GARNER, NC 27529
919-632-1779
Benny R. Johnson, President

SHOTWELL RD AND OLD US 70
JOHNSTON CO CLAYTON
Weather: RAIN
Counted By: MICHAEL JOHNSON

File Name : SITE 2
Site Code : SITE 2
Start Date : 4/5/2017
Page No : 8

Northbound SHOTWELL RD

GREENLIGHT TRAFFIC SERVICES
PO BOX 1364
GARNER, NC 27529
919-632-1779
Benny R. Johnson, President

SHOTWELL RD AND OLD US 70
JOHNSTON CO CLAYTON
Weather: RAIN
Counted By: MICHAEL JOHNSON

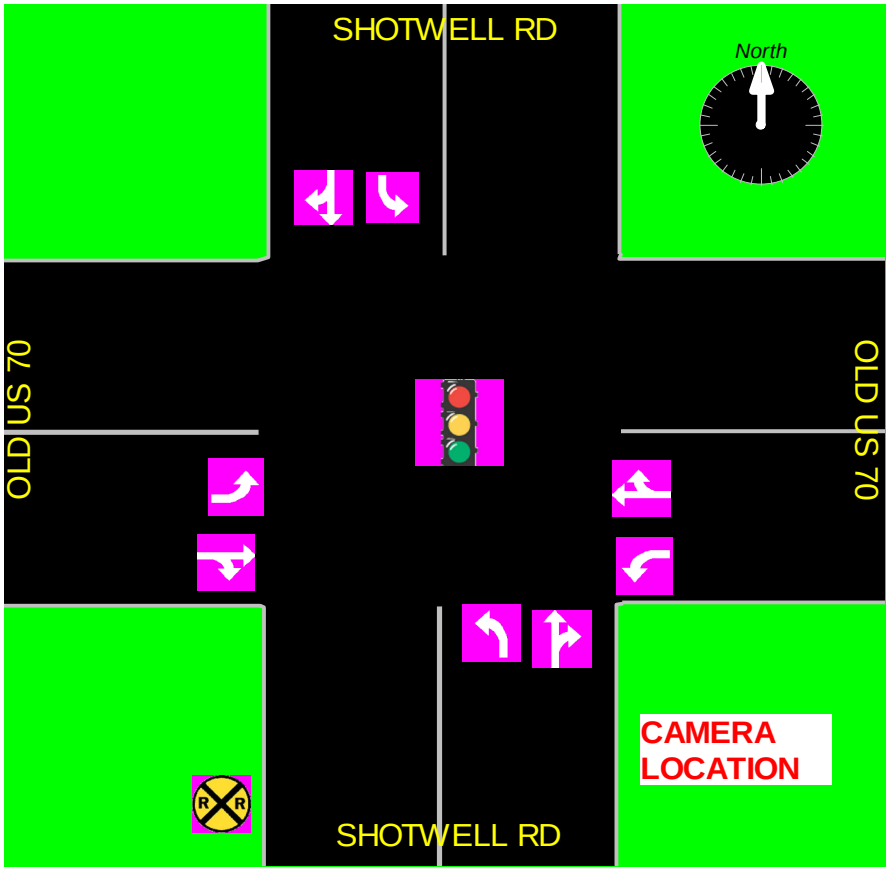
File Name : SITE 2
Site Code : SITE 2
Start Date : 4/5/2017
Page No : 9

Eastbound OLD US 70

GREENLIGHT TRAFFIC SERVICES
PO BOX 1364
GARNER, NC 27529
919-632-1779
Benny R. Johnson, President

SHOTWELL RD AND OLD US 70
JOHNSTON CO CLAYTON
Weather: RAIN
Counted By: MICHAEL JOHNSON

File Name : SITE 2
Site Code : SITE 2
Start Date : 4/5/2017
Page No : 10



GreenLight
Traffic Services, Inc.

Post Office 1364

Garner, North Carolina 27529-1364

919-632-1779

Benny R. Johnson, President

Count #SITE 1

Intersection: SHOTWELL RD AND US 70

Division: 5 **County:** Johnston **City / Town** CLAYTON

Date and Time of Count: 4/5/2017 Choose an item.

VIDEO TIME USED: 7:00 AM – 9:00 AM (04-05) 4:00PM – 6:00 PM (04-09)

Counted by: Michael Johnson **Processed by:** Michael Johnson

School in Session: ☒Yes ☐No **Weather Conditions:** 74- High / 49-Lo/ Prep 0.20" 0.80 Sky Cover

Total Volume: 14,662

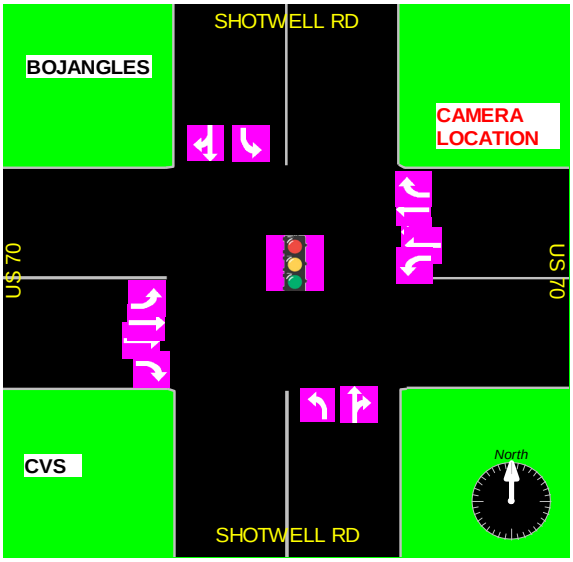
Method Used: Jamar DB-400 Electronic Count Board **Equipment Operating Properly:** ☒Yes

Type of Count: Turning Movement

Area Lighting: Street Lights **Intersection controlled by:** Traffic Signal

Construction Present: ☐ Yes ☒ No **Disabled Pedestrians Observed:** ☐ Yes ☒ No

Traffic Problem Observed: ☐ Yes ☒ No **If Yes Describe:**



GreenLight
Traffic Services, Inc.
Post Office 1364
Garner, North Carolina 27529-1364
919-632-1779
Benny R. Johnson, President

Count Number SITE 1

Additional Pictures

Intersection: SHOTWELL RD AND US 70

Southbound Approach SHOTWELL RD

Stop Sign Within 300' : NO

Traffic Signal Within 300': NO

Railroad Within 300' : YES **If Yes** Feet 200'

Southbound SHOTWELL RD

Intersection: SHOTWELL RD AND US 70

Northbound Approach: SHOTWELL RD

Stop Sign Within 300' : NO

Traffic Signal Within 300' :NO

Railroad Within 300' : NO **If Yes** **Feet**

Northbound SHOTWELL RD

Intersection: **SHOTWELL RD AND US 70**

Westbound Approach: US 70

Stop Sign Within 300' : **NO**

Traffic Signal Within 300': **NO**

Railroad Within 300' : **NO** **If Yes** **Feet**

Westbound US 70

Intersection: **SHOTWELL RD AND US 70**

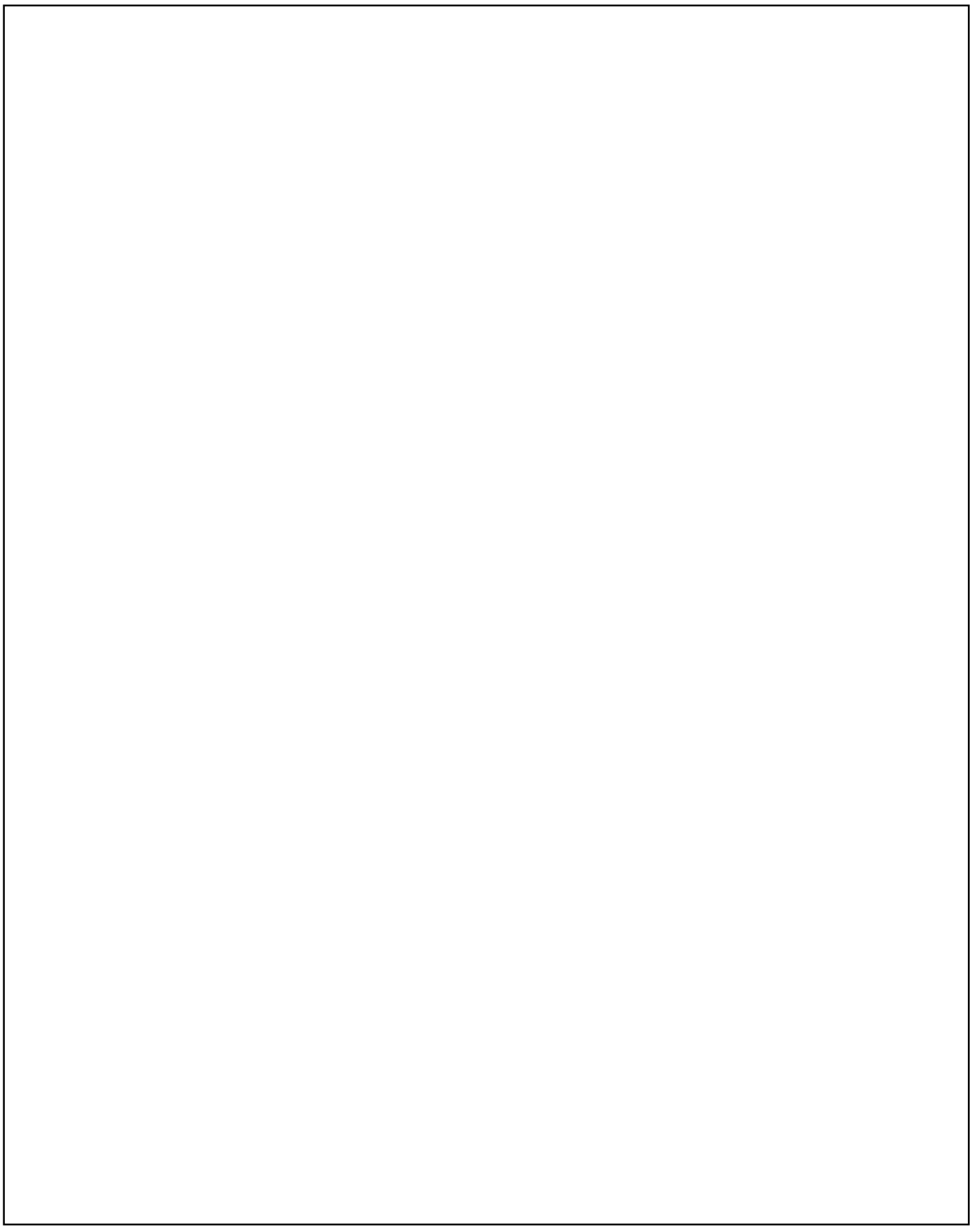
Eastbound Approach: **US 70**

Stop Sign Within 300' : **NO**

Traffic Signal Within 300': **NO**

Railroad Within 300': **NO** **If Yes** **Feet**

Eastbound US 70



GREENLIGHT TRAFFIC SERVICES

PO BOX 1364
GARNER, NC 27529
919-632-1779
Benny R. Johnson, President

SHOTWELLRD AND US 70
JOHNSTON CO CLAYTON
Weather: RAIN
Counted By: MICHAEL JOHNSON

File Name : site 1
Site Code : SITE 1
Start Date : 4/5/2017
Page No : 1

Groups Printed- ALL VEHICLES

	SHOTWELL RD SOUTHBOUND					US 70 WESTBOUND					SHOTWELL RD NORTHBOUND					US 70 EASTBOUND					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:00 AM	45	22	31	0	98	20	325	69	1	415	35	58	5	0	98	22	160	6	0	188	799
07:15 AM	46	19	18	0	83	34	296	78	0	408	44	71	5	0	120	31	174	6	0	211	822
07:30 AM	55	17	34	0	106	21	305	80	0	406	22	74	4	0	100	24	203	8	0	235	847
07:45 AM	51	26	22	0	99	25	307	82	0	414	41	73	5	0	119	25	182	11	0	218	850
Total	197	84	105	0	386	100	1233	309	1	1643	142	276	19	0	437	102	719	31	0	852	3318
08:00 AM	69	15	18	0	102	28	385	36	0	449	35	57	8	0	100	37	194	7	0	238	889
08:15 AM	67	17	33	0	117	34	356	31	0	421	63	54	6	0	123	28	226	14	0	268	929
08:30 AM	62	12	34	0	108	60	332	45	0	437	41	61	5	0	107	37	193	7	0	237	889
08:45 AM	52	18	57	0	127	62	291	33	0	386	26	43	5	0	74	34	180	10	0	224	811
Total	250	62	142	0	454	184	1364	145	0	1693	165	215	24	0	404	136	793	38	0	967	3518
09:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

GREENLIGHT TRAFFIC SERVICES

PO BOX 1364
GARNER, NC 27529
919-632-1779
Benny R. Johnson, President

SHOTWELLRD AND US 70
JOHNSTON CO CLAYTON
Weather: RAIN
Counted By: MICHAEL JOHNSON

File Name : site 1
Site Code : SITE 1
Start Date : 4/5/2017
Page No : 2

Groups Printed- ALL VEHICLES

	SHOTWELL RD SOUTHBOUND					US 70 WESTBOUND					SHOTWELL RD NORTHBOUND					US 70 EASTBOUND					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00 PM	73	42	23	0	138	63	210	38	0	311	34	49	7	0	90	60	283	36	0	379	918
04:15 PM	64	20	16	0	100	85	178	37	0	300	33	52	6	0	91	58	278	51	0	387	878
04:30 PM	67	25	19	0	111	59	226	40	0	325	28	45	6	0	79	35	267	48	0	350	865
04:45 PM	67	51	14	0	132	58	204	53	0	315	27	62	11	0	100	59	227	63	0	349	896
Total	271	138	72	0	481	265	818	168	0	1251	122	208	30	0	360	212	1055	198	0	1465	3557
05:00 PM	61	31	16	0	108	51	247	49	0	347	50	43	8	0	101	59	319	49	0	427	983
05:15 PM	92	45	21	0	158	107	254	52	0	413	28	46	13	0	87	52	331	64	0	447	1105
05:30 PM	62	40	16	0	118	80	223	59	0	362	41	51	17	0	109	50	419	71	0	540	1129
05:45 PM	102	43	17	0	162	86	229	31	0	346	27	47	6	0	80	45	366	53	0	464	1052
Total	317	159	70	0	546	324	953	191	0	1468	146	187	44	0	377	206	1435	237	0	1878	4269
06:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	1035	443	389	0	1867	873	4368	813	1	6055	575	886	117	0	1578	656	4002	504	0	5162	14662
Apprch %	55.4	23.7	20.8	0		14.4	72.1	13.4	0		36.4	56.1	7.4	0		12.7	77.5	9.8	0		
Total %	7.1	3	2.7	0	12.7	6	29.8	5.5	0	41.3	3.9	6	0.8	0	10.8	4.5	27.3	3.4	0	35.2	

GREENLIGHT TRAFFIC SERVICES

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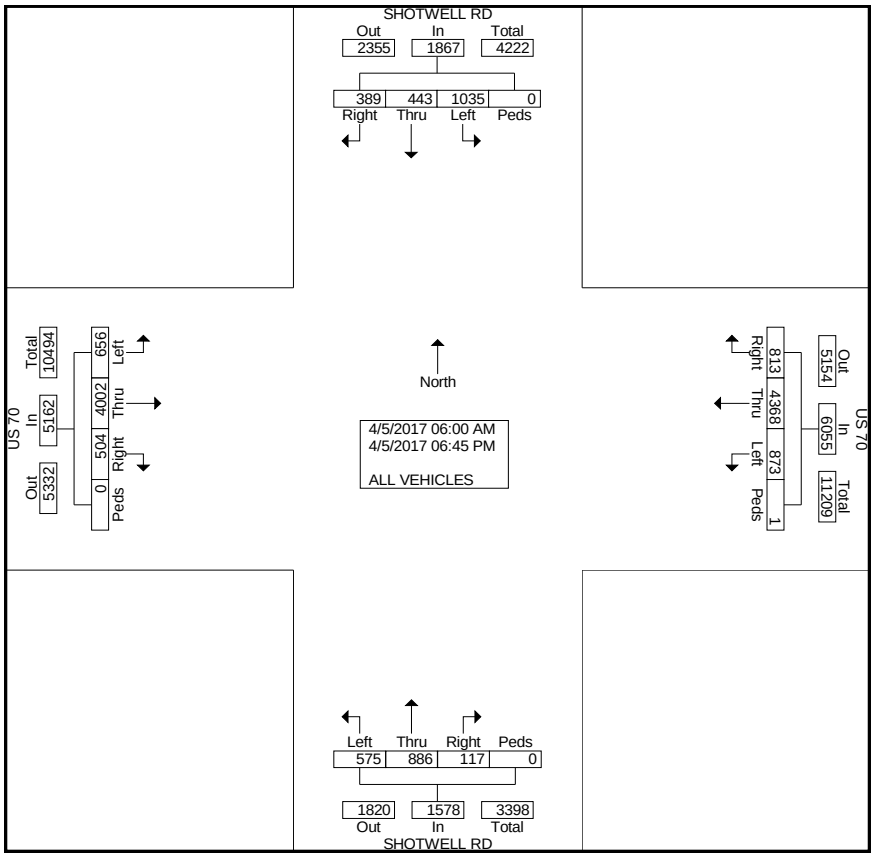
919-632-1779
Benny R. Johnson, President

SHOTWELLRD AND US 70
JOHNSTON CO CLAYTON
Weather: RAIN
Counted By: MICHAEL JOHNSON

File Name : site 1
Site Code : SITE 1
Start Date : 4/5/2017
Page No : 3



GREENLIGHT TRAFFIC SERVICES

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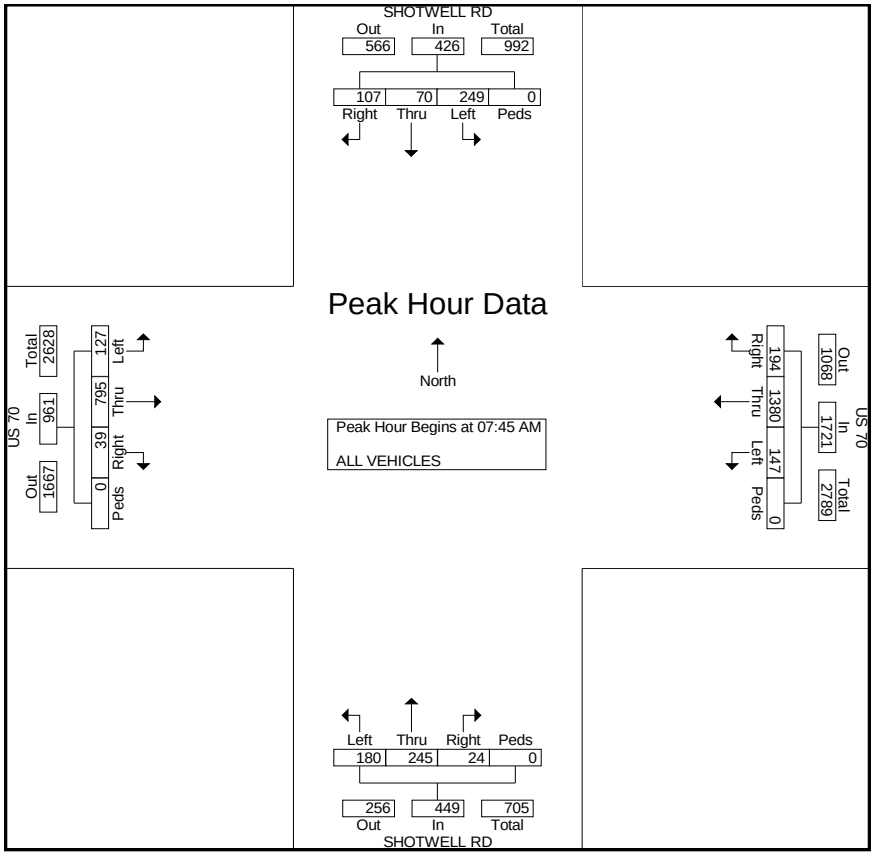
919-632-1779
Benny R. Johnson, President

SHOTWELLRD AND US 70
JOHNSTON CO CLAYTON
Weather: RAIN
Counted By: MICHAEL JOHNSON

File Name : site 1
Site Code : SITE 1
Start Date : 4/5/2017

	SHOTWELL RD SOUTHBOUND					US 70 WESTBOUND					SHOTWELL RD NORTHBOUND					US 70 EASTBOUND					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	51	**26**	22	0	99	25	307	**82**	0	414	41	**73**	5	0	119	25	182	11	0	218	850
08:00 AM	**69**	15	18	0	102	28	**385**	36	0	**449**	35	57	**8**	0	100	**37**	194	7	0	238	889
08:15 AM	67	17	33	0	**117**	34	356	31	0	421	**63**	54	6	0	**123**	28	**226**	**14**	0	**268**	**929**
08:30 AM	62	12	**34**	0	108	**60**	332	45	0	437	41	61	5	0	107	37	193	7	0	237	889
Total Volume	249	70	107	0	426	147	1380	194	0	1721	180	245	24	0	449	127	795	39	0	961	3557
% App. Total	58.5	16.4	25.1	0		8.5	80.2	11.3	0		40.1	54.6	5.3	0		13.2	82.7	4.1	0		
PHF	.902	.673	.787	.000	.910	.613	.896	.591	.000	.958	.714	.839	.750	.000	.913	.858	.879	.696	.000	.896	.957



GREENLIGHT TRAFFIC SERVICES

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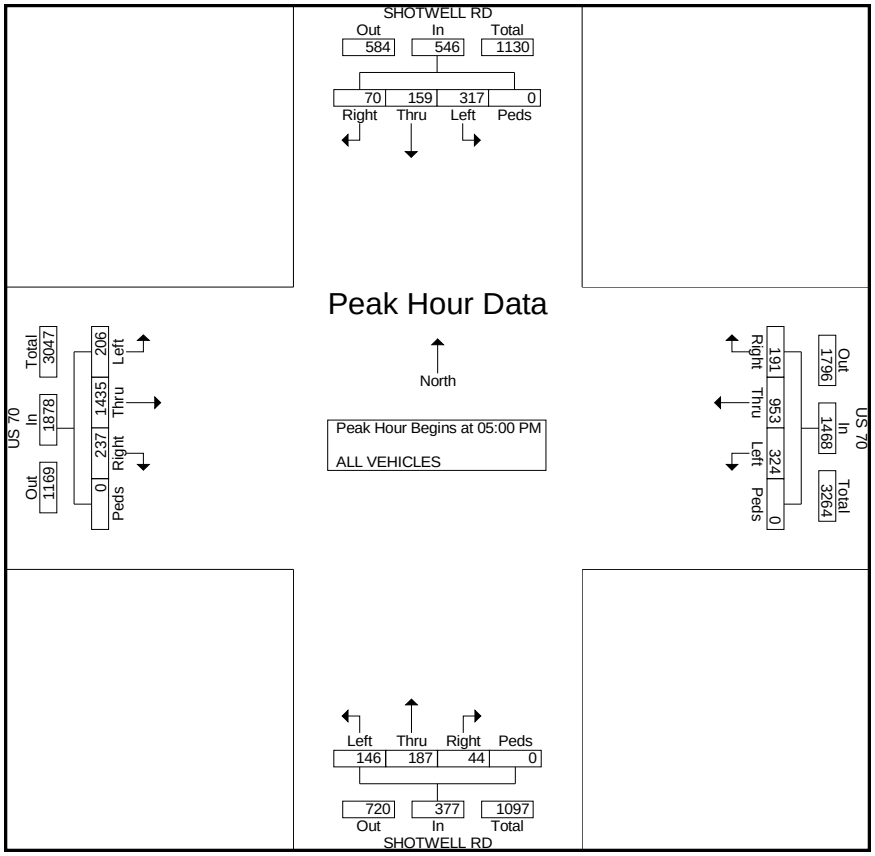
GARNER, NC 27529
919-632-1779
Benny R. Johnson, President

SHOTWELLRD AND US 70
JOHNSTON CO CLAYTON
Weather: RAIN
Counted By: MICHAEL JOHNSON

File Name : site 1
Site Code : SITE 1
Start Date : 4/5/2017
Page No : 5

	SHOTWELL RD SOUTHBOUND					US 70 WESTBOUND					SHOTWELL RD NORTHBOUND					US 70 EASTBOUND					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 06:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	61	31	16	0	108	51	247	49	0	347	**50**	43	8	0	101	**59**	319	49	0	427	983
05:15 PM	92	**45**	**21**	0	158	**107**	**254**	52	0	**413**	28	46	13	0	87	52	331	64	0	447	1105
05:30 PM	62	40	16	0	118	80	223	**59**	0	362	41	**51**	**17**	0	**109**	50	**419**	**71**	0	**540**	**1129**
05:45 PM	**102**	43	17	0	**162**	86	229	31	0	346	27	47	6	0	80	45	366	53	0	464	1052
Total Volume	317	159	70	0	546	324	953	191	0	1468	146	187	44	0	377	206	1435	237	0	1878	4269
% App. Total	58.1	29.1	12.8	0		22.1	64.9	13	0		38.7	49.6	11.7	0		11	76.4	12.6	0		
PHF	.777	.883	.833	.000	.843	.757	.938	.809	.000	.889	.730	.917	.647	.000	.865	.873	.856	.835	.000	.869	.945



GREENLIGHT TRAFFIC SERVICES
PO BOX 1364
GARNER, NC 27529
919-632-1779
Benny R. Johnson, President

SHOTWELLRD AND US 70
JOHNSTON CO CLAYTON
Weather: RAIN
Counted By: MICHAEL JOHNSON

File Name : site 1
Site Code : SITE 1
Start Date : 4/5/2017
Page No : 6

Southbound SHOTWELL RD

GREENLIGHT TRAFFIC SERVICES
PO BOX 1364
GARNER, NC 27529
919-632-1779
Benny R. Johnson, President

SHOTWELLRD AND US 70
JOHNSTON CO CLAYTON
Weather: RAIN
Counted By: MICHAEL JOHNSON

File Name : site 1
Site Code : SITE 1
Start Date : 4/5/2017
Page No : 7

Westbound US 70

GREENLIGHT TRAFFIC SERVICES
PO BOX 1364
GARNER, NC 27529
919-632-1779
Benny R. Johnson, President

SHOTWELLRD AND US 70
JOHNSTON CO CLAYTON
Weather: RAIN
Counted By: MICHAEL JOHNSON

File Name : site 1
Site Code : SITE 1
Start Date : 4/5/2017
Page No : 8

Northbound SHOTWELL RD

GREENLIGHT TRAFFIC SERVICES
PO BOX 1364
GARNER, NC 27529
919-632-1779
Benny R. Johnson, President

SHOTWELLRD AND US 70
JOHNSTON CO CLAYTON
Weather: RAIN
Counted By: MICHAEL JOHNSON

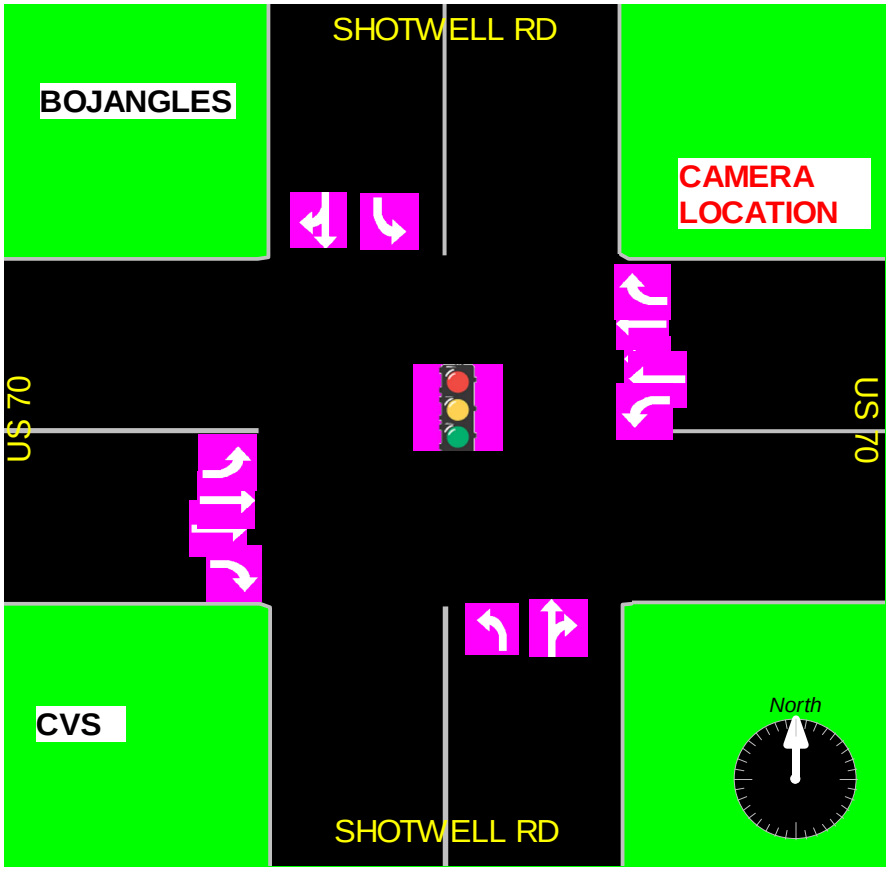
File Name : site 1
Site Code : SITE 1
Start Date : 4/5/2017
Page No : 9

Eastbound US 70

GREENLIGHT TRAFFIC SERVICES
PO BOX 1364
GARNER, NC 27529
919-632-1779
Benny R. Johnson, President

SHOTWELLRD AND US 70
JOHNSTON CO CLAYTON
Weather: RAIN
Counted By: MICHAEL JOHNSON

File Name : site 1
Site Code : SITE 1
Start Date : 4/5/2017
Page No : 10



GreenLight
Traffic Services, Inc.

Post Office 1364

Garner, North Carolina 27529-1364

919-632-1779

Benny R. Johnson, President

Count #SITE 4

Intersection: COVERED BRIDGE RD AND CITY RD / SMITH DR

Division: 5 **County:** Johnston **City / Town** CLAYTON

Date and Time of Count: 4/5/2017 Choose an item.

VIDEO TIME USED: 7:00 AM – 9:00 AM (04-05) 4:00PM – 6:00 PM (04-09)

Counted by: Michael Johnson **Processed by:** Michael Johnson

School in Session: ☒Yes ☐No **Weather Conditions:** 74- High / 49-Lo/ Prep 0.20" 0.80 Sky Cover

Total Volume: 2,317

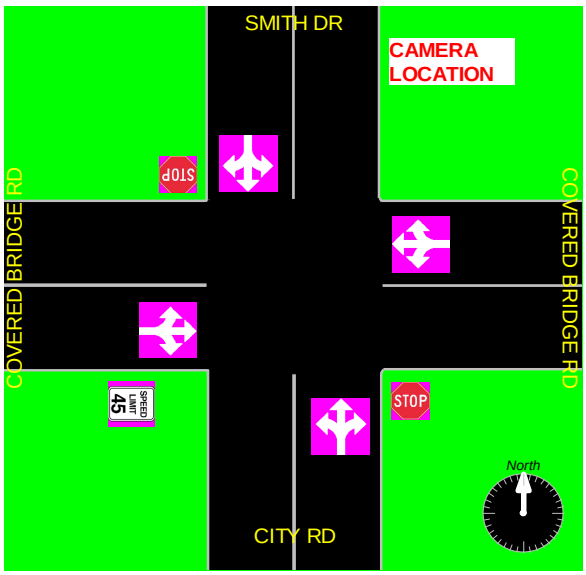
Method Used: Jamar DB-400 Electronic Count Board **Equipment Operating Properly:** ☒Yes

Type of Count: Turning Movement

Area Lighting: Street Lights **Intersection controlled by:** Stop Sign

Construction Present: ☐ Yes ☒ No **Disabled Pedestrians Observed:** ☐ Yes ☒ No

Traffic Problem Observed: ☐ Yes ☒ No **If Yes Describe:**



GreenLight
Traffic Services, Inc.
Post Office 1364
Garner, North Carolina 27529-1364
919-632-1779
Benny R. Johnson, President

Count Number SITE 4

Additional Pictures

Intersection: COVERED BRIDGE RD AND CITY RD / SMITH DR

Southbound Approach SMITH DR

Stop Sign Within 300' : NO

Traffic Signal Within 300': NO

Railroad Within 300' : NO **If Yes** Feet

Southbound SMITH DR

Intersection: COVERED BRIDGE RD AND CITY RD / SMITH DR

Northbound Approach: CITY RD

Stop Sign Within 300' : NO

Traffic Signal Within 300' :NO

Railroad Within 300' : NO **If Yes** Feet

Northbound CITY RD

Intersection: COVERED BRIDGE RD AND CITY RD / SMITH DR

Westbound Approach: COVERED BRIDGE RD

Stop Sign Within 300' : NO

Traffic Signal Within 300': NO

Railroad Within 300' : NO **If Yes** Feet

Westbound COVERED BRIDGE RD

Intersection: COVERED BRIDGE RD AND CITY RD / SMITH DR

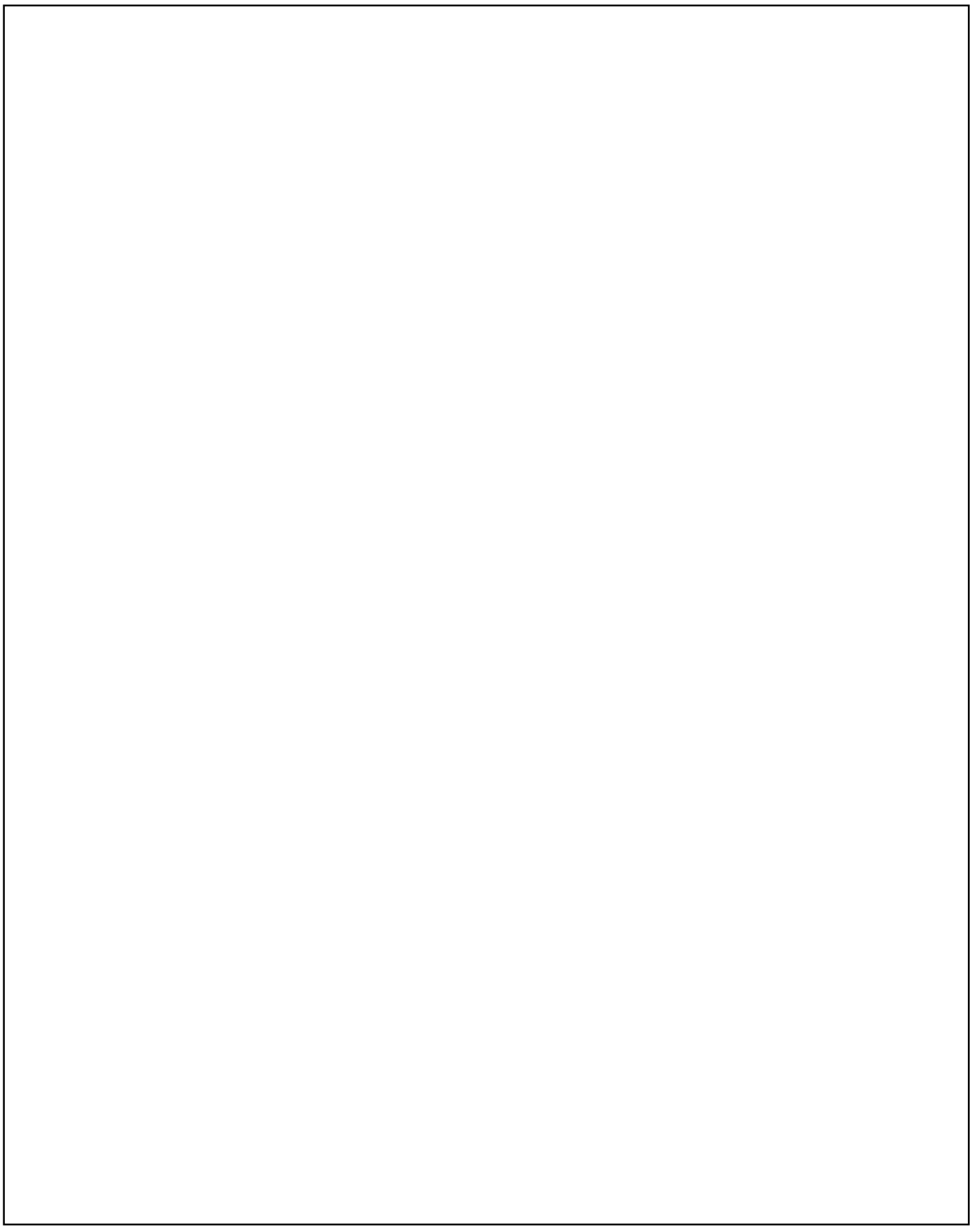
Eastbound Approach: COVERED BRIDGE RD

Stop Sign Within 300' : NO

Traffic Signal Within 300': NO

Railroad Within 300': NO **If Yes** Feet

Eastbound COVERED BRIDGE RD



GREENLIGHT TRAFFIC SERVICES

PO BOX 1364
GARNER, NC 27529
919-632-1779
Benny R. Johnson, President

COVERED BRIDGE RD AND CITY/SMITH DR
JOHNSTON CO CLAYTON
Weather: RAIN
Counted By: MICHAEL JOHNSON

File Name : SITE 4
Site Code : SITE 4
Start Date : 4/5/2017
Page No : 1

Groups Printed- ALL VEHICLES

	SMITH DR SOUTHBOUND					COVERED BRIDGE RD WESTBOUND					CITY RD NORTHBOUND					COVERED BRIDGE RD EASTBOUND					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:00 AM	3	10	7	0	20	6	100	0	0	106	7	1	5	0	13	0	12	5	0	17	156
07:15 AM	1	2	2	0	5	3	89	0	0	92	5	2	2	0	9	2	23	7	0	32	138
07:30 AM	1	3	2	0	6	1	79	0	0	80	1	0	2	0	3	0	26	9	0	35	124
07:45 AM	0	1	4	0	5	5	80	0	0	85	3	0	5	0	8	0	46	3	0	49	147
Total	5	16	15	0	36	15	348	0	0	363	16	3	14	0	33	2	107	24	0	133	565
08:00 AM	1	3	3	0	7	7	59	3	0	69	5	0	4	0	9	1	32	7	0	40	125
08:15 AM	3	1	1	0	5	5	67	1	0	73	3	0	2	0	5	3	19	4	0	26	109
08:30 AM	0	5	3	0	8	7	71	1	0	79	2	1	5	0	8	1	30	7	0	38	133
08:45 AM	0	1	3	0	4	4	73	0	0	77	6	1	0	0	7	1	24	5	0	30	118
Total	4	10	10	0	24	23	270	5	0	298	16	2	11	0	29	6	105	23	0	134	485
09:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

GREENLIGHT TRAFFIC SERVICES

PO BOX 1364
GARNER, NC 27529
919-632-1779
Benny R. Johnson, President

COVERED BRIDGE RD AND CITY/SMITH DR
JOHNSTON CO CLAYTON
Weather: RAIN
Counted By: MICHAEL JOHNSON

File Name : SITE 4
Site Code : SITE 4
Start Date : 4/5/2017

Groups Printed- ALL VEHICLES

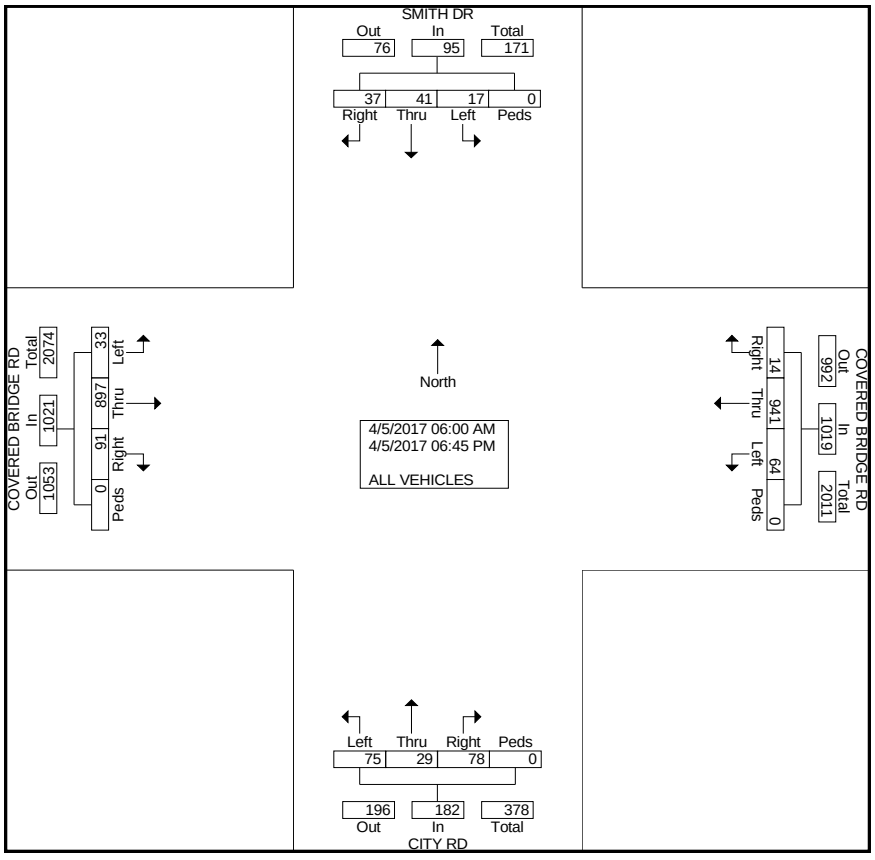
	SMITH DR SOUTHBOUND					COVERED BRIDGE RD WESTBOUND					CITY RD NORTHBOUND					COVERED BRIDGE RD EASTBOUND					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00 PM	2	5	1	0	8	5	45	1	0	51	6	2	4	0	12	7	59	8	0	74	145
04:15 PM	1	1	0	0	2	4	45	1	0	50	12	7	7	0	26	4	86	6	0	96	174
04:30 PM	0	1	0	0	1	5	42	1	0	48	6	3	4	0	13	1	70	0	0	71	133
04:45 PM	1	0	1	0	2	5	25	2	0	32	1	0	3	0	4	1	83	5	0	89	127
Total	4	7	2	0	13	19	157	5	0	181	25	12	18	0	55	13	298	19	0	330	579
05:00 PM	2	1	1	0	4	3	42	3	0	48	6	4	12	0	22	1	93	9	0	103	177
05:15 PM	1	3	3	0	7	2	36	0	0	38	4	1	12	0	17	2	91	4	0	97	159
05:30 PM	0	4	2	0	6	2	39	1	0	42	2	2	6	0	10	7	104	5	0	116	174
05:45 PM	1	0	4	0	5	0	49	0	0	49	6	5	5	0	16	2	99	7	0	108	178
Total	4	8	10	0	22	7	166	4	0	177	18	12	35	0	65	12	387	25	0	424	688
06:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	17	41	37	0	95	64	941	14	0	1019	75	29	78	0	182	33	897	91	0	1021	2317
Apprch %	17.9	43.2	38.9	0		6.3	92.3	1.4	0		41.2	15.9	42.9	0		3.2	87.9	8.9	0		
Total %	0.7	1.8	1.6	0	4.1	2.8	40.6	0.6	0	44	3.2	1.3	3.4	0	7.9	1.4	38.7	3.9	0	44.1	

GREENLIGHT TRAFFIC SERVICES

PO BOX 1364
GARNER, NC 27529
919-632-1779
Benny R. Johnson, President

COVERED BRIDGE RD AND CITY/SMITH DR
JOHNSTON CO CLAYTON
Weather: RAIN
Counted By: MICHAEL JOHNSON

File Name : SITE 4
Site Code : SITE 4
Start Date : 4/5/2017
Page No : 3



GREENLIGHT TRAFFIC SERVICES

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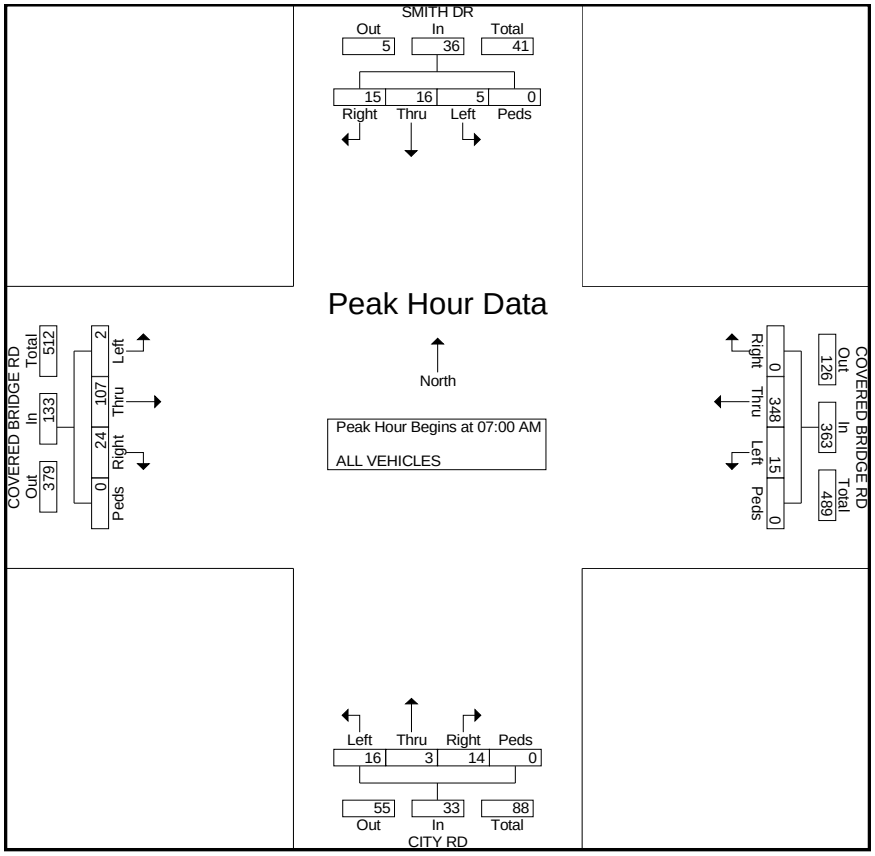
COVERED BRIDGE RD AND CITY/SMITH DR
JOHNSTON CO CLAYTON
Weather: RAIN
Counted By: MICHAEL JOHNSON

File Name : SITE 4
Site Code : SITE 4
Start Date : 4/5/2017

	SMITH DR SOUTHBOUND					COVERED BRIDGE RD WESTBOUND					CITY RD NORTHBOUND					COVERED BRIDGE RD EASTBOUND					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 12:30 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	**3**	**10**	**7**	0	**20**	**6**	**100**	0	0	**106**	**7**	1	**5**	0	**13**	0	12	5	0	17	**156**
07:15 AM	1	2	2	0	5	3	89	0	0	92	5	**2**	2	0	9	**2**	23	7	0	32	138
07:30 AM	1	3	2	0	6	1	79	0	0	80	1	0	2	0	3	0	26	**9**	0	35	124
07:45 AM	0	1	4	0	5	5	80	0	0	85	3	0	5	0	8	0	**46**	3	0	**49**	147
Total Volume	5	16	15	0	36	15	348	0	0	363	16	3	14	0	33	2	107	24	0	133	565
% App. Total	13.9	44.4	41.7	0		4.1	95.9	0	0		48.5	9.1	42.4	0		1.5	80.5	18	0		
PHF	.417	.400	.536	.000	.450	.625	.870	.000	.000	.856	.571	.375	.700	.000	.635	.250	.582	.667	.000	.679	.905



GREENLIGHT TRAFFIC SERVICES

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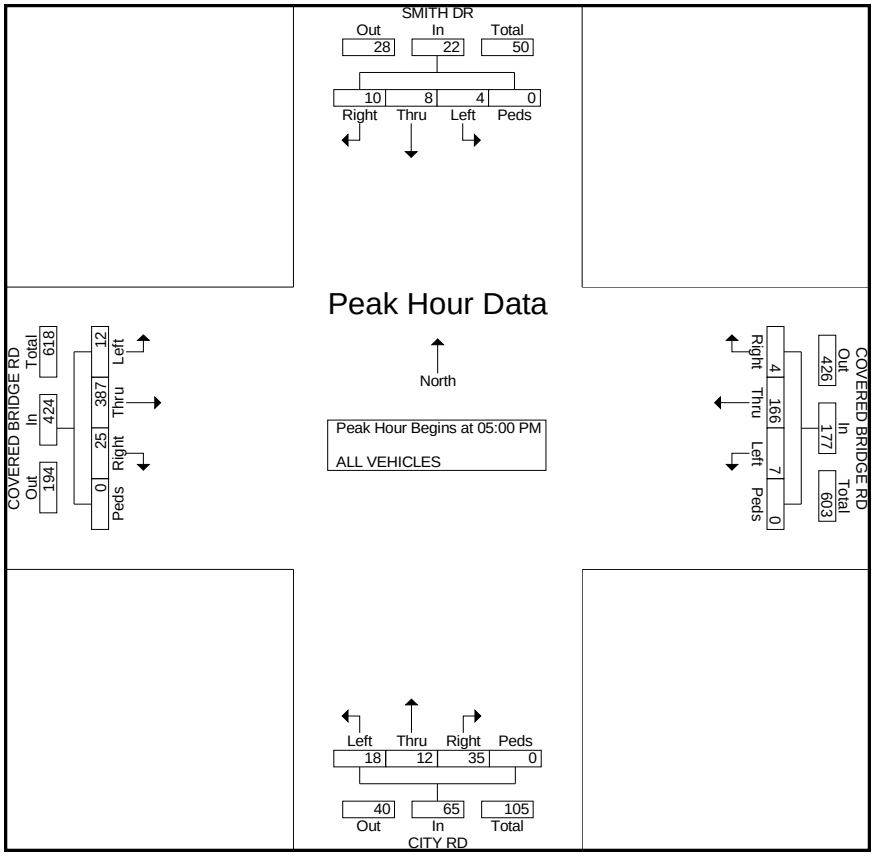
Benny R. Johnson, President

COVERED BRIDGE RD AND CITY/SMITH DR
JOHNSTON CO CLAYTON
Weather: RAIN
Counted By: MICHAEL JOHNSON

File Name : SITE 4
Site Code : SITE 4
Start Date : 4/5/2017
Page No : 5

	SMITH DR SOUTHBOUND					COVERED BRIDGE RD WESTBOUND					CITY RD NORTHBOUND					COVERED BRIDGE RD EASTBOUND					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:45 PM to 06:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	**2**	1	1	0	4	**3**	42	**3**	0	48	**6**	4	**12**	0	**22**	1	93	**9**	0	103	177
05:15 PM	1	3	3	0	**7**	2	36	0	0	38	4	1	12	0	17	2	91	4	0	97	159
05:30 PM	0	**4**	2	0	6	2	39	1	0	42	2	2	6	0	10	**7**	**104**	5	0	**116**	174
05:45 PM	1	0	**4**	0	5	0	**49**	0	0	**49**	6	**5**	5	0	16	2	99	7	0	108	**178**
Total Volume	4	8	10	0	22	7	166	4	0	177	18	12	35	0	65	12	387	25	0	424	688
% App. Total	18.2	36.4	45.5	0		4	93.8	2.3	0		27.7	18.5	53.8	0		2.8	91.3	5.9	0		
PHF	.500	.500	.625	.000	.786	.583	.847	.333	.000	.903	.750	.600	.729	.000	.739	.429	.930	.694	.000	.914	.966



GREENLIGHT TRAFFIC SERVICES
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919-632-1779
Benny R. Johnson, President

COVERED BRIDGE RD AND CITY/SMITH DR
JOHNSTON CO CLAYTON
Weather: RAIN
Counted By: MICHAEL JOHNSON

File Name : SITE 4
Site Code : SITE 4
Start Date : 4/5/2017
Page No : 6

Southbound SMITH DR

GREENLIGHT TRAFFIC SERVICES
PO BOX 1364
GARNER, NC 27529
919-632-1779
Benny R. Johnson, President

COVERED BRIDGE RD AND CITY/SMITH DR
JOHNSTON CO CLAYTON
Weather: RAIN
Counted By: MICHAEL JOHNSON

File Name : SITE 4
Site Code : SITE 4
Start Date : 4/5/2017
Page No : 7

Westbound COVERED BRIDGE RD

GREENLIGHT TRAFFIC SERVICES
PO BOX 1364
GARNER, NC 27529
919-632-1779
Benny R. Johnson, President

COVERED BRIDGE RD AND CITY/SMITH DR
JOHNSTON CO CLAYTON
Weather: RAIN
Counted By: MICHAEL JOHNSON

File Name : SITE 4
Site Code : SITE 4
Start Date : 4/5/2017
Page No : 8

Northbound CITY RD

GREENLIGHT TRAFFIC SERVICES
PO BOX 1364
GARNER, NC 27529
919-632-1779
Benny R. Johnson, President

COVERED BRIDGE RD AND CITY/SMITH DR
JOHNSTON CO CLAYTON
Weather: RAIN
Counted By: MICHAEL JOHNSON

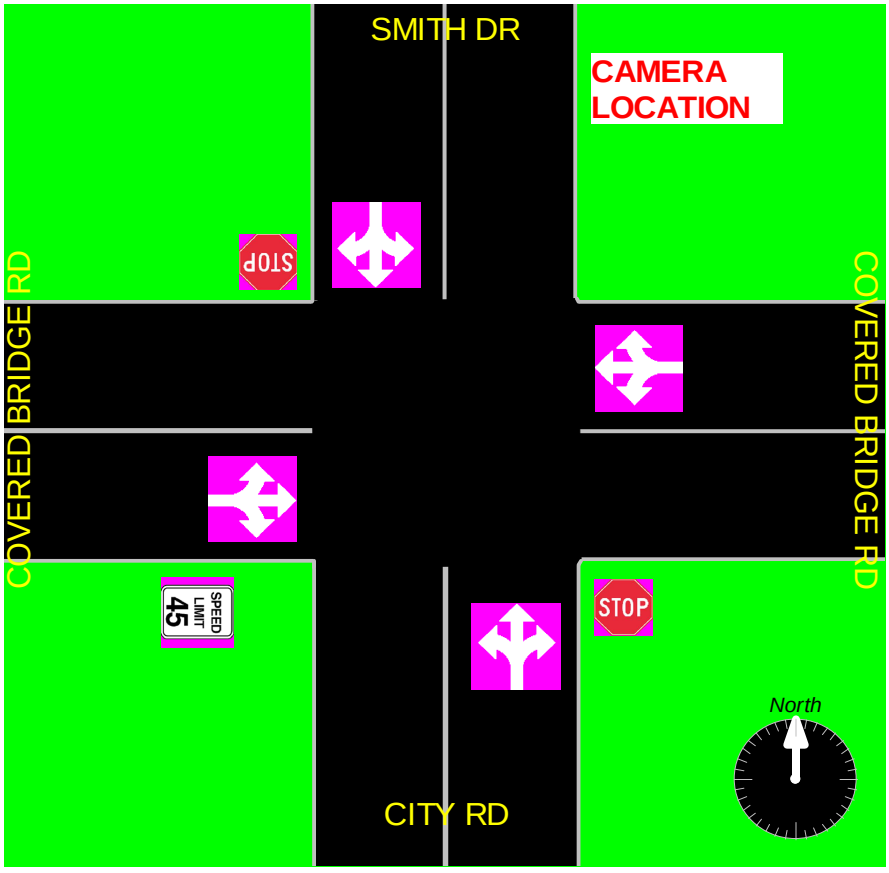
File Name : SITE 4
Site Code : SITE 4
Start Date : 4/5/2017
Page No : 9

Eastbound COVERED BRIDGE RD

GREENLIGHT TRAFFIC SERVICES
PO BOX 1364
GARNER, NC 27529
919-632-1779
Benny R. Johnson, President

COVERED BRIDGE RD AND CITY/SMITH DR
JOHNSTON CO CLAYTON
Weather: RAIN
Counted By: MICHAEL JOHNSON

File Name : SITE 4
Site Code : SITE 4
Start Date : 4/5/2017
Page No : 10



GreenLight
Traffic Services, Inc.

Post Office 1364

Garner, North Carolina 27529-1364

919-632-1779

Benny R. Johnson, President

Count #SITE 6

Intersection: COVERED BRIDGE RD AND O'NEIL ST

Division: 5 **County:** Johnston **City / Town** CLAYTON

Date and Time of Count: 4/5/2017 Choose an item.

VIDEO TIME USED: 7:00 AM – 9:00 AM (04-05) 4:00PM – 6:00 PM (04-09)

Counted by: Michael Johnson **Processed by:** Michael Johnson

School in Session: ☒Yes ☐No **Weather Conditions:** 74- High / 49-Lo/ Prep 0.20" 0.80 Sky Cover

Total Volume: 4,234

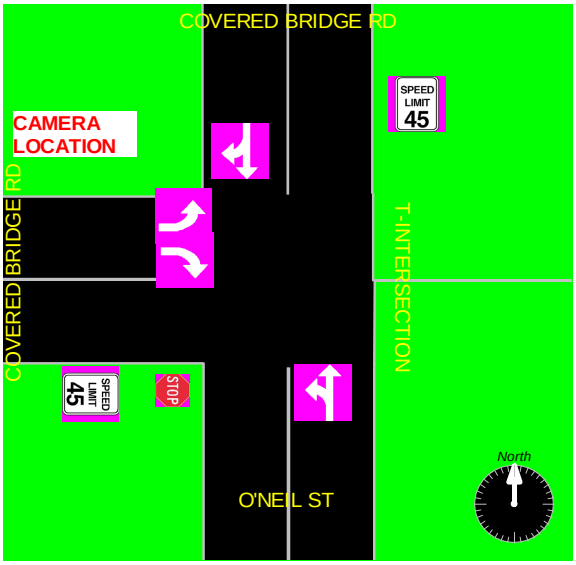
Method Used: Jamar DB-400 Electronic Count Board **Equipment Operating Properly:** ☒Yes

Type of Count: Turning Movement

Area Lighting: Street Lights **Intersection controlled by:** Stop Sign

Construction Present: ☐ Yes ☒ No **Disabled Pedestrians Observed:** ☐ Yes ☒ No

Traffic Problem Observed: ☐ Yes ☒ No **If Yes Describe:**



GreenLight
Traffic Services, Inc.
Post Office 1364
Garner, North Carolina 27529-1364
919-632-1779
Benny R. Johnson, President

Count Number SITE 6

Additional Pictures

Intersection: COVERED BRIDGE RD AND O'NEIL ST

Southbound Approach COVERED BRIDGE RD

Stop Sign Within 300' : NO

Traffic Signal Within 300': NO

Railroad Within 300' : NO **If Yes** Feet

Southbound COVERED BRIDGE RD

Intersection: **COVERED BRIDGE RD AND O'NEIL ST**

Northbound Approach: O'NEIL ST

Stop Sign Within 300' : **NO**

Traffic Signal Within 300' :NO

Railroad Within 300' : NO **If Yes** **Feet**

Northbound O'NEIL ST

Intersection: **COVERED BRIDGE RD AND O'NEIL ST**

Westbound Approach: T-INTERSECTION

Stop Sign Within 300' : **NO**

Traffic Signal Within 300': **NO**

Railroad Within 300' : **NO** **If Yes** **Feet**

Westbound T-INTERSECTION

Intersection: COVERED BRIDGE RD AND O'NEIL ST

Eastbound Approach: COVERED BRIDGE RD

Stop Sign Within 300' : NO

Traffic Signal Within 300': NO

Railroad Within 300': NO **If Yes** Feet

Eastbound COVERED BRIDGE RD

GREENLIGHT TRAFFIC SERVICES

PO BOX 1364
GARNER, NC 27529
919-632-1779
Benny R. Johnson, President

COVERED BRIDGE RD AND O'NEIL ST
JOHNSTON CO CLAYTON
Weather: RAIN
Counted By: MICHAEL JOHNSON

File Name : SITE 6
Site Code : SITE 6
Start Date : 4/5/2017
Page No : 1

Groups Printed- ALL VEHICLES

	COVERED BRIDGE RD SOUTHBOUND					T-INTERSECTION WESTBOUND					O'NEIL ST NORTHBOUND					COVERED BRIDGE RD EASTBOUND					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
06:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:00 AM	0	84	88	0	172	0	0	0	0	0	0	52	0	0	52	20	0	2	0	22	246
07:15 AM	0	73	89	0	162	0	0	0	0	0	0	69	0	0	69	28	0	0	0	28	259
07:30 AM	0	70	70	0	140	0	0	0	0	0	0	71	0	0	71	33	0	2	0	35	246
07:45 AM	0	91	78	0	169	0	0	0	0	0	3	55	0	0	58	56	0	2	0	58	285
Total	0	318	325	0	643	0	0	0	0	0	3	247	0	0	250	137	0	6	0	143	1036
08:00 AM	0	69	58	0	127	0	0	0	0	0	1	45	0	0	46	34	0	1	0	35	208
08:15 AM	0	71	64	0	135	0	0	0	0	0	1	52	0	0	53	21	0	2	0	23	211
08:30 AM	0	77	70	0	147	0	0	0	0	0	0	56	0	0	56	33	0	2	0	35	238
08:45 AM	0	75	72	0	147	0	0	0	0	0	3	32	0	0	35	22	0	2	0	24	206
Total	0	292	264	0	556	0	0	0	0	0	5	185	0	0	190	110	0	7	0	117	863
09:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

GREENLIGHT TRAFFIC SERVICES

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919-632-1779
Benny R. Johnson, President

COVERED BRIDGE RD AND O'NEIL ST
JOHNSTON CO CLAYTON
Weather: RAIN
Counted By: MICHAEL JOHNSON

File Name : SITE 6
Site Code : SITE 6
Start Date : 4/5/2017
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Groups Printed- ALL VEHICLES

	COVERED BRIDGE RD SOUTHBOUND					T-INTERSECTION WESTBOUND					O'NEIL ST NORTHBOUND					COVERED BRIDGE RD EASTBOUND					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
12:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
01:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00 PM	0	84	50	0	134	0	0	0	0	0	1	62	0	0	63	59	0	1	0	60	257
04:15 PM	0	81	45	0	126	0	0	0	0	0	3	73	0	0	76	84	0	1	0	85	287
04:30 PM	0	94	44	0	138	0	0	0	0	0	2	54	0	0	56	63	0	0	0	63	257
04:45 PM	0	76	27	0	103	0	0	0	0	0	0	95	0	0	95	78	0	2	0	80	278
Total	0	335	166	0	501	0	0	0	0	0	6	284	0	0	290	284	0	4	0	288	1079
05:00 PM	0	74	46	0	120	0	0	0	0	0	1	110	0	0	111	96	0	0	0	96	327
05:15 PM	0	73	32	0	105	0	0	0	0	0	1	84	0	0	85	89	0	1	0	90	280
05:30 PM	0	94	34	0	128	0	0	0	0	0	1	105	0	0	106	95	0	0	0	95	329
05:45 PM	0	75	49	0	124	0	0	0	0	0	0	96	0	0	96	98	0	2	0	100	320
Total	0	316	161	0	477	0	0	0	0	0	3	395	0	0	398	378	0	3	0	381	1256
06:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
06:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Grand Total	0	1261	916	0	2177	0	0	0	0	0	17	1111	0	0	1128	909	0	20	0	929	4234
Apprch %	0	57.9	42.1	0		0	0	0	0		1.5	98.5	0	0		97.8	0	2.2	0		
Total %	0	29.8	21.6	0	51.4	0	0	0	0	0	0.4	26.2	0	0	26.6	21.5	0	0.5	0	21.9	

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COVERED BRIDGE RD AND O'NEIL ST
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Weather: RAIN
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File Name : SITE 6
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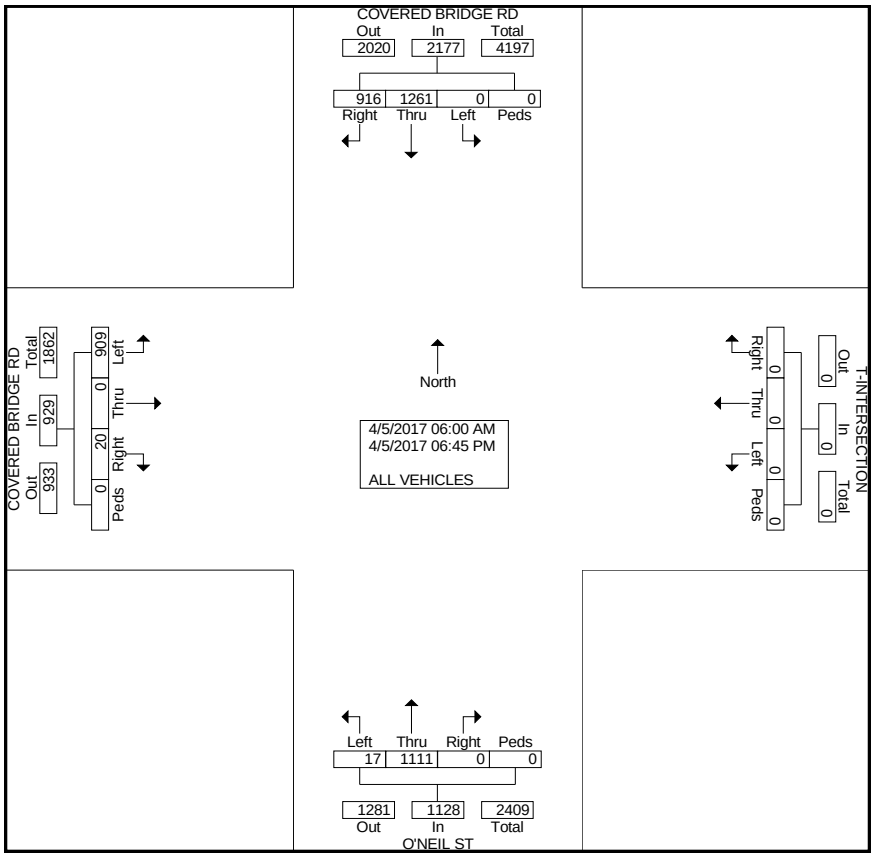

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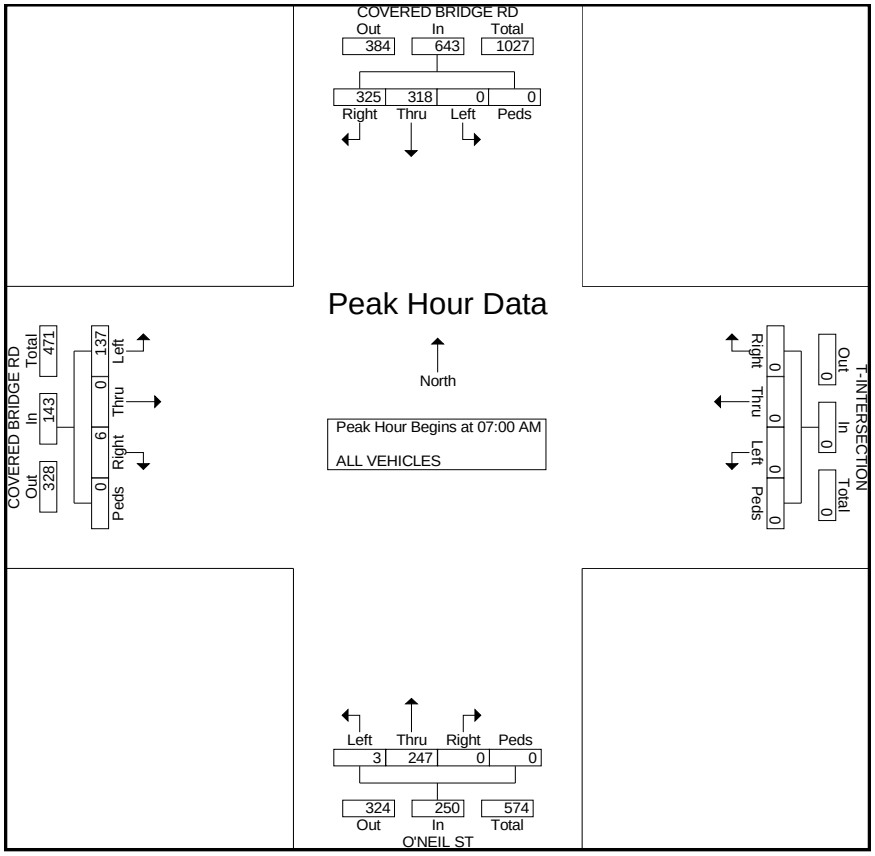
	COVERED BRIDGE RD SOUTHBOUND					T-INTERSECTION WESTBOUND					O'NEIL ST NORTHBOUND					COVERED BRIDGE RD EASTBOUND					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:00 AM to 12:30 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	0	84	88	0	**172**	0	0	0	0	0	0	52	0	0	52	20	0	**2**	0	22	246
07:15 AM	0	73	**89**	0	162	0	0	0	0	0	0	69	0	0	69	28	0	0	0	28	259
07:30 AM	0	70	70	0	140	0	0	0	0	0	0	**71**	0	0	**71**	33	0	2	0	35	246
07:45 AM	0	**91**	78	0	169	0	0	0	0	0	**3**	55	0	0	58	**56**	0	2	0	**58**	**285**
Total Volume	0	318	325	0	643	0	0	0	0	0	3	247	0	0	250	137	0	6	0	143	1036
% App. Total	0	49.5	50.5	0		0	0	0	0		1.2	98.8	0	0		95.8	0	4.2	0		
PHF	.000	.874	.913	.000	.935	.000	.000	.000	.000	.000	.250	.870	.000	.000	.880	.612	.000	.750	.000	.616	.909



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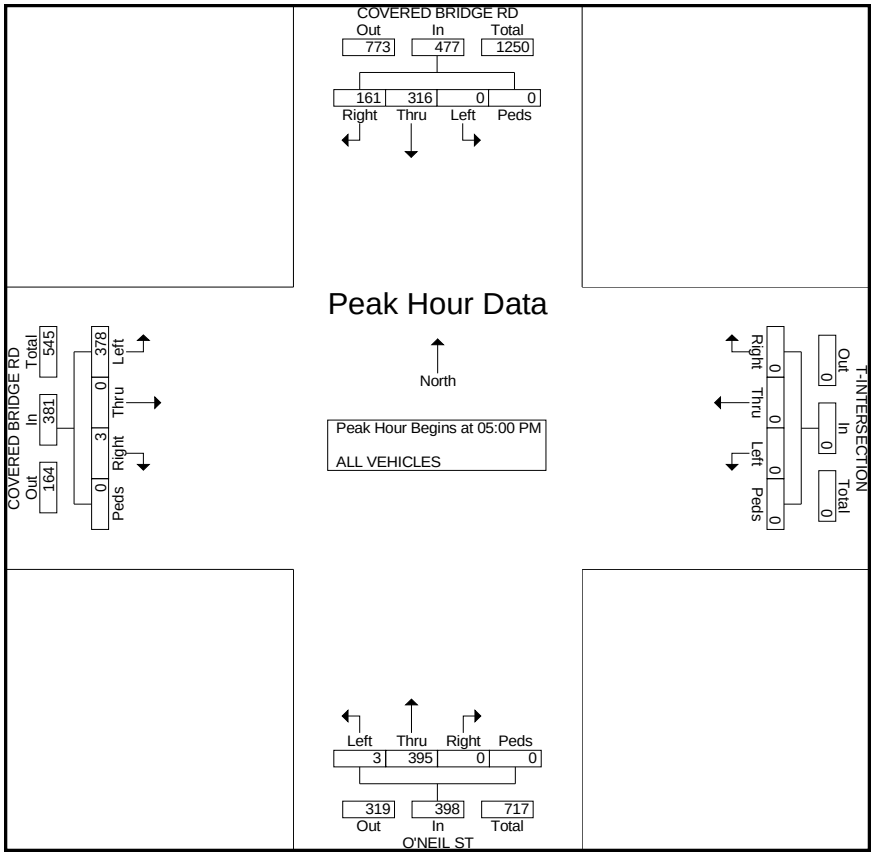
COVERED BRIDGE RD AND O'NEIL ST
JOHNSTON CO CLAYTON
Weather: RAIN
Counted By: MICHAEL JOHNSON

File Name : SITE 6
Site Code : SITE 6
Start Date : 4/5/2017

	COVERED BRIDGE RD SOUTHBOUND					T-INTERSECTION WESTBOUND					O'NEIL ST NORTHBOUND					COVERED BRIDGE RD EASTBOUND					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:45 PM to 06:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	0	74	46	0	120	0	0	0	0	0	**1**	**110**	0	0	**111**	96	0	0	0	96	327
05:15 PM	0	73	32	0	105	0	0	0	0	0	1	84	0	0	85	89	0	1	0	90	280
05:30 PM	0	**94**	34	0	**128**	0	0	0	0	0	1	105	0	0	106	95	0	0	0	95	**329**
05:45 PM	0	75	**49**	0	124	0	0	0	0	0	0	96	0	0	96	**98**	0	**2**	0	**100**	320
Total Volume	0	316	161	0	477	0	0	0	0	0	3	395	0	0	398	378	0	3	0	381	1256
% App. Total	0	66.2	33.8	0		0	0	0	0		0.8	99.2	0	0		99.2	0	0.8	0		
PHF	.000	.840	.821	.000	.932	.000	.000	.000	.000	.000	.750	.898	.000	.000	.896	.964	.000	.375	.000	.953	.954



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Southbound COVERED BRIDGE RD

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Westbound T-INTERSECTION

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JOHNSTON CO CLAYTON
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Site Code : SITE 6
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Northbound O'NEIL ST

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Benny R. Johnson, President

COVERED BRIDGE RD AND O'NEIL ST
JOHNSTON CO CLAYTON
Weather: RAIN
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Site Code : SITE 6
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Eastbound COVERED BRIDGE RD

GREENLIGHT TRAFFIC SERVICES

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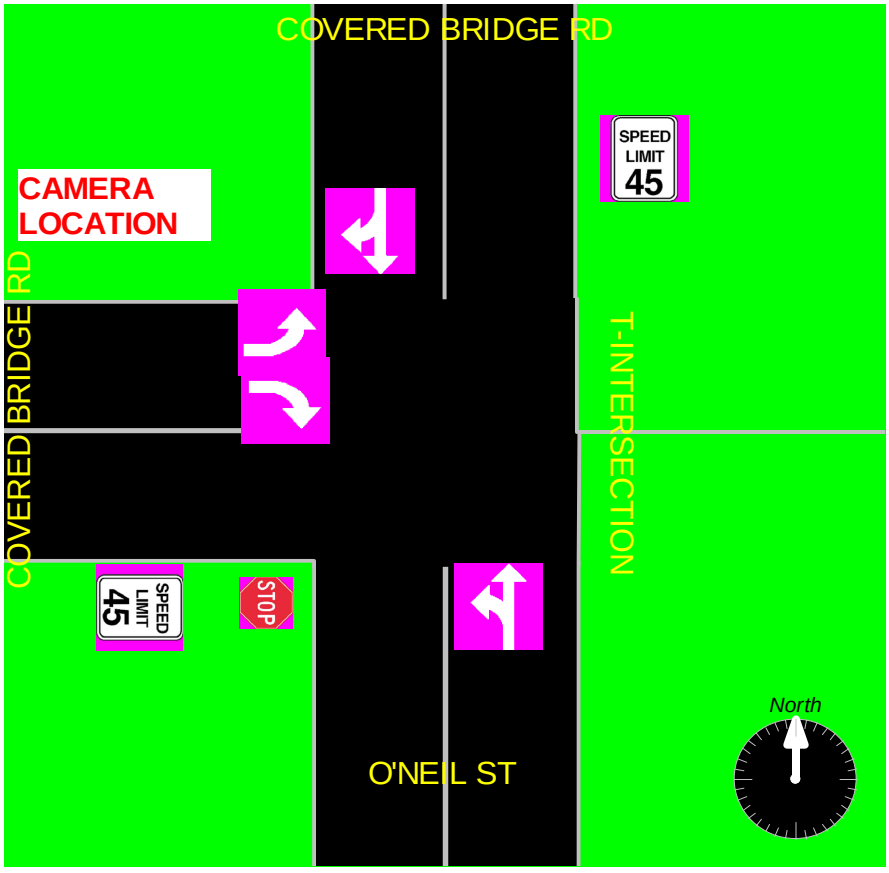
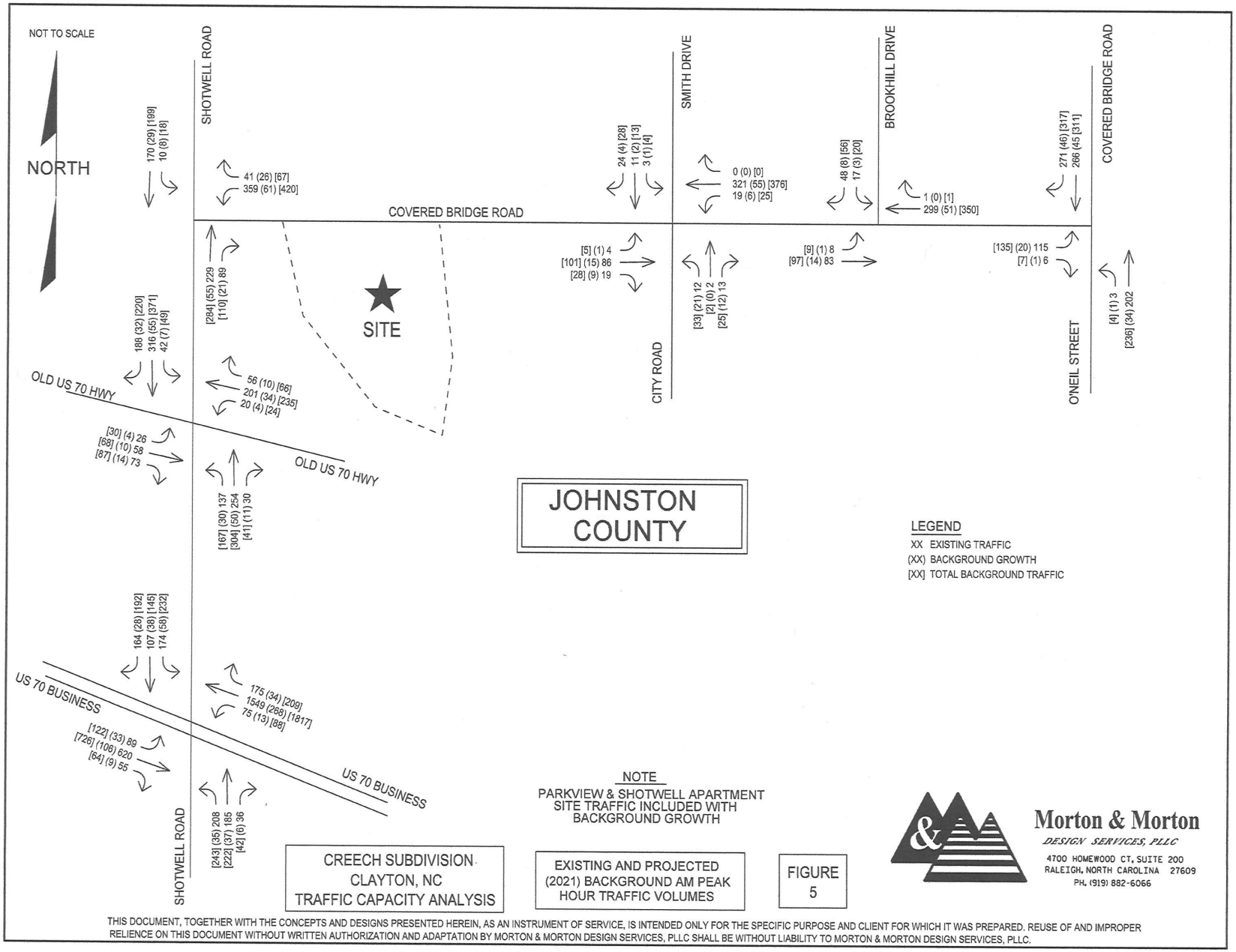
919-632-1779
Benny R. Johnson, President

COVERED BRIDGE RD AND O'NEIL ST
JOHNSTON CO CLAYTON
Weather: RAIN
Counted By: MICHAEL JOHNSON

File Name : SITE 6
Site Code : SITE 6
Start Date : 4/5/2017
Page No : 10



Creech TIA Volume Figures



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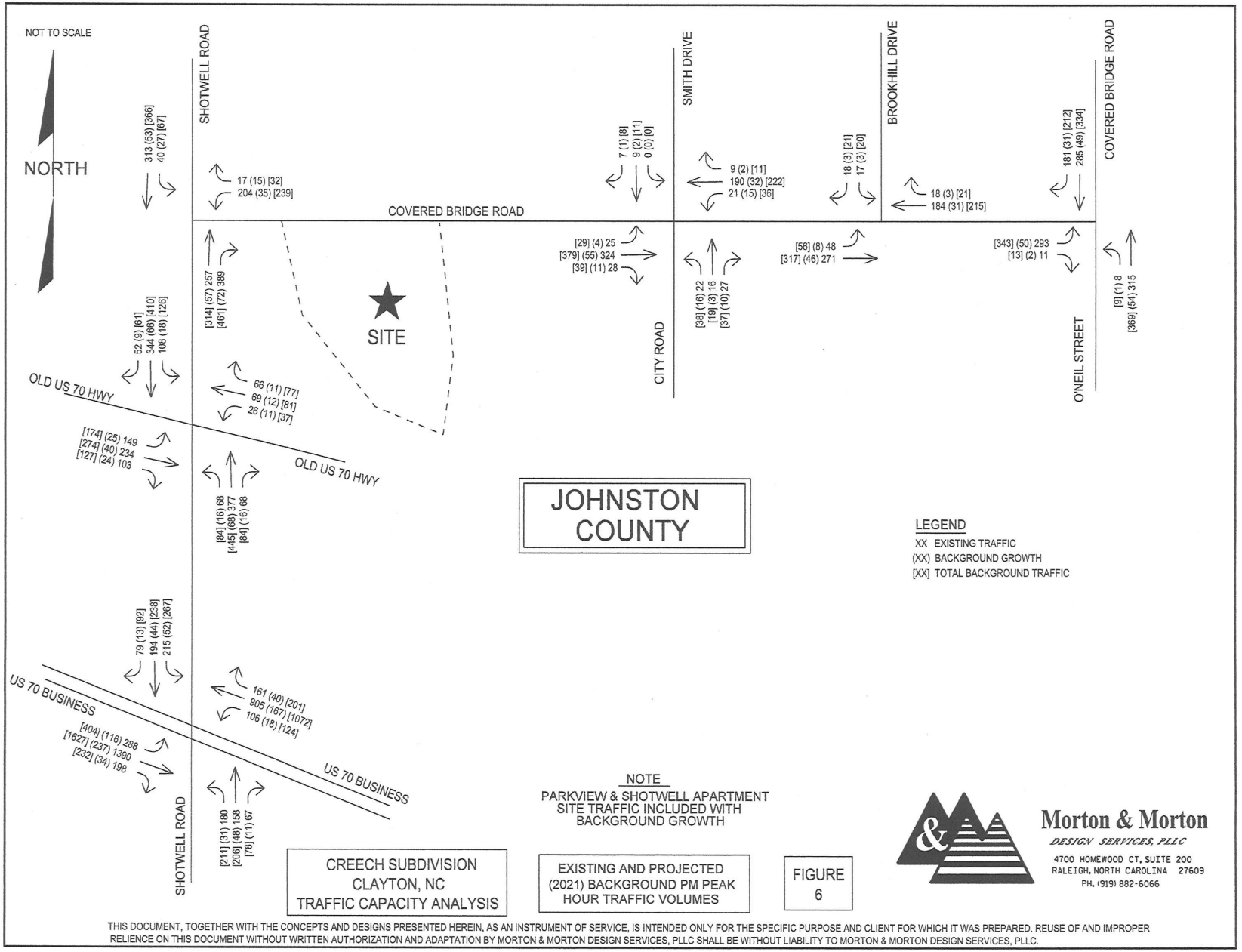

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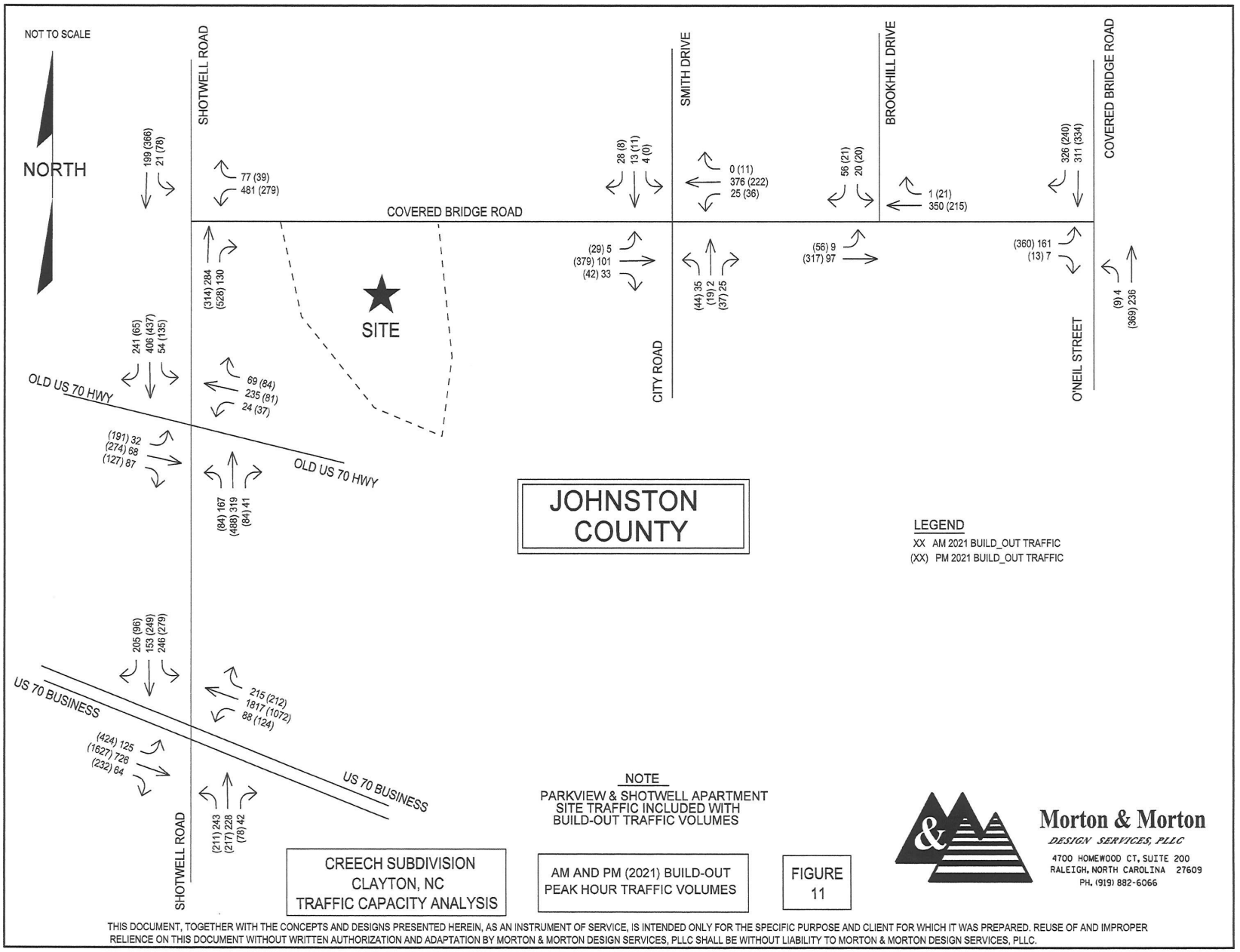

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Appendix

B

Existing Signal Timings and Existing Signal Plans

US 70 Business at Shotwell Road
Signal Timing Sheets

401086 - US 70 @ SR 1553 (Shotwell Rd)
3 - Phase Timing 2
7/3/2017 3:10 PM

Phase Timing Elements	Phase															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Minimum Green 1	7	12	7	7	7	12	7	7	0	0	0	0	0	0	0	0
Minimum Green 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Re-service Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Extension 1 (Gap 1)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Extension 2 (Gap 2)	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
Maximum Green 1	30	30	30	30	30	30	30	30	0	0	0	0	0	0	0	0
Maximum Green 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Yellow Clearance	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Red Clearance	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk 1	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Walk 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dont Walk 1	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
Dont Walk 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Advance Time	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
Walk Delay Time	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
Alternate Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Alternate Dont Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Alternate Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dynamic Max / Max 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dynamic Max Adjust	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
Seconds / Actuation	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
Max Variable Initial	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time Before Reduction	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time To Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Gap	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
Alt Flash Frequency (0-25.5 Hz)	1.0															

401086 - US 70 @ SR 1553 (Shotwell Rd)
3 - Phase Timing 3
7/3/2017 3:10 PM

Phase Timing Elements	Phase															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Minimum Green 1	7	12	7	7	7	12	7	7	0	0	0	0	0	0	0	0
Minimum Green 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Re-service Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Extension 1 (Gap 1)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Extension 2 (Gap 2)	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
Maximum Green 1	30	30	30	30	30	30	30	30	0	0	0	0	0	0	0	0
Maximum Green 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Yellow Clearance	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Red Clearance	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk 1	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Walk 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dont Walk 1	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
Dont Walk 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Advance Time	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
Walk Delay Time	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
Alternate Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Alternate Dont Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Alternate Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dynamic Max / Max 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dynamic Max Adjust	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
Seconds / Actuation	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
Max Variable Initial	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time Before Reduction	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time To Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Gap	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
Alt Flash Frequency (0-25.5 Hz)	1.0															

401086 - US 70 @ SR 1553 (Shotwell Rd)
3 - Phase Timing 4
7/3/2017 3:10 PM

Phase Timing Elements	Phase															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Minimum Green 1	7	12	7	7	7	12	7	7	0	0	0	0	0	0	0	0
Minimum Green 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Re-service Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Extension 1 (Gap 1)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Extension 2 (Gap 2)	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
Maximum Green 1	30	30	30	30	30	30	30	30	0	0	0	0	0	0	0	0
Maximum Green 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Yellow Clearance	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Red Clearance	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Red Revert	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Walk 1	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Walk 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dont Walk 1	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
Dont Walk 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Advance Time	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
Walk Delay Time	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
Alternate Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Alternate Dont Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Alternate Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dynamic Max / Max 3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dynamic Max Adjust	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
Seconds / Actuation	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
Max Variable Initial	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time Before Reduction	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time To Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Gap	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
Alt Flash Frequency (0-25.5 Hz)	1.0															

401086 - US 70 @ SR 1553 (Shotwell Rd)
4 - Phase Sequence Page 1
7/3/2017 3:10 PM

Rings	Barrier 1				Barrier 2				Barrier 3				Barrier 4			
1	1	2	0	0	3	4	0	0	0	0	0	0	0	0	0	0
2	5	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Rings	Barrier 5				Barrier 6				Barrier 7				Barrier 8			
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

401086 - US 70 @ SR 1553 (Shotwell Rd)
4 - Phase Sequence Page 2
7/3/2017 3:10 PM

Rings	Barrier 1				Barrier 2				Barrier 3				Barrier 4			
1	0	2	1	0	3	4	0	0	0	0	0	0	0	0	0	0
2	5	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Rings	Barrier 5				Barrier 6				Barrier 7				Barrier 8			
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

401086 - US 70 @ SR 1553 (Shotwell Rd)
4 - Phase Sequence Page 3
7/3/2017 3:10 PM

Rings	Barrier 1				Barrier 2				Barrier 3				Barrier 4			
1	1	2	0	0	3	4	0	0	0	0	0	0	0	0	0	0
2	0	6	5	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Rings	Barrier 5				Barrier 6				Barrier 7				Barrier 8			
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

401086 - US 70 @ SR 1553 (Shotwell Rd)
4 - Phase Sequence Page 4
7/3/2017 3:10 PM

Rings	Barrier 1				Barrier 2				Barrier 3				Barrier 4			
1	1	2	0	0	0	4	3	0	0	0	0	0	0	0	0	0
2	5	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Rings	Barrier 5				Barrier 6				Barrier 7				Barrier 8			
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

401086 - US 70 @ SR 1553 (Shotwell Rd)
4 - Phase Sequence Page 5
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Rings	Barrier 1				Barrier 2				Barrier 3				Barrier 4			
1	0	2	1	0	0	4	3	0	0	0	0	0	0	0	0	0
2	5	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Rings	Barrier 5				Barrier 6				Barrier 7				Barrier 8			
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

401086 - US 70 @ SR 1553 (Shotwell Rd)
4 - Phase Sequence Page 6
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Rings	Barrier 1				Barrier 2				Barrier 3				Barrier 4			
1	1	2	0	0	0	4	3	0	0	0	0	0	0	0	0	0
2	0	6	5	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Rings	Barrier 5				Barrier 6				Barrier 7				Barrier 8			
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

401086 - US 70 @ SR 1553 (Shotwell Rd)
4 - Phase Sequence Page 7
7/3/2017 3:10 PM

Rings	Barrier 1				Barrier 2				Barrier 3				Barrier 4			
1	1	2	0	0	3	4	0	0	0	0	0	0	0	0	0	0
2	5	6	0	0	7	8	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Rings	Barrier 5				Barrier 6				Barrier 7				Barrier 8			
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

401086 - US 70 @ SR 1553 (Shotwell Rd)
4 - Phase Sequence Page 8
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Rings	Barrier 1				Barrier 2				Barrier 3				Barrier 4			
1	1	2	0	0	3	4	0	0	0	0	0	0	0	0	0	0
2	5	6	0	0	7	8	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Rings	Barrier 5				Barrier 6				Barrier 7				Barrier 8			
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

401086 - US 70 @ SR 1553 (Shotwell Rd)
4 - Phase Sequence Page 9
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Rings	Barrier 1				Barrier 2				Barrier 3				Barrier 4			
1	1	2	0	0	3	4	0	0	0	0	0	0	0	0	0	0
2	5	6	0	0	7	8	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Rings	Barrier 5				Barrier 6				Barrier 7				Barrier 8			
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

401086 - US 70 @ SR 1553 (Shotwell Rd)
4 - Phase Sequence Page 10
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Rings	Barrier 1				Barrier 2				Barrier 3				Barrier 4			
1	1	2	0	0	3	4	0	0	0	0	0	0	0	0	0	0
2	5	6	0	0	7	8	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Rings	Barrier 5				Barrier 6				Barrier 7				Barrier 8			
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

401086 - US 70 @ SR 1553 (Shotwell Rd)
4 - Phase Sequence Page 11
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Rings	Barrier 1				Barrier 2				Barrier 3				Barrier 4			
1	1	2	0	0	3	4	0	0	0	0	0	0	0	0	0	0
2	5	6	0	0	7	8	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Rings	Barrier 5				Barrier 6				Barrier 7				Barrier 8			
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

401086 - US 70 @ SR 1553 (Shotwell Rd)
4 - Phase Sequence Page 12
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Rings	Barrier 1				Barrier 2				Barrier 3				Barrier 4			
1	1	2	0	0	3	4	0	0	0	0	0	0	0	0	0	0
2	5	6	0	0	7	8	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Rings	Barrier 5				Barrier 6				Barrier 7				Barrier 8			
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

401086 - US 70 @ SR 1553 (Shotwell Rd)
5 Input Assignments Page 1
7/3/2017 3:10 PM

Inputs	Assignment	Value	Pin (?=Help)	Debounce	Delay	Holdover	Inputs	Assignment	Value	Pin (?=Help)	Debounce	Delay	Holdover
1	Vehicle Detector (1-64)	2	39	0.5	0.0	0.0	33	Preempt (1-10)	3	71	0.5	0.0	0.0
2	Vehicle Detector (1-64)	6	40	0.5	0.0	0.0	34	Preempt (1-10)	4	72	0.5	0.0	0.0
3	Vehicle Detector (1-64)	4	41	0.5	0.0	0.0	35	Preempt (1-10)	5	73	0.5	0.0	0.0
4	Vehicle Detector (1-64)	8	42	0.5	0.0	0.0	36	Preempt (1-10)	6	74	0.5	0.0	0.0
5	Vehicle Detector (1-64)	12	43	0.5	0.0	0.0	37	Not Enabled		75	0.5	0.0	0.0
6	Vehicle Detector (1-64)	16	44	0.5	0.0	0.0	38	Vehicle Detector (1-64)	42	76	0.5	0.0	0.0
7	Vehicle Detector (1-64)	14	45	0.5	0.0	0.0	39	Vehicle Detector (1-64)	46	77	0.5	0.0	0.0
8	Vehicle Detector (1-64)	18	46	0.5	0.0	0.0	40	Vehicle Detector (1-64)	44	78	0.5	0.0	0.0
9	Vehicle Detector (1-64)	22	47	0.5	0.0	0.0	41	Vehicle Detector (1-64)	48	79	0.5	0.0	0.0
10	Vehicle Detector (1-64)	26	48	0.5	0.0	0.0	42	Manual Control Advance (Y/N)		80	0.5	0.0	0.0
11	Vehicle Detector (1-64)	24	49	0.5	0.0	0.0	43	Flash Sense (Y/N)		81	0.5	1.0	0.0
12	Vehicle Detector (1-64)	28	50	0.5	0.0	0.0	44	Stop Time (Y/N)		82	0.5	0.0	0.0
13	Preempt (1-10)	1	51	0.5	0.0	0.0	45	Not Enabled		0	0.0	0.0	0.0
14	Preempt (1-10)	2	52	0.5	0.0	0.0	46	Not Enabled		0	0.0	0.0	0.0
15	Manual Control Enable (Y/N)		53	0.5	0.0	0.0	47	Not Enabled		0	0.0	0.0	0.0
16	Not Enabled		54	0.5	0.0	0.0	48	Not Enabled		0	0.0	0.0	0.0
17	Vehicle Detector (1-64)	5	55	0.5	0.0	0.0	49	Not Enabled		0	0.0	0.0	0.0
18	Vehicle Detector (1-64)	1	56	0.5	0.0	0.0	50	Not Enabled		0	0.0	0.0	0.0
19	Vehicle Detector (1-64)	7	57	0.5	0.0	0.0	51	Not Enabled		0	0.0	0.0	0.0
20	Vehicle Detector (1-64)	3	58	0.5	0.0	0.0	52	Not Enabled		0	0.0	0.0	0.0
21	Vehicle Detector (1-64)	15	59	0.5	0.0	0.0	53	Not Enabled		0	0.0	0.0	0.0
22	Vehicle Detector (1-64)	11	60	0.5	0.0	0.0	54	Not Enabled		0	0.0	0.0	0.0
23	Vehicle Detector (1-64)	17	61	0.5	0.0	0.0	55	Not Enabled		0	0.0	0.0	0.0
24	Vehicle Detector (1-64)	13	62	0.5	0.0	0.0	56	Not Enabled		0	0.0	0.0	0.0
25	Vehicle Detector (1-64)	32	63	0.5	0.0	0.0	57	Not Enabled		0	0.0	0.0	0.0
26	Vehicle Detector (1-64)	36	64	0.5	0.0	0.0	58	Not Enabled		0	0.0	0.0	0.0
27	Vehicle Detector (1-64)	34	65	0.5	0.0	0.0	59	Not Enabled		0	0.0	0.0	0.0
28	Vehicle Detector (1-64)	38	66	0.5	0.0	0.0	60	Not Enabled		0	0.0	0.0	0.0
29	Pedestrian Detector (1-16)	2	67	0.5	0.0	0.0	61	Not Enabled		0	0.0	0.0	0.0
30	Pedestrian Detector (1-16)	6	68	0.5	0.0	0.0	62	Not Enabled		0	0.0	0.0	0.0
31	Pedestrian Detector (1-16)	4	69	0.5	0.0	0.0	63	Not Enabled		0	0.0	0.0	0.0
32	Pedestrian Detector (1-16)	8	70	0.5	0.0	0.0	64	Not Enabled		0	0.0	0.0	0.0

401086 - US 70 @ SR 1553 (Shotwell Rd)
5 Input Assignments Page 2
7/3/2017 3:10 PM

Inputs	Assignment	Value	Pin (?=Help)	Debounce	Delay	Holdover	Inputs	Assignment	Value	Pin (?=Help)	Debounce	Delay	Holdover
1	Vehicle Detector (1-64)	2	39	0.5	0.0	0.0	33	Preempt (1-10)	3	71	0.5	0.0	0.0
2	Vehicle Detector (1-64)	6	40	0.5	0.0	0.0	34	Preempt (1-10)	4	72	0.5	0.0	0.0
3	Vehicle Detector (1-64)	4	41	0.5	0.0	0.0	35	Preempt (1-10)	5	73	0.5	0.0	0.0
4	Vehicle Detector (1-64)	8	42	0.5	0.0	0.0	36	Preempt (1-10)	6	74	0.5	0.0	0.0
5	Vehicle Detector (1-64)	12	43	0.5	0.0	0.0	37	Not Enabled		75	0.5	0.0	0.0
6	Vehicle Detector (1-64)	6	44	0.5	0.0	0.0	38	Vehicle Detector (1-64)	42	76	0.5	0.0	0.0
7	Vehicle Detector (1-64)	14	45	0.5	0.0	0.0	39	Vehicle Detector (1-64)	46	77	0.5	0.0	0.0
8	Vehicle Detector (1-64)	18	46	0.5	0.0	0.0	40	Vehicle Detector (1-64)	44	78	0.5	0.0	0.0
9	Vehicle Detector (1-64)	22	47	0.5	0.0	0.0	41	Vehicle Detector (1-64)	48	79	0.5	0.0	0.0
10	Vehicle Detector (1-64)	26	48	0.5	0.0	0.0	42	Manual Control Advance (Y/N)		80	0.5	0.0	0.0
11	Vehicle Detector (1-64)	24	49	0.5	0.0	0.0	43	Flash Sense (Y/N)		81	0.5	1.0	0.0
12	Vehicle Detector (1-64)	28	50	0.5	0.0	0.0	44	Stop Time (Y/N)		82	0.5	0.0	0.0
13	Preempt (1-10)	1	51	0.5	0.0	0.0	45	Not Enabled		0	0.0	0.0	0.0
14	Preempt (1-10)	2	52	0.5	0.0	0.0	46	Not Enabled		0	0.0	0.0	0.0
15	Manual Control Enable (Y/N)		53	0.5	0.0	0.0	47	Not Enabled		0	0.0	0.0	0.0
16	Not Enabled		54	0.5	0.0	0.0	48	Not Enabled		0	0.0	0.0	0.0
17	Vehicle Detector (1-64)	5	55	0.5	0.0	0.0	49	Not Enabled		0	0.0	0.0	0.0
18	Vehicle Detector (1-64)	1	56	0.5	0.0	0.0	50	Not Enabled		0	0.0	0.0	0.0
19	Vehicle Detector (1-64)	7	57	0.5	0.0	0.0	51	Not Enabled		0	0.0	0.0	0.0
20	Vehicle Detector (1-64)	3	58	0.5	0.0	0.0	52	Not Enabled		0	0.0	0.0	0.0
21	Vehicle Detector (1-64)	15	59	0.5	0.0	0.0	53	Not Enabled		0	0.0	0.0	0.0
22	Vehicle Detector (1-64)	11	60	0.5	0.0	0.0	54	Not Enabled		0	0.0	0.0	0.0
23	Vehicle Detector (1-64)	17	61	0.5	0.0	0.0	55	Not Enabled		0	0.0	0.0	0.0
24	Vehicle Detector (1-64)	13	62	0.5	0.0	0.0	56	Not Enabled		0	0.0	0.0	0.0
25	Vehicle Detector (1-64)	32	63	0.5	0.0	0.0	57	Not Enabled		0	0.0	0.0	0.0
26	Vehicle Detector (1-64)	36	64	0.5	0.0	0.0	58	Not Enabled		0	0.0	0.0	0.0
27	Vehicle Detector (1-64)	34	65	0.5	0.0	0.0	59	Not Enabled		0	0.0	0.0	0.0
28	Vehicle Detector (1-64)	38	66	0.5	0.0	0.0	60	Not Enabled		0	0.0	0.0	0.0
29	Pedestrian Detector (1-16)	2	67	0.5	0.0	0.0	61	Not Enabled		0	0.0	0.0	0.0
30	Pedestrian Detector (1-16)	6	68	0.5	0.0	0.0	62	Not Enabled		0	0.0	0.0	0.0
31	Pedestrian Detector (1-16)	4	69	0.5	0.0	0.0	63	Not Enabled		0	0.0	0.0	0.0
32	Pedestrian Detector (1-16)	8	70	0.5	0.0	0.0	64	Not Enabled		0	0.0	0.0	0.0

401086 - US 70 @ SR 1553 (Shotwell Rd)
5 Input Assignments Page 3
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Inputs	Assignment	Value	Pin (?=Help)	Debounce	Delay	Holdover	Inputs	Assignment	Value	Pin (?=Help)	Debounce	Delay	Holdover
1	Vehicle Detector (1-64)	2	39	0.5	0.0	0.0	33	Preempt (1-10)	3	71	0.5	0.0	0.0
2	Vehicle Detector (1-64)	6	40	0.5	0.0	0.0	34	Preempt (1-10)	4	72	0.5	0.0	0.0
3	Vehicle Detector (1-64)	4	41	0.5	0.0	0.0	35	Preempt (1-10)	5	73	0.5	0.0	0.0
4	Vehicle Detector (1-64)	8	42	0.5	0.0	0.0	36	Preempt (1-10)	6	74	0.5	0.0	0.0
5	Vehicle Detector (1-64)	12	43	0.5	0.0	0.0	37	Not Enabled		75	0.5	0.0	0.0
6	Vehicle Detector (1-64)	6	44	0.5	0.0	0.0	38	Vehicle Detector (1-64)	42	76	0.5	0.0	0.0
7	Vehicle Detector (1-64)	14	45	0.5	0.0	0.0	39	Vehicle Detector (1-64)	46	77	0.5	0.0	0.0
8	Vehicle Detector (1-64)	18	46	0.5	0.0	0.0	40	Vehicle Detector (1-64)	44	78	0.5	0.0	0.0
9	Vehicle Detector (1-64)	22	47	0.5	0.0	0.0	41	Vehicle Detector (1-64)	48	79	0.5	0.0	0.0
10	Vehicle Detector (1-64)	26	48	0.5	0.0	0.0	42	Manual Control Advance (Y/N)		80	0.5	0.0	0.0
11	Vehicle Detector (1-64)	24	49	0.5	0.0	0.0	43	Flash Sense (Y/N)		81	0.5	1.0	0.0
12	Vehicle Detector (1-64)	28	50	0.5	0.0	0.0	44	Stop Time (Y/N)		82	0.5	0.0	0.0
13	Preempt (1-10)	1	51	0.5	0.0	0.0	45	Not Enabled		0	0.0	0.0	0.0
14	Preempt (1-10)	2	52	0.5	0.0	0.0	46	Not Enabled		0	0.0	0.0	0.0
15	Manual Control Enable (Y/N)		53	0.5	0.0	0.0	47	Not Enabled		0	0.0	0.0	0.0
16	Not Enabled		54	0.5	0.0	0.0	48	Not Enabled		0	0.0	0.0	0.0
17	Vehicle Detector (1-64)	5	55	0.5	0.0	0.0	49	Not Enabled		0	0.0	0.0	0.0
18	Vehicle Detector (1-64)	1	56	0.5	0.0	0.0	50	Not Enabled		0	0.0	0.0	0.0
19	Vehicle Detector (1-64)	7	57	0.5	0.0	0.0	51	Not Enabled		0	0.0	0.0	0.0
20	Vehicle Detector (1-64)	3	58	0.5	0.0	0.0	52	Not Enabled		0	0.0	0.0	0.0
21	Vehicle Detector (1-64)	15	59	0.5	0.0	0.0	53	Not Enabled		0	0.0	0.0	0.0
22	Vehicle Detector (1-64)	11	60	0.5	0.0	0.0	54	Not Enabled		0	0.0	0.0	0.0
23	Vehicle Detector (1-64)	17	61	0.5	0.0	0.0	55	Not Enabled		0	0.0	0.0	0.0
24	Vehicle Detector (1-64)	13	62	0.5	0.0	0.0	56	Not Enabled		0	0.0	0.0	0.0
25	Vehicle Detector (1-64)	32	63	0.5	0.0	0.0	57	Not Enabled		0	0.0	0.0	0.0
26	Vehicle Detector (1-64)	36	64	0.5	0.0	0.0	58	Not Enabled		0	0.0	0.0	0.0
27	Vehicle Detector (1-64)	34	65	0.5	0.0	0.0	59	Not Enabled		0	0.0	0.0	0.0
28	Vehicle Detector (1-64)	38	66	0.5	0.0	0.0	60	Not Enabled		0	0.0	0.0	0.0
29	Pedestrian Detector (1-16)	2	67	0.5	0.0	0.0	61	Not Enabled		0	0.0	0.0	0.0
30	Pedestrian Detector (1-16)	6	68	0.5	0.0	0.0	62	Not Enabled		0	0.0	0.0	0.0
31	Pedestrian Detector (1-16)	4	69	0.5	0.0	0.0	63	Not Enabled		0	0.0	0.0	0.0
32	Pedestrian Detector (1-16)	8	70	0.5	0.0	0.0	64	Not Enabled		0	0.0	0.0	0.0

401086 - US 70 @ SR 1553 (Shotwell Rd)
9 - Coordination Plan 1
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Coordination Plan # 1

Cycle length (0-999 sec)	150
Min Transition Cycle (0-999 sec)	130
Max Transition Cycle (0-999 sec)	170

Offset # or Ring:	1	2	3	4
Offsets (0-999 sec)	43	0	0	0
Act Coord Phase Min Green (0-255)	0	0	0	0

Splits (0-255 sec)

Phase	1	2	3	4	5	6	7	8
Split	25	67	30	28	28	64	0	0
Phase	9	10	11	12	13	14	15	16
Split	0	0	0	0	0	0	0	0

Verify Plan Data

Phase/Function Settings:

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coordinated Phase		2				6										
Float Force Offs																
Hold to Force Off																
Hi Priority Ped																
Dynamic/Backup																

Options:	(Y/N)	
Split/Timing in percent?	N	
*Permissive Mode (0-4)	0	*0 = Auto
Enable Transition Permissive Mode?	N	1 = Open
Adjust Non-Coordinated Splits?	Y	2 = Manual
Cycle Once per Cycle Length?	Y	3 = Window
		4 = Walk

Active Pages:	
Phase Sequence Page (1-12)	2
Phase Timing Page (1-4)	1
Phase Control Page (1-4)	1
OverLap Control Page (1-4)	1
Input Page (1-4)	1
Output Page (1-4)	1

Global Manual Permissive windows:	
*Applies when "Window" permissive is selected	
Manual Perm 1 End Point (0-255 sec)	0
Manual Perm 2 Start Point (0-255 sec)	0
Manual Perm 2 End Point (0-255 sec)	0

Manual Permissives by Phase:

*Applies when "Manual" permissive is selected

	Vehicle		Pedestrian	
(0-255 sec)	Start	Stop	Start	Stop
Phase 1	0	0	0	0
Phase 2	0	0	0	0
Phase 3	0	0	0	0
Phase 4	0	0	0	0
Phase 5	0	0	0	0
Phase 6	0	0	0	0
Phase 7	0	0	0	0
Phase 8	0	0	0	0
Phase 9	0	0	0	0
Phase 10	0	0	0	0
Phase 11	0	0	0	0
Phase 12	0	0	0	0
Phase 13	0	0	0	0
Phase 14	0	0	0	0
Phase 15	0	0	0	0
Phase 16	0	0	0	0

401086 - US 70 @ SR 1553 (Shotwell Rd)
9 - Coordination Plan 2
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Coordination Plan # **2**

Cycle length (0-999 sec)	135
Min Transition Cycle (0-999 sec)	110
Max Transition Cycle (0-999 sec)	160

Offset # or Ring:	1	2	3	4
Offsets (0-999 sec)	64	0	0	0
Act Coord Phase Min Green (0-255)	0	0	0	0

Splits (0-255 sec)

Phase	1	2	3	4	5	6	7	8
Split	28	57	25	25	25	60	0	0
Phase	9	10	11	12	13	14	15	16
Split	0	0	0	0	0	0	0	0

Verify Plan Data

Phase/Function Settings:

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coordinated Phase		2				6										
Float Force Offs																
Hold to Force Off																
Hi Priority Ped																
Dynamic/Backup																

Options:	(Y/N)	
Split/Timing in percent?	N	
*Permissive Mode (0-4)	0	*0 = Auto
Enable Transition Permissive Mode?	N	1 = Open
Adjust Non-Coordinated Splits?	Y	2 = Manual
Cycle Once per Cycle Length?	Y	3 = Window
		4 = Walk

Active Pages:

Phase Sequence Page (1-12)	1
Phase Timing Page (1-4)	1
Phase Control Page (1-4)	1
OverLap Control Page (1-4)	1
Input Page (1-4)	1
Output Page (1-4)	1

Global Manual Permissive windows:

*Applies when "Window" permissive is selected

Manual Perm 1 End Point (0-255 sec)	0
Manual Perm 2 Start Point (0-255 sec)	0
Manual Perm 2 End Point (0-255 sec)	0

Manual Permissives by Phase:

*Applies when "Manual" permissive is selected

	Vehicle		Pedestrian	
(0-255 sec)	Start	Stop	Start	Stop
Phase 1	0	0	0	0
Phase 2	0	0	0	0
Phase 3	0	0	0	0
Phase 4	0	0	0	0
Phase 5	0	0	0	0
Phase 6	0	0	0	0
Phase 7	0	0	0	0
Phase 8	0	0	0	0
Phase 9	0	0	0	0
Phase 10	0	0	0	0
Phase 11	0	0	0	0
Phase 12	0	0	0	0
Phase 13	0	0	0	0
Phase 14	0	0	0	0
Phase 15	0	0	0	0
Phase 16	0	0	0	0

401086 - US 70 @ SR 1553 (Shotwell Rd)
9 - Coordination Plan 3
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Coordination Plan # 3

Cycle length (0-999 sec)	200
Min Transition Cycle (0-999 sec)	180
Max Transition Cycle (0-999 sec)	220

Offset # or Ring:	1	2	3	4
Offsets (0-999 sec)	66	0	0	0
Act Coord Phase Min Green (0-255)	0	0	0	0

Splits (0-255 sec)

Phase	1	2	3	4	5	6	7	8
Split	32	97	33	38	45	82	0	0
Phase	9	10	11	12	13	14	15	16
Split	0	0	0	0	0	0	0	0

Verify Plan Data

Phase/Function Settings:

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coordinated Phase		2				6										
Float Force Offs																
Hold to Force Off																
Hi Priority Ped																
Dynamic/Backup																

Options:

	(Y/N)	
Split/Timing in percent?	N	
*Permissive Mode (0-4)	0	*0 = Auto
Enable Transition Permissive Mode?	N	1 = Open
Adjust Non-Coordinated Splits?	Y	2 = Manual
Cycle Once per Cycle Length?	Y	3 = Window
		4 = Walk

Active Pages:

Phase Sequence Page (1-12)	3
Phase Timing Page (1-4)	1
Phase Control Page (1-4)	1
OverLap Control Page (1-4)	1
Input Page (1-4)	1
Output Page (1-4)	1

Global Manual Permissive windows:

*Applies when "Window" permissive is selected

Manual Perm 1 End Point (0-255 sec)	0
Manual Perm 2 Start Point (0-255 sec)	0
Manual Perm 2 End Point (0-255 sec)	0

Manual Permissives by Phase:

*Applies when "Manual" permissive is selected

	Vehicle		Pedestrian	
(0-255 sec)	Start	Stop	Start	Stop
Phase 1	0	0	0	0
Phase 2	0	0	0	0
Phase 3	0	0	0	0
Phase 4	0	0	0	0
Phase 5	0	0	0	0
Phase 6	0	0	0	0
Phase 7	0	0	0	0
Phase 8	0	0	0	0
Phase 9	0	0	0	0
Phase 10	0	0	0	0
Phase 11	0	0	0	0
Phase 12	0	0	0	0
Phase 13	0	0	0	0
Phase 14	0	0	0	0
Phase 15	0	0	0	0
Phase 16	0	0	0	0

401086 - US 70 @ SR 1553 (Shotwell Rd)
9 - Coordination Plan 4
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Coordination Plan # 4

Cycle length (0-999 sec)	110
Min Transition Cycle (0-999 sec)	90
Max Transition Cycle (0-999 sec)	130

Offset # or Ring:	1	2	3	4
Offsets (0-999 sec)	78	0	0	0
Act Coord Phase Min Green (0-255)	0	0	0	0

Splits (0-255 sec)

Phase	1	2	3	4	5	6	7	8
Split	22	38	25	25	20	40	0	0
Phase	9	10	11	12	13	14	15	16
Split	0	0	0	0	0	0	0	0

Verify Plan Data

Phase/Function Settings:

	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
Coordinated Phase	2 6
Float Force Offs	
Hold to Force Off	
Hi Priority Ped	
Dynamic/Backup	

Options:	(Y/N)	
Split/Timing in percent?	N	
*Permissive Mode (0-4)	0	*0 = Auto
Enable Transition Permissive Mode?	N	1 = Open
Adjust Non-Coordinated Splits?	Y	2 = Manual
Cycle Once per Cycle Length?	Y	3 = Window
		4 = Walk

Active Pages:

Phase Sequence Page (1-12)	2
Phase Timing Page (1-4)	1
Phase Control Page (1-4)	1
OverLap Control Page (1-4)	1
Input Page (1-4)	1
Output Page (1-4)	1

Global Manual Permissive windows:

*Applies when "Window" permissive is selected

Manual Perm 1 End Point (0-255 sec)	0
Manual Perm 2 Start Point (0-255 sec)	0
Manual Perm 2 End Point (0-255 sec)	0

Manual Permissives by Phase:

*Applies when "Manual" permissive is selected

	Vehicle		Pedestrian	
(0-255 sec)	Start	Stop	Start	Stop
Phase 1	0	0	0	0
Phase 2	0	0	0	0
Phase 3	0	0	0	0
Phase 4	0	0	0	0
Phase 5	0	0	0	0
Phase 6	0	0	0	0
Phase 7	0	0	0	0
Phase 8	0	0	0	0
Phase 9	0	0	0	0
Phase 10	0	0	0	0
Phase 11	0	0	0	0
Phase 12	0	0	0	0
Phase 13	0	0	0	0
Phase 14	0	0	0	0
Phase 15	0	0	0	0
Phase 16	0	0	0	0

401086 - US 70 @ SR 1553 (Shotwell Rd)
9 - Coordination Plan 5
7/3/2017 3:10 PM

Coordination Plan # **5**

Cycle length (0-999 sec)	120
Min Transition Cycle (0-999 sec)	100
Max Transition Cycle (0-999 sec)	140

Offset # or Ring:	1	2	3	4
Offsets (0-999 sec)	107	0	0	0
Act Coord Phase Min Green (0-255)	0	0	0	0

Splits (0-255 sec)

Phase	1	2	3	4	5	6	7	8
Split	22	48	25	25	22	48	0	0
Phase	9	10	11	12	13	14	15	16
Split	0	0	0	0	0	0	0	0

Verify Plan Data

Phase/Function Settings:

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coordinated Phase		2				6										
Float Force Offs																
Hold to Force Off																
Hi Priority Ped																
Dynamic/Backup																

Options:	(Y/N)	
Split/Timing in percent?	N	
*Permissive Mode (0-4)	0	*0 = Auto
Enable Transition Permissive Mode?	N	1 = Open
Adjust Non-Coordinated Splits?	Y	2 = Manual
Cycle Once per Cycle Length?	Y	3 = Window
		4 = Walk

Active Pages:

Phase Sequence Page (1-12)	3
Phase Timing Page (1-4)	1
Phase Control Page (1-4)	1
OverLap Control Page (1-4)	1
Input Page (1-4)	1
Output Page (1-4)	1

Global Manual Permissive windows:

*Applies when "Window" permissive is selected

Manual Perm 1 End Point (0-255 sec)	0
Manual Perm 2 Start Point (0-255 sec)	0
Manual Perm 2 End Point (0-255 sec)	0

Manual Permissives by Phase:

*Applies when "Manual" permissive is selected

	Vehicle		Pedestrian	
(0-255 sec)	Start	Stop	Start	Stop
Phase 1	0	0	0	0
Phase 2	0	0	0	0
Phase 3	0	0	0	0
Phase 4	0	0	0	0
Phase 5	0	0	0	0
Phase 6	0	0	0	0
Phase 7	0	0	0	0
Phase 8	0	0	0	0
Phase 9	0	0	0	0
Phase 10	0	0	0	0
Phase 11	0	0	0	0
Phase 12	0	0	0	0
Phase 13	0	0	0	0
Phase 14	0	0	0	0
Phase 15	0	0	0	0
Phase 16	0	0	0	0

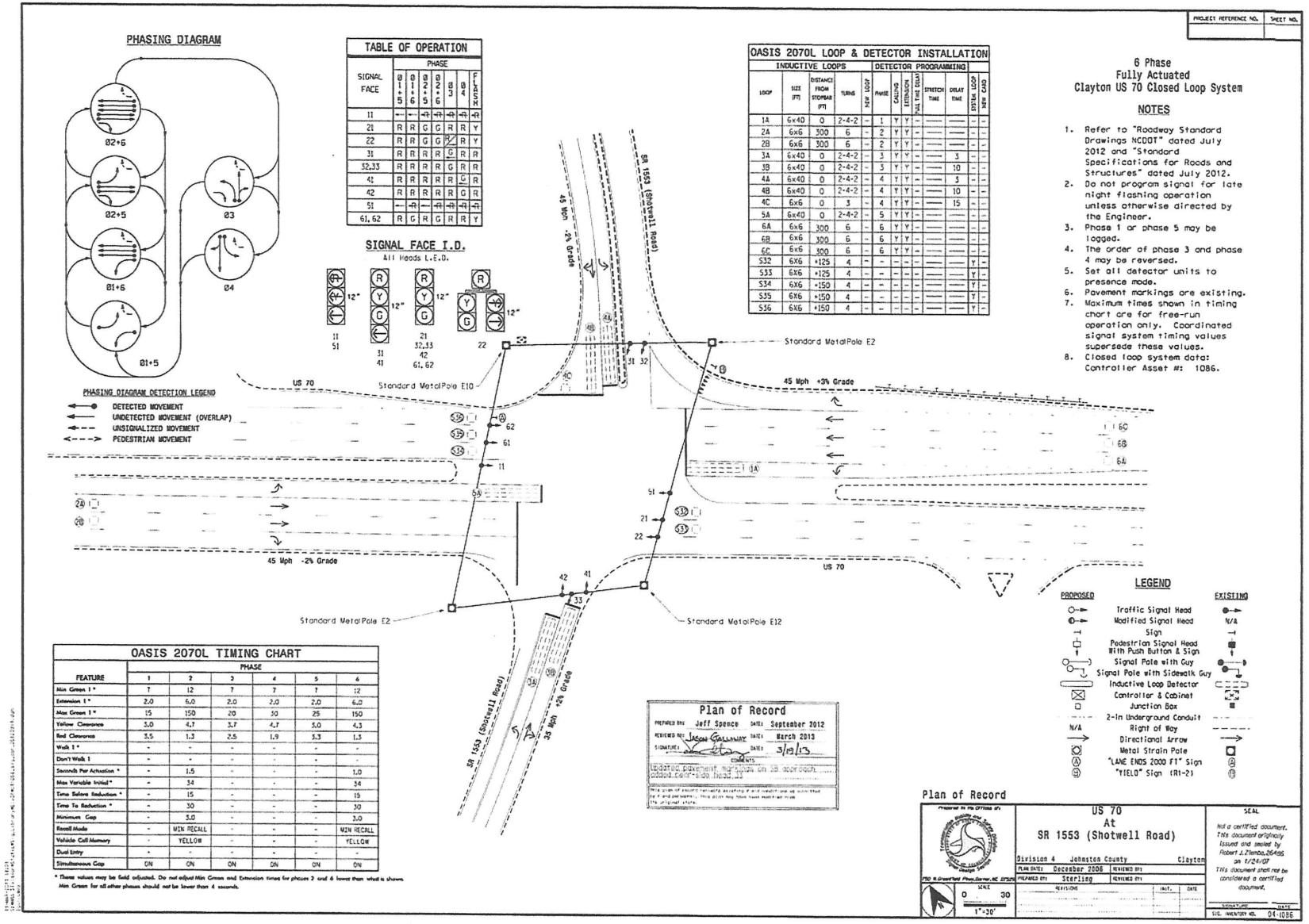
401086 - US 70 @ SR 1553 (Shotwell Rd)
B - Scheduling Events 1-100
7/3/2017 3:10 PM

Event #	Event Type	Event Details	Pri	Start Date		Stop Date		Start Time		Stop Time		DOW Enabled	Del When Done	Cont	Event Groups Assigned
			LMH	MM	DD	MM	DD	HH	MM	HH	MM	1 2 3 4 5 6 7			1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
1	Coordination Plan (1-66)	1-1	L	1	1	12	31	6	0	9	0	2 3 4 5 6	N	N	
2	Coordination Plan (1-66)	4-1	L	1	1	12	31	9	0	11	15	2 3 4 5 6	N	N	
3	Coordination Plan (1-66)	2-1	L	1	1	12	31	11	15	15	15	2 3 4 5 6	N	N	
4	Coordination Plan (1-66)	3-1	L	1	1	12	31	15	15	19	0	2 3 4 5 6	N	N	
5	Coordination Plan (1-66)	5-1	L	1	1	12	31	19	0	20	30	2 3 4 5 6	N	N	
6	None			0	0	0	0	0	0	0	0		N	N	
7	None			0	0	0	0	0	0	0	0		N	N	
8	None			0	0	0	0	0	0	0	0		N	N	
9	Coordination Plan (1-66)	4-1	L	1	1	12	31	7	15	10	0	7	N	N	
10	Coordination Plan (1-66)	2-1	L	1	1	12	31	10	0	17	0	7	N	N	
11	Coordination Plan (1-66)	5-1	L	1	1	12	31	17	0	21	15	7	N	N	
12	None			0	0	0	0	0	0	0	0		N	N	
13	None			0	0	0	0	0	0	0	0		N	N	
14	None			0	0	0	0	0	0	0	0		N	N	
15	Coordination Plan (1-66)	4-1	L	1	1	12	31	9	0	11	30	1	N	N	
16	Coordination Plan (1-66)	2-1	L	1	1	12	31	11	30	16	0	1	N	N	
17	Coordination Plan (1-66)	5-1	L	1	1	12	31	16	0	20	30	1	N	N	
18	None			0	0	0	0	0	0	0	0		N	N	
19	None			0	0	0	0	0	0	0	0		N	N	
20	None			0	0	0	0	0	0	0	0		N	N	
21	Coordination Plan (1-66)	Free	M	11	22	11	28	0	0	24	0	5	N	N	
22	Coordination Plan (1-66)	Free	M	12	25	12	25	0	0	24	0	1 2 3 4 5 6 7	N	N	
23	Coordination Plan (1-66)	Free	M	1	1	1	1	0	0	24	0	1 2 3 4 5 6 7	N	N	
24	None			0	0	0	0	0	0	0	0		N	N	
25	None			0	0	0	0	0	0	0	0		N	N	
26	None			0	0	0	0	0	0	0	0		N	N	
27	None			0	0	0	0	0	0	0	0		N	N	
28	None			0	0	0	0	0	0	0	0		N	N	
29	None			0	0	0	0	0	0	0	0		N	N	
30	None			0	0	0	0	0	0	0	0		N	N	
31	None			0	0	0	0	0	0	0	0		N	N	
32	None			0	0	0	0	0	0	0	0		N	N	
33	None			0	0	0	0	0	0	0	0		N	N	
34	None			0	0	0	0	0	0	0	0		N	N	
35	None			0	0	0	0	0	0	0	0		N	N	
36	None			0	0	0	0	0	0	0	0		N	N	
37	None			0	0	0	0	0	0	0	0		N	N	
38	None			0	0	0	0	0	0	0	0		N	N	
39	None			0	0	0	0	0	0	0	0		N	N	
40	None			0	0	0	0	0	0	0	0		N	N	
41	None			0	0	0	0	0	0	0	0		N	N	
42	None			0	0	0	0	0	0	0	0		N	N	
43	None			0	0	0	0	0	0	0	0		N	N	
44	None			0	0	0	0	0	0	0	0		N	N	
45	None			0	0	0	0	0	0	0	0		N	N	
46	None			0	0	0	0	0	0	0	0		N	N	
47	None			0	0	0	0	0	0	0	0		N	N	
48	None			0	0	0	0	0	0	0	0		N	N	
49	None			0	0	0	0	0	0	0	0		N	N	
50	None			0	0	0	0	0	0	0	0		N	N	

401086 - US 70 @ SR 1553 (Shotwell Rd)
B - Scheduling Events 1-100
7/3/2017 3:11 PM

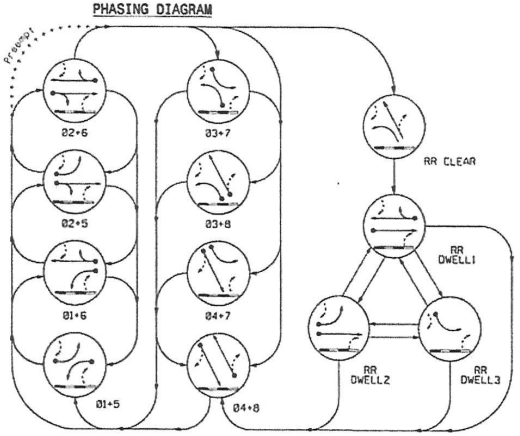
51	None			0	0	0	0	0	0	0	0		N	N	
52	None			0	0	0	0	0	0	0	0		N	N	
53	None			0	0	0	0	0	0	0	0		N	N	
54	None			0	0	0	0	0	0	0	0		N	N	
55	None			0	0	0	0	0	0	0	0		N	N	
56	None			0	0	0	0	0	0	0	0		N	N	
57	None			0	0	0	0	0	0	0	0		N	N	
58	None			0	0	0	0	0	0	0	0		N	N	
59	None			0	0	0	0	0	0	0	0		N	N	
60	None			0	0	0	0	0	0	0	0		N	N	
61	None			0	0	0	0	0	0	0	0		N	N	
62	None			0	0	0	0	0	0	0	0		N	N	
63	None			0	0	0	0	0	0	0	0		N	N	
64	None			0	0	0	0	0	0	0	0		N	N	
65	None			0	0	0	0	0	0	0	0		N	N	
66	None			0	0	0	0	0	0	0	0		N	N	
67	None			0	0	0	0	0	0	0	0		N	N	
68	None			0	0	0	0	0	0	0	0		N	N	
69	None			0	0	0	0	0	0	0	0		N	N	
70	None			0	0	0	0	0	0	0	0		N	N	
71	None			0	0	0	0	0	0	0	0		N	N	
72	None			0	0	0	0	0	0	0	0		N	N	
73	None			0	0	0	0	0	0	0	0		N	N	
74	None			0	0	0	0	0	0	0	0		N	N	
75	None			0	0	0	0	0	0	0	0		N	N	
76	None			0	0	0	0	0	0	0	0		N	N	
77	None			0	0	0	0	0	0	0	0		N	N	
78	None			0	0	0	0	0	0	0	0		N	N	
79	None			0	0	0	0	0	0	0	0		N	N	
80	None			0	0	0	0	0	0	0	0		N	N	
81	None			0	0	0	0	0	0	0	0		N	N	
82	None			0	0	0	0	0	0	0	0		N	N	
83	None			0	0	0	0	0	0	0	0		N	N	
84	None			0	0	0	0	0	0	0	0		N	N	
85	None			0	0	0	0	0	0	0	0		N	N	
86	None			0	0	0	0	0	0	0	0		N	N	
87	None			0	0	0	0	0	0	0	0		N	N	
88	None			0	0	0	0	0	0	0	0		N	N	
89	None			0	0	0	0	0	0	0	0		N	N	
90	None			0	0	0	0	0	0	0	0		N	N	
91	None			0	0	0	0	0	0	0	0		N	N	
92	None			0	0	0	0	0	0	0	0		N	N	
93	None			0	0	0	0	0	0	0	0		N	N	
94	None			0	0	0	0	0	0	0	0		N	N	
95	None			0	0	0	0	0	0	0	0		N	N	
96	None			0	0	0	0	0	0	0	0		N	N	
97	None			0	0	0	0	0	0	0	0		N	N	
98	None			0	0	0	0	0	0	0	0		N	N	
99	None			0	0	0	0	0	0	0	0		N	N	
100	None			0	0	0	0	0	0	0	0		N	N	

Existing Signal Plans


PROJECT REFERENCE NO.
SHEET NO.
PHASING DIAGRAM
Ø2+6
Ø2+5
Ø3
Ø1+6
Ø4
Ø1+5
TABLE OF OPERATION
SIGNAL FACE
PHASE
Ø1+5
Ø1+6
Ø2+5
Ø2+6
Ø3
Ø4
FLASH
11 R R G G R R Y
21 R R G G R R Y
22 R R G G R R Y
31 R R R R G R R
32,33 R R R R G R R
41 R R R R R G R
42 R R R R R G R
51 R G R G R R Y
61, 62 R G R G R R Y
SIGNAL FACE I.D.
All Heads L.E.D.
11
51
31
41
21
32,33
42
61, 62
22
OASIS 2070L LOOP & DETECTOR INSTALLATION
INDUCTIVE LOOPS
DETECTOR PROGRAMMING
LOOP
SIZE (FT)
DISTANCE FROM STOPBAR (FT)
TURNS
NEW LOOP
PHASE
CALLING
EXTENSION
PULL THE DELAY
STRETCH TIME
DELAY TIME
EXTEN. LOOP
NEW CARD
1A 6x40 0 2-4-2 – 1 Y Y – —— —— – –
2A 6x6 300 6 – 2 Y Y – —— —— – –
2B 6x6 300 6 – 2 Y Y – —— —— – –
3A 6x40 0 2-4-2 – 3 Y Y – —— 3 – –
3B 6x40 0 2-4-2 – 3 Y Y – —— 10 – –
4A 6x40 0 2-4-2 – 4 Y Y – —— 3 – –
4B 6x40 0 2-4-2 – 4 Y Y – —— 10 – –
4C 6x6 0 3 – 4 Y Y – —— 15 – –
5A 6x40 0 2-4-2 – 5 Y Y – —— —— – –
6A 6x6 300 6 – 6 Y Y – —— —— – –
6B 6x6 300 6 – 6 Y Y – —— —— – –
6C 6x6 300 6 – 6 Y Y – —— —— – –
S32 6X6 +125 4 – – – – – —— —— Y –
S33 6X6 +125 4 – – – – – —— —— Y –
S34 6X6 +150 4 – – – – – —— —— Y –
S35 6X6 +150 4 – – – – – —— —— Y –
S36 6X6 +150 4 – – – – – —— —— Y –
6 Phase
Fully Actuated
Clayton US 70 Closed Loop System
NOTES
1. Refer to "Roadway Standard Drawings NCDOT" dated July 2012 and "Standard Specifications for Roads and Structures" dated July 2012.
2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
3. Phase 1 or phase 5 may be lagged.
4. The order of phase 3 and phase 4 may be reversed.
5. Set all detector units to presence mode.
6. Pavement markings are existing.
7. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.
8. Closed loop system data: Controller Asset #: 1086.
PHASING DIAGRAM DETECTION LEGEND
DETECTED MOVEMENT
UNDETECTED MOVEMENT (OVERLAP)
UNSIGNALIZED MOVEMENT
PEDESTRIAN MOVEMENT
US 70
Standard MetalPole E10
Standard MetalPole E2
SR 1553 (Shotwell Road)
45 Mph +3% Grade
45 Mph -2% Grade
35 Mph +2% Grade
Standard MetalPole E12
LEGEND
PROPOSED
EXISTING
Traffic Signal Head
Modified Signal Head
Sign
Pedestrian Signal Head With Push Button & Sign
Signal Pole with Guy
Signal Pole with Sidewalk Guy
Inductive Loop Detector
Controller & Cabinet
Junction Box
2-in Underground Conduit
Right of Way
Directional Arrow
Metal Strain Pole
"LANE ENDS 2000 FT" Sign (R1-2)
"YIELD" Sign (R1-2)
N/A
OASIS 2070L TIMING CHART
PHASE
FEATURE 1 2 3 4 5 6
Min Green 1 * 7 12 7 7 7 12
Extension 1 * 2.0 6.0 2.0 2.0 2.0 6.0
Max Green 1 * 15 150 20 30 25 150
Yellow Clearance 5.0 4.7 3.7 4.7 5.0 4.3
Red Clearance 3.5 1.3 2.5 1.9 3.3 1.3
Walk 1 * - - - - - -
Don't Walk 1 - - - - - -
Seconds Per Actuation * - 1.5 - - - 1.0
Max Variable Initial * - 34 - - - 34
Time Before Reduction * - 15 - - - 15
Time To Reduction * - 30 - - - 30
Minimum Gap - 3.0 - - - 3.0
Recall Mode - MIN RECALL - - - MIN RECALL
Vehicle Call Memory - YELLOW - - - YELLOW
Dual Entry - - - - - -
Simultaneous Gap ON ON ON ON ON ON
* These values may be field adjusted. Do not adjust Min Green and Extension times for phases 2 and 6 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.
Plan of Record
PREPARED BY: Jeff Spence DATE: September 2012
REVIEWED BY: Jason Gallaway DATE: March 2013
SIGNATURE: DATE: 3/19/13
COMMENTS:
Updated pavement markings on SR 1553 approach. Updated signal head.
Plan of Record
US 70
At
SR 1553 (Shotwell Road)
Division 4 Johnston County Clayton
PLAN DATE: December 2006 REVIEWED BY:
PREPARED BY: Sterling REVIEWED BY:
SCALE 0 30
1"=30'
REVISIONS INIT. DATE
SEAL
Not a certified document. This document originally issued and sealed by Robert J. Ziemba, PE 4165 on 1/24/07
This document shall not be considered a certified document.
SIGNATURE DATE
SIG. INVENTORY NO. 04-1086

PROJECT REFERENCE NO.	SHEET NO.
	Sig. 1

PHASING DIAGRAM



PHASING DIAGRAM DETECTION LEGEND
- DETECTED MOVEMENT
- UNDETECTED MOVEMENT (OVERLAP)
- UNSIGNALIZED MOVEMENT
- PEDESTRIAN MOVEMENT

TABLE OF OPERATION

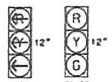
SIGNAL FACE	PHASE 01+05	01+06	02+05	02+06	03+07	03+08	04+07	04+08	PED 2	PED 4	PED 6	PED 8
11	*	-	-G	-G	-G	-G	-G	-G	-G	-G	-G	-G
21, 22	R	R	G	G	R	R	R	R	G	G	R	Y
31	-G	-G	-G	-G	-	-	-G	-G	-	-G	-G	-G
41, 42	R	R	R	R	R	R	G	G	R	R	R	R
51	*	-G	-	-G	-G	-G	-G	-G	-G	-	-G	-G
61, 62	R	G	R	G	R	R	R	R	G	R	R	Y
71	-G	-G	-G	-G	*	-G	*	-G	-G	-G	*	-G
81, 82	R	R	R	R	G	R	G	R	R	R	R	R

OASIS 2070L LOOP & DETECTOR INSTALLATION CHART

LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURNS	INDUCTIVE LOOPS: NEW LOOP	DETECTOR PROGRAMMING: PHASE	CALLING EXTENSION	FULL TIME DELAY	STRETCH TIME	DELAY TIME	SYSTEM LOOP	NEW CARD
1A	6X60	+5	2-4-2	-	1	Y	Y	-	-	3	-	Y
2A	6X6	300	5	-	2	Y	Y	-	-	-	-	Y
3A	6X60	+5	2-4-2	-	3	Y	Y	-	-	-	-	Y
4A	6X60	+5	2-4-2	-	4	Y	Y	-	-	5	-	Y
5A	6X60	+5	2-4-2	-	5	Y	Y	-	-	3	-	Y
6A	6X6	300	4	-	6	Y	Y	-	-	-	-	Y
7A	6X60	+5	2-4-2	-	7	Y	Y	-	-	-	-	Y
8A	6X60	+5	2-4-2	-	8	Y	Y	-	-	5	-	Y

SIGNAL FACE I.D.

All Heads L.E.D.



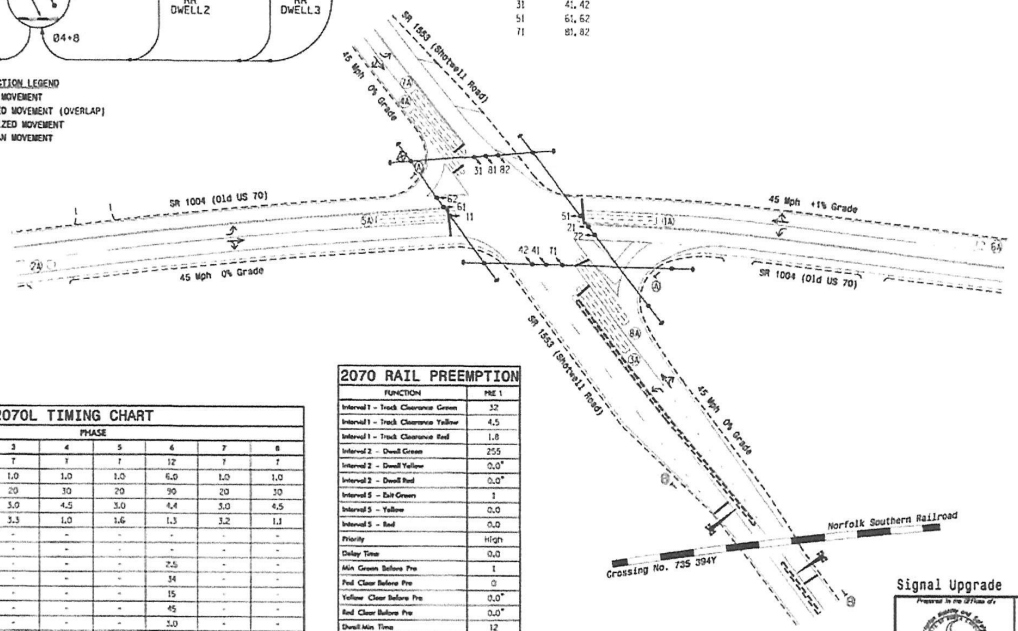
11
31
51
71

21, 22
41, 42
61, 62
81, 82

8 Phase
Fully Actuated
W/ RR Preemption
Isolated

NOTES

1. Refer to "Roadway Standard Drawings NCDOT" dated July 2006 and "Standard Specifications for Roads and Structures" dated July 2006.
2. This location contains railroad preemption phasing. Do not program signal for late night flashing operation.
3. Phase 1 and/or phase 5 may be lagged.
4. Phase 3 and/or phase 7 may be lagged.
5. Set all detector units to presence mode.
6. In the event of loop replacement, refer to the current ITS and Signals Design Manual and submit a Plan of Record to the Signal Design Section.
7. Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.
8. Program parent phases for Overlap "P" for all phases used in normal operation.



LEGEND

PROPOSED		EXISTING
○-	Traffic Signal Head	●-
◐-	Modified Signal Head	N/A
T	Sign	T
	Pedestrian Signal Head With Push Button & Sign	
	Signal Pole with Guy	
	Signal Pole with Sidewalk Guy	
	Inductive Loop Detector	
	Controller & Cabinet	
	Junction Box	
	2-in Underground Conduit	
N/A	Right of Way with Marker	
→	Directional Arrow	→
N/A	Railroad Gate and Flasher	
N/A	Railroad Tracks	
Ⓐ	"YIELD" Sign (R1-2)	Ⓐ
N/A	"DO NOT STOP ON TRACKS" Sign (R8-8)	Ⓑ

OASIS 2070L TIMING CHART

FEATURE	PHASE 1	2	3	4	5	6	7	8
Min Green 1 *	7	12	7	7	7	12	7	7
Extension 1 *	1.0	6.0	1.0	1.0	1.0	6.0	1.0	1.0
Max Green 1 *	20	90	20	30	20	90	20	30
Yellow Clearance	3.0	4.5	3.0	4.5	3.0	4.4	3.0	4.5
Red Clearance	1.8	1.4	3.3	1.0	1.6	1.3	3.2	1.1
Walk 1 *	-	-	-	-	-	-	-	-
Don't Walk 1	-	-	-	-	-	-	-	-
Seconds Per Activation *	-	2.5	-	-	-	2.5	-	-
Max Variable Initial *	-	34	-	-	-	34	-	-
Time Before Reduction *	-	15	-	-	-	15	-	-
Time To Reduce *	-	45	-	-	-	45	-	-
Minimum Gap	-	3.0	-	-	-	3.0	-	-
Recall Mode	-	MIN RECALL	-	-	-	MIN RECALL	-	-
Vehicle Call Memory	-	YELLOW	-	-	-	YELLOW	-	-
Dual Entry	-	-	-	-	-	-	-	-
Simultaneous Gap	ON	ON	ON	ON	ON	ON	ON	ON

* These values may be field adjusted. Do not adjust Min Green and Extension times for phases 2 and 6 lower than what is shown. Min Green for all other phases should not be lower than 4 seconds.

2070 RAIL PREEMPTION

FUNCTION	PRE 1
Interval 1 - Track Clearance Green	32
Interval 1 - Track Clearance Yellow	4.5
Interval 1 - Track Clearance Red	1.8
Interval 2 - Dwell Green	255
Interval 2 - Dwell Yellow	0.0*
Interval 2 - Dwell Red	0.0*
Interval 5 - Exit Green	1
Interval 5 - Yellow	0.0
Interval 5 - Red	0.0
Priority	High
Delay Time	0.0
Min Green Before Pre	1
Ped Clear Before Pre	0
Yellow Clear Before Pre	0.0*
Red Clear Before Pre	0.0*
Dwell Min Time	12
Enable Backup Protection	N
Ped Clear Through Yellow	N
Preempt Extend**	N/A
Omit Overlaps	P

* Time defaults to time used for phase during normal operation
** Program Timing on Optical Detection Unit

Signal Upgrade

SR 1004 (Old US 70)
at
SR 1553 (Shotwell Road)

Division 04 Johnston County Clayton
PLAN DATE February 2011 REVIEWED BY
PREPARED BY J.R.Spence REVIEWED BY
REVISIONS INIT. DATE
SCALE 0 40 1"=40'

SEAL
NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 29904 JAMES R. GALLOWAY
SIGNATURE 3/15/11 DATE
SIG. INVENTORY NO. 04-0717

Appendix

C

Existing HCM Outputs

AM

HCM Unsignalized Intersection Capacity Analysis
1: Shotwell Rd & Covered Bridge Rd

09/20/2017

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	325	55	426	94	21	423
Future Volume (Veh/h)	325	55	426	94	21	423
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	361	61	473	104	23	470
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1041	525			577	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1041	525			577	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	89			98	
cM capacity (veh/h)	249	552			996	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	422	577	493
Volume Left	361	0	23
Volume Right	61	104	0
cSH	270	1700	996
Volume to Capacity	1.56	0.34	0.02
Queue Length 95th (ft)	631	0	2
Control Delay (s)	303.6	0.0	0.7
Lane LOS	F		A
Approach Delay (s)	303.6	0.0	0.7
Approach LOS	F		

Intersection Summary			
Average Delay	86.1		
Intersection Capacity Utilization	67.4%	ICU Level of Service	C
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
2: Shotwell Rd & Old Highway 70 W

09/20/2017

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	39	94	71	23	401	50	192	431	29	76	452	220
Future Volume (vph)	39	94	71	23	401	50	192	431	29	76	452	220
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	5.9		4.8	5.7		6.3	5.6		6.2	5.5	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.94		1.00	0.98		1.00	0.99		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1742		1770	1832		1770	1845		1770	1771	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1742		1770	1832		1770	1845		1770	1771	
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)	43	104	79	26	446	56	213	479	32	84	502	244
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	43	183	0	26	502	0	213	511	0	84	746	0
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Actuated Green, G (s)	4.3	21.7		2.7	20.5		12.8	41.1		9.7	38.0	
Effective Green, g (s)	4.3	21.7		2.7	20.5		12.8	41.1		9.7	38.0	
Actuated g/C Ratio	0.04	0.22		0.03	0.21		0.13	0.42		0.10	0.39	
Clearance Time (s)	4.6	5.9		4.8	5.7		6.3	5.6		6.2	5.5	
Vehicle Extension (s)	1.0	6.0		1.0	1.0		1.0	1.0		6.0	1.0	
Lane Grp Cap (vph)	77	386		48	384		231	776		175	688	
v/s Ratio Prot	c0.02	0.11		0.01	c0.27		c0.12	c0.28		0.05	c0.42	
v/s Ratio Perm												
v/c Ratio	0.56	0.47		0.54	1.31		0.92	0.66		0.48	1.08	
Uniform Delay, d1	45.8	33.0		46.9	38.6		42.0	22.7		41.6	29.9	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	4.9	2.6		6.5	156.0		37.9	1.5		5.7	59.4	
Delay (s)	50.7	35.6		53.4	194.6		79.9	24.2		47.4	89.3	
Level of Service	D	D		D	F		E	C		D	F	
Approach Delay (s)		38.5			187.6			40.6			85.0	
Approach LOS		D			F			D			F	

Intersection Summary			
HCM 2000 Control Delay	90.0	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.10		
Actuated Cycle Length (s)	97.7	Sum of lost time (s)	22.5
Intersection Capacity Utilization	95.0%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	102	719	31	100	1233	309	142	276	19	197	84	105
Future Volume (vph)	102	719	31	100	1233	309	142	276	19	197	84	105
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.0	6.2	6.5	5.6	5.6	6.2	6.2		6.6	6.6	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	0.92	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	5085	1583	1770	1845		1770	1707	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539	1583	1770	5085	1583	1770	1845		1770	1707	
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)	113	799	34	111	1370	343	158	307	21	219	93	117
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	113	799	34	111	1370	343	158	328	0	219	210	0
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Split	NA		Split	NA	
Protected Phases	5	2	3	1	6		3	3		4	4	
Permitted Phases			2			6						
Actuated Green, G (s)	17.4	66.0	90.6	13.6	62.8	62.8	24.6	24.6		20.5	20.5	
Effective Green, g (s)	17.4	66.0	90.6	13.6	62.8	62.8	24.6	24.6		20.5	20.5	
Actuated g/C Ratio	0.12	0.44	0.60	0.09	0.42	0.42	0.16	0.16		0.14	0.14	
Clearance Time (s)	6.3	6.0	6.2	6.5	5.6	5.6	6.2	6.2		6.6	6.6	
Vehicle Extension (s)	6.0	6.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	205	1557	956	160	2128	662	290	302		241	233	
v/s Ratio Prot	c0.06	c0.23	0.01	0.06	c0.27		0.09	c0.18		c0.12	0.12	
v/s Ratio Perm			0.02			0.22						
v/c Ratio	0.55	0.51	0.04	0.69	0.64	0.52	0.54	1.09		0.91	0.90	
Uniform Delay, d1	62.6	30.4	12.0	66.2	34.7	32.4	57.6	62.7		63.8	63.8	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	6.8	1.2	0.0	10.0	1.5	2.9	1.1	76.7		33.6	33.1	
Delay (s)	69.4	31.6	12.0	76.2	36.2	35.3	58.7	139.4		97.4	96.9	
Level of Service	E	C	B	E	D	D	E	F		F	F	
Approach Delay (s)		35.4			38.5			113.2			97.1	
Approach LOS		D			D			F			F	

Intersection Summary			
HCM 2000 Control Delay	54.4	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.77		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	25.3
Intersection Capacity Utilization	76.8%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	89	24	15	349	0	16	3	14	5	16	15
Future Volume (Veh/h)	2	89	24	15	349	0	16	3	14	5	16	15
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	2	99	27	17	388	0	18	3	16	6	18	17
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	388			126			564	538	112	556	552	388
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	388			126			564	538	112	556	552	388
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			96	99	98	99	96	97
cM capacity (veh/h)	1170			1460			407	444	940	428	436	660

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	128	405	37	41
Volume Left	2	17	18	6
Volume Right	27	0	16	17
cSH	1170	1460	544	506
Volume to Capacity	0.00	0.01	0.07	0.08
Queue Length 95th (ft)	0	1	5	7
Control Delay (s)	0.1	0.4	12.1	12.7
Lane LOS	A	A	B	B
Approach Delay (s)	0.1	0.4	12.1	12.7
Approach LOS			B	B

Intersection Summary				
Average Delay	1.9			
Intersection Capacity Utilization	37.5%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	118	7	5	185	318	324
Future Volume (Veh/h)	118	7	5	185	318	324
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	131	8	6	206	353	360
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	751	533	713			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	751	533	713			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	65	99	99			
cM capacity (veh/h)	376	547	887			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	139	212	713
Volume Left	131	6	0
Volume Right	8	0	360
cSH	383	887	1700
Volume to Capacity	0.36	0.01	0.42
Queue Length 95th (ft)	41	1	0
Control Delay (s)	19.7	0.3	0.0
Lane LOS	C	A	
Approach Delay (s)	19.7	0.3	0.0
Approach LOS	C		

Intersection Summary			
Average Delay	2.6		
Intersection Capacity Utilization	50.2%	ICU Level of Service	A
Analysis Period (min)	15		

PM

HCM Unsignalized Intersection Capacity Analysis
1: Shotwell Rd & Covered Bridge Rd

09/20/2017

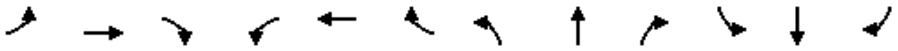
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	190	17	422	359	48	486
Future Volume (Veh/h)	190	17	422	359	48	486
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	211	19	469	399	53	540
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1314	668			868	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1314	668			868	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	96			93	
cM capacity (veh/h)	162	458			776	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	230	868	593
Volume Left	211	0	53
Volume Right	19	399	0
cSH	172	1700	776
Volume to Capacity	1.34	0.51	0.07
Queue Length 95th (ft)	341	0	5
Control Delay (s)	238.7	0.0	1.8
Lane LOS	F		A
Approach Delay (s)	238.7	0.0	1.8
Approach LOS	F		

Intersection Summary			
Average Delay	33.1		
Intersection Capacity Utilization	83.7%	ICU Level of Service	E
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
2: Shotwell Rd & Old Highway 70 W

09/20/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	217	432	76	28	136	63	89	501	58	39	467	170
Future Volume (vph)	217	432	76	28	136	63	89	501	58	39	467	170
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	5.9		4.8	5.7		6.3	5.6		6.2	5.5	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.95		1.00	0.98		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1821		1770	1774		1770	1834		1770	1788	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1821		1770	1774		1770	1834		1770	1788	
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)	241	480	84	31	151	70	99	557	64	43	519	189
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	241	564	0	31	221	0	99	621	0	43	708	0
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Actuated Green, G (s)	12.5	27.0		2.5	17.4		6.8	21.6		6.2	21.0	
Effective Green, g (s)	12.5	27.0		2.5	17.4		6.8	21.6		6.2	21.0	
Actuated g/C Ratio	0.16	0.34		0.03	0.22		0.09	0.27		0.08	0.26	
Clearance Time (s)	4.6	5.9		4.8	5.7		6.3	5.6		6.2	5.5	
Vehicle Extension (s)	1.0	6.0		1.0	1.0		1.0	1.0		6.0	1.0	
Lane Grp Cap (vph)	277	616		55	386		150	496		137	470	
v/s Ratio Prot	c0.14	c0.31		0.02	0.12		c0.06	0.34		0.02	c0.40	
v/s Ratio Perm												
v/c Ratio	0.87	0.92		0.56	0.57		0.66	1.25		0.31	1.51	
Uniform Delay, d1	32.9	25.3		38.1	27.9		35.4	29.1		34.8	29.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	23.7	19.7		7.6	1.3		8.1	129.2		3.7	238.7	
Delay (s)	56.6	45.0		45.8	29.2		43.5	158.3		38.5	268.1	
Level of Service	E	D		D	C		D	F		D	F	
Approach Delay (s)		48.5			31.2			142.5			255.0	
Approach LOS		D			C			F			F	

Intersection Summary			
HCM 2000 Control Delay	134.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.13		
Actuated Cycle Length (s)	79.8	Sum of lost time (s)	22.5
Intersection Capacity Utilization	92.7%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	206	1435	237	324	953	191	146	187	44	317	159	70
Future Volume (vph)	206	1435	237	324	953	191	146	187	44	317	159	70
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.0	6.2	6.5	5.6	5.6	6.2	6.2		6.6	6.6	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	5085	1583	1770	1809		1770	1777	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539	1583	1770	5085	1583	1770	1809		1770	1777	
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)	229	1594	263	360	1059	212	162	208	49	352	177	78
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	229	1594	263	360	1059	212	162	257	0	352	255	0
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Split	NA		Split	NA	
Protected Phases	5	2	3	1	6		3	3		4	4	
Permitted Phases			2			6						
Actuated Green, G (s)	32.9	91.0	117.8	25.5	84.2	84.2	26.8	26.8		31.4	31.4	
Effective Green, g (s)	32.9	91.0	117.8	25.5	84.2	84.2	26.8	26.8		31.4	31.4	
Actuated g/C Ratio	0.16	0.46	0.59	0.13	0.42	0.42	0.13	0.13		0.16	0.16	
Clearance Time (s)	6.3	6.0	6.2	6.5	5.6	5.6	6.2	6.2		6.6	6.6	
Vehicle Extension (s)	6.0	6.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	291	1610	932	225	2140	666	237	242		277	278	
v/s Ratio Prot	0.13	c0.45	0.04	c0.20	0.21		0.09	c0.14		c0.20	0.14	
v/s Ratio Perm			0.13			0.13						
v/c Ratio	0.79	0.99	0.28	1.60	0.49	0.32	0.68	1.06		1.27	0.92	
Uniform Delay, d1	80.2	54.1	20.3	87.2	42.3	38.7	82.6	86.6		84.3	83.0	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	16.0	20.2	0.1	289.9	0.8	1.3	6.3	75.2		147.1	32.2	
Delay (s)	96.2	74.2	20.3	377.1	43.2	40.0	88.9	161.8		231.4	115.3	
Level of Service	F	E	C	F	D	D	F	F		F	F	
Approach Delay (s)		69.9			116.5			133.6			182.6	
Approach LOS		E			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	105.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	200.0	Sum of lost time (s)	25.3
Intersection Capacity Utilization	108.5%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	12	370	25	7	185	4	18	12	35	10	8	4
Future Volume (Veh/h)	12	370	25	7	185	4	18	12	35	10	8	4
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	13	411	28	8	206	4	20	13	39	11	9	4
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	210			439			684	677	425	720	689	208
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	210			439			684	677	425	720	689	208
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			99			94	96	94	96	98	100
cM capacity (veh/h)	1361			1121			350	368	629	309	363	832

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	452	218	72	24
Volume Left	13	8	20	11
Volume Right	28	4	39	4
cSH	1361	1121	466	368
Volume to Capacity	0.01	0.01	0.15	0.07
Queue Length 95th (ft)	1	1	14	5
Control Delay (s)	0.3	0.4	14.1	15.5
Lane LOS	A	A	B	C
Approach Delay (s)	0.3	0.4	14.1	15.5
Approach LOS			B	C

Intersection Summary				
Average Delay	2.1			
Intersection Capacity Utilization	36.6%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	367	3	3	395	316	180
Future Volume (Veh/h)	367	3	3	395	316	180
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	408	3	3	439	351	200
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	896	451	551			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	896	451	551			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	0	100	100			
cM capacity (veh/h)	310	608	1019			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	411	442	551
Volume Left	408	3	0
Volume Right	3	0	200
cSH	311	1019	1700
Volume to Capacity	1.32	0.00	0.32
Queue Length 95th (ft)	504	0	0
Control Delay (s)	199.1	0.1	0.0
Lane LOS	F	A	
Approach Delay (s)	199.1	0.1	0.0
Approach LOS	F		

Intersection Summary				
Average Delay	58.3			
Intersection Capacity Utilization	54.8%	ICU Level of Service	A	
Analysis Period (min)	15			

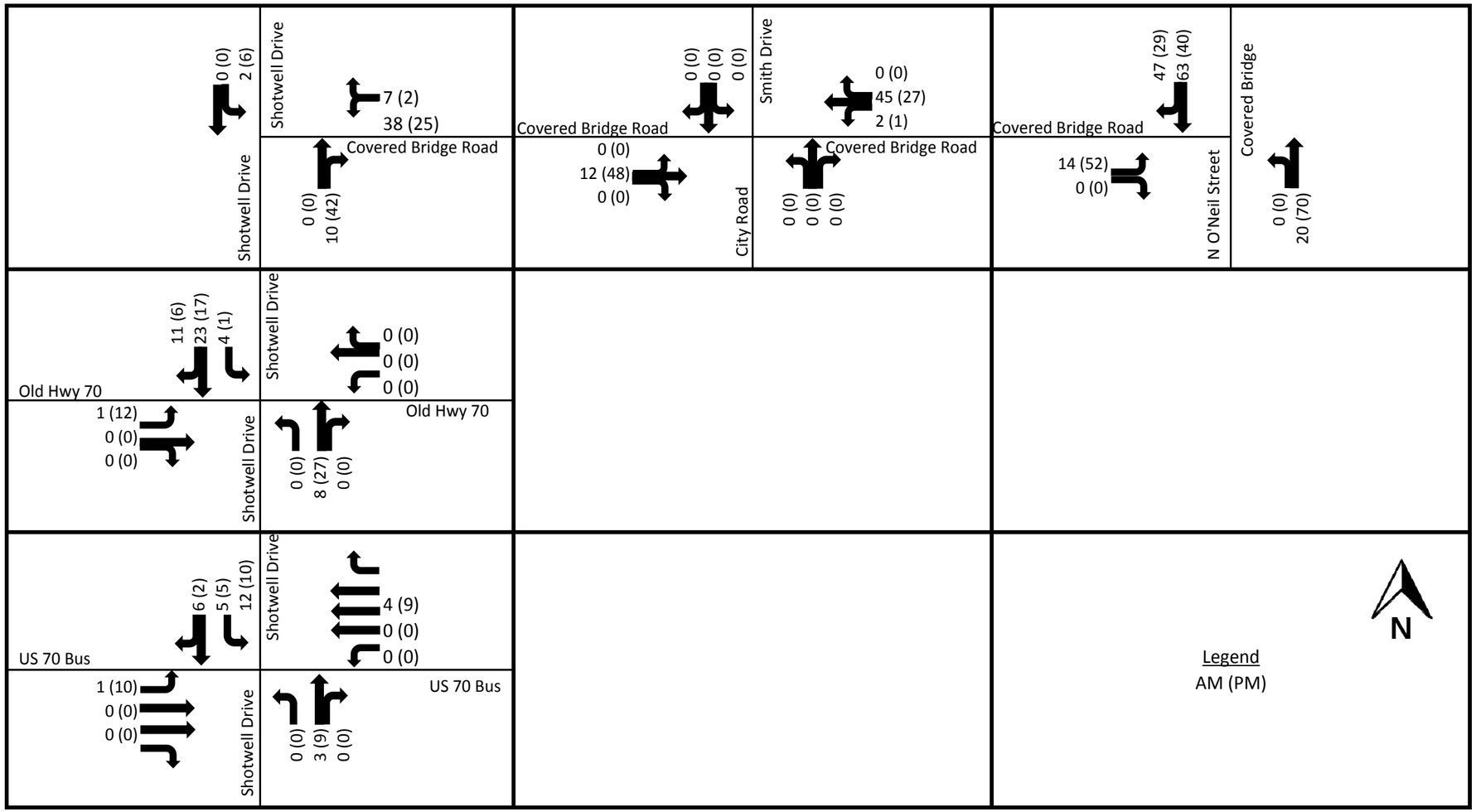
Appendix

D

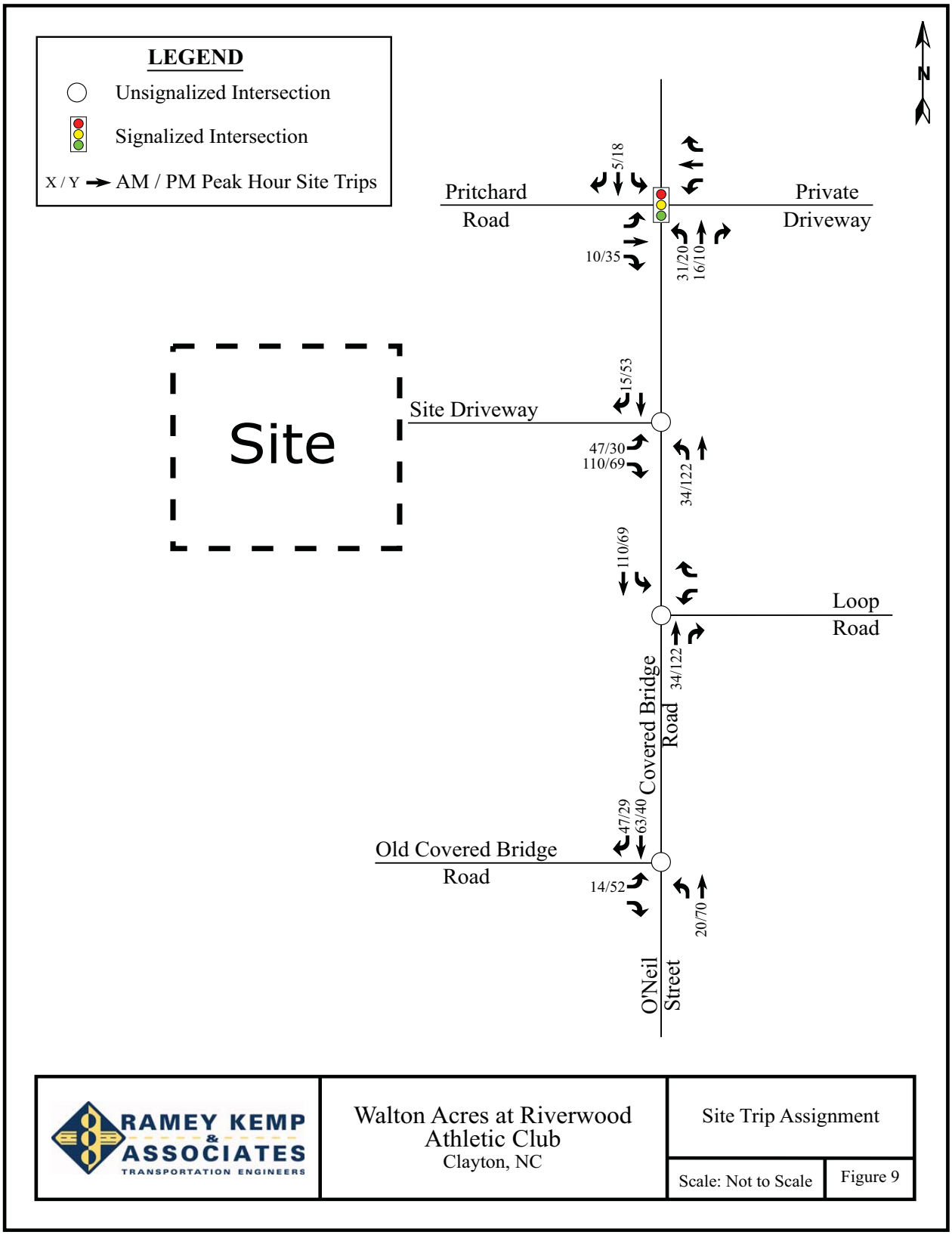
Walton Acres Site Distribution

7/10/2017

Highgate and Creech TIA
Walton Acres Site Distribution



Prepared By Moffatt and Nichol



RAMEY KEMP & ASSOCIATES TRANSPORTATION ENGINEERS	Walton Acres at Riverwood Athletic Club Clayton, NC	Site Trip Assignment Scale: Not to Scale / Figure 9

Appendix

E

2019 No Build HCM Outputs

AM

HCM Unsignalized Intersection Capacity Analysis
1: Shotwell Rd & Covered Bridge Rd

09/20/2017

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	393	67	466	113	25	462
Future Volume (Veh/h)	393	67	466	113	25	462
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	437	74	518	126	28	513
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1150	581			644	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1150	581			644	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	86			97	
cM capacity (veh/h)	213	514			941	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	511	644	541
Volume Left	437	0	28
Volume Right	74	126	0
cSH	232	1700	941
Volume to Capacity	2.20	0.38	0.03
Queue Length 95th (ft)	992	0	2
Control Delay (s)	587.2	0.0	0.8
Lane LOS	F		A
Approach Delay (s)	587.2	0.0	0.8
Approach LOS	F		

Intersection Summary			
Average Delay	177.2		
Intersection Capacity Utilization	77.2%	ICU Level of Service	D
Analysis Period (min)	15		

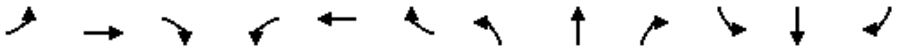
HCM Signalized Intersection Capacity Analysis
2: Shotwell Rd & Old Highway 70 W

09/20/2017

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	103	78	25	438	55	210	479	32	87	517	251
Future Volume (vph)	44	103	78	25	438	55	210	479	32	87	517	251
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	5.9		4.8	5.7		6.3	5.6		6.2	5.5	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.94		1.00	0.98		1.00	0.99		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1742		1770	1832		1770	1845		1770	1771	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1742		1770	1832		1770	1845		1770	1771	
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)	49	114	87	28	487	61	233	532	36	97	574	279
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	49	201	0	28	548	0	233	568	0	97	853	0
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Actuated Green, G (s)	4.4	19.5		4.0	19.5		12.8	41.0		9.8	38.0	
Effective Green, g (s)	4.4	19.5		4.0	19.5		12.8	41.0		9.8	38.0	
Actuated g/C Ratio	0.05	0.20		0.04	0.20		0.13	0.42		0.10	0.39	
Clearance Time (s)	4.6	5.9		4.8	5.7		6.3	5.6		6.2	5.5	
Vehicle Extension (s)	1.0	6.0		1.0	1.0		1.0	1.0		6.0	1.0	
Lane Grp Cap (vph)	80	350		73	369		234	781		179	695	
v/s Ratio Prot	c0.03	0.12		0.02	c0.30		c0.13	c0.31		0.05	c0.48	
v/s Ratio Perm												
v/c Ratio	0.61	0.57		0.38	1.49		1.00	0.73		0.54	1.23	
Uniform Delay, d1	45.4	34.9		45.2	38.6		42.0	23.2		41.4	29.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	9.4	4.5		1.2	232.3		57.2	2.9		7.4	114.8	
Delay (s)	54.7	39.4		46.4	271.0		99.2	26.1		48.8	144.2	
Level of Service	D	D		D	F		F	C		D	F	
Approach Delay (s)		42.4			260.1			47.4			134.4	
Approach LOS		D			F			D			F	

Intersection Summary			
HCM 2000 Control Delay	126.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.23		
Actuated Cycle Length (s)	96.8	Sum of lost time (s)	22.5
Intersection Capacity Utilization	104.8%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	112	786	34	109	1347	342	155	305	21	227	97	121
Future Volume (vph)	112	786	34	109	1347	342	155	305	21	227	97	121
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.0	6.2	6.5	5.6	5.6	6.2	6.2		6.6	6.6	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	0.92	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	5085	1583	1770	1845		1770	1708	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539	1583	1770	5085	1583	1770	1845		1770	1708	
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)	124	873	38	121	1497	380	172	339	23	252	108	134
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	124	873	38	121	1497	380	172	362	0	252	242	0
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Split	NA		Split	NA	
Protected Phases	5	2	3	1	6		3	3		4	4	
Permitted Phases			2			6						
Actuated Green, G (s)	18.1	65.3	89.1	14.2	62.0	62.0	23.8	23.8		21.4	21.4	
Effective Green, g (s)	18.1	65.3	89.1	14.2	62.0	62.0	23.8	23.8		21.4	21.4	
Actuated g/C Ratio	0.12	0.44	0.59	0.09	0.41	0.41	0.16	0.16		0.14	0.14	
Clearance Time (s)	6.3	6.0	6.2	6.5	5.6	5.6	6.2	6.2		6.6	6.6	
Vehicle Extension (s)	6.0	6.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	213	1540	940	167	2101	654	280	292		252	243	
v/s Ratio Prot	c0.07	c0.25	0.01	0.07	c0.29		0.10	c0.20		c0.14	0.14	
v/s Ratio Perm			0.02			0.24						
v/c Ratio	0.58	0.57	0.04	0.72	0.71	0.58	0.61	1.24		1.00	1.00	
Uniform Delay, d1	62.4	31.7	12.7	66.0	36.6	34.0	58.8	63.1		64.3	64.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	7.6	1.5	0.0	12.4	2.1	3.7	2.8	133.6		56.7	56.2	
Delay (s)	69.9	33.3	12.7	78.4	38.7	37.7	61.6	196.7		121.0	120.4	
Level of Service	E	C	B	E	D	D	E	F		F	F	
Approach Delay (s)		36.9			40.9			153.2			120.7	
Approach LOS		D			D			F			F	

Intersection Summary			
HCM 2000 Control Delay	64.4	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.85		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	25.3
Intersection Capacity Utilization	82.7%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	109	26	18	426	0	17	3	17	5	17	16
Future Volume (Veh/h)	2	109	26	18	426	0	17	3	17	5	17	16
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	2	121	29	20	473	0	19	3	19	6	19	18
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	473			150			680	652	136	673	667	473
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	473			150			680	652	136	673	667	473
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			94	99	98	98	95	97
cM capacity (veh/h)	1089			1431			336	381	913	355	374	591

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	152	493	41	43
Volume Left	2	20	19	6
Volume Right	29	0	19	18
cSH	1089	1431	481	438
Volume to Capacity	0.00	0.01	0.09	0.10
Queue Length 95th (ft)	0	1	7	8
Control Delay (s)	0.1	0.4	13.2	14.1
Lane LOS	A	A	B	B
Approach Delay (s)	0.1	0.4	13.2	14.1
Approach LOS			B	B

Intersection Summary					
Average Delay	1.9				
Intersection Capacity Utilization	44.9%	ICU Level of Service		A	
Analysis Period (min)	15				

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	143	8	5	222	410	401
Future Volume (Veh/h)	143	8	5	222	410	401
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	159	9	6	247	456	446
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	938	679	902			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	938	679	902			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	45	98	99			
cM capacity (veh/h)	291	452	754			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	168	253	902
Volume Left	159	6	0
Volume Right	9	0	446
cSH	297	754	1700
Volume to Capacity	0.57	0.01	0.53
Queue Length 95th (ft)	81	1	0
Control Delay (s)	31.9	0.3	0.0
Lane LOS	D	A	
Approach Delay (s)	31.9	0.3	0.0
Approach LOS	D		

Intersection Summary			
Average Delay	4.1		
Intersection Capacity Utilization	61.2%	ICU Level of Service	B
Analysis Period (min)	15		

PM

HCM Unsignalized Intersection Capacity Analysis
1: Shotwell Rd & Covered Bridge Rd

09/20/2017

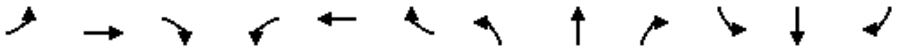
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	233	21	462	435	59	532
Future Volume (Veh/h)	233	21	462	435	59	532
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	259	23	513	483	66	591
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1478	754			996	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1478	754			996	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	94			90	
cM capacity (veh/h)	126	409			695	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	282	996	657
Volume Left	259	0	66
Volume Right	23	483	0
cSH	133	1700	695
Volume to Capacity	2.12	0.59	0.10
Queue Length 95th (ft)	579	0	8
Control Delay (s)	582.6	0.0	2.5
Lane LOS	F		A
Approach Delay (s)	582.6	0.0	2.5
Approach LOS	F		

Intersection Summary			
Average Delay	85.8		
Intersection Capacity Utilization	98.1%	ICU Level of Service	F
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
2: Shotwell Rd & Old Highway 70 W

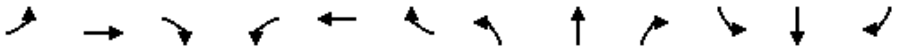
09/20/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	250	473	84	31	149	69	98	575	64	44	528	192
Future Volume (vph)	250	473	84	31	149	69	98	575	64	44	528	192
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	5.9		4.8	5.7		6.3	5.6		6.2	5.5	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.95		1.00	0.98		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1821		1770	1774		1770	1835		1770	1788	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1821		1770	1774		1770	1835		1770	1788	
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)	278	526	93	34	166	77	109	639	71	49	587	213
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	278	619	0	34	243	0	109	710	0	49	800	0
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Actuated Green, G (s)	13.8	26.4		3.9	16.9		7.2	21.5		6.4	20.7	
Effective Green, g (s)	13.8	26.4		3.9	16.9		7.2	21.5		6.4	20.7	
Actuated g/C Ratio	0.17	0.33		0.05	0.21		0.09	0.27		0.08	0.26	
Clearance Time (s)	4.6	5.9		4.8	5.7		6.3	5.6		6.2	5.5	
Vehicle Extension (s)	1.0	6.0		1.0	1.0		1.0	1.0		6.0	1.0	
Lane Grp Cap (vph)	302	595		85	371		157	488		140	458	
v/s Ratio Prot	c0.16	c0.34		0.02	0.14		c0.06	0.39		0.03	c0.45	
v/s Ratio Perm												
v/c Ratio	0.92	1.04		0.40	0.65		0.69	1.45		0.35	1.75	
Uniform Delay, d1	32.9	27.2		37.3	29.2		35.7	29.6		35.2	30.0	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	31.4	47.8		1.1	3.2		10.2	215.9		4.2	345.0	
Delay (s)	64.4	74.9		38.4	32.4		45.9	245.5		39.4	375.0	
Level of Service	E	E		D	C		D	F		D	F	
Approach Delay (s)		71.7			33.1			218.9			355.6	
Approach LOS		E			C			F			F	

Intersection Summary			
HCM 2000 Control Delay	195.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.27		
Actuated Cycle Length (s)	80.7	Sum of lost time (s)	22.5
Intersection Capacity Utilization	99.9%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	236	1569	259	355	1042	218	160	214	49	357	179	79
Future Volume (vph)	236	1569	259	355	1042	218	160	214	49	357	179	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.0	6.2	6.5	5.6	5.6	6.2	6.2		6.6	6.6	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	5085	1583	1770	1811		1770	1777	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539	1583	1770	5085	1583	1770	1811		1770	1777	
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)	262	1743	288	394	1158	242	178	238	54	397	199	88
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	262	1743	288	394	1158	242	178	292	0	397	287	0
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Split	NA		Split	NA	
Protected Phases	5	2	3	1	6		3	3		4	4	
Permitted Phases			2			6						
Actuated Green, G (s)	35.3	91.0	117.8	25.5	81.8	81.8	26.8	26.8		31.4	31.4	
Effective Green, g (s)	35.3	91.0	117.8	25.5	81.8	81.8	26.8	26.8		31.4	31.4	
Actuated g/C Ratio	0.18	0.46	0.59	0.13	0.41	0.41	0.13	0.13		0.16	0.16	
Clearance Time (s)	6.3	6.0	6.2	6.5	5.6	5.6	6.2	6.2		6.6	6.6	
Vehicle Extension (s)	6.0	6.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	312	1610	932	225	2079	647	237	242		277	278	
v/s Ratio Prot	0.15	c0.49	0.04	c0.22	0.23		0.10	c0.16		c0.22	0.16	
v/s Ratio Perm			0.14			0.15						
v/c Ratio	0.84	1.08	0.31	1.75	0.56	0.37	0.75	1.21		1.43	1.03	
Uniform Delay, d1	79.6	54.5	20.7	87.2	45.2	41.2	83.4	86.6		84.3	84.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	20.2	48.4	0.1	355.7	1.1	1.7	11.2	125.2		214.5	62.6	
Delay (s)	99.8	102.9	20.7	443.0	46.3	42.9	94.6	211.8		298.8	146.9	
Level of Service	F	F	C	F	D	D	F	F		F	F	
Approach Delay (s)		92.2			133.0			167.4			235.1	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	131.6	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.26		
Actuated Cycle Length (s)	200.0	Sum of lost time (s)	25.3
Intersection Capacity Utilization	117.9%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	453	28	9	230	5	20	14	43	11	9	5
Future Volume (Veh/h)	14	453	28	9	230	5	20	14	43	11	9	5
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	16	503	31	10	256	6	22	16	48	12	10	6
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	262			534			840	832	518	886	845	259
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	262			534			840	832	518	886	845	259
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			99			92	95	91	95	97	99
cM capacity (veh/h)	1302			1034			271	298	557	229	293	780

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	550	272	86	28
Volume Left	16	10	22	12
Volume Right	31	6	48	6
cSH	1302	1034	389	297
Volume to Capacity	0.01	0.01	0.22	0.09
Queue Length 95th (ft)	1	1	21	8
Control Delay (s)	0.4	0.4	16.9	18.4
Lane LOS	A	A	C	C
Approach Delay (s)	0.4	0.4	16.9	18.4
Approach LOS			C	C

Intersection Summary				
Average Delay	2.4			
Intersection Capacity Utilization	42.7%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	454	4	4	502	386	226
Future Volume (Veh/h)	454	4	4	502	386	226
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	504	4	4	558	429	251
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1120	554	680			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1120	554	680			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	0	99	100			
cM capacity (veh/h)	227	532	912			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	508	562	680
Volume Left	504	4	0
Volume Right	4	0	251
cSH	228	912	1700
Volume to Capacity	2.23	0.00	0.40
Queue Length 95th (ft)	994	0	0
Control Delay (s)	599.3	0.1	0.0
Lane LOS	F	A	
Approach Delay (s)	599.3	0.1	0.0
Approach LOS	F		

Intersection Summary			
Average Delay	174.0		
Intersection Capacity Utilization	66.2%	ICU Level of Service	C
Analysis Period (min)	15		

Appendix

F

2019 Site Trip Generation & Distribution

IMPERVIOUS AREA CALCULATIONS

	TOTAL AREA (square feet)	PERCENTAGE OF TOTAL SITE	IMPERVIOUS AREA (square feet)	IMPERVIOUS PERCENTAGE
RESIDENTIAL LOTS	2,381,076	55.00%	1,785,807	75%
RIGHT-OF-WAY (street, sidewalk, & ROW dedication)	626,127	14.47%	331,541	52.95%
TOTAL RESOURCE CONSERVATION AREAS	392,089	9.06%	0	0%
TOTAL OPEN SPACE (includes pool, clubhouse, amenities, greenways, internal sidewalks and features in parks etc.)	712,332	16.45%	186,961	26.25%
STORMWATER BMP	129,987	3.00%	0	0%
LANDSCAPING BUFFERS	87,364	2.02%	0	0%
TOTAL AREA	4,328,975	100%	2,304,309	53.23%

LEGEND:

- 80' WIDE LOTS
- 70' WIDE LOTS
- 60' WIDE LOTS
- 50' WIDE LOTS
- RECREATIONAL OPEN SPACE
- LANDSCAPE BUFFER
- RESOURCE CONSERVATION AREA
- SINGLE-FAMILY RESIDENTIAL USE
- 10' WIDE PUBLIC GREENWAY

SUMMARY INFORMATION - TRACT 1

DEVELOPMENT NAME: HIGHGATE SUBDIVISION

TOTAL AREA CONTAINED WITHIN TRACT: 99.379 AC (4,328,975 S.F.)

PARCEL PIN: 165907-79-0962; 175000-50-9426

OWNER:
CREECH NC, LLC
448 VIKING DRIVE STE 220
VIRGINIA BEACH, VA 23452

PROPERTY IS LOCATED WITHIN THE TOWN OF CLAYTON

ZONING: PD-R

PROPERTY IS NOT LOCATED WITHIN A WATERSHED PROTECTION OVERLAY

TOTAL LOTS: 229

DENSITY: 2.30 LOTS PER ACRE

AREA IN RIPARIAN BUFFER: 9.00 ACRES

PROPERTY IS NOT LOCATED IN FEMA DESIGNATED FLOOD PLAIN

ELECTRIC PROVIDER: TOWN OF CLAYTON

WATER PROVIDER: TOWN OF CLAYTON

SEWER PROVIDER: TOWN OF CLAYTON

EXISTING IMPERVIOUS AREA: NONE

PROPOSED IMPERVIOUS AREA: SEE CHART ON THIS SHEET

EXISTING USE: VACANT

PROPOSED USE: SINGLE FAMILY RESIDENTIAL, 229 LOTS

Lot Data

Lot	Size (sf)	Width	Lot	Size (sf)	Width	Lot	Size (sf)	Width	Lot	Size (sf)	Width
1	9,874	79'	59	11,916	80'	117	7,000	50'	175	7,079	51'
2	9,867	79'	60	10,630	80'	118	7,000	50'	176	7,500	50'
3	10,033	80'	61	11,869	80'	119	7,355	49'	177	7,500	50'
4	12,083	77'	62	12,000	80'	120	9,911	64'	178	7,500	50'
5	13,057	83'	63	11,992	80'	121	9,542	69'	179	7,500	50'
6	11,214	83'	64	12,125	109'	122	7,365	49'	180	7,515	50'
7	11,656	95'	65	10,993	107'	123	10,000	80'	181	7,526	50'
8	9,723	80'	66	15,140	140'	124	10,000	80'	182	7,526	50'
9	9,733	80'	67	11,990	80'	125	10,766	81'	183	7,526	50'
10	11,895	83'	68	11,865	79'	126	10,481	80'	184	8,701	51'
11	10,619	80'	69	12,615	84'	127	10,831	80'	185	12,615	84'
12	10,411	80'	70	9,511	70'	128	9,316	78'	186	12,750	85'
13	10,411	80'	71	11,616	49'	129	19,857	65'	187	14,555	101'
14	10,421	80'	72	19,026	65'	130	9,559	83'	188	12,750	85'
15	10,659	84'	73	18,043	59'	131	10,801	80'	189	12,750	85'
16	7,838	60'	74	9,164	48'	132	10,800	80'	190	12,454	70'
17	7,839	60'	75	8,606	70'	133	10,800	80'	191	5,196	61'
18	9,252	77'	76	9,846	70'	134	10,800	80'	192	6,687	58'
19	7,201	60'	77	13,412	52'	135	10,800	80'	193	8,532	55'
20	7,125	60'	78	18,510	69'	136	11,190	80'	194	6,640	59'
21	7,638	60'	79	11,213	51'	137	10,800	80'	195	6,108	64'
22	7,497	60'	80	10,994	49'	138	10,800	80'	196	6,346	52'
23	7,356	60'	81	9,357	70'	139	10,671	79'	197	6,955	59'
24	7,280	60'	82	13,856	70'	140	10,661	79'	198	4,959	56'
25	8,925	61'	83	12,840	70'	141	12,756	82'	199	6,547	54'
26	8,722	60'	84	11,824	70'	142	14,380	82'	200	6,418	64'
27	6,352	60'	85	10,809	70'	143	16,299	82'	201	6,827	59'
28	6,137	60'	86	9,998	70'	144	19,426	82'	202	12,442	45'
29	6,593	59'	87	9,429	69'	145	25,144	82'	203	12,811	45'
30	7,189	59'	88	7,912	59'	146	16,635	101'	204	6,828	59'
31	7,555	60'	89	7,917	60'	147	9,853	55'	205	6,412	64'
32	7,906	60'	90	8,130	60'	148	8,463	106'	206	7,955	54'
33	9,374	63'	91	8,287	60'	149	7,014	50'	207	5,448	56'
34	7,861	60'	92	11,599	58'	150	11,035	87'	208	10,961	56'
35	8,005	62'	93	6,430	62'	151	11,184	87'	209	9,599	54'
36	10,481	54'	94	7,127	60'	152	11,529	61'	210	6,836	64'
37	10,046	89'	95	7,761	60'	153	7,526	50'	211	7,359	59'
38	8,069	60'	96	8,529	60'	154	7,319	50'	212	12,094	50'
39	7,816	60'	97	10,662	76'	155	7,257	50'	213	11,636	124'
40	7,364	60'	98	8,945	60'	156	7,200	50'	214	7,905	58'
41	12,172	64'	99	9,379	55'	157	10,880	91'	215	7,120	52'
42	9,755	60'	100	11,054	71'	158	7,489	50'	216	7,257	53'
43	8,335	60'	101	10,351	94'	159	7,659	50'	217	7,782	58'
44	8,836	59'	102	10,365	70'	160	7,772	50'	218	6,294	55'
45	12,220	103'	103	11,764	90'	161	8,177	51'	219	6,769	56'
46	9,162	60'	104	11,809	92'	162	8,872	52'	220	7,026	55'
47	9,160	60'	105	11,359	71'	163	12,217	55'	221	6,841	56'
48	9,073	60'	106	14,008	45'	164	8,310	61'	222	6,742	70'
49	8,985	60'	107	16,371	53'	165	7,000	50'	223	6,339	69'
50	8,763	59'	108	10,192	90'	166	7,000	50'	224	6,631	59'
51	12,360	78'	109	12,948	98'	167	7,125	50'	225	7,087	59'
52	13,390	82'	110	9,864	60'	168	9,001	69'	226	7,339	58'
53	12,000	80'	111	9,527	60'	169	7,010	51'	227	7,945	64'
54	12,000	80'	112	8,727	62'	170	6,942	51'	228	7,972	74'
55	12,000	80'	113	8,087	71'	171	7,083	51'	229	7,621	80'
56	12,000	80'	114	16,571	101'	172	7,148	51'			
57	11,991	80'	115	10,692	86'	173	7,129	51'			
58	13,465	98'	116	7,000	50'	174	7,104	51'			

NOTE: LOT WIDTHS SHOWN ARE BASED ON THE PRELIMINARY DESIGN AND ARE SUBJECT TO CHANGE. HOWEVER, ANY CHANGE IN LOT WIDTHS SHALL MEET THE REQUIREMENTS OF THE DIMENSIONAL STANDARDS OF THE NEIGHBORHOOD DDESIGN.

REVIEW ONLY
NOT FOR CONSTRUCTION

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 16282 ENGINEER TIMOTHY T. DIVISION
7/3/17

TOWN OF CLAYTON PROJECT NUMBER: 2017-56-SD

MASTER PLAN		
Job: 17014	**Date:** 4/3/17	**Revision:**
File: COVER	**Drawn:** WJB	**Sheet:** 3 OF 12

Site Trip Generation

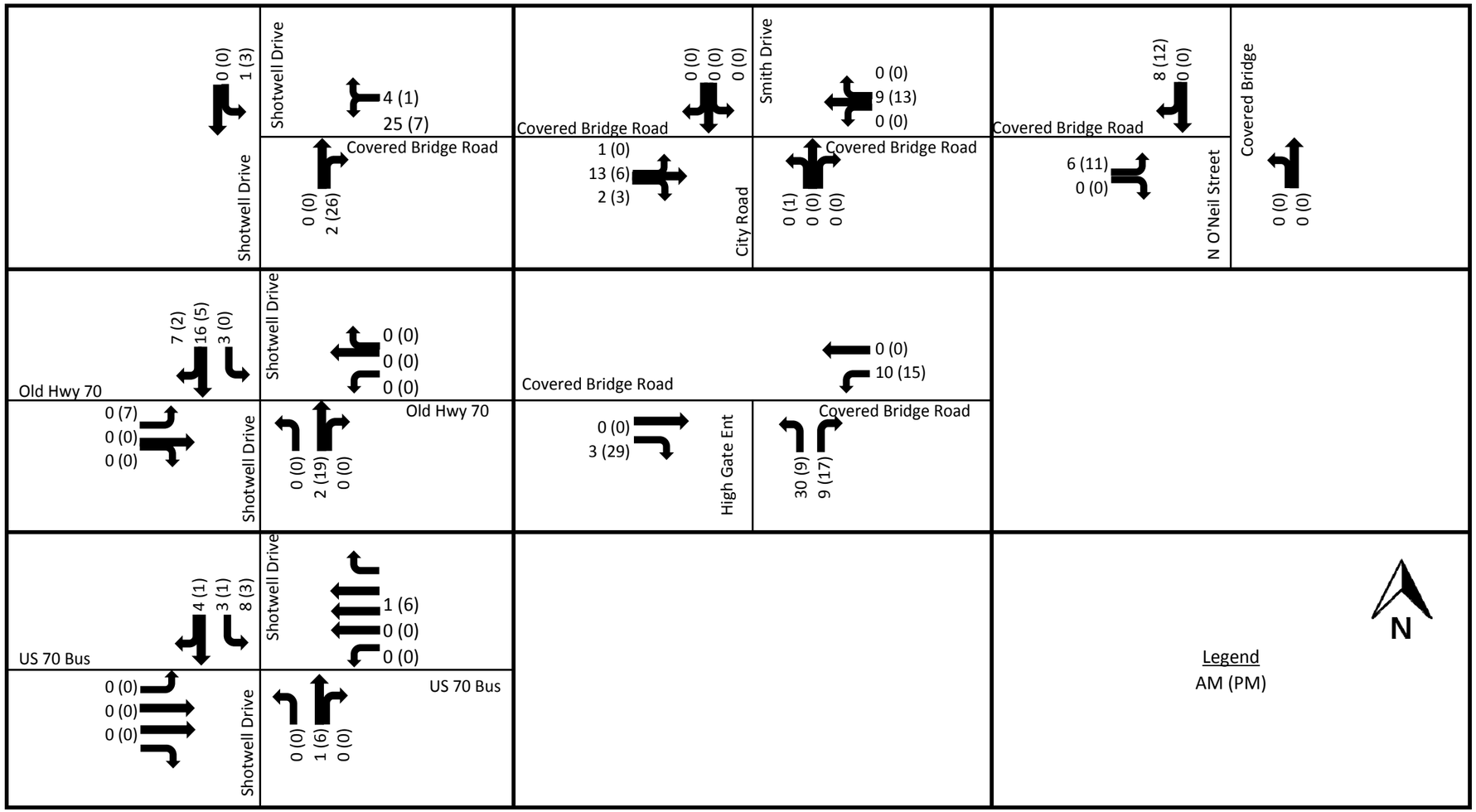
7/10/2017

Development	Phase	Type of complex	Number of Units	AM					PM				
				Rate	Total Trips	% In	Trips In	Trips Out	Rate	Total Trips	% In	Trips In	Trips Out
Creech	Phase 1	Single Family Units											
	Phase 1	Townhome Lots											
	Total Trips												
Highgate Section 1	Phase 1	Single Family Units	69	0.75	52	25%	13	39	1.00	69	63%	43	26
	Phase 2	Single Family Units											
	Phase 3	Single Family Units											
	Total Trips		69	-	52	-	13	39	-	69	-	43	26
Highgate Section 2	Phase 1	Single Family Units											
Total			69	-	52	-	13	39	-	69	-	43	26

Prepared By: Moffatt and Nichol

Highgate and Creech TIA
2019 Site Distribution

7/10/2017



Prepared By Moffatt and Nichol

NCDOT Congestion Management Rate vs Equation Spreadsheet

					SUGGESTED METHOD			% PASS-BY	
	LUC	DESCRIPTION	IND VARIABLE	PK HR TYPE	RATE	EQN	LOCAL DATA	AM	PM
1	010	Waterport/Marine Terminal	Acres	Adjacent			X	-	-
2	021	Commercial Airport	Ave Flights per Day	Adjacent			X	-	-
3	022	General Aviation Airport	Ave Flights per Day	Generator			X	-	-
4	030	Truck Terminal	Acres	Generator			X	-	-
5	090	Park-and-Ride Lot with Bus Service [Data Range 50 - 1000]	Parking Spaces	Adjacent		X		-	-
6	093	Light Rail Transit with Parking	Parking Spaces	Adjacent			X	-	-

					SUGGESTED METHOD			% PASS-BY	
	LUC	DESCRIPTION	IND VARIABLE	PK HR TYPE	RATE	EQN	LOCAL DATA	AM	PM
1	110	General Light Industrial [Data Range 100-1000]	1,000 GFA	Adjacent		X		-	-
2	120	General Heavy Industrial	1,000 GFA	Adjacent			X	-	-
3	130	Industrial Park [Data Range 40-1000]	1,000 GFA	Adjacent		X		-	-
4	140	Manufacturing [Data Range 10-1100]	1,000 GFA	Adjacent		X		-	-
5	150	Warehousing	1,000 GFA	Adjacent	X			-	-
6	151	Mini-Warehouse	1,000 GFA	Generator	X			-	-
7	152	High-Cube Warehouse	1,000 GFA	Adjacent	X			-	-
8	160	Data Center	1,000 GFA	Adjacent			X	-	-
9	170	Utilities	1,000 GFA	Adjacent			X	-	-

					SUGGESTED METHOD			% PASS_BY	
	LUC	DESCRIPTION	IND VARIABLE	PK HR TYPE	RATE	EQN	LOCAL DATA	AM	PM
1	210	Singe Family Detached	Dwelling Units	Adjacent	X			-	-
2	220	Apartments [Data Range 50-700]	Dwelling Units	Adjacent		X		-	-
3	221	Low-Rise Apartments	Occupied Dwelling Units	Adjacent	X			-	-
4	222	High-Rise Apartments	Dwelling Units	Adjacent	X			-	-
5	223	Mid-Rise Apartments	Dwelling Units	Adjacent	X			-	-
6	224	Rental Townhouse	Dwelling Units	Adjacent			X	-	-
7	230	Residential Condo/Townhouse	Dwelling Units	Adjacent	X			-	-
8	231	Low-Rise Residential Condo/Townhouse	Dwelling Units	Adjacent	X			-	-
9	232	High-Rise Residential Condo/Townhouse	Dwelling Units	Adjacent	X			-	-
10	233	Luxury Condo/Townhouse	Dwelling Units	Adjacent	X			-	-
11	240	Mobile Home Park	Dwelling Units	Adjacent	X			-	-
12	251	Senior Adult Housing-Detached	Dwelling Units	Adjacent	X			-	-
13	252	Senior Adult Housing-Attached	Occupied Dwelling Units	Adjacent	X			-	-
14	253	Congregate Care Facility	Dwelling Units	Generator			X	-	-
15	254	Assisted Living	Beds	Generator	X			-	-
16	255	Cont. Care Retirement Comm. (CCRC)	Occupied Units	Generator	X			-	-
17	260	Recreational Homes	Dwelling Units	Generator	X			-	-
18	265	Timeshare	Dwelling Units	Adjacent	X			-	-
19	270	Residential Planned Unit Development	Dwelling Units	Adjacent	X			-	-

					SUGGESTED METHOD			% PASS_BY	
	LUC	DESCRIPTION	IND VARIABLE	PK HR TYPE	RATE	EQN	LOCAL DATA	AM	PM
1	310	Hotel	Rooms	Adjacent	X			-	-
2	311	All Suites Hotel	Rooms	Adjacent	X			-	-
3	312	Business Hotel	Rooms	Adjacent	X			-	-
4	320	Motel	Rooms	Adjacent	X			-	-
5	330	Resort Hotel	Rooms	Adjacent	X			-	-

					SUGGESTED METHOD			% PASS_BY	
	LUC	DESCRIPTION	IND VARIABLE	PK HR TYPE	RATE	EQN	LOCAL DATA	AM	PM
1	411	City Park	Acres	Generator			X	-	-
2	412	County Park	Acres	Generator	X			-	-
3	413	State Park	Acres	Generator			X	-	-
4	414	Water Slide Park	Parking Spaces	Generator			X	-	-
5	415	Beach Park	Acres	Generator	X			-	-
6	416	Campground/Recreational Vehicle Park	Occupied Sites	Generator	X			-	-
7	417	Regional Park	Acres	Generator	X			-	-
8	418	National Monument	Acres	Generator			X	-	-
9	420	Marina	Berths	Generator			X	-	-
10	430	Golf Course	Holes	Generator			X	-	-
11	431	Miniature Golf Course	Holes	Generator			X	-	-
12	432	Golf Driving Range	Tees	Generator			X	-	-
13	433	Batting Cages	Cages	Generator			X	-	-
14	435	Multipurpose Recreational Facility	Acres	Generator			X	-	-
15	437	Bowling Alley	Lanes	Generator			X	-	-
16	440	Adult Cabaret	1,000 GFA	Generator			X	-	-
17	441	Live Theater	Seats	Generator			X	-	-
18	443	Movie Theater w/o Matinee	Movie Screens	Generator			X	-	-
19	444	Movie Theater with Matinee	Movie Screens	Generator			X	-	-
20	445	Multiplex Movie Theater	1,000 GFA	Generator			X	-	-
21	452	Horse Racetrack	Acres	Generator			X	-	-
22	453	Automobile Racetrack	Attendees	Generator			X	-	-
23	454	Dog Racetrack	Attendees	Generator			X	-	-
24	460	Arena	Acres	Generator			X	-	-
25	465	Ice Skating Rink	1,000 GFA	Generator			X	-	-
26	466	Snow Ski Area	Lifts	Generator			X	-	-
27	473	Casino/Video Lottery Establishment	1,000 GFA	Generator			X	-	-
28	480	Amusement Park	Acres	Generator			X	-	-
29	481	Zoo	Acres	Generator			X	-	-
30	488	Soccer Complex	Fields	Generator			X	-	-
31	490	Tennis Courts	Courts	Generator			X	-	-
32	491	Racquet/Tennis Club	Courts	Generator			X	-	-
33	492	Health/Fitness Club	1,000 GFA	Generator			X	-	-
34	493	Athletic Club	1,000 GFA	Generator			X	-	-
35	495	Recreational Community Center	1,000 GFA	Generator			X	-	-

					SUGGESTED METHOD			% PASS_BY	
	LUC	DESCRIPTION	IND VARIABLE	PK HR TYPE	RATE	EQN	LOCAL DATA	AM	PM
1	501	Military Base	Employees	Adjacent	X			-	-
2	520	Elementary School	Students	Generator			*	-	-
3	522	Middle School/Junior High School	Students	Generator			*	-	-
4	530	High School	Students	Generator			*	-	-
5	534	Private School (K-8)	Students	Generator			*	-	-
6	536	Private School (K-12)	Students	Generator			*	-	-
7	540	Junior/Community College	Students	Generator	X			-	-
8	550	University / College	Students	Generator	X			-	-
9	560	Church	1,000 GFA	Generator			X	-	-
10	561	Synagogue	1,000 GFA	Generator			X	-	-
11	562	Mosque	1,000 GFA	Generator			X	-	-
12	565	Day Care Center	Students	Adjacent	X			-	-
13	566	Cemetery	Acres	Generator			X	-	-
14	571	Prison	Employees	Generator			X	-	-
15	580	Museum	1,000 GFA	Generator			X	-	-
16	590	Library	1,000 GFA	Generator			X	-	-
17	591	Lodge/Fraternal Organization	1,000 GFA	Generator			X	-	-

* For LUC's 520-536, refer to the MSTA School Calculator found at: **https://connect.ncdot.gov/municipalities/School/Pages/default.aspx**

					SUGGESTED METHOD			% PASS_BY	
	LUC	DESCRIPTION	IND VARIABLE	PK HR TYPE	RATE	EQN	LOCAL DATA	AM	PM
1	610	Hospital	1,000 GFA	Adjacent	X			-	-
2	620	Nursing Home	Beds	Generator	X			-	-
3	630	Clinic	1,000 GFA	Adjacent			X	-	-
4	640	Animal Hospital/Veterinary Clinic	1,000 GFA	Adjacent			X	-	-

					SUGGESTED METHOD			% PASS_BY	
	LUC	DESCRIPTION	IND VARIABLE	PK HR TYPE	RATE	EQN	LOCAL DATA	AM	PM
1	710	General Office Building [Data Range 10-1000]	1,000 GFA	Adjacent		X		-	-
2	714	Corporate Headquarters Building	1,000 GFA	Generator	X			-	-
3	715	Single Tenant Office Building	1,000 GFA	Generator	X			-	-
4	720	Medical-Dental Office Building	1,000 GFA	Generator			X	-	-
5	730	Government Office Building	1,000 GFA	Adjacent	X			-	-
6	731	State Motor Vehicles Department	1,000 GFA	Generator			X	-	-
7	732	United States Post Office	1,000 GFA	Adjacent			X	-	-
8	733	Government Office Complex	1,000 GFA	Adjacent	X			-	-
9	750	Office Park [Data Range 50-900]	1,000 GFA	Adjacent		X		-	-
10	760	Research and Development Center	1,000 GFA	Adjacent	X			-	-
11	770	Business Park [Data Range 30-600]	1,000 GFA	Adjacent		X		-	-

					SUGGESTED METHOD			% PASS_BY	
	LUC	DESCRIPTION	IND VARIABLE	PK HR TYPE	RATE	EQN	LOCAL DATA	AM	PM
1	810	Tractor Supply Store	1,000 GFA	Generator			X	N/A	N/A
2	811	Construction Equipment Rental Store	1,000 GFA	Generator			X	N/A	N/A
3	812	Building Materials and Lumber Store	1,000 GFA	Generator	X			N/A	N/A
4	813	Free-Standing Discount Superstore	1,000 GFA	Adjacent	X**			N/A	27
5	814	Variety Store	1,000 GLA	Adjacent	X**			N/A	34
6	815	Free-Standing Discount Store	1,000 GFA	Adjacent	X**			N/A	17
7	816	Hardware/Paint Store	1,000 GFA	Generator			X	N/A	26
8	817	Nursery (Garden Center)	1,000 GFA	Generator			X	N/A	N/A
9	818	Nursery (Wholesale)	Acres	Generator	X			N/A	N/A
10	820	Shopping Center [Data Range 0-1500]	1,000 GLA	Adjacent		X		N/A	34
11	823	Factory Outlet Center	1,000 GFA	Adjacent			X	N/A	N/A
12	826	Specialty Retail Center	1,000 GFA	Adjacent			X	N/A	N/A
13	841	Automobile Sales [Data Range 0-45]	1,000 GFA	Generator		X		N/A	N/A
14	842	Recreational Vehicle Sales	1,000 GFA	Generator			X	N/A	N/A
15	843	Automobile Parts Sales [Data Range 4.5-8.5]	1,000 GFA	Adjacent		X		N/A	43
16	848	Tire Store	1,000 GFA	Adjacent			X	N/A	28
17	849	Tire Superstore	1,000 GFA	Adjacent	X			N/A	N/A
18	850	Supermarket	1,000 GFA	Adjacent	X**			N/A	36
19	851	Convenience Market (Open 24 hours)	1,000 GFA	Adjacent			X	N/A	61
20	852	Convenience Market (Open 15-16 hours)	1,000 GFA	Adjacent			X	N/A	N/A
21	853	Convenience Market with Gasoline Pumps	1,000 GFA	Adjacent	X**			63	66
22	854	Discount Supermarket	1,000 GFA	Adjacent			X	N/A	21
23	857	Discount Club	1,000 GFA	Adjacent	X			N/A	37
24	860	Wholesale Market	1,000 GFA	Adjacent			X	N/A	N/A
25	861	Sporting Goods Superstore	1,000 GFA	Adjacent			X	N/A	N/A
26	862	Home Improvement Superstore	1,000 GFA	Generator			X	N/A	42
27	863	Electronics Superstore	1,000 GFA	Generator			X	N/A	40
28	864	Toy/Children's Superstore	1,000 GFA	Generator			X	N/A	N/A
29	865	Baby Superstore	1,000 GFA	Generator			X	N/A	N/A
30	866	Pet Supply Superstore	1,000 GFA	Generator			X	N/A	N/A
31	867	Office Supply Superstore	1,000 GFA	Adjacent			X	N/A	N/A
32	868	Book Superstore	1,000 GFA	Generator			X	N/A	N/A
33	869	Discount Home Furnishing Superstore	1,000 GFA	Generator			X	N/A	N/A
34	872	Bed and Linen Superstore	1,000 GFA	Adjacent			X	N/A	N/A
35	875	Department Store	1,000 GFA	Adjacent			X	N/A	N/A
36	876	Apparel Store	1,000 GFA	Generator			X	N/A	N/A
37	879	Arts and Crafts Store	1,000 GFA	Adjacent			X	N/A	N/A
38	880	Pharmacy/Drugstore w/out Drive-Thru Window	1,000 GFA	Adjacent			X	N/A	53
39	881	Pharmacy/Drugstore with Drive-Thru Window	1,000 GFA	Adjacent	X**			N/A	49
40	890	Furniture Store	1,000 GFA	Generator	X			N/A	53
41	896	DVD/Video Rental Store	1,000 GFA	Adjacent			X	N/A	N/A
42	897	Medical Equipment Store	1,000 GFA	Generator	X			N/A	N/A

					SUGGESTED METHOD			% PASS-BY	
	LUC	DESCRIPTION	IND VARIABLE	PK HR TYPE	RATE	EQN	LOCAL DATA	AM	PM
1	911	Walk-in Bank	1,000 GFA	Generator			X	N/A	N/A
2	912	Drive-in Bank	1,000 GFA	Adjacent	X**			29	35
3	918	Hair Salon	1,000 GFA	Generator			X	N/A	N/A
4	920	Copy, Print and Express Ship Store	1,000 GFA	Adjacent			X	N/A	N/A
5	925	Drinking Place	1,000 GFA	Generator			X	N/A	N/A
6	931	Quality Restaurant	1,000 GFA	Adjacent	X**			N/A	44
7	932	High-Turnover (Sit-Down) Restaurant	1,000 GFA	Generator	X**			N/A	43
8	933	Fast-Food Restaurant w/out Drive-Thru Window	1,000 GFA	Adjacent	X			N/A	N/A
9	934	Fast-Food Restaurant with Drive-Thru Window	1,000 GFA	Adjacent	X**			49	50
10	935	Fast-Food Restaurant w/ Drive-Thru and No Indoor Seating	1,000 GFA	Adjacent			X	N/A	N/A
11	936	Coffee/Donut Shop without Drive-Thru Window	1,000 GFA	Adjacent			X	N/A	N/A
12	937	Coffee/Donut Shop with Drive-Thru Window	1,000 GFA	Adjacent			X	N/A	N/A
13	938	Coffee/Donut Shop w/ Drive-Thru Window & No Indoor Seating	1,000 GFA	Adjacent			X	N/A	N/A
14	939	Bread/Donut/Bagel Shop without Drive-Thru Window	1,000 GFA	Adjacent			X	N/A	N/A
15	940	Bread/Donut/Bagel Shop with Drive-Thru Window	1,000 GFA	Adjacent			X	N/A	N/A
16	941	Quick Lubrication Vehicle Shop	Servicing Positions	Adjacent			X	N/A	N/A
17	942	Automobile Care Center	1,000 Occ. Gr LA	Adjacent			X	N/A	N/A
18	943	Automobile Parts and Service Center	1,000 GFA	Adjacent			X	N/A	N/A
19	944	Gasoline/Service Station	Vehicle Fueling Pos.	Adjacent			X	58	42
20	945	Gasoline/Service Station w/ Convenience Market	Vehicle Fueling Pos.	Adjacent	X**			62	56
21	946	Gasoline/Service Station w/ Convenience Mart and Car Wash	Vehicle Fueling Pos.	Adjacent	X**			N/A	N/A
22	947	Self-Service Car Wash	Wash Stalls	Adjacent			X	N/A	N/A
23	948	Automated Car Wash	1,000 GFA	Generator			X	N/A	N/A
24	950	Truck Stop	1,000 GFA	Generator			X	N/A	N/A

LUC 933, 934, 935: See the Trip Generation Manual if tenants specialize in specific land uses, e.g. yogurt, coffee, bread, etc.

* For LUC's 520-536, refer to the MSTA School Calculator found at: **https://connect.ncdot.gov/municipalities/School/Pages/default.aspx**

** Please use the average rate as a starting point for your estimations. Local data will also be considered if available. Any further changes to the trip generation data should be backed-up with reasonable justifications, and will be handled on a case by case basis. Please contact NCDOT for further clarifications or instructions.

Appendix

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2019 Build HCM Outputs

AM

HCM Unsignalized Intersection Capacity Analysis
1: Shotwell Rd & Covered Bridge Rd

09/20/2017

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	418	71	466	115	26	462
Future Volume (Veh/h)	418	71	466	115	26	462
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	464	79	518	128	29	513
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1153	582			646	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1153	582			646	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	85			97	
cM capacity (veh/h)	212	513			939	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	543	646	542
Volume Left	464	0	29
Volume Right	79	128	0
cSH	231	1700	939
Volume to Capacity	2.35	0.38	0.03
Queue Length 95th (ft)	1091	0	2
Control Delay (s)	653.1	0.0	0.9
Lane LOS	F		A
Approach Delay (s)	653.1	0.0	0.9
Approach LOS	F		

Intersection Summary			
Average Delay	205.1		
Intersection Capacity Utilization	79.7%	ICU Level of Service	D
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
2: Shotwell Rd & Old Highway 70 W

09/20/2017

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	44	103	78	25	438	55	210	481	32	90	533	258
Future Volume (vph)	44	103	78	25	438	55	210	481	32	90	533	258
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	5.9		4.8	5.7		6.3	5.6		6.2	5.5	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.94		1.00	0.98		1.00	0.99		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1742		1770	1832		1770	1845		1770	1772	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1742		1770	1832		1770	1845		1770	1772	
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)	49	114	87	28	487	61	233	534	36	100	592	287
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	49	201	0	28	548	0	233	570	0	100	879	0
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Actuated Green, G (s)	4.4	19.5		4.0	19.5		12.8	41.0		9.8	38.0	
Effective Green, g (s)	4.4	19.5		4.0	19.5		12.8	41.0		9.8	38.0	
Actuated g/C Ratio	0.05	0.20		0.04	0.20		0.13	0.42		0.10	0.39	
Clearance Time (s)	4.6	5.9		4.8	5.7		6.3	5.6		6.2	5.5	
Vehicle Extension (s)	1.0	6.0		1.0	1.0		1.0	1.0		6.0	1.0	
Lane Grp Cap (vph)	80	350		73	369		234	781		179	695	
v/s Ratio Prot	c0.03	0.12		0.02	c0.30		c0.13	c0.31		0.06	c0.50	
v/s Ratio Perm												
v/c Ratio	0.61	0.57		0.38	1.49		1.00	0.73		0.56	1.26	
Uniform Delay, d1	45.4	34.9		45.2	38.6		42.0	23.3		41.4	29.4	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	9.4	4.5		1.2	232.3		57.2	2.9		8.0	130.4	
Delay (s)	54.7	39.4		46.4	271.0		99.2	26.2		49.4	159.8	
Level of Service	D	D		D	F		F	C		D	F	
Approach Delay (s)		42.4			260.1			47.4			148.6	
Approach LOS		D			F			D			F	

Intersection Summary			
HCM 2000 Control Delay	131.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.25		
Actuated Cycle Length (s)	96.8	Sum of lost time (s)	22.5
Intersection Capacity Utilization	106.0%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
3: Shotwell Rd & US 70 Business 09/20/2017

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	112	786	34	109	1347	343	155	306	21	235	100	125
Future Volume (vph)	112	786	34	109	1347	343	155	306	21	235	100	125
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.0	6.2	6.5	5.6	5.6	6.2	6.2		6.6	6.6	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	0.92	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	5085	1583	1770	1845		1770	1707	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539	1583	1770	5085	1583	1770	1845		1770	1707	
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)	124	873	38	121	1497	381	172	340	23	261	111	139
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	124	873	38	121	1497	381	172	363	0	261	250	0
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Split	NA		Split	NA	
Protected Phases	5	2	3	1	6		3	3		4	4	
Permitted Phases			2			6						
Actuated Green, G (s)	18.1	65.3	89.1	14.2	62.0	62.0	23.8	23.8		21.4	21.4	
Effective Green, g (s)	18.1	65.3	89.1	14.2	62.0	62.0	23.8	23.8		21.4	21.4	
Actuated g/C Ratio	0.12	0.44	0.59	0.09	0.41	0.41	0.16	0.16		0.14	0.14	
Clearance Time (s)	6.3	6.0	6.2	6.5	5.6	5.6	6.2	6.2		6.6	6.6	
Vehicle Extension (s)	6.0	6.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	213	1540	940	167	2101	654	280	292		252	243	
v/s Ratio Prot	c0.07	c0.25	0.01	0.07	c0.29		0.10	c0.20		c0.15	0.15	
v/s Ratio Perm			0.02			0.24						
v/c Ratio	0.58	0.57	0.04	0.72	0.71	0.58	0.61	1.24		1.04	1.03	
Uniform Delay, d1	62.4	31.7	12.7	66.0	36.6	34.0	58.8	63.1		64.3	64.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	7.6	1.5	0.0	12.4	2.1	3.8	2.8	135.0		66.3	65.4	
Delay (s)	69.9	33.3	12.7	78.4	38.7	37.8	61.6	198.1		130.6	129.7	
Level of Service	E	C	B	E	D	D	E	F		F	F	
Approach Delay (s)		36.9			40.9			154.2			130.2	
Approach LOS		D			D			F			F	

Intersection Summary			
HCM 2000 Control Delay	65.9	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.86		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	25.3
Intersection Capacity Utilization	83.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Unsignalized Intersection Capacity Analysis
4: City Rd & Covered Bridge Rd 09/20/2017

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	115	28	18	435	0	17	3	17	5	17	16
Future Volume (Veh/h)	2	115	28	18	435	0	17	3	17	5	17	16
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	2	128	31	20	483	0	19	3	19	6	19	18
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	483			159			698	670	144	691	686	483
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	483			159			698	670	144	691	686	483
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			94	99	98	98	95	97
cM capacity (veh/h)	1080			1420			326	372	904	345	364	584

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	161	503	41	43
Volume Left	2	20	19	6
Volume Right	31	0	19	18
cSH	1080	1420	470	428
Volume to Capacity	0.00	0.01	0.09	0.10
Queue Length 95th (ft)	0	1	7	8
Control Delay (s)	0.1	0.4	13.4	14.3
Lane LOS	A	A	B	B
Approach Delay (s)	0.1	0.4	13.4	14.3
Approach LOS			B	B

Intersection Summary				
Average Delay	1.9			
Intersection Capacity Utilization	45.6%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	149	8	5	222	410	409
Future Volume (Veh/h)	149	8	5	222	410	409
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	166	9	6	247	456	454
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	942	683	910			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	942	683	910			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	43	98	99			
cM capacity (veh/h)	289	449	748			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	175	253	910
Volume Left	166	6	0
Volume Right	9	0	454
cSH	295	748	1700
Volume to Capacity	0.59	0.01	0.54
Queue Length 95th (ft)	89	1	0
Control Delay (s)	33.6	0.3	0.0
Lane LOS	D	A	
Approach Delay (s)	33.6	0.3	0.0
Approach LOS	D		

Intersection Summary				
Average Delay		4.5		
Intersection Capacity Utilization		62.0%	ICU Level of Service	B
Analysis Period (min)		15		

PM

HCM Unsignalized Intersection Capacity Analysis
1: Shotwell Rd & Covered Bridge Rd

09/20/2017

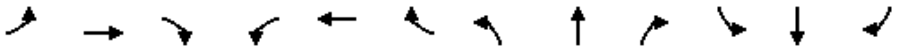
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	240	22	464	461	62	532
Future Volume (Veh/h)	240	22	464	461	62	532
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	267	24	516	512	69	591
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1501	772			1028	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1501	772			1028	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	94			90	
cM capacity (veh/h)	120	400			676	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	291	1028	660
Volume Left	267	0	69
Volume Right	24	512	0
cSH	128	1700	676
Volume to Capacity	2.28	0.60	0.10
Queue Length 95th (ft)	620	0	8
Control Delay (s)	653.8	0.0	2.7
Lane LOS	F		A
Approach Delay (s)	653.8	0.0	2.7
Approach LOS	F		

Intersection Summary			
Average Delay		97.0	
Intersection Capacity Utilization		101.2%	ICU Level of Service G
Analysis Period (min)		15	

HCM Signalized Intersection Capacity Analysis
2: Shotwell Rd & Old Highway 70 W

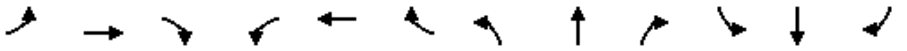
09/20/2017



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	257	473	84	31	149	71	98	594	64	44	533	194
Future Volume (vph)	257	473	84	31	149	71	98	594	64	44	533	194
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	5.9		4.8	5.7		6.3	5.6		6.2	5.5	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.95		1.00	0.99		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1821		1770	1773		1770	1836		1770	1788	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1821		1770	1773		1770	1836		1770	1788	
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)	286	526	93	34	166	79	109	660	71	49	592	216
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	286	619	0	34	245	0	109	731	0	49	808	0
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Actuated Green, G (s)	14.2	26.7		3.9	16.8		7.2	21.5		6.4	20.7	
Effective Green, g (s)	14.2	26.7		3.9	16.8		7.2	21.5		6.4	20.7	
Actuated g/C Ratio	0.18	0.33		0.05	0.21		0.09	0.27		0.08	0.26	
Clearance Time (s)	4.6	5.9		4.8	5.7		6.3	5.6		6.2	5.5	
Vehicle Extension (s)	1.0	6.0		1.0	1.0		1.0	1.0		6.0	1.0	
Lane Grp Cap (vph)	310	600		85	367		157	487		139	456	
v/s Ratio Prot	c0.16	c0.34		0.02	0.14		c0.06	0.40		0.03	c0.45	
v/s Ratio Perm												
v/c Ratio	0.92	1.03		0.40	0.67		0.69	1.50		0.35	1.77	
Uniform Delay, d1	32.9	27.1		37.4	29.5		35.8	29.8		35.3	30.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	31.2	45.1		1.1	3.5		10.2	236.0		4.3	356.2	
Delay (s)	64.1	72.3		38.5	33.1		46.1	265.8		39.6	386.4	
Level of Service	E	E		D	C		D	F		D	F	
Approach Delay (s)		69.7			33.7			237.3			366.5	
Approach LOS		E			C			F			F	

Intersection Summary			
HCM 2000 Control Delay	203.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.28		
Actuated Cycle Length (s)	81.0	Sum of lost time (s)	22.5
Intersection Capacity Utilization	100.3%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	243	1569	259	355	1042	225	160	220	49	360	180	80
Future Volume (vph)	243	1569	259	355	1042	225	160	220	49	360	180	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.0	6.2	6.5	5.6	5.6	6.2	6.2		6.6	6.6	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	5085	1583	1770	1812		1770	1777	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539	1583	1770	5085	1583	1770	1812		1770	1777	
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)	270	1743	288	394	1158	250	178	244	54	400	200	89
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	270	1743	288	394	1158	250	178	298	0	400	289	0
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Split	NA		Split	NA	
Protected Phases	5	2	3	1	6		3	3		4	4	
Permitted Phases			2			6						
Actuated Green, G (s)	35.9	91.0	117.8	25.5	81.2	81.2	26.8	26.8		31.4	31.4	
Effective Green, g (s)	35.9	91.0	117.8	25.5	81.2	81.2	26.8	26.8		31.4	31.4	
Actuated g/C Ratio	0.18	0.46	0.59	0.13	0.41	0.41	0.13	0.13		0.16	0.16	
Clearance Time (s)	6.3	6.0	6.2	6.5	5.6	5.6	6.2	6.2		6.6	6.6	
Vehicle Extension (s)	6.0	6.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	317	1610	932	225	2064	642	237	242		277	278	
v/s Ratio Prot	0.15	c0.49	0.04	c0.22	0.23		0.10	c0.16		c0.23	0.16	
v/s Ratio Perm			0.14			0.16						
v/c Ratio	0.85	1.08	0.31	1.75	0.56	0.39	0.75	1.23		1.44	1.04	
Uniform Delay, d1	79.5	54.5	20.7	87.2	45.7	41.9	83.4	86.6		84.3	84.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	21.7	48.4	0.1	355.7	1.1	1.8	11.2	134.7		219.1	64.7	
Delay (s)	101.1	102.9	20.7	443.0	46.8	43.7	94.6	221.3		303.4	149.0	
Level of Service	F	F	C	F	D	D	F	F		F	F	
Approach Delay (s)		92.4			133.0			173.9			238.6	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	132.8	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.27		
Actuated Cycle Length (s)	200.0	Sum of lost time (s)	25.3
Intersection Capacity Utilization	118.3%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	466	31	9	243	5	21	14	43	11	9	5
Future Volume (Veh/h)	15	466	31	9	243	5	21	14	43	11	9	5
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	17	518	34	10	270	6	23	16	48	12	10	6
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	276			552			873	865	535	918	879	273
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	276			552			873	865	535	918	879	273
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			99			91	94	91	94	96	99
cM capacity (veh/h)	1287			1018			257	285	545	216	280	766

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	569	286	87	28
Volume Left	17	10	23	12
Volume Right	34	6	48	6
cSH	1287	1018	372	283
Volume to Capacity	0.01	0.01	0.23	0.10
Queue Length 95th (ft)	1	1	22	8
Control Delay (s)	0.4	0.4	17.6	19.1
Lane LOS	A	A	C	C
Approach Delay (s)	0.4	0.4	17.6	19.1
Approach LOS			C	C

Intersection Summary				
Average Delay	2.5			
Intersection Capacity Utilization	44.2%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	465	4	4	502	386	238
Future Volume (Veh/h)	465	4	4	502	386	238
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	517	4	4	558	429	264
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1127	561	693			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1127	561	693			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	0	99	100			
cM capacity (veh/h)	225	527	902			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	521	562	693
Volume Left	517	4	0
Volume Right	4	0	264
cSH	226	902	1700
Volume to Capacity	2.30	0.00	0.41
Queue Length 95th (ft)	1039	0	0
Control Delay (s)	634.1	0.1	0.0
Lane LOS	F	A	
Approach Delay (s)	634.1	0.1	0.0
Approach LOS	F		

Intersection Summary			
Average Delay	186.1		
Intersection Capacity Utilization	67.5%	ICU Level of Service	C
Analysis Period (min)	15		

Appendix

H

2021 No Build HCM Outputs

AM

HCM Unsignalized Intersection Capacity Analysis
1: Shotwell Rd & Covered Bridge Rd 09/20/2017

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	415	71	494	119	26	490
Future Volume (Veh/h)	415	71	494	119	26	490
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	461	79	549	132	29	544
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1217	615			681	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1217	615			681	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	84			97	
cM capacity (veh/h)	193	491			912	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	540	681	573
Volume Left	461	0	29
Volume Right	79	132	0
cSH	212	1700	912
Volume to Capacity	2.55	0.40	0.03
Queue Length 95th (ft)	1136	0	2
Control Delay (s)	744.1	0.0	0.9
Lane LOS	F		A
Approach Delay (s)	744.1	0.0	0.9
Approach LOS	F		

Intersection Summary			
Average Delay	224.3		
Intersection Capacity Utilization	81.0%	ICU Level of Service	D
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
2: Shotwell Rd & Old Highway 70 W

09/20/2017

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	109	82	27	465	58	223	508	34	92	547	266
Future Volume (vph)	46	109	82	27	465	58	223	508	34	92	547	266
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	5.9		4.8	5.7		6.3	5.6		6.2	5.5	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.94		1.00	0.98		1.00	0.99		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1743		1770	1832		1770	1845		1770	1771	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1743		1770	1832		1770	1845		1770	1771	
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)	51	121	91	30	517	64	248	564	38	102	608	296
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	51	212	0	30	581	0	248	602	0	102	904	0
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Actuated Green, G (s)	6.0	21.8		4.2	20.4		12.7	40.9		9.8	38.0	
Effective Green, g (s)	6.0	21.8		4.2	20.4		12.7	40.9		9.8	38.0	
Actuated g/C Ratio	0.06	0.22		0.04	0.21		0.13	0.41		0.10	0.38	
Clearance Time (s)	4.6	5.9		4.8	5.7		6.3	5.6		6.2	5.5	
Vehicle Extension (s)	1.0	6.0		1.0	1.0		1.0	1.0		6.0	1.0	
Lane Grp Cap (vph)	107	383		74	376		226	760		174	678	
v/s Ratio Prot	c0.03	0.12		0.02	c0.32		c0.14	c0.33		0.06	c0.51	
v/s Ratio Perm												
v/c Ratio	0.48	0.55		0.41	1.55		1.10	0.79		0.59	1.33	
Uniform Delay, d1	45.1	34.4		46.3	39.4		43.2	25.4		42.8	30.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.2	3.7		1.3	258.2		88.3	5.3		9.3	160.0	
Delay (s)	46.3	38.1		47.6	297.6		131.6	30.7		52.1	190.6	
Level of Service	D	D		D	F		F	C		D	F	
Approach Delay (s)		39.7			285.4			60.2			176.5	
Approach LOS		D			F			E			F	

Intersection Summary			
HCM 2000 Control Delay	151.5	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.29		
Actuated Cycle Length (s)	99.2	Sum of lost time (s)	22.5
Intersection Capacity Utilization	109.6%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
3: Shotwell Rd & US 70 Business

09/20/2017

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	119	834	36	116	1429	362	165	323	22	240	102	128
Future Volume (vph)	119	834	36	116	1429	362	165	323	22	240	102	128
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.0	6.2	6.5	5.6	5.6	6.2	6.2		6.6	6.6	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	0.92	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	5085	1583	1770	1845		1770	1707	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539	1583	1770	5085	1583	1770	1845		1770	1707	
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)	132	927	40	129	1588	402	183	359	24	267	113	142
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	132	927	40	129	1588	402	183	383	0	267	255	0
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Split	NA		Split	NA	
Protected Phases	5	2	3	1	6		3	3		4	4	
Permitted Phases			2			6						
Actuated Green, G (s)	18.5	64.8	88.6	14.7	61.6	61.6	23.8	23.8		21.4	21.4	
Effective Green, g (s)	18.5	64.8	88.6	14.7	61.6	61.6	23.8	23.8		21.4	21.4	
Actuated g/C Ratio	0.12	0.43	0.59	0.10	0.41	0.41	0.16	0.16		0.14	0.14	
Clearance Time (s)	6.3	6.0	6.2	6.5	5.6	5.6	6.2	6.2		6.6	6.6	
Vehicle Extension (s)	6.0	6.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	218	1528	935	173	2088	650	280	292		252	243	
v/s Ratio Prot	c0.07	c0.26	0.01	0.07	c0.31		0.10	c0.21		c0.15	0.15	
v/s Ratio Perm			0.02			0.25						
v/c Ratio	0.61	0.61	0.04	0.75	0.76	0.62	0.65	1.31		1.06	1.05	
Uniform Delay, d1	62.3	32.8	12.9	65.8	37.9	34.9	59.2	63.1		64.3	64.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	8.2	1.8	0.0	14.1	2.7	4.4	4.1	162.6		73.3	71.3	
Delay (s)	70.5	34.6	12.9	80.0	40.6	39.3	63.4	225.7		137.6	135.6	
Level of Service	E	C	B	E	D	D	E	F		F	F	
Approach Delay (s)		38.1			42.7			173.2			136.6	
Approach LOS		D			D			F			F	

Intersection Summary			
HCM 2000 Control Delay	70.1	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	25.3
Intersection Capacity Utilization	86.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	115	28	19	450	0	19	3	18	6	19	17
Future Volume (Veh/h)	2	115	28	19	450	0	19	3	18	6	19	17
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	2	128	31	21	500	0	21	3	20	7	21	19
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	500			159			719	690	144	711	705	500
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	500			159			719	690	144	711	705	500
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			93	99	98	98	94	97
cM capacity (veh/h)	1064			1420			313	362	904	334	355	571

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	161	521	44	47
Volume Left	2	21	21	7
Volume Right	31	0	20	19
cSH	1064	1420	451	414
Volume to Capacity	0.00	0.01	0.10	0.11
Queue Length 95th (ft)	0	1	8	10
Control Delay (s)	0.1	0.5	13.8	14.8
Lane LOS	A	A	B	B
Approach Delay (s)	0.1	0.5	13.8	14.8
Approach LOS			B	B

Intersection Summary				
Average Delay	2.0			
Intersection Capacity Utilization	47.3%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	151	8	6	234	432	423
Future Volume (Veh/h)	151	8	6	234	432	423
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	168	9	7	260	480	470
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	989	715	950			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	989	715	950			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	38	98	99			
cM capacity (veh/h)	271	431	723			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	177	267	950
Volume Left	168	7	0
Volume Right	9	0	470
cSH	276	723	1700
Volume to Capacity	0.64	0.01	0.56
Queue Length 95th (ft)	101	1	0
Control Delay (s)	38.7	0.4	0.0
Lane LOS	E	A	
Approach Delay (s)	38.7	0.4	0.0
Approach LOS	E		

Intersection Summary			
Average Delay	5.0		
Intersection Capacity Utilization	64.1%	ICU Level of Service	C
Analysis Period (min)	15		

PM

HCM Unsignalized Intersection Capacity Analysis
1: Shotwell Rd & Covered Bridge Rd 09/20/2017

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	246	22	490	459	62	564
Future Volume (Veh/h)	246	22	490	459	62	564
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	273	24	544	510	69	627
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1564	799			1054	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1564	799			1054	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	94			90	
cM capacity (veh/h)	110	386			661	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	297	1054	696
Volume Left	273	0	69
Volume Right	24	510	0
cSH	117	1700	661
Volume to Capacity	2.55	0.62	0.10
Queue Length 95th (ft)	668	0	9
Control Delay (s)	778.8	0.0	2.8
Lane LOS	F		A
Approach Delay (s)	778.8	0.0	2.8
Approach LOS	F		

Intersection Summary			
Average Delay	113.9		
Intersection Capacity Utilization	103.1%	ICU Level of Service	G
Analysis Period (min)	15		

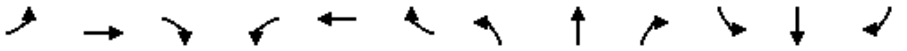
HCM Signalized Intersection Capacity Analysis
2: Shotwell Rd & Old Highway 70 W

09/20/2017

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	264	501	89	33	158	74	104	608	68	47	559	204
Future Volume (vph)	264	501	89	33	158	74	104	608	68	47	559	204
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	5.9		4.8	5.7		6.3	5.6		6.2	5.5	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.95		1.00	0.98		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1821		1770	1774		1770	1835		1770	1788	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1821		1770	1774		1770	1835		1770	1788	
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)	293	557	99	37	176	82	116	676	76	52	621	227
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	293	656	0	37	258	0	116	752	0	52	848	0
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Actuated Green, G (s)	14.6	27.2		4.0	17.0		7.3	21.5		6.5	20.7	
Effective Green, g (s)	14.6	27.2		4.0	17.0		7.3	21.5		6.5	20.7	
Actuated g/C Ratio	0.18	0.33		0.05	0.21		0.09	0.26		0.08	0.25	
Clearance Time (s)	4.6	5.9		4.8	5.7		6.3	5.6		6.2	5.5	
Vehicle Extension (s)	1.0	6.0		1.0	1.0		1.0	1.0		6.0	1.0	
Lane Grp Cap (vph)	316	606		86	369		158	482		140	453	
v/s Ratio Prot	c0.17	c0.36		0.02	0.15		c0.07	0.41		0.03	c0.47	
v/s Ratio Perm												
v/c Ratio	0.93	1.08		0.43	0.70		0.73	1.56		0.37	1.87	
Uniform Delay, d1	33.0	27.2		37.7	30.0		36.3	30.1		35.7	30.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	31.6	60.9		1.3	4.6		14.1	262.1		4.6	400.7	
Delay (s)	64.6	88.1		39.0	34.6		50.3	292.2		40.3	431.2	
Level of Service	E	F		D	C		D	F		D	F	
Approach Delay (s)		80.9			35.2			259.9			408.6	
Approach LOS		F			D			F			F	

Intersection Summary			
HCM 2000 Control Delay	225.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.34		
Actuated Cycle Length (s)	81.7	Sum of lost time (s)	22.5
Intersection Capacity Utilization	104.0%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	249	1664	275	376	1105	231	170	226	52	237	190	84
Future Volume (vph)	249	1664	275	376	1105	231	170	226	52	237	190	84
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.0	6.2	6.5	5.6	5.6	6.2	6.2		6.6	6.6	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	5085	1583	1770	1810		1770	1777	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539	1583	1770	5085	1583	1770	1810		1770	1777	
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)	277	1849	306	418	1228	257	189	251	58	263	211	93
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	277	1849	306	418	1228	257	189	309	0	263	304	0
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Split	NA		Split	NA	
Protected Phases	5	2	3	1	6		3	3		4	4	
Permitted Phases			2			6						
Actuated Green, G (s)	36.3	91.0	117.8	25.5	80.8	80.8	26.8	26.8		31.4	31.4	
Effective Green, g (s)	36.3	91.0	117.8	25.5	80.8	80.8	26.8	26.8		31.4	31.4	
Actuated g/C Ratio	0.18	0.46	0.59	0.13	0.40	0.40	0.13	0.13		0.16	0.16	
Clearance Time (s)	6.3	6.0	6.2	6.5	5.6	5.6	6.2	6.2		6.6	6.6	
Vehicle Extension (s)	6.0	6.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	321	1610	932	225	2054	639	237	242		277	278	
v/s Ratio Prot	0.16	c0.52	0.04	c0.24	0.24		0.11	c0.17		0.15	c0.17	
v/s Ratio Perm			0.15			0.16						
v/c Ratio	0.86	1.15	0.33	1.86	0.60	0.40	0.80	1.28		0.95	1.09	
Uniform Delay, d1	79.4	54.5	20.9	87.2	46.8	42.4	84.0	86.6		83.5	84.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	23.0	74.6	0.1	402.6	1.3	1.9	15.8	152.6		39.7	81.3	
Delay (s)	102.4	129.1	21.0	489.9	48.1	44.3	99.8	239.2		123.2	165.6	
Level of Service	F	F	C	F	D	D	F	F		F	F	
Approach Delay (s)		112.4			144.6			186.3			145.9	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	134.1	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.26		
Actuated Cycle Length (s)	200.0	Sum of lost time (s)	25.3
Intersection Capacity Utilization	115.9%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	477	29	10	242	5	21	14	45	12	10	5
Future Volume (Veh/h)	14	477	29	10	242	5	21	14	45	12	10	5
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	16	530	32	11	269	6	23	16	50	13	11	6
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	275			562			884	875	546	930	888	272
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	275			562			884	875	546	930	888	272
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			99			91	94	91	94	96	99
cM capacity (veh/h)	1288			1009			252	281	538	211	276	767

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	578	286	89	30
Volume Left	16	11	23	13
Volume Right	32	6	50	6
cSH	1288	1009	369	275
Volume to Capacity	0.01	0.01	0.24	0.11
Queue Length 95th (ft)	1	1	23	9
Control Delay (s)	0.4	0.4	17.8	19.7
Lane LOS	A	A	C	C
Approach Delay (s)	0.4	0.4	17.8	19.7
Approach LOS			C	C

Intersection Summary				
Average Delay	2.6			
Intersection Capacity Utilization	44.0%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	478	4	4	528	407	238
Future Volume (Veh/h)	478	4	4	528	407	238
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	531	4	4	587	452	264
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1179	584	716			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1179	584	716			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	0	99	100			
cM capacity (veh/h)	210	512	885			

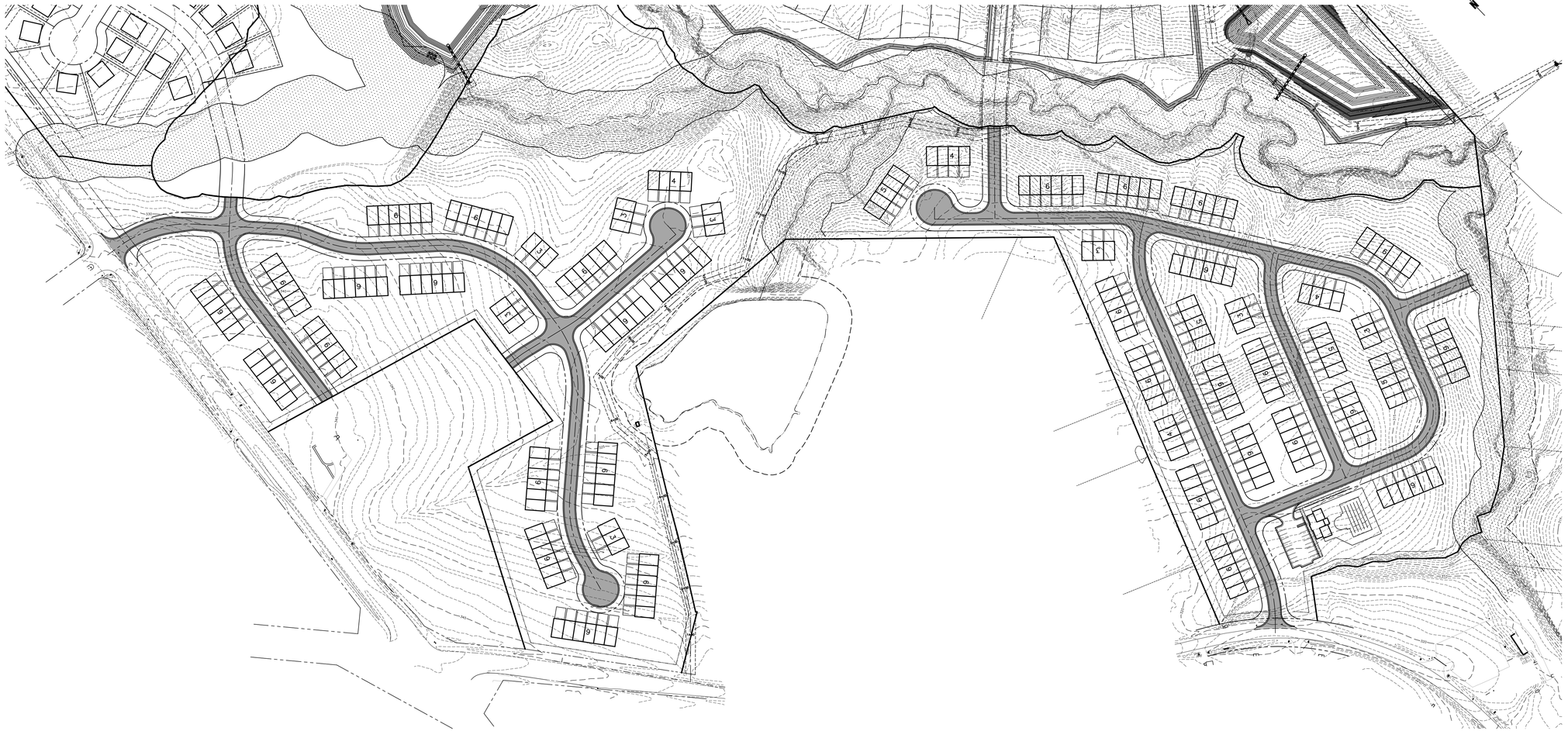
Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	535	591	716
Volume Left	531	4	0
Volume Right	4	0	264
cSH	211	885	1700
Volume to Capacity	2.54	0.00	0.42
Queue Length 95th (ft)	1125	0	0
Control Delay (s)	742.9	0.1	0.0
Lane LOS	F	A	
Approach Delay (s)	742.9	0.1	0.0
Approach LOS	F		

Intersection Summary			
Average Delay	215.8		
Intersection Capacity Utilization	69.3%	ICU Level of Service	C
Analysis Period (min)	15		

Appendix

I

2021 Site Trip Generation & Distribution



TOWNHOME LOTS: 252
WEST SIDE.....115
EAST SIDE.....137

CLUB HOUSE: 1

TOTAL AREA IN PAVEMENT: .176,480 SF.
WEST SIDE.....77,689 SF
EAST SIDE.....98,791 SF

PRELIMINARY DEVELOPMENT PLAN
OF
CREECH PROPERTY
TOWN OF CLAYTON - JOHNSTON COUNTY, N.C.

PRELIMINARY
NOT FOR CONSTRUCTION

Dalton Engineering and Associates, P. A.
446 East Main Street
P.O. Box 426
Clayton, NC 27520
(919)550-4740
Fax (919) 550-4741

Job: 16048	**Date:** 8/17/17	**Revision:**
File: 16048_TOWNHOMES	**Drawn:** WJB	**Sheet:** 1 OF 1

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IMPERVIOUS AREA CALCULATIONS

	TOTAL AREA (square feet)	PERCENTAGE OF TOTAL SITE	IMPERVIOUS AREA (square feet)	IMPERVIOUS PERCENTAGE
RESIDENTIAL LOTS	2,381,076	55.00%	1,785,807	75%
RIGHT-OF-WAY (street, sidewalk, & ROW dedication)	626,127	14.47%	331,541	52.95%
TOTAL RESOURCE CONSERVATION AREAS	392,089	9.06%	0	0%
TOTAL OPEN SPACE (includes pool, clubhouse, amenities, greenways, internal sidewalks and features in parks etc.)	712,332	16.45%	186,961	26.25%
STORMWATER BMP	129,987	3.00%	0	0%
LANDSCAPING BUFFERS	87,364	2.02%	0	0%
TOTAL AREA	4,328,975	100%	2,304,309	53.23%

LEGEND:

- 80' WIDE LOTS
- 70' WIDE LOTS
- 60' WIDE LOTS
- 50' WIDE LOTS
- RECREATIONAL OPEN SPACE
- LANDSCAPE BUFFER
- RESOURCE CONSERVATION AREA
- SINGLE-FAMILY RESIDENTIAL USE
- 10' WIDE PUBLIC GREENWAY

SUMMARY INFORMATION - TRACT 1

DEVELOPMENT NAME: HIGHGATE SUBDIVISION

TOTAL AREA CONTAINED WITHIN TRACT: 99.379 AC (4,328,975 S.F.)

PARCEL PIN: 165907-79-0962; 175000-50-9426

OWNER:
CREECH NC, LLC
448 VIKING DRIVE STE 220
VIRGINIA BEACH, VA 23452

PROPERTY IS LOCATED WITHIN THE TOWN OF CLAYTON

ZONING: PD-R

PROPERTY IS NOT LOCATED WITHIN A WATERSHED PROTECTION OVERLAY

TOTAL LOTS: 229

DENSITY: 2.30 LOTS PER ACRE

AREA IN RIPARIAN BUFFER: 9.00 ACRES

PROPERTY IS NOT LOCATED IN FEMA DESIGNATED FLOOD PLAIN

ELECTRIC PROVIDER: TOWN OF CLAYTON

WATER PROVIDER: TOWN OF CLAYTON

SEWER PROVIDER: TOWN OF CLAYTON

EXISTING IMPERVIOUS AREA: NONE

PROPOSED IMPERVIOUS AREA: SEE CHART ON THIS SHEET

EXISTING USE: VACANT

PROPOSED USE: SINGLE FAMILY RESIDENTIAL, 229 LOTS

Lot Data

Lot	Size (sf)	Width	Lot	Size (sf)	Width	Lot	Size (sf)	Width	Lot	Size (sf)	Width
1	9,874	79'	59	11,916	80'	117	7,000	50'	175	7,079	51'
2	9,867	79'	60	10,630	80'	118	7,000	50'	176	7,500	50'
3	10,033	80'	61	11,869	80'	119	7,355	49'	177	7,500	50'
4	12,083	77'	62	12,000	80'	120	9,911	64'	178	7,500	50'
5	13,057	83'	63	11,992	80'	121	9,542	69'	179	7,500	50'
6	11,214	83'	64	12,125	109'	122	7,365	49'	180	7,515	50'
7	11,656	95'	65	10,993	107'	123	10,000	80'	181	7,526	50'
8	9,723	80'	66	15,140	140'	124	10,000	80'	182	7,526	50'
9	9,733	80'	67	11,990	80'	125	10,766	81'	183	7,526	50'
10	11,895	83'	68	11,865	79'	126	10,481	80'	184	8,701	51'
11	10,619	80'	69	12,615	84'	127	10,831	80'	185	12,615	84'
12	10,411	80'	70	9,511	70'	128	9,316	78'	186	12,750	85'
13	10,411	80'	71	11,616	49'	129	19,857	65'	187	14,555	101'
14	10,421	80'	72	19,026	65'	130	9,559	83'	188	12,750	85'
15	10,659	84'	73	18,043	59'	131	10,801	80'	189	12,750	85'
16	7,838	60'	74	9,164	48'	132	10,800	80'	190	12,454	70'
17	7,839	60'	75	8,606	70'	133	10,800	80'	191	5,196	61'
18	9,252	77'	76	9,846	70'	134	10,800	80'	192	6,687	58'
19	7,201	60'	77	13,412	52'	135	10,800	80'	193	8,532	55'
20	7,125	60'	78	18,510	69'	136	11,190	80'	194	6,640	59'
21	7,638	60'	79	11,213	51'	137	10,800	80'	195	6,108	64'
22	7,497	60'	80	10,994	49'	138	10,800	80'	196	6,346	52'
23	7,356	60'	81	9,357	70'	139	10,671	79'	197	6,955	59'
24	7,280	60'	82	13,856	70'	140	10,661	79'	198	4,959	56'
25	8,925	61'	83	12,840	70'	141	12,756	82'	199	6,547	54'
26	8,722	60'	84	11,824	70'	142	14,380	82'	200	6,418	64'
27	6,352	60'	85	10,809	70'	143	16,299	82'	201	6,827	59'
28	6,137	60'	86	9,998	70'	144	19,426	82'	202	12,442	45'
29	6,593	59'	87	9,429	69'	145	25,144	82'	203	12,811	45'
30	7,189	59'	88	7,912	59'	146	16,635	101'	204	6,828	59'
31	7,555	60'	89	7,917	60'	147	9,853	55'	205	6,412	64'
32	7,906	60'	90	8,130	60'	148	8,463	106'	206	7,955	54'
33	9,374	63'	91	8,287	60'	149	7,014	50'	207	5,448	56'
34	7,861	60'	92	11,599	58'	150	11,035	87'	208	10,961	56'
35	8,005	62'	93	6,430	62'	151	11,184	87'	209	9,599	54'
36	10,481	54'	94	7,127	60'	152	11,529	61'	210	6,836	64'
37	10,046	89'	95	7,761	60'	153	7,526	50'	211	7,359	59'
38	8,069	60'	96	8,529	60'	154	7,319	50'	212	12,094	50'
39	7,816	60'	97	10,662	76'	155	7,257	50'	213	11,636	124'
40	7,364	60'	98	8,945	60'	156	7,200	50'	214	7,905	58'
41	12,172	64'	99	9,379	55'	157	10,880	91'	215	7,120	52'
42	9,755	60'	100	11,054	71'	158	7,489	50'	216	7,257	53'
43	8,335	60'	101	10,351	94'	159	7,659	50'	217	7,782	58'
44	8,836	59'	102	10,365	70'	160	7,772	50'	218	6,294	55'
45	12,220	103'	103	11,764	90'	161	8,177	51'	219	6,769	56'
46	9,162	60'	104	11,809	92'	162	8,872	52'	220	7,026	55'
47	9,160	60'	105	11,359	71'	163	12,217	55'	221	6,841	56'
48	9,073	60'	106	14,008	45'	164	8,310	61'	222	6,742	70'
49	8,985	60'	107	16,371	53'	165	7,000	50'	223	6,339	69'
50	8,763	59'	108	10,192	90'	166	7,000	50'	224	6,631	59'
51	12,360	78'	109	12,948	98'	167	7,125	50'	225	7,087	59'
52	13,390	82'	110	9,864	60'	168	9,001	69'	226	7,339	58'
53	12,000	80'	111	9,527	60'	169	7,010	51'	227	7,945	64'
54	12,000	80'	112	8,727	62'	170	6,942	51'	228	7,972	74'
55	12,000	80'	113	8,087	71'	171	7,083	51'	229	7,621	80'
56	12,000	80'	114	16,571	101'	172	7,148	51'			
57	11,991	80'	115	10,692	86'	173	7,129	51'			
58	13,465	98'	116	7,000	50'	174	7,104	51'			

NOTE: LOT WIDTHS SHOWN ARE BASED ON THE PRELIMINARY DESIGN AND ARE SUBJECT TO CHANGE. HOWEVER, ANY CHANGE IN LOT WIDTHS SHALL MEET THE REQUIREMENTS OF THE DIMENSIONAL STANDARDS OF THE NEIGHBORHOOD DDESIGN.

REVIEW ONLY
NOT FOR CONSTRUCTION

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 16282 ENGINEER TIMOTHY T. DIVISION
7/3/17

TOWN OF CLAYTON PROJECT NUMBER: 2017-56-SD

MASTER PLAN		
Job: 17014	**Date:** 4/3/17	**Revision:**
File: COVER	**Drawn:** WJB	**Sheet:** 3 OF 12

Site Trip Generation

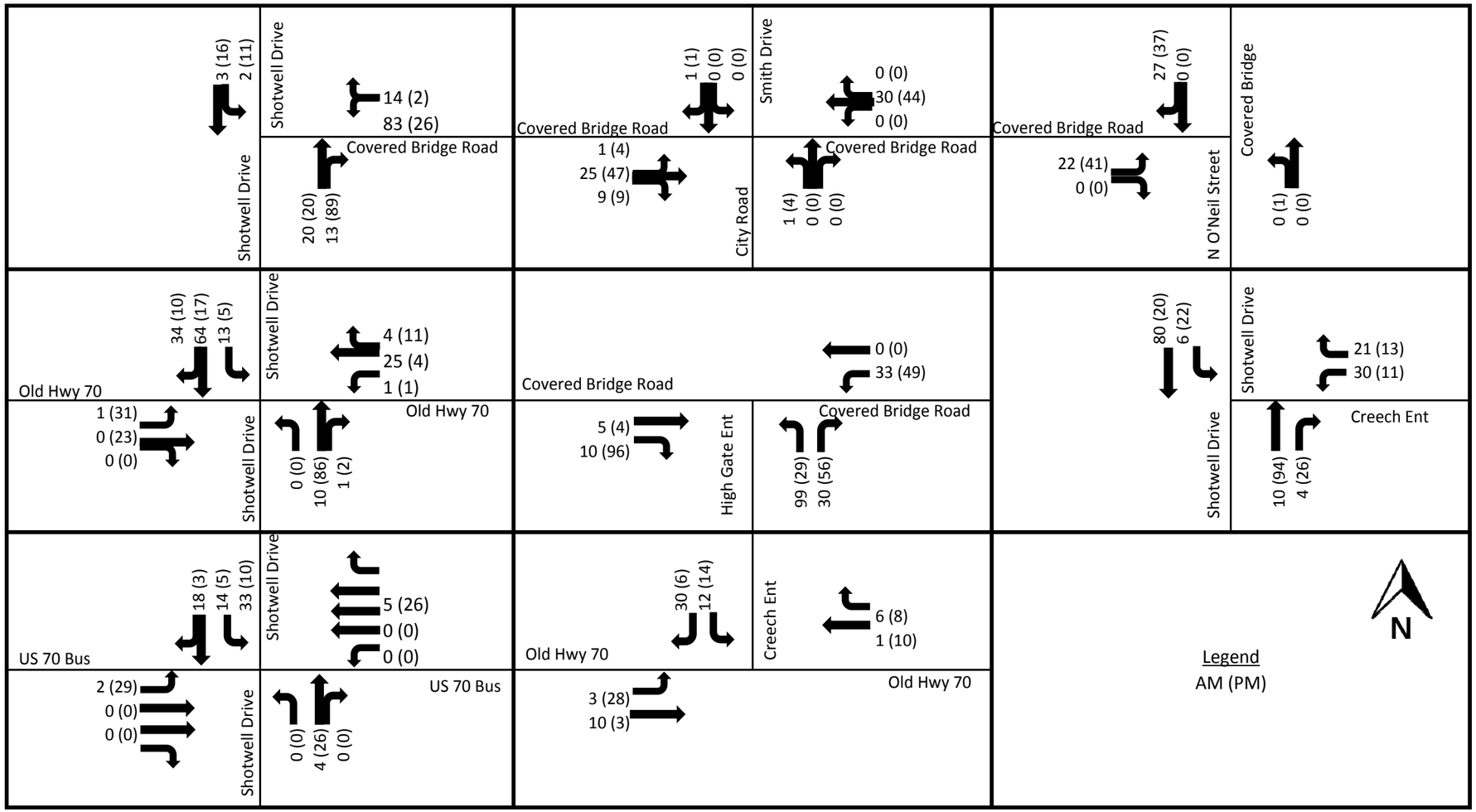
8/24/2017

Development	Phase	Type of complex	Number of Units	AM					PM				
				Rate	Total Trips	% In	Trips In	Trips Out	Rate	Total Trips	% In	Trips In	Trips Out
Creech	West	Townhome Lots	115	0.44	51	17%	9	42	0.52	60	67%	40	20
	East	Townhome Lots	137	0.44	60	17%	10	50	0.52	71	67%	48	24
	Total Trips		252	-	111	-	19	92	-	131	-	88	43
Highgate Section 1	Phase 1	Single Family Units	69	0.75	52	25%	13	39	1.00	69	63%	43	26
	Phase 2	Single Family Units	54	0.75	41	25%	10	30	1.00	54	63%	34	20
	Phase 3	Single Family Units	66	0.75	50	25%	12	37	1.00	66	63%	42	24
	Total Trips		189	-	142	-	35	106	-	189	-	119	70
Highgate Section 2	Phase 1	Single Family Units	40	0.75	30	25%	8	23	1.00	40	63%	25	15
Total			481	-	283	-	62	221	-	360	-	232	128

Prepared By: Moffatt and Nichol

Highgate and Creech TIA
2021 Site Distribution

8/24/2017



Prepared By Moffatt and Nichol

Appendix

J

2021 Build HCM Outputs

AM

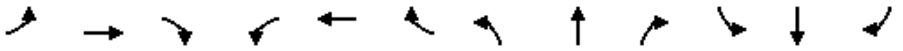
HCM Unsignalized Intersection Capacity Analysis
1: Shotwell Rd & Covered Bridge Rd

09/20/2017

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	499	85	514	132	28	493
Future Volume (Veh/h)	499	85	514	132	28	493
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	554	94	571	147	31	548
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1254	644			718	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1254	644			718	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	80			96	
cM capacity (veh/h)	183	473			883	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	648	718	579
Volume Left	554	0	31
Volume Right	94	147	0
cSH	201	1700	883
Volume to Capacity	3.23	0.42	0.04
Queue Length 95th (ft)	Err	0	3
Control Delay (s)	Err	0.0	0.9
Lane LOS	F		A
Approach Delay (s)	Err	0.0	0.9
Approach LOS	F		

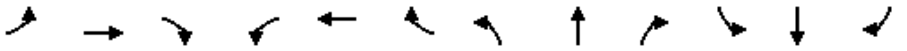
Intersection Summary			
Average Delay	3331.6		
Intersection Capacity Utilization	88.3%	ICU Level of Service	E
Analysis Period (min)	15		



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	109	82	28	490	62	223	518	35	105	611	300
Future Volume (vph)	46	109	82	28	490	62	223	518	35	105	611	300
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	5.9		4.8	5.7		6.3	5.6		6.2	5.5	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.94		1.00	0.98		1.00	0.99		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1743		1770	1831		1770	1845		1770	1771	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1743		1770	1831		1770	1845		1770	1771	
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)	51	121	91	31	544	69	248	576	39	117	679	333
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	51	212	0	31	613	0	248	615	0	117	1012	0
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Actuated Green, G (s)	6.0	21.8		4.2	20.4		12.7	37.1		12.2	36.6	
Effective Green, g (s)	6.0	21.8		4.2	20.4		12.7	37.1		12.2	36.6	
Actuated g/C Ratio	0.06	0.22		0.04	0.21		0.13	0.38		0.12	0.37	
Clearance Time (s)	4.6	5.9		4.8	5.7		6.3	5.6		6.2	5.5	
Vehicle Extension (s)	1.0	6.0		1.0	1.0		1.0	1.0		6.0	1.0	
Lane Grp Cap (vph)	108	388		76	381		229	699		220	662	
v/s Ratio Prot	c0.03	0.12		0.02	c0.33		c0.14	0.33		0.07	c0.57	
v/s Ratio Perm												
v/c Ratio	0.47	0.55		0.41	1.61		1.08	0.88		0.53	1.53	
Uniform Delay, d1	44.4	33.6		45.6	38.7		42.5	28.3		40.1	30.6	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	1.2	3.5		1.3	286.0		83.3	11.8		5.8	245.5	
Delay (s)	45.6	37.2		46.9	324.7		125.9	40.1		45.9	276.1	
Level of Service	D	D		D	F		F	D		D	F	
Approach Delay (s)		38.8			311.3			64.8			252.3	
Approach LOS		D			F			E			F	

Intersection Summary			
HCM 2000 Control Delay	190.2	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.40		
Actuated Cycle Length (s)	97.8	Sum of lost time (s)	22.5
Intersection Capacity Utilization	115.8%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	121	834	36	116	1429	367	165	327	22	273	116	146
Future Volume (vph)	121	834	36	116	1429	367	165	327	22	273	116	146
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.0	6.2	6.5	5.6	5.6	6.2	6.2		6.6	6.6	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	0.92	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	5085	1583	1770	1845		1770	1707	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539	1583	1770	5085	1583	1770	1845		1770	1707	
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)	134	927	40	129	1588	408	183	363	24	303	129	162
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	134	927	40	129	1588	408	183	387	0	303	291	0
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Split	NA		Split	NA	
Protected Phases	5	2	3	1	6		3	3		4	4	
Permitted Phases			2			6						
Actuated Green, G (s)	18.6	64.8	88.6	14.7	61.5	61.5	23.8	23.8		21.4	21.4	
Effective Green, g (s)	18.6	64.8	88.6	14.7	61.5	61.5	23.8	23.8		21.4	21.4	
Actuated g/C Ratio	0.12	0.43	0.59	0.10	0.41	0.41	0.16	0.16		0.14	0.14	
Clearance Time (s)	6.3	6.0	6.2	6.5	5.6	5.6	6.2	6.2		6.6	6.6	
Vehicle Extension (s)	6.0	6.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	219	1528	935	173	2084	649	280	292		252	243	
v/s Ratio Prot	c0.08	c0.26	0.01	0.07	c0.31		0.10	c0.21		c0.17	0.17	
v/s Ratio Perm			0.02			0.26						
v/c Ratio	0.61	0.61	0.04	0.75	0.76	0.63	0.65	1.33		1.20	1.20	
Uniform Delay, d1	62.3	32.8	12.9	65.8	38.0	35.2	59.2	63.1		64.3	64.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	8.5	1.8	0.0	14.1	2.7	4.6	4.1	168.3		122.6	121.7	
Delay (s)	70.8	34.6	12.9	80.0	40.7	39.7	63.4	231.4		186.9	186.0	
Level of Service	E	C	B	E	D	D	E	F		F	F	
Approach Delay (s)		38.2			42.9			177.4			186.5	
Approach LOS		D			D			F			F	

Intersection Summary			
HCM 2000 Control Delay	78.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	25.3
Intersection Capacity Utilization	88.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	140	37	19	480	0	20	3	18	6	19	18
Future Volume (Veh/h)	3	140	37	19	480	0	20	3	18	6	19	18
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	3	156	41	21	533	0	22	3	20	7	21	20
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	533			197			788	758	176	779	778	533
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	533			197			788	758	176	779	778	533
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			98			92	99	98	98	93	96
cM capacity (veh/h)	1035			1376			279	331	867	300	322	547

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	200	554	45	48
Volume Left	3	21	22	7
Volume Right	41	0	20	20
cSH	1035	1376	405	383
Volume to Capacity	0.00	0.02	0.11	0.13
Queue Length 95th (ft)	0	1	9	11
Control Delay (s)	0.2	0.5	15.0	15.7
Lane LOS	A	A	B	C
Approach Delay (s)	0.2	0.5	15.0	15.7
Approach LOS			B	C

Intersection Summary				
Average Delay	2.0			
Intersection Capacity Utilization	48.5%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	173	9	6	234	432	450
Future Volume (Veh/h)	173	9	6	234	432	450
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	192	10	7	260	480	500
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1004	730	980			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1004	730	980			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	28	98	99			
cM capacity (veh/h)	265	422	704			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	202	267	980
Volume Left	192	7	0
Volume Right	10	0	500
cSH	270	704	1700
Volume to Capacity	0.75	0.01	0.58
Queue Length 95th (ft)	136	1	0
Control Delay (s)	49.3	0.4	0.0
Lane LOS	E	A	
Approach Delay (s)	49.3	0.4	0.0
Approach LOS	E		

Intersection Summary			
Average Delay	6.9		
Intersection Capacity Utilization	67.1%	ICU Level of Service	C
Analysis Period (min)	15		

PM

HCM Unsignalized Intersection Capacity Analysis
1: Shotwell Rd & Covered Bridge Rd 09/20/2017

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	273	24	510	548	73	580
Future Volume (Veh/h)	273	24	510	548	73	580
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	303	27	567	609	81	644
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1678	872			1176	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1678	872			1176	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	0	92			86	
cM capacity (veh/h)	90	350			594	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	330	1176	725
Volume Left	303	0	81
Volume Right	27	609	0
cSH	96	1700	594
Volume to Capacity	3.43	0.69	0.14
Queue Length 95th (ft)	Err	0	12
Control Delay (s)	Err	0.0	3.7
Lane LOS	F		A
Approach Delay (s)	Err	0.0	3.7
Approach LOS	F		

Intersection Summary			
Average Delay	1480.2		
Intersection Capacity Utilization	115.0%	ICU Level of Service	H
Analysis Period (min)	15		

HCM Signalized Intersection Capacity Analysis
2: Shotwell Rd & Old Highway 70 W

09/20/2017

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	294	524	89	34	162	85	104	688	70	52	576	214
Future Volume (vph)	294	524	89	34	162	85	104	688	70	52	576	214
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	5.9		4.8	5.7		6.3	5.6		6.2	5.5	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.95		1.00	0.99		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1822		1770	1767		1770	1837		1770	1787	
Flt Permitted	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	1822		1770	1767		1770	1837		1770	1787	
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)	327	582	99	38	180	94	116	764	78	58	640	238
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	327	681	0	38	274	0	116	842	0	58	878	0
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Actuated Green, G (s)	14.6	27.7		4.0	17.5		7.4	21.4		6.6	20.6	
Effective Green, g (s)	14.6	27.7		4.0	17.5		7.4	21.4		6.6	20.6	
Actuated g/C Ratio	0.18	0.34		0.05	0.21		0.09	0.26		0.08	0.25	
Clearance Time (s)	4.6	5.9		4.8	5.7		6.3	5.6		6.2	5.5	
Vehicle Extension (s)	1.0	6.0		1.0	1.0		1.0	1.0		6.0	1.0	
Lane Grp Cap (vph)	314	613		86	376		159	478		142	447	
v/s Ratio Prot	c0.18	c0.37		0.02	0.16		c0.07	0.46		0.03	c0.49	
v/s Ratio Perm												
v/c Ratio	1.04	1.11		0.44	0.73		0.73	1.76		0.41	1.96	
Uniform Delay, d1	33.8	27.2		38.0	30.1		36.4	30.4		35.9	30.8	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	62.0	70.7		1.3	5.9		13.2	351.2		5.3	441.9	
Delay (s)	95.8	97.9		39.3	36.0		49.6	381.6		41.3	472.7	
Level of Service	F	F		D	D		D	F		D	F	
Approach Delay (s)		97.2			36.4			341.4			446.0	
Approach LOS		F			D			F			F	

Intersection Summary			
HCM 2000 Control Delay	265.7	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.39		
Actuated Cycle Length (s)	82.2	Sum of lost time (s)	22.5
Intersection Capacity Utilization	106.7%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	278	1664	275	376	1105	257	170	252	52	388	195	86
Future Volume (vph)	278	1664	275	376	1105	257	170	252	52	388	195	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.0	6.2	6.5	5.6	5.6	6.2	6.2		6.6	6.6	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	5085	1583	1770	1815		1770	1777	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539	1583	1770	5085	1583	1770	1815		1770	1777	
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)	309	1849	306	418	1228	286	189	280	58	431	217	96
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	309	1849	306	418	1228	286	189	338	0	431	313	0
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Split	NA		Split	NA	
Protected Phases	5	2	3	1	6		3	3		4	4	
Permitted Phases			2			6						
Actuated Green, G (s)	37.9	91.0	117.8	25.5	79.2	79.2	26.8	26.8		31.4	31.4	
Effective Green, g (s)	37.9	91.0	117.8	25.5	79.2	79.2	26.8	26.8		31.4	31.4	
Actuated g/C Ratio	0.19	0.46	0.59	0.13	0.40	0.40	0.13	0.13		0.16	0.16	
Clearance Time (s)	6.3	6.0	6.2	6.5	5.6	5.6	6.2	6.2		6.6	6.6	
Vehicle Extension (s)	6.0	6.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	335	1610	932	225	2013	626	237	243		277	278	
v/s Ratio Prot	0.17	c0.52	0.04	c0.24	0.24		0.11	c0.19		c0.24	0.18	
v/s Ratio Perm			0.15			0.18						
v/c Ratio	0.92	1.15	0.33	1.86	0.61	0.46	0.80	1.39		1.56	1.13	
Uniform Delay, d1	79.6	54.5	20.9	87.2	48.1	44.5	84.0	86.6		84.3	84.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	31.8	74.6	0.1	402.6	1.4	2.4	15.8	199.2		267.2	92.2	
Delay (s)	111.4	129.1	21.0	489.9	49.5	46.9	99.8	285.8		351.5	176.5	
Level of Service	F	F	C	F	D	D	F	F		F	F	
Approach Delay (s)		113.4			144.4			219.1			277.9	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	155.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.36		
Actuated Cycle Length (s)	200.0	Sum of lost time (s)	25.3
Intersection Capacity Utilization	125.6%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	524	38	10	286	5	25	14	45	12	10	6
Future Volume (Veh/h)	18	524	38	10	286	5	25	14	45	12	10	6
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	20	582	42	11	318	6	28	16	50	13	11	7
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	324			624			998	989	603	1044	1007	321
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	324			624			998	989	603	1044	1007	321
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			99			87	93	90	92	95	99
cM capacity (veh/h)	1236			957			208	240	499	173	234	720

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	644	335	94	31
Volume Left	20	11	28	13
Volume Right	42	6	50	7
cSH	1236	957	312	235
Volume to Capacity	0.02	0.01	0.30	0.13
Queue Length 95th (ft)	1	1	31	11
Control Delay (s)	0.4	0.4	21.5	22.6
Lane LOS	A	A	C	C
Approach Delay (s)	0.4	0.4	21.5	22.6
Approach LOS			C	C

Intersection Summary				
Average Delay	2.8			
Intersection Capacity Utilization	49.6%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (veh/h)	519	4	5	528	407	275
Future Volume (Veh/h)	519	4	5	528	407	275
Sign Control	Stop			Free	Free	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	577	4	6	587	452	306
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type				None	None	
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	1204	605	758			
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1204	605	758			
tC, single (s)	6.4	6.2	4.1			
tC, 2 stage (s)						
tF (s)	3.5	3.3	2.2			
p0 queue free %	0	99	99			
cM capacity (veh/h)	202	498	853			

Direction, Lane #	EB 1	NB 1	SB 1
Volume Total	581	593	758
Volume Left	577	6	0
Volume Right	4	0	306
cSH	203	853	1700
Volume to Capacity	2.87	0.01	0.45
Queue Length 95th (ft)	1288	1	0
Control Delay (s)	888.7	0.2	0.0
Lane LOS	F	A	
Approach Delay (s)	888.7	0.2	0.0
Approach LOS	F		

Intersection Summary			
Average Delay	267.3		
Intersection Capacity Utilization	73.9%	ICU Level of Service	D
Analysis Period (min)	15		

Appendix

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2021 Build with Improvements HCM Outputs

AM

HCM Signalized Intersection Capacity Analysis
1: Shotwell Rd & Covered Bridge Rd 09/20/2017

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	499	85	514	132	28	493
Future Volume (vph)	499	85	514	132	28	493
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0		7.0			7.0
Lane Util. Factor	1.00		1.00			1.00
Frt	0.98		0.97			1.00
Flt Protected	0.96		1.00			1.00
Satd. Flow (prot)	1751		1811			1858
Flt Permitted	0.96		1.00			0.68
Satd. Flow (perm)	1751		1811			1266
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	554	94	571	147	31	548
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	648	0	718	0	0	579
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Actuated Green, G (s)	34.0		41.6			41.6
Effective Green, g (s)	34.0		41.6			41.6
Actuated g/C Ratio	0.38		0.46			0.46
Clearance Time (s)	7.0		7.0			7.0
Vehicle Extension (s)	3.0		3.0			3.0
Lane Grp Cap (vph)	664		840			587
v/s Ratio Prot	c0.37		0.40			
v/s Ratio Perm						c0.46
v/c Ratio	0.98		0.85			0.99
Uniform Delay, d1	27.4		21.3			23.7
Progression Factor	1.00		1.00			1.00
Incremental Delay, d2	28.7		8.5			33.4
Delay (s)	56.1		29.8			57.1
Level of Service	E		C			E
Approach Delay (s)	56.1		29.8			57.1
Approach LOS	E		C			E

Intersection Summary			
HCM 2000 Control Delay	46.7	HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio	0.98		
Actuated Cycle Length (s)	89.6	Sum of lost time (s)	14.0
Intersection Capacity Utilization	93.3%	ICU Level of Service	F
Analysis Period (min)	15		

c Critical Lane Group

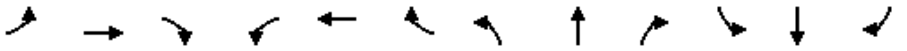
HCM Signalized Intersection Capacity Analysis
2: Shotwell Rd & Old Highway 70 W

09/20/2017

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	109	82	28	490	62	223	518	35	105	611	300
Future Volume (vph)	46	109	82	28	490	62	223	518	35	105	611	300
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	5.9		4.8	5.7		6.3	5.6		6.2	5.5	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.94		1.00	0.98		1.00	0.99		1.00	0.95	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1743		1770	1831		1770	1845		1770	1771	
Flt Permitted	0.10	1.00		0.51	1.00		0.06	1.00		0.95	1.00	
Satd. Flow (perm)	184	1743		953	1831		121	1845		1770	1771	
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)	51	121	91	31	544	69	248	576	39	117	679	333
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	51	212	0	31	613	0	248	615	0	117	1012	0
Turn Type	D.P+P	NA		D.P+P	NA		D.P+P	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	6			2			4					
Actuated Green, G (s)	46.2	41.7		45.8	40.4		74.3	61.5		12.8	61.6	
Effective Green, g (s)	46.2	41.7		45.8	40.4		74.3	61.5		12.8	61.6	
Actuated g/C Ratio	0.32	0.29		0.32	0.28		0.52	0.43		0.09	0.43	
Clearance Time (s)	4.6	5.9		4.8	5.7		6.3	5.6		6.2	5.5	
Vehicle Extension (s)	1.0	6.0		1.0	1.0		1.0	1.0		6.0	1.0	
Lane Grp Cap (vph)	124	509		329	518		209	795		158	765	
v/s Ratio Prot	c0.02	0.12		0.00	c0.33		c0.11	0.33		0.07	c0.57	
v/s Ratio Perm	0.12			0.03			0.51					
v/c Ratio	0.41	0.42		0.09	1.18		1.19	0.77		0.74	1.32	
Uniform Delay, d1	38.3	40.6		33.6	51.1		45.8	34.6		63.3	40.5	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	0.8	1.6		0.0	100.9		121.7	4.3		22.1	154.4	
Delay (s)	39.1	42.2		33.7	152.0		167.5	38.9		85.4	194.9	
Level of Service	D	D		C	F		F	D		F	F	
Approach Delay (s)		41.6			146.3			75.9			183.5	
Approach LOS		D			F			E			F	

Intersection Summary			
HCM 2000 Control Delay	130.3	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.22		
Actuated Cycle Length (s)	142.6	Sum of lost time (s)	22.5
Intersection Capacity Utilization	115.8%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	121	834	36	116	1429	367	165	327	22	273	116	146
Future Volume (vph)	121	834	36	116	1429	367	165	327	22	273	116	146
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.0	6.2	6.5	5.6	5.6	6.2	6.2		6.6	6.6	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.99		1.00	0.92	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	5085	1583	1770	1845		1770	1707	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539	1583	1770	5085	1583	1770	1845		1770	1707	
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)	134	927	40	129	1588	408	183	363	24	303	129	162
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	134	927	40	129	1588	408	183	387	0	303	291	0
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Split	NA		Split	NA	
Protected Phases	5	2	3	1	6		3	3		4	4	
Permitted Phases			2			6						
Actuated Green, G (s)	18.6	64.8	88.6	14.7	61.5	61.5	23.8	23.8		21.4	21.4	
Effective Green, g (s)	18.6	64.8	88.6	14.7	61.5	61.5	23.8	23.8		21.4	21.4	
Actuated g/C Ratio	0.12	0.43	0.59	0.10	0.41	0.41	0.16	0.16		0.14	0.14	
Clearance Time (s)	6.3	6.0	6.2	6.5	5.6	5.6	6.2	6.2		6.6	6.6	
Vehicle Extension (s)	6.0	6.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	219	1528	935	173	2084	649	280	292		252	243	
v/s Ratio Prot	c0.08	c0.26	0.01	0.07	c0.31		0.10	c0.21		c0.17	0.17	
v/s Ratio Perm			0.02			0.26						
v/c Ratio	0.61	0.61	0.04	0.75	0.76	0.63	0.65	1.33		1.20	1.20	
Uniform Delay, d1	62.3	32.8	12.9	65.8	38.0	35.2	59.2	63.1		64.3	64.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	8.5	1.8	0.0	14.1	2.7	4.6	4.1	168.3		122.6	121.7	
Delay (s)	70.8	34.6	12.9	80.0	40.7	39.7	63.4	231.4		186.9	186.0	
Level of Service	E	C	B	E	D	D	E	F		F	F	
Approach Delay (s)		38.2			42.9			177.4			186.5	
Approach LOS		D			D			F			F	

Intersection Summary			
HCM 2000 Control Delay	78.6	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	0.93		
Actuated Cycle Length (s)	150.0	Sum of lost time (s)	25.3
Intersection Capacity Utilization	88.6%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	140	37	19	480	0	20	3	18	6	19	18
Future Volume (Veh/h)	3	140	37	19	480	0	20	3	18	6	19	18
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	3	156	41	21	533	0	22	3	20	7	21	20
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	533			197			788	758	176	779	778	533
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	533			197			788	758	176	779	778	533
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			98			92	99	98	98	93	96
cM capacity (veh/h)	1035			1376			279	331	867	300	322	547

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	200	554	45	48
Volume Left	3	21	22	7
Volume Right	41	0	20	20
cSH	1035	1376	405	383
Volume to Capacity	0.00	0.02	0.11	0.13
Queue Length 95th (ft)	0	1	9	11
Control Delay (s)	0.2	0.5	15.0	15.7
Lane LOS	A	A	B	C
Approach Delay (s)	0.2	0.5	15.0	15.7
Approach LOS			B	C

Intersection Summary				
Average Delay	2.0			
Intersection Capacity Utilization	48.5%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	173	9	6	234	432	450
Future Volume (vph)	173	9	6	234	432	450
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0			7.0	7.0	
Lane Util. Factor	1.00			1.00	1.00	
Frt	0.99			1.00	0.93	
Flt Protected	0.95			1.00	1.00	
Satd. Flow (prot)	1766			1860	1734	
Flt Permitted	0.95			0.98	1.00	
Satd. Flow (perm)	1766			1818	1734	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	192	10	7	260	480	500
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	202	0	0	267	980	0
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Actuated Green, G (s)	13.9			50.1	50.1	
Effective Green, g (s)	13.9			50.1	50.1	
Actuated g/C Ratio	0.18			0.64	0.64	
Clearance Time (s)	7.0			7.0	7.0	
Vehicle Extension (s)	3.0			3.0	3.0	
Lane Grp Cap (vph)	314			1167	1113	
v/s Ratio Prot	c0.11				c0.57	
v/s Ratio Perm				0.15		
v/c Ratio	0.64			0.23	0.88	
Uniform Delay, d1	29.7			5.8	11.5	
Progression Factor	1.00			1.00	1.00	
Incremental Delay, d2	4.5			0.1	8.3	
Delay (s)	34.2			6.0	19.8	
Level of Service	C			A	B	
Approach Delay (s)	34.2			6.0	19.8	
Approach LOS	C			A	B	

Intersection Summary			
HCM 2000 Control Delay	19.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.83		
Actuated Cycle Length (s)	78.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	72.1%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

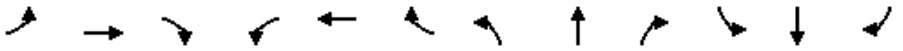
PM

HCM Signalized Intersection Capacity Analysis
1: Shotwell Rd & Covered Bridge Rd 09/20/2017

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	273	24	510	548	73	580
Future Volume (vph)	273	24	510	548	73	580
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0		7.0			7.0
Lane Util. Factor	1.00		1.00			1.00
Frt	0.99		0.93			1.00
Flt Protected	0.96		1.00			0.99
Satd. Flow (prot)	1761		1733			1852
Flt Permitted	0.96		1.00			0.41
Satd. Flow (perm)	1761		1733			757
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	303	27	567	609	81	644
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	330	0	1176	0	0	725
Turn Type	Prot		NA		Perm	NA
Protected Phases	8		2			6
Permitted Phases					6	
Actuated Green, G (s)	18.0		88.0			88.0
Effective Green, g (s)	18.0		88.0			88.0
Actuated g/C Ratio	0.15		0.73			0.73
Clearance Time (s)	7.0		7.0			7.0
Vehicle Extension (s)	3.0		3.0			3.0
Lane Grp Cap (vph)	264		1270			555
v/s Ratio Prot	c0.19		0.68			
v/s Ratio Perm						c0.96
v/c Ratio	1.25		0.93			1.31
Uniform Delay, d1	51.0		13.3			16.0
Progression Factor	1.00		1.00			1.00
Incremental Delay, d2	139.9		11.5			150.5
Delay (s)	190.9		24.8			166.5
Level of Service	F		C			F
Approach Delay (s)	190.9		24.8			166.5
Approach LOS	F		C			F

Intersection Summary			
HCM 2000 Control Delay	95.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.30		
Actuated Cycle Length (s)	120.0	Sum of lost time (s)	14.0
Intersection Capacity Utilization	120.0%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	295	524	89	34	162	85	104	688	70	52	576	214
Future Volume (vph)	295	524	89	34	162	85	104	688	70	52	576	214
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	4.6	5.9		4.8	5.7		6.3	5.6		6.2	5.5	
Lane Util. Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt	1.00	0.98		1.00	0.95		1.00	0.99		1.00	0.96	
Flt Protected	0.95	1.00		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	1822		1770	1767		1770	1837		1770	1787	
Flt Permitted	0.33	1.00		0.95	1.00		0.07	1.00		0.07	1.00	
Satd. Flow (perm)	617	1822		1770	1767		126	1837		125	1787	
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)	328	582	99	38	180	94	116	764	78	58	640	238
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	328	681	0	38	274	0	116	842	0	58	878	0
Turn Type	D.P+P	NA		Prot	NA		D.P+P	NA		D.P+P	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases	6						4			8		
Actuated Green, G (s)	50.9	44.3		6.2	31.8		68.3	59.5		68.3	59.2	
Effective Green, g (s)	50.9	44.3		6.2	31.8		68.3	59.5		68.3	59.2	
Actuated g/C Ratio	0.36	0.31		0.04	0.23		0.48	0.42		0.48	0.42	
Clearance Time (s)	4.6	5.9		4.8	5.7		6.3	5.6		6.2	5.5	
Vehicle Extension (s)	1.0	6.0		1.0	1.0		1.0	1.0		6.0	1.0	
Lane Grp Cap (vph)	378	571		77	397		166	773		162	748	
v/s Ratio Prot	c0.12	c0.37		0.02	0.16		c0.04	0.46		0.02	c0.49	
v/s Ratio Perm	0.20						0.29			0.15		
v/c Ratio	0.87	1.19		0.49	0.69		0.70	1.09		0.36	1.17	
Uniform Delay, d1	37.4	48.5		66.0	50.2		31.7	40.9		30.7	41.1	
Progression Factor	1.00	1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2	18.0	103.1		1.8	4.1		9.9	59.4		3.8	92.0	
Delay (s)	55.4	151.6		67.8	54.4		41.6	100.3		34.5	133.1	
Level of Service	E	F		E	D		D	F		C	F	
Approach Delay (s)		120.3			56.0			93.2			127.0	
Approach LOS		F			E			F			F	

Intersection Summary			
HCM 2000 Control Delay	107.9	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.14		
Actuated Cycle Length (s)	141.3	Sum of lost time (s)	22.5
Intersection Capacity Utilization	106.7%	ICU Level of Service	G
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	278	1664	275	376	1105	257	170	252	52	388	195	86
Future Volume (vph)	278	1664	275	376	1105	257	170	252	52	388	195	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.3	6.0	6.2	6.5	5.6	5.6	6.2	6.2		6.6	6.6	
Lane Util. Factor	1.00	0.95	1.00	1.00	0.91	1.00	1.00	1.00		1.00	1.00	
Frt	1.00	1.00	0.85	1.00	1.00	0.85	1.00	0.97		1.00	0.95	
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (prot)	1770	3539	1583	1770	5085	1583	1770	1815		1770	1777	
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00	0.95	1.00		0.95	1.00	
Satd. Flow (perm)	1770	3539	1583	1770	5085	1583	1770	1815		1770	1777	
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)	309	1849	306	418	1228	286	189	280	58	431	217	96
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	309	1849	306	418	1228	286	189	338	0	431	313	0
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Split	NA		Split	NA	
Protected Phases	5	2	3	1	6		3	3		4	4	
Permitted Phases			2			6						
Actuated Green, G (s)	37.9	91.0	117.8	25.5	79.2	79.2	26.8	26.8		31.4	31.4	
Effective Green, g (s)	37.9	91.0	117.8	25.5	79.2	79.2	26.8	26.8		31.4	31.4	
Actuated g/C Ratio	0.19	0.46	0.59	0.13	0.40	0.40	0.13	0.13		0.16	0.16	
Clearance Time (s)	6.3	6.0	6.2	6.5	5.6	5.6	6.2	6.2		6.6	6.6	
Vehicle Extension (s)	6.0	6.0	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	
Lane Grp Cap (vph)	335	1610	932	225	2013	626	237	243		277	278	
v/s Ratio Prot	0.17	c0.52	0.04	c0.24	0.24		0.11	c0.19		c0.24	0.18	
v/s Ratio Perm			0.15			0.18						
v/c Ratio	0.92	1.15	0.33	1.86	0.61	0.46	0.80	1.39		1.56	1.13	
Uniform Delay, d1	79.6	54.5	20.9	87.2	48.1	44.5	84.0	86.6		84.3	84.3	
Progression Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	
Incremental Delay, d2	31.8	74.6	0.1	402.6	1.4	2.4	15.8	199.2		267.2	92.2	
Delay (s)	111.4	129.1	21.0	489.9	49.5	46.9	99.8	285.8		351.5	176.5	
Level of Service	F	F	C	F	D	D	F	F		F	F	
Approach Delay (s)		113.4			144.4			219.1			277.9	
Approach LOS		F			F			F			F	

Intersection Summary			
HCM 2000 Control Delay	155.4	HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio	1.36		
Actuated Cycle Length (s)	200.0	Sum of lost time (s)	25.3
Intersection Capacity Utilization	125.6%	ICU Level of Service	H
Analysis Period (min)	15		

c Critical Lane Group

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	18	524	38	10	286	5	25	14	45	12	10	6
Future Volume (Veh/h)	18	524	38	10	286	5	25	14	45	12	10	6
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	20	582	42	11	318	6	28	16	50	13	11	7
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	324			624			998	989	603	1044	1007	321
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	324			624			998	989	603	1044	1007	321
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			99			87	93	90	92	95	99
cM capacity (veh/h)	1236			957			208	240	499	173	234	720

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	644	335	94	31
Volume Left	20	11	28	13
Volume Right	42	6	50	7
cSH	1236	957	312	235
Volume to Capacity	0.02	0.01	0.30	0.13
Queue Length 95th (ft)	1	1	31	11
Control Delay (s)	0.4	0.4	21.5	22.6
Lane LOS	A	A	C	C
Approach Delay (s)	0.4	0.4	21.5	22.6
Approach LOS			C	C

Intersection Summary				
Average Delay	2.8			
Intersection Capacity Utilization	49.6%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	519	4	5	528	407	275
Future Volume (vph)	519	4	5	528	407	275
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.0			7.0	7.0	
Lane Util. Factor	1.00			1.00	1.00	
Frt	1.00			1.00	0.95	
Flt Protected	0.95			1.00	1.00	
Satd. Flow (prot)	1773			1862	1761	
Flt Permitted	0.95			0.96	1.00	
Satd. Flow (perm)	1773			1789	1761	
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.90	0.90
Adj. Flow (vph)	577	4	6	587	452	306
RTOR Reduction (vph)	0	0	0	0	0	0
Lane Group Flow (vph)	581	0	0	593	758	0
Turn Type	Prot		Perm	NA	NA	
Protected Phases	4			2	6	
Permitted Phases			2			
Actuated Green, G (s)	30.1			39.5	39.5	
Effective Green, g (s)	30.1			39.5	39.5	
Actuated g/C Ratio	0.36			0.47	0.47	
Clearance Time (s)	7.0			7.0	7.0	
Vehicle Extension (s)	3.0			3.0	3.0	
Lane Grp Cap (vph)	638			845	832	
v/s Ratio Prot	c0.33				c0.43	
v/s Ratio Perm				0.33		
v/c Ratio	0.91			0.70	0.91	
Uniform Delay, d1	25.5			17.4	20.4	
Progression Factor	1.00			1.00	1.00	
Incremental Delay, d2	17.2			2.7	14.0	
Delay (s)	42.7			20.1	34.5	
Level of Service	D			C	C	
Approach Delay (s)	42.7			20.1	34.5	
Approach LOS	D			C	C	

Intersection Summary			
HCM 2000 Control Delay	32.5	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.91		
Actuated Cycle Length (s)	83.6	Sum of lost time (s)	14.0
Intersection Capacity Utilization	78.9%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

Appendix

L

Development Entrances' HCM

2019 Build

AM

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	138	3	10	459	30	9
Future Volume (Veh/h)	138	3	10	459	30	9
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	153	3	11	510	33	10
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			156		686	154
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			156		686	154
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			99		92	99
cM capacity (veh/h)			1424		410	891

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	156	521	43
Volume Left	0	11	33
Volume Right	3	0	10
cSH	1700	1424	469
Volume to Capacity	0.09	0.01	0.09
Queue Length 95th (ft)	0	1	8
Control Delay (s)	0.0	0.2	13.5
Lane LOS		A	B
Approach Delay (s)	0.0	0.2	13.5
Approach LOS			B

Intersection Summary			
Average Delay	1.0		
Intersection Capacity Utilization	42.2%	ICU Level of Service	A
Analysis Period (min)	15		

PM

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	494	29	15	255	9	17
Future Volume (Veh/h)	494	29	15	255	9	17
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	549	32	17	283	10	19
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			581		882	565
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			581		882	565
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			98		97	96
cM capacity (veh/h)			993		311	524

Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	581	300	29
Volume Left	0	17	10
Volume Right	32	0	19
cSH	1700	993	424
Volume to Capacity	0.34	0.02	0.07
Queue Length 95th (ft)	0	1	5
Control Delay (s)	0.0	0.7	14.1
Lane LOS		A	B
Approach Delay (s)	0.0	0.7	14.1
Approach LOS			B

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	37.8%	ICU Level of Service	A
Analysis Period (min)	15		

2021 Build

AM

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	150	10	33	485	99	30
Future Volume (Veh/h)	150	10	33	485	99	30
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	167	11	37	539	110	33
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			178		786	172
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			178		786	172
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			97		69	96
cM capacity (veh/h)			1398		352	871

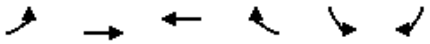
Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	178	576	143
Volume Left	0	37	110
Volume Right	11	0	33
cSH	1700	1398	408
Volume to Capacity	0.10	0.03	0.35
Queue Length 95th (ft)	0	2	39
Control Delay (s)	0.0	0.8	18.5
Lane LOS		A	C
Approach Delay (s)	0.0	0.8	18.5
Approach LOS			C

Intersection Summary			
Average Delay	3.4		
Intersection Capacity Utilization	53.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	30	21	622	4	6	986
Future Volume (Veh/h)	30	21	622	4	6	986
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	33	23	691	4	7	1096
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			1109			
pX, platoon unblocked	0.68	0.68			0.68	
vC, conflicting volume	1803	693			695	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1944	318			321	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	32	95			99	
cM capacity (veh/h)	48	493			846	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	56	695	1103
Volume Left	33	0	7
Volume Right	23	4	0
cSH	77	1700	846
Volume to Capacity	0.73	0.41	0.01
Queue Length 95th (ft)	87	0	1
Control Delay (s)	129.2	0.0	0.3
Lane LOS	F		A
Approach Delay (s)	129.2	0.0	0.3
Approach LOS	F		

Intersection Summary			
Average Delay	4.1		
Intersection Capacity Utilization	66.7%	ICU Level of Service	C
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	3	246	550	6	12	30
Future Volume (Veh/h)	3	246	550	6	12	30
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	3	273	611	7	13	33
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	618				894	614
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	618				894	614
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				96	93
cM capacity (veh/h)	962				311	491

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	276	618	46
Volume Left	3	0	13
Volume Right	0	7	33
cSH	962	1700	422
Volume to Capacity	0.00	0.36	0.11
Queue Length 95th (ft)	0	0	9
Control Delay (s)	0.1	0.0	14.6
Lane LOS	A		B
Approach Delay (s)	0.1	0.0	14.6
Approach LOS			B

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	39.3%	ICU Level of Service	A
Analysis Period (min)	15		

PM

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	525	96	49	268	29	56
Future Volume (Veh/h)	525	96	49	268	29	56
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	583	107	54	298	32	62
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			690		1042	636
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			690		1042	636
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			94		87	87
cM capacity (veh/h)			905		239	478

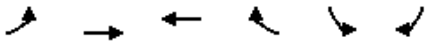
Direction, Lane #	EB 1	WB 1	NB 1
Volume Total	690	352	94
Volume Left	0	54	32
Volume Right	107	0	62
cSH	1700	905	356
Volume to Capacity	0.41	0.06	0.26
Queue Length 95th (ft)	0	5	26
Control Delay (s)	0.0	2.0	18.7
Lane LOS		A	C
Approach Delay (s)	0.0	2.0	18.7
Approach LOS			C

Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	65.3%	ICU Level of Service	C
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	11	13	1041	26	22	831
Future Volume (Veh/h)	11	13	1041	26	22	831
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	12	14	1157	29	24	923
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			1109			
pX, platoon unblocked	0.75	0.75			0.75	
vC, conflicting volume	2142	1172			1186	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	2354	1063			1083	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	57	93			95	
cM capacity (veh/h)	28	204			485	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	26	1186	947
Volume Left	12	0	24
Volume Right	14	29	0
cSH	52	1700	485
Volume to Capacity	0.50	0.70	0.05
Queue Length 95th (ft)	47	0	4
Control Delay (s)	128.0	0.0	1.7
Lane LOS	F		A
Approach Delay (s)	128.0	0.0	1.7
Approach LOS	F		

Intersection Summary			
Average Delay	2.3		
Intersection Capacity Utilization	71.4%	ICU Level of Service	C
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	28	618	275	8	14	6
Future Volume (Veh/h)	28	618	275	8	14	6
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	31	687	306	9	16	7
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	315				1060	310
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	315				1060	310
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				93	99
cM capacity (veh/h)	1245				242	730

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	718	315	23
Volume Left	31	0	16
Volume Right	0	9	7
cSH	1245	1700	304
Volume to Capacity	0.02	0.19	0.08
Queue Length 95th (ft)	2	0	6
Control Delay (s)	0.7	0.0	17.8
Lane LOS	A		C
Approach Delay (s)	0.7	0.0	17.8
Approach LOS			C

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	62.4%	ICU Level of Service	B
Analysis Period (min)	15		

2021 Build with Improvements

AM

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	150	10	33	485	99	30
Future Volume (Veh/h)	150	10	33	485	99	30
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	167	11	37	539	110	33
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	1182					
pX, platoon unblocked						
vC, conflicting volume			178		780	167
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			178		780	167
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			97		69	96
cM capacity (veh/h)			1398		354	877

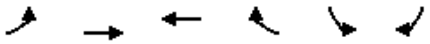
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	167	11	37	539	143
Volume Left	0	0	37	0	110
Volume Right	0	11	0	0	33
cSH	1700	1700	1398	1700	411
Volume to Capacity	0.10	0.01	0.03	0.32	0.35
Queue Length 95th (ft)	0	0	2	0	38
Control Delay (s)	0.0	0.0	7.6	0.0	18.4
Lane LOS			A		C
Approach Delay (s)	0.0		0.5		18.4
Approach LOS					C

Intersection Summary			
Average Delay	3.2		
Intersection Capacity Utilization	39.5%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	30	21	622	4	6	986
Future Volume (Veh/h)	30	21	622	4	6	986
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	33	23	691	4	7	1096
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			1109			986
pX, platoon unblocked	0.84	0.71			0.71	
vC, conflicting volume	1801	691			695	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1192	363			369	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	81	95			99	
cM capacity (veh/h)	171	485			847	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	56	691	4	7	1096
Volume Left	33	0	0	7	0
Volume Right	23	0	4	0	0
cSH	233	1700	1700	847	1700
Volume to Capacity	0.24	0.41	0.00	0.01	0.64
Queue Length 95th (ft)	23	0	0	1	0
Control Delay (s)	25.2	0.0	0.0	9.3	0.0
Lane LOS	D			A	
Approach Delay (s)	25.2	0.0		0.1	
Approach LOS	D				

Intersection Summary			
Average Delay	0.8		
Intersection Capacity Utilization	61.9%	ICU Level of Service	B
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	3	246	550	6	12	30
Future Volume (Veh/h)	3	246	550	6	12	30
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	3	273	611	7	13	33
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	618				890	611
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	618				890	611
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				96	93
cM capacity (veh/h)	962				312	494

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	3	273	611	7	46
Volume Left	3	0	0	0	13
Volume Right	0	0	0	7	33
cSH	962	1700	1700	1700	424
Volume to Capacity	0.00	0.16	0.36	0.00	0.11
Queue Length 95th (ft)	0	0	0	0	9
Control Delay (s)	8.8	0.0	0.0	0.0	14.5
Lane LOS	A				B
Approach Delay (s)	0.1		0.0		14.5
Approach LOS					B

Intersection Summary			
Average Delay	0.7		
Intersection Capacity Utilization	38.9%	ICU Level of Service	A
Analysis Period (min)	15		

PM

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	525	96	49	268	29	56
Future Volume (Veh/h)	525	96	49	268	29	56
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	583	107	54	298	32	62
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)	1182					
pX, platoon unblocked						
vC, conflicting volume			690		989	583
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			690		989	583
tC, single (s)			4.1		6.4	6.2
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			94		88	88
cM capacity (veh/h)			905		257	512

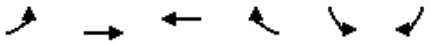
Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1
Volume Total	583	107	54	298	94
Volume Left	0	0	54	0	32
Volume Right	0	107	0	0	62
cSH	1700	1700	905	1700	383
Volume to Capacity	0.34	0.06	0.06	0.18	0.25
Queue Length 95th (ft)	0	0	5	0	24
Control Delay (s)	0.0	0.0	9.2	0.0	17.4
Lane LOS			A		C
Approach Delay (s)	0.0		1.4		17.4
Approach LOS					C

Intersection Summary			
Average Delay	1.9		
Intersection Capacity Utilization	46.0%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	11	13	1041	26	22	831
Future Volume (Veh/h)	11	13	1041	26	22	831
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	12	14	1157	29	24	923
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)			1109			986
pX, platoon unblocked	0.50	0.42			0.42	
vC, conflicting volume	2128	1157			1186	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	1988	679			749	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	62	93			93	
cM capacity (veh/h)	31	189			359	

Direction, Lane #	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total	26	1157	29	24	923
Volume Left	12	0	0	24	0
Volume Right	14	0	29	0	0
cSH	57	1700	1700	359	1700
Volume to Capacity	0.46	0.68	0.02	0.07	0.54
Queue Length 95th (ft)	43	0	0	5	0
Control Delay (s)	112.7	0.0	0.0	15.7	0.0
Lane LOS	F			C	
Approach Delay (s)	112.7	0.0		0.4	
Approach LOS	F				

Intersection Summary			
Average Delay	1.5		
Intersection Capacity Utilization	64.8%	ICU Level of Service	C
Analysis Period (min)	15		



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	28	618	275	8	14	6
Future Volume (Veh/h)	28	618	275	8	14	6
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	31	687	306	9	16	7
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	315				1055	306
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	315				1055	306
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	98				93	99
cM capacity (veh/h)	1245				244	734

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	SB 1
Volume Total	31	687	306	9	23
Volume Left	31	0	0	0	16
Volume Right	0	0	0	9	7
cSH	1245	1700	1700	1700	306
Volume to Capacity	0.02	0.40	0.18	0.01	0.08
Queue Length 95th (ft)	2	0	0	0	6
Control Delay (s)	8.0	0.0	0.0	0.0	17.7
Lane LOS	A				C
Approach Delay (s)	0.3		0.0		17.7
Approach LOS					C

Intersection Summary			
Average Delay	0.6		
Intersection Capacity Utilization	42.5%	ICU Level of Service	A
Analysis Period (min)	15		

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

JAMES H. TROGDON, III
SECRETARY

DELIVERY VIA EMAIL

October 20, 2017

David L. DeYoung, AICP
Planning Director - Town of Clayton
PO Box 879
Clayton, NC 27528

COUNTY: Johnston

SUBJECT: **TIA Review of Proposed Highgate Subdivision on SR 1553 Shotwell Road and SR 1700 Covered Bridge Road in Clayton**

Dear Mr. DeYoung,

Highway Division Four (Division) has reviewed the Traffic Impact Analysis (TIA) for the subject development and offers the following comments. These comments are in addition to any requirements that are included in the attached Traffic Impact Analysis Review Report performed by the Congestion Management Section of the Transportation Mobility and Safety Division of NCDOT. All requirements or recommendations included herein are based off of current Department policies. This review should not be mistaken for approval of the driveway permit, design/construction plans, or final plat. A driveway permit must be obtained prior to construction. All design aspects of any submitted plans shall comply with current NCDOT Standard Specifications for Roads and Structures and Policy on Street and Driveway Access to North Carolina Highways.

GENERAL COMMENTS

- Lane Closures for required improvement construction will only be permitted under restricted hours due to heavy traffic volumes in the vicinity of the proposed development. These restrictions will be determined during the driveway permitting application and approval.

RIGHT-OF-WAY DEDICATION & RESERVATION

- A 25' right-of-way reservation shall be a requirement of the driveway permit and recorded via plat for the proposed subdivision for the property frontage along SR 1700 and SR 1553.

Mailing Address:
NC DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS | DIV. 4 DIST. 3
2671 US 70 WEST
GOLDSBORO, NC 27530

Telephone: (919) 739-5300
Fax: (919) 731-2017
Customer Service: 1-877-368-4968
Website: www.ncdot.gov

Location:
2671 US 70 WEST
GOLDSBORO, NC 26730

INTERSECTIONS / SITE ACCESSES AND ASSOCIATED IMPROVEMENTS

The following comments are in addition to individual intersection improvements recommended by the TIA and TIA Review Report and are considered necessary for consistency with local District and Division policy. If an intersection is not listed herein, then the Division concurs with the TIA Review Report recommendations.

SR 1553 Shotwell Road and SR 1700 Covered Bridge Road

- A northbound right turn lane on SR 1553 with a minimum storage of 250' and appropriate taper
- A southbound left turn lane on SR 1553 with a minimum storage of 100' and appropriate taper
- A westbound right turn lane on SR 1700 with a minimum storage of 200' and appropriate taper
- The above requirements are consistent with the requirements of the previously reviewed TIA for Creech Tract dated September 28, 2015

SR 1553 Shotwell Road and Creech Western Entrance Intersection

- A northbound right turn lane on SR 1553 with a minimum storage of 100' and appropriate taper

As previously stated, these conditions and recommendations are in addition to any requirements that have been provided by the Traffic Impact Analysis Review Report performed by the Congestion Management Unit. Any roadway improvements and right-of-way dedication necessary to accommodate the road construction shall be the responsibility of the owner/developers. These conditions are based on current traffic volumes and projected growth for the study area. Should the timelines presented for project build-out dates not be met and traffic conditions change due to growth in adjacent areas, these recommendations may not be applicable. Feel free to contact me if you have any additional questions or concerns.

Sincerely,

DocuSigned by:

6C10249A6B37469...

Jiles P. Harrell, PE
District Engineer

cc: Ronnie Keeter, PE - Division Engineer
Andy Brown, PE - Division Traffic Engineer
Solomon Mengesha – Congestion Management Unit
Jerry Dalton, PE – Dalton Engineering and Associates, P. A.
Don Darity, PE – Moffatt & Nichol, Inc.
Driveway Permit File

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

JAMES H. TROGDON, III
SECRETARY

DEPARTMENT OF TRANSPORTATION

TRANSPORTATION MOBILITY AND SAFETY DIVISION
TRAFFIC MANAGEMENT UNIT
CONGESTION MANAGEMENT SECTION

October 12, 2017

Traffic Impact Analysis Review Report

Highgate/Creech Subdivision

TIA Project: SC-2017-103
Division: 4
County: Johnston
Description: Highgate/Creech Subdivision on SR 1553 (Shotwell Rd) and SR 1700 (Covered Bridge Rd) in Clayton

NORTH CAROLINA PROFESSIONAL SEAL 18080 ENGINEER JAMES H. DUNLOP

10/12/2017

James H. Dunlop, P. E.
Congestion Management Engineer

Solomon Mengesha
Congestion Management Project Design Engineer

MAILING ADDRESS:
1561 Mail Service Center
Raleigh, North Carolina 27699-1561

Telephone: 919-814-5000

LOCATION:
750 North Greenfield Parkway
Garner, North Carolina 27529

Website: WWW.NCDOT.ORG/DOH/Preconstruct/Traffic/Congestion/CM/

Highgate/Creech Subdivision

SC-2017-103	Johnston County	10/12/2017

Per your request, the Congestion Management Section (CMS) of the Transportation Mobility and Safety Division has completed a review of the subject site. The comments and recommendations contained in this review are based on data presented in the sealed Traffic Impact Analysis (TIA) and are subject to the approval of the local District Engineer's Office and appropriate local authorities.

Date Initially Received by CMS	08/22/2017	Date of Site Plan Prepared by Dalton Engineering & Associates, P. A.	08/17/2017
Date Latest Information Received	09/22/2017		
Date of Preliminary Review Letter Accepting TIA for Review	09/26/2017	Date of Sealed TIA Prepared by Moffatt & Nichol, Inc.	09/21/2017

Proposed Development

According to the TIA, the proposed Highgate/Creech Subdivision is to be located on SR 1553 (Shotwell Rd) and SR 1700 (Cover Bridge Rd) in Clayton, Johnston County. The TIA states the development is to be constructed in two phases.

Phase 1 is to be constructed by 2019, phase 2 by 2021 and consisted of the following.

Land Use	Land Use Code	Size
Phase 1		
Single Family Homes	210	69
Phase 2		
Townhouse	230	252
Single Family Homes	210	160

Trip Generation – Total Phase 1 & 2 Unadjusted Volumes During a Typical Weekday Based on appropriate methodology outlined in the *ITE Trip Generation Manual, 9th Ed.*

	IN	OUT	TOTAL
AM Peak Hour	62	221	283
PM Peak Hour	232	128	360
Daily Trips			**3,656**

Requested Access Points

Driveway	Public Roadway	Access Type
Highgate Entrance	SR 1004 (Covered Bridge Rd)	All-Movements
Creech Western Entrance	SR 1553 (Shotwell Rd)	All-Movements
Creech Southern Entrance	SR 1004 (Old US Hwy 70)	All-Movements

TIP Projects in Study Area

None In Area

General Reference

For reference to various documents applicable to this review please reference the following link: *http://www.ncdot.org/doh/preconstruct/traffic/teppl/Topics/C-37/C-37.html*

Once the driveway permit has been approved and issued, a copy of the final driveway permit requirements should be forwarded to this office. If we can provide further assistance, please contact the Congestion Management Section at (919) 773-2800.

Recommendations

LEGEND

❶ Improvement by Developer. Congestion Management concurs with recommendation.
❷ Improvement by Developer. Additional or modified recommendation.

General comments

General comments

The following comments and recommendations are based on the full buildout of the site.

SR 1553 (Shotwell Rd) and SR 1700 (Cover Bridge Rd) Intersection

Poor LOS and queuing are anticipated to persist after recommended developer mitigation on the WB approach.

New Signal ❶

- **NB SR 1553 (Shotwell Rd)**
  - 100' Right-Turn Lane ❷

SR 1700 (Covered Bridge Rd) and Highgate Entrance/Trotter's Run Ct Intersection

- **EB RS 1700 (Covered Bridge Rd)**
  - 75' Right-Turn Lane ❶
- **WB RS 1700 (Covered Bridge Rd)**
  - 75' Left-Turn Lane ❶
- **NB Highgate Entrance**
  - Two-lane cross-section: one ingress, one egress ❶
  - Egress: Left/Thru/Right Lane ❶
  - 150' Internal Protected Stem ❷

SR 1700 (Covered Bridge Rd) and SR 1709 (City Rd)/Smith Dr. Intersection

No Improvements are recommended for site traffic

SR 1553 (Covered Bridge Rd) and N O'Neil St Intersection

New Signal ❶

SR 1553 (Shotwell Rd) and Creech Western Entrance Intersection

- **NB SR 1553 (Shotwell Rd)**
  - 50' Right-Turn Lane ❶
- **SB SR 1553 (Shotwell Rd)**
  - 100' Left-Turn Lane ❶
- **WB Creech Western Entrance**
  - Two-lane cross-section: one ingress, one egress ❶
  - Egress: Left/Right Lane ❶
  - 150' Internal Protected Stem ❷

SR 1553 (Shotwell Rd) and SR 1004 (Old US Hwy 70) Intersection

Poor LOS/excessive queuing is anticipated to persist after recommended developer mitigation at this location.

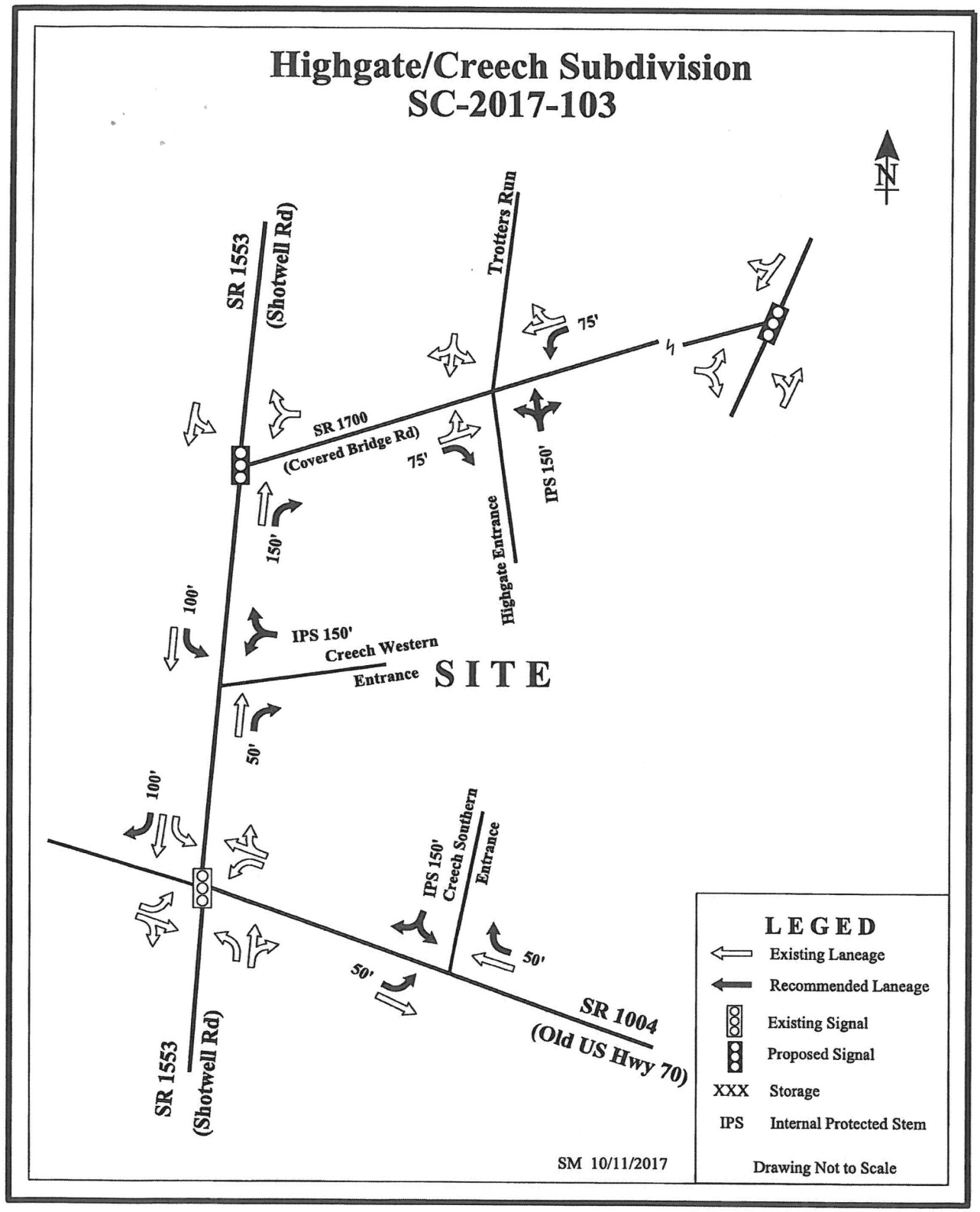
- **SB SR 1553 (Shotwell Rd)**
  - 100' Right-Turn Lane ❷

SR 1553 (Shotwell Rd) and US 70 Business Intersection

Poor LOS/excessive queuing is anticipated to persist at this location; however, no Improvements are recommended for site traffic

SR 1004 (Old US Hwy 70) and Creech Southern Entrance Intersection

- **EB SR 1004 (Old Hwy 70)**
  - 50' Left-Turn Lane ❶
- **WB SR 1004 (US Hwy 70)**
  - 50' Right-Turn Lane ❶
- **SB Creech Southern Entrance**
  - Two-lane cross-section: one ingress, one egress ❶
  - Egress: Left/Right Lane ❶
  - 100' Internal Protected Stem ❷


Highgate/Creech Subdivision
SC-2017-103
N
SR 1553
(Shotwell Rd)
Trotters Run
75'
SR 1700
(Covered Bridge Rd)
75'
IPS 150'
Highgate Entrance
150'
100'
IPS 150'
Creech Western
Entrance
SITE
50'
100'
IPS 150'
Creech Southern
Entrance
50'
50'
SR 1004
(Old US Hwy 70)
SR 1553
(Shotwell Rd)
SM 10/11/2017
LEGED
Existing Laneage
Recommended Laneage
Existing Signal
Proposed Signal
XXX Storage
IPS Internal Protected Stem
Drawing Not to Scale

Dalton Engineering
and Associates, P. A.

LETTER OF TRANSMITTAL

TO: Town of Clayton ATTENTION: Samantha Wullenwaber

DATE: 2/15/2019 REFERENCE: Creech Tract Development

We are sending You:

	PLANS		CHECK
	SPECIFICATIONS		COPY OF LETTER
X	REVISED PLANS		APPLICATIONS
	PERMITS	X	OTHER

Copies	Date	Dwg. #	Description
1			**Traffic Impact Analysis e-mail with attached transmittal, as provided by Moffatt & Nichol**
3		16048	**Subdivision Plans - revised**

These are transmitted as checked below:

X	For Approval		Revisions As Requested
	As Requested		Return Corrected Copies
	Review & Comment		Make Corrections Needed
	For Your Use		Other :

COMMENTS

Note : The Traffic Impact Analysis that is referred to in the attached Moffatt & Nichol transmittal (Highgate - Creech Developments) was previously reviewed and approved by both the Town of Clayton and N.C.D.O.T.

THANK YOU

Jonathan Barnes
Dalton Engineering and Associates, P.A.

RECEIVED
FEB 15 2019
TOWN OF CLAYTON
PLANNING DEPARTMENT

Jonathan Barnes

From: Darity, Don [ddarity@moffattnichol.com]
Sent: Wednesday, February 13, 2019 8:02 AM
To: Jonathan Barnes; Jerry Dalton
Cc: Paleti, Chaitanya
Subject: RE: Creech Tract Timeline
Attachments: HighGate-Creech Developments_2019 TIA Updates.pdf

Jerry/Jonathan,

Attached is a memo addressing the HighGate-Creech Development project in Clayton, NC. Per our conversation, I have prepared this memo to address concerns from the Town of Clayton concerning the need to obtain new 2019 traffic counts at the original five study intersections as noted in the 2017 TIA study prepared by our office.

Please review the attached memo and let me know if you are in agreement with the contents of the subject matter.

Best Regards,

Don Darity, PE
Sr. Traffic Operations Manager
Moffatt & Nichol
4700 Falls of Neuse Road, Suite 300 | Raleigh, NC 27609
P 919.781.4626 | **F** 919.781.4869 | **C** 919.624.3938

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From: Jonathan Barnes <jbarnes@daltonengineering.com>
Sent: Thursday, February 7, 2019 4:34 PM
To: Darity, Don <ddarity@moffattnichol.com>
Subject: FW: Creech Tract Timeline

Don,

Good afternoon. Hope everything has been going well over your way.

Please see the e-mail, below, as received from the Town of Clayton Planning Department regarding the Creech Tract Development, located within the Town of Clayton.

After you have a chance to review, would you give me a call at the office to discuss the scope of work associated in the Town's comments ?

Thank you.

Jonathan Barnes

Dalton Engineering and Associates, P.A.

(919) 550 – 4740 office

From: Samantha Wullenwaber [mailto:swullenwaber@townofclaytonnc.org]
Sent: Thursday, February 07, 2019 1:43 PM
To: Jonathan Barnes
Cc: Haley Hogg; Jerry Dalton
Subject: RE: Creech Tract Timeline

Hi Jonathan,

Due to the new development in the area since the joint TIA was completed and the layout change, can you please update your counts and verify that the TIA is still valid and the improvements suggested are still accurate. How soon can you get this to us? Thank you.

Samantha Wullenwaber

From: Jonathan Barnes <jbarnes@daltonengineering.com>
Sent: Wednesday, February 06, 2019 12:55 PM
To: Samantha Wullenwaber <swullenwaber@townofclaytonnc.org>
Cc: Haley Hogg <hhogg@townofclaytonnc.org>; Jerry Dalton <jdalton@daltonengineering.com>
Subject: RE: Creech Tract Timeline

Samantha,

Good afternoon. Hope everything is going well over your way.

I wanted to take a couple of minutes and reach out to you regarding subject project.

At one time, there was discussion with the Planning Department about the project being placed on the January Planning Board agenda. Following our previous meeting about the project and due to the reasons provided, below, the Planning Department felt it necessary to place the project on the agenda for the February Planning Board Meeting.

Can you confirm that the Creech Tract Development is scheduled to be presented at the February Planning Board Meeting ?

Thank you.

Jonathan Barnes

Dalton Engineering and Associates, P.A.

(919) 550 – 4740 office

From: Samantha Wullenwaber [mailto:swullenwaber@townofclaytonnc.org]
Sent: Wednesday, January 23, 2019 8:54 AM
To: Jerry Dalton; Jonathan Barnes
Cc: Haley Hogg
Subject: Creech Tract Timeline

Jerry & Jonathan,

Thank you for the re-submittal on Friday. We are still reviewing the plans. For the following reasons, this project will go to Planning Board in February:

- The ability to do a full review in a short amount of time by multiple departments. We have to fully review the plans again. Staff has looked through them and there are items missing and some incorrect items.
- We have furthered reviewed the "right-in" only that was submitted on Friday and we have concerns about the design and layout. We will be reviewing the design with NCDOT. The letter that Jonathan provided from NCDOT states the below:

> owner/developers. These conditions are based on current traffic volumes and projected growth for the study area. Should the timelines presented for project build-out dates not be met and traffic conditions change due to growth in adjacent areas, these recommendations may not be applicable. Feel free to contact me if you have any additional questions or concerns.

- We will be in touch later this week about the TIA and road improvements.

We need to be sure that we thoroughly review all submittals and do not rush them through without the proper review. I apologize for any inconvenience but the plans need to be accurate and the transportation needs of the subdivision and area have to be evaluated. If you have any questions, please let me know.

Samantha L. Wullenwaber, MPA
Planning Director
Town of Clayton
111 East Second Street | PO Box 879 | Clayton, NC 27528
O (919)553-5002 | D (919)359-9364
swullenwaber@townofclaytonnc.org

moffatt & nichol

Traffic Impact Analysis, HighGate-Creech Developments

Clayton, NC

February 13, 2019

Direct Client Information

Dalton Engineering & Associates, P.A.
446 E. Main Street
Clayton, NC 27520

Reference Information

Mr. Jerry Dalton
President, Dalton Engineering & Assoc., PA
Phone: 919-550-4740
Email: jdalton@daltonengineering.com

Synopsis

At the request of Dalton Engineering, PA, Moffatt & Nichol prepared a Traffic Impact Analysis (TIA) of two concurrent residential developments located near the intersections of SR 1553 (Shotwell Road) at SR 1700 (Covered Bridge Road) and at SR 1553 (Shotwell Road) and SR 1004 (Old Hwy 70) in Clayton, NC. The TIA was completed and approved by the NCDOT on 9-21-2017. As part of the TIA requirements established by NCDOT guidelines, traffic counts were obtained on April 5th, 2017 at the five study intersections noted below:

- US 70 Business & SR 1553 (Shotwell Road), Signalized
- SR 1553 (Shotwell Road) & SR 1004 (Old Hwy 70), Signalized
- SR 1553 (Shotwell Road) & SR 1700 (Covered Bridge Road), Unsignalized
- SR 1700 (Covered Bridge Road) & SR 1709 (City Road), Unsignalized
- SR 1700 (Covered Bridge Road) & SR 1700 (Covered Bridge Rd)/O'Neil Street, Unsignalized

The TIA included analysis of the study intersections as 2017 Existing Conditions, 2019 No-Build Conditions 2019 Build Conditions, 2021 No-Build Conditions, and 2021 Build Conditions. The existing traffic volumes were projected and expanded into the future years of 2019 and 2021 using a 3% growth rate per year. Build Condition (with the site development) volumes were projected using the 2015 Trip Generation Manual. All analyses were completed using Synchro 9.2.

TIA Results

Based on the existing 2017 traffic volumes obtained, and the fact that most roadways within the study area consist of two-lane roadways, one lane in each direction except for US 70 Business, the intersection analysis shows the Existing Conditions at the two major intersections at Shotwell Road at Covered Bridge Road, and Shotwell Road at Old Highway 70 operate at an overall Level of Service (LOS) "F" during the PM Peak Hour period. Projecting traffic volumes at 3% growth per year for the 2019 and 2021 Background traffic conditions only compound the delays resulting in a worsening LOS "F".

As shown in Appendix "I", fully developed site results in 118 trips in and 70 trips out for the HighGate development, and, 81 trips in and 43 trips out for the Creech development. Distributing these trips to the

analysis of operational performance at the inlet and outlet locations indicated very little impact to the normal operations at these locations.

Conclusions

The 2017 TIA indicates the major intersections under existing 2017 conditions are operating at LOS "F" during the PM Peak period. The original TIA prepared by Morton & Morton for the HighGate development was completed and approved in 2015. Both TIA's indicate poor LOS levels at the major study intersections at the time of completion. Since both TIA's indicate poor existing operations, it should be assumed that any new traffic counts taken in 2019 will also show similar results. Using the 3% growth rate, or any new 2019 counts should show similar results as shown in Figure 5: 2019 No-Build Volumes.

As noted in the 2017 TIA, the recommendations indicate that signalizing the intersections of Shotwell Road at Covered Bridge Road and Covered Bridge Road at O'Neil Street should bring the LOS levels back to existing conditions. It is recommended to discuss shared responsibility between the NCDOT, Town of Clayton, and the Developer for the installation of these signals and/or turn-lane additions at the major study intersections.

Sincerely,

Don Darity, PE
Moffatt & Nichol

TOWN OF CLAYTON PROJECT NUMBER: 2018-90-SD

PRELIMINARY SUBDIVISION PLAN

FOR

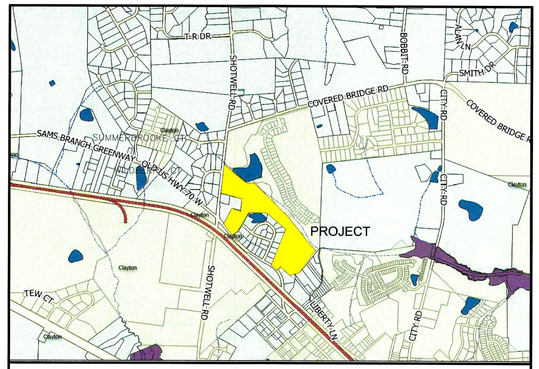
CREECH TRACT DEVELOPMENT

TOWN OF CLAYTON - JOHNSTON COUNTY, NC

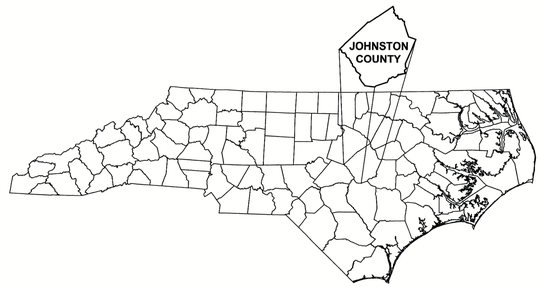
Received By:
Town of Clayton
2/19/20

INDEX TO DRAWINGS

SHEET 1..... COVER SHEET
SHEET 2..... BOUNDARY SURVEY (NOTE: PROVIDED BY OTHERS)
SHEET 3..... BOUNDARY SURVEY (NOTE: PROVIDED BY OTHERS)
SHEET 4..... OVERALL PRELIMINARY SITE PLAN / PHASING PLAN
SHEET 4.1.. TRAFFIC IMPROVEMENTS PLAN
SHEET 5..... PRELIMINARY SITE PLAN - PHASE ONE
SHEET 6..... PRELIMINARY SITE PLAN - PHASE TWO
SHEET 7..... PRELIMINARY SITE PLAN - PHASE TWO
SHEET 8..... PRELIMINARY UTILITY PLAN - PHASE ONE
SHEET 9..... PRELIMINARY UTILITY PLAN - PHASE TWO
SHEET 10... PRELIMINARY UTILITY PLAN - PHASE TWO
SHEET 11... PRELIMINARY LANDSCAPE PLAN - PHASE ONE
SHEET 12... PRELIMINARY LANDSCAPE PLAN - PHASE TWO
SHEET 13... PRELIMINARY LANDSCAPE PLAN - PHASE TWO
SHEET 14... LANDSCAPE DETAIL SHEET
SHEET 15... SITE DETAIL SHEET
SHEET 16... WATER & SEWER DETAIL SHEET
SHEET 17... TYPICAL BUILDING ELEVATION (FRONT LOADED)
SHEET 18... TYPICAL BUILDING ELEVATION (FRONT LOADED)
SHEET 19... TYPICAL BUILDING ELEVATION (ALLEY LOADED)
SHEET 20... TYPICAL BUILDING ELEVATION (ALLEY LOADED)
SHEET 21... TYPICAL BUILDING RENDERINGS
SHEET 22... TYPICAL BUILDING ELEVATION (CLUBHOUSE)



VICINITY MAP (NOT TO SCALE)



ENGINEER

DALTON ENGINEERING AND ASSOCIATES, P. A.
446 EAST MAIN STREET P. O. BOX 426
CLAYTON, NC 27520 CLAYTON, NC 27528
(919) 550-4740 - FAX (919) 550-4741

SURVEYOR

TRUE LINE SURVEYING, P. C.
205 WEST MAIN STREET
CLAYTON, NC 27520
(919) 359-0427

OWNER

EVERLAND-LEE, L.L.C.
104 STATE AVENUE, SUITE 103
CLAYTON, NC 27520
(919) 971-5353

NOTES:

1. ALL OPEN END CROSS PIPES IN NON C.A.M.A. COUNTIES WILL BE BURIED 20% OF THEIR DIAMETER UP TO A MAXIMUM OF ONE FOOT AS THE BED CONDITIONS ALLOW.
2. HEADWALLS ARE USED ON PIPES ABOVE OR EQUAL TO 36" IN DIAMETER, USUALLY ON BOTH ENDS BUT ALWAYS ON THE INLET. FLARED END SECTIONS ARE USED ON SMALLER PIPES.
3. ALL DRAINAGE STRUCTURES INCLUDING OUTFALL DITCHES OUTSIDE OF THE PROPOSED RIGHT OF WAY ARE TO BE ENCLOSED WITHIN A PERMANENT PUBLIC DRAINAGE EASEMENT.
4. ALL SURVEY INFORMATION/DATA SHOWN, AND/OR REPRESENTED, IN THE CONSTRUCTION DRAWINGS HAS BEEN PROVIDED BY A PROFESSIONAL LAND SURVEYOR AND IS NOT THE WORK OF DALTON ENGINEERING AND ASSOCIATES, P.A.
5. IT IS THE RESPONSIBILITY OF THE OWNER/DEVELOPER TO PROVIDE DRAWINGS TO THE VARIOUS UTILITY PROVIDERS, SUCH AS DUKE PROGRESS, CENTURYLINK, SPECTRUM, PIEDMONT GAS, ETC.

NOTES:

DALTON ENGINEERING AND ASSOCIATES, P.A. OWNS, AND HAS THE RIGHT TO, ALL DIGITAL INFORMATION (DWGs) CONTAINED IN THESE CONSTRUCTION DRAWINGS. THAT INFORMATION MAY BE SHARED WITH THE OWNER, SURVEYOR, CONTRACTOR OR OTHER DIRECTLY INVOLVED WITH THIS PROJECT, FOR THE PURPOSE OF WORK RELATED TO ONLY THIS PROJECT. THAT INFORMATION SHALL NOT BE SHARED WITH ANY OTHER PERSON AND/OR FIRM, WITHOUT THE WRITTEN CONSENT OF DALTON ENGINEERING AND ASSOCIATES, P.A.

CALL BEFORE YOU DIG!
NORTH CAROLINA LAW REQUIRES NOTIFICATION OF THE UNDERGROUND FACILITY OWNER NOT LESS THAN TWO (2) BUT NO MORE THAN TEN (10) WORKING DAYS PRIOR TO EXCAVATION OR DEMOLITION
North Carolina One-Call Center, Inc.
www.nococ.org
1-800-632-4949

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 16282 T. DALTON 2/15/19

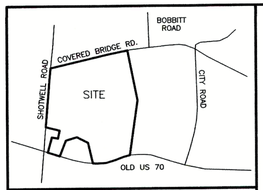
PRELIMINARY
NOT FOR CONSTRUCTION

Dalton Engineering and Associates, P. A.

REVISION 001: ADDRESSED TOWN OF CLAYTON TRC REVIEW COMMENTS – 2/15/19

Job: 16048	**Date:** 8/29/18	**Revision:**
File: t6048-Prelim_Subd_REV	**Drawn:** WJB	**Sheet:** 1 OF 22

C:\Users\Bill Benca\Documents\Projects\16048 G.R. Hollow SDs\16048-Prelim_Subd_REV.dwg\Bill 8/6\ANSI\2/18/2019 9:38 AM



VICINITY MAP (NOT TO SCALE)

I, HEREBY CERTIFY THAT THIS RECORD PLAT HAS BEEN FOUND TO COMPLY WITH THE UNIFIED DEVELOPMENT CODE OF CLAYTON, NORTH CAROLINA, AND THAT THIS PLAT HAS BEEN APPROVED FOR RECORDING IN THE REGISTER OF DEEDS OF JOHNSTON COUNTY.

6-15-16 DATE — Beth Dawson PLANNING DIRECTOR

NUMBER	RADIUS	ARC LENGTH	CHORD DIRECTION	CHORD LENGTH
C1	590.00	204.00	N48°51'04"W	202.98
C2	4980.00	414.24	N74°12'47"E	414.12

NUMBER	DIRECTION	DISTANCE
L1	S13°21'36"E	24.95'
L2	S13°21'36"E	5.05'
L3	N76°35'46"E	376.37'
L4	N81°28'00"E	377.59'
L5	S01°55'28"W	3.87'
L6	S36°56'29"W	107.02'
L7	S51°39'15"W	92.36'
L8	S61°13'34"W	49.52'
L9	N66°41'55"W	29.01'
L10	S27°35'20"W	34.60'
L11	N68°23'08"W	25.79'
L12	N88°49'30"W	19.61'
L13	S72°01'18"W	22.88'
L14	N72°38'17"W	28.21'
L15	N48°53'22"W	45.85'
L16	N46°42'47"W	51.00'
L17	N63°10'51"W	24.08'
L18	N46°08'19"W	30.18'
L19	N66°28'14"W	33.06'
L20	N40°34'34"W	24.67'
L21	N50°14'15"W	16.98'
L22	N71°39'41"W	26.78'
L23	N66°38'31"W	32.49'
L24	S35°34'04"W	94.64'
L25	S29°44'34"E	37.13'
L26	N20°32'59"E	135.00'
L27	N20°39'02"E	125.01'
L28	N20°32'10"E	124.75'
L29	N20°55'30"E	125.05'
L30	N20°33'11"E	289.93'
L31	N19°53'59"E	90.38'
L32	N03°51'11"E	10.03'
L33	S29°55'55"W	308.10'
L34	S30°00'14"W	62.33'
L35	S29°56'38"W	165.30'
L36	S46°46'29"E	3.17'
L37	N44°49'59"E	12.99'
L38	S57°18'59"W	132.84'
L39	N76°00'26"W	200.00'
L40	S34°14'04"W	137.25'
L41	N12°41'51"W	211.58'
L42	N76°35'46"E	40.55'
L43	S75°26'48"W	275.03'
L44	S72°12'15"W	512.55'
L45	S71°49'48"W	538.36'
L46	S39°16'18"E	165.86'
L47	S46°24'35"E	247.60'
L48	S47°18'21"E	279.64'
L49	S08°29'02"W	222.28'
L50	S55°42'26"E	190.52'
L51	S25°51'41"E	156.68'
L52	S29°23'43"W	223.41'
L53	S13°58'13"W	247.86'
L54	S69°20'35"E	159.94'
L55	S04°34'00"E	467.42'
L56	S42°49'03"E	165.07'
L58	S38°00'20"E	28.94'

NUMBER	DIRECTION	DISTANCE
L59	S36°56'29"W	134.73'
L60	N53°34'40"W	35.77'
L61	N42°52'54"W	46.78'
L62	N56°20'46"W	56.17'
L63	N81°12'22"W	26.74'
L64	N55°43'45"W	28.73'
L65	N36°15'40"W	66.80'
L66	N55°23'44"W	55.30'
L67	N52°35'27"W	46.55'
L68	N39°02'00"W	23.43'
L69	N25°37'05"W	83.77'
L70	N14°57'37"W	35.32'
L71	N21°35'34"E	37.96'
L72	N29°23'47"E	33.93'
L73	N60°40'50"W	58.81'
L74	N81°07'58"W	19.66'
L75	N74°11'53"W	15.83'
L76	N54°50'11"W	31.09'
L77	N63°17'33"W	19.97'
L78	N39°44'17"W	34.90'
L79	N14°02'53"W	64.79'
L80	N47°21'50"W	65.44'
L81	N44°30'14"W	24.51'
L82	N17°28'08"W	42.98'
L83	N48°46'45"W	44.14'
L84	N42°06'39"W	44.83'
L85	N38°11'25"W	88.24'
L86	N37°49'37"W	34.76'
L87	N16°08'33"W	71.40'
L88	N59°25'24"W	239.48'
L89	N46°44'58"W	37.60'
L90	N07°48'33"W	36.90'
L91	N02°03'53"E	58.09'
L92	N28°10'28"W	61.27'
L93	N57°14'46"W	36.98'
L94	N20°33'22"W	42.04'
L95	N09°37'28"W	8.57'
L96	N06°35'52"W	37.48'
L97	N13°23'14"W	17.09'
L98	N05°35'56"E	24.91'
L99	N13°55'19"E	36.48'
L100	N23°55'38"E	22.53'
L101	N30°47'32"W	35.92'
L102	N24°35'06"W	25.32'
L103	N07°53'55"W	26.18'
L104	N06°46'35"W	65.81'
L105	N52°55'23"W	50.29'
L106	N72°02'07"W	160.10'
L107	S73°24'59"W	251.83'
L108	S77°33'35"W	122.47'
L109	N52°42'14"W	212.46'
L110	N57°07'44"W	64.85'
L111	N41°21'46"W	115.49'
L112	N51°05'36"W	63.12'
L113	N28°27'04"W	65.76'
L114	N34°27'14"E	81.41'
L115	N80°31'45"E	87.59'
L116	N85°13'47"E	218.15'
L117	N55°36'50"E	30.87'
L118	N83°11'59"E	33.53'
L119	N36°07'33"E	28.11'
L120	N05°54'14"E	83.13'
L121	N15°46'57"W	44.75'
L122	N14°20'35"W	67.39'
L123	N09°05'36"E	25.74'
L124	N17°40'36"W	205.96'
L125	N30°54'21"E	163.56'
L126	N27°24'42"E	66.31'
L127	N33°05'16"E	129.46'
L128	N86°59'23"E	49.80'
L129	S68°14'20"E	27.25'
L130	S23°17'34"E	15.23'
L131	N24°23'49"E	374.53'

NUMBER	DIRECTION	DISTANCE
L132	N57°20'40"E	123.00'
L133	N29°56'38"E	70.10'
L134	N29°56'38"E	268.50'
L135	N05°50'30"W	98.42'
L136	N23°05'16"E	117.94'
L137	N82°04'11"E	97.59'
L138	S88°46'22"E	199.59'
L139	S66°49'33"E	99.62'
L140	N60°06'12"E	92.62'
L141	N68°04'31"E	134.40'
L142	S86°25'29"E	89.64'
L143	S59°28'12"E	189.40'
L144	S35°07'57"E	155.97'
L145	S59°13'33"E	36.10'
L146	N30°57'18"E	2.78'
L147	S47°06'47"E	20.44'
L148	S30°57'18"W	18.49'
L149	N59°13'33"W	60.31'
L150	N35°07'57"W	155.92'
L151	N59°28'12"W	180.29'
L152	N86°25'29"W	80.32'
L153	S68°04'31"W	128.48'
L154	S60°06'12"W	101.21'
L155	N66°49'33"W	105.73'
L156	N88°46'22"W	194.11'
L157	S82°04'11"W	84.67'
L158	S23°05'16"W	101.47'
L159	S05°50'30"E	99.72'
L160	S29°56'38"W	177.81'
L161	S29°56'38"W	165.30'
L162	S43°28'12"W	12.85'
L163	S57°18'59"W	119.59'
L164	N38°00'20"W	20.09'

ADJOINING PROPERTY INFORMATION

1–CAROL A. FIFIELD
DB 1872 PG 597
PB 19 PG 153
PIN 165907–68–5693

2–CAROL A. FIFIELD
DB 1872 PG 597
PB 19 PG 153
PIN 165907–68–7520

3–DILLION D. BLACKMON
BOBBIE LOU BLACKMON
DB 708 PG 576
PB 10 PG 145
PIN 165907–68–7491

4–ALFRED RAY MOORE
AGNES MOORE
DB 802 PG 716
PB 10 PG 145
PIN 165907–68–7288

5–HELEN S. JONES
DB 1286 PG 415
PB 10 PG 145
PIN 165907–68–6095

6–WILLIAM R. BRITT, JR.
BETTY B. BRITT
DB 4571 PG 259
PB 10 PG 145
PIN 165907–67–6943

7–KERRY SCOTT CHESNUT
BARBARA CHESTNUT
DB 798 PG 411
PB 10 PG 145
PIN 165907–67–5892

8–NILOUS I. BANKS
DB 1745 PG 849
PB 10 PG 145
PIN 165907–67–5741

9–ZABIULLAH NAZARI
RAHIMA NAZARI
DB 3721 PG 145
PB 5 PG 3
PIN 165911–77–3010

10–MARTIN L. MOODY, JR.
DB 4760 PG 112
PB 5 PG 3
PIN 165911–77–3038

11–HECTOR M. PENA
DB 1468 PG 716
PB 5 PG 3
PIN 165911–77–3281

12–HECTOR PENA
DB 3767 PG 217
PIN 165912–77–5490

13–MICHAEL BEASLEY
DB 3082 PG 455
PB 5 PG 3
PIN 165912–77–6459

14–MICHAEL BEASLEY
DB 3082 PG 455
PB 5 PG 3
PIN 165912–77–6575

15–MICHAEL BEASLEY
DB 3082 PG 455
PB 5 PG 3
PIN 165908–77–7604

16–JOSE L. JUAREZ
DB 1939 PG 538
PB 5 PG 3
PIN 165908–77–7804

17–CASEY RANDALL BROWN
MEGHAN WAGNER BROWN
DB 4358 PG 960
PIN 175000–70–8270

18–RUPESH PRAJAPATI
CANDACE PRAJAPATI
DB 4552 PG 097
PIN 175000–70–8511

NOTES:

1) ALL DISTANCES SHOWN ARE HORIZONTAL GROUND DISTANCES
2) AREAS COMPUTED BY COORDINATE METHOD.
3) PROPERTY SUBJECT TO ALL EASEMENTS AND RESTRICTIONS OF RECORD.
4) NO. 5 REBAR IRON STAKES WITH CAPS SET AT ALL LOT CORNERS UNLESS OTHERWISE NOTED
5) GRID TIE BY GPS
6) ZONING: PD–MU
7) PARENT TRACT DEED DB 2916 PG 504
8) NC PIN NO. 165907–69–6977
9) PARCEL NO. 05G01012A

REFERENCES:

DB 479 PG 314
DB 424 PG 097
DB 285 PG 106
DB 137 PG 416
DB 109 PG 133
DB 1857 PG 298
DB 1359 PG 740
DB 2627 PG 560
DB 1633 PG 034
DB 1474 PG 176
DB 1233 PG 399
DB 2830 PG 892
DB 2400 PG 665
DB 1141 PG 108
DB 771 PG 699
DB 1495 PG 394
DB 1399 PG 049
DB 1343 PG 101
DB 1408 PG 718
DB 2088 PG 960
DB 2093 PG 146
DB 1359 PG 030
DB 1994 PG 034
DB 1514 PG 751
DB 1954 PG 848
DB 1418 PG 433
DB 634 PG 517
DB 1872 PG 597
DB 708 PG 576
DB 802 PG 716
DB 1286 PG 415
DB 742 PG 290
DB 798 PG 411
DB 1745 PG 849
DB 1409 PG 496
DB 2561 PG 253
DB 1468 PG 716
DB 731 PG 831
DB 1204 PG 705
DB 1939 PG 538
DB 1387 PG 514
DB 2758 PG 965
DB 4571 PG 259
DB 3721 PG 145
DB 3767 PG 217
DB 4760 PG 112
DB 3082 PG 455
DB 4358 PG 960
DB 4552 PG 097
PB 37 PG 371
PB 1 PG 205
PB 63 PG 405
PB 19 PG 153
PB 41 PG 115
PB 39 PG 415
PB 6 PG 111
PB 60 PG 088
PB 61 PG 476
PB 5 PG 003
PB 66 PG 294–295

LINE	BEARING	DISTANCE
L165	N47°45'02"W	28.90'
L166	N42°37'06"W	55.25'
L167	N36°31'29"W	40.80'
L168	N30°29'33"W	37.52'
L169	N39°49'46"W	20.49'
L170	N53°09'13"W	8.10'
L171	N64°35'03"E	52.03'
L172	N76°03'38"E	37.22'
L173	N51°32'43"E	29.63'
L174	S86°46'35"E	56.26'
L175	S37°29'54"E	34.83'
L176	N66°43'01"E	55.84'
L177	S81°50'31"E	54.64'
L178	N61°23'44"E	30.78'

CERTIFICATE OF OWNERSHIP AND DEDICATION

I HEREBY CERTIFY THAT I AM THE OWNER OF THE PROPERTY SHOWN AND DESCRIBED HEREON AND I HEREBY ADOPT THIS PLAN OF SUBDIVISION WITH MY FREE CONSENT, ESTABLISH MINIMUM BUILDING SETBACK LINES AND DEDICATE ALL STREETS, ALLEYS, WALKS, PARKS AND OTHER SITES AND EASEMENTS TO PUBLIC AND PRIVATE USE AS NOTED. FURTHERMORE, I DEDICATE ALL ELECTRICAL SYSTEMS AND ALL SEWER AND WATER LINES TO THE TOWN OF CLAYTON.

6-15-2016 DATE — OWNER

PROPERTY SHOWN HEREON_____IS ___XXX___IS NOT LOCATED IN A FEMA DESIGNATED FLOOD ZONE.
FEMA FLOOD HAZARD PANEL NO. 3720175000 K
EFFECTIVE DATE: DECEMBER 5, 2005

THIS SURVEY:

■ **1) CREATES A SUBDIVISION OF LAND WITHIN THE AREA OF A COUNTY OR MUNICIPALITY THAT HAS AN ORDINANCE THAT REGULATES PARCELS OF LAND.**

☐ 2) IS LOCATED IN A PORTION OF A COUNTY OR MUNICIPALITY THAT IS UNREGULATED AS TO AN ORDINANCE THAT REGULATES PARCELS OF LAND.

☐ 3) IS ONE OF THE FOLLOWING:
- a) IS OF AN EXISTING PARCEL OR PARCELS OF LAND AND DOES NOT CREATE A NEW STREET OR CHANGE AN EXISTING STREET.
- b) IS OF AN EXISTING BUILDING OR OTHER STRUCTURE, OR NATURAL FEATURE, SUCH AS A WATERCOURSE
- c) IS A CONTROL SURVEY

☐ 4) IS OF ANOTHER CATEGORY SUCH AS THE RECOMBINATION OF EXISTING PARCELS, A COURT–ORDERED SURVEY OR OTHER EXCEPTION TO THE DEFINITION OF SUBDIVISION

☐ 5) FROM THE INFORMATION AVAILABLE, THE SURVEYOR IS UNABLE TO MAKE A DETERMINATION OF THE PROVISIONS (1) THROUGH (4).

6-15-16 DATE — SURVEYOR

SURVEYOR'S DISCLAIMER: NO ATTEMPT WAS MADE TO LOCATE ANY CEMETERIES, WETLANDS, HAZARDOUS MATERIAL SITES, UNDERGROUND UTILITIES OR ANY OTHER FEATURES ABOVE OR BELOW GROUND OTHER THAN THOSE SHOWN.

6-15-16 DATE — SURVEYOR

STATE OF NORTH CAROLINA, JOHNSTON COUNTY

I, CURK T. LANE, DO HEREBY CERTIFY THAT THIS PLAT WAS DRAWN UNDER MY SUPERVISION FROM AN ACTUAL SURVEY MADE UNDER MY SUPERVISION (DEED DESCRIPTION RECORDED IN BOOK 2916, PAGE 504, ETC.); THAT THE BOUNDARIES NOT SURVEYED ARE CLEARLY INDICATED AS DRAWN FROM INFORMATION FOUND IN BOOK 2916, PAGE 504; THAT THE RATIO OF PRECISION AS CALCULATED IS 1:10,000+; THAT THIS PLAT WAS PREPARED IN ACCORDANCE WITH G.S. 47–30 AS AMENDED. WITNESS MY ORIGINAL SIGNATURE, REGISTRATION NUMBER AND SEAL THIS 15TH DAY OF JUNE, A.D., 2016

NORTH CAROLINA PROFESSIONAL SEAL L-3990 LAND SURVEYOR CURK T. LANE

SURVEYOR

L – 3990
LICENSE NUMBER

REVIEW OFFICER'S CERTIFICATE

I, Walter Sandy Ford, REVIEW OFFICER OF JOHNSTON COUNTY, N/C CERTIFY THAT THE MAP OR PLAT TO WHICH THIS CERTIFICATION IS AFFIXED MEETS ALL STATUTORY REQUIREMENTS FOR RECORDING.

6/16/2016 DATE — REVIEW OFFICER

STATE OF NORTH CAROLINA, JOHNSTON COUNTY

THIS INSTRUMENT WAS PRESENTED FOR REGISTRATION AND RECORDING THIS 16 DAY OF June 20 16 AT 09:48:50 AM

CRAIG OLIVE REGISTER OF DEEDS — BY: DEPUTY REG. OF DEEDS

RECORDED IN PB 83 PG 117

OWNER: EVERLAND–LEE, LLC.
1294 SHOTWELL ROAD
CLAYTON, N.C. 27520

LEGEND

○	IPF	IRON PIPE FOUND
●	IPS	IRON PIPE SET
■	CMF	CONCRETE MONUMENT FOUND
○	PKNF	PARKER–KALON NAIL FOUND
●	PKNS	PARKER–KALON NAIL SET
●	RRS	RAILROAD SPIKE
△	TBM	TEMPORARY BENCH
⊙	CP	COMPUTED POINT
	P/P	POWER POLE
	O/HL	OVERHEAD POWER LINE
	R/W	RIGHT OF WAY
	S.F.	SQUARE FEET
	AC	ACRES
	DB	DEED BOOK
	PB	PLAT BOOK
	BOM	BOOK OF MAPS
	PG	PAGE
	LF	LINEAR FEET
	OSS	OFF–SITE SEWER
	115L	OFF–SITE SEWER LOT
	15R	RECOMBINATION LOT
	100	STREET ADDRESS
		LINES NOT SURVEYED

SUBDIVISION PLAT FOR

EVERLAND–LEE, LLC.

CLAYTON TOWNSHIP, JOHNSTON COUNTY
NORTH CAROLINA
MAY 26, 2016
SHEET 1 OF 2

SURVEYED BY:	STEVE
DRAWN BY:	MIKE
CHECKED BY:	CURK
DRAWING NAME:	BOUNDARY.DWG
SURVEY DATE:	5–25–05
JOB NO.	122.244

TRUE LINE SURVEYING, P.C.
205 WEST MAIN STREET
CLAYTON, N.C. 27520
TELEPHONE: (919) 359–0427
FAX: (919) 359–0428
www.truelinesurveying.com

BOUNDARY SURVEY
FOR
CREECH TRACT DEVELOPMENT
TOWN OF CLAYTON - JOHNSTON COUNTY, N.C.

PRELIMINARY
NOT FOR CONSTRUCTION

Dalton Engineering and Associates, P. A.
446 East Main Street
P.O. Box 426
Clayton, NC 27520
(919)550-4740
Fax (919) 550-4741

Job: 16048	Date: 8/29/18	Revision:
File: 16048–Prelim_ELEVATIONS	Drawn: WJB	Sheet: 2 OF 22

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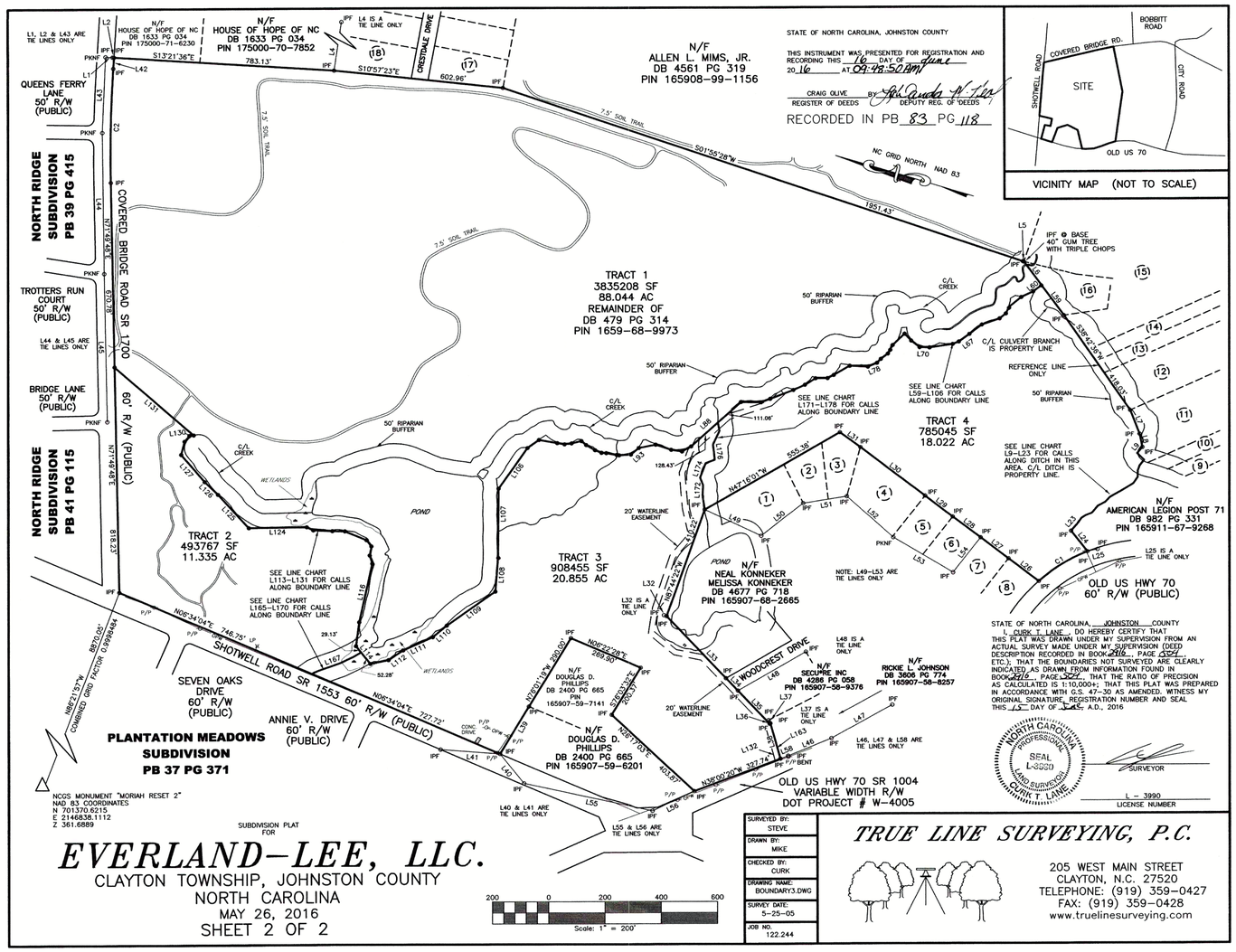

BOUNDARY SURVEY
FOR
CREECH TRACT DEVELOPMENT
TOWN OF CLAYTON - JOHNSTON COUNTY, N.C.

PRELIMINARY
NOT FOR CONSTRUCTION

Dalton Engineering and Associates, P. A.
446 East Main Street
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Fax (919) 550-4741

Job: 16048	Date: 8/29/18	Revision:
File: 16048--Prelim_ELEVATIONS	Drawn: WJB	Sheet: 3 OF 22

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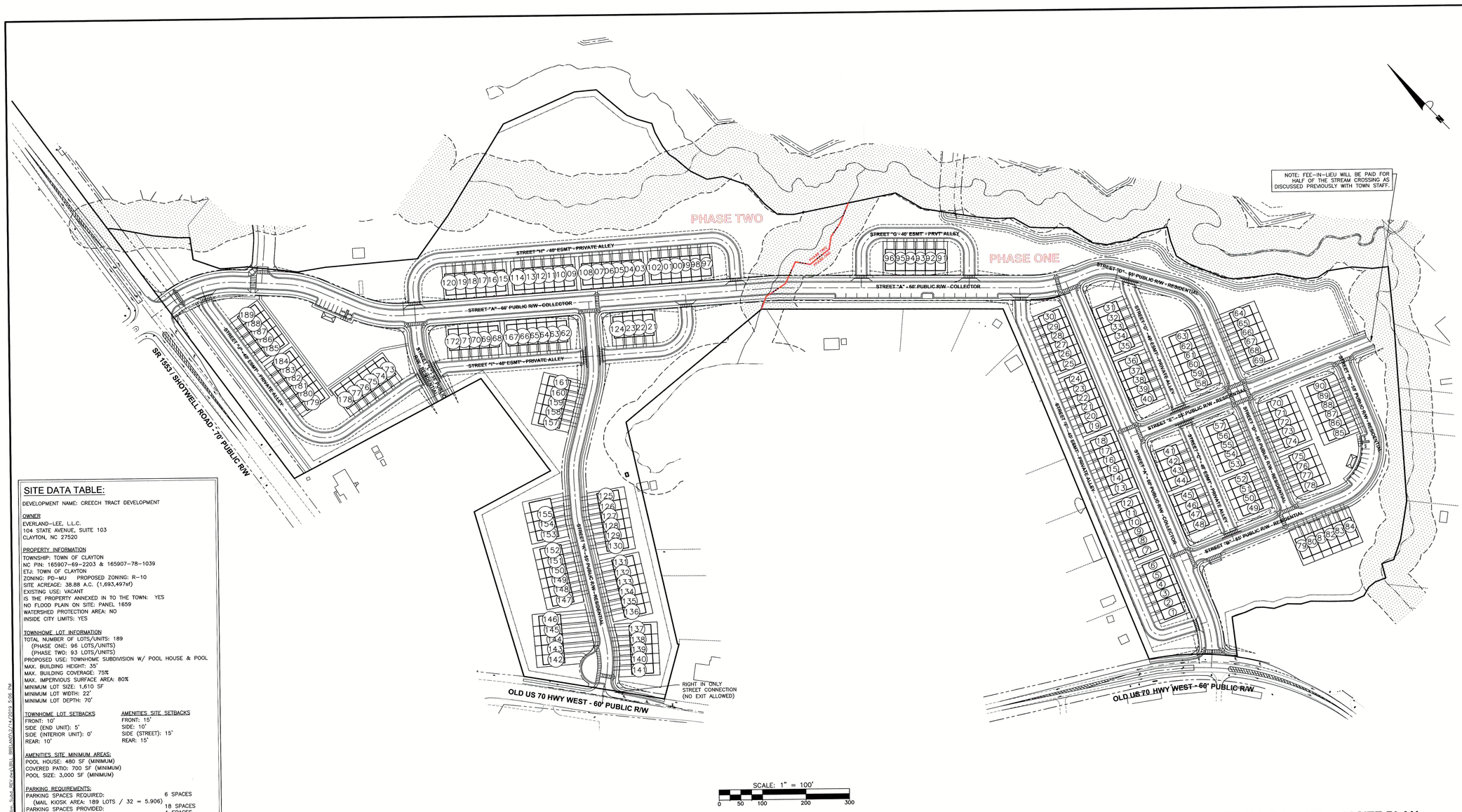

SITE DATA TABLE:

DEVELOPMENT NAME: CREECH TRACT DEVELOPMENT

OWNER
EVERLAND-LEE, L.L.C.
104 STATE AVENUE, SUITE 103
CLAYTON, NC 27520

PROPERTY INFORMATION
TOWNSHIP: TOWN OF CLAYTON
NC PIN: 165907-69-2203 & 165907-78-1039
ETJ: TOWN OF CLAYTON
ZONING: PD-MU PROPOSED ZONING: R-10
SITE ACREAGE: 38.88 A.C. (1,693,497sf)
EXISTING USE: VACANT
IS THE PROPERTY ANNEXED IN TO THE TOWN: YES
NO FLOOD PLAIN ON SITE: PANEL 1659
WATERSHED PROTECTION AREA: NO
INSIDE CITY LIMITS: YES

TOWNHOME LOT INFORMATION
TOTAL NUMBER OF LOTS/UNITS: 189
(PHASE ONE: 96 LOTS/UNITS)
(PHASE TWO: 93 LOTS/UNITS)
PROPOSED USE: TOWNHOME SUBDIVISION W/ POOL HOUSE & POOL
MAX. BUILDING HEIGHT: 35'
MAX. BUILDING COVERAGE: 75%
MAX. IMPERVIOUS SURFACE AREA: 80%
MINIMUM LOT SIZE: 1,610 SF
MINIMUM LOT WIDTH: 22'
MINIMUM LOT DEPTH: 70'

TOWNHOME LOT SETBACKS	AMENITIES SITE SETBACKS
FRONT: 10'	FRONT: 15'
SIDE (END UNIT): 5'	SIDE: 10'
SIDE (INTERIOR UNIT): 0'	SIDE (STREET): 15'
REAR: 10'	REAR: 15'

AMENITIES SITE MINIMUM AREAS:
POOL HOUSE: 480 SF (MINIMUM)
COVERED PATIO: 700 SF (MINIMUM)
POOL SIZE: 3,000 SF (MINIMUM)

PARKING REQUIREMENTS:	
PARKING SPACES REQUIRED:	6 SPACES
(MAIL KIOSK AREA: 189 LOTS / 32 = 5.906)	
PARKING SPACES PROVIDED:	18 SPACES
HANDICAP SPACES PROVIDED:	4 SPACES
PARKING SPACES REQUIRED:	378 SPACES
(TOWNHOME: 189 UNITS X 2 = 378)	
PARKING SPACES PROVIDED:	393 SPACES

PERVIOUS SURFACE AREA: 918,554sf / 54.25%
IMPERVIOUS SURFACE AREA: 774,494sf / 45.75%
PROPOSED DENSITY: 4.86 UNITS/ACRE
LINER FEET OF STREETS: 9,294 LF
ELECTRIC PROVIDER: TOWN OF CLAYTON
SANITARY SEWER PROVIDER: TOWN OF CLAYTON
WATER PROVIDER: TOWN OF CLAYTON
TRASH SERVICE: CURBSIDE PICKUP (NO DUMPSTER PROVIDED)

CALL BEFORE YOU DIG!
NORTH CAROLINA LAW REQUIRES NOTIFICATION OF THE UNDERGROUND FACILITY OWNER NOT LESS THAN TWO (2) BUT NO MORE THAN TEN (10) WORKING DAYS PRIOR TO EXCAVATION OR DEMOLITION
North Carolina One-Call Center, Inc.
www.ncocc.org
1-800-632-4949

OVERALL PRELIMINARY SITE PLAN
TRAFFIC MANAGMENT / PHASING PLAN
FOR
CREECH TRACT DEVELOPMENT
TOWN OF CLAYTON - JOHNSTON COUNTY, N.C.

PRELIMINARY
NOT FOR CONSTRUCTION

REVISION 003: ADDRESSED TOWN OF CLAYTON TRC REVIEW COMMENTS - 2/15/19
REVISION 002: ADDRESSED TOWN OF CLAYTON TRC REVIEW COMMENTS - 1/17/19
REVISION 001: ADDRESSED TOWN OF CLAYTON TRC REVIEW COMMENTS - 12/3/18

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 16282 JERRY T. DALTON 2/15/19

Dalton Engineering and Associates, P. A.
446 East Main Street
P.O. Box 426
Clayton, NC 27520
(919)550-4740
Fax (919) 550-4741

Job: 16048	**Date:** 8/29/18	**Revision:** 003
File: 16048--Prelim_Subd_REV	**Drawn:** WJB	**Sheet:** 4 OF 22

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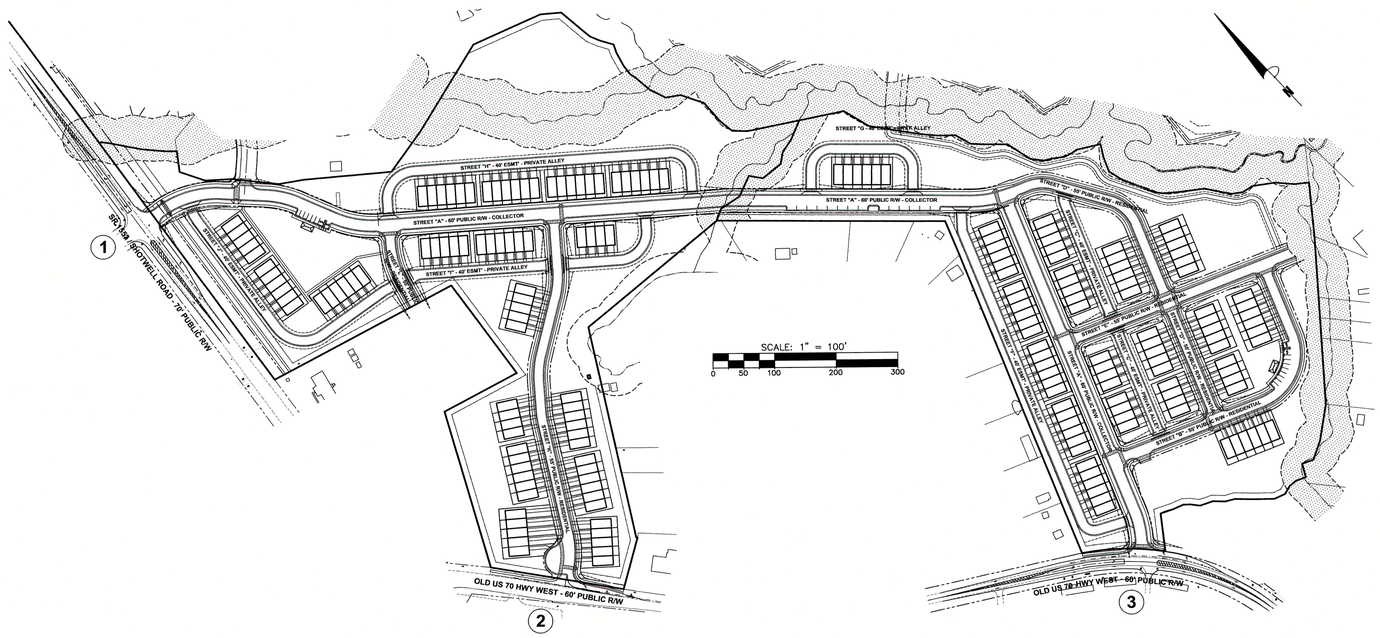
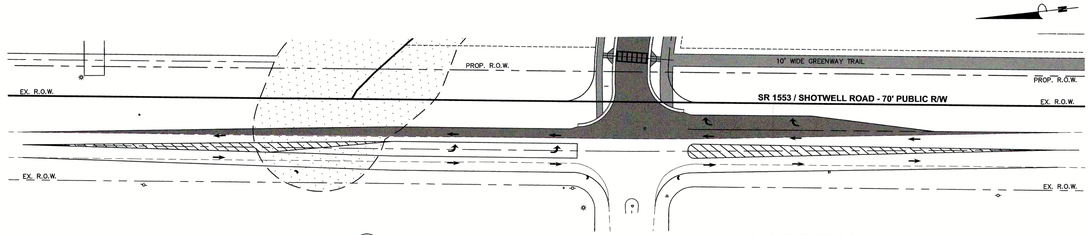
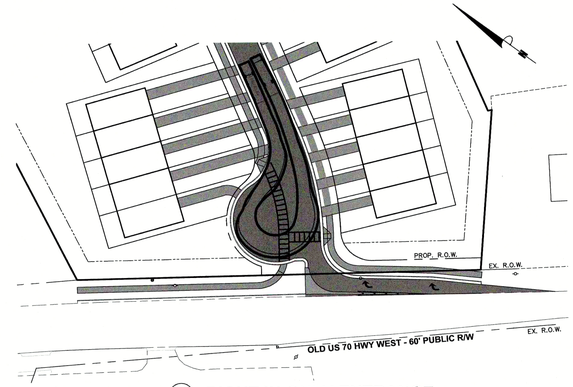




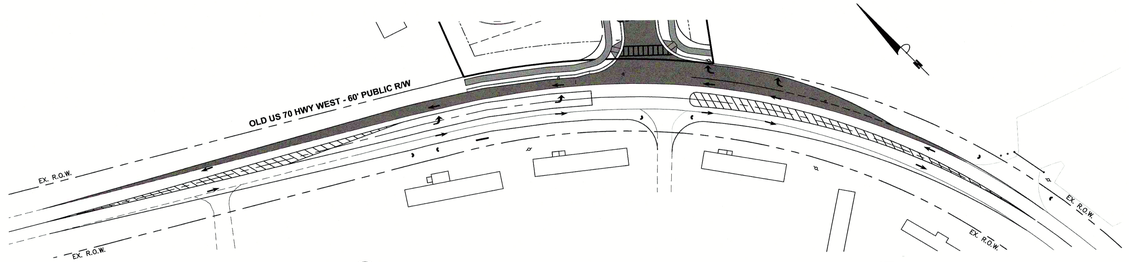
1 SOUTHBOUND LEFT AND NORTHBOUND RIGHT TURN LANE

SCALE: 1" = 50'



2 RIGHT IN ONLY ENTRANCE

SCALE: 1" = 50'



3 SOUTHBOUND LEFT AND NORTHBOUND RIGHT TURN LANE

SCALE: 1" = 50'

TRAFFIC IMPROVEMENTS FOR CREECH TRACT DEVELOPMENT

TOWN OF CLAYTON - JOHNSTON COUNTY, N.C.

PRELIMINARY
NOT FOR CONSTRUCTION

NORTH CAROLINA PROFESSIONAL SEAL 16282 ENGINEER JERRY T. DALTON 2/18/19

Dalton Engineering and Associates, P. A.
446 East Main Street
P.O. Box 426
Clayton, NC 27520
(919)550-4740
Fax (919) 550-4741

Job: 16048	**Date:** 8/29/18	**Revision:**
File: t6048--Prelim_Subd_REV	**Drawn:** WJB	**Sheet:** 4.1 OF 22

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DRIVEWAY TURNOUT GRADES

NOT TO SCALE

SITE DATA TABLE:

DEVELOPMENT NAME: CREECH TRACT DEVELOPMENT

OWNER
EVERLAND-LEE, L.L.C.
104 STATE AVENUE, SUITE 103
CLAYTON, NC 27520

PROPERTY INFORMATION
TOWNSHIP: TOWN OF CLAYTON
NC PIN: 165907-69-2203 & 165907-78-1039
ETJ: TOWN OF CLAYTON
ZONING: PD-MU PROPOSED ZONING: R-10
SITE ACREAGE: 38.88 A.C. (1,693,497sf)
EXISTING USE: VACANT
IS THE PROPERTY ANNEXED IN TO THE TOWN: YES
NO FLOOD PLAIN ON SITE: PANEL 1659
WATERSHED PROTECTION AREA: NO
INSIDE CITY LIMITS: YES

TOWNHOME LOT INFORMATION
TOTAL NUMBER OF LOTS/UNITS: 189
(PHASE ONE: 96 LOTS/UNITS)
(PHASE TWO: 93 LOTS/UNITS)
PROPOSED USE: TOWNHOME SUBDIVISION W/ POOL HOUSE & POOL
MAX. BUILDING HEIGHT: 35'
MAX. BUILDING COVERAGE: 75%
MAX. IMPERVIOUS SURFACE AREA: 80%
MINIMUM LOT SIZE: 1,610 SF
MINIMUM LOT WIDTH: 22'
MINIMUM LOT DEPTH: 70'

TOWNHOME LOT SETBACKS	AMENITIES SITE SETBACKS
FRONT: 10'	FRONT: 15'
SIDE (END UNIT): 5'	SIDE: 10'
SIDE (INTERIOR UNIT): 0'	SIDE (STREET): 15'
REAR: 10'	REAR: 15'

AMENITIES SITE MINIMUM AREAS:
POOL HOUSE: 480 SF (MINIMUM)
COVERED PATIO: 700 SF (MINIMUM)
POOL SIZE: 3,000 SF (MINIMUM)

PARKING REQUIREMENTS:
PARKING SPACES REQUIRED: 6 SPACES
(MAIL KIOSK AREA: 189 LOTS / 32 = 5.906)
PARKING SPACES PROVIDED: 18 SPACES
HANDICAP SPACES PROVIDED: 4 SPACES

PARKING SPACES REQUIRED: 378 SPACES
(TOWNHOME: 189 UNITS X 2 = 378)
PARKING SPACES PROVIDED: 393 SPACES

PERVIOUS SURFACE AREA: 918,554sf / 54.25%
IMPERVIOUS SURFACE AREA: 774,494sf / 45.75%
PROPOSED DENSITY: 4.86 UNITS/ACRE
LINER FEET OF STREETS: 9,294 LF
ELECTRIC PROVIDER: TOWN OF CLAYTON
SANITARY SEWER PROVIDER: TOWN OF CLAYTON
WATER PROVIDER: TOWN OF CLAYTON
TRASH SERVICE: CURBSIDE PICKUP (NO DUMPSTER PROVIDED)

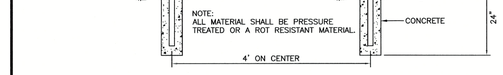
LEGEND

ALLEY LOADED UNITS	
FRONT LOADED UNITS	

NOTES:

1. CONSTRUCTION DRAWINGS ARE TO BE SUBMITTED TO THE TOWN OF CLAYTON ENGINEERING DEPARTMENT FOR REVIEW AND APPROVAL.
2. N.C.D.O.T. DRIVEWAY PERMIT APPROVAL IS REQUIRED FOR ROADWAY CONNECTION TO SHOTWELL ROAD AND OLD US HWY 70 WEST.
3. THE 10'X70' SIGHT TRIANGLES SHALL TAKE PRECEDENCE OVER ANY SIGN EASEMENT.
4. THE FINAL PLAT WILL ENSURE THAT ALL DRAINAGE EASEMENTS INTERSECT THE PUBLIC RIGHT-OF-WAY ALONG A LOT LINE. DRAINAGE EASEMENTS WITHIN THE INTERIOR OF THE PROJECT MAY OR MAY NOT COMPLETELY CENTER ALONG A LOT LINE.
5. ALL ACCESS TO UTILITY EASEMENTS ALONG THE OUTFALL LINE SHALL HAVE A MAXIMUM SLOPE OF 4:1 (H:V) AND A MAXIMUM CROSS SLOPE OF 4%.
6. THE APPROVAL OF A MAIL KIOSK IN THIS PRELIMINARY SITE PLAN DOES NOT EXEMPT THE KIOSK AREA FROM MEETING ALL APPLICABLE NC BUILDING CODE REGULATIONS.
7. THE POOL HOUSE / AMENITIES AREA WILL BE APPROVED UNDER A MINOR SITE PLAN SUBMITTAL TO THE TOWN OF CLAYTON.
8. RETAINING WALLS WILL REQUIRE A BUILDING PERMIT UNLESS WAIVED BY THE BUILDING DEPARTMENT.

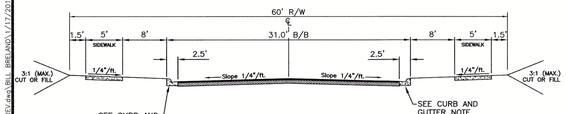
CALL BEFORE YOU DIG!
NORTH CAROLINA LAW REQUIRES NOTIFICATION OF THE UNDERGROUND FACILITY OWNER NOT LESS THAN TWO (2) BUT NO MORE THAN TEN (10) WORKING DAYS PRIOR TO EXCAVATION OR DEMOLITION
North Carolina One-Call Center, Inc.
www.ncocc.org
1-800-632-4949



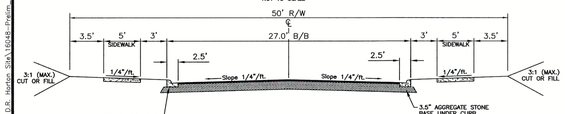
TYPICAL WOODEN PRIVACY FENCE SECTION

NOT TO SCALE

NOTE:
A MINIMUM OF 3" PAVEMENT/ASPHALT AND 8" OF STONE BASE SECTION IS REQUIRED FOR ALL SECTIONS. PRIOR TO COMPLETION OF FINE GRADING OF THE ROADWAY, THE OWNER SHALL PROVIDE A DESIGN DETAIL OF THE PAVEMENT AND BASE IN ACCORDANCE WITH THE MOST CURRENT TOWN OF CLAYTON MANUAL OF SPECIFICATIONS, STANDARDS AND DESIGN, FOR REVIEW AND APPROVAL.



RESIDENTIAL COLLECTOR STREET SECTION
NOT TO SCALE



TYPICAL RESIDENTIAL STREET SECTION
NOT TO SCALE

TYPICAL PRIVATE ALLEY STREET SECTION
NOT TO SCALE

INSET DETAIL "A"

REVISION 002: ADDRESSED TOWN OF CLAYTON TRC REVIEW COMMENTS - 1/17/19
REVISION 001: ADDRESSED TOWN OF CLAYTON TRC REVIEW COMMENTS - 12/3/18

PRELIMINARY
NOT FOR CONSTRUCTION

PRELIMINARY SITE PLAN - PHASE ONE
FOR
CREECH TRACT DEVELOPMENT
TOWN OF CLAYTON - JOHNSTON COUNTY, N.C.

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 16282 JEFFREY T. DALTON 1/10/19

Dalton Engineering and Associates, P. A.
446 East Main Street
P.O. Box 426
Clayton, NC 27520
(919)550-4740
Fax (919) 550-4741

Job: 16048	Date: 8/29/18	Revision: 002
File: 16048-Prelim_Subd_REV	Drawn: WJB	Sheet: 5 OF 22

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SITE DATA TABLE:

DEVELOPMENT NAME: CREECH TRACT DEVELOPMENT

OWNER
EVERLAND-LEE, L.L.C.
104 STATE AVENUE, SUITE 103
CLAYTON, NC 27520

PROPERTY INFORMATION
TOWNSHIP: TOWN OF CLAYTON
NC PIN: 165907-69-2203 & 165907-78-1039
ETJ: TOWN OF CLAYTON
ZONING: PD-MU PROPOSED ZONING: R-10
SITE ACREAGE: 38.88 A.C. (1,693,497sf)
EXISTING USE: VACANT
IS THE PROPERTY ANNEXED IN TO THE TOWN: YES
NO FLOOD PLAIN ON SITE: PANEL 1659
WATERSHED PROTECTION AREA: NO
INSIDE CITY LIMITS: YES

TOWNHOME LOT INFORMATION
TOTAL NUMBER OF LOTS/UNITS: 189
(PHASE ONE: 96 LOTS/UNITS)
(PHASE TWO: 93 LOTS/UNITS)
PROPOSED USE: TOWNHOME SUBDIVISION W/ POOL HOUSE & POOL
MAX. BUILDING HEIGHT: 35'
MAX. BUILDING COVERAGE: 75%
MAX. IMPERVIOUS SURFACE AREA: 80%
MINIMUM LOT SIZE: 1,610 SF
MINIMUM LOT WIDTH: 22'
MINIMUM LOT DEPTH: 70'

TOWNHOME LOT SETBACKS	AMENITIES SITE SETBACKS
FRONT: 10'	FRONT: 15'
SIDE (END UNIT): 5'	SIDE: 10'
SIDE (INTERIOR UNIT): 0'	SIDE (STREET): 15'
REAR: 10'	REAR: 15'

AMENITIES SITE MINIMUM AREAS:
POOL HOUSE: 480 SF (MINIMUM)
COVERED PATIO: 700 SF (MINIMUM)
POOL SIZE: 3,000 SF (MINIMUM)

PARKING REQUIREMENTS:

PARKING SPACES REQUIRED: (MAIL KIOSK AREA: 189 LOTS / 32 = 5.906)	6 SPACES
PARKING SPACES PROVIDED:	18 SPACES
HANDICAP SPACES PROVIDED:	4 SPACES
PARKING SPACES REQUIRED: (TOWNHOME: 189 UNITS X 2 = 378)	378 SPACES
PARKING SPACES PROVIDED:	393 SPACES

PERVIOUS SURFACE AREA: 918,554sf / 54.25%
IMPERVIOUS SURFACE AREA: 774,494sf / 45.75%
PROPOSED DENSITY: 4.86 UNITS/ACRE
LINER FEET OF STREETS: 9,294 LF
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SANITARY SEWER PROVIDER: TOWN OF CLAYTON
WATER PROVIDER: TOWN OF CLAYTON
TRASH SERVICE: CURBSIDE PICKUP (NO DUMPSTER PROVIDED)

LEGEND

ALLEY LOADED UNITS	
FRONT LOADED UNITS	

CALL BEFORE YOU DIG!
NORTH CAROLINA LAW REQUIRES NOTIFICATION OF THE UNDERGROUND FACILITY OWNER NOT LESS THAN TWO (2) BUT NO MORE THAN TEN (10) WORKING DAYS PRIOR TO EXCAVATION OR DEMOLITION
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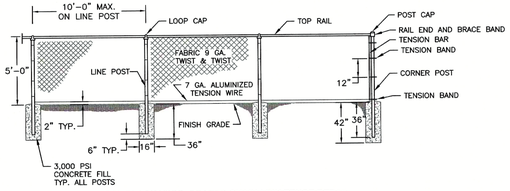

TYPICAL BLACK VINYL COATED CHAIN LINK FENCE DETAIL
NOT TO SCALE

PRELIMINARY SITE PLAN - PHASE TWO
FOR
CREECH TRACT DEVELOPMENT
TOWN OF CLAYTON - JOHNSTON COUNTY, N.C.

PRELIMINARY
NOT FOR CONSTRUCTION

REVISION 003: ADDRESSED TOWN OF CLAYTON TRC REVIEW COMMENTS - 2/15/19
REVISION 002: ADDRESSED TOWN OF CLAYTON TRC REVIEW COMMENTS - 1/17/19
REVISION 001: ADDRESSED TOWN OF CLAYTON TRC REVIEW COMMENTS - 12/3/18

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 16282 TIMOTHY T. DALTON

Dalton Engineering and Associates, P. A.
446 East Main Street
P.O. Box 426
Clayton, NC 27520
(919)550-4740
Fax (919) 550-4741

Job: 16048	**Date:** 8/29/18	**Revision:** 003
File: 16048-Prelim_Subd_REV	**Drawn:** WJB	**Sheet:** 6 OF 22

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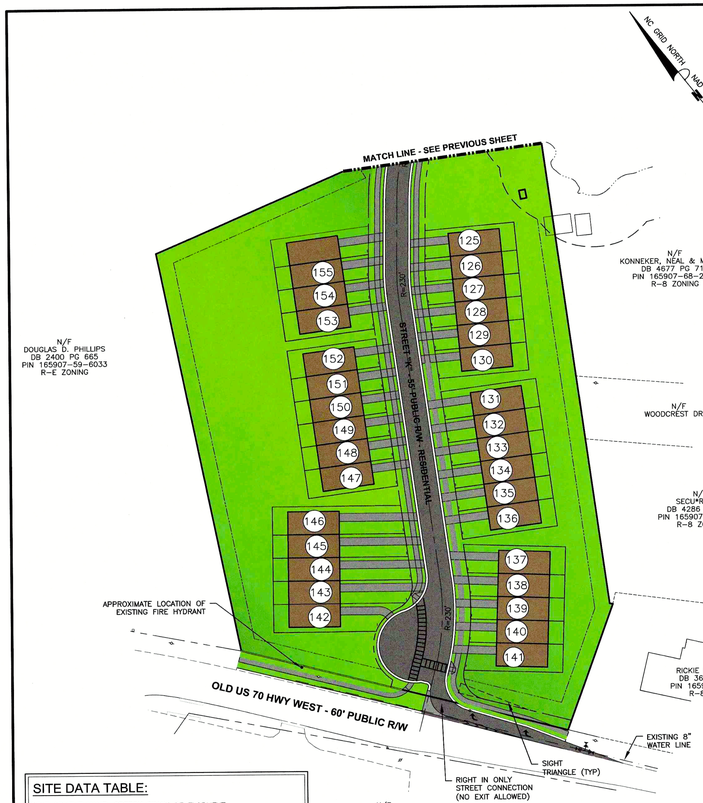
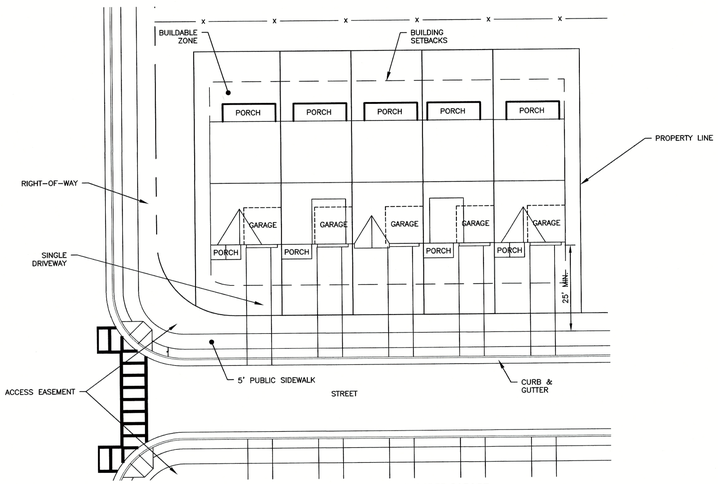
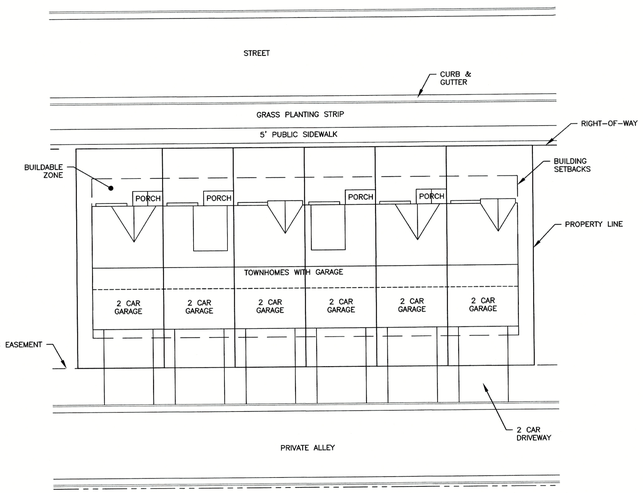
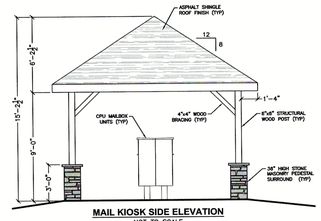




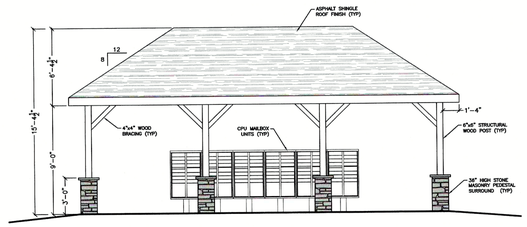
TOWNHOMES: FRONT LOADED GARAGE
SCALE: 1" = 20'
NOTE: SEE DATA TABLE ON THIS SHEET FOR DIMENSIONAL STANDARDS.



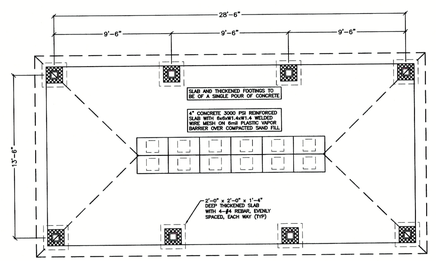
TOWNHOMES: ALLEY LOADED GARAGE
SCALE: 1" = 20'
NOTE: SEE DATA TABLE ON THIS SHEET FOR DIMENSIONAL STANDARDS.



MAIL KIOSK SIDE ELEVATION
NOT TO SCALE



MAIL KIOSK FRONT ELEVATION
NOT TO SCALE



MAIL KIOSK FLOOR PLAN
NOT TO SCALE
NOTE: MAIL KIOSK DETAILS FOR PHASE ONE AND TWO

SITE DATA TABLE:

DEVELOPMENT NAME: CREECH TRACT DEVELOPMENT

OWNER
EVERLAND-LEE, L.L.C.
104 STATE AVENUE, SUITE 103
CLAYTON, NC 27520

PROPERTY INFORMATION
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ETJ: TOWN OF CLAYTON
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WATERSHED PROTECTION AREA: NO
INSIDE CITY LIMITS: YES

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(PHASE ONE: 96 LOTS/UNITS)
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MAX. BUILDING HEIGHT: 35'
MAX. BUILDING COVERAGE: 75%
MAX. IMPERVIOUS SURFACE AREA: 80%
MINIMUM LOT SIZE: 1,610 SF
MINIMUM LOT WIDTH: 22'
MINIMUM LOT DEPTH: 70'

TOWNHOME LOT SETBACKS	AMENITIES SITE SETBACKS
FRONT: 10'	FRONT: 15'
SIDE (END UNIT): 5'	SIDE: 10'
SIDE (INTERIOR UNIT): 0'	SIDE (STREET): 15'
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AMENITIES SITE MINIMUM AREAS:
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COVERED PATIO: 700 SF (MINIMUM)
POOL SIZE: 3,000 SF (MINIMUM)

PARKING REQUIREMENTS:

PARKING SPACES REQUIRED:	6 SPACES
(MAIL KIOSK AREA: 189 LOTS / 32 = 5.906)	
PARKING SPACES PROVIDED:	18 SPACES
HANDICAP SPACES PROVIDED:	4 SPACES
PARKING SPACES REQUIRED:	378 SPACES
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PARKING SPACES PROVIDED:	393 SPACES

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ELECTRIC PROVIDER: TOWN OF CLAYTON
SANITARY SEWER PROVIDER: TOWN OF CLAYTON
WATER PROVIDER: TOWN OF CLAYTON
TRASH SERVICE: CURBSIDE PICKUP (NO DUMPSTER PROVIDED)

LEGEND

ALLEY LOADED UNITS	
FRONT LOADED UNITS	

CALL BEFORE YOU DIG!
NORTH CAROLINA LAW REQUIRES NOTIFICATION OF THE UNDERGROUND FACILITY OWNER NOT LESS THAN TWO (2) BUT NO MORE THAN TEN (10) WORKING DAYS PRIOR TO EXCAVATION OR DEMOLITION
North Carolina One-Call Center, Inc.
www.ncocc.org
1-800-632-4949

PRELIMINARY SITE PLAN - PHASE TWO
FOR
CREECH TRACT DEVELOPMENT
TOWN OF CLAYTON - JOHNSTON COUNTY, N.C.

PRELIMINARY
NOT FOR CONSTRUCTION

REVISION 003: ADDRESSED TOWN OF CLAYTON TRC REVIEW COMMENTS - 2/15/19
REVISION 002: ADDRESSED TOWN OF CLAYTON TRC REVIEW COMMENTS - 1/17/19
REVISION 001: ADDRESSED TOWN OF CLAYTON TRC REVIEW COMMENTS - 12/3/18

NORTH CAROLINA PROFESSIONAL SEAL 16282 ENGINEER TREY T. DALTON

Dalton Engineering and Associates, P. A.
446 East Main Street
P.O. Box 426
Clayton, NC 27520
(919)550-4740
Fax (919) 550-4741

Job: 16048	**Date:** 8/29/18	**Revision:** 002
File: 16048-Prelim_Subd_REV	**Drawn:** WJB	**Sheet:** 7 OF 22

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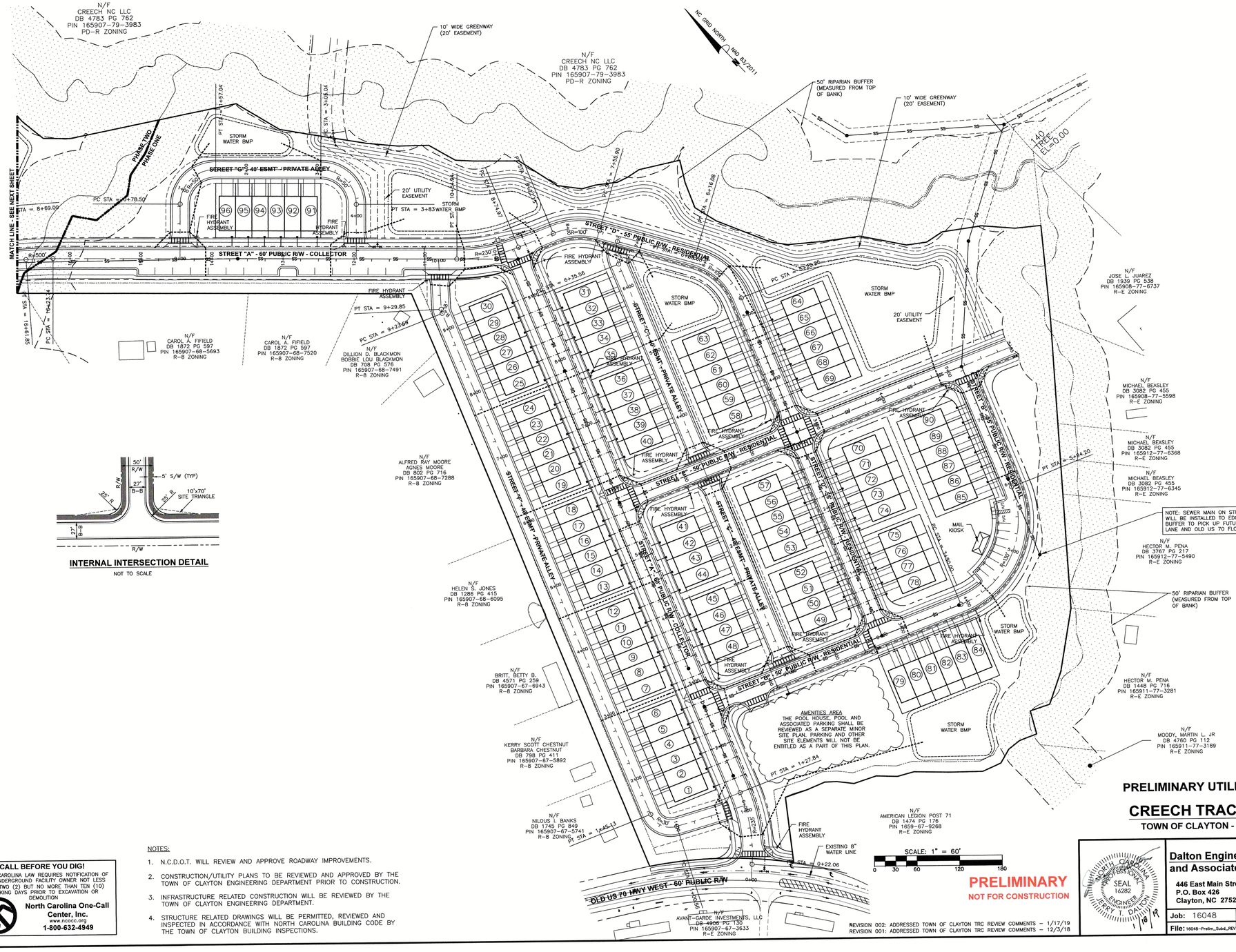

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1-800-632-4949

NOTES:

1. N.C.D.O.T. WILL REVIEW AND APPROVE ROADWAY IMPROVEMENTS.
2. CONSTRUCTION/UTILITY PLANS TO BE REVIEWED AND APPROVED BY THE TOWN OF CLAYTON ENGINEERING DEPARTMENT PRIOR TO CONSTRUCTION.
3. INFRASTRUCTURE RELATED CONSTRUCTION WILL BE REVIEWED BY THE TOWN OF CLAYTON ENGINEERING DEPARTMENT.
4. STRUCTURE RELATED DRAWINGS WILL BE PERMITTED, REVIEWED AND INSPECTED IN ACCORDANCE WITH NORTH CAROLINA BUILDING CODE BY THE TOWN OF CLAYTON BUILDING INSPECTIONS.

PRELIMINARY
NOT FOR CONSTRUCTION

REVISION 002: ADDRESSED TOWN OF CLAYTON TRC REVIEW COMMENTS – 1/17/19
REVISION 001: ADDRESSED TOWN OF CLAYTON TRC REVIEW COMMENTS – 12/3/18

PRELIMINARY UTILITY PLAN - PHASE ONE
FOR
CREECH TRACT DEVELOPMENT
TOWN OF CLAYTON - JOHNSTON COUNTY, N.C.

Dalton Engineering and Associates, P. A.
446 East Main Street
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Clayton, NC 27520
(919)550-4740
Fax (919) 550-4741

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 16282 JERRY T. DALTON

Job: 16048	**Date:** 8/29/18	**Revision:** 002
File: 16048-Prelim_Subd_REV	**Drawn:** WJB	**Sheet:** 8 OF 22

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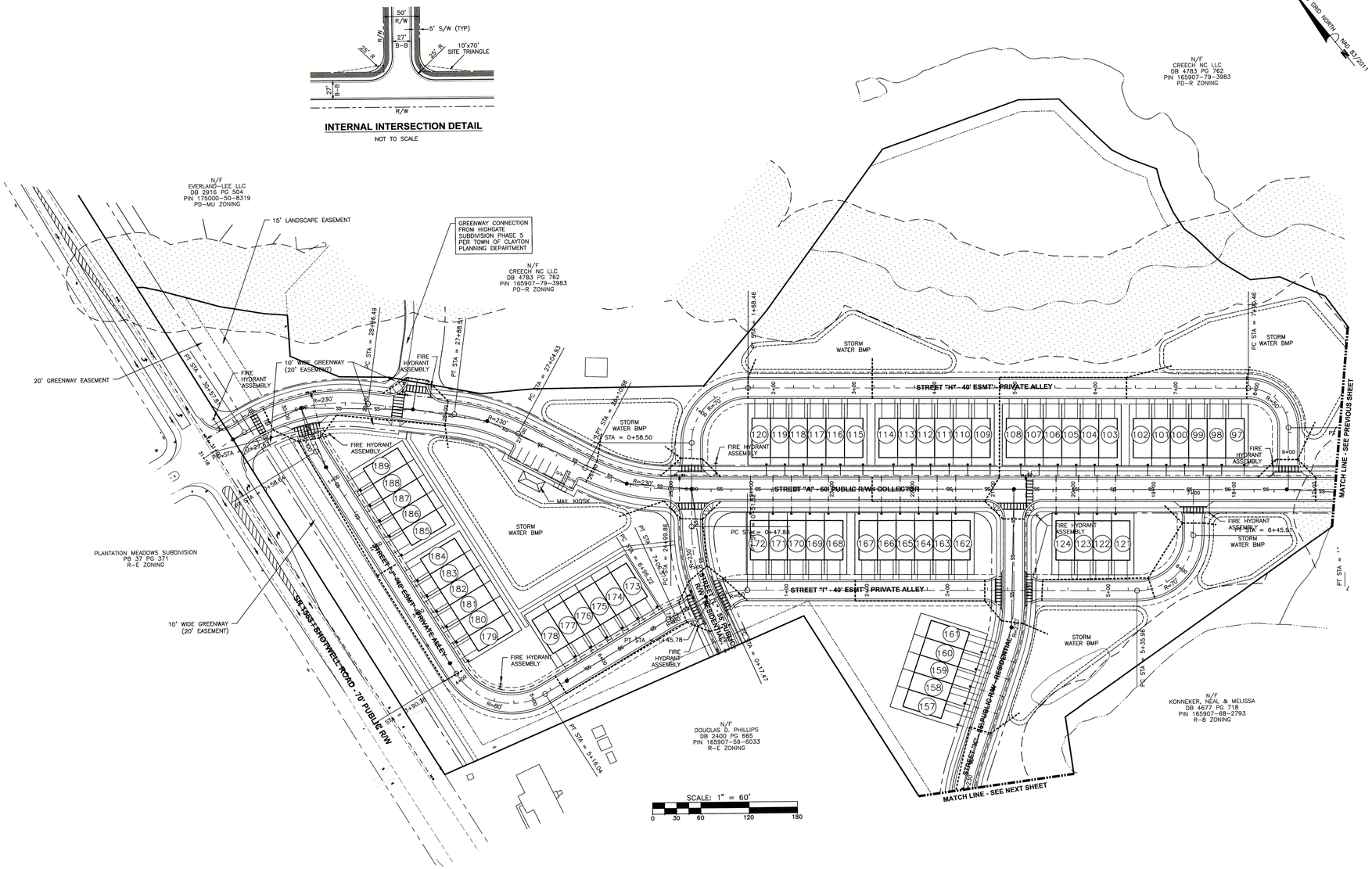

CALL BEFORE YOU DIG!

NORTH CAROLINA LAW REQUIRES NOTIFICATION OF THE UNDERGROUND FACILITY OWNER NOT LESS THAN TWO (2) BUT NO MORE THAN TEN (10) WORKING DAYS PRIOR TO EXCAVATION OR DEMOLITION

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www.ncocc.org
1-800-632-4949

NOTES:

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2. CONSTRUCTION/UTILITY PLANS TO BE REVIEWED AND APPROVED BY THE ENGINEERING DEPARTMENT PRIOR TO CONSTRUCTION.
3. INFRASTRUCTURE RELATED CONSTRUCTION WILL BE REVIEWED BY THE ENGINEERING DIVISION OF PUBLIC WORKS.
4. STRUCTURE RELATED DRAWINGS WILL BE PERMITTED, REVIEWED AND INSPECTED IN ACCORDANCE WITH NORTH CAROLINA BUILDING CODE BY THE TOWN OF CLAYTON BUILDING INSPECTIONS.

PRELIMINARY UTILITY PLAN - PHASE TWO
FOR
CREECH TRACT DEVELOPMENT
TOWN OF CLAYTON - JOHNSTON COUNTY, N.C.

PRELIMINARY
NOT FOR CONSTRUCTION

REVISION 003: ADDRESSED TOWN OF CLAYTON TRC REVIEW COMMENTS – 2/15/19
REVISION 002: ADDRESSED TOWN OF CLAYTON TRC REVIEW COMMENTS – 1/17/19
REVISION 001: ADDRESSED TOWN OF CLAYTON TRC REVIEW COMMENTS – 12/3/18

NORTH CAROLINA REGISTERED PROFESSIONAL ENGINEER SEAL 16282 JERRY T. DALTON

Dalton Engineering and Associates, P. A.
446 East Main Street
P.O. Box 426
Clayton, NC 27520
(919)550-4740
Fax (919) 550-4741

Job: 16048	**Date:** 8/29/18	**Revision:** 003
File: 16048--Prelim_Subd_REV	**Drawn:** WJB	**Sheet:** 9 OF 22

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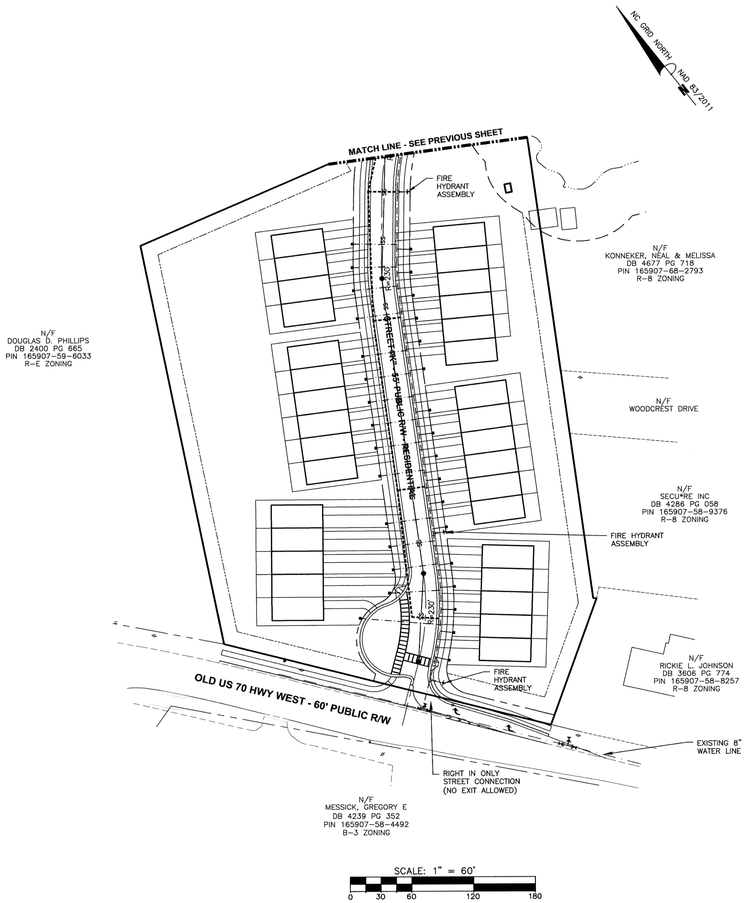
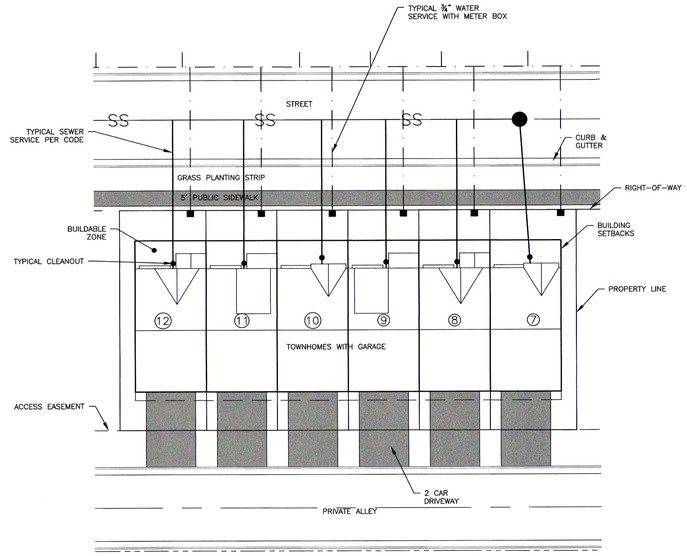
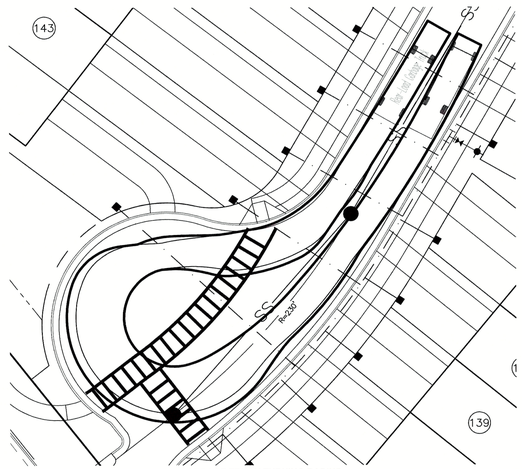




TYPICAL WATER AND SEWER SERVICE CONNECTION
SCALE: 1" = 20'



GARBAGE TRUCK TURNING RADIUS
SCALE: 1" = 20'

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North Carolina One-Call Center, Inc.
www.ncocc.org
1-800-632-4949

NOTES:

1. N.C.D.O.T. WILL REVIEW AND APPROVE ROADWAY IMPROVEMENTS.
2. CONSTRUCTION/UTILITY PLANS TO BE REVIEWED AND APPROVED BY THE ENGINEERING DEPARTMENT PRIOR TO CONSTRUCTION.
3. INFRASTRUCTURE RELATED CONSTRUCTION WILL BE REVIEWED BY THE ENGINEERING DIVISION OF PUBLIC WORKS.
4. STRUCTURE RELATED DRAWINGS WILL BE PERMITTED, REVIEWED AND INSPECTED IN ACCORDANCE WITH NORTH CAROLINA BUILDING CODE BY THE TOWN OF CLAYTON BUILDING INSPECTIONS.

PRELIMINARY UTILITY PLAN - PHASE TWO
FOR
CREECH TRACT DEVELOPMENT
TOWN OF CLAYTON - JOHNSTON COUNTY, N.C.

PRELIMINARY
NOT FOR CONSTRUCTION

REVISION 003: ADDRESSED TOWN OF CLAYTON TRC REVIEW COMMENTS – 2/15/19
REVISION 002: ADDRESSED TOWN OF CLAYTON TRC REVIEW COMMENTS – 1/17/19
REVISION 001: ADDRESSED TOWN OF CLAYTON TRC REVIEW COMMENTS – 12/3/18

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 16282 JERRY T. DALTON 11/14/19

Dalton Engineering and Associates, P. A.
446 East Main Street
P.O. Box 426
Clayton, NC 27520
(919)550-4740
Fax (919) 550-4741

Job: 16048	**Date:** 8/29/18	**Revision:** 003
File: 16048-Prelim_Subd_REV	**Drawn:** WJB	**Sheet:** 10 OF 22

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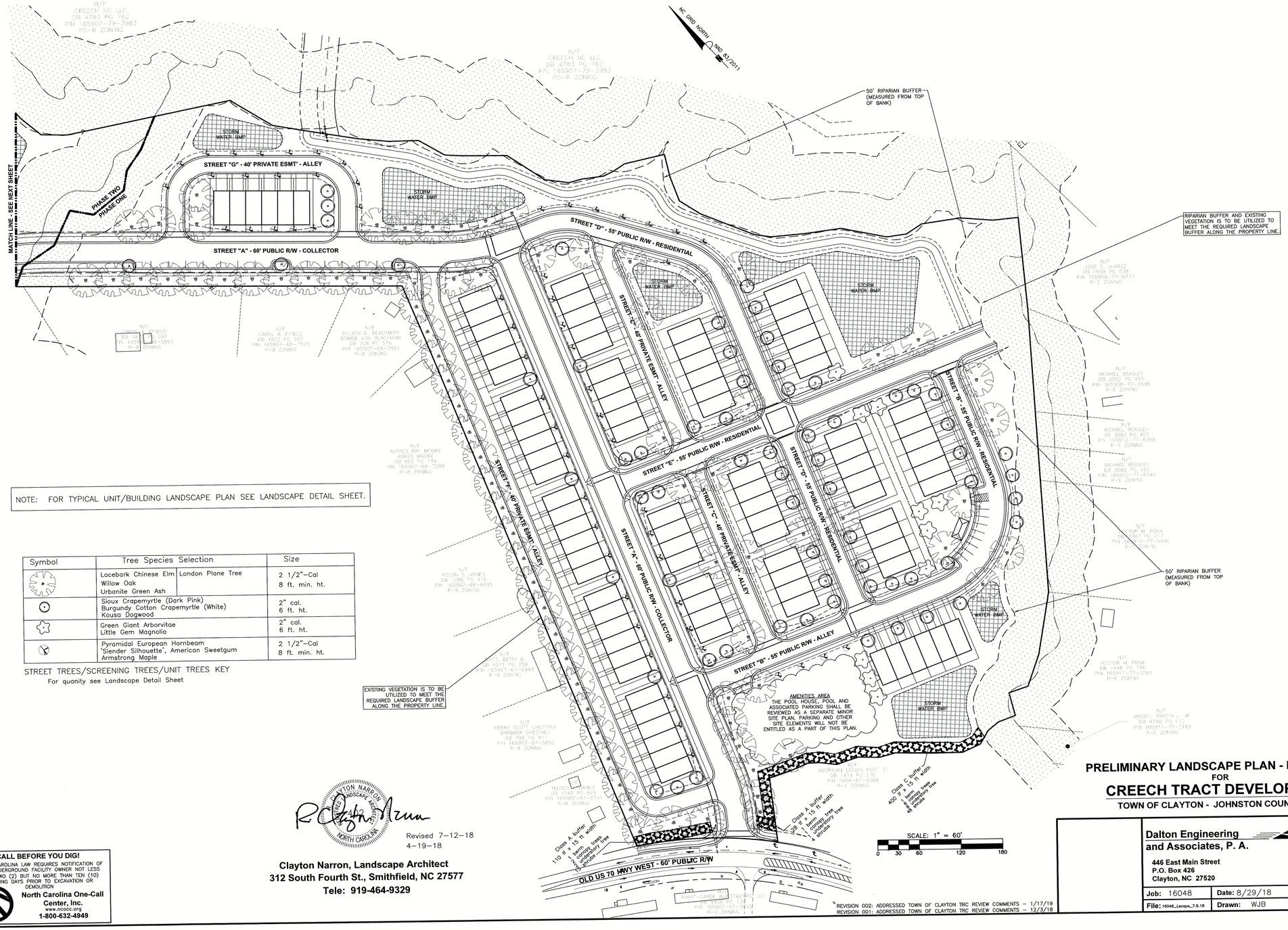

NOTE: FOR TYPICAL UNIT/BUILDING LANDSCAPE PLAN SEE LANDSCAPE DETAIL SHEET.

Symbol	Tree Species Selection		Size
	Lacebark Chinese Elm Willow Oak Urbanite Green Ash	London Plane Tree	2 1/2"–Cal 8 ft. min. ht.
	Sioux Crapemyrtle (Dark Pink) Burgundy Cotton Crapemyrtle (White) Kousa Dogwood		2" cal. 6 ft. ht.
	Green Giant Arborvitae Little Gem Magnolia		2" cal. 6 ft. ht.
	Pyramidal European Hornbeam 'Slender Silhouette', American Sweetgum Armstrong Maple		2 1/2"–Cal 8 ft. min. ht.

STREET TREES/SCREENING TREES/UNIT TREES KEY
For quanity see Landscape Detail Sheet

CLAYTON NARRON LANDSCAPE ARCHITECT NORTH CAROLINA

Revised 7–12–18
4–19–18

Clayton Narron, Landscape Architect
312 South Fourth St., Smithfield, NC 27577
Tele: 919-464-9329

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NORTH CAROLINA LAW REQUIRES NOTIFICATION OF THE UNDERGROUND FACILITY OWNER NOT LESS THAN TWO (2) BUT NO MORE THAN TEN (10) WORKING DAYS PRIOR TO EXCAVATION OR DEMOLITION
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www.ncocc.org
1-800-632-4949

REVISION 002: ADDRESSED TOWN OF CLAYTON TRC REVIEW COMMENTS – 1/17/19
REVISION 001: ADDRESSED TOWN OF CLAYTON TRC REVIEW COMMENTS – 12/3/18

PRELIMINARY LANDSCAPE PLAN - PHASE ONE
FOR
CREECH TRACT DEVELOPMENT
TOWN OF CLAYTON - JOHNSTON COUNTY, N.C.

Dalton Engineering and Associates, P. A.
446 East Main Street
P.O. Box 426
Clayton, NC 27520
(919)550-4740
Fax (919) 550-4741

Job: 16048	**Date:** 8/29/18	**Revision:** 002
File: 16048_Lacopa_7.9.18	**Drawn:** WJB	**Sheet:** 11 OF 22

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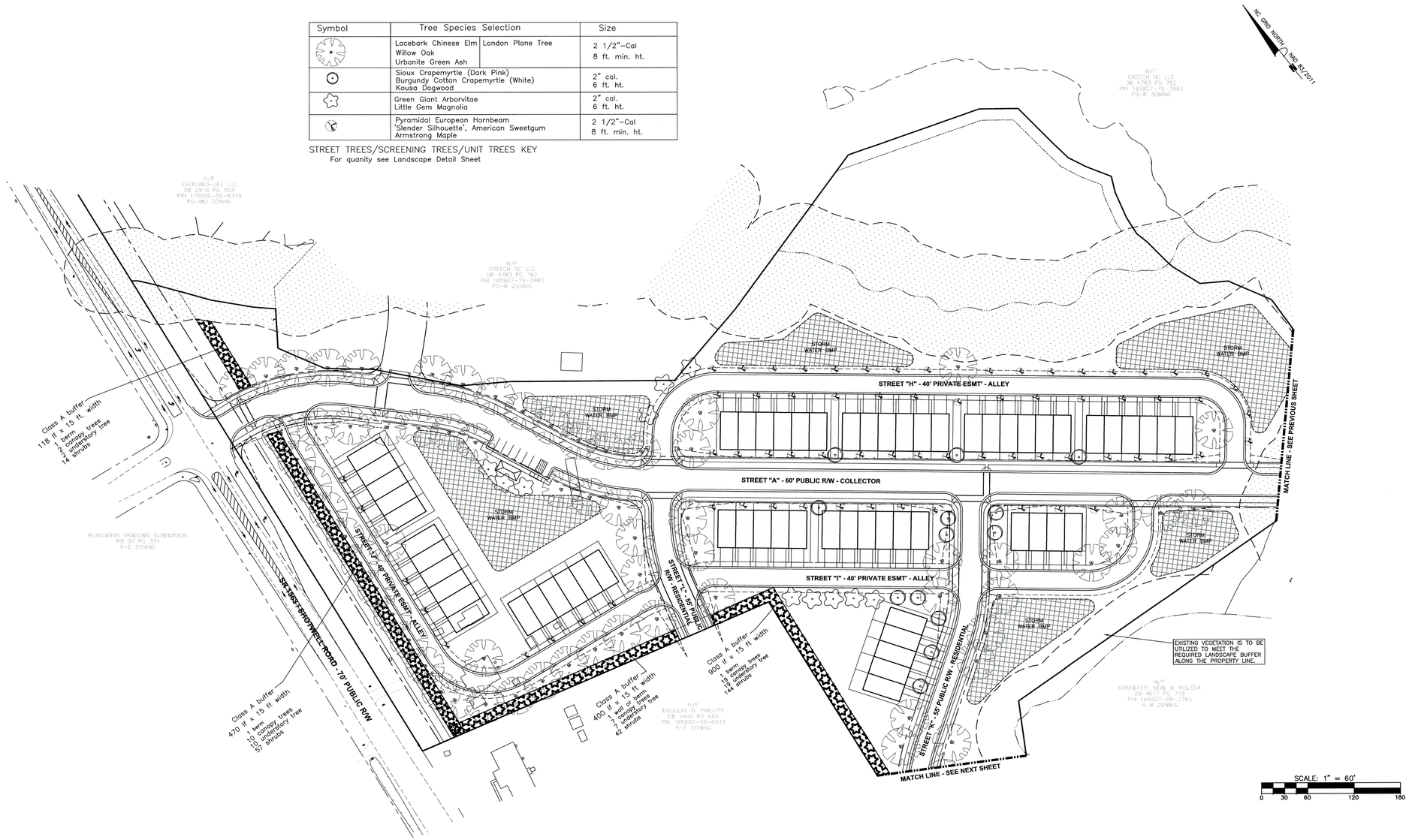
Symbol	Tree Species Selection		Size
	Lacebark Chinese Elm Willow Oak Urbanite Green Ash	London Plane Tree	2 1/2"-Cal 8 ft. min. ht.
	Sioux Crapemyrtle (Dark Pink) Burgundy Cotton Crapemyrtle (White) Kousa Dogwood		2" cal. 6 ft. ht.
	Green Giant Arborvitae Little Gem Magnolia		2" cal. 6 ft. ht.
	Pyramidal European Hornbeam 'Slender Silhouette', American Sweetgum Armstrong Maple		2 1/2"-Cal 8 ft. min. ht.

STREET TREES/SCREENING TREES/UNIT TREES KEY
For quanity see Landscape Detail Sheet



NOTE: FOR TYPICAL UNIT/BUILDING LANDSCAPE PLAN SEE LANDSCAPE DETAIL SHEET.

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Revised 7-12-18
4-19-18

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Tele: 919-464-9329

REVISION 003: ADDRESSED TOWN OF CLAYTON TRC REVIEW COMMENTS - 2/15/19
REVISION 002: ADDRESSED TOWN OF CLAYTON TRC REVIEW COMMENTS - 1/17/19
REVISION 001: ADDRESSED TOWN OF CLAYTON TRC REVIEW COMMENTS - 12/3/18

PRELIMINARY LANDSCAPE PLAN - PHASE TWO
FOR
CREECH TRACT DEVELOPMENT
TOWN OF CLAYTON - JOHNSTON COUNTY, N.C.

Dalton Engineering and Associates, P. A.
446 East Main Street
P.O. Box 426
Clayton, NC 27520
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Fax (919) 550-4741

Job: 16048	**Date:** 8/29/18	**Revision:** 003
File: 16048_Lscape_7.9.18	**Drawn:** WJB	**Sheet:** 12 OF 22

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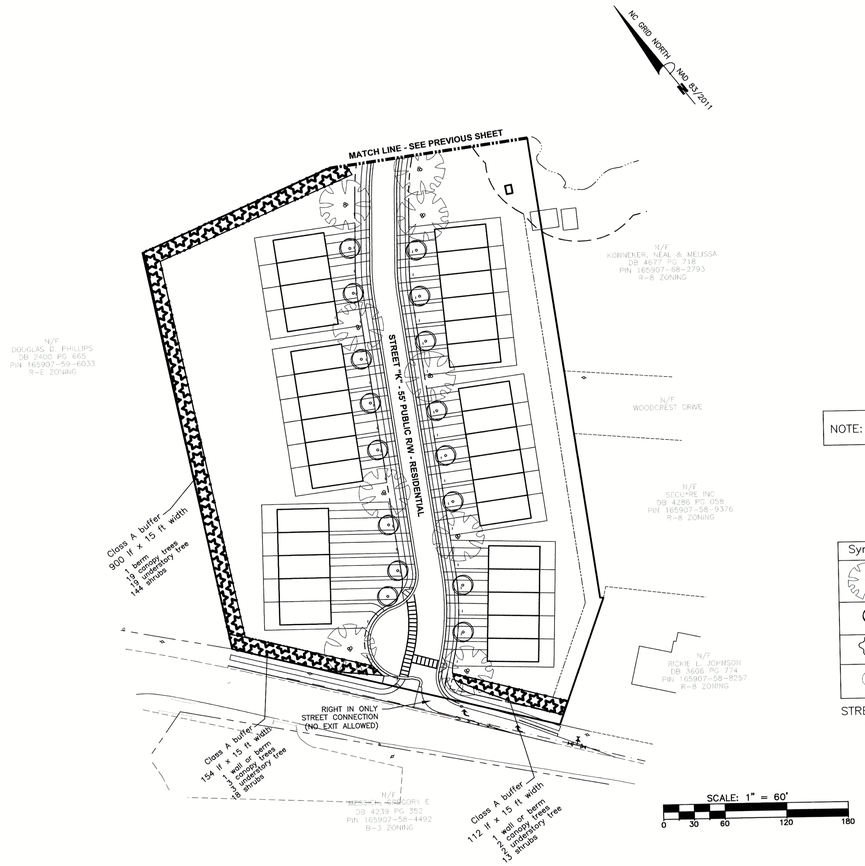

NOTE: FOR TYPICAL UNIT/BUILDING LANDSCAPE PLAN SEE LANDSCAPE DETAIL SHEET.

Symbol		Tree Species Selection		Size
		Lacebark Chinese Elm Willow Oak Urbanite Green Ash	London Plane Tree	2 1/2"-Cal 8 ft. min. ht.
		Sioux Crapemyrtle (Dark Pink) Burgundy Cotton Crapemyrtle (White) Kousa Dogwood		2" cal. 6 ft. ht.
		Green Giant Arborvitae Little Gem Magnolia		2" cal. 6 ft. ht.
		Pyramidal European Hornbeam 'Slender Silhouette', American Sweetgum Armstrong Maple		2 1/2"-Cal 8 ft. min. ht.

STREET TREES/SCREENING TREES/UNIT TREES KEY
For quanity see Landscape Detail Sheet

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Revised 7-12-18
4-19-18

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312 South Fourth St., Smithfield, NC 27577
Tele: 919-464-9329

REVISION 003: ADDRESSED TOWN OF CLAYTON TRC REVIEW COMMENTS - 2/15/19
REVISION 002: ADDRESSED TOWN OF CLAYTON TRC REVIEW COMMENTS - 1/17/19
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PRELIMINARY LANDSCAPE PLAN - PHASE TWO
FOR
CREECH TRACT DEVELOPMENT
TOWN OF CLAYTON - JOHNSTON COUNTY, N.C.

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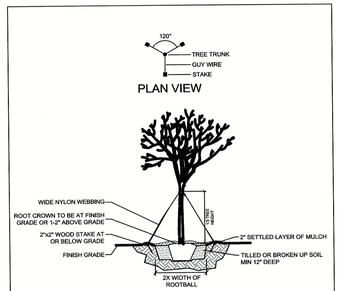
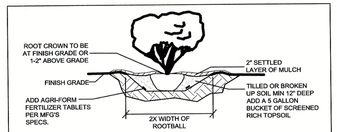
Job: 16048	**Date:** 8/29/18	**Revision:** 003
File: 16048_Lscape_7.9.18	**Drawn:** WJB	**Sheet:** 13 OF 22



TREE PLANTING

NOT TO SCALE



TYP. SHRUB PLANTING: INDIVIDUAL PLANTING HOLE

NOT TO SCALE

LAWN PREPARATION AND SEEDING NOTES:

A. Before fertilizing and seeding, the topsoil surfaces shall be trimmed and worked to true line from unsightly variation, bumps, ridges and depressions and all detrimental material, roots and stones larger than 3–inches in any diameter shall be removed from the soil.

B. Not earlier than 24 hours before seed is to be sown, the soil surface to be seeded shall be thoroughly cultivated to a depth of not less than 4–inches with a weighted disc, tiller, pulvimixer or other equipment, until the surface is smooth and in an acceptabe condition.

C. If the prepared surface becomes eroded as a result of rain or for any other reason, or becomes crusted before the seed is sown, the surface shall again be placed in a condition suitable for seeding.

D. Ground preparation operations shall be performed only when the ground is in a tillable and workable condition.

E. All seeded areas shall be uniformly mulched in a continuous blanket immediately after seeding. The mulch shall be applied evenly so as to permit sunlight to penetrate and the air to circulate and at the same time shade the ground, reduce erosion and conserve soil moisture. Approximately 45 percent of the ground shall be visible through the mulch blanket.

F. The Contractor shall be responsible for maintaining the proper moisture content of the soil to insure adequate plant growth until a satisfactory stand is obtained. If necessary, watering shall be performed to maintain adequate water content in the soil.

G. Seeding rate: Drought resistant Fescue seed, 5 lbs/1000sf, 10 lbs. (5–10–15) plus 3% iron fertilizer/1000sf, 45 lbs. limestone/1000sf.

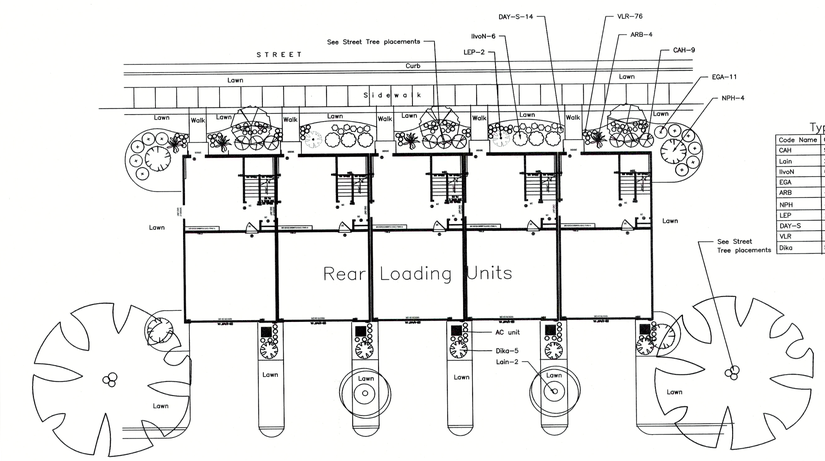
LANDSCAPE SUMMARY

SITE DATA

PROPOSED USE:	TOWN HOMES
TOTAL LOT ACREAGE:	20.86 AC 908,662 SF
ZONING DISTRICT:	R 10

LANDSCAPE DATA

% OF SITE LANDSCAPED:	
% REQ. = 20%	
20% LANDSCAPED AREA:	181,732 SF
CANOPY TREE REQ. AND PROVIDED	1/1000 SF = 182 REQ/PROVIDED
UNDERSTORY TREE REQ. AND PROVIDED	1/1000 SF = 182 REQ/PROVIDED
SHRUBS REQ. AND PROVIDED	2/1000 SF = 364 REQ/PROVIDED



Not To Scale

Rear Loading Units: Typical Landscape Plantings

Typical Planting Schedule: Rear Loading Bldg.

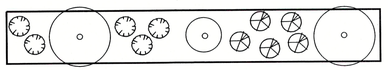
Code	Name	Quantity	Common Name	Scientific Name	Planting Size
CAH		9	Carissa Holly	Ilex cornuta 'Carissa'	3–Gal 15–18" spd.
Lain		2	Crape myrtle 'Tuscarora'	Lagerstroemia indica 'Tuscarora'	7 gal. 5 ft. ht.
IlvoN		6	Dwarf youpon	Ilex vomitoria 'Nana'	3–Gal 15–18" spd.
EGA		11	Kaleidescope Abelia	Abelia x 'Kaleidescope'	3–Gal 15–18" spd.
ARB		4	Globe Arborvitae	Thuja occidentalis hybrid	3–Gal 15–18" spd.
NPH		4	Oak leaf Red Holly	Ilex x 'Oakleaf'	10–gallon 4 ft. ht.
LEP		2	Pink Lorepetalum	Lorepetalum chinense, 'Purple Diamond'	3–Gal 15–18" spd.
DAY–S		14	Stella de Oro Daylily	Hemerocallis, 'Stella de Oro'	1–Gal
VLR		76	Variegated Liriope	Liriope muscari 'Variegata'	1–Gal
Dika		5	Blue cascade Distylium	Distylium x 'Blue cascade'	3–Gal 15–18" spd.

GENERAL PLANTING NOTES:
1. Mulch all new plant beds with 3" clean pinestraw mulch.
2. Warranty plantings for 1 year period following completion.
3. Prepare plant beds by removing grass, add 5" of 50% topsoil blend soil to beds, till and rake smooth. Remove large clods, roots, etc..
4. See site plan for actual number of units per building and street tree locations.
5. Plant quantities shall be checked for accuracy by the Landscape Contractor prior to construction.
6. New lawn to be drought resistant fescue seed.

CLASS A BUFFER
Perimeter Buffer symbol (typical)

15 feet

CLASS A BUFFER
Alternative 2
15 feet



100 ft.

2 canopy trees
1 understory tree
10 shrubs

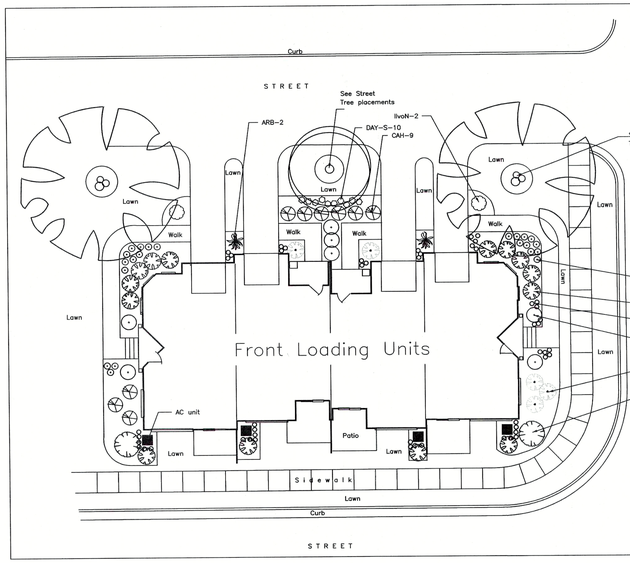
CLASS A BUFFER PLANT SELECTION

Plant type	Qty.	Plant Selection	Size
Canopy tree Plant no more than 25 of one species	54	Lacebark Chinese Elm London Plane Tree Willow Oak Urbanite Green Ash	2 1/2"–Cal 8 ft. min. ht.
Understory Tree Plant no more than 25 of one species	27	Sioux Crapemyrtle (Dark Pink) Nellie Stevens Holly, Little Gem Magnolia Kousa Dogwood	2"–Cal. 6 ft. min. ht.
Shrub Plant in groups of 3, 5 or 7	269	Abelia, Sea Green Juniper, Miscanthus, Wavy leaf privet Dwarf Burford Holly, Zhuzhou Fuchsia Loropetalum Viburnum tinus 'Compactum', Bridal Wreath Spirea	24" min. ht.

Class A Buffer Berm Requirements

Symbol	Qty.	Tree Species Selection		Size
	115	Lacebark Chinese Elm Willow Oak Urbanite Green Ash	London Plane Tree	2 1/2"–Cal 8 ft. min. ht.
	92	Sioux Crapemyrtle (Dark Pink) Burgundy Cotton Crapemyrtle (White) Kousa Dogwood		2" cal. 6 ft. ht.
	21	Green Giant Arborvitae Little Gem Magnolia		2" cal. 6 ft. ht.
	128	Pyramidal European Hornbeam 'Slender Silhouette', American Sweetgum Armstrong Maple		2 1/2"–Cal 8 ft. min. ht.

STREET TREES/SCREENING TREES/UNIT TREES KEY



Not To Scale

Front Loading Units: Typical Landscape Plantings

Typical Planting Schedule: Front Loading Bldg.

Code	Name	Quantity	Common Name	Scientific Name	Planting Size
CAH		9	Carissa Holly	Ilex cornuta 'Carissa'	3–Gal 15–18" spd.
IlcrC		7	Dwarf Japanese holly	Ilex crenata 'Compacta'	3–Gal 15–18" spd.
IlvoN		2	Dwarf youpon	Ilex vomitoria 'Nana'	3–Gal 15–18" spd.
ARB		2	Globe Arborvitae	Thuja occidentalis hybrid	3–Gal 15–18" spd.
DNA		22	Harbour Dwarf Nandina	Nandina domestica 'Harbour Dwarf'	3–Gal 12–15" spd.
Dika		14	Blue Cascade Distylium	Distylium x 'Blue Cascade'	3–Gal 15–18" spd.
NPH		2	Oak leaf Red Holly	Ilex x 'Oak leaf'	10–gallon 4 ft. ht.
LEP		5	Pink Lorepetalum	Lorepetalum chinense, 'Purple Diamond'	3–Gal 15–18" spd.
DAY–S		10	Stella de Oro Daylily	Hemerocallis, 'Stella de Oro'	1–Gal
VLR		28	Variegated Liriope	Liriope muscari 'Variegata'	1–Gal

GENERAL PLANTING NOTES:
1. Mulch all new plant beds with 2" Brown Designer hardwood mulch.
2. Warranty plantings for 1 year period following completion.
3. Prepare plant beds by removing grass, add 5" of 50% topsoil blend soil to beds, till and rake smooth. Remove large clods, roots, etc..
4. See site plan for actual number of units per building and street tree locations.
5. Plant quantities shall be checked for accuracy by the Landscape Contractor prior to construction.
6. New lawn to be drought resistant fescue seed.

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1-800-632-4949

Revised 7–12–18
4–19–18

Clayton Narron, Landscape Architect
312 South Fourth St., Smithfield, NC 27577
Tele: 919-464-9329

REVISION 001: ADDRESSED TOWN OF CLAYTON TRC REVIEW COMMENTS – 12/3/18

PRELIMINARY LANDSCAPE PLAN DETAILS FOR CREECH TRACT DEVELOPMENT

TOWN OF CLAYTON - JOHNSTON COUNTY, N.C.

Dalton Engineering and Associates, P. A.
446 East Main Street
P.O. Box 426
Clayton, NC 27520
(919)550-4740
Fax (919) 550-4741

Job: 16048	**Date:** 8/29/18	**Revision:** 001
File: 16048_Lscape_7.9.18	**Drawn:** WJB	**Sheet:** 14 OF 22

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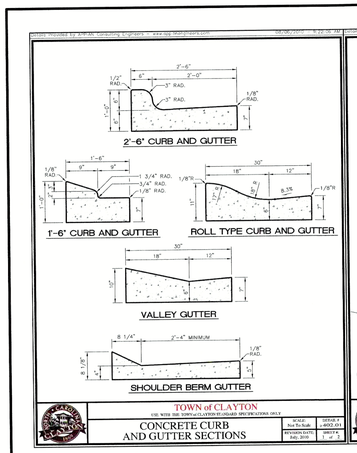
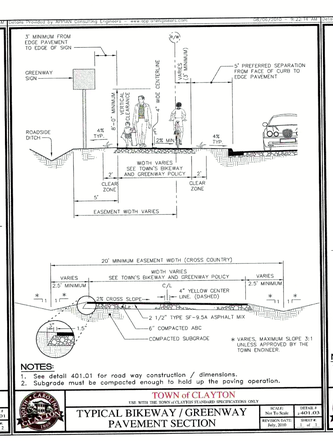


TOWN of CLAYTON
USE NOTE: SEE TOWN of CLAYTON STANDARD SPECIFICATIONS ONLY

CONCRETE CURB AND GUTTER SECTIONS

SCALE: Not To Scale | DETAIL #: 401.01
REVISION DATE(S): July, 2010 | SHEET #: 1 of 1

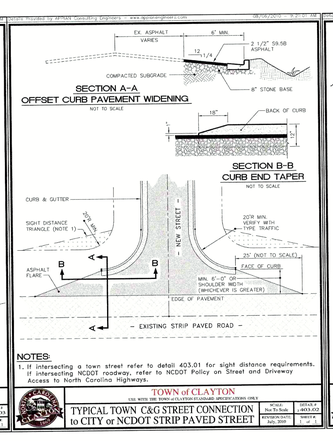


NOTES:
1. See detail 401.01 for road way construction / dimensions.
2. Subgrade must be compacted enough to hold up the paving operation.

TOWN of CLAYTON
USE NOTE: SEE TOWN of CLAYTON STANDARD SPECIFICATIONS ONLY

TYPICAL BIKEWAY / GREENWAY PAVEMENT SECTION

SCALE: Not To Scale | DETAIL #: 401.01
REVISION DATE(S): July, 2010 | SHEET #: 1 of 1

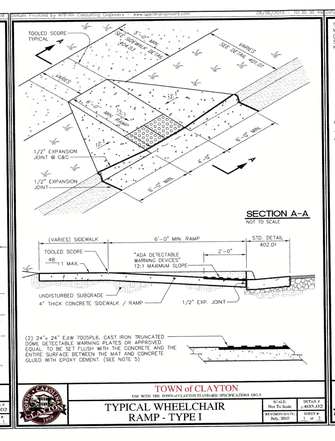


NOTES:
1. If intersecting a town street refer to detail 403.01 for sight distance requirements.
   If intersecting NCDOT roadway, refer to NCDOT Policy on Street and Driveway Access to North Carolina Highways.

TOWN of CLAYTON
USE NOTE: SEE TOWN of CLAYTON STANDARD SPECIFICATIONS ONLY

TYPICAL TOWN C&G STREET CONNECTION to CITY or NCDOT STRIP PAVED STREET

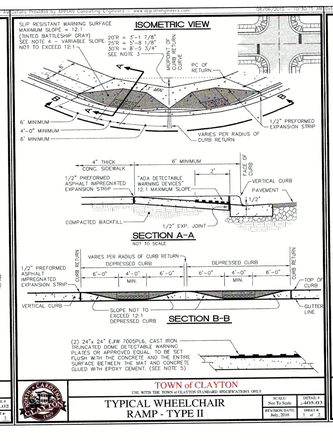
SCALE: Not To Scale | DETAIL #: 403.01
REVISION DATE(S): July, 2010 | SHEET #: 1 of 1



TOWN of CLAYTON
USE NOTE: SEE TOWN of CLAYTON STANDARD SPECIFICATIONS ONLY

TYPICAL WHEELCHAIR RAMP - TYPE I

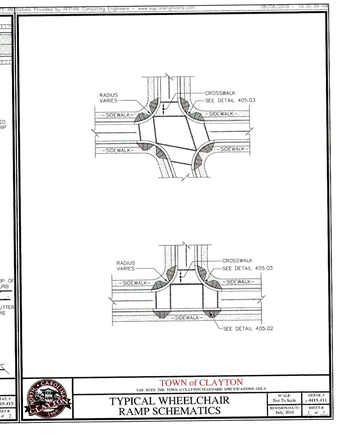
SCALE: Not To Scale | DETAIL #: 403.01
REVISION DATE(S): July, 2010 | SHEET #: 1 of 1



TOWN of CLAYTON
USE NOTE: SEE TOWN of CLAYTON STANDARD SPECIFICATIONS ONLY

TYPICAL WHEELCHAIR RAMP - TYPE II

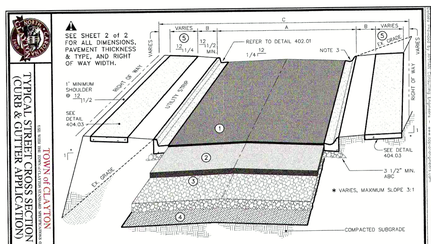
SCALE: Not To Scale | DETAIL #: 403.03
REVISION DATE(S): July, 2010 | SHEET #: 1 of 1



TOWN of CLAYTON
USE NOTE: SEE TOWN of CLAYTON STANDARD SPECIFICATIONS ONLY

TYPICAL WHEELCHAIR RAMP SCHEMATICS

SCALE: Not To Scale | DETAIL #: 403.01
REVISION DATE(S): July, 2010 | SHEET #: 1 of 1



NOTES:
1. Pavement design, pavement width, and street right of way shall be as shown unless otherwise specified. Where unusual conditions exist, or excessive traffic volume is anticipated, the project engineer may vary the typical street section or pavement design accordingly.
2. Refer to plan cross-sections for slope tie-ins.
3. Mountable roll curb and gutter may be used in lieu of straight back curb on residential and residential collectors.

TOWN of CLAYTON

TYPICAL STREET CROSS SECTION (CURB & GUTTER APPLICATION)

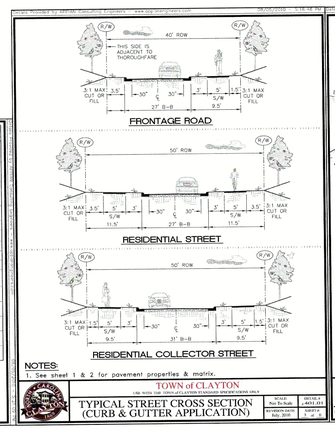
SCALE: Not To Scale | DETAIL #: 401.02
REVISION DATE(S): July, 2010 | SHEET #: 1 of 2

Roadway Geometric Properties Matrix

Facility Classification	C&G Application Back to Back (FI) (minimum)	Minimum Utility Strip Back to Back (FI) if applicable	Minimum ROW (ft)	Pavement Section: Riding Surface (minimum)	Asphalt Base (minimum)	Aggregate Base (minimum)	Geogrid Required Between Earth Subgrade and Stone Base	Sidewalk Required (one side, both or none)
	A	B	C	1	2	3	4	5
Residential cul-de-sacs	27'	3'	50'	2 1/2" S 9.5B	-	8"	-	
Commercial cul-de-sacs	31'	3'	60'	2 1/2" S 9.5B	-	8"	-	
Residential Streets	27'	3'	50'	2 1/2" S 9.5B		8"	-	Both
Residential Collector	31'	3'	50'	2 1/2" S 9.5B		8"	-	Both
Frontage Road	27'	3'	40'	2 1/2" S 9.5B		8"	-	One
Commercial	41'	3'	60	2 1/2" S 9.5B		8"	-	Both
Collector	41'	3'	60'	2" S 9.5B	2 1/2" B 25.X	8"	-	Both
Minor Thoroughfare – 2 Lane w/ parking on one side	35'	5'	60'	2" S 9.5B	2 1/2" B 25.X	8"	Yes	Both
Minor Thoroughfare [a] – 3 Lane	41'	Varies per sheet 5 of 6	70'	2" S 9.5B	4" B 25.X	8"	Yes	Both [b]
Major Thoroughfare [a] – 4 Lane	53'	Varies per sheet 5 of 6	80'	3" S 9.5C	6" B 25.X	8"	Yes	Both [b]
Major Thoroughfare [a] – 4 Lane divided	69'	Varies per sheet 5 of 6	100'	3" S 9.5C	6" B 25.X	10"	Yes	Both [b]
Major Thoroughfare [a] – 5 Lane	65'	Varies per sheet 6 OF 6	90'	3" S 9.5C	6" B 25.X	10"	Yes	Both [b]
Major Thoroughfare [a] – 5 Lane	65'	Varies per sheet 6 of 6	100'	3" S 9.5C	6" B 25.X	10"	Yes	Both [b]

a. Minimum non-residential lane width = 12 ft.
b. For shared Pedestrian & Bicycle Facility, use 8' width on one of sidewalks.

1. This compacted subgrade and the aggregate base must pass proof roll before constructing next stage.

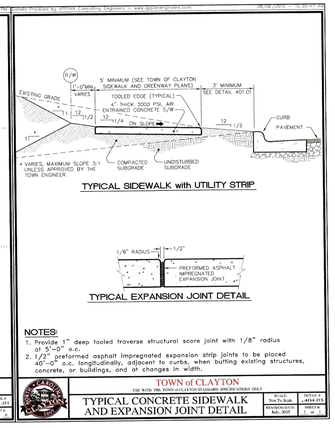


NOTES:
1. See sheet 1 & 2 for pavement properties & matrix.

TOWN of CLAYTON

TYPICAL STREET CROSS SECTION (CURB & GUTTER APPLICATION)

SCALE: Not To Scale | DETAIL #: 401.02
REVISION DATE(S): July, 2010 | SHEET #: 2 of 2

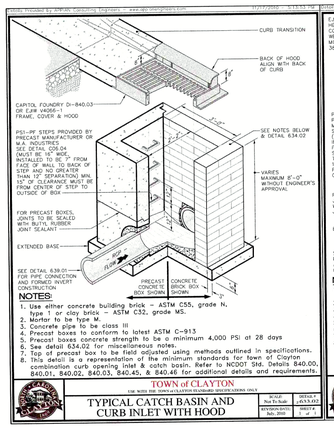


NOTES:
1. Provide 1" deep tooled traverse structural score joint with 1/8" radius at 5'-0" o.c.
2. 1/2" preformed asphalt impregnated expansion strip joints to be placed 40'-0" o.c. longitudinally, adjacent to curbs, when butting existing structures, concrete, or buildings, and at changes in width.

TOWN of CLAYTON

TYPICAL CONCRETE SIDEWALK AND EXPANSION JOINT DETAIL

SCALE: Not To Scale | DETAIL #: 404.04
REVISION DATE(S): July, 2010 | SHEET #: 1 of 1

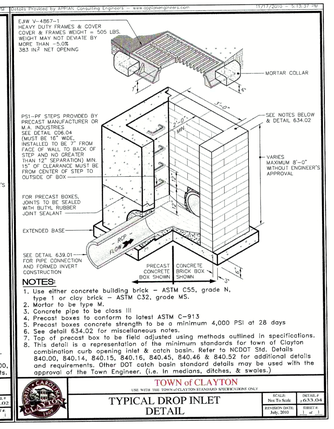


NOTES:
1. Use either concrete building brick – ASTM C55, grade N, type 1 or clay brick – ASTM C32, grade MS.
2. Mortar to be type M.
3. Concrete pipe to be class III
4. Precast boxes to conform to latest ASTM C-913
5. Precast boxes concrete strength to be a minimum 4,000 PSI at 28 days
6. See detail 634.02 for miscellaneous notes.
7. Top of precast box to be field adjusted using methods outlined in specifications.
8. This detail is a representation of the minimum standards for town of Clayton combination curb opening inlet & catch basin. Refer to NCDOT Std. Details 840.00, 840.01, 840.02, 840.03, 840.45, & 840.46 for additional details and requirements.

TOWN of CLAYTON

TYPICAL CATCH BASIN AND CURB INLET WITH HOOD

SCALE: Not To Scale | DETAIL #: 634.01
REVISION DATE(S): July, 2010 | SHEET #: 1 of 2



NOTES:
1. Use either concrete building brick – ASTM C55, grade N, type 1 or clay brick – ASTM C32, grade MS.
2. Mortar to be type M.
3. Concrete pipe to be class III
4. Precast boxes to conform to latest ASTM C-913
5. Precast boxes concrete strength to be a minimum 4,000 PSI at 28 days
6. See detail 634.02 for miscellaneous notes.
7. Top of precast box to be field adjusted using methods outlined in specifications.
8. This detail is a representation of the minimum standards for town of Clayton combination curb opening inlet & catch basin. Refer to NCDOT Std. Details 840.00, 840.14, 840.15, 840.16, 840.45, 840.46 & 840.52 for additional details and requirements. Other DOT catch basin standard details may be used with the approval of the Town Engineer. (i.e. In medians, ditches, & swales.)

TOWN of CLAYTON

TYPICAL DROP INLET DETAIL

SCALE: Not To Scale | DETAIL #: 634.04
REVISION DATE(S): July, 2010 | SHEET #: 1 of 1

PRELIMINARY
NOT FOR CONSTRUCTION

SITE DETAIL SHEET
FOR
CREECH TRACT DEVELOPMENT
TOWN OF CLAYTON - JOHNSTON COUNTY, N.C.

Dalton Engineering and Associates, P. A.
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Clayton, NC 27520
(919)550-4740
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NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 16282 JERRY T. DALTON

Job: 16048	Date: 8/29/18	Revision:
File: 16048--Prelim_Subd_REV	Drawn: WJB	Sheet: 15 OF 22

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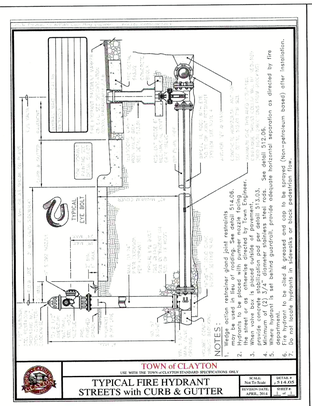
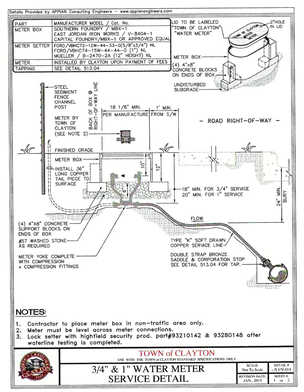


TOWN of CLAYTON
USE WITH THE TOWN of CLAYTON STANDARD SPECIFICATIONS ONLY

TYPICAL FIRE HYDRANT STREETS with CURB & GUTTER

SCALE: Not To Scale | DETAIL #: S-519.01
REVISION DATE: MAR., 2018 | SHEET #: 1 of 2

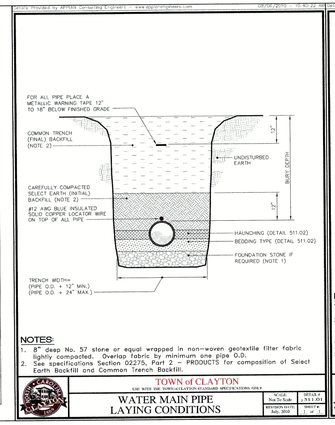


NOTES:
1. Contractor to place meter box in non-traffic area only.
2. Meter must be level across meter connections.
3. Lock setter with highfield security prod. pst#93210142 & 93280148 after waterline testing is completed.

TOWN of CLAYTON
USE WITH THE TOWN of CLAYTON STANDARD SPECIFICATIONS ONLY

3/4" & 1" WATER METER SERVICE DETAIL

SCALE: Not To Scale | DETAIL #: S-519.04
REVISION DATE: MAR., 2018 | SHEET #: 1 of 1

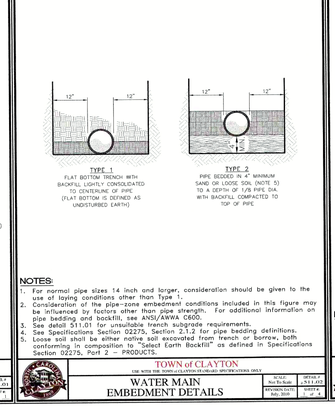


NOTES:
1. 8" deep No. 57 stone or equal wrapped in non-woven geotextile filter fabric tightly compacted. Overlap fabric by minimum one pipe O.D.
2. See specifications Section 02275, Part 2 – PRODUCTS for composition of Select Earth Backfill and Common Trench Backfill.

TOWN of CLAYTON
USE WITH THE TOWN of CLAYTON STANDARD SPECIFICATIONS ONLY

WATER MAIN PIPE LAYING CONDITIONS

SCALE: Not To Scale | DETAIL #: S-511.01
REVISION DATE: Feb., 2018 | SHEET #: 1 of 4

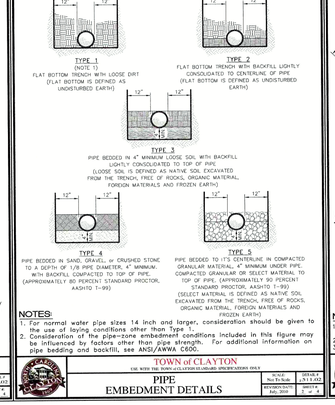


NOTES:
1. For normal pipe sizes 14 inch and larger, consideration should be given to the use of laying conditions other than Type 1.
2. Consideration of the pipe-zone embedment conditions included in this figure may be influenced by factors other than pipe strength. For additional information on pipe bedding and backfill, see ANSI/AWWA C600.
3. See detail 511.01 for unsuitable trench subgrade requirements.
4. See Specifications Section 02275, Section 2.1.2 for pipe bedding definitions.
5. Loose soil shall be either native soil excavated from trench or borrow, both conforming in composition to "Select Earth Backfill" as defined in Specifications Section 02275, Part 2 – PRODUCTS.

TOWN of CLAYTON
USE WITH THE TOWN of CLAYTON STANDARD SPECIFICATIONS ONLY

WATER MAIN EMBEDMENT DETAILS

SCALE: Not To Scale | DETAIL #: S-511.02
REVISION DATE: Feb., 2018 | SHEET #: 2 of 4

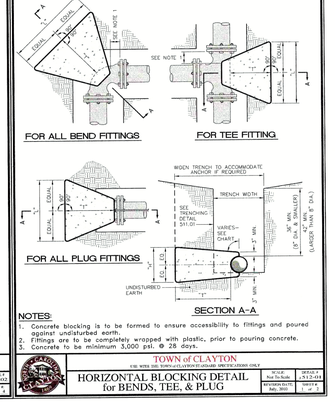


NOTES:
1. For normal water pipe sizes 14 inch and larger, consideration should be given to the use of laying conditions other than Type 1.
2. Consideration of the pipe-zone embedment conditions included in this figure may be influenced by factors other than pipe strength. For additional information on pipe bedding and backfill, see ANSI/AWWA C600.

TOWN of CLAYTON
USE WITH THE TOWN of CLAYTON STANDARD SPECIFICATIONS ONLY

PIPE EMBEDMENT DETAILS

SCALE: Not To Scale | DETAIL #: S-511.03
REVISION DATE: Feb., 2018 | SHEET #: 3 of 4

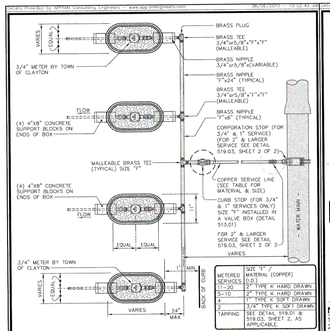


NOTES:
1. Concrete blocking is to be formed to ensure accessibility to fittings and poured against undisturbed earth.
2. Fittings are to be completely wrapped with plastic, prior to pouring concrete.
3. Concrete to be minimum 3,000 psi. @ 28 days.

TOWN of CLAYTON
USE WITH THE TOWN of CLAYTON STANDARD SPECIFICATIONS ONLY

HORIZONTAL BLOCKING DETAIL for BENDS, TEE, & PLUG

SCALE: Not To Scale | DETAIL #: S-511.04
REVISION DATE: Mar., 2018 | SHEET #: 4 of 5

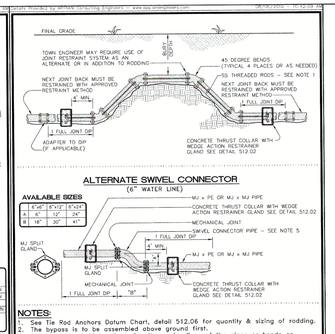


NOTES:
1. Contractor to place meter boxes in non-traffic area only.
2. Meter must be level across meter connections.
3. Substitutions approval by Town Engineer.
4. See detail 519.01, sheet 1 of 2 for meter installation detail.

TOWN of CLAYTON
USE WITH THE TOWN of CLAYTON STANDARD SPECIFICATIONS ONLY

STANDARD GANG METER ASSEMBLY

SCALE: Not To Scale | DETAIL #: S-519.05
REVISION DATE: Feb., 2018 | SHEET #: 1 of 2

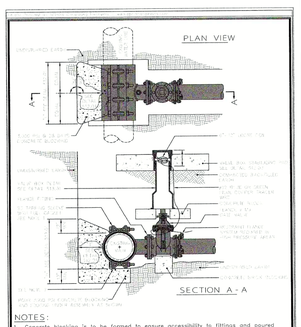


NOTES:
1. See Tie Rod Anchors Datum Chart, detail 512.06 for quantity & sizing of rodding.
2. The bypass is to be assembled above ground first.
3. Record all as-built lengths using the center lines of the pipes or bends as reference points.
4. Adapters vary in type according to the material of the existing water main.
5. Compact ductile iron (350 p.s.i.) fire hydrant offset connector pipe (AWWA C-110-ANSI A21.4) equal to or exceeding "GRADE 60" as manufactured by: Assured Flow Sales, Inc., 1-(800)-388-0678

TOWN of CLAYTON
USE WITH THE TOWN of CLAYTON STANDARD SPECIFICATIONS ONLY

VERTICAL BEND, RODDING, and BLOCKING DETAIL

SCALE: Not To Scale | DETAIL #: S-512.04
REVISION DATE: Feb., 2018 | SHEET #: 1 of 1

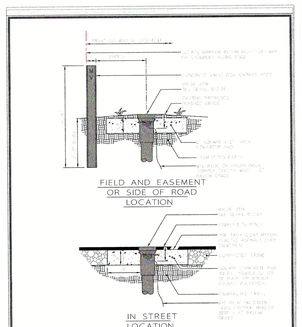


NOTES:
1. Concrete blocking is to be formed to ensure accessibility to fittings and poured against undisturbed earth.
2. Fittings are to be completely wrapped with plastic, prior to pouring concrete.
3. Concrete to be minimum 3,000 psi. @ 28 days.

TOWN of CLAYTON
USE WITH THE TOWN of CLAYTON STANDARD SPECIFICATIONS ONLY

4" to 12" STANDARD TAPPING SLEEVE and VALVE ASSEMBLY

SCALE: Not To Scale | DETAIL #: S-513.01
REVISION DATE: Feb., 2018 | SHEET #: 1 of 4

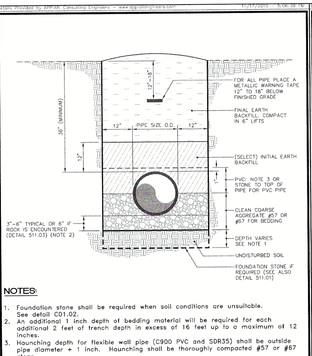


NOTES:
1. Concrete to be minimum 3,000 PSI @ 28 days.

TOWN of CLAYTON
USE WITH THE TOWN of CLAYTON STANDARD SPECIFICATIONS ONLY

VALVE, VALVE BOX, AND MARKER INSTALLATION DETAIL

SCALE: Not To Scale | DETAIL #: S-513.02
REVISION DATE: APRIL, 2012 | SHEET #: 2 of 4

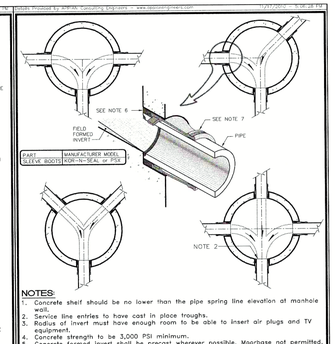


NOTES:
1. Foundation stone shall be required when soil conditions are unsuitable. See detail C01.02.
2. An additional 1 inch depth of bedding material will be required for each additional 2 feet of trench depth in excess of 16 feet up to a maximum of 12 inches.
3. Haunching depth for flexible wall pipe (C900 PVC and SDR35) shall be outside pipe diameter + 1 inch. Haunching shall be thoroughly compacted #57 or #67 stone.
4. Where rock is encountered, refer to detail 511.03 for subgrade preparation.
5. For all force mains, embedment to be Type 1 or 2 as shown on detail 511.02.

TOWN of CLAYTON
USE WITH THE TOWN of CLAYTON STANDARD SPECIFICATIONS ONLY

SANITARY SEWER PIPE LAYING CONDITIONS

SCALE: Not To Scale | DETAIL #: S-513.03
REVISION DATE: Feb., 2018 | SHEET #: 1 of 4

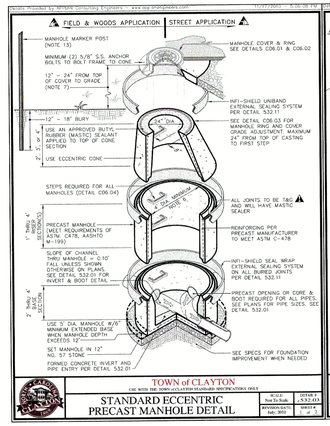


NOTES:
1. Concrete shelf should be no lower than the pipe spring line elevation at manhole wall.
2. Service line entries to have cast in place troughs.
3. Radius of invert must have enough room to be able to insert air plugs and TV equipment.
4. Concrete strength to be 3,000 PSI minimum.
5. Concrete formed invert shall be precast wherever possible. Moorbase not permitted.
6. Pipes will be grouted inside.
7. Flexible sleeve boots cast in place or installed with stainless steel expander rings as manufactured by Kor-N-Seal or PSX shall be used for pipe connections. Boots shall be secured to pipe using (2) stainless steel bands.

TOWN of CLAYTON
USE WITH THE TOWN of CLAYTON STANDARD SPECIFICATIONS ONLY

TYPICAL SEWER INVERT PLANS FOR MANHOLES

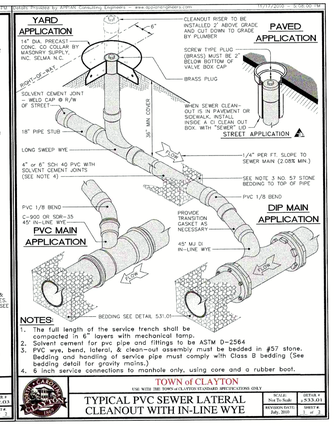
SCALE: Not To Scale | DETAIL #: S-513.04
REVISION DATE: Feb., 2018 | SHEET #: 2 of 4



TOWN of CLAYTON
USE WITH THE TOWN of CLAYTON STANDARD SPECIFICATIONS ONLY

STANDARD ECCENTRIC PRECAST MANHOLE DETAIL

SCALE: Not To Scale | DETAIL #: S-532.01
REVISION DATE: Feb., 2018 | SHEET #: 1 of 4



NOTES:
1. The full length of the service trench shall be compacted in 6" layers with mechanical tamps.
2. Solvent cement for pvc & dip pipe and fittings to be ASTM D-2564
3. PVC wye, bend, lateral & cleanout assembly must be bedded in #57 stone. Bedding and laying of service pipe must comply with Class B bedding (See bedding detail for laying inches.)
4. 6 inch service connections to manhole only, using core and a rubber boot.

TOWN of CLAYTON
USE WITH THE TOWN of CLAYTON STANDARD SPECIFICATIONS ONLY

TYPICAL PVC SEWER LATERAL CLEANOUT WITH IN-LINE WYE

SCALE: Not To Scale | DETAIL #: S-532.01
REVISION DATE: Feb., 2018 | SHEET #: 2 of 4

WATER & SEWER DETAIL SHEET
FOR
CREECH TRACT DEVELOPMENT
TOWN OF CLAYTON - JOHNSTON COUNTY, N.C.

PRELIMINARY
NOT FOR CONSTRUCTION

NORTH CAROLINA PROFESSIONAL SEAL 16282 ENGINEER JERRY T. DALTON

Dalton Engineering and Associates, P. A.
446 East Main Street
P.O. Box 426
Clayton, NC 27520
(919)550-4740
Fax (919) 550-4741

Job: 16048	Date: 8/29/18	Revision:
File: 16048-Prelim_Subd_RDY	Drawn: WJB	Sheet: 16 OF 22

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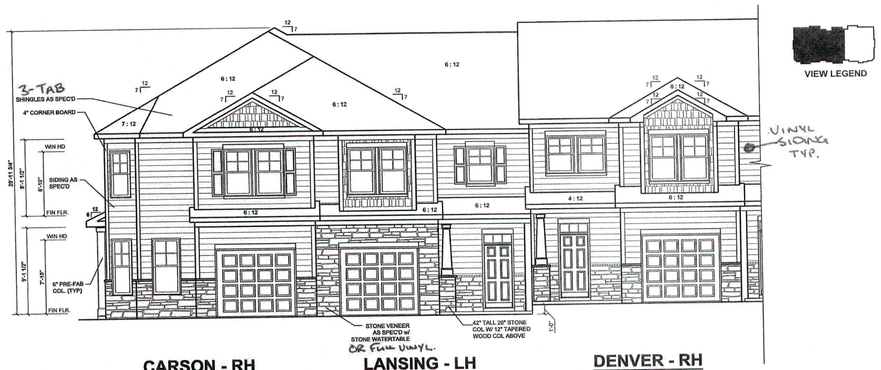
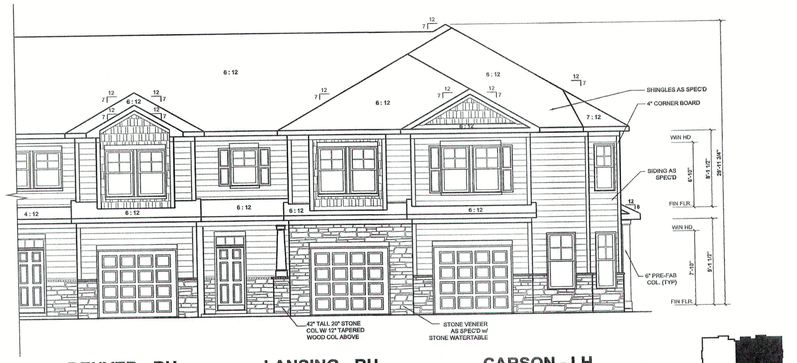


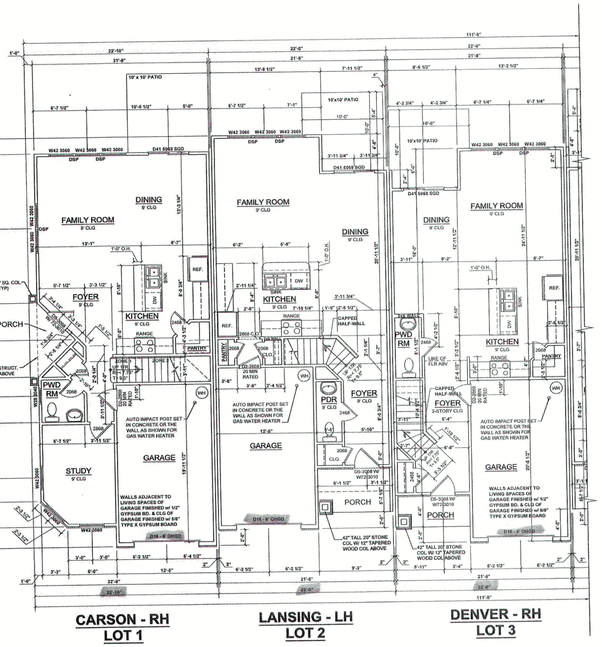
VIEW LEGEND

CARSON - RH LOT 1 | **LANSING - LH LOT 2** | **DENVER - RH LOT 3**



VIEW LEGEND

DENVER - RH LOT 3 | **LANSING - RH LOT 4** | **CARSON - LH LOT 5**



GARAGE DOOR: 8' WIDE
BUILDING: 22' WIDE
GARAGE: 36% OF OVERALL WIDTH

CARSON - RH LOT 1 | **LANSING - LH LOT 2** | **DENVER - RH LOT 3**

TYPICAL BUILDING ELEVATION (FRONT)

NOT TO SCALE

TYPICAL BUILDING ELEVATION (FRONT LOADED)
FOR
CREECH TRACT DEVELOPMENT
TOWN OF CLAYTON - JOHNSTON COUNTY, N.C.

PRELIMINARY
NOT FOR CONSTRUCTION

REVISION 001: ADDRESSED TOWN OF CLAYTON TRC REVIEW COMMENTS – 12/3/18

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(919)550-4740
Fax (919) 550-4741

Job: 16048	Date: 8/29/18	Revision: 001
File: 16048-Prelim_ELEVATIONS	Drawn: WJB	Sheet: 17 OF 22

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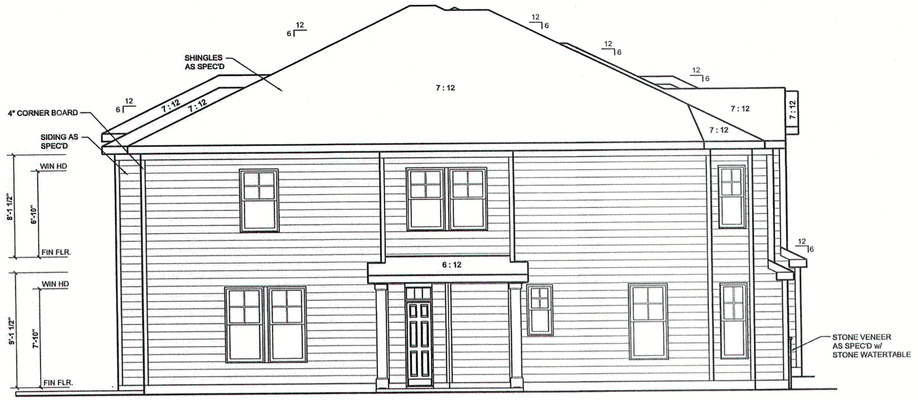
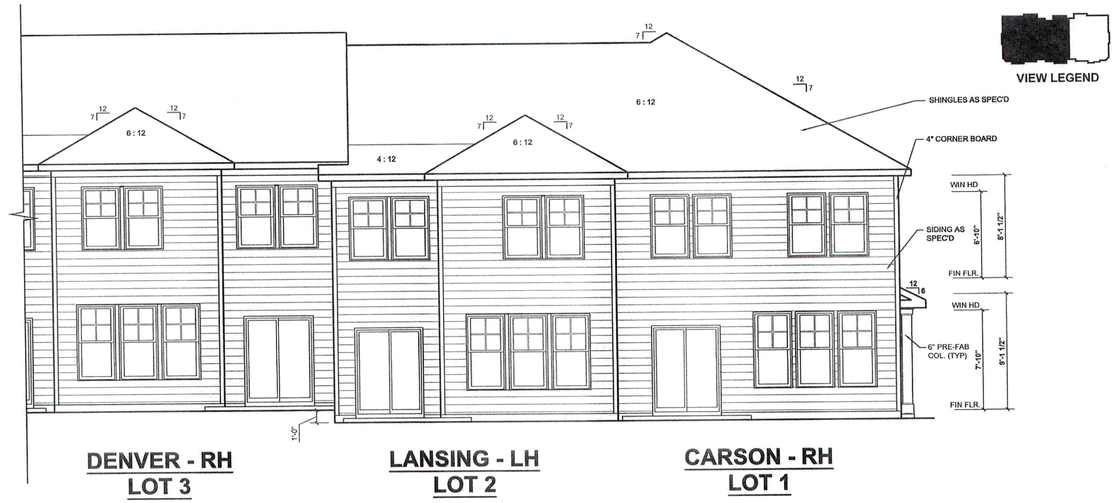


TYPICAL BUILDING ELEVATION (LEFT SIDE)

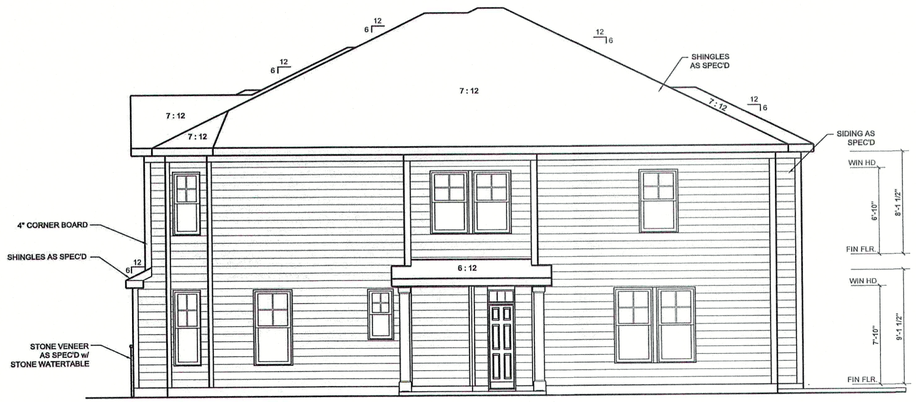
NOT TO SCALE



DENVER - RH
LOT 3

LANSING - LH
LOT 2

CARSON - RH
LOT 1



TYPICAL BUILDING ELEVATION (RIGHT SIDE)

NOT TO SCALE

CARSON - LH
LOT 5

LANSING - RH
LOT 4

DENVER - RH
LOT 3

TYPICAL BUILDING ELEVATION (REAR)

NOT TO SCALE

TYPICAL BUILDING ELEVATION (FRONT LOADED)
FOR
CREECH TRACT DEVELOPMENT
TOWN OF CLAYTON - JOHNSTON COUNTY, N.C.

PRELIMINARY
NOT FOR CONSTRUCTION

REVISION 001: ADDRESSED TOWN OF CLAYTON TRC REVIEW COMMENTS – 12/3/18

Dalton Engineering and Associates, P. A.
446 East Main Street
P.O. Box 426
Clayton, NC 27520
(919)550-4740
Fax (919) 550-4741

Job: 16048	**Date:** 8/29/18	**Revision:** 001
File: 16048--Prelim_ELEVATIONS (2)	**Drawn:** WJB	**Sheet:** 18 OF 22

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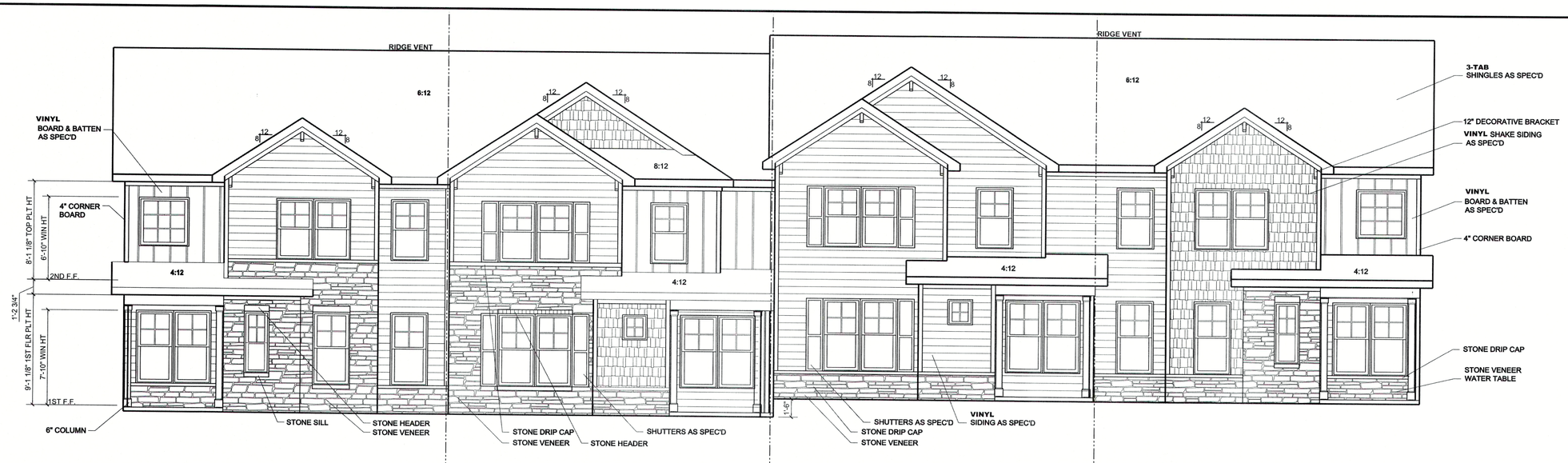


T-1
LITCHFIELD - B - LH

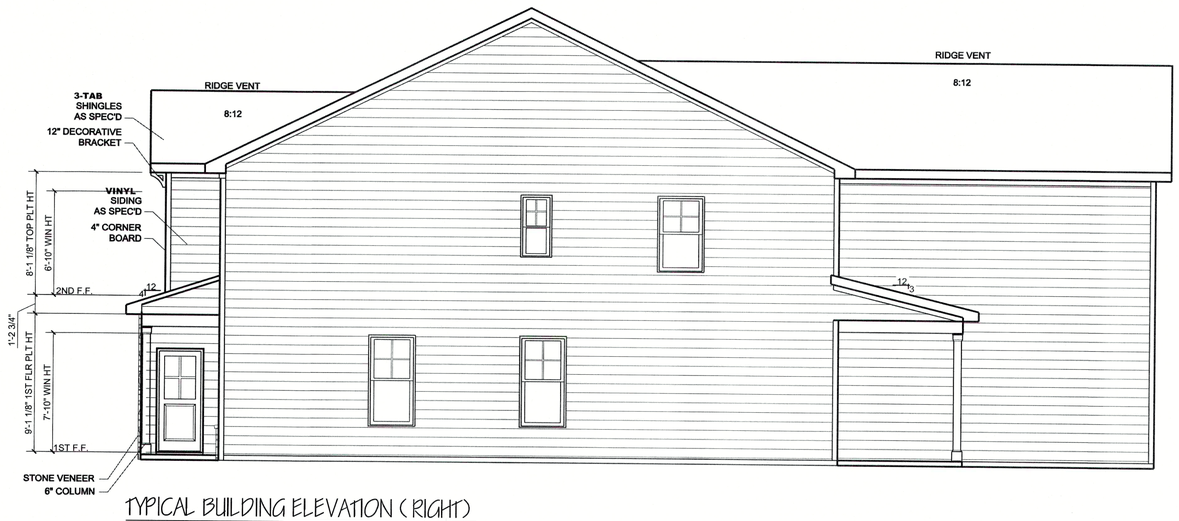
T-2
SULLIVAN - A - RH

T-3
SULLIVAN - B - RH

T-4
LITCHFIELD - A - RH

TYPICAL BUILDING ELEVATION (FRONT)

1/ 4" =1'-0"



TYPICAL BUILDING ELEVATION (RIGHT)

1/ 4" =1'-0"

TYPICAL BUILDING ELEVATION (ALLEY LOADED)
FOR
CREECH TRACT DEVELOPMENT
TOWN OF CLAYTON - JOHNSTON COUNTY, N.C.

PRELIMINARY
NOT FOR CONSTRUCTION

REVISION 001: ADDRESSED TOWN OF CLAYTON TRC REVIEW COMMENTS – 12/3/18

Dalton Engineering and Associates, P. A.
446 East Main Street
P.O. Box 426
Clayton, NC 27520
(919)550-4740
Fax (919) 550-4741

Job: 16048	Date: 8/29/18	Revision: 001
File: 16048-Prelim_ELEVATIONS	Drawn: WJB	Sheet: 19 OF 22

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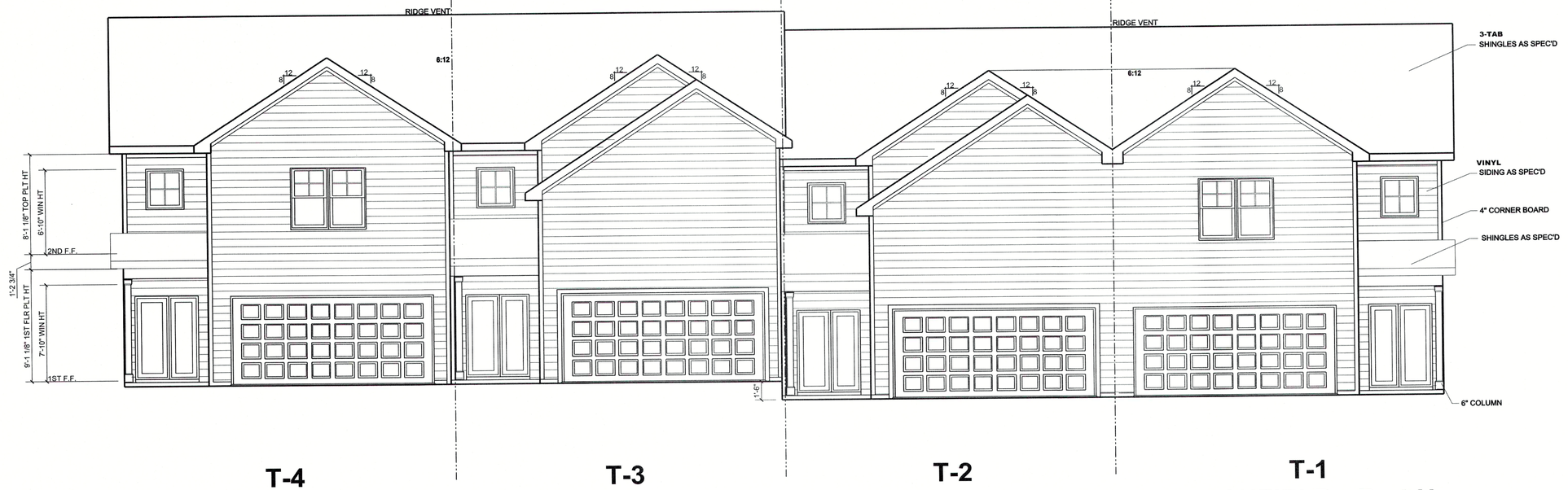

T-4
LITCHFIELD - A - RH

T-3
SULLIVAN - B - RH

T-2
SULLIVAN - A - RH

T-1
LITCHFIELD - B - LH

TYPICAL BUILDING ELEVATION (REAR)

1/4"=1'-0"

TYPICAL BUILDING ELEVATION (LEFT)

1/4"=1'-0"

TYPICAL BUILDING ELEVATION (ALLEY LOADED)
FOR
CREECH TRACT DEVELOPMENT
TOWN OF CLAYTON - JOHNSTON COUNTY, N.C.

PRELIMINARY
NOT FOR CONSTRUCTION

REVISION 001: ADDRESSED TOWN OF CLAYTON TRC REVIEW COMMENTS - 12/3/18

Dalton Engineering and Associates, P. A.
446 East Main Street
P.O. Box 426
Clayton, NC 27520
(919)550-4740
Fax (919) 550-4741

Job: 16048	**Date:** 8/29/18	**Revision:** 001
File: 16048--Prelim_ELEVATIONS	**Drawn:** WJB	**Sheet:** 20 OF 22

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TOWNHOMES: FRONT LOADED GARAGE

TOWNHOMES: ALLEY LOADED GARAGE

PRELIMINARY
NOT FOR CONSTRUCTION

TYPICAL BUILDING RENDERINGS
FOR
CREECH TRACT DEVELOPMENT
TOWN OF CLAYTON - JOHNSTON COUNTY, N.C.

Dalton Engineering and Associates, P. A.
446 East Main Street
P.O. Box 426
Clayton, NC 27520
(919)550-4740
Fax (919) 550-4741

Job: 16048	Date: 8/29/18	Revision:
File: 16048--Prelim_ELEVATIONS	Drawn: WJB	Sheet: 21 OF 22

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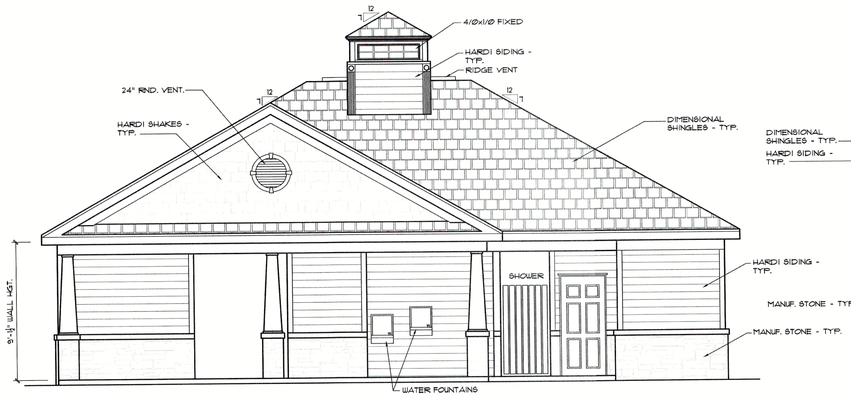
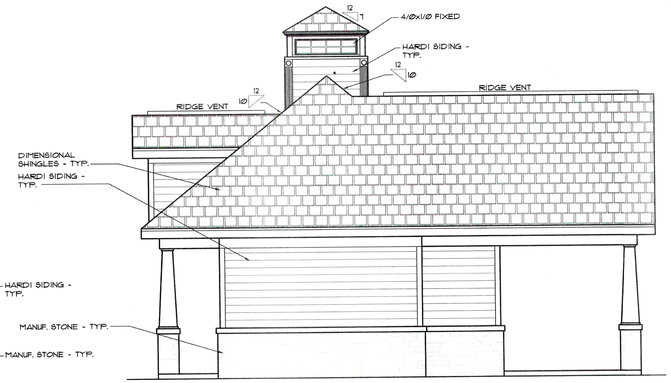


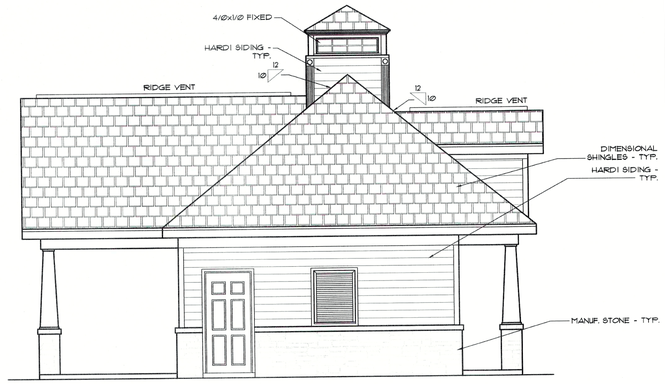
FRONT ELEVATION

1/4"=1'-0"



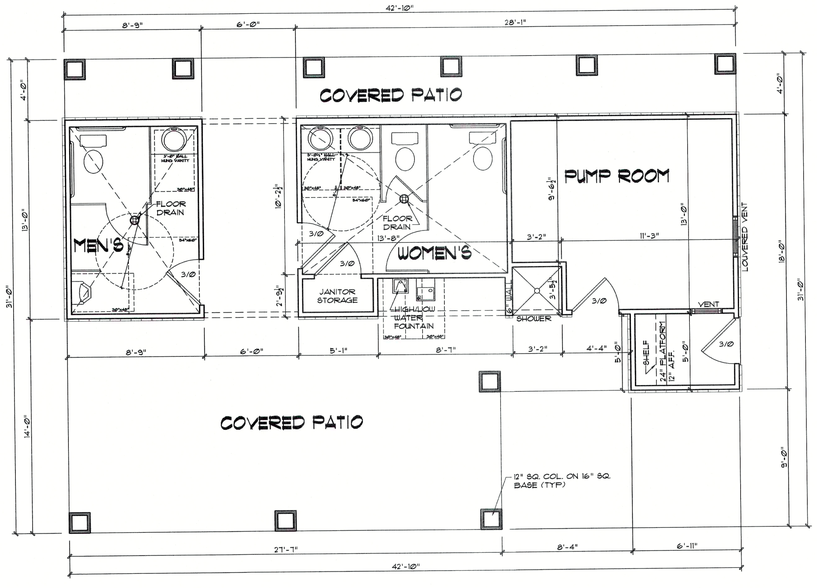
LEFT ELEVATION

1/4"=1'-0"



RIGHT ELEVATION

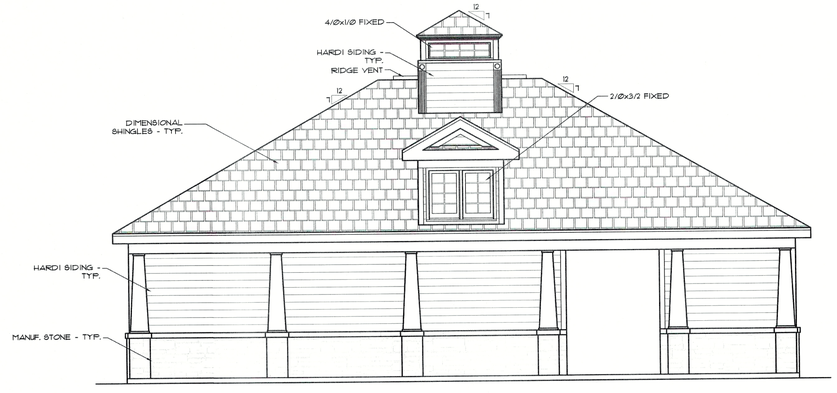
1/4"=1'-0"



FLOOR PLAN

1/4"=1'-0"

Heated Square Footage	
Pool House	4813
Total	4813
Unheated Square Footage	
Covered Patio	1088.1



REAR ELEVATION

1/4"=1'-0"

TYPICAL BUILDING ELEVATION (CLUB HOUSE)
FOR
CREECH TRACT DEVELOPMENT
TOWN OF CLAYTON - JOHNSTON COUNTY, N.C.

PRELIMINARY
NOT FOR CONSTRUCTION

Dalton Engineering and Associates, P. A.
446 East Main Street
P.O. Box 426
Clayton, NC 27520
(919)550-4740
Fax (919) 550-4741

Job: 16048	Date: 8/29/18	Revision:
File: 16048-Prelim_ELEVATIONS	Drawn: WJB	Sheet: 22 OF 22

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TOWN OF CLAYTON
Planning Department
111 E. Second St., P.O. Box 879
Clayton, NC 27528
Phone: 919-553-5002
Fax: 919-553-1720

REZONING APPLICATION COVER SHEET

Name of Project: Barbour Tract **Date:** 12-03-2018

Applicant Name: Adams & Hodge Engineering, PC

The following checklist to be completed by applicant:

[✔] Pre-Application Meeting on: 10-03-2018
[ ] Review Fee
[ ] Advertisement Fee
[ ] Completed Application
[ ] Owner's Consent Form
[ ] Adjacent Property Owner's List
[ ] Neighborhood Meeting Notice Letter (1 copy)
[ ] Set of stamped, addressed, empty envelopes for adjacent property owner notification
[ ] Signed & Sealed Boundary Survey
[ ] Copy of signed & sealed boundary survey in PDF on USB

Reviewed by: _____

TOWN OF CLAYTON
Planning Department
111 E. Second St., P.O. Box 879
Clayton, NC 27528
Phone: 919-553-5002
Fax: 919-553-1720

REZONING APPLICATION

☐ **Standard Rezoning Fee: $500.00**
■ **Planned Development Rezoning Fee: $1,000 + $5.00 per acre**
■ **Advertisement Fee: $200.00**

SITE INFORMATION

Name of Project: Barbour Tract

Acreage of Property: 33.71acs **Zoning District:** R-8

County Tag #: See Exhibit B **NC Pin #:** See Exhibit B

Address/Location: See Exhibit B

Existing Zoning District: R-8 **Proposed Zoning District:** PD-R

APPLICANT INFORMATION

Applicant: Adams & Hodge Engineering, PC

Mailing Address: 314 E. Main St., Clayton, NC 27520

Phone Number: 919-243-1332 **Fax:** N/A

Contact Person: Amy Stancil

Email Address: amy@adamsandhodge.com

PROPERTY OWNER INFORAMTION

Name: See Exhibit B

Mailing Address:

Phone Number: **Fax:**

Email Address:

OFFICE USE ONLY

Date Received: RECEIVED DEC 03 2018 TOWN OF CLAYTON PLANNING DEPARTMENT

Amount Paid: $1370 CK# 1090

File Number: 2018-231-PDD

EXPLANATION OF PROJECT

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

See Exhibit C

APPROVAL CRITERIA

All applications for a Rezoning must address the following findings:

1. Consistency with the adopted plans of the Town.

   See Exhibit D

2. Suitability of the subject property for uses permitted by the current vs. the proposed district.

   See Exhibit D

3. Whether the proposed change tends to improve the balance of uses, or meets specific demand in the Town.

   See Exhibit D

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.

   See Exhibit D

5. It has been determined that the legal purposes for which zoning exists are not violated.

   See Exhibit D

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.

   See Exhibit D

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.

See Exhibit D

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.

Donnie Adams
Print Name

Signature of Applicant

11-30-2018
Date

Explanation of Project

The rezoning is located in what would be considered northeast Clayton, bound on the north by O'Neil Street and Oakdale Ave (Rolling Woods Subdivision), to the east and south by the Cooper Academy property and to the west by the Alice B. Wilson Subdivision which is adjacent to Wilson Street.

All the properties are currently zoned R-8 residential. The request is to rezone the property to Planned Development-Residential (PD-R). This request is in support of the Clayton 2040 Comprehensive Plan which calls for this area of Clayton to be a Downtown Residential (DR) area that is in support of the Downtown Core. The Downtown Residential area should generally retain established neighborhoods while fostering the historical character while allowing for a variety of higher density housing types. The Downtown Residential area should also have a connecting street network, with short block lengths that facilitate a grid-style street system that not only carries vehicular traffic but also accommodates pedestrians and bicycles.

The PD-R rezoning can accommodate all of the recommendation set forth in the Clayton 2040 Comprehensive Plan while at the same time provide for citizens' passive and active recreational opportunities and open space while at the same time allows for resource conservation space to protect riparian streams and wetland areas.

EXHIBIT D

APPROVAL CRITERIA

Approval Criteria

1.Consistency with the adopted plans of the Town.

By rezoning the properties from R-8 to PD-R the Town Council will lay the ground work and give the staff the tools necessary to assure that the properties can be developed into Downtown Residential as directed in the Clayton 2040 Comprehensive Plan. By rezoning to PD-R the Town Council can be assured of higher density residential development that will create recreational facilities, open space and provide resource conservation areas to protect critical features.

2. *Suitability of the subject property for uses permitted by the current vs. the proposed district.*

If the property remains R-8 residential (8000 sf/lots) given the existing physical constraints (riparian streams, topography and wetlands) the property cannot be developed in a manner to allow for a residential density of 12-20- units per acre as recommended by th Clayton 2040 Comprehensive Plan. The maximum density that could be expected from the existing R-8 zoning would be 3 to 4 lots per acre. If the Town Council rezones the properties to PD-R the density will be able to reach the densities (12-20 units /ac) suggested in the Clayton 2040 Comprehensive Plan while at the same time creating new recreational open space opportunities and establishing resource conservation areas.

3. Whether the proposed change tends to improve the balance of uses or meets specific demand in the Town.

The existing R-8 zoning is very limited in how it can impact the balances of uses. Primarily, R-8 zoning is set up for single family housing. PD-R zoning allows the flexibility to have a mix of residential products. By rezoning to PD-R there is flexibility to accommodate multi-family townhomes and single family within the same development. Flexibility is in lot size is also provided by the rezoning to PD-R allowing for smaller single-family lots which will afford the availability of additional land for recreation/open space and resource conservation areas. The rezoning request will also allow for a mix of multi-family and single family that can more closely meet a larger segment of Clayton's housing market.

4. *The capacity of adequate public facilities and services including schools, roads, recreational facilities, wastewater treatment, potable water supply and storm water drainage facilities is available for the proposed use.*

There is enough existing capacity in the Town's water system and the Town's wastewater system to accommodate the greater density of development that will occur if the properties are rezoned. Adequate public utilities (water, sewer, and electric) presently serve the area of the rezoning. Specific engineering provisions will need to be made at the time of connection to utilities.

The existing road network in the area of the rezoning is under-utilized because of the amount of undeveloped lots and vacant land. The existing street network is a traditional grid-style pattern with inter-connections blocks that allow for alternate traffic flows. In fact, the proposed property considered for rezoning has 6 connecting points to the existing road network. Impacts to the existing road network will be minimal if the rezoning is granted.

Once developed and occupied the neighborhood will have Cooper Academy Elementary School to attend. The area of rezoning is within easy walking distance of the school. Public School bus transportation will be provided from the neighborhood to either Cooper Academy, Riverwood Middle School, or Clayton High School.

Storm water management facilities will be to be construct onsite as part of the normal course of development. The storm water facilities will be required by ordinance not only manage the quantity of storm water generated by the development but also treat the quality of the water released from the property.

5. *It has been determined that the legal purposes for which zoning exists are not violated.*

The rezoning of the R-8 properties to PD-R does not constitute "Spot Zoning" because the existing zoning is residential and proposed use zoning will also be residential. Existing single family residential and multi-family already exist on the property or adjacent to the properties. Therefore, the proposed zoning is compatible with existing land development patterns in the area.

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.

The rezoning actually allows for a continuation of the existing development pattern of single family residential and multi-family residential, that exists in the neighborhood. With the rezoning and subsequent development of the property the existing streets will in whole or in part be upgraded, walks will be provided that do not exist now, recreation/open space/resource conservation areas will be created through development codes, storm water

will be managed, utilities will be upgraded, and the overall visual quality of the neighborhood will be improved. In general, adjacent property owners should experience a general upgrade in the physical and visual quality of the neighborhood.

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.

The rezoning should greatly benefit the general public. The rezoning and subsequent development will not create any environmental consequences to the public interest, will not place an economic burden on the tax payers and will not over tax the existing utility systems requiring costly upgrades.

In fact, the rezoning and resulting development should benefit the Citizens of Clayton by creating new recreation/open space; new resource conservation areas, improve existing infrastructure, increases the utility base, and increase property tax revenues.

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

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: BARBOUR TRACT **Address or PIN #:** 05E99003F

AGENT/APPLICANT INFORMATION:

JAMES LIPSCOMB
ADAMS AND HODGE ENGINEERING
(Name - type, print clearly)

328 EAST MAIN STREET
(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)*:

REZONING
SUBDIVISION PROCESS

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:

ROY BARBOUR & LOIS BARBOUR
(Name - type, print clearly)

125 Bobbitt Rd
(Address)

Roy Barbour + Lois Barbour
(Owner's Signature)

Clayton, NC 27520
(City, State, Zip)

STATE OF North Carolina
COUNTY OF Johnston

Sworn and subscribed before me Mia M. Richard, a Notary Public for the above State and County, this the 3rd day of October, 2018.

SEAL MIA M. RICHARD NOTARY PUBLIC JOHNSTON CO., NC

Notary Public

My Commission Expires: 6-21-2021

October 2013

TOWN OF CLAYTON
Planning Department
111 E. Second St., P.O. Box 879
Clayton, NC 27528
Phone: 919-553-5002
Fax: 919-553-1720

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: Barbour Tract **Address or PIN #:** 05005067B, 05H03189H, 05H03189G, 05H03189F, 05H03189E

AGENT/APPLICANT INFORMATION:

Adams & Hodge Engineering, PC
(Name - type, print clearly)

314 E. Main St.
(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*):

Rezoning
Subdivision Process

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:

Sam's Branch II, LLC
(Name - type, print clearly)

114 W Main St.
(Address)

(Owner's Signature)

Clayton, NC 27520
(City, State, Zip)

STATE OF North Carolina
COUNTY OF Johnston

Sworn and subscribed before me Holland R. Adams, a Notary Public for the above State and County, this the 29th day of November, 2018.

SEAL

Holland R Adams
Notary Public
Johnston County
North Carolina
My Commission Expires 12-11-2021

Holland R. Adams
Notary Public

My Commission Expires: 12-11-2021

July 2018

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

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: Barbour Tract **Address or PIN #:** 05G02026Q - N. O'Neil St./ W. Wilson St.

AGENT/APPLICANT INFORMATION:

James H. Lipscomb
(Name - type, print clearly)

328 E. Main Street
(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*):

Adams & Hodge Engineering

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:

Blondell Johnson
(Name - type, print clearly)

706 Fernwood Dr.
(Address)

Blondell D. Johnson
(Owner's Signature)

Clayton, NC 27520
(City, State, Zip)

STATE OF North Carolina
COUNTY OF Johnston

Sworn and subscribed before me Mia M. Richard, a Notary Public for the above State and County, this the 2nd day of November, 2018.

MIA M. RICHARD NOTARY PUBLIC JOHNSTON CO., NC

SEAL

Mia M. Richard
Notary Public

My Commission Expires: 6-27-2021

October 2015

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

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: _____ **Address or PIN #:** 641 N. O'NEIL STREET CLAYTON, NC 05H02002

AGENT/APPLICANT INFORMATION:

Steven Ferrell
(Name - type, print clearly)
Paul Capps

111 Hamby Street
(Address)
Clayton, N.C. 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***):

_____ _____

_____ _____

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:

Brooke Hackney / Becky Gordon
(Name - type, print clearly)

111 Hamby Street
(Address)

Brooke Hackney Becky Gordon
(Owner's Signature)

Clayton N.C. 27520
(City, State, Zip)

STATE OF North Carolina
COUNTY OF Brunswick

Sworn and subscribed before me Christina Burke, a Notary Public for the above State and County, this the 2 day of July, 2018.

SEAL

CHRISTINA BURKE
NOTARY PUBLIC
BRUNSWICK COUNTY, NC
My Commission Expires 7-11-2022

Christina Burke
Notary Public

My Commission Expires: 7-11-2022

October 2013

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

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: Roseman/Street Lots **Address or PIN #:** 05E99008H and 05E99008I 2.284 acres on Rosemarys

AGENT/APPLICANT INFORMATION:

James Lipscomb
(Name - type, print clearly)

328 E. Main Street
(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*):

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:

James H. and Ruth Harris
(Name - type, print clearly)

James H. Harris, Ruth Harris
(Owner's Signature)

837 Broadhurst Rd.
(Address)
Seven Springs, NC 28578
(City, State, Zip)

STATE OF North Carolina
COUNTY OF Johnston

Sworn and subscribed before me Mia M. Richard, a Notary Public for the above State and County, this the 1st day of November, 2018.

SEAL

Mia M Richard
Notary Public

My Commission Expires: 6-27-2021

October 2019

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

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: Rosemary Street Lots **Address or PIN #:** 05E99008H and 05E990085 2.284 acres on Rosemarys

AGENT/APPLICANT INFORMATION:

James Lipscomb
(Name - type, print clearly)

328 E. Main Street
(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)*:

_____ _____

_____ _____

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:

James H. and Ruth Harris
(Name - type, print clearly)

837 Broadhurst Rd.
(Address)

James H. Harris, Ruth Harris
(Owner's Signature)

Seven Springs, NC 28578
(City, State, Zip)

STATE OF _____
COUNTY OF _____

Sworn and subscribed before me_____, a Notary Public for the above State and County, this the_____ day of _____, 20____.

SEAL

_____
Notary Public

My Commission Expires: _____

October 2013

TOWN OF CLAYTON
Planning Department
111 E. Second St., P.O. Box 879
Clayton, NC 27528
Phone: 919-553-5002
Fax: 919-553-1720

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: Barbour Tract **Address or PIN #:** 05E99021V - N. Mial Street

AGENT/APPLICANT INFORMATION:

James Lipscomb
(Name - type, print clearly)

328 E. Main Street
(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)***:

Adams & Hodge Engineering

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:

Johnston County Board of Education
(Name - type, print clearly)

(Owner's Signature)

P.O. Box 1336
(Address)

Smithfield, NC 27577
(City, State, Zip)

STATE OF North Carolina
COUNTY OF Johnston

Sworn and subscribed before me ~~Michael C. Wooten~~ Megan M. Stewart MMS, a Notary Public for the above State and County, this the 27th day of November, 20____.

SEAL

MEGAN M. STEWART NOTARY PUBLIC JOHNSTON COUNTY, NC

My 2018

Megan M. Stewart
Notary Public

My Commission Expires: 03/27/23

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
February 25, 2019

STAFF REPORT

Application Number: 2018-231-PDD
Project Name: Barbour Tract, Rezoning

NC PIN / Tag #:	166913-24-0652 / 05E99003F, 166913-24-0827 / 05005067B, 166914-34-7560 / 05H03189G, 166914-34-7451 / 05H03189F, 166914-34-7371 / 05H03189E, 166913-14-9727 / 05G02026Q, 166914-24-8945 / 05E99008H, 166914-34-2175 / 05E99021V, 166909-25-2086 / 05H02200Z, 166914-24-5585 / 05034068E
Town Limits/ETJ:	Town Limits
Overlay:	Partially within the Watershed Protection Overlay
Applicant:	Adams & Hodge Engineering, PC
Owner:	Roy Barbour & Lois Barbour; Sam's Branch II, LLC; Blondell Johnson; James H Harris & Ruth Harris; Alan Neil Hartman Revocable Trust; Johnston County Board of Education
Location:	33.71 acres located south of and adjacent to O'Neil St. and Oakdale Ave., northwest of Cooper Academy, and east of and adjacent to Wilson St.

Public Noticing:

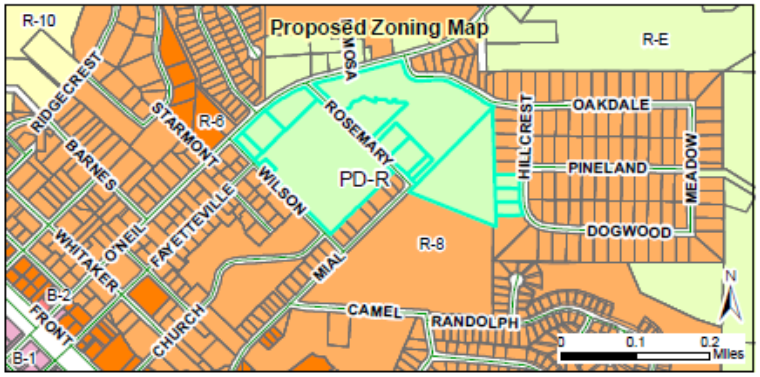
- Neighborhood meeting held on Tuesday, January 8, 2019
- Sign posted February 15 , 2019
- Letters mailed prior to March 8, 2019
- Newspaper Ad published March 6, 2019 and March 13, 2019

REQUEST: Rezone 33.71 acres from Single-Family Residential-8 (R-8) to Planned Development-Residential (PD-R).

SITE DATA:
Acreage: 33.71 acres
Existing Use: Vacant, Commercial

ADJACENT ZONING AND LAND USES:

Direction	Zoning	Existing Use
North	Residential-Estate	Single-Family Residential
South	Single-Family Residential-8	Single-Family Residential, School
East	Single-Family Residential-8, Residential-Estate	Single-Family Residential
West	Single-Family Residential-8, Single-Family Residential-6	Single-Family Residential



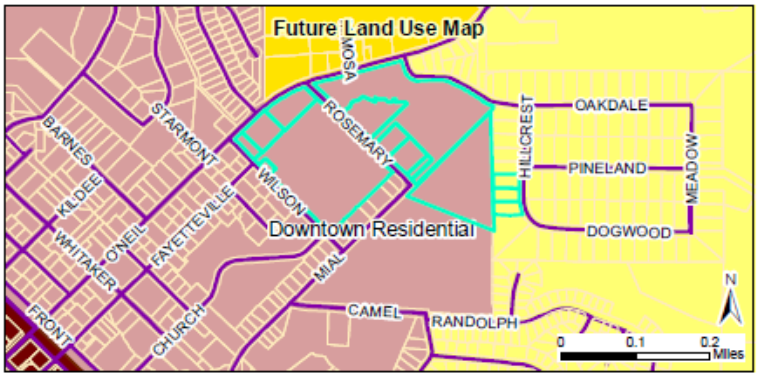
STAFF ANALYSIS AND COMMENTARY:

Overview
The applicant is requesting to rezone 33.71 acres of land from Single-Family Residential-8 to Planned Development-Residential (PD-R).

This application is running concurrently with a Preliminary Plat application, acting as a Master Plan (2018-233-SD). The Master Plan will designate the uses, dimensional standards, and other associated design elements. The proposed master plan proposes 119 units of Single-Family Homes with varying designs, 12 units of Townhomes, and 126 units of Apartments. The proposed density of the development is approximately 12 units per acre. The development will also include 4.73 acres of Resource Conservation Area and 7.25 acres of recreation and open space area.

Compatibility with surrounding land uses
The proposed zoning is consistent with the surrounding land uses, which are primarily Single-Family Residential.

Consistency with the Comprehensive Plan 2040
The Comprehensive Plan 2040 designates this property as "Downtown Residential" in the future land use map. The requested rezoning is consistent with this designation, as it does allow for the development of an increased density of residential units, as well a variety of housing types which support and foster growth of the Downtown Core.



Approval Criteria
Applications for a Planned Development Rezoning must address the following Approval Criteria. The burden of proof is on the applicant. Please see below for the applicant's response to each criteria, as well as staff's commentary.

1. *Consistency with the adopted plans of the Town.*

   Applicant Response: "By rezoning the properties from R-8 to PD-R the Town Council will lay the ground work and give the staff the tools necessary to assure that the properties can be developed into Downtown Residential as directed in the Clayton 2040 Comprehensive Plan. By rezoning to PD-R the Town Council can be assured of higher density residential development that will create recreational facilities, open space and provide resource conservation areas to protect critical features."

   Staff Commentary: The proposed rezoning from R-8 to PD-R is be consistent with the Clayton 2040 Comprehensive Plan. Open space will be provided within the master plan.

2. *Suitability of the subject property for uses permitted by the current vs. the proposed district.*

   Applicant Response: "If the property remains R-8 (8000 sf/lots) given the existing physical constraints (riparian streams, topography and wetlands) the property cannot be developed in a manner to allow for a residential density of 12-20 units per acre as recommended by the Clayton 2040 Comprehensive Plan. The maximum density that could be expected from the existing R-8 zoning would be 3 to 4 lots per acre. If the town Council rezones the properties to PD-R the density will be able to reach the densities (12-20 units / acre) suggested in the Clayton 2040 Comprehensive Plan while at the same time creating new recreational open space opportunities and establishing resource conservation areas."

Staff Commentary: A zoning designation of PD-R allows for higher density development than a standard zoning district would. The "Downtown Residential" Future Land Use Designation encourages a density of up to 12 units per acre, and up to 20 units per acre with a Planned Development designation.

3. *Whether the proposed change tends to improve the balance of uses, or meets specific demand in the Town.*

   Applicant Response: "The existing R-8 zoning is very limited in how it can impact the balances of uses. Primarily, R-8 zoning is set up for single family housing. PD-R there is flexibility to accommodate multi-family townhomes and single family-within the same development. Flexibility in lot size is also required by the rezoning to PD-R allowing for smaller single-family lots which will afford the availability of additional land for recreation/open space and resource conservation areas. The rezoning request will also allow for a mix of multi-family and single-family that can more closely meet a larger segment of Clayton's housing market."

   Staff Commentary: The existing R-8 zoning does permit the uses of single-family residences, townhomes, and apartments. However, townhomes and apartments are only permitted by a separate Special Use Permit. Additionally, the R-8 district requires more stringent lot standards, which would prohibit higher densities in the area. With a rezoning to PD-R, the applicant would be able to provide a balance of residential uses while simultaneously addressing the demand for increased density near the Downtown Core.

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.*

   Applicant Response: "There is enough existing capacity in the Town's water system and the Town's wastewater system to accommodate the greater density of development that will occur if the properties are rezoned. Adequate public utilizes (water, sewer, and electric) presently serve the area of the rezoning. Specific engineering provisions will need to be made at the time of connection to utilities.

   The existing road network in the area of the rezoning is under-utilized because of the amount of undeveloped lots and vacant land. The existing street network is a traditional grid style pattern with inter-connections blocks that allow for alternate traffic flows. In fact, the proposed property considered for rezoning has 6 connecting points to the existing road network. Impacts to the existing road network will be minimal if the rezoning is granted.

   Once developed and occupied the neighborhood will have Cooper Academy Elementary School to attend. The area of rezoning is within easy walking distance of the school. Public School bus transportation will be provided from the neighborhood to either Cooper Academy, Riverwood Middle School, or Clayton High School.

   Storm water management facilities will be constructed on site as part of the normal course of development. The storm water facilities will be required by ordinance not only to manage the quantity of storm water generated by the development but also treat the quality of the water released from the property.

Staff Commentary: Staff concurs that there will mostly be a sufficient capacity of public facilities to serve the proposed use. As mentioned by the applicant, the increased density and existing property size would require additional road access through the development that should be properly integrated into the existing street grid network for adequate pedestrian and vehicular traffic flow. Additionally, the increased storm water would require more infrastructure in order to treat the increased storm water generated by the development.

5. *It has been determined that the legal purposes for which zoning exists are not violated.*

   Applicant Response: "The rezoning of the R-8 properties to PD-R does not constitute "Spot Zoning" because the existing zoning is residential and proposed use zoning will also be residential. Existing single family residential and multi-family already exist on the property or adjacent properties. Therefore, the proposed zoning is compatible with existing land development patterns in the area."

   Staff Commentary: Staff concurs the use of residential is consistent with the existing development patterns.

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.*

   Applicant Response: "The rezoning actually allows for a continuation of the existing development pattern of single family residential and multi-family residential, that exists in the neighborhood. With the rezoning and subsequent development of the property the existing streets will in whole or in part be upgraded, walks will be provided that do not exist now, recreation/open space/resource conservation areas will be created through development codes, storm water will be managed, utilities will be upgraded, and the overall visual quality of the neighborhood will be improved. In general, adjacent property owners should experience a general upgrade in the physical and visual quality of the neighborhood."

   Staff Commentary: The associated master plan will include enhancements to the existing streets, add pedestrian access, and provide open space.

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.*

   Applicant Response: "The rezoning should greatly benefit the general public. The rezoning and subsequent development will not create any environmental consequences to the public interest, will not place and economic burden on the tax payers and will not over tax the existing utility systems requiring costly upgrades.

   In fact, the rezoning and resulting development should benefit the Citizens of Clayton by creating new recreation/ open space; new resource conservation areas, improve existing infrastructure, increases the utility base, and increase property tax revenues."

   Staff Commentary: The associated master plan will provide recreation/open space, new RCAs, and will modify the existing infrastructure in regards to streets.

CONSIDERATIONS:

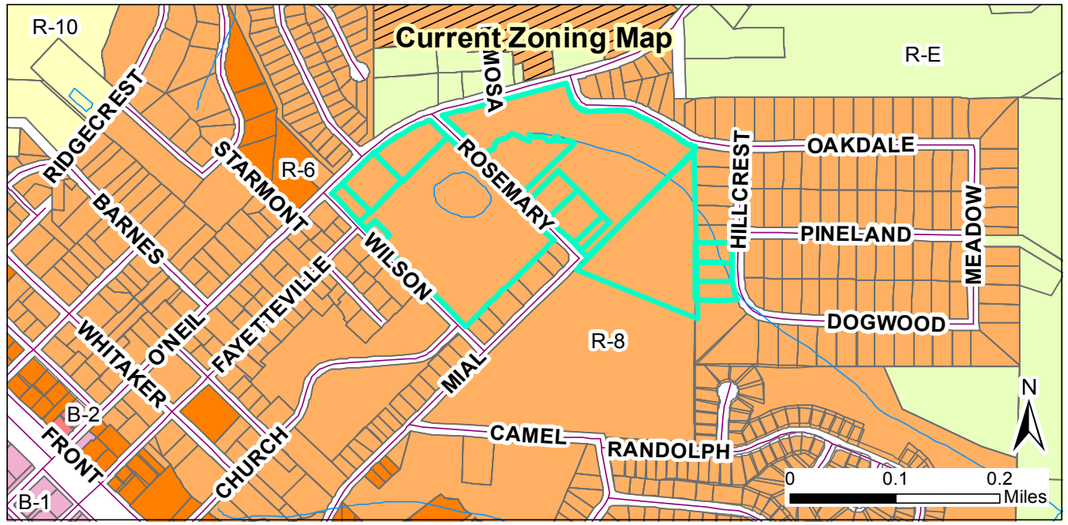
- Rezonings are decided by the Town Council. The Planning Board shall make a recommendation to the Town Council.
- When adopting or rejecting the rezoning, the Town Council shall approve a statement describing whether its action is consistent with adopted plans and/or policies of the Town and explaining why the Council considers the action taken to be reasonable and in the public interest.
- This rezoning is running concurrently with a major preliminary plat request (2018-233-SD, Barbour Tract Master Plan) acting as a Master Plan for the planned development.
- Dimensional standards and other criteria for a planned development are set within the Master Plan.

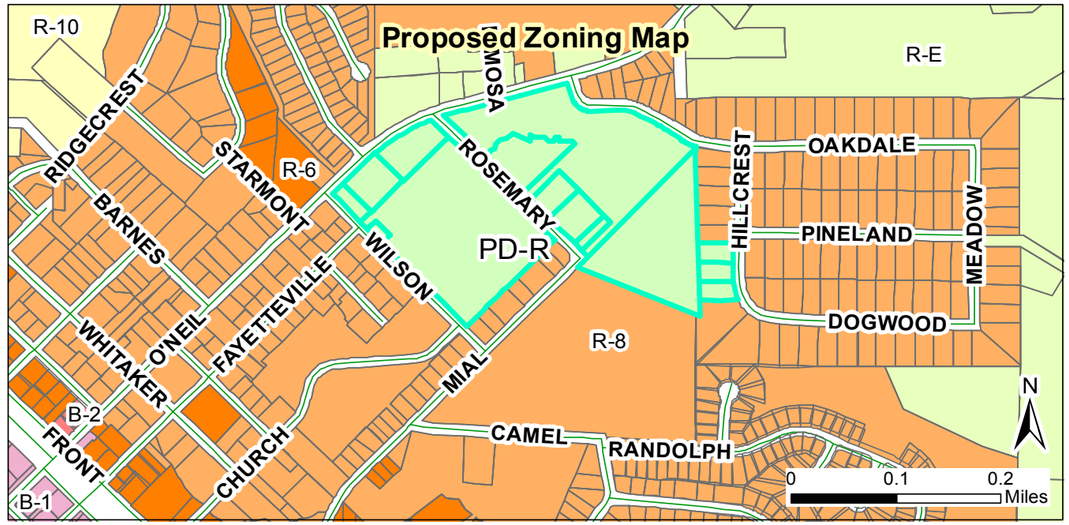
APPROVAL CRITERIA:

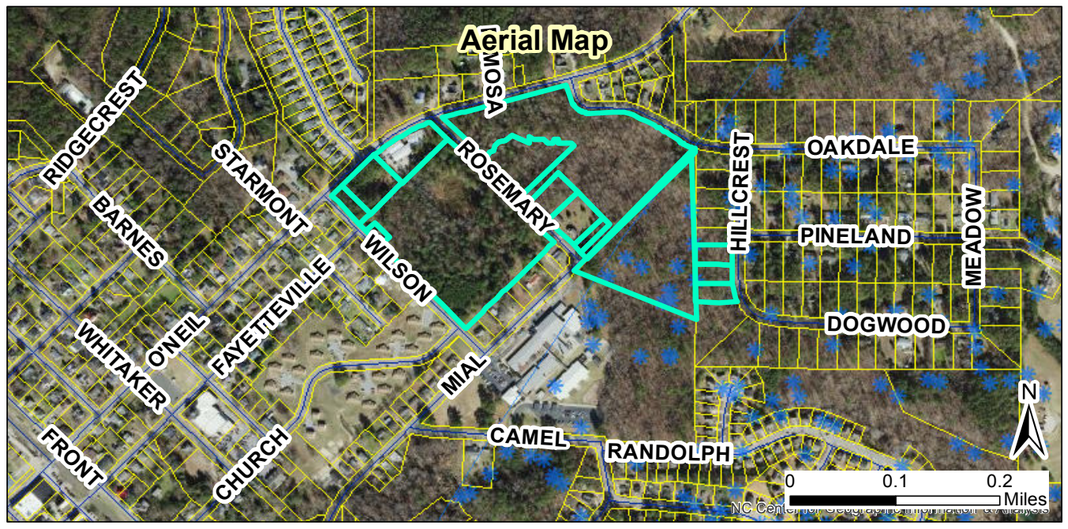
The applicant has addressed the Rezoning Approval Criteria and Master Plan Approval Criteria outlined in §155.704 and .705. The applicant's responses are incorporated in the application, as an attachment to the Staff Report.

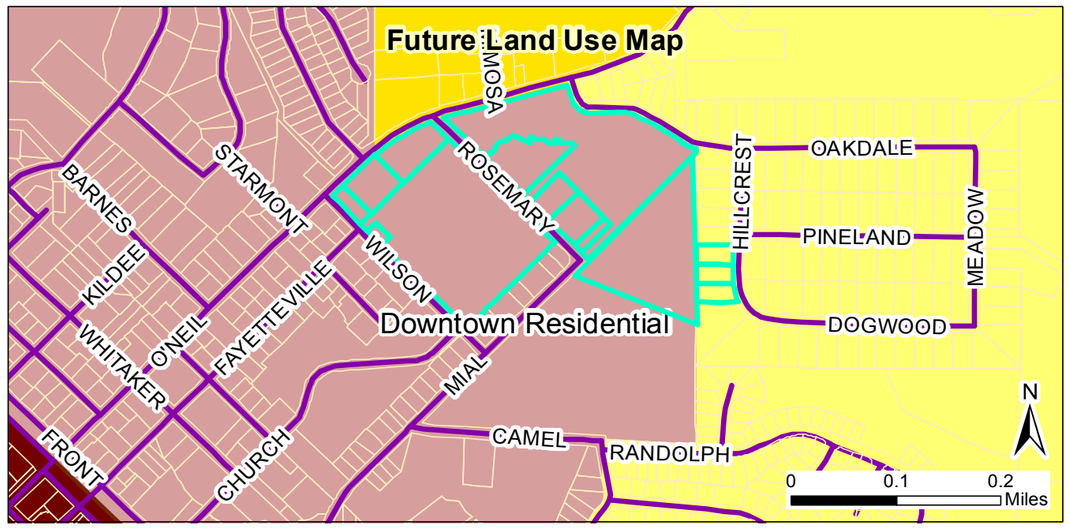
ATTACHMENTS:

1) Application
2) Staff Report Map
3) Neighborhood Meeting Materials
4) Associated Site Plan (2018-233-SD)









Request:
2018-231-PDD, Barbour Tract, Rezoning
Applicant: Adams & Hodge Engineering, PC
Property Owners: Roy Barbour & Lois Barbour; Sam's Branch II, LLC; Blondell Johnson; James H Harris & Ruth Harris; Alan Neil Hartman Revocable Trust; Johnston County Board of Education
Parcel ID: 166913-24-0652, 166913-24-0827, 166805-18-6162, 166914-34-7560, 166914-34-7451, 166914-34-7371, 166913-14-9727, 166914-24-8945, 166700-29-2835, 166914-34-2175
Tag #: 0599003F, 05005067B, 05005067H, 05H03189G, 05H03189F, 05H03189E, 05G02026Q, 05E99008H, 05E99008J, 05E99021V

Staff Report Map

02/14/2019
Produced by: TOC Planning
Disclaimer: Town of Clayton assumes no legal responsibility for the quality fo the data represented here.

Legend
- 100-yr Flood Zone
- Thoroughfare Overlay
- Watershed Protection Overlay
- Site

Document Path: O:\PLANNING\REZONING\Planned Developments\2018\2018-231-PDD Barbour Tract\Map\Update Map 2018-231-PDD Barbour Tract.mxd

ADAMS & HODGE ENGINEERING, PC

Barbour Tract Neighborhood Meeting Minutes
Date: January 8, 2019
Time: 7:00 PM
Location: 114 W Main St. Clayton, NC 27527

The meeting began at 7:05pm. Donnie Adams had the plans for the Barbour tract on the table for all of the residents to view as they came in. The application was also available for all to view.

Donnie began the meeting by discussing the overview of the Barbour Tract Project and had the plans displayed on the TV as a reference for all to view as he discussed what the plan consisted of. He discussed that we are going through rezoning to get this rezoned to PDR (Planned Development Residential). We are also seeking Master Plan approval from the town of Clayton. He discussed the process from start to finish to the residents including TRC, Town Council, and that they will be receiving letters from the Town to let them know when the Town Council meeting will be for the Barbour Tract. Donnie then explained the boundary of the project by giving the specific street names and explaining that the green area on the map shows the boundaries, the various phases of the project with 126 apartment units, triplexes, single family homes, and the alley loaded houses. He explained there will be curb and gutter throughout and sidewalks on both sides of the street. He also described how Rosemary will be upgraded to curb and gutter and sidewalks on both sides of the street, he explained about the round-a-bout and how they had been working with Johnston County School System and Cooper Academy to maximize flow for school traffic. He pointed out that the proposed stormwater pond would include a walking trail around it and an outdoor classroom for Cooper Academy to use. He also identified Tot Lots, a Dog Park, and Cluster Unit mailboxes. The water and sewer will be served by Town of Clayton. Happy to answer any questions.

Resident: Once it is in this stage, how hard is it to rebuttable the apartments of this project?
Donnie: This project is in the review process as explained earlier so you are welcome to bring this concern or opinions to the Town Council Meeting to share. As an applicant we will demonstrate that our project meets the requirements for the requested rezoning.

Resident: Are they going to tear up the Sam's Branch Greenway? It's not like the walk it used to be where the first entrance is to the Greenway.
Donnie: This will not be touching the Greenway system.

Resident: Can you describe how the Townhouses are going to look. I live right across from where they are going to be built. Right now, it is a rural road, I'm wondering how that's all going to look? Are these Townhouses going to face Oakdale Street?
Donnie: Donnie described that there will be 4 buildings across from her, they will be the exact same as the single-family houses but with 2 party walls. Each will have individual driveways and two parking spaces for each house. Yes, these will be facing your house. They are really nice looking. Donnie showed an example in the plan set. The single-family homes will be very similar to what you see in Parkview.

Resident: Asked the question about the plan to clarify where all of the entrances will be to subdivision.
Donnie: Donnie pointed out and clarified where all the entrances would be.

Resident: Are there going to be sidewalks where those townhomes are? I was just curious if I was going to wake up one morning and my front yard was going to be dug up.
Donnie: Donnie stated, ss proposed right now there are no sidewalks in front of the townhomes.

Each resident wanted to know how this would affect their particular property. Donnie went through the map with each one and talked about the possible construction and road improvements that may occur during the building process.

Resident: Will this enhance my property value?
Donnie: I like to think so. I am really excited about this new community and how it's all going to look.

Resident: Are they going to have a lot more police presence with this new neighborhood there?
Donnie: I can't really speak to that.

Resident: When do you anticipate a start date for this project and how long will the process be?
Donnie: The project will be built in phases. We are on an aggressive schedule and plan to make the improvements along Rosemary while school is out this summer. In addition to those improvements, we would like to start developing single family lots with the goal to start building homes by late summer or early fall. We don't have a set schedule for the phasing, but we are probably looking at a 5-year total project before it is all built out.

Resident: How many stories are the apartments?
Donnie: The apartments will be three stories. The single family and triplexes are going to be a mix between ranch and two story.

Resident: Will there be any fencing?
Donnie: Don't have a plan for fencing at this point. But we will have fencing around the storm water pond.

Resident: Worst case scenario if this project is denied what will happen to this property?
Donnie: If it's denied there will be some reason it is denied, and we will address these reasons or conditions. Donnie went on to explain this process.

Resident: What is the 2040 Plan that the Town has in place.
Donnie: Explained that this is a long-range plan that the Town has in place. He further described some of the goals this plan touches on: different areas, density, use types etc. and explained how the Barbour Tract is in line with this plan.

Resident: How many houses do you have per acre.
Donnie: About 12 units per acre. Then discussed the areas they set as open space.

Resident: Are ya'll anticipating any issues with the sewer?
Donnie: The Town stays on top of growth projections so that they have the capacity for the future development.

Resident: Where my house is, I'm assuming that I will be facing the back of the apartments.
Donnie: No, the apartments will be facing Oneal street with parking in the back. End goal will be very attractive from the front. We are proposing sidewalks in front of those.

Resident: Are there any homes in that area that will be removed?
Donnie: Donnie pointed out the only one he was aware of.

Resident: Is the traffic pretty heavy around the school now?
Donnie: Explained how the traffic flow is structured now and how the round-a- bout would be a plus for the traffic flow.

Resident: I live on Rosemary Street what can I be expecting?
Donnie: Donnie helped her to locate her house and he said there will be a significant amount of construction on Rosemary. He again explained that they will be adding curb and gutter and sidewalks.

Resident: Would she have a fence around her property?
Donnie: Pointed out that during construction there may be a temporary fence put around the property, like a silt fence or construction fence. He also stated that they will be putting a buffer around the back of these lots.

Resident: What happened to that pond that used to be there.
Donnie: Someone drained it, maybe the owners before this, I'm not sure.

Resident: Is the name of Rosemary Street going to change?
Donnie: It has been proposed to change to something like Academy Drive, but it will have to be approved by the Town.

Resident: What's the neighborhood going to be called.
Jon Harrell: We are thinking about Academy Point.

Resident: Will we get notification about the Town meeting?
Donnie: Yes sir, the Town of Clayton will be sending all residents who are in the 100 ft buffer of the land, letters letting you know when the meeting will be just like we did with this meeting.

Resident: Who's the builder?
Donnie: Not been 100% firmed up, but I do know that One27 Homes will be a builder.

Donnie asked for any other questions from the residents and there were no more questions. The meeting was adjourned at 8:00pm.

NEIGHBORHOOD MEETING ATTENDANCE ROSTER

Project: Barbour Tract

Application: Major Subdivision / Rezoning

Location/Date: 114 W Main Street / January 8th

	NAME	ADDRESS
1	Cheryl LAMBETH	154 OAKdale Avenue, CLAYTON, NC 27520
2	Irene Cannady	136 Rosemary St. Clayton, N.C. 27520
3	Jeff Burke	614 N Oneil st
4	JOHN D. COVE	214 HILLCREST
5	DAVID A. HAMER	582 N. Fayetteville Street
6	Dennie Adams	Rep. Adams + Hodges Engineering 404 Swann Trail Clayton NC 27527
7	Holland Adams	404 Swann Trail Clayton, NC 27527
8	Jon Harrell	Rep. Sam's Branch LLC.
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ADAMS & HODGE ENGINEERING, PC

January 12, 2019

Samantha Wullenwaber
Planning Director
Town of Clayton
111 E. Second Street
Clayton, NC 27527

Subject: **Neighborhood Meeting Minutes/Attendance Roster**
Barbour Tract

Dear Ms. Wullenwaber,

Please find attached the Attendance Roster along with the Minutes from the Barbour Tract Neighborhood Meeting which was held on January 8, 2019. The addressed stamped envelopes were submitted with the application. If you have any questions, please don't hesitate to contact us.

Sincerely,

Holland Adams
holland@adamsandhodge.com
919-763-2780

RECEIVED
JAN 15 2019
TOWN OF CLAYTON
PLANNING DEPARTMENT

ADAMS & HODGE ENGINEERING, PC

December 17, 2018

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 or development 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: **Tuesday, January 8, 2019**

Meeting Time: **7:00 p.m.**

Meeting Location: **114 W. Main Street (Former NC Paper Company Building)**

Type of Application: **Major Subdivision Application and Rezoning Application**

Project/proposal property location: **Fronts O'Neil Street from Wilson Street to Oak Dale Ave. Both sides of Rosemary Street and Adjacent to Cooper Academy.**

Description of project/proposal: **The proposed Barbour Tract development is located near Downtown Clayton and is currently designated as Downtown Residential (DR) in the Town of Clayton Comprehensive Plan 2040. The proposed development has a total acreage of 33.71 acs. The development will offer a walkable neighborhood near the Downtown Core with a variety of Single-Family Homes, Townhomes, and Apartments.**

Upcoming Public Meetings for this application: Planning Board Meeting, January 23 (tent)

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

1. A copy of the project application.
2. A schedule of all upcoming public meetings for application.
3. A map at scale that is appropriate to the project and shows neighboring properties and roads.
4. 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)763-7278*.

You may also contact the Planning Department at 919-553-5002.

Sincerely,

Donald C. Adams, Jr., PE

NORTH CAROLINA PROFESSIONAL SEAL 25469 ENGINEER DONALD C. ADAMS, JR.

EXHIBIT E

ADJACENT PROPERTY OWNERS

JOHNSTON COUNTY NORTH CAROLINA

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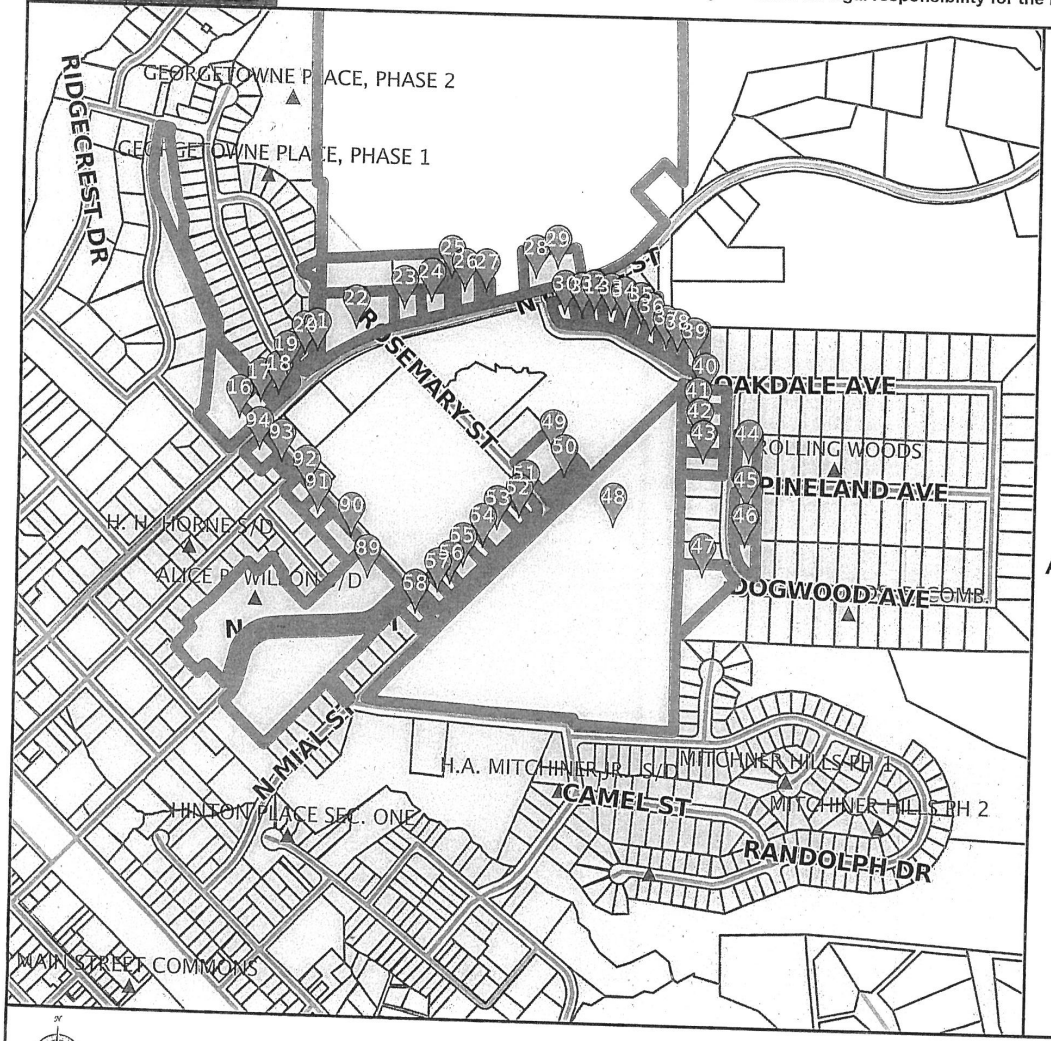

Result 1

id:	05I03199
Tag:	05I03199
NCPin:	166913-14-6827
Mapsheet No:	166913
Owner Name 1:	TRIANGLE HOUSING DEV CORP
Owner Name 2:	
Mail Address 1:	
Mail Address 2:	
Mail Address 3:	
Site Address 1:	600 4D N O'NEIL ST
Site Address 2:	CLAYTON, NC 27520-
Book:	00787
Page:	0366
Market Value:	465150
Assessed Acreage:	1.59
Calc. Acreage:	1.59
Sales Price:	0
Sale Date:	1975-01-01

Scale: 1:8441 - 1 in. = 703.43 feet

(The scale is only accurate when printed landscape on a 8 1/2 x 11 size sheet with no page scaling.)

Johnston County GIS
November 26, 2018

JOHNSTON COUNTY NORTH • CAROLINA

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Result 2

id: 05I03199
Tag: 05I03199
NCPin: 166913-14-6827
Mapsheet No: 166913
Owner Name 1: TRIANGLE HOUSING DEV CORP
Owner Name 2:
Mail Address 1:
Mail Address 2:
Mail Address 3:
Site Address 1: 600 4C N O'NEIL ST
Site Address 2: CLAYTON, NC 27520-
Book: 00787
Page: 0366
Market Value: 465150
Assessed Acreage: 1.59
Calc. Acreage: 1.59
Sales Price: 0
Sale Date: 1975-01-01

Result 3

id: 05I03199
Tag: 05I03199
NCPin: 166913-14-6827
Mapsheet No: 166913
Owner Name 1: TRIANGLE HOUSING DEV CORP
Owner Name 2:
Mail Address 1:
Mail Address 2:
Mail Address 3:
Site Address 1: 600 4B N O'NEIL ST
Site Address 2: CLAYTON, NC 27520-
Book: 00787
Page: 0366
Market Value: 465150
Assessed Acreage: 1.59
Calc. Acreage: 1.59
Sales Price: 0
Sale Date: 1975-01-01

Result 4

id: 05I03199
Tag: 05I03199
NCPin: 166913-14-6827
Mapsheet No: 166913
Owner Name 1: TRIANGLE HOUSING DEV CORP
Owner Name 2:
Mail Address 1:
Mail Address 2:
Mail Address 3:
Site Address 1: 600 1B N O'NEIL ST
Site Address 2: CLAYTON, NC 27520-
Book: 00787
Page: 0366
Market Value: 465150
Assessed Acreage: 1.59
Calc. Acreage: 1.59
Sales Price: 0
Sale Date: 1975-01-01

Result 5

id: 05I03199
Tag: 05I03199
NCPin: 166913-14-6827
Mapsheet No: 166913
Owner Name 1: TRIANGLE HOUSING DEV CORP
Owner Name 2:
Mail Address 1:
Mail Address 2:
Mail Address 3:
Site Address 1: 600 1D N O'NEIL ST
Site Address 2: CLAYTON, NC 27520-
Book: 00787
Page: 0366
Market Value: 465150
Assessed Acreage: 1.59
Calc. Acreage: 1.59
Sales Price: 0
Sale Date: 1975-01-01

JOHNSTON COUNTY NORTH CAROLINA

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Result 6

id: 05I03199
Tag: 05I03199
NCPin: 166913-14-6827
Mapsheet No: 166913
Owner Name 1: TRIANGLE HOUSING DEV CORP
Owner Name 2:
Mail Address 1:
Mail Address 2:
Mail Address 3:
Site Address 1: 600 4A N O'NEIL ST
Site Address 2: CLAYTON, NC 27520-
Book: 00787
Page: 0366
Market Value: 465150
Assessed Acreage: 1.59
Calc. Acreage: 1.59
Sales Price: 0
Sale Date: 1975-01-01

Result 7

id: 05I03199
Tag: 05I03199
NCPin: 166913-14-6827
Mapsheet No: 166913
Owner Name 1: TRIANGLE HOUSING DEV CORP
Owner Name 2:
Mail Address 1:
Mail Address 2:
Mail Address 3:
Site Address 1: 600 3C N O'NEIL ST
Site Address 2: CLAYTON, NC 27520-
Book: 00787
Page: 0366
Market Value: 465150
Assessed Acreage: 1.59
Calc. Acreage: 1.59
Sales Price: 0
Sale Date: 1975-01-01

Result 8

id: 05I03199
Tag: 05I03199
NCPin: 166913-14-6827
Mapsheet No: 166913
Owner Name 1: TRIANGLE HOUSING DEV CORP
Owner Name 2:
Mail Address 1:
Mail Address 2:
Mail Address 3:
Site Address 1: 600 3A N O'NEIL ST
Site Address 2: CLAYTON, NC 27520-
Book: 00787
Page: 0366
Market Value: 465150
Assessed Acreage: 1.59
Calc. Acreage: 1.59
Sales Price: 0
Sale Date: 1975-01-01

Result 9

id: 05I03199
Tag: 05I03199
NCPin: 166913-14-6827
Mapsheet No: 166913
Owner Name 1: TRIANGLE HOUSING DEV CORP
Owner Name 2:
Mail Address 1:
Mail Address 2:
Mail Address 3:
Site Address 1: 600 1A N O'NEIL ST
Site Address 2: CLAYTON, NC 27520-
Book: 00787
Page: 0366
Market Value: 465150
Assessed Acreage: 1.59
Calc. Acreage: 1.59
Sales Price: 0
Sale Date: 1975-01-01

JOHNSTON COUNTY NORTH CAROLINA

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Result 10

id: 05I03199
Tag: 05I03199
NCPin: 166913-14-6827
Mapsheet No: 166913
Owner Name 1: TRIANGLE HOUSING DEV CORP
Owner Name 2:
Mail Address 1:
Mail Address 2:
Mail Address 3:
Site Address 1: 600 2C N O'NEIL ST
Site Address 2: CLAYTON, NC 27520-
Book: 00787
Page: 0366
Market Value: 465150
Assessed Acreage: 1.59
Calc. Acreage: 1.59
Sales Price: 0
Sale Date: 1975-01-01

Result 11

id: 05I03199
Tag: 05I03199
NCPin: 166913-14-6827
Mapsheet No: 166913
Owner Name 1: TRIANGLE HOUSING DEV CORP
Owner Name 2:
Mail Address 1:
Mail Address 2:
Mail Address 3:
Site Address 1: 600 2B N O'NEIL ST
Site Address 2: CLAYTON, NC 27520-
Book: 00787
Page: 0366
Market Value: 465150
Assessed Acreage: 1.59
Calc. Acreage: 1.59
Sales Price: 0
Sale Date: 1975-01-01

Result 12

id: 05I03199
Tag: 05I03199
NCPin: 166913-14-6827
Mapsheet No: 166913
Owner Name 1: TRIANGLE HOUSING DEV CORP
Owner Name 2:
Mail Address 1:
Mail Address 2:
Mail Address 3:
Site Address 1: 600 2A N O'NEIL ST
Site Address 2: CLAYTON, NC 27520-
Book: 00787
Page: 0366
Market Value: 465150
Assessed Acreage: 1.59
Calc. Acreage: 1.59
Sales Price: 0
Sale Date: 1975-01-01

Result 13

id: 05I03199
Tag: 05I03199
NCPin: 166913-14-6827
Mapsheet No: 166913
Owner Name 1: TRIANGLE HOUSING DEV CORP
Owner Name 2:
Mail Address 1:
Mail Address 2:
Mail Address 3:
Site Address 1: 600 2D N O'NEIL ST
Site Address 2: CLAYTON, NC 27520-
Book: 00787
Page: 0366
Market Value: 465150
Assessed Acreage: 1.59
Calc. Acreage: 1.59
Sales Price: 0
Sale Date: 1975-01-01

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Result 14

id: 05I03199
Tag: 05I03199
NCPin: 166913-14-6827
Mapsheet No: 166913
Owner Name 1: TRIANGLE HOUSING DEV CORP
Owner Name 2:
Mail Address 1:
Mail Address 2:
Mail Address 3:
Site Address 1: 600 1C N O'NEIL ST
Site Address 2: CLAYTON, NC 27520-
Book: 00787
Page: 0366
Market Value: 465150
Assessed Acreage: 1.59
Calc. Acreage: 1.59
Sales Price: 0
Sale Date: 1975-01-01

Result 15

id: 05I03199
Tag: 05I03199
NCPin: 166913-14-6827
Mapsheet No: 166913
Owner Name 1: TRIANGLE HOUSING DEV CORP
Owner Name 2:
Mail Address 1:
Mail Address 2:
Mail Address 3:
Site Address 1: 600 3D N O'NEIL ST
Site Address 2: CLAYTON, NC 27520-
Book: 00787
Page: 0366
Market Value: 465150
Assessed Acreage: 1.59
Calc. Acreage: 1.59
Sales Price: 0
Sale Date: 1975-01-01

Result 16

id: 05I03199
Tag: 05I03199
NCPin: 166913-14-6827
Mapsheet No: 166913
Owner Name 1: TRIANGLE HOUSING DEV CORP
Owner Name 2:
Mail Address 1:
Mail Address 2:
Mail Address 3:
Site Address 1: 600 3B N O'NEIL ST
Site Address 2: CLAYTON, NC 27520-
Book: 00787
Page: 0366
Market Value: 465150
Assessed Acreage: 1.59
Calc. Acreage: 1.59
Sales Price: 0
Sale Date: 1975-01-01

Result 17

id: 05H02201A
Tag: 05H02201A
NCPin: 166913-14-8939
Mapsheet No: 166913
Owner Name 1: TECHTWOOD, LLC
Owner Name 2:
Mail Address 1: 328 E MAIN ST
Mail Address 2:
Mail Address 3: CLAYTON, NC 27520-2464
Site Address 1:
Site Address 2:
Book: 04917
Page: 0922
Market Value: 25730
Assessed Acreage: 0.35
Calc. Acreage: 0.284
Sales Price: 45000
Sale Date: 2017-02-28

JOHNSTON COUNTY NORTH CAROLINA

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Result 18

id: 05H02201B
Tag: 05H02201B
NCPin: 166909-15-4914
Mapsheet No: 166909
Owner Name 1: GEORGETOWN COMMUNITY ASSOC
Owner Name 2:
Mail Address 1: 2530 MERIDIAN PKWY
Mail Address 2:
Mail Address 3: DURHAM, NC 27713-0000
Site Address 1:
Site Address 2:
Book: 03525
Page: 0386
Market Value: 50
Assessed Acreage: 1.31
Calc. Acreage: 1.509
Sales Price: 0
Sale Date: 2008-04-08

Result 19

id: 05H02201C
Tag: 05H02201C
NCPin: 166909-15-9130
Mapsheet No: 166909
Owner Name 1: BRINKLEY, JERRY TODD
Owner Name 2: KRASOWSKI, CYNTHIA JEAN
Mail Address 1: 2125 DARTMOUTH GLEN DR APT 306
Mail Address 2:
Mail Address 3: GARNER, NC 27529-5232
Site Address 1: 105 GEORGETOWNE DR
Site Address 2: CLAYTON, NC 27520-
Book: 03248
Page: 0551
Market Value: 163960
Assessed Acreage: 0.15
Calc. Acreage: 0.148
Sales Price: 200000
Sale Date: 2006-12-06

Result 20

id: 05H02203G
Tag: 05H02203G
NCPin: 166909-25-0240
Mapsheet No: 166909
Owner Name 1: TABOADA, BOBBY
Owner Name 2:
Mail Address 1: 104 GEORGETOWNE DR
Mail Address 2:
Mail Address 3: CLAYTON, NC 27520-1818
Site Address 1: 104 GEORGETOWNE DR
Site Address 2: CLAYTON, NC 27520-
Book: 04735
Page: 0882
Market Value: 124840
Assessed Acreage: 0.13
Calc. Acreage: 0.132
Sales Price: 152000
Sale Date: 2016-03-21

Result 21

id: 05H02202K
Tag: 05H02202K
NCPin: 166909-25-1308
Mapsheet No: 166909
Owner Name 1: GEORGETOWN COMMUNITY ASSOC
Owner Name 2:
Mail Address 1: 2530 MERIDIAN PKWY
Mail Address 2:
Mail Address 3: DURHAM, NC 27713-0000
Site Address 1:
Site Address 2:
Book: 03525
Page: 0386
Market Value: 20
Assessed Acreage: 0.41
Calc. Acreage: 0.412
Sales Price: 0
Sale Date: 2008-04-08

JOHNSTON COUNTY NORTH CAROLINA

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Result 22

id: 05H02199J
Tag: 05H02199J
NCPin: 166909-25-1382
Mapsheet No: 166909
Owner Name 1: BURKE, PATRICK A
Owner Name 2: BURKE, LAURIE
Mail Address 1: 178 HANCOCK AVE
Mail Address 2:
Mail Address 3: HANCOCK, MN 56244-9710
Site Address 1: 614 N O'NEIL ST
Site Address 2: CLAYTON, NC 27520-
Book: 01136
Page: 0855
Market Value: 103870
Assessed Acreage: 1
Calc. Acreage: 1.712
Sales Price: 55000
Sale Date: 1989-08-01

Result 23

id: 05E99009G
Tag: 05E99009G
NCPin: 166909-25-4326
Mapsheet No: 166909
Owner Name 1: PEREZ, WELINTON MISAEL
Owner Name 2:
Mail Address 1: 702 O'NEAL ST
Mail Address 2:
Mail Address 3: CLAYTON, NC 27520
Site Address 1: 702 N O'NEIL ST
Site Address 2: CLAYTON, NC 27520-
Book: 04739
Page: 0792
Market Value: 73560
Assessed Acreage: 0.51
Calc. Acreage: 0.42
Sales Price: 0
Sale Date: 2016-03-29

Result 24

id: 05E99009F
Tag: 05E99009F
NCPin: 166910-25-5440
Mapsheet No: 166910
Owner Name 1: DRIVER, MICHAEL R
Owner Name 2: DRIVER, ANN J
Mail Address 1: 559 ANTIOCH CHURCH RD
Mail Address 2:
Mail Address 3: ZEBULON, NC 27597-1835
Site Address 1: 704 N O'NEIL ST
Site Address 2: CLAYTON, NC 27520-
Book: 04339
Page: 0895
Market Value: 72080
Assessed Acreage: 0.36
Calc. Acreage: 0.356
Sales Price: 28500
Sale Date: 2013-08-14

Result 25

id: 05H02025
Tag: 05H02025
NCPin: 166910-36-0755
Mapsheet No: 166910
Owner Name 1: PEEDIN, EDNA S
Owner Name 2:
Mail Address 1: 2721 US 70 EAST
Mail Address 2:
Mail Address 3: SELMA, NC 27576-8174
Site Address 1:
Site Address 2:
Book: 00527
Page: 0089
Market Value: 292800
Assessed Acreage: 71.69
Calc. Acreage: 70.769
Sales Price: 0
Sale Date: 1953-01-01

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Result 26

id: 05H02199E
Tag: 05H02199E
NCPin: 166910-25-6496
Mapsheet No: 166910
Owner Name 1: JANCUSKA, THOMAS
Owner Name 2:
Mail Address 1: 116 KENSINGTON CT
Mail Address 2:
Mail Address 3: CLAYTON, NC 27527-5324
Site Address 1: 802 N O'NEIL ST
Site Address 2: CLAYTON, NC 27520-
Book: 04531
Page: 0488
Market Value: 91230
Assessed Acreage: 1
Calc. Acreage: 0.432
Sales Price: 0
Sale Date: 2014-12-03

Result 27

id: 05H02199D
Tag: 05H02199D
NCPin: 166910-25-7474
Mapsheet No: 166910
Owner Name 1: JACKSON, EDNA PEEDIN
Owner Name 2:
Mail Address 1: 2721 US 70 EAST
Mail Address 2:
Mail Address 3: SELMA, NC 27576-8174
Site Address 1:
Site Address 2:
Book: 01189
Page: 0495
Market Value: 9770
Assessed Acreage: 1
Calc. Acreage: 0.115
Sales Price: 0
Sale Date: 1990-12-03

Result 28

id: 05H02199A
Tag: 05H02199A
NCPin: 166910-35-0555
Mapsheet No: 166910
Owner Name 1: JERNIGAN, BELLE PEACOCK
Owner Name 2:
Mail Address 1: 789 N ONEIL STREET EXT
Mail Address 2:
Mail Address 3: CLAYTON, NC 27520-6243
Site Address 1: 789 N O'NEIL ST
Site Address 2: CLAYTON, NC 27520-
Book: 00664
Page: 0003
Market Value: 114380
Assessed Acreage: 1
Calc. Acreage: 0.976
Sales Price: 0
Sale Date: 1967-01-01

Result 29

id: 05H02199A
Tag: 05H02199A
NCPin: 166910-35-0555
Mapsheet No: 166910
Owner Name 1: JERNIGAN, BELLE PEACOCK
Owner Name 2:
Mail Address 1: 789 N ONEIL STREET EXT
Mail Address 2:
Mail Address 3: CLAYTON, NC 27520-6243
Site Address 1: 789 N O'NEIL ST
Site Address 2: CLAYTON, NC 27520-
Book: 00664
Page: 0003
Market Value: 114380
Assessed Acreage: 1
Calc. Acreage: 0.976
Sales Price: 0
Sale Date: 1967-01-01

JOHNSTON COUNTY NORTH • CAROLINA

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Result 30

id: 05H02199G
Tag: 05H02199G
NCPin: 166910-35-1337
Mapsheet No: 166910
Owner Name 1: FEREZ, NICHOLAS J
Owner Name 2: FEREZ, KIMBERLY
Mail Address 1: 780 LIGHTFOOT DR
Mail Address 2:
Mail Address 3: CLAYTON, NC 27520-2136
Site Address 1: 100 OAKDALE AVE
Site Address 2: CLAYTON, NC 27520-
Book: 03463
Page: 0813
Market Value: 96110
Assessed Acreage: 0.23
Calc. Acreage: 0.232
Sales Price: 72000
Sale Date: 2007-12-27

Result 31

id: 05H02200H
Tag: 05H02200H
NCPin: 166910-35-2308
Mapsheet No: 166910
Owner Name 1: ANTUNEZ, CARLOS HERNANDEZ
Owner Name 2:
Mail Address 1: 1714 CASTLEBERRY RD
Mail Address 2:
Mail Address 3: CLAYTON, NC 27527-6277
Site Address 1: 110 OAKDALE AVE
Site Address 2: CLAYTON, NC 27520-
Book: 02107
Page: 0349
Market Value: 101300
Assessed Acreage: 0.2
Calc. Acreage: 0.203
Sales Price: 82000
Sale Date: 2001-08-30

Result 32

id: 05H02200I
Tag: 05H02200I
NCPin: 166910-35-2379
Mapsheet No: 166910
Owner Name 1: HERNANDEZ, MARINA IBARRA
Owner Name 2: COYOTE, JOSE MELCHOR PULQUERO
Mail Address 1: 120 OAKDALE AVE
Mail Address 2:
Mail Address 3: CLAYTON, NC 27520-1837
Site Address 1: 120 OAKDALE AVE
Site Address 2: CLAYTON, NC 27520-
Book: 04828
Page: 0722
Market Value: 90410
Assessed Acreage: 0.22
Calc. Acreage: 0.22
Sales Price: 0
Sale Date: 2016-09-09

Result 33

id: 05H02200N
Tag: 05H02200N
NCPin: 166910-35-3345
Mapsheet No: 166910
Owner Name 1: FEREZ, NICHOLAS J
Owner Name 2: FEREZ, KIMBERLY D
Mail Address 1: 780 LIGHTFOOT DR
Mail Address 2:
Mail Address 3: CLAYTON, NC 27520-2136
Site Address 1: 130 OAKDALE AVE
Site Address 2: CLAYTON, NC 27520-
Book: 02536
Page: 0370
Market Value: 98450
Assessed Acreage: 0.18
Calc. Acreage: 0.182
Sales Price: 77000
Sale Date: 2003-08-28

JOHNSTON COUNTY NORTH CAROLINA

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Result 34

id: 05H02200O
Tag: 05H02200O
NCPin: 166910-35-4315
Mapsheet No: 166910
Owner Name 1: FEREZ, NICHOLAS J
Owner Name 2:
Mail Address 1: 780 LIGHTFOOT DR
Mail Address 2:
Mail Address 3: CLAYTON, NC 27520-2136
Site Address 1: 140 OAKDALE AVE
Site Address 2: CLAYTON, NC 27520-
Book: 04144
Page: 0656
Market Value: 87970
Assessed Acreage: 0.2
Calc. Acreage: 0.204
Sales Price: 53000
Sale Date: 2012-07-12

Result 35

id: 05H02200P
Tag: 05H02200P
NCPin: 166910-35-4387
Mapsheet No: 166910
Owner Name 1: NEWKIRK, SONYA Y
Owner Name 2:
Mail Address 1: 150 OAKDALE AVE
Mail Address 2:
Mail Address 3: CLAYTON, NC 27520-1837
Site Address 1: 150 OAKDALE AVE
Site Address 2: CLAYTON, NC 27520-
Book: 01748
Page: 0433
Market Value: 101410
Assessed Acreage: 0.25
Calc. Acreage: 0.262
Sales Price: 78900
Sale Date: 1998-09-28

Result 36

id: 05H02200Q
Tag: 05H02200Q
NCPin: 166910-35-5336
Mapsheet No: 166910
Owner Name 1: LAMBETH, CHERYL M
Owner Name 2:
Mail Address 1: 154 OAKDALE AVE
Mail Address 2:
Mail Address 3: CLAYTON, NC 27520-1837
Site Address 1: 154 OAKDALE AVE
Site Address 2: CLAYTON, NC 27520-
Book: 01700
Page: 0388
Market Value: 90030
Assessed Acreage: 0.27
Calc. Acreage: 0.266
Sales Price: 72000
Sale Date: 1998-04-29

Result 37

id: 05033060
Tag: 05033060
NCPin: 166910-35-5284
Mapsheet No: 166910
Owner Name 1: FU, XIAOXING
Owner Name 2:
Mail Address 1: 2670 JANE DR
Mail Address 2:
Mail Address 3: CREEDMOOR, NC 27522-8650
Site Address 1: 160 OAKDALE AVE
Site Address 2: CLAYTON, NC 27520-
Book: 04531
Page: 0093
Market Value: 92780
Assessed Acreage: 0.19
Calc. Acreage: 0.195
Sales Price: 56500
Sale Date: 2014-12-02

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Result 38

id: 05033060A
Tag: 05033060A
NCPin: 166910-35-6242
Mapsheet No: 166910
Owner Name 1: GARCIA, MANUEL
Owner Name 2: GARCIA, MARIA
Mail Address 1: 164 OAKDALE AVENUE
Mail Address 2:
Mail Address 3: CLAYTON, NC 27520-0000
Site Address 1: 164 OAKDALE AVE
Site Address 2: CLAYTON, NC 27520-
Book: 01669
Page: 0643
Market Value: 92840
Assessed Acreage: 0.19
Calc. Acreage: 0.188
Sales Price: 0
Sale Date: 1998-01-28

Result 39

id: 05H03199W
Tag: 05H03199W
NCPin: 166910-35-7211
Mapsheet No: 166910
Owner Name 1: CORRAL, LAURA
Owner Name 2: CORRAL, JOSE
Mail Address 1: 192 OAKDALE AVE
Mail Address 2:
Mail Address 3: CLAYTON, NC 27520-0000
Site Address 1: 192 OAKDALE AVE
Site Address 2: CLAYTON, NC 27520-
Book: 03349
Page: 0949
Market Value: 91490
Assessed Acreage: 0.47
Calc. Acreage: 0.462
Sales Price: 97000
Sale Date: 2007-05-24

Result 40

id: 05H03195O
Tag: 05H03195O
NCPin: 166910-35-7052
Mapsheet No: 166910
Owner Name 1: CLAYTON, WILLIAM H
Owner Name 2: CLAYTON, JANIE WATSON
Mail Address 1: 202 HILLCREST LANE
Mail Address 2:
Mail Address 3: CLAYTON, NC 27520-1819
Site Address 1: 202 HILLCREST LN
Site Address 2: CLAYTON, NC 27520-
Book: 00699
Page: 0205
Market Value: 84500
Assessed Acreage: 0.42
Calc. Acreage: 0.411
Sales Price: 0
Sale Date: 1966-01-01

Result 41

id: 05H03199E
Tag: 05H03199E
NCPin: 166914-34-7961
Mapsheet No: 166914
Owner Name 1: HILLARD, ELOISE C
Owner Name 2:
Mail Address 1:
Mail Address 2: P O BOX 1053
Mail Address 3: CLAYTON, NC 27520-1053
Site Address 1: 206 HILLCREST LN
Site Address 2: CLAYTON, NC 27520-
Book: 00680
Page: 0066
Market Value: 88630
Assessed Acreage: 0.44
Calc. Acreage: 0.443
Sales Price: 0
Sale Date: 1988-01-01

JOHNSTON COUNTY NORTH • CAROLINA

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Result 42

id: 05H03189J
Tag: 05H03189J
NCPin: 166914-34-7860
Mapsheet No: 166914
Owner Name 1: MANNING, CURTIS J. JR.
Owner Name 2: MANNING, TEESHA B.
Mail Address 1: 210 HILLCREST LN
Mail Address 2:
Mail Address 3: CLAYTON, NC 27520
Site Address 1:
Site Address 2:
Book: 05094
Page: 0919
Market Value: 162720
Assessed Acreage: 0.45
Calc. Acreage: 0.457
Sales Price: 190000
Sale Date: 2018-01-31

Result 43

id: 05H03189I
Tag: 05H03189I
NCPin: 166914-34-7760
Mapsheet No: 166914
Owner Name 1: COVE, JOHN D
Owner Name 2: COVE, CHARLENE B
Mail Address 1: 214 HILLCREST LN
Mail Address 2:
Mail Address 3: CLAYTON, NC 27520-1819
Site Address 1:
Site Address 2:
Book: 05147
Page: 0799
Market Value: 17600
Assessed Acreage: 0.44
Calc. Acreage: 0.429
Sales Price: 190500
Sale Date: 2018-05-11

Result 44

id: 05H03199H
Tag: 05H03199H
NCPin: 166914-34-9774
Mapsheet No: 166914
Owner Name 1: JOHNSON, DOROTHY G
Owner Name 2:
Mail Address 1: 201 OAKDALE AVE
Mail Address 2:
Mail Address 3: CLAYTON, NC 27520-0000
Site Address 1:
Site Address 2:
Book:
Page:
Market Value: 22000
Assessed Acreage: 0.41
Calc. Acreage: 0.414
Sales Price: 0
Sale Date:

Result 45

id: 05H03200E
Tag: 05H03200E
NCPin: 166914-34-9467
Mapsheet No: 166914
Owner Name 1: LASSITER, VALERIA
Owner Name 2:
Mail Address 1: 203 PINELAND AVE
Mail Address 2:
Mail Address 3: CLAYTON, NC 27520-0000
Site Address 1: 203 PINELAND AVE
Site Address 2: CLAYTON, NC 27520-
Book: 03196
Page: 0324
Market Value: 140790
Assessed Acreage: 0.48
Calc. Acreage: 0.477
Sales Price: 150000
Sale Date: 2006-09-11

JOHNSTON COUNTY NORTH CAROLINA

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Result 46

id: 05H03189D
Tag: 05H03189D
NCPin: 166914-34-9361
Mapsheet No: 166914
Owner Name 1: LASSITER, LEAMON
Owner Name 2: LASSITER, VALERIE
Mail Address 1: 203 PINELAND AVE
Mail Address 2:
Mail Address 3: CLAYTON, NC 27520-1842
Site Address 1:
Site Address 2:
Book: 01495
Page: 0830
Market Value: 22000
Assessed Acreage: 0.32
Calc. Acreage: 0.284
Sales Price: 15000
Sale Date: 1996-02-07

Result 47

id: 05H03200H
Tag: 05H03200H
NCPin: 166914-34-8232
Mapsheet No: 166914
Owner Name 1: SCA VENTURES
Owner Name 2:
Mail Address 1: 132 CITATION LN
Mail Address 2:
Mail Address 3: SMITHFIELD, NC 27577-0000
Site Address 1:
Site Address 2:
Book: 03497
Page: 0230
Market Value: 22000
Assessed Acreage: 1.14
Calc. Acreage: 1.15
Sales Price: 25000
Sale Date: 2007-02-20

Result 48

id: 05E99021V
Tag: 05E99021V
NCPin: 166914-34-2175
Mapsheet No: 166914
Owner Name 1: JOHNSTON COUNTY BOARD OF
Owner Name 2: EDUCATION
Mail Address 1:
Mail Address 2: P O BOX 1336
Mail Address 3: SMITHFIELD, NC 27577-1336
Site Address 1: 849 N MIAL ST
Site Address 2: CLAYTON, NC 27520-
Book: 00501
Page: 0020
Market Value: 7733180
Assessed Acreage: 24.38
Calc. Acreage: 24.07
Sales Price: 0
Sale Date: 1990-02-01

Result 49

id: 05H02200
Tag: 05H02200
NCPin: 166914-34-0668
Mapsheet No: 166914
Owner Name 1: CANNADY, IRENE H
Owner Name 2:
Mail Address 1: 136 ROSEMARY ST
Mail Address 2:
Mail Address 3: CLAYTON, NC 27520-1845
Site Address 1:
Site Address 2:
Book:
Page:
Market Value: 133140
Assessed Acreage: 1
Calc. Acreage: 0.882
Sales Price: 0
Sale Date:

JOHNSTON COUNTY NORTH CAROLINA

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Result 50

id: 05H02200D
Tag: 05H02200D
NCPin: 166914-34-1631
Mapsheet No: 166914
Owner Name 1: CANNADY, IRENE H
Owner Name 2:
Mail Address 1: 136 ROSEMARY ST
Mail Address 2:
Mail Address 3: CLAYTON, NC 27520-1845
Site Address 1: 132 ROSEMARY ST
Site Address 2: CLAYTON, NC 27520-
Book: 00748
Page: 0028
Market Value: 20460
Assessed Acreage: 1
Calc. Acreage: 0.239
Sales Price: 0
Sale Date: 1990-01-25

Result 51

id: 05034075
Tag: 05034075
NCPin: 166914-24-9571
Mapsheet No: 166914
Owner Name 1: TRAVIS, DONNA ATKINSON
Owner Name 2: BLOW, CHERIE ATKINSON HEIRS
Mail Address 1:
Mail Address 2: PO BOX 31220
Mail Address 3: HOUSTON, TX 77231-1220
Site Address 1: 862 N MIAL ST
Site Address 2: CLAYTON, NC 27520-
Book: 01661
Page: 0486
Market Value: 85810
Assessed Acreage: 0.19
Calc. Acreage: 0.187
Sales Price: 0
Sale Date: 1997-12-23

Result 52

id: 05034074
Tag: 05034074
NCPin: 166914-24-9425
Mapsheet No: 166914
Owner Name 1: TOMLINSON, LOIS HEIRS
Owner Name 2:
Mail Address 1:
Mail Address 2: PO BOX 31220
Mail Address 3: HOUSTON, TX 77231-1220
Site Address 1:
Site Address 2:
Book: 00544
Page: 0017
Market Value: 16780
Assessed Acreage: 0.21
Calc. Acreage: 0.211
Sales Price: 0
Sale Date: 1956-01-01

Result 53

id: 05034073
Tag: 05034073
NCPin: 166914-24-8471
Mapsheet No: 166914
Owner Name 1: MITCHELL, BETTIE C
Owner Name 2:
Mail Address 1: 856 MIAL ST
Mail Address 2:
Mail Address 3: CLAYTON, NC 27520-0000
Site Address 1: 856 N MIAL ST
Site Address 2: CLAYTON, NC 27520-
Book: 02809
Page: 0781
Market Value: 102380
Assessed Acreage: 0.43
Calc. Acreage: 0.43
Sales Price: 0
Sale Date: 2004-12-07

JOHNSTON COUNTY NORTH•CAROLINA

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Result 54

id: 05034072
Tag: 05034072
NCPin: 166914-24-7371
Mapsheet No: 166914
Owner Name 1: BARNES, DONALD
Owner Name 2:
Mail Address 1: 130 RICHARD DR
Mail Address 2:
Mail Address 3: GARNER, NC 27529-6716
Site Address 1:
Site Address 2:
Book: 02207
Page: 0362
Market Value: 16780
Assessed Acreage: 0.21
Calc. Acreage: 0.214
Sales Price: 3000
Sale Date: 2002-03-28

Result 55

id: 05034071
Tag: 05034071
NCPin: 166914-24-7225
Mapsheet No: 166914
Owner Name 1: MOORE, MICHAEL
Owner Name 2:
Mail Address 1: 3400 BUAUX COURT
Mail Address 2:
Mail Address 3: RALEIGH, NC 27616-0000
Site Address 1: 840 N MIAL ST
Site Address 2: CLAYTON, NC 27520-
Book: 02201
Page: 0507
Market Value: 89430
Assessed Acreage: 0.41
Calc. Acreage: 0.414
Sales Price: 0
Sale Date: 2002-03-18

Result 56

id: 05003076
Tag: 05003076
NCPin: 166914-24-6126
Mapsheet No: 166914
Owner Name 1: BARNES, DONALD
Owner Name 2:
Mail Address 1: 130 RICHARD DR
Mail Address 2:
Mail Address 3: GARNER, NC 27529-6716
Site Address 1:
Site Address 2:
Book: 02207
Page: 0355
Market Value: 16780
Assessed Acreage: 1
Calc. Acreage: 0.211
Sales Price: 3000
Sale Date: 2002-03-28

Result 57

id: 05034068D
Tag: 05034068D
NCPin: 166914-24-5180
Mapsheet No: 166914
Owner Name 1: ROWE, SANDRA E
Owner Name 2:
Mail Address 1: 826 MIAL STREET
Mail Address 2:
Mail Address 3: CLAYTON, NC 27520-0000
Site Address 1:
Site Address 2:
Book: 03533
Page: 0524
Market Value: 99610
Assessed Acreage: 0.23
Calc. Acreage: 0.234
Sales Price: 108000
Sale Date: 2008-04-23

JOHNSTON COUNTY NORTH CAROLINA

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Result 58

id: 05034068C
Tag: 05034068C
NCPin: 166914-24-5160
Mapsheet No: 166914
Owner Name 1: EASTERN CAROLINA REGIONAL
Owner Name 2: HOUSING AUTHORITY
Mail Address 1:
Mail Address 2: PO BOX 1315
Mail Address 3: GOLDSBORO, NC 27533-0000
Site Address 1:
Site Address 2:
Book: 03878
Page: 0792
Market Value: 18720
Assessed Acreage: 0.25
Calc. Acreage: 0.23
Sales Price: 0
Sale Date: 2010-08-10

Result 59

id: 05034068
Tag: 05034068
NCPin: 166913-14-9192
Mapsheet No: 166913
Owner Name 1: EASTERN REGIONAL HOUSING AUTH
Owner Name 2:
Mail Address 1:
Mail Address 2:
Mail Address 3:
Site Address 1: 560 N CHURCH ST
Site Address 2: CLAYTON, NC 27520-
Book: 00908
Page: 0543
Market Value: 2278580
Assessed Acreage: 9.02
Calc. Acreage: 9.06
Sales Price: 0
Sale Date: 1982-01-01

Result 60

id: 05034068
Tag: 05034068
NCPin: 166913-14-9192
Mapsheet No: 166913
Owner Name 1: EASTERN REGIONAL HOUSING AUTH
Owner Name 2:
Mail Address 1:
Mail Address 2:
Mail Address 3:
Site Address 1: 556 N CHURCH ST
Site Address 2: CLAYTON, NC 27520-
Book: 00908
Page: 0543
Market Value: 2278580
Assessed Acreage: 9.02
Calc. Acreage: 9.06
Sales Price: 0
Sale Date: 1982-01-01

Result 61

id: 05034068
Tag: 05034068
NCPin: 166913-14-9192
Mapsheet No: 166913
Owner Name 1: EASTERN REGIONAL HOUSING AUTH
Owner Name 2:
Mail Address 1:
Mail Address 2:
Mail Address 3:
Site Address 1: 554 N CHURCH ST
Site Address 2: CLAYTON, NC 27520-
Book: 00908
Page: 0543
Market Value: 2278580
Assessed Acreage: 9.02
Calc. Acreage: 9.06
Sales Price: 0
Sale Date: 1982-01-01

JOHNSTON COUNTY NORTH CAROLINA

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Result 62

id: 05034068
Tag: 05034068
NCPin: 166913-14-9192
Mapsheet No: 166913
Owner Name 1: EASTERN REGIONAL HOUSING AUTH
Owner Name 2:
Mail Address 1:
Mail Address 2:
Mail Address 3:
Site Address 1: 550 N CHURCH ST
Site Address 2: CLAYTON, NC 27520-
Book: 00908
Page: 0543
Market Value: 2278580
Assessed Acreage: 9.02
Calc. Acreage: 9.06
Sales Price: 0
Sale Date: 1982-01-01

Result 63

id: 05034068
Tag: 05034068
NCPin: 166913-14-9192
Mapsheet No: 166913
Owner Name 1: EASTERN REGIONAL HOUSING AUTH
Owner Name 2:
Mail Address 1:
Mail Address 2:
Mail Address 3:
Site Address 1: 548 N CHURCH ST
Site Address 2: CLAYTON, NC 27520-
Book: 00908
Page: 0543
Market Value: 2278580
Assessed Acreage: 9.02
Calc. Acreage: 9.06
Sales Price: 0
Sale Date: 1982-01-01

Result 64

id: 05034068
Tag: 05034068
NCPin: 166913-14-9192
Mapsheet No: 166913
Owner Name 1: EASTERN REGIONAL HOUSING AUTH
Owner Name 2:
Mail Address 1:
Mail Address 2:
Mail Address 3:
Site Address 1: 546 N CHURCH ST
Site Address 2: CLAYTON, NC 27520-
Book: 00908
Page: 0543
Market Value: 2278580
Assessed Acreage: 9.02
Calc. Acreage: 9.06
Sales Price: 0
Sale Date: 1982-01-01

Result 65

id: 05034068
Tag: 05034068
NCPin: 166913-14-9192
Mapsheet No: 166913
Owner Name 1: EASTERN REGIONAL HOUSING AUTH
Owner Name 2:
Mail Address 1:
Mail Address 2:
Mail Address 3:
Site Address 1: 543 N CHURCH ST
Site Address 2: CLAYTON, NC 27520-
Book: 00908
Page: 0543
Market Value: 2278580
Assessed Acreage: 9.02
Calc. Acreage: 9.06
Sales Price: 0
Sale Date: 1982-01-01

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Result 66

id: 05034068
Tag: 05034068
NCPin: 166913-14-9192
Mapsheet No: 166913
Owner Name 1: EASTERN REGIONAL HOUSING AUTH
Owner Name 2:
Mail Address 1:
Mail Address 2:
Mail Address 3:
Site Address 1: 542 N CHURCH ST
Site Address 2: CLAYTON, NC 27520-
Book: 00908
Page: 0543
Market Value: 2278580
Assessed Acreage: 9.02
Calc. Acreage: 9.06
Sales Price: 0
Sale Date: 1982-01-01

Result 67

id: 05034068
Tag: 05034068
NCPin: 166913-14-9192
Mapsheet No: 166913
Owner Name 1: EASTERN REGIONAL HOUSING AUTH
Owner Name 2:
Mail Address 1:
Mail Address 2:
Mail Address 3:
Site Address 1: 540 N CHURCH ST
Site Address 2: CLAYTON, NC 27520-
Book: 00908
Page: 0543
Market Value: 2278580
Assessed Acreage: 9.02
Calc. Acreage: 9.06
Sales Price: 0
Sale Date: 1982-01-01

Result 68

id: 05034068
Tag: 05034068
NCPin: 166913-14-9192
Mapsheet No: 166913
Owner Name 1: EASTERN REGIONAL HOUSING AUTH
Owner Name 2:
Mail Address 1:
Mail Address 2:
Mail Address 3:
Site Address 1: 538 N CHURCH ST
Site Address 2: CLAYTON, NC 27520-
Book: 00908
Page: 0543
Market Value: 2278580
Assessed Acreage: 9.02
Calc. Acreage: 9.06
Sales Price: 0
Sale Date: 1982-01-01

Result 69

id: 05034068
Tag: 05034068
NCPin: 166913-14-9192
Mapsheet No: 166913
Owner Name 1: EASTERN REGIONAL HOUSING AUTH
Owner Name 2:
Mail Address 1:
Mail Address 2:
Mail Address 3:
Site Address 1: 536 N CHURCH ST
Site Address 2: CLAYTON, NC 27520-
Book: 00908
Page: 0543
Market Value: 2278580
Assessed Acreage: 9.02
Calc. Acreage: 9.06
Sales Price: 0
Sale Date: 1982-01-01

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Result 70

id: 05034068
Tag: 05034068
NCPin: 166913-14-9192
Mapsheet No: 166913
Owner Name 1: EASTERN REGIONAL HOUSING AUTH
Owner Name 2:
Mail Address 1:
Mail Address 2:
Mail Address 3:
Site Address 1: 534 N CHURCH ST
Site Address 2: CLAYTON, NC 27520-
Book: 00908
Page: 0543
Market Value: 2278580
Assessed Acreage: 9.02
Calc. Acreage: 9.06
Sales Price: 0
Sale Date: 1982-01-01

Result 71

id: 05034068
Tag: 05034068
NCPin: 166913-14-9192
Mapsheet No: 166913
Owner Name 1: EASTERN REGIONAL HOUSING AUTH
Owner Name 2:
Mail Address 1:
Mail Address 2:
Mail Address 3:
Site Address 1: 533 N CHURCH ST
Site Address 2: CLAYTON, NC 27520-
Book: 00908
Page: 0543
Market Value: 2278580
Assessed Acreage: 9.02
Calc. Acreage: 9.06
Sales Price: 0
Sale Date: 1982-01-01

Result 72

id: 05034068
Tag: 05034068
NCPin: 166913-14-9192
Mapsheet No: 166913
Owner Name 1: EASTERN REGIONAL HOUSING AUTH
Owner Name 2:
Mail Address 1:
Mail Address 2:
Mail Address 3:
Site Address 1: 532 N CHURCH ST
Site Address 2: CLAYTON, NC 27520-
Book: 00908
Page: 0543
Market Value: 2278580
Assessed Acreage: 9.02
Calc. Acreage: 9.06
Sales Price: 0
Sale Date: 1982-01-01

Result 73

id: 05034068
Tag: 05034068
NCPin: 166913-14-9192
Mapsheet No: 166913
Owner Name 1: EASTERN REGIONAL HOUSING AUTH
Owner Name 2:
Mail Address 1:
Mail Address 2:
Mail Address 3:
Site Address 1: 531 N CHURCH ST
Site Address 2: CLAYTON, NC 27520-
Book: 00908
Page: 0543
Market Value: 2278580
Assessed Acreage: 9.02
Calc. Acreage: 9.06
Sales Price: 0
Sale Date: 1982-01-01

JOHNSTON COUNTY NORTH CAROLINA

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Result 74

id: 05034068
Tag: 05034068
NCPin: 166913-14-9192
Mapsheet No: 166913
Owner Name 1: EASTERN REGIONAL HOUSING AUTH
Owner Name 2:
Mail Address 1:
Mail Address 2:
Mail Address 3:
Site Address 1: 530 N CHURCH ST
Site Address 2: CLAYTON, NC 27520-
Book: 00908
Page: 0543
Market Value: 2278580
Assessed Acreage: 9.02
Calc. Acreage: 9.06
Sales Price: 0
Sale Date: 1982-01-01

Result 75

id: 05034068
Tag: 05034068
NCPin: 166913-14-9192
Mapsheet No: 166913
Owner Name 1: EASTERN REGIONAL HOUSING AUTH
Owner Name 2:
Mail Address 1:
Mail Address 2:
Mail Address 3:
Site Address 1: 529 N CHURCH ST
Site Address 2: CLAYTON, NC 27520-
Book: 00908
Page: 0543
Market Value: 2278580
Assessed Acreage: 9.02
Calc. Acreage: 9.06
Sales Price: 0
Sale Date: 1982-01-01

Result 76

id: 05034068
Tag: 05034068
NCPin: 166913-14-9192
Mapsheet No: 166913
Owner Name 1: EASTERN REGIONAL HOUSING AUTH
Owner Name 2:
Mail Address 1:
Mail Address 2:
Mail Address 3:
Site Address 1: 526 N CHURCH ST
Site Address 2: CLAYTON, NC 27520-
Book: 00908
Page: 0543
Market Value: 2278580
Assessed Acreage: 9.02
Calc. Acreage: 9.06
Sales Price: 0
Sale Date: 1982-01-01

Result 77

id: 05034068
Tag: 05034068
NCPin: 166913-14-9192
Mapsheet No: 166913
Owner Name 1: EASTERN REGIONAL HOUSING AUTH
Owner Name 2:
Mail Address 1:
Mail Address 2:
Mail Address 3:
Site Address 1: 524 N CHURCH ST
Site Address 2: CLAYTON, NC 27520-
Book: 00908
Page: 0543
Market Value: 2278580
Assessed Acreage: 9.02
Calc. Acreage: 9.06
Sales Price: 0
Sale Date: 1982-01-01

JOHNSTON COUNTY NORTH CAROLINA

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Result 78

id: 05034068
Tag: 05034068
NCPin: 166913-14-9192
Mapsheet No: 166913
Owner Name 1: EASTERN REGIONAL HOUSING AUTH
Owner Name 2:
Mail Address 1:
Mail Address 2:
Mail Address 3:
Site Address 1: 522 N CHURCH ST
Site Address 2: CLAYTON, NC 27520-
Book: 00908
Page: 0543
Market Value: 2278580
Assessed Acreage: 9.02
Calc. Acreage: 9.06
Sales Price: 0
Sale Date: 1982-01-01

Result 79

id: 05034068
Tag: 05034068
NCPin: 166913-14-9192
Mapsheet No: 166913
Owner Name 1: EASTERN REGIONAL HOUSING AUTH
Owner Name 2:
Mail Address 1:
Mail Address 2:
Mail Address 3:
Site Address 1: 520 N CHURCH ST
Site Address 2: CLAYTON, NC 27520-
Book: 00908
Page: 0543
Market Value: 2278580
Assessed Acreage: 9.02
Calc. Acreage: 9.06
Sales Price: 0
Sale Date: 1982-01-01

Result 80

id: 05034068
Tag: 05034068
NCPin: 166913-14-9192
Mapsheet No: 166913
Owner Name 1: EASTERN REGIONAL HOUSING AUTH
Owner Name 2:
Mail Address 1:
Mail Address 2:
Mail Address 3:
Site Address 1: 518 N CHURCH ST
Site Address 2: CLAYTON, NC 27520-
Book: 00908
Page: 0543
Market Value: 2278580
Assessed Acreage: 9.02
Calc. Acreage: 9.06
Sales Price: 0
Sale Date: 1982-01-01

Result 81

id: 05034068
Tag: 05034068
NCPin: 166913-14-9192
Mapsheet No: 166913
Owner Name 1: EASTERN REGIONAL HOUSING AUTH
Owner Name 2:
Mail Address 1:
Mail Address 2:
Mail Address 3:
Site Address 1: 516 N CHURCH ST
Site Address 2: CLAYTON, NC 27520-
Book: 00908
Page: 0543
Market Value: 2278580
Assessed Acreage: 9.02
Calc. Acreage: 9.06
Sales Price: 0
Sale Date: 1982-01-01

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Result 82

id: 05034068
Tag: 05034068
NCPin: 166913-14-9192
Mapsheet No: 166913
Owner Name 1: EASTERN REGIONAL HOUSING AUTH
Owner Name 2:
Mail Address 1:
Mail Address 2:
Mail Address 3:
Site Address 1: 512 N CHURCH ST
Site Address 2: CLAYTON, NC 27520-
Book: 00908
Page: 0543
Market Value: 2278580
Assessed Acreage: 9.02
Calc. Acreage: 9.06
Sales Price: 0
Sale Date: 1982-01-01

Result 83

id: 05034068
Tag: 05034068
NCPin: 166913-14-9192
Mapsheet No: 166913
Owner Name 1: EASTERN REGIONAL HOUSING AUTH
Owner Name 2:
Mail Address 1:
Mail Address 2:
Mail Address 3:
Site Address 1: 510 N CHURCH ST
Site Address 2: CLAYTON, NC 27520-
Book: 00908
Page: 0543
Market Value: 2278580
Assessed Acreage: 9.02
Calc. Acreage: 9.06
Sales Price: 0
Sale Date: 1982-01-01

Result 84

id: 05034068
Tag: 05034068
NCPin: 166913-14-9192
Mapsheet No: 166913
Owner Name 1: EASTERN REGIONAL HOUSING AUTH
Owner Name 2:
Mail Address 1:
Mail Address 2:
Mail Address 3:
Site Address 1: 506 N CHURCH ST
Site Address 2: CLAYTON, NC 27520-
Book: 00908
Page: 0543
Market Value: 2278580
Assessed Acreage: 9.02
Calc. Acreage: 9.06
Sales Price: 0
Sale Date: 1982-01-01

Result 85

id: 05034068
Tag: 05034068
NCPin: 166913-14-9192
Mapsheet No: 166913
Owner Name 1: EASTERN REGIONAL HOUSING AUTH
Owner Name 2:
Mail Address 1:
Mail Address 2:
Mail Address 3:
Site Address 1: 505 N CHURCH ST
Site Address 2: CLAYTON, NC 27520-
Book: 00908
Page: 0543
Market Value: 2278580
Assessed Acreage: 9.02
Calc. Acreage: 9.06
Sales Price: 0
Sale Date: 1982-01-01

JOHNSTON COUNTY NORTH • CAROLINA

*** DISCLAIMER ***

Johnston County assumes no legal responsibility for the information represented here.

Result 86

id: 05034068
Tag: 05034068
NCPin: 166913-14-9192
Mapsheet No: 166913
Owner Name 1: EASTERN REGIONAL HOUSING AUTH
Owner Name 2:
Mail Address 1:
Mail Address 2:
Mail Address 3:
Site Address 1: 504 N CHURCH ST
Site Address 2: CLAYTON, NC 27520-
Book: 00908
Page: 0543
Market Value: 2278580
Assessed Acreage: 9.02
Calc. Acreage: 9.06
Sales Price: 0
Sale Date: 1982-01-01

Result 87

id: 05034068
Tag: 05034068
NCPin: 166913-14-9192
Mapsheet No: 166913
Owner Name 1: EASTERN REGIONAL HOUSING AUTH
Owner Name 2:
Mail Address 1:
Mail Address 2:
Mail Address 3:
Site Address 1: 503 N CHURCH ST
Site Address 2: CLAYTON, NC 27520-
Book: 00908
Page: 0543
Market Value: 2278580
Assessed Acreage: 9.02
Calc. Acreage: 9.06
Sales Price: 0
Sale Date: 1982-01-01

Result 88

id: 05034068
Tag: 05034068
NCPin: 166913-14-9192
Mapsheet No: 166913
Owner Name 1: EASTERN REGIONAL HOUSING AUTH
Owner Name 2:
Mail Address 1:
Mail Address 2:
Mail Address 3:
Site Address 1: 502 N CHURCH ST
Site Address 2: CLAYTON, NC 27520-
Book: 00908
Page: 0543
Market Value: 2278580
Assessed Acreage: 9.02
Calc. Acreage: 9.06
Sales Price: 0
Sale Date: 1982-01-01

Result 89

id: 05034068
Tag: 05034068
NCPin: 166913-14-9192
Mapsheet No: 166913
Owner Name 1: EASTERN REGIONAL HOUSING AUTH
Owner Name 2:
Mail Address 1:
Mail Address 2:
Mail Address 3:
Site Address 1: 501 N CHURCH ST
Site Address 2: CLAYTON, NC 27520-
Book: 00908
Page: 0543
Market Value: 2278580
Assessed Acreage: 9.02
Calc. Acreage: 9.06
Sales Price: 0
Sale Date: 1982-01-01

JOHNSTON COUNTY NORTH CAROLINA

*** DISCLAIMER ***

Johnston County assumes no legal responsibility for the information represented here.

Result 90

id: 05034019
Tag: 05034019
NCPin: 166913-24-1344
Mapsheet No: 166913
Owner Name 1: TOWN OF CLAYTON
Owner Name 2:
Mail Address 1:
Mail Address 2: P O BOX 879
Mail Address 3: CLAYTON, NC 27528-0000
Site Address 1:
Site Address 2:
Book: 00638
Page: 0359
Market Value: 76000
Assessed Acreage: 0.5
Calc. Acreage: 0.5
Sales Price: 0
Sale Date: 1965-01-01

Result 91

id: 05034018
Tag: 05034018
NCPin: 166913-24-0435
Mapsheet No: 166913
Owner Name 1: SWEITZER, DONNA P
Owner Name 2:
Mail Address 1: 1302 TIMBER DR
Mail Address 2:
Mail Address 3: GARNER, NC 27529-0000
Site Address 1:
Site Address 2:
Book: 01974
Page: 0234
Market Value: 5850
Assessed Acreage: 0.23
Calc. Acreage: 0.231
Sales Price: 0
Sale Date: 2000-09-26

Result 92

id: 05034015
Tag: 05034015
NCPin: 166913-14-9562
Mapsheet No: 166913
Owner Name 1: SWEITZER, DONNA P
Owner Name 2:
Mail Address 1: 1302 TIMBER DR
Mail Address 2:
Mail Address 3: GARNER, NC 27529-0000
Site Address 1:
Site Address 2:
Book: 01974
Page: 0236
Market Value: 90520
Assessed Acreage: 0.26
Calc. Acreage: 0.262
Sales Price: 0
Sale Date: 2000-09-26

Result 93

id: 05034001
Tag: 05034001
NCPin: 166913-14-8685
Mapsheet No: 166913
Owner Name 1: HAMER, DAVID ALEXANDER
Owner Name 2:
Mail Address 1: 588 N FAYETTEVILLE STREET
Mail Address 2:
Mail Address 3: CLAYTON, NC 27520-1802
Site Address 1: 588 N FAYETTEVILLE ST
Site Address 2: CLAYTON, NC 27520-
Book: 01904
Page: 0870
Market Value: 61920
Assessed Acreage: 0.09
Calc. Acreage: 0.089
Sales Price: 57000
Sale Date: 2000-02-02

JOHNSTON COUNTY NORTH • CAROLINA

*** DISCLAIMER ***

Johnston County assumes no legal responsibility for the information represented here.

Result 94

id: 05034002
Tag: 05034002
NCPin: 166913-14-7780
Mapsheet No: 166913
Owner Name 1: STANCIL, ELIZABETH D
Owner Name 2:
Mail Address 1: 178 ARABELLA CT
Mail Address 2:
Mail Address 3: CARY, NC 27518-7155
Site Address 1: 583 N O'NEIL ST
Site Address 2: CLAYTON, NC 27520-
Book: 04608
Page: 0417
Market Value: 100330
Assessed Acreage: 0.34
Calc. Acreage: 0.308
Sales Price: 0
Sale Date: 2015-06-08

Town of Cla
Planning Depart
111 E. Second Street, Clayton, NC
P.O. Box 879, Clayton, NC
Phone: 919-553
Fax: 919-553

February 14, 2019

NOTICE

SUBJECT:	**Project:**	2018-231-PDD Barbour Tract, Planned Development Rezoning
	Address:	North of Atwood Drive; located off N. O'Neil Street
	PIN #:	166913-24-0652, 166913-24-0827, 166805-18-6162, 166914-34-7560, 166914-34-7451, 166914-34-7371, 166913-14-9727, 166914-24-894, 166700-29-2835, 166914-34-2175
	Applicant:	Adams & Hodge Engineering

Dear Clayton Area Property Owner:

Notice is hereby given that the Clayton Town Planning Board will hold a public hearing on Monday, February 25**,** 2019 at 6:00 PM at Town Hall, 111 E Second Street, to consider the above referenced Rezoning application. The applicant is requesting to rezone 33.71 acres from Residential-8 (R-8) to Planned Development-Residential (PD-R). The property is located south of and adjacent to O'Neil St. and Oakdale Ave., north of Cooper Academy, and east of and adjacent to Wilson St. Please see the map attached with this letter.

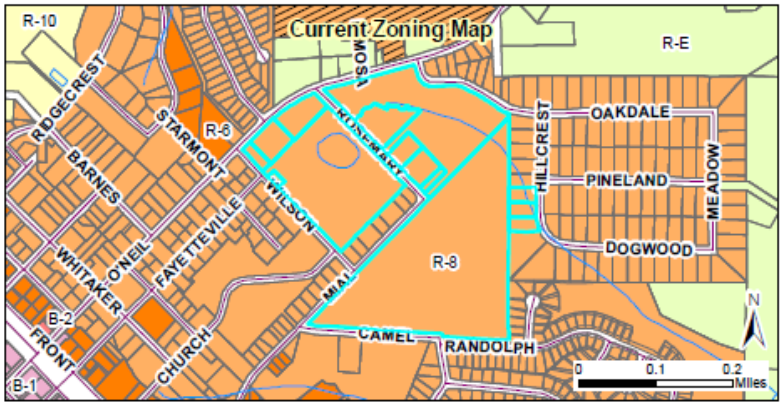
For rezonings, a public hearing shall be held, during which the Clayton Town Council reserves the right to approve the request as presented or any portion of the request without necessity of withdrawal or modification of the application or additional public hearing on the matter. Likewise, the Town Council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

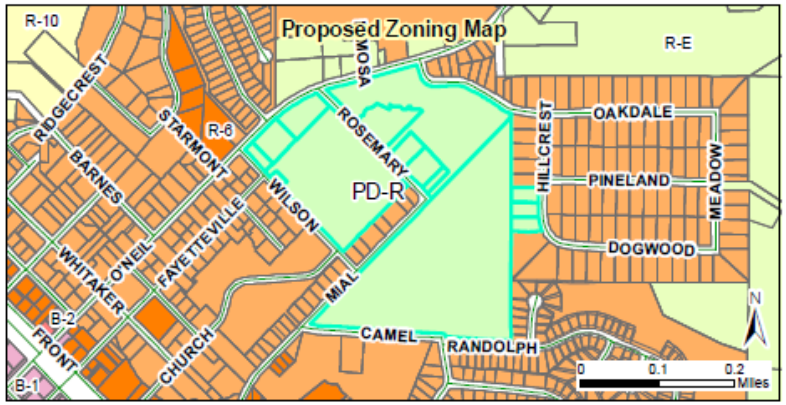
Based upon records in the Johnston County Tax Office, you are the owner of property that is within 100 feet of this proposed rezoning request. You are invited to attend this meeting and express your opinions on this request to Council.

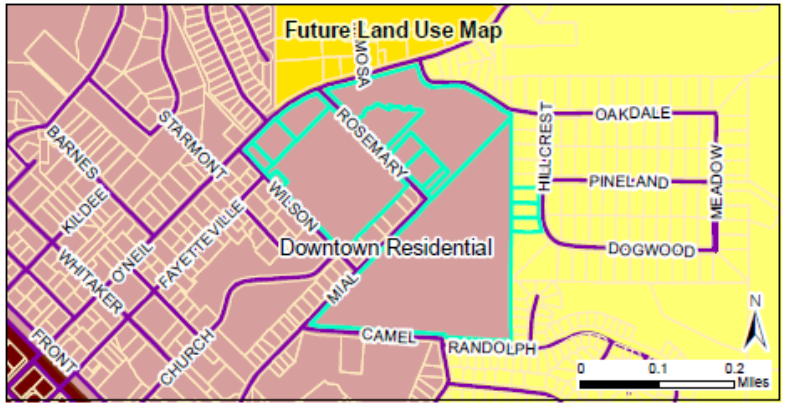
If you should need additional assistance or information, please contact the Planning Department at (919) 553-5002 or email at dpowell@townofclaytonnc.org**.**

Sincerely,

Damiere Powell
Town Planner







Request:

2018-231-PDD, Barbour Tract, Rezoning

Applicant: Adams & Hodge Engineering, PC

Property Owners: Roy Barbour & Lois Barbour; Sam's Branch II, LLC; Blondell Johnson; James H Harris & Ruth Harris; Alan Neil Hartman Revocable Trust; Johnston County Board of Education

Parcel ID: 166913-24-0652, 166913-24-0827, 166805-18-6162, 166914-34-7560, 166914-34-7451, 166914-34-7371, 166913-14-9727, 166914-24-8945, 166700-29-2835, 166914-34-2175

Tag #: 0599003F, 05005067B, 05005067H, 05H03189G, 05H03189F, 05H03189E, 05G02026Q, 05E99008H, 05E99008J, 05E99021V

Staff Report Map

02/14/2019

Produced by: TOC Planning

Disclaimer: Town of Clayton assumes no legal responsibility for the quality to the data represented here.

Document Path: O:\PLANNING\REZONING\Planned Developments\2018\2018-231-PDD Barbour Tract\Map\Map 2018-231-PDD Barbour Tract.mxd

Legend

- 100-yr Flood Zone
- Thoroughfare Overlay
- Watershed Protection Overlay
- Site

MAJOR SUBDIVISION PLANS

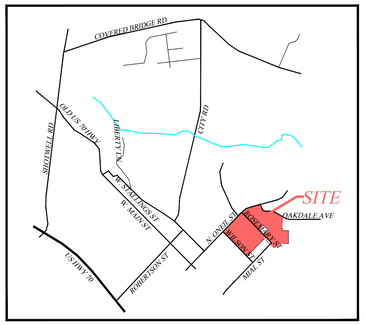
Received by:
Town of Clayton
2/19/19

FOR

BARBOUR TRACT

IN

TOWN OF CLAYTON, JOHNSTON COUNTY, NORTH CAROLINA



SITE VICINITY MAP
NOT TO SCALE

DEVELOPER/APPLICANT:

SAM'S BRANCH DEVELOPMENT
114 WEST MAIN STREET, SUITE 102
CLAYTON, NC 27520

CONTACT/AGENT: JON HARRELL
919-710-3326

PRELIMINARY

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 25405 DONALD C. ADAMS, JR.

REVISED
4:35 pm, Feb 18, 2019

SHEET INDEX

SHEET TITLE	SHEET No.
SEALED BOUNDARY MAP	BM1
EXISTING CONDITIONS	SD01
MASTER PLAN	SD02
PHASING PLAN	SD03
PEDESTRIAN & VEHICULAR ROUTING	SD04
PRELIMINARY UTILITY PLAN	SD05
PRELIMINARY GRADING PLAN	SD06
PRELIMINARY LANDSCAPING PLAN	SD07
PRELIMINARY LIGHTING PLAN	SD08
AMENITIES	SD09
REGULATORY STANDARDS	SD10
3-STORY APARTMENT PLANS	G1-A201-A202-ASK-1
TRIPLEX TOWNHOME PLANS	1-3

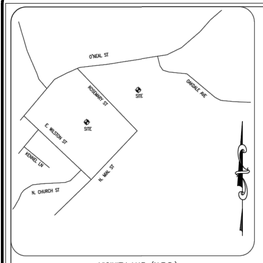
ADAMS & HODGE ENGINEERING, PC
314 EAST MAIN STREET
CLAYTON, NC 27520
919-243-1332 info@adamsandhodge.com
FIRM # C-4187

BARBOUR TRACT

TOWN OF CLAYTON, JOHNSTON COUNTY, NORTH CAROLINA

NOVEMBER 30, 2018
**JANUARY 04 , 2019*
FEBRUARY 18, 2019 REVISED PER TOC COMMENTS

T.O.C. PROJECT: 2018-233-SD



VICINITY MAP (N.T.S.)

CURVE	ARC LENGTH	RADIUS	DELTA ANGLE	CHORD BEARING	CHORD LENGTH
C1	533.73'	862.24'	127°10'33.64"	S 59°07'33" W	531.65'
C2	74.93'	180.00'	23°51'02.27"	S 08°49'11" E	74.39'

LINE	BEARING	DISTANCE
L1	N 44°01'48" E	70.00'
L2	S 44°01'48" W	70.00'
L3	N 44°17'36" W	50.37'
L4	N 44°01'48" E	75.00'
L5	S 47°36'04" W	73.49'
L6	S 44°01'48" W	75.00'
L7	N 73°56'13" E	7.58'
L8	N 73°21'50" E	68.13'
L9	S 14°06'24" E	55.89'
L10	S 19°38'18" E	57.01'
L11	S 29°07'38" E	55.18'
L12	S 39°16'58" E	58.74'
L13	S 87°59'50" E	49.53'
L14	S 79°57'05" E	46.32'
L15	S 65°19'27" E	50.07'
L16	S 52°36'39" E	53.03'
L17	S 61°55'28" E	50.59'
L18	S 73°56'11" E	64.30'
L19	S 00°08'03" W	15.61'
L20	N 45°03'42" W	54.27'
L21	N 45°03'42" W	50.35'
L22	N 67°39'41" W	26.18'
L23	S 84°28'53" W	38.80'
L24	N 83°41'14" W	16.88'
L25	N 11°58'25" E	13.52'
L26	N 86°41'24" W	19.44'
L27	S 33°21'51" W	13.70'
L28	S 82°56'51" W	22.12'
L29	N 57°27'22" W	42.20'
L30	S 88°18'31" W	42.90'
L31	N 31°20'50" W	23.24'
L32	S 00°12'54" E	33.14'
L33	S 47°46'01" W	40.76'
L34	N 88°25'04" W	20.04'
L35	S 62°57'15" W	28.89'
L36	S 44°51'25" W	28.06'
L37	S 24°48'43" E	15.01'
L38	S 14°29'09" W	12.56'
L39	S 88°56'42" W	20.75'
L40	S 37°05'14" W	45.04'

Note 'A'
This property is located in Zone 'X' (minimal flood risk) and is not within a Special Flood Hazard Area.
FIRM # 3720166900J
Effective Date: 12/02/2005

Note 'B'
This property is currently Zoned 'R-8'

Note 'C'
All distances are horizontal ground unless otherwise stated

Note 'D'
All areas computed by coordinate method

Note 'E'
The parcel(s) shown hereon are subject to any and all easements, rights of way and restrictions of record

Note 'F'
Survey Dates: 4/10/2018, 4/11/2018, 11/08/2018

Note 'G'
Underground utilities were not considered on this survey

I, Michael S. Stokes, Professional Land Surveyor certify that this survey complies with the North Carolina Standards of Practice for Surveying Section 1600; that this is a class A survey, meeting the criteria of precision greater than 1:10,000; that RTN field procedure with GNSS reciever utilizing correction factors broadcast by NCGS from base station was utilized; that all units are U.S. Survey Feet unless otherwise stated; that all distances are ground distances unless otherwise stated. Any Easements, gaps, lappages, or encroachments are shown on this survey; that all areas were computed by coordinate method. This survey is not to be recorded without written permission from the surveyor. This map remains the property of the surveyor and is to be used only for conveyance or development of this lot by the person(s) shown on this map.

Witness my original signature, registration number and seal this 27th day of November, A.D. 2018.
Surveyor: Michael S Stokes
License # L-4996

NORTH CAROLINA PROFESSIONAL SEAL L-4996 LAND SURVEYOR MICHAEL S. STOKES

PRELIMINARY

NORTH CAROLINA PROFESSIONAL SEAL 15469 ENGINEER DONALD C. ADAMS, JR.

REVISED
4:35 pm, Feb 18, 2019

PLEASE NOTE:
THIS MAP SHOWS FUTURE CONDITIONS OF LOT 1A AND 1B BASED ON PRELIMINARY PLAT (UNRECORDED) OF THE PARCEL OWNED BY THE JOHNSTON COUNTY BOARD OF EDUCATION.

SCALE: 1" = 80'
80' 0' 40' 80' 160' 320'

- ELECTRIC BOX
- TELEPHONE PEDESTAL
- WATER METER
- FIRE HYDRANT
- WATER VALVE
- CLEANOUT
- SEWER MANHOLE
- LIGHT POLE
- POWER POLE
- CALCULATED/SET POINT
- EXISTING IRON

STOKES
SURVEYING & MAPPING, PLLC
Firm License # P-1139
1425-105 B Rock Quarry Rd.
Raleigh, NC 27610
(919)-971-7897
www.stokes-surveying.com

Version 1	04/10/2018
Version 2	04/11/2018
Version 3	11/08/2018
Version 4	11/27/2018

ADAMS & HODGE ENGINEERING, PC
314 EAST MAIN STREET
CLAYTON, NC 27520
info@adamshodge.com
919-243-1322
FIRM # C-4187

REVISIONS:

BARBOUR TRACT

TOWN OF CLAYTON, JOHNSTON COUNTY, NORTH CAROLINA

SEALED BOUNDARY MAP

DESIGN	DCA/PCE
DRAWN	ADS
CHECKED	DCA
HORIZONTAL SCALE	SEE GRAPHIC SCALE
VERTICAL SCALE	N/A
DATE	11/27/2018
JOB NO.	AH-
SHEET	BM1

LEGEND
RESOURCE CONSERVATION AREA
WATERSUPPLY WATERSHED PROTECTION AREA
NOTE:
EXISTING CONDITIONS BY OTHERS
1. BOUNDARY AND TOPOGRAPHIC SURVEY: STOKES SURVEYING & MAPPING, PLLC, 1425-105 B ROCK QUARRY RD., RALEIGH, NC 27610.
2. ZONING, SURROUNDING INFORMATION: JOHNSTON COUNTY GIS.
3. STREAM DELINEATIONS: NCDENR
EXISTING SUBDIVISION SIGN
50' RIPARIAN BUFFER
NCWR "LAC" FEATURE "A" RRO 18-370
CREEK
TREELINE (TYP.)
EX. BLDG.
EX. BLDG.
EX. BLDG.
EX. BLDG.
EX. BLDG.
EX. BLDG.
EX. BLDG.
EXISTING BUILDINGS (TYP.)
WATERSUPPLY WATERSHED PROTECTION AREA
N FAYETTEVILLE STREET
NC HIGHWAY 42
N CHURCH STREET
NC HIGHWAY 42
NEW LOT 1A
N/F
JOHNSTON COUNTY BOARD OF EDUCATION
PIN: 169814-34-2175
DB 501 PG 20
OLD AREA 1,051,775 SF /24.15 AC
NEW AREA 758,612 SF /17.44 AC
COOPER HIGH SCHOOL
ZONED R-8
N/F PEREZ, WELINTON MISAEL 0594023 169809-25-4326 BK 4739 PG 792 0.51 ACRES RE
N/F DRIVER, MICHAEL R DRIVER, ANN J 0583600SF 169910-35.5440 BK 4121 PG 999 0.58 ACRES R-E
N/F JANCUSKA, THOMAS 0594023 169910-25-6406 BK 4031 PG 488 0.43 ACRES R-E
N/F JACKSON, EDNA PEDIN 0594021990 169910-25-7474 BK 1188 PG 495 0.12 ACRES R-E
N/F PEDIN, EDNA S 0594020S 169910-25-7555 BK 527 PG 089 71.69 ACRES R-AGLD
N/F JERNIGAN, BELLE PEACOCK 0594019A 169910-35-0555 BK 564 PG 003 1 ACRE R-E
N/F FEREZ, NICHOLAS J FEREZ, KIMBERLY D 0594019G 169910-35-1137 BK 4134 PG 915 0.23 ACRES R-8
N/F ZOTOREZ CARLOS HERNANDEZ 0594022GH 169910-35-2268 BK 3107 PG 249 0.20 ACRES R-8
N/F HERNANDEZ, MARINA RIVERA COYOTE, JOSE MELCHOR PULQUERO 0594022GG 169910-35-2379 BK 4829 PG 722 0.22 ACRES R-8
N/F FEREZ, NICHOLAS J FEREZ,KIMBERLY D 0594022GV 169910-35-3345 BK 4134 PG 915 0.18 ACRES R-8
N/F FEREZ, NICHOLAS J PEREZ0GG 169910-35-4315 BK 4134 PG 908 0.20 ACRES R-8
N/F NEWKIRK, SONYA Y 0594022GT 169910-35-5347 BK 1748 PG 43 0.20 ACRES R-8
N/F LAMBETH, CHERYL N 0594022GQ 169910-35-5336 BK 1705 PG 388 0.27 ACRES R-8
N/F FU, XIAOXING 0594022GP 169910-35-6284 BK 4021 PG 93 0.19 ACRES R-8
N/F GARCIA, MANUEL CANALES, ANA 0594022GM 169910-35-6342 BK 1899 PG 643 0.19 ACRES R-8
N/F CORRAL, LAURA CORRAL, JOSE 0594019W 169910-35-6211 BK 3349 PG 949 0.41 ACRES R-8
N/F TABOADA, BOBBY 0594022GG 169909-25-9240 BK 4735 PG 882 0.13 ACRES R-E
N/F GEORGETOWN COMMUNITY ASSOC 0594022GX 169909-25-1308 BK 3525 PG 386 0.41 ACRES R-8
N/F BURKE, PATRICK A BURKE,LAURIE 0594021991 169909-15-9487 BK 4738 PG 855 1.71 ACRES R-E
N/F BRINKLEY, JERRY TODD KRASOWSKI, CYNTHIA JEAN 0594022GC 169909-15-9130 BK 3248 PG 551 0.15 ACRES R-8
N/F GEORGETOWN COMMUNITY ASSOC 0594022GB 169909-15-4914 BK 3525 PG 386 1.7 ACRES R-8
N/F TECHTWOOD, LLC 0594022GH 169909-15-3630 BK 4917 PG 922 0.55 ACRES R-6
N/F STANCA, ELIZABETH D 0534202 169913-14-7295 BK 4826 PG 417 0.34 ACRES R-8
N/F HAMPE,DAVID ALEXANDER 0534201 169913-14-8185 BK 4826 PG 417 0.34 ACRES R-8
N/F SWEITZER, DONNA P 0534015 169913-14-9562 DB 1874 PG 236 0.26 ACRES R-6
N/F SWEITZER, DONNA P 0534018 169913-24-0435 DB 1874 PG 234 0.23 ACRES R-6
N/F EASTERN REGIONAL HOUSING AUTH 0534099 169913-14-9192 BK 908 PG 543 9.62 ACRES R-8
N/F EASTERN CAROLINA REGIONAL HOUSING AUTHORITY 0534100 169913-14-8192 BK 908 PG 543 R-8
N/F DONALD L HOWARD, INC 0534098 169913-24-4438 0.7 ACRES R-8
N/F DONALD L HOWARD, INC 0534097 169913-24-5427 0.7 ACRES R-8
N/F MICHAEL, BRENDA 0534096 169913-24-6417 0.7 ACRES R-8
N/F MICHAEL, BRENDA 0534095 169913-24-7408 0.7 ACRES R-8
N/F LOW COUNTRY HOMES, PIN 0534094 169913-24-8397 0.7 ACRES R-8
N/F DONALD L HOWARD, INC 0534093 169913-24-9388 0.7 ACRES R-8
N/F DONALD L HOWARD, INC 0534092 169913-25-0379 0.7 ACRES R-8
N/F DONALD L HOWARD, INC 0534091 169913-25-1370 0.7 ACRES R-8
N/F DONALD L HOWARD, INC 0534090 169913-25-2360 0.7 ACRES R-8
N/F DONALD L HOWARD, INC 0534089 169913-25-3351 0.7 ACRES R-8
N/F DONALD L HOWARD, INC 0534088 169913-25-4341 0.7 ACRES R-8
N/F DONALD L HOWARD, INC 0534087 169913-25-5332 0.7 ACRES R-8
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N/F DONALD L HOWARD, INC 0534084 169913-25-8303 0.7 ACRES R-8
N/F DONALD L HOWARD, INC 0534083 169913-25-9294 0.7 ACRES R-8
N/F DONALD L HOWARD, INC 0534082 169913-35-0285 0.7 ACRES R-8
N/F DONALD L HOWARD, INC 0534081 169913-35-1275 0.7 ACRES R-8
N/F DONALD L HOWARD, INC 0534080 169913-35-2266 0.7 ACRES R-8
N/F DONALD L HOWARD, INC 0534079 169913-35-3257 0.7 ACRES R-8
N/F DONALD L HOWARD, INC 0534078 169913-35-4247 0.7 ACRES R-8
N/F DONALD L HOWARD, INC 0534077 169913-35-5238 0.7 ACRES R-8
N/F DONALD L HOWARD, INC 0534076 169913-35-6228 0.7 ACRES R-8
N/F DONALD L HOWARD, INC 0534075 169913-35-7219 0.7 ACRES R-8
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N/F DONALD L HOWARD, INC 0533828 169915-85-4023 0.7 ACRES R-8
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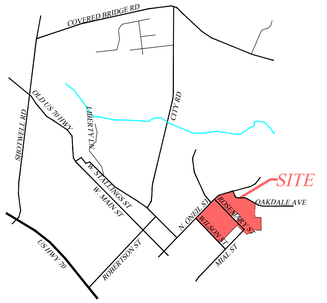


SITE VICINITY MAP
NOT TO SCALE

LEGEND

- TYPE 1 HOUSING (ALLEY LOADED) (89 UNITS)
- TYPE 2 HOUSING (29 UNITS)
- TOWNHOMES (TRIPLEX UNITS) (12 UNITS)
- 3-STORY APARTMENTS (42 - 2 BDRM UNITS & 84 - 1 BDRM UNITS)
- RESOURCE CONSERVATION AREA
- WATERSUPPLY WATERSHED PROTECTION AREA
- AREA OF POSSIBLE FUTURE DEVELOPMENT
- 10' GREENWAY ASPHALT TRAIL

NOTE:
ALL MECHANICAL EQUIPMENT IS TO BE LOCATED ON THE SIDES OF EACH APARTMENT BUILDING WITH THE TOWN APPROVED LANDSCAPING.

NOTE:
ALL SIDE WALKS SHALL BE 5' WIDE.

BARBOUR TRACT LOT STANDARDS

ZONING	UNIT TYPE	LOT STANDARDS					MINIMUM SETBACKS (FT.)					BUILDING STANDARDS
		Min. Lot Area (sq.ft.)	Min. Lot Width (LF)	Min. Lot Depth (LF)	Max. Lot Coverage (%)	Max. Impervious Surface (%)	Front	Side	Side Interior	Side Street	Rear	Max. Height (ft.)
PD-R	SINGLE FAMILY (TYPE-1)	3,000	37	74	50	75	12	5	N/A	12	10	35
PD-R	SINGLE FAMILY (TYPE-2)	3,000	37	78	50	75	18	5	N/A	12	10	35
PD-R	TRIPLEX TOWNHOMES	2,750	25	80	50	75	18	5	0	10	10	35
PD-R	3-STORY APARTMENTS	N/A	N/A	N/A	50	75	12	5	N/A	10	10	50

BARBOUR TRACT SITE DATA CHART

PARCEL OWNER	SAM'S BRANCH II, LLC	JOHN BARBOUR
PARCEL OWNER ADDRESS	114 W. MAIN ST, SUITE 102 CLAYTON, NC 27520	8013 OLD STAGE RD RALEIGH, NC 27603
PARCEL IDENTIFICATION	166913-24-0827, 166914-34-7560, 166914-34-7451 & 166914-34-7371	166914-24-5585
PROPERTY SIZE (SF)	2.31 ACS / 1100,624 SF	20.27 ACS / 882,982 SF
PARCEL OWNER	JAMES & RUTH HARRIS	Johnston Co. Board of Education
PARCEL OWNER ADDRESS	837 BROADHURST RD, SEVEN SPRINGS, NC 78578	PO BOX 1336, SMITHFIELD, NC 27577
PARCEL IDENTIFICATION	166914-24-8945 & 166914-24-9850	166914-34-2175
PROPERTY SIZE (SF)	2.28 ACS / 99,421.24 SF	6.71 AC / 292,163 SF
PARCEL OWNER	BLONDELL JOHNSON	HARVEY & MILDRED GORDON
PARCEL OWNER ADDRESS	706 FERNWOOD DR, CLAYTON, NC 27520	133 PLANTATION CIR S, PONTE VEDRA BEACH, FL 32082
PARCEL IDENTIFICATION	166913-14-9727	166909-25-2086
PROPERTY SIZE (SF)	0.36 ACS / 15,057.70 SF	1.17 ACS / 50,817.28 SF
PARCEL OWNER	ROY & LOIS BARBOUR	
PARCEL OWNER ADDRESS	124 BOBBITT RD, CLAYTON, NC 27520	
PARCEL IDENTIFICATION	166909-25-2086	
PROPERTY SIZE (SF)	0.17 ACS / 7,346.85	
PROPERTY SIZE (SF) TOTAL	33.27 ACS / 1,449,241.2 SF	
PROPERTY LOCATION	TOWN OF CLAYTON/CLAYTON TOWNSHIP	
EXISTING/PROPOSED ZONING	R-8/PD-R	
EXISTING USE	LIMITED COMMERCIAL ON O'NEIL ST & UNDEVELOPED RESIDENTIAL AND /OR SCHOOL PROPERTY	
PROPOSED USE	SINGLE FAMILY RESIDENTIAL, MULTI-FAMILY RESIDENTIAL, RECREATION OPEN SPACE & RESOURCE CONSERVATION	
PROPOSED INTENSITY (GROSS FLOOR AREA IN SF)	APARTMENTS 0.77 ACS / 33,698 SF TOWNHOMES 0.43 ACS / 18,792 SF SINGLE FAMILY 2.93 ACS / 12,763 SF	
PROPOSED NUMBER OF HOUSING UNITS	118 SINGLE FAMILY HOMES, 12 TOWNHOMES & 126 APARTMENT UNITS (42-2 BDRM UNITS & 84-1 BDRM UNITS)	
PROPOSED DENSITY(BASED ON BUILDABLE LAND OF 21.73 AC)	257 UNITS / 21.29 AC = 12.07 UNITS PER AC (12 UNITS)	
PROPOSED BUILDING COVER (PERCENTAGE OF TOTAL SITE)	50%	
PROPOSED IMPERVIOUS AREA (% OF TOTAL SITE)	47%	
TOTAL RESOURCE CONSERVATION AREA	4.45 ACS / 193,842 SF	
ELECTRIC PROVIDER	TOWN OF CLAYTON	
WATER PROVIDER	TOWN OF CLAYTON	
SEWER PROVIDER	TOWN OF CLAYTON	
30,0746 SF (20.75%) OF THE SITE IS IN THE WATERSHED PROTECTION OVERLAY (70,852 SF IMPERVIOUS)		

PARKING CALCULATIONS FOR APARTMENTS

	NUMBER OF 1 BDRM UNITS	NUMBER OF 2 BDRM UNITS	PARKING SPACE REQUIREMENTS	TOTAL NUMBER OF SPACES
PHASES 5-7	36	18	2 SPACES/ 2 BDRM UNIT 1 SPACE / 1 BDRM UNIT	72
GUEST PARKING PHASES 5-7			1 SPACE/4 UNITS	14
REQUIRED ADA PARKING SPACES PHASES 5-7			1 SPACE/25 SPACES	4
TOTAL REQUIRED SPACES INCLUDING ADA				86
TOTAL PROPOSED SPACES				87
REQUIRED BICYCLE PARKING PHASES 5-7	6 BLDGS		1 RACK/BLDG	6
TOTAL PROPOSED SPACES PHASES 8-10	48	24	2 SPACES/ 2 BDRM UNIT 1 SPACE / 1 BDRM UNIT	96
GUEST PARKING PHASES 8-10			1 SPACE/4 UNITS	18
REQUIRED ADA PARKING SPACES PHASES 8-10			1 SPACE/25 SPACES	5
TOTAL REQUIRED SPACES INCLUDING ADA				114
TOTAL PROPOSED SPACES				122
REQUIRED BICYCLE PARKING PHASES 8-10	8 BLDGS		1 RACK/BLDG	8
ALL PHASES TOTAL REQUIRED SPACES				**200**
ALL PHASES TOTAL PROPOSED SPACES				209

* NOTE: PARKING CALCULATIONS ARE BASED ON SECTION 155.401, TABLE 4-2 OF THE TOWN OF CLAYTON UNIFIED DEVELOPMENT CODE

PRELIMINARY

NORTH CAROLINA PROFESSIONAL SEAL 024469 ENGINEER DONALD C. ADAMS, JR.

REVISED
4:35 pm, Feb 18, 2019

OPEN SPACE TABLE

	ACRES
NET USEABLE LAND	28.54
REQUIRED OPEN SPACE (12.5%)	3.57
OPEN SPACE PROVIDED	7.25
IMPROVED RECREATION / OPEN SPACE (REQ'D 25% OF TOTAL OPEN SPACE)	1.81
IMPROVED RECREATION/OPEN SPACE PROVIDED (PARK ONLY - DOES NOT INCLUDE GREENWAY TRAIL)	2.79

*NOTE: ACREAGE SHOWN IS APPROXIMATE AS THIS IS A MASTER PLAN. ACTUAL ACREAGE WILL BE DETERMINED DURING THE MINOR SUBDIVISION/MINOR SITE PLAN APPLICATION SUBMITTAL PROCESS

**NOTE: NET USEABLE LAND WAS DETERMINED BY REMOVING THE RCA (4.73 AC) FROM THE TOTAL PROPERTY SIZE (33.71 AC)

NOTE: PER TOWN OF CLAYTON DEVELOPMENT STANDARDS, GREENWAYS MUST HAVE A MINIMUM OF 2.5' OF CLEARED, GRADED GRASS ON EACH SIDE. THIS AREA DOES NOT COUNT TOWARD ACTIVE RECREATION AREA AND IS NOT IN THE CALCULATIONS ABOVE. IN ACTUALITY, GREENWAYS ARE AN ACTIVE RECREATION LAND USE.

NOTE:
POSSIBLE FUTURE DEVELOPMENT (1.31 AC) IS INCLUDED IN THE CHART BELOW

IMPERVIOUS AREA CALCULATIONS*

	TOTAL AREA (SQUARE FEET)	% OF TOTAL SITE	IMPERVIOUS AREA (SQUARE FEET)	% IMPERVIOUS AREA OF THE TOTAL SITE
RESIDENTIAL LOTS	774,106	52.72%	546,835	70.64%
RIGHT-OF-WAYS**	172,498	11.75%	128,502	74.49%
RESOURCE CONSERVATION AREAS***	206,039	14.03%	0	0.00%
TOTAL OPEN SPACE****	315,765	21.50%	23,963	7.59%
TOTAL AREA	**1,468,407**	**100.00%**	**699,300**	**47.62%**

*NOTE: AREAS AND CALCULATIONS SHOWN ARE APPROXIMATE AS THIS IS A MASTER PLAN. ACTUAL ACREAGE WILL BE DETERMINED DURING THE MINOR SUBDIVISION/MINOR SITE PLAN APPLICATION SUBMITTAL PROCESS

**NOTE: RIGHTS-OF-WAY INCLUDES STREETS AND SIDEWALKS

***NOTE: RESOURCE CONSERVATION AREAS INCLUDE RIPARIAN BUFFER AREAS, OPEN WATER BODIES AND 100 YEAR FLOOD PLAIN

****NOTE: OPEN SPACE INCLUDES, AMENITIES, GREENWAYS, FEATURES IN PARKS PARKS, ACTIVE AND PASSIVE SPACES, ETC.

NORTH

GRAPHIC SCALE
100 0 50 100 200 400
(IN FEET)
1 inch = 100 ft.

REVISIONS
01/JULY/19 PER TOC COMMENTS

314 EAST MAIN STREET
CLAYTON, NC 27520
info@adamshodge.com
919-243-1332
FIRM # C-1187

ADAMS & HODGE ENGINEERING, PC

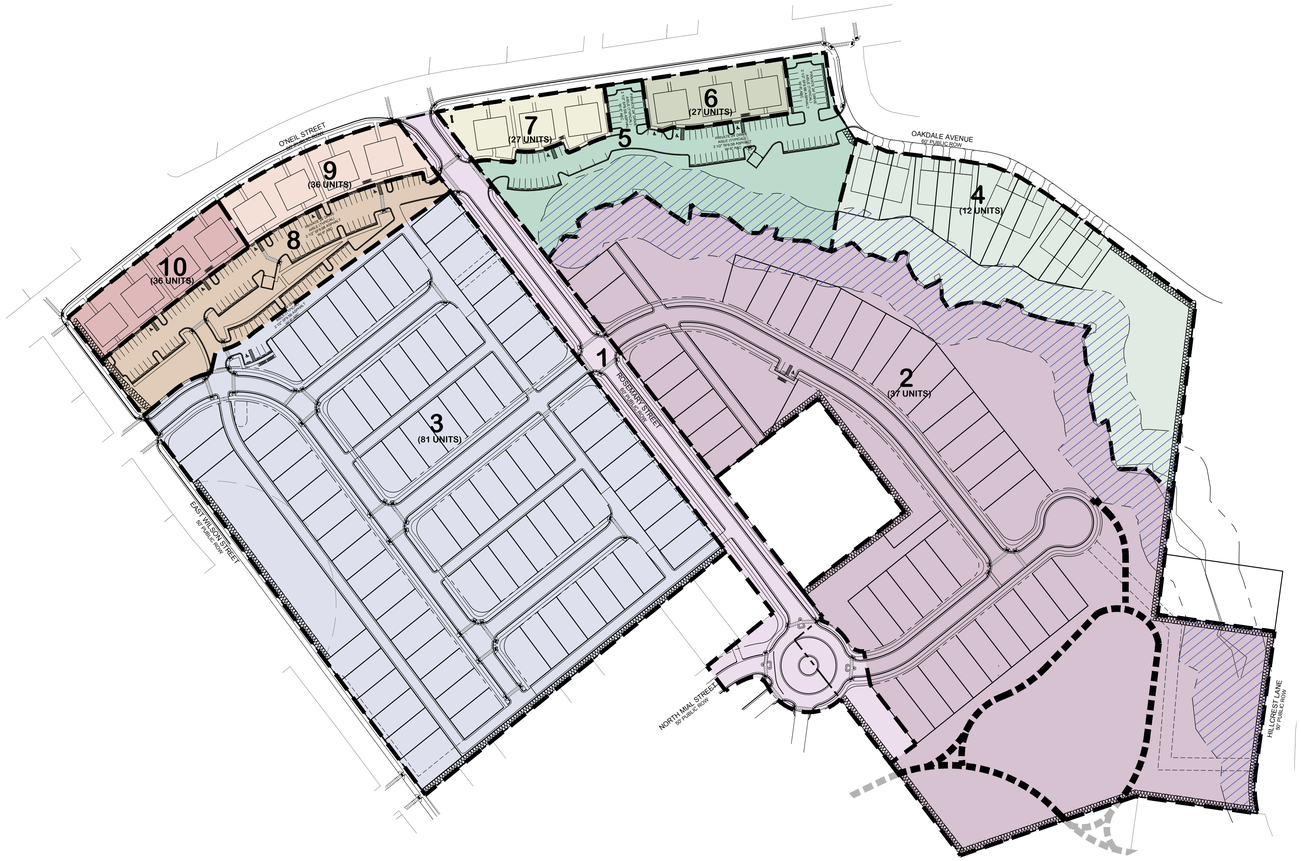
BARBOUR TRACT
TOWN OF CLAYTON, JOHNSTON COUNTY, NORTH CAROLINA

MASTER PLAN

DESIGN DCA/PCE
DRAWN ADS
CHECKED DCA
HORIZONTAL SCALE SEE GRAPHIC SCALE
VERTICAL SCALE N/A
DATE 11/27/2018
JOB NO. AH-
SHEET SD02

LEGEND

- RESOURCE CONSERVATION AREA
- WATERSUPPLY WATERSHED PROTECTION AREA
- 10' GREENWAY ASPHALT TRAIL



NOTE:
ROSEMARY STREET (1.48 ACS IN PHASE 1) IS TO BE IMPROVED AND IS OUTSIDE OF THE PROJECT BOUNDARY. THIS IS NOT INCLUDED IN THE CHART BELOW.

BARBOUR TRACT DEVELOPMENT CHART

PHASE	AREA OF PHASE	% OF OVERALL SITE	# OF LOTS	RIGHTS-OF-WAY	RESOURCE CONSERVATION AREAS	OPEN SPACE	IMPERVIOUS AREA	PERVIOUS AREA	STATUS OF PHASE
1	0.35 AC	1%	0	0.19 AC	0	0.16 AC	0.16 AC (46%)	0.19 AC (54%)	NOT SUBMITTED
2	13.10 AC	39%	38	1.76 AC	2.52 AC	4.88 AC	4.43 AC (34%)	8.67 AC (66%)	NOT SUBMITTED
3	10.66 AC	31%	81	2.01 AC	0	0.87 AC	7.25 AC (68%)	3.41 AC (32%)	NOT SUBMITTED
4	3.02 AC	9%	12 UNITS	0	1.17 AC	0.64 AC	0.75 AC (25%)	2.27 AC (75%)	NOT SUBMITTED
5	2.23 AC	7%	0	0	0.76 AC	0.54 AC	0.85 AC (38%)	1.38 AC (62%)	NOT SUBMITTED
6	0.47 AC	2%	27 UNITS	0	0	0	0.24 AC (51%)	0.23 AC (49%)	NOT SUBMITTED
7	0.52 AC	2%	27 UNITS	0	0	0	0.25 AC (48%)	0.27 AC (52%)	NOT SUBMITTED
8	1.61 AC	5%	0	0	0	0.16 AC	1.16 AC (72%)	0.45 AC (28%)	NOT SUBMITTED
9	0.68 AC	2%	36 UNITS	0	0	0	0.32 AC (47%)	0.36 AC (53%)	NOT SUBMITTED
10	0.64 AC	2%	36 UNITS	0	0	0	0.31 AC (48%)	0.33 AC (52%)	NOT SUBMITTED
Totals	33.28 AC	98.65%	257	3.96 AC	4.45 AC	7.25 AC	15.72 AC (47%)	17.56 AC (53%)	

NOTE:
APARTMENTS = 126 UNITS
SINGLE FAMILY = 131 UNITS

PRELIMINARY

NORTH CAROLINA PROFESSIONAL SEAL 15403 ENGINEER DONALD C. ADAMS, JR.

REVISED
4:35 pm, Feb 18, 2019

ADAMS & HODGE ENGINEERING, PC
314 EAST MAIN STREET
CLAYTON, NC 27520
info@adamshodge.com
919-243-1332
FIRM # C-4187

REVISIONS
01/04/19 PER TOC COMMENTS

BARBOUR TRACT

TOWN OF CLAYTON, JOHNSTON COUNTY, NORTH CAROLINA

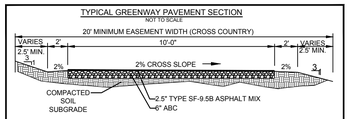
PHASING PLAN

DESIGN DCA/PCE
DRAWN ADS
CHECKED DCA
HORIZONTAL SCALE SEE GRAPHIC SCALE
VERTICAL SCALE N/A
DATE 11/27/2018
JOB NO. AH-
SHEET SD03

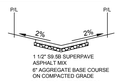
LEGEND:

- STREET IMPROVEMENT (60' R/W)
- RESIDENTIAL STREET (50' R/W) (30" STANDARD CURB)
- RESIDENTIAL STREET (55' R/W) (30" VALLEY CURB)
- RESIDENTIAL PRIVATE ALLEY
- 10' ASPHALT GREENWAY
- RESOURCE CONSERVATION AREA
- AREA OF POSSIBLE FUTURE DEVELOPMENT

TYPICAL GREENWAY PAVEMENT SECTION
NOT TO SCALE

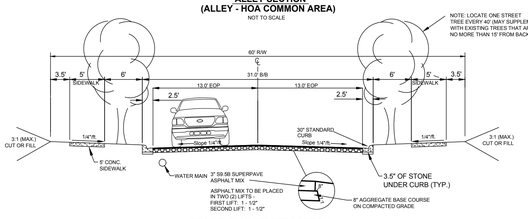


1. SUBGRADE MUST PASS LOADED TANDEM TRUCK PROOF ROLL.
2. SOFT/YIELDING AREAS WILL BE UNDERCUT AND REPLACED WITH COMPACTED ABC AS NEEDED.

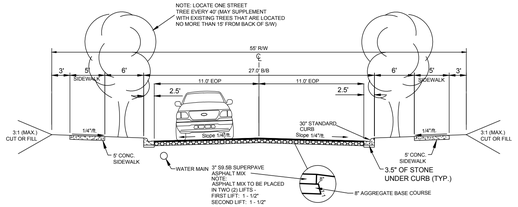


1 1/2" S9.5B SUPERPAVE ASPHALT MIX
6" AGGREGATE BASE COURSE ON COMPACTED GRADE

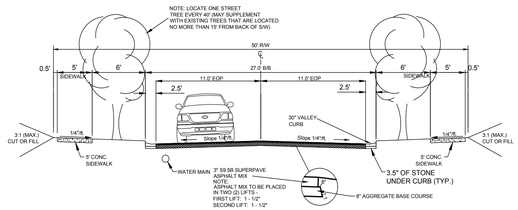
ALLEY SECTION
(ALLEY - HOA COMMON AREA)
NOT TO SCALE



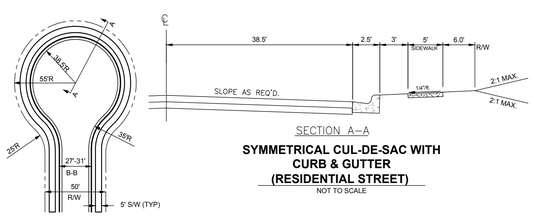
RESIDENTIAL STREET SECTION
(ROSEMARY STREET IMPROVEMENT)
NOT TO SCALE



RESIDENTIAL STREET SECTION
(STREETS "A", "B", "C" &"D")
NOT TO SCALE



RESIDENTIAL STREET SECTION
(STREETS "E"&"F")
NOT TO SCALE



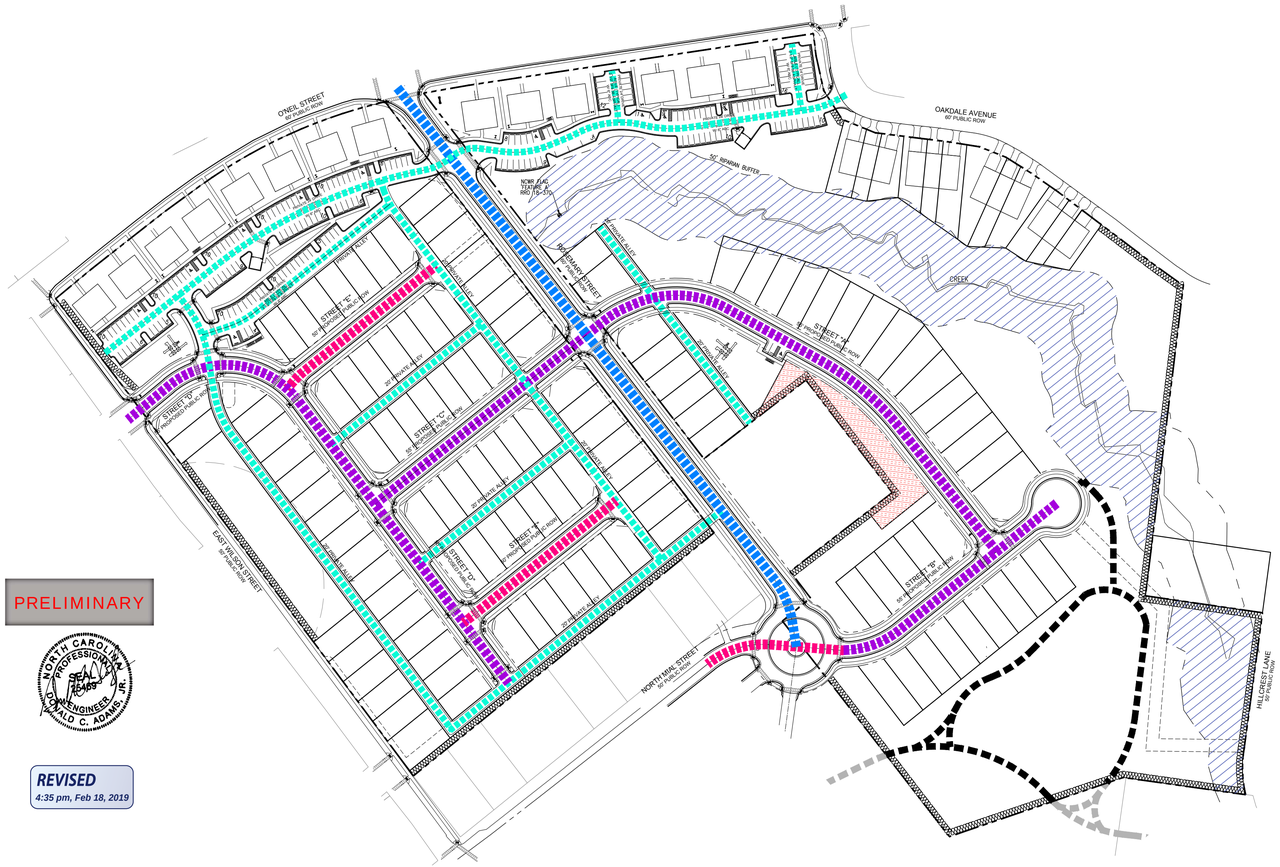
SECTION A–A

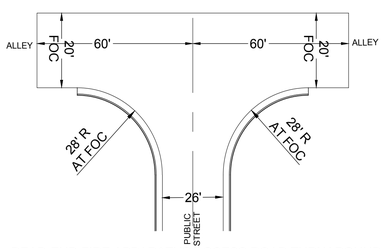
SYMMETRICAL CUL-DE-SAC WITH CURB & GUTTER
(RESIDENTIAL STREET)
NOT TO SCALE

PRELIMINARY

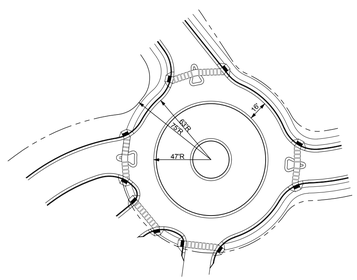
NORTH CAROLINA PROFESSIONAL SEAL 16489 ENGINEER DONALD C. ADAMS, JR.

REVISED
4:35 pm, Feb 18, 2019





DEAD-END FIRE APPARATUS ACCESS ROAD TURNAROUND
120' HAMMERHEAD
NOT TO SCALE



ROUND-ABOUT

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

ADAMS & HODGE ENGINEERING, PC
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919-243-1332
FIRM # C-4187

REVISIONS
01/04/19 PER TOC COMMENTS

BARBOUR TRACT

TOWN OF CLAYTON, JOHNSTON COUNTY, NORTH CAROLINA

PEDESTRIAN & VEHICULAR ROUTING

DESIGN	DCA/PCE
DRAWN	ADS
CHECKED	DCA
HORIZONTAL SCALE	SEE GRAPHIC SCALE
VERTICAL SCALE	N/A
DATE	11/27/2018
JOB NO.	AH–
SHEET	SD04

LEGEND

PROPOSED

WATERLINE
BLOWOFF
HYDRANT
VALVE
REDUCER
METER
SEWERLINE
MANHOLE
CLEANOUT
STORM DRAINAGE
CATCH BASIN
DROP INLET/YARD INLET

LEGEND

RESOURCE CONSERVATION AREA
AREA OF POSSIBLE FUTURE DEVELOPMENT
10' GREENWAY ASPHALT TRAIL

VARIABLE WIDTH PUBLIC UTILITY EASEMENT EXTENDS TO 10FT BEYOND THE WATER AND SEWER LINES

VARIABLE WIDTH PUBLIC UTILITY EASEMENT EXTENDS TO 10FT BEYOND THE WATER AND SEWER LINES

PRELIMINARY

NORTH CAROLINA PROFESSIONAL SEAL 25489 ENGINEER DONALD C. ADAMS, JR.

REVISED
4:35 pm, Feb 18, 2019

NOTE:
THERMOPLASTIC STRIPING TO BE USED.

WATER SYSTEM PROJECT SUMMARY:
1. THERE ARE 130 SINGLE FAMILY LOTS SERVED BY THIS WATER SYSTEM EXTENSION.
2. THERE ARE 126 APARTMENT UNITS SERVED BY THIS WATER SYSTEM EXTENSION.
3. THERE IS (1) EXISTING LOT ALREADY SERVED BY EXISIITING WATER SYSTEM.
4. THE LENGTHS AND SIZES OF WATER MAIN EXTENSIONS ARE AS FOLLOWS:
± 5,172 LF OF 6" PVC MAIN

SEWER SYSTEM PROJECT SUMMARY:
1. THERE ARE 130 SINGLE FAMILY LOTS SERVED BY THIS GRAVITY SEWER SYSTEM EXTENSION.
2. THERE ARE 126 APARTMENT UNITS SERVED BY THIS GRAVITY SEWER SYSTEM EXTENSION.
3. THERE IS (1) EXISTING LOT ALREADY DERVED BY EXISTING GRAVITY SEWER.
3. THE LENGTHS AND SIZES OF SEWER MAIN EXTENSIONS ARE AS FOLLOWS:
± 6,146 LF OF 8" PVC MAIN

STREET SUMMARY:
1. THE TOTAL LINEAR OF PUBLIC STREETS: ± 3,315 LF
2. THE TOTAL LINEAR OF PRIVATE ALLEYS: ± 4,217 LF

WATER AND SEWER SERVICES MUST BE:
1. INSTALLED 3' APART
2. INSTALLED ±5' FROM LOW SIDE OF LOT CORNER, PER STREET GRADE.
3. SEWER SERVICE MUST BE INSTALLED CLOSEST TO LOT CORNER
4. SEE DETAILS BELOW.

TYPICAL FIRE HYDRANT LOCATION

TYPICAL WATER/SEWER SERVICES LOCATION

GRAPHIC SCALE
(IN FEET)
1 inch = 60 ft.

ADAMS & HODGE ENGINEERING, PC
314 EAST MAIN STREET
CLAYTON, NC 27520
info@adamshodge.com
919-243-1322
FIRM # C-4187

REVISIONS
01/04/19 PER TOC COMMENTS

BARBOUR TRACT
TOWN OF CLAYTON, JOHNSTON COUNTY, NORTH CAROLINA

PRELIMIARY UTILITY PLAN

DESIGN: DCA/PCE
DRAWN: ADS
CHECKED: DCA
HORIZONTAL SCALE: SEE GRAPHIC SCALE
VERTICAL SCALE: N/A
DATE: 11/27/2018
JOB NO.: AH-
SHEET: SD05

LEGEND

PROPOSED

WATERLINE
BLOWOFF
HYDRANT
VALVE
REDUCER
METER
SEWERLINE
MANHOLE
CLEANOUT
STORM DRAINAGE
CATCH BASIN
DROP INLET/YARD INLET

LEGEND

RESOURCE CONSERVATION AREA

10' GREENWAY ASPHALT TRAIL

SITE ACCESS

O'NEIL STREET
50' PUBLIC ROW

APARTMENTS

PRIVATE 24' DRIVE AISLE (TYP)
2 1/2" SF9.5A ASPHALT
6" ABC

SINGLE FAMILY TYPE 1

ROSEMARY STREET
50' PUBLIC ROW

30' PRIVATE ALLEY

STREET 'B'
50' PUBLIC ACCESS

STREET 'C'
50' PUBLIC ACCESS

TOT LOT
(0.16 ACS)

OPEN SPACE
(0.08 ACS)

MINI PARK
(0.74 ACS)

N FAYETTEVILLE STREET
50' PUBLIC ROW

EAST MAIN STREET
50' PUBLIC ROW

200' FALL RADIUS
FOR WATER TOWER

N CHURCH STREET
50' PUBLIC ROW

NCWR FLAG
'FEATURE A'
RRD 718-370

50' RIPARIAN BUFFER

OPEN SPACE
(0.57 ACS)

CREEK

STREET 'A'
50' PUBLIC ACCESS

TOT LOT
(0.26 ACS)

TOWNHOMES

OPEN SPACE
(0.59 ACS)

DOG PARK

SINGLE FAMILY TYPE 2

OPEN SPACE
(0.44 ACS)

OPEN SPACE
(4.61 ACS)

SITE ACCESS

FEREZ, PATRICIA
05H021
166910-35-132
BK 3463 PG 813
0.23 ACRES
R-8

ANN CARLO
POTENTIAL STORM WATER QUALITY
0.20 ACRES
R-8

166910-30-
BK 4828 PG 72
0.22 ACRES
R-8

OAKDALE AVENUE
60' PUBLIC ROW

NF TRAVIS & DENISE ATKINSON
PIN 166914-54-9871
DB 5697 PG 0486
0.19 ACRES
R-8

NF LOIS TOMLINSON HEIRS &PIN
166914-54-7
DB 544 PG 7
0.21 ACRES
R-8

NF BETTIE MITCHELL
PIN 166914-54-8
DB 1809 PG 24
0.43 ACRES
R-8

NF DONALD BARNE
PIN 166914-54-7
DB 2207 PG 2
0.21 ACRES
R-8

NF MICHAEL JACOX
PIN 166914-54-6
DB 2207 PG 2
0.41 ACRES
R-8

NF DONALD BARN
PIN 166914-54-5
DB 2207 PG 2
0.21 ACRES
R-8

NF SANDERS RD
PIN 166914-43-5
0.52 ACRES
R-8

NORTH MAIN STREET
50' PUBLIC ROW

HILLCREST LANE
50' PUBLIC ROW

10' GREENWAY TRAIL

POTENTIAL STORM WATER QUALITY

POSSIBLE FUTURE CONNECTION OF SCHOOL SYSTEM TRAIL

OPEN SPACE
(4.61 ACS)

NORTH

GRAPHIC SCALE

60 0 30 60 120 240

(IN FEET)
1 inch = 60 ft.

PRELIMINARY

NORTH CAROLINA PROFESSIONAL SEAL 16469 ENGINEER DONALD C. ADAMS, JR.

REVISED
4:35 pm, Feb 18, 2019

REVISIONS
01/04/19 PER TDC COMMENTS

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919-243-1332
FIRM # C-4187

BARBOUR TRACT

TOWN OF CLAYTON, JOHNSTON COUNTY, NORTH CAROLINA

PRELIMINARY GRADING PLAN

DESIGN	DCA/PCE
DRAWN	ADS
CHECKED	DCA
HORIZONTAL SCALE	SEE GRAPHIC SCALE
VERTICAL SCALE	N/A
DATE	11/27/2018
JOB NO.	AH–
SHEET	SD06

STREET YARD TREES

1. STREET YARD TREES SHALL BE REQUIRED ALONG ALL RIGHTS OF WAY AT THE RATE OF ONE CANOPY TREE PER LOT OR ONE CANOPY TREE FOR EVERY 40 LINEAR FT. (SPACE A MAXIMUM OF 50 FT. APART).

2. ALL STREET YARD TREES SHALL BE A MINIMUM OF TWO AND ONE-HALF CALIPER INCHES AT TIME OF PLANTING AND SHALL BE PLANTED IN THE TREE STRIP NO LESS THAN FIVE FT. OR MORE THAN 15 FT. FROM THE BACK OF THE SIDEWALK.

Landscape Notes

GENERAL LANDSCAPE NOTES

1. ALL PLANT MATERIALS AND PLANTING BEDS SHALL BE LOCATED BY SCALED DIMENSIONS FROM BUILDINGS, CURBS, PAVEMENTS, ETC. LOCATION OF ALL PLANTS SHALL BE REVIEWED IN THE FIELD BY THE LANDSCAPE ARCHITECT PRIOR TO INSTALLATION. THE CONTRACTOR SHALL PROVIDE 48 HOURS NOTICE FOR REVIEW.

2. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE EXACT LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO ANY EXCAVATION OR PLANTING AND SHALL BE RESPONSIBLE FOR THEIR REPAIR OR PAY FOR ALL DAMAGES MADE TO UNDERGROUND UTILITIES.

3. THE LANDSCAPE CONTRACTOR SHALL VERIFY ALL PLANT QUANTITIES.

4. THE LANDSCAPE ARCHITECT SHALL BE NOTIFIED IN WRITING OF ANY PROPOSED PLANT SUBSTITUTIONS BY THE LANDSCAPE CONTRACTOR. NO SUBSTITUTIONS SHALL BE MADE UNDER ANY CIRCUMSTANCES WITHOUT PRIOR APPROVAL BY THE LANDSCAPE ARCHITECT.

5. ALL DISTURBED AREAS NOT IDENTIFIED TO EITHER BE SEEDED OR SODDED SHALL BE MULCHED IN ACCORDANCE WITH THE SPECIFICATIONS.

6. A PRE-EMERGENT HERBICIDE SHALL BE APPLIED TO ALL PLANTING BEDS IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

7. ALL PLANTING BEDS, SAUCERS, AND AREAS DESIGNATED TO BE MULCHED SHALL BE MULCHED WITH A MINIMUM OF 3-4 INCHES OF TRIPLE SHREDDED HARDWOOD MULCH.

8. PLANTING BEDS AND SAUCERS SHALL BE EDGED TO PROVIDE A 2" TO 3" DEEP "V" CUT ALONG ITS BORDER WITH SODDED OR SEEDED AREAS.

9. ALL SAUCERS SHALL BE SOAKED WITH WATER AND MULCHED IMMEDIATELY FOLLOWING PLANTING.

10. GUYING SHALL BE REMOVED AFTER ONE FULL GROWING SEASON.

11. THE LANDSCAPE CONTRACTOR SHALL INSTALL ALL LANDSCAPING IN ACCORDANCE WITH THE DETAILS AND SPECIFICATIONS SHOWN AND ENUMERATED ON THIS SHEET UNLESS ALTERNATIVE METHODS OR PRACTICES ARE REVIEWED AND ACCEPTED BY THE LANDSCAPE ARCHITECT.

12. AT INSTALLATION AND CONTINUOUSLY DURING THE MAINTENANCE CONTRACT, ALL PROPOSED SHRUBS THAT ARE SQUARE IN SHAPE AND ARRANGED IN ROWS SHOULD BE PRUNED INTO BOXED AND CLIPPED HEDGEROWS.

13. ALL LANDSCAPED AREAS SHALL BE MAINTAINED IN AN ATTRACTIVE AND HEALTHY CONDITION. DEAD OR DISEASED PLANTINGS SHALL BE REMOVED AND REPLACED IN A TIMELY FASHION

14. 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.

15. ALL HVAC AND MECHANICAL EQUIPMENT WILL BE SCREENED WITH LANDSCAPING OR DECORATIVE FENCING

Proposed Plant List

PLANT LIST

ALIAS	BOTANICAL NAME	COMMON NAME	CALIPER	HEIGHT	WIDTH	ROOT
AROG	ACER RUBRUM 'OCTOBER GLORY'	OCTOBER GLORY RED MAPLE	2.5"	10'-12' MIN.	-	B&B
QA	QUERCUS ACUTISSIMA	SAW TOOTH OAK	2.5"	10'-12' MIN.	-	B&B
TD	TAXODIUM DISTICHUM	BALD CYPRESS	2.5"	10'-12' MIN.	-	B&B
TCG	TILIA CORDATUM 'GREENSPIRE'	LINDEN	2.5"	10'-12' MIN.	-	B&B
IAF	ILEX ATTENUATA FOSTERII	FOSTER HOLLY	2"	6'-8' MIN.	-	B&B/15 GAL
INS	ILEX 'NELLIE R. STEVENS'	NELLIE STEVENS HOLLY	2"	6'-8' MIN.	-	B&B/15 GAL
LIN	LAGERSTROEMIA INDICA 'NATCHEZ'	NATCHEZ CREPE MYRTLE	2"	6'-8' MIN.	-	B&B/15 GAL
PCP	PRUNUS CERASIFERA 'PURPLE PONY'	PURPLE LEAF PLUM	2"	6'-8' MIN.	-	B&B/15 GAL
CJ	CAMELLIA JAPONICA	CAMELLIA	-	24"-30" MIN.	-	7GAL
CP	CHAMAECYPARIS PISIFERA 'GOLD MOPS'	GOLD MOPS CYPRESS	-	24"-30" MIN.	-	7GAL
IC	ILEX CORNUTA 'BURFORDII'		-	24"-30" MIN.	-	7GAL
LJ	LIGUSTRUM JAPONICA	GLOSSY PRIVIT	-	24"-30" MIN.	-	7GAL
LC	LOROPETALUM CHINESE RUBRUM 'ZHUZHOU'	ZHUZHOU LORPETALUM	-	24"-30" MIN.	-	7GAL
BT	BERBERIS THUMBERGIATROPURPUREA 'CRIMSON PIGMY'	BAR BERRY	-	15"-18" MIN.	-	3GAL

1. ALL PLANTS AND INSTALLATION SHALL BE IN ACCORDANCE WITH TOWN OF CLAYTON RULES, REGULATIONS AND REQUIREMENTS AND, AT THE LEAST, MEET THE TOWN'S MINIMUM REQUIREMENTS FOR CODE COMPLIANCY
2. THE LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR VERIFYING PLANT QUANTITIES AND IS TO NOTIFY THE CONTRACTOR ASAP OF ANY DISCREPANCIES BETWEEN THE PLANT LIST AND THE PLAN
3. THE LANDSCAPE CONTRACTOR SHALL ADJUST ANY BUFFER PLANTING AS NEEDED TO MAINTAIN REQUIRED CLEARANCES AROUND TRANSFORMERS, GENERATORS AND OTHER UTILITIES THAT REQUIRE CLEARANCES FOR ACCESS

NOTE:
ALL MECHANICAL EQUIPMENT IS TO BE LOCATED ON THE SIDES OF EACH APARTMENT BUILDING WITH THE TOWN APPROVED LANDSCAPING.

NOTES:
1. ALL ROOF, GROUND, AND WALL MOUNTED MECHANICAL EQUIPMENT SHALL BE COMPLETELY SCREENED FORM VIEW. 155.402(G)(2).
2. 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, DROUGH-TOLERANT SPECIES MUST BE USED).
3. ALL LANDSCAPED AREA SHALL BE MAINTAINED IN AN ATTRACTIVE AND HEALTHY CONDITION. DEAD OR DISEASED PLANTINGS SHALL BE REMOVED AND REPLACED IN A TIMELY FASHION.

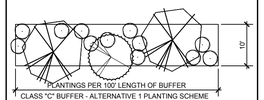
Plant Symbol Key

CANOPY TREE:
STREET TREES &
TERMINAL STREET PARKING
ISLANDS

LEGEND

- TYPE 1 HOUSING (ALLEY LOADED) (89 UNITS)
- TYPE 2 HOUSING (29 UNITS)
- TOWNHOMES (TRIPLEX UNITS) (12 UNITS)
- 3-STORY APARTMENTS (42 - 2 BDRM UNITS & 84 - 1 BDRM UNITS)
- RESOURCE CONSERVATION AREA
- 10' GREENWAY ASPHALT TRAIL

TOTAL LENGTH OF CLASS "C" BUFFER : ±1,243 L.F.
TREES/SHRUBS REQUIRED FOR LENGTH OF BUFFER:
(25) CANOPY TREES
(38) UNDERSTORY TREE
(150) SHRUBS



CLASS "C" BUFFER - ALTERNATIVE 1 PLANTING SCHEME
REQUIRED PER 100':
(2) CANOPY TREES
(3) UNDERSTORY TREE
(12) SHRUBS

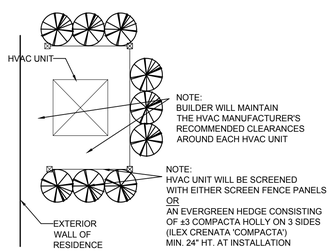
NOTE: REQUIRED PLANTING FOR CLASS "C" BUFFER ALTERNATIVE 1

LANDSCAPE BUFFER = 2,725 LF
(55) CANOPY TREES
(82) UNDERSTORY TREE
(327) SHRUBS

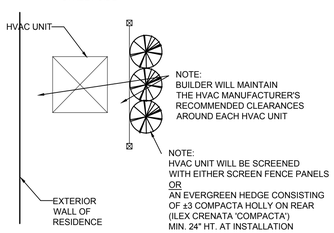
NOTE: CLASS C BUFFER SHALL INCLUDE A BERM WITH EVERGREEN HEDGE WITH A MINIMUM HEIGHT OF 6FT @ INSTALLATION.

NOTE: WHERE APPLICABLE, THE DEVELOPER WILL USE EXISTING VEGETATION TO MEET THE CLASS "C" BUFFER REQUIREMENTS. THIS WILL BE FIELD DETERMINED ALONG WITH TOTALS FOR ANY ADDITIONAL SUPPLEMENTAL BUFFER PLANTINGS THAT MAY BE NEEDED AND PRESENTED TO THE TOWN OF CLAYTON FOR APPROVAL PRIOR TO INSTALLATION OF BUFFER PLANTINGS.

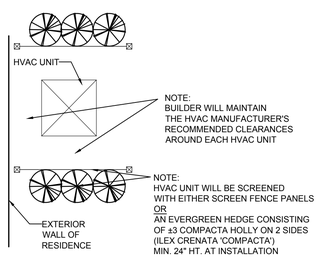
Class "C" Buffer ALTERNATIVE 1



TYPICAL HVAC SCREENING
STREET SIDE



TYPICAL HVAC SCREENING
BUILDING REAR



TYPICAL HVAC SCREENING
BUILDING SIDE

PRELIMINARY

NORTH CAROLINA PROFESSIONAL SEAL 25489 ENGINEER DONALD C. ADAMS, JR.

REVISED
4:35 pm, Feb 18, 2019

GRAPHIC SCALE
100 0 50 100 200 400
(IN FEET)
1 inch = 100 ft.

314 EAST MAIN STREET
CLAYTON, NC 27520
info@adamshodge.com
919-243-1332
FIRM # C-4187

REVISIONS
01/30/19 PER TOC COMMENTS

ADAMS & HODGE ENGINEERING, PC

BARBOUR TRACT
TOWN OF CLAYTON, JOHNSTON COUNTY, NORTH CAROLINA

PRELIMINARY LANDSCAPING PLAN

DESIGN	DCA/PCE
DRAWN	ADS
CHECKED	DCA
HORIZONTAL SCALE	SEE GRAPHIC SCALE
VERTICAL SCALE	N/A
DATE	11/27/2018
JOB NO.	AH-
SHEET	SD07

LEGEND

- RESOURCE CONSERVATION AREA
- 10' GREENWAY ASPHALT TRAIL
- STREET LIGHT

NOTE:
STREET LIGHTS SHALL BE TOWN OF CLAYTON STANDARD LIGHT.

SITE ACCESS
O'NEIL STREET 60' PUBLIC ROW
APARTMENTS
PRIVATE DRIVE ADA ELEVATIONS 2 1/2" SF9.5B ASPHALT 6" ABC
TOT LOT (0.16 ACS)
OPEN SPACE (0.06 ACS)
STREET 'D' 50' PUBLIC ROW
HOA OWNED AREA
MINI PARK (0.74 ACS)
LIGHT (TYP.)
EAST WILSON STREET 60' PUBLIC ROW
MH
NCWR / LAC FEATURE A RRO 18-370
ROSEMARY STREET 60' PUBLIC ROW
OPEN SPACE (0.37 ACS)
50' RIPARIAN BUFFER
TRAVIS & GEORGE A STANION PIN: 1508-14-4907 DB 1921, PG 380 0.19 ACRES R-8
LOIS TOMLINSON AHERN PIN: 1508-14-4727 DB 4144, PG 727 0.21 ACRES R-8
NORTH MAIN STREET 60' PUBLIC ROW
OAKDALE AVENUE 60' PUBLIC ROW
TOWNHOMES
CREEK
DOG PARK
OPEN SPACE (0.44 ACS)
OPEN SPACE (4.67 ACS)
HILLCREST LANE 60' PUBLIC ROW

PRELIMINARY

NORTH CAROLINA PROFESSIONAL SEAL 16465 ENGINEER DONALD C. ADAMS, JR.

REVISED
4:35 pm, Feb 18, 2019

GRAPHIC SCALE
60 0 30 60 120 240
(IN FEET)
1 inch = 60 ft.

ADAMS & HODGE ENGINEERING, PC
314 EAST MAIN STREET
CLAYTON, NC 27520
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919-243-1332
FIRM # C-4187

REVISIONS:

BARBOUR TRACT

TOWN OF CLAYTON, JOHNSTON COUNTY, NORTH CAROLINA

PRELIMIARY LIGHTING PLAN

DESIGN	DCA/PCE
DRAWN	ADS
CHECKED	DCA
HORIZONTAL SCALE	SEE GRAPHIC SCALE
VERTICAL SCALE	N/A
DATE	11/27/2018
JOB NO.	AH-
SHEET	SD08

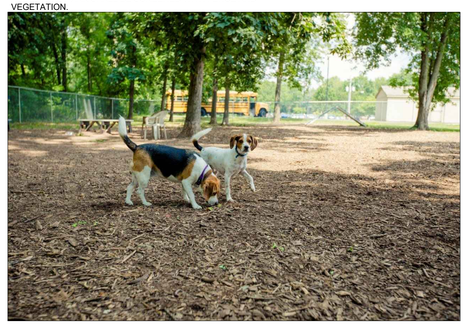
OPEN SPACE POND TRAIL

PICNIC TABLES

BIKE RACKS

DOG PARK

NOTE DOG PARK SHALL BE SCREENED WITH FENCE AND VEGETATION.



NOTE NEIGHBORHOOD PARKS AND AMENITIES SHALL BE REVIEWED AS MINOR SITE PLANS.

MINI PARK GAZEBO

1. APPROXIMATELY 16'x16' PAINTED WOOD OR VINYL CONSTRUCTION.
2. CONCRETE FLOOR WITH WALKWAY.
3. PERIMETER LANDSCAPE MAY BE ADDED AS NEEDED.

NOTE NEIGHBORHOOD PARKS AND AMENITIES SHALL BE REVIEWED AS MINOR SITE PLANS.

TOT LOT PLAYGROUND EQUIPMENT

NOTE NEIGHBORHOOD PARKS AND AMENITIES SHALL BE REVIEWED AS MINOR SITE PLANS.

PRELIMINARY

NORTH CAROLINA PROFESSIONAL SEAL 12469 ENGINEER DONALD C. ADAMS, JR.

REVISED
4:35 pm, Feb 18, 2019

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FIRM # C-4187

REVISIONS
01/04/19 PER TOC COMMENTS

BARBOUR TRACT

TOWN OF CLAYTON, JOHNSTON COUNTY, NORTH CAROLINA

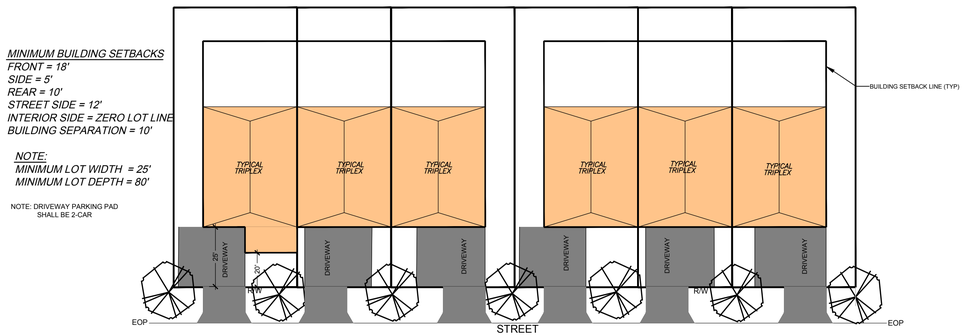
AMENITIES

DESIGN	DCA/PCE
DRAWN	ADS
CHECKED	DCA
HORIZONTAL SCALE	SEE GRAPHIC SCALE
VERTICAL SCALE	N/A
DATE	11/27/2018
JOB NO.	AH-
SHEET	SD09

TOWNHOMES - (TRIPLEX)

NOT TO SCALE

TRIPLEX
ELEVATION



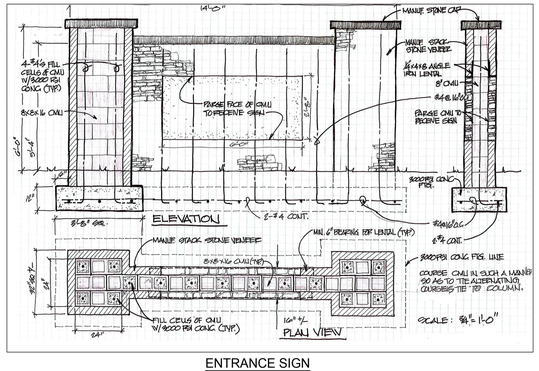
MULTI-FAMILY APARTMENT BUILDINGS

NOT TO SCALE

MINIMUM BUILDING SETBACKS
FRONT (O'NEIL STREET)= 15'
STREET CORNER = 10'
BUILDING SEPARATION = 10'

NOTE: PHOTOS SHOWN ARE FOR ILLUSTRATIVE PURPOSES ONLY

NOTE: THE MULTI-FAMILY PORTION OF THIS MASTER PLAN WILL REQUIRE A MINOR SITE PLAN APPLICATION TO BE REVIEWED AND APPROVED BY THE TOWN OF CLAYTON


14'-3"
MAUVE STONE CAP
MAUVE STACK STONE VENEER
#4 #4 #8 ANGLE IRON LINTEL
8" CMU
#4 @ 16" O.C.
PARGE FACE OF CMU TO RECEIVE STAIN
PARGE CMU TO RECEIVE CAULK
#4 @ 16" O.C. VERT.
#4 @ 24" O.C. HORIZ.
8" CMU

ARTICLE 6: SUBDIVISION STANDARDS

CONTENTS:

§ 155.600 APPLICABILITY 1
§ 155.601 SEQUENCE OF IMPROVEMENTS 2
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§ 155.603 LOTS AND BLOCKS 11
§ 155.604 UTILITIES 12
§ 155.605 PUBLIC FACILITIES 15
§ 155.606 PERMANENT REFERENCE POINTS 16
§ 155.607 GUARANTEE OF IMPROVEMENTS 17

§ 155.600 APPLICABILITY

(A) This subchapter shall apply to all development within the town's planning jurisdiction, unless expressly exempted by the language of the sections below.

(B) Prior to approval of a final plat for the subdivision of land, the applicant shall have installed improvements specified in this subchapter or guaranteed their installation as provided.

(C) ~~No municipal services or utilities shall be extended or furnished to any subdivision either within or outside the town until the applicant shall have installed the improvements specified in this subchapter or guaranteed their installation as provided.~~ In accordance with section §51.03 (G) No water or sewer service shall be provided to any property outside of the municipal limits of the town, except upon compliance with one of the following:

1. If the property is contiguous to the municipal limits of the town, the property owners shall immediately petition for an obtain annexation of the property into the municipal limits of the town.

2. If the property is not then contiguous to the municipal limits of the town, the property owners shall enter into a written agreement with the town for the voluntary annexation thereof at such future date as said property.

3. The Town Council may negotiate terms for voluntary annexation of major industrial or commercial tracts which require water and/or sewer system extensions.

(D) The appropriate ~~acreage~~ water and sewer System Development fees in accordance with § 50.02 of the ~~t~~Town ~~c~~Code of ~~o~~Ordinances, which addresses the water and sewer extension policy, shall be collected by the town prior to permission being granted to connect lines serving the property to the town's facilities.

(Ord. 2005-11-02, passed 11-21-05)

§ 155.601 SEQUENCE OF IMPROVEMENTS

Subdivision improvements shall be installed on the site in the following sequence:

(A) Street grading and installation of water distribution lines, sanitary sewers, storm sewers, gas, telephone, cable television, and electric service lines, with connections for each system extended beyond the curb line to preclude subsequent cutting of pavement.

(B) Street base material.

(C) Curb and gutter and sidewalks.

(D) Street paving.

(Ord. 2005-11-02, passed 11-21-05)

§ 155.602 STREETS

(A) **GENERAL**

(1) Streets within the town are intended for multi-purpose use, as follows:

(a) To carry motor vehicle traffic, and, in some cases, allow on-street parking;

(b) To provide a safe and convenient passageway for pedestrian traffic; and

(c) To serve as an important link in the town's drainage system.

(2) All public streets which serve properties connected to the town's utility system shall be constructed in conformance with town standards and specifications; however, if the roadway is maintained by NCDOT, then the roadway shall be constructed in conformance with either town or NCDOT standards and specifications, whichever is more stringent.

(3) If the final plat for a residential subdivision outside the town limits but within the town's extraterritorial jurisdiction has been approved and improvements have been guaranteed by the developer in accordance with § 155.607, the applicant shall provide the town and purchasers of land in the subdivision with an agreement providing for adequate maintenance of the newly constructed streets until such time that the streets are taken over by the NCDOT, as required by G.S. § 136-102.6.

(B) **STREET IMPROVEMENTS**

(1) Required Improvements

(1) The applicant shall be responsible for the cost and installation of the applicable standard residential, residential collector, collector, or commercial street width and pavement design requirements. Paving shall be installed for roadways through and adjoining the development in accordance with town standards and specifications (or NCDOT standards if applicable). The applicant shall also provide additional pavement surfaces for turning lanes in accordance with the town's Engineering Design Manual.

(a) The applicant shall be responsible for making improvements to thoroughfare rights-of-way, as designated on the town's Transportation Plan. The improvements to be installed are as follows: the thoroughfare sub-base and surface paving materials, thoroughfare grading, and the remaining standards of applicable minimum residential, residential collector, collector, or commercial streets shall be made to extend to the outer perimeter boundaries of a development for any development where any of the following conditions occur:

1. The thoroughfare improvements would provide necessary access to the development or adjoining properties.

2. The improvement would be an extension of an already existing section of thoroughfare roadway.

3. The traffic from the development is predominantly from nonresidential activities and the development would otherwise gain access through a residential area.

(2) **Fee-In-Lieu**

(a) The town may require a fee-in-lieu of installation payment to the town for minimum residential, residential collector, collector, or commercial streets for the length of the thoroughfare if any of the following criteria are met:

1. No direct access to the thoroughfare is proposed.

2. The minimum street improvement is one-half of an existing unimproved right-of-way, and improvements, if constructed, would not be used for traffic circulation.

3. Where the new thoroughfare right-of-way is only partially contained on the development site and therefore, construction of only a portion of the new street cross-section is possible.

(b) The Town Council may allow fee-in-lieu of minimum street construction payments to the town for residential, residential collector, collector, or commercial streets if any of the following criteria and their conditions are satisfied:

1. Where existing unimproved streets have:

A. Insufficient lineal footage to serve overall traffic circulation purposes or interrupts an existing swale/ditch storm drainage system with curb and gutter, which would disrupt the drainage system operation;

B. Curb and gutter improvements would not connect to existing curb and gutter, or there are no similar improvements on the same block;

C. There are no plans for town improvements on the same block; and

D. The area is sufficiently developed (75% of the block) such that few future subdivision or site plan submittals are anticipated.

2. Where construction of the streets by the town or other party is imminent.

3. Where construction of only a sidewalk is required without street improvements, and the new sidewalk is less than one block in length and would not connect to an existing sidewalk.

4. Where approved by the Town Council for a new street that traverses a site when:

A. Street construction will not connect to an existing improved street;

B. There are no plans to construct an adjoining street in the near future; and

C. A letter of credit is not an appropriate financial security.

5. Where approved by the Town Council, when for reasons of topography, street construction is impractical due to:

A. The need for off-site construction or slope encroachment;

B. Proper street alignment should be determined with off-site development; or

C. Design of bridges or culverts are required and only a portion of the structure is on the development's property.

(c) Developments will not be responsible for the cost and installation of any paving construction requirements along existing or planned roadways, if any of the following conditions exist:

1. The roadway is a freeway, expressway or any other fully controlled access facility.

2. The roadway is in the town's Capital Improvement Program, final design plans have been initiated, and the project will fall under the assessment policy of the town.

3. The roadway is on NCDOT's Transportation Improvement Program, final design plans have been initiated, and there will be no town contribution or participation in funding the project. If the town funds a portion of the project, then a fee-in-lieu of installation will be required as a contribution towards town-funded improvements.

(C) **STREET CLASSIFICATION**

In all new subdivisions, streets that are dedicated to public use shall be classified as provided in (D) of this section.

(1) The classification shall be based upon the projected volume of traffic to be carried by the street, stated in terms of the number of trips per day or during the peak hour of the day;

(2) The number of dwelling units to be served by the street may be used as a useful indicator of the number of trips but is not conclusive; and

(3) Whenever a subdivision street continues on an existing street or it is expected that a subdivision street will be continued beyond the subdivision at some future time, the classification of the street will be based upon the street in its entirety, both within and outside of the subdivision.

(D) **STREET TYPES**

See Defined Terms (§155.802) for description of each Street Type.

(1) Residences should not front on a major thoroughfare.

(2) Where a parcel of land to be subdivided adjoins a major thoroughfare, the Planning Board or Town Council may require that such lots be provided access by a frontage road.

(E) **THOROUGHFARE DEDICATION**

(1) Whenever a parcel of land included within any proposed development plan embraces any part of a thoroughfare system roadway and is so designated in the town's Transportation Plan, after such part of it has been adopted by the proper authority, such part of such proposed public way shall be platted and dedicated in the location and width indicated on the plans. This requirement shall not require the applicant to dedicate rights-of-way unless indicated on the town's Transportation Plan. It is the responsibility of the applicant to take future roadway plans of the town and the NCDOT into account when laying out a development plan.

(2) Developments which embrace only one side of an existing or planned thoroughfare right-of-way will only be required to plat and dedicate additional right-of-way for that portion of roadway with which the development has frontage. Such improvements shall be in conformance with town standards and shall be measured from the right-of-way centerline.

(F) **CROSS-SECTIONS**

(1) Appropriate street cross-sections shall be approved by the town or NCDOT. Appendix A contains approved street cross-sections for the town. Alternative cross-sections may be approved by the Town Council as a waiver (see § 155.706(I)(7)), and when necessary in conjunction with NCDOT.

(2) Cul-de-sacs shall be used only when it is determined by the Town Council that extension of the street to an adjacent property is impractical or unnecessary. Alternative turnaround designs on residential streets serving six dwelling units or less may be considered on a case-by-case basis. Alternative designs must readily accommodate emergency vehicles and sanitation trucks. Medians may be permitted where the cul-de-sac radius is increased and it can be demonstrated that emergency vehicles and sanitation trucks can be accommodated. Unless specifically agreed upon with the town, landscaped medians are not to be maintained by the town, and a private maintenance agreement for the median shall be required to be approved by the Town Attorney.

(3) Subdivisions along existing streets of inadequate right-of-way shall provide additional right-of-way to meet the minimum widths specified in Appendix A. The entire right-of-way shall be provided where any part of a new subdivision is on both sides of an existing street, and one-half the required right-of-way, measured from the center line of the existing street, shall be provided where a new subdivision is located on one side of an existing street.

(4) A slope easement of 20 feet in width may be required adjoining each side of a street right-of-way. The town may reduce or increase the slope easement width, if due to terrain. If the applicant submits to the town sufficient information to show that improvements to be located in the slope easement do not interfere with the right of the public to construct within the adjoining right-of-way streets, sidewalks, or both, then the town shall allow the proposed improvement.

(G) **CUL-DE-SAC LENGTH**

(1) No residential street cul-de-sac serving lots of 20,000 square feet or greater in size shall exceed 1,000 feet in length. No residential street cul-de-sac serving lots less than 20,000 square feet in size shall exceed 700 feet in length.

(2) No commercial street cul-de-sac shall exceed 400 feet in length.

(H) **SIDEWALKS**

(1) In order to enhance pedestrian safety and mobility, except as set forth below, sidewalks shall be required on both sides of all streets (see Appendix A for approved street cross-sections).

(a) Sidewalks shall not be required on the following roadways:

1. In residential developments with minimum lot sizes one acre or greater, except where an existing school, park, open space, trail or greenway lies within one-quarter-mile of the boundaries of the proposed subdivision, in which case a safe pedestrian connection between the subdivision and the off-site facility is required.

2. Residential streets serving less than or equal to ten dwelling units. Corner lots that have frontage on both a connective or loop street shall not be included in determining the number of dwelling units served by the street. Street stubs temporarily serving ten lots or less shall provide sidewalks on both sides of the street.

3. Commercial street cul-de-sacs that are less than 150 feet in length.

(b) Sidewalks shall be required on only one side of a frontage road.

(2) Sidewalk access ramps, also commonly referred to as wheelchair ramps for the physically handicapped, shall be provided at all intersections where curb and gutter are provided (see (I) of this section), and where sidewalks and/or greenway trails intersect any street.

(3) Pedestrian crosswalks are required on any residential street at each intersection and at any mid-block pedestrian or bicycle connections.

(4) The Town Council may allow a fee-in-lieu for sidewalk construction as set forth in (B)(2)(b) of this section.

(I) **CURB AND GUTTER**

Unless granted a waiver (see § 155.706(I)(7)) by the Town Council, all public streets, inside the corporate limits of the town and outside the town when water or sewer is connected to the town utility system, shall be constructed with curb and gutter (see Appendix A for approved street cross-sections). Curb and gutter shall be a combination curb and gutter or such other construction approved in the town's Engineering Design Manual. Rolled or valley-type curbs are permitted for new collector, residential collector, and residential streets.

(J) **RELATIONSHIP OF STREETS TO TOPOGRAPHY**

(1) Streets shall be designed to relate appropriately to the topography of a site. In particular, streets shall be designed to facilitate the storm drainage requirements specified in § 155.604(E) and, subject to the design requirements relating to maximum grades set forth in (J)(2) of this section, street grades shall conform as closely as practicable to the original topography.

(2) The maximum grade for street construction shall meet design requirements of the town or NCDOT. However, in no case may streets be constructed with grades that, in the professional opinion of the Public Works Director, create a substantial danger to the public safety or cause any substantial degradation to the street or drainage system.

(K) **STREET LAYOUT**

(1) The street layout of any development should be in conformity with the town's Transportation Plan and all other applicable adopted plans and policies of the town. Public streets shall be constructed to the boundary lines of the development submitted for approval when required to provide for efficient circulation of traffic within the community.

(2) Each side of a collector street, commercial street or residential street shall, within every 1,500 foot length of the street, be intersected by at least one connective street. The 1,500 foot length shall be measured from the origination point, if established, of the collector, commercial, residential or residential street.

(3) A waiver (see § 155.706(I)(7)) may be granted by the Town Council for developments that do not meet the above layout or creates a violation of this layout if:

(a) Existing surrounding development prevents extending a street to any adjoining developments to meet this regulation.

(b) The adjoining existing street pattern or a planned "stub" street provides for an appropriate intersecting street beyond the 1,500-foot point, that would provide equivalent benefits as an intersecting street within 1,500 feet.

(c) Severe topography or other physical features warrant making a connection of an intersecting street at another location either inside or outside the development to provide equivalent benefits as an intersecting street within a distance of 1,500 feet, and this other alternate specific location is provided for at the time the development making the request for an alternate location is approved.

(4) Existing adjoining public streets, public platted streets, and publicly planned streets shall be continued and extended as public streets as part of the development. Streets that are not to be extended, as determined by the Town Council, shall be terminated in a permanent cul-de-sac.

(5) Where a proposed development will extend a public street that is already stubbed out to the property line, such extension as a public street shall be required.

(6) Wherever there exists a dedicated or platted half street adjacent to the parcel to be developed, the other half shall be platted and, where required, constructed.

(7) Where a through street or a series of streets establishes a connection between two public streets and the connection is greater than 1,200 feet in length, or the connection may encourage through traffic not generated by the development, the street shall be a public street, except in instances where the Town Council determines that requiring such connection to be a public street will serve no purpose, due to the existing or proposed street pattern, traffic flow or traffic volumes.

(8) Where a proposed development utilizing private streets has an area of 20 or more acres, at least one public through street must be provided in a location determined by the Town Council to assure continuity of the public street system, except in instances where the Town Council determines that such public through street will serve no purpose due to the existing or proposed street pattern, traffic flow or traffic volume. The Town Council may also require additional public through streets for the provision of emergency services, such as police and fire protection, or to provide alternate circulation at congested or critical intersections.

(L) **CONSTRUCTION STANDARDS AND SPECIFICATIONS**

All streets and sidewalks required by this section shall be constructed according to the specifications of the town's Engineering Design Manual, except that the Town Council may permit sidewalks to be constructed with other materials when they conclude that:

(1) Such sidewalks would serve the residents of the development as adequately as concrete sidewalks;

(2) Such sidewalks would be more environmentally desirable or more in keeping with the overall design of the development; or

(3) Such sidewalks could be maintained as adequately as concrete sidewalks.

(M) **PRIVATE STREETS**

(1) All private streets shall be constructed according to the town's public street construction standards. Unless the recorded plat of a subdivision clearly indicates a street to be private, the recording of such plat shall constitute an offer of dedication of such streets. The town shall have the discretion to require a public street connection for safety or access purposes.

(2) The recorded plat of any subdivision that includes a private street shall clearly state that such street is a private street. Further, the initial purchasers of a newly-created lot served by a private road shall be furnished by the seller with a disclosure statement outlining the maintenance responsibilities for the street, in accordance with the requirements set forth in G.S. § 136-102.6.

(3) All private streets shall be maintained by a designated responsible party in accordance with town standards.

(4) Where private streets are later made public through dedication to the town, such streets shall be brought up to public construction and maintenance standards, prior to their acceptance by the town.

(N) **STREET NAMES AND SIGNS**

(1) Street names shall be subject to the approval of the Town Council. New street names shall not duplicate or be similar to existing street names in Johnston County. Existing street names, however, shall be projected where appropriate.

(2) Street name signs shall be in place prior to approval of any certificate of occupancy for structures to be located on the street.

(Ord. 2005-11-02, passed 11-21-05; (Ord. 2016-04-04, adopted 2016-04-04)

§ 155.603 LOTS AND BLOCKS

(A) **LOTS**

(1) Every lot shall abut or front on a public street.

(2) Lot sites, shapes, and locations shall be made with due regard to topographic conditions, contemplated uses, and the surrounding areas. All lots approved after January 6, 1997 shall contain the minimum required lot width of the applicable zoning district within 50 feet of the street right-of-way adjoining the front yard.

(3) Double frontage lots shall be avoided, except when lots adjoin a thoroughfare and access is desirable by a street of residential scale, and discouraged or prohibited on the thoroughfare.

(4) Side lot lines shall be substantially at right angles or radial to street lines.

(B) **BLOCKS**

(1) Blocks shall be laid out with special consideration given to the type of land use proposed within the block.

(2) Blocks shall not exceed 1,500 feet in length.

(3) Blocks shall have sufficient width to provide for two tiers of lots of appropriate depth, except where otherwise required to separate residential development from through traffic.

(4) A pedestrian connection not less than ten feet in width may be required near the center and entirely across any block in excess of 900 feet in length to provide adequate access to schools, shopping centers, churches, or transportation facilities.

(5) A pedestrian connection through a cul-de-sac not less than ten feet in width may be required when the cul-de-sac helps provide adequate access to schools, shopping centers, churches, or transportation facilities.

(Ord. 2005-11-02, passed 11-21-05)

§ 155.604 UTILITIES

(A) **EASEMENTS**

(1) Utility easements shall be at least 20 feet wide, and shall run along side or rear lot lines. Wider easements may be required if the topography along the proposed right-of-way is such that maintenance equipment cannot reasonably operate within the minimum 20-foot wide easement.

(2) Where a subdivision is traversed by a water-course, drainageway, channel, or stream, there shall be provided a stormwater easement or drainage right-of-way, conforming substantially with the lines of such watercourses, and of such further width or construction, or both, as will be adequate for the purpose. Lakes, ponds, watercourses, and the land immediately adjacent thereto shall be considered for maintenance by the town only if sufficient land is dedicated as a public recreation area or park, or if such area constitutes a necessary part of the drainage control system. The town reserves the right to reject any intended dedications.

(B) **OWNERSHIP OF UTILITIES**

All water, sanitary sewerage, electrical (when in town's service area) and storm drainage facilities installed under the requirements of this chapter shall become the sole property of the town upon acceptance. A deed to the town for such facilities, including easements pertaining to right-of-way entrance for maintenance, shall be executed prior to connections to the respective municipal systems.

(C) **REQUIRED ADDITIONAL CAPACITY**

Where the Town Council deems it necessary, in the interest of the health, safety and general welfare of the residents of the town and it's extraterritorial jurisdiction, the applicant shall make certain improvements at sizes in excess of those which would normally be required to serve only the applicant's subdivision. Where oversized improvements are required, the town shall reimburse the applicant for the cost of materials incurred over and above those required to serve the applicant's subdivision. Such reimbursement shall be mutually agreed upon.

(D) **WATER DISTRIBUTION LINES AND SANITARY SEWERS**

(1) Each lot in all subdivisions within the town's corporate limits, and each lot in all subdivisions in the extraterritorial jurisdiction within ~~500~~300 feet of the town's water and/or sanitary sewer system shall be connected at the applicant's expense to the town's water and/or sewer system. In accordance with § 51.03 (A) of the Town Code of Ordinances, each developer of land shall be responsible for providing water and sewer line connections and all necessary pump stations, lift stations, and fire hydrants between their property and the town systems. In accordance with § 50.02 of the Town Code of Ordinances, the applicant shall pay ~~an acreage~~ water and sewer System Development fees for all property to be served by a connection to the town's water and/or sanitary sewer system.

(2) Where a subdivision, in the extraterritorial jurisdiction lies more than ~~500~~300 feet from the municipal water and/or sewer system, the applicant may, at the applicant's expense, connect the subdivision lots to the town's water and/or sanitary sewer system. In accordance with section § 51.20 (A) of the Town Code of Ordinances, any property owner or developer desiring to have water or sanitary sewer services extended to and along any public street or other area where no water or sanitary sewer main exists shall apply to the Town Manager, or designee, in writing requesting a specific daily allocation for such services. If the applicant provides a community water and/or sewer system, rather than connecting to the municipal system, or provides individual wells and/or septic tanks, the materials, design, and installation shall be made in accordance with all applicable state and Johnston County specifications and standards.

(3) ~~Sanitary sewers shall be no smaller in size than eight inches nominal diameter.~~ In accordance with section § 51.03(D) of the Town Code of Ordinances, the minimum diameter of a water main shall be six inches and the minimum diameter for a sewer main shall be eight inches. All sewer mains shall be installed at a maximum depth to ensure service to as large an area as possible. Water distribution lines shall be no smaller in size than six inches nominal diameter, with the following exception: On cul-de-sacs which are served by fire hydrants at their intersection with a local street, and the hydrant is connected to a water line of six inches nominal diameter, or larger, water service may be provided with lines smaller than six inches if a blow-off valve is established at the end of such line, or the line is connected to another line within the subdivision to form a loop. This exception shall not apply where such line represents the interconnection between the subdivision and the municipal system. On streets which are "stubbed out" at property lines to permit future development, service must be provided by lines of at least six inches nominal diameter.

(4) ~~Water systems in the extraterritorial jurisdiction not connected to the town water system need not provide fire hydrants. However, such systems shall be designed for future file flows so that when tied in with the town system in the future, adequate flow for fire fighting will be available to every lot in the subdivision.~~ In accordance with section § 155.301(F)(6)(a) of the Town Code of Ordinances, an accessible, adequate, safe supply of water shall be provided in each manufactured home park. When a municipal water supply is not available, a community water supply shall be developed and its supply used exclusively in accordance with the standards of the Sanitary Engineering Division of the North Carolina Division of Health Services and the County Health Department. This provision will require that the main lines be a minimum six inches in diameter, and that a hydrant tee and valve be provided within 500 feet of each lot.

(5) For the purpose of this section, the term "water system" shall include all appurtenances and fixtures normally associated with such facilities, including fire hydrants, gate valves, blow-offs, manholes, and pumping apparatus, but shall not include individual service meters, which shall be installed by the town; the aforementioned appurtenances and fixtures shall comply with the specifications and standards of the town.

(E) **STORM DRAINAGE**

(1) The applicant shall provide an adequate drainage system for the proper drainage of all surface water in order to protect the proposed development from water damage. The design of such system shall be subject to the approval of the Town Council.

(2) No surface water shall be channeled or directed into a sanitary sewer.

(3) Where feasible, the applicant shall connect to the municipal storm drainage system.

(4) Where the municipal storm drainage system cannot feasibly be extended to the subdivision, a surface drainage system shall be designed to complement surface drainage systems to surrounding properties.

(5) Cross pipes under streets and driveways shall be concrete, reinforced concrete, or other pipe, as approved by the Town Manager. All such cross pipes shall be a minimum of 15 inches in diameter.

(6) Surface drainage courses shall have side slopes of at least one foot of horizontal distance for each foot of vertical distance.

(7) The minimum grade along the bottom of a surface drainage course shall be a vertical fall of approximately one foot in each 300 feet of horizontal distance.

(F) **ELECTRICAL UTILITIES**

Electrical improvements in accordance with town or progress energy standards, whichever is applicable, shall be required in all subdivisions.

(Ord. 2005-11-02, passed 11-21-05)

§ 155.605 PUBLIC FACILITIES

(A) **SCHOOL SITES**

(1) When a subdivision plat is submitted for approval, in which, according to the land use or land development plan, a school site should be reserved, the Planning Director shall notify the County Board of Education that the subdivision has been submitted for approval, and that under this chapter, a school site may be reserved therein.

(2) In reviewing the subdivision and giving approval the Planning Director shall consult the Board of Education in determining the exact size and location of any school site to be reserved therein.

(3) Before the final plat of the subdivision is approved, the Board of Education shall determine whether or not it wishes to have a school site reserved in the subdivision. If the Board of Education does wish to have a school site reserved in the subdivision, the subdivision as finally approved shall reserve a school site of a size and location agreeable to the Board of Education and to the Planning Board. The Board of Education shall then have 18 months, beginning on the date of the final approval of the subdivision, within which to acquire the site. If the Board of Education has not purchased or begun proceedings to acquire the site within 18 months after the subdivision is finally approved, the applicant may proceed to dispose of it in accordance with the subdivision procedure and provisions of this chapter.

(B) **RECREATION AND OPEN SPACE**

The minimum recreation and open space requirements for conventional and open space residential subdivisions are set forth in § 155.203(h).

(Ord. 2005-11-02, passed 11-21-05)

§ 155.606 PERMANENT REFERENCE POINTS

Prior to the approval of the final plat, iron stakes shall be installed on all corners of the subdivision and at additional points in the subdivision, so that no point within the subdivision lies more than 500 feet from a monument. In addition, two or more control points shall be designated on the final plat.

(Ord. 2005-11-02, passed 11-21-05)

§ 155.607 GUARANTEE OF IMPROVEMENTS

(A) **GENERAL**

(1) No final plat will be accepted for review by the Technical Review Committee unless accompanied by written notice by the Planning Director, acknowledging compliance with (B) and (C) of this section.

(2) If the subdivision is to be phased or developed in sections, the Planning Director shall withhold final plat approval for the most recent phase until improvements in prior stages have been completed or guaranteed.

(B) **PERFORMANCE GUARANTEES**

In lieu of prior construction of the improvements required by this subchapter, the town shall, for the purpose of approving a final plat, accept a guarantee from the applicant that such improvements will be carried out according to the town's specifications at the applicant's expense. Such guarantee may be in the form of a performance bond, letter of credit, or certified check drawn in favor of the town or cash deposited with the town. Such guarantee shall be in an amount of not less than 125% or more than 150% of the estimated cost of the construction of the required improvements. This amount shall be determined by the Town Public Works Director. Performance guarantees shall run for a period of one year upon written approval of the Town Council.

(C) **PERFORMANCE BOND**

The town shall require a bond guaranteeing: street improvements, curbs, gutters, drainage facilities, sidewalks, electrical facilities, water and sewer lines and taps and all other improvements against defects for one year from the date of final acceptance by the town. This bond shall be in the amount determined by the Town Public Works Director or designee, and shall be in cash, certified check, or be made by a bonding/insurance company authorized to do business in North Carolina.

(D) **TOWN'S RIGHT OF INSPECTION AND ACCEPTANCE**

(1) Whether the required improvements are performed prior to or following approval of the final plat, the applicant shall grant to the town and its assignees authority to inspect all construction of the required improvements, and moreover, shall advise the town at least two days in advance of beginning work on any of the various improvements. However, such right of inspection shall not constitute duty to inspect, nor shall it guarantee final acceptance by the town of any required improvements.

(2) If improvements are guaranteed by a bond or cash deposit, failure by the applicant to perform the work to the town's standards shall free the town, at the discretion of the Town Council, to liquidate the bond or cash deposit, in order to finance the necessary repairs. This provision shall extend through the one-year warranty period. The town will provide the applicant with a written notice of its intent to carry out this provision at least two weeks

prior to such liquidations, and shall also provide the applicant during this period a hearing at a regularly scheduled meeting of the Town Council.

(3) The town's final acceptance of required improvements in the event of their construction following final plat approval shall be evidenced by a written letter from the Town Manager as specifically authorized by the Town Council.

(Ord. 2005-11-02, passed 11-21-05; Am. Ord. 2007-04-05, passed 4-2-07)