



**Town of Clayton
Regular Town Council Meeting Agenda
Monday, April 5, 2021 @ 6:00 PM
Council Chambers**

THE TOWN OF CLAYTON WILL FOLLOW GUIDELINES FROM THE CENTERS FOR DISEASE CONTROL AND THE NORTH CAROLINA DEPARTMENT OF HEALTH AND HUMAN SERVICES WITH REGARD TO SOCIAL DISTANCING.

BELOW PLEASE FIND CHANGES TO THE COUNCIL MEETING FORMAT:

THE CURRENT TOWN COUNCIL MEETING WILL BE HELD IN PERSON.

ANY MEMBER OF THE PUBLIC THAT WISHES TO ADDRESS THE COUNCIL, MAY DO SO IN PERSON, HOWEVER YOU ARE ASKED TO CONTACT THE TOWN CLERK IN ADVANCE OF THE MEETING.

IF YOU DO NOT WISH TO ATTEND THE MEETING IN PERSON BUT DO WISH TO SHARE ANY PUBLIC COMMENT WITH THE COUNCIL, PLEASE FORWARD YOUR COMMENT(S) TO THE TOWN CLERK NO LATER THAN NOON THE DAY OF THE MEETING. PLEASE INCLUDE YOUR NAME AND ADDRESS. PUBLIC COMMENT(S) RECEIVED WILL BE READ INTO THE RECORD BY THE TOWN CLERK.
EMAIL: KMOFFETT@TOWNOFCLAYTONNC.ORG

THE PUBLIC MAY VIEW THE LIVE COUNCIL MEETING ON THE TOWN'S YOU TUBE CHANNEL:
https://www.youtube.com/channel/UCwz_EIU1ENyy7BkFsqmWYzQ

BELOW PLEASE FIND ADDITIONAL INFORMATION REGARDING PROCEDURES FOR IN-PERSON MEETINGS:

- ALL persons attending must wear a mask.
- We will be following proper social distancing at all times.
- Entrance AND Exit will be main door on Second Street.
- Any member of the public attending will be asked to wait in the lobby until item they wish to address is ready for discussion and asked to leave the Chambers once item is complete.
- Lobby will be set to encourage social distancing.
- Chairs will be at least 6' from each other.
- We will have TWO staff members attending the meeting(s) to ensure smooth transition with those attending the meeting.
- One person will serve as LOBBY staff and the other will serve as CHAMBER staff.
- The meeting will be shown on the monitor in the lobby. (YouTube)
- All council or board members will be socially distanced in the council chambers and wearing face masks.*
- Staff will be socially distanced and seated within the council chambers. Face masks will be worn.*
- Hand sanitizer will be available, both in the lobby and council chambers.
- Podium/microphone will be sanitized after each speaker.

**Masks may be lowered when speaking.*

1. CALL TO ORDER

Pledge of Allegiance and Invocation

2. ADJUSTMENT OF THE AGENDA

3. CONSENT AGENDA

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

a. Draft Minutes

- March 8, 2021 DRAFT Minutes - Retreat Day #1
- March 9, 2021 DRAFT Minutes - Retreat Day #2
- March 9, 2021 DRAFT Minutes - Closed Session
- March 15, 2021 DRAFT Minutes - Closed Session

[March 8 2021 Council Retreat DRAFT Minutes](#)

[March 9 2021 Council Retreat DRAFT Minutes](#)

b. Proclamation - Week of the Child

[Proclamation](#)

c. Warranty Acceptance

- Ashcroft, Phases 4A & 4B

[Ashcroft Phases 4A & 4B \(Asphalt\)](#)

POTENTIAL ACTION: Adoption of Consent Agenda as Presented

4. ADMINISTRATIVE ITEMS

a. Advisory Board Appointment Recommendations

Presenter: Kimberly Moffett, Town Clerk

- Board of Adjustment
- Fire Advisory Board

[Cover](#)

[BOA Applications](#)

[FAB Application](#)

5. INTRODUCTIONS AND SPECIAL PRESENTATIONS

a. Employee Certification

Presenter: James Blalock, Utility Maintenance Supervisor

- Stephen Norris - "A Distribution" Certification
- Dylan Carroll - Collections 4 Operator

b. New Employee Introduction

Presenter: Michael Tutweiler, GIS Coordinator

- Matt Moore - GIS Technician

c. Recognition of Long Time Employee

Presenter: JD Solomon, Town Manager

- Steve Blasko - Former Public Works Operations Manager

d. Harbor "White Ribbon" Campaign Presentation

Presenter: Kay Johnson - Harbor Inc., Executive Director

6. PUBLIC HEARINGS

- a. 2020-160-ANX Riverwood Golf Course - Section 2 - Annexation

Presenter: Planning Department

[Cover](#)

[Application](#)

[Aerial Map](#)

[ETJ Map](#)

[Site Plan Survey](#)

[Resolution Setting Public Hearing](#)

[Advertisement](#)

[Staff Report](#)

[Ordinance](#)

POTENTIAL ACTION: Adoption of Ordinance #2021-04-01

- b. 2020-157-PDD Riverwood Golf Course - Section 2 - Rezoning

Presenter: Planning Department

[Cover](#)

[Application](#)

[Staff Map](#)

[Adj. Property Letter](#)

[Planning Board Recommendation](#)

[Consistency Statement Updated](#)

[Advertisement](#)

[Staff Report](#)

[Motion Form](#)

[Ordinance](#)

POTENTIAL ACTION: Adoption of Ordinance #2021-04-02

- c. 2020-158-SD Riverwood Golf Course - Section 2 - Subdivision (Quasi-Judicial)

Presenter: Planning Department

[Cover](#)

[Application](#)

[Staff Map](#)

[Site Plan](#)

[Neighborhood Meeting Material](#)

[TRC Certification Letter](#)

[Traffic Impact Study](#)

[Traffic Impact Study Comments](#)

[Advertisement](#)

[PROPOSED Conditions of Approval Updated](#)

[Staff Report Updated](#)

[Wastewater Application](#)

[Wastewater Treatment Letter](#)

[Stormwater Impact Statement](#)

[Public Comment Received](#)

[Resolution -Wastewater](#)

POTENTIAL ACTION:
Course - Section 2

Approval/Denial 2020-158-SD - Riverwood Golf

POTENTIAL ACTION:

Adoption of Resolution #2021-16 (Wastewater Allocation)

7. OLD BUSINESS

- a. Old Town Hall Building Update - Town to Re-Acquire Property

Presenter: JD Solomon, Town Manager

POTENTIAL ACTION:

Authorize Town Manager to Execute Contract

- b. Donation Agreement for Glennie Rae Property

Presenter: Joshua Baird, Town Engineer

[Cover](#)

[Real Property Donation Agreement](#)

POTENTIAL ACTION:

Authorize Acceptance of Land Donation

8. NEW BUSINESS

- a. Lumen Project

Presenter: JD Solomon, Town Manager

- b. Purchase of Two Police Canines

Presenter: JD Solomon, Town Manager

[Cover](#)

POTENTIAL ACTION:

Approval of Purchase

9. STAFF REPORTS

- a. Town Manager
- b. Town Attorney
- c. Town Clerk
- d. Other Staff

10. OTHER BUSINESS

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

11. ADJOURNMENT

Quasi-Judicial (evidentiary) – These hearings are different from other public hearings in that they resemble a court hearing where testimony is presented and the Town Council acts like a court of law. During evidentiary hearings, the Town Council receives only sworn testimony and other credible evidence. In addition, the Town Council must make findings of fact based upon the evidence presented. Citizens may give testimony in an evidentiary hearing after they have taken an oath.



**Town of Clayton
Council Retreat Day 1 Minutes
Monday, March 8, 2021 @ 8:15 AM
Rotary Room**

COUNCIL PRESENT:

Mayor McLeod
Mayor Pro Tem Thompson
Council Member Holder
Council Member Grannis
Council Member Bunn
Council Member Everett

STAFF PRESENT:

JD Solomon, Town Manager
Rich Cappola, Deputy Town Manager
Dolores Gill, Deputy Town Manager
Kimberly Moffett, Town Clerk
Heidi Holland, Deputy Town Clerk
Lee Barbee, Fire Chief
Greg Tart, Acting Police Chief
Cathy Marraccini, Public Information Officer
Scotty Henley, Cultural Arts Exec. Director
Robert McKie, Finance Director
Byron Poelman, Dist. & Collection Systems Mgr.
Jeffra Patton, Safety Officer
Dale Medlin, Electric Distribution System Director
Blake Mills, Asst. Public Works/Utilities Director
Ann Game, Customer Service Director
Patrick Pierce, Economic Development Director
Samantha Wullenwaber, Planning Director
Joy Garretson, Library Director

COUNCIL ABSENT:

1 CALL TO ORDER

- a) Mr. Solomon called the meeting to order at 8:32 a.m.

2 CUSTOMER FOCUS

- a) **8:30 - 8:45 a.m.**
Key Accounts
Presenter: Ann Game, Customer Service Director

Discussion began at 8:35 a.m.

Ms. Game began her presentation on Customer Focus. She shared the top ten water customers for the town are:

- Alta MHP
- Automatic Rolls
- Caterpillar
- Clayton Manor Apartments

- Grifols Therapeutics
- Johnston Medical Center
- Novo Nordisk
- SIF CDC LLC (The old Winn-Dixie)
- Springbrook Nursing & Rehab
- Zips Car Wash

The top 10 electric customers:

- Brian Center
- Centurylink
- Compare Foods
- First Baptist Church
- Food Lion
- Johnston County Schools
- Lowes Foods
- McDonald's
- NPC Quality Burgers
- Sheetz

She stated these are not in order of consumption but in alphabetical order.

There was discussion of the importance of reaching out to these 10 customers. She stated if any of these major companies close or move, this could affect the town's revenue. Council Member Holder stated we need to discuss with the companies the importance of consumption in regard to water and sewer.

b) **8:45 - 9:00 a.m.**

Economic Development

Presenter: Patrick Pierce, Economic Development Director

Discussion began at 8:45 a.m.

Mr. Pierce presented slides of where the town is going as far as growth in the future. He shared a community survey that asked citizens their top three concerns for the future of Clayton which were: traffic, change in small town lifestyle and schools.

He provided information on transportation & growth:

- CAMPO Metropolitan Transportation Plan (MTP) 2050 Update
- CAMPO/GoTriangle Bus Rapid Transit (BRT) and Commuter Rail studies
- NCDOT State Transportation Improvement Plan (STIP) 6.0 Update
- Town's Bike/Ped Plan underway; strong interest in Greenways
- Emphasis by business and business orgs to engage in transportation and growth issues

He discussed two big downtown projects in the works that will require participation from the town, in the form of roadways, utilities and/or site improvements, which are Project Goodwill and Life Dust.

Other downtown projects include:

- First Street Parking
- Downtown Streetscape Plan and pedestrian safety
- Old Town Hall
- Library Redevelopment
- Town Square Improvements
- Greenway Connections to Downtown (and beyond)
- Future Commuter Rail Station

He provided strategy goals:

- Goal 1 - Grow jobs for Clayton
- Goal 2 - Build on a charming and historic downtown
- Goal 3 - Build Clayton's sense of community and quality of life
- Goal 4 - Develop the infrastructure necessary to improve quality of life

c) **9:00 - 9:30 a.m.**

Capital Program Integration

Presenter: Rich Cappola, Deputy Town Manager

Discussion began at 9:05 a.m.

Mr. Cappola distributed maps to everyone. He stated there are a lot of demands and limited funds to pay for these. He stated we are blessed with having a lot of growth and are looking ahead 10-20 years down the road to accommodate this. He stated 2.5 miles of new roads are added every year. He discussed the 12 facilities the town owns and the lack of funds for improvements for these buildings.

He shared the current CIP process:

What is included:

- Requests from Departments
- Compliance Requirements (ADA transition plan & Powell Bill)
- Major Rehab/Maintenance (Pump Station upgrades/replacements/removals)

What is not included:

- Facilities (Major rehab and replacements)
- Transportation Plan (updated & participation \$\$)
- Bike/Ped Plan (What are the projects)
- Collaboration (Electric/Water projects)

There was discussion on the need to prioritize town projects and how future costs need to be accounted for. He stated great opportunities are coming up but prioritization is needed to see where to put the money first. There was also discussion on the town's cost for new developments and if they are costing more than the revenue they bring in.

- d) **9:30 - 9:45 a.m.**
Impacts on CIP's
Presenter: Robert McKie, Finance Director

Discussion began at 9:35 a.m.

Mr. McKie stated a CIP evaluation was completed on the general fund which resulted in Davenport stating the town would need a .32 cent tax increase. With that information, we will have to go back to the drawing board. The CIP is now down to \$190 million but this amount still puts us under pressure. There are limited funds in the electric fund as well as the water/sewer fund. The town is researching more creative uses of unrestricted reserves and pay back.

He shared a CIP Evaluation:

- General Fund - Fall of 2020 with Davenport
 - Limited availability for new borrowing over next 5 years
- Electric Fund - 2020 with Electric Utility Consultant
 - Limited availability for major new projects
- Water & Sewer Fund - Constant updating, including one in progress
 - Limited availability for projects beyond WRF

In summary, we have limited funding capacity for new CIP projects, we have limited staffing capacity to deliver new CIP projects, and we have more needs than capacity to deliver.

- e) **9:45 - 10:15 a.m.**
Discussion

Discussion began at 9:47 a.m.

Mr. Solomon opened this up for discussion among council.

Mayor McLeod discussed the partnership between the town and Johnston County. There was also discussion on requiring more from developers around town and being selective on what we take on in the future. Mr. Solomon stated this goes back to ordinances.

Council Member Holder discussed the current tax rate and stated if it does not cover current in-town services required, then what should the tax rate be. He also stated we have two issues, how are we supporting our present boundaries and what do we have to do to support new developments.

Mayor Pro Tem Thompson stated hearing the top 10 electric and water customers really hit home and was very telling. He stated it is important to take care of their needs. We aren't accomplishing anything if one of these companies leave and we have that vacancy. He agreed the CIP projects should be prioritized and we need to require more of the developers.

Council Member Everett discussed changing ordinances. He stated he is really interested in which ones need to change and the impact that could have.

Council Member Bunn discussed the issue of new developments. He stated we do not know what it costs to put a house on the ground and development fees may need to go up. He asked if we knew if we are making any money or barely making money. Mr. Solomon agreed and stated we need to know what we are paying for this.

Council Member Grannis stated he had three things to mention. He stated we need to look at the possibility of more staff and he agrees with the long term CIP prioritization. He discussed the need to stay on top of facility maintenance. He also agreed with increasing development fees.

Mr. Solomon stated this was a good segment and everyone agreed. Mayor McLeod stated Ms. Game's presentation was huge to know and very impactful.

3 BREAK

10:15 - 10:30 a.m.

- a) At 10:02 a.m., Mr. Solomon stated we would take a break and return back at 10:15 a.m.

4 COVID IN 2021

- a) **10:45 - 10:55 a.m.**

Allied Organizations

Presenter: Patrick Pierce

Discussion began at 10:18 a.m.

Mr. Pierce stated there is a growing demand to return to normal. He stated after a year of pandemic restrictions, the public is eager to get things going again. This would only increase as the weather improves, school returns back to in-person, other communities reopen facilities and events, more people are vaccinated, and government restrictions and regulations loosen.

He discussed events on the horizon:

- DDA
 - Movies in Town Square, Concerts in Town Square, Christmas Village
- Clayton Chamber
 - Harvest Fest, Annual Meeting & Awards Celebration
- Rotary
 - Flags for Hero's, Christmas Parade
- Clayton High HS/JoCo Public Schools
 - Homecoming Parade
- Clayton Farmer's Market
- Last Friday

He stated the challenges to overcome:

- Costs associated with reopening will be higher due to additional staff for safety compliance, additional PPE, additional coordination with allied organizations
- Allied organizations revenues reduced due to attendance restrictions
- Managing crowd size
- Focused on continuing to do the basics to satisfy the desires of the public
- Result is likely fewer events and activities in FY21-22

b) **10:55 - 11:05 a.m.**

Community Enforcement

Presenter: Greg Tart, Police Chief

Discussion began at 10:31 a.m.

Chief Tart provided information on the department's response calls to COVID-19. He stated the department has responded to thirty-three COVID related calls, thirty of these related to businesses. He shared:

- 1 in reference to a general COVID question
- 2 in reference to a COVID related illness
- 8 in reference to overcrowding
- 22 in reference to mask mandate violations

He discussed when he came to the police department, he put an order in place to track violations that have been reported. The theory behind this is to keep track of violations. The plan going forward is to continue what they have been doing and respond when calls are received. He also discussed the enforcement of repeat General Order violators.

c) **11:05 - 11:15 a.m.**

Town Re-Opening

Presenter: Jeffra Patton, Safety Officer

Discussion began at 11:02 a.m.

Ms. Patton discussed Phase 1 Facility Reopening Guidelines. She stated the building phase classification system is based on access/usage. All visitors/employees will be limited to one entrance, must wear face coverings, sign in and complete wellness assessments, and practice 6-foot social distancing. There will be enhanced cleaning protocols and enhanced signage/communication.

Council Member Grannis asked if she had an estimated cost to get town facilities opened and stay open. Ms. Patton stated for the library and community center, it will take between 40-50 signs at \$38.95 per sign. The signs currently in the building were made in-house, but to have a sign on a larger scale would have to be outsourced. There will be 14-16 more sanitizing stations town wide. Currently these stations cost \$152.00 each.

Mayor McLeod asked if we could get any kind of reimbursement, Mr. McKie stated we received \$800,000 from the County and we could use this. Ms. Garretson stated she received notice from the State Library that there would be another round of money, she stated she would be in contact about this. Mayor McLeod asked when the Clayton Center reopens, if rental costs would increase due to the additional cleaning procedures in place. Mr. Henley stated this would be factored into the rental costs in the future.

d) **11:15 - 11:30 a.m.**
DISCUSSION

Discussion began at 11:17 a.m.

Mr. Solomon paired up council members, he stated he would like them to work together to discuss the good news that has gone on in the town. He stated there has been a lot more good than bad.

Deputy Town Manager Gill shared her thoughts on the good news throughout the town.

Mayor McLeod and Council Member Holder stated quality development is good. They think the growth is favorable, there are quality amenities as well as great town staff.

Mayor Pro Tem Thompson and Council Member Everett stated the communication with the public and responding to citizens has improved. They stated downtown is alive and well.

Council Member Bunn and Council Member Grannis stated the morale of the police department has improved and the teamwork at the fire department has improved as well after bouncing back from the COVID incident. They stated there is a high degree of communication between staff and council. They also stated Mr. Henley and his staff had done an excellent job with streaming shows in the Clayton Center during COVID.

Deputy Town Manager Gill stated the way new employees are introduced to council and staff make an extremely comfortable feeling. There was further discussion between council on improving the appearance of our streets, the dilapidated houses among the streets, and the rental properties not being cared for.

5 WORKING LUNCH

11:30 a.m. - 1:00 P.M.

a) **Breakouts & Report-Outs**

Discussion began at 12:15 p.m.

Chief Barbee discussed rescue procedures. He stated the volume of these calls are low but safety sensitive which requires training and certification. He

stated Clayton Fire Department is the only department in the county that does confined space, water rescue and swift water rescue which has put the department in rescue services. He discussed the need for more staff. 25-30 staff should respond per call, as of now there is only enough man power to put 12 people on scene.

He shared information on the Archer Lodge training facility built years ago, the department has been trying to work with them to use the facility but there would be a cost. He stated there is an opportunity for Archer's Lodge to purchase land and the department has been working with them to try to offset the cost. Mr. Solomon stated we can lease from them, which would restrict how much capital they can get from us. The other option is buying beside them and have a joint facility, then be able to lease to another fire department.

Chief Tart and Chief Barbee discussed the need for a firing range with Station 2 possibility being a location. There was also discussion on the police department patrolling the Greenways. Some communication has failed in the past, future plans would be to get signage up on the trails to indicate mile markers.

b) Fire & Police Updates

Discussion began at 12:46 p.m.

Chief Tart discussed his transition into the Acting Chief position. He stated he learned quickly the police department's morale has been very low over the past few years. He stated after being there a week, he sat down with the entire department and discussed expectations. He stated one issue is accountability. He stated some have never been trained with leadership and management skills. He stated a plan is in place to start making changes for the better.

He discussed that patrol is the backbone of the police department and usually the first interaction most people get from Clayton. These individuals must make sure they are performing their jobs consistently and properly. He stated he has started to cut items out of the budget that are not necessary and moving funds to places that are needed. He discussed that policies have never been reviewed by anyone out of the department or outside attorneys. He stated he has sent policies to Human Resources for review. There was discussion on the need for body cameras. He stated this is something the guys must have and will put these in this year's budget. Council Member Holder asked how to keep officers from turning off the body cameras, Chief Tart stated there will be a policy in place for this.

He discussed the need for a healthy relationship between fire and police departments. He stated he meets with Chief Barbee once a week to communicate. Council Member Bunn thanked Chief Tart for the fantastic job he has done since coming to Clayton.

Mr. Solomon stated at 1:30 p.m. we would take a break and return back at 1:40 p.m.

6 EMERGING PROGRAMS

- a) **1:00 - 1:15 p.m.**
Stormwater Program Update
Presenter: Joshua Baird, Town Engineer

Discussion began at 1:43 p.m.

Mr. Baird discussed the stormwater program. He discussed this is now an in-house process, not a county process. He discussed the future plans for an online submittal form process, which would help both the planning and engineering departments. This will be a need as moving forward.

He stated current challenges are:

- Transition and new process
- Timing of permitted related to a site plan approval
- Tweaking New World System configuration
- Submittal Process during COVID
- Compliance

He stated moving forward the focus will be on closing out permits, the town's standard details and reconfiguring the website and information. He went into further discussion on processes and challenges for this program.

He stated the focus moving forward would be:

- Audit 2022
- Annual Inspections
- Mapping Storm Infrastructure
- Integrating needs into CIP
- Education Material
- Training Town Staff on IDDE
- SWMP
- New Neuse Model Ordinance
- Comprehensive review of Water Supply Watershed Ordinance and Resource Conservation Areas

- b) **1:15 - 1:30 p.m.**
Emergency Management
Presenter: Lee Barbee, Fire Chief

Discussion began at 2:12 p.m.

Chief Barbee discussed Emergency Management and how this affects the town in many ways. He discussed when COVID hit, they lost the use of the training room for the EOC and came up with the idea for virtual EOC's. He discussed Amy Shearin, Emergency Management Coordinator's role with the Incident Command System and the EOC, FEMA preparations, emergency planning, maintaining public information outlets for emergency services and special events.

He further discussed Ms. Shearin's role. He stated she will also learn what the police department does in order to communicate information for both departments. If the PIO is unavailable, Ms. Shearin will be able to put out a press release for both departments. Her role will be focused on public safety and she will be making sure all roads for events are secure.

- c) **1:30 - 1:45 p.m.**
Risk Management, Safety and Security
Presenter: Robert McKie

Discussion began at 2:35 p.m.

Mr. McKie discussed the Risk Management process. He stated this has not been done in a formal capacity but he is trying to kick this off. He stated this is a 5 step process:

- Step 1 - identify (uncover and recognize)
- Step 2 - analyze (probability and consequence)
- Step 3 - evaluate/rank (acceptable or action needed)
- Step 4 - treat the risk (risk response planning)
- Step 5 - monitor and review

Security:

- Ensure town's assets and workforce are protected
- Collaborating with partners (NCLM, Tyler, VC3)
- Cybersecurity - social engineering fraud coverage
- Employee awareness/education
- Consider increasing utilization of two-factor authentication

Recommendations from NCLM meetings

- Create a formal program/hire Risk Manager
- Review P&L coverage levels for 2022 renewal
- Schedule site visit for Legend Park bike trail
- Review of rental agreements (town owned space)
- Consider outsourcing security for events

- d) **1:45 - 2:00 p.m.**
Facility/ Asset Management
Presenter: Dolores Gill, Deputy Town Manager

Discussion began at 2:51 p.m.

Ms. Gill stated a common idea she has heard throughout the day is baseline assessment, how to make sure we utilize resources. She stated there needs to be facility/asset management in regard to maintaining the town's facilities, we need to be proactive instead of reactive. The purpose of the assessment is:

- Access the condition of each municipal building
- Identify the economic life of each building
- Identify deferred maintenance items

- Provide budgetary cost estimate to remedy the items
- Utilize the assessment to plan prioritized capital improvements

Scope of the Assessment:

- Review pertinent documents
- Create a timeline and assessment schedule (7 weeks)
- Assess building structure, exterior walls and windows, roofing, interiors, mechanical, electric, plumbing, fire/life protections, Americans with disabilities overview and conveyances
- Exclusion to the work

Deliverables/Outcomes:

- Compile data using standardized software including cost estimations
- Provide a detailed summary report of findings
- Utilize summary report to create prioritized improvement plan (short and long range)

- e) **2:00 - 2:30 p.m.**
Discussion

7 BREAK

2:30 - 2:45 p.m.

- a) This break ran from 3:02 until 3:20 p.m.

8 ORGANIZATION CAPACITY

- a) **2:45 - 4:15 p.m.**
- Environmental Stewardship
 - Post-Secondary Internships
 - Inclusion and Diversity
 - Organization Structure

Discussion began at 3:21 p.m.

Environment Stewardship

Mr. Solomon stated key approaches are:

- Build on Current Activities
- AMI (water/electric conservation)
- Stormwater (Nutrient reduction)
- Partnerships (Industries such as Caterpillar & Novo Nordisk)

Post-Secondary Internships

Mr. Solomon stated throughout the years the town has not been very proactive with interns. He stated he would like to team up with Clayton High School for possible intern candidates. This would benefit the town as well as allow experience for these students.

Inclusion and Diversity

Mr. Solomon discussed his multi-phase approach to this subject. He stated as of now we do not have a lot of staff working for the town with disabilities. Mayor Pro Tem Thompson stated there are agencies the town could partner with that will find jobs for folks with disabilities. There was discussion on the amount of staff that is able to translate. He stated we need to do more with that. Council Member Holder stated we could offer training within to actively improve on this. Mayor McLeod asked if we had anyone on staff that can do sign language, he stated we especially need this on the law enforcement side. Currently we have four officers that are fluent in Spanish as well as Catherine Whitley (HR Director). Mr. Solomon stated we need to use this year to improve on this.

Organization Structure

Mr. Solomon stated as of November 2020, there are 229 staff members. He stated there are 15 departments within in the town. Presented was a chart of the structure when he became Town Manager. He shared current information on the positions and his suggestion of which Deputy Town Manager should supervise which departments. He stated he would like council input on this.

He discussed the amount of work that is delivered from the town and the need to handle contracts better. The town will be hiring a contract manager to handle town contracts.

There was discussion between Mr. Solomon and council on their thoughts for the day.

9 ADJOURNMENT

- a) With nothing further, the meeting was adjourned at 4:11 p.m.

Duly adopted this the 5th day of April, 2021.

Jody L. McLeod
Mayor

ATTEST:

Kimberly A. Moffett, CMC, NCCMC
Town Clerk

March 8, 2021
Minutes



**Town of Clayton
Council Retreat Day 2 Minutes
Tuesday, March 9, 2021 @ 8:30 AM
Rotary Room**

COUNCIL PRESENT:

Mayor McLeod
Mayor Pro Tem Thompson
Council Member Holder
Council Member Grannis
Council Member Bunn
Council Member Everett

STAFF PRESENT:

JD Solomon, Town Manager
Rich Cappola, Deputy Town Manager
Dolores Gill, Deputy Town Manager
Jim Cauley, Town Attorney
Kimberly Moffett, Town Clerk
Heidi Holland, Deputy Town Clerk
Lee Barbee, Fire Chief
Matt Sutphin, Deputy Chief
Cathy Marraccini, Public Information Officer
Catherine Whitley, HR Director
Robert McKie, Finance Director

COUNCIL ABSENT:

1 CALL TO ORDER

- a) Mr. Solomon called the meeting to order at 8:32 a.m.

2 ORGANIZATIONAL FOCUS AND BUDGET CONSIDERATIONS

- a) **8:30 - 9:30 a.m.**
Organizational Capacity - Part 2
Presenter: JD Solomon, Town Manager

Discussion began at 8:32 a.m.

Mr. Solomon began the discussion on this subject. He stated when he asked department heads how many positions are needed, there were over 30 requests made. He discussed the two ways to handle this, the old way and function base. Mr. Solomon provided examples of this. He stated we need to focus on what customers expect from town staff. There was further discussion.

- b) **9:30 - 9:45 a.m.**
Organization Structure
Presenter: JD Solomon

Discussion began at 9:32 a.m.

Mr. Solomon discussed the structure of departments within the town, sharing his thoughts on which departments should be under the Town Manager and Deputy Town Managers. There was detailed discussion on this.

Mr. Solomon discussed the current purchase order procedures and shared the proposed procedures. Mr. McKie shared his thoughts on the new proposed signature sign off process. There was discussion on the repositioning of departments within town hall. Economic Development will be moving upstairs near Planning to enable easier communication between the two departments.

There was discussion on the length of staff meetings changing from approximately 2 hour meetings down to 1 for more effectiveness.

- c) **9:45 - 10:15 a.m.**
Gaps and Key Hires
Presenter: JD Solomon

Discussion began at 9:47 a.m.

Mr. Solomon discussed the need for himself, Mr. Cappola, Ms. Gill, Chief Tart, Chief Barbee and Mr. McKie to rotate to departments and talk with staff throughout the town. The goal is for better communication between management and town staff.

He discussed 6 major issues to monitor and make progress on. He stated Ms. Gill will oversee customer service billing and meter reading, Public Works/Operation Center, Personnel Policy (Health & Safety) and Asset Management; Mr. Cappola will oversee IT and VC3; Ms. Gill and Mr. McKie will oversee contracts, purchase orders, and finance; and Chief Lee and Chief Tart will oversee Emergency Management. Council agreed they like this direction.

A break began at 9:57 a.m.

- d) **10:15 - 10:30 a.m.**
Personnel Policy Update
Presenter: Catherine Whitley, HR Director

Discussion began at 10:13 a.m.

Mr. Solomon stated Ms. Whitley will work on this policy update while she is here 3 days a week. Ms. Whitley stated the policy was rewritten before her retirement in 2019 but was not approved by council. She stated the policy needs a refresher before going to council. Mr. Solomon stated he would like this complete before the end of the calendar year.

- e) **10:30 - 10:45 a.m.**
Discussion

There was no discussion during this time.

3 BREAK

10:45 - 11:00 a.m.

- a) This break ran from 9:57 - 10:12 a.m.

4 BUDGET CONSIDERATIONS

11:00 a.m. - 12:30 p.m.

Presenters: Robert McKie, JD Solomon, Rich Cappola & Dolores Gill

- Overview of Current Budget Status
 - Overview of Emerging Budget
 - CIPS's: General, Water & Sewer, Electric
 - Operating Budgets: General, Water & Sewer, Electric
- a) Discussion began at 10:30 a.m.

Mr. McKie distributed handouts regarding the current budget status, overview of emerging budget, CIPs regarding general, water and sewer, and operating budgets regarding general, water and sewer.

Mr. Solomon stated the budget is not complete, he has not yet met with all groups. Mr. McKie there is approximately a \$200,000 request increase from last year's budget. He shared information on revenue, share sales tax, utility sales tax and ABC revenues. There was detailed discussion on the budget balance and funds for the town.

Chief Barbee discussed Claytex tax rate and funds. He discussed the department's plan to apply for the SAFER grant with hopes of adding more staff to the department. Chief discussed the need to help the county as much as the town and Claytex. He stated he wants to show the county the fire department will travel anywhere in the county but need funding to support this. He stated when calls come in, there is a need for people and resources.

There was further discussion between council and Mr. McKie on line items within this proposed budget.

Mr. McKie discussed the water and sewer fund. He stated just in salary and wages, there is an expected \$300,000 increase in 2022 in comparison to current budget. He discussed realigning the CIP. He stated he does not think the capital overlay number will stay where it is at, it will change drastically.

In the electric fund, he stated there were not a lot of major changes. No financing revenue is projected but there will more than likely be some financing. There was discussion on the cost of the new water reclamation facility, he stated that is the burden on the water/sewer fund.

There was discussion on future plans for the new property for the fire station and discussion on the benefit of owning property versus having a mobile unit. Chief Barbee stated in the end, owning property would be an asset.

Mayor McLeod stated the budget presentation has been very helpful and it is helpful to know where the town is financially headed.

5 LUNCH

12:30 - 1:00 p.m.

- a) Lunch began at 11:33 a.m.

6 CLOSED SESSION

1:00 - 1:30 p.m.

Closed Session Pursuant to NCGS 143-318-.11(a)(5)

- a) **ACTION:** Motion to Go Into Closed Session at 12:24 p.m.

Motion: Mayor Pro Tem Thompson

Second: Council Member Grannis

Vote: Unanimous

7 COMMUNICATIONS

- a) **1:00 - 1:30 p.m.**

Presenter: Cathy Marraccini, Public Information Officer

Council returned from Closed Session and discussion began at 1:18 p.m.

Ms. Marraccini discussed outline priorities of the PIO position and restructuring the PIO department. A new position, Communication Specialist, will soon be added. This department will cultivate an organizational focus on Communications Teams and the goal is to have Trained Mini PIOs in each department to identify and submit consistent information.

There was discussion on a reliable notification system. She stated if a street is going to be closed, there should be a procedure in place that citizens receive a call or text notifying them of this. There needs to be a targeted way of letting people know when it may affect them.

She shared the current website will soon be updated. CivicPlus, who works with local government, will be working on this update. They hope to start within 60 days and this should be a 3-6 month process. The annual maintenance fee will include the cost of a 4-year redesign.

Mr. Solomon discussed the importance of staying behind the electric meter conversation and updating that every week. He discussed pushing out articles every week of positive happenings within the town.

Ms. Marricini asked if there were any questions, Mayor McLeod thanked her for stepping up in this role and doing an amazing job. He stated she has represented Clayton with dignity, grace and first class style.

8 WRAP-UP

- a) **1:30 - 2:30 p.m.**

Discussion began at 1:40 p.m.

Mr. Solomon asked council their plus and delta thoughts.

The Plus thoughts from council were

- The pace and speed of this retreat was good
- Good information
- Interactive
- Good communication between everyone
- Trust between staff and council
- Very educational
- Impressed with organizational piece

The Delta thoughts from council were:

- Need a little more balance between what is working and what is not
- Want to hear more about infrastructure
- Want to hear more on the budget
- Would like more input opportunity from council

9 ADJOURNMENT

- a) With nothing further, the meeting was adjourned at 2:21 p.m.

ACTION: Motion to Adjourn

Motion: Council Member Bunn
Second: Council Member Everett
Vote: Unanimous

Duly adopted this the 5th day of April, 2021.

Jody L. McLeod
Mayor

ATTEST:

Kimberly A. Moffett, CMC, NCCMC
Town Clerk

March 9, 2021
Minutes

*P*roclamation

Whereas, the Week of the Young Child™ is a time to promote the needs of young children, their families, and the early childhood programs that serve them because the first years of a child's life are the period of most rapid brain development and lay the foundation for all future learning and success; and

Whereas, the Clayton Chamber of Commerce, along with the Partnership for Children of Johnston County, in conjunction with the North Carolina Association for the Education of Young Children (NCAEYC) and National Association for the Education of Young Children (NAEYC), are celebrating the Week of the Young Child™, April 10-16, 2021; and

Whereas, these organizations are working to promote and inspire high quality early childhood experiences for the youngest citizens of Clayton, NC as these programs provide important benefits to children, families, and our state and nation's economies; and

Whereas, teachers and others who work with or on behalf of young children birth through age eight, who make a difference in the lives of young children in Clayton, NC deserve thanks and professional recognition; and

Whereas, public policies that support early learning for all young children are crucial to young children's futures and to the prosperity of our society as participation in high-quality early childhood education saves taxpayer dollars, makes working families more economically secure, and prepares children to succeed in school, earn higher wages, and live healthier lives;

Therefore, on behalf of the Clayton Town Council, I, Mayor Jody McLeod do hereby proclaim April 10-16, 2021 as the Week of the Young Child™ and encourage all citizens to work to support and invest in early childhood in the Town of Clayton.

Duly adopted this the 5th day of April, 2021 while in regular session.

Jody McLeod
Mayor



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

MEMORANDUM

To: Kimberly Moffett, Town Clerk

From: Chris Rowland, Construction Project Administrator _____

Copy: Donnie Adams, Adams & Hodge Engineering
Harrison Smith, Providence Construction
Karen Durham, Engineering & Inspections Coordinator

Date: March 16, 2021

Subject: Ashcroft, Phases 4A & 4B

Please place a warranty acceptance request for the subject public roadway sections, along with all pertinent easements on the next available agenda. The final lift of asphalt has been placed and all punch list items have been addressed. Following acceptance, the referenced work will be subject to a one-year warranty period. Following warranty expiration, a final inspection will be done with all deficient items corrected by the developer prior to final acceptance.



Town Council Agenda Cover Sheet

Meeting Date

April 5, 2021

Agenda Location

Administrative

Item Title

Advisory Board Appointment Recommendations

Presenter

Kimberly Moffett, Town Clerk

Summary/Description

On February 15, 2021, Town Council adopted Ordinance #2021-02-04 to re-establish the Board of Adjustment. The Board of Adjustment has a total of 7 vacancies with 4 in-town and 3 EJT positions. Of those 7 vacancies, there are 2 alternate positions; 1 in-town and 1 ETJ. The vacancies were advertised, applications received and interviews conducted by staff, Mayor McLeod and board liaison. The recommendations for appointment to the Board of Adjustment presented for consideration (with staggered terms) are as follows:

Name	Board Position #	Term Expiration	In-Town/ETJ
Bob Satterfield	BOA1	12/31/2023	In-Town
Michael Sims	BOA2	12/31/2022	In-Town
Porter Casey	BOA3	12/31/2023	In-Town
Jim Perricone	BOA4	12/31/2023	ETJ
Marty Bizzell	BOA5	12/31/2022	ETJ
John Saluppo	BOA6 (ALTERNATE)	12/31/2021	In-Town
Thomas Antoine	BOA7 (ALTERNATE)	12/31/2021	ETJ

The Fire Advisory Board had 1 unexpired vacancy for the Claytex position with a term expiration of December 31, 2023. The vacancy was advertised, applications received and interviews conducted by staff and board liaison. The recommendation for appointment to the Fire Advisory Board presented for consideration are as follows:

Name	Board Position #	Term Expiration
David "Witt" Young	FD7	12/31/2023

Requested Action

Approval/Denial

Funding Source (If Applicable):

N/A

Cost: N/A Yes ☐ No ☒

Additional Documents to be Included in Agenda Packet

Applications

Meeting Timeline



received message
asked to work
app. business
in summer
BOA 2/22/21

2/22/21
BOA

Clerk's Office Use	
Date Rec'd:	10.13.2020
Town/ETJ:	Town

ADVISORY BOARD CANDIDATE APPLICATION

The Town of Clayton welcomes and appreciates your interest in serving the Town. This application is designed to gather information to evaluate your qualifications. Candidates may be interviewed prior to appointment.

If requesting consideration for more than one board, please submit a separate application for each board.

CHOOSE ONE:

☒ Planning Board

☐ Downtown Development Association Advisory Board

☐ Recreation Advisory Board

☐ Library Advisory Board

☐ Fire Advisory Board

☐ Public Art Advisory Board

PLEASE NOTE: In accordance with North Carolina law, this application is a public record and will be disclosed upon request without notice. If there is any information you do not want released to the public, please do not include it.

Please type or print using dark ink.

Name: BOB SATTERFIELD

Mailing Address: 2045 WALDEN WAY CLAYTON N.C. 27527

Physical HOME Address: SAME

Phone Number (HOME): 919-422-3197 (WORK) _____

FAX Number: _____ Mobile Number: SAME

Email Address: BS2045@N.C.RR.COM

☐ Female*

☒ Male*

Employer: RETIRED

Occupation: SLASH SHOP

*This information is voluntary and is requested for the sole purpose of assuring that a cross section of the community is appointed; NCGS 143-157.1

Residency within the Town limits or ETJ (extra territorial jurisdiction) is required for membership on **most** Council advisory boards.

Length of residence in Clayton: 63

Do you live in Clayton Corporate Limits: ☒ Yes ☐ No ETJ: ☐ Yes ☐ No

How did you find out about this board?

☐ Facebook ☐ Website ☐ Newspaper ☐ Twitter
☐ TV ☒ Friend ☐ Email ☐ Other

Outline your qualifications and why you wish to serve on the board you indicated:

21 YEARS CLAYTON TOWN COUNCIL
21 YEARS EX-OFFICIO MEMBER OF CLAYTON PLANNING BOARD

State why you believe you would be an asset to this board:

A LIFETIME OF EXPERIENCE AND THE WORKINGS OF CLAYTON

Do you anticipate a conflict of interest if asked to serve as a member of the requested board:

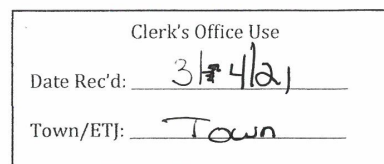
☒ No ☐ Yes If Yes, please explain:

Please list any current or previous service to the community, civic organizations, activities and any special talents:

Boards/Civic Organization/Talents	From	To
<u>CLAYTON FIRE DEPT</u>	<u>1991</u>	<u>2011</u>
<u>CLAYTON TOWN COUNCIL</u>	<u>1998</u>	<u>2019</u>
<u>CLAYTON PLANNING BOARD</u>	<u>1998</u>	<u>2019</u>
<u>Bob Sattler</u>		<u>10-12-2020</u>
Signature		Date

- Please do not submit resumes or attachments.
- This application is a PUBLIC RECORD.
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- Candidates may be interviewed prior to appointment.
- If not initially appointed to serve, applications will remain active for one year from date of receipt.

Applications should be submitted to the Town Clerk in person at 111 East Second Street, by mail at Town of Clayton, PO Box 879, Clayton, NC 27528 or via email at kmoffett@townofclaytonnc.org



Residency within the Town limits or ETJ (extra territorial jurisdiction) is required for membership on **most** Council advisory boards.

Length of residence in Clayton: 21 years

Do you live in Clayton Corporate Limits: ☒ Yes ☐ No ETJ: ☒ Yes ☐ No

How did you find out about this board?

- ☐ Facebook ☐ Website ☐ Newspaper ☐ Twitter
☐ TV ☐ Friend ☐ Email ☒ Other

Outline your qualifications and why you wish to serve on the board you indicated:

To help SHAPE the future of Clayton

State why you believe you would be an asset to this board:

My Background IN SERVING the community AND Decision making

Do you anticipate a conflict of interest if asked to serve as a member of the requested board:

☒ No ☐ Yes If Yes, please explain:

Please list any current or previous service to the community, civic organizations, activities and any special talents:

Boards/Civic Organization/Talents	From	To
<u>Downtown Revitalization Board</u>	<u>2007</u>	<u>2012</u>
<u>Rotary President</u>	<u>2020</u>	<u>Present</u>
<u>Clayton Community Rel. Board</u>	<u>2018</u>	<u>Present</u>

[Signature] **Signature** April 4 2020 **Date**

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Clerk's Office Use	
Date Rec'd:	3-5-21
Town/ETJ:	Town

ADVISORY BOARD CANDIDATE APPLICATION

The Town of Clayton welcomes and appreciates your interest in serving the Town. This application is designed to gather information to evaluate your qualifications. Candidates may be interviewed prior to appointment.

If requesting consideration for more than one board, please submit a separate application for each board.

CHOOSE ONE:

☐ Planning Board

☐ Library Advisory Board

☐ Downtown Development Association Advisory Board

☐ Fire Advisory Board

☐ Recreation Advisory Board

☐ Public Art Advisory Board

☒ Board of Adjustment

PLEASE NOTE: In accordance with North Carolina law, this application is a public record and will be disclosed upon request without notice. If there is any information you do not want released to the public, please do not include it.

Please type or print using dark ink.

Name: Porter Casey Jr.

Mailing Address: 326 Page St. Clayton, NC 27520

Physical HOME Address: 326 Page St. Clayton, NC 27520

Phone Number (HOME): 919-395-2607 (WORK) 919-710-3461

FAX Number: _____ Mobile Number: 919-395-2607

Email Address: portercaseyjr@gmail.com

☐ Female*

☒ Male*

Employer: Trane Technologies

Occupation: Territory Manager

*This information is voluntary and is requested for the sole purpose of assuring that a cross section of the community is appointed; NCGS 143-157.1

Residency within the Town limits or ETJ (extra territorial jurisdiction) is required for membership on **most** Council advisory boards.

Length of residence in Clayton: 2006

Do you live in Clayton Corporate Limits: ☒ Yes ☐ No ETJ: ☐ Yes ☐ No

How did you find out about this board?

☐ Facebook ☐ Website ☐ Newspaper ☐ Twitter

☐ TV ☐ Friend ☐ Email ☒ Other

Outline your qualifications and why you wish to serve on the board you indicated:

Understanding and familiarity of the North Carolina State Building Code - 2018

Understanding of the construction and building process and the roles of each trade and how they effect construction.

Strong love for our community and a desire to see the town, citizens and businesses flourish.

State why you believe you would be an asset to this board:

Ability to manage a team with diverse backgrounds and skills.

Ability to manage complex and unique situations through transparency, integrity and impartiality.

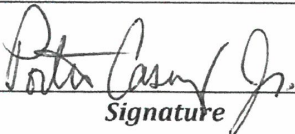
I was born and raised in Clayton and have seen and experienced the transformation over the years and can relate to lifelong residents.

Do you anticipate a conflict of interest if asked to serve as a member of the requested board:

☒ No ☐ Yes *If Yes, please explain:*

Please list any current or previous service to the community, civic organizations, activities and any special talents:

Boards/Civic Organization/Talents	From	To
<u>Johnston Co. Building Industry Ass. Director/State</u>	<u>2019</u>	<u>Current</u>
<u>150th Sesquicentennial Advisory Board</u>	<u>2019</u>	<u>2019</u>
<u>Clayton Historical Ass. / Founding Member / Pres.</u>	<u>2007</u>	<u>2014</u>


Signature

Date

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Clerk's Office Use

Date Rec'd: 2-16-21

Town/ETJ: Boat ETJ

ADVISORY BOARD CANDIDATE APPLICATION

The Town of Clayton welcomes and appreciates your interest in serving the Town. This application is designed to gather information to evaluate your qualifications. Candidates may be interviewed prior to appointment.

If requesting consideration for more than one board, please submit a separate application for each board.

CHOOSE ONE:

- ☐ Planning Board Boat ☐ Library Advisory Board
- ☐ Downtown Development Association Advisory Board ☐ Fire Advisory Board
- ☐ Recreation Advisory Board ☐ Public Art Advisory Board

PLEASE NOTE: In accordance with North Carolina law, this application is a public record and will be disclosed upon request without notice. If there is any information you do not want released to the public, please do not include it.

Please type or print using dark ink.

Name: Jim Perricone

Mailing Address: 404 Southmont St, Clayton NC 27527

Physical HOME Address: 404 Southmont St, Clayton NC 27527

Phone Number (HOME): 919-628-9063 (WORK) 919-585-5321

FAX Number: 919-585-5321 Mobile Number: 919-628-9063

Email Address: jim3591@outlook.com

☐ Female*

☒ Male*

Employer: Self (Partners Commercial Realty, LLC - 50% partner)

Occupation: Commercial Real Estate Brokerage & Prop Mgmt

*This information is voluntary and is requested for the sole purpose of assuring that a cross section of the community is appointed; NCGS 143-157.1

Residency within the Town limits or ETJ (extra territorial jurisdiction) is required for membership on **most** Council advisory boards.

Length of residence in Clayton: 15 Years

Do you live in Clayton Corporate Limits: ☐ Yes ☐ No ETJ: ☒ Yes ☐ No

How did you find out about this board?

- ☐ Facebook ☐ Website ☐ Newspaper ☐ Twitter
☐ TV ☐ Friend ☐ Email ☒ Other

Outline your qualifications and why you wish to serve on the board you indicated:

Masters Degree and 20 years in hospital management/leadership including greenfield development of a new hospital and a health park.

14 Years in commercial real estate brokerage, property management and ownership

Wish to serve to use my experience to give back to the community in which I live.

State why you believe you would be an asset to this board:

Logical thinker committed to thoughtful and fair decision making within the constraints of applicable codes and laws, for the betterment of the community.

Do you anticipate a conflict of interest if asked to serve as a member of the requested board:

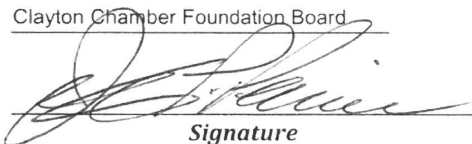
☐ No ☒ Yes *If Yes, please explain:*

An occasion may arise where I am representing a client whose project comes before the Board.

In this situation occurs I would recuse myself.

Please list any current or previous service to the community, civic organizations, activities and any special talents:

Boards/Civic Organization/Talents	From	To
<u>Rotary (Past President & Xmas Parade Co-Chair)</u>	<u>09/2008</u>	<u>current</u>
<u>Clayton Chamber EDC & 3 Yr Planning</u>	<u>09/2015</u>	<u>current</u>
<u>Clayton Chamber Foundation Board</u>	<u>06/2019</u>	<u>current</u>

 **Signature** 02/17/2021 **Date**

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Clerk's Office Use	
Date Rec'd:	35-21
Town/ETJ:	ETJ

ADVISORY BOARD CANDIDATE APPLICATION

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CHOOSE ONE:

- ☐ Planning Board
- ☐ Library Advisory Board
- ☐ Downtown Development Association Advisory Board
- ☐ Fire Advisory Board
- ☐ Recreation Advisory Board
- ☐ Public Art Advisory Board
- ☒ Board of Adjustment

PLEASE NOTE: In accordance with North Carolina law, this application is a public record and will be disclosed upon request without notice. If there is any information you do not want released to the public, please do not include it.

Please type or print using dark ink.

Name: Marty D. Bizzell

Mailing Address: 1026 Brookhill Drive, Clayton, NC 27520

Physical HOME Address: 1026 Brookhill Drive, Clayton, NC 27520

Phone Number (HOME): 919-553-2434 (WORK) 919-851-4422

FAX Number: 919-851-8968 Mobile Number: 919-631-4493

Email Address: marty.bizzell@bnkinc.com

☐ Female*

☒ Male*

Employer: Bass, Nixon and Kennedy, Inc. - Consulting Engineers

Occupation: Civil Engineer

*This information is voluntary and is requested for the sole purpose of assuring that a cross section of the community is appointed; NCGS 143-157.1

Interview
3.18.2020
10:20 am

Residency within the Town limits or ETJ (extra territorial jurisdiction) is required for membership on **most** Council advisory boards.

Length of residence in Clayton: 29 Years

Do you live in **Clayton Corporate Limits**: ☐ Yes ☐ No **ETJ**: ☒ Yes ☐ No

How did you find out about this board?

☐ Facebook ☐ Website ☐ Newspaper ☐ Twitter
☐ TV ☐ Friend ☐ Email ☒ Other

Outline your qualifications and why you wish to serve on the board you indicated:

I am a professional engineer with over 30 years of experience in land development experience. I have worked 15 years with the City of Raleigh and 18 years in the private sector all dealing with land development ordinances, design and permitting. I have also served on the Town of Clayton Planning Board for 12 years and have gained tremendous experience while on the board.

State why you believe you would be an asset to this board:

During my professional career, I have worked on development projects from concept to construction working with municipalities and boards across the Triangle to gain approvals for subdivisions, shopping centers, apartment and commercial projects. Many of the approvals included special use permits, rezoning, preliminary site and subdivision approvals. This experience would be valuable in serving on the board.

Do you anticipate a conflict of interest if asked to serve as a member of the requested board:

☐ No ☒ Yes *If Yes, please explain:*

Occasionally, my company will have a project that will appear before the board for approval. If so, I will recuse myself from the board for that item and appoint another member of our company staff to present the project to the board as I have done so in the past.

Please list any current or previous service to the community, civic organizations, activities and any special talents:

Boards/Civic Organization/Talents	From	To
<u>Town of Clayton Planning Board</u>	<u>November 2008</u>	<u>Present</u>
<u>Clayton Chamber of Commerce Board of Directors</u>	<u>January 2018</u>	<u>December 2020</u>
<u>Clayton Rotary Club</u>	<u>February 2012</u>	<u>Present</u>

Marty D. Bizzell

Signature

Digitally signed by Marty D. Bizzell
DN: cn=US, o=Marty Bizzell@townofclaytonnc.com, ou=Clayton, ou=North Carolina, ou=US, email=Marty D. Bizzell
Date: 2021.03.05 13:25:54 -0500

03-05-21

Date

- Please do not submit resumes or attachments.
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email
received
w. interest
BVA

BVA
2-22-21

Clerk's Office Use	
Date Rec'd:	1-9-2020
Town/ETJ:	Town

ADVISORY BOARD CANDIDATE APPLICATION

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CHOOSE ONE:

☒ Planning Board

☐ Library Advisory Board

☐ Downtown Development Association Advisory Board

☐ Fire Advisory Board

AA ☒ Recreation Advisory Board

☐ Public Art Advisory Board

PLEASE NOTE: In accordance with North Carolina law, this application is a public record and will be disclosed upon request without notice. If there is any information you do not want released to the public, please do not include it.

Please type or print using dark ink.

Name: John Saluppo

Mailing Address: 117 Hansen Run Clayton

Physical HOME Address: 117 Hansen Run Clayton

Phone Number (HOME): _____ (WORK) N/A

FAX Number: _____ Mobile Number: 984-220-5806

Email Address: JASenterp@aol.com

☐ Female*

☒ Male*

Employer: N/A

Occupation: N/A : Marketing / Sales Fortune 50 Company

*This information is voluntary and is requested for the sole purpose of assuring that a cross section of the community is appointed; NCGS 143-157.1

Residency within the Town limits or ETJ (extra territorial jurisdiction) is required for membership on **most** Council advisory boards.

Length of residence in Clayton: August 2019

Do you live in Clayton Corporate Limits: ☒ Yes ☐ No ETJ: ☐ Yes ☐ No

How did you find out about this board?

- ☐ Facebook ☐ Website ☐ Newspaper ☐ Twitter
☐ TV ☐ Friend ☐ Email ☒ Other

Outline your qualifications and why you wish to serve on the board you indicated:

I worked closely with Pain Planning Board To ensure Balance Between Quality of life and progress, Extensive Building Experience and Real Estate qualified.

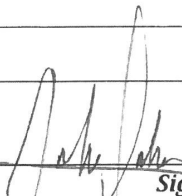
State why you believe you would be an asset to this board:

The Town and surrounding Boroughs are exploding with development My opinion is Balance and Transparency is needed not to exceed growth potential at The Role of Clayton history, citizens, education
Do you anticipate a conflict of interest if asked to serve as a member of the requested board:
Quality of life, Expense

☒ No ☐ Yes If Yes, please explain:

Please list any current or previous service to the community, civic organizations, activities and any special talents:

Boards/Civic Organization/Talents	From	To


Signature

1/6/2020
Date

- Please do not submit resumes or attachments.
- This application is a PUBLIC RECORD.
- Information contained in the application will be considered when making appointments.
- Candidates may be interviewed prior to appointment.
- If not initially appointed to serve, applications will remain active for one year from date of receipt.

Applications should be submitted to the Town Clerk in person at 111 East Second Street, by mail at Town of Clayton, PO Box 879, Clayton, NC 27528 or via email at kmoffett@townofclaytonnc.org



Clerk's Office Use

Date Rec'd: 2.25.2021

Town/ETJ: ETJ

ADVISORY BOARD CANDIDATE APPLICATION

The Town of Clayton welcomes and appreciates your interest in serving the Town. This application is designed to gather information to evaluate your qualifications. Candidates may be interviewed prior to appointment.

If requesting consideration for more than one board, please submit a separate application for each board.

CHOOSE ONE:

- | | |
|--|--|
| ☐ Planning Board | ☐ Library Advisory Board |
| ☐ Downtown Development Association Advisory Board | ☐ Fire Advisory Board |
| ☐ Recreation Advisory Board | ☐ Public Art Advisory Board |
| ☒ Board of Adjustment | |

PLEASE NOTE: In accordance with North Carolina law, this application is a public record and will be disclosed upon request without notice. If there is any information you do not want released to the public, please do not include it.

Please type or print using dark ink.

Name: Thomas L. Antoine

Mailing Address: 174 Plaza De Luke Sq., Clayton, NC 27527

Physical HOME Address: 174 Plaza De Luke Sq., Clayton, NC 27527 (ETJ)

Phone Number (HOME): Not disclosed (WORK) (919) 833-3224

FAX Number: None Mobile Number: Not disclosed

Email Address: TomA@JDBeam.com

☐ Female*

☒ Male*

Employer: J.D. Beam, Inc.

Occupation: Commercial General Contractor / Construction Attorney

*This information is voluntary and is requested for the sole purpose of assuring that a cross section of the community is appointed; NCGS 143-157.1

Residency within the Town limits or ETJ (extra territorial jurisdiction) is required for membership on **most** Council advisory boards.

Length of residence in Clayton: I am nearing my fourth year of residency in Clayton's ETJ.

Do you live in Clayton Corporate Limits: ☐ Yes ☐ No ETJ: ☒ Yes ☐ No

How did you find out about this board?

☐ Facebook ☒ Website ☐ Newspaper ☐ Twitter
☐ TV ☐ Friend ☐ Email ☐ Other

Outline your qualifications and why you wish to serve on the board you indicated:

I have over 25 years of experience as a Commercial General Contractor, currently am part owner of J.D. Beam, Inc. and serve as both their Chief Operations Officer and General Counsel. I have a BS in Construction Management, JD focused in construction and development and an LLM in Real Estate Law. I am a licensed attorney, a qualifier on my firm's Unlimited General Contractor's license. and work in construction and development on a daily basis.

State why you believe you would be an asset to this board:

My unique blend of professional and education experience will prove to be invaluable for the board to process technical data and evaluate it for judicious interpretation and rulings on the code for it's application to unique situations or special cases. I believe in fair mindedness in application and enforcement of the code and recognize that while well written and intended it doesn't capture all circumstances with precision which is the appropriate role for the Advisory Board to fill as a stop-gap.

Do you anticipate a conflict of interest if asked to serve as a member of the requested board:

☒ No ☐ Yes *If Yes, please explain:*

Please list any current or previous service to the community, civic organizations, activities and any special talents:

Boards/Civic Organization/Talents	From	To
<u>Deacon - White Oak Baptist Church</u>	<u>2019</u>	<u>Present</u>
<u>Licensed Attorney</u>	<u>2009</u>	<u>Present</u>
<u>Licensed General Contractor 14167 / 35362</u>	<u>1982 / 2019</u>	<u>Present</u>

 Signature	<u>2/25/2021</u> Date
---	---------------------------------

- Please do not submit resumes or attachments.
- This application is a PUBLIC RECORD.
- Information contained in the application will be considered when making appointments.
- Candidates may be interviewed prior to appointment.
- If not initially appointed to serve, applications will remain active for one year from date of receipt.

Applications should be submitted to the Town Clerk in person at 111 East Second Street, by mail at Town of Clayton, PO Box 879, Clayton, NC 27528 or via email at kmoffett@townofclaytonnc.org



Clerk's Office Use	
Date Rec'd:	3/22/2021
Town/ETJ:	Claytex

ADVISORY BOARD CANDIDATE APPLICATION

The Town of Clayton welcomes and appreciates your interest in serving the Town. This application is designed to gather information to evaluate your qualifications. Candidates may be interviewed prior to appointment.

If requesting consideration for more than one board, please submit a separate application for each board.

CHOOSE ONE:

- | | |
|--|---|
| ☐ Planning Board | ☐ Library Advisory Board |
| ☐ Downtown Development Association Advisory Board | ☒ Fire Advisory Board |
| ☐ Recreation Advisory Board | ☐ Public Art Advisory Board |

PLEASE NOTE: In accordance with North Carolina law, this application is a public record and will be disclosed upon request without notice. If there is any information you do not want released to the public, please do not include it.

Please type or print using dark ink.

Name: David Young

Mailing Address: 2352 Twin Acres Rd Clayton NC 27520

Physical HOME Address: 2352 Twin Acres Rd Clayton NC 27520

Phone Number (HOME): 919-255-2754 (WORK) _____

FAX Number: _____ Mobile Number: 919-255-2754

Email Address: DYoung@GarnerFire.com

☐ Female*

☒ Male*

Employer: Garner Fire and Rescue

Occupation: Captain (Fire Fighter)

*This information is voluntary and is requested for the sole purpose of assuring that a cross section of the community is appointed; NCGS 143-157.1



Town Council Agenda Cover Sheet

Meeting Date

April 5, 2021

Agenda Location

Consent Agenda

Item Title

2020-160-ANX – Riverwood Golf Club Section 2

Presenter

Kimberly Moffett, Town Clerk

Summary/Description

Request to annex seven parcels that total approximately 301.89 acres of land. Some parcels are currently located in the Town's ETJ and are zoned Residential-Estate (R-E) other parcels are located in Johnston County and are zoned Agriculture-Residential (AR).

Requested Action

Place on Consent Agenda

Funding Source (If Applicable):

N/A

Cost: N/A Yes ☐ No ☒

Additional Documents to be Included in Agenda Packet

Application
Aerial Map with Town Zoning
Town Limits with ETJ Map
Advertisement Annexation
Legal Description – Public Notice
Written Legal Description
Site Plan Survey
Resolution 2021-13

Meeting Timeline

Click or tap here to enter text.



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

PETITION FOR VOLUNTARY ANNEXATION

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

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

REQUEST INFORMATION

☒ **Contiguous Annexation**

☐ **Non-Contiguous Annexation**

The following items must accompany an annexation petition:

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

PROCESS:

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

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

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

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

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

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

**PETITION FOR VOLUNTARY ANNEXATION APPLICATION – PROPERTY INFORMATION
COMPLETE IF A LIMITED LIABILITY COMPANY:**

Submittal Date: 11/3/2020

Petition No.: _____

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

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

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

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

Total acreage to be annexed: 139 acres; NC Pms: 167900-54-4810, 167900-65-8736, 167900-85-6791, 167900-85-1824
Existing housing units: n/a
Population of acreage to be annexed: n/a
Existing Zoning District*: RA
Proposed Town Zoning District*: PD-R Fire District: Archer Lodge
Reason for petitioner to annex: X Receive Town Services
_____ Other (please specify): _____

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

In witness whereof, Fred Smith Ranch, LLC a limited liability company, caused this instrument to be executed in its name by a member/manager pursuant to authority duly given, this 4TH day of November, 2020.

Name of Limited Liability Company: _____

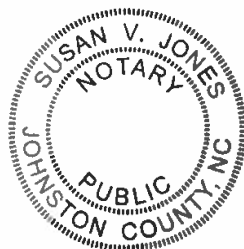
By: _____

Signature of Member/Manager

STATE OF NORTH CAROLINA
COUNTY OF JOHNSTON

Sworn and subscribed before me, Susan V. Jones, a Notary Public for the above State and County, this 4TH day of November, 2020.

SEAL



Notary Public

My Commission Expires: 03/29/2025

Petition for Voluntary Annexation Application – Property Information
COMPLETE IF PROPERTY IS OWNED BY INDIVIDUAL (S)

Submittal Date: 11/3/2020

Petition No.: _____

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

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

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

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

Total acreage to be annexed: 3.9 acres; NC Pin: 167900-56-1805
Existing housing units: n/a
Population of acreage to be annexed: n/a
Existing Zoning District*: RE
Proposed Town Zoning District*: PD-R
Reason for petitioner to annex: X Receive Town Services
Other (please specify): _____

Fire District: Archer Lodge

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

Fred J Smith, Jr.
Please Print

[Signature]
Signature

Please Print

Signature

**STATE OF NORTH CAROLINA
COUNTY OF JOHNSTON**

Sworn and subscribed before me, Susan V Jones, a Notary Public for the above State and County, this 4TH day of, NOVEMBER, 2020.

SEAL



[Signature]
Notary Public

My Commission Expires: 03/29/2025

Petition for Voluntary Annexation Application – Property Information
COMPLETE IF PROPERTY IS OWNED BY INDIVIDUAL (S)

Submittal Date: _____

Petition No.: _____

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

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

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

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

Total acreage to be annexed: 156 acres; NC Pin: 167900-76-3795
Existing housing units: n/a
Population of acreage to be annexed: n/a
Existing Zoning District*: RA
Proposed Town Zoning District*: PD-R
Reason for petitioner to annex: X Receive Town Services
_____ Other (please specify): _____

Fire District: Archer Lodge

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

James W. & Janice C. Holloway, LLC

Signature James W. Holloway, Manager
Janice C. Holloway, Manager
Sandra Crowder Holloway, co-trustee

Signature Sandra Crowder Holloway
Deborah A. Holloway

Signature Deborah A. Holloway

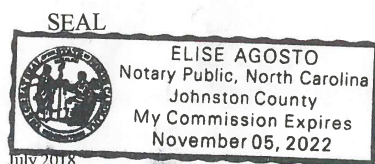
Charles Wade Holloway, co-trustee

Signature Charles Wade Holloway
William Harold Holloway

Signature William H. Holloway

**STATE OF NORTH CAROLINA
COUNTY OF JOHNSTON**

Sworn and subscribed before me, Elise Agosto, a Notary Public for the above State and County, this 2 day of November, 2020

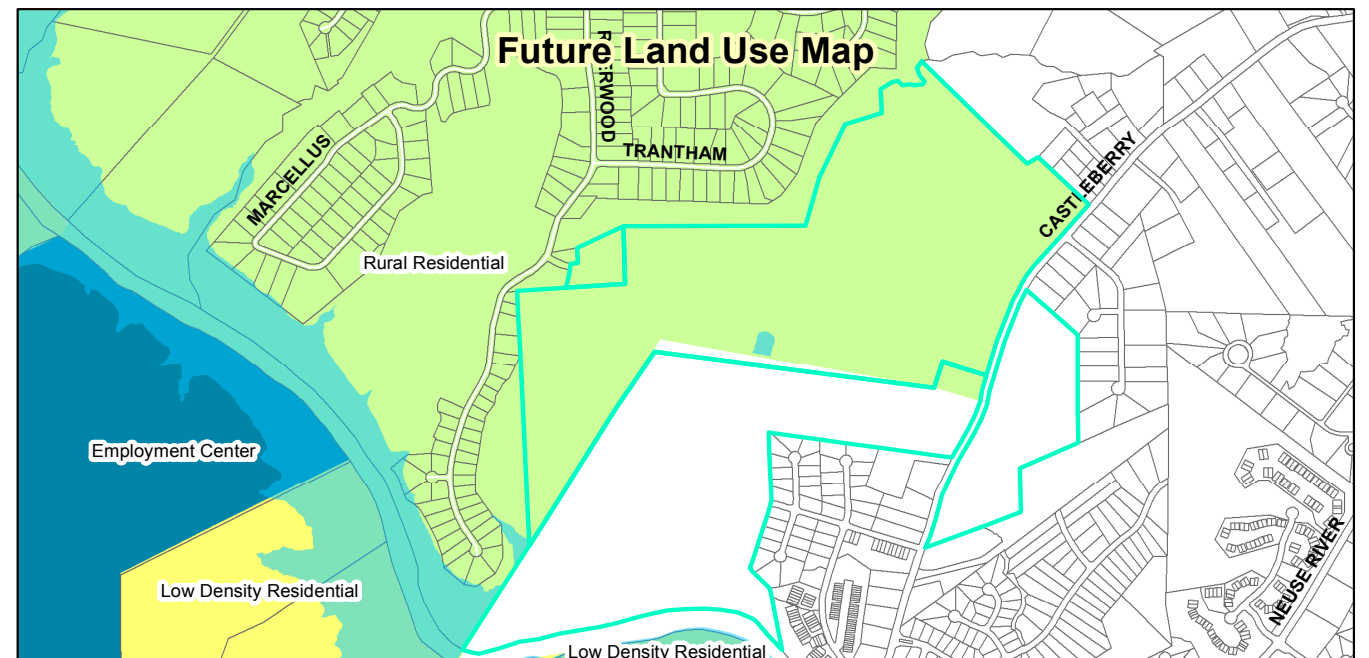
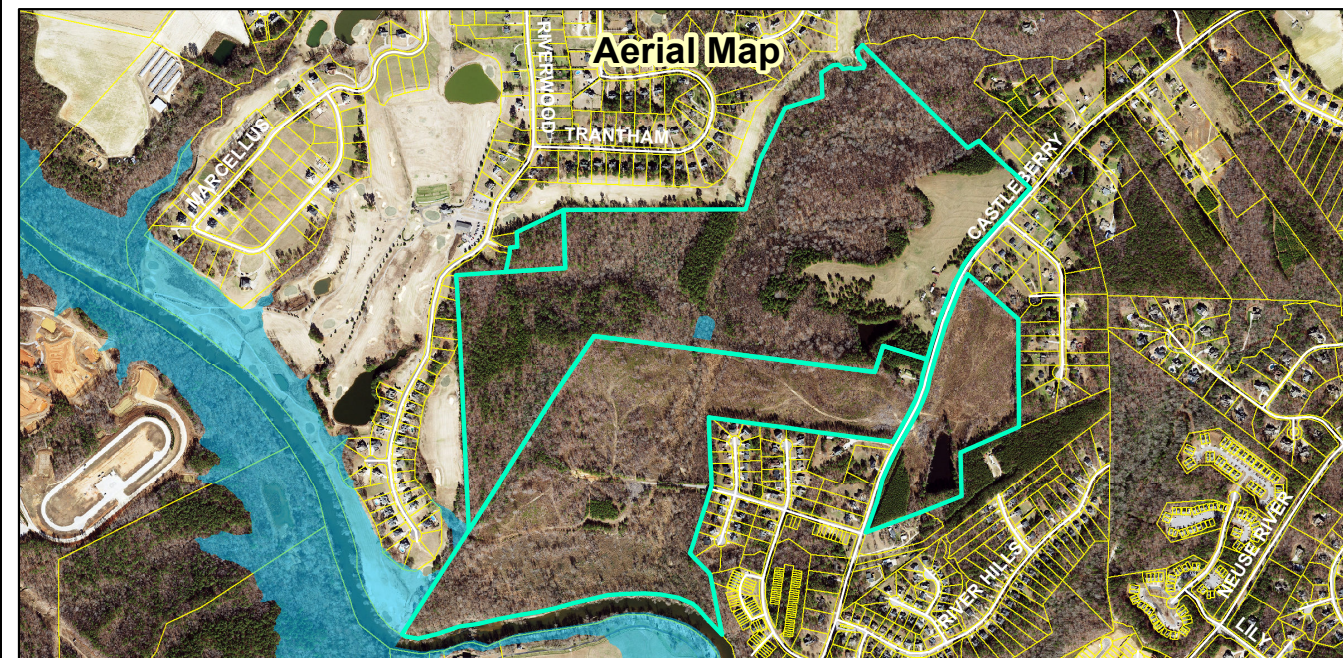
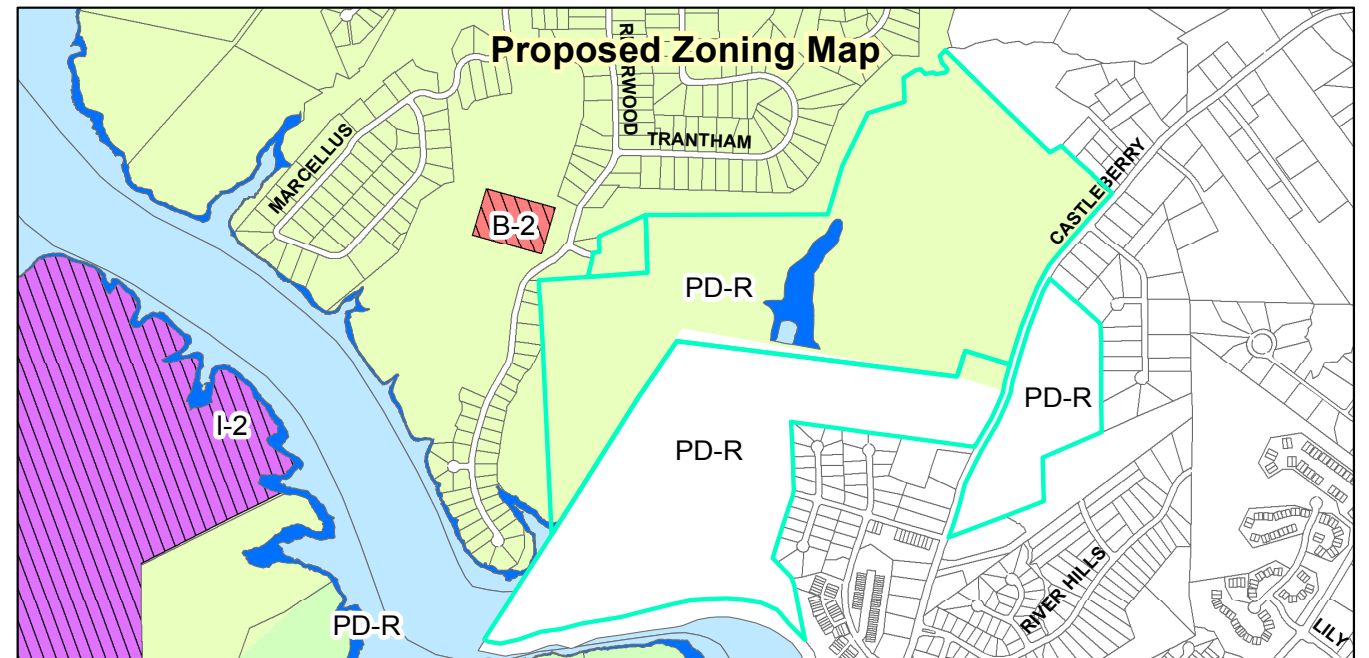
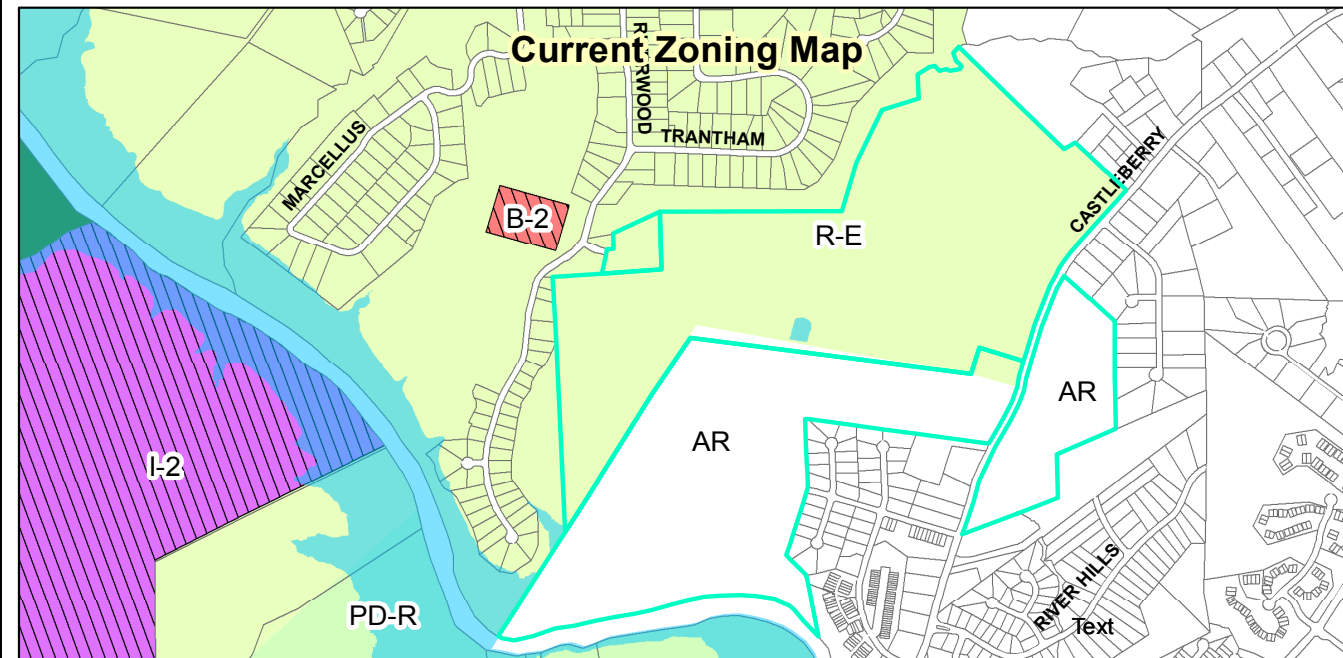


Elise Agosto
Notary Public

My Commission Expires: 11/05/2022

Voluntary Annexation Plat Checklist

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



Request:
2020-157-PD, to Rezone parcels from Residential-Estate (R-E – Clayton) & Agricultural-Residential (AR–Johnston County) & Planned Unit Development (PUD–Johnston County) to Planned Development-Residential (PD-R – Clayton); 2020-158-SD - Preliminary Plat Master Plan 723 residential units, comprising of a mixture of single-family, townhome, and apartment units.

Applicant: David DeYoung - Riverwild Property Owners: FSC Ranch, LLC. Tag #: 16I03012F; 16I03009; 16P99016A; 16P99016A; 16I03009B; 16K05012E; 16J040

0 2,000 4,000 Feet

- Site
- 100-yr Flood Zone
- Thoroughfare Overlay

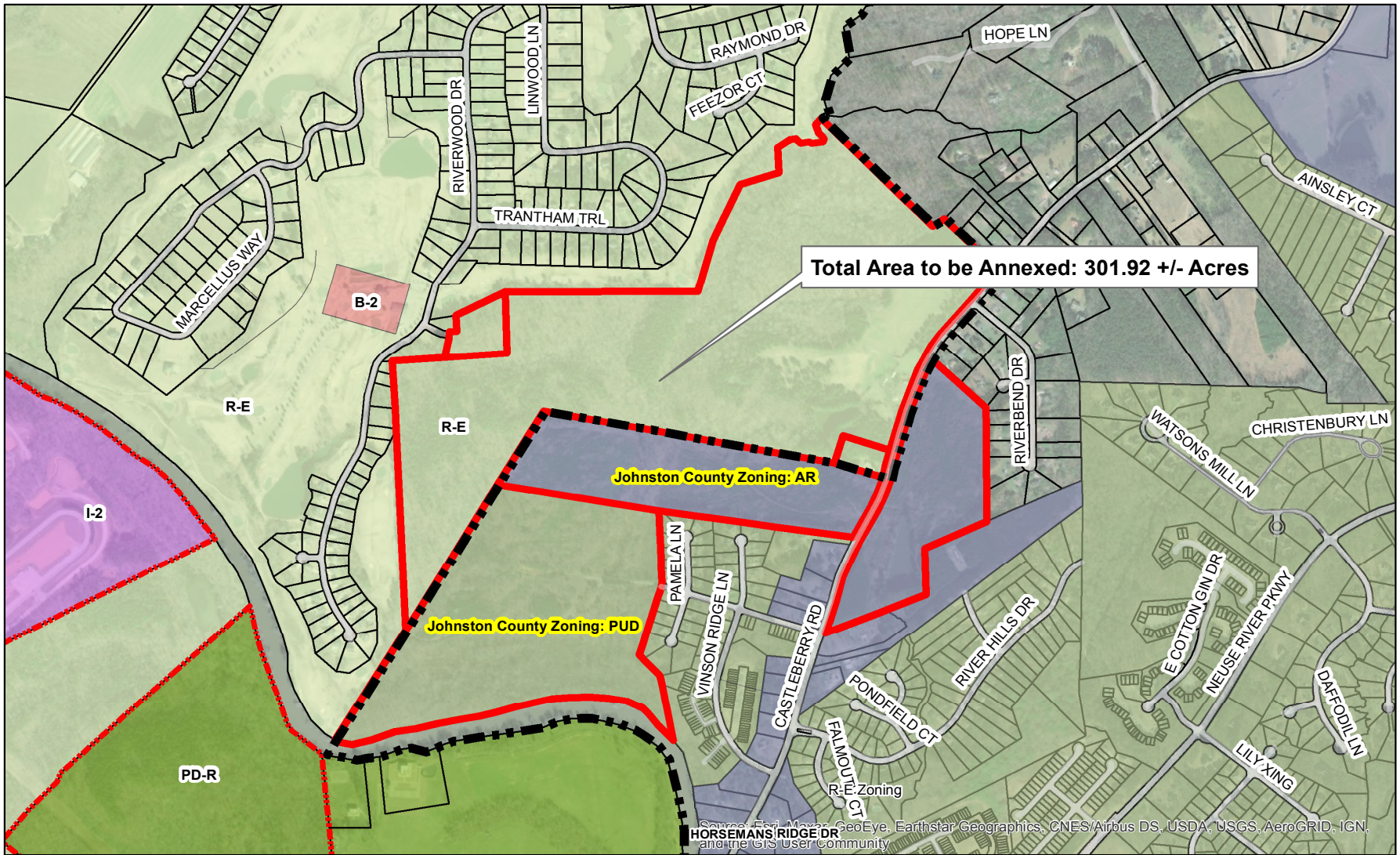


Staff Report Map

Prepared by: TOC Planning Department
March 3, 2021

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

Document Path: O:\PLANNING\REZONING\Planned Developments\2020\2020-157-PDD Riverwood Golf Club Section 2\Staff Report Map\Staff Report Map - 2020-158-SD & 2020-157-PDD - Riverwood Golf Club Section 2 Part 2.mxd



ANNEXATION PETITION 2020-160-ANX

Riverwood Golf - Section II

Parcel: 167900-56-1805; 167900-76-3795; 167900-85-1824

Owners: Fred Smith Properties, James & Janice Holloway & RGCI, LLC

Contiguous; 298.9 +/- acres

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

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

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

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

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

Section 1. A public hearing on the question of annexation of the contiguous area described herein will be held at Town Hall at 6:00 PM on Monday, April 5, 2021.

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

BEGINNING AT AN EXISTING IRON AXLE, SAID AXLE HAVING NC GRID 83(2011) COORDINATES N:697212.94', E:2175416.57', AND BEING THE POINT AND PLACE OF BEGINNING; THENCE N89°44'35"E A DISTANCE OF 1480.00 FEET TO A POINT; THENCE N15°01'35"E A DISTANCE OF 422.48 FEET TO AN EXISTING IRON PIPE; THENCE N20°43'35"E A DISTANCE OF 276.60 FEET TO AN EXISTING IRON PIPE; THENCE N31°26'35"E A DISTANCE OF 203.50 FEET TO A POINT; THENCE N72°19'35"E A DISTANCE OF 327.48 FEET TO A POINT; THENCE N03°59'25"W A DISTANCE OF 204.01 FEET TO A POINT; THENCE N58°44'47"E A DISTANCE OF 110.37 FEET TO A POINT; THENCE S88°05'20"E A DISTANCE OF 43.09 FEET TO A POINT; THENCE S46°27'23"E A DISTANCE OF 60.26 FEET TO A POINT; THENCE N68°38'47"E A DISTANCE OF 60.29 FEET TO A POINT; THENCE S58°12'06"E A DISTANCE OF 40.70 FEET TO A POINT; THENCE N75°36'57"E A DISTANCE OF 91.49 FEET TO A POINT; THENCE N01°55'54"E A DISTANCE OF 30.91 FEET TO A POINT; THENCE N50°27'44"W A DISTANCE OF 47.34 FEET TO A POINT; THENCE N22°40'11"W A DISTANCE OF 88.06 FEET TO A POINT; THENCE N50°49'45"E A DISTANCE OF 59.36 FEET TO A POINT; THENCE S45°21'02"E A DISTANCE

OF 1205.63 FEET TO AN EXISTING IRON PIPE; THENCE N42°38'58"E A DISTANCE OF 104.60 FEET TO A POINT; THENCE N42°35'58"E A DISTANCE OF 104.60 FEET TO A POINT; THENCE S45°36'47"E A DISTANCE OF 37.19 FEET TO AN EXISTING IRON PIPE; THENCE CONTINUING S45°36'47"E A DISTANCE OF 137.48 FEET TO AN EXISTING IRON PIPE; THENCE S46°17'55"E A DISTANCE OF 203.89 FEET TO A POINT; THENCE S45°45'15"E A DISTANCE OF 216.65 FEET TO AN EXISTING IRON PIPE ON THE WEST MARGIN OF THE RIGHT OF WAY OF CASTLEBERRY ROAD; THENCE CONTINUING S45°45'15"E A DISTANCE OF 30.06 FEET TO A POINT IN ON THE CENTERLINE OF CASTLEBERRY ROAD; THENCE WITH AND ALONG THE CENTERLINE OF CASTLEBERRY ROAD S40°29'09"W A DISTANCE OF 580.89 FEET TO A POINT; THENCE S39°07'06"W A DISTANCE OF 99.70 FEET TO A POINT; THENCE S34°47'15"W A DISTANCE OF 99.98 FEET TO A POINT; THENCE S30°42'38"W A DISTANCE OF 99.94 FEET TO A POINT; THENCE LEAVING THE CENTERLINE OF CASTLEBERRY ROAD S46°51'12"E A DISTANCE OF 30.72 FEET TO AN EXISTING CONCRETE MONUMENT ON THE EAST MARGIN OF THE RIGHT OF WAY OF CASTLEBERRY ROAD; THENCE LEAVING SAID MARGIN AND CONTINUING S46°51'12"E A DISTANCE OF 290.35 FEET TO AN EXISTING IRON PIPE; THENCE S46°50'55"E A DISTANCE OF 267.19 FEET TO AN EXISTING CONCRETE MONUMENT; THENCE S00°22'51"W A DISTANCE OF 4.68 FEET TO AN EXISTING IRON PIPE; THENCE S00°22'51"W A DISTANCE OF 879.80 FEET TO AN EXISTING CONCRETE MONUMENT; THENCE S66°39'26"W A DISTANCE OF 477.62 FEET TO AN EXISTING IRON PIPE; THENCE S01°09'24"E A DISTANCE OF 366.40 FEET TO A POINT; THENCE S68°54'01"W A DISTANCE OF 350.14 FEET TO AN EXISTING IRON PIPE; THENCE CONTINUING S68°54'01"W A DISTANCE OF 499.70 FEET TO AN EXISTING IRON PIPE ON THE EAST MARGIN OF THE RIGHT OF WAY OF CASTLEBERRY ROAD; THENCE CONTINUING S68°54'01"W A DISTANCE OF 38.18 FEET TO A POINT IN THE CENTERLINE OF CASTLEBERRY ROAD; THENCE

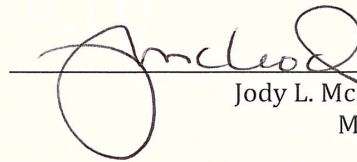
WITH AND ALONG SAID CENTERLINE N17°43'43"E A DISTANCE OF 131.22 FEET TO A POINT; THENCE N17°29'28"E A DISTANCE OF 278.15 FEET TO A POINT THENCE N22°02'13"E A DISTANCE OF 199.97 FEET TO A POINT; THENCE N27°02'59"E A DISTANCE OF 200.18 FEET TO A POINT; THENCE LEAVING THE CENTERLINE OF CASTLEBERRY ROAD N82°00'26"W A DISTANCE OF 33.72 FEET TO AN EXISTING CONCRETE MONUMENT ON THE WEST MARGIN OF THE RIGHT OF WAY OF CASTLEBERRY ROAD; THENCE LEAVING THE WEST MARGIN OF CASTLEBERRY ROAD AND CONTINUING N82°00'26"W A DISTANCE OF 1483.72 FEET TO AN EXISTING NAIL FOUND; THENCE CONTINUING N82°00'26"W A DISTANCE OF 22.96 FEET TO AN EXISTING IRON ROD, SAID PIPE BEING THE NORTHWESTERN MOST CORNER OF LOT 28 OF THE NEUSE HAVEN ESTATES SUBDIVISION FOUND IN PLAT BOOK 57 ON PAGE 322, JOHNSTON COUNTY REGISTRY; THENCE WITH THE WEST BOUNDARY OF THE NEUSE HAVEN ESTATES SUBDIVISION S02°20'13"E A DISTANCE OF 165.05 FEET TO AN EXISTING IRON PIPE; THENCE CONTINUING S02°20'13"E A DISTANCE OF 400.89 FEET TO AN EXISTING IRON ROD ON THE NORTHWESTERN CORNER OF THE RIGHT OF WAY OF STEWARTS KNOB DR; THENCE S13°28'19"W A DISTANCE OF 50.22 FEET TO AN EXISTING IRON ROD ON THE SOUTHWESTERN CORNER OF THE RIGHT OF WAY OF STEWARTS KNOB DR.; THENCE LEAVING THE SOUTH MARGIN OF THE RIGHT OF WAY OF STEWARTS KNOB DR. S17°33'38"W A DISTANCE OF 540.02 FEET TO AN EXISTING IRON ROD;

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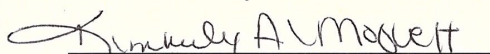
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Section 3. Notice of the public hearing shall be published once in The Johnstonian Newspaper, a newspaper having general circulation in the Town of Clayton, at least ten days prior to the date of the public hearing.

Duly adopted this 15th day of March, 2021 while in regular session.


Jody L. McLeod
Mayor

ATTEST:


Kimberly A. Moffett, CMC, NCCMC
Town Clerk



PUBLIC NOTICE

The Clayton Town Council has called a public hearing at 6:00 PM on Monday, April 5, 2021, at Town Hall, 111 E. Second Street, on the question of annexing the following described contiguous area, requested by annexation petition 2020-160-ANX filed pursuant to G.S. 160A-31:

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

BEGINNING AT AN EXISTING IRON AXLE, SAID AXLE HAVING NC GRID 83(2011) COORDINATES N:697212.94', E:2175416.57', AND BEING THE POINT AND PLACE OF BEGINNING; THENCE N89°44'35"E A DISTANCE OF 1480.00 FEET TO A POINT; THENCE N15°01'35"E A DISTANCE OF 422.48 FEET TO AN EXISTING IRON PIPE; THENCE N20°43'35"E A DISTANCE OF 276.60 FEET TO AN EXISTING IRON PIPE; THENCE N31°26'35"E A DISTANCE OF 203.50 FEET TO A POINT; THENCE N72°19'35"E A DISTANCE OF 327.48 FEET TO A POINT; THENCE N03°59'25"W A DISTANCE OF 204.01 FEET TO A POINT; THENCE N58°44'47"E A DISTANCE OF 110.37 FEET TO A POINT; THENCE S88°05'20"E A DISTANCE OF 43.09 FEET TO A POINT; THENCE S46°27'23"E A DISTANCE OF 60.26 FEET TO A POINT; THENCE N68°38'47"E A DISTANCE OF 60.29 FEET TO A POINT; THENCE S58°12'06"E A DISTANCE OF 40.70 FEET TO A POINT; THENCE N75°36'57"E A DISTANCE OF 91.49 FEET TO A POINT; THENCE N01°55'54"E A DISTANCE OF 30.91 FEET TO A POINT; THENCE N50°27'44"W A DISTANCE OF 47.34 FEET TO A POINT; THENCE N22°40'11"W A DISTANCE OF 88.06 FEET TO A POINT; THENCE N50°49'45"E A DISTANCE OF 59.36 FEET TO A POINT; THENCE S45°21'02"E A DISTANCE OF 1205.63 FEET TO AN EXISTING IRON PIPE; THENCE N42°38'58"E A DISTANCE OF 104.60 FEET TO A POINT; THENCE N42°35'58"E A DISTANCE OF 104.60 FEET TO A POINT; THENCE S45°36'47"E A DISTANCE OF 37.19 FEET TO AN EXISTING IRON PIPE; THENCE CONTINUING S45°36'47"E A DISTANCE OF 137.48 FEET TO AN EXISTING IRON PIPE; THENCE S46°17'55"E A DISTANCE OF 203.89 FEET TO A POINT; THENCE S45°45'15"E A DISTANCE OF 216.65 FEET TO AN EXISTING IRON PIPE ON THE WEST MARGIN OF THE RIGHT OF WAY OF CASTLEBERRY ROAD; THENCE CONTINUING S45°45'15"E A DISTANCE OF 30.06 FEET TO A POINT IN ON THE CENTERLINE OF CASTLEBERRY ROAD; THENCE WITH AND ALONG THE CENTERLINE OF CASTLEBERRY ROAD S40°29'09"W A DISTANCE OF 580.89 FEET TO A POINT; THENCE S39°07'06"W A DISTANCE OF 99.70 FEET TO A POINT; THENCE S34°47'15"W A DISTANCE OF 99.98 FEET TO A POINT; THENCE S30°42'38"W A DISTANCE OF 99.94 FEET TO A POINT; THENCE LEAVING THE CENTERLINE OF CASTLEBERRY ROAD S46°51'12"E A DISTANCE OF 30.72 FEET TO AN EXISTING CONCRETE MONUMENT ON THE EAST MARGIN OF THE RIGHT OF WAY OF CASTLEBERRY ROAD; THENCE LEAVING SAID MARGIN AND CONTINUING S46°51'12"E A DISTANCE OF 290.35 FEET TO AN EXISTING IRON PIPE; THENCE S46°50'55"E A DISTANCE OF 267.19 FEET TO AN EXISTING CONCRETE MONUMENT; THENCE S00°22'51"W A DISTANCE OF 4.68 FEET TO AN EXISTING IRON PIPE; THENCE S00°22'51"W A DISTANCE OF 879.80 FEET TO AN EXISTING CONCRETE MONUMENT; THENCE S66°39'26"W A DISTANCE OF 477.62 FEET TO AN EXISTING IRON PIPE; THENCE S01°09'24"E A DISTANCE OF 366.40 FEET TO A POINT; THENCE S68°54'01"W A DISTANCE OF 350.14 FEET TO AN

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APPROXIMATELY 141,288 SQUARE FEET OR 3.24 ACRES LIES WITHIN THE
RIGHT OF WAY OF CASTLEBERRY ROAD.

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

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

The Johnstonian Newspaper

Please advertise on the following dates:

March 24, 2021

Affidavit of publication required.



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

*Town Council
April 5, 2021*

STAFF REPORT

Application Number: 2020-158-SD

Project Name: Riverwood Golf Club Section 2 Preliminary Plat (Master Plan)

Tag #: 16I03012F; 16I03009; 16P99016A; 16I03009B; 16K05012E; 16J04001

Location: Located east of Riverwood Drive and West of Castleberry Road

Overlay: N/A

Applicant: RiverWild – David DeYoung

Owner(s): Fred J. Smith Jr.; FSC Ranch, LLC; James W. & Janice C. Holloway LLC

Project Planner: Jeff Caines, AICP, Planner – Town of Clayton

Public Noticing Dates:

- **Neighborhood Meeting:** December 3, 2020
- **Sign Posted:** March 26, 2021
- **Letters Mailed:** March 26, 2021
- **Newspaper Ad Published:** March 24, 2021; March 31, 2021

REQUEST: Riverwood Golf Club Section 2 is a proposed 302+/- acre mixed-use neighborhood development located between Riverwood Drive on the western boundary and Castleberry Road on the eastern boundary, with the Neuse River being the southern boundary. The development plans to develop approximately 723 residential units (429 single family units, 74 townhome units, and 220 apartment units), a variety of open space amenities, and access to community amenities such as outdoor pools, workout facilities, walking trails, golf courses, and driving ranges. It is anticipated that the project will be developed in multiple phases over time, based on market demand and to meet the needs and functionality of the community during construction.



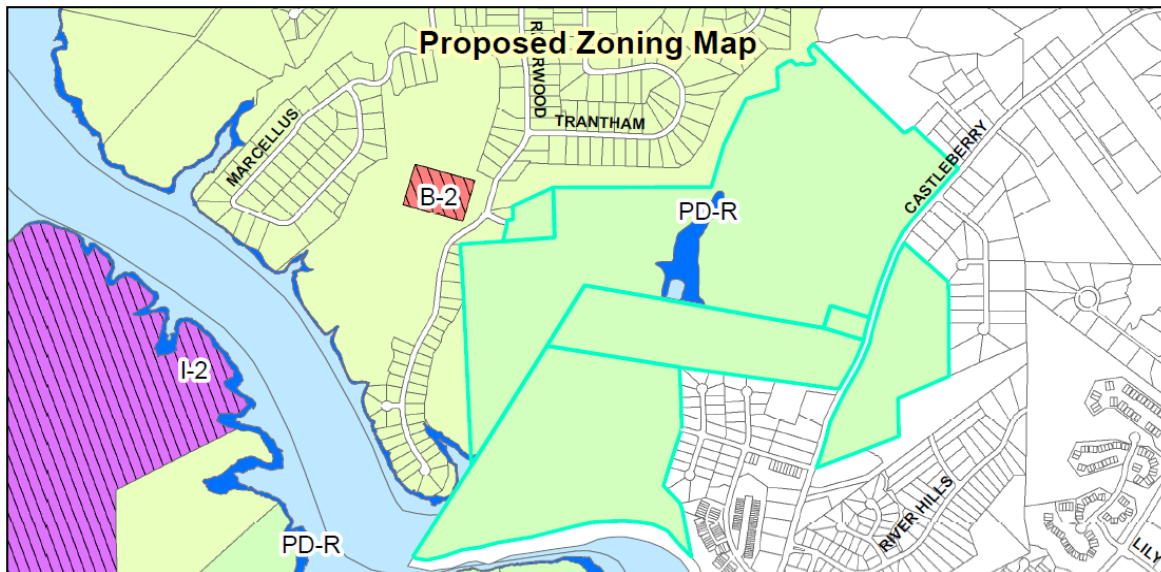
SITE DATA:

Acreage: +/- 302acres

Existing Use: Vacant & Single-Family Residence

ADJACENT ZONING AND LAND USES:

Direction	Zoning	Existing Use(s)
North	Residential Estate (R-E)	Single-Family Residential
South	Planned Development-Residential (PD-R) / Neuse River	Single-Family Residential / River
East	Residential-Estate (AR) / Single Family Residential (SFR)	Vacant / Single-Family Residential
West	Residential Estate (R-E)	Single-Family Residential



DEVELOPMENT DATA:

Proposed Uses:	Residential (mixture of single family, townhome, and apartment units) as well as non-residential uses (combination of open space, access to community amenities: i.e., outdoor pools, workout facilities, walking trails, golf courses, and driving ranges.)
Proposed Density:	Overall up to 723 units are proposed (mixture of single family, townhome, and apartment units) on a net project area of 298.67 (excluding Castleberry ROW) which would create an overall proposed residential density of 2.42 units/acre for the entire development
Proposed Impervious Surface:	25.22 % (75.34 ac) of site impervious area.
Fire Protection:	Archer Lodge Fire District
Access/Streets:	Access will be provided off NC HWY 42 W
Water Provider:	Johnston County – Archer Lodge Water District
Sewer Provider:	Johnston County – East Clayton WWPS Outfall
Electric Provider:	Duke Energy

STAFF ANALYSIS:

Overview

The applicant is requesting approval of a preliminary plat, acting as a master plan. There is an associated rezoning application, 2020-157-PDD and an annexation application, 2020-160-ANX, running concurrently with this

application to annex properties from Johnston County into the Town limits as well as rezone the subject properties from Residential-Estate (R-E) and Agricultural-Residential (AR) to Planned Development Residential (PD-R).

The overall development plans to develop approximately 723 residential units (429 single family units, 74 townhome units, and 220 apartment units), a variety of open space amenities, and access to community amenities such as outdoor pools, workout facilities, walking trails, golf courses, and driving ranges. It is anticipated that the project will be developed in multiple phases over time, based on market demand and to meet the needs and functionality of the community during construction.

Four Main Types of Residential Development:

Single-Family Large Lot Residential:

The Master Plan identifies approximately 153 “Type A” housing units that will be on minimum lot sizes of 10,000 square feet. This type of development is proposed to be located on the western side of the development project closest to Riverwood Drive. Stewarts Knob Drive is the main road through this portion of the development, south of the proposed amenity center. A smaller portion of these larger lots are proposed east of the amenity center on Timberlake Lane.

Single-Family Small Lot Residential:

The Master Plan identifies approximately 276 “Type B” housing units that will be on minimum lot sizes of 4,100 square feet. This type of development is located primarily east and west of Castleberry Road, as shown on the submitted site plan.

Townhome Residential Lots:

The Master Plan identifies approximately 74 “Type C” townhome residential units that will be on minimum lot sizes of 2,000 square feet. This type of development is located primarily east of Castleberry Road on “Road 12” and “Road 13”, as shown on the submitted site plan. The Master Plan shows a passive open space fronting the units that face Castleberry Road for the units on the west side of “Road 12”; while the east side and the townhomes on “Road 13” abut single family small lot residential.

Apartment Units:

The Master Plan identifies approximately 220 “Type D” apartment units located north and south of Timberlake Lane, west of Road 5 near Castleberry Road. The minimum lot size for the apartment units is identified as 20,000 square feet. Page 14 of the site plan set shows the general design of the apartments. Details will be forth coming during the site plan review stage of the development process.

Amenity Center:

The Master Plan proposes an Amenity Center and Maintenance area on the western side of the proposed Master Plan development. The Amenity Center is divided up into two parts, the northern portion is approximately 2.21 acres in size while the southern portion is approximately 4.39 acres in size. Sheet 15 of the plan set give details of eight (8) types of amenities this area may have for the residents of Riverwood Golf Section 2; the applicant will be required to install a minimum of three (3) of the eight (8) uses.

Traffic Impact Analysis along Castleberry Road

A TIA was performed for this development by Kimley Horn. NCDOT also provided the Town with requirements from the Congestion Management Section after the review of the TIA. Both the TIA and Congestion Management Section comments are included as attachments to this staff report. NCDOT has determined that both the TIA recommendations as well as additional comments, as identified in the letter sent to the applicant

out lining individual site and associated improvements are considered necessary for consistency with local District and Division policy. Please refer to the letter dated December 7, 2020 for specific details.

Landscaping/Buffering

The development will include required Class “C” landscaping buffers or natural vegetation along the perimeter of the development. The buffers vary by location around the development. For example, there is a Class “C” boundary surrounding the project area east of Castleberry Road within Phase 1, 12, and 13. The perimeter of the project west of Castleberry Road is surrounded by a combination of open space, Resource Conservation Area, Class “C” buffer or the Riverwood Golf Course. The Landscape Plan shows specific details and locations of the buffers located around the entire development project.

Consistency with Adopted Plans:

Consistency with the Comprehensive Plan 2040

The Town’s Comprehensive Plan – Future Land Use Map designates the properties inside the Town’s ETJ as Agricultural and Rural Residential, while the properties outside the Town’s ETJ are designated as Prime Growth Area, as designated on the Johnson County Comprehensive Plan Map. Agricultural and Rural Residential areas are primarily located outside of existing and future sewer service areas. Agricultural and Rural Residential areas are outlined to provide septic systems for wastewater treatment, have a limited road network and, in this case, lie within the watershed protection overlay of the Neuse River. This designation typically allows up to 2 units/acre as a part of a Planned Development. In this specific case the density is approximately 2.42 units/acre. The application states that the Comprehensive Plan allows “densities up to 7 dwelling units/acre may be approved as part of a Planned Development – Residential District.” This statement is stated under the Medium Density Residential area(s) which is comprised predominantly of neighborhoods with housing units that are more urban in character and in closer proximity to commercial services and centers. Finally, although the single-family density may be identified as 1.44 units/acre, the overall density taking into account all forms of housing types is 2.42 units/acre which is still consistent with the underlying Comprehensive plan designation of Agricultural and Rural Residential.

Overall, the proposed master plan is consistent with the Future Land Use map and Comprehensive Plan 2040 as it maintains the overall density of 2.4 units/acre. Although the development includes a varied mix of residential housing the development preserves large area of resource conservation areas and provides open space areas as well as an amenity center for future residents. The site plan is uniquely designed by keeping larger residential lots on the western side of the development near already existing development and providing higher density (i.e., multi-family) in the middle of the planned development. This is balanced out by smaller lot single-family and townhome residential units on the eastern side of the development.

If the associated rezoning is approved to PD-R the Future Land Use Map Designation would be updated accordingly.

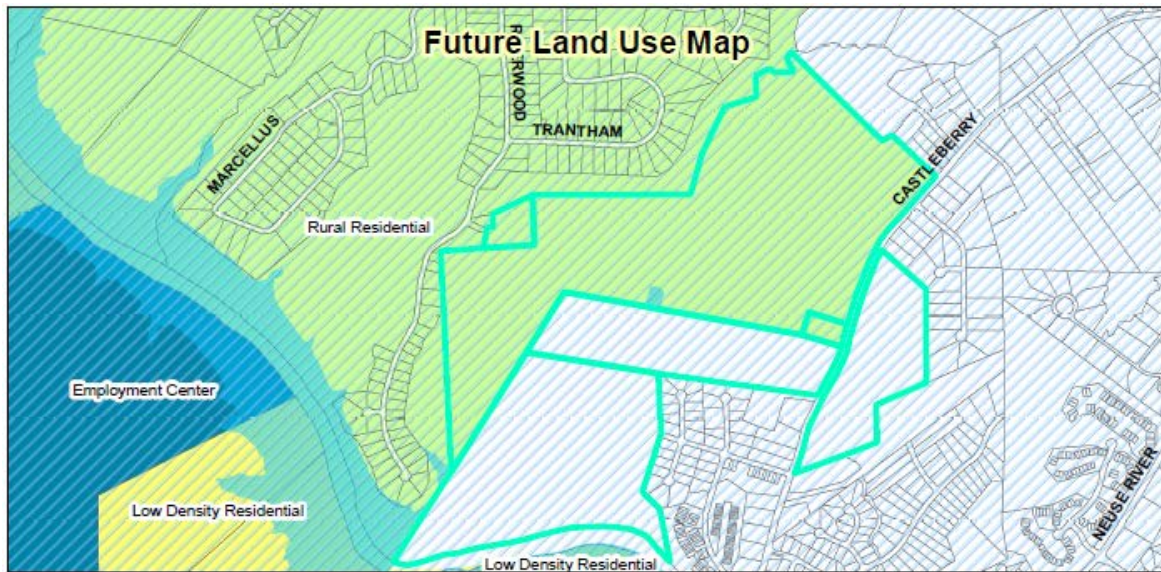
Comprehensive Plan Goals supporting the master plan request include:

- **Goal LU1:** Preserve Clayton’s small-town character while allowing for growth and development in appropriate areas.
- **Goal LU2:** Encourage quality development which maximizes existing infrastructure, promotes walking and biking, and enhances travel safety.
- **Strategy LU2.1.2:** Require vehicular interconnectivity between existing and future adjacent development.
- **Strategy LU2.1.4:** Require development to integrate sidewalks internally and provide pedestrian connections to existing and future adjacent development and/or destinations.

- **Goal H1:** Encourage a range of housing types and lot sizes that meets the needs of various income levels, family sizes, and ages.

Comprehensive Plan Goals not supporting the master plan request include:

- None.



- **Unified Development Code**

The proposed master plan is consistent with the requirements of the Unified Development Code for a plan at its level. Each phase of the development will be reviewed individually as a subdivision plan to ensure consistency with the Unified Development Code and regulating standards of the master plan, as approved by the Town Council.

Compatibility with Surrounding Land Uses

The proposed master plan is compatible with the surrounding land uses. Directly north of the proposed development is Riverwood (i.e., Riverwood Golf Club), which is zoned R-E. To the east of the proposed development are single-family residences located in Johnston County zoned Agricultural – Residential (AR). To the southeast of the proposed development are single-family residences also located in Johnston County which are zoned a combination of Planned Development and Agricultural – Residential (AR). Finally to the south of the proposed development is the Neuse River.

CONSIDERATIONS:

- Each phase of the development will be reviewed as a separate subdivision plan prior to plat recordation.
- If approved, this master plan will be recorded with Johnston County and shall guide future development for this land.
- Approval of the master plan is contingent upon specific conditions of approval which are agreed upon by both the applicant and the Town Council.

FINDINGS OF FACT:

The applicant has addressed the Findings of Fact outlined below, as listed in the Application.

1. Consistency with the adopted plans and policies of the Town.
 - Applicant Response:

Upon rezoning to PD-R the proposed subdivision will be consistent with the following Comprehensive Plan Implementation Goals:

Objective LU1.1 - Encourage developments which incorporate high-quality design and enhance the quality of life for existing and future residents of the Town.

Goal LU2 - Encourage quality development which maximizes existing infrastructure, promotes walking and biking, and enhances travel safety.

Strategy LU2.1.2 - Require vehicular interconnectivity between existing and future adjacent development. Strategy LU2.1.4 - Require development to integrate sidewalks internally and provide pedestrian connections to existing and future adjacent development and/or destinations.

Goal H1 – Encourage a range of housing types and lot sizes that meets the needs of various income levels, family sizes, and ages.

The project provides multiple stormwater control measures (SCM's) and complies with Phase II Watershed Rules - Neuse River Rules. This compliance through the use of SCM's, removes the maximum threshold for density. The overall density of the proposed project is 2.42 du/ac with single family density at 1.44 units per acre.

Staff Commentary:

The subject properties are located within both the Town's ETJ and in Johnston County. After annexation and rezoning the development to Planned Development – Residential (PD-R) the master plan meets the general requirements of the UDC and is consistent with the overall consistent with the Comp Plan 2040.

2. The subdivision meets all required specifications of the Unified Development Code.
 - Applicant Response:

The proposed Riverwood Golf Club Section 2 major subdivision, upon rezoning to Planned Development-Residential will meet the specifications of the Unified Development Code. No waivers or variances are requested as part of this submittal.

Staff Commentary:

The proposed master plan meets the required specifications of the Unified Development Code. The actual subdivision of outparcels will be subject to minor subdivision review in the future and will be required to meet the standards of the UDC and master plan narrative requirements.

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.

- Applicant Response:

The proposed 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 proposed neighborhood will include varying home options, densities, and price points necessary to satisfy continued demand for housing in the Town as well as provide an additional opportunity for commercial uses. Additionally, the proposed development meets Comprehensive Plan Goal H1 – to encourage a range of housing types and lot sizes that meets the needs of various income levels, family sizes, and ages.

Staff Commentary:

The proposed master plan is consistent with Comprehensive Plan Goal H which encourages a wide range of housing types. The proposed master plan provides for two (2) types of single family residential as well as townhome and multi-family residential styles. Besides a planned amenity center the road connections will allow for active recreation between this development and the Riverwood gold course in addition to walking and running opportunities.

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.

- Applicant Response:

The subdivision layout and roadway design are in accord with the September 2020, Traffic Impact Analysis and provide a thoughtful and connected pedestrian and vehicular network. As appropriate, public sidewalks will be located on each side of internal streets to provide pedestrian access to the adjacent existing development. All proposed improvements within the street ROW comply with the Town of Clayton Standards and Specifications. The subdivision layout was designed to avoid environmental conflicts by appropriately buffering streams and honoring floodplain requirements.

Staff Commentary:

The proposed master plan will be required to make internal street improvements in accordance with Town of Clayton standards and specifications. In addition the development will also be required to construct roadway improvements along Castleberry Road as outlined in the TIA and NCDOT requirements to mitigate congestion in the immediate area.

RECOMMENDED CONDITIONS OF APPROVAL:

If approved, staff is recommending conditions of approval be placed upon the application. These conditions are outlined in an attachment to the staff report. The applicant has reviewed the attachment and is in agreement with the conditions proposed by staff.

ATTACHMENTS:

- 1) Application
- 2) Neighborhood Meeting Materials
- 3) Site Plans / Master Plan
- 4) Adjacent Property Letter
- 5) Newspaper Notice
- 6) Traffic Impact Analysis – Traffic Study
- 7) NCDOT Congestion Management Comments
- 8) Signed TRC Certification
- 9) Recommended Conditions of Approval- Signed
- 10) Staff Report Map
- 11) Wastewater Treatment Letter

Ordinance #2021-04-02

ANNEXATION PETITION 2020-160-ANX

Riverwood Golf - Section II

Parcel: 167900-56-1805; 167900-76-3795; 167900-85-1824

Owners: Fred Smith Properties, James & Janice Halloway & RGCI, LLC

Contiguous; 298.9 +/- acres

**AN ORDINANCE TO EXTEND THE CORPORATE LIMITS OF THE
TOWN OF CLAYTON, NORTH CAROLINA**

WHEREAS, the Town of Clayton has been petitioned under G.S. 160A-31 to annex the area described below; and

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

WHEREAS, the Town Clerk has certified the sufficiency of the petition and a public hearing on the question of this annexation was held at Town Hall at 6:00 PM on April 5, 2021 due notice of publication on March 24, 2021.

WHEREAS, the Town of Clayton finds that the petition meets the requirements of G.S. 160A-31;

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

Section 1. By virtue of the authority granted by G.S. 160A-31, the following described territory is hereby annexed and made part of the Town of Clayton as of April 5, 2021:

BEGINNING AT AN EXISTING IRON AXLE, SAID AXLE HAVING NC GRID 83(2011) COORDINATES N:697212.94', E:2175416.57', AND BEING THE POINT AND PLACE OF BEGINNING; THENCE N89°44'35"E A DISTANCE OF 1480.00 FEET TO A POINT; THENCE N15°01'35"E A DISTANCE OF 422.48 FEET TO AN EXISTING IRON PIPE; THENCE N20°43'35"E A DISTANCE OF 276.60 FEET TO AN EXISTING IRON PIPE; THENCE N31°26'35"E A DISTANCE OF 203.50 FEET TO A POINT; THENCE N72°19'35"E A DISTANCE OF 327.48 FEET TO A POINT; THENCE N03°59'25"W A DISTANCE OF 204.01 FEET TO A POINT; THENCE N58°44'47"E A DISTANCE OF 110.37 FEET TO A POINT; THENCE S88°05'20"E A DISTANCE OF 43.09 FEET TO A POINT; THENCE S46°27'23"E A DISTANCE OF 60.26 FEET TO A POINT; THENCE N68°38'47"E A DISTANCE OF 60.29 FEET TO A POINT; THENCE S58°12'06"E A DISTANCE OF 40.70 FEET TO A POINT; THENCE N75°36'57"E A DISTANCE OF 91.49 FEET TO A POINT; THENCE N01°55'54"E A DISTANCE OF 30.91 FEET TO A POINT; THENCE N50°27'44"W A DISTANCE OF 47.34 FEET TO A POINT; THENCE N22°40'11"W A DISTANCE OF 88.06 FEET TO A POINT; THENCE N50°49'45"E A DISTANCE OF 59.36 FEET TO A POINT; THENCE S45°21'02"E A DISTANCE OF 1205.63 FEET TO AN EXISTING IRON PIPE; THENCE N42°38'58"E A DISTANCE OF 104.60 FEET TO A POINT; THENCE N42°35'58"E A DISTANCE OF 104.60 FEET TO A POINT; THENCE S45°36'47"E A DISTANCE OF 37.19 FEET TO AN EXISTING IRON PIPE; THENCE CONTINUING S45°36'47"E A DISTANCE OF 137.48 FEET TO AN EXISTING IRON PIPE; THENCE S46°17'55"E A DISTANCE OF 203.89 FEET TO A POINT; THENCE S45°45'15"E A DISTANCE OF 216.65 FEET TO AN EXISTING IRON PIPE ON THE WEST MARGIN OF THE RIGHT OF WAY OF CASTLEBERRY ROAD; THENCE CONTINUING S45°45'15"E A DISTANCE OF 30.06 FEET TO A POINT IN ON THE CENTERLINE OF CASTLEBERRY ROAD; THENCE WITH AND ALONG THE CENTERLINE OF CASTLEBERRY ROAD S40°29'09"W A DISTANCE OF 580.89 FEET TO A POINT; THENCE S39°07'06"W A DISTANCE OF 99.70 FEET TO A POINT; THENCE S34°47'15"W A DISTANCE OF 99.98 FEET TO A POINT; THENCE S30°42'38"W A DISTANCE OF 99.94 FEET TO A POINT; THENCE LEAVING THE CENTERLINE OF CASTLEBERRY ROAD S46°51'12"E A DISTANCE OF 30.72 FEET TO AN EXISTING CONCRETE MONUMENT ON THE EAST MARGIN OF THE RIGHT OF WAY OF CASTLEBERRY ROAD; THENCE LEAVING SAID MARGIN AND CONTINUING S46°51'12"E A DISTANCE OF 290.35 FEET TO AN EXISTING IRON PIPE; THENCE S46°50'55"E A DISTANCE OF 267.19 FEET TO AN EXISTING CONCRETE MONUMENT; THENCE S00°22'51"W A DISTANCE OF 4.68 FEET TO AN EXISTING IRON PIPE; THENCE S00°22'51"W A DISTANCE OF 879.80 FEET TO AN EXISTING CONCRETE MONUMENT; THENCE S66°39'26"W A DISTANCE OF 477.62 FEET TO AN EXISTING IRON PIPE; THENCE S01°09'24"E A DISTANCE OF 366.40 FEET TO A POINT; THENCE S68°54'01"W A DISTANCE OF 350.14 FEET TO AN EXISTING IRON PIPE; THENCE CONTINUING S68°54'01"W A DISTANCE OF 499.70 FEET TO AN EXISTING IRON PIPE ON THE EAST MARGIN OF THE RIGHT OF WAY OF CASTLEBERRY ROAD; THENCE CONTINUING S68°54'01"W A DISTANCE OF 38.18 FEET TO A POINT IN THE CENTERLINE OF CASTLEBERRY ROAD; THENCE

WITH AND ALONG SAID CENTERLINE N17°43'43"E A DISTANCE OF 131.22 FEET TO A POINT; THENCE N17°29'28"E A DISTANCE OF 278.15 FEET TO A POINT THENCE N22°02'13"E A DISTANCE OF 199.97 FEET TO A POINT; THENCE N27°02'59"E A DISTANCE OF 200.18 FEET TO A POINT; THENCE LEAVING THE CENTERLINE OF CASTLEBERRY ROAD N82°00'26"W A DISTANCE OF 33.72 FEET TO AN EXISTING CONCRETE MONUMENT ON THE WEST MARGIN OF THE RIGHT OF WAY OF CASTLEBERRY ROAD; THENCE LEAVING THE WEST MARGIN OF CASTLEBERRY ROAD AND CONTINUING N82°00'26"W A DISTANCE OF 1483.72 FEET TO AN EXISTING NAIL FOUND; THENCE CONTINUING N82°00'26"W A DISTANCE OF 22.96 FEET TO AN EXISTING IRON ROD, SAID PIPE BEING THE NORTHWESTERN MOST CORNER OF LOT 28 OF THE NEUSE HAVEN ESTATES SUBDIVISION FOUND IN PLAT BOOK 57 ON PAGE 322, JOHNSTON COUNTY REGISTRY; THENCE WITH THE WEST BOUNDARY OF THE NEUSE HAVEN ESTATES SUBDIVISION S02°20'13"E A DISTANCE OF 165.05 FEET TO AN EXISTING IRON PIPE; THENCE CONTINUING S02°20'13"E A DISTANCE OF 400.89 FEET TO AN EXISTING IRON ROD ON THE NORTHWESTERN CORNER OF THE RIGHT OF WAY OF STEWARTS KNOB DR; THENCE S13°28'19"W A DISTANCE OF 50.22 FEET TO AN EXISTING IRON ROD ON THE SOUTHWESTERN CORNER OF THE RIGHT OF WAY OF STEWARTS KNOB DR.; THENCE LEAVING THE SOUTH MARGIN OF THE RIGHT OF WAY OF STEWARTS KNOB DR. S17°33'38"W A DISTANCE OF 540.02 FEET TO AN EXISTING IRON ROD; THENCE S42°26'22"E A DISTANCE OF 47.26 FEET TO AN EXISTING IRON ROD; THENCE CONTINUING S42°26'22"E A DISTANCE OF 181.43 FEET TO AN EXISTING IRON ROD; THENCE S15°23'01"E A DISTANCE OF 477.06 FEET TO A POINT ON THE TOP OF BANK OF THE NEUSE RIVER; THENCE WITH AND ALONG THE TOP OF BANK OF THE NEUSE RIVER IN AN WESTERLY DIRECTION APPROXIMATELY 2,800 FEET TO A POINT, [REFERENCE LINE OF S88°39'06"W A DISTANCE OF 2607.65 FEET] SAID POINT BEING LOCATED N31°40'44"E A DISTANCE OF 9.72 FEET FROM AN EXISTING IRON ROD IN THE BANK OF THE NEUSE RIVER; THENCE N31°40'44"E A DISTANCE OF 1040.47 FEET TO AN EXISTING IRON PIPE; THENCE N03°13'38"W A DISTANCE OF 1593.04 FEET TO AN EXISTING IRON ROD, SAID PIPE BEING THE SOUTHEAST CORNER OF LOT 245 OF THE RIVERWOOD SUBDIVISION FOUND IN PLAT BOOK 66 ON PAGE 364, JOHNSTON COUNTY REGISTRY; THENCE CONTINUING N03°13'38"W A DISTANCE OF 323.55 FEET TO AN EXISTING IRON ROD; THENCE CONTINUING N03°13'38"W A DISTANCE OF 210.93 FEET TO AN EXISTING BENT IRON ROD; THENCE N85°14'40"E A DISTANCE OF 405.45 FEET TO AN EXISTING IRON PIPE; THENCE N13°59'06"E A DISTANCE OF 147.78 FEET TO A POINT ON THE SOUTHEAST CORNER OF THE RIGHT OF WAY OF TIMBERLAKE LN.; THENCE N47°43'37"E A DISTANCE OF 72.21 FEET TO A POINT ON THE NORTHEAST CORNER OF THE RIGHT OF WAY OF TIMBERLAKE LN.; THENCE LEAVING THE NORTH MARGIN OF TIMBERLAKE LN. N01°18'47"W A DISTANCE OF 131.76 FEET TO A POINT; THENCE N66°37'50"E A DISTANCE OF 409.19 FEET TO A POINT; THENCE N03°27'33"W A DISTANCE OF 9.45 FEET TO

AN EXISTING IRON AXLE AND THE POINT AND PLACE OF BEGINNING, CONTAINING 13,150,182 SQUARE FEET OR 301.89 ACRES, MORE OR LESS. APPROXIMATELY 141,288 SQUARE FEET OR 3.24 ACRES LIES WITHIN THE RIGHT OF WAY OF CASTLEBERRY ROAD.

Section 2: Upon and after September 21, 2020, the above described territory and its citizens and property shall be subject to all debts, laws, ordinances and regulations in force in the Town of Clayton and shall be entitled to the same privileges and benefits as other parts of the Town of Clayton. Said territory shall be subject to municipal taxes according to G.S. 160A-58.10.

Section 3. The Mayor of the Town of Clayton shall cause to be recorded in the office of the Register of Deeds of Johnston County, and in the office of the Secretary of State at Raleigh, North Carolina, an accurate map of the annexed territory, described in Section 1 above, together with a duly certified copy of this ordinance. Such a map shall also be delivered to the County Board of Elections, as required by G.S. 163-288.1.

Duly adopted this the 5th day of April, 2021 while in regular session.

Jody L. McLeod, Mayor

ATTEST:

Kimberly A. Moffett, CMC, NCCMC
Town Clerk

Jim Cauley
Town Attorney

**NORTH CAROLINA
JOHNSTON COUNTY**

This the _____ day of _____, 2021 _____ personally appeared before me, Kimberly A. Moffett, Clerk of the Town of Clayton, who, being duly sworn by me, says that she knows the common seal of the Town of Clayton and is acquainted with Jody L. McLeod, who is the Mayor and presiding member of said municipal corporation; and that she saw the said Mayor sign the foregoing instrument and saw the said common seal of said municipal corporation affixed to said instrument by said Mayor, and that she, the said Kimberly A. Moffett, signed her name in attestation of said instrument in the presence of said Mayor.

Witness my hand and notarial seal, this the day and year first above written.

(SEAL)

Notary Public - Signature

Notary Public – Printed Name

Commission Expires: _____

County of Commission: _____



Town Council Agenda Cover Sheet

Meeting Date

April 5, 2021

Agenda Location

Public Hearings

Item Title

2020-157-PDD Riverwood Golf Club Section 2 Rezoning;

Presenter

Jeff Caines, AICP – Planning Department

Summary/Description

The request to rezone approximately +/- 300 acres of land from Residential-Estate (R-E – Clayton) & Agricultural-Residential (AR – Johnston County) & Planned Unit Development (PUD – Johnston County) to Planned Development-Residential (PD-R – Clayton). The properties are located between Castleberry Road and Riverwood Road; north of the Neuse River.

Requested Action

Approval/Denial

Funding Source (If Applicable):

N/A

Cost: N/A Yes ☐ No ☒

Additional Documents to be Included in Agenda Packet

Application
Neighborhood Meeting Material
Site Plan – Master Plan
Adjacent Property Letter
Newspaper Ad
Traffic Impact Analysis
Staff Report
Staff Report Map
Consistency Statement
Wastewater Allocation Request

Meeting Timeline

Click or tap here to enter text.



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: Riverwood Golf Club Section 2
Acreage of Property: 298.43 Zoning District: R-E (Clayton) AR & PUD (County)
County Tag #: 16I03009, 16I03009B, 16P99016A, 16K05012E, 16J04001 NC Pin #: 167900-76-3795, 167900-65-8736, 167900-85-1824, 167900-54-4810, 167900-85-6791
Address/Location: Located east of Riverwood Drive and west of Castleberry Road
Existing Zoning District: R-E (Clayton) AR & PUD (County) Proposed Zoning District: PD-R (Planned Development-Residential)

APPLICANT INFORMATION

Applicant: David DeYoung - RiverWild
Mailing Address: 114 W Main Street Clayton NC 27520
Phone Number: 919-901-3178 Fax: n/a
Contact Person: David DeYoung
Email Address: david@theriverwildteam.com

PROPERTY OWNER INFORMATION

Name: See attachment 1 for all property owner information
Mailing Address: _____
Phone Number: _____ Fax: _____
Email Address: _____

OFFICE USE ONLY

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

EXPLANATION OF PROJECT

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

See attachment 2 in project submittal.

APPROVAL CRITERIA

All applications for a Rezoning must address the following findings:

1. Consistency with the adopted plans of the Town.
See attachment 2 in project submittal.

2. Suitability of the subject property for uses permitted by the current vs. the proposed district.
See attachment 2 in project submittal.

3. Whether the proposed change tends to improve the balance of uses, or meets specific demand in the Town.
See attachment 2 in project submittal.

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 attachment 2 in project submittal.

5. It has been determined that the legal purposes for which zoning exists are not violated.
See attachment 2 in project submittal.

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 attachment 2 in project submittal.

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 attachment 2 in project submittal.

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.

David DeYoung

Print Name


Signature of Applicant

11/2/2020

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: Riverwood Golf Club - Section 2 **Address or PIN #:** 167900-56-1805

AGENT/APPLICANT INFORMATION:

David DeYoung, AICP - RiverWild
(Name - type, print clearly)

114 W. 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*):

All entitlement / development processes

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:

SMITH, FRED J JR
(Name - type, print clearly)

632 MARCELLUS WAY
(Address)

[Signature]
(Owner's Signature)

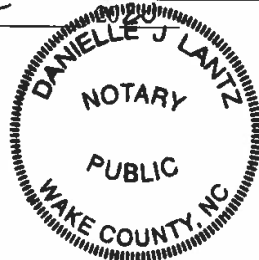
CLAYTON, NC 27527
(City, State, Zip)

STATE OF NC

COUNTY OF JOHNSTON

Sworn and subscribed before me Danielle J. Lantz, a Notary Public for the above State and County, this the 3rd day of August

SEAL



[Signature]
Notary Public

My Commission
Expires:

3-11-2024

July 2018



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: Riverwood Golf Club - Section 2 **Address or PIN #:** 167900-85-1824, 167900-65-8736, 167900-54-4810, 167900-85-6791

AGENT/APPLICANT INFORMATION:

David DeYoung, AICP - RiverWild
(Name - type, print clearly)

114 W. 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*):

All entitlement / development processes

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:

FSC RANCH, LLC
(Name - type, print clearly)

400 RIVERWOOD DR
(Address)

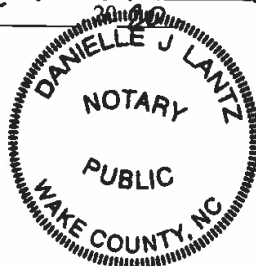
[Signature]
(Owner's Signature)

CLAYTON, NC 27527
(City, State, Zip)

STATE OF NC
COUNTY OF Johnston

Sworn and subscribed before me Danielle J. Lantz, a Notary Public for the above State and County, this the 3rd day of August, 2022

SEAL



[Signature]
Notary Public

My Commission
Expires:

3-11-2024

July 2018



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: Riverwood Golf Club - Section 2 **Address or PIN #:** 167900-76-3795

AGENT/APPLICANT INFORMATION:

David DeYoung, AICP - RiverWild
(Name - type, print clearly)

114 W. 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*):

All entitlement / development processes

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 W & JANICE C HOLLOWAY LLC
(Name - type, print clearly)

8401 CROWDER RD.
(Address)

James W. Holloway, Manager
(Owner's Signature)

RALEIGH, NC 27603
(City, State, Zip)

STATE OF NC

COUNTY OF Johnston

Sworn and subscribed before me Kelli B. Bynum, a Notary Public for the above State and County, this the 3 day of August, 2020.

SEAL



Kelli B. Bynum
Notary Public

My Commission
Expires:

10.28.2023

July 2018

Riverwood Golf Club Section 2 - Rezoning Application Attachment 2 (revised per Town comments)

EXPLANATION OF PROJECT *Please provide detailed information concerning all requests. Attach additional sheets if necessary.*

Riverwood Golf Club Section 2 is a proposed planned development residential neighborhood consisting of 723 residential units (429 single family lots, 74 townhome lots, and 220 apartments). In addition to the residential lots, the neighborhood will contain an amenity center and a Golf Course maintenance facility. There are a total of 507 proposed lots.

The property assemblage is 301.91 acres with a net project area of 210.57 acres yielding an overall proposed density of 2.42 units per acre. The site is located on the edge of the Town limits between Riverwood Drive and Castleberry Road with three parcels zoned R-E (Clayton), one parcel zoned PUD (County) and one parcel zoned AR (County).

The proposed zoning is PD-R, Planned Development-Residential which provides the opportunity to design a master-planned neighborhood containing a mixture of housing types and associated recreational amenities. This neighborhood will be developed in multiple phases based on a market demand while meeting the needs and functionality of the community during construction.

REQUIRED INFORMATION (to be submitted with the application)

The following items must accompany a Rezoning application. To be completed by the applicant: To be completed by staff: *Submit 9 copies of all materials unless otherwise noted or directed by staff*

APPROVAL CRITERIA

All applications for a Rezoning must address the following findings:

1. Consistency with the adopted plans of the Town.

The proposed rezoning to PD-R, and proposed density, is consistent with the adjacent Riverwood Golf Club Section 1 and meets the general plans for development and growth of the Town of Clayton. The proposed rezoning is consistent with the following Comprehensive Plan Implementation Goals:

- Objective LU1.1 - Encourage developments which incorporate high-quality design and enhance the quality of life for existing and future residents of the Town.
- Goal LU2 - Encourage quality development which maximizes existing infrastructure, promotes walking and biking, and enhances travel safety.
- Strategy LU2.1.2 - Require vehicular interconnectivity between existing and future adjacent development.
- Strategy LU2.1.4 - Require development to integrate sidewalks internally and provide pedestrian connections to existing and future adjacent development and/or destinations.
- Goal H1 – Encourage a range of housing types and lot sizes that meets the needs of various income levels, family sizes, and ages.

While the FLUM designation of Agricultural/Rural Residential suggests gross residential density of up to 2 dwelling units per acre, the Comprehensive Plan provides guidance to permit up to 7 units per acre in Planned Development Districts. The proposed density of 2.42 units per acre is consistent with the adjacent Riverwood Golf Club Section 1 and the Comprehensive Plan guidance. This project provides stormwater control measures (SCM) in compliance with Town of Clayton regulations and complies with Phase II Watershed Rules - Neuse River Rules. In addition, the single-family density is 1.44 units per acre.

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

The existing zoning allows for low-density residential uses and select complementary non-residential uses. Rezoning to a Planned Development-Residential designation:

- Is compliant with Comprehensive Plan Goal H1 to encourage a range of housing types and lots sizes that meets the needs of various income levels, family sizes, and ages.
- Provides the opportunity to design a master-planned neighborhood containing a mixture of housing types and associated recreational amenities.

3. Whether the proposed change tends to improve the balance of uses, or meets specific demand in the Town.
The proposed rezoning to Planned Development-Residential will:

- Allow the development of a master-planned community promoting residential diversity, density, levels of affordability to satisfy the continued housing demand in Clayton.
- Aid in the development of a well-designed neighborhood that provides a setting for residents to develop a strong sense of community.

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.

- To ensure that adequate public facilities are in place, the Riverwood Golf Club Section 2 neighborhood will be developed in multiple phases in response to residential market demands.
- Water and wastewater are both available through capacity owned by the Town of Clayton in the County's system. This capacity is only available to development located in this area of the Town.
- Infrastructure will be designed and built to provide appropriate capacity and in accord with phasing.
- A TIA has been provided noting roadway improvement recommendations.
- The project will be designed with SCMs for stormwater control and conveyance.
- Recreation facilities including an Amenity Center, pool, playground, and parks as well as sidewalks for pedestrian connectivity will be provided.

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

There are no legal concerns or issues related to the proposed rezoning and will not negatively impact the health, safety, or general welfare of the public.

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 will not result in an adverse effect upon adjoining property owners. The site is bounded to the west by the existing Riverwood Golf Club Section 1 and Castleberry Road to the east. The proposed rezoning is consistent with Comprehensive Plan guidance which allows up to 7 units per acre in a Planned Development - Residential district. The proposed overall zoning density is 2.42 units per acre, with the single-family density of 1.44 units per acre. Further, Riverwood Golf Club Section 2 is an extension of the original golf club and will share amenities with that development.

7. It has been determined that no one property owner or small group of property owners will benefit materially from the change to the detriment of the general public.

No individual or group of small group of property owners will benefit to the detriment of the general public.

Riverwood Golf Club Section 2 - Major Subdivision Application Attachment 2 (revised per staff comments)

1. The subdivision is consistent with the adopted plans and policies of the Town.

Upon rezoning to PD-R the proposed subdivision will be consistent with the following Comprehensive Plan Implementation Goals:

Objective LU1.1 - Encourage developments which incorporate high-quality design and enhance the quality of life for existing and future residents of the Town.

Goal LU2 - Encourage quality development which maximizes existing infrastructure, promotes walking and biking, and enhances travel safety.

Strategy LU2.1.2 - Require vehicular interconnectivity between existing and future adjacent development. Strategy LU2.1.4 - Require development to integrate sidewalks internally and provide pedestrian connections to existing and future adjacent development and/or destinations.

Goal H1 – Encourage a range of housing types and lot sizes that meets the needs of various income levels, family sizes, and ages.

The project provides multiple stormwater control measures (SCM's) and complies with Phase II Watershed Rules - Neuse River Rules. This compliance through the use of SCM's, removes the maximum threshold for density. The overall density of the proposed project is 2.42 du/ac with single family density at 1.44 units per acre.

2. The subdivision meets all required specifications of the Unified Development Code.

The proposed Riverwood Golf Club Section 2 major subdivision, upon rezoning to Planned Development-Residential will meet the specifications of the Unified Development Code. No waivers or variances are requested as part of this submittal.

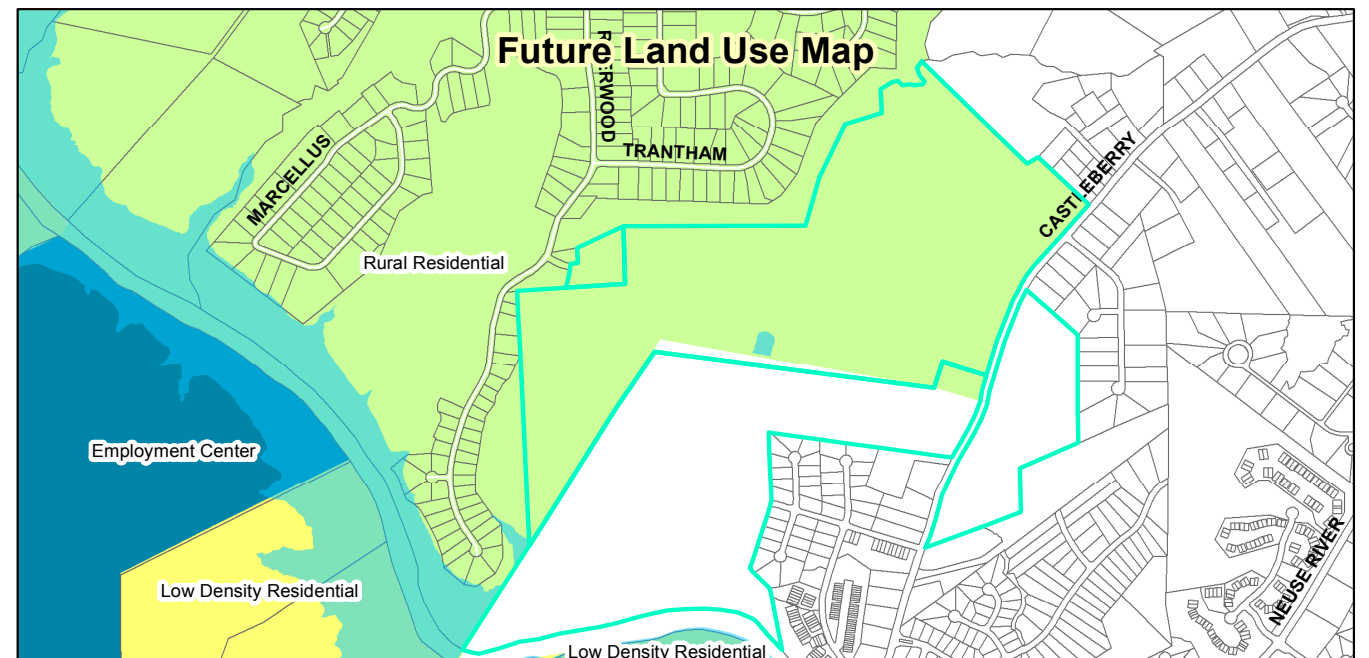
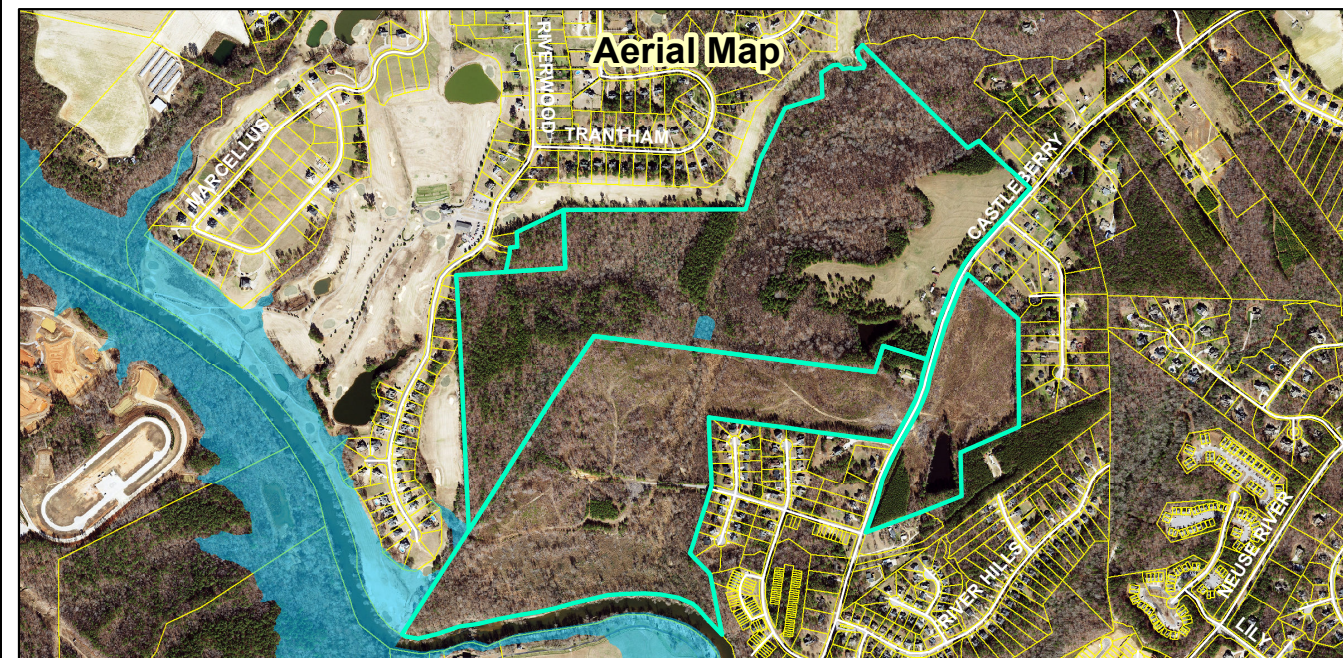
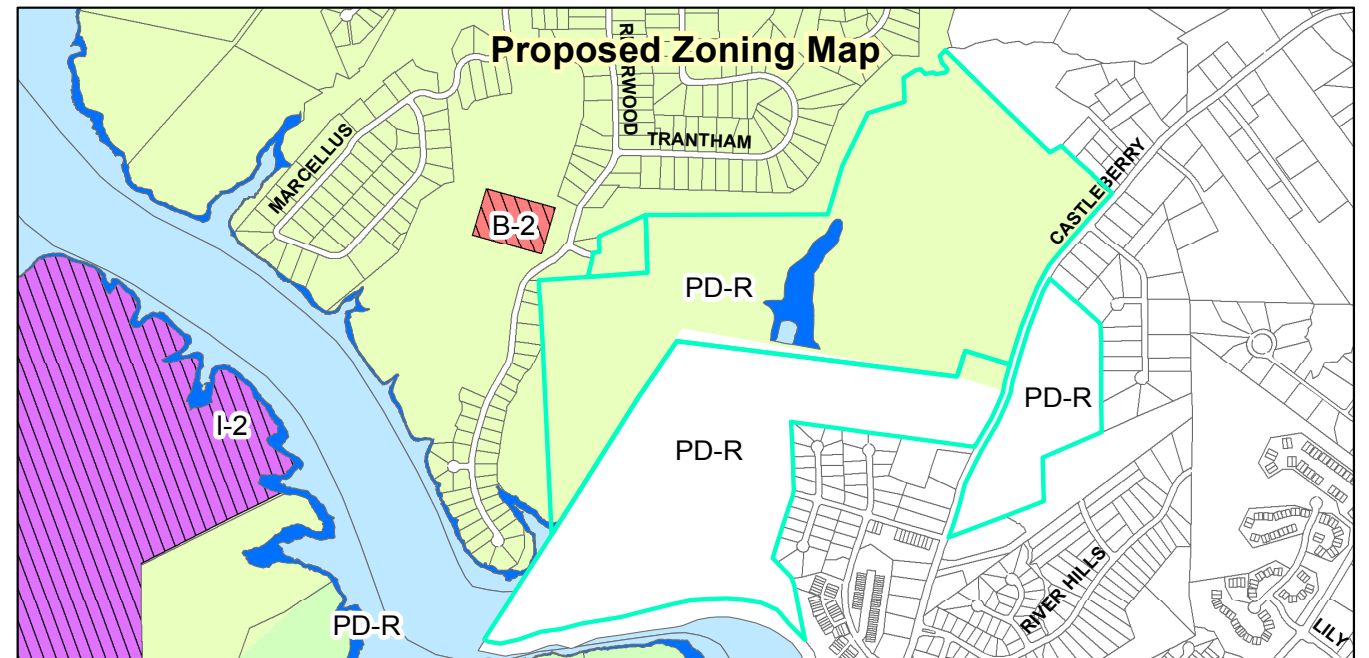
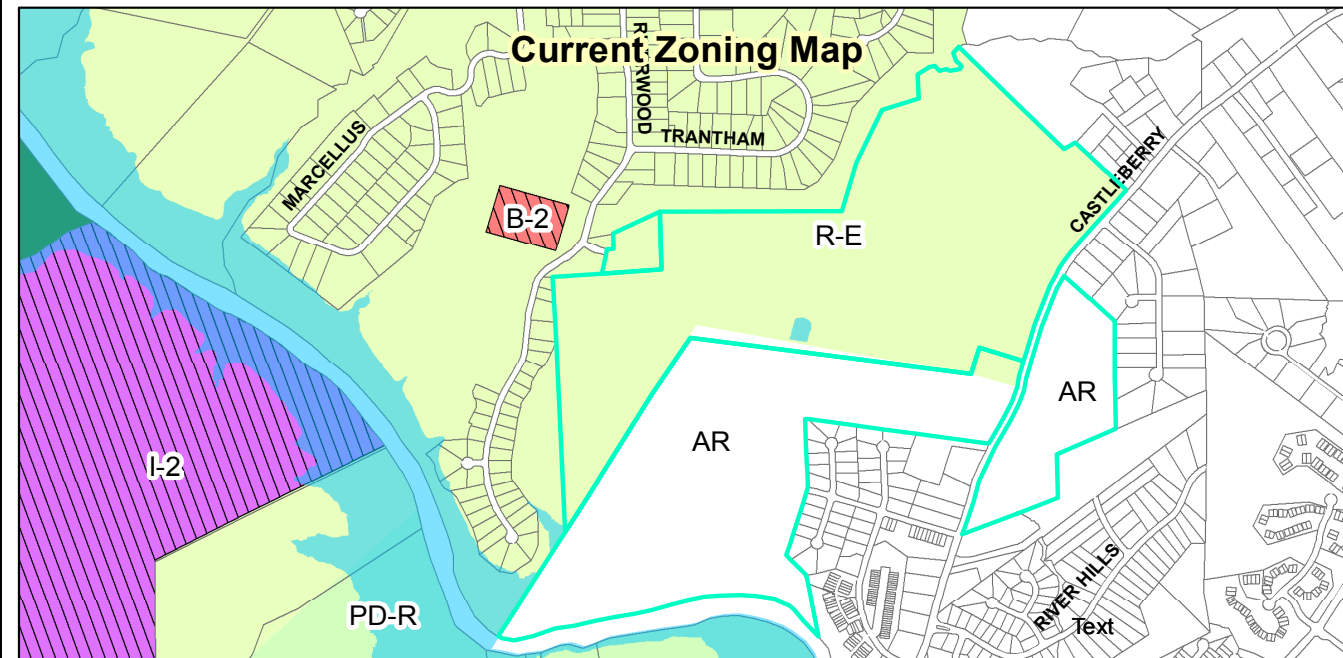
3. The subdivision will not be detrimental to the use or orderly development of other properties in the surrounding area and will not violate the character of existing standards for development of properties in the surrounding area.

The proposed 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 proposed neighborhood will include varying home options, densities, and price points necessary to satisfy continued demand for housing in the Town as well as provide an additional opportunity for commercial uses. Additionally, the proposed development meets Comprehensive Plan Goal H1 – to encourage a range of housing types and lot sizes that meets the needs of various income levels, family sizes, and ages.

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, or the general welfare.

The subdivision layout and roadway design are in accord with the September 2020, Traffic Impact Analysis and provide a thoughtful and connected pedestrian and vehicular network. As appropriate, public sidewalks will be located on each side of internal streets to provide pedestrian access to the adjacent existing development.

All proposed improvements within the street ROW comply with the Town of Clayton Standards and Specifications. The subdivision layout was designed to avoid environmental conflicts by appropriately buffering streams and honoring floodplain requirements.



Request:
2020-157-PD, to Rezone parcels from Residential-Estate (R-E – Clayton) & Agricultural-Residential (AR–Johnston County) & Planned Unit Development (PUD–Johnston County) to Planned Development-Residential (PD-R – Clayton); 2020-158-SD - Preliminary Plat Master Plan 723 residential units, comprising of a mixture of single-family, townhome, and apartment units.

Applicant: David DeYoung - Riverwild Property Owners: FSC Ranch, LLC. Tag #: 16I03012F; 16I03009; 16P99016A; 16P99016A; 16I03009B; 16K05012E; 16J040

0 2,000 4,000 Feet

- Site
- 100-yr Flood Zone
- Thoroughfare Overlay

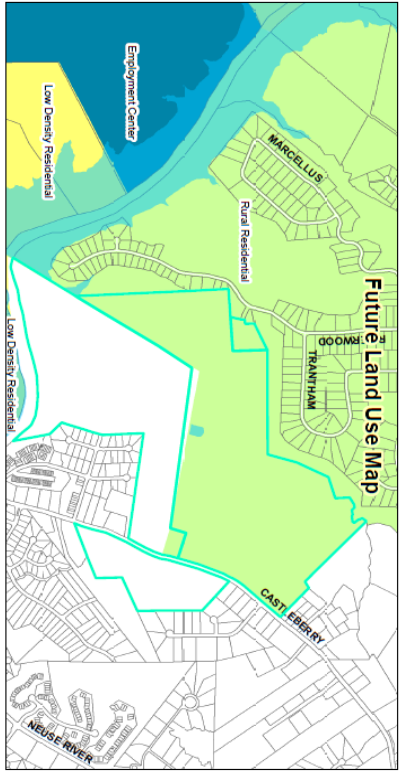
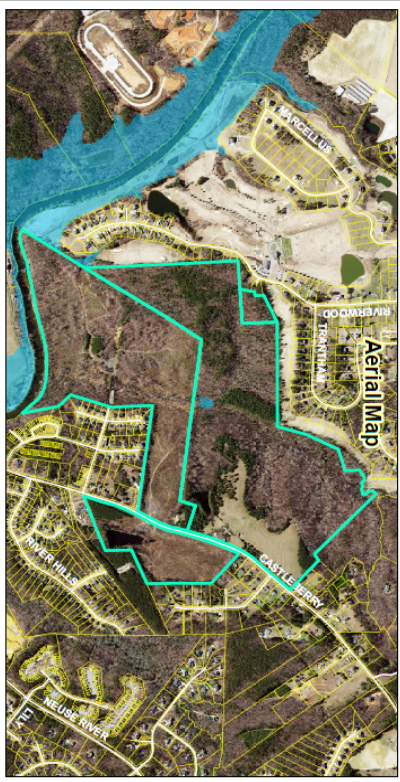
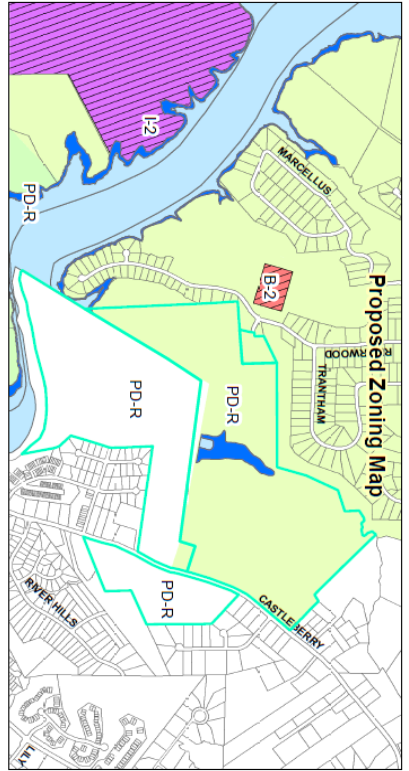
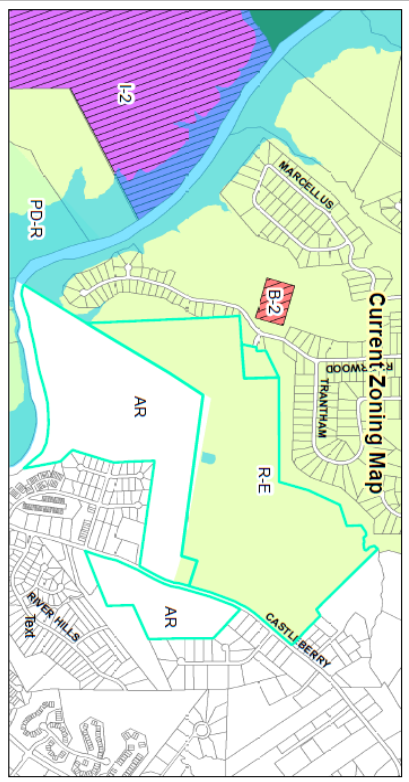


Staff Report Map

Prepared by: TOC Planning Department
March 3, 2021

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

Document Path: O:\PLANNING\REZONING\Planned Developments\2020\2020-157-PDD Riverwood Golf Club Section 2\Staff Report Map\Staff Report Map - 2020-158-SD & 2020-157-PDD - Riverwood Golf Club Section 2 Part 2.mxd



Request:
 2020-157-PD, to Rezone parcels from Residential-Estate (R-E - Clayton) & Agricultural-Residential (AR-Johnston County) & Planned Unit Development (PUD-Johnston County) to Planned Development-Residential (PD-R - Clayton); 2020-158-SD - Preliminary Plat Master Plan 723 residential units, comprising of a mixture of single-family, townhome, and apartment units.

Applicant: David DeYoung - Riverworld Property Owners: FSC Ranch, LLC. Tag #: 1603012F; 1603009; 16P99016A, 16P99016A, 1603009B, 16K05012E, 16J040

Document Path: O:\PLANNING\ZONING\planned Development\1603009B-157-PD0 Riverwood Golf Club Section 23\Staff Report Map\Staff Report Map - 2020-158-SD & 2020-157-PD - Riverwood Golf Club Section 2 Part 2.mxd

0 2,000 4,000 Feet

Site

100-yr Flood Zone

Thoroughfare Overlay

Staff Report Map

Prepared by: TOC Planning Department

March 3, 2021

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

TOWN OF CLAYTON
PLANNING BOARD WRITTEN RECOMMENDATION
Planned Development Rezoning

**2020-157-PDD Riverwood Golf Club Section 2 Planned Development
Rezoning**

On February 22, 2021 the Planning Board heard the above-referenced request and made the following vote:

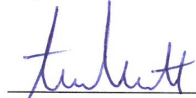
Recommendation to the Town Council to

☒ Approve the request

☐ Deny the request.

Recommendation(s) made this 22nd day of February 2021 while in regular session.

Signed:



Andria Merritt, Planning Board Chair

TOWN OF CLAYTON
ZONING AMENDMENT

CONSISTENCY AND REASONABLENESS STATEMENT

2020-157-PDD Riverwood Golf Club Section 2 Planned Development Rezoning

The Town Council of the Town of Clayton hereby states:

Section 1: The above referenced zoning amendment IS APPROVED.

Section 2: The above referenced zoning amendment AMENDS THE FOLLOWING PLAN(S):

The Town of Clayton's Comprehensive Plan 2040, specifically:

- **Future Land Use Map – Modify the properties located in Johnston County's "Primary Growth Area" to "Low Density Residential" while the properties located in Clayton's ETJ will also be modified to "Low Density Residential". See attached map.**
- **The proposed rezoning from Residential-Estate (R-E) and Agricultural Residential (AR) to Planned Development Residential (PD-R) is consistent with the future land use map designation of "Low Density Residential". Per the Comprehensive Plan 2040, Low Density Residential is predominately single-family residential uses but may include a mixture of residential uses in a Planned Development – Residential District to support conservation of open space, so long as the density does not exceed 3 units/acre.**

Section 3: Based upon information presented at the public hearings and by the applicant, and based upon the recommendations and detailed information developed by staff and the Planning Board contained in the staff report, and considering the criteria applicable sections of the Unified Development Code of the Town of Clayton, the above referenced zoning amendment is reasonable and in the public interest.

The proposed rezoning is consistent with the current development pattern in this area and the modification to the future land use map would be consistent with properties located in the Riverwood area. Although, the Future Land Use Map designation and the proposed rezoning are not consistent, the following goals and objectives of the Comprehensive Plan 2040 are applicable:

- **Objective LU1.1 - Encourage developments which incorporate high-quality design and enhance the quality of life for existing and future residents of the Town.**
- **Goal LU2 - Encourage quality development which maximizes existing infrastructure, promotes walking and biking, and enhances travel safety.**

PPAB 2574608v3

- **Strategy LU2.1.2 - Require vehicular interconnectivity between existing and future adjacent development.**
- **Strategy LU2.1.4 - Require development to integrate sidewalks internally and provide pedestrian connections to existing and future adjacent development and/or destinations.**
- **Goal H1 – Encourage a range of housing types and lot sizes that meets the needs of various income levels, family sizes, and ages.**

PUBLIC NOTICE

In accordance with NC GS 160A-364 the Clayton Town Council will hold a public hearing and evidentiary hearing on Monday, April 5 2021, at 6 PM at Town Hall, 111 East Second Street, to consider the following requests:

- 2020-157-PDD Riverwood Golf Club Section 2 Rezoning; the request to rezone approximately +/- 300 acres of land from Residential-Estate (R-E – Clayton) & Agricultural-Residential (AR – Johnston County) & Planned Unit Development (PUD – Johnston County) to Planned Development-Residential (PD-R – Clayton). The properties are located between Castleberry Road and Riverwood Road; north of the Neuse River; TAG # 16I03012F; 16I03009; 16P99016A; 16I03009B; 16K05012E; 16J040.
- 2020-158-SD Riverwood Golf Club Section 2 Preliminary Plat Master Plan; the request for a Master Plan to develop approximately +/- 300 acres of land which will include up to 723 residential units. The properties are located between Castleberry Road and Riverwood Road; north of the Neuse River; TAG # 16I03012F; 16I03009; 16P99016A; 16I03009B; 16K05012E; 16J040.

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

For the Preliminary Plat (Master Plan) the Council will hold an evidentiary hearing. During an evidentiary hearing, the Clayton Town Council must make findings of fact based upon sworn testimony and other credible evidence. Citizens may give testimony in an evidentiary hearing after they have taken an oath.

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

Jeff Caines, AICP, Planner
919-553-5002

The Johnstonian Newspaper

Please advertise on the following dates:

3/24/2021

3/31/2021

Affidavit of publication required.



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

*Planning Board: February 22, 2021
Town Council: April 5, 2021*

STAFF REPORT

Application Number: 2020-157- PDD
Project Name: Riverwood Golf Club Section 2
Planned Development Rezoning

Tag #: 16I03012F; 16I03009; 16P99016A; 16I03009B; 16K05012E; 16J04001.

Location: Located east of Riverwood Drive and West of Castleberry Road

Overlay: N/A

Applicant: RiverWild – David DeYoung

Owner(s): Fred J. Smith Jr.; FSC Ranch, LLC; James W. & Janice C. Holloway LLC

Project Planner: Jeff Caines, AICP, Planner – Town of Clayton

Public Noticing Dates:

- **Neighborhood Meeting:** December 3, 2020
- **Sign Posted:** February 11, 2021 (Planning Board); March 26, 2021 (Town Council)
- **Letters Mailed:** February 10, 2021 (Planning Board); March 26, 2021 (Town Council)
- **Newspaper Ad Published:** March 24, 2021; March 31, 2021

REQUEST: Riverwood Golf Club Section 2 is proposing to rezone approximately 302+/- acre property (combined) located between Riverwood Drive on the western boundary and Castleberry Road on the eastern boundary, with the Neuse River being the southern boundary. The applicant is requesting to rezone the subject properties from Residential-Estate (R-E) and Agricultural-Residential (AR) to Planned Development Residential (PD-R). Riverwood Golf Club Section 2 is a proposed planned development residential neighborhood consisting of 723 residential units (429 single family units, 74 townhome units, and 220 apartment units). In addition to the residential lots, the neighborhood will contain an amenity center and a Golf Course maintenance facility. It is anticipated that the project will be developed in multiple phases over time, based on market demand and to meet the needs and functionality of the community during construction.



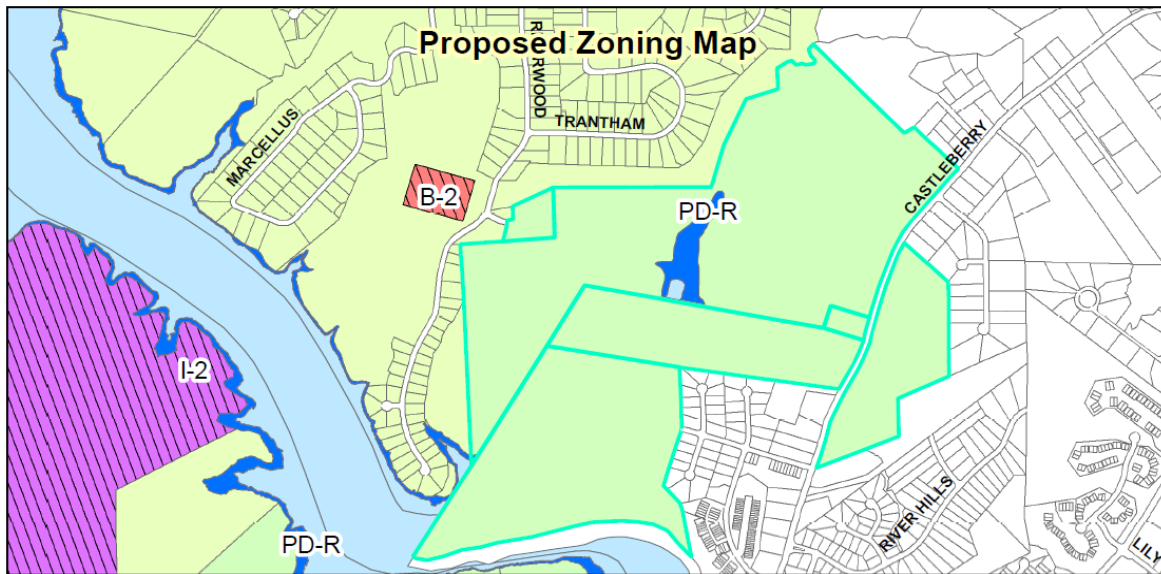
SITE DATA:

Acreage: +/- 302acres

Existing Use: Vacant & Single-Family Residence

ADJACENT ZONING AND LAND USES:

Direction	Zoning	Existing Use(s)
North	Residential Estate (R-E)	Single-Family Residential
South	Planned Development-Residential (PD-R) / Neuse River	Single-Family Residential / River
East	Residential-Estate (AR) / Single Family Residential (SFR)	Vacant / Single-Family Residential
West	Residential Estate (R-E)	Single-Family Residential



STAFF ANALYSIS AND COMMENTARY:

Overview

The applicant is requesting to rezone the subject properties from Residential-Estate (R-E) and Agricultural-Residential (AR) to Planned Development Residential (PD-R). Riverwood Golf Club Section 2 is a proposed planned development residential neighborhood consisting of 723 residential units (429 single family units, 74 townhome units, and 220 apartment units). In addition to the residential lots, the neighborhood will contain an amenity center and a Golf Course maintenance facility.

The property assemblage is 301.91+/- acres with a net project area of 210.57+/- acres yielding an overall proposed density of 2.43 units per acre. The site is located on the edge of the Town limits between Riverwood Drive and Castleberry Road with three parcels zoned R-E (Clayton), one parcel zoned PUD (County) and one parcel zoned AR (County).

The proposed zoning is PD-R, Planned Development-Residential which provides the opportunity to design a master-planned neighborhood containing a mixture of housing types and associated recreational amenities. This neighborhood will be developed in multiple phases based on a market demand while meeting the needs and functionality of the community during construction.

The properties are mostly located between Riverwood Drive and Castleberry Road; there is one property located east of Castleberry Road. This application is running concurrently with a preliminary plat application, which is serving as a master plan for the overall development. The plan outlines the permitted uses and dimensional standards proposed for the development under the PD-R designation. There is also an Annexation application to bring in the properties zoned AR which are located outside the Town's ETJ currently under in Johnson County's planning jurisdiction.

Per the UDC requirements, the Planning Board shall make a recommendation to Town Council regarding all rezoning requests, including Planned Development districts. However, the Planning Board does not review or

make recommendations on preliminary plats, even those acting as a master plan associated with a Planned Development rezoning. The proposed master plan layout for this development was attached to the staff report to provide an overall idea to the Planning Board of how the site may be developed under the PD-R zoning designation. The plan was only included as an attachment to the staff report for informational purposes.

Consistency with the Comprehensive Plan 2040

The Comprehensive Plan's Future Land Use Map designates the land located within the Towns ETJ as Rural Residential. The portions of land that will need to be annexed may ultimately be zoned PD-R pending the Town Council's decision.

As stated in the applicant's narrative the proposed rezoning to PD-R and proposed density (723 units/298.97 acres = 2.42 units per acre), is consistent with the adjacent Riverwood Golf Club Section 1 and meets the general plans for development and growth of the Town of Clayton. Overall, the proposed rezoning is generally consistent with the Future Land Use map and Comprehensive Plan 2040 as the Agricultural / Rural Residential (ARR) designation it is primarily located outside of sewer service areas. Most of these areas rely on septic systems for wastewater treatment, have a limited road network and, in this case, lies within the watershed protection overlay of the Neuse River. The land use near Riverwood Drive include larger residential lots while higher densities are located closer to Castleberry Road. Townhomes will be located east of Castleberry Road and apartments are proposed on both sides of Timberlake Lane. There are large conservation areas that break up the overall project that create natural buffers between the various types of development. As shown above in calculating the overall density for the site, the "Net Project Area" subtracts the right-of-way dedication for Castleberry Road leaving the "Net Project Area" approximately 298.97 acres. Divide the total number of units proposed (723 units) and the overall density calculation is 2.42 units per acres. Staff is supportive of this type of rezoning request and development since it would be constant with Riverwood Golf Club Section 1.

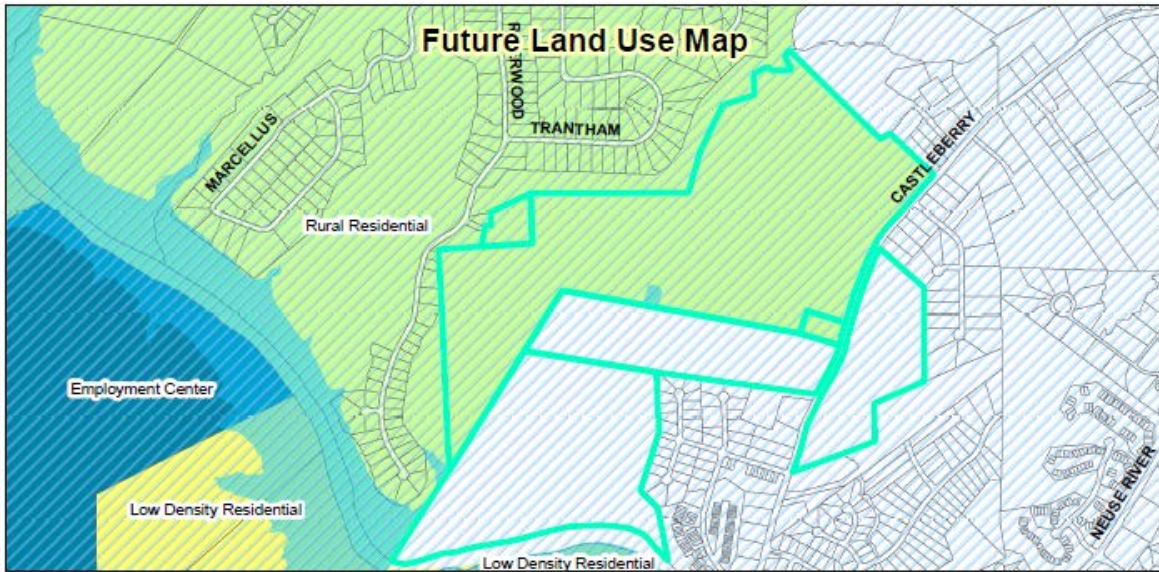
If the associated rezoning is approved to PD-R the Future Land Use Map Designation would be updated accordingly for the all properties, pending the approval of the annexation of the properties located outside of the ETJ (i.e., within Johnston County). Please see the attached "Consistency Statement" document which includes a map depicting this change.

Comprehensive Plan Goals supporting the rezoning request include:

- Objective LU1.1 - Encourage developments which incorporate high-quality design and enhance the quality of life for existing and future residents of the Town.
- Goal LU2 - Encourage quality development which maximizes existing infrastructure, promotes walking and biking, and enhances travel safety.
- Strategy LU2.1.2 - Require vehicular interconnectivity between existing and future adjacent development.
- Strategy LU2.1.4 - Require development to integrate sidewalks internally and provide pedestrian connections to existing and future adjacent development and/or destinations.
- Goal H1 – Encourage a range of housing types and lot sizes that meets the needs of various income levels, family sizes, and ages.

Comprehensive Plan Goals not supporting the rezoning request include:

- None.



CONSIDERATIONS:

- Rezonings are decided by the Town Council. The Planning Board shall make a recommendation to the Town Council.
- The Planning Board shall only make a recommendation on this rezoning; the associated master plan (preliminary plat) is quasi-judicial and does not receive a Planning Board recommendation.
- 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.

ATTACHMENTS:

- 1) Application
- 2) Neighborhood Meeting Materials
- 3) Site Plan
- 4) PB Adjacent Property Letter
- 5) TC Adjacent Property Letter
- 6) TC Newspaper Notice
- 7) Traffic Impact Study
- 8) Traffic NCDOT Comments
- 9) Wastewater Treatment Letter – Johnston County
- 10) Planning Board Motion Sheet
- 11) Staff Report Maps
- 12) Reasonableness and Consistency Statement

**Town of Clayton
Town Council
Zoning Ordinance Amendment Motion Sheet**

After considering the recommendations of the Planning Board and Planning Director, I move to [approve OR deny] **Case 2020-157-PDD – Riverwood Golf Section 2; Ordinance #2021-04-02**

[IF APPROVING]

and to approve the Statement of Consistency and Reasonableness included in the Agenda packet [with the following modifications: STATE MODIFICATIONS, IF ANY].

**MOTION FORM
Item 6b
2020-157-PDD
Riverwood Golf Section 2**

**AN ORDINANCE AMENDING THE ZONING ORDINANCE AND
ZONING MAP
OF THE TOWN OF CLAYTON, NORTH CAROLINA**

WHEREAS a petition has been filed with the Town Council of the Town of Clayton requesting an amendment to the Zoning Ordinance and Zoning Map of the Town of Clayton to include in the Planned Development Residential (PD-R) zone the property described below, said property formerly being zoned Residential-Estate (R-E) and Agricultural-Residential (A-R) and;

WHEREAS said property is owned by Fred J. Smith Jr.; FSC Ranch, LLC; James W. & Janice C. Holloway LLC. And;

WHEREAS the Planning Board of the Town of Clayton has reviewed the proposed change(s) and made a recommendation thereupon; and

WHEREAS notice of a public hearing to consider the proposed change was published in accordance with law in The Johnstonian, a local newspaper, as required by Section 155.702(D) of the Clayton Unified Development Code and by Section 160A-364 of the North Carolina General Statutes; and

WHEREAS a notice of the proposed zoning classification action was mailed to the owner(s) of the parcel(s) of land involved, as shown on the County Tax Listings, and to the owners of all parcels of land abutting that (those) parcel(s) of land and within 100 feet of the subject parcel(s) of land, as shown on the County Tax Listings, by depositing a copy of the same in the United States Mail, first class postage paid, as required by Section 155.702(D) of the Zoning Ordinance of the Town of Clayton and by Section 160A-384 of the General Statutes; and

WHEREAS the said public hearing was actually conducted at 6:00 p.m. on April 5, 2021 wherein a reasonable opportunity was given to all those in attendance to speak either in favor or against the said change or to make relevant comments;

THEREFORE, after duly considering the matter, THE TOWN COUNCIL OF THE TOWN OF CLAYTON DOES HEREBY ORDAIN:

SECTION 1. That the Unified Development Code of the Town of Clayton is hereby amended to include in the Planned Development Residential (PD-R) zone the following described property:

General Description:

Property is located east of Riverwood Drive and West of Castleberry Road

Specific Description:

NC Parcel Identification Numbers: 16I03012F; 16I03009; 16P99016A; 16I03009B;
16K05012E; 16J04001

SECTION 2. That the official Town of Clayton Zoning Map is hereby amended to include in the Planned Development Residential (PD-R) zone the above-described property and will be so marked.

SECTION 3. That if any section, sentence, clause, or phrase of this Ordinance is for any reason held to be invalid or unconstitutional by the decision of any court of competent jurisdiction, such decision shall not affect the validity of the remaining portions of this Ordinance.

SECTION 4. That this ordinance shall become effective immediately upon its adoption.

DULY ADOPTED by the Clayton Town Council this 5th day of April, 2021 while in regular session.

Jody McLeod
Mayor

ATTEST:

Kimberly A. Moffett, CMC, NCCMC
Town Clerk



Town Council Agenda Cover Sheet

Meeting Date

April 5, 2021

Agenda Location

Public Hearings

Item Title

2020-158-SD Riverwood Golf Club Section 2 Preliminary Plat Master Plan

Presenter

Jeff Caines, AICP – Planning Department

Summary/Description

The request is for a Master Plan to develop approximately +/- 300 acres of land which will include up to 723 residential units. The properties are located between Castleberry Road and Riverwood Road

Requested Action

Approval with Conditions

Funding Source (If Applicable):

N/A

Cost: N/A Yes ☐ No ☒

Additional Documents to be Included in Agenda Packet

Application
Neighborhood Meeting Material
Site Plan – Master Plan
Adjacent Property Letter
Newspaper Ad
Traffic Impact Analysis
Staff Report
Staff Report Map
Consistency Statement
Wastewater Allocation Request

Meeting Timeline

Click or tap here to enter text.



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: Riverwood Golf Club Section 2 Acreage of Property: 298.43

Tag #: 16I03009, 16I03009B, 16P99016A, 16K05012E, 16J04001 NC Pin #: 167900-76-3795, 167900-65-8736, 167900-85-1824, 167900-54-4810, 167900-85-6791

Location: 1085 Castleberry Road Clayton NC 27527

Number of lots (Existing): 5 (Proposed): 540- 726 Min. Lot Size: 4,200 SF
Per applicant they are proposing 726 lots not 510

Zoning District: R-E (Clayton) AR, PUD (County) Electric Provider: Duke Electric

Wastewater: ☐ Septic ☒ Sewer Water: ☐ Well ☒ Public/Private Water

Recreation/Open Space Requirement: ☒ Fee in lieu ☐ Land Dedication – acreage: _____

APPLICANT INFORMATION

Applicant: David DeYoung, AICP - RiverWild

Mailing Address: 114 W Main Street Clayton NC 27520

Phone Number: 919-901-3178 Fax: n/a

Contact Person: David DeYoung

Email Address: David@theriverwildteam.com

OFFICE USE ONLY

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

Updated August 2020

PROPERTY OWNER INFORMATION

Name: See attachment 1 for all property owner information

Mailing Address: _____

Phone Number: _____ **Fax:** _____

Email Address: _____

EXPLANATION OF PROJECT

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

Riverwood Golf Club Section 2 is a proposed planned development residential neighborhood consisting of 726 residential units (432 single family lots, 74 townhome lots, and 220 apartments). In addition to the residential lots, the neighborhood will contain an amenity center and a Golf Course maintenance facility. There are a total of 510 proposed lots.

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) The subdivision is consistent with the adopted plans and policies of the Town.
See attachment 2 in project submittal.
- _____
- _____
- _____
- _____
- _____
- (2) The subdivision meets all required specification of the Unified Development Code.
See attachment 2 in project submittal.
- _____
- _____

Updated August 2020

- (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 areas.

See attachment 2 in project submittal.

- (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 our extension of public infrastructure, and will not materially endanger the environment, public health, safety, or the general welfare.

See attachment 2 in project submittal.

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'.

Updated August 2020

ARCHITECTURAL ELEVATIONS AND FLOORPLAN

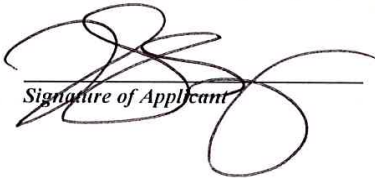
Provided		
Yes	N/A	
☐	X	Provide floor plans, elevations, construction materials, finishes and colors, along with type of construction of all buildings per North Carolina Building Code prepared by a professional architect registered in North Carolina. This should be provided in color.
☒		Indicate the height and number of stories for each structure.
☐	X	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.

David DeYoung

Print Name



Signature of Applicant

11/2/2020

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: Riverwood Golf Club - Section 2 **Address or PIN #:** 167900-56-1805

AGENT/APPLICANT INFORMATION:

David DeYoung, AICP - RiverWild
(Name - type, print clearly)

114 W. 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*):

All entitlement / development processes

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:

SMITH, FRED J JR
(Name - type, print clearly)

632 MARCELLUS WAY
(Address)

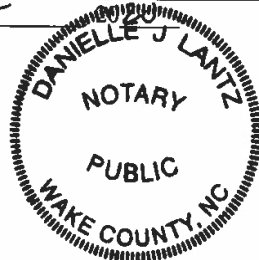
[Signature]
(Owner's Signature)

CLAYTON, NC 27527
(City, State, Zip)

STATE OF NC
COUNTY OF JOHNSTON

Sworn and subscribed before me Danielle J. Lantz, a Notary Public for the above State and County, this
the 3rd day of August

SEAL



[Signature]
Notary Public

My Commission
Expires:

3-11-2024

July 2018



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: Riverwood Golf Club - Section 2 **Address or PIN #:** 167900-85-1824, 167900-65-8736, 167900-54-4810, 167900-85-6791

AGENT/APPLICANT INFORMATION:

David DeYoung, AICP - RiverWild
(Name - type, print clearly)

114 W. 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*):

All entitlement / development processes

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:

FSC RANCH, LLC
(Name - type, print clearly)

400 RIVERWOOD DR
(Address)

[Signature]
(Owner's Signature)

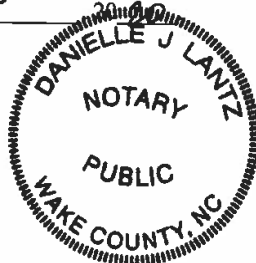
CLAYTON, NC 27527
(City, State, Zip)

STATE OF NC

COUNTY OF Johnston

Sworn and subscribed before me Danielle J. Lantz, a Notary Public for the above State and County, this the 3rd day of August, 2022

SEAL



[Signature]
Notary Public

My Commission
Expires: 3-11-2024

July 2018



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: Riverwood Golf Club - Section 2 **Address or PIN #:** 167900-76-3795

AGENT/APPLICANT INFORMATION:

David DeYoung, AICP - RiverWild
(Name - type, print clearly)

114 W. 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*):

All entitlement / development processes

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 W & JANICE C HOLLOWAY LLC
(Name - type, print clearly)

8401 CROWDER RD.
(Address)

James W. Holloway, Manager
(Owner's Signature)

RALEIGH, NC 27603
(City, State, Zip)

STATE OF NC

COUNTY OF Johnston

Sworn and subscribed before me Kelli B. Bynum, a Notary Public for the above State and County, this the 3 day of August, 2020.

SEAL



Kelli B. Bynum
Notary Public

My Commission
Expires:

10.28.2023

July 2018

Riverwood Golf Club Section 2 - Rezoning Application Attachment 2 (revised per Town comments)

EXPLANATION OF PROJECT *Please provide detailed information concerning all requests. Attach additional sheets if necessary.*

Riverwood Golf Club Section 2 is a proposed planned development residential neighborhood consisting of 723 residential units (429 single family lots, 74 townhome lots, and 220 apartments). In addition to the residential lots, the neighborhood will contain an amenity center and a Golf Course maintenance facility. There are a total of 507 proposed lots.

The property assemblage is 301.91 acres with a net project area of 210.57 acres yielding an overall proposed density of 2.42 units per acre. The site is located on the edge of the Town limits between Riverwood Drive and Castleberry Road with three parcels zoned R-E (Clayton), one parcel zoned PUD (County) and one parcel zoned AR (County).

The proposed zoning is PD-R, Planned Development-Residential which provides the opportunity to design a master-planned neighborhood containing a mixture of housing types and associated recreational amenities. This neighborhood will be developed in multiple phases based on a market demand while meeting the needs and functionality of the community during construction.

REQUIRED INFORMATION (to be submitted with the application)

The following items must accompany a Rezoning application. To be completed by the applicant: To be completed by staff: *Submit 9 copies of all materials unless otherwise noted or directed by staff*

APPROVAL CRITERIA

All applications for a Rezoning must address the following findings:

1. Consistency with the adopted plans of the Town.

The proposed rezoning to PD-R, and proposed density, is consistent with the adjacent Riverwood Golf Club Section 1 and meets the general plans for development and growth of the Town of Clayton. The proposed rezoning is consistent with the following Comprehensive Plan Implementation Goals:

- Objective LU1.1 - Encourage developments which incorporate high-quality design and enhance the quality of life for existing and future residents of the Town.
- Goal LU2 - Encourage quality development which maximizes existing infrastructure, promotes walking and biking, and enhances travel safety.
- Strategy LU2.1.2 - Require vehicular interconnectivity between existing and future adjacent development.
- Strategy LU2.1.4 - Require development to integrate sidewalks internally and provide pedestrian connections to existing and future adjacent development and/or destinations.
- Goal H1 – Encourage a range of housing types and lot sizes that meets the needs of various income levels, family sizes, and ages.

While the FLUM designation of Agricultural/Rural Residential suggests gross residential density of up to 2 dwelling units per acre, the Comprehensive Plan provides guidance to permit up to 7 units per acre in Planned Development Districts. The proposed density of 2.42 units per acre is consistent with the adjacent Riverwood Golf Club Section 1 and the Comprehensive Plan guidance. This project provides stormwater control measures (SCM) in compliance with Town of Clayton regulations and complies with Phase II Watershed Rules - Neuse River Rules. In addition, the single-family density is 1.44 units per acre.

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

The existing zoning allows for low-density residential uses and select complementary non-residential uses. Rezoning to a Planned Development-Residential designation:

- Is compliant with Comprehensive Plan Goal H1 to encourage a range of housing types and lots sizes that meets the needs of various income levels, family sizes, and ages.
- Provides the opportunity to design a master-planned neighborhood containing a mixture of housing types and associated recreational amenities.

3. Whether the proposed change tends to improve the balance of uses, or meets specific demand in the Town.
The proposed rezoning to Planned Development-Residential will:

- Allow the development of a master-planned community promoting residential diversity, density, levels of affordability to satisfy the continued housing demand in Clayton.
- Aid in the development of a well-designed neighborhood that provides a setting for residents to develop a strong sense of community.

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.

- To ensure that adequate public facilities are in place, the Riverwood Golf Club Section 2 neighborhood will be developed in multiple phases in response to residential market demands.
- Water and wastewater are both available through capacity owned by the Town of Clayton in the County's system. This capacity is only available to development located in this area of the Town.
- Infrastructure will be designed and built to provide appropriate capacity and in accord with phasing.
- A TIA has been provided noting roadway improvement recommendations.
- The project will be designed with SCMs for stormwater control and conveyance.
- Recreation facilities including an Amenity Center, pool, playground, and parks as well as sidewalks for pedestrian connectivity will be provided.

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

There are no legal concerns or issues related to the proposed rezoning and will not negatively impact the health, safety, or general welfare of the public.

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 will not result in an adverse effect upon adjoining property owners. The site is bounded to the west by the existing Riverwood Golf Club Section 1 and Castleberry Road to the east. The proposed rezoning is consistent with Comprehensive Plan guidance which allows up to 7 units per acre in a Planned Development - Residential district. The proposed overall zoning density is 2.42 units per acre, with the single-family density of 1.44 units per acre. Further, Riverwood Golf Club Section 2 is an extension of the original golf club and will share amenities with that development.

7. It has been determined that no one property owner or small group of property owners will benefit materially from the change to the detriment of the general public.

No individual or group of small group of property owners will benefit to the detriment of the general public.

Riverwood Golf Club Section 2 - Major Subdivision Application Attachment 2 (revised per staff comments)

1. The subdivision is consistent with the adopted plans and policies of the Town.

Upon rezoning to PD-R the proposed subdivision will be consistent with the following Comprehensive Plan Implementation Goals:

Objective LU1.1 - Encourage developments which incorporate high-quality design and enhance the quality of life for existing and future residents of the Town.

Goal LU2 - Encourage quality development which maximizes existing infrastructure, promotes walking and biking, and enhances travel safety.

Strategy LU2.1.2 - Require vehicular interconnectivity between existing and future adjacent development. Strategy LU2.1.4 - Require development to integrate sidewalks internally and provide pedestrian connections to existing and future adjacent development and/or destinations.

Goal H1 – Encourage a range of housing types and lot sizes that meets the needs of various income levels, family sizes, and ages.

The project provides multiple stormwater control measures (SCM's) and complies with Phase II Watershed Rules - Neuse River Rules. This compliance through the use of SCM's, removes the maximum threshold for density. The overall density of the proposed project is 2.42 du/ac with single family density at 1.44 units per acre.

2. The subdivision meets all required specifications of the Unified Development Code.

The proposed Riverwood Golf Club Section 2 major subdivision, upon rezoning to Planned Development-Residential will meet the specifications of the Unified Development Code. No waivers or variances are requested as part of this submittal.

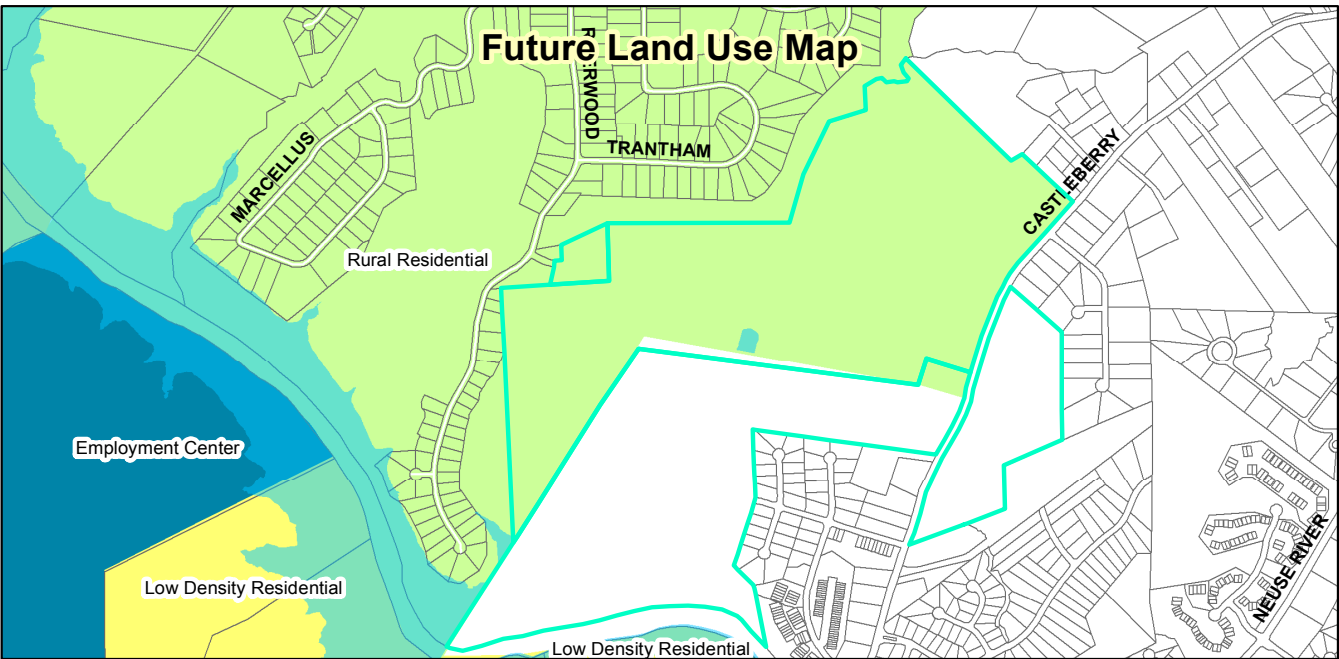
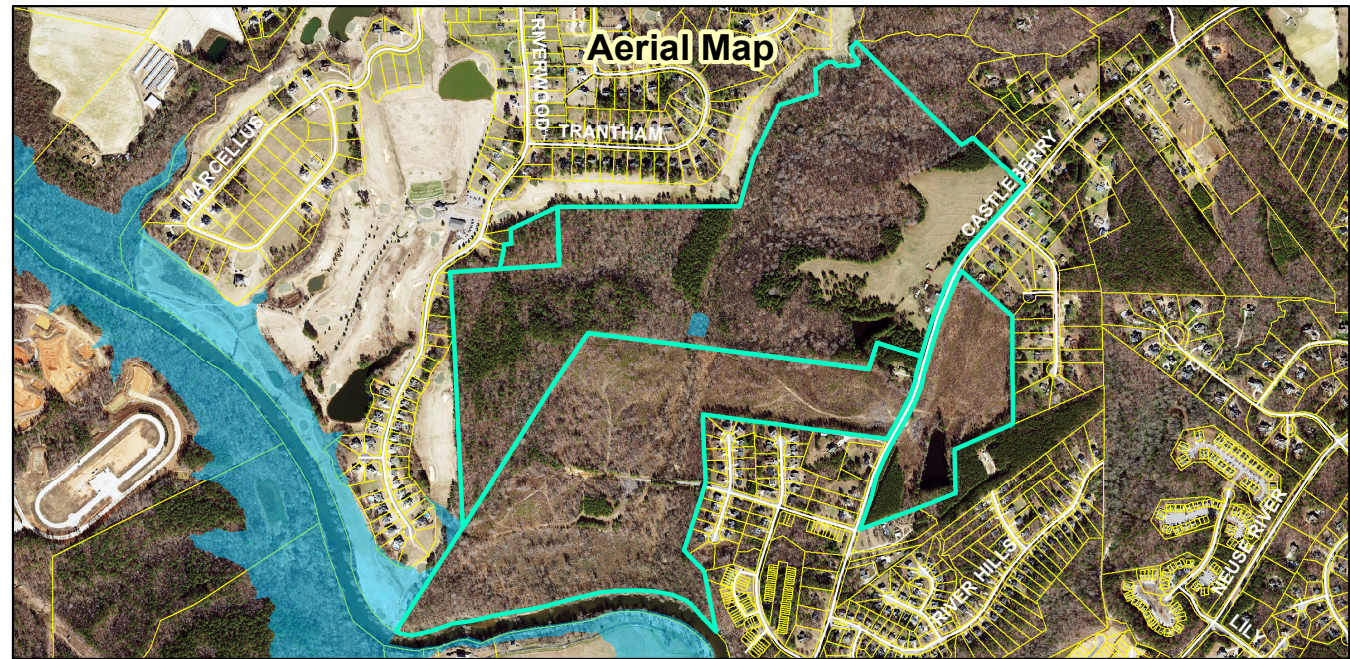
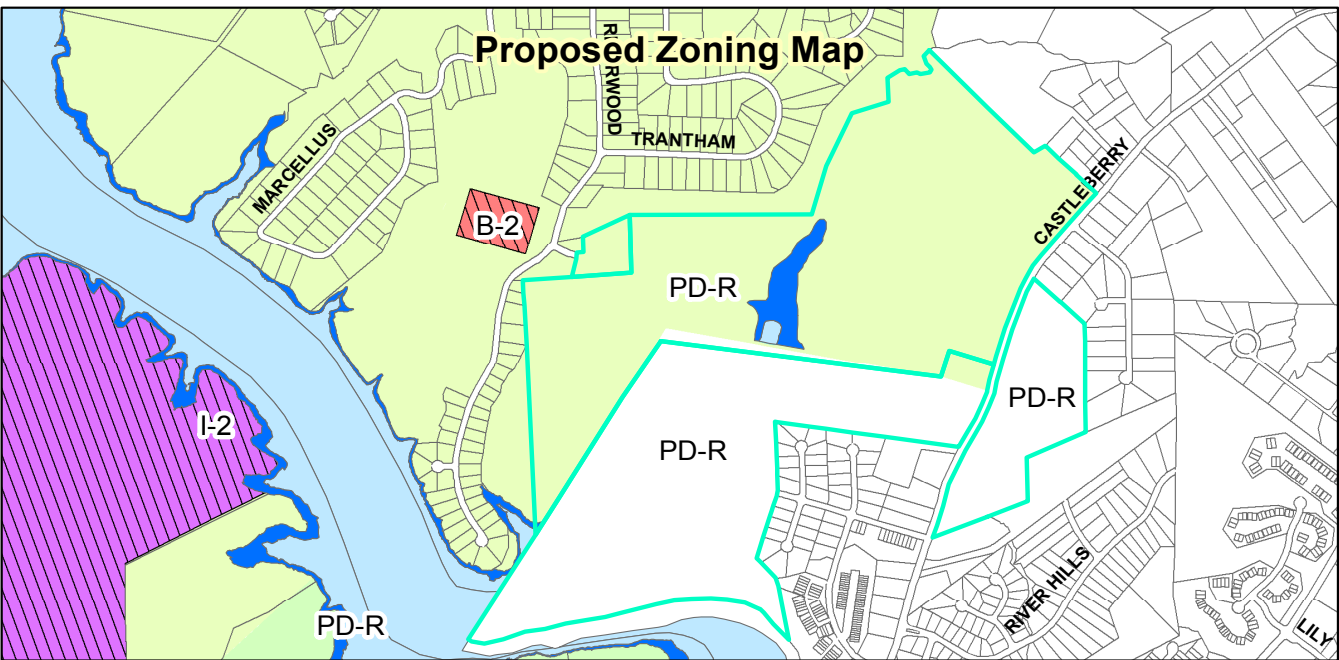
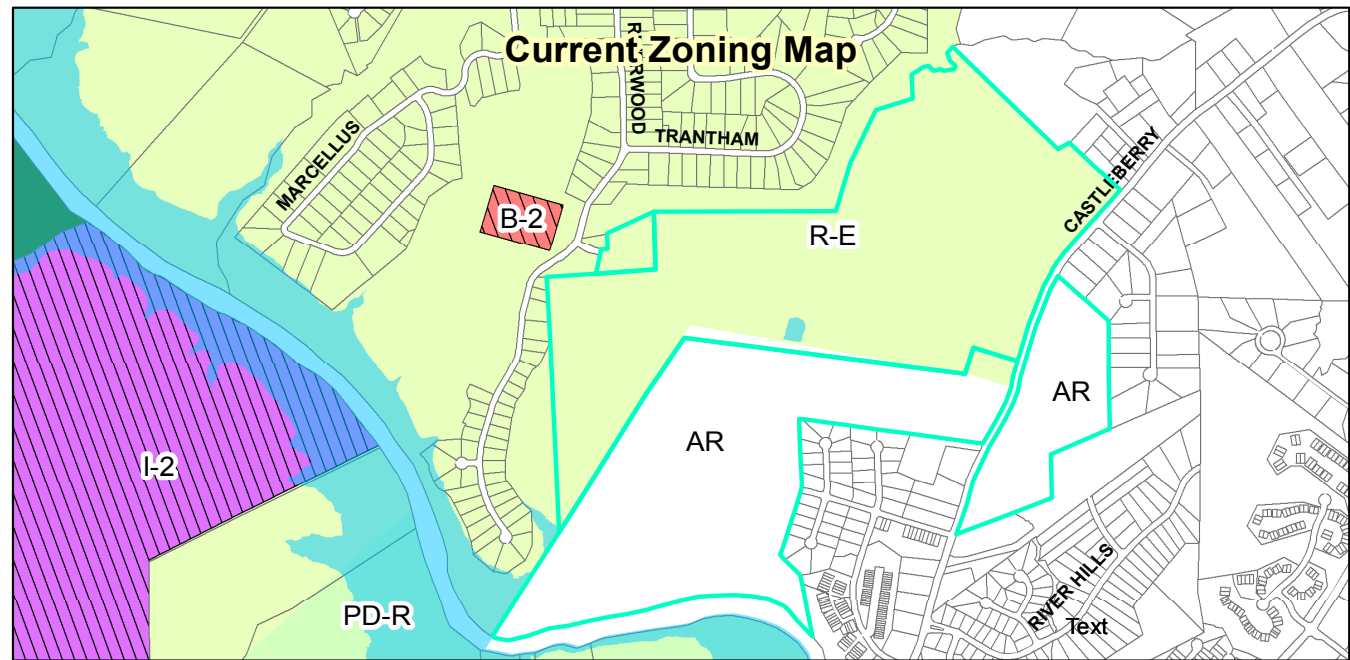
3. The subdivision will not be detrimental to the use or orderly development of other properties in the surrounding area and will not violate the character of existing standards for development of properties in the surrounding area.

The proposed 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 proposed neighborhood will include varying home options, densities, and price points necessary to satisfy continued demand for housing in the Town as well as provide an additional opportunity for commercial uses. Additionally, the proposed development meets Comprehensive Plan Goal H1 – to encourage a range of housing types and lot sizes that meets the needs of various income levels, family sizes, and ages.

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, or the general welfare.

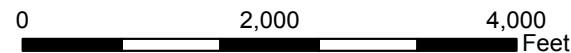
The subdivision layout and roadway design are in accord with the September 2020, Traffic Impact Analysis and provide a thoughtful and connected pedestrian and vehicular network. As appropriate, public sidewalks will be located on each side of internal streets to provide pedestrian access to the adjacent existing development.

All proposed improvements within the street ROW comply with the Town of Clayton Standards and Specifications. The subdivision layout was designed to avoid environmental conflicts by appropriately buffering streams and honoring floodplain requirements.



Request:
 2020-157-PD, to Rezone parcels from Residential-Estate (R-E – Clayton) & Agricultural-Residential (AR–Johnston County) & Planned Unit Development (PUD–Johnston County) to Planned Development-Residential (PD-R – Clayton); 2020-158-SD - Preliminary Plat Master Plan 723 residential units, comprising of a mixture of single-family, townhome, and apartment units.

Applicant: David DeYoung - Riverwild Property Owners: FSC Ranch, LLC. Tag #: 16I03012F; 16I03009; 16P99016A; 16P99016A; 16I03009B; 16K05012E; 16J040



- Site
- 100-yr Flood Zone
- Thoroughfare Overlay



Staff Report Map
 Prepared by: TOC Planning Department
 March 3, 2021

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

Document Path: O:\PLANNING\REZONING\Planned Developments\2020\2020-157-PDD Riverwood Golf Club Section 2\Staff Report Map\Staff Report Map - 2020-158-SD & 2020-157-PDD - Riverwood Golf Club Section 2 Part 2.mxd

RIVERWOOD GOLF CLUB

SECTION 2

APPLICANT / OWNER:



RIVERWILD
114 W. MAIN STREET
CLAYTON, NC 27520
CONTACT: DAVID DEYOUNG
PH: 919.901.3178
EMAIL: DAVID@THERIVERWILDTEAM.COM

CONSULTANTS:



SURVEY: DUSTIN McCARTY
djmccarty@stewartinc.com
919.866.4724
GEOTECH: DON BROWN
dbrown@stewartinc.com
919.866.4842
LAND. ARCH: MIKE TARRANT
mtarrant@stewartinc.com
919.866.4789
CIVIL ENG.: TIM SUMMERVILLE
tsummerville@stewartinc.com
919.866.4794



ENVIRONMENTAL
KEVIN MARTIN
PH: 919.720.7941
EMAIL: kmartin@sandec.com



TRAFFIC ENGINEERING
TRAVIS FLUITT
PH: 919.649.0759
EMAIL: travis.fluitt@kimley-horn.com

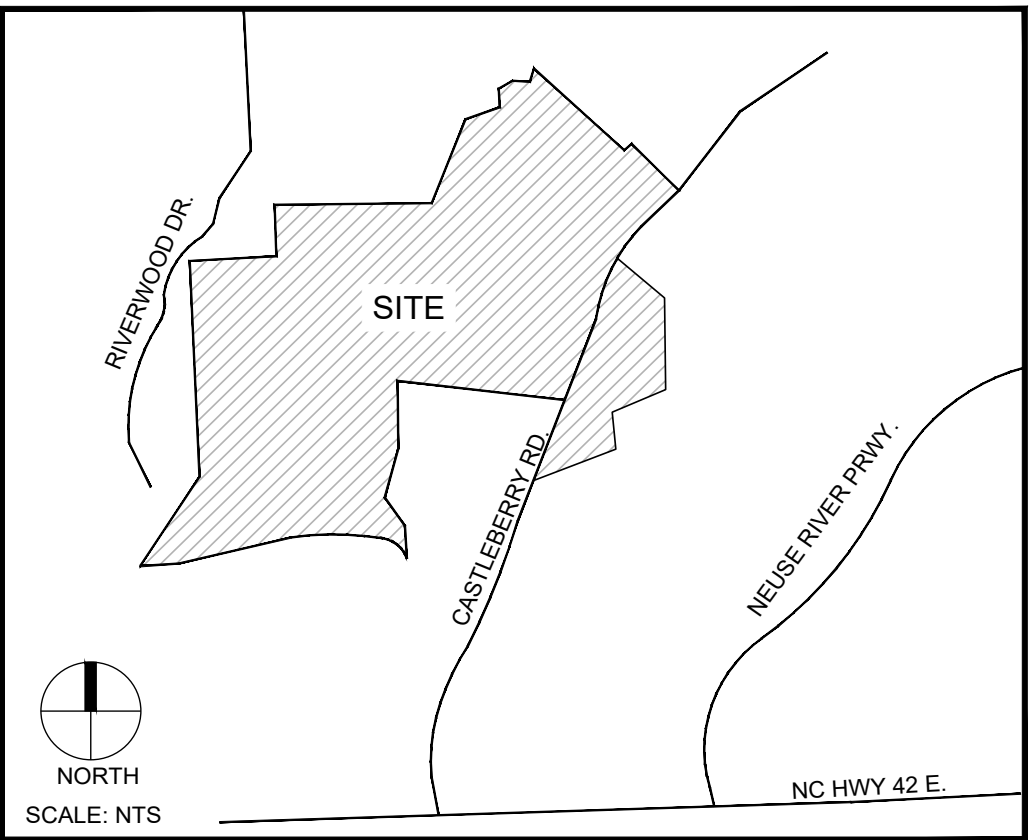
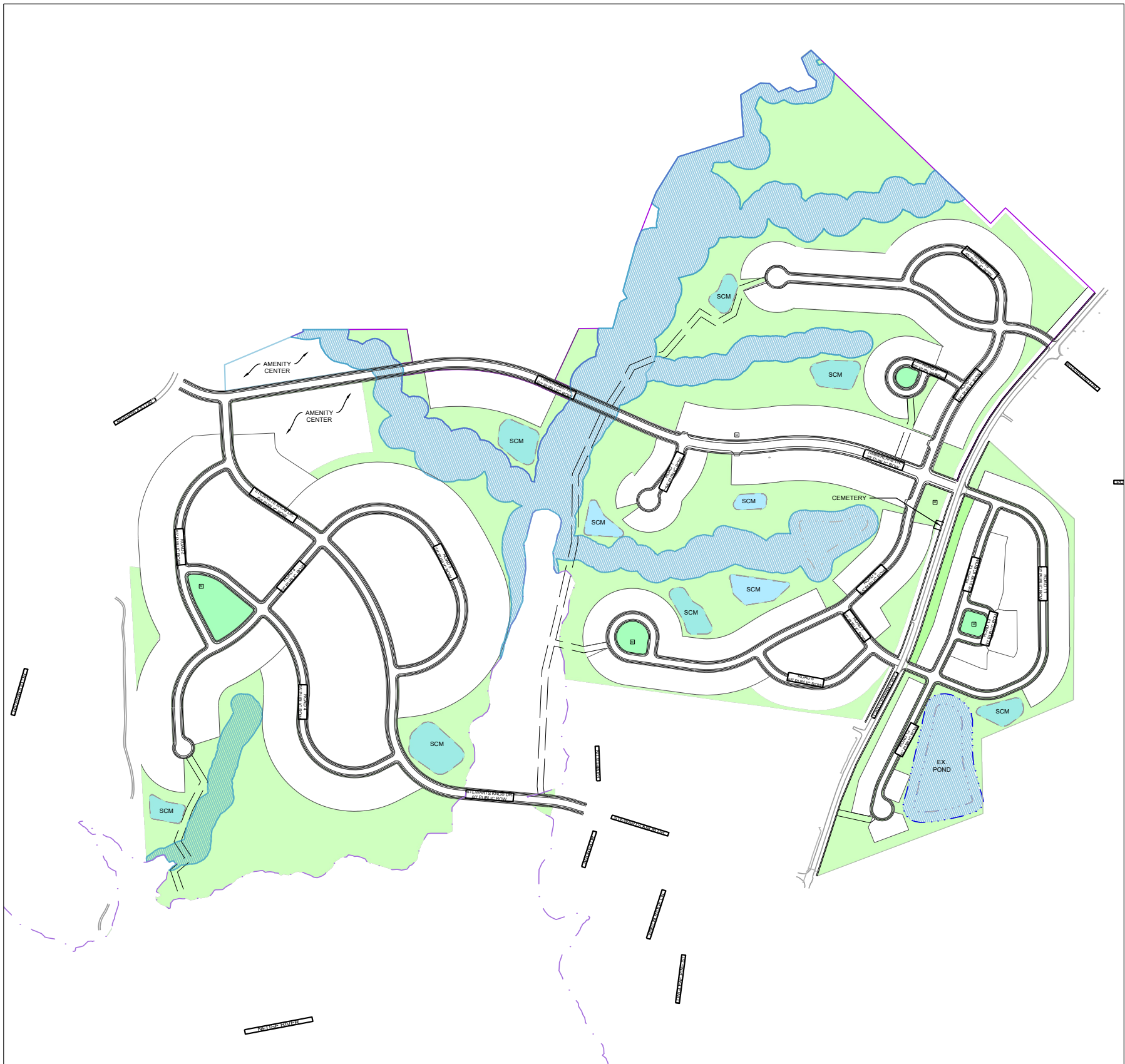
PROPOSED RESIDENTIAL COMMUNITY

CLAYTON, NORTH CAROLINA

MASTER PLAN

CASE # 2020-158-SD
SUBMITTED ON NOVEMBER 02, 2020

REVISIONS
DECEMBER 23, 2020 - RESUBMITTAL
JANUARY 25,2021 - RESUBMITTAL



INDEX OF DRAWINGS	
SHEET NO.	SHEET NAME
0.0	COVER SHEET
1.0	SURVEY
2.0	EXISTING CONDITIONS PLAN
3.0	SITE PLAN
4.0	LANDSCAPE PLAN
5.0	PHASING PLAN
6.0	VEHICULAR CIRCULATION PLAN
7.0	TIA ROAD IMPROVEMENTS PLAN
8.0	PEDESTRIAN CIRCULATION PLAN
9.0	PRELIMINARY UTILITY PLAN
10.0	PRELIMINARY GRADING & DRAINAGE PLAN
11.0	OPEN SPACE PLAN
12.0	SINGLE FAMILY REGULATING PLAN
13.0	TOWNHOME REGULATING PLAN
14.0	MULTIFAMILY REGULATING PLAN
15.0	AMENITY CENTER REGULATING PLAN
16.0	RCA OVERLAY



STEWART

101 WEST MAIN ST.
DURHAM, NC 27701
T 919.380.8750

FIRM LICENSE #: C-1051
www.stewartinc.com
PROJECT #: L20030

Client:

RIVERWILD
114 W. MAIN STREET
CLAYTON, NC 27520

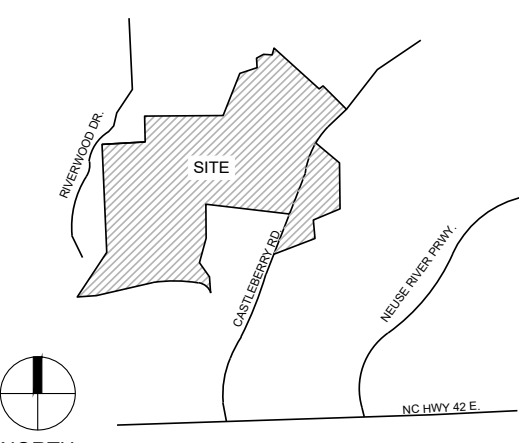
Consultants:

SOIL & ENVIRONMENTAL CONSULTANTS, PA
NORTH QUARTER OFFICE PARK
RALEIGH, NC 27615

Agent:

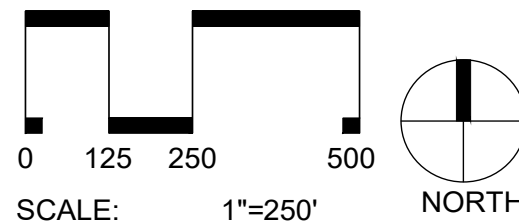
RIVERWILD
114 W. MAIN STREET
CLAYTON, NC 27520
CONTACT: DAVID DEYOUNG, AICP

Vicinity map:



Seal:

PRELIMINARY - DO NOT
USE FOR CONSTRUCTION



Project:

**RIVERWOOD
GOLF CLUB
SECTION 2**

Issued for:

MASTER PLAN

No.	Date	Description
1	12.23.2020	PER TOWN COMMENTS
2	1.25.2021	PER TOWN COMMENTS
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---	---	---
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Title:

SURVEY

Project number: L20030 Sheet #:

Issued Date: 11.02.2020

Drawn by: ---

Approved by: ---

1.0

LEGEND

	SURVEY CONTROL POINT		GUY POLE		UNDERGROUND TELEPHONE LINE
	EXISTING IRON PIPE		GUY WIRE		UNDERGROUND FIBER OPTIC LINE
	EXISTING IRON ROD		LIGHT POLE		UNDERGROUND ELECTRIC LINE
	EXISTING CONCRETE MONUMENT		BOLLARD		UNDERGROUND WATER LINE
	EXISTING AXLE		SIGN		SANITARY SEWER LINE
	COMPUTED POINT		MAILBOX		STORM DRAIN LINE
	STORM DRAIN FLARED END SECTION		DECIDUOUS TREE		OVERHEAD WIRES
	SANITARY SEWER MANHOLE		EVERGREEN TREE		UNKNOWN DESTINATION
	HYDRANT		BUSH		CONCRETE SURFACE
	WATER VALVE		BUFFER ZONE		DUCTILE IRON PIPE
	WATER METER		0.2% CHANCE FLOOD LINE		POLYVINYL CHLORIDE PIPE
	WELL		1% CHANCE FLOOD LINE		REINFORCED CONCRETE PIPE
	IRRIGATION CONTROL VALVE		FLOODWAY LINE		CORRUGATED METAL PIPE
	TELEPHONE PEDESTAL		WIRE FENCE		CHAIN LINK FENCE
	TV PEDESTAL		CHAIN LINK FENCE		WOOD FENCE
	COMMUNICATION WITNESS POST		WOOD FENCE		
	FIBER OPTIC WITNESS POST		TREELINE		
	FIBER OPTIC BOX				
	ELECTRIC METER				
	ELECTRIC TRANSFORMER				
	ELECTRIC BOX				
	UTILITY POLE				

LINE	BEARING	DISTANCE
L1	N13°59'06"E	147.78'
L2	N47°43'37"E	72.21'
L3	N01°18'47"W	131.76'
L4	N58°44'47"E	110.37'
L5	S88°06'20"E	43.09'
L6	S46°27'23"E	60.26'
L7	N68°38'47"E	60.29'
L8	S58°12'08"E	40.70'
L9	N75°36'57"E	91.49'
L10	N01°55'54"E	30.91'
L11	N50°27'44"W	47.34'
L12	N22°40'11"W	88.06'
L13	N50°49'45"E	59.36'
L14	N42°38'58"E	104.60'
L15	N45°38'47"W	37.19'
L16	N45°38'47"W	137.48'
L17	N45°45'15"W	30.06'
L18	N39°07'08"E	46.08'
L19	N39°07'08"E	53.62'
L20	N34°17'15"E	99.98'
L21	N30°42'38"E	99.94'
L22	N46°51'12"W	30.72'
L23	N00°22'51"E	4.68'
L24	S68°54'01"W	38.18'
L25	N17°43'43"E	131.22'
L26	N17°29'28"E	278.15'
L27	N22°02'13"E	199.97'
L28	N27°02'59"E	200.18'
L29	S82°00'28"E	33.72'
L30	S82°00'28"E	22.96'
L31	N02°20'13"W	165.05'
L32	N13°28'19"E	50.22'
L33	N42°26'32"W	47.26'
L34	N42°26'32"W	181.43'
L35	S03°13'38"E	210.93'
L36	N27°15'26"E	212.24'
L37	N25°52'15"E	100.00'
L38	N22°23'15"E	100.00'
L39	N19°10'10"E	100.00'
L40	N17°19'11"E	216.21'
L41	N17°11'10"E	383.48'
L42	N19°50'28"E	199.93'
L43	N26°16'54"E	200.55'
L44	S71°52'45"E	30.00'
L45	N32°00'33"E	46.69'
L46	N04°24'12"E	39.63'
L47	S85°39'48"E	40.00'
L48	S04°24'12"W	39.65'
L49	N86°36'11"W	35.97'
L50	S03°27'33"E	9.45'



GENERAL NOTES

- THIS SURVEY MAP IS INTENDED TO REPRESENT THE EXISTING CONDITIONS/TOPOGRAPHY ON THE PROPERTIES SHOWN HEREON, AND IS NOT A BOUNDARY SURVEY. THIS SURVEY WAS PERFORMED WITHOUT THE BENEFIT OF A TITLE REPORT AND THEREFORE ALL ENCUMBRANCES UPON THE PROPERTY MAY NOT BE SHOWN.
- THE PROPERTY LINES SHOWN HEREON HAVE BEEN CONFIRMED FROM A FIELD SURVEY BY STEWART INC. PROPERTY LINES SHOWN TAKEN FROM REFERENCES SHOWN HEREON.
- HORIZONTAL DATUM IS NAD 83 (2011) AND VERTICAL DATUM IS NAVD83. BASED ON GPS METHODS USING REAL-TIME KINEMATIC SOLUTIONS FOR THE SURVEY CONTROL POINTS SHOWN HEREON AND TIED TO NORTH CAROLINA GEODETIC SURVEY MONUMENT "MORAH RESET 2".
"MORAH RESET 2"
N 701370.11'
E 2146838.92'
EL 360.75'
- THE INITIAL STATE PLANE POSITIONS FOR THIS SURVEY WERE SCALED FROM GRID TO GROUND FROM A PROJECT LOCATION OF (TRAV-2) N 989698.87 E 2174262.80, AN ELEVATION OF 240.51, USING A COMBINED FACTOR OF 0.99988797.
- THIS DRAWING DOES NOT CONFORM TO N.C. GS47-30 AND THEREFORE IS NOT FOR RECORDATION.
- UTILITIES SHOWN HEREON ARE BASED ON ABOVE-GROUND VISIBLE EVIDENCE AND UTILITY DESIGNATION/MARKING SERVICES PERFORMED BY STEWART INC. AS A PART OF THIS SURVEY. CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF ALL UTILITIES BEFORE COMMENCING CONSTRUCTION.
- TREES SHOWN HEREON MAY NOT REPRESENT ALL VEGETATION ON THE SUBJECT PROPERTY.
- THE SUBJECT PROPERTY IS ZONED "RESIDENTIAL ESTATE" (PER TOWN OF CLAYTON ZONING MAP) & "AR" (PER JOHNSTON COUNTY GIS).
- THE SUBJECT PROPERTY LIES IN ZONES X (AREA DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE AND FUTURE CONDITIONS 1% ANNUAL CHANCE FLOODPLAIN), X (SHADED) (AREA OF 0.2% ANNUAL CHANCE FLOOD; AREAS OF FUTURE CONDITIONS 1% ANNUAL CHANCE FLOOD; AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS OF LESS THAN 1 SQUARE MILE; AND AREAS PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD), AE (AREA DETERMINED TO BE INSIDE THE 1% ANNUAL CHANCE FLOOD, BASE FLOOD ELEVATIONS DETERMINED), AND FLOODWAY (DELINEATED FLOODWAY OF A STREAM). BASED ON THE FLOOD INSURANCE RATE MAP COMMUNITY MAP NUMBER 3720167800K DATED 06/20/2018. FLOOD HAZARD LINES SHOWN HEREON ARE FROM FRIS.NC.GOV.

I, DUSTIN J. MCCARTY, CERTIFY THAT THIS PROJECT WAS COMPLETED UNDER MY DIRECT AND RESPONSIBLE CHARGE FROM AN ACTUAL GROUND SURVEY MADE UNDER MY SUPERVISION. THAT THE IMAGERY AND/OR ORIGINAL DATA WAS OBTAINED ON 07/02/2020. THAT THE SURVEY WAS COMPLETED ON 08/18/2020. THAT CONTOURS SHOWN AS (CONTINUOUS LINES) MAY NOT MEET THE STATED STANDARD, AND ALL COORDINATES ARE BASED ON NAD83(2011).

Dustin J. McCarty
10/15/2020
DUSTIN J. MCCARTY, PLS L-5213



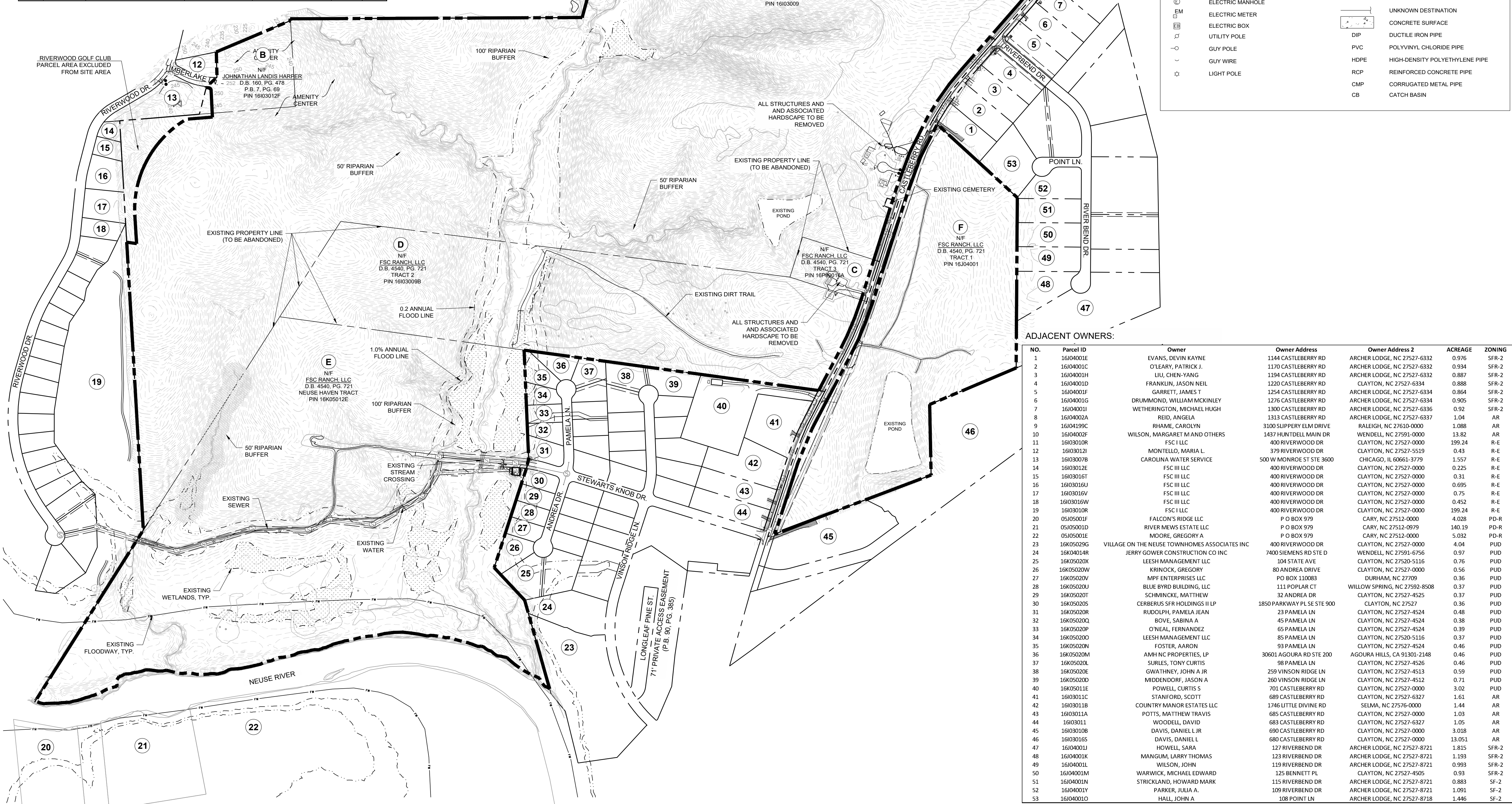
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"MORIAH RESET 2"
N 701370.11"
E 2146838.92"
EL 360.75'
- THE INITIAL STATE PLANE POSITIONS FOR THIS SURVEY WERE SCALED FROM GRID TO GROUND FROM A PROJECT LOCATION OF (TRAV) N 998998.87 E 2174528.80, AN ELEVATION OF 240.51, USING A COMBINED FACTOR OF 0.99988797.
- THIS DRAWING DOES NOT CONFORM TO N.C. 0547-30 AND THEREFORE IS NOT FOR RECORDATION.
- UTILITIES SHOWN HEREON ARE BASED ON ABOVE-GROUND VISIBLE EVIDENCE AND UTILITY DESIGNATION/MARKING SERVICES PERFORMED BY STEWART INC. AS A PART OF THIS SURVEY. CONTRACTOR SHALL FIELD VERIFY THE LOCATION OF ALL UTILITIES BEFORE COMMENCING CONSTRUCTION.
- TREES SHOWN HEREON MAY NOT REPRESENT ALL VEGETATION ON THE SUBJECT PROPERTY.
- THE SUBJECT PROPERTY IS ZONED "RESIDENTIAL ESTATE" (PER TOWN OF CLAYTON ZONING MAP) & "AR" (PER JOHNSTON COUNTY GIS).
- THE SUBJECT PROPERTY LIES IN ZONES X (AREA DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE AND FUTURE CONDITIONS 1% ANNUAL CHANCE FLOODPLAIN), X (SHADED) (AREA OF 0.2% ANNUAL CHANCE FLOOD; AREAS OF FUTURE CONDITIONS 1% ANNUAL CHANCE FLOOD; AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS OF LESS THAN 1 SQUARE MILE; AND AREAS PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD), AE (AREA DETERMINED TO BE INSIDE THE 1% ANNUAL CHANCE FLOOD, BASE FLOOD ELEVATIONS DETERMINED), AND FLOODWAY (DELINEATED FLOODWAY OF A STREAM), BASED ON THE FLOOD INSURANCE RATE MAP COMMUNITY MAP NUMBER 3720167900K DATED 06/20/2018. FLOOD HAZARD LINES SHOWN HEREON ARE FROM FRIS.NC.GOV.

PROPERTY OWNERS:

LETTER	PARCEL ID	OWNER	OWNER ADDRESS	OWNER ADDRESS 2	ACREAGE	ZONING
A	16103009	JAMES W & JANICE C HOLLOWAY LLC	8401 CROWDER RD	RALEIGH, NC 27603-0000	155.930	RE
B	16103012F	SMITH, FRED J JR	632 MARCELLUS WAY	CLAYTON, NC 27527-5591	3.93	RE
C	16P99016A	FSC RANCH LLC	400 RIVERWOOD DR	CLAYTON, NC 27527-5500	1.959	RE
D	16103009B	FSC RANCH LLC	400 RIVERWOOD DR	CLAYTON, NC 27527-5500	59.870	AR
E	16K05012E	FSC RANCH LLC	400 RIVERWOOD DR	CLAYTON, NC 27527-5500	71.570	PUD
F	16J04001	FSC RANCH LLC	400 RIVERWOOD DR	CLAYTON, NC 27527-5500	28.05	AR



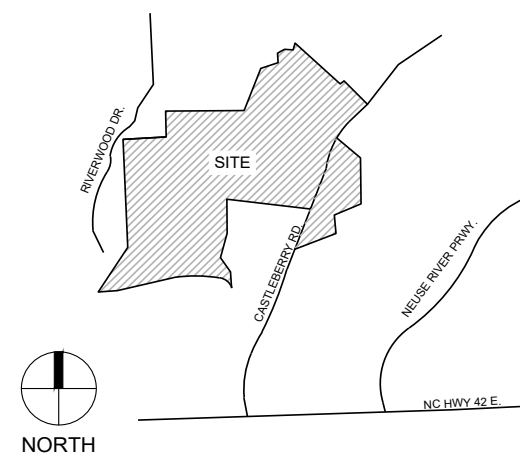
Client:
RIVERWILD
114 W. MAIN STREET
CLAYTON, NC 27520

Consultants:
SOIL & ENVIRONMENTAL CONSULTANTS, PA
NORTH QUARTER OFFICE PARK
RALEIGH, NC 27615

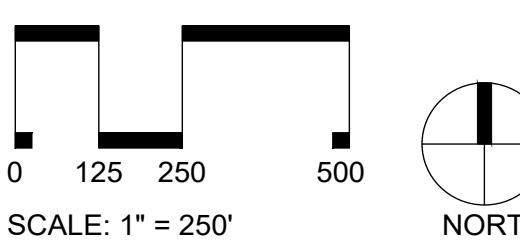
KIMLEY HORN
421 FAYETTEVILLE ST SUITE 600
RALEIGH, NC 27601

Agent:
RIVERWILD
114 W. MAIN STREET
CLAYTON, NC 27520
CONTACT: DAVID DEYOUNG, AICP

Vicinity map:



Seal:
PRELIMINARY - DO NOT
USE FOR CONSTRUCTION



RIVERWOOD
GOLF CLUB
SECTION 2

MASTER PLAN

No.	Date	Description
1	12.23.2020	PER TOWN COMMENTS
2	1.25.2021	PER TOWN COMMENTS
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EXISTING CONDITIONS
PLAN

Project number: L20030 Sheet #:
Issued Date: 11.02.2020
Drawn by: HNJ
Approved by: MT

2.0

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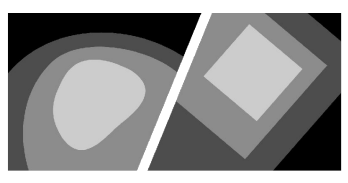


LOTS STANDARD TABLE:										
	QUANTITY +/-10%	MIN LOT SIZE	MIN LOT WIDTH	MAX IMPERVIOUS	MAX BLDG COVER	MIN FRONT GARAGE SETBACK MEASURED FROM BACK OF SIDEWALK	MIN FRONT BUILDING SETBACK MEASURED FROM BACK OF SIDEWALK	MIN SIDE STREET SETBACK MEASURED FROM BACK OF SIDEWALK	MIN SIDE YARD	MIN REAR YARD
TYPE A	153	10,000 SF	60'	40%	25%	25'	10'	10'	5'	20'
TYPE B	278	4,100 SF	42'	60%	50%	25'	10'	10'	5'	15'
TYPE C	74	2,000 SF	22'	95%	90%	25'	10'	15'	0'	10'
TYPE D	220	20,000 SF	100'	95%	90%	N/A	15'	15'	0'	10'

SITE DATA:	
SITE DATA:	
PROJECT NAME:	RIVERWOOD GOLF CLUB SECTION 2
PIN NUMBERS:	167900-56-1805, 167900-76-3755, 167900-85-1824, 167900-85-8736, 167900-54-4810, 167900-85-6781
TAG NUMBERS:	PORTION OF 1603012F, PORTION OF 1603009, 16P99016A, 1603009B, 16K05012E, 16J040
OWNER INFO:	SMITH, FRED J JR: 632 MARCELLUS WAY, CLAYTON, NC 27527-5591 JAMES W & JANICE C HOLLOWAY LLC: 8401 CROWDER RD, RALEIGH, NC 27603-0000 FSC RANCH LLC: 400 RIVERWOOD DR, CLAYTON, NC 27527-5500
TOTAL PARCEL AREA:	301.91 AC 13,151,288 SF
RIVERWOOD GOLF CLUB PARCEL AREA:	1.94 AC 84,646 SF
PARCEL AREA (EXCLUDING CASTLEBERRY ROW):	298.67 AC 13,009,978 SF
RESOURCE CONSERVATION AREA:	86.74 AC 3,778,524 SF
NET PROJECT AREA:	209.98 AC 9,231,454 SF
PROJECT LOCATION:	CLAYTON ET J / UNINCORPORATED JOHNSTON COUNTY
EXISTING ZONING:	RESIDENTIAL ESTATE
PROPOSED ZONING:	PLANNED DEVELOPMENT - RESIDENTIAL
OVERLAY DISTRICT:	WATERSHED PROTECTION OVERLAY (301.91 ACRES)
CURRENT FUTURE LAND USE DESIGNATION:	LOW DENSITY RESIDENTIAL
EXISTING USE:	VACANT, LARGE LOT SINGLE FAMILY RESIDENTIAL
PROPOSED USES:	SINGLE FAMILY RESIDENTIAL, MULTIFAMILY RESIDENTIAL
RESIDENTIAL DENSITY CALCS:	
• TOTAL UNITS:	723
• SINGLE FAMILY LOTS:	429
• TOWNHOME LOTS:	74
• APARTMENT UNITS:	220
• PROPOSED DENSITY (DU/AC):	2.42
• SINGLE FAMILY DENSITY:	1.44 GROSS DWELLING UNITS / ACRE
UTILITIES:	
• WATER (PUBLIC):	JOHNSTON COUNTY - ARCHER LODGE WATER DISTRICT
• SEWER (PUBLIC):	JOHNSTON COUNTY - EAST CLAYTON WWPS OUTFALL
• ELECTRIC:	DUKE ENERGY
MAX. BUILDING HEIGHT:	3 STORIES, 34' FOR SINGLE FAMILY AND TOWNS; 50' FOR APARTMENTS & AMENITIES
PARKING CALCS:	
• AMENITY:	1 / 300 SF OF AMENITY BUILDING
• APARTMENTS:	1 SPACES / BEDROOM (UP TO 2 BEDROOMS) + 1 SPACE / 4 UNITS
• RESIDENTIAL LOTS:	2 SPACES / UNIT
FEMA FLOOD MAP:	3720166900K
TOTAL SITE IMPERVIOUS AREA:	75.34 AC 3,281,712 SF 25.22%
AC OPEN SPACE REQ'D (12.5%)	26.25 AC 1,153,932 SF
IMPROVED OPEN SPACE REQ'D (25%)	6.56 AC 288,483 SF

- NOTES:
- SEE SHEET C1.0 FOR ADJACENT PROPERTY OWNER INFORMATION
 - HOA SHALL MAINTAIN ALL COMMON OPEN SPACE AREAS INCLUDING LANDSCAPE MEDIANS AT ENTRANCES AND PERIMETER BUFFERS.
 - PERMITTED RESIDENTIAL USES INCLUDE THE FOLLOWING:
 - APARTMENTS
 - TOWNHOUSES
 - SINGLE FAMILY LOTS
 - MAILBOX NUMBER AND LOCATION ARE CONCEPTUAL AND TO BE CONFIRMED AT PRELIMINARY PLAN REVIEW AND UPON REVIEW BY U.S. POSTAL SERVICE.
 - MAILBOX KIOSK / PUBLIC AREA SHALL BE ACCESSIBLE PER ADA REQUIREMENT.
 - ALL PHASES OF THE DEVELOPMENT SHALL BE SUBMITTED AND REVIEWED AS SEPARATE MINOR SITE PLANS AND SUBDIVISION PLANS.
 - STREET LIGHTS TO BE DESIGNED BY CLAYTON PUBLIC POWER AND SHALL BE INSTALLED IN ACCORDANCE WITH TOWN AND NCDOT STANDARDS ALONG THE FRONTAGE OF CASTLEBERRY ROAD TO PROVIDE LIGHTING FOR THE STREET AND THE PROPOSED MULTI-USE PATH.
 - APARTMENT AND PARKING LAYOUT TO BE SUBMITTED AT SITE PLAN REVIEW.
 - MEDIANS WITHIN THE CUL-DE-SACS MAY BE PERMITTED WHERE THE CUL-DE-SAC RADIUS IS INCREASED TO ACCOMMODATE FIRE AND SANITATION. ADEQUATE RADIUS TO BE COORDINATED WITH FIRE DEPARTMENT AND ENGINEERING. THESE LANDSCAPE MEDIANS WILL BE PRIVATELY MAINTAINED AND ARE NOT THE RESPONSIBILITY OF THE TOWN.
 - AMENITY CENTER BUILDING SHALL BE 4,000 SF MINIMUM. POOL AND POOL DECK SHALL BE A MINIMUM OF 7,500 SF. ALL IMPROVEMENTS ASSOCIATED WITH AMENITIES SHALL MEET THE UDC AT THE TIME OF SITE PLAN APPROVAL.
 - EXISTING ELECTRICAL EASEMENT ALONG EAST SIDE OF CASTLEBERRY RD. TO BE REALIGNED TO FOLLOW EXISTING RIGHT OF WAY.

LEGEND:	
	100 YEAR FLOODPLAIN (RCA)
	STREAM BUFFER (RCA)
	EXISTING WETLAND
	STREAM CENTERLINE
	PASSIVE OPEN SPACE
	IMPROVED OPEN SPACE
	LOT TYPE A (4 AC ESTATE LOTS)
	LOT TYPE B (4,200 SF)
	LOT TYPE C (TOWNHES)
	LOT TYPE D (APARTMENTS)
	MAILBOX CENTER



STEWART

101 WEST MAIN ST.
DURHAM, NC 27701
T 919.380.8750

FIRM LICENSE #: C-1051
www.stewartinc.com
PROJECT #: L20030

Client:

RIVERWILD
114 W. MAIN STREET
CLAYTON, NC 27520

Consultants:

SOIL & ENVIRONMENTAL CONSULTANTS, PA
NORTH QUARTER OFFICE PARK
RALEIGH, NC 27615

KIMLEY HORN
421 FAYETTEVILLE ST SUITE 600
RALEIGH, NC 27601

Agent:

RIVERWILD
114 W. MAIN STREET
CLAYTON, NC 27520
CONTACT: DAVID DEYOUNG, AICP

Vicinity map:

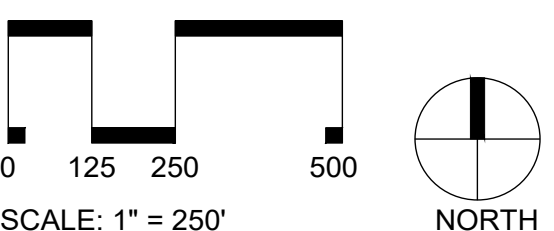


Seal:

PRELIMINARY - DO NOT
USE FOR CONSTRUCTION



Scale:



Project:

RIVERWOOD GOLF CLUB SECTION 2

Issued for:

MASTER PLAN

No.	Date	Description
1	12.23.2020	PER TOWN COMMENTS
2	1.25.2021	PER TOWN COMMENTS
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Title:

SITE PLAN

Project number: L20030 Sheet #:

Issued Date: 11.02.2020

Drawn by: KH

Approved by: MT

3.0



1. "WHERE NON-NATIVE OR NON-DROUGHT TOLERANT NATIVE VEGETATION IS INCORPORATED AN IRRIGATION SYSTEM SHALL BE REQUIRED." [UDC 156.402.5.(H)(2).(b).5]
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, DROUGHT TOLERANT SPECIES MUST BE USED.)
3. "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"
4. ALL MECHANICAL EQUIPMENT, INCLUDING HVAC SHALL BE SCREENED PER THE UDC.

- "TWENTY PERCENT OF THE TOTAL LOT AREA SHALL BE LANDSCAPED. ONE CANOPY TREE, ONE UNDERSTORY TREE, AND TWO SHRUBS SHALL BE PLANTED FOR EACH 1,000 SQUARE FEET OF LOT AREA. THE PLANTING SHALL BE GIVEN THE FOLLOWING: PLANTED THROUGHOUT THE LANDSCAPED AREA, BUT MAY BE STAGGERED OR CLUSTERED AS NECESSARY TO MAXIMIZE VISUAL AND SCREENING OBJECTIVES, AND TO MEET THE NEEDS OF THE PARTICULAR SPECIES OF PLANTS FOR ROOT SPACE, WATER, LIGHT, AND AIR CIRCULATION." (UDO 155.402, PART 1)
- "ALL SITE PLANS REQUIRING LANDSCAPING IN ACCORDANCE WITH THIS SECTION SHALL PROVIDE SITE INTERIOR LANDSCAPING. PERIMETER BUFFER REQUIREMENTS SET FORTH IN PART 2 AND STREET YARD TREES SET FORTH IN PART 3 OF THIS SECTION SHALL BE PROVIDED COMPLETELY, AS REQUIRED, IN ADDITION TO THESE REQUIREMENTS."
 - "EXISTING PRESERVED VEGETATION AND LANDSCAPING PROVIDED WITHIN VEHICULAR USE AREAS MAY BE COUNTED TOWARD THE SITE INTERIOR LANDSCAPE REQUIREMENT."
 - "RESOURCE CONSERVATION AREAS (SEE § 155.500) MAY BE USED TO SATISFY A MAXIMUM OF 40% OF THE TOTAL REQUIRED LANDSCAPED AREA."

"STREET YARD TREE 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)." (UDO 155.402, PART 3)

STREET TREE LOCATIONS SHOWN IN LANDSCAPE PLAN ARE CONCEPTUAL IN NATURE. ACTUAL LOCATIONS TO BE DETERMINED AT FINAL ENGINEERING AND PERMITTING. TREES SHALL NOT BE PLANTED IN THE EXISTING STREAM BUFFER.

- NOTES:
- * MAINTAIN EXISTING VEGETATION WHEREVER POSSIBLE TO SATISFY BUFFER REQUIREMENTS. CONTRACTOR TO FIELD VERIFY EXISTING VEGETATION WITH TOWN PRIOR TO PROCURING PLANT MATERIAL.
- * ANY EXISTING VEGETATION TO BE UTILIZED TO MEET BUFFER REQUIREMENTS WILL BE FIELD INSPECTION AND APPROVAL BY PLANNING DEPARTMENT DURING THE MINOR SUBDIVISION SITE PLAN REVIEW.
- * WHEREVER EXISTING VEGETATION IN THE BUFFER IS REMOVED IT SHALL BE REPLACED AND MAINTAINED TO MEET BUFFER REQUIREMENTS.
- * BUFFER DIAGRAMS BELOW ARE FOR ILLUSTRATIVE PURPOSES ONLY. ACTUAL LAYOUT MAY VARY.
- * DETAILED SPECIES AND QUANTITIES IN COMPLIANCE WITH UDC SHALL BE PROVIDED DURING PRELIMINARY PLAN REVIEW.
- * BUFFER REQUIREMENTS TO BE PROVIDED SUBJECT TO, AND IN ACCORDANCE WITH TOWN OF CLAYTON AND DUKE ENERGY PLANNING GUIDELINES WITHIN ELECTRICAL EASEMENTS.

CLASS 2 BUFFER - ALTERNATIVE PLANTING SCHEME

NOTE: CLASS 2 BUFFER MAY INCLUDE A BURN WEDGE, FENCE OR COMBINATION THEREOF WITH A MINIMUM HEIGHT OF 8 FT AT INSTALLATION.

REQUIRED PER 100'

(1)	CANDY THREES	2.0 C/F AT 10 FT
(2)	INDIVIDUALLY TREE	2.0 C/F AT 10 FT
(3)	SHRUB	24 HGT.

SECTION: 1" = 20'

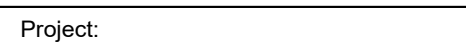
NOTE: PLANT SPECIES ARE RECOMMENDATIONS ONLY. SPECIES WILL BE FINALIZED AT MINOR SITE. (REVISIONS REQUIRED)

STREET YARD GRASS TREE (2.5' CAL. 8' HGT)
POSSIBLE SPECIES INCLUDE:
ALNUS BURGERIANA / ALMOND TM / VALMYR TRIDENT MAPLE
CARPINUS BETULUS / EUROPEAN HORNBEAM
FAGUS GRANDIFOLIA / AMERICAN BEECH
GLEHSTIA TRACANTANUS / SWEET GUM / SEANLINE HONEY LOCUST
NYSSA SYLVATICA / 'GREEN GABLE' TM / BLACK GUM
QUERCUS SHUMARDI / SHUMARD RED OAK

BUFFER GRASS TREE (2.5' CAL. 8' HGT)
QUANTITIES MAY VARY. SEE BUFFER NOTES
POSSIBLE SPECIES INCLUDE:
JUNIPERUS VIRGINIANA / EASTERN RED CEDAR
LUDWIGIA STYLYCIUM / AMERICAN SWEET GUM
LIRIODENDRON TULIPIFERA / TUL TUL
NYSSA SYLVATICA / 'GREEN GABLE' / BLACK GUM
PINUS TAEDA / LOBLOLLY PINE

BUFFER UNDERSTORY (2" CAL. 8' HGT)
QUANTITIES MAY VARY. SEE BUFFER NOTES
POSSIBLE SPECIES INCLUDE:
CERCIS CANADENSIS / EASTERN REDBUD
ILEX OPACA / AMERICAN HOLLY
OXYDENDRUM ARBOREUM / SOURWOOD TREE

BUFFER SHRUB (24" HGT.)
QUANTITIES MAY VARY. SEE BUFFER NOTES
POSSIBLE SPECIES INCLUDE:
CLEYERA JAPONICA / 'LEANN' TM / SEANLINE CLEYERA
ILEX VOMITORIA / YAPPOON HOLLY
NYSSA CERCIFERA / WAXY HAWTHORN



RIVERWOOD
GOLF CLUB
SECTION 2

Issued for:

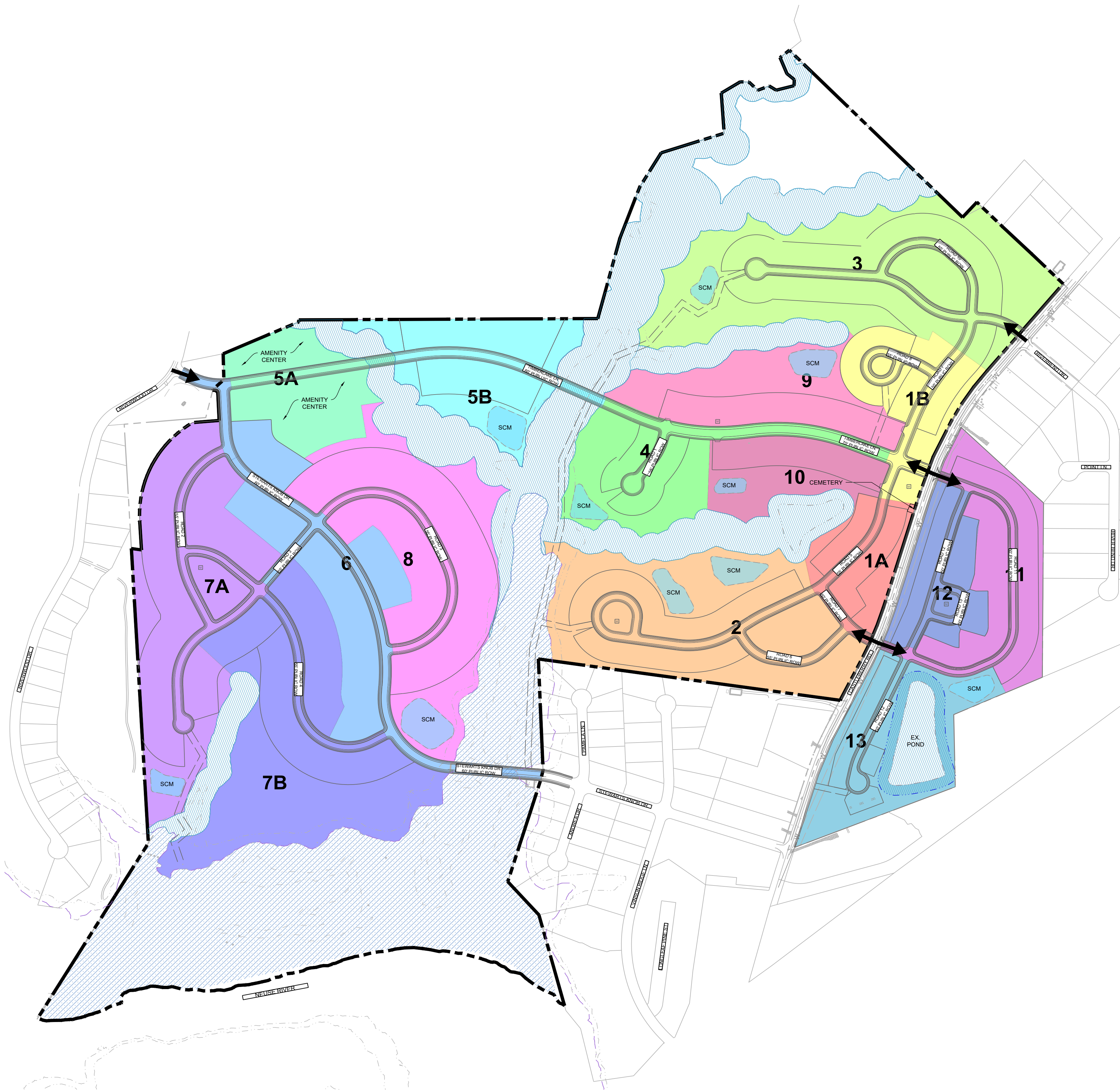
MASTER PLAN

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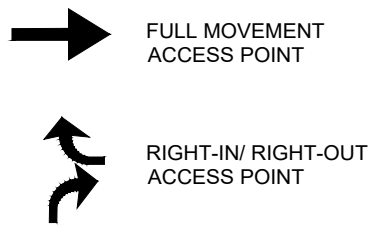
Title: _____

LANDSCAPE PLAN

Project number: L20030 Sheet #:
Issued Date: 11.02.2020
Drawn by: ELL
Approved by: MPT



UNIT COUNTS:		LEGEND:	
PHASE 1A			PHASE 1A
SINGLE FAMILY LOTS:	+/- 24		PHASE 1B
TOWNHOME LOTS:	0		PHASE 2
APARTMENT UNITS:	0		PHASE 3
PHASE 1B			PHASE 4
SINGLE FAMILY LOTS:	+/- 35		PHASE 5A
TOWNHOME LOTS:	0		PHASE 5B
APARTMENT UNITS:	0		PHASE 6
PHASE 2			PHASE 7A
SINGLE FAMILY LOTS:	+/- 74		PHASE 7B
TOWNHOME LOTS:	0		PHASE 8
APARTMENT UNITS:	0		PHASE 9
PHASE 3			PHASE 10
SINGLE FAMILY LOTS:	+/- 75		PHASE 11
TOWNHOME LOTS:	0		PHASE 12
APARTMENT UNITS:	0		PHASE 13
PHASE 4			
SINGLE FAMILY LOTS:	+/- 16		
TOWNHOME LOTS:	0		
APARTMENT UNITS:	0		
PHASE 5A (AMENITY CENTER)			
SINGLE FAMILY LOTS:	0		
TOWNHOME LOTS:	0		
APARTMENT UNITS:	0		
PHASE 5B			
SINGLE FAMILY LOTS:	+/- 18		
TOWNHOME LOTS:	0		
APARTMENT UNITS:	0		
PHASE 6			
SINGLE FAMILY LOTS:	+/- 31		
TOWNHOME LOTS:	0		
APARTMENT UNITS:	0		
PHASE 7A			
SINGLE FAMILY LOTS:	+/- 38		
TOWNHOME LOTS:	0		
APARTMENT UNITS:	0		
PHASE 7B			
SINGLE FAMILY LOTS:	+/- 30		
TOWNHOME LOTS:	0		
APARTMENT UNITS:	0		
PHASE 8			
SINGLE FAMILY LOTS:	+/- 36		
TOWNHOME LOTS:	0		
APARTMENT UNITS:	0		
PHASE 9			
SINGLE FAMILY LOTS:	0		
TOWNHOME LOTS:	0		
APARTMENT UNITS:	+/- 132		
PHASE 10			
SINGLE FAMILY LOTS:	0		
TOWNHOME LOTS:	0		
APARTMENT UNITS:	+/- 88		
PHASE 11			
SINGLE FAMILY LOTS:	+/- 53		
TOWNHOME LOTS:	0		
APARTMENT UNITS:	0		
PHASE 12			
SINGLE FAMILY LOTS:	0		
TOWNHOME LOTS:	+/-46		
APARTMENT UNITS:	0		
PHASE 13			
SINGLE FAMILY LOTS:	0		
TOWNHOME LOTS:	+/-29		
APARTMENT UNITS:	0		



- NOTES:
- PHASES DEPICTED ON PLAN DO NOT REPRESENT SEQUENCE OF DEVELOPMENT. APPLICANT RESERVES THE RIGHT TO DEVELOP SITE IMPROVEMENTS AND OBTAIN CERTIFICATES OF OCCUPANCY FOR EACH PROJECT AREA INDEPENDENTLY AND ACCORDING TO THE PROJECT SCHEDULE DETERMINED TO BEST MEET THE NEEDS AND FUNCTIONALITY OF THE COMMUNITY DURING CONSTRUCTION.
 - EACH PRIMARY PHASE MUST BE SELF SUFFICIENT AND STAND ALONE AS IT RELATES TO MEETING APPLICABLE UDO REQUIREMENTS.
 - NUMBER OF LOTS AND PRODUCT TYPE IN EACH PHASE ARE SCHEMATIC IN NATURE AND SUBJECT TO CHANGE AT FINAL ENGINEERING AND PERMITTING SUCH THAT THE OVERALL DENSITY OF THE PROJECT IS WITHIN 10% OF THAT PROPOSED.



STEWART

101 WEST MAIN ST.
DURHAM, NC 27701
T 919.380.8750

FIRM LICENSE #: C-1051
www.stewartinc.com
PROJECT #: L20030

Client:

RIVERWILD
114 W. MAIN STREET
CLAYTON, NC 27520

Consultants:

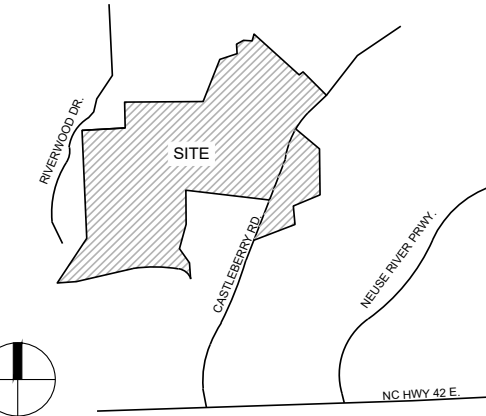
SOIL & ENVIRONMENTAL CONSULTANTS, PA
NORTH QUARTER OFFICE PARK
RALEIGH, NC 27615

KIMLEY HORN
421 FAYETTEVILLE ST SUITE 600
RALEIGH, NC 27601

Agent:

RIVERWILD
114 W. MAIN STREET
CLAYTON, NC 27520
CONTACT: DAVID DEYOUNG, AICP

Vicinity map:



NORTH

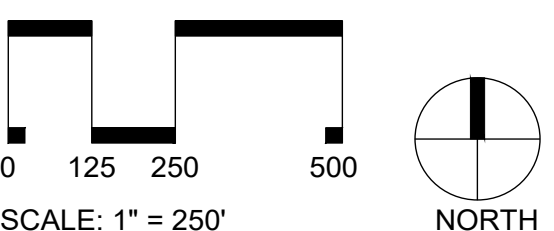
Seal:

PRELIMINARY - DO NOT
USE FOR CONSTRUCTION



Michael P. Tabor
6643
STATE OF NORTH CAROLINA

Scale:



0 125 250 500
SCALE: 1" = 250'

NORTH

Project:

RIVERWOOD GOLF CLUB SECTION 2

Issued for:

MASTER PLAN

No.	Date	Description
1	12.23.2020	PER TOWN COMMENTS
2	1.25.2021	PER TOWN COMMENTS
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Title:

PHASING PLAN

Project number: L20030 Sheet #:

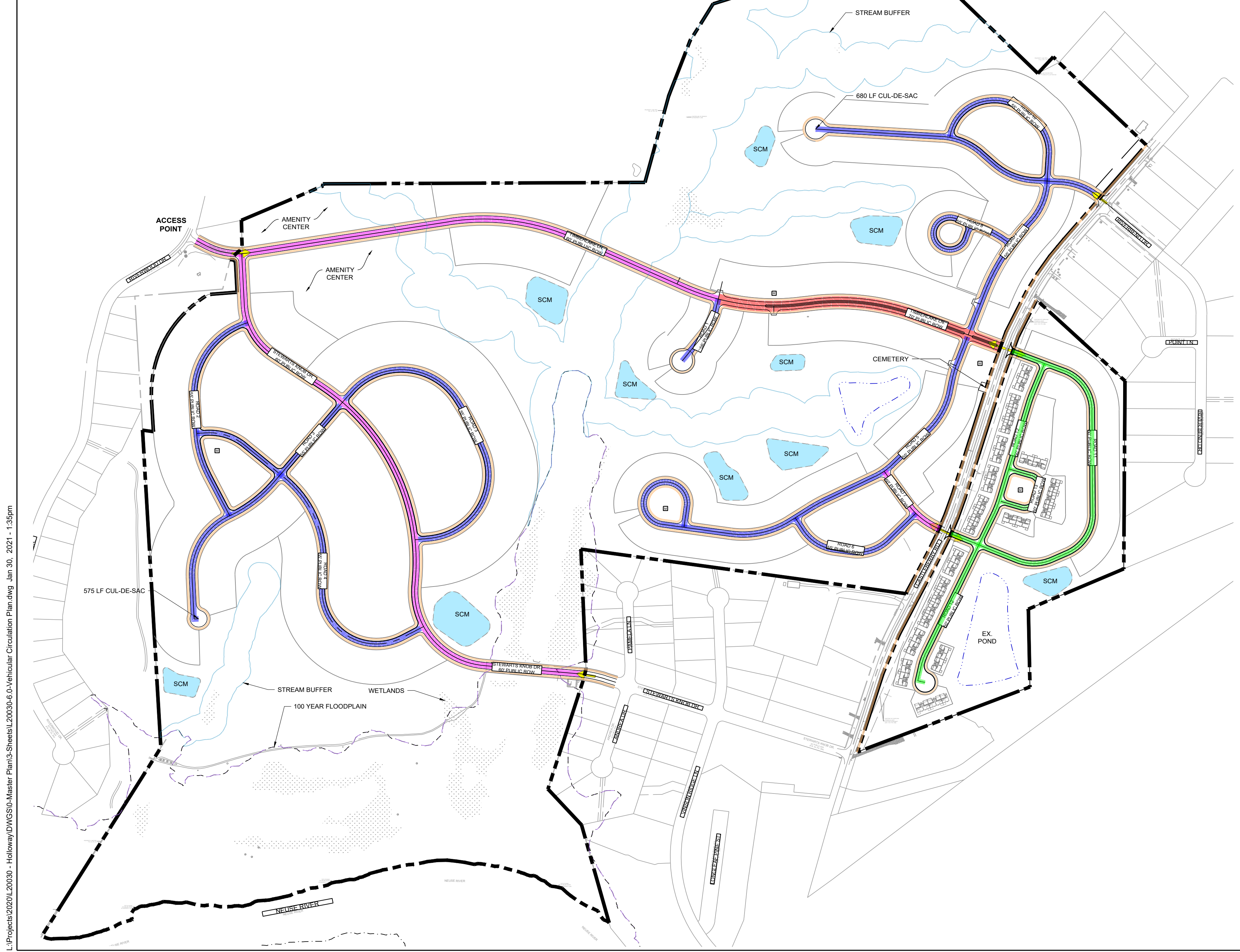
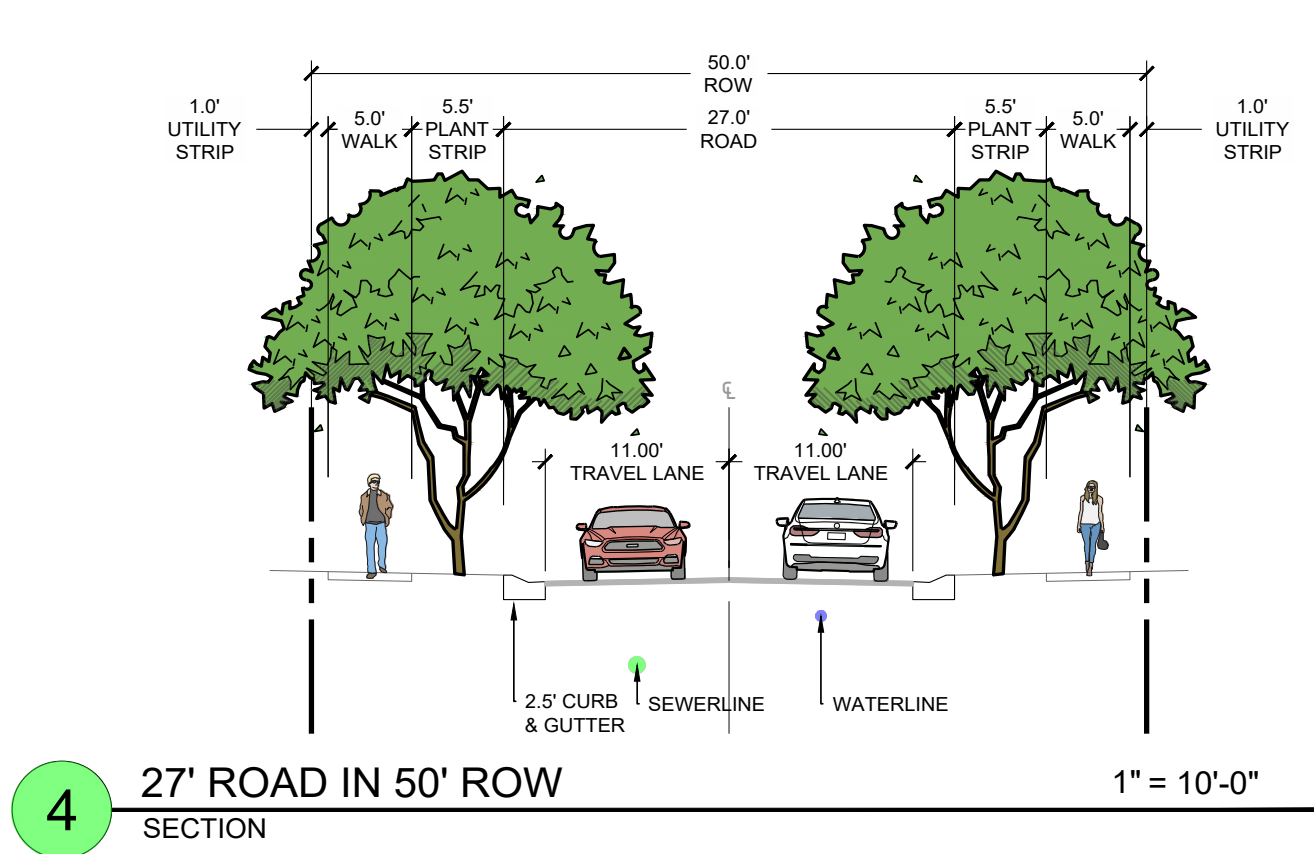
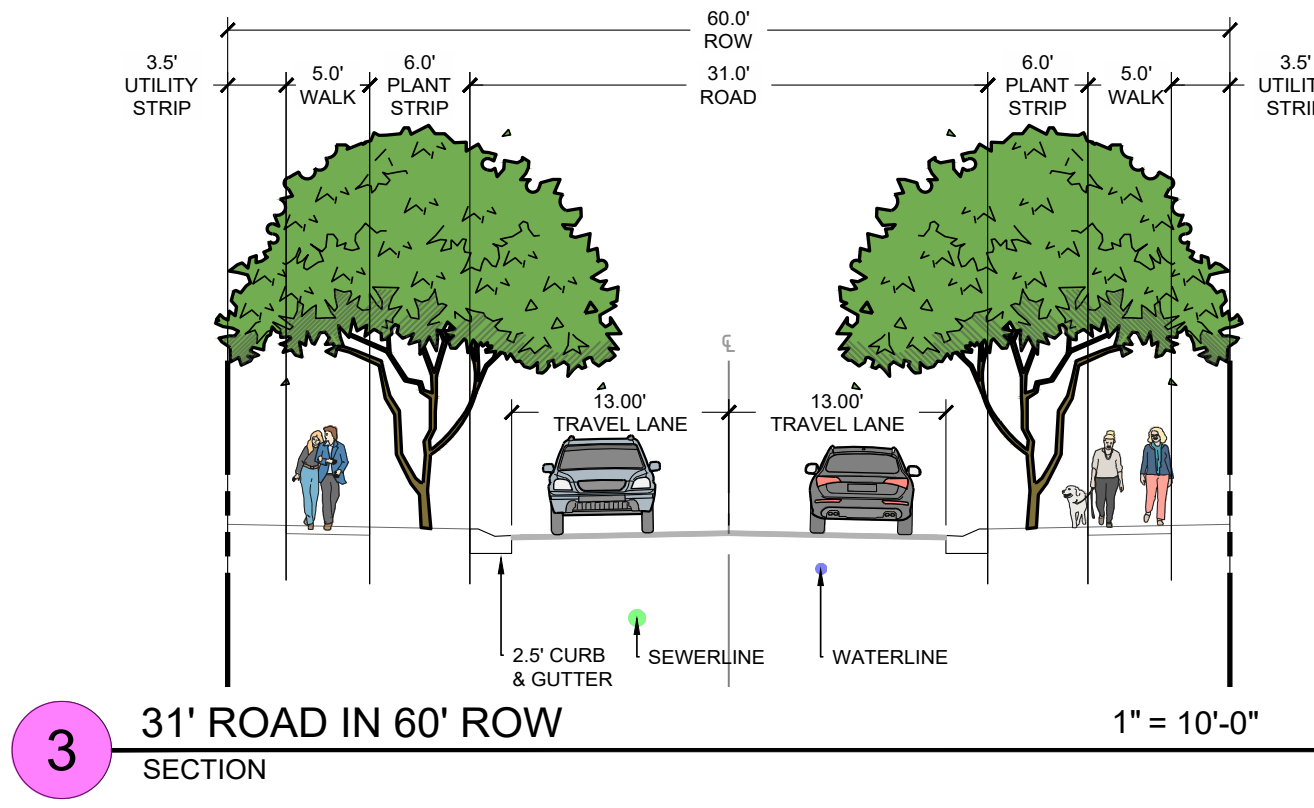
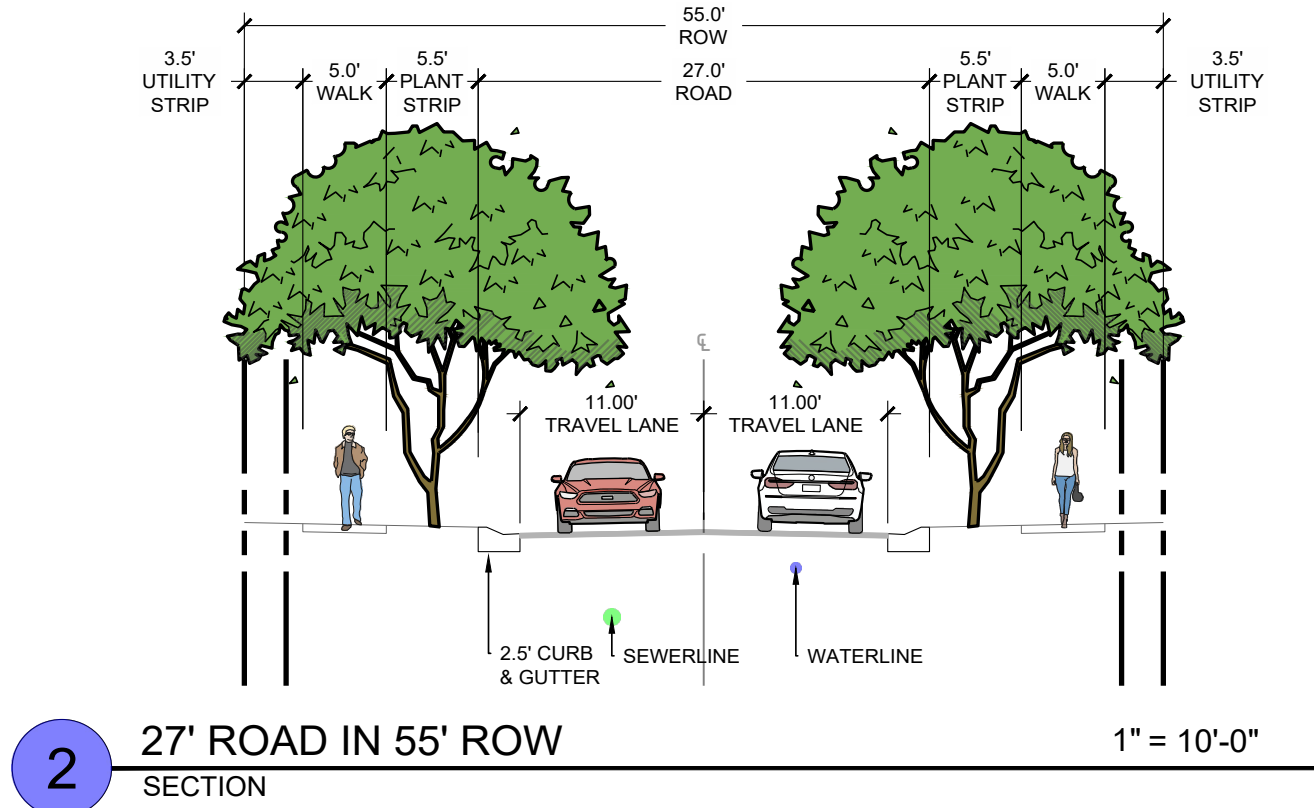
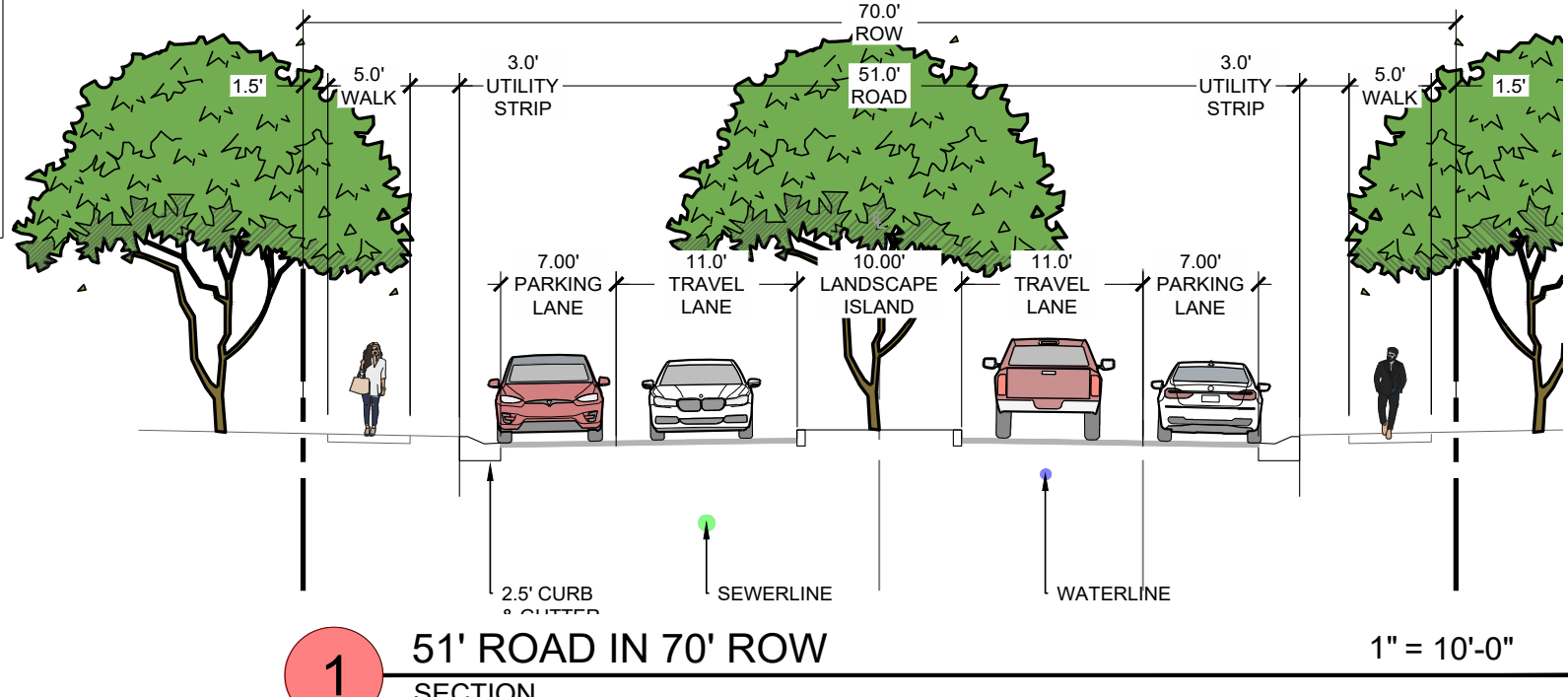
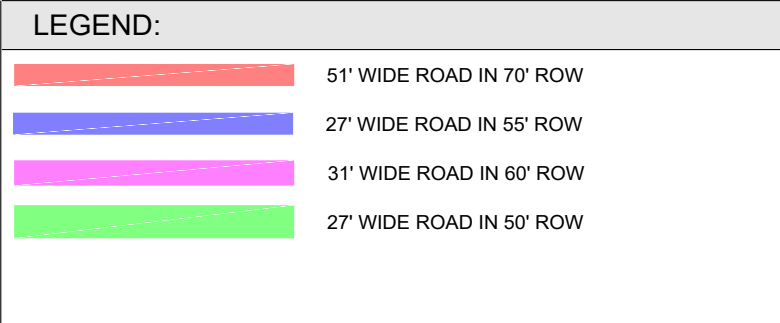
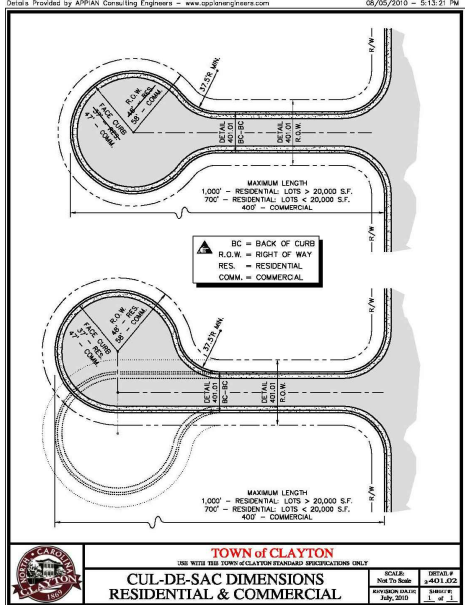
Issued Date: 11.02.2020

Drawn by: KH

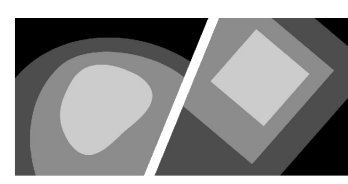
Approved by: MT

5.0

- NOTES:
1. ALL ROAD IMPROVEMENTS TO CASTLEBERRY ROAD SHALL BE ACCORDING TO THE RECOMMENDATIONS OF THE TRAFFIC IMPACT ANALYSIS (TIA), PROVIDED BY KIMLEY HORN DATED, SEPTEMBER 2020.
 2. ALL INTERNAL STREETS SHALL HAVE 5'-WIDE PUBLIC SIDEWALK ON BOTH SIDES OF THE STREET TO PROVIDE PEDESTRIAN ACCESS TO ADJACENT EXISTING DEVELOPMENT, AMENITIES, AND TRAIL NETWORKS.
 3. ALL STREETS SHALL HAVE ROLLED OR VALLEY CURB AND GUTTER.
 4. A PLANTING STRIP SHALL BE PROVIDED AS PER THE CROSS SECTION ASSOCIATED WITH EACH STREET TYPOLOGY TO ALLOW FOR STREET TREES AND STREET LIGHTING.
 5. PUBLIC UTILITIES SUCH AS SANITARY SEWER AND PUBLIC WATER SHALL BE LOCATED WITHIN THE STREET PAVEMENT SECTIONS AND SHALL COMPLY WITH ALL TOWN OF CLAYTON STANDARDS AND SPECIFICATIONS.
 6. ALL IMPROVEMENTS WITHIN STREET RIGHT-OF-WAY SHALL COMPLY WITH ALL TOWN OF CLAYTON STANDARDS AND SPECIFICATIONS UNLESS OTHERWISE NOTED HEREIN.
 7. INTERNAL STREET SHALL MEET THE VERTICAL AND HORIZONTAL DESIGN REQUIREMENTS FOR STREETS WITH DESIGN SPEED OF 35MPH.
 8. CUL-DE-SACS SHALL UTILIZE COMMERCIAL DIMENSIONS FOR CUL-DE-SACS PER TOWN OF CLAYTON DETAIL 401.02 AS REVISED JULY 2, 2010.



L:\Projects\2020\L20030 - Holloway\DWGS\0-Master Plan\3-Sheets\L20030-6.0-Vehicular Circulation Plan.dwg Jan 30, 2021 - 1:35pm



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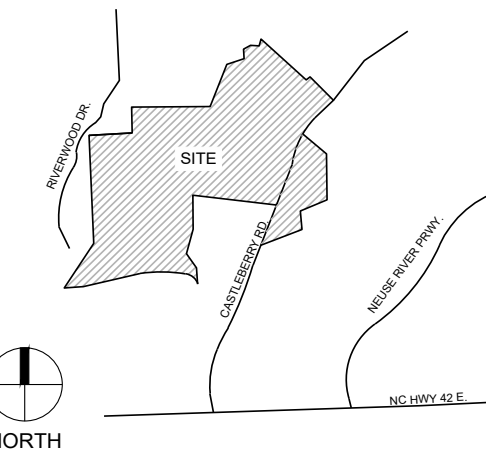
Client:
RIVERWILD
114 W. MAIN STREET
CLAYTON, NC 27520

Consultants:
SOIL & ENVIRONMENTAL CONSULTANTS, PA
NORTH QUARTER OFFICE PARK
RALEIGH, NC 27615

KIMLEY HORN
421 FAYETTEVILLE ST SUITE 600
RALEIGH, NC 27601

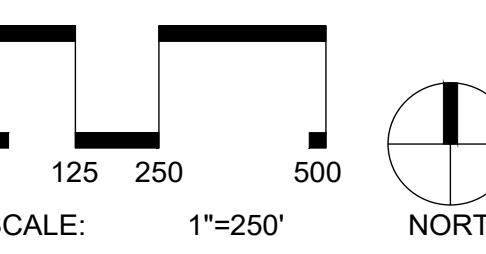
Agent:
RIVERWILD
114 W. MAIN STREET
CLAYTON, NC 27520
CONTACT: DAVID DEYOUNG, AICP

Vicinity map:



Seal:

PRELIMINARY - DO NOT
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Project:

**RIVERWOOD
GOLF CLUB
SECTION 2**

Issued for:

MASTER PLAN

No.	Date	Description
1	12.23.2020	PER TOWN COMMENTS
2	1.25.2021	PER TOWN COMMENTS

Title:

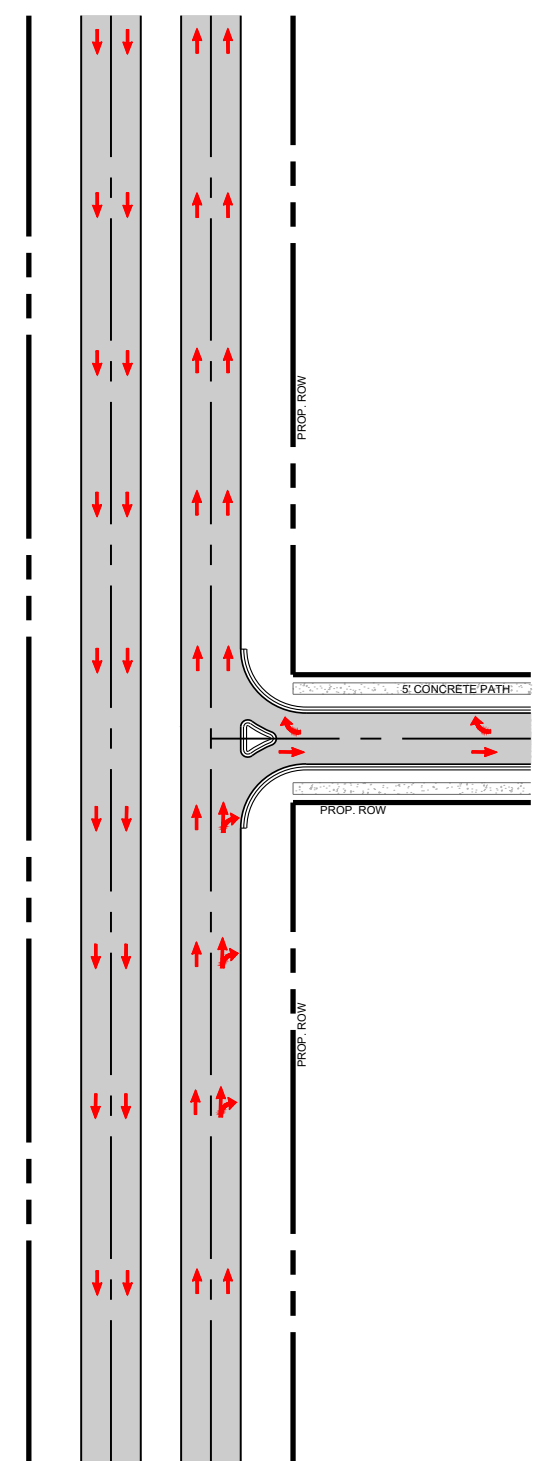
**VEHICULAR
CIRCULATION PLAN**

Project number: L20030 Sheet #:
Issued Date: 11.02.2020
Drawn by: KH
Approved by: MT

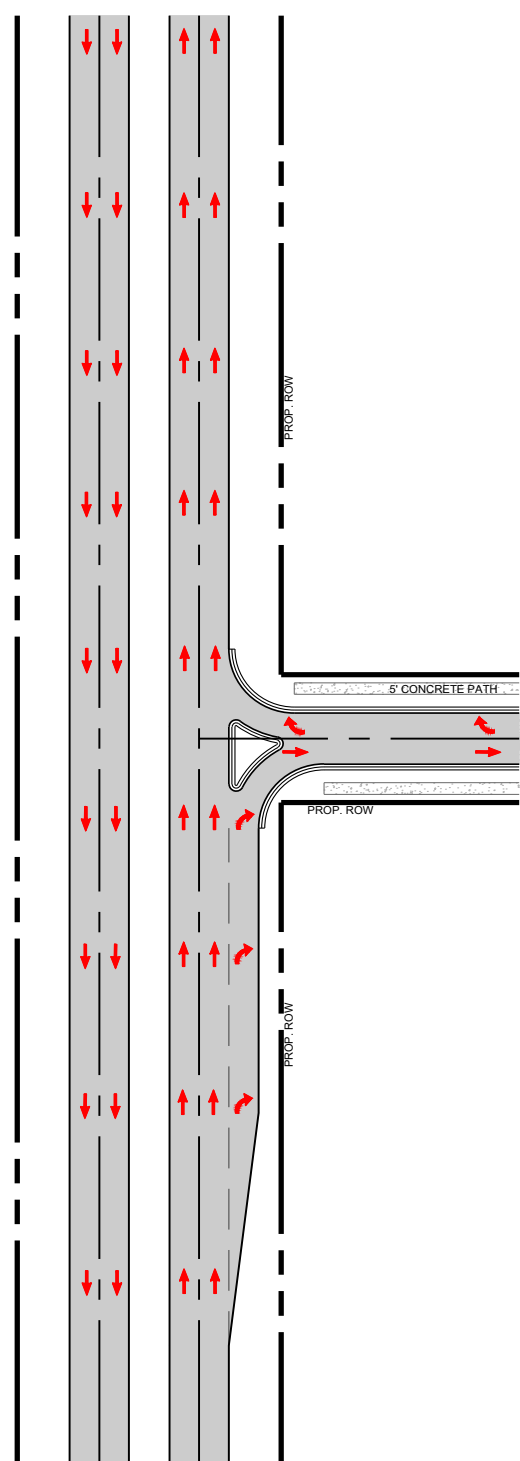
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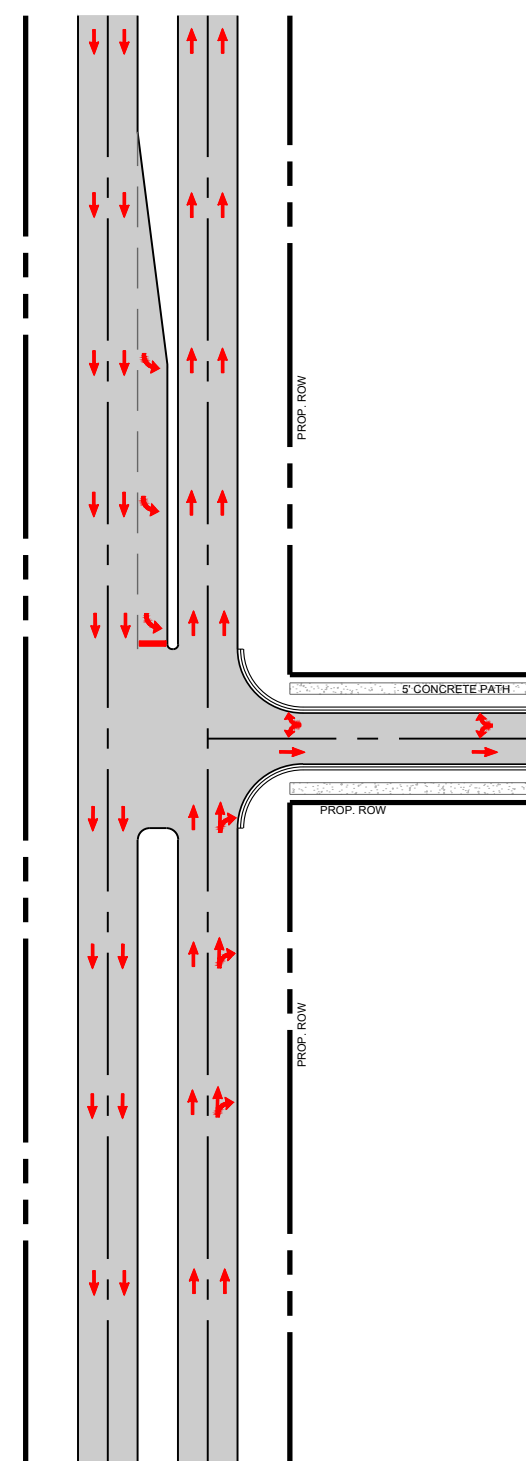
TYPICAL INTERSECTION DIAGRAMS



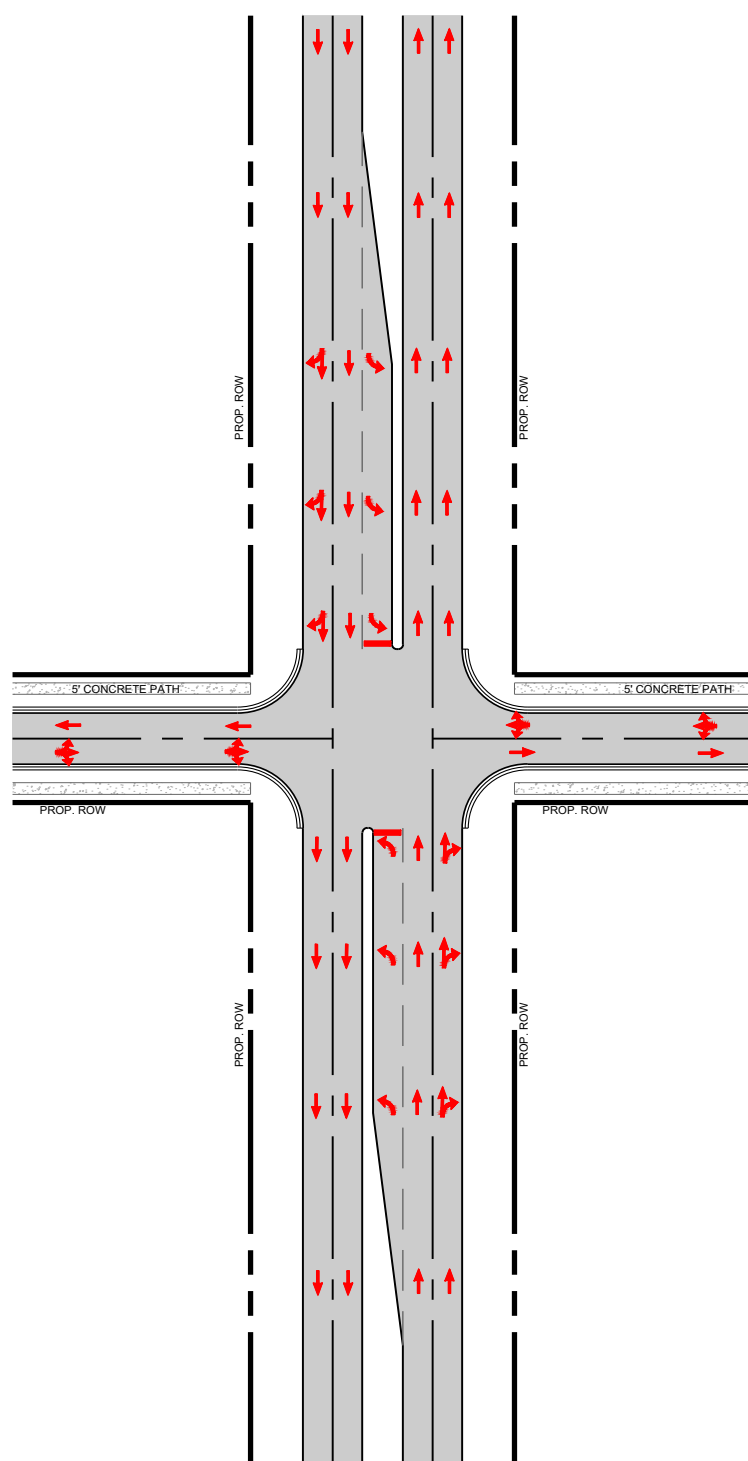
RIGHT-IN/RIGHT-OUT



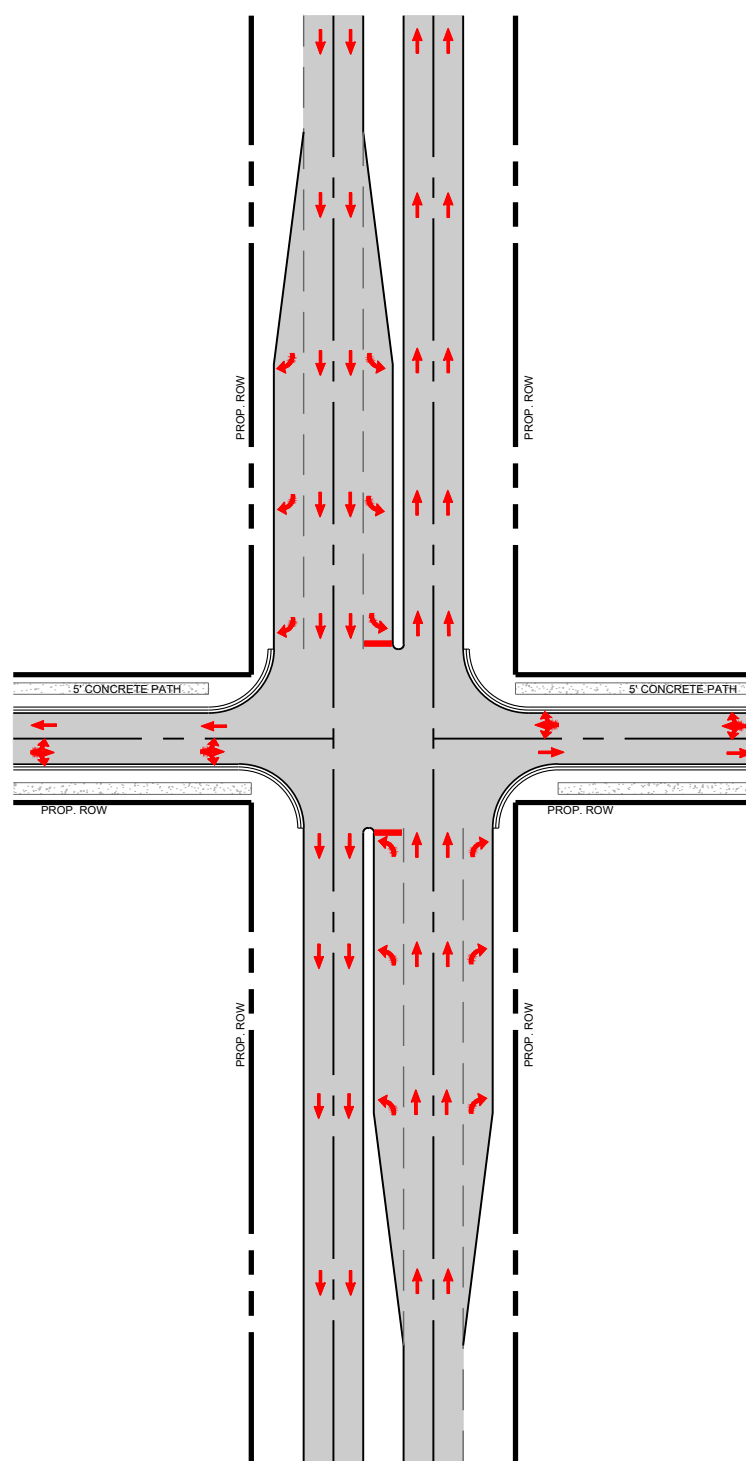
RIGHT-IN/RIGHT-OUT WITH DEDICATED
DECELERATION/RIGHT TURN LANE



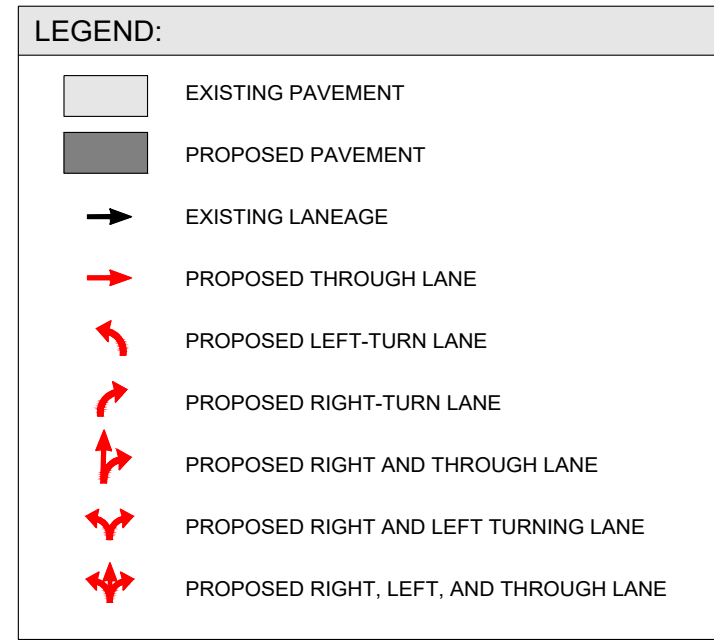
FULL MOVEMENT WITH DEDICATED
DECELERATION/LEFT TURN LANE



FULL MOVEMENT LEFT-OVER WITH DEDICATED
DECELERATION/LEFT TURN LANE

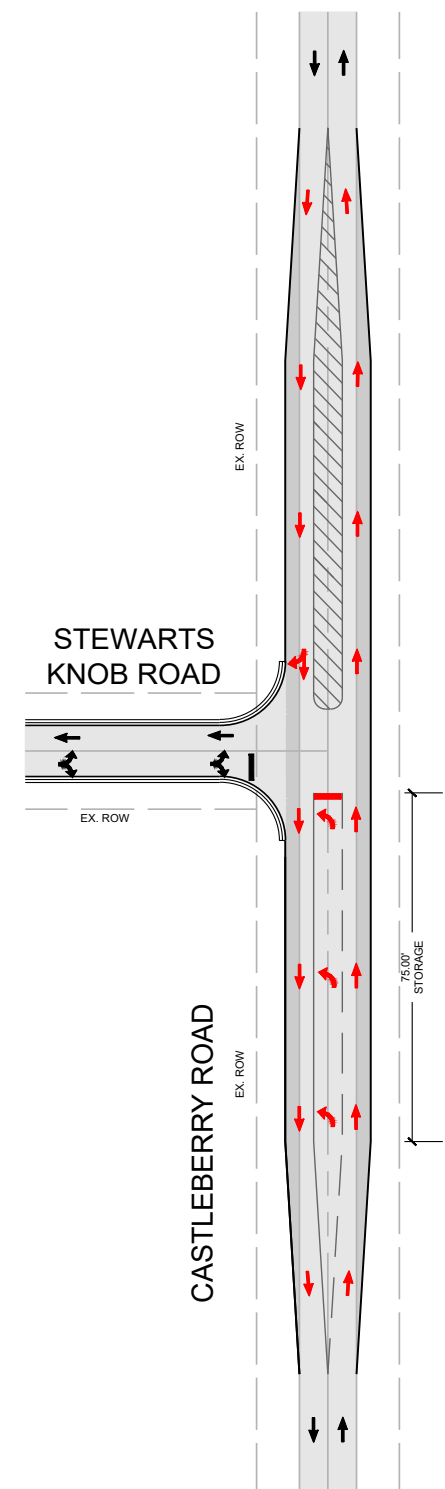


FULL MOVEMENT LEFT-OVER WITH DEDICATED
DECELERATION/LEFT TURN LANE AND
DEDICATED DECELERATION/RIGHT TURN LANE



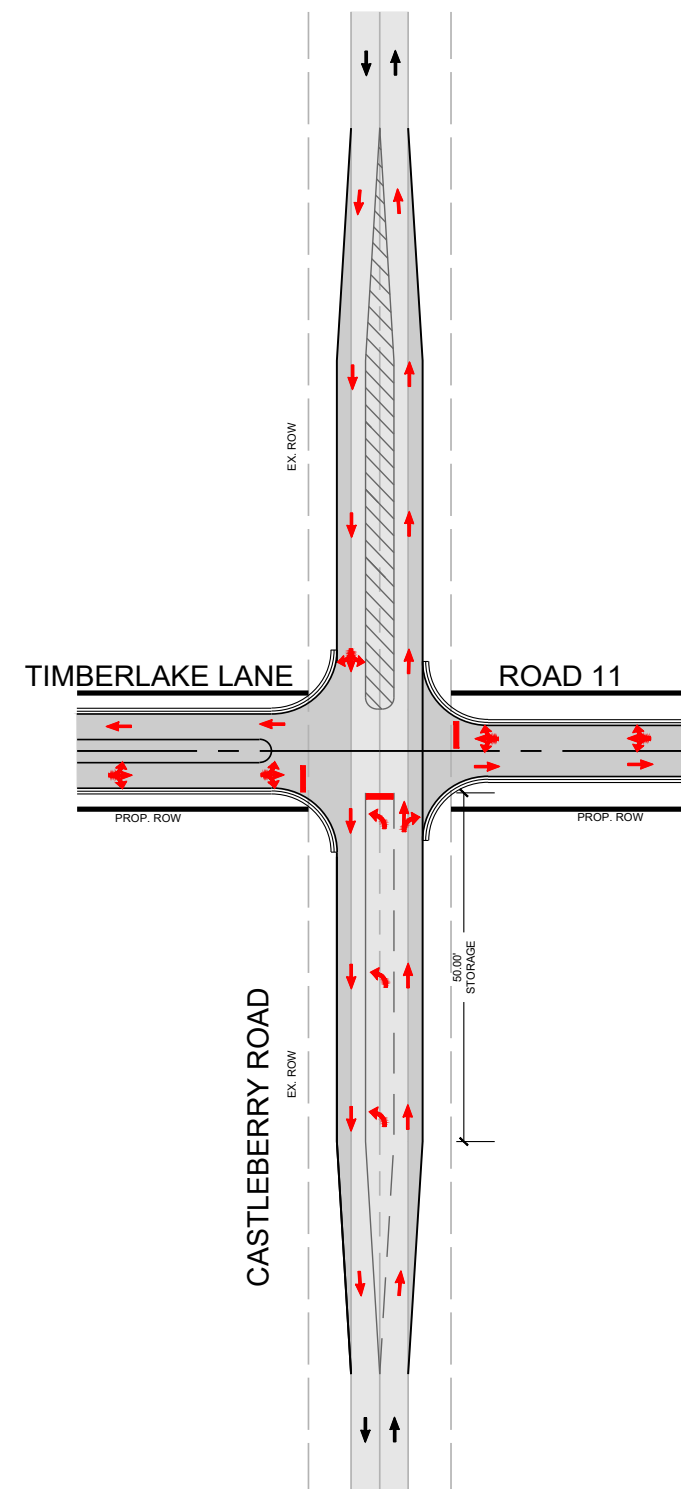
- NOTES:
- ROADWAY IMPROVEMENT DIAGRAMS FOR REFERENCE ONLY PER TYPICAL DESIGN STANDARDS. ACTUAL IMPROVEMENTS AND DETAIL FORTHCOMING UPON COMPLETION OF TIA.
 - MODIFICATION TO THE ROAD IMPROVEMENT PLAN MAY BE REQUIRED UPON NCDOT REVIEW AND APPROVAL OF TIA RECOMMENDATIONS.

PROPOSED IMPROVEMENTS



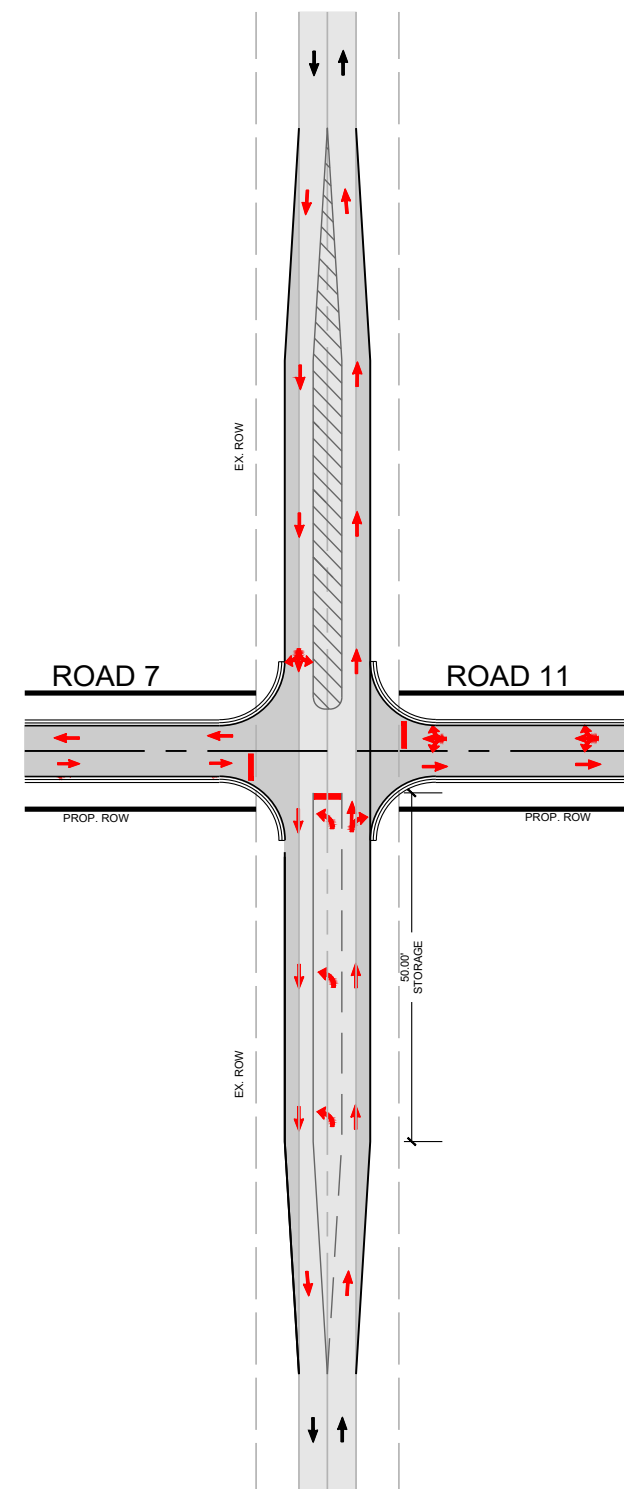
1 CASTLEBERRY ROAD IMPROVEMENTS AT
STEWARTS KNOB DRIVE

- RECOMMENDED LANEAGE IMPROVEMENTS
- 100' NORTHBOUND LEFT TURN LANE ON CASTLEBERRY ROAD.



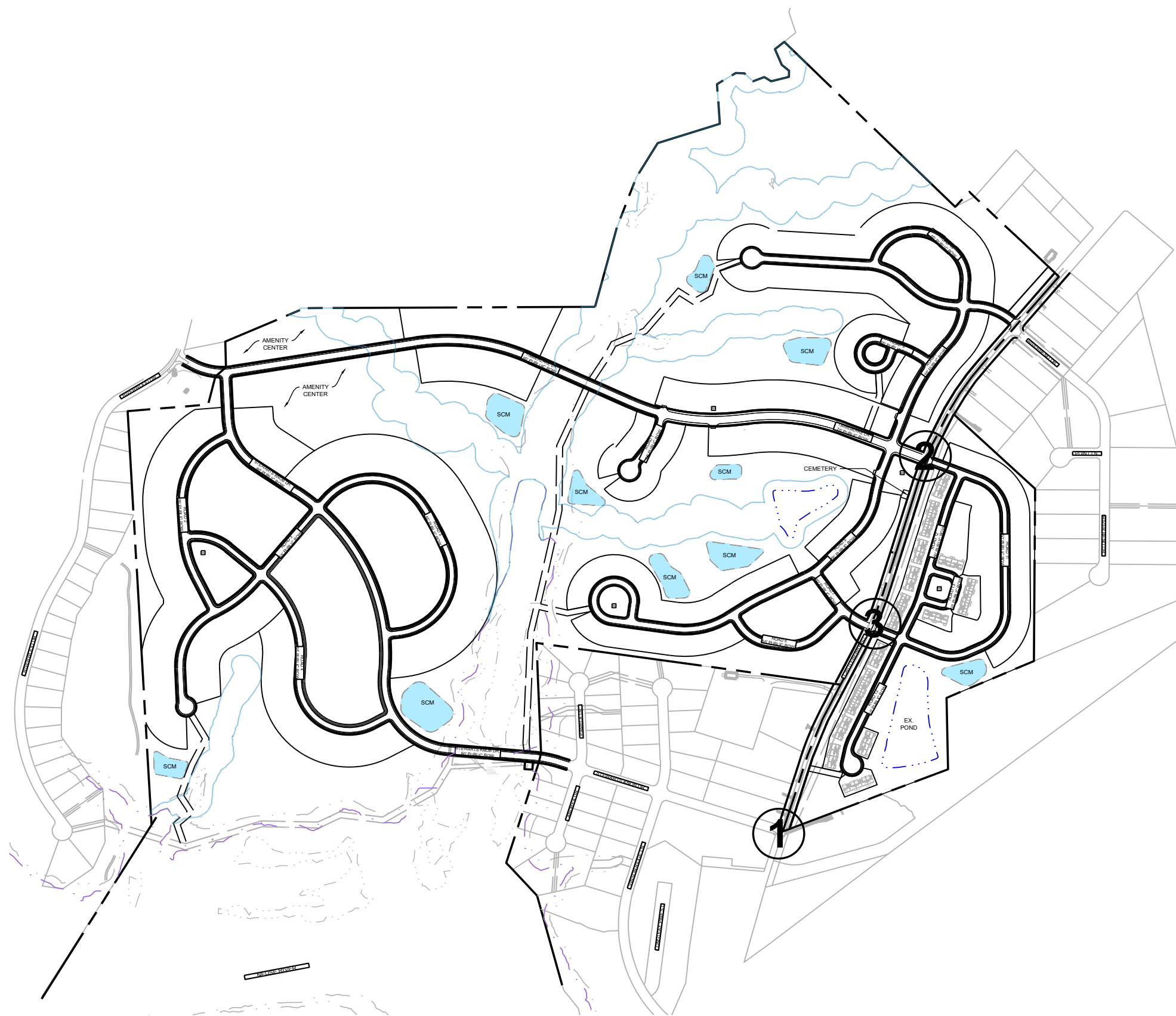
2 CASTLEBERRY ROAD
IMPROVEMENTS AT TIMBERLAKE
LANE AND ROAD 11

- RECOMMENDED LANEAGE IMPROVEMENTS
- 100' NORTHBOUND LEFT TURN LANE ON CASTLEBERRY ROAD.
 - 100' INTERNAL STEM PROTECTION ON TIMBERLAKE.
 - 100' INTERNAL STEM PROTECTION ON ROAD 11.



3 CASTLEBERRY ROAD
IMPROVEMENTS AT ROAD 7 AND
ROAD 11

- RECOMMENDED LANEAGE IMPROVEMENTS
- 100' NORTHBOUND LEFT TURN LANE ON CASTLEBERRY ROAD.
 - 100' INTERNAL STEM PROTECTION ON ROAD 7.
 - 100' INTERNAL STEM PROTECTION ON ROAD 11.



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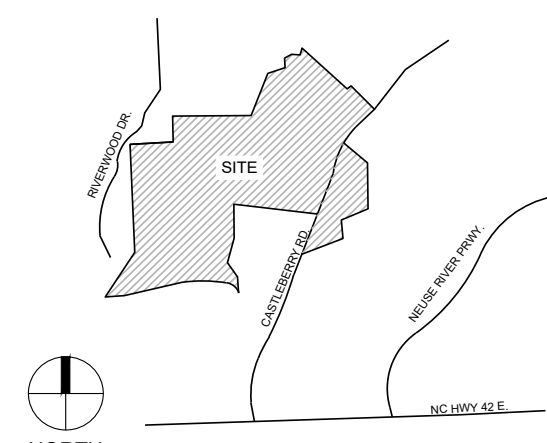
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Agent:

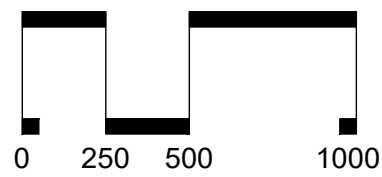
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CONTACT: DAVID DEYOUNG, AICP

Vicinity map:



Seal:

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SCALE: 1" = 500'

Project:

**RIVERWOOD
GOLF CLUB
SECTION 2**

Issued for:

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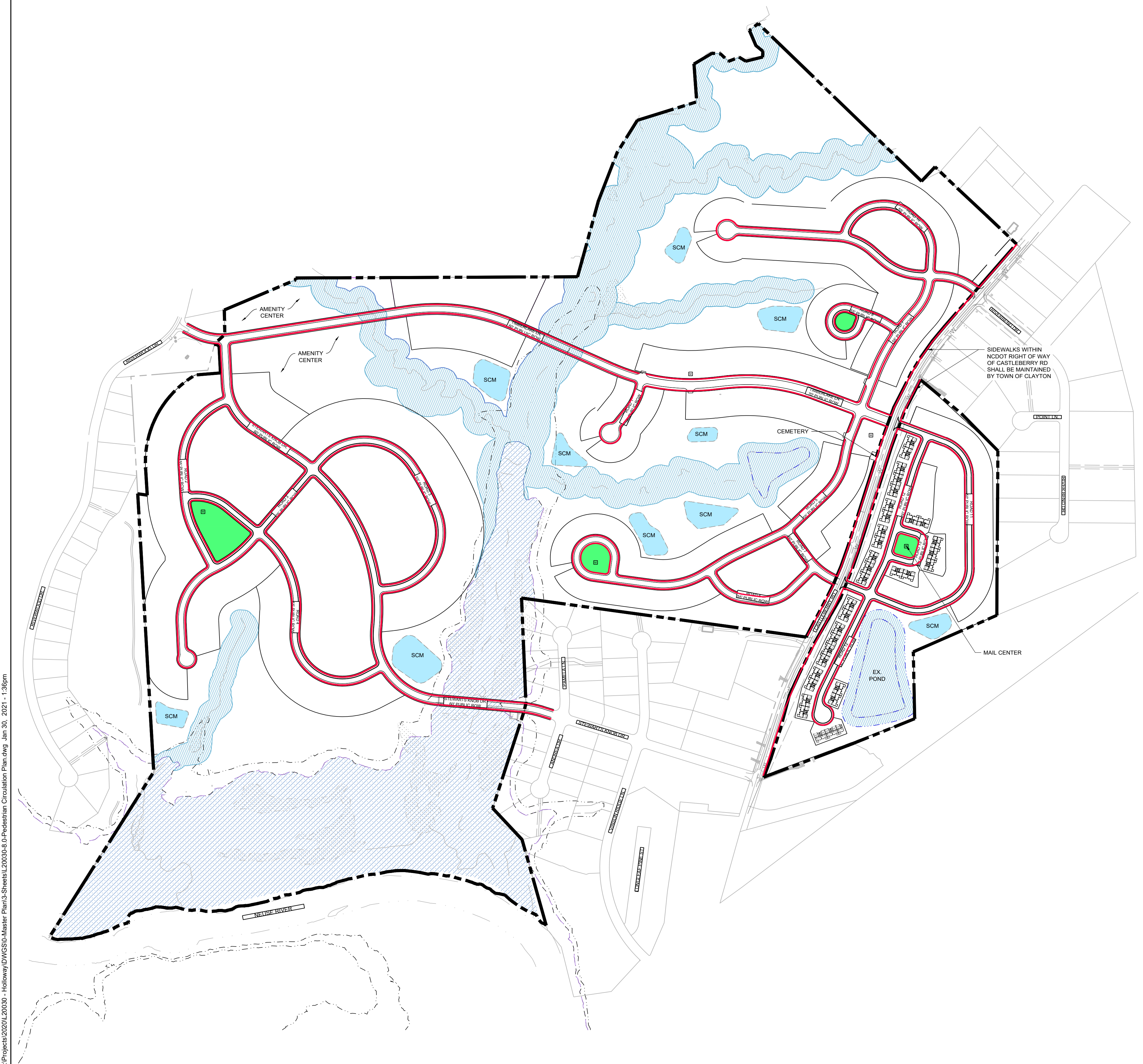
No.	Date	Description
1	12.23.2020	PER TOWN COMMENTS
2	1.25.2021	PER TOWN COMMENTS
3		
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8		
9		
10		

Title:

**TIA ROAD
IMPROVEMENTS PLAN**

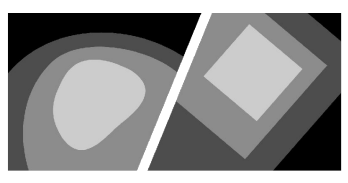
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LEGEND:

PROPOSED PUBLIC 5' SIDEWALKS



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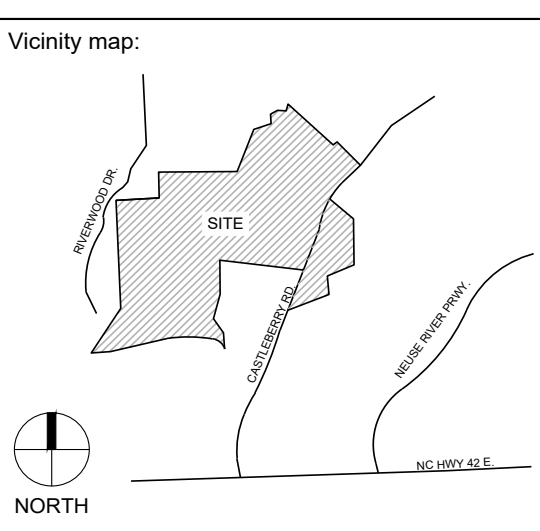
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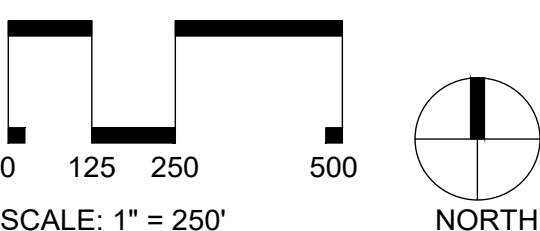
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Project:
**RIVERWOOD
GOLF CLUB
SECTION 2**

Issued for:

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No.	Date	Description
1	12.23.2020	PER TOWN COMMENTS
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Title:
**PEDESTRIAN
CIRCULATION PLAN**

Project number: L20030 Sheet #:
Issued Date: 11.02.2020
Drawn by: KH
Approved by: MT **8.0**

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LEGEND:

- PROPOSED SEWER MAIN
- PROPOSED MANHOLE
- PROPOSED FIRE HYDRANT
- PROPOSED WATER MAIN
- PROPOSED UTILITY EASEMENT
- EXISTING SEWER MAIN
- EXISTING MANHOLE
- EXISTING WATER MAIN

- NOTES:**
- A PRECONSTRUCTION MEETING WILL BE REQUIRED BEFORE WORK BEGINS ON ANY PROJECT. THE MEETING WILL CONSIST OF, AT MINIMUM, THE DEVELOPER'S ENGINEER, THE CONTRACTOR, AND A REPRESENTATIVE OF UTILITY. OTHER ATTENDEES CAN BE REQUIRED BY UTILITY AS NEEDED, INCLUDING ANY SUBCONTRACTORS AND REGULATORS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CONTACT ANY LOCAL AND STATE REGULATORS TO SEE IF THEIR PRESENCE IS REQUIRED AT THE PRECONSTRUCTION MEETING.
 - TOWN OF CLAYTON SHALL BE NOTIFIED 48 HOURS BEFORE CONSTRUCTION IS TO BEGIN.
 - TOWN OF CLAYTON SHALL BE NOTIFIED 48 HOURS BEFORE ANY CONSTRUCTION IS BURIED.
 - A MINIMUM HORIZONTAL SEPARATION OF TEN FEET, OUTSIDE OF PIPE TO OUTSIDE OF PIPE, SHALL BE MAINTAINED BETWEEN POTABLE WATER PIPING AND DOMESTIC WASTEWATER GRAVITY PIPING OR STORM WATER PIPING.
 - A MINIMUM VERTICAL SEPARATION OF EIGHTEEN INCHES, OUTSIDE OF PIPE TO OUTSIDE OF PIPE, SHALL BE MAINTAINED BETWEEN POTABLE WATER PIPING, WASTEWATER GRAVITY PIPING, STORM SEWER PIPING OR RECLAIMED WATER PIPING. A 24 INCH SEPARATION SHALL BE PROVIDED BETWEEN STORM SEWER AND SANITARY SEWER LINES.
 - WHERE THE EIGHTEEN INCHES OF NET VERTICAL CLEARANCE BETWEEN POTABLE WATER PIPE AND THE WASTEWATER GRAVITY PIPE CANNOT BE MAINTAINED, THE WASTEWATER GRAVITY PIPE SHALL BE DUCTILE IRON PIPE AND SHALL BE HYDROSTATICALLY PRESSURE TESTED WITH WATER TO ENSURE JOINT TIGHTNESS. PIPES SHALL BE LOCATED SO THAT THE POINTS ARE AS FAR AS POSSIBLE FROM EACH OTHER.
 - ALL CONSTRUCTION SHALL CONFORM TO TOWN OF CLAYTON STANDARDS, SPECIFICATIONS, AND DETAILS.

WATER AND SEWER

NOTE: WATER AND SEWER DESIGN INCLUDING FIRE HYDRANT LOCATIONS AND UTILITY EASEMENTS REPRESENTED ON THIS SHEET ARE FOR CONCEPT PURPOSES ONLY. FINAL UTILITY APPROVAL WILL BE DURING MINOR SUBDIVISION PROCESS.

DRY UTILITIES SUCH AS POWER, TELECOM, GAS, ETC. WILL BE LOCATED IN THE PUBLIC UTILITY EASEMENT LOCATED OUTSIDE OF THE STREET RIGHT-OF-WAY. PUBLIC UTILITY EASEMENT IS PROVIDED ON BOTH SIDES OF THE STREET RIGHT-OF-WAY.



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Consultants:

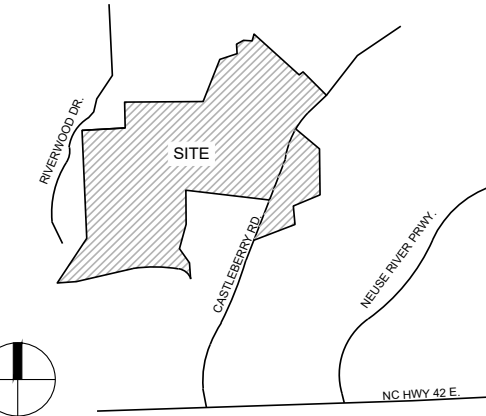
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Agent:

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CLAYTON, NC 27520
CONTACT: DAVID DEYOUNG, AICP

Vicinity map:

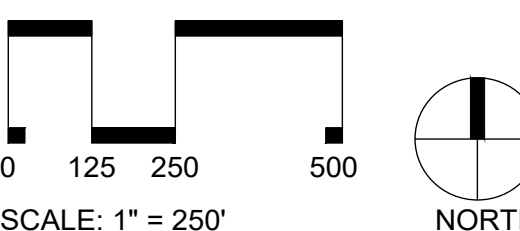


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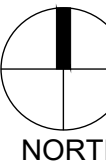


Scale:



SCALE: 1" = 250'

North Arrow:



Project:

**RIVERWOOD
GOLF CLUB
SECTION 2**

Issued for:

MASTER PLAN

No.	Date	Description
1	12.23.2020	PER TOWN COMMENTS
2	1.25.2021	PER TOWN COMMENTS
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Title:

**PRELIMINARY UTILITY
PLAN**

Project number: L20030 **Sheet #:**

Issued Date: 11.02.2020

Drawn by: SM

Approved by: TS

9.0

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GRADING LEGEND:

SYMBOL	DESCRIPTION
	PROPOSED MAJOR CONTOUR
	PROPOSED MINOR CONTOUR
	EXISTING MAJOR CONTOUR
	EXISTING MINOR CONTOUR
	PROPOSED STORM DRAINAGE
	PROPOSED JUNCTION BOX
	PROPOSED CATCH BASIN
	PROPOSED AREA DRAIN

NOTES:

- PRIOR TO THE APPROVAL OF THE CONSTRUCTION DOCUMENTS, THE FOLLOWING SHALL BE PROVIDED AS APPLICABLE:
 - STORMWATER MANAGEMENT APPLICATION
 - NUTRIENT CALCULATIONS, SEALED BY A LICENSED PROFESSIONAL
 - STORMWATER NARRATIVE, CALCULATIONS, NCDENR SUPPLEMENT WORKSHEETS AND DESIGN SPECIFICATIONS FOR EACH STORMWATER BMP, INDICATING PEAK FLOW AND NUTRIENT LOADING CALCULATIONS
 - OPERATION AND MAINTENANCE PLAN AND LEGAL AGREEMENT FOR EACH BMP
- CONTOUR INTERVAL FOR PROPOSED GRADING IS 2 FEET.

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Consultants:

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NORTH QUARTER OFFICE PARK
RALEIGH, NC 27615

KIMLEY HORN
421 FAYETTEVILLE ST SUITE 600
RALEIGH, NC 27601

Agent:

RIVERWILD
114 W. MAIN STREET
CLAYTON, NC 27520
CONTACT: DAVID DEYOUNG, AICP

Vicinity map:

Seal:

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SCALE: 1" = 250'

Project:

**RIVERWOOD
GOLF CLUB
SECTION 2**

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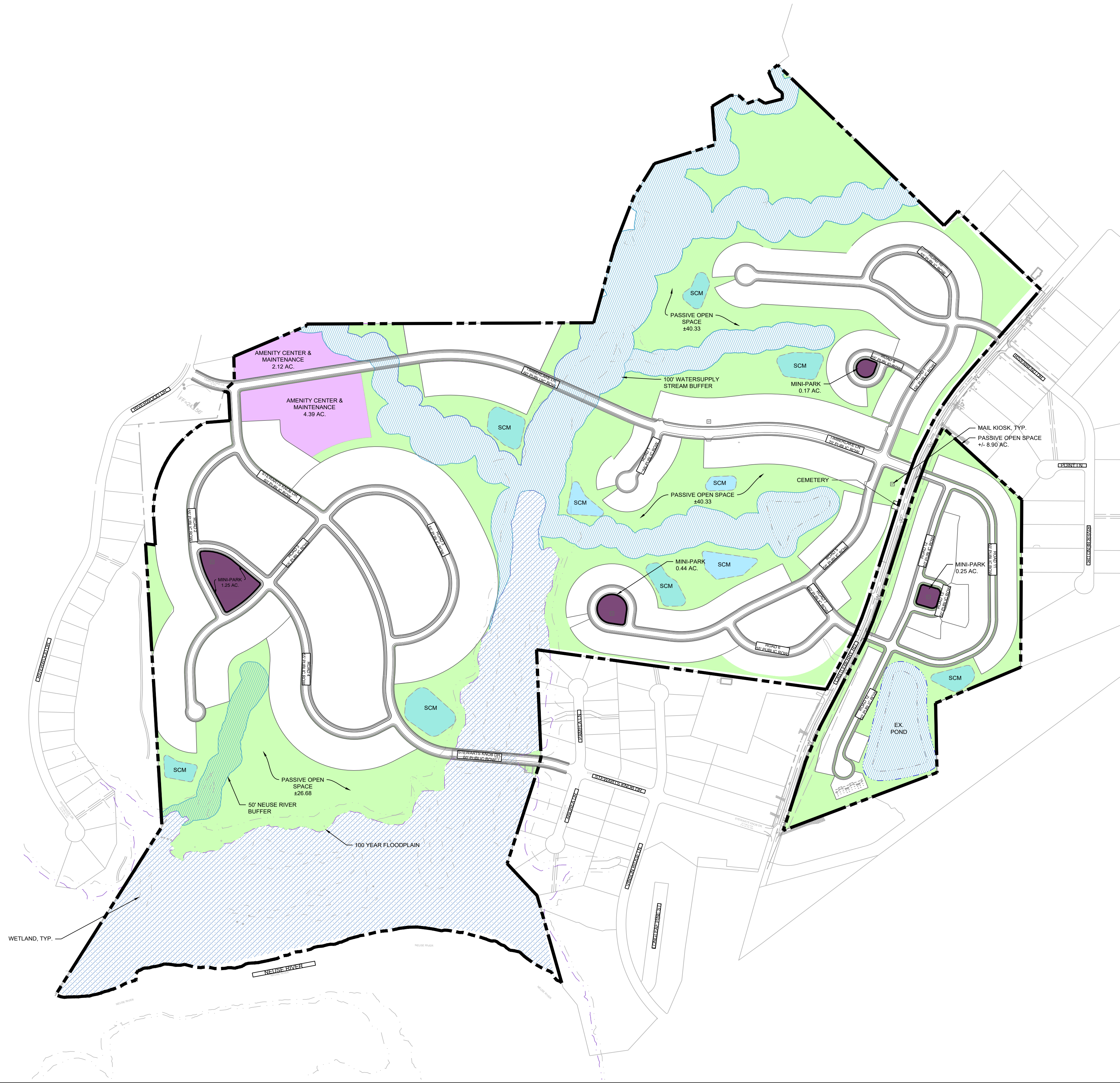
Title:

**PRELIMINARY GRADING
& DRAINAGE PLAN**

Project number: L20030 Sheet #:
Issued Date: 11.02.2020
Drawn by: SM
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10.0

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NOTES:

1. ALL AREAS THAT WILL BE PRESERVED SHALL BE DELINEATED BY ORANGE TEMPORARY FENCING DURING GRADING AND CONSTRUCTION.
2. ALL OPEN SPACE AREAS AND THE AMENITY CENTER SHALL BE SUBMITTED AS MINOR SITE PLANS.
3. ALL IMPROVED OPEN SPACE SHALL BE MAINTAINED BY THE HOA.
4. MAILBOX KIOSK LOCATION ARE ILLUSTRATIVE IN NUMBER AND LOCATION AND SUBJECT TO CHANGE DURING PRELIMINARY PLAT REVIEW AND UPON REVIEW BY U.S. POSTAL SERVICE.
5. MAILBOX KIOSK / PUBLIC AREA SHALL BE ACCESSIBLE PER ADA REQUIREMENT.
6. PROGRAM OF ELEMENTS IDENTIFIED IN RECREATION AND OPEN SPACE TYPES BELOW INDICATE A SAMPLING OF ELEMENTS THAT MAY BE PROVIDED. APPLICANT RESERVES THE RIGHT TO PROVIDE ANY COMBINATION OF THESE ELEMENTS, INCLUDING ONES THAT MAY NOT BE LISTED. THE APPLICANT SHALL NOT BE REQUIRED TO PROVIDE ALL OF THE LISTED ELEMENTS. FINAL PROGRAMMING WILL BE PROVIDED AND APPROVED AT MINOR SITE PLAN REVIEW.
7. AMENITY CENTER BUILDING WILL BE NO SMALLER THAN 4,000 SF AND WILL MEET THE REQUIREMENTS OF THE UDC AT THE TIME OF SITE PLAN SUBDIVISION PLAN APPROVAL.
8. POOL AREA SHALL BE NO SMALLER THAN 7,500 SF AND WILL MEET THE REQUIREMENTS OF THE UDC AT THE TIME OF SITE PLAN SUBDIVISION PLAN APPROVAL.
9. LANDSCAPE MEDIANS/ISLANDS WITHIN PROPOSED STREETS WILL BE PRIVATELY MAINTAINED BY HOA.
10. AMENITY CENTER BUILDING SHALL BE 4,000 SF MINIMUM. POOL AND POOL DECK SHALL BE A MINIMUM OF 7,500 SF. ALL IMPROVEMENTS ASSOCIATED WITH AMENITIES SHALL MEET THE UDC AT THE TIME OF SITE PLAN APPROVAL.

OPEN SPACE CALCULATIONS:

SITE AREA	298.72
RESOURCE CONSERVATION AREA	86.74
NET PROJECT AREA	209.98
AC OPEN SPACE REQ'D (12.5%)	26.25
IMPROVED OPEN SPACE REQ'D (25%)	6.56
IMPROVED OPEN SPACE PROPOSED	AC
AMENITY CENTER & MAINTENANCE AREA	6.51
MINI-PARK	2.07
TOTAL	8.58
OPEN SPACE PROPOSED	AC
IMPROVED OPEN SPACE PROPOSED	8.58
PASSIVE OPEN SPACE PROPOSED	75.98
TOTAL OPEN SPACE PROPOSED	84.56

IMPROVED OPEN SPACE PROGRAM ELEMENTS:

AMENITY CENTER (3 USES MIN)	
FITNESS ROOM	
BUSINESS CENTER	
POOL	
COMMUNITY LOUNGE	
BOOZE COURTS	
PLAYGROUND	
MINI PARK (2 USES MIN)	
TABLE & SEATING	
DOG PARK (WITH WASTE STATION)	
BENCHES	
MULTI-USE PATH	
SHADE STRUCTURE	
PLAY STRUCTURES	
FITNESS STATION	
COMMUNITY GARDEN	

LEGEND:

- 100 YEAR FLOODPLAIN (RCA)
- STREAM BUFFER (RCA)
- EXISTING WETLAND
- PASSIVE OPEN SPACE
- IMPROVED OPEN SPACE - AMENITY & MAINTENANCE
- IMPROVED OPEN SPACE - MINI PARK
- LOT TYPE A (1/4 AC ESTATE LOTS)
- LOT TYPE B (4,200 SF)
- LOT TYPE C (TOWNES)
- LOT TYPE D (APARTMENTS)



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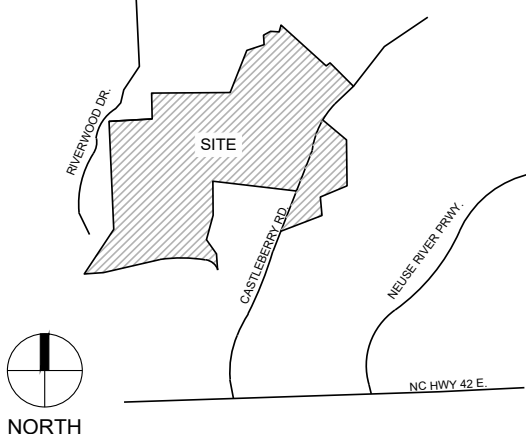
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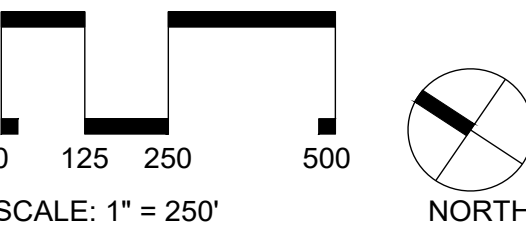
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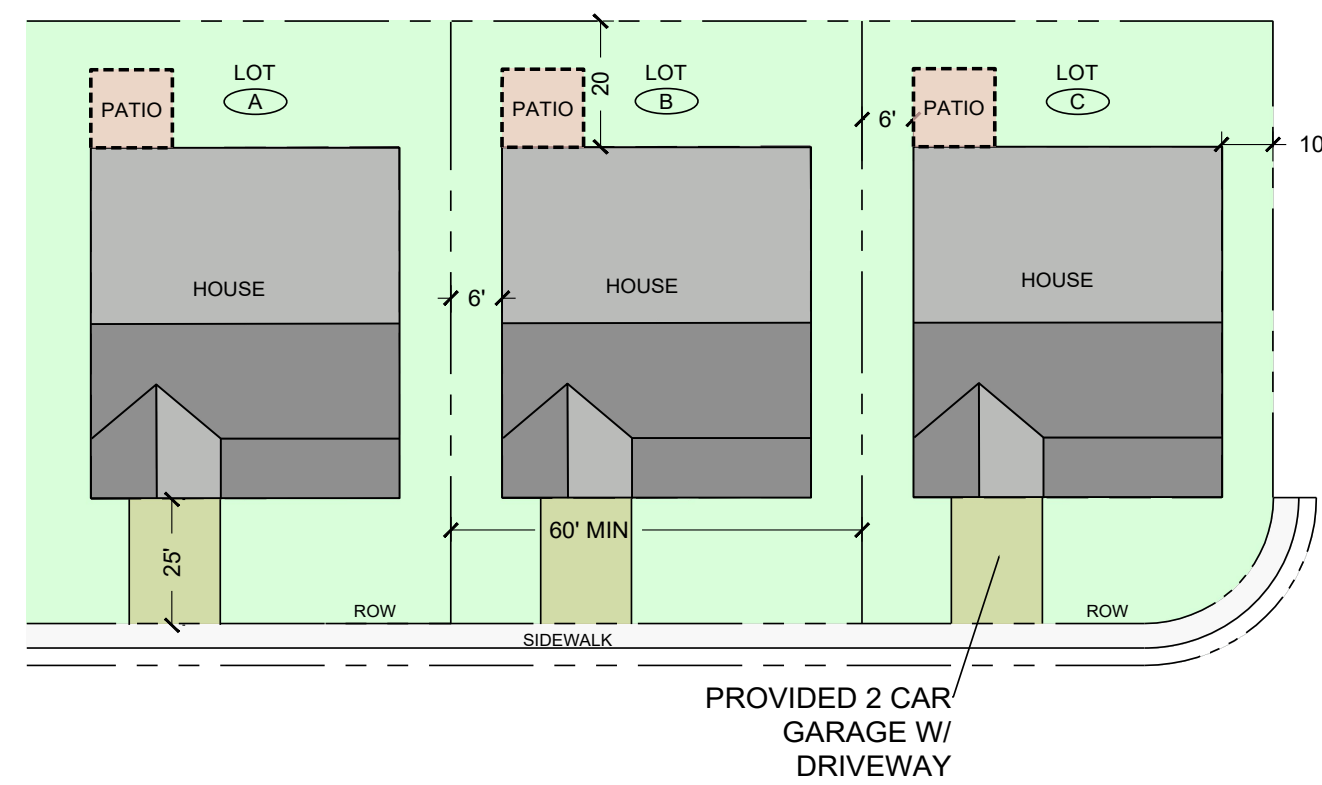
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GOLF CLUB
SECTION 2**

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OPEN SPACE PLAN

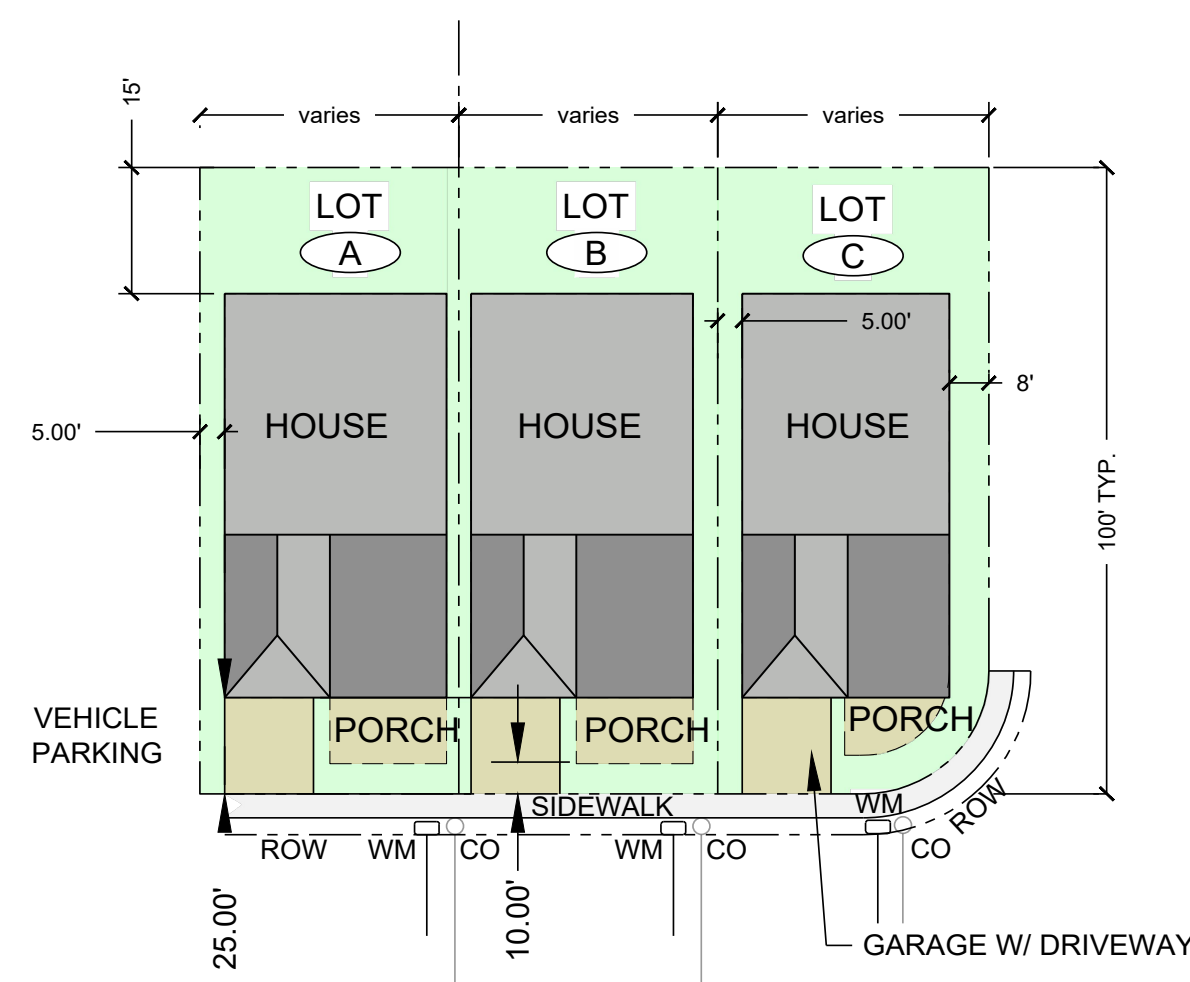
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Approved by: MT **11.0**



LOTS STANDARD TABLE	
	1/4 AC.
MINIMUM LOT WIDTH/ DEPTH	60' X 165'
TYPICAL LOT WIDTH/ DEPTH	60' X 165'
MINIMUM LOT SIZE (SF)	10,000 SF
MAXIMUM IMPERVIOUS AREA	40%
BUILDING SETBACKS	
FRONT	10'
SIDE	6'
REAR	20'
GARAGE	25'
BEDROOMS	2 -4

NOTES:

1. **SINGLE FAMILY RESIDENTIAL:**
1. LOT WIDTH SHALL BE MEASURED AT THE FRONT SETBACK LINE.
2. THE BUILDABLE ZONE IS DEFINED AS ALL AREAS OF THE LOT BOUNDED BY THE SETBACK FROM THE PROPERTY LINES AND THE STREET RIGHT-OF-WAY.
3. THE PEDESTRIAN ZONE IS DEFINED AS THE AREA FROM THE PUBLIC RIGHT-OF-WAY TO THE BACK OF CURB AND MAY INCLUDE 5' WIDE PUBLIC SIDEWALK, PLANTING STRIP WITH STREET TREES AND STREET LIGHTS.
4. STREET TREES SHALL BE PLANTED WITHIN THE PLANTING STRIP BETWEEN THE BACK OF CURB AND THE SIDEWALK. TREES SHALL BE PLANTED AT AN AVERAGE OF 1 TREE PER 40 FEET OF RIGHT OF WAY AND WITH AT LEAST 1 TREE PER LOT.
5. ALL SINGLE-FAMILY HOMES SHALL HAVE A 1-2 CAR GARAGE WITH DRIVEWAY WITH A MINIMUM DEPTH OF 25' FROM THE BACK OF SIDEWALK TO THE GARAGE FACE.
6. EACH HOME SHALL HAVE A FRONT ENTRY THAT MAY SHALL INCLUDE A PORCH, STOOP OR COVERED AREA.
7. NO ACCESSORY STRUCTURES SHALL BE PERMITTED.
8. FENCING SHALL BE PERMITTED FROM THE REAR CORNER OF THE PRINCIPAL RESIDENCE AND MAY BE LOCATED WITH A ZERO SETBACK ALONG THE PROPERTY LINE.
9. NO FENCING SHALL BE PERMITTED IN ANY PUBLIC UTILITY EASEMENT. FENCE SETBACK ON CORNER LOTS SHALL BE A MINIMUM OF 5' OFF THE RIGHT-OF-WAY.
10. FENCING SHALL COMPLY WITH THE ARCHITECTURAL STANDARDS SET FORTH IN THE HOA.
11. MAXIMUM BUILDING HEIGHT SHALL BE 35' AS MEASURED FROM THE FINISHED GRADE AT FRONT DOOR..
12. ROOF PITCHES SHALL BE BETWEEN 3:12 AND 10:12.
13. ALL SINGLE FAMILY DETACHED HOMES SHALL HAVE 2-4 BEDROOMS, 1 - 2 CAR GARAGES, AND 1 - 2 CAR DRIVEWAYS.
14. DRIVEWAYS SHALL BE A MINIMUM OF 3.5' FROM ANY LOT LINE.
15. DRIVEWAYS SHALL BE A MINIMUM OF 30' FROM CURB LINE OF INTERSECTING STREETS.
16. ALL HVAC AND MECHANICAL EQUIPMENT SHALL BE LOCATED IN THE REAR OR STAGGERED BETWEEN HOMES IN THE SIDE YARDS SO AS TO NOT IMPEDE EMERGENCY ACCESS AND SCREENED FROM THE PUBLIC RIGHT-OF-WAY BY OPAQUE BARRIER.



LOTS STANDARD TABLE	
	4,200' SF
MINIMUM LOT WIDTH/ DEPTH	42' X 100'
TYPICAL LOT WIDTH/ DEPTH	42' X 100'
MINIMUM LOT SIZE (SF)	4,100
MAXIMUM IMPERVIOUS AREA	60%
BUILDING SETBACKS	
FRONT	10'
SIDE	5'
REAR	15'
GARAGE (FROM SIDEWALK)	25'
BEDROOMS	2 -4



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FIRM LICENSE #: C-1051
www.stewartinc.com
PROJECT #: L20030

Client:

RIVERWILD
114 W. MAIN STREET
CLAYTON, NC 27520

Consultants:

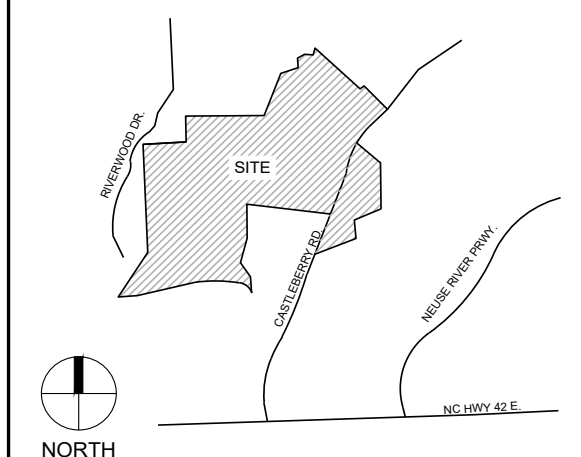
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NORTH QUARTER OFFICE PARK
RALEIGH, NC 27615

KIMLEY HORN
421 FAYETTEVILLE ST SUITE 600
RALEIGH, NC 27601

Agent:

RIVERWILD
114 W. MAIN STREET
CLAYTON, NC 27520
CONTACT: DAVID DEYOUNG, AICP

Vicinity map:



Seal:

PRELIMINARY - DO NOT
USE FOR CONSTRUCTION



Project:

RIVERWOOD
GOLF CLUB
SECTION 2

Issued for:

MASTER PLAN

[illegible]

Title:

SINGLE FAMILY REGULATING PLAN

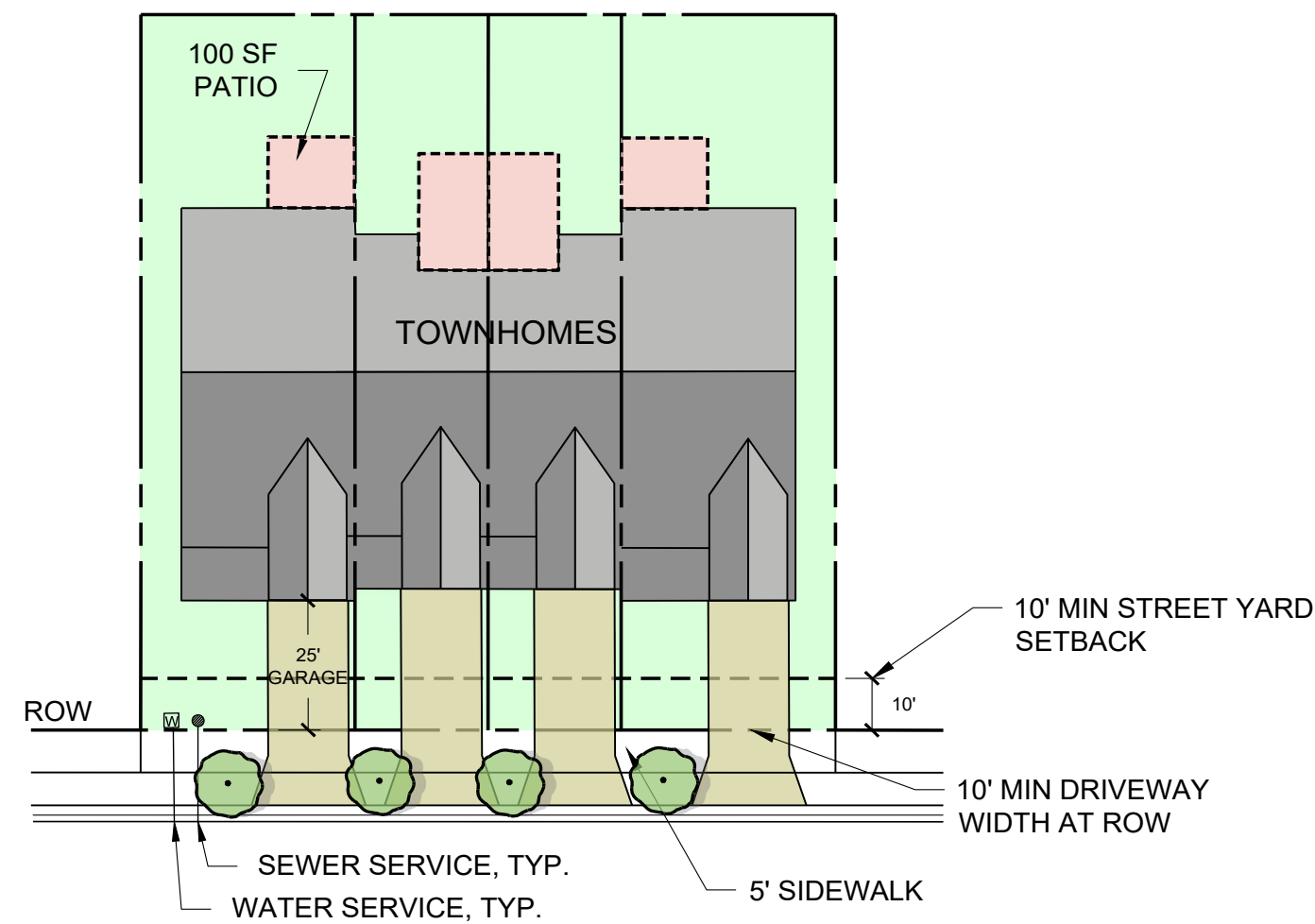
Project number: 120030 Sheet #:

Issued Date: 11.02.2020

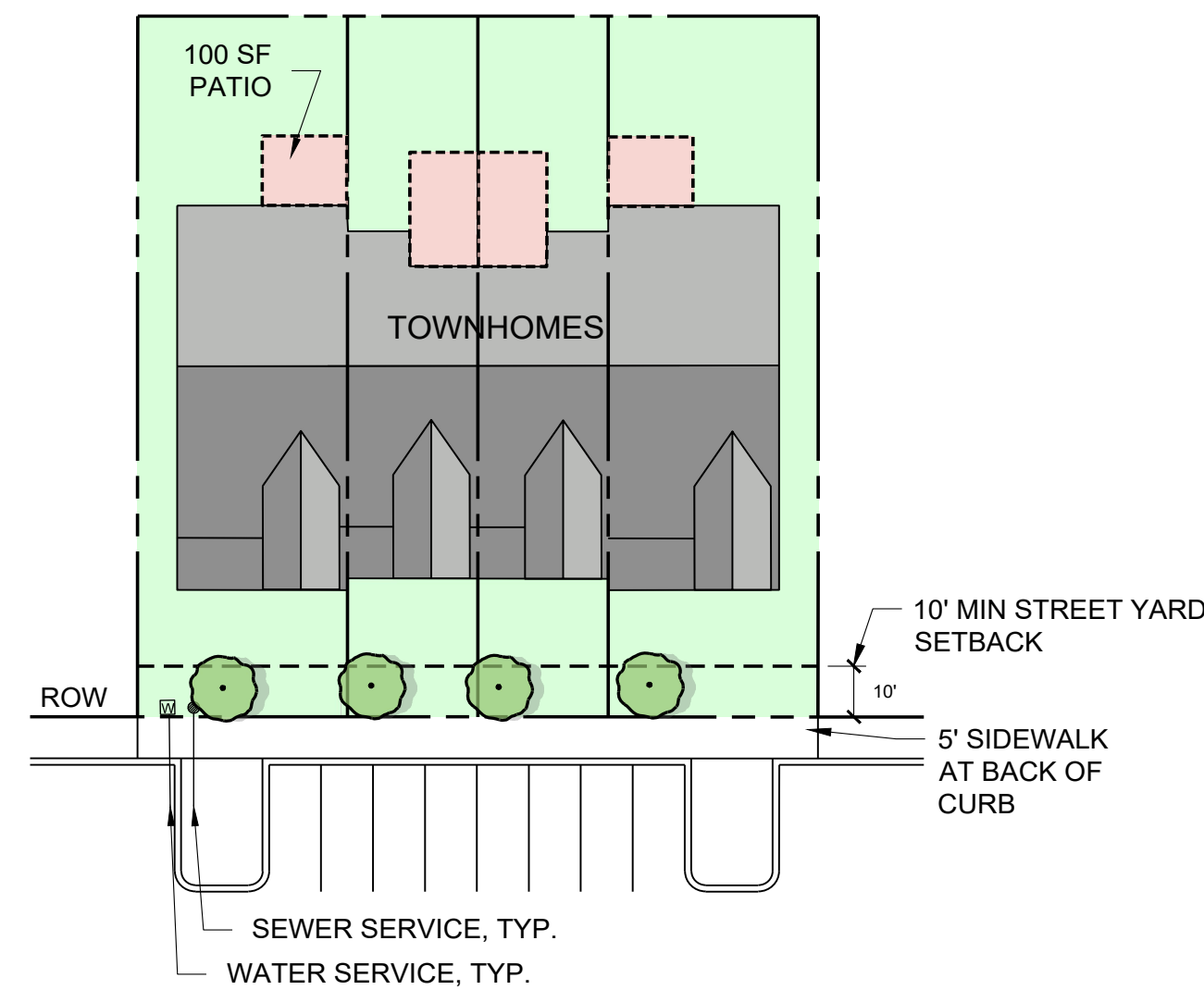
Drawn by: KH

Approved by: MT

12.0



LOT TYPE C (DRIVEWAY)



LOT TYPE C (PARKING LOT)

LOTS STANDARD TABLE	
	TOWNHOMES
MINIMUM LOT WIDTH/ DEPTH	22' X 90'
TYPICAL LOT WIDTH/ DEPTH	24' X 95'
MINIMUM LOT SIZE (SF)	2,000
MAXIMUM IMPERVIOUS AREA	95%
MAXIMUM BUILDING COVERAGE	90%
BUILDING SETBACKS	
FRONT STREET (FROM SIDEWALK)	10'
SIDE STREET (FROM SIDEWALK)	15'
SIDE	0'
REAR	20'
GARAGE (FROM SIDEWALK)	25'
DRIVEWAY (FROM SIDE LOT LINE)	3.5'

NOTES:

TOWNHOME SITE DESIGN STANDARDS

- ANY ON-STREET PARKING AREAS SHALL COMPLY WITH TOWN OF CLAYTON UDC REQUIREMENTS FOR PARKING LOTS AND ISLANDS.
- ALL HVAC AND MECHANICAL EQUIPMENT SHALL BE LOCATED AT THE REAR OF EACH UNIT AND SCREENED FROM THE PUBLIC VIEW IN ACCORDANCE WITH TOWN OF CLAYTON UDC REQUIREMENTS.
- TRASH AND RECYCLING COLLECTION SHALL BE THROUGH CURB SIDE PICK UP OR DUMPSTER AREAS.
- ALL COMMON AREAS SHALL MEET THE SITE INTERIOR LANDSCAPING REQUIREMENTS AS PER TOWN OF CLAYTON UDC (155.102(D)).
- ALL COMMON AREAS SHALL BE MAINTAINED BY THE ASHCROFT SECTION 2 HOA.
- DWELLING UNITS WILL BE LOCATED ON INDIVIDUALLY OWNED LOTS.
- BUILDINGS SHALL NOT CONTAIN MORE THAN 8 UNITS.
- TOWNHOMES MAY FRONT ON A PUBLIC STREET OR PARKING LOT.

TOWNHOME DESIGN STANDARDS

- ALL UNITS WILL BE A MAXIMUM OF THREE (3) STORIES IN HEIGHT AND WILL UTILIZE EITHER GARAGES (SEE DRIVEWAY DETAIL) OR PERPENDICULAR ON-STREET PARKING (SEE PARKING LOT DETAIL). THIS IS SUBJECT TO PLANNING AND ENGINEERING DETPARTMENT APPROVAL TO DETERMINE ADEQUATE ROW WIDTHS.
- THE PRIMARY EXTERIOR SIDING MATERIALS SHALL CONSIST OF MASONRY (BRICK AND/OR CULTURED STONE OR REAL STONE) OR VINYL OR CEMENT-FIBER PLANK SIDING.
- COLOR PALETTE SHALL INCLUDE A MINIMUM OF TWO COLORS PER STRIP OF UNITS.
- MASONRY ACCENTS OF EITHER BRICK OR CULTURED STONE SHALL BE USED TO AVOID MONOTONOUS AND CONTINUOUS BUILDING FACADES.
- ARCHITECTURAL BUILDING STYLES FOR TOWNHOMES MAY INCLUDE: CRAFTSMAN, FARMHOUSE, LOW COUNTRY, TRADITIONAL, BUNGALOW, RANCHES, OPEN LIVING.
- VARIED STREETScape IN ARCHITECTURAL DETAIL AND COLORS TO PREVENT MONOTONY.
- FRONT DOOR ENTRIES TO BE COVERED.
- ROOF LINES TO MATCH ARCHITECTURAL BUILDING STYLE AND WILL HAVE ASPHALT SHINGLES.
- ANY EXTERIOR WALL OF THE HOME VISIBLE FROM THE PUBLIC STREET SHALL CONTAIN AT LEAST TWO DECORATIVE ELEMENTS SUCH AS, BUT NOT LIMITED TO THE FOLLOWING ELEMENTS: WINDOWS, PORCH, DECORATIVE TRIM, DECORATIVE GABLE, COLUMN
- ALL ARCHITECTURAL ELEMENTS TO BE CONSISTENT WITH THE BUILDING STYLE OF THE TOWNHOME.
- WHERE BUILDING ARE VISIBLE FROM RIGHT OF WAY OR ADJACENT PROPERTY, ALL SIDES OF BUILDING SHALL BE ARCHITECTURALLY CONSISTENT.



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Client:

RIVERWILD
114 W. MAIN STREET
CLAYTON, NC 27520

Consultants:

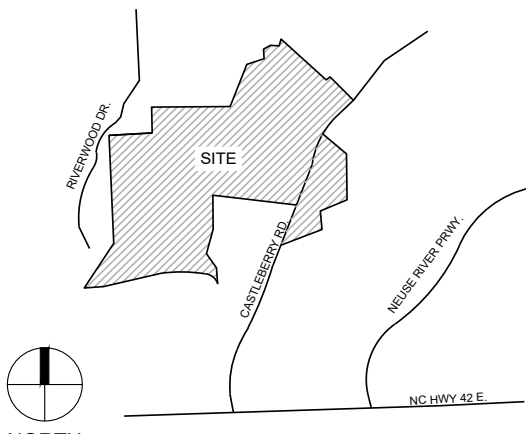
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KIMLEY HORN
421 FAYETTEVILLE ST SUITE 600
RALEIGH, NC 27601

Agent:

RIVERWILD
114 W. MAIN STREET
CLAYTON, NC 27520
CONTACT: DAVID DEYOUNG, AICP

Vicinity map:



Seal:

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Project:

**RIVERWOOD
GOLF CLUB
SECTION 2**

Issued for:

MASTER PLAN

No.	Date	Description
1	12.23.2020	PER TOWN COMMENTS
2	1.25.2021	PER TOWN COMMENTS
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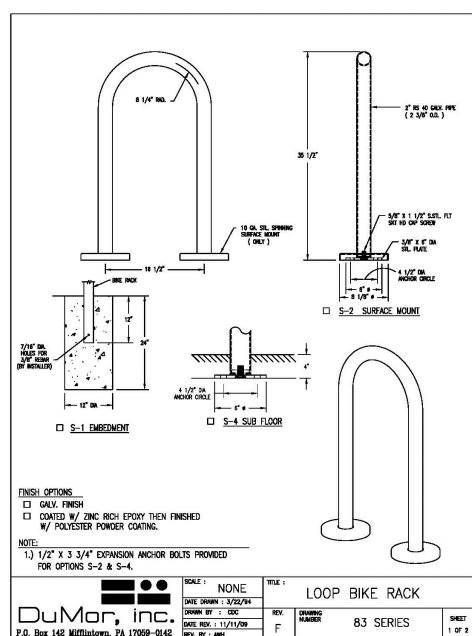
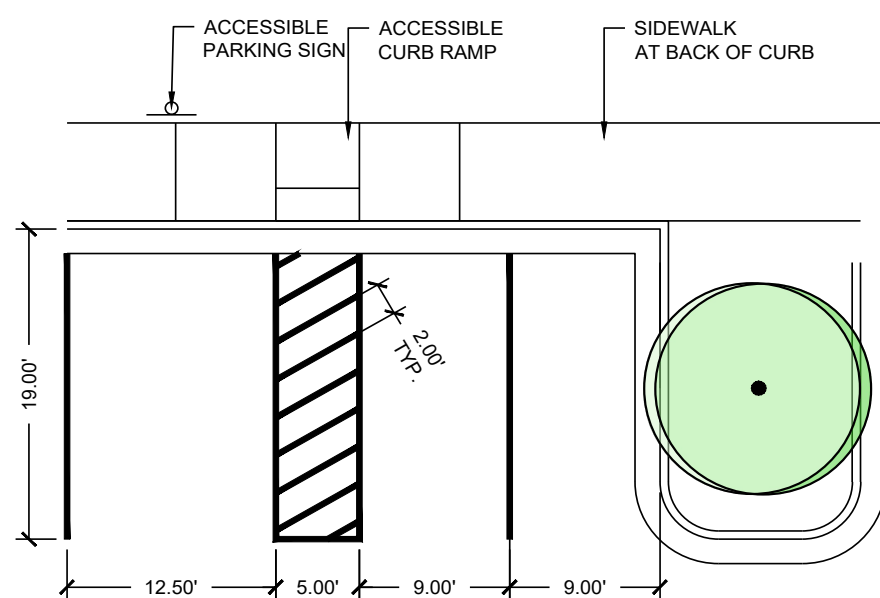
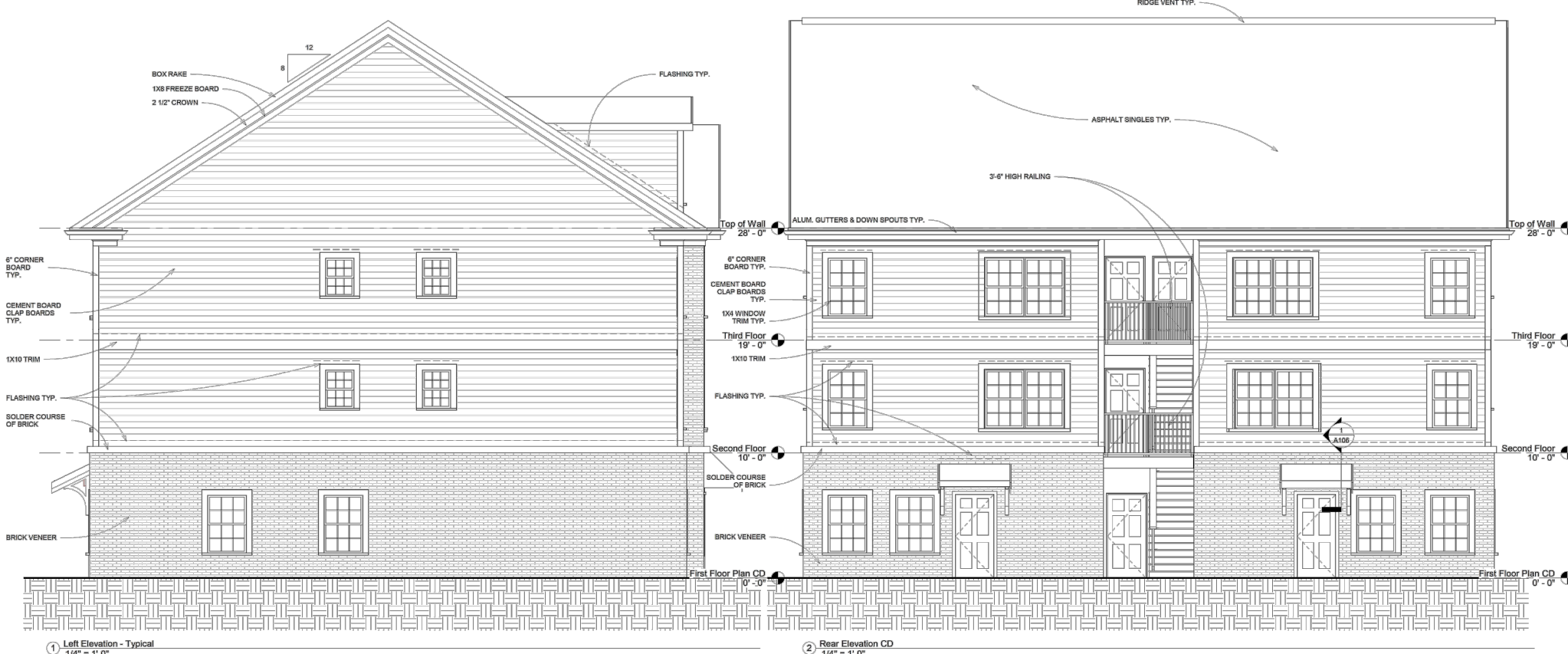
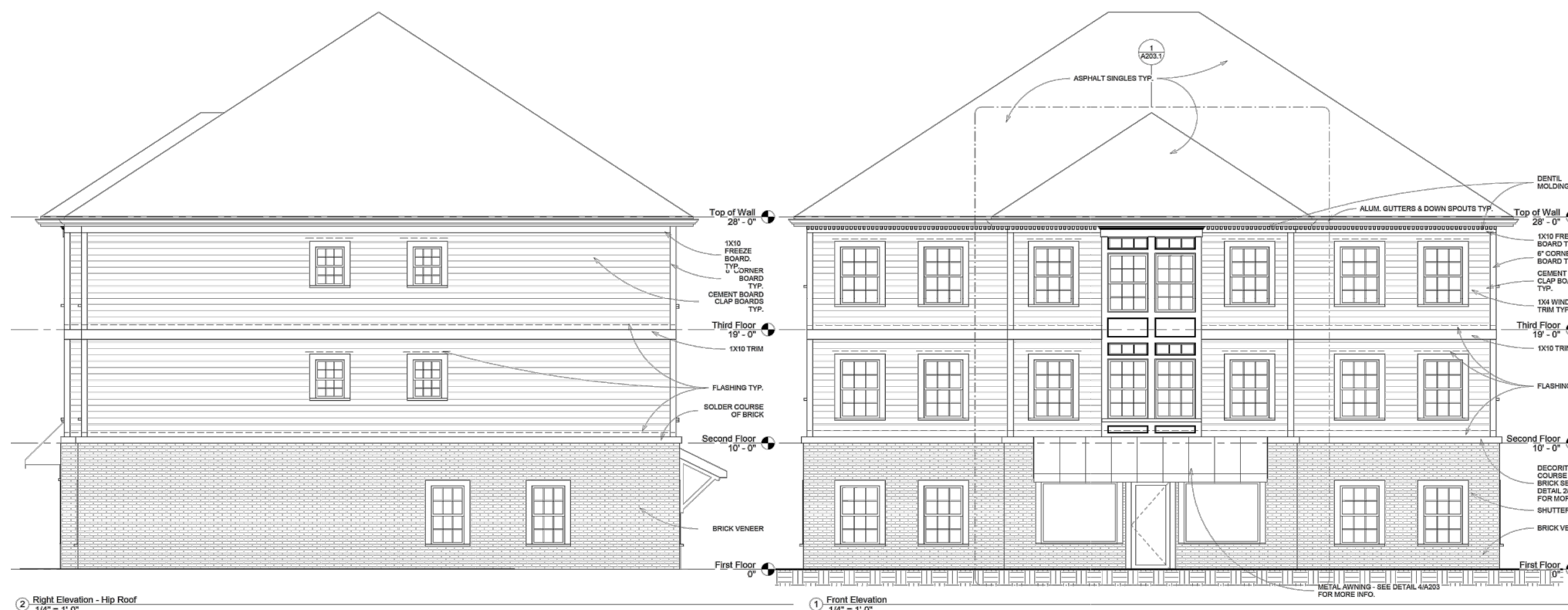
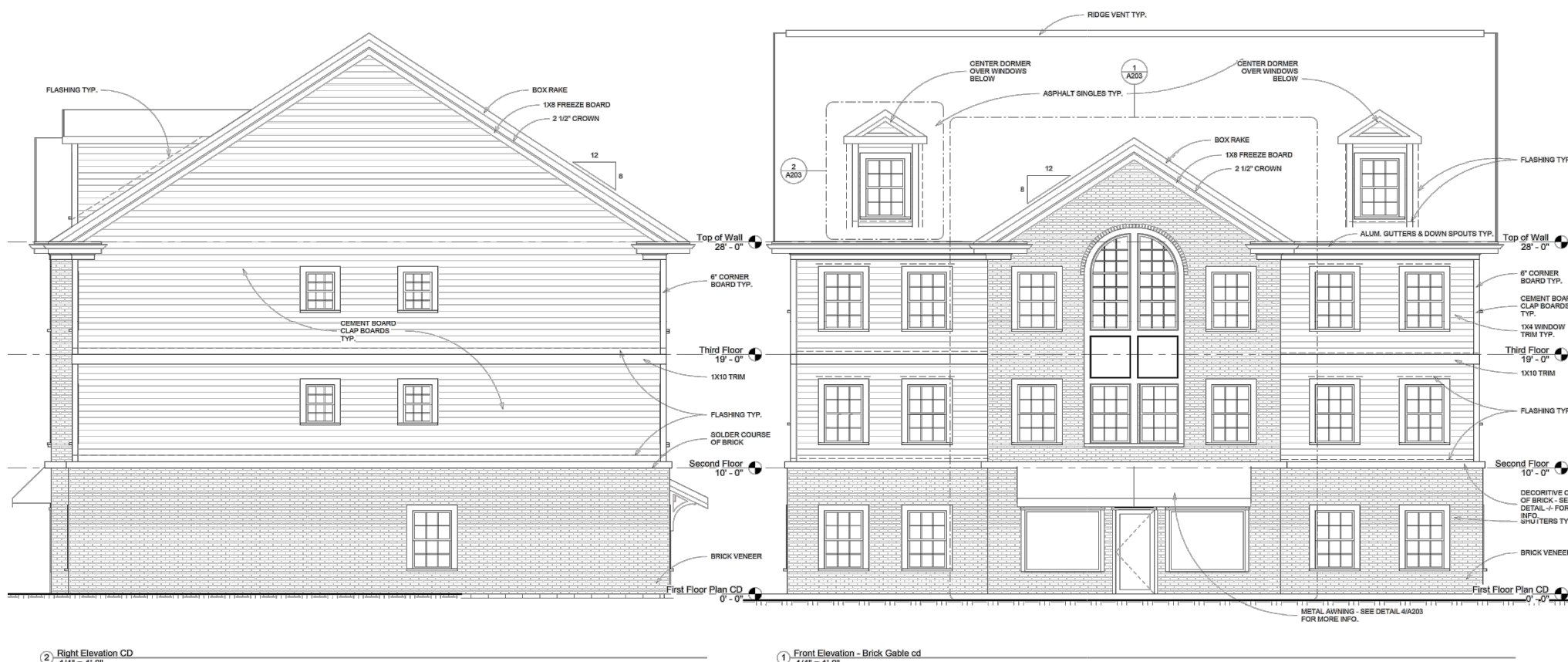
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**TOWNHOME
REGULATING PLAN**

Project number: L20030 Sheet #:
Issued Date: 11.02.2020
Drawn by: KH
Approved by: MT

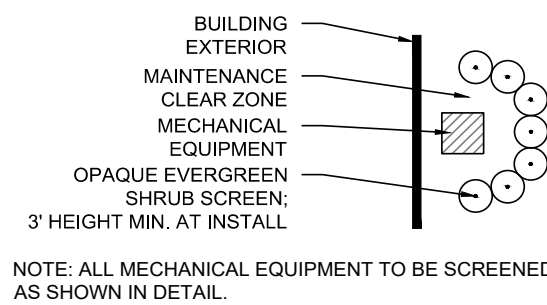
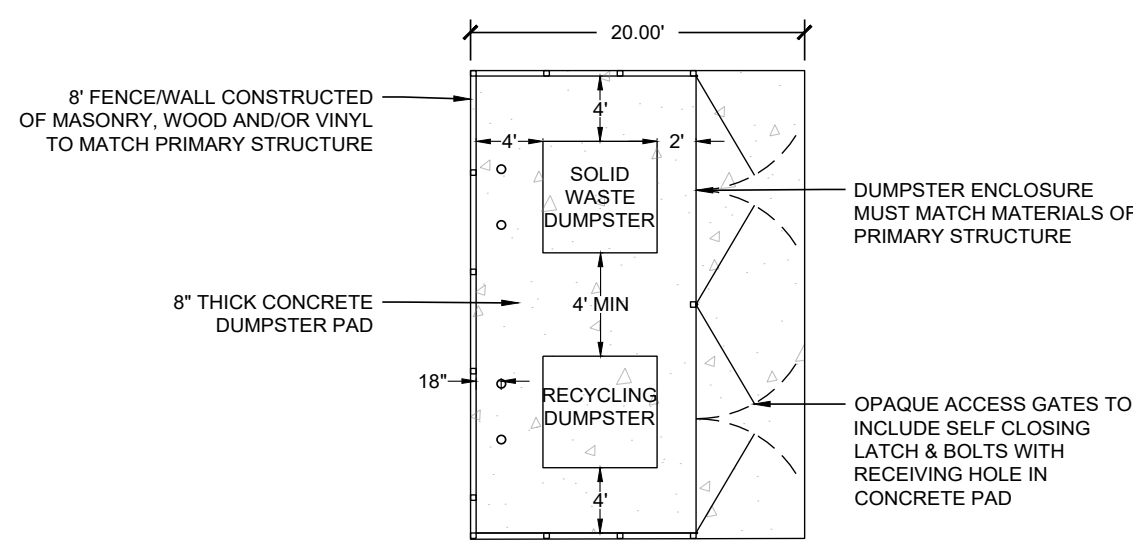
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L:\Projects\2020\L20030 - Holloway DWGS\0-Master Plan\3-Sheets\L20030-13.0 Typical Housing Types.dwg Jan 30, 2021 - 1:39pm



4 BIKE RACK, TYP.
ELEVATION

NTS



3 SCREENING, TYP.
PLAN

NTS



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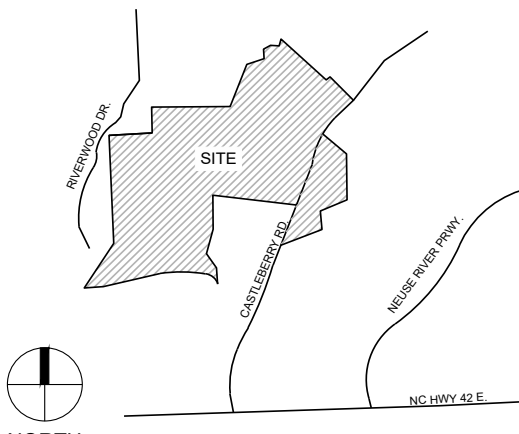
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Agent:
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CONTACT: DAVID DEYOUNG, AICP

Vicinity map:



Seal:

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Project:

**RIVERWOOD
GOLF CLUB
SECTION 2**

Issued for:

MASTER PLAN

No.	Date	Description
1	12.23.2020	PER TOWN COMMENTS
2	1.25.2021	PER TOWN COMMENTS

Title:

**MULTIFAMILY
REGULATING PLAN**

Project number: L20030 Sheet #:
Issued Date: 11.02.2020
Drawn by: KH
Approved by: MT

14.0



AMENITY CENTER CONCEPT SKETCH
FOR ILLUSTRATIVE PURPOSES ONLY.
AMENITY ARCHITECTURAL ELEVATIONS AND MINOR SITE PLAN APPLICATION SHALL BE SUBMITTED TO THE TOWN OF CLAYTON FOR SITE PLAN APPROVAL IN ACCORDANCE WITH THE UNIFIED DEVELOPMENT CODE.

- Amenity Center Design Standards**
- Amenity Center Pod shall be a minimum of 2 acres in size.
 - Any parking areas shall comply with Town of Clayton UDC requirements for parking lots and islands.
 - All HVAC and mechanical equipment shall be screened from the public ROW in accordance with Town of Clayton UDC requirements.
 - All architectural elements including color palette to be consistent with the Amenity Center building style.
 - All recreation and open space shall be maintained by the HOA.
 - Materials:
 - Siding - Fiber siding, shake, brick, board/batten or combination
 - Roof - Asphalt shingles/masonry-stone
 - Additional Trim Details - Columns, Stone, or Brick
 - Amenity Center Building shall be a minimum of 4,000 sf with a pool area that is a minimum of 7,500 sf.

DIMENSIONAL STANDARDS TABLE	
MINIMUM LOT SIZE (SF)	2 AC
MAXIMUM IMPERVIOUS AREA	85%
MAXIMUM BUILDING COVERAGE	25%
BUILDING SETBACKS	
FRONT STREET (FROM SIDEWALK)	20'
SIDE STREET (FROM SIDEWALK)	15'
SIDE	15'
REAR	20'

HOLLOWAY AMENITY CENTER (3 USES MIN)
FITNESS ROOM
BUSINESS CENTER
MAIL ROOM
POOL
LAZY RIVER
COMMUNITY LOUNGE
BOCCO COURTS
PLAYGROUND

ADDITIONAL AMENITY RESOURCES

RIVERWOOD ATHLETIC CLUB
OUTDOOR POOLS
INDOOR POOL
WORKOUT FACILITY
WALKING TRAILS

LIONSGATE ATHLETIC CLUB
OUTDOOR POOLS
WORKOUT FACILITY

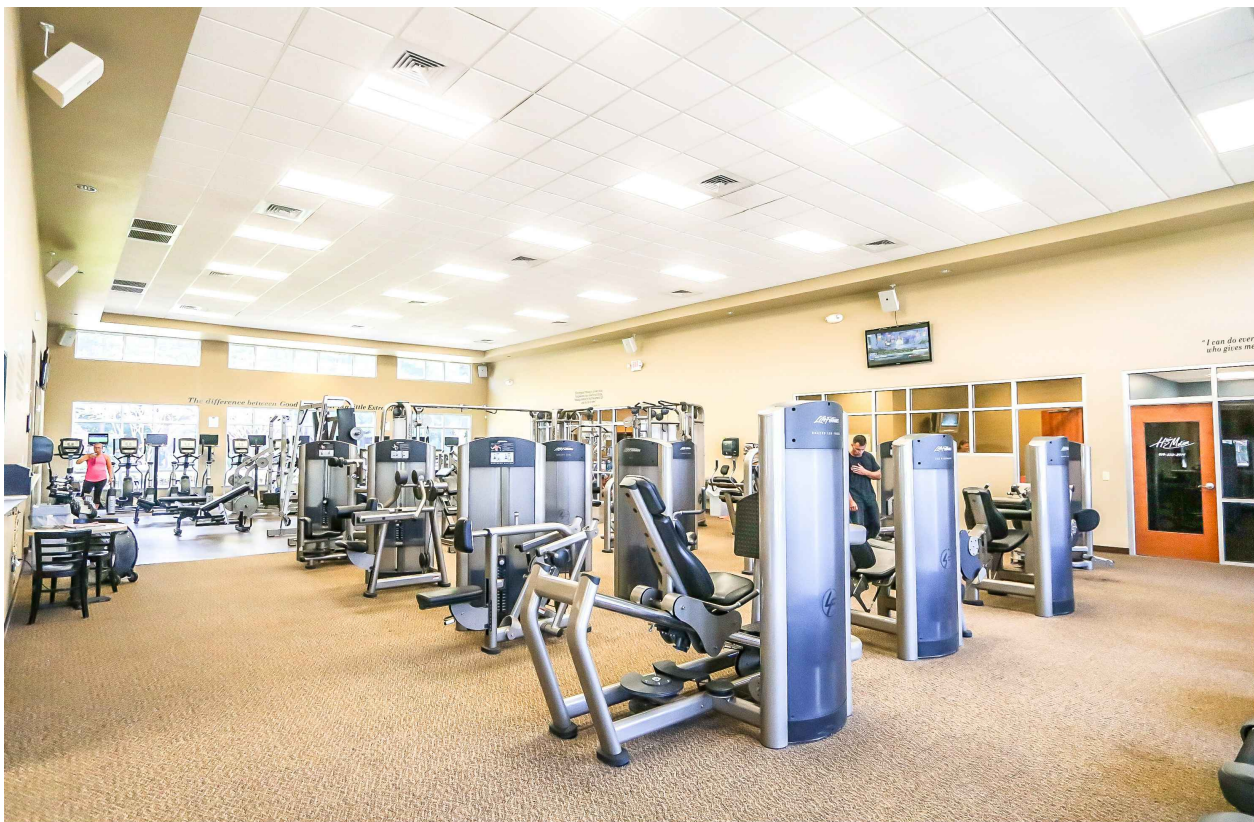
RIVERWOOD GOLF CLUB
GOLF COURSE AND DRIVING RANGE

EAGLE RIDGE GOLF CLUB
GOLF COURSE AND DRIVING RANGE

OLD LIBERTY GOLF CLUB
GOLF COURSE AND DRIVING RANGE

HEDDINGHAM GOLF CLUB
GOLF COURSE AND DRIVING RANGE

TRALEE ATHLETIC CLUB
OUTDOOR POOLS



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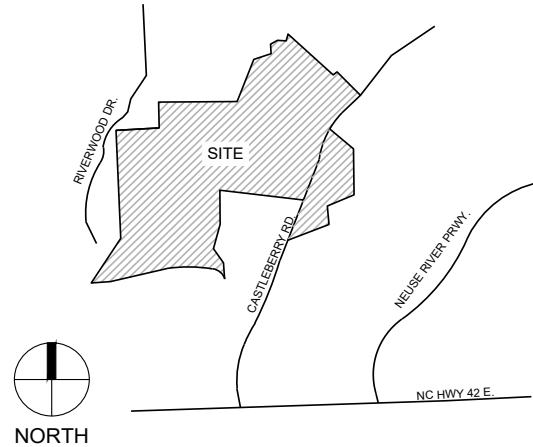
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Consultants:
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CONTACT: DAVID DEYOUNG, AICP

Vicinity map:



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Project:

**RIVERWOOD
GOLF CLUB
SECTION 2**

Issued for:

MASTER PLAN

No.	Date	Description
1	12.23.2020	PER TOWN COMMENTS
2	1.25.2021	PER TOWN COMMENTS
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Title:

**AMENITY CENTER
REGULATING PLAN**

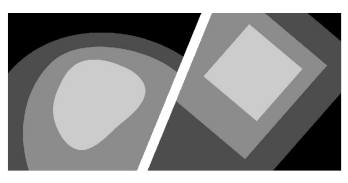
Project number: L20030 Sheet #:
Issued Date: 11.02.2020
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Approved by: MT

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- LEGEND:**
- 100 YEAR FLOODPLAIN (RCA)
 - STREAM BUFFER (RCA)
 - EXISTING WETLAND
 - STREAM CENTERLINE
 - PASSIVE OPEN SPACE
 - IMPROVED OPEN SPACE
 - LOT TYPE A (1/4 AC ESTATE LOTS)
 - LOT TYPE B (4,200 SF)
 - LOT TYPE C (TOWNES)
 - LOT TYPE D (APARTMENTS)
 - MAILBOX CENTER
 - STEEP SLOPES (RCA) - 1,237,458 SF
 - STEEP SLOPES (RCA) - IMPACTED BY DEVELOPMENT +1-57,823 SF (4.67%)



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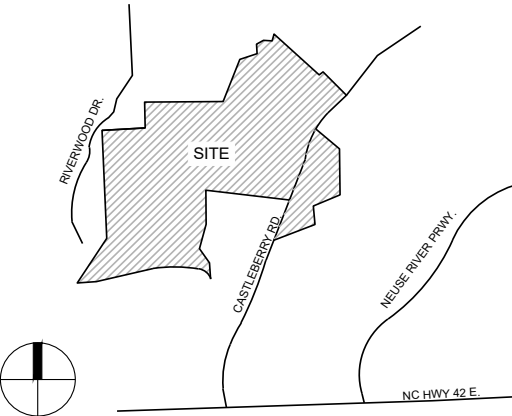
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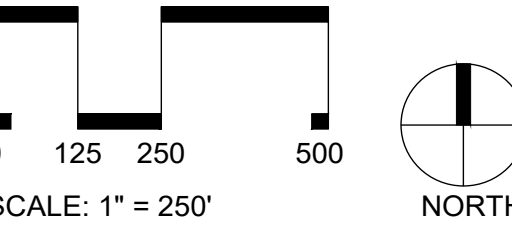
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CONTACT: DAVID DEYOUNG, AICP

Vicinity map:



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Project:
**RIVERWOOD
GOLF CLUB
SECTION 2**

Issued for:
MASTER PLAN

No.	Date	Description
1	12.23.2020	PER TOWN COMMENTS
2	1.25.2021	PER TOWN COMMENTS

Title:
RCA OVERLAY

Project number: L20030 Sheet #:
Issued Date: 11.02.2020
Drawn by: KH
Approved by: MT **16.0**



Date - November 16th, 2020

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. The following provides details for the Neighborhood Meeting:

Meeting Date: Thursday December 3rd 2020
Meeting Time: 6:00 - 8:00 PM
Meeting Location: Virtual Meeting - Use the link to join! <https://us02web.zoom.us/j/88029910613>

Type of Application: Major Subdivision Application/Rezoning
Project Address: 1085 Castleberry Road Clayton, NC 27527

Project Description: Riverwood Golf Club Section 2 is a proposed 302 acre mixed-use neighborhood development located in the southeast quadrant of the intersection Covered Bridge Road and the Neuse River. The development plan includes 726 residential units (432 single family units, 74 townhome units, and 220 apartment units), a variety of open space amenities, and access to community amenities such as outdoor pools, workout facilities, walking trails, golf courses, and driving ranges. It is anticipated that the project will be developed in multiple phases over time, based on market demand and to meet the needs and functionality of the community during construction.

Public Meeting: The project will be heard by the Town of Clayton Planning Board and a mailing notice will be sent by the Town once a date is selected.

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.

Enclosed with this letter is a map showing the location of the property that is subject to Major Site Plan approval.

If you have any questions prior to or after this meeting, you may contact us at 919-813-0123. You may also contact the Town of Clayton Planning Department at 919-553-5002.

Sincerely,

A blue ink handwritten signature, appearing to read 'DeYoung', is written over a large, faint, light blue 'WILD' watermark.

David DeYoung, AICP
Director of Development

Cc: Town of Clayton Planning Department

THE RIVER WILD TEAM.COM

114 W. Main Street, Clayton, NC 27520 | 919.813.0123

Name	Mailing Address	Phone Number	Fax	Email address	Tag(s) of property owned
FSC Ranch LLC	400 Riverwood Drive Clayton NC 27527		N/A	N/A	16J04001, 16P99016A, 16K05012E, 16I03009B
Fred J Smith Jr.	632 Marcellus Way Clayton NC 27527		N/A	N/A	16I03012F
JAMES W & JANICE C HOLLOWAY LLC, William Harold Holloway	8401 Crowder Rd Raleigh NC 27603		N/A	N/A	16I03009

PARNO	OWNNAME	OWNNAME2	MAILADD	MCITY	MSTATE	MZIP
167900-65-7451	AMH NC PROPERTIES, LP		30601 AGOURA RD STE 200	AGOURA HILLS	CA	91301-2148
167900-64-6634	BLUE BYRD BUILDING, LLC		111 POPLAR CT	WILLOW SPRING	NC	27592-8508
167900-65-7006	BOVE, SABINA A		45 PAMELA LN	CLAYTON	NC	27527-4524
167900-46-7730	CAROLINA WATER SERVICE	INCORPORATED OF NC	500 W MONROE ST STE 3600	CHICAGO	IL	60661-3779
167900-64-6881	CERBERUS SFR HOLDINGS II LP		1850 PARKWAY PL SE STE 900	MARIETTA	GA	30067-8261
167900-97-2528	COOLEY, SHELTON W		1329 CASTLEBERRY RD	ARCHER LODGE	NC	27527-6337
167900-74-7913	COUNTRY MANOR ESTATES LLC		1746 LITTLE DIVINE RD	SELMA	NC	27576-0000
167900-84-8949	DAVIS, DANIEL L		680 CASTLEBERRY RD	CLAYTON	NC	27527-0000
167900-74-9491	DAVIS, DANIEL L JR		690 CASTLEBERRY RD	CLAYTON	NC	27527-0000
167900-97-1173	DRUMMOND, WILLIAM MCKINLEY		1276 CASTLEBERRY RD	ARCHER LODGE	NC	27527-6334
167900-86-7574	EVANS, DEVIN KAYNE	WILKINS, REBECCA	1144 CASTLEBERRY RD	ARCHER LODGE	NC	27527-6332
167900-65-6396	FOSTER, AARON	FOSTER, MERKINA	93 PAMELA LN	CLAYTON	NC	27527-4524
167900-96-0825	FRANKLIN, JASON NEIL	FRANKLIN, SHERI WILLIAMS	1220 CASTLEBERRY RD	CLAYTON	NC	27527-6334
167900-37-8183	FSC I LLC		400 RIVERWOOD DR	CLAYTON	NC	27527-0000
167900-46-4272	FSC III LLC		400 RIVERWOOD DR	CLAYTON	NC	27527-0000
167900-46-4379	FSC III LLC		400 RIVERWOOD DR	CLAYTON	NC	27527-0000
167900-46-4160	FSC III LLC		400 RIVERWOOD DR	CLAYTON	NC	27527-0000
167900-46-4592	FSC III LLC		400 RIVERWOOD DR	CLAYTON	NC	27527-0000
167900-46-5601	FSC III LLC		400 RIVERWOOD DR	CLAYTON	NC	27527-0000
167900-54-4810	FSC RANCH LLC		400 RIVERWOOD DR	CLAYTON	NC	27527-5500
167900-65-8736	FSC RANCH LLC		400 RIVERWOOD DR	CLAYTON	NC	27527-5500
167900-85-6791	FSC RANCH LLC		400 RIVERWOOD DR	CLAYTON	NC	27527-5500
167900-85-1824	FSC RANCH LLC		400 RIVERWOOD DR	CLAYTON	NC	27527-5500
167900-97-1022	GARRETT, JAMES T	GARRETT, BARBARA A	1254 CASTLEBERRY RD	ARCHER LODGE	NC	27527-6334
167900-75-1325	GWATHNEY, JOHN A JR	GWATHNEY, PAMELA L	259 VINSON RIDGE LN	CLAYTON	NC	27527-4513
167900-86-9484	HALL, JOHN A	HALL, GERALDINE B	108 POINT LN	ARCHER LODGE	NC	27527-8718
167900-88-3830	HAUSER, JULIE B			CLAYTON	NC	27528-0913
167900-95-2502	HOWELL, SARA	HOWELL, RUDOLPH	127 RIVERBEND DR	ARCHER LODGE	NC	27527-8721
167900-64-7083	JACKSON, EDNA		2721 US HIGHWAY 70 E	SELMA	NC	27576-8174
167900-76-3795	JAMES W & JANICE C HOLLOWAY LLC	HOLLOWAY, WILLIAM HAROLD	8401 CROWDER RD	RALEIGH	NC	27603-0000
167900-64-7115	JERRY GOWER CONSTRUCTION CO INC		7400 SIEMENS RD STE D	WENDELL	NC	27591-6756
167900-97-4424	JOHNSON, CYRUS DOUGLAS	JOHNSON, LISA KEATON	1340 CASTLEBERRY RD	ARCHER LODGE	NC	27527-6336
167900-64-5454	KRINOCK, GREGORY	KRINOCK, JENNIFER	80 ANDREA DRIVE	CLAYTON	NC	27527-0000
167900-64-7394	LEESH MANAGEMENT LLC		104 STATE AVE	CLAYTON	NC	27520-5116
167900-64-5390	LEESH MANAGEMENT LLC		104 STATE AVE	CLAYTON	NC	27520-5116
167900-65-6295	LEESH MANAGEMENT LLC		104 STATE AVE	CLAYTON	NC	27520-5116
167900-86-9755	LIU, CHEN-YANG	WINFREE, MOLLY	1194 CASTLEBERRY RD	ARCHER LODGE	NC	27527-6332
167900-95-0750	MANGUM, LARRY THOMAS	BLALOCK, CAROL	123 RIVERBEND DR	ARCHER LODGE	NC	27527-8721
167900-75-3361	MIDDENDORF, JASON A	MIDDENDORF, SARAH E	260 VINSON RIDGE LN	CLAYTON	NC	27527-4512
167900-46-8888	MONTELLO, MARIA L.	MONTELLO, VINCENT ANTHONY	379 RIVERWOOD DR	CLAYTON	NC	27527-5519
167900-64-6505	MPF ENTERPRISES LLC			DURHAM	NC	27709
167900-74-4488	NEUSE HAVEN TOWNHOMES, LLC		1524 CANTERBURY RD	RALEIGH	NC	27608-1106

PARNO	OWNNAME	OWNNAME2	MAILADD	MCITY	MSTATE	MZIP
167900-86-8644	O'LEARY, PATRICK J.		1170 CASTLEBERRY RD	ARCHER LODGE	NC	27527-6332
167900-65-7106	O'NEAL, FERNANDEZ		65 PAMELA LN	CLAYTON	NC	27527-4524
167900-96-2344	PARKER, JULIA A.		109 RIVERBEND DR	ARCHER LODGE	NC	27527-8721
167900-74-6787	POTTS, MATTHEW TRAVIS		685 CASTLEBERRY RD	CLAYTON	NC	27527-0000
167900-75-7232	POWELL, CURTIS S	POWELL, CAROLYN M	701 CASTLEBERRY RD	CLAYTON	NC	27527-0000
167900-97-0587	REID, ANGELA	REID, JAMES	1313 CASTLEBERRY RD	ARCHER LODGE	NC	27527-6337
167900-87-8873	RHAME, CAROLYN		3100 SLIPPERY ELM DRIVE	RALEIGH	NC	27610-0000
167900-64-7906	RUDOLPH, PAMELA JEAN		23 PAMELA LN	CLAYTON	NC	27527-4524
167900-64-6752	SCHMINCKE, MATTHEW	SCHMINCKE, OLIVIA	32 ANDREA DR	CLAYTON	NC	27527-4525
167900-56-1805	SMITH, FRED J JR		632 MARCELLUS WAY	CLAYTON	NC	27527-5591
167900-75-8180	STANFORD, SCOTT	STANFORD, JODI	689 CASTLEBERRY RD	CLAYTON	NC	27527-6327
167900-46-4030	STANLEY, JAMES ALAN JR.		627 RIVERWOOD DR	CLAYTON	NC	27527
167900-96-2104	STRICKLAND, HOWARD MARK		115 RIVERBEND DR	ARCHER LODGE	NC	27527-8721
167900-65-9327	SURLES, TONY CURTIS		98 PAMELA LN	CLAYTON	NC	27527-4526
167900-65-9236	TEAGUE, THADDAEUS H	TEAGUE, KIMBERLY E	84 PAMELA DRIVE	CLAYTON	NC	27527-0000
167900-64-7090	TORINO, VICTORIA		117 HILL SHORE LN	CLAYTON	NC	27527-5597
167900-63-7775	VILLAGE ON THE NEUSE TOWNHOMES ASSOCIATES INC		400 RIVERWOOD DR	CLAYTON	NC	27527-0000
167900-96-2002	WARWICK, MICHAEL EDWARD	WARWICK, DEBORAH W	125 BENNETT PL	CLAYTON	NC	27527-4505
167900-97-2198	WETHERINGTON, MICHAEL HUGH	WETHERINGTON, PAMELA W	1300 CASTLEBERRY RD	ARCHER LODGE	NC	27527-6336
167900-95-1899	WILSON, JOHN	WILSON, LINDA	119 RIVERBEND DR	ARCHER LODGE	NC	27527-8721
167900-88-4293	WILSON, MARGARET M AND OTHERS		1437 HUNTDILL MAIN DR	WENDELL	NC	27591-0000
167900-74-6647	WOODELL, DAVID		683 CASTLEBERRY RD	CLAYTON	NC	27527-6327

NEIGHBORHOOD MEETING ATTENDANCE ROSTER

Project: Riverwood Golf Club Section 2

Application: Rezoning & Major Subdivision

Location/Date: Virtual / Zoom — Dec. 3rd 2020 6-8pm

	NAME	ADDRESS
1	Becca Mountz	River Wild - Developer
2	Cindy Szwarczkop	Stewart - Engineer
3	Katie Hamilton	Stewart - Engineer
4	Tod Eberle	438 Marcellus Way Clayton NC 27527
5	Doug Boice	No address provided or identified
6	Vincent Montello	379 Riverwood Drive Clayton NC 27527
7	Scott Nunn	134 Trantham Trail Clayton NC 27527
8	Debbie Hinds	761 Raymond Drive Clayton NC 27527
9	Stephanie Kelley	105 Feezor Court Clayton NC 27527
10	Matt Zaske	720 Charleston Drive Clayton NC 27527
11	Michele Koziarz	160 Marcellus Way Clayton NC 27527
12	Brandon Pearce	100 Trantham Trail Clayton NC 27527
13	Doc Oliver	795 Riverwood Drive Clayton NC 27527
14	Brittany McLamb	140 Trantham Trail Clayton NC 27527
15	Kim Helmer	726 Riverwood Drive Clayton NC 27527
16	Cole Bradburn	277 Marcellus Way Clayton NC 27527
17	Reagan Hunt	No address provided or identified
18	Scott Wright	125 Linwood Lane Clayton NC 27527
19	Melissa Fischer	313 Riverwood Drive Clayton NC 27527
20	Robert Stanley	No address provided or identified

October 2019

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pg 1 of 2

NEIGHBORHOOD MEETING ATTENDANCE ROSTER

Project: See previous

Application: See previous

Location/Date: See previous

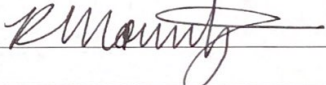
	NAME	ADDRESS
1	Shannon Hill	124 Trantham Trail Clayton NC 27527
2	Ryann Little	No address provided or identified
3	Shirley Daniel	No address provided or identified
4	Scott + Jodi Stanford	689 Castleberry Road Clayton NC 27527
5	Donna Ray	No address provided or identified
6	Keri Green	185 Vinson Ridge Lane Clayton NC 27527
7	Suzanne Rathbun Morris	157 Fontana Drive Clayton NC 27527
8	Michelle Harrell	130 Trantham Trail Clayton NC 27527
9	Lisa Johnson	1340 Castleberry Road Archer Lodge NC 27527
10	Jeff	Non-identifiable screen name
11	Robin's iPhone	Non-identifiable screen name
12	Jerry's iPhone	Non-identifiable screen name
13	Andrisbear	Non-identifiable screen name
14	Caidence	Non-identifiable screen name
15	Mike	Non-identifiable screen name
16	Galaxy android device	Non-identifiable screen name
17	iPhone	Non-identifiable screen name
18	Town	Non-identifiable screen name
19		
20		

NEIGHBORHOOD MEETING SUMMARY FORM

FILL OUT THE FOLLOWING:

Application: Rezoning + Major Subdivision
Date of Mailing: Nov. 16th 2020
Date of Meeting: Dec. 3rd 2020 Time of Meeting: 6-8 pm
Location of Meeting: Virtual/Zoom

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: Rebecca Mountz 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.*

Please see attached document for meeting
minutes summary

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

Becca Mountz - RiverWild
 Cindy Szwarcop - Stewart
 Katie Hamilton - Stewart
 Tod Eberle - 438 Marcellus Way Clayton NC 27527
 Doug Boice - NO ADDRESS GIVEN OR FOUND - dboice3346@gmail.com
 Vincent Montello - 379 Riverwood Drive Clayton NC 27527
 Scott Nunn - 134 Trantham Trail Clayton NC 27527 - scnu@novonordisk.com
 Debbie Hinds - 761 Raymond Drive Clayton NC 27527
 Stephanie Kelley - 105 Feezor Court Clayton NC 27527
 Matt Zaske - 720 Charleston Drive Clayton NC 27527
 Michele Koziarz - 160 Marcellus Way Clayton NC 27527
 Brandon Pearce - 100 Trantham Trail Clayton NC 27527- pearcehydroseeding@yahoo.com
 Doc Oliver - 795 Riverwood Drive Clayton NC 27527
 Brittany McLamb - 140 Trantham Trail Clayton NC 27527 - M.a.mclamb@gmail.com
 Kim Helmer - 726 Riverwood Drive Clayton NC 27527
 Cole Bradburn - 277 Marcellus Way Clayton NC 27527
 Reagan hunt - NO ADDRESS GIVEN OR FOUND
 Scott wright - 125 Linwood Lane Clayton NC 27527 - sw44993@gmail.com
 Melissa Fischer - 313 Riverwood Drive Clayton NC 27527 - m_fischer@live.com
 Robert Stanley - NO ADDRESS GIVEN OR FOUND
 Shannon hill - 124 Trantham Trail Clayton NC 27527 - sjhill2@yahoo.com
 Ryann little - NO ADDRESS GIVEN OR FOUND
 Shirley daniel - 329 Riverwood Drive Clayton NC 27527 - tsdaniel@nc.rr.com
 Scott and Jodi Stanford - 689 Castleberry Road Clayton NC 27527 - scottinraleigh@gmail.com and jodistanford27@gmail.com
 Donna Ray - NO ADDRESS GIVEN OR FOUND - djcross2013@hotmail.com
 Keri Green - 185 Vinson Ridge Lane Clayton NC 27527
 Suzanne rathburn morris - 157 Fontana Drive Clayton NC 27527
 Michelle Harrell - 130 Trantham Trail Clayton NC 27527 - huntnc1@twc.com and n2art@hotmail.com
 Lisa Johnson - 1340 Castleberry Road Archers Lodge NC 27527- lisajohnson6@embarqmail.com

People's Screen Names That were not Identifiable

Jeff
 Robin's Iphone
 Jerrys Iphone
 Andrisbear andrisbear@bellsouth.net
 Caidence
 Mike
 Galaxy android device (no name)
 Iphone (no name)
 John - johninn46@gmail.com

Starting meeting at 6:03 pm

Cindy introduces herself and Becca and Katie Hamilton and starts to go through the presentation

Any questions?

Cindy starts off by going over the timeframe of the project with the entitlement process as well as how far out the build out timeline is (8-10 years)

- What are we going to do about traffic?
 - Cindy- we are doing a traffic impact analysis required by the town. It is currently being reviewed by the NCDOT. Any requirement and conditions made by the NCDOT per the TIA will be required to be completed by the developer. At this moment we don't know what those requirements will be as the recommendations will come out as we move further into the process.
- Our main concern is that Riverwood is going to be used as a main entrance for this neighborhood.
 - Cindy - we don't really see a lot of cross through traffic through this neighborhood but people could possibly use the connection from neuse haven through to this project
- People are going to use this neighborhood as a cut-through from castleberry to Loop. With this it would cut off 7 minutes of drive time for people getting to work
 - Cindy - there could be some benefits of using this roadway network to reduce times between point A to point B. It is not envisioned as a cut through and roadway will be designed to prevent a speedway type of situation. ****Cindy asks Katie Hamilton to elaborate on speed limits***
 - Katie - posted speed limits would be 25 mph

- Vincent Montello - *Yells* Well that is what it is now in riverwood golf and people come through at 40 and 45 mph and that without 700 new neighbors
- ***Various overlapping comments***** (0:26:15)
 - You say it going to benefit people
 - It's not going to benefit us
 - None of us who live here are going to benefit off of this
- So we moved in here to have a one entrance neighborhood so kids could play in streets
 - Cindy explains the code requirement for multiple entrances for every certain number of lots in a subdivision
- Why does it have to connect to riverwood at all?
 - Cindy explains again the code requirement for multiple entrances for every certain number of lots in a subdivision that is dictated by the Town of Clayton
- Has there been a DOT (Department of Transportation Study) conducted to identify what type of traffic we will be seeing on our road system
 - Cindy - Yes the Town of Clayton requires a traffic impact analysis to be submitted. That has been submitted and it is in the process of being reviewed by the NCDOT and their congestion management group. This is part of the process and so when the comments come out, they will be reviewed by Town staff and Town council to identify what improvements would be required.
 - Vincent Montello - What does that mean for Riverwood Golf (existing) as we are not the town of Clayton?
 - Cindy - It means that there would likely be no improvements on that side and where improvements are likely will be on Castleberry.
 - Vincent Montello - So the people who are affected by this increased traffic would not get any improvement to their roadway
 - Cindy - It just depends on if it is a state road, a town road, the level of classification determines it Cindy speaking but people talking over her saying that castleberry road is in archer lodge....
 - Cindy- Everything will be determined by the TIA and those recommendations and we can't speak to them yet since they have not been released to us. We are at the very beginning of the project with the master plan and submittals
- Resident - So will these people be members of the golf club with the golf and pool membership
 - Cindy - They would have to purchase them
 - Resident - So it's not part of their homeowners association fees?
 - Cindy - at this time I have been told that it will be worked out later on and they would have to join
 - Resident - so they wouldn't have to pay just the minimum membership dues like we do for ours correct?
 - Cindy - I cannot speak to thatcindy gets interrupted
 - Resident - well this is an answer that we need to know because you're talking about increasing the golf membership by another 700 to 1000 people
 - Cindy - attempts to respond but is interrupted again
 - Resident - members can't even play golf anymore. They can't get in to play golf anymore because of covid. Members can't play now so if you add 100 more people it's going to be ridiculous and then are they putting a pool in here?
 - Cindy- It is part of the project's amenities that they are putting in a pool and workout facility but I can't speak to details about the golf course. But what I can do is get your name and number and have Dave DeYoung with riverwild call you back.
- A number of people talking over each other so comments are inaudible
- Resident - I am confused, if all of this is just for this community, how is our community being affected so much without having any answers to these questions
 - Another resident - yeah I'm not hearing any answers. I think are we about to use that pool over there? Is that available to us?
 - Cindy - at this point that is something that I am unable to answer as well as anything related to the amenities.
 - Resident - so is there anybody who will be able to answer any questions before the building starts?
 - Cindy- as I said, this is the very beginning of the process. There is a proposed amenity center going in with a pool and fitness center. My understanding is that it is for this neighborhood and there is a potential for it to be available to the Riverwood golf club 1, for lack of a better word, because there is not a swimming pool currently in that neighborhood....cindy gets interrupted
 - Resident - So am I correct when I say that the original plan for this neighborhood showed that there was supposed to be a pool where the greens keeping area is and 9 more holes of golf? Are those 9 holes of golf being built as part of this? (0:31:00)
 - Cindy - no sure there is no golf being built as part of this project
 - Resident - so let me get this straight? They're getting a pool over there that we may or may not be able to use? They're going to get a membership to our golf club....
 - Cindy - No I said that I cannot speak to the memberships related to the golf club or sports club....

- Resident - it's not the golf club that is part of our homeowners. We have to pay it
- Cindy - well this plan is not related to that. This meeting for tonight is to talk about the proposed development on this tract and to let you know that there are plans for an amenity center. Now as I said we are going to get this information and Becca has a list of everyone that is on here, we will get Dave DeYoung to reply back with details on the HOA. That is nothing that the engineering company that I work for would be overseeing. That would be Riverwild and Riverwood golf.
- Resident - My only concern is the traffic.
 - Resident - Exactly! Ma'am, you're saying everything that this new community is going to do but how are you going to compensate us for our roadways and to reduce the traffic since we are not within the Town of Clayton? This community is not benefitting us so you guys need to take care of the roadways
 - Another resident interrupts - especially since there are a ton of kids on that road..... Yeah hitting my mailbox, my kids are in my yard. This is going to be very very bad for us
 - Other residents interrupt - castleberry is already jam packed, you can't get off either end of it now it's easier on 42 because of the stop light finally ubt on covered bridge it's worse than 42 was and there is no stoplight. We have not experienced the excess traffic from the new subdivisions that were built because of the lockdown. Our schools are overcrowded, we have mobile units at every school including the new and recently renovated ones. I live on castleberry road and if this development goes in, it (the road) will most likely have to be expanded and it will take a majority or so many houses that are on this road and this is people who have lived here most of all of their life. The traffic is the main concern and the overcrowding of the schools.
 - Resident - it's the overcrowding of everything! The schools, the golf, everything is overcrowded its ridiculous
 - Resident - they're talking about all the traffic going toward the Riverwood School. How many people here drive down Smithfield road to get to work in Raleigh. I mean come on.
 - Resident - and they cut down castleberry road to get to smithfield road from 42.
 - ****overlapping inaudible comments*** (0:34:21)
- This is also very convenient that this is being done now and you're going to do a DOT analysis...
 - Cindy - explains that the DOT analysis has already been submitted and in review and that it is the very beginning of the process.
 - Resident - I have a problem with saying that this is the very very beginning because this is absolutely fast tracked if you can put shovels in the ground next year.
- Resident - My thing Cindy and I'm not sure if you are catching it or not is that if this is the very beginning, you are seeing all of the pushback on this project and it is only going to get worse.
 - Cindy - I understand that and am happy to hear that because we have to let the owners and the design team know what people are thinking about the project and we have to report all of this to the town.
- Resident - Why does it need to connect to Riverwood at all?
 - Another resident replies - It's so that they can be members at our golf course and our pool that why! So they can use our amenities that why it has to be connected
 - Another resident claims - I don't need it to be connected for amenities. I don't want your pool. Go away!
- Resident - Hey community guys and girls, can anybody on this call answer who pays for the road maintenance of Riverwood Drive
 - Resident - I have no idea
 - Resident - it never gets done so...
 - Resident - I believe it's the HOA
 - Resident - Well we need speed bumps already! Desperately.
 - Resident - Our road is maintained by the HOA
 - Resident - Well Castleberry Road is Archer Lodge/ Covered Bridge is a disaster right now
 - Resident - oh for sure
 - Resident - I think he's specifically asking about the riverwood golf course roads
 - ***Overlapping comments. Inaudible***
 - Resident - Yes well this is going to affect everyone around
 - Resident - Yes I understand but that is what he was speaking about
 - Resident - The guy who built the neighborhood originally, he was responsible the fix the roads so it never got finished down to the end of riverwood and although it was not his responsibility to fix it anymore or he wasn't in that position anymore, he had to go back and fix it when they raised it up to the levels of the manholes which took like 15 years or so
- Resident - I would be fine if it wasn't actually a road connecting to riverwood drive and instead if you make it like a golf cart path or something. That's fine but not a road
 - Resident - Or what about making it a road to comply with what the city of Clayton needs for emergency services but making it a road that is not open to the public but its used only in emergencies?
 - Cindy - We can't do that for access purposes.

- Resident - what about a road that connects just to the pool area you want to put in and they have access from their side and we have access from our side but there's no cut-through?
- Cindy- Hey Katie (Katie Hamilton from Stewart) can you hop on a little bit to talk about the access requirements?
- ***Overlapping residents comments. Inaudible*** (0:37:24)
- Cindy - Ladies and Gentlemen realize that we are doing this in a Zoom environment so it's very difficult for me to hear everybody. What my goal is tonight is to make sure we hear from you and hear the comments and questions and concerns and all of this is being reported...
 - Resident - WE DON'T WANT A ROAD THROUGH RIVERWOOD PERIOD. Put that on the papers. We don't want a road. Cut it off. Take it out.
 - Resident - We don't want a development
 - Resident - I think there are 35 people on this call. I think we will fight the road, is that correct?
 - Residents overlapping - Yes, yes, yes, yes absolutely, yes,
 - Resident - lets go to court over this road
 - Resident - This does nothing for anybody except for your guys's pocket
 - Resident - This is not meant to help us. It's meant to help the people who own the subdivision. We know who that is. We also know that our opinions are not going to mean much because you have a county commissioner in your back pocket! We all know that!
 - Cindy - Well this goes through the Town of Clayton, not through Johnston County
 - Resident - God knows Mr. Smith has no connections in the Town of Clayton within the county that he's the commissioner of. Come on were not stupid!
 - Cindy - And I am not saying anything about that. I'm saying that
 - Resident - Of course you're not! Because that's a pushback point so of course you won't say anything about that.
 - Cindy - This is a Clayton project that is being submitted to the Town of Clayton. Its being reviewed and considered by the town of clayton staff, the planning board, and ultimately the Town Council
 - Resident - When will the planning board meeting be for this project so we can speak to the Town of Clayton?
 - Cindy - You will be notified. At this point in time it is undetermined because we are so early in the process. We have just submitted and are getting comments and working with staff to do another review. So my best guess for the earliest we could make it to a planning board meeting would probably be very late February at the earliest. Somewhere in that time frame.
 - Resident - But I really think you need to postpone all your work and all of your plans because right now they can not do any kind of a traffic study until the new developments are being built and being used.
 - Resident - They're already clearing away on the castleberry side. They've already brought in excavators...
 - Resident - Are you serious?
 - Resident - And also, also, where in covid so people are locked in the house and not out as much so there's less traffic compared to a typical year. So that does not give a fair assessment of traffic either (0:40:20)
 - Resident - Absolutely. Can I ask something? Can you show me on this map exactly where that road would be coming through Riverwood? Can somebody point out some landmarks to me? Where's the clubhouse?
 - Resident - It's the dirt road that goes back to nothing that's across from the clubhouse. Right down along....
 - Resident - Thats, pretty much, that, I would be the corner there. I would be the intersection of that corner. That's lovely
 - Resident - There's going to be a bunch of new houses built on the other side that will be part of this neighborhood. What about this water here where it says "Stream Buffer RCA"?
 - ***Overlapping comments. Inaudible***
 - Cindy - I'm sorry there are so many people talking I can't hear the question.
 - Resident - what is this water buffer? This Stream buffer RCA? Where can I find that?
 - Cindy - The RCA is a resource conservation area and it is areas that have wetlands and streams in there. A firm called S&EC has been out and they've worked with the Army Corp. of Engineers and the State Department of Water Quality to delineate the streams and we must and are honoring all the different stream and wetland buffers in the grey blue area of the map.
 - Resident - I walked that yesterday and it's flagged with white and orange flags back there. What do they mean?
 - Cindy - Those are the areas that are being preserved. Those are areas that the stream banks are and the buffer areas.

- Resident - Can I ask a question? If people could mute themselves that would be great! Uhm, the houses that will be lining the golf course. These will be custom homes?
- Cindy - Yes sir
- Resident - And will they be custom homes to the level of those that are currently being built in Riverwood?
- Cindy - They are quarter acre- ish lots and are designated to be custom homes.
- Resident - We don't know sizes? Do we know the quality of home? The level of it? Because anything that comes in that is lower than \$350,000 \$375,000 is lowering out/r property values.
- Cindy - the pinks lots are approximately quarter acre lots designated for custom homes.
- Resident - I was told just a week ago when I spoke to Dave that these were going to be ¾ acre lots.
- Cindy - there are some that are going to be a little bit larger, but as a whole they are around a quarter of an acre
- Resident - This is not an actual...this is not real. This area where you have the wetlands is not real. The pink lots behind the tee box of holes 8 and 9, i've walked this and it's all water and marshlands.
 - Cindy - this is a master plan. It is a conceptual layout that will go through the process and more details are added as more surveys are done. This is to show where roads are going and where homes are going and the area is allocated for amenities. (0:44:00)
 - Resident - you can't build where those pink houses are. I was there yesterday. There are all kinds of creeks and marshlands and swamps out there and those houses will be underwater
 - Resident - Call EPA.
 - Resident - I think there are endangered mussels in the creek. There are endangered mussels here!
 - Resident - We can call the EPA and have them do a 5-10 year study on this
 - Resident - Yeah there are definitely endangered mussels in here. I was in here yesterday and I know they are because they stopped the building of 540 for the same mussels.
 - Resident - You know we may be able to find some indian burial ground that they can't disturb. (a number of residents laugh)
- Cindy - Alright now. I would like to kind of bring this back and see if there is anyone else who maybe didn't join the call in the beginning that needs us to go back through the presentation again. It looks like we've got about 30 or so people on the call.
 - Resident - where does their sewer and water come from?
 - Resident - Have the corp. Of engineers verified your wetlands?
 - Cindy - Yes they have. The Corp. of engineers has already been out and issued the jurisdictional determination.
 - ***Overlapping comments. Inaudible***
- Resident - The homes on holes 8 and 9, will they be clear cut or will there be some aesthetically pleasing buffer between the homes and the course. Or will they be clear cut like the other properties you typically do that are not aesthetically pleasing?
- Cindy - from the golf hole, the course will be a good buffer. And as much vegetation that can be will be retained.
 - Resident - I spoke to Dave last week and he told me in all candor that there will be a few trees in the backyard but they will clear most of them because people are paying for the view of the golf course.
 - Resident - Yeah! Paying for the view of our golf course!
 - Resident - They're paying for a view into my backyard basically.
 - Resident - well some of us have lived here out wholes lives and are missing the view of the open land instead of developments everywhere
- Resident - Can I ask a question? Can you just explain to me what the dark grey blue patches are.
 - Cindy- explains resource conservation area and how they will be undisturbed
- Resident - Can you point on the map where the pool is going?
- ***Becca points to amenity location on the presentation***
- Resident - The pool is basically going to be where all of our children are going to drive by the pool everyday or ride by on scooters everyday and see the pool but not be able to use it?
 - Cindy - reiterates that we cannot speak yet on who can use the pool outside of the proposed neighborhood and how it is an HOA decision that she cannot speak on at this time. Cindy has noted this concern.
- Resident - so by calling these homes "Riverwood 2" are they going to be Riverwood or are they going to be RiverWild just like the townhouses and apartments? (0:48:45)
 - Cindy - No it is Riverwood Golf Section 2
 - Resident - Okay so why does it have to go all the way through to castleberry. Why can't the townhomes and d*** apartments, why can't they just go to Castleberry and let Riverwood 2 go to Riverwood?
 - Cindy - In the beginning
 - Resident interrupts - Because Castleberry is already overrun!

- Cindy - Okay. The roadway connection that is proposed is something that would have to be permitted. The connection at the southern part going into Neuse Haven is already permitted so there is a chance that that roadway connection may not be permitted. But we are showing it because the Town requires access
 - Resident - So the road that goes up by the clubhouse may not go in but the road that goes down here in the bottom part of this map that is already approved?
 - Cindy - That is already permitted, yes.
 - Resident - Okay but the road that is the northernmost road is not approved as of now?
 - Cindy - No there is not a permit for that. The crossing of that stream is something that would take some time and there's always a chance that it could not happen
- ***Overlapping comments. Inaudible***
- Resident - Okay what are the light green areas that are around the grey areas that you say is protected watershed?
 - Cindy - Calls on Katie Hamilton to answer
 - Katie - those are open space not lotted. They may potentially be graded into for stormwater treatment or something along those lines, they won't be privately owned. It will be commonly owned open space outside of the RCAs
- Resident - Hey folks can I jump in? Yes, I just moved into the neighborhood a couple months ago, looking at the handout that was mailed out, there is a section labeled number 2 on the map. What is that?
 - *** Please note that during the meeting we did not fully understand what the resident was referencing and so were unable to answer his question, but after the meeting we realized that it was just the label text for "Riverwood Golf Section 2" on the provided printed map that was mailed to all adjacent property owners.
 - Resident - proceeds to try to explain to the group where exactly he lives so that it can be pointed out by the presenter.
 - Resident - Are they proposing a playground, a dog park, apartments?
 - ***Overlapping comments. Inaudible***
- Cindy - If you all could mute yourselves so I can go back through to explain the layout for anyone who has just joined? Cindy then explains the lot layouts and lot types and site plan details. Talks about how there will be custom homes, single family homes, townhomes and apartments.
- Resident - Townhomes? In the golf course? We don't want townhomes or apartments here period.
- Resident - So every home right now in Riverwood is currently on septic and the lot sizes are about .7 to 1 acre and i have hard time thinking about how to get a good size custom home respective of our current home values now on ¼ acre lots in a community that has larger lots of space.
 - Cindy - this must have water and sewer service brought to it so it cannot have the typical 1 acre lot size that we are used to for well water and septic service
 - Resident - are there going to be any improvements to the sewer pump at the corner of castleberry and 42?
 - Cindy - Yes there will be significant utility upgrades that will be part of the project
 - Resident - I live on castleberry right by where this is going to happen, is there a possibility that I may lose some of my property by adding a turn lane?
 - Cindy - at this point in time I cannot say, but i'd like to have you contact info so that you have all advance notice of what the traffic impact analysis determines
- ****Overlapping comments. Inaudible****
- Resident - To all the community members who live in Riverwood or on Castleberry, they cant put this in. We have to fight this, they had this call that didn't have enough answers to give us anything. This was a waste of a time for a call. There needs to be more information gien. The study for traffic is useless because we have been in covid and the other communities aren't even up yet for them to do a traffic study. I don't know about anyone else by my water here in Riverwood sucks.
 - Resident - Sucks!
 - Resident - I also think that the golf course.... There was an original plan for this neighborhood that....we need another nine holes. This is not what was originally planned. There was a pool on the original plans that never got done and now they're putting this where the nine holes were going to go and they're putting a golf maintenance thing but if these people aren't going to be a part of the golf club then why is there a golf cart maintenance facility. So what becomes of this course since these people will obviously be members? This course cant handle that. It can't handle the daily play it gets now.
 - Resident - My only concern is the traffic and overcrowding of everything!
 - Resident - Yes we understand that traffic is a big deal to us all. I do want to say I do notice that a lot of the questions we have are all returned with the wonderful answer involving "we invision ". So basically when you say you envision, like if you say you envision the pool to be open to us, you are saying that so that you don't have to be held to that. It's not a promise or guarantee (0:58:00)

- Cindy - And what I have said is that I will make sure that everyone on the call will get a definitive answer for that so we have heard all of your concerns about traffic and cut throughs and HOA and amenities. We are tracking all of this so that we can continue this conversation.
- Resident - Just cut it off. We don't want any of it at all!
- Resident - I have a question about schools! What elementary, middle and high schools will these houses go to? They're all full.
 - Cindy - You won't like the answer but this is determined by Johnston County and when new developments are proposed, Clayton works with the county to let them know about new homes and then their demographics group looks at the houses to look at and get an idea of approx. family size and number of students to be able to help program for future schools
 - Resident - Is that normal for Johnston county? Because everywhere else I've ever lived, development had to have sufficient public resources before getting approval. I'm not hearing where the city or town is able to provide these services or any answers to any of the problems that this neighborhood is going to create.
 - Cindy - part of the development, the infrastructure is being upgraded. Water and sewer is being brought in. Stormwater will be accounted for. The schools when the subdivision is proposed, the information is provided to Johnston county to let them know about a potential subdivision with a number of units. The county has a multiplier they typically use based on the units to see a normal family size for the units and that goes into their demographics units to prepare for future schools.
- Resident - What about crime? What are you guys planning for crime that is going to increase here? Because we lived in Riverwood Athletic Club. We moved in 10 years ago and it was a nice place then after another 500-600 houses were built there are break-ins every single weekend and vandalism, spray paint all over the place, what happens when that happens over here?
 - Resident - It's the apartments!
 - ****Overlapping Comments. Inaudible***
 - Cindy - It would be serviced by the Town of Clayton Police.
- Resident - So you're talking about all these pink houses are going to have sewer? So they have to run sewer through the wetlands?
 - Resident - That's a great idea.
 - Cindy - there will be appropriate extensions..... (Cindy interrupted)
 - Resident - it runs above ground now near the 8th tee from Riverwood drive across the wetlands
 - Resident - It looks great.
- Resident - Does anyone on this call have the original plans for the Riverwood golf community? Or have access to them?
 - Resident - I'm sure they are somewhere. I know it was supposed to have pools, volleyball courts, cabanas, basketball, tennis courts. As soon as Fred got all this money he said "I'm not building anything else"
- Cindy - Okay, I have an answer for you all about the pool.
 - Resident - We don't care about the pool!
 - *** Overlapping comments. Inaudible*** (1:02:30)
 - Cindy - Some people on the call asked the question earlier, and it is that everyone who is a member of the sports club will be able to use the pool.
 - Resident - Which means anyone in that neighborhood will be a member of the sports club correct?
 - ***Overlapping comments. Inaudible***
 - Resident - The Riverwood Athletic as well?
 - Resident - Yes.
 - Resident - **screams** Are you kidding me?! No new traffic you think?! Are you kidding me?!
 - Resident - This is a mess!
 - ***Overlapping comments. Inaudible***
 - Resident - I know you're catching all sorts of hell but I have a 14 year old son who's got the attention span of a pothole, and he's going to get flattened with all this traffic! He's one of the older kids too. There are 6-7, there's a 4 year old who plays in the road on Riverwood. This is not acceptable!
 - ***Overlapping comments and yelling. Inaudible***
 - Cindy - I am not going to put up with people yelling over one another. I clearly understand and clearly have heard all of the comments and concerns and....
 - Resident - but they're not going to do anything are they?
 - Cindy - we will be turning over the meeting video recording and minutes over to the Town so they will clearly hear all of the conversations which is good. We have all taken notes on the topics you have brought up and I appreciate the fact that you are passionate about your neighborhood. I encourage you to stay involved and follow this project. You will get additional notification on the project as it goes through the Clayton Process.

- Vincent - This is going to be on record for the city of Clayton, I want it to be said that this breezing through easily, quickly just like Reid and everybody wants is going to smell like corruption. They ignore the pushback you are getting from everyone who lives here. It's going to be a huge stink and everyone is going to smell it.
- Resident - Can I say something? The mayor won't change the guidelines for approval. I've talked to him about it. You have to talk to him.
- Resident - I do this for a living. I do this in another state for a living and it seems as though the policies in Johnston County need to get some revision because the way the planning commission has pushed this through, the way the entire project has been talked about and being set in stone, it doesn't seem like there is much at all we can do. I would like to have the names, numbers and email addresses of the people at the county to talk about the issues this is going to create.
 - Cindy - Let me abc up real quick and state that this is very far away from an approval.
 - Resident - That's not true
 - Resident - Y'all need to ****inaudible**** for a lawyer
 - Cindy - This is the first neighborhood meeting to let people know about the project. It is being approved through the Town of Clayton so that would be your first...
 - Resident - Were not in the Town limits!
 - Cindy - but that doesn't matter. This plan is.
 - Resident - of course it doesn't. The town will do whatever they want
 - Cindy - What I am saying is that if you have concerns, the appropriate people for you to speak with will be the Town of Clayton because that is where the ultimate jurisdiction is.
 - Resident - Clayton? Are you redrawing the lines?
 - Resident - We're not Town of Clayton!
 - Resident - Hang on. No. We're in the county but we are part of the town ETJ. When they extended the ETJ they grabbed us in the golf club, that is why everything approval wise would go through them.
 - Cindy - That is correct!
 - Resident - This is ridiculous
- Resident - Cindy, I just want to say that you have a set thing you are supposed to say to us tonight. But you can't keep falling back on the idea that this is the early stages when we already know you said they will be putting shovels to dirt in one year.
 - Cindy - That would happen if it is approved. *Cindy tries on to explain the typical time frame of project approval*
 - Resident - I drove over to neuse haven and that's where a road will come through correct? And they've already brought in equipment and are clearing over there.
 - Cindy - They may be clearing for a different project.
 - Resident - A neighbor asked a worker about what they were clearing for adn the worker said that there is a road going through.
 - Cindy - There is a permitted roadway that is correct.
 - Resident - Well there you go! So youre saying whether this subdivision comes in or not we're getting that road in Riverwood? (1:08:00)
 - Resident - Yes thats what shes saying.\
 - Katie Hamilton - Sir, they have to clear some of the trees to be able to go in and locate the streams and waters...
 - Resident - and build the road.
 - Katie Hamilton - and find the wetlands. They do clear some of the trees to get back there.
 - Resident - I've seen them back there in my backyard. They're back there marking stuff they've been back there. There's tags all across back there.
 - Cindy - To do the surveys of wetlands like Katie said, they do have to go in and clear and grub alittle to be able to do that. The environmental groups have been out there fairly recently with the army corp. of engineers doing their studies so that could be what you're seeing.
 - Resident - I have a hard time following it. It seems very aggressive. They're nipping off parts of the waterways here and there. It looks like it would not work if i'm reading the flagging correctly back here behind my house
- Resident - Why was nobody notified of the road that is absolutely going to happen prior to that being set in stone
 - Cindy - I don't believe that entire roadway was permitted. The stub and crossing have been permitted as part of a separate project, not this project but the roadway layouts are still...
 - Resident - The road to nowhere project! (resident laughs)
 - Resident - What is the name of this other project so we can look it up please?
 - Cindy - I would anticipate that it was part of neuse haven.
 - Resident - And that's of course owned by...
 - Resident - Nobody wants a road across a waterway to nowhere!

- Resident - If you've already started clearing and have approval for the bottom (of the map), that road is going in. There is no way that you can sit here and tell me differently.
 - Resident - exactly
 - Resident - well we don't want that
 - Resident - we don't want the road. We don't want any of it
 - Resident - nobody wants it
- ***Two residents who may be neighbors start talking to one another outside over the call but outside of their homes***
- Cindy - Ladies and Gentlemen if there are not any more questions we will....
 - Resident - *screams* Oh there are tons of questions! We just aren't getting any answers!
 - Cindy - We have heard the same questions and the same comments and I have a list of them all.
 - Resident - Call the EPA
- Resident - Are there going to be treelines bordering the townhomes across Castleberry or will it be wide open? If there aren't any trees then I will be able to see straight into the townhomes.
 - Cindy - Yes there will be a buffering along the road frontage and on the perimeter of the property.
 - Resident - You don't have to worry about watching that, you just have to worry about all the criminals coming over and breaking into your cars and houses.
 - Resident (who was originally speaking about the trees) - Okay and what about the other side of castleberry? Will there be a tree buffer there?
 - Cindy - *explains the perimeter buffer requirement for the Town of Clayton*
 - Resident - how wide is that buffer? 1 tree or several?
 - Katie Hamilton - I think it is a 20 foot buffer but I cannot speak on the quantities of trees and shrubs in each location but there will be a combination.
 - Resident - well a buffer in forestry, the trees can be 20 something feet apart
 - Katie - Clayton has a specific planting requirement based on the length of the property lines. There will be trees and shrubs. I just don't know the numbers off the top of my head.
 - Resident - **compares this to a different subdivision**
- Resident - These houses on the 8th tee, I don't see how that can even happen. I'm going to walk back there tomorrow but I don't think that area is buildable. The way it looks here is not the way it is.
- Resident - Barring any delays, can you talk about your timeline from this meeting without any delays?
 - Cindy - explains expected timeline of earliest planning board meeting being late February, council sometime in march all dependent on responses to comments...
 - Resident - March of 2021...
 - Cindy explains that construction will happen in phases and that it will not all go up at once, but anticipating starting with the design build section of the lots.
 - Resident - will they all go up at once or as purchased?
 - Cindy - it would be as people purchase the lot and work with custom home builders a couple at a time.
- Resident - when subdivisions are built, the roads are built to DOT standards and eventually taken over by the State? Is that correct?
 - Cindy - Yes and No. Depending on the roadway classification and location, some roads can be NCDOT or Town of Clayton maintained. Anticipating that Castleberry will be NCDOT and the rest will be Town of Clayton
 - Resident - So how do we go about getting sidewalks? (1:17:00)
 - Katie Hamilton - There will be sidewalks on all streets
 - Resident - Including Riverwood? The old section we're talking about now? Will you be adding them for us so we don't get plowed over?
 - Resident - Are we being annexed into the city and have to pay city taxes?
 - Cindy - No you are not, the proposed neighborhood itself will be annexed into the town limits as it is a requirement for water and sewer infrastructure
- Resident - You mentioned earlier that we would all be notified for everything, only two of us here were notified so how will you notify us?
 - Cindy - it is based on a distance from the boundary of the property and a 100 foot buffer. We are glad to hear your comments and concerns and so we have your contact information to be able to notify you as the process goes on. All documents can be requested from the Town of Clayton
- Residents ask repeated questions about the types of homes being built in the neighborhood and Cindy provides lot square footage and home types.
- Resident - Who does the dot studies here? Are they private or state studies?
 - Cindy - The consultant doing the study is Kimley-Horn and the Traffic Impact Analysis will go to the NCDOT for review and comment.
 - Resident - Are we allowed to dispute the traffic study? And say that we don't agree and want another study done by another agency. I do this for a living and I know how easy it is to pay

- someone to give you the answers that you want. So are we allowed to dispute it? Could we do another study ourselves?
- Cindy - It's all public record. If you would like to do it.
 - Resident - We need a new EPA study. This is a serious issue here and there's no way this can get approved. When it rains the water goes all back in here.
 - Cindy - Is there anyone else who wasn't on the call in the beginning or are there other different comments of concerns that we haven't addressed already?
 - Resident - It is dang near impossible to pull out onto Covered Bridge Road as it is. I cannot even imagine what it will be like to be able to do that with this many more homes and residents. It's going to take someone getting killed before something happens.
 - Resident - Inside the 100 year flood plain, how many stream crossings do you see in there?
 - Katie Hamilton - there is one currently in there
 - Resident - and those streams are designated by the Army Corps. Of Engineers?
 - Katie - Yes
 - Resident - All the ponds being built, are those to catch the stormwater?
 - Residents bring up the multiple entrances into the neighborhood again and Cindy gives regulations for the Town of Clayton's and fire code requiring additional access points for new neighborhoods. (1:27:30)
 - ***Inaudible***
 - Resident - If they don't put the road in because we don't want it, it renders the property owned by the Smiths useless. So they have to go and build a road through or they have to sell the property. And they're not going to do that.
 - ***Inaudible***
 - Resident - I knew nothing about this until anot popped up on the Nextdoor website.
 - Cindy - explains the process for notifications and the specific distances your property must be in to be notified.
 - Resident - Where can I go to get a comprehensive list of details for this project
 - Cindy - The Town of Clayton is the approving authority for the project is the Town of Clayton
 - Resident - Why are you calling it Riverwood Golf 2? Why can't it have its own name?
 - Cindy - It will have a different name eventually but this is what it is named for submittal purposes
 - Resident - I think if you give it a different name people will be less inclined to think of it as a different name and think of it less as a pass through.
 - ***Inaudible***
 - Resident - So with this road going through the next time we meet is when we fight the traffic lights they put in!
 - Resident - I would be happy for some traffic lights somewhere so people aren't getting runover.
 - Cindy - Ladies and Gentlemen are there any new questions or comments that have come up? I want to make sure everyone has a chance to say everything.
 - Resident - Will this presentation be available to us?
 - Cindy - Yes we can make it available to you.
 - Resident - Can we all jump on facebook and make a united front for this
 - Resident - We live in Neuse Haven and since they are expanding Stewarts Knob, is that road going to be an entrance to the neighborhood?
 - Cindy - it is a connection point, yes.
 - Resident - We live on Trantham trail and have the 9th hole behind our house, how far back will the houses be from the gold course?
 - Katie - The Town of Clayton will require a 20 ft buffer along the property line.
 - Resident - So there will be no trees left?
 - Resident - Doesn't the fairway count as the buffer?
 - Katie - No there will still be a required buffer on top of the fairway (1:35:35)
 - Resident - We are a golf course community and we don't want to be connected to townhomes and apartments. That's not what we bought in here for. Definitely not apartments. As soon as apartments were built in the athletic club, the crime started. All the rental homes came in there and all the homes are rentals now. They don't care about anything but the rent. There's muscle cars and loud music and that's what you get when you attach apartments to this. What you need to do is completely separate that from the golf course. Just because Fred wants to make more money, we don't want that.
 - ***Inaudible***
 - Resident - Will all of the townhomes and houses be owned by homeowners?
 - Cindy - At this point in time I don't. Obviously the apartment will be rentals
 - Resident - Isn't there a different zoning for rental units and owned units?
 - Cindy - No you do not need different zoning for a rental property.
 - Resident - All of the homes built in the athletic club are all rentals. Even the single family homes.
 - Resident - You can probably guarantee that all these will be all rentals here too.
 - Resident - It'll be nothing but crime. Crime. Crime. Crime.

- Resident - Why does the road have to come through?
 - Cindy - For access points?
 - Resident - What access points?
 - Cindy - For emergency as well as the golf maintenance facility as well as the pool...
 - Resident - This neighborhood was a private golf course community when it opened?
 - Resident - No its been public.
 - Resident - I think we should consider making the course private again to cut down on traffic. Would that be through the homeowners association, or who would we go to for that?
 - Cindy - Can i suggest that that be an offline conversation? I know it is very important to everyone on the call but it is not pertaining to this subdivision. (1:40:50)
- Resident - What is the threshold for you to have two entrances and exits for houses?
 - Katie - It is 30 units. So you wouldn't be able to build the culdesac at the end of your neighborhood anymore with Clayton's standards.
 - Resident - Could you make the custom homes part of riverwood gold and the rest a separate entrance and exit?
 - Various resident comments about the EPA and emergency exits and open space
 - Cindy - The process of approval is through the Town of Clayton
 - Resident - We need to circle our wagons on the neighborhood site and get our concerns to someone who will take our comments more seriously. You do not have our best interests at heart.
- Resident - when is the first planning board that will discuss this?
 - Cindy - it hasn't been scheduled yet since the plan is still in review with the planning department. You will get notice of the planning board meeting.
 - Resident - So the same people who got notice before will get the next notice? Yeah so I will get the letter and post it to everyone. I have a feeling that Cindy was not prepared for 40 people to show up tonight and the town of Clayton would not be happy to have hundreds of people show up to a meeting.
 - Residents talk about organizing a joint effort.
 - Cindy - I want to let you guys do this on your own time, I know Becca made a list of everyone who attended tonight so we will make sure the presentation gets sent out and everything goes to the Town so the record will be what was discussed today. For those in the buffer, you will get notified and you can share that with your neighbors.
 - Becca - I am going to work with the Town of Clayton to send our courtesy notifications for the planning board meeting so that it is not just the 100 foot buffer, so I can work to get more people notified. If anyone would like more information, I am going to send my email address in the chat so you can send any new comments or concerns. I will work on getting those answers to you and provide you the presentation from tonight. Anything that I can do to k=let your voices be heard in this process. (1:47:00)
 - Resident - Just keep the pink and the orange/yellow separated. We don't want any of that mess over there. It's going to be a nightmare of crime.
 - Cindy - Becca just said that she's going to make sure everyone on the call is on the notification list moving forward. She's going to make sure the contact info is in the chat. Please do work together to formulate your comments as you talked about.
- Resident - If there is another meeting, I say RiverWild comes more prepared with guarantees instead of "this is what we'd like to do" because we are going to need to know more concrete info before we can tell you how much we hate this idea.
 - Cindy - Once we go further into the process and work with the Town, then they will be able to give you more guarantees compared to the current conceptual masterplan.
 - Resident - If they try to propose things that would be of interest to us, we might not be as apt to fight this like it seems like we will. Like these folks will get sidewalks but you all over here who have lived here forever don't get sidewalks, your kids are in danger.
 - *** Inaudible***
 - Resident - For the future HOA, will it be separate from our existing or will it be tied in to ours?
 - Cindy - I am not sure, Becca can ask those questions.
 - Becca - Yes, feel free to send me an email with any of your concerns. I'd like to be able to address them.
 - Resident - Is there a link to the map?
 - Becca - I can send out the presentation and a PDF of the map if you send your email in the chat.
- Resident - Is the sewer smell going to get worse?
 - Cindy - We are required to make improvements of the sewer system for this project to be able to serve the neighborhood.
- Becca - All those who send their emails into the chat will get the presentation and pdf of the maps from tonight
- Cindy - Thank you all for joining us and sharing your comments so candidly. And Becca will be taking note of everyone's emails to send information out, and work with the town to expand the notification boundary.
- Resident - Thank you for taking the beating! (END OF MEETING)



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

TRC CERTIFICATION

March 11, 2021

David DeYoung
114 W Main Street
Clayton, NC 27520
David@theriverwildteam.com

Re: 2020-158-SD Riverwood Golf Club Section 2

Mr. DeYoung,

The project listed above has received certification from the Technical Review Committee on March 11, 2021. In order to prepare for your upcoming Town Council meeting, please submit **ONE** clean, digital copy of your latest site plan AND a signed copy of your conditions of approval. Please submit these items as soon as possible. The project will now proceed to the following meeting:

Town Council: April 5, 2021 at 6:00pm

Please let me know if you have any questions or need further assistance.

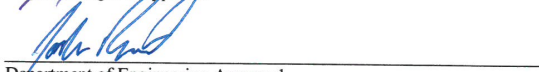
Thank you,

Lori Bryant
Development Services Coordinator
Lbryant@townofclaytonnc.org
(919) 359-9337

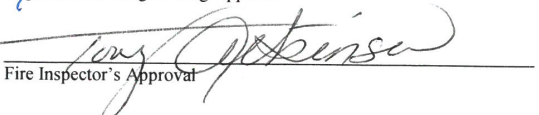
Staff Approval:


Project Manager's Approval

3/12/2021
Date

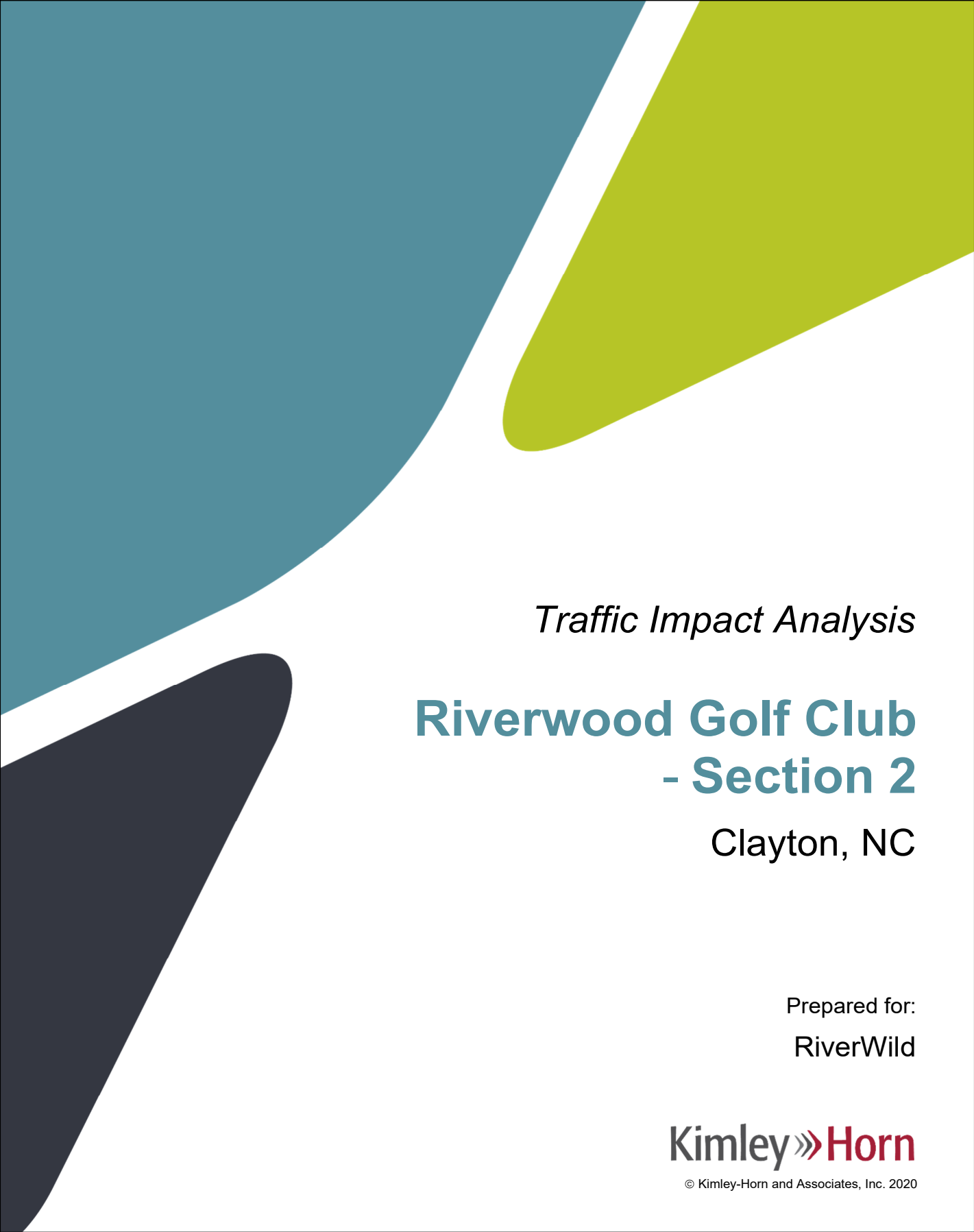

Department of Engineering Approval

3/22/2021
Date


Fire Inspector's Approval

03-12-2021
Date

Updated February 2019



Traffic Impact Analysis

Riverwood Golf Club - Section 2

Clayton, NC

Prepared for:
RiverWild

Kimley»Horn

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Traffic Impact Analysis for
Riverwood Golf Club – Section 2
Clayton, North Carolina

Prepared for:

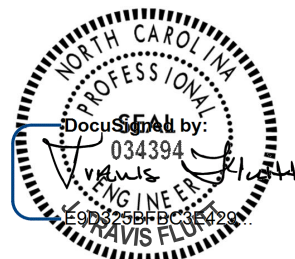
**RiverWild
Clayton, NC**

Prepared by:

**Kimley-Horn and Associates, Inc.
NC License #F-0102
421 Fayetteville Street, Suite 600
Raleigh, NC 27601
(919) 677-2000**

September 2020

014163001



9/28/2020

This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.

Executive Summary

Kimley-Horn and Associates, Inc. has prepared a Traffic Impact Analysis (TIA) for the proposed Riverwood Golf Club - Section 2 development located on both sides of Castleberry Road generally between Stewart's Knob Drive and Riverbend Drive in Clayton, North Carolina. The proposed development is expected to include approximately 435 single-family homes, 75 townhomes, and 220 apartments. The site is proposed to be accessed via the extension of Stewart's Knob Drive as well as additional access points along Castleberry Road. One of these street connections will extend from Castleberry Road to Riverwood Drive in the vicinity of Riverwood Golf Club. Build-out of the development is anticipated in the year 2030.

NC 42 is currently being widened to a four-lane, median-divided roadway through the study area (along with other geometric and traffic signal improvements) as part of North Carolina Department of Transportation (NCDOT) State Transportation Improvement Program (STIP) Project R-3825B widen. These improvements were included in each of the traffic conditions.

This report presents trip generation, distribution, traffic analyses, and recommendations for transportation improvements required to meet anticipated traffic demands in conjunction with the Riverwood Golf Club - Section 2 development. The traffic conditions studied include the existing (2020) traffic condition and the projected (2030) background and build-out traffic conditions.

As shown in [Table ES-1](#), the development has the potential to generate 5,746 new daily trips, with 424 new trips during the AM peak hour and 557 new trips during the PM peak hour.

Table ES-1									
ITE Traffic Generation (Vehicles)									
Land Use Code	Land Use	Intensity		Daily		AM Peak Hour		PM Peak Hour	
				In	Out	In	Out	In	Out
210	Single-Family Detached Housing	435	d.u.	2,011	2,011	79	235	263	154
220	Multifamily Housing (Low-Rise)	75	d.u.	263	263	8	28	29	17
221	Multifamily Housing (Mid-Rise)	220	d.u.	599	599	19	55	57	37
Net New External Trips				2,873	2,873	106	318	349	208

Capacity analyses were performed using Synchro Version 10 software. [Table ES-2](#) summarizes the operation of the study intersections for the AM and PM peak hour traffic conditions.

Table ES-2 Level-of-Service Summary		
Condition	AM Peak Hour LOS (Delay)	PM Peak Hour LOS (Delay)
NC 42 at Castleberry Road (Signalized)		
Existing (2020) Traffic – with Committed Improvements by NCDOT	B (14.0)	A (9.7)
Background (2030) Traffic – with Committed Improvements by NCDOT	B (19.9)	B (17.2)
Build-out (2030) Traffic – with Committed Improvements by NCDOT	C (32.5)	C (32.4)
Castleberry Road at Stewart's Knob Drive (Unsignalized)		
Existing (2020) Traffic	EB – A (9.9) NBL – A (7.7)	EB – A (9.5) NBL – A (7.6)
Background (2030) Traffic	EB – B (10.4) NBL – A (7.8)	EB – B (10.2) NBL – A (7.7)
Build-out (2030) Traffic – with Recommended Improvements	EB – B (13.7) NBL – A (8.4)	EB – B (12.8) NBL – A (8.3)
Castleberry Road at Pod E Driveway/Riverbend Driveway (Unsignalized)		
Existing (2020) Traffic	SB – B (10.4) SBL – A (7.6)	WB – A (9.9) SBL – A (7.6)
Background (2030) Traffic	SB – B (11.3) SBL – A (7.7)	WB – B (10.9) SBL – A (7.8)
Build-out (2030) Traffic	EB – B (12.6) WB – B (13.6) NBL – A (7.8) SBL – A (7.9)	EB – B (13.2) WB – B (13.7) NBL – A (7.9) SBL – A (7.9)
Covered Bridge Road at Castleberry Road (Unsignalized)		
Existing (2020) Traffic	NB – E (46.9) WBL – A (8.4)	NB – F (197.9) WBL – B (10.6)
Background (2030) Traffic	NB – F (>500) WBL – A (9.4)	NB – F (>500) WBL – C (15.4)
Build-out (2030) Traffic	NB – F (>500) WBL – A (9.6)	NB – F (>500) WBL – C (15.7)

Table ES-2 (cont.) Level-of-Service Summary		
Condition	AM Peak Hour LOS (Delay)	PM Peak Hour LOS (Delay)
Castleberry Road at Pod J Driveway/Pod H South Driveway (Unsignalized)		
Build-out (2030) Traffic	EB – B (12.9)	EB – B (13.3)
	WB – C (16.1)	WB – C (18.9)
	NBL – A (8.2)	NBL – A (8.1)
	SBL – A (7.9)	SBL – A (8.2)
Castleberry Road at Pod F Driveway/Pod H North Driveway (Unsignalized)		
Build-out (2030) Traffic	EB – B (12.8)	EB – B (13.7)
	WB – C (15.6)	WB – C (18.7)
	NBL – A (7.9)	NBL – A (8.1)
	SBL – A (7.8)	SBL – A (7.9)
Riverwood Drive at Riverwood Connection (Unsignalized)		
Build-out (2030) Traffic	WB – A (8.7)	WB – A (8.7)
	SBL – A (7.3)	SBL – A (7.3)

Committed Improvements

The following improvements are currently being performed as part of NCDOT STIP Project R-3825B and were included in each of the traffic conditions for this analysis:

NC 42:

- Widen NC 42 to a four-lane divided roadway through the study area, including a median limiting the intersection of E. School Road/Bennett Place to a directional crossover

NC 42 at Castleberry Road:

- Construct an exclusive eastbound left-turn lane on NC 42 with 525 feet of storage and appropriate tapers
- Construct an exclusive westbound U-turn lane on NC 42 with 475 feet of storage and appropriate tapers
- Construct an exclusive westbound right-turn lane on NC 42 with 550 feet of storage and appropriate tapers
- Widen the southbound approach of Castleberry Road to provide a shared left/right lane with 350 feet of storage and appropriate tapers and an exclusive right-turn lane
- Install a traffic signal to accommodate the committed laneage

Recommended Improvements

In addition to the improvements currently under construction as part of TIP Project R-3825B, the following improvements are recommended to be performed to accommodate site traffic volumes:

Castleberry Road at Stewart's Knob Drive:

- Construct a northbound left-turn lane on Castleberry Road with 75 feet of storage and appropriate tapers

Castleberry Road at Riverbend Driveway/Pod E Driveway:

- Construct the Pod E Driveway with one ingress lane and one egress lane

Castleberry Road at Pod J Driveway/Pod H South Driveway:

- Construct the Pod J Driveway with one ingress lane and one egress lane
- Construct the Pod H South Driveway with one ingress lane and one egress lane
- Construct a northbound left-turn lane on Castleberry Road with 50 feet of storage and appropriate tapers

Castleberry Road at Pod F Driveway/Pod H North Driveway:

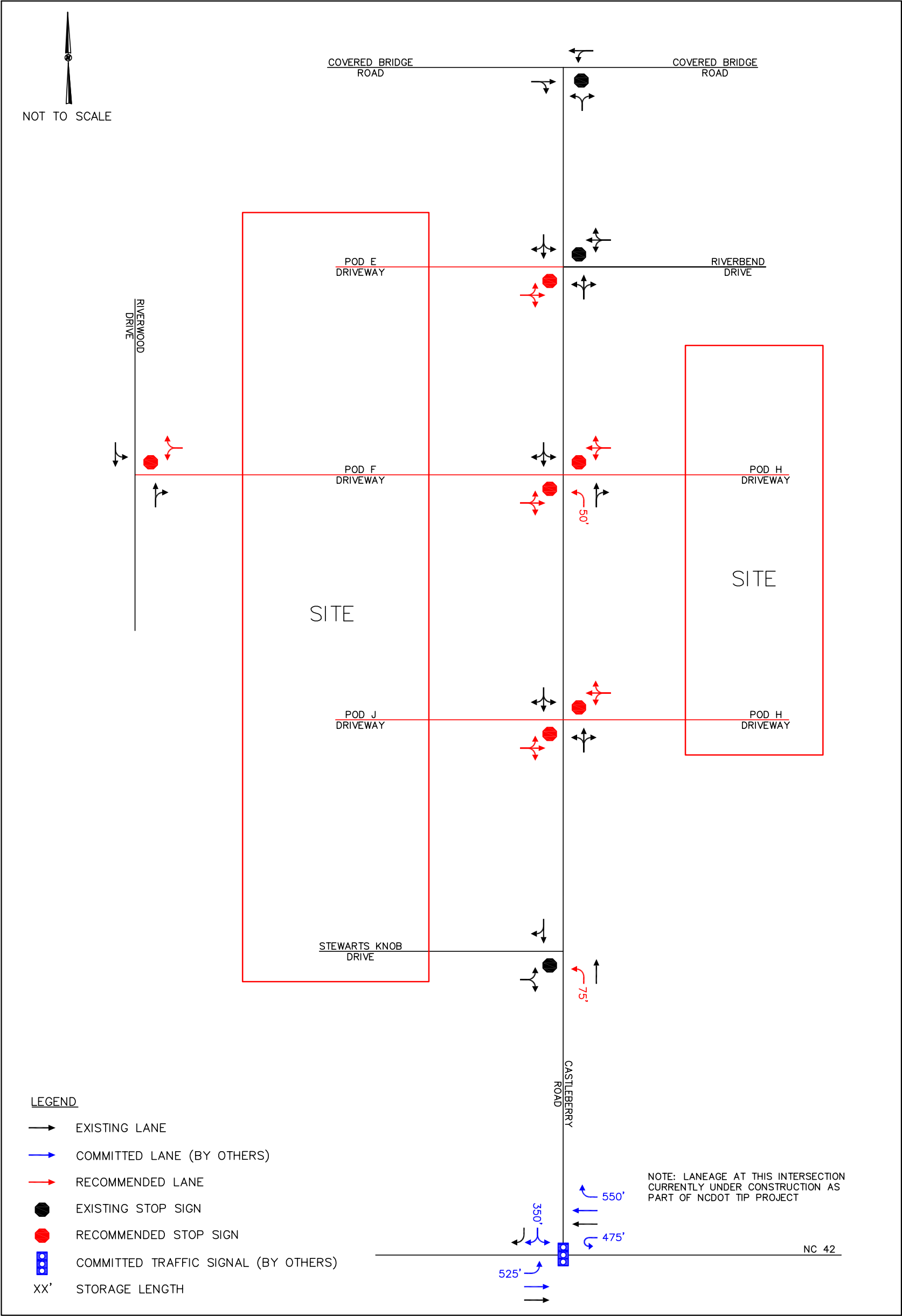
- Construct the Pod F Driveway with one ingress lane and one egress lane
- Construct the Pod H North Driveway with one ingress lane and one egress lane

Riverwood Drive at Riverwood Connection:

- Construct the Riverwood Connection at Riverwood Drive with one ingress lane and one egress lane

Analyses indicate that with the committed and recommended improvements in place, all of the study intersections are expected to operate at acceptable LOS at project build-out with the exception of the intersection of Covered Bridge Road at Castleberry Road. However, as that intersection is expected to operate with long delays in the study year 2030 with or without the proposed project in place, no improvements are recommended to be performed at that intersection as part of this project.

The committed and recommended roadway laneage is shown on **Figure ES-1**.



	RIVERWOOD GOLF CLUB - SECTION 2 CLAYTON, NC TRAFFIC IMPACT ANALYSIS	RECOMMENDED AND COMMITTED ROADWAY LANEAGE	FIGURE ES-1
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1.0 Introduction

Kimley-Horn and Associates, Inc. has prepared a Traffic Impact Analysis (TIA) for the proposed Riverwood Golf Club - Section 2 development located on both sides of Castleberry Road generally between Stewart's Knob Drive and Riverbend Drive in Clayton, North Carolina. The proposed development is expected to include approximately 435 single-family homes, 75 townhomes, and 220 apartments. The site is proposed to be accessed via the extension of Stewart's Knob Drive as well as additional access points along Castleberry Road. One of these street connections will extend from Castleberry Road to Riverwood Drive in the vicinity of Riverwood Golf Club. Build-out of the development is anticipated in the year 2030.

NC 42 is currently being widened to a four-lane, median-divided roadway through the study area (along with other geometric and traffic signal improvements) as part of North Carolina Department of Transportation (NCDOT) State Transportation Improvement Program (STIP) Project R-3825B widen. These improvements were included in each of the traffic conditions.

This report presents trip generation, distribution, traffic analyses, and recommendations for transportation improvements required to meet anticipated traffic demands in conjunction with the Riverwood Golf Club - Section 2 development. The traffic conditions studied include the existing (2020) traffic condition and the projected (2030) background and build-out traffic conditions.

Town of Clayton and NCDOT staff provided background data and were consulted regarding the elements to be covered in this analysis. The TIA Scoping Documents are included in the Appendix.

2.0 Inventory

2.1 Study Area

The study area for this development includes the following intersections:

- NC 42 at Castleberry Road
- Castleberry Road at Stewart's Knob Drive
- Castleberry Road at Riverbend Drive/Pod E Driveway
- Covered Bridge Road at Castleberry Road
- Castleberry Road at Pod J Driveway/Pod H South Driveway
- Castleberry Road at Pod F Driveway/Pod H North Driveway
- Riverwood Drive at Riverwood Connection

Figure 2.1 shows the site location, and the conceptual site plan is shown on **Figure 2.2**

2.2 Existing Conditions

The Riverwood Golf Club - Section 2 project is proposed to be located along Castleberry Road generally between Stewart's Knob Drive and Riverbend Drive in Clayton, North Carolina. Roadways in the area include NC 42, Covered Bridge Road, Castleberry Road, Riverwood Drive, Stewart's Knob Drive, and Riverbend Drive. The existing roadway laneage is shown in **Figure 2.3**.

NC 42 is generally a two-lane undivided roadway in the study area with a posted speed limit of 55 mph. NC 42 is currently being widened to a four-lane divided roadway through the study area as part of NCDOT Projects R-3825A & R-3825B. The reported 2017 annual daily traffic (ADT) volume from NCDOT was 24,000 vehicles per day (vpd) northeast of US 70 Business.

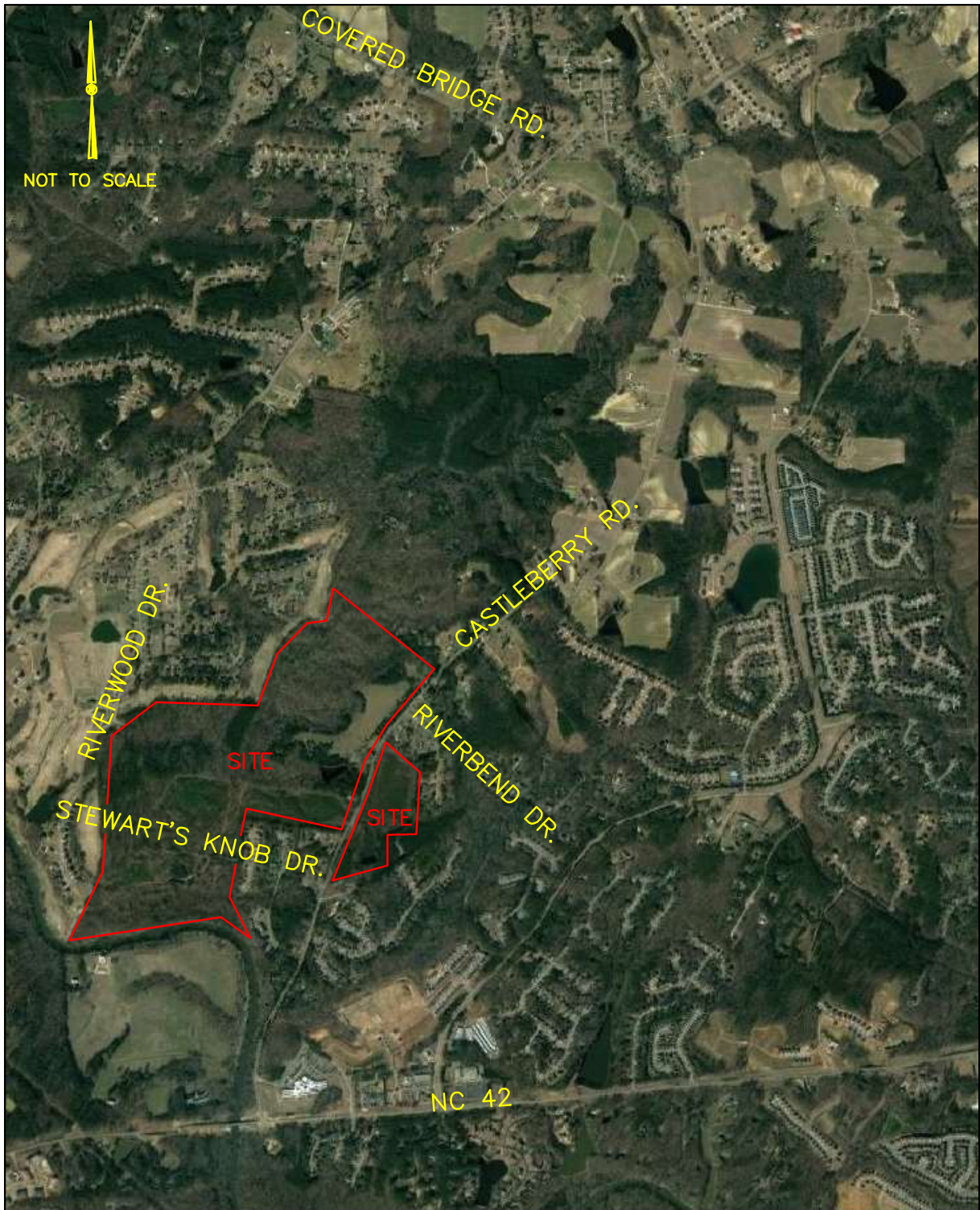
Covered Bridge Road is a two-lane undivided roadway with a posted speed limit of 45 mph. The reported 2017 ADT volume was approximately 6,400 vpd east of Castleberry Road.

Castleberry Road is a two-lane undivided roadway with a posted speed limit of 55 mph north of Stewart's Knob Drive and 45 mph south of Stewart's Knob Drive. The reported 2017 ADT volume was reported to be 2,400 vpd south of Covered Bridge Road.

Riverwood Drive is a two-lane undivided roadway with a posted speed limit of 25 mph. The estimated existing ADT volume is assumed to be more than 2,000 vpd.

Stewart's Knob Drive is a two-lane undivided roadway with an assumed speed limit of 25 mph. The existing ADT volume is assumed to be less than 1,000 vpd.

Riverbend Drive is a two-lane undivided roadway with a posted speed limit of 25 mph. The existing ADT volume is assumed to be less than 1,000 vpd.



Kimley»Horn

RIVERWOOD GOLF CLUB –
SECTION 2
CLAYTON, NC
TRAFFIC IMPACT ANALYSIS

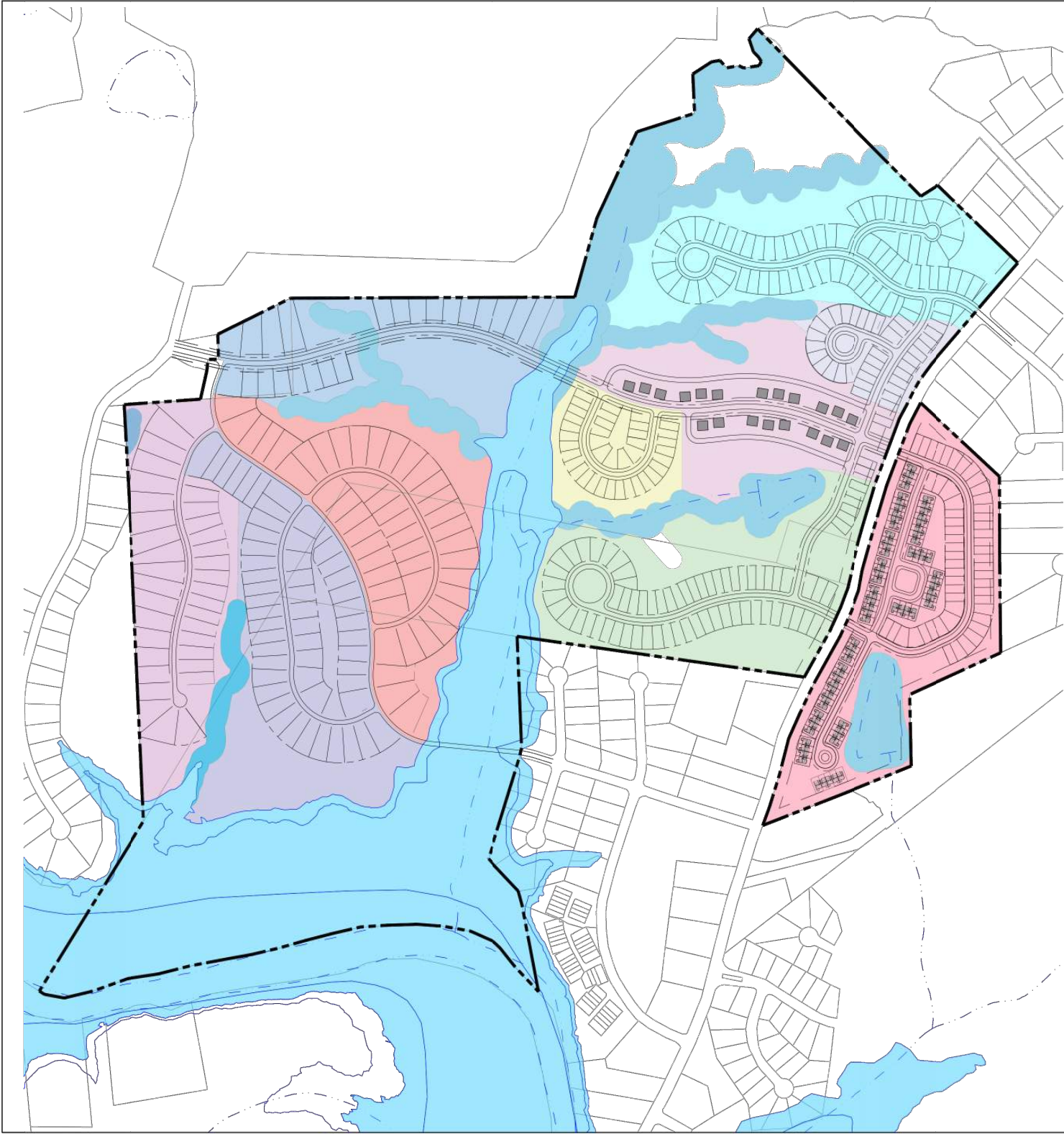
SITE LOCATION

FIGURE
2.1

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Client:

RIVERWILD
114 W. MAIN STREET
CLAYTON, NC 27520

Consultants:

SOIL & ENVIRONMENTAL CONSULTANTS, PA
NORTH QUARTER OFFICE PARK
RALEIGH, NC 27615

KIMLEY HORN
421 FAYETTEVILLE ST SUITE 600
RALEIGH, NC 27601

Vicinity map:

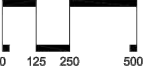


NORTH

Seal:

PRELIMINARY - DO NOT
USE FOR CONSTRUCTION





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SCALE: 1" = 250'



NORTH

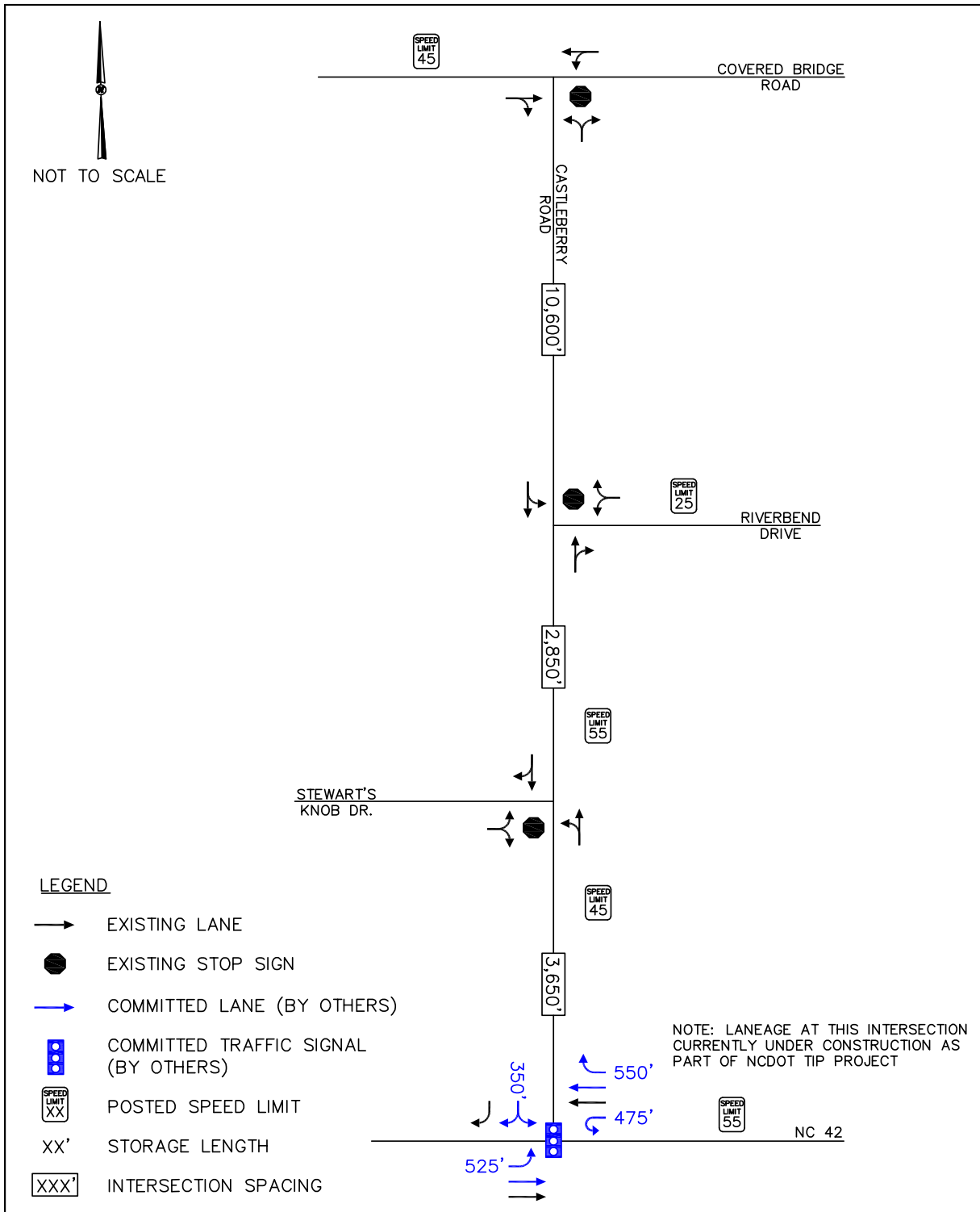
Project:

HOLLOWAY
MASTER PLAN

Issued for:

MASTER PLAN

No.	Date	Description
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291	03/11/44	Revised
292	04/11/44	Revised
293	05/11/44	Revised
294	06/11/44	Revised
295	07/11/44	Revised
296	08/11/44	Revised
297	09/11/44	Revised
298	10/11/44	Revised
299	11/11/44	Revised
300	12/11/44	Revised
301	01/11/45	Revised
302	02/11/45	Revised
303	03/11/45	Revised
304	04/11/45	Revised
305	05/11/45	Revised
306	06/11/45	Revised
307	07/11/45	Revised
308	08/11/45	Revised
309	09/11/45	Revised
310	10/11/45	Revised
311	11/11/45	Revised
312	12/11/45	Revised
313	01/11/46	Revised
314	02/11/46	Revised
315	03/11/46	Revised
316	04/11/46	Revised
317	05/11/46	Revised
318	06/11/46	Revised
319	07/11/46	Revised
320	08/11/46	Revised
321	09/11/46	Revised
322	10/11/46	Revised
323	11/11/46	Revised
324	12/11/46	Revised
325	01/11/47	Revised
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343	07/11/48	Revised
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346	10/11/48	Revised
347	11/11/48	Revised
348	12/11/48	Revised
349	01/11/49	Revised
350	02/11/49	Revised
351	03/11/49	Revised
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353	05/11/49	Revised
354	06/11/49	Revised
355	07/11/49	Revised
356	08/11/49	Revised
357	09/11/49	Revised
358	10/11/49	Revised
359	11/11/49	Revised
360	12/11/49	Revised
361	01/11/50	Revised
362	02/11/50	Revised
363	03/11/50	Revised
364	04/11/50	Revised
365	05/11/50	Revised



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RIVERWOOD GOLF CLUB –
SECTION 2
CLAYTON, NC
TRAFFIC IMPACT ANALYSIS

EXISTING ROADWAY LANEAGE

FIGURE
2.3

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3.0 Traffic Generation

The traffic generation potential of the Riverwood Golf Club - Section 2 development was determined using the traffic generation rates published in *Trip Generation* (Institute of Transportation Engineers, Tenth Edition, 2017). As currently envisioned, the proposed development is expected to include approximately 435 single-family homes, 75 townhomes, and 220 apartments. Trip generation calculations for the site are shown below in [Table 3.1](#).

Table ES-1 ITE Traffic Generation (Vehicles)									
Land Use Code	Land Use	Intensity		Daily		AM Peak Hour		PM Peak Hour	
				In	Out	In	Out	In	Out
210	Single-Family Detached Housing	435	d.u.	2,011	2,011	79	235	263	154
220	Multifamily Housing (Low-Rise)	75	d.u.	263	263	8	28	29	17
221	Multifamily Housing (Mid-Rise)	220	d.u.	599	599	19	55	57	37
Net New External Trips				2,873	2,873	106	318	349	208

As shown in Table 3.1, the development has the potential to generate 5,746 new daily trips, with 424 new trips during the AM peak hour and 557 new trips during the PM peak hour.

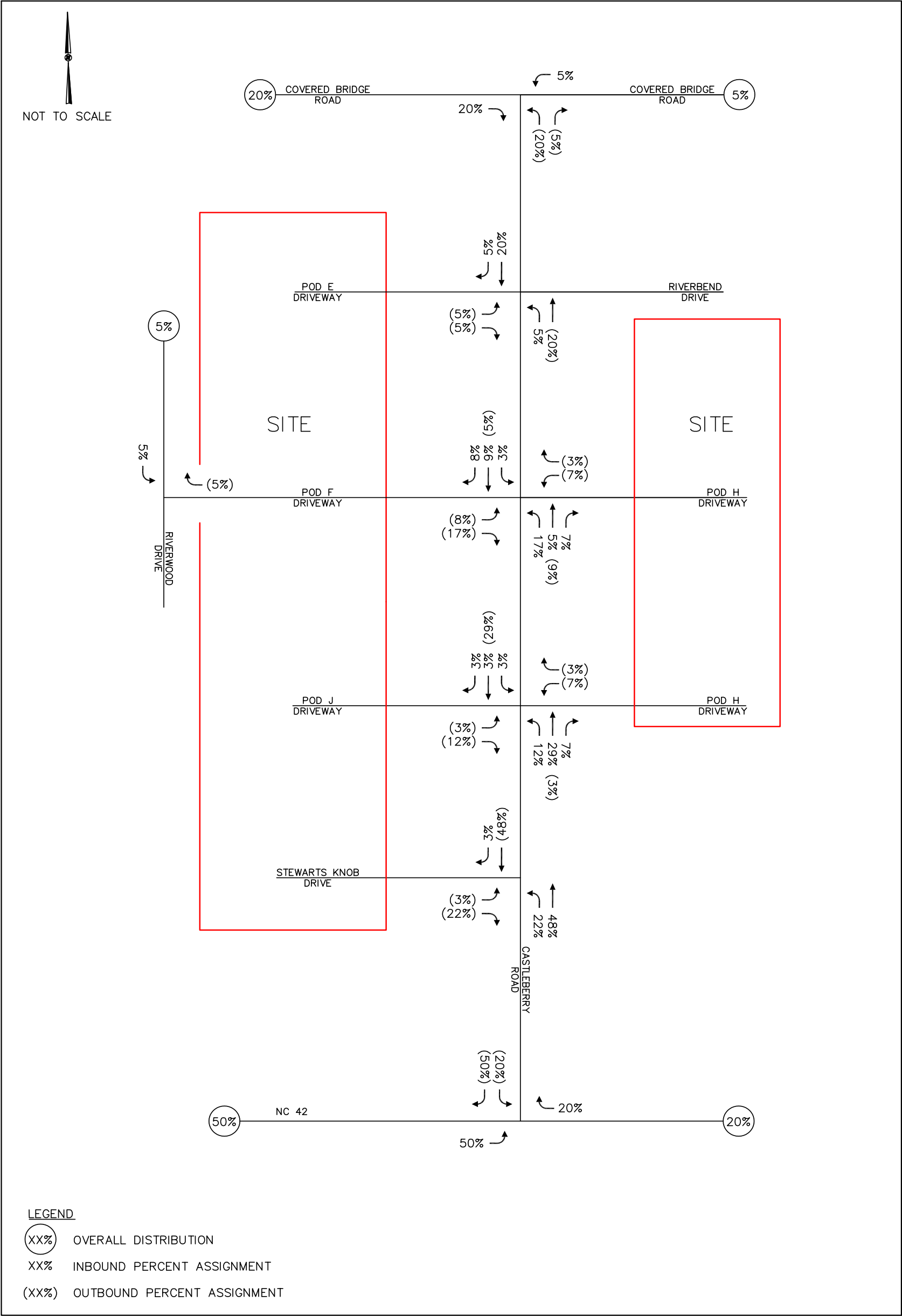
Detailed trip generation calculations are included in the Appendix of this report.

4.0 Site Traffic Distribution

The projected site-generated trips were assigned to the surrounding roadway network. The directional distribution and assignment for this development were based on a review of surrounding land uses and discussions with NCDOT and the Town of Clayton. The following overall distribution was used for the development:

- 50% to/from the west on NC 42
- 20% to/from the east on NC 42
- 20% to/from the west on Covered Bridge Road
- 5% to/from the east on Covered Bridge Road
- 5% to/from the north on Riverwood Drive

Figure 4.1 shows the site traffic distribution and percent assignment for the project.



	RIVERWOOD GOLF CLUB – SECTION 2 CLAYTON, NC TRAFFIC IMPACT ANALYSIS	SITE TRAFFIC DISTRIBUTION AND PERCENT ASSIGNMENT	FIGURE 4.1
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5.0 Projected Traffic Volumes

5.1 Existing Traffic

AM peak hour (7:00 to 9:00 AM) and PM peak hour (4:00 to 6:00 PM) turning movement counts were obtained from NCDOT at the following intersection:

- NC 42 at Castleberry Road December 6, 2018

To estimate existing peak hour traffic volumes, a 3% annual growth rate was applied to the turning movement count volumes at this intersection up to the study year 2020.

AM peak hour (7:00 to 9:00 AM) and PM peak hour (4:00 to 6:00 PM) turning movement counts were performed at the following intersection:

- Covered Bridge Road at Castleberry Road August 25, 2020

To account for impacts to traffic volumes associated with COVID-19 closures, previously collected turning movement counts at the adjacent intersection of Covered Bridge Road at Pritchard Road were reviewed to compare arriving and departing trips in the peak hours. Based on that volume review, peak hour counts at this intersection were increased by 30% to estimate existing year traffic volumes.

To estimate existing peak hour volumes onto and off of Stewart's Knob Drive, trip generation was performed for 45 single-family homes, with 20% of those trips assumed to/from the north and 80% of those trips to and from the south. Similarly, existing peak hour volumes onto and off of Riverbend Drive were estimated by performing trip generation for 20 single-family homes, with 20% of those trips assumed to/from the north and 80% of those trips to and from the south.

The existing AM and PM peak hour traffic volumes are shown on **Figure 5.1**, and the traffic count data are included in the Appendix.

5.2 NCDOT TIP Project R-3825B

NCDOT is currently widening NC 42 to a four-lane, median-divided roadway (in addition to other geometric and traffic signal improvements) through the study area as part of STIP Project R-3825B. Traffic volume forecast data was obtained from the "R-3825B – NC 42 Widening Traffic Capacity Analysis" (AECOM, March 2016) and future roadway laneage was obtained from the R-3825 Roadway Plans (URS, August 2018) provided by NCDOT. Roadway improvements, which are currently under construction, were included in each of the study conditions per discussions with NCDOT, and forecast data was interpolated to determine projected (2030) background traffic volumes at the intersection of NC 42 at Castleberry Road. Forecast volumes were balanced through the existing study intersections along Castleberry Road, with volumes at the intersection of Covered Bridge Road at Castleberry Road balanced based on

existing traffic patterns at that intersection. To be conservative, through volumes on Covered Bridge Road were increased by an additional 5% to reflect volume balancing with forecast volumes. TIP project information is included in the Appendix of this report.

Weekday AM and PM peak hour volumes for the background traffic condition, developed per a review of NCDOT TIP forecast volumes, are shown on **Figures 5.2 and 5.3**.

5.3 Site Traffic

Project site traffic was generated and assigned to the adjacent roadway network according to the distribution discussed previously in *Section 4.0*. AM and PM peak hour site traffic volumes are shown on **Figures 5.2 and 5.3** for the AM and PM peak hours, respectively.

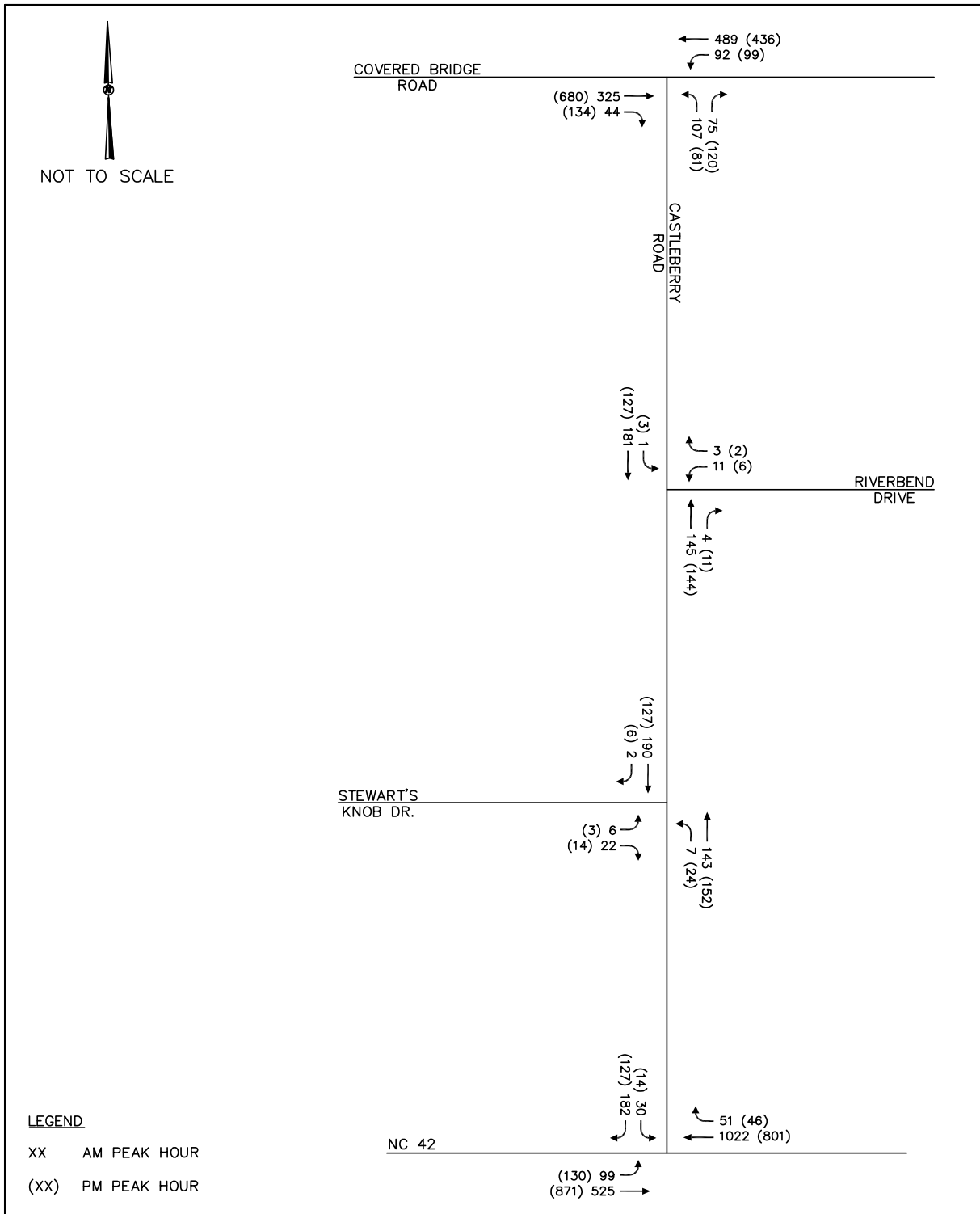
To be conservative, forecast volumes were not reduced for this analysis even though the forecast is assumed to have accounted for some development on the Riverwood Golf Club - Section 2 development parcels.

5.4 Riverwood Traffic Diversions

A connection between Castleberry Road (at the Pod E Driveway) and Riverbend Drive is proposed to be constructed as part of this project, and it is expected that some traffic from the Riverwood Golf Club community would use that new connection as an alternate route to NC 42 via Castleberry Road. For this analysis, that diversion was assumed to be equivalent to traffic generated by 50 single-family homes, which is 25% of the approximately 200 parcels in the Riverwood community south of Southmont Street along Riverwood Drive, Linwood Lane, Marcellus Way, and Trantham Trail. Those AM and PM peak hour traffic diversions are shown on **Figures 5.2 and 5.3** for the AM and PM peak hours, respectively.

5.5 Build-Out Traffic

Projected build-out traffic volumes include background traffic volumes, total site traffic, and Riverwood Drive traffic diversions. Traffic volume calculations are detailed in intersection spreadsheets in the Appendix of this report. The projected (2030) AM and PM peak hour build-out volumes are shown on **Figures 5.2 and 5.3**, respectively.



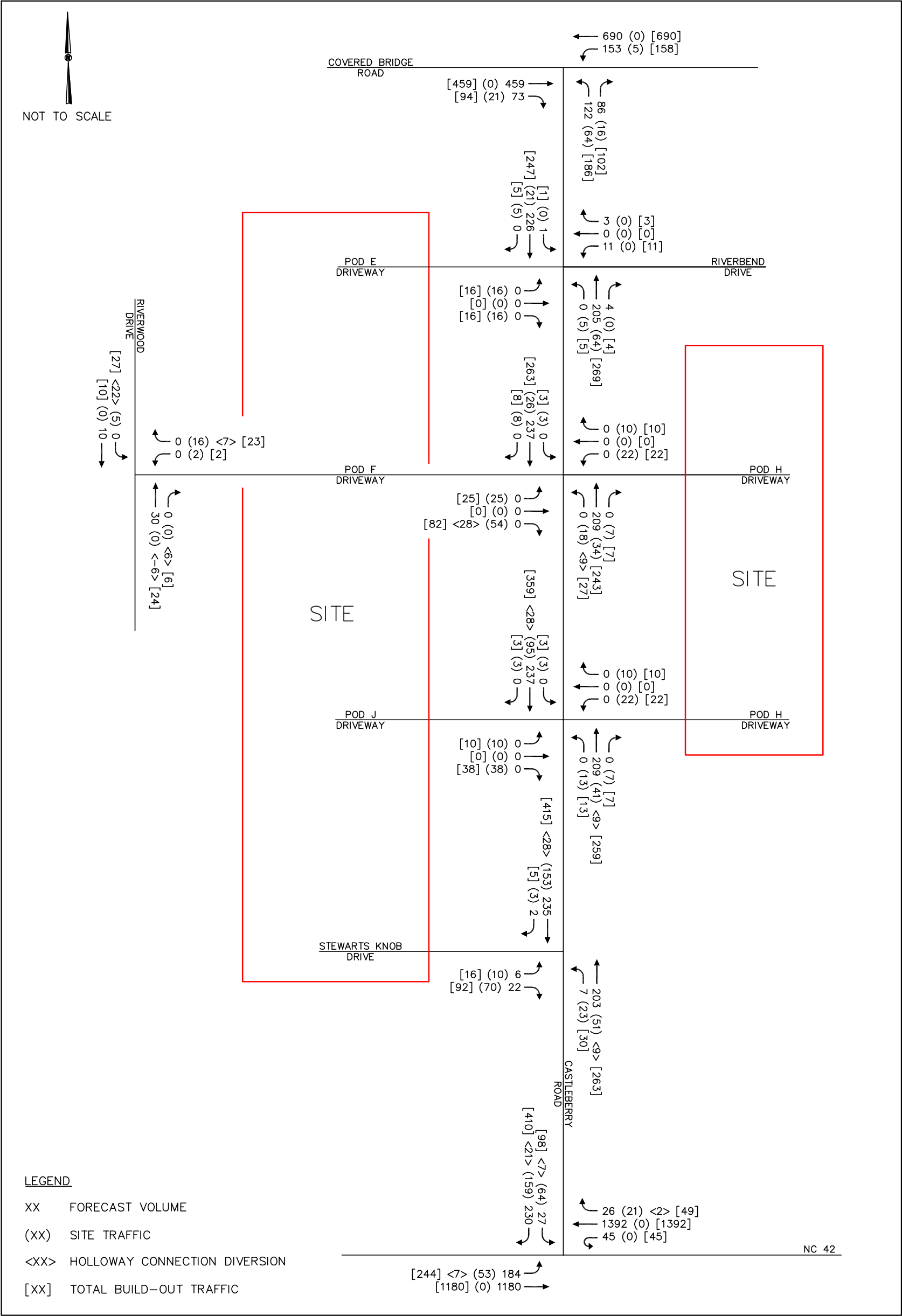
Kimley»Horn

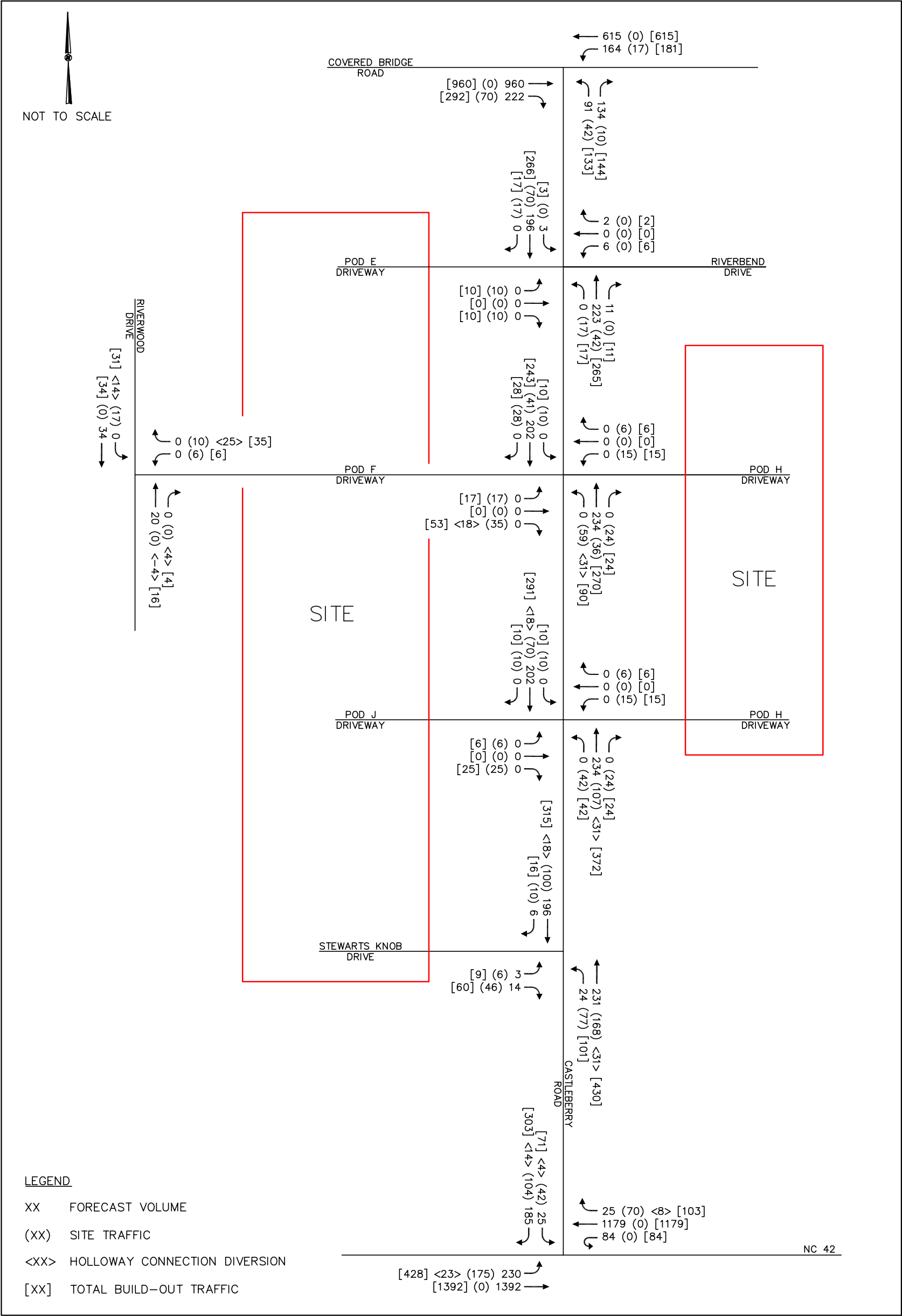
RIVERWOOD GOLF CLUB –
SECTION 2
CLAYTON, NC
TRAFFIC IMPACT ANALYSIS

EXISTING PEAK HOUR
TRAFFIC VOLUMES

FIGURE
5.1

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Kimley»Horn	RIVERWOOD GOLF CLUB - SECTION 2 CLAYTON, NC TRAFFIC IMPACT ANALYSIS	PROJECTED (2030) BACKGROUND AND BUILD-OUT PM PEAK HOUR TRAFFIC VOLUMES	FIGURE 5.3
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6.0 Capacity Analysis

Capacity analyses were performed for the AM and PM peak hours for the existing (2020) traffic condition and the projected (2030) background and build-out traffic conditions at the study intersections using Synchro Version 10 software to determine the operating characteristics of the adjacent road network and the impacts of the proposed project.

Capacity is defined as the maximum number of vehicles that can pass over a particular road segment or through a particular intersection within a set time duration. Capacity is combined with Level-of-Service (LOS) to describe the operating characteristics of a road segment or intersection. LOS is a qualitative measure that describes operational conditions and motorist perceptions within a traffic stream. The *Highway Capacity Manual (HCM)* defines six levels of service, LOS A through LOS F, with A representing the shortest average delays and F representing the longest average delays. LOS D is the typically accepted standard for signalized intersections in urbanized areas. For signalized intersections, LOS is defined for the overall intersection operation.

For unsignalized intersections, only the movements that must yield right-of-way experience control delay. Therefore, LOS criteria for the overall intersection is not reported by Synchro/SimTraffic Version 10 or computable using methodology published in the *HCM*. It is typical for stop sign controlled side streets and driveways intersecting major streets to experience long delays during peak hours, while the majority of the traffic moving through the intersection on the major street experiences little or no delay. Table 6.0 lists the LOS control delay thresholds published in the *HCM* for signalized and unsignalized intersections.

Table 6.0 Level-of-Service Control Delay Thresholds			
Level-of-Service	Signalized Intersections – Control Delay Per Vehicle [sec/veh]	Unsignalized Intersections – Average Control Delay [sec/veh] & Qualitative Operational Description	
A	≤ 10	≤ 10	Short Delays
B	> 10 – 20	> 10 – 15	
C	> 20 – 35	> 15 – 25	
D	> 35 – 55	> 25 – 35	Moderate Delays
E	> 55 – 80	> 35 – 50	
F	> 80	> 50	Long Delays

A peak hour factor (PHF) of 0.90 was used for all turning movements except for the westbound U-turn on NC 42 at Castleberry Road, where a PHF of 0.50 was used in the AM peak hour in future conditions to account for diverted East Clayton Elementary School traffic. Per NCDOT guidance, right-turns on red (RTOR) were prohibited unless otherwise noted. Additionally, while actual volumes are shown in the figures, a minimum volume of 4 vehicles was used for intersection movements in Synchro even if existing or projected volumes were found to be lower. Signal plans were obtained from NCDOT and signal timings were optimized for each traffic condition. Synchro scenarios and file descriptions are included in the Appendix of this report.

6.1 NC 42 at Castleberry Road

The following improvements associated with NCDOT TIP Project R-3825B are currently under construction at the intersection of NC 42 at Castleberry Road and were included in each of the traffic conditions per direction from NCDOT:

- Widen NC 42 to a four-lane divided roadway through the study area, including a median limiting the intersection of E. School Road/Bennett Place to a directional crossover
- Construct an exclusive eastbound left-turn lane on NC 42 with 525 feet of storage
- Construct an exclusive westbound U-turn lane on NC 42 with 475 feet of storage
- Construct an exclusive westbound right-turn lane on NC 42 with 550 feet of storage
- Widen the southbound approach of Castleberry Road to provide a shared left/right lane with 350 feet of storage and appropriate tapers and an exclusive right-turn lane
- Install a traffic signal to accommodate the committed laneage

Analyses indicate that this intersection is expected to operate at LOS C or better in each of the study traffic conditions, and no queuing issues are expected at this intersection. As RTOR are not planned to be prohibited at this intersection per the signal design plans, additional analyses were performed with RTOR permitted. These analyses indicate shorter queues and delays are expected in each condition compared to scenarios prohibiting RTOR.

No improvements are recommended to be performed as part of the Riverwood Golf Club - Section 2 project at this intersection.

Table 6.1 summarizes the operation of the intersection of NC 42 at Castleberry Road for the existing (2020) and projected (2030) background and build-out traffic conditions.

Table 6.1 Level-of-Service NC 42 at Castleberry Road (Signalized)		
Condition	AM Peak Hour LOS (Delay)	PM Peak Hour LOS (Delay)
Existing (2020) Traffic	B (14.0)	A (9.7)
Background (2030) Traffic – with Committed Improvements by NCDOT	B (19.9)	B (17.2)
Build-out (2030) Traffic – with Committed Improvements by NCDOT	C (32.5)	C (32.4)
Existing (2020) Traffic <i>with RTOR</i>	A (7.4)	A (5.6)
Background (2030) Traffic – with Committed Improvements by NCDOT <i>with RTOR</i>	B (11.8)	B (10.8)
Build-out (2030) Traffic – with Committed Improvements by NCDOT <i>with RTOR</i>	C (24.7)	C (24.7)

6.2 Castleberry Road at Stewart's Knob Drive

Analyses indicate that the unsignalized intersection of Castleberry Road at Stewart's Knob Drive currently operates with short delays on the unsignalized approach (Stewart's Knob Drive) in the AM and PM peak hours. The intersection is expected to continue to operate with short delays in the projected (2030) background traffic condition.

The following improvement is recommended to be performed at this intersection as part of the Riverwood Golf Club - Section 2 development:

- Construct a northbound left-turn lane on Castleberry Road with 75 feet of storage and appropriate tapers

With the recommended improvement in place, this intersection is expected to operate with short delays and queues on the minor street approach in the AM and PM peak hours at project build-out.

Table 6.2 summarizes the operation of the intersection of Castleberry Road at Stewart's Knob Drive for the existing (2020) and projected (2030) background and build-out traffic conditions.

Table 6.2 Level-of-Service Castleberry Road at Stewart's Knob Drive (Unsignalized)		
Condition	AM Peak Hour LOS (Delay)	PM Peak Hour LOS (Delay)
Existing (2020) Traffic	EB – A (9.9) NBL – A (7.7)	EB – A (9.5) NBL – A (7.6)
Background (2030) Traffic	EB – B (10.4) NBL – A (7.8)	EB – B (10.2) NBL – A (7.7)
Build-out (2030) Traffic – with Recommended Improvements	EB – B (13.7) NBL – A (8.4)	EB – B (12.9) NBL – A (8.3)

6.3 Castleberry Road at Riverbend Drive/Pod E Driveway

Analyses indicate that the unsignalized intersection of Castleberry Road at Riverbend Drive currently operates with short delays on the unsignalized approach (Riverbend Drive) in the AM and PM peak hours. The intersection is expected to continue to operate with short delays in the projected (2030) background traffic condition.

A full-movement driveway (Pod E Driveway) is proposed to align with Riverbend Drive with one ingress lane and one egress lane. Analyses indicate that both minor street approaches are expected to operate with short delays in the projected build-out condition, and no queuing issues are expected at this intersection.

Table 6.3 summarizes the operation of the intersection of Castleberry Road at Riverbend Drive/Pod E Driveway for the existing (2020) and projected (2030) background and build-out traffic conditions.

Table 6.3 Level-of-Service Castleberry Road at Riverbend Drive/Pod E Driveway (Unsignalized)		
Condition	AM Peak Hour LOS (Delay)	PM Peak Hour LOS (Delay)
Existing (2020) Traffic	SB – B (10.4) SBL – A (7.6)	WB – A (9.9) SBL – A (7.6)
Background (2030) Traffic	SB – B (11.3) SBL – A (7.7)	WB – B (10.9) SBL – A (7.8)
Build-out (2030) Traffic	EB – B (12.6) WB – B (13.6) NBL – A (7.8) SBL – A (7.9)	EB – B (13.2) WB – B (13.7) NBL – A (7.9) SBL – A (7.9)

6.4 Covered Bridge Road at Castleberry Road

Analyses indicate that the unsignalized intersection of Covered Bridge Road at Castleberry Road currently operates with long delays on the minor street approach (Castleberry Road) in both the AM and PM peak hours. The intersection is expected to continue to operate with long delays on the minor street approach in the study year 2030 with or without the proposed project in place.

No improvements are recommended to be performed as part of the Riverwood Golf Club - Section 2 project to accommodate projected traffic volumes.

Table 6.4 summarizes the operation of the intersection of NC 42 at Springbrook Avenue/East Site Driveway for the existing (2020) and projected (2030) background and build-out traffic conditions.

Table 6.4 Level-of-Service Covered Bridge Road at Castleberry Road (Unsignalized)		
Condition	AM Peak Hour LOS (Delay)	PM Peak Hour LOS (Delay)
Existing (2020) Traffic	NB – E (46.9) WBL – A (8.4)	NB – F (197.9) WBL – B (10.6)
Background (2030) Traffic	NB – F (>500) WBL – A (9.4)	NB – F (>500) WBL – C (15.4)
Build-out (2030) Traffic	NB – F (>500) WBL – A (9.6)	NB – F (>500) WBL – C (15.7)

6.5 Castleberry Road at Pod J Driveway/Pod H South Driveway

A full-movement intersection is proposed on Castleberry Road approximately 1,100 feet north of Stewart's Knob Drive. The following improvements are recommended to be performed to accommodate project site traffic:

- Construct the Pod J Driveway with one ingress lane and one egress lane
- Construct the Pod H South Driveway with one ingress lane and one egress lane
- Construct a northbound left-turn lane on Castleberry Road with 50 feet of storage and appropriate tapers

With the recommended improvements in place, analyses indicate that the intersection is expected to operate with short delays and queues on both minor street approaches at project build-out.

Table 6.5 summarizes the operation of the intersection of Castleberry Road at Pod J Driveway/Pod H South Driveway for the projected (2030) build-out traffic condition.

Table 6.5 Level-of-Service Castleberry Road at Pod J Driveway/Pod H South Driveway (Unsignalized)		
Condition	AM Peak Hour LOS (Delay)	PM Peak Hour LOS (Delay)
Build-out (2030) Traffic	EB – B (12.9) WB – C (16.1) NBL – A (8.2) SBL – A (7.9)	EB – B (13.3) WB – C (18.9) NBL – A (8.1) SBL – A (8.2)

6.6 Castleberry Road at Pod F Driveway/Pod H North Driveway

A full-movement intersection is proposed on Castleberry Road approximately 850 feet south of Riverbend Drive. The following improvements are recommended to be performed to accommodate project site traffic:

- Construct the west leg (Pod F Driveway) with one ingress lane and one egress lane
- Construct the east leg (Pod H North Driveway) with one ingress lane and one egress lane

Analyses indicate that the intersection is expected to operate with short delays and queues on both minor street approaches at project build-out.

Table 6.6 summarizes the operation of the intersection of Castleberry Road at Pod F Driveway/Pod H North Driveway for the projected (2030) build-out traffic condition.

Table 6.6 Level-of-Service Castleberry Road at Pod F Driveway/Pod H North Driveway (Unsignalized)		
Condition	AM Peak Hour LOS (Delay)	PM Peak Hour LOS (Delay)
Build-out (2030) Traffic	EB – B (12.8) WB – C (15.6) NBL – A (7.9) SBL – A (7.8)	EB – B (13.8) WB – C (18.9) NBL – A (8.1) SBL – A (7.9)

6.7 Riverwood Drive at Riverwood Connection

A roadway connection is proposed to be constructed as part of the Riverwood Golf Club – Section 2 project to intersect Riverwood Drive approximately 900 feet south of Trantham Trail. The Riverwood Connection is proposed to be constructed as a two-lane roadway, and analyses indicate that the intersection is expected to operate with short delays and queues on the minor street approach (Riverwood Connection) in both peak hours at project build-out.

Table 6.7 summarizes the operation of the intersection of Riverwood Drive at Riverwood Connection for the projected (2030) build-out traffic condition.

Table 6.7 Level-of-Service Riverwood Drive at Riverwood Connection (Unsignalized)		
Condition	AM Peak Hour LOS (Delay)	PM Peak Hour LOS (Delay)
Build-out (2030) Traffic	WB – A (8.7) SBL – A (7.3)	WB – A (8.7) SBL – A (7.3)

7.0 Recommendations

Committed Improvements

The following improvements are currently being performed as part of NCDOT STIP Project R-3825B and were included in each of the traffic conditions for this analysis:

NC 42:

- Widen NC 42 to a four-lane divided roadway through the study area, including a median limiting the intersection of E. School Road/Bennett Place to a directional crossover

NC 42 at Castleberry Road:

- Construct an exclusive eastbound left-turn lane on NC 42 with 525 feet of storage and appropriate tapers
- Construct an exclusive westbound U-turn lane on NC 42 with 475 feet of storage and appropriate tapers
- Construct an exclusive westbound right-turn lane on NC 42 with 550 feet of storage and appropriate tapers
- Widen the southbound approach of Castleberry Road to provide a shared left/right lane with 350 feet of storage and appropriate tapers and an exclusive right-turn lane
- Install a traffic signal to accommodate the committed laneage

Recommended Improvements

In addition to the improvements currently under construction as part of TIP Project R-3825B, the following improvements are recommended to be performed to accommodate site traffic volumes:

Castleberry Road at Stewart's Knob Drive:

- Construct a northbound left-turn lane on Castleberry Road with 75 feet of storage and appropriate tapers

Castleberry Road at Riverbend Driveway/Pod E Driveway:

- Construct the Pod E Driveway with one ingress lane and one egress lane

Castleberry Road at Pod J Driveway/Pod H South Driveway:

- Construct the Pod J Driveway with one ingress lane and one egress lane
- Construct the Pod H South Driveway with one ingress lane and one egress lane
- Construct a northbound left-turn lane on Castleberry Road with 50 feet of storage and appropriate tapers

Castleberry Road at Pod F Driveway/Pod H North Driveway:

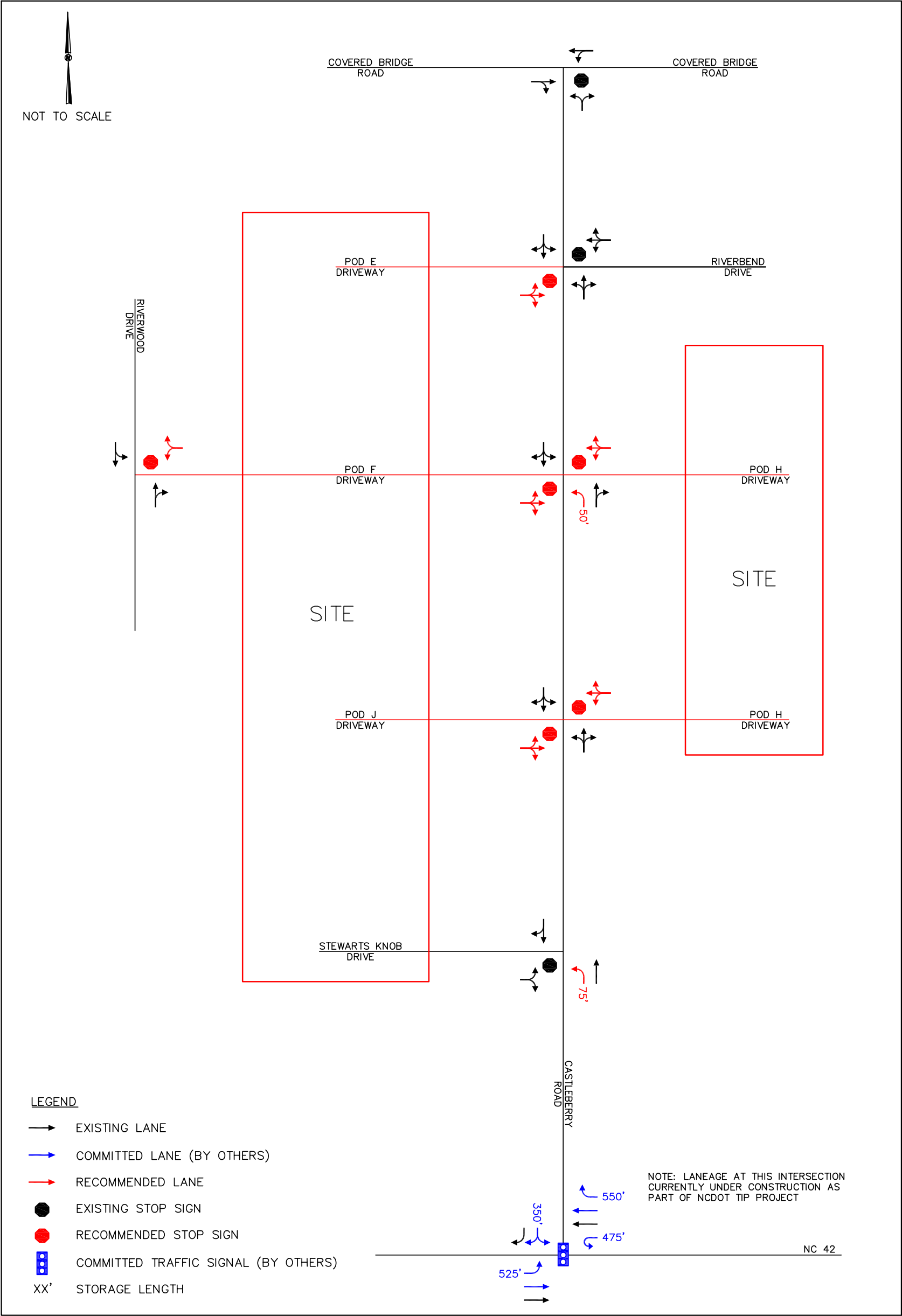
- Construct the Pod F Driveway with one ingress lane and one egress lane
- Construct the Pod H North Driveway with one ingress lane and one egress lane

Riverwood Drive at Riverwood Connection:

- Construct the Riverwood Connection at Riverwood Drive with one ingress lane and one egress lane

Analyses indicate that with the committed and recommended improvements in place, all of the study intersections are expected to operate at acceptable LOS at project build-out with the exception of the intersection of Covered Bridge Road at Castleberry Road. However, as that intersection is expected to operate with long delays in the study year 2030 with or without the proposed project in place, no improvements are recommended to be performed at that intersection as part of this project.

The committed and recommended roadway laneage is shown on **Figure 7.1**.



Kimley»Horn	RIVERWOOD GOLF CLUB - SECTION 2 CLAYTON, NC TRAFFIC IMPACT ANALYSIS	RECOMMENDED AND COMMITTED ROADWAY LANEAGE	FIGURE 7.1
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Appendix

Appendix A:

TIA Scoping Documents



NCDOT Traffic Impact Analysis Need Screening / Scoping Request



TIA Need
Screening



TIA
Scoping



TIA
Submittal

A Traffic Impact Analysis (TIA) may be required for developments based on the site trip generation estimates, site context, or at the discretion of the NCDOT District Engineer. The Applicant or the TIA Consultant shall submit this form along with the site plan to the District Engineer to determine the TIA need and, if a TIA is required, initiate the TIA scoping process. Without an approved scope, the TIA is incomplete and will be rejected until the study is revised to conform to NCDOT's TIA requirements.

Project Name: Holloway Residential **Previous Name:** If Applicable
Location: Castleberry Road at Stewart's Knob Drive **County:** Johnston **Municipality:** Clayton
Project Description: Residential development consisting of single family homes, townhomes, and apartments
☐

Project Contact:	Applicant	TIA Consultant
Company Name	<u>RiverWild</u>	<u>Kimley-Horn</u>
Contact Person	<u>David DeYoung</u>	<u>Travis Fluitt</u>
Phone Number	<u>919-901-3178</u>	<u>919-653-2948</u>
Email	<u>david@theriverwildteam.com</u>	<u>travis.fluitt@kimley-horn.com</u>
Mailing Address	<u>114 W Main Street, Suite 108</u>	<u>421 Fayetteville Street, Suite 600</u>
	<u>Clayton, NC 27520</u>	<u>Raleigh, NC 27601</u>

Site Plan Prepared By: Stewart **Site Plan Date:** May 19, 2020
 See site plan/vicinity map requirements on page 2.
Parcel Size: 215 Acre(s) **Anticipated Build-Out Year:** 2030

Weekday Site Trip Generation - Do NOT adjust for mode split, pass-by, internal capture, or diverted trips.

ITE LUC	Proposed Land Use	Size	Unit	Daily Trips	Peak Hour Type	AM Peak Hour Trips			PM Peak Hour Trips			Data Source
						Enter	Exit	Total	Enter	Exit	Total	
210	Single Family	435	d.u.	4022	Adj. Street	79	235	314	263	154	417	ITE Equation
220	Townhomes	75	d.u.	526	Adj. Street	8	28	36	29	17	46	ITE Equation
221	Apartments	220	d.u.	1198	Adj. Street	19	55	74	57	37	94	ITE Equation
Total				5746		106	318	424	349	208	557	

Refer to the current [NCDOT Congestion Management Capacity Analysis Guidelines](#) for acceptable trip calculation methods and data sources.

**Explain local or other data sources, if used:

- ☒ The estimated site trips meet NCDOT's TIA trip threshold of 3,000 daily trips.
- ☒ The estimated site trips meet the municipal TIA trip threshold of 100 peak hour trips
- ☐ This project is located in a known [STIP](#) and/ or local CIP project #
- ☐ This project includes a rezoning request.



NCDOT Traffic Impact Analysis Need Screening / Scoping Request



TIA Need
Screening

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- ☐ The proposed site access is located within 1,000 feet of an interchange.
- ☐ The Applicant requests for a new or modified control-of-access break.
- ☐ The Applicant requests for a new or modified median break.


Applicant's Signature

David DeYoung
Print Name

8/12/20
Date

Site Plan/Vicinity Map Requirement for TIA Need Screening: While the site plan may not be finalized during the TIA scoping stage, the graphic representation of the proposed development shall provide adequate details on the development scope and context. More specifically, the site plan/map shall clearly show the location and type of each access point, spacing to adjacent and opposing driveways or intersections, internal street network, proposed buildings/parcels with their anticipated uses and sizes at full build-out and, if applicable, any nearby interstate, US, NC or Secondary Roads (SR).

Project Name: Holloway Residential

Project Reference Number: _____

- ☒ **A TIA is Required by the Local Government.** In addition, the study area is expected to include NCDOT maintained transportation facilities.
- ☒ **A TIA is Required by NCDOT,** per the [Policy on Street and Driveway Access to North Carolina Highways](#).

If either or both of the boxes above are checked, the Applicant/TIA Consultant is hereby requested to fill out as much as possible of the following TIA scoping checklist, and return it along with the supporting documents to NCDOT prior to the scoping meeting.

- ☐ **A TIA is NOT required.** This decision is based on the development information presented above. Changes in the development plan will require re-evaluation of the TIA need, and may necessitate a TIA. The Applicant should inform the District Engineer of any significant changes in a timely fashion to avoid delays or rejections of the driveway permit / encroachment agreement applications.

Effective Date: 10/01/2017 (Version 17-721)

Page 2 of 2



NCDOT Traffic Impact Analysis Need Screening / Scoping Request

TIA Need
Screening



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Additional Comments:

The TIA need decision is made by the NCDOT Division ____ District ____ on ____.

NCDOT District Representative's Signature

Email concurrence may be used in lieu of the signature.

Print Name



NCDOT TIA Scoping Checklist



Project Name: Holloway Residential

TIA Scoping Date: 7/7/2020

☒ TIA Need Screening Forms are Attached. Project Reference #: _____ Decision Date: _____

☒ Site Plan and Access

☒ Provide a site plan illustrating site access, internal and external roadways, buildings and land uses.

Refer to NCDOT's [Policy on Street and Driveway Access to North Carolina Highways](#) pages 14 and 15 for site plan requirements.

☒ Identify site access.

New Access	On Road	Access Type		Driveway Spacing		
	Road Name	Permitted Movements	Traffic Control	Distance (ft)	Direction	Nearest Intersection / Access
Access A	Castleberry Rd	Conventional Full-Mvmt	2-Way Stop	1000	North	Stewarts Knob Dr
Access B	Castleberry Rd	Conventional Full-Mvmt	2-Way Stop	950	South	Riverbend Dr
Access C	Castleberry Rd	Conventional Full-Mvmt	2-Way Stop	0		Riverbend Dr
Access D	Riverwood Dr	Conventional Full-Mvmt	2-Way Stop	900	South	Trantham Tr
Access E						
Access F						
Access G						
Access H						

Existing Access	Existing Intersection of		Access Modification	Proposed Interconnectivity (If Applicable)		
	Road A	Road B		Connector #	Road Connected	Adjacent Development
Access 1	Castleberry Rd	Stewarts Knob Dr	N/A	Connector 1		
Access 2				Connector 2		
Access 3				Connector 3		
Access 4				Connector 4		

☐ Additional access clarifications and provisions (e.g., proposed control-of-access or median breaks, modifications of existing access, loading/unloading area access, bike/pedestrian accommodation).

☒ Assume that approximately 25% of the traffic from the 200 lots along Riverwood Drive, Trantham Trail, Linwood Lane, and Marcellus Way would use the proposed connection from Riverwood Drive to Castleberry Road to get to/from NC 42 (assume 3/4 to/from the west on NC 42 and 1/4 to/from the east on NC 42)

Proposed K-12 School Site

- ☐ NCDOT [MSTA School Traffic Calculator](#) for Select School Type shall be used.
- ☐ Peak Hour Factors (PHFs) shall be adjusted/weighted for new school trips (0.5 PHF by default).
- ☐ Internal school circulation analysis is required, and should be submitted in advance or concurrent with the TIA submittal.
- ☐ Clarify traffic operation plans (e.g. traffic circulation pattern, pedestrian access, drop-off/pick-up zone location and configuration, queue storage area and, if applicable, staggered start times).



NCDOT TIA Scoping Checklist



☒ Trip Distribution

- ☒ Trip distribution diagrams are submitted concurrently with this document (attach separate sheets).
- ☐ Trip distribution diagrams will be submitted separately, along with supporting information, to the District Engineer for review and approval prior to capacity analysis. The trip distribution shall be based on the current and anticipated traffic patterns, as well as instructions noted below.

If required by the District Engineer, the following additional diagrams shall also be submitted:

- ☐ Mixed-Use Developments (separate diagrams for residential, commercial, and office trips)
- ☐ Inter-Development Trips (if 'internal' trips cross public streets)
- ☐ Pass-By Trips
- ☐ Diverted Trips
- ☐ Each Analysis Period

☐ Mode Split

- ☐ Provide Data Source and Justification

Mode Period	Auto		
AM Peak	%	%	%
PM Peak	%	%	%
Daily	%	%	%
	%	%	%

- ☐ Identify proper infrastructure and accommodation for other modes of travel.

☒ Analysis Peak Periods:

- ☒ Weekday AM Peak 7:00 AM - 9:00 AM
- ☒ Weekday PM Peak 4:00 PM - 6:00 PM
- ☐ Weekday Midday Peak _____
- ☐ Weekday PM School Peak _____
- ☐ Weekend _____ Peak _____
- ☐ Other _____



NCDOT TIA Scoping Checklist

TIA Need
Screening

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☒ Study Area Intersections and Data Collection

The study area shall include the site access intersections (both new and existing) identified under "Site Plan and Access" on page 1, as well as the following external and, if applicable, internal intersections.

External Intersection	Intersection of		Traffic Control	Intersection Turning Movement Counts			Notes
	Road A	Road B		New / Existing	Date of Counts	Growth Adjustment	
#1	Castleberry Rd	NC 42	Signal	Use Existing Counts	12/18	3%	Forecast
#2	Glen Laurel Rd	NC 42	Signal	Use Existing Counts	4/15	3%	Forecast
#3	Castleberry Rd	Stewarts Knob Dr	2-Way Stop				TripGen, Balanc.
#4	Riverwood Drive	Stewarts Knob Dr	2-Way Stop				TripGen, Balanc.
#5							
#6							
#7							
#8							
#9							
#10							
#11							
#12							

Internal Intersection	Intersection of		Access Type		Intersection Spacing		
	Road A	Road B	Traffic Control	Permitted Movements	Distance (ft)	Direction	Nearest Intersection
#101			Please Select	Please Select		Please Select	
#102							
#103							
#104							
#105							

The following data will be collected:

- ☐ New traffic turning movement counts in ☐ 15-min intervals ☐ 5-min intervals (near schools)
 Unless otherwise noted above, new traffic counts shall be collected at the existing study intersections during the analysis periods. Weekday counts shall avoid Mondays, Fridays, holidays, school breaks, road closures, and major weather events.
- ☐ To account for the impact of existing and/or proposed school traffic, PHFs will be adjusted for:

intersections numbered: _____

and access points numbered: _____

- ☒ Traffic Forecast Data for TIP: R-3825B forecast data
- ☒ Roadway/Intersection Configuration & Traffic Control
- ☒ Traffic Signal Phasing & Timing Data
- ☐ Crash Data: _____ Period: _____
- ☒ Other:

Stewart's Knob Dr. Existing Volume: Trip gen for 40 single-family d.u., assigned 20/80 north/south
 Riverbend Dr. Existing Volume: Trip gen for 20 single-family d.u., assigned 20/80 north/south
 Use R-3825B forecast data for background and build-out (and no specific app. dev.)



NCDOT TIA Scoping Checklist



☒ Future Year Conditions

☒ Project Build-Out Year: 2030

☐ Future Analysis Year(s): _____

☐ Identify below any funded/committed future transportation improvements, as well as any approved but incomplete developments near the site.

Funded STIP / Local CIP Project	Project Description		Year Complete
R-3825B	Widening NC 42 to a four-lane median divided roadway		2021
Nearby Approved Development	Location	Future Land Use (exclude any completed phases)	Committed Improvements
Hunt Property	SE quadrant of NC 42 at Glen	220 apts, 180k sf retail, 117k	Glen Laurel@NC 42: NBL

☒ Annual Growth Factor: 3 %

Justification/Data Source: 3% to get 2020 vols, use interpolated forecast (and no app. dev.) for background

☒ Local Comprehensive Transportation Plan Compliance

☒ Identify Applicable Local Transportation Planning Documents

Johnston County Comprehensive Transportation Plan (December 2014)

Town of Clayton Comprehensive Plan (October 2015)

☒ Identify Applicable Roadways inside the Study Area

Road Name	Classification	Speed Limit	Proposed Cross-Section	Proposed Right-of-Way	Compliance Requirements	Affect Study Intersection #
NC 42	Boulevard	45	4-lane divided	110	n/a	
Castleberry Road	Minor Thoroughfare	45	no change	-	n/a	
Glen Laurel Road	Minor Thoroughfare	45	no change	-	n/a	
Riverwood Drive	Minor Thoroughfare	55	no change	-	n/a	



NCDOT TIA Scoping Checklist

TIA Need
Screening

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☒ Study Method

The traffic analysis shall follow the current NCDOT Congestion Management Capacity Analysis Guidelines, Policy on Street and Driveway Access to North Carolina Highways, and use the current approved version of analysis software (e.g. Synchro/SimTraffic, HCS, Sidra Intersection, TransModeler).

The study shall include the following analysis scenarios for each analysis period.

1. Existing Conditions
2. Future No-Build Conditions (existing + background growth + approved developments + committed or funded improvements)
3. Future Build Conditions (future no-build + site trips)
4. Future Build with Improvements Conditions (future build traffic with improvements to mitigate the proposed development's impacts) and, if applicable:

☐ 5. TIP Design Year Analysis _____

☐ 6. Alternative Access Scenario (without proposed control-of-access or median break / modification)

The following additional analysis/outputs should be provided as warranted:

- ☐ Signal Warrant Analysis for accesses/intersections _____
- ☐ Multi-Modal Level of Service Analysis
- ☐ School Loading Zone Traffic Simulation
- ☐ Phasing Analysis (scope separately as needed)
- ☐ Safety/Crash Analysis
- ☐ Control-of-Access Modification Justification
- ☐ Median Break / Modification Justification
- ☐ Other _____

☒ Submittals

In addition to the hardcopies required below, the TIA Consultant shall provide the District Engineer and, if required, the local government an electronic copy of the study documents, including the latest site plan, figures and appendices, in searchable PDF files and the original traffic analysis files (e.g., Synchro, HCS).

To expedite review, the NCDOT electronic submittals shall also be delivered concurrently to:

☐ Div. Traffic Engr ☐ Regional Traffic Engr ☐ Congestion Management ☐ Other _____

Submittals	NCDOT		Local Government	
	Electronic	Hardcopy	Electronic	Hardcopy
Trip Generation & Distribution	Required		Please Select	
Draft TIA Report	Required			
Final Sealed TIA Report	Required			

☐ Additional Comments (municipal TIA requirements, approved variations from NCDOT guidelines)



NCDOT TIA Scoping Checklist



Agreement by All Parties

The undersigned agree to the contents and methodology described above for completing the required traffic impact analysis for the proposed development identified herein. Any changes to the above methodology contemplated by the Applicant or the TIA Consultant must be submitted to the District Engineer in writing. If approved by NCDOT, then such changes may be accepted for the TIA report. Subsequent revisions to the development plan (e.g. land use, density, site access, or schedule) may require additional scoping and analysis, and may modify the TIA requirements.

This agreement shall become effective on the date approved by NCDOT, and shall expire ____ months after the effective date or upon significant changes to the roadway network and/or development assumptions, whichever occurs first. Once expired, renewal or re-scoping will be required for subsequent TIA submittals.

APPLICANT


Signature

David DeYoung
Print Name

8/12/20
Date

TIA CONSULTANT


Signature

Kevin Dean
Print Name

8/12/2020
Date

LOCAL GOVERNMENT REPRESENTATIVE (If Applicable)

Signature
Email concurrence may be used in lieu of the signature.

Print Name

Date

NCDOT DISTRICT REPRESENTATIVE

Reviewed and approved by the NCDOT Division ____ District ____ on ____.

Signature
Email concurrence may be used in lieu of the signature.

Print Name

Appendix B:
Traffic Count Data &
Existing Volume Development



Morton & Morton Design Services, PLLC

4700 Homewood Ct, Suite 200

Raleigh, North Carolina 27609

Ph. (919) 882-6066

www.mortonmorton.com

File Name : 629

Site Code : 06290600

Start Date : 12/6/2018

Page No : 1

Groups Printed- All Traffic

	SR 1705 (Castleberry Road) From North					NC 42 From East					From South					NC 42 From West							
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Exclu. Total	Inclu. Total	Int. Total
06:00 AM	20	0	1	0	21	1	163	0	0	164	0	0	0	0	0	0	39	7	0	46	0	231	231
06:15 AM	42	0	3	0	45	4	213	0	0	217	0	0	0	0	0	0	65	18	0	83	0	345	345
06:30 AM	34	0	1	0	35	5	218	0	0	223	0	0	0	0	0	0	84	28	0	112	0	370	370
06:45 AM	35	0	0	0	35	13	252	0	0	265	0	0	0	0	0	0	98	22	0	120	0	420	420
Total	131	0	5	0	136	23	846	0	0	869	0	0	0	0	0	0	286	75	0	361	0	1366	1366
07:00 AM	49	0	2	0	51	12	215	0	0	227	0	0	0	0	0	0	91	23	0	114	0	392	392
07:15 AM	35	0	3	0	38	15	207	0	0	222	0	0	0	0	0	0	123	30	0	153	0	413	413
07:30 AM	39	0	5	0	44	10	259	0	0	269	0	0	0	0	0	0	97	46	0	143	0	456	456
07:45 AM	48	0	4	0	52	15	219	0	0	234	0	0	0	0	0	0	143	25	0	168	0	454	454
Total	171	0	14	0	185	52	900	0	0	952	0	0	0	0	0	0	454	124	0	578	0	1715	1715
08:00 AM	57	0	10	0	67	15	215	0	0	230	0	0	0	0	0	0	121	13	0	134	0	431	431
08:15 AM	40	0	7	0	47	15	234	0	0	249	0	0	0	0	0	0	109	22	0	131	0	427	427
08:30 AM	37	0	8	0	45	7	227	0	0	234	0	0	0	0	0	0	146	39	0	185	0	464	464
08:45 AM	38	0	3	0	41	11	287	0	0	298	0	0	0	0	0	0	119	19	0	138	0	477	477
Total	172	0	28	0	200	48	963	0	0	1011	0	0	0	0	0	0	495	93	0	588	0	1799	1799
09:00 AM	28	0	2	0	30	7	175	0	0	182	0	0	0	0	0	0	120	13	0	133	0	345	345
09:15 AM	20	0	3	0	23	4	172	0	0	176	0	0	0	0	0	0	94	7	0	101	0	300	300
09:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
09:45 AM	10	0	3	0	13	5	146	0	0	151	0	0	0	0	0	0	107	11	0	118	0	282	282
Total	58	0	8	0	66	16	493	0	0	509	0	0	0	0	0	0	321	31	0	352	0	927	927
10:00 AM	17	0	2	0	19	4	125	0	0	129	0	0	0	0	0	0	100	14	0	114	0	262	262
10:15 AM	23	1	2	0	26	7	152	0	0	159	0	0	0	0	0	0	122	17	0	139	0	324	324
10:30 AM	20	0	4	0	24	2	122	0	0	124	0	0	0	0	0	0	124	17	0	141	0	289	289
10:45 AM	18	0	4	0	22	7	141	0	0	148	0	0	0	0	0	0	107	8	0	115	0	285	285
Total	78	1	12	0	91	20	540	0	0	560	0	0	0	0	0	0	453	56	0	509	0	1160	1160
11:00 AM	17	0	2	0	19	7	131	0	0	138	0	0	0	0	0	0	129	20	0	149	0	306	306
11:15 AM	21	0	4	0	25	5	127	0	0	132	0	0	0	0	0	0	103	13	0	116	0	273	273
11:30 AM	18	0	0	0	18	6	163	0	0	169	0	0	0	0	0	0	150	15	0	165	0	352	352
11:45 AM	14	0	7	0	21	7	152	0	0	159	0	0	0	0	0	0	125	11	0	136	0	316	316
Total	70	0	13	0	83	25	573	0	0	598	0	0	0	0	0	0	507	59	0	566	0	1247	1247
12:00 PM	17	0	4	0	21	3	136	0	0	139	0	0	0	0	0	0	147	13	0	160	0	320	320
12:15 PM	24	0	1	0	25	7	166	0	0	173	0	0	0	0	0	0	132	17	0	150	0	348	348
12:30 PM	15	0	3	0	18	3	139	0	0	142	0	0	0	0	0	0	142	14	0	156	0	316	316
12:45 PM	17	0	5	0	22	6	146	0	0	152	0	0	0	0	0	0	167	22	0	189	0	363	363
Total	73	0	13	0	86	19	587	0	0	606	0	0	0	0	0	0	588	66	0	655	0	1347	1347
01:00 PM	28	0	0	0	28	4	117	0	0	121	0	0	0	0	0	0	169	19	0	188	0	337	337
01:15 PM	17	0	2	0	19	6	120	0	0	126	0	0	0	0	0	0	148	23	0	171	0	316	316
01:30 PM	11	0	2	0	13	3	129	0	0	132	0	0	0	0	0	0	151	25	0	176	0	321	321
01:45 PM	19	0	0	0	19	6	136	0	0	142	0	0	0	0	0	0	163	19	0	182	0	343	343
Total	75	0	4	0	79	19	502	0	0	521	0	0	0	0	0	0	631	86	0	717	0	1317	1317
02:00 PM	10	0	5	0	15	10	143	0	0	153	0	0	0	0	0	0	155	18	0	173	0	341	341
02:15 PM	23	0	1	0	24	4	117	0	0	121	0	0	0	0	0	0	166	25	0	191	0	336	336
02:30 PM	26	0	0	0	26	9	139	0	0	148	0	0	0	0	0	0	159	24	0	183	0	357	357
02:45 PM	28	0	6	0	34	6	115	0	0	121	0	0	0	0	0	0	164	29	0	193	0	348	348
Total	87	0	12	0	99	29	514	0	0	543	0	0	0	0	0	0	644	96	0	740	0	1382	1382



Morton & Morton Design Services, PLLC

4700 Homewood Ct, Suite 200

Raleigh, North Carolina 27609

Ph. (919) 882-6066

www.mortonmorton.com

File Name : 629

Site Code : 06290600

Start Date : 12/6/2018

Page No : 2

Groups Printed- All Traffic

	SR 1705 (Castleberry Road) From North					NC 42 From East					From South					NC 42 From West							
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Exclu. Total	Inclu. Total	Int. Total
03:00 PM	23	0	1	0	24	7	146	0	0	153	0	0	0	0	0	0	188	26	0	214	0	391	391
03:15 PM	30	0	6	0	36	4	147	0	0	151	0	0	0	0	0	0	141	30	0	171	0	358	358
03:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:45 PM	30	0	0	0	30	12	174	0	0	186	0	0	0	0	0	0	184	43	0	227	0	443	443
Total	83	0	7	0	90	23	467	0	0	490	0	0	0	0	0	0	513	99	0	612	0	1192	1192
04:00 PM	37	0	0	0	37	12	188	0	0	200	0	0	0	0	0	0	202	34	0	236	0	473	473
04:15 PM	32	0	7	0	39	10	174	0	0	184	0	0	0	0	0	0	198	49	0	247	0	470	470
04:30 PM	34	0	3	0	37	16	148	0	0	164	0	0	0	0	0	0	218	40	0	258	0	459	459
04:45 PM	19	0	6	0	25	7	163	0	0	170	0	0	0	0	0	0	195	34	0	229	0	424	424
Total	122	0	16	0	138	45	673	0	0	718	0	0	0	0	0	0	813	157	0	970	0	1826	1826
05:00 PM	28	0	1	0	29	11	187	0	0	198	0	0	0	0	0	0	200	38	0	238	0	465	465
05:15 PM	33	0	3	0	36	11	181	0	0	192	0	0	0	0	0	0	225	30	0	255	0	483	483
05:30 PM	38	0	5	0	43	8	200	0	0	208	0	0	0	0	0	0	186	26	0	212	0	463	463
05:45 PM	21	0	4	0	25	13	187	0	0	200	0	0	0	0	0	0	210	29	0	239	0	464	464
Total	120	0	13	0	133	43	755	0	0	798	0	0	0	0	0	0	821	123	0	944	0	1875	1875
06:00 PM	26	0	3	0	29	18	173	0	0	191	0	0	0	0	0	0	198	34	0	232	0	452	452
06:15 PM	29	0	5	0	34	12	189	0	0	201	0	0	0	0	0	0	216	28	0	244	0	479	479
06:30 PM	26	0	3	0	29	8	147	0	0	155	0	0	0	0	0	0	199	28	0	227	0	411	411
06:45 PM	18	0	6	0	24	5	118	0	0	123	0	0	0	0	0	0	149	19	0	168	0	315	315
Total	99	0	17	0	116	43	627	0	0	670	0	0	0	0	0	0	762	109	0	871	0	1657	1657
Grand Total	1339	1	162	0	1502	405	8440	0	0	8845	0	0	0	0	0	1	7288	1174	0	8463	0	18810	18810
Apprch %	89.1	0.1	10.8			4.6	95.4	0			0	0	0			0	86.1	13.9			0		
Total %	7.1	0	0.9			2.2	44.9	0		47	0	0	0			0	38.7	6.2		45	0	100	



Morton & Morton Design Services, PLLC

4700 Homewood Ct, Suite 200

Raleigh, North Carolina 27609

Ph. (919) 882-6066

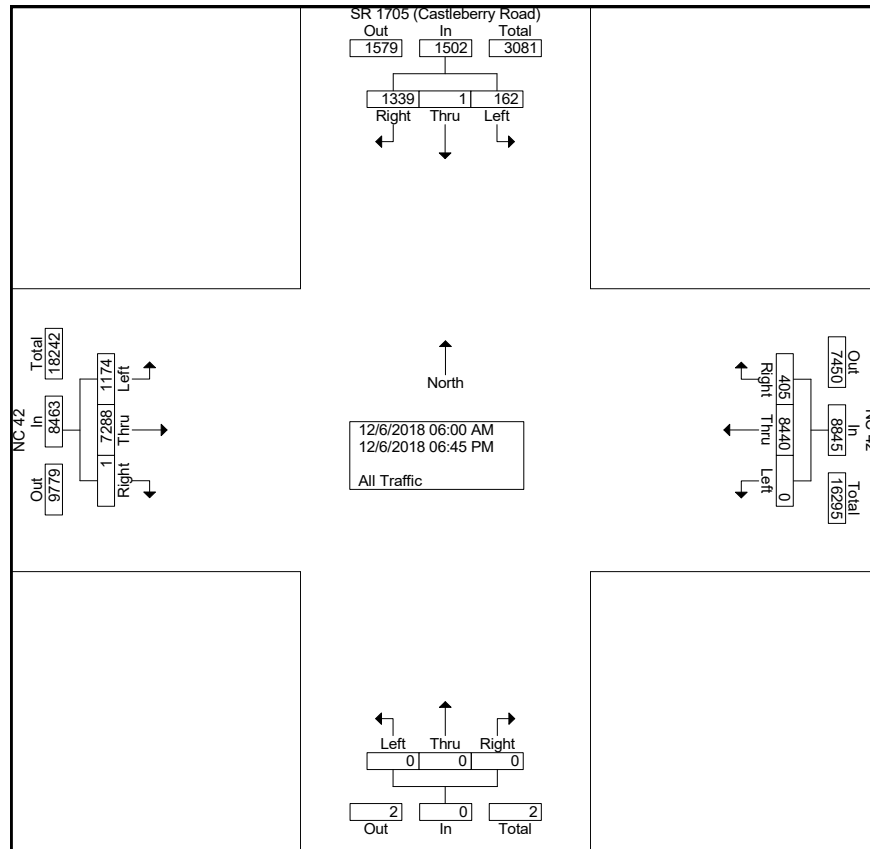
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4700 Homewood Ct, Suite 200

Raleigh, North Carolina 27609

Ph. (919) 882-6066

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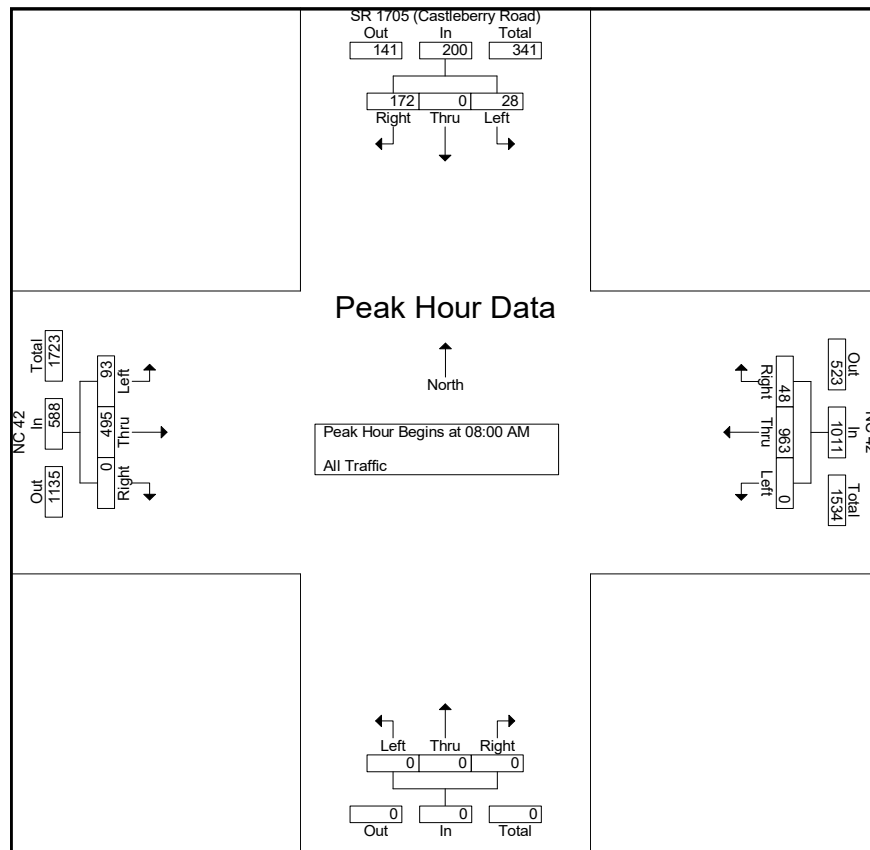
File Name : 629

Site Code : 06290600

Start Date : 12/6/2018

Page No : 4

	SR 1705 (Castleberry Road) From North				NC 42 From East				From South				NC 42 From West				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	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 08:00 AM																	
08:00 AM	57	0	10	67	15	215	0	230	0	0	0	0	0	121	13	134	431
08:15 AM	40	0	7	47	15	234	0	249	0	0	0	0	0	109	22	131	427
08:30 AM	37	0	8	45	7	227	0	234	0	0	0	0	0	146	39	185	464
08:45 AM	38	0	3	41	11	287	0	298	0	0	0	0	0	119	19	138	477
Total Volume	172	0	28	200	48	963	0	1011	0	0	0	0	0	495	93	588	1799
% App. Total	86	0	14		4.7	95.3	0		0	0	0	0	0	84.2	15.8		
PHF	.754	.000	.700	.746	.800	.839	.000	.848	.000	.000	.000	.000	.000	.848	.596	.795	.943





Morton & Morton Design Services, PLLC

4700 Homewood Ct, Suite 200

Raleigh, North Carolina 27609

Ph. (919) 882-6066

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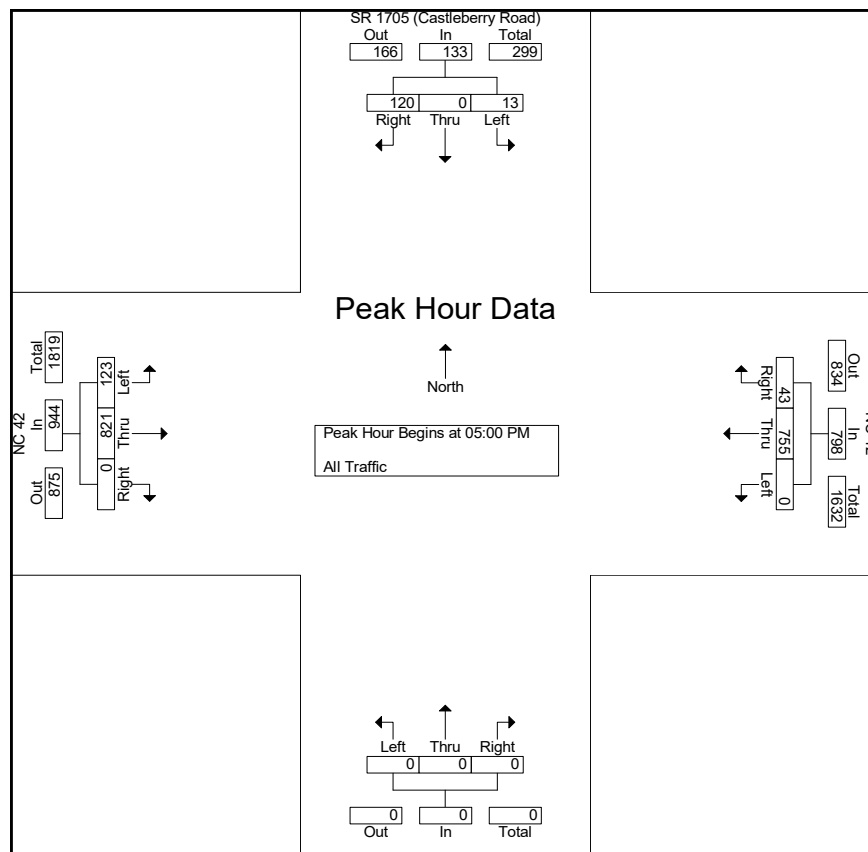
File Name : 629

Site Code : 06290600

Start Date : 12/6/2018

Page No : 5

	SR 1705 (Castleberry Road) From North				NC 42 From East				From South				NC 42 From West				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	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	28	0	1	29	11	187	0	198	0	0	0	0	0	200	38	238	465
05:15 PM	33	0	3	36	11	181	0	192	0	0	0	0	0	225	30	255	483
05:30 PM	38	0	5	43	8	200	0	208	0	0	0	0	0	186	26	212	463
05:45 PM	21	0	4	25	13	187	0	200	0	0	0	0	0	210	29	239	464
Total Volume	120	0	13	133	43	755	0	798	0	0	0	0	0	821	123	944	1875
% App. Total	90.2	0	9.8		5.4	94.6	0		0	0	0	0	0	87	13		
PHF	.789	.000	.650	.773	.827	.944	.000	.959	.000	.000	.000	.000	.000	.912	.809	.925	.970



Traffic Survey Services, Inc.

7909 Old Stage Rd.
Raleigh, NC 27603

We are your "EYES" in the field

Covered Bridge Rd. @ Castleberry Rd.
Clayton, NC
Counter:JCG
August 25, 2020

File Name : CoveredBridgeCastleberry
Site Code : 00002008
Start Date : 8/25/2020
Page No : 1

Groups Printed- Vehicles

	From North	Covered Bridge Rd. From East			Castleberry Rd. From South			Covered Bridge Rd. From West			
Start Time	App. Total	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	Int. Total
07:00 AM	0	102	12	114	14	19	33	6	54	60	207
07:15 AM	0	97	19	116	13	13	26	7	64	71	213
07:30 AM	0	86	19	105	20	23	43	10	86	96	244
07:45 AM	0	91	21	112	11	27	38	11	46	57	207
Total	0	376	71	447	58	82	140	34	250	284	871
08:00 AM	0	79	14	93	4	9	13	5	65	70	176
08:15 AM	0	87	11	98	8	11	19	13	52	65	182
08:30 AM	0	70	12	82	11	8	19	15	53	68	169
08:45 AM	0	65	9	74	10	9	19	13	55	68	161
Total	0	301	46	347	33	37	70	46	225	271	688
*** BREAK ***											
04:00 PM	0	81	19	100	16	16	32	14	100	114	246
04:15 PM	0	76	18	94	12	8	20	10	117	127	241
04:30 PM	0	85	15	100	16	12	28	20	114	134	262
04:45 PM	0	68	12	80	33	12	45	22	118	140	265
Total	0	310	64	374	77	48	125	66	449	515	1014
05:00 PM	0	70	17	87	25	12	37	24	128	152	276
05:15 PM	0	100	24	124	22	15	37	22	129	151	312
05:30 PM	0	77	17	94	26	16	42	28	144	172	308
05:45 PM	0	88	18	106	19	19	38	29	122	151	295
Total	0	335	76	411	92	62	154	103	523	626	1191
Grand Total	0	1322	257	1579	260	229	489	249	1447	1696	3764
Apprch %		83.7	16.3		53.2	46.8		14.7	85.3		
Total %	0	35.1	6.8	42	6.9	6.1	13	6.6	38.4	45.1	

Traffic Survey Services, Inc.

7909 Old Stage Rd.
Raleigh, NC 27603

We are your "EYES" in the field

Covered Bridge Rd. @ Castleberry Rd.
Clayton, NC
Counter:JCG
August 25, 2020

File Name : CoveredBridgeCastleberry
Site Code : 00002008
Start Date : 8/25/2020
Page No : 2

	From North	Covered Bridge Rd. From East			Castleberry Rd. From South			Covered Bridge Rd. From West			
Start Time	App. Total	Thru	Left	App. Total	Right	Left	App. Total	Right	Thru	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1											
Peak Hour for Entire Intersection Begins at 07:00 AM											
07:00 AM	0	102	12	114	14	19	33	6	54	60	207
07:15 AM	0	97	19	116	13	13	26	7	64	71	213
07:30 AM	0	86	19	105	20	23	43	10	86	96	244
07:45 AM	0	91	21	112	11	27	38	11	46	57	207
Total Volume	0	376	71	447	58	82	140	34	250	284	871
% App. Total		84.1	15.9		41.4	58.6		12	88		
PHF	.000	.922	.845	.963	.725	.759	.814	.773	.727	.740	.892

Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 05:00 PM

05:00 PM	0	70	17	87	25	12	37	24	128	152	276
05:15 PM	0	100	24	124	22	15	37	22	129	151	312
05:30 PM	0	77	17	94	26	16	42	28	144	172	308
05:45 PM	0	88	18	106	19	19	38	29	122	151	295
Total Volume	0	335	76	411	92	62	154	103	523	626	1191
% App. Total		81.5	18.5		59.7	40.3		16.5	83.5		
PHF	.000	.838	.792	.829	.885	.816	.917	.888	.908	.910	.954

Riverwood Golf Club - Section 2

Table A - Trip Generation along Stewart's Knob

Land Use	Intensity	AM Peak Hour			PM Peak Hour		
		Total	In	Out	Total	In	Out
210 Single Family Detached Housing	45 d.u.	37	9	28	47	30	17
Total Net New External Trips		37	9	28	47	30	17

Riverwood Golf Club - Section 2
Table B - Trip Generation along Riverbend

Land Use	Intensity	AM Peak Hour			PM Peak Hour		
		Total	In	Out	Total	In	Out
210 Single Family Detached Housing	20 d.u.	19	5	14	22	14	8
Total Net New External Trips		19	5	14	22	14	8

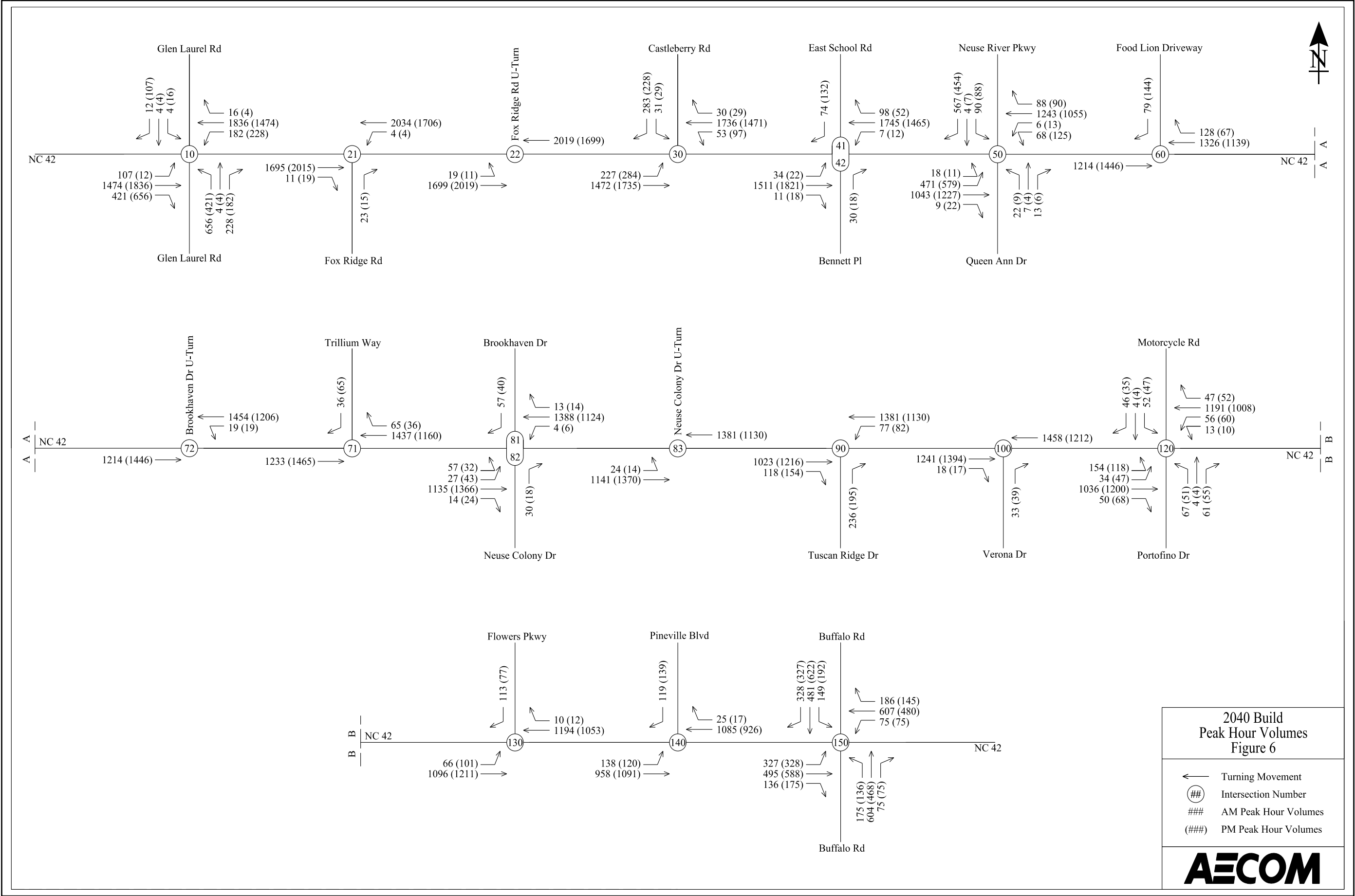
Appendix C:
Riverwood Drive
Trip Generation

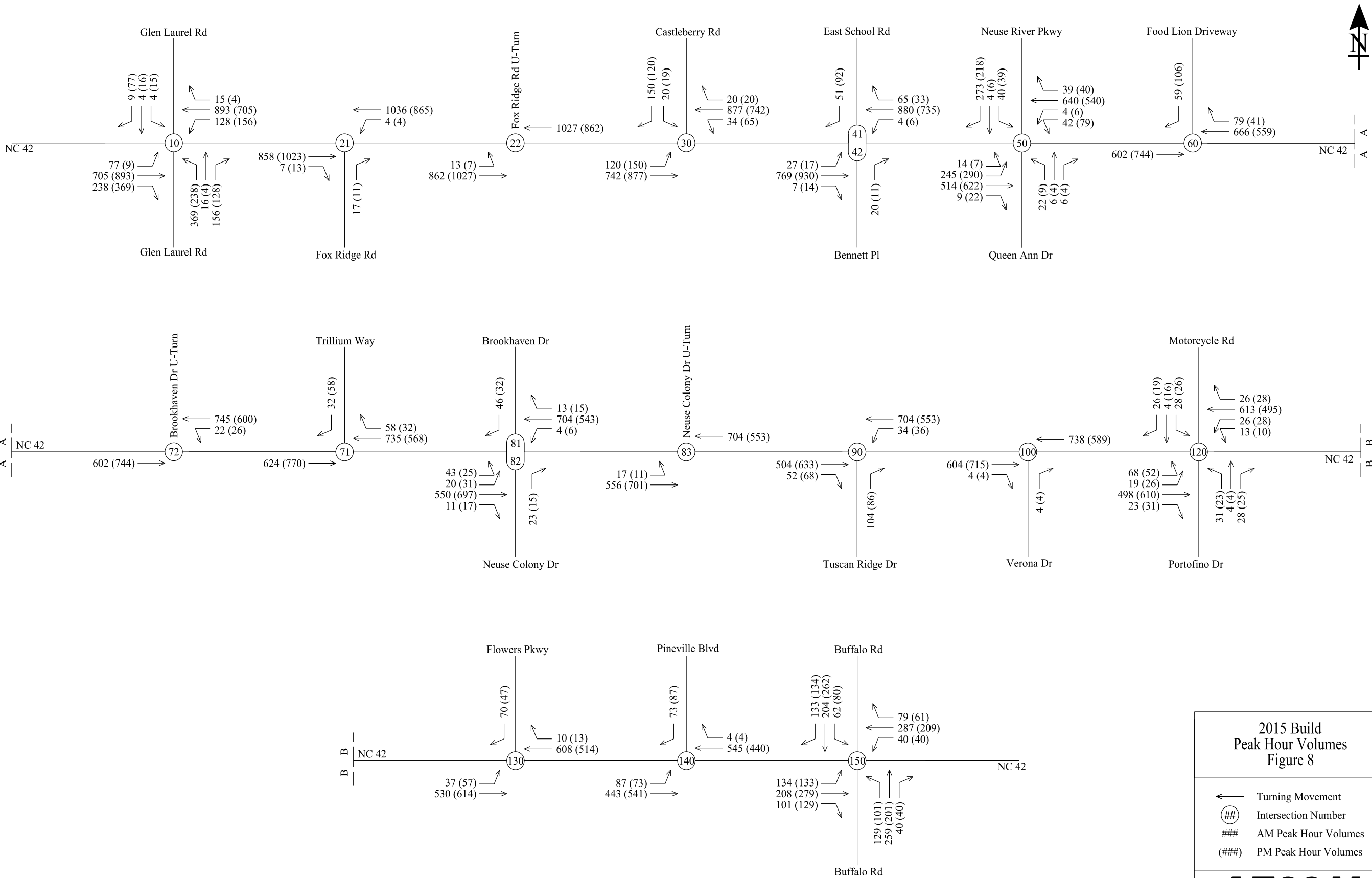
Riverwood Golf Club - Section 2

Table B - Trip Generation along Riverwood, Linwood, Trantham, and Marcellus (S. of Southmont St)

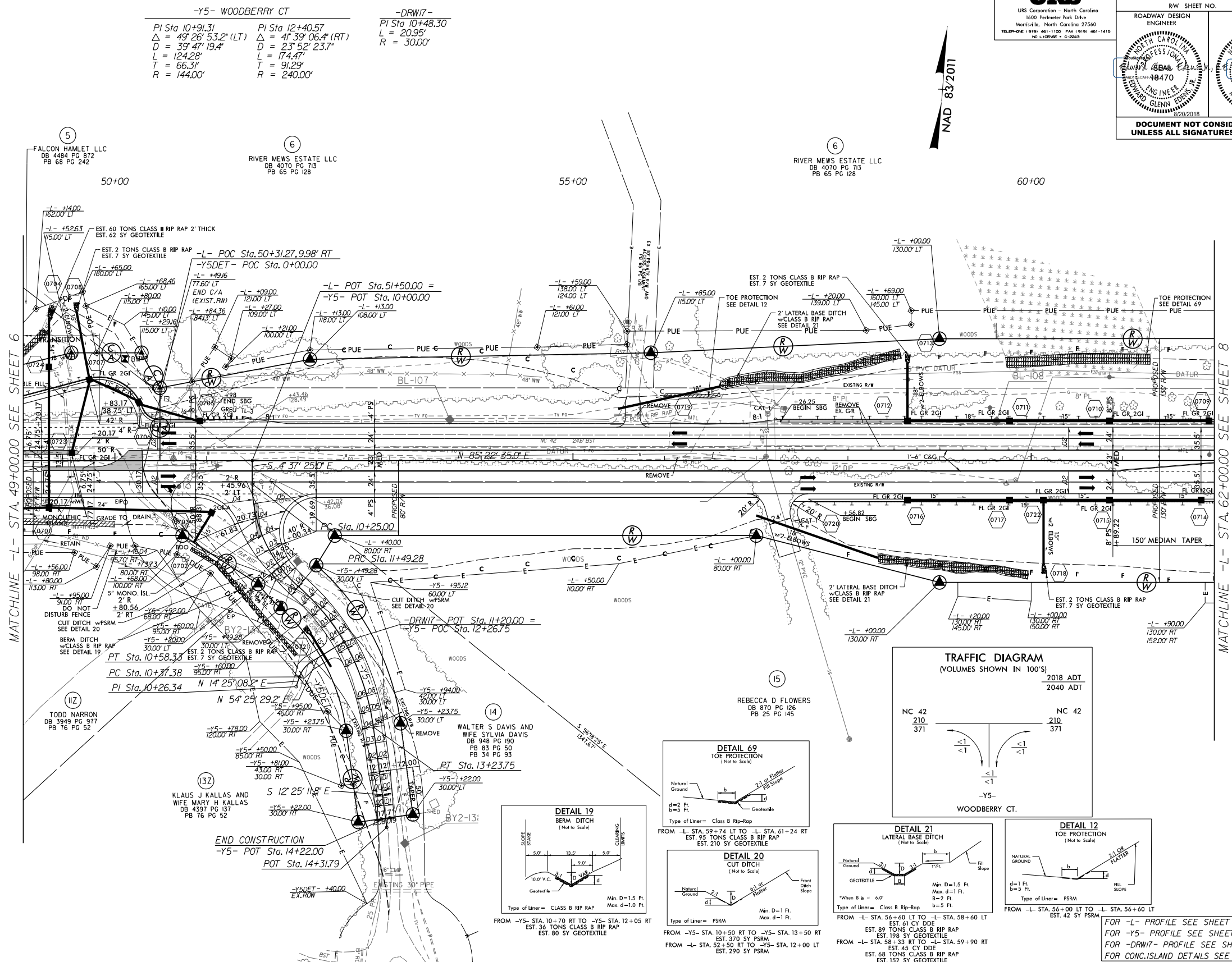
Land Use	Intensity	AM Peak Hour			PM Peak Hour		
		Total	In	Out	Total	In	Out
210 Single Family Detached Housing	200 d.u.	147	37	110	198	125	73
Total Net New External Trips		147	37	110	198	125	73

Appendix D:
NCDOT TIP Project R-3825B
Traffic Forecast Figures and
Roadway Plans



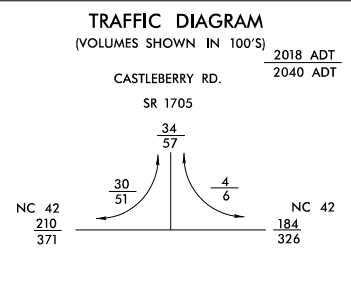
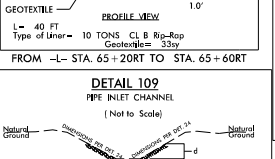
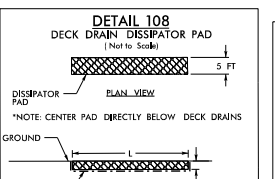
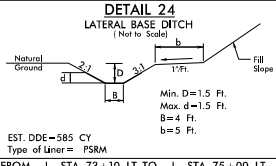
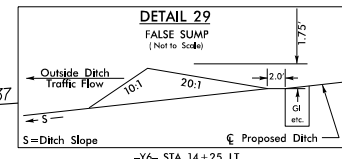
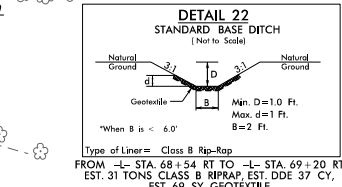
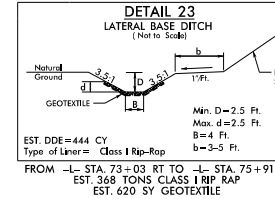
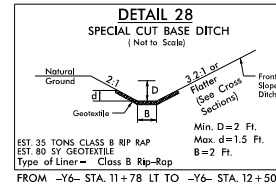
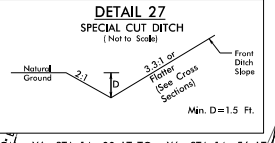
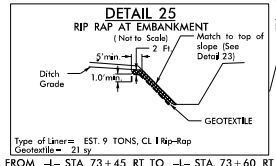
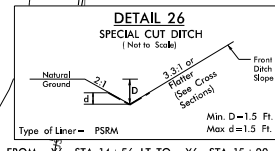
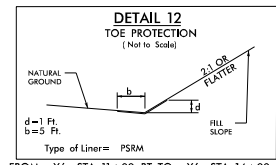
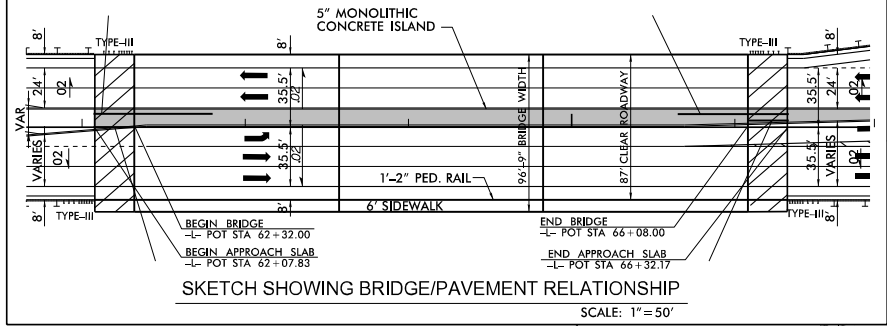


R:\Roadway



8/17/99

FOR DETAILS ON BRIDGE SEE STRUCTURES PLANS



CASTLEBERRY RD
SR 1705
2018 ADT
2040 ADT
34 57
30 51
4 6
NC 42
210
371
184
326
NC 42

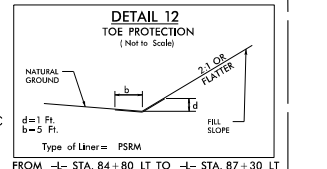
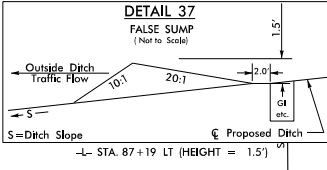
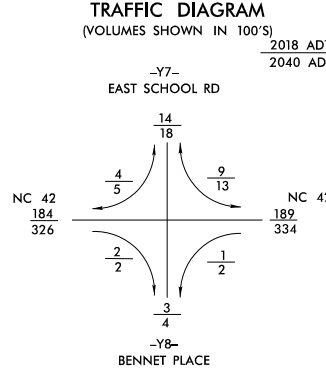
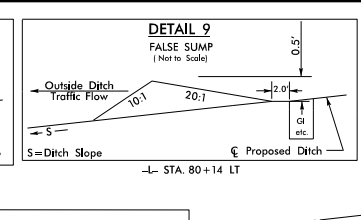
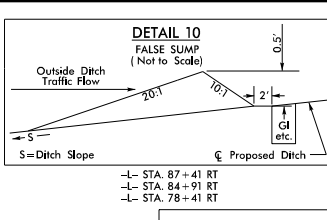
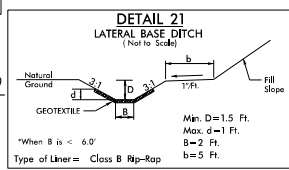
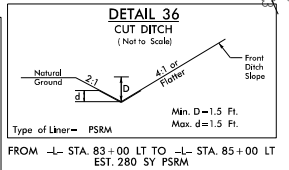
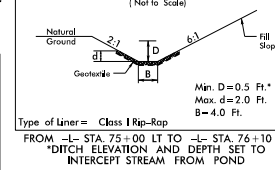
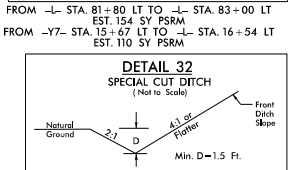
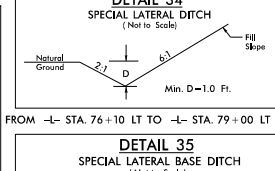
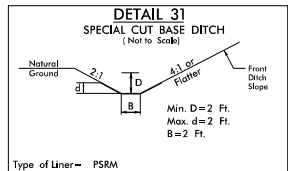
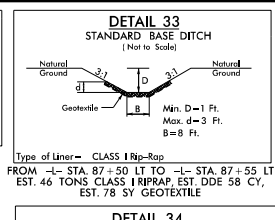
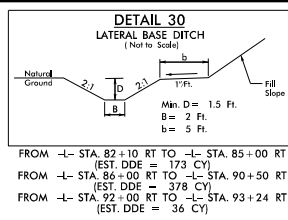
CASTLEBERRY RD
SR 1705
2018 ADT
2040 ADT
34 57
30 51
4 6
NC 42
210
371
184
326
NC 42

8/9/2018
R:\V\codekey\p\o\1\3825b.rdw\psh08.dgn
T:\sholder

MATCHLINE -L- STA 62+00.00 SEE SHEET 7

MATCHLINE -L- STA 15+00.00 SEE SHEET 9

8/17/19



PI Sta 76+02.21
Δ = 3° 53' 59.4" (LT)
D = 1° 00' 00.4"
L = 389.95'
T = 195.05'
R = 5,729.00'
e = 3%
Runoff = 162'

PI Sta 79+93.48
Δ = 3° 55' 35.2" (RT)
D = 1° 00' 00.4"
L = 392.61'
T = 196.38'
R = 5,729.00'
e = 3%
Runoff = 162'

PI Sta 12+47.04
Δ = 35° 17' 22.8" (RT)
D = 7° 22' 38.3"
L = 478.36'
T = 247.04'
R = 776.65'

PI Sta 11+77.40
Δ = 13° 43' 20.5" (LT)
D = 23° 38' 08.6"
L = 58.06'
T = 29.17'
R = 242.41'

-Y7- EAST SCHOOL RD
-Y8- BENNETT PL

MATCHLINE -L- STA. 75+00.00 SEE SHEET 8

MATCHLINE -L- STA. 88+00.00 SEE SHEET 10

8/17/2018 R:\Projects\2018\20180817\20180817.dgn

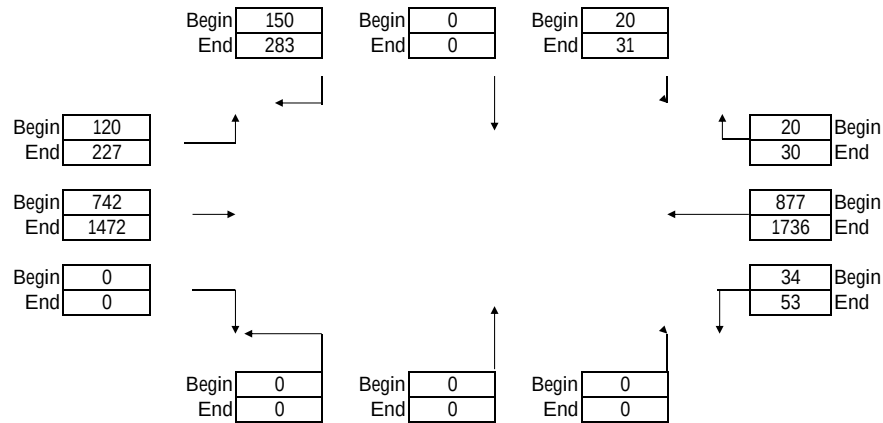
Appendix E:

Forecast Interpolation Sheets

Interpolating Intermediate Traffic Volumes

Location : NC 42 at Castleberry
Description : AM Peak Hour

Input Beginning Year = 2015
Input Ending Year = 2040



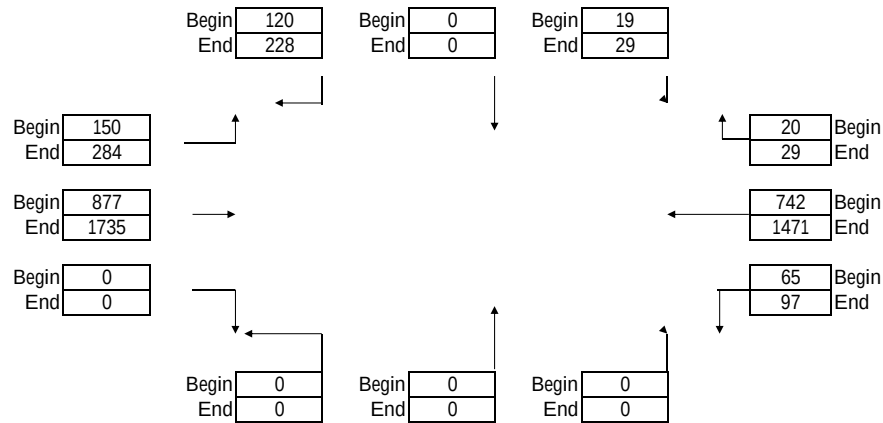
Year	EB LT Volume	EB TH Volume	EB RT Volume	WB LT Volume	WB TH Volume	WB RT Volume	NB LT Volume	NB TH Volume	NB RT Volume	SB LT Volume	SB TH Volume	SB RT Volume
2015	120	742	0	34	877	20	0	0	0	20	0	150
2016	124	771	0	35	911	20	0	0	0	20	0	155
2017	129	800	0	36	946	21	0	0	0	21	0	161
2018	133	830	0	36	980	21	0	0	0	21	0	166
2019	137	859	0	37	1014	22	0	0	0	22	0	171
2020	141	888	0	38	1049	22	0	0	0	22	0	177
2021	146	917	0	39	1083	22	0	0	0	23	0	182
2022	150	946	0	39	1118	23	0	0	0	23	0	187
2023	154	976	0	40	1152	23	0	0	0	24	0	193
2024	159	1005	0	41	1186	24	0	0	0	24	0	198
2025	163	1034	0	42	1221	24	0	0	0	24	0	203
2026	167	1063	0	42	1255	24	0	0	0	25	0	209
2027	171	1092	0	43	1289	25	0	0	0	25	0	214
2028	176	1122	0	44	1324	25	0	0	0	26	0	219
2029	180	1151	0	45	1358	26	0	0	0	26	0	224
2030	184	1180	0	45	1392	26	0	0	0	27	0	230
2031	188	1209	0	46	1427	26	0	0	0	27	0	235
2032	193	1238	0	47	1461	27	0	0	0	27	0	240
2033	197	1268	0	48	1495	27	0	0	0	28	0	246
2034	201	1297	0	48	1530	28	0	0	0	28	0	251
2035	206	1326	0	49	1564	28	0	0	0	29	0	256
2036	210	1355	0	50	1599	28	0	0	0	29	0	262
2037	214	1384	0	51	1633	29	0	0	0	30	0	267
2038	218	1414	0	51	1667	29	0	0	0	30	0	272
2039	223	1443	0	52	1702	30	0	0	0	31	0	278
2040	227	1472	0	53	1736	30	0	0	0	31	0	283
2041	231	1501	0	54	1770	30	0	0	0	31	0	288
2042	236	1530	0	55	1805	31	0	0	0	32	0	294
2043	240	1560	0	55	1839	31	0	0	0	32	0	299
2044	244	1589	0	56	1873	32	0	0	0	33	0	304
2045	248	1618	0	57	1908	32	0	0	0	33	0	310

Note : Average Delay in seconds is not a straight line interpolation and should only be used as a reference.

Interpolating Intermediate Traffic Volumes

Location : NC 42 at Castleberry
Description : PM Peak Hour

Input Beginning Year = 2015
Input Ending Year = 2040



Year	EB LT Volume	EB TH Volume	EB RT Volume	WB LT Volume	WB TH Volume	WB RT Volume	NB LT Volume	NB TH Volume	NB RT Volume	SB LT Volume	SB TH Volume	SB RT Volume
2015	150	877	0	65	742	20	0	0	0	19	0	120
2016	155	911	0	66	771	20	0	0	0	19	0	124
2017	161	946	0	68	800	21	0	0	0	20	0	129
2018	166	980	0	69	829	21	0	0	0	20	0	133
2019	171	1014	0	70	859	21	0	0	0	21	0	137
2020	177	1049	0	71	888	22	0	0	0	21	0	142
2021	182	1083	0	73	917	22	0	0	0	21	0	146
2022	188	1117	0	74	946	23	0	0	0	22	0	150
2023	193	1152	0	75	975	23	0	0	0	22	0	155
2024	198	1186	0	77	1004	23	0	0	0	23	0	159
2025	204	1220	0	78	1034	24	0	0	0	23	0	163
2026	209	1255	0	79	1063	24	0	0	0	23	0	168
2027	214	1289	0	80	1092	24	0	0	0	24	0	172
2028	220	1323	0	82	1121	25	0	0	0	24	0	176
2029	225	1357	0	83	1150	25	0	0	0	25	0	180
2030	230	1392	0	84	1179	25	0	0	0	25	0	185
2031	236	1426	0	85	1209	26	0	0	0	25	0	189
2032	241	1460	0	87	1238	26	0	0	0	26	0	193
2033	246	1495	0	88	1267	26	0	0	0	26	0	198
2034	252	1529	0	89	1296	27	0	0	0	27	0	202
2035	257	1563	0	91	1325	27	0	0	0	27	0	206
2036	263	1598	0	92	1354	28	0	0	0	27	0	211
2037	268	1632	0	93	1384	28	0	0	0	28	0	215
2038	273	1666	0	94	1413	28	0	0	0	28	0	219
2039	279	1701	0	96	1442	29	0	0	0	29	0	224
2040	284	1735	0	97	1471	29	0	0	0	29	0	228
2041	289	1769	0	98	1500	29	0	0	0	29	0	232
2042	295	1804	0	100	1529	30	0	0	0	30	0	237
2043	300	1838	0	101	1558	30	0	0	0	30	0	241
2044	305	1872	0	102	1588	30	0	0	0	31	0	245
2045	311	1907	0	103	1617	31	0	0	0	31	0	250

Note : Average Delay in seconds is not a straight line interpolation and should only be used as a reference.

Appendix F: Trip Generation

Riverwood Golf Club - Section 2

Table 1 - Trip Generation

Land Use	Intensity	Daily			AM Peak Hour			PM Peak Hour		
		Total	In	Out	Total	In	Out	Total	In	Out
210 Single Family Detached Housing	435 d.u.	4,022	2,011	2,011	314	79	235	417	263	154
220 Multifamily Housing (Low-Rise)	75 d.u.	526	263	263	36	8	28	46	29	17
221 Multifamily Housing (Mid-Rise)	220 d.u.	1,198	599	599	74	19	55	94	57	37
Total Net New External Trips		5,746	2,873	2,873	424	106	318	557	349	208

Appendix G:

Intersection Spreadsheets

INTERSECTION ANALYSIS SHEET

Project: Riverwood Golf Club - Section 2
Location: Clayton, NC
Ct. Date: 12/6/2018
N/S Street: Castleberry Road
E/W Street: NC 42

AM In	AM Out	PM In	PM Out
Net New Trips: 106	318	349	208
Pass-By Trips: 0	0	0	0

Annual Growth Rate: 3.0%	Existing Year: 2020
Growth Factor: 0.343916	Buildout Year: 2030

AM PEAK HOUR
AM PHF = 0.94

Description	NC 42 Eastbound			NC 42 Westbound			Castleberry Road Northbound			Castleberry Road Southbound		
	Left	Through	Right	U-Turn	Through	Right	Left	Through	Right	Left	Through	Right
2018 Traffic Count	93	495	0	0	963	48	0	0	0	28	0	172
Growth to 2020	6	30	0	0	59	3	0	0	0	2	0	10
2020 Existing Traffic	99	525	0	0	1022	51	0	0	0	30	0	182
Growth Factor (0.03 per year)	0.344	0.344	0.344	0.344	0.344	0.344	0.344	0.344	0.344	0.344	0.344	0.344
2030 Background Growth	34	181	0	0	351	18	0	0	0	10	0	63
2030 Background Traffic	141	754	0	0	1426	69	0	0	0	40	0	255
2030 Forecast Volume	184	1180	0	45	1392	26	0	0	0	27	0	230
Project Traffic												
Percent Assignment Inbound	50%	0%	0%	0%	0%	20%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	53	0	0	0	0	21	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	20%	0%	50%
Outbound Project Traffic	0	0	0	0	0	0	0	0	0	64	0	159
Total Project Traffic	53	0	0	0	0	21	0	0	0	64	0	159
Riverwood Connect. Div. to Riverwood	7	0	0	0	0	2	0	0	0	7	0	21
2030 Buildout Total	244	1180	0	45	1392	49	0	0	0	98	0	410
Percent Impact (Approach)		3.7%			1.4%		-			43.9%		
Overall Percent Impact	8.7%											

PM PEAK HOUR
PM PHF = 0.97

Description	NC 42 Eastbound			NC 42 Westbound			Castleberry Road Northbound			Castleberry Road Southbound		
	Left	Through	Right	U-Turn	Through	Right	Left	Through	Right	Left	Through	Right
2018 Traffic Count	123	821	0	0	755	43	0	0	0	13	0	120
Growth to 2020	7	50	0	0	46	3	0	0	0	1	0	7
2020 Existing Traffic	130	871	0	0	801	46	0	0	0	14	0	127
Growth Factor (0.03 per year)	0.344	0.344	0.344	0.344	0.344	0.344	0.344	0.344	0.344	0.344	0.344	0.344
2030 Background Growth	45	300	0	0	275	16	0	0	0	5	0	44
2030 Background Traffic	194	1278	0	0	1179	62	0	0	0	19	0	189
2030 Forecast Volume	230	1392	0	84	1179	25	0	0	0	25	0	185
Project Traffic												
Percent Assignment Inbound	50%	0%	0%	0%	0%	20%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic	175	0	0	0	0	70	0	0	0	0	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	20%	0%	50%
Outbound Project Traffic	0	0	0	0	0	0	0	0	0	42	0	104
Total Project Traffic	175	0	0	0	0	70	0	0	0	42	0	104
Riverwood Connect. Div. to Riverwood	23	0	0	0	0	8	0	0	0	4	0	14
2030 Buildout Total	428	1392	0	84	1179	103	0	0	0	71	0	303
Percent Impact (Approach)		9.6%			5.1%		-			39.0%		
Overall Percent Impact	11.0%											

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9/16/20

INTERSECTION ANALYSIS SHEET

Project: Riverwood Golf Club - Section 2
Location: Clayton, NC
Ct. Date: Balanced with NC 42 & Trip Gen
N/S Street: Castleberry Road
E/W Street: Stewart's Knob Drive

AM In	AM Out	PM In	PM Out
Net New Trips: 106	318	349	208
Pass-By Trips: 0	0	0	0
Annual Growth Rate: 3.0%		Existing Year: 2020	
Growth Factor: 0.343916		Buildout Year: 2030	

AM PEAK HOUR **AM PHF = 0.90**

Description	Stewart's Knob Drive <u>Eastbound</u>			Stewart's Knob Drive <u>Westbound</u>			Castleberry Road <u>Northbound</u>			Castleberry Road <u>Southbound</u>		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2020 Traffic Count	0	0	0	0	0	0	0	0	0	0	0	0
Trip Gen/Balancing	6	0	22	0	0	0	7	143	0	0	190	2
2020 Existing Traffic	6	0	22	0	0	0	7	143	0	0	190	2
Growth Factor (0.03 per year)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.344	0.000	0.000	0.344	0.000
2030 Background Growth	0	0	0	0	0	0	0	49	0	0	65	0
2030 Background Traffic	6	0	22	0	0	0	7	192	0	0	255	2
2030 Back. + Forecast Bal.	6	0	22	0	0	0	7	203	0	0	235	2
Project Traffic												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	22%	48%	0%	0%	0%	3%
Inbound Project Traffic	0	0	0	0	0	0	23	51	0	0	0	3
Percent Assignment Outbound	3%	0%	22%	0%	0%	0%	0%	0%	0%	0%	48%	0%
Outbound Project Traffic	10	0	70	0	0	0	0	0	0	0	153	0
Total Project Traffic	10	0	70	0	0	0	23	51	0	0	153	3
Riverwood Connect. Div. to Riverwood	0	0	0	0	0	0	0	9	0	0	28	0
2030 Buildout Total	16	0	92	0	0	0	30	263	0	0	415	5
Percent Impact (Approach)		73.8%			-			25.2%			37.1%	
Overall Percent Impact	37.7%											

PM PEAK HOUR **PM PHF = 0.90**

Description	Stewart's Knob Drive <u>Eastbound</u>			Stewart's Knob Drive <u>Westbound</u>			Castleberry Road <u>Northbound</u>			Castleberry Road <u>Southbound</u>		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2020 Traffic Count	0	0	0	0	0	0	0	0	0	0	0	0
Trip Gen/Balancing	3	0	14	0	0	0	24	152	0	0	127	6
2020 Existing Traffic	3	0	14	0	0	0	24	152	0	0	127	6
Growth Factor (0.03 per year)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.344	0.000	0.000	0.344	0.000
2030 Background Growth	0	0	0	0	0	0	0	52	0	0	44	0
2030 Background Traffic	3	0	14	0	0	0	24	204	0	0	171	6
2030 Back. + Forecast Bal.	3	0	14	0	0	0	24	231	0	0	196	6
Project Traffic												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	22%	48%	0%	0%	0%	3%
Inbound Project Traffic	0	0	0	0	0	0	77	168	0	0	0	10
Percent Assignment Outbound	3%	0%	22%	0%	0%	0%	0%	0%	0%	0%	48%	0%
Outbound Project Traffic	6	0	46	0	0	0	0	0	0	0	100	0
Total Project Traffic	6	0	46	0	0	0	77	168	0	0	100	10
Riverwood Connect. Div. to Riverwood	0	0	0	0	0	0	0	31	0	0	18	0
2030 Buildout Total	9	0	60	0	0	0	101	430	0	0	315	16
Percent Impact (Approach)		75.8%			-			46.1%			33.3%	
Overall Percent Impact	43.7%											

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9/16/20

INTERSECTION ANALYSIS SHEET

Project: Riverwood Golf Club - Section 2
Location: Clayton, NC
Ct. Date: Balanced with NC 42 & Trip Gen
N/S Street: Castleberry Road
E/W Street: Pod E Driveway/River Bend Driveway

AM In	AM Out	PM In	PM Out
Net New Trips: 106	318	349	208
Pass-By Trips: 0	0	0	0

Annual Growth Rate: 3.0%	Existing Year: 2020
Growth Factor: 0.343916	Buildout Year: 2030

AM PEAK HOUR **AM PHF = 0.90**

Description		Pod E Driveway			River Bend Drive			Castleberry Road			Castleberry Road		
		Eastbound			Westbound			Northbound			Southbound		
		Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2020	Traffic Count	0	0	0	0	0	0	0	0	0	0	0	0
Trip Gen/Balancing		0	0	0	11	0	3	0	145	4	1	181	0
2020	Existing Traffic	0	0	0	11	0	3	0	145	4	1	181	0
Growth Factor (0.03 per year)		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.344	0.000	0.000	0.344	0.000
2030	Background Growth	0	0	0	0	0	0	0	50	0	0	62	0
2030	Background Traffic	0	0	0	11	0	3	0	195	4	1	243	0
2030	Back. + Forecast Bal.	0	0	0	11	0	3	0	205	4	1	226	0
Project Traffic													
Percent Assignment Inbound		0%	0%	0%	0%	0%	0%	5%	0%	0%	0%	20%	5%
Inbound Project Traffic		0	0	0	0	0	0	5	0	0	0	21	5
Percent Assignment Outbound		5%	0%	5%	0%	0%	0%	0%	20%	0%	0%	0%	0%
Outbound Project Traffic		16	0	16	0	0	0	0	64	0	0	0	0
Total Project Traffic		16	0	16	0	0	0	5	64	0	0	21	5
2030	Buildout Total	16	0	16	11	0	3	5	269	4	1	247	5
Percent Impact (Approach)		100.0%			0.0%			24.8%			10.3%		

PM PEAK HOUR **PM PHF = 0.90**

Description		Pod E Driveway <u>Eastbound</u>			River Bend Drive <u>Westbound</u>			Castleberry Road <u>Northbound</u>			Castleberry Road <u>Southbound</u>		
		Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2020	Traffic Count	0	0	0	0	0	0	0	0	0	0	0	0
Trip Gen/Balancing		0	0	0	6	0	2	0	144	11	3	127	0
2020	Existing Traffic	0	0	0	6	0	2	0	144	11	3	127	0
Growth Factor (0.03 per year)		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.344	0.000	0.000	0.344	0.000
2030	Background Growth	0	0	0	0	0	0	0	50	0	0	44	0
2030	Background Traffic	0	0	0	6	0	2	0	194	11	3	171	0
2030	Back. + Forecast Bal.	0	0	0	6	0	2	0	223	11	3	196	0
Project Traffic													
Percent Assignment Inbound		0%	0%	0%	0%	0%	0%	5%	0%	0%	0%	20%	5%
Inbound Project Traffic		0	0	0	0	0	0	17	0	0	0	70	17
Percent Assignment Outbound		5%	0%	5%	0%	0%	0%	0%	20%	0%	0%	0%	0%
Outbound Project Traffic		10	0	10	0	0	0	0	42	0	0	0	0
Total Project Traffic		10	0	10	0	0	0	17	42	0	0	70	17
2030	Buildout Total	10	0	10	6	0	2	17	265	11	3	266	17
Percent Impact (Approach)		100.0%			0.0%			20.1%			30.4%		

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9/16/20

INTERSECTION ANALYSIS SHEET

Project: Riverwood Golf Club - Section 2
Location: Clayton, NC
Ct. Date Aug 2020 Count + Adjustment
N/S Street: Castleberry Road
E/W Street: Covered Bridge Road

AM In	AM Out	PM In	PM Out
Net New Trips: 106	318	349	208
Pass-By Trips: 0	0	0	0

Annual Growth Rate: 3.0%	Existing Year: 2020
Growth Factor: 0.343916	Buildout Year: 2030

AM PEAK HOUR
AM PHF = 0.89

Description		Covered Bridge Road			Covered Bridge Road			Castleberry Road			Castleberry Road		
		Eastbound			Westbound			Northbound			Southbound		
		Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2020	Traffic Count	0	250	34	71	376	0	82	0	58	0	0	0
	30% Volume Increase	0	75	10	21	113	0	25	0	17	0	0	0
2020	Existing Traffic	0	325	44	92	489	0	107	0	75	0	0	0
Growth Factor (0.03 per year)		0.344	0.344	0.344	0.344	0.344	0.344	0.344	0.344	0.344	0.344	0.344	0.344
2030	Background Growth	0	112	15	32	168	0	37	0	26	0	0	0
2030	Background Traffic	0	437	59	124	657	0	144	0	101	0	0	0
2030	Back. + Forecast Bal.	0	459	73	153	690	0	122	0	86	0	0	0
Project Traffic													
Percent Assignment Inbound		0%	0%	20%	5%	0%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic		0	0	21	5	0	0	0	0	0	0	0	0
Percent Assignment Outbound		0%	0%	0%	0%	0%	0%	20%	0%	5%	0%	0%	0%
Outbound Project Traffic		0	0	0	0	0	0	64	0	16	0	0	0
Total Project Traffic		0	0	21	5	0	0	64	0	16	0	0	0
2030	Buildout Total	0	459	94	158	690	0	186	0	102	0	0	0
Percent Impact (Approach)		3.8%			0.6%			27.8%			-		

PM PEAK HOUR
PM PHF = 0.95

Description		Covered Bridge Road			Covered Bridge Road			Castleberry Road			Castleberry Road		
		<u>Eastbound</u>			<u>Westbound</u>			<u>Northbound</u>			<u>Southbound</u>		
		Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2020	Traffic Count	0	523	103	76	335	0	62	0	92	0	0	0
30% Volume Increase		0	157	31	23	101	0	19	0	28	0	0	0
2020	Existing Traffic	0	680	134	99	436	0	81	0	120	0	0	0
Growth Factor (0.03 per year)		0.344	0.344	0.344	0.344	0.344	0.344	0.344	0.344	0.344	0.344	0.344	0.344
2030	Background Growth	0	234	46	34	150	0	28	0	41	0	0	0
2030	Background Traffic	0	914	180	133	586	0	109	0	161	0	0	0
2030	Back. + Forecast Bal.	0	960	222	164	615	0	91	0	134	0	0	0
Project Traffic													
Percent Assignment Inbound		0%	0%	20%	5%	0%	0%	0%	0%	0%	0%	0%	0%
Inbound Project Traffic		0	0	70	17	0	0	0	0	0	0	0	0
Percent Assignment Outbound		0%	0%	0%	0%	0%	0%	20%	0%	5%	0%	0%	0%
Outbound Project Traffic		0	0	0	0	0	0	42	0	10	0	0	0
Total Project Traffic		0	0	70	17	0	0	42	0	10	0	0	0
2030	Buildout Total	0	960	292	181	615	0	133	0	144	0	0	0
Percent Impact (Approach)		5.6%			2.1%			18.8%			-		
Overall Percent Impact		6.0%											

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9/16/20

INTERSECTION ANALYSIS SHEET

Project: Riverwood Golf Club - Section 2
Location: Clayton, NC
Ct. Date: Balanced with NC 42 & Trip Gen
N/S Street: Castleberry Road
E/W Street: Pod J Driveway/Pod H South Driveway

AM In	AM Out	PM In	PM Out
106	318	349	208
Net New Trips:			
0	0	0	0
Pass-By Trips:			
Annual Growth Rate:	3.0%	Existing Year:	2020
Growth Factor:	0.343916	Buildout Year:	2030

AM PEAK HOUR
AM PHF = 0.90

Description		Pod J Driveway			Pod H South Driveway			Castleberry Road			Castleberry Road		
		Eastbound			Westbound			Northbound			Southbound		
		Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2020	Traffic Count	0	0	0	0	0	0	0	0	0	0	0	0
	Trip Gen/Balancing	0	0	0	0	0	0	0	149	0	0	192	0
2020	Existing Traffic	0	0	0	0	0	0	0	149	0	0	192	0
Growth Factor (0.03 per year)		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.344	0.000	0.000	0.344	0.000
2030	Background Growth	0	0	0	0	0	0	0	51	0	0	66	0
2030	Background Traffic	0	0	0	0	0	0	0	200	0	0	258	0
2030	Back. + Forecast Bal.	0	0	0	0	0	0	0	209	0	0	237	0
Project Traffic													
Percent Assignment Inbound		0%	0%	0%	0%	0%	0%	12%	29%	7%	3%	3%	3%
Inbound Project Traffic		0	0	0	0	0	0	13	31	7	3	3	3
Percent Assignment Outbound		3%	0%	12%	7%	0%	3%	0%	3%	0%	0%	29%	0%
Outbound Project Traffic		10	0	38	22	0	10	0	10	0	0	92	0
Total Project Traffic		10	0	38	22	0	10	13	41	7	3	95	3
Riverwood Connect. Div. to Riverwood		0	0	0	0	0	0	0	9	0	0	28	0
2030	Buildout Total	10	0	38	22	0	10	13	259	7	3	359	3
Percent Impact (Approach)		100.0%			100.0%			21.8%			27.7%		

PM PEAK HOUR
PM PHF = 0.90

Description		Pod J Driveway <u>Eastbound</u>			Pod H South Driveway <u>Westbound</u>			Castleberry Road <u>Northbound</u>			Castleberry Road <u>Southbound</u>		
		Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2020	Traffic Count	0	0	0	0	0	0	0	0	0	0	0	0
	Trip Gen/Balancing	0	0	0	0	0	0	0	155	0	0	133	0
2020	Existing Traffic	0	0	0	0	0	0	0	155	0	0	133	0
Growth Factor (0.03 per year)		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.344	0.000	0.000	0.344	0.000
2030	Background Growth	0	0	0	0	0	0	0	53	0	0	46	0
2030	Background Traffic	0	0	0	0	0	0	0	208	0	0	179	0
2030	Back. + Forecast Bal.	0	0	0	0	0	0	0	234	0	0	202	0
Project Traffic													
Percent Assignment Inbound		0%	0%	0%	0%	0%	0%	12%	29%	7%	3%	3%	3%
Inbound Project Traffic		0	0	0	0	0	0	42	101	24	10	10	10
Percent Assignment Outbound		3%	0%	12%	7%	0%	3%	0%	3%	0%	0%	29%	0%
Outbound Project Traffic		6	0	25	15	0	6	0	6	0	0	60	0
Total Project Traffic		6	0	25	15	0	6	42	107	24	10	70	10
Riverwood Connect. Div. to Riverwood		0	0	0	0	0	0	0	31	0	0	18	0
2030	Buildout Total	6	0	25	15	0	6	42	372	24	10	291	10
Percent Impact (Approach)		100.0%			100.0%			39.5%			29.0%		
Overall Percent Impact		39.3%											

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9/16/20

INTERSECTION ANALYSIS SHEET

Project: Riverwood Golf Club - Section 2
Location: Clayton, NC
Ct. Date: Balanced with NC 42 & Trip Gen
N/S Street: Castleberry Road
E/W Street: Pod F Driveway/Pod H North Driveway

AM In	AM Out	PM In	PM Out
106	318	349	208
Net New Trips:			
0	0	0	0
Pass-By Trips:			
Annual Growth Rate:	3.0%	Existing Year:	2020
Growth Factor:	0.343916	Buildout Year:	2030

AM PEAK HOUR
AM PHF = 0.90

Description	Pod F Driveway <u>Eastbound</u>			Pod H North Driveway <u>Westbound</u>			Castleberry Road <u>Northbound</u>			Castleberry Road <u>Southbound</u>		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2020 Traffic Count	0	0	0	0	0	0	0	0	0	0	0	0
Trip Gen/Balancing	0	0	0	0	0	0	0	149	0	0	192	0
2020 Existing Traffic	0	0	0	0	0	0	0	149	0	0	192	0
Growth Factor (0.03 per year)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.344	0.000	0.000	0.344	0.000
2030 Background Growth	0	0	0	0	0	0	0	51	0	0	66	0
2030 Background Traffic	0	0	0	0	0	0	0	200	0	0	258	0
2030 Back. + Forecast Bal.	0	0	0	0	0	0	0	209	0	0	237	0
Project Traffic												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	17%	5%	7%	3%	9%	8%
Inbound Project Traffic	0	0	0	0	0	0	18	5	7	3	10	8
Percent Assignment Outbound	8%	0%	17%	7%	0%	3%	0%	9%	0%	0%	5%	0%
Outbound Project Traffic	25	0	54	22	0	10	0	29	0	0	16	0
Total Project Traffic	25	0	54	22	0	10	18	34	7	3	26	8
Riverwood Connect. Div. to Riverwood	0	0	28	0	0	0	9	0	0	0	0	0
2030 Buildout Total	25	0	82	22	0	10	27	243	7	3	263	8
Percent Impact (Approach)		74.2%			100.0%			21.3%			13.5%	
Overall Percent Impact	30.0%											

PM PEAK HOUR
PM PHF = 0.90

Description	Pod F Driveway <u>Eastbound</u>			Pod H North Driveway <u>Westbound</u>			Castleberry Road <u>Northbound</u>			Castleberry Road <u>Southbound</u>		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2020 Traffic Count	0	0	0	0	0	0	0	0	0	0	0	0
Trip Gen/Balancing	0	0	0	0	0	0	0	155	0	0	133	0
2020 Existing Traffic	0	0	0	0	0	0	0	155	0	0	133	0
Growth Factor (0.03 per year)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.344	0.000	0.000	0.344	0.000
2030 Background Growth	0	0	0	0	0	0	0	53	0	0	46	0
2030 Background Traffic	0	0	0	0	0	0	0	208	0	0	179	0
2030 Back. + Forecast Bal.	0	0	0	0	0	0	0	234	0	0	202	0
Project Traffic												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	17%	5%	7%	3%	9%	8%
Inbound Project Traffic	0	0	0	0	0	0	59	17	24	10	31	28
Percent Assignment Outbound	8%	0%	17%	7%	0%	3%	0%	9%	0%	0%	5%	0%
Outbound Project Traffic	17	0	35	15	0	6	0	19	0	0	10	0
Total Project Traffic	17	0	35	15	0	6	59	36	24	10	41	28
Riverwood Connect. Div. to Riverwood	0	0	18	0	0	0	31	0	0	0	0	0
2030 Buildout Total	17	0	53	15	0	6	90	270	24	10	243	28
Percent Impact (Approach)		74.0%			100.0%			31.0%			28.1%	
Overall Percent Impact	35.8%											

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INTERSECTION ANALYSIS SHEET

Project: Riverwood Golf Club - Section 2
Location: Clayton, NC
Ct. Date: Balanced with NC 42 & Trip Gen
N/S Street: Riverwood Drive
E/W Street: Riverwood Extension

AM In	AM Out	PM In	PM Out
106	318	349	208
Net New Trips:	0	0	0
Pass-By Trips:	0	0	0

Annual Growth Rate:	3.0%	Existing Year:	2020
Growth Factor:	0.343916	Buildout Year:	2030

AM PEAK HOUR
AM PHF = 0.90

Description	- Eastbound			Riverwood Extension Westbound			Riverwood Drive Northbound			Riverwood Drive Southbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2020 Traffic Count	0	0	0	0	0	0	0	0	0	0	0	0
Trip Gen/Balancing	0	0	0	0	0	0	0	22	0	0	7	0
2020 Existing Traffic	0	0	0	0	0	0	0	22	0	0	7	0
Growth Factor (0.03 per year)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.344	0.000	0.000	0.344	0.000
2030 Background Growth	0	0	0	0	0	0	0	8	0	0	3	0
2030 Background Traffic	0	0	0	0	0	0	0	30	0	0	10	0
Project Traffic												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	0%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	0	0	5	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	5%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	16	0	0	0	0	0	0
Total Project Traffic	0	0	0	0	0	16	0	0	0	5	0	0
Riverwood Connect. Div. to Riverwood	0	0	0	2	0	7	0	-6	6	22	0	0
2030 Buildout Total	0	0	0	2	0	23	0	24	6	27	10	0
Percent Impact (Approach)	-	-	-	-	-	-	-	-	-	-	-	-
Overall Percent Impact	22.8%			63.4%			0.0%			13.6%		

PM PEAK HOUR
PM PHF = 0.90

Description	- Eastbound			Riverwood Extension Westbound			Riverwood Drive Northbound			Riverwood Drive Southbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2020 Traffic Count	0	0	0	0	0	0	0	0	0	0	0	0
Trip Gen/Balancing	0	0	0	0	0	0	0	15	0	0	25	0
2020 Existing Traffic	0	0	0	0	0	0	0	15	0	0	25	0
Growth Factor (0.03 per year)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.344	0.000	0.000	0.344	0.000
2030 Background Growth	0	0	0	0	0	0	0	5	0	0	9	0
2030 Background Traffic	0	0	0	0	0	0	0	20	0	0	34	0
Project Traffic												
Percent Assignment Inbound	0%	0%	0%	0%	0%	0%	0%	0%	0%	5%	0%	0%
Inbound Project Traffic	0	0	0	0	0	0	0	0	0	17	0	0
Percent Assignment Outbound	0%	0%	0%	0%	0%	5%	0%	0%	0%	0%	0%	0%
Outbound Project Traffic	0	0	0	0	0	10	0	0	0	0	0	0
Total Project Traffic	0	0	0	0	0	10	0	0	0	17	0	0
Riverwood Connect. Div. to Riverwood	0	0	0	6	0	25	0	-4	4	14	0	0
2030 Buildout Total	0	0	0	6	0	35	0	16	4	31	34	0
Percent Impact (Approach)	-	-	-	-	-	-	-	-	-	-	-	-
Overall Percent Impact	21.4%			24.2%			0.0%			26.1%		

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Appendix H:

Synchro File Descriptions

Synchro File Descriptions	
File Name	Notes
1-Existing AM.syn	Typical NCDOT CMU Inputs (0.90 PHF, RTOR Prohibited)
2-Existing PM.syn	
3-Background AM.syn	
4-Background PM.syn	
5-Build AM.syn	
6-Build PM.syn	
7-Existing AM - RTOR.syn	Same volume and laneage inputs as corresponding Files 1-6 but with RTOR permitted in analysis files
8-Existing PM - RTOR.syn	
9-Background AM - RTOR.syn	
10-Background PM - RTOR.syn	
11-Build AM - RTOR.syn	
12-Build PM - RTOR.syn	

Appendix I:
Synchro Output:
Existing (2020)

Riverwood Golf Club - Section 2
1: NC 42 & Castleberry Road

Existing AM (2020)
09/14/2020

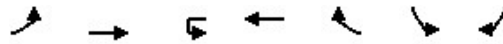
							
Lane Group	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (vph)	99	525	4	1022	51	30	182
Future Volume (vph)	99	525	4	1022	51	30	182
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12
Grade (%)		-2%		-1%		2%	
Storage Length (ft)	525		475		550	350	0
Storage Lanes	1		1		1	1	1
Taper Length (ft)	150		100			100	
Satd. Flow (prot)	1787	3575	1778	3557	1591	1620	1489
Flt Permitted	0.210		0.426			0.986	
Satd. Flow (perm)	395	3575	797	3557	1591	1620	1489
Right Turn on Red					No		No
Satd. Flow (RTOR)							
Link Speed (mph)		55		55		45	
Link Distance (ft)		1242		1317		645	
Travel Time (s)		15.4		16.3		9.8	
Confl. Peds. (#/hr)							
Confl. Bikes (#/hr)							
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0
Parking (#/hr)							
Mid-Block Traffic (%)		0%		0%		0%	
Shared Lane Traffic (%)							43%
Lane Group Flow (vph)	110	583	4	1136	57	120	115
Turn Type	D.P+P	NA	D.P+P	NA	pm+ov	Prot	Perm
Protected Phases	5	2	1	6	4	4	
Permitted Phases	6		2		6		4
Detector Phase	5	2	1	6	4	4	4
Switch Phase							
Minimum Initial (s)	7.0	14.0	7.0	14.0	7.0	7.0	7.0
Minimum Split (s)	13.0	21.0	12.0	21.0	13.0	13.0	13.0
Total Split (s)	20.0	70.0	15.0	65.0	35.0	35.0	35.0
Total Split (%)	16.7%	58.3%	12.5%	54.2%	29.2%	29.2%	29.2%
Yellow Time (s)	3.2	5.3	3.0	5.3	3.1	3.1	3.1
All-Red Time (s)	2.2	1.3	1.8	1.3	2.2	2.2	2.2
Lost Time Adjust (s)	-0.4	-1.6	0.2	-1.6	-0.3	-0.3	-0.3
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag			
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			
Recall Mode	None	C-Max	None	C-Max	None	None	None
Act Effect Green (s)	91.0	93.7	95.0	83.4	102.4	14.0	14.0
Actuated g/C Ratio	0.76	0.78	0.79	0.70	0.85	0.12	0.12
v/c Ratio	0.28	0.21	0.01	0.46	0.04	0.64	0.66
Control Delay	5.1	4.5	3.5	9.4	1.4	64.9	68.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	5.1	4.5	3.5	9.4	1.4	64.9	68.2

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Synchro 10 Report

Riverwood Golf Club - Section 2
1: NC 42 & Castleberry Road

Existing AM (2020)
09/14/2020



Lane Group	EBL	EBT	WBU	WBT	WBR	SBL	SBR
LOS	A	A	A	A	A	E	E
Approach Delay		4.6		9.0		66.5	
Approach LOS		A		A		E	
Queue Length 50th (ft)	15	45	1	185	5	90	91
Queue Length 95th (ft)	34	118	3	278	10	147	150
Internal Link Dist (ft)		1162		1237		565	
Turn Bay Length (ft)	525		475		550	350	
Base Capacity (vph)	490	2790	716	2473	1555	405	372
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.22	0.21	0.01	0.46	0.04	0.30	0.31

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBWB and 6:EBWB, Start of Green

Natural Cycle: 55

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.66

Intersection Signal Delay: 14.0

Intersection LOS: B

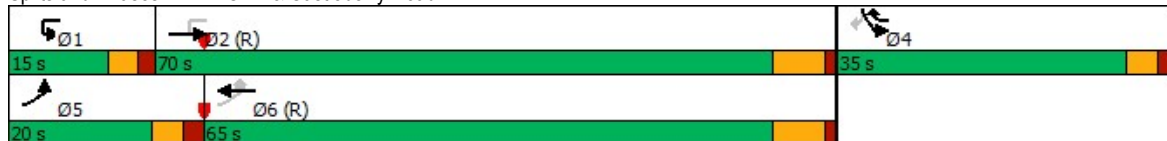
Intersection Capacity Utilization 52.4%

ICU Level of Service A

Analysis Period (min) 15

Description: 04-1241

Splits and Phases: 1: NC 42 & Castleberry Road



Riverwood Golf Club - Section 2
2: Castleberry Road & Stewart's Knob Drive

Existing AM (2020)
09/14/2020

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	6	22	7	143	190	4
Future Volume (vph)	6	22	7	143	190	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	0	0			0
Storage Lanes	1	0	0			0
Taper Length (ft)	25		25			
Satd. Flow (prot)	1649	0	0	1859	1857	0
Flt Permitted	0.989			0.998		
Satd. Flow (perm)	1649	0	0	1859	1857	0
Link Speed (mph)	25			45	45	
Link Distance (ft)	1075			1561	1118	
Travel Time (s)	29.3			23.7	16.9	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	31	0	0	167	215	0
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	23.2%			ICU Level of Service A		
Analysis Period (min)	15					

Riverwood Golf Club - Section 2
2: Castleberry Road & Stewart's Knob Drive

Existing AM (2020)
09/14/2020

Intersection						
Int Delay, s/veh	0.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	6	22	7	143	190	4
Future Vol, veh/h	6	22	7	143	190	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	24	8	159	211	4
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	388	213	215	0	-	0
Stage 1	213	-	-	-	-	-
Stage 2	175	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	616	827	1355	-	-	-
Stage 1	823	-	-	-	-	-
Stage 2	855	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	612	827	1355	-	-	-
Mov Cap-2 Maneuver	612	-	-	-	-	-
Stage 1	818	-	-	-	-	-
Stage 2	855	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	9.9	0.4		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1355	-	769	-	-	
HCM Lane V/C Ratio	0.006	-	0.04	-	-	
HCM Control Delay (s)	7.7	0	9.9	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0	-	0.1	-	-	

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Synchro 10 Report

Riverwood Golf Club - Section 2
3: Castleberry Road & Riverbend Drive

Existing AM (2020)
09/14/2020

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	11	4	145	4	4	181
Future Volume (vph)	11	4	145	4	4	181
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	0	
Storage Lanes	1	0		0	0	
Taper Length (ft)	25				25	
Satd. Flow (prot)	1735	0	1857	0	0	1861
Flt Permitted	0.964					0.999
Satd. Flow (perm)	1735	0	1857	0	0	1861
Link Speed (mph)	25		55			55
Link Distance (ft)	493		639			852
Travel Time (s)	13.4		7.9			10.6
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	16	0	165	0	0	205
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	22.7%			ICU Level of Service A		
Analysis Period (min) 15						

Riverwood Golf Club - Section 2
3: Castleberry Road & Riverbend Drive

Existing AM (2020)
09/14/2020

Intersection						
Int Delay, s/veh	0.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	11	4	145	4	4	181
Future Vol, veh/h	11	4	145	4	4	181
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	4	161	4	4	201
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	372	163	0	0	165	0
Stage 1	163	-	-	-	-	-
Stage 2	209	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	629	882	-	-	1413	-
Stage 1	866	-	-	-	-	-
Stage 2	826	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	627	882	-	-	1413	-
Mov Cap-2 Maneuver	627	-	-	-	-	-
Stage 1	866	-	-	-	-	-
Stage 2	824	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	10.4	0		0.2		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	679	1413	-	
HCM Lane V/C Ratio	-	-	0.025	0.003	-	
HCM Control Delay (s)	-	-	10.4	7.6	0	
HCM Lane LOS	-	-	B	A	A	
HCM 95th %tile Q(veh)	-	-	0.1	0	-	

Riverwood Golf Club - Section 2
4: Castleberry Road & Covered Bridge Road

Existing AM (2020)
09/14/2020

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	325	44	92	489	107	75
Future Volume (vph)	325	44	92	489	107	75
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		1	0
Taper Length (ft)			25		25	
Satd. Flow (prot)	1833	0	0	1848	1709	0
Flt Permitted				0.992	0.971	
Satd. Flow (perm)	1833	0	0	1848	1709	0
Link Speed (mph)	45			45	55	
Link Distance (ft)	785			895	1235	
Travel Time (s)	11.9			13.6	15.3	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	410	0	0	645	202	0
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	71.1%			ICU Level of Service C		
Analysis Period (min)	15					

Riverwood Golf Club - Section 2
4: Castleberry Road & Covered Bridge Road

Existing AM (2020)
09/14/2020

Intersection						
Int Delay, s/veh	8.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	325	44	92	489	107	75
Future Vol, veh/h	325	44	92	489	107	75
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	361	49	102	543	119	83
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	410	0	1133	386
Stage 1	-	-	-	-	386	-
Stage 2	-	-	-	-	747	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1149	-	224	662
Stage 1	-	-	-	-	687	-
Stage 2	-	-	-	-	468	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1149	-	196	662
Mov Cap-2 Maneuver	-	-	-	-	196	-
Stage 1	-	-	-	-	687	-
Stage 2	-	-	-	-	409	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	1.3		46.9		
HCM LOS	E					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	276	-	-	1149	-	
HCM Lane V/C Ratio	0.733	-	-	0.089	-	
HCM Control Delay (s)	46.9	-	-	8.4	0	
HCM Lane LOS	E	-	-	A	A	
HCM 95th %tile Q(veh)	5.2	-	-	0.3	-	

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Synchro 10 Report

Riverwood Golf Club - Section 2
1: NC 42 & Castleberry Road

Existing PM (2020)
09/14/2020

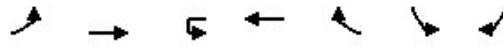
Lane Group	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (vph)	130	871	4	801	46	14	127
Future Volume (vph)	130	871	4	801	46	14	127
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12
Grade (%)		-2%		-1%		2%	
Storage Length (ft)	525		475		550	350	0
Storage Lanes	1		1		1	1	1
Taper Length (ft)	150		100			100	
Satd. Flow (prot)	1787	3575	1778	3557	1591	1607	1489
Flt Permitted	0.294		0.277			0.990	
Satd. Flow (perm)	553	3575	519	3557	1591	1607	1489
Right Turn on Red					No		No
Satd. Flow (RTOR)							
Link Speed (mph)		55		55		45	
Link Distance (ft)		1242		1317		645	
Travel Time (s)		15.4		16.3		9.8	
Confl. Peds. (#/hr)							
Confl. Bikes (#/hr)							
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0
Parking (#/hr)							
Mid-Block Traffic (%)		0%		0%		0%	
Shared Lane Traffic (%)							45%
Lane Group Flow (vph)	144	968	4	890	51	79	78
Turn Type	D.P+P	NA	D.P+P	NA	pm+ov	Prot	Perm
Protected Phases	5	2	1	6	4	4	
Permitted Phases	6		2		6		4
Detector Phase	5	2	1	6	4	4	4
Switch Phase							
Minimum Initial (s)	7.0	14.0	7.0	14.0	7.0	7.0	7.0
Minimum Split (s)	13.0	21.0	12.0	21.0	13.0	13.0	13.0
Total Split (s)	30.0	80.0	15.0	65.0	25.0	25.0	25.0
Total Split (%)	25.0%	66.7%	12.5%	54.2%	20.8%	20.8%	20.8%
Yellow Time (s)	3.2	5.3	3.0	5.3	3.1	3.1	3.1
All-Red Time (s)	2.2	1.3	1.8	1.3	2.2	2.2	2.2
Lost Time Adjust (s)	-0.4	-1.6	0.2	-1.6	-0.3	-0.3	-0.3
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag			
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			
Recall Mode	None	C-Max	None	C-Max	None	None	None
Act Effect Green (s)	93.8	96.4	97.8	86.1	102.4	11.2	11.2
Actuated g/C Ratio	0.78	0.80	0.82	0.72	0.85	0.09	0.09
v/c Ratio	0.28	0.34	0.01	0.35	0.04	0.53	0.56
Control Delay	3.9	4.3	2.5	7.2	1.4	63.7	66.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	3.9	4.3	2.5	7.2	1.4	63.7	66.7

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Synchro 10 Report

Riverwood Golf Club - Section 2
1: NC 42 & Castleberry Road

Existing PM (2020)
09/14/2020



Lane Group	EBL	EBT	WBU	WBT	WBR	SBL	SBR
LOS	A	A	A	A	A	E	E
Approach Delay		4.2		6.8		65.2	
Approach LOS		A		A		E	
Queue Length 50th (ft)	16	72	1	118	4	59	62
Queue Length 95th (ft)	36	190	3	180	10	107	112
Internal Link Dist (ft)		1162		1237		565	
Turn Bay Length (ft)	525		475		550	350	
Base Capacity (vph)	712	2871	530	2552	1473	267	248
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.20	0.34	0.01	0.35	0.03	0.30	0.31

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBWB and 6:EBWB, Start of Green

Natural Cycle: 50

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.56

Intersection Signal Delay: 9.7

Intersection LOS: A

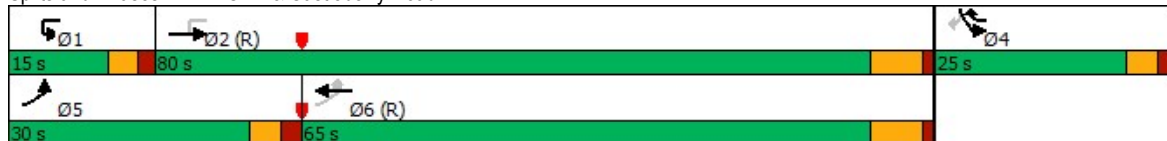
Intersection Capacity Utilization 48.2%

ICU Level of Service A

Analysis Period (min) 15

Description: 04-1241

Splits and Phases: 1: NC 42 & Castleberry Road



Riverwood Golf Club - Section 2
2: Castleberry Road & Stewart's Knob Drive

Existing PM (2020)
09/14/2020

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	4	14	24	152	127	6
Future Volume (vph)	4	14	24	152	127	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	0	0			0
Storage Lanes	1	0	0			0
Taper Length (ft)	25		25			
Satd. Flow (prot)	1645	0	0	1850	1852	0
Flt Permitted	0.990			0.993		
Satd. Flow (perm)	1645	0	0	1850	1852	0
Link Speed (mph)	25			45	45	
Link Distance (ft)	1075			1561	1118	
Travel Time (s)	29.3			23.7	16.9	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	20	0	0	196	148	0
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	29.7%			ICU Level of Service A		
Analysis Period (min)	15					

Riverwood Golf Club - Section 2
2: Castleberry Road & Stewart's Knob Drive

Existing PM (2020)
09/14/2020

Intersection						
Int Delay, s/veh	1.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	14	24	152	127	6
Future Vol, veh/h	4	14	24	152	127	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	16	27	169	141	7
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	368	145	148	0	-	0
Stage 1	145	-	-	-	-	-
Stage 2	223	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	632	902	1434	-	-	-
Stage 1	882	-	-	-	-	-
Stage 2	814	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	619	902	1434	-	-	-
Mov Cap-2 Maneuver	619	-	-	-	-	-
Stage 1	863	-	-	-	-	-
Stage 2	814	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	9.5	1		0		
HCM LOS	A					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1434	-	819	-	-	
HCM Lane V/C Ratio	0.019	-	0.024	-	-	
HCM Control Delay (s)	7.6	0	9.5	-	-	
HCM Lane LOS	A	A	A	-	-	
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-	

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Synchro 10 Report

Riverwood Golf Club - Section 2
3: Castleberry Road & Riverbend Drive

Existing PM (2020)
09/14/2020

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	6	4	144	11	4	127
Future Volume (vph)	6	4	144	11	4	127
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	0	
Storage Lanes	1	0		0	0	
Taper Length (ft)	25				25	
Satd. Flow (prot)	1717	0	1846	0	0	1861
Flt Permitted	0.969					0.999
Satd. Flow (perm)	1717	0	1846	0	0	1861
Link Speed (mph)	25		55			55
Link Distance (ft)	493		639			852
Travel Time (s)	13.4		7.9			10.6
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	11	0	172	0	0	145
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	19.9%			ICU Level of Service A		
Analysis Period (min)	15					

Riverwood Golf Club - Section 2
3: Castleberry Road & Riverbend Drive

Existing PM (2020)
09/14/2020

Intersection						
Int Delay, s/veh	0.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	6	4	144	11	4	127
Future Vol, veh/h	6	4	144	11	4	127
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	4	160	12	4	141
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	315	166	0	0	172	0
Stage 1	166	-	-	-	-	-
Stage 2	149	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	678	878	-	-	1405	-
Stage 1	863	-	-	-	-	-
Stage 2	879	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	676	878	-	-	1405	-
Mov Cap-2 Maneuver	676	-	-	-	-	-
Stage 1	863	-	-	-	-	-
Stage 2	876	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	9.9	0		0.2		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	745	1405	-	
HCM Lane V/C Ratio	-	-	0.015	0.003	-	
HCM Control Delay (s)	-	-	9.9	7.6	0	
HCM Lane LOS	-	-	A	A	A	
HCM 95th %tile Q(veh)	-	-	0	0	-	

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Synchro 10 Report

Riverwood Golf Club - Section 2
4: Castleberry Road & Covered Bridge Road

Existing PM (2020)
09/14/2020

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	680	134	99	436	81	120
Future Volume (vph)	680	134	99	436	81	120
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		1	0
Taper Length (ft)			25		25	
Satd. Flow (prot)	1822	0	0	1846	1678	0
Flt Permitted				0.991	0.980	
Satd. Flow (perm)	1822	0	0	1846	1678	0
Link Speed (mph)	45			45	55	
Link Distance (ft)	785			895	1235	
Travel Time (s)	11.9			13.6	15.3	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	905	0	0	594	223	0
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	94.2%			ICU Level of Service F		
Analysis Period (min)	15					

Riverwood Golf Club - Section 2
4: Castleberry Road & Covered Bridge Road

Existing PM (2020)
09/14/2020

Intersection						
Int Delay, s/veh	26.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	680	134	99	436	81	120
Future Vol, veh/h	680	134	99	436	81	120
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	756	149	110	484	90	133
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	905	0	1535	831
Stage 1	-	-	-	-	831	-
Stage 2	-	-	-	-	704	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	752	-	128	370
Stage 1	-	-	-	-	428	-
Stage 2	-	-	-	-	490	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	752	-	102	370
Mov Cap-2 Maneuver	-	-	-	-	102	-
Stage 1	-	-	-	-	428	-
Stage 2	-	-	-	-	392	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		2		197.9	
HCM LOS					F	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	180	-	-	752	-	
HCM Lane V/C Ratio	1.241	-	-	0.146	-	
HCM Control Delay (s)	197.9	-	-	10.6	0	
HCM Lane LOS	F	-	-	B	A	
HCM 95th %tile Q(veh)	12.3	-	-	0.5	-	

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Synchro 10 Report

Riverwood Golf Club - Section 2
1: NC 42 & Castleberry Road

Existing AM (2020) - w/ RTOR
09/14/2020

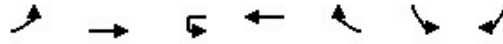
							
Lane Group	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (vph)	99	525	4	1022	51	30	182
Future Volume (vph)	99	525	4	1022	51	30	182
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12
Grade (%)		-2%		-1%		2%	
Storage Length (ft)	525		475		550	350	0
Storage Lanes	1		1		1	1	1
Taper Length (ft)	150		100			100	
Satd. Flow (prot)	1787	3575	1778	3557	1591	1620	1489
Flt Permitted	0.220		0.431			0.986	
Satd. Flow (perm)	414	3575	807	3557	1591	1620	1489
Right Turn on Red					Yes		Yes
Satd. Flow (RTOR)					57	87	115
Link Speed (mph)		55		55		45	
Link Distance (ft)		1242		1317		645	
Travel Time (s)		15.4		16.3		9.8	
Confl. Peds. (#/hr)							
Confl. Bikes (#/hr)							
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0
Parking (#/hr)							
Mid-Block Traffic (%)		0%		0%		0%	
Shared Lane Traffic (%)							43%
Lane Group Flow (vph)	110	583	4	1136	57	120	115
Turn Type	D.P+P	NA	D.P+P	NA	pm+ov	Prot	Perm
Protected Phases	5	2	1	6	4	4	
Permitted Phases	6		2		6		4
Detector Phase	5	2	1	6	4	4	4
Switch Phase							
Minimum Initial (s)	7.0	14.0	7.0	14.0	7.0	7.0	7.0
Minimum Split (s)	13.0	21.0	12.0	21.0	13.0	13.0	13.0
Total Split (s)	25.0	75.0	15.0	65.0	30.0	30.0	30.0
Total Split (%)	20.8%	62.5%	12.5%	54.2%	25.0%	25.0%	25.0%
Yellow Time (s)	3.2	5.3	3.0	5.3	3.1	3.1	3.1
All-Red Time (s)	2.2	1.3	1.8	1.3	2.2	2.2	2.2
Lost Time Adjust (s)	-0.4	-1.6	0.2	-1.6	-0.3	-0.3	-0.3
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag			
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			
Recall Mode	None	C-Max	None	C-Max	None	None	None
Act Effect Green (s)	96.0	98.7	100.0	88.5	102.5	9.0	9.0
Actuated g/C Ratio	0.80	0.82	0.83	0.74	0.85	0.08	0.08
v/c Ratio	0.26	0.20	0.01	0.43	0.04	0.60	0.53
Control Delay	3.5	3.0	2.0	6.9	0.4	30.5	18.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	3.5	3.0	2.0	6.9	0.4	30.5	18.3

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Synchro 10 Report

Riverwood Golf Club - Section 2
1: NC 42 & Castleberry Road

Existing AM (2020) - w/ RTOR
09/14/2020



Lane Group	EBL	EBT	WBU	WBT	WBR	SBL	SBR
LOS	A	A	A	A	A	C	B
Approach Delay		3.1		6.6		24.5	
Approach LOS		A		A		C	
Queue Length 50th (ft)	9	28	0	144	0	25	0
Queue Length 95th (ft)	25	96	2	225	5	84	58
Internal Link Dist (ft)		1162		1237		565	
Turn Bay Length (ft)	525		475		550	350	
Base Capacity (vph)	577	2939	757	2623	1570	406	401
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.19	0.20	0.01	0.43	0.04	0.30	0.29

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBWB and 6:EBWB, Start of Green

Natural Cycle: 50

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.60

Intersection Signal Delay: 7.4

Intersection LOS: A

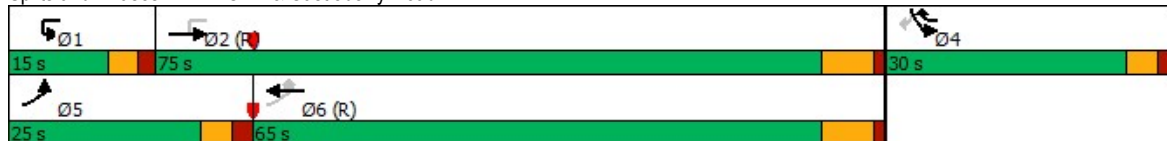
Intersection Capacity Utilization 52.4%

ICU Level of Service A

Analysis Period (min) 15

Description: 04-1241

Splits and Phases: 1: NC 42 & Castleberry Road



Riverwood Golf Club - Section 2
1: NC 42 & Castleberry Road

Existing PM (2020) - w/ RTOR
09/14/2020

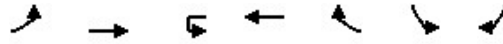
Lane Group	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (vph)	130	871	4	801	46	14	127
Future Volume (vph)	130	871	4	801	46	14	127
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12
Grade (%)		-2%		-1%		2%	
Storage Length (ft)	525		475		550	350	0
Storage Lanes	1		1		1	1	1
Taper Length (ft)	150		100			100	
Satd. Flow (prot)	1787	3575	1778	3557	1591	1607	1489
Flt Permitted	0.299		0.281			0.990	
Satd. Flow (perm)	563	3575	526	3557	1591	1607	1489
Right Turn on Red					Yes		Yes
Satd. Flow (RTOR)					51	63	78
Link Speed (mph)		55		55		45	
Link Distance (ft)		1242		1317		645	
Travel Time (s)		15.4		16.3		9.8	
Confl. Peds. (#/hr)							
Confl. Bikes (#/hr)							
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0
Parking (#/hr)							
Mid-Block Traffic (%)		0%		0%		0%	
Shared Lane Traffic (%)							45%
Lane Group Flow (vph)	144	968	4	890	51	79	78
Turn Type	D.P+P	NA	D.P+P	NA	pm+ov	Prot	Perm
Protected Phases	5	2	1	6	4	4	
Permitted Phases	6		2		6		4
Detector Phase	5	2	1	6	4	4	4
Switch Phase							
Minimum Initial (s)	7.0	14.0	7.0	14.0	7.0	7.0	7.0
Minimum Split (s)	13.0	21.0	12.0	21.0	13.0	13.0	13.0
Total Split (s)	25.0	81.0	14.0	70.0	25.0	25.0	25.0
Total Split (%)	20.8%	67.5%	11.7%	58.3%	20.8%	20.8%	20.8%
Yellow Time (s)	3.2	5.3	3.0	5.3	3.1	3.1	3.1
All-Red Time (s)	2.2	1.3	1.8	1.3	2.2	2.2	2.2
Lost Time Adjust (s)	-0.4	-1.6	0.2	-1.6	-0.3	-0.3	-0.3
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag			
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			
Recall Mode	None	C-Max	None	C-Max	None	None	None
Act Effect Green (s)	96.9	99.5	100.9	89.4	102.5	8.1	8.1
Actuated g/C Ratio	0.81	0.83	0.84	0.74	0.85	0.07	0.07
v/c Ratio	0.27	0.33	0.01	0.34	0.04	0.47	0.45
Control Delay	3.0	3.2	1.8	5.7	0.4	27.6	20.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	3.0	3.2	1.8	5.7	0.4	27.6	20.0

Riverwood Golf Club - Section 2 07/30/2020 Existing PM (2020) - w/ RTOR
Kimley-Horn

Synchro 10 Report

Riverwood Golf Club - Section 2
1: NC 42 & Castleberry Road

Existing PM (2020) - w/ RTOR
09/14/2020



Lane Group	EBL	EBT	WBU	WBT	WBR	SBL	SBR
LOS	A	A	A	A	A	C	B
Approach Delay		3.2		5.4		23.8	
Approach LOS		A		A		C	
Queue Length 50th (ft)	12	55	0	103	0	12	0
Queue Length 95th (ft)	27	158	2	148	5	60	50
Internal Link Dist (ft)		1162		1237		565	
Turn Bay Length (ft)	525		475		550	350	
Base Capacity (vph)	681	2964	538	2649	1518	320	313
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.21	0.33	0.01	0.34	0.03	0.25	0.25

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBWB and 6:EBWB, Start of Green

Natural Cycle: 50

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.47

Intersection Signal Delay: 5.6

Intersection LOS: A

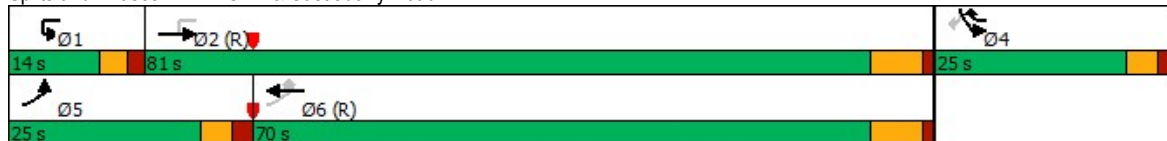
Intersection Capacity Utilization 48.2%

ICU Level of Service A

Analysis Period (min) 15

Description: 04-1241

Splits and Phases: 1: NC 42 & Castleberry Road



Appendix J:
Synchro Output:
Background (2030)

Riverwood Golf Club - Section 2
1: NC 42 & Castleberry Road

Background AM (2030)
09/14/2020

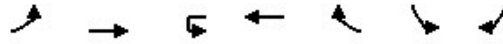
							
Lane Group	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (vph)	184	1180	45	1392	26	27	230
Future Volume (vph)	184	1180	45	1392	26	27	230
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12
Grade (%)		-2%		-1%		2%	
Storage Length (ft)	525		475		550	350	0
Storage Lanes	1		1		1	1	1
Taper Length (ft)	150		100			100	
Satd. Flow (prot)	1787	3575	1778	3557	1591	1608	1489
Flt Permitted	0.092		0.161			0.990	
Satd. Flow (perm)	173	3575	301	3557	1591	1608	1489
Right Turn on Red					No		No
Satd. Flow (RTOR)							
Link Speed (mph)		55		55		45	
Link Distance (ft)		1242		1317		645	
Travel Time (s)		15.4		16.3		9.8	
Confl. Peds. (#/hr)							
Confl. Bikes (#/hr)							
Peak Hour Factor	0.90	0.90	0.50	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0
Parking (#/hr)							
Mid-Block Traffic (%)		0%		0%		0%	
Shared Lane Traffic (%)							45%
Lane Group Flow (vph)	204	1311	90	1547	29	145	141
Turn Type	D.P+P	NA	D.P+P	NA	pm+ov	Prot	Perm
Protected Phases	5	2	1	6	4	4	
Permitted Phases	6		2		6		4
Detector Phase	5	2	1	6	4	4	4
Switch Phase							
Minimum Initial (s)	7.0	14.0	7.0	14.0	7.0	7.0	7.0
Minimum Split (s)	13.0	21.0	12.0	21.0	13.0	13.0	13.0
Total Split (s)	20.0	70.0	15.0	65.0	35.0	35.0	35.0
Total Split (%)	16.7%	58.3%	12.5%	54.2%	29.2%	29.2%	29.2%
Yellow Time (s)	3.2	5.3	3.0	5.3	3.1	3.1	3.1
All-Red Time (s)	2.2	1.3	1.8	1.3	2.2	2.2	2.2
Lost Time Adjust (s)	-0.4	-1.6	0.2	-1.6	-0.3	-0.3	-0.3
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag			
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			
Recall Mode	None	C-Max	None	C-Max	None	None	None
Act Effect Green (s)	88.9	82.0	88.9	74.7	95.8	16.1	16.1
Actuated g/C Ratio	0.74	0.68	0.74	0.62	0.80	0.13	0.13
v/c Ratio	0.64	0.54	0.29	0.70	0.02	0.67	0.71
Control Delay	25.9	11.1	6.2	19.2	3.3	64.3	68.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	25.9	11.1	6.2	19.2	3.3	64.3	68.0

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Synchro 10 Report

Riverwood Golf Club - Section 2
1: NC 42 & Castleberry Road

Background AM (2030)
09/14/2020



Lane Group	EBL	EBT	WBU	WBT	WBR	SBL	SBR
LOS	C	B	A	B	A	E	E
Approach Delay		13.1		18.2		66.1	
Approach LOS		B		B		E	
Queue Length 50th (ft)	58	241	13	394	4	108	111
Queue Length 95th (ft)	145	358	17	628	12	168	174
Internal Link Dist (ft)		1162		1237		565	
Turn Bay Length (ft)	525		475		550	350	
Base Capacity (vph)	352	2443	354	2215	1447	402	372
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.58	0.54	0.25	0.70	0.02	0.36	0.38

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBWB and 6:EBWB, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.71

Intersection Signal Delay: 19.9

Intersection LOS: B

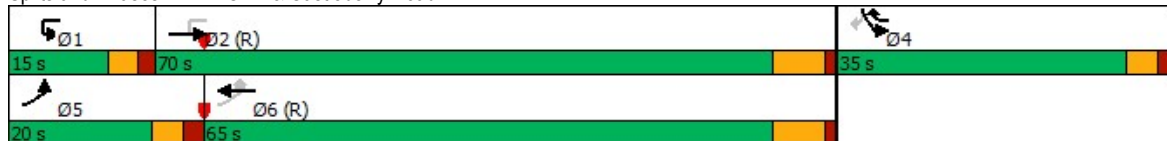
Intersection Capacity Utilization 67.4%

ICU Level of Service C

Analysis Period (min) 15

Description: 04-1241

Splits and Phases: 1: NC 42 & Castleberry Road



Riverwood Golf Club - Section 2
2: Castleberry Road & Stewart's Knob Drive

Background AM (2030)
09/14/2020

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	6	22	7	203	235	4
Future Volume (vph)	6	22	7	203	235	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	0	0			0
Storage Lanes	1	0	0			0
Taper Length (ft)	25		25			
Satd. Flow (prot)	1649	0	0	1859	1859	0
Flt Permitted	0.989			0.998		
Satd. Flow (perm)	1649	0	0	1859	1859	0
Link Speed (mph)	25			45	45	
Link Distance (ft)	1075			1561	1118	
Travel Time (s)	29.3			23.7	16.9	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	31	0	0	234	265	0
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization 26.3%				ICU Level of Service A		
Analysis Period (min) 15						

Riverwood Golf Club - Section 2
2: Castleberry Road & Stewart's Knob Drive

Background AM (2030)
09/14/2020

Intersection						
Int Delay, s/veh	0.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	6	22	7	203	235	4
Future Vol, veh/h	6	22	7	203	235	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	24	8	226	261	4
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	505	263	265	0	-	0
Stage 1	263	-	-	-	-	-
Stage 2	242	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	527	776	1299	-	-	-
Stage 1	781	-	-	-	-	-
Stage 2	798	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	523	776	1299	-	-	-
Mov Cap-2 Maneuver	523	-	-	-	-	-
Stage 1	776	-	-	-	-	-
Stage 2	798	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	10.4	0.3		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1299	-	703	-	-	
HCM Lane V/C Ratio	0.006	-	0.044	-	-	
HCM Control Delay (s)	7.8	0	10.4	-	-	
HCM Lane LOS	A	A	B	-	-	
HCM 95th %tile Q(veh)	0	-	0.1	-	-	

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Synchro 10 Report

Riverwood Golf Club - Section 2
3: Castleberry Road & Riverbend Drive

Background AM (2030)
09/14/2020

						
Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	11	4	205	4	4	226
Future Volume (vph)	11	4	205	4	4	226
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	0	
Storage Lanes	1	0		0	0	
Taper Length (ft)	25				25	
Satd. Flow (prot)	1735	0	1859	0	0	1861
Flt Permitted	0.964					0.999
Satd. Flow (perm)	1735	0	1859	0	0	1861
Link Speed (mph)	25		55			55
Link Distance (ft)	493		639			852
Travel Time (s)	13.4		7.9			10.6
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	16	0	232	0	0	255
Sign Control	Stop		Free			Free
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	25.1%			ICU Level of Service A		
Analysis Period (min) 15						

Riverwood Golf Club - Section 2
3: Castleberry Road & Riverbend Drive

Background AM (2030)
09/14/2020

Intersection						
Int Delay, s/veh	0.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	11	4	205	4	4	226
Future Vol, veh/h	11	4	205	4	4	226
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	4	228	4	4	251
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	489	230	0	0	232	0
Stage 1	230	-	-	-	-	-
Stage 2	259	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	538	809	-	-	1336	-
Stage 1	808	-	-	-	-	-
Stage 2	784	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	536	809	-	-	1336	-
Mov Cap-2 Maneuver	536	-	-	-	-	-
Stage 1	808	-	-	-	-	-
Stage 2	782	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	11.3	0		0.1		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	589	1336	-	
HCM Lane V/C Ratio	-	-	0.028	0.003	-	
HCM Control Delay (s)	-	-	11.3	7.7	0	
HCM Lane LOS	-	-	B	A	A	
HCM 95th %tile Q(veh)	-	-	0.1	0	-	

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Synchro 10 Report

Riverwood Golf Club - Section 2
4: Castleberry Road & Covered Bridge Road

Background AM (2030)
09/14/2020

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	459	73	153	690	122	86
Future Volume (vph)	459	73	153	690	122	86
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		1	0
Taper Length (ft)			25		25	
Satd. Flow (prot)	1827	0	0	1846	1709	0
Flt Permitted				0.991	0.972	
Satd. Flow (perm)	1827	0	0	1846	1709	0
Link Speed (mph)	45			45	55	
Link Distance (ft)	785			895	1235	
Travel Time (s)	11.9			13.6	15.3	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	591	0	0	937	232	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 95.4% ICU Level of Service F

Analysis Period (min) 15

Riverwood Golf Club - Section 2
4: Castleberry Road & Covered Bridge Road

Background AM (2030)
09/14/2020

Intersection						
Int Delay, s/veh	71.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	459	73	153	690	122	86
Future Vol, veh/h	459	73	153	690	122	86
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	510	81	170	767	136	96
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	591	0	1658	551
Stage 1	-	-	-	-	551	-
Stage 2	-	-	-	-	1107	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	985	-	~ 107	534
Stage 1	-	-	-	-	577	-
Stage 2	-	-	-	-	316	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	985	-	~ 75	534
Mov Cap-2 Maneuver	-	-	-	-	~ 75	-
Stage 1	-	-	-	-	577	-
Stage 2	-	-	-	-	221	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	1.7		\$ 538		
HCM LOS	F					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	116	-	-	985	-	
HCM Lane V/C Ratio	1.992	-	-	0.173	-	
HCM Control Delay (s)	\$ 538	-	-	9.4	0	
HCM Lane LOS	F	-	-	A	A	
HCM 95th %tile Q(veh)	19	-	-	0.6	-	
Notes						
~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon						

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Synchro 10 Report

Riverwood Golf Club - Section 2
1: NC 42 & Castleberry Road

Background PM (2030)
09/14/2020

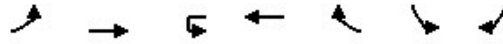
							
Lane Group	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (vph)	230	1392	84	1179	25	25	185
Future Volume (vph)	230	1392	84	1179	25	25	185
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12
Grade (%)		-2%		-1%		2%	
Storage Length (ft)	525		475		550	350	0
Storage Lanes	1		1		1	1	1
Taper Length (ft)	150		100			100	
Satd. Flow (prot)	1787	3575	1778	3557	1591	1612	1489
Flt Permitted	0.145		0.116			0.988	
Satd. Flow (perm)	273	3575	217	3557	1591	1612	1489
Right Turn on Red					No		No
Satd. Flow (RTOR)							
Link Speed (mph)		55		55		45	
Link Distance (ft)		1242		1317		645	
Travel Time (s)		15.4		16.3		9.8	
Confl. Peds. (#/hr)							
Confl. Bikes (#/hr)							
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0
Parking (#/hr)							
Mid-Block Traffic (%)		0%		0%		0%	
Shared Lane Traffic (%)							44%
Lane Group Flow (vph)	256	1547	93	1310	28	119	115
Turn Type	D.P+P	NA	D.P+P	NA	pm+ov	Prot	Perm
Protected Phases	5	2	1	6	4	4	
Permitted Phases	6		2		6		4
Detector Phase	5	2	1	6	4	4	4
Switch Phase							
Minimum Initial (s)	7.0	14.0	7.0	14.0	7.0	7.0	7.0
Minimum Split (s)	13.0	21.0	12.0	21.0	13.0	13.0	13.0
Total Split (s)	30.0	81.0	14.0	65.0	25.0	25.0	25.0
Total Split (%)	25.0%	67.5%	11.7%	54.2%	20.8%	20.8%	20.8%
Yellow Time (s)	3.2	5.3	3.0	5.3	3.1	3.1	3.1
All-Red Time (s)	2.2	1.3	1.8	1.3	2.2	2.2	2.2
Lost Time Adjust (s)	-0.4	-1.6	0.2	-1.6	-0.3	-0.3	-0.3
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag			
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			
Recall Mode	None	C-Max	None	C-Max	None	None	None
Act Effect Green (s)	91.1	84.2	91.1	75.2	94.1	13.9	13.9
Actuated g/C Ratio	0.76	0.70	0.76	0.63	0.78	0.12	0.12
v/c Ratio	0.63	0.62	0.37	0.59	0.02	0.64	0.67
Control Delay	16.7	11.4	7.4	16.3	3.9	65.4	68.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	16.7	11.4	7.4	16.3	3.9	65.4	68.8

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Synchro 10 Report

Riverwood Golf Club - Section 2
1: NC 42 & Castleberry Road

Background PM (2030)
09/14/2020



Lane Group	EBL	EBT	WBU	WBT	WBR	SBL	SBR
LOS	B	B	A	B	A	E	E
Approach Delay		12.1		15.5		67.0	
Approach LOS		B		B		E	
Queue Length 50th (ft)	37	296	12	295	4	89	91
Queue Length 95th (ft)	137	433	29	478	14	145	150
Internal Link Dist (ft)		1162		1237		565	
Turn Bay Length (ft)	525		475		550	350	
Base Capacity (vph)	532	2508	285	2228	1328	268	248
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.62	0.33	0.59	0.02	0.44	0.46

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBWB and 6:EBWB, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.67

Intersection Signal Delay: 17.2

Intersection LOS: B

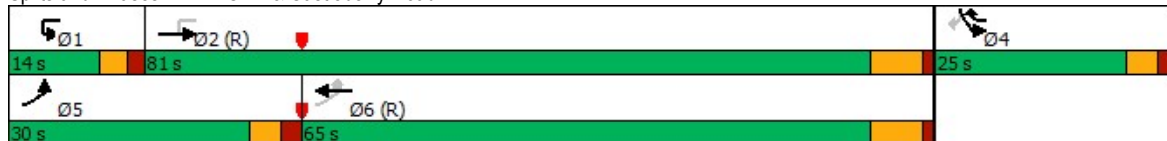
Intersection Capacity Utilization 63.7%

ICU Level of Service B

Analysis Period (min) 15

Description: 04-1241

Splits and Phases: 1: NC 42 & Castleberry Road



Riverwood Golf Club - Section 2
2: Castleberry Road & Stewart's Knob Drive

Background PM (2030)
09/14/2020

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	4	14	24	231	196	6
Future Volume (vph)	4	14	24	231	196	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	0	0			0
Storage Lanes	1	0	0			0
Taper Length (ft)	25		25			
Satd. Flow (prot)	1645	0	0	1853	1855	0
Flt Permitted	0.990			0.995		
Satd. Flow (perm)	1645	0	0	1853	1855	0
Link Speed (mph)	25			45	45	
Link Distance (ft)	1075			1561	1118	
Travel Time (s)	29.3			23.7	16.9	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	20	0	0	284	225	0
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	37.5%			ICU Level of Service A		
Analysis Period (min)	15					

Riverwood Golf Club - Section 2
2: Castleberry Road & Stewart's Knob Drive

Background PM (2030)
09/14/2020

Intersection						
Int Delay, s/veh	0.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	4	14	24	231	196	6
Future Vol, veh/h	4	14	24	231	196	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	16	27	257	218	7
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	533	222	225	0	-	0
Stage 1	222	-	-	-	-	-
Stage 2	311	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	507	818	1344	-	-	-
Stage 1	815	-	-	-	-	-
Stage 2	743	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	495	818	1344	-	-	-
Mov Cap-2 Maneuver	495	-	-	-	-	-
Stage 1	796	-	-	-	-	-
Stage 2	743	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	10.2	0.7		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1344	-	714	-	-	
HCM Lane V/C Ratio	0.02	-	0.028	-	-	
HCM Control Delay (s)	7.7	0	10.2	-	-	
HCM Lane LOS	A	A	B	-	-	
HCM 95th %tile Q(veh)	0.1	-	0.1	-	-	

Riverwood Golf Club - Section 2
3: Castleberry Road & Riverbend Drive

Background PM (2030)
09/14/2020

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	6	4	223	11	4	196
Future Volume (vph)	6	4	223	11	4	196
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	0	
Storage Lanes	1	0		0	0	
Taper Length (ft)	25				25	
Satd. Flow (prot)	1717	0	1852	0	0	1861
Flt Permitted	0.969					0.999
Satd. Flow (perm)	1717	0	1852	0	0	1861
Link Speed (mph)	25		55			55
Link Distance (ft)	493		639			852
Travel Time (s)	13.4		7.9			10.6
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	11	0	260	0	0	222
Sign Control	Stop		Free			Free

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 23.5% ICU Level of Service A

Analysis Period (min) 15

Riverwood Golf Club - Section 2
3: Castleberry Road & Riverbend Drive

Background PM (2030)
09/14/2020

Intersection						
Int Delay, s/veh	0.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	6	4	223	11	4	196
Future Vol, veh/h	6	4	223	11	4	196
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	4	248	12	4	218
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	480	254	0	0	260	0
Stage 1	254	-	-	-	-	-
Stage 2	226	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	545	785	-	-	1304	-
Stage 1	788	-	-	-	-	-
Stage 2	812	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	543	785	-	-	1304	-
Mov Cap-2 Maneuver	543	-	-	-	-	-
Stage 1	788	-	-	-	-	-
Stage 2	810	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	10.9	0		0.2		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	619	1304	-	
HCM Lane V/C Ratio	-	-	0.018	0.003	-	
HCM Control Delay (s)	-	-	10.9	7.8	0	
HCM Lane LOS	-	-	B	A	A	
HCM 95th %tile Q(veh)	-	-	0.1	0	-	

Riverwood Golf Club - Section 2
4: Castleberry Road & Covered Bridge Road

Background PM (2030)
09/14/2020

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	960	222	164	615	91	134
Future Volume (vph)	960	222	164	615	91	134
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		1	0
Taper Length (ft)			25		25	
Satd. Flow (prot)	1816	0	0	1844	1679	0
Flt Permitted				0.990	0.980	
Satd. Flow (perm)	1816	0	0	1844	1679	0
Link Speed (mph)	45			45	55	
Link Distance (ft)	785			895	1235	
Travel Time (s)	11.9			13.6	15.3	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1314	0	0	865	250	0
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	128.7%			ICU Level of Service H		
Analysis Period (min)	15					

Riverwood Golf Club - Section 2
4: Castleberry Road & Covered Bridge Road

Background PM (2030)
09/14/2020

Intersection						
Int Delay, s/veh	224.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	960	222	164	615	91	134
Future Vol, veh/h	960	222	164	615	91	134
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1067	247	182	683	101	149
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	1314	0	2238	1191
Stage 1	-	-	-	-	1191	-
Stage 2	-	-	-	-	1047	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	526	-	~ 47	228
Stage 1	-	-	-	-	288	-
Stage 2	-	-	-	-	338	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	526	-	~ 21	228
Mov Cap-2 Maneuver	-	-	-	-	~ 21	-
Stage 1	-	-	-	-	288	-
Stage 2	-	-	-	-	149	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		3.2		\$ 2170.6	
HCM LOS	F					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	46	-	-	526	-	
HCM Lane V/C Ratio	5.435	-	-	0.346	-	
HCM Control Delay (s)	\$ 2170.6	-	-	15.4	0	
HCM Lane LOS	F	-	-	C	A	
HCM 95th %tile Q(veh)	28.8	-	-	1.5	-	
Notes						
~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon						

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Synchro 10 Report

Riverwood Golf Club - Section 2
1: NC 42 & Castleberry Road

Background AM (2030) - w/ RTOR
09/14/2020

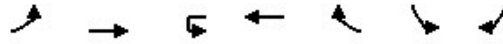
Lane Group	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (vph)	184	1180	45	1392	26	27	230
Future Volume (vph)	184	1180	45	1392	26	27	230
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12
Grade (%)		-2%		-1%		2%	
Storage Length (ft)	525		475		550	350	0
Storage Lanes	1		1		1	1	1
Taper Length (ft)	150		100			100	
Satd. Flow (prot)	1787	3575	1778	3557	1591	1608	1489
Flt Permitted	0.111		0.176			0.990	
Satd. Flow (perm)	209	3575	329	3557	1591	1608	1489
Right Turn on Red					Yes		Yes
Satd. Flow (RTOR)					29	115	141
Link Speed (mph)		55		55		45	
Link Distance (ft)		1242		1317		645	
Travel Time (s)		15.4		16.3		9.8	
Confl. Peds. (#/hr)							
Confl. Bikes (#/hr)							
Peak Hour Factor	0.90	0.90	0.50	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0
Parking (#/hr)							
Mid-Block Traffic (%)		0%		0%		0%	
Shared Lane Traffic (%)							45%
Lane Group Flow (vph)	204	1311	90	1547	29	145	141
Turn Type	D.P+P	NA	D.P+P	NA	pm+ov	Prot	Perm
Protected Phases	5	2	1	6	4	4	
Permitted Phases	6		2		6		4
Detector Phase	5	2	1	6	4	4	4
Switch Phase							
Minimum Initial (s)	7.0	14.0	7.0	14.0	7.0	7.0	7.0
Minimum Split (s)	13.0	21.0	12.0	21.0	13.0	13.0	13.0
Total Split (s)	25.0	75.0	15.0	65.0	30.0	30.0	30.0
Total Split (%)	20.8%	62.5%	12.5%	54.2%	25.0%	25.0%	25.0%
Yellow Time (s)	3.2	5.3	3.0	5.3	3.1	3.1	3.1
All-Red Time (s)	2.2	1.3	1.8	1.3	2.2	2.2	2.2
Lost Time Adjust (s)	-0.4	-1.6	0.2	-1.6	-0.3	-0.3	-0.3
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag			
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			
Recall Mode	None	C-Max	None	C-Max	None	None	None
Act Effect Green (s)	95.9	89.1	95.9	81.8	95.9	9.1	9.1
Actuated g/C Ratio	0.80	0.74	0.80	0.68	0.80	0.08	0.08
v/c Ratio	0.58	0.49	0.26	0.64	0.02	0.64	0.58
Control Delay	17.0	7.3	3.9	13.5	1.3	27.8	18.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.0	7.3	3.9	13.5	1.3	27.8	18.0

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Synchro 10 Report

Riverwood Golf Club - Section 2
1: NC 42 & Castleberry Road

Background AM (2030) - w/ RTOR
09/14/2020



Lane Group	EBL	EBT	WBU	WBT	WBR	SBL	SBR
LOS	B	A	A	B	A	C	B
Approach Delay		8.6		12.8		23.0	
Approach LOS		A		B		C	
Queue Length 50th (ft)	21	175	7	304	0	23	0
Queue Length 95th (ft)	111	272	12	524	7	86	63
Internal Link Dist (ft)		1162		1237		565	
Turn Bay Length (ft)	525		475		550	350	
Base Capacity (vph)	437	2653	392	2424	1483	426	421
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.47	0.49	0.23	0.64	0.02	0.34	0.33

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBWB and 6:EBWB, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.64

Intersection Signal Delay: 11.8

Intersection LOS: B

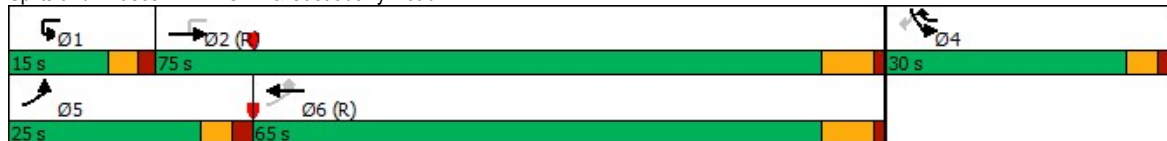
Intersection Capacity Utilization 67.4%

ICU Level of Service C

Analysis Period (min) 15

Description: 04-1241

Splits and Phases: 1: NC 42 & Castleberry Road



Riverwood Golf Club - Section 2
1: NC 42 & Castleberry Road

Background PM (2030) - w/ RTOR
09/14/2020

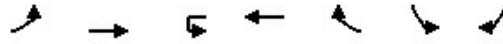
							
Lane Group	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (vph)	230	1392	84	1179	25	25	185
Future Volume (vph)	230	1392	84	1179	25	25	185
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12
Grade (%)		-2%		-1%		2%	
Storage Length (ft)	525		475		550	350	0
Storage Lanes	1		1		1	1	1
Taper Length (ft)	150		100			100	
Satd. Flow (prot)	1787	3575	1778	3557	1591	1612	1489
Flt Permitted	0.162		0.127			0.988	
Satd. Flow (perm)	305	3575	238	3557	1591	1612	1489
Right Turn on Red					Yes		Yes
Satd. Flow (RTOR)					28	91	115
Link Speed (mph)		55		55		45	
Link Distance (ft)		1242		1317		645	
Travel Time (s)		15.4		16.3		9.8	
Confl. Peds. (#/hr)							
Confl. Bikes (#/hr)							
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0
Parking (#/hr)							
Mid-Block Traffic (%)		0%		0%		0%	
Shared Lane Traffic (%)							44%
Lane Group Flow (vph)	256	1547	93	1310	28	119	115
Turn Type	D.P+P	NA	D.P+P	NA	pm+ov	Prot	Perm
Protected Phases	5	2	1	6	4	4	
Permitted Phases	6		2		6		4
Detector Phase	5	2	1	6	4	4	4
Switch Phase							
Minimum Initial (s)	7.0	14.0	7.0	14.0	7.0	7.0	7.0
Minimum Split (s)	13.0	21.0	12.0	21.0	13.0	13.0	13.0
Total Split (s)	25.0	79.0	16.0	70.0	25.0	25.0	25.0
Total Split (%)	20.8%	65.8%	13.3%	58.3%	20.8%	20.8%	20.8%
Yellow Time (s)	3.2	5.3	3.0	5.3	3.1	3.1	3.1
All-Red Time (s)	2.2	1.3	1.8	1.3	2.2	2.2	2.2
Lost Time Adjust (s)	-0.4	-1.6	0.2	-1.6	-0.3	-0.3	-0.3
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag			
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			
Recall Mode	None	C-Max	None	C-Max	None	None	None
Act Effect Green (s)	96.2	89.1	96.2	82.0	95.8	8.8	8.8
Actuated g/C Ratio	0.80	0.74	0.80	0.68	0.80	0.07	0.07
v/c Ratio	0.61	0.58	0.33	0.54	0.02	0.59	0.53
Control Delay	12.7	8.4	5.1	11.6	1.4	28.8	18.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.7	8.4	5.1	11.6	1.4	28.8	18.6

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Synchro 10 Report

Riverwood Golf Club - Section 2
1: NC 42 & Castleberry Road

Background PM (2030) - w/ RTOR
09/14/2020



Lane Group	EBL	EBT	WBU	WBT	WBR	SBL	SBR
LOS	B	A	A	B	A	C	B
Approach Delay		9.0		11.0		23.8	
Approach LOS		A		B		C	
Queue Length 50th (ft)	23	230	8	231	0	21	0
Queue Length 95th (ft)	102	359	21	396	7	79	58
Internal Link Dist (ft)		1162		1237		565	
Turn Bay Length (ft)	525		475		550	350	
Base Capacity (vph)	504	2655	339	2429	1421	344	344
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.58	0.27	0.54	0.02	0.35	0.33

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBWB and 6:EBWB, Start of Green

Natural Cycle: 60

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.61

Intersection Signal Delay: 10.8

Intersection LOS: B

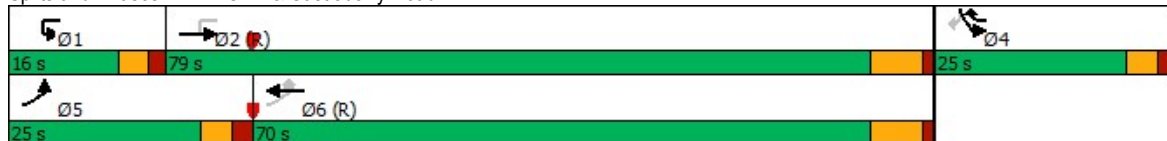
Intersection Capacity Utilization 63.7%

ICU Level of Service B

Analysis Period (min) 15

Description: 04-1241

Splits and Phases: 1: NC 42 & Castleberry Road



Appendix K:
Synchro Output:
Build-out (2030)

Riverwood Golf Club - Section 2
1: NC 42 & Castleberry Road

Build AM (2030)
09/14/2020

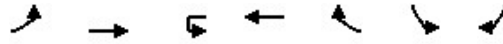
							
Lane Group	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (vph)	244	1180	45	1392	49	98	410
Future Volume (vph)	244	1180	45	1392	49	98	410
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12
Grade (%)		-2%		-1%		2%	
Storage Length (ft)	525		475		550	350	0
Storage Lanes	1		1		1	1	1
Taper Length (ft)	150		100			100	
Satd. Flow (prot)	1787	3575	1778	3557	1591	1641	1489
Flt Permitted	0.065		0.136			0.981	
Satd. Flow (perm)	122	3575	255	3557	1591	1641	1489
Right Turn on Red					No		No
Satd. Flow (RTOR)							
Link Speed (mph)		55		55		45	
Link Distance (ft)		1242		1317		645	
Travel Time (s)		15.4		16.3		9.8	
Confl. Peds. (#/hr)							
Confl. Bikes (#/hr)							
Peak Hour Factor	0.90	0.90	0.50	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0
Parking (#/hr)							
Mid-Block Traffic (%)		0%		0%		0%	
Shared Lane Traffic (%)							39%
Lane Group Flow (vph)	271	1311	90	1547	54	287	278
Turn Type	D.P+P	NA	D.P+P	NA	pm+ov	Prot	Perm
Protected Phases	5	2	1	6	4	4	
Permitted Phases	6		2		6		4
Detector Phase	5	2	1	6	4	4	4
Switch Phase							
Minimum Initial (s)	7.0	14.0	7.0	14.0	7.0	7.0	7.0
Minimum Split (s)	13.0	21.0	12.0	21.0	13.0	13.0	13.0
Total Split (s)	20.0	70.0	15.0	65.0	35.0	35.0	35.0
Total Split (%)	16.7%	58.3%	12.5%	54.2%	29.2%	29.2%	29.2%
Yellow Time (s)	3.2	5.3	3.0	5.3	3.1	3.1	3.1
All-Red Time (s)	2.2	1.3	1.8	1.3	2.2	2.2	2.2
Lost Time Adjust (s)	-0.4	-1.6	0.2	-1.6	-0.3	-0.3	-0.3
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag			
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			
Recall Mode	None	C-Max	None	C-Max	None	None	None
Act Effect Green (s)	79.1	72.0	79.1	62.9	93.7	25.9	25.9
Actuated g/C Ratio	0.66	0.60	0.66	0.52	0.78	0.22	0.22
v/c Ratio	0.89	0.61	0.35	0.83	0.04	0.81	0.87
Control Delay	63.1	17.4	10.4	29.8	3.0	62.6	70.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	63.1	17.4	10.4	29.8	3.0	62.6	70.8

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Synchro 10 Report

Riverwood Golf Club - Section 2
1: NC 42 & Castleberry Road

Build AM (2030)
09/14/2020



Lane Group	EBL	EBT	WBU	WBT	WBR	SBL	SBR
LOS	E	B	B	C	A	E	E
Approach Delay		25.3		27.9		66.6	
Approach LOS		C		C		E	
Queue Length 50th (ft)	154	326	21	540	8	209	216
Queue Length 95th (ft)	#330	431	22	651	15	305	#337
Internal Link Dist (ft)		1162		1237		565	
Turn Bay Length (ft)	525		475		550	350	
Base Capacity (vph)	307	2145	301	1863	1297	410	372
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.88	0.61	0.30	0.83	0.04	0.70	0.75

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBWB and 6:EBWB, Start of Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.89

Intersection Signal Delay: 32.5

Intersection LOS: C

Intersection Capacity Utilization 78.3%

ICU Level of Service D

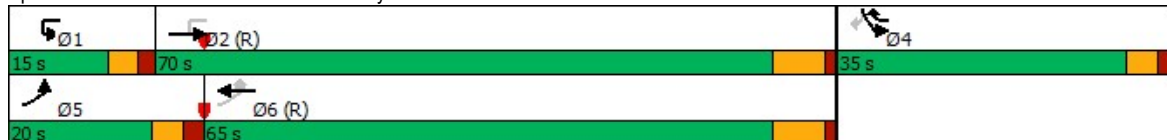
Analysis Period (min) 15

Description: 04-1241

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

Queue shown is maximum after two cycles.

Splits and Phases: 1: NC 42 & Castleberry Road



Riverwood Golf Club - Section 2
2: Castleberry Road & Stewart's Knob Drive

Build AM (2030)
09/14/2020

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	16	92	30	263	415	5
Future Volume (vph)	16	92	30	263	415	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	0	75			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		100			
Satd. Flow (prot)	1637	0	1770	1863	1859	0
Flt Permitted	0.993		0.950			
Satd. Flow (perm)	1637	0	1770	1863	1859	0
Link Speed (mph)	25			45	45	
Link Distance (ft)	1075			1561	1117	
Travel Time (s)	29.3			23.7	16.9	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	120	0	33	292	467	0
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type: Unsignalized						
Intersection Capacity Utilization 38.2%				ICU Level of Service A		
Analysis Period (min) 15						

Riverwood Golf Club - Section 2
2: Castleberry Road & Stewart's Knob Drive

Build AM (2030)
09/14/2020

Intersection						
Int Delay, s/veh	2.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	16	92	30	263	415	5
Future Vol, veh/h	16	92	30	263	415	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	75	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	18	102	33	292	461	6
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	822	464	467	0	-	0
Stage 1	464	-	-	-	-	-
Stage 2	358	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	344	598	1094	-	-	-
Stage 1	633	-	-	-	-	-
Stage 2	707	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	334	598	1094	-	-	-
Mov Cap-2 Maneuver	334	-	-	-	-	-
Stage 1	614	-	-	-	-	-
Stage 2	707	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	13.7	0.9		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1094	-	535	-	-	
HCM Lane V/C Ratio	0.03	-	0.224	-	-	
HCM Control Delay (s)	8.4	-	13.7	-	-	
HCM Lane LOS	A	-	B	-	-	
HCM 95th %tile Q(veh)	0.1	-	0.9	-	-	

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Synchro 10 Report

Riverwood Golf Club - Section 2

3: Castleberry Road & Pod E Driveway/Riverbend Drive

Build AM (2030)

09/14/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	4	16	11	4	4	5	269	4	4	247	5
Future Volume (vph)	16	4	16	11	4	4	5	269	4	4	247	5
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	1711	0	0	1760	0	0	1857	0	0	1855	0
Flt Permitted		0.978			0.971			0.999			0.999	
Satd. Flow (perm)	0	1711	0	0	1760	0	0	1857	0	0	1855	0
Link Speed (mph)		25			25			55			55	
Link Distance (ft)		496			493			839			852	
Travel Time (s)		13.5			13.4			10.4			10.6	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	40	0	0	20	0	0	309	0	0	284	0
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	27.2%											
Analysis Period (min)	15											
ICU Level of Service A												

Riverwood Golf Club - Section 2
3: Castleberry Road & Pod E Driveway/Riverbend Drive

Build AM (2030)
09/14/2020

Intersection												
Int Delay, s/veh	1.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	16	4	16	11	4	4	5	269	4	4	247	5
Future Vol, veh/h	16	4	16	11	4	4	5	269	4	4	247	5
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	18	4	18	12	4	4	6	299	4	4	274	6
Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	602	600	277	609	601	301	280	0	0	303	0	0
Stage 1	285	285	-	313	313	-	-	-	-	-	-	-
Stage 2	317	315	-	296	288	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	412	415	762	407	414	739	1283	-	-	1258	-	-
Stage 1	722	676	-	698	657	-	-	-	-	-	-	-
Stage 2	694	656	-	712	674	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	403	411	762	391	410	739	1283	-	-	1258	-	-
Mov Cap-2 Maneuver	403	411	-	391	410	-	-	-	-	-	-	-
Stage 1	718	673	-	694	653	-	-	-	-	-	-	-
Stage 2	681	652	-	688	671	-	-	-	-	-	-	-
Approach	EB		WB		NB			SB				
HCM Control Delay, s	12.6		13.6		0.1			0.1				
HCM LOS	B		B									
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1283	-	-	511	439	1258	-	-				
HCM Lane V/C Ratio	0.004	-	-	0.078	0.048	0.004	-	-				
HCM Control Delay (s)	7.8	0	-	12.6	13.6	7.9	0	-				
HCM Lane LOS	A	A	-	B	B	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0.3	0.2	0	-	-				

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Synchro 10 Report

Riverwood Golf Club - Section 2
4: Castleberry Road & Covered Bridge Road

Build AM (2030)
09/14/2020

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	459	94	158	690	186	102
Future Volume (vph)	459	94	158	690	186	102
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		1	0
Taper Length (ft)			25		25	
Satd. Flow (prot)	1820	0	0	1846	1718	0
Flt Permitted				0.991	0.969	
Satd. Flow (perm)	1820	0	0	1846	1718	0
Link Speed (mph)	45			45	55	
Link Distance (ft)	785			895	1235	
Travel Time (s)	11.9			13.6	15.3	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	614	0	0	943	320	0
Sign Control	Free			Free	Stop	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 101.5% ICU Level of Service G

Analysis Period (min) 15

Riverwood Golf Club - Section 2
4: Castleberry Road & Covered Bridge Road

Build AM (2030)
09/14/2020

Intersection						
Int Delay, s/veh	180.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	459	94	158	690	186	102
Future Vol, veh/h	459	94	158	690	186	102
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	510	104	176	767	207	113
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	614	0	1681	562
Stage 1	-	-	-	-	562	-
Stage 2	-	-	-	-	1119	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	965	-	~ 104	526
Stage 1	-	-	-	-	571	-
Stage 2	-	-	-	-	312	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	965	-	~ 71	526
Mov Cap-2 Maneuver	-	-	-	-	~ 71	-
Stage 1	-	-	-	-	571	-
Stage 2	-	-	-	-	213	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	1.8		\$ 1051.3		
HCM LOS	F					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	102	-	-	965	-	
HCM Lane V/C Ratio	3.137	-	-	0.182	-	
HCM Control Delay (s)	\$ 1051.3	-	-	9.6	0	
HCM Lane LOS	F	-	-	A	A	
HCM 95th %tile Q(veh)	31.1	-	-	0.7	-	
Notes						
~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon						

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Synchro 10 Report

Riverwood Golf Club - Section 2

5: Castleberry Road & Pod J Driveway/Pod H South Driveway

Build AM (2030)

09/14/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	4	38	22	4	10	13	259	7	4	359	4
Future Volume (vph)	10	4	38	22	4	10	13	259	7	4	359	4
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	1662	0	0	1738	0	0	1853	0	0	1861	0
Flt Permitted		0.990			0.970			0.998				
Satd. Flow (perm)	0	1662	0	0	1738	0	0	1853	0	0	1861	0
Link Speed (mph)		10			25			55			55	
Link Distance (ft)		1333			703			1117			905	
Travel Time (s)		90.9			19.2			13.8			11.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	57	0	0	39	0	0	310	0	0	407	0
Sign Control		Stop			Stop			Free			Free	

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 34.1%

ICU Level of Service A

Analysis Period (min) 15

Riverwood Golf Club - Section 2
5: Castleberry Road & Pod J Driveway/Pod H South Driveway

Build AM (2030)
09/14/2020

Intersection												
Int Delay, s/veh	1.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	4	38	22	4	10	13	259	7	4	359	4
Future Vol, veh/h	10	4	38	22	4	10	13	259	7	4	359	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	4	42	24	4	11	14	288	8	4	399	4
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	737	733	401	752	731	292	403	0	0	296	0	0
Stage 1	409	409	-	320	320	-	-	-	-	-	-	-
Stage 2	328	324	-	432	411	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	334	348	649	327	349	747	1156	-	-	1265	-	-
Stage 1	619	596	-	692	652	-	-	-	-	-	-	-
Stage 2	685	650	-	602	595	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	321	341	649	298	342	747	1156	-	-	1265	-	-
Mov Cap-2 Maneuver	321	341	-	298	342	-	-	-	-	-	-	-
Stage 1	610	594	-	682	642	-	-	-	-	-	-	-
Stage 2	660	640	-	556	593	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	12.9			16.1			0.4			0.1		
HCM LOS	B			C								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1156	-	-	513	364	1265	-	-				
HCM Lane V/C Ratio	0.012	-	-	0.113	0.11	0.004	-	-				
HCM Control Delay (s)	8.2	0	-	12.9	16.1	7.9	0	-				
HCM Lane LOS	A	A	-	B	C	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0.4	0.4	0	-	-				

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Synchro 10 Report

Riverwood Golf Club - Section 2

6: Castleberry Road & Pod F Driveway/Pod H North Driveway

Build AM (2030)

09/14/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	4	82	22	4	10	27	243	7	4	263	8
Future Volume (vph)	25	4	82	22	4	10	27	243	7	4	263	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	50		0	0		0
Storage Lanes	0		0	0		0	1		0	0		0
Taper Length (ft)	25			25			100			25		
Satd. Flow (prot)	0	1658	0	0	1738	0	1770	1855	0	0	1853	0
Flt Permitted		0.989			0.970		0.950				0.999	
Satd. Flow (perm)	0	1658	0	0	1738	0	1770	1855	0	0	1853	0
Link Speed (mph)		25			25			55			55	
Link Distance (ft)		2066			488			905			839	
Travel Time (s)		56.3			13.3			11.2			10.4	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	123	0	0	39	0	30	278	0	0	305	0
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	31.8%				ICU Level of Service A							
Analysis Period (min)	15											

Riverwood Golf Club - Section 2
6: Castleberry Road & Pod F Driveway/Pod H North Driveway

Build AM (2030)
09/14/2020

Intersection												
Int Delay, s/veh	3.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↖			↕	
Traffic Vol, veh/h	25	4	82	22	4	10	27	243	7	4	263	8
Future Vol, veh/h	25	4	82	22	4	10	27	243	7	4	263	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	28	4	91	24	4	11	30	270	8	4	292	9
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	647	643	297	686	643	274	301	0	0	278	0	0
Stage 1	305	305	-	334	334	-	-	-	-	-	-	-
Stage 2	342	338	-	352	309	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	384	392	742	362	392	765	1260	-	-	1285	-	-
Stage 1	705	662	-	680	643	-	-	-	-	-	-	-
Stage 2	673	641	-	665	660	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	367	381	742	308	381	765	1260	-	-	1285	-	-
Mov Cap-2 Maneuver	367	381	-	308	381	-	-	-	-	-	-	-
Stage 1	688	659	-	664	628	-	-	-	-	-	-	-
Stage 2	643	626	-	577	657	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	12.8			15.6			0.8			0.1		
HCM LOS	B			C								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1260	-	-	587	379	1285	-	-				
HCM Lane V/C Ratio	0.024	-	-	0.21	0.106	0.003	-	-				
HCM Control Delay (s)	7.9	-	-	12.8	15.6	7.8	0	-				
HCM Lane LOS	A	-	-	B	C	A	A	-				
HCM 95th %tile Q(veh)	0.1	-	-	0.8	0.4	0	-	-				

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Synchro 10 Report

Riverwood Golf Club - Section 2
7: Riverwood Drive & Riverwood Connection

Build AM (2030)
09/14/2020

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	4	23	24	6	27	10
Future Volume (vph)	4	23	24	6	27	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	0	
Storage Lanes	1	0		0	0	
Taper Length (ft)	25				25	
Satd. Flow (prot)	1633	0	1811	0	0	1798
Flt Permitted	0.993					0.965
Satd. Flow (perm)	1633	0	1811	0	0	1798
Link Speed (mph)	25		25			25
Link Distance (ft)	1503		917			878
Travel Time (s)	41.0		25.0			23.9
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	30	0	34	0	0	41
Sign Control	Stop		Free			Free

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 18.7% ICU Level of Service A

Analysis Period (min) 15

Riverwood Golf Club - Section 2
7: Riverwood Drive & Riverwood Connection

Build AM (2030)
09/14/2020

Intersection						
Int Delay, s/veh	4.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	23	24	6	27	10
Future Vol, veh/h	4	23	24	6	27	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	4	26	27	7	30	11
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	102	31	0	0	34	0
Stage 1	31	-	-	-	-	-
Stage 2	71	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	896	1043	-	-	1578	-
Stage 1	992	-	-	-	-	-
Stage 2	952	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	879	1043	-	-	1578	-
Mov Cap-2 Maneuver	879	-	-	-	-	-
Stage 1	992	-	-	-	-	-
Stage 2	934	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	8.7	0		5.3		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	1015	1578	-	
HCM Lane V/C Ratio	-	-	0.03	0.019	-	
HCM Control Delay (s)	-	-	8.7	7.3	0	
HCM Lane LOS	-	-	A	A	A	
HCM 95th %tile Q(veh)	-	-	0.1	0.1	-	

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Synchro 10 Report

Riverwood Golf Club - Section 2
1: NC 42 & Castleberry Road

Build PM (2030)
09/14/2020

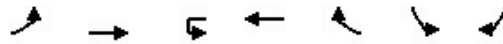
Lane Group	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (vph)	428	1392	84	1179	103	71	303
Future Volume (vph)	428	1392	84	1179	103	71	303
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12
Grade (%)		-2%		-1%		2%	
Storage Length (ft)	525		475		550	350	0
Storage Lanes	1		1		1	1	1
Taper Length (ft)	150		100			100	
Satd. Flow (prot)	1787	3575	1778	3557	1591	1639	1489
Flt Permitted	0.076		0.101			0.982	
Satd. Flow (perm)	143	3575	189	3557	1591	1639	1489
Right Turn on Red					No		No
Satd. Flow (RTOR)							
Link Speed (mph)		55		55		45	
Link Distance (ft)		1242		1317		645	
Travel Time (s)		15.4		16.3		9.8	
Confl. Peds. (#/hr)							
Confl. Bikes (#/hr)							
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0
Parking (#/hr)							
Mid-Block Traffic (%)		0%		0%		0%	
Shared Lane Traffic (%)							40%
Lane Group Flow (vph)	476	1547	93	1310	114	214	202
Turn Type	D.P+P	NA	D.P+P	NA	pm+ov	Prot	Perm
Protected Phases	5	2	1	6	4	4	
Permitted Phases	6		2		6		4
Detector Phase	5	2	1	6	4	4	4
Switch Phase							
Minimum Initial (s)	7.0	14.0	7.0	14.0	7.0	7.0	7.0
Minimum Split (s)	13.0	21.0	12.0	21.0	13.0	13.0	13.0
Total Split (s)	40.0	77.0	13.0	50.0	30.0	30.0	30.0
Total Split (%)	33.3%	64.2%	10.8%	41.7%	25.0%	25.0%	25.0%
Yellow Time (s)	3.2	5.3	3.0	5.3	3.1	3.1	3.1
All-Red Time (s)	2.2	1.3	1.8	1.3	2.2	2.2	2.2
Lost Time Adjust (s)	-0.4	-1.6	0.2	-1.6	-0.3	-0.3	-0.3
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag			
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			
Recall Mode	None	C-Max	None	C-Max	None	None	None
Act Effect Green (s)	84.9	77.9	84.9	53.6	78.7	20.1	20.1
Actuated g/C Ratio	0.71	0.65	0.71	0.45	0.66	0.17	0.17
v/c Ratio	0.90	0.67	0.41	0.82	0.11	0.78	0.81
Control Delay	54.0	15.6	10.5	36.3	8.8	66.7	71.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	54.0	15.6	10.5	36.3	8.8	66.7	71.7

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Synchro 10 Report

Riverwood Golf Club - Section 2
1: NC 42 & Castleberry Road

Build PM (2030)
09/14/2020



Lane Group	EBL	EBT	WBU	WBT	WBR	SBL	SBR
LOS	D	B	B	D	A	E	E
Approach Delay		24.7		32.6		69.1	
Approach LOS		C		C		E	
Queue Length 50th (ft)	296	366	17	477	32	159	158
Queue Length 95th (ft)	#470	504	36	#683	58	237	241
Internal Link Dist (ft)		1162		1237		565	
Turn Bay Length (ft)	525		475		550	350	
Base Capacity (vph)	586	2319	241	1589	1109	341	310
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.81	0.67	0.39	0.82	0.10	0.63	0.65

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBWB and 6:EBWB, Start of Green

Natural Cycle: 80

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.90

Intersection Signal Delay: 32.4

Intersection LOS: C

Intersection Capacity Utilization 78.9%

ICU Level of Service D

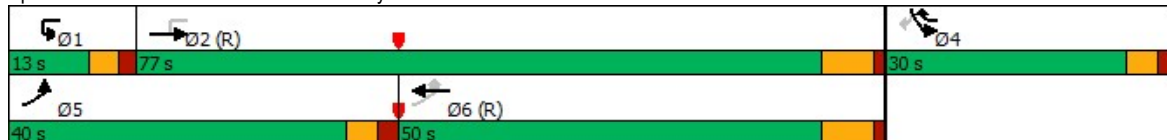
Analysis Period (min) 15

Description: 04-1241

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

Queue shown is maximum after two cycles.

Splits and Phases: 1: NC 42 & Castleberry Road



Riverwood Golf Club - Section 2
2: Castleberry Road & Stewart's Knob Drive

Build PM (2030)
09/14/2020

						
Lane Group	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Volume (vph)	9	60	101	430	315	16
Future Volume (vph)	9	60	101	430	315	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)	0	0	75			0
Storage Lanes	1	0	1			0
Taper Length (ft)	25		100			
Satd. Flow (prot)	1635	0	1770	1863	1850	0
Flt Permitted	0.994		0.950			
Satd. Flow (perm)	1635	0	1770	1863	1850	0
Link Speed (mph)	25			45	45	
Link Distance (ft)	1075			1561	1117	
Travel Time (s)	29.3			23.7	16.9	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	77	0	112	478	368	0
Sign Control	Stop			Free	Free	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	37.3%			ICU Level of Service A		
Analysis Period (min)	15					

Riverwood Golf Club - Section 2
2: Castleberry Road & Stewart's Knob Drive

Build PM (2030)
09/14/2020

Intersection						
Int Delay, s/veh	1.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	9	60	101	430	315	16
Future Vol, veh/h	9	60	101	430	315	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	75	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	10	67	112	478	350	18
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	1061	359	368	0	-	0
Stage 1	359	-	-	-	-	-
Stage 2	702	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	248	685	1191	-	-	-
Stage 1	707	-	-	-	-	-
Stage 2	491	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	225	685	1191	-	-	-
Mov Cap-2 Maneuver	225	-	-	-	-	-
Stage 1	641	-	-	-	-	-
Stage 2	491	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	12.8	1.6		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1191	-	541	-	-	
HCM Lane V/C Ratio	0.094	-	0.142	-	-	
HCM Control Delay (s)	8.3	-	12.8	-	-	
HCM Lane LOS	A	-	B	-	-	
HCM 95th %tile Q(veh)	0.3	-	0.5	-	-	

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Synchro 10 Report

Riverwood Golf Club - Section 2

3: Castleberry Road & Pod E Driveway/Riverbend Drive

Build PM (2030)

09/14/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	10	4	10	6	4	4	17	265	11	4	266	17
Future Volume (vph)	10	4	10	6	4	4	17	265	11	4	266	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	1720	0	0	1754	0	0	1848	0	0	1846	0
Flt Permitted		0.979			0.977			0.997			0.999	
Satd. Flow (perm)	0	1720	0	0	1754	0	0	1848	0	0	1846	0
Link Speed (mph)		25			25			55			55	
Link Distance (ft)		496			493			839			852	
Travel Time (s)		13.5			13.4			10.4			10.6	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	26	0	0	15	0	0	325	0	0	319	0
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	34.7%				ICU Level of Service A							
Analysis Period (min) 15												

Riverwood Golf Club - Section 2
3: Castleberry Road & Pod E Driveway/Riverbend Drive

Build PM (2030)
09/14/2020

Intersection												
Int Delay, s/veh	1.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Traffic Vol, veh/h	10	4	10	6	4	4	17	265	11	4	266	17
Future Vol, veh/h	10	4	10	6	4	4	17	265	11	4	266	17
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	11	4	11	7	4	4	19	294	12	4	296	19
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	656	658	306	659	661	300	315	0	0	306	0	0
Stage 1	314	314	-	338	338	-	-	-	-	-	-	-
Stage 2	342	344	-	321	323	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	379	384	734	377	383	740	1245	-	-	1255	-	-
Stage 1	697	656	-	676	641	-	-	-	-	-	-	-
Stage 2	673	637	-	691	650	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	367	376	734	362	375	740	1245	-	-	1255	-	-
Mov Cap-2 Maneuver	367	376	-	362	375	-	-	-	-	-	-	-
Stage 1	684	653	-	664	629	-	-	-	-	-	-	-
Stage 2	652	626	-	673	647	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	13.2			13.7			0.5			0.1		
HCM LOS	B			B								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1245	-	-	466	429	1255	-	-				
HCM Lane V/C Ratio	0.015	-	-	0.057	0.036	0.004	-	-				
HCM Control Delay (s)	7.9	0	-	13.2	13.7	7.9	0	-				
HCM Lane LOS	A	A	-	B	B	A	A	-				
HCM 95th %tile Q(veh)	0	-	-	0.2	0.1	0	-	-				

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Synchro 10 Report

Riverwood Golf Club - Section 2
4: Castleberry Road & Covered Bridge Road

Build PM (2030)
09/14/2020

						
Lane Group	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	960	292	181	615	133	144
Future Volume (vph)	960	292	181	615	133	144
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%			0%	0%	
Storage Length (ft)		0	0		0	0
Storage Lanes		0	0		1	0
Taper Length (ft)			25		25	
Satd. Flow (prot)	1805	0	0	1842	1693	0
Flt Permitted				0.989	0.977	
Satd. Flow (perm)	1805	0	0	1842	1693	0
Link Speed (mph)	45			45	55	
Link Distance (ft)	785			895	1235	
Travel Time (s)	11.9			13.6	15.3	
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%			0%	0%	
Shared Lane Traffic (%)						
Lane Group Flow (vph)	1318	0	0	838	292	0
Sign Control	Free			Free	Stop	
Intersection Summary						
Area Type:	Other					
Control Type:	Unsignalized					
Intersection Capacity Utilization	136.9%			ICU Level of Service H		
Analysis Period (min)	15					

Riverwood Golf Club - Section 2
4: Castleberry Road & Covered Bridge Road

Build PM (2030)
09/14/2020

Intersection						
Int Delay, s/veh	342.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	960	292	181	615	133	144
Future Vol, veh/h	960	292	181	615	133	144
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1011	307	191	647	140	152
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	1318	0	2194	1165
Stage 1	-	-	-	-	1165	-
Stage 2	-	-	-	-	1029	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	524	-	~ 50	236
Stage 1	-	-	-	-	297	-
Stage 2	-	-	-	-	345	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	524	-	~ 22	236
Mov Cap-2 Maneuver	-	-	-	-	~ 22	-
Stage 1	-	-	-	-	297	-
Stage 2	-	-	-	-	149	-
Approach	EB	WB		NB		
HCM Control Delay, s	0	3.6		\$ 2861.4		
HCM LOS	F					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	42	-	-	524	-	
HCM Lane V/C Ratio	6.942	-	-	0.364	-	
HCM Control Delay (s)	\$ 2861.4	-	-	15.7	0	
HCM Lane LOS	F	-	-	C	A	
HCM 95th %tile Q(veh)	34.4	-	-	1.6	-	
Notes						
~: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon						

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Synchro 10 Report

Riverwood Golf Club - Section 2

5: Castleberry Road & Pod J Driveway/Pod H South Driveway

Build PM (2030)

09/14/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	6	4	25	15	4	6	42	372	24	10	291	10
Future Volume (vph)	6	4	25	15	4	6	42	372	24	10	291	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	0		0	0		0
Storage Lanes	0		0	0		0	0		0	0		0
Taper Length (ft)	25			25			25			25		
Satd. Flow (prot)	0	1667	0	0	1747	0	0	1840	0	0	1852	0
Flt Permitted		0.991			0.971			0.995			0.998	
Satd. Flow (perm)	0	1667	0	0	1747	0	0	1840	0	0	1852	0
Link Speed (mph)		10			25			55			55	
Link Distance (ft)		1333			703			1117			905	
Travel Time (s)		90.9			19.2			13.8			11.2	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	39	0	0	28	0	0	487	0	0	345	0
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	50.3%				ICU Level of Service A							
Analysis Period (min)	15											

Riverwood Golf Club - Section 2
5: Castleberry Road & Pod J Driveway/Pod H South Driveway

Build PM (2030)
09/14/2020

Intersection												
Int Delay, s/veh	1.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	4	25	15	4	6	42	372	24	10	291	10
Future Vol, veh/h	6	4	25	15	4	6	42	372	24	10	291	10
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	4	28	17	4	7	47	413	27	11	323	11
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	877	885	329	888	877	427	334	0	0	440	0	0
Stage 1	351	351	-	521	521	-	-	-	-	-	-	-
Stage 2	526	534	-	367	356	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	269	284	712	264	287	628	1225	-	-	1120	-	-
Stage 1	666	632	-	539	532	-	-	-	-	-	-	-
Stage 2	535	524	-	653	629	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	250	266	712	239	269	628	1225	-	-	1120	-	-
Mov Cap-2 Maneuver	250	266	-	239	269	-	-	-	-	-	-	-
Stage 1	632	624	-	512	505	-	-	-	-	-	-	-
Stage 2	498	497	-	616	621	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	13.3			18.9			0.8			0.3		
HCM LOS	B			C								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1225	-	-	472	287	1120	-	-				
HCM Lane V/C Ratio	0.038	-	-	0.082	0.097	0.01	-	-				
HCM Control Delay (s)	8.1	0	-	13.3	18.9	8.2	0	-				
HCM Lane LOS	A	A	-	B	C	A	A	-				
HCM 95th %tile Q(veh)	0.1	-	-	0.3	0.3	0	-	-				

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Synchro 10 Report

Riverwood Golf Club - Section 2

6: Castleberry Road & Pod F Driveway/Pod H North Driveway

Build PM (2030)

09/14/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	17	4	53	15	4	6	90	270	24	10	243	28
Future Volume (vph)	17	4	53	15	4	6	90	270	24	10	243	28
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12	12	12	12	12	12
Grade (%)		0%			0%			0%			0%	
Storage Length (ft)	0		0	0		0	50		0	0		0
Storage Lanes	0		0	0		0	1		0	0		0
Taper Length (ft)	25			25			100			25		
Satd. Flow (prot)	0	1664	0	0	1747	0	1770	1840	0	0	1835	0
Flt Permitted		0.989			0.971		0.950				0.998	
Satd. Flow (perm)	0	1664	0	0	1747	0	1770	1840	0	0	1835	0
Link Speed (mph)		25			25			55			55	
Link Distance (ft)		1745			488			905			839	
Travel Time (s)		47.6			13.3			11.2			10.4	
Confl. Peds. (#/hr)												
Confl. Bikes (#/hr)												
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
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	82	0	0	28	0	100	327	0	0	312	0
Sign Control		Stop			Stop			Free			Free	
Intersection Summary												
Area Type:	Other											
Control Type:	Unsignalized											
Intersection Capacity Utilization	45.2%						ICU Level of Service A					
Analysis Period (min)	15											

Riverwood Golf Club - Section 2
6: Castleberry Road & Pod F Driveway/Pod H North Driveway

Build PM (2030)
09/14/2020

Intersection												
Int Delay, s/veh	3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↗	↖			↕	
Traffic Vol, veh/h	17	4	53	15	4	6	90	270	24	10	243	28
Future Vol, veh/h	17	4	53	15	4	6	90	270	24	10	243	28
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	50	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	19	4	59	17	4	7	100	300	27	11	270	31
Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	827	835	286	853	837	314	301	0	0	327	0	0
Stage 1	308	308	-	514	514	-	-	-	-	-	-	-
Stage 2	519	527	-	339	323	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	291	304	753	279	303	726	1260	-	-	1233	-	-
Stage 1	702	660	-	543	535	-	-	-	-	-	-	-
Stage 2	540	528	-	676	650	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	265	277	753	237	276	726	1260	-	-	1233	-	-
Mov Cap-2 Maneuver	265	277	-	237	276	-	-	-	-	-	-	-
Stage 1	647	653	-	500	493	-	-	-	-	-	-	-
Stage 2	488	486	-	612	643	-	-	-	-	-	-	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	13.7			18.7			1.9			0.3		
HCM LOS	B			C								
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR				
Capacity (veh/h)	1260	-	-	497	291	1233	-	-				
HCM Lane V/C Ratio	0.079	-	-	0.165	0.095	0.009	-	-				
HCM Control Delay (s)	8.1	-	-	13.7	18.7	7.9	0	-				
HCM Lane LOS	A	-	-	B	C	A	A	-				
HCM 95th %tile Q(veh)	0.3	-	-	0.6	0.3	0	-	-				

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Synchro 10 Report

Riverwood Golf Club - Section 2
7: Riverwood Drive & Riverwood Connection

Build PM (2030)
09/14/2020

Lane Group	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	6	35	16	4	31	34
Future Volume (vph)	6	35	16	4	31	34
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12
Grade (%)	0%		0%			0%
Storage Length (ft)	0	0		0	0	
Storage Lanes	1	0		0	0	
Taper Length (ft)	25				25	
Satd. Flow (prot)	1637	0	1816	0	0	1820
Flt Permitted	0.992					0.977
Satd. Flow (perm)	1637	0	1816	0	0	1820
Link Speed (mph)	25		25			25
Link Distance (ft)	1641		917			878
Travel Time (s)	44.8		25.0			23.9
Confl. Peds. (#/hr)						
Confl. Bikes (#/hr)						
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)	0%		0%			0%
Shared Lane Traffic (%)						
Lane Group Flow (vph)	46	0	22	0	0	72
Sign Control	Stop		Free			Free

Intersection Summary

Area Type: Other

Control Type: Unsignalized

Intersection Capacity Utilization 20.2% ICU Level of Service A

Analysis Period (min) 15

Riverwood Golf Club - Section 2
7: Riverwood Drive & Riverwood Connection

Build PM (2030)
09/14/2020

Intersection						
Int Delay, s/veh	4.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	6	35	16	4	31	34
Future Vol, veh/h	6	35	16	4	31	34
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	7	39	18	4	34	38
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	126	20	0	0	22	0
Stage 1	20	-	-	-	-	-
Stage 2	106	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	869	1058	-	-	1593	-
Stage 1	1003	-	-	-	-	-
Stage 2	918	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	850	1058	-	-	1593	-
Mov Cap-2 Maneuver	850	-	-	-	-	-
Stage 1	1003	-	-	-	-	-
Stage 2	898	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	8.7	0		3.5		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	1021	1593	-	
HCM Lane V/C Ratio	-	-	0.045	0.022	-	
HCM Control Delay (s)	-	-	8.7	7.3	0	
HCM Lane LOS	-	-	A	A	A	
HCM 95th %tile Q(veh)	-	-	0.1	0.1	-	

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Synchro 10 Report

Riverwood Golf Club - Section 2
1: NC 42 & Castleberry Road

Build AM (2030) - w/ RTOR
09/14/2020

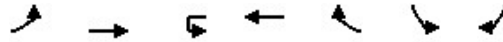
							
Lane Group	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (vph)	244	1180	45	1392	49	98	410
Future Volume (vph)	244	1180	45	1392	49	98	410
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12
Grade (%)		-2%		-1%		2%	
Storage Length (ft)	525		475		550	350	0
Storage Lanes	1		1		1	1	1
Taper Length (ft)	150		100			100	
Satd. Flow (prot)	1787	3575	1778	3557	1591	1641	1489
Flt Permitted	0.068		0.150			0.981	
Satd. Flow (perm)	128	3575	281	3557	1591	1641	1489
Right Turn on Red					Yes		Yes
Satd. Flow (RTOR)					54	62	233
Link Speed (mph)		55		55		45	
Link Distance (ft)		1242		1317		645	
Travel Time (s)		15.4		16.3		9.8	
Confl. Peds. (#/hr)							
Confl. Bikes (#/hr)							
Peak Hour Factor	0.90	0.90	0.50	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0
Parking (#/hr)							
Mid-Block Traffic (%)		0%		0%		0%	
Shared Lane Traffic (%)							39%
Lane Group Flow (vph)	271	1311	90	1547	54	287	278
Turn Type	D.P+P	NA	D.P+P	NA	pm+ov	Prot	Perm
Protected Phases	5	2	1	6	4	4	
Permitted Phases	6		2		6		4
Detector Phase	5	2	1	6	4	4	4
Switch Phase							
Minimum Initial (s)	7.0	14.0	7.0	14.0	7.0	7.0	7.0
Minimum Split (s)	13.0	21.0	12.0	21.0	13.0	13.0	13.0
Total Split (s)	25.0	75.0	15.0	65.0	30.0	30.0	30.0
Total Split (%)	20.8%	62.5%	12.5%	54.2%	25.0%	25.0%	25.0%
Yellow Time (s)	3.2	5.3	3.0	5.3	3.1	3.1	3.1
All-Red Time (s)	2.2	1.3	1.8	1.3	2.2	2.2	2.2
Lost Time Adjust (s)	-0.4	-1.6	0.2	-1.6	-0.3	-0.3	-0.3
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag			
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			
Recall Mode	None	C-Max	None	C-Max	None	None	None
Act Effect Green (s)	84.3	77.4	84.3	67.1	92.8	20.7	20.7
Actuated g/C Ratio	0.70	0.64	0.70	0.56	0.77	0.17	0.17
v/c Ratio	0.83	0.57	0.32	0.78	0.04	0.86	0.62
Control Delay	51.7	13.8	8.0	25.7	1.1	61.4	15.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	51.7	13.8	8.0	25.7	1.1	61.4	15.4

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Synchro 10 Report

Riverwood Golf Club - Section 2
1: NC 42 & Castleberry Road

Build AM (2030) - w/ RTOR
09/14/2020



Lane Group	EBL	EBT	WBU	WBT	WBR	SBL	SBR
LOS	D	B	A	C	A	E	B
Approach Delay		20.3		24.0		38.8	
Approach LOS		C		C		D	
Queue Length 50th (ft)	144	286	17	499	0	171	31
Queue Length 95th (ft)	#263	381	19	651	9	#274	120
Internal Link Dist (ft)		1162		1237		565	
Turn Bay Length (ft)	525		475		550	350	
Base Capacity (vph)	368	2305	329	1989	1297	390	494
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.74	0.57	0.27	0.78	0.04	0.74	0.56

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBWB and 6:EBWB, Start of Green

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.86

Intersection Signal Delay: 24.7

Intersection LOS: C

Intersection Capacity Utilization 78.3%

ICU Level of Service D

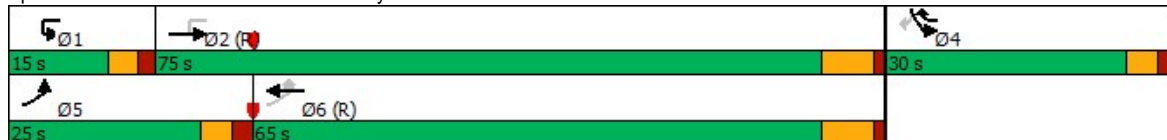
Analysis Period (min) 15

Description: 04-1241

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

Queue shown is maximum after two cycles.

Splits and Phases: 1: NC 42 & Castleberry Road



Riverwood Golf Club - Section 2
1: NC 42 & Castleberry Road

Build PM (2030) - w/ RTOR
09/14/2020

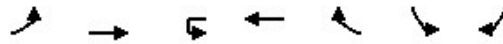
							
Lane Group	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (vph)	428	1392	84	1179	103	71	303
Future Volume (vph)	428	1392	84	1179	103	71	303
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	12	12	12	12	12	12	12
Grade (%)		-2%		-1%		2%	
Storage Length (ft)	525		475		550	350	0
Storage Lanes	1		1		1	1	1
Taper Length (ft)	150		100			100	
Satd. Flow (prot)	1787	3575	1778	3557	1591	1639	1489
Flt Permitted	0.088		0.112			0.982	
Satd. Flow (perm)	166	3575	210	3557	1591	1639	1489
Right Turn on Red					Yes		Yes
Satd. Flow (RTOR)					114	62	202
Link Speed (mph)		55		55		45	
Link Distance (ft)		1242		1317		645	
Travel Time (s)		15.4		16.3		9.8	
Confl. Peds. (#/hr)							
Confl. Bikes (#/hr)							
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Growth Factor	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0	0
Parking (#/hr)							
Mid-Block Traffic (%)		0%		0%		0%	
Shared Lane Traffic (%)							40%
Lane Group Flow (vph)	476	1547	93	1310	114	214	202
Turn Type	D.P+P	NA	D.P+P	NA	pm+ov	Prot	Perm
Protected Phases	5	2	1	6	4	4	
Permitted Phases	6		2		6		4
Detector Phase	5	2	1	6	4	4	4
Switch Phase							
Minimum Initial (s)	7.0	14.0	7.0	14.0	7.0	7.0	7.0
Minimum Split (s)	13.0	21.0	12.0	21.0	13.0	13.0	13.0
Total Split (s)	40.0	80.0	15.0	55.0	25.0	25.0	25.0
Total Split (%)	33.3%	66.7%	12.5%	45.8%	20.8%	20.8%	20.8%
Yellow Time (s)	3.2	5.3	3.0	5.3	3.1	3.1	3.1
All-Red Time (s)	2.2	1.3	1.8	1.3	2.2	2.2	2.2
Lost Time Adjust (s)	-0.4	-1.6	0.2	-1.6	-0.3	-0.3	-0.3
Total Lost Time (s)	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Lead/Lag	Lead	Lag	Lead	Lag			
Lead-Lag Optimize?	Yes	Yes	Yes	Yes			
Recall Mode	None	C-Max	None	C-Max	None	None	None
Act Effect Green (s)	89.6	82.7	89.6	58.4	78.8	15.4	15.4
Actuated g/C Ratio	0.75	0.69	0.75	0.49	0.66	0.13	0.13
v/c Ratio	0.87	0.63	0.38	0.76	0.11	0.81	0.55
Control Delay	48.1	12.3	8.0	30.4	1.8	58.6	12.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	48.1	12.3	8.0	30.4	1.8	58.6	12.1

Riverwood Golf Club - Section 2
Kimley-Horn

Synchro 10 Report

Riverwood Golf Club - Section 2
1: NC 42 & Castleberry Road

Build PM (2030) - w/ RTOR
09/14/2020



Lane Group	EBL	EBT	WBU	WBT	WBR	SBL	SBR
LOS	D	B	A	C	A	E	B
Approach Delay		20.7		26.9		36.0	
Approach LOS		C		C		D	
Queue Length 50th (ft)	277	318	14	441	0	116	0
Queue Length 95th (ft)	#444	440	30	587	21	197	70
Internal Link Dist (ft)		1162		1237		565	
Turn Bay Length (ft)	525		475		550	350	
Base Capacity (vph)	601	2462	292	1731	1140	324	416
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.79	0.63	0.32	0.76	0.10	0.66	0.49

Intersection Summary

Area Type: Other

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 0 (0%), Referenced to phase 2:EBWB and 6:EBWB, Start of Green

Natural Cycle: 65

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.87

Intersection Signal Delay: 24.7

Intersection LOS: C

Intersection Capacity Utilization 78.9%

ICU Level of Service D

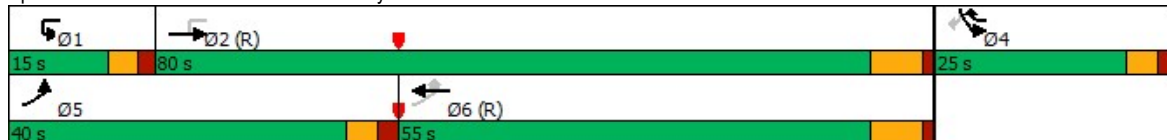
Analysis Period (min) 15

Description: 04-1241

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

Queue shown is maximum after two cycles.

Splits and Phases: 1: NC 42 & Castleberry Road



Appendix L: Signal Plans

PROJECT REFERENCE NO.	SHEET NO.
R-3825B	Sig.5.0

5 Phase
Fully Actuated
NC 42 (East of Clayton)

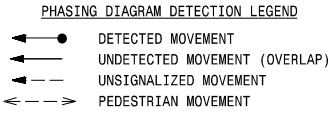
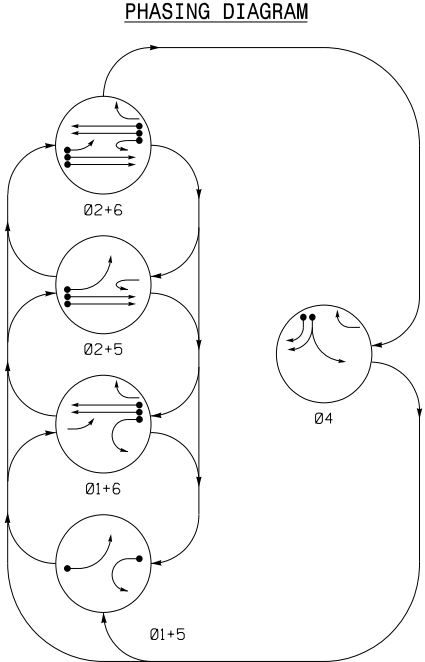
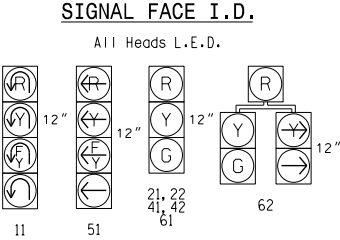
NOTES

1. Refer to "Roadway Standard Drawings NCDOT" dated January 2018, "Standard Specifications for Roads and Structures" dated January 2018.
2. Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
3. Phase 1 and/or phase 5 may be lagged.
4. Set all detector units to presence mode.
5. Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.
6. Closed loop system data:
Controller Asset #1241.
7. All metal poles and arms should be black in color as specified in the project special provisions.

OASIS 2070 LOOP & DETECTOR INSTALLATION CHART											
INDUCTIVE LOOPS						DETECTOR PROGRAMMING					
LOOP	SIZE (FT)	DISTANCE FROM STOPBAR (FT)	TURN	NEW LOOP	PHASE	CALLING	EXTENSION	FULL TIME DELAY	STRETCH TIME	DELAY TIME	SYSTEM LOOP NEW CARD
1A	6X40	0	2-4-2	Y	1	Y	Y	-	-	15	- Y
2A	6X6	420	*	Y	2	Y	Y	-	-	-	- *
2B	6X6	420	*	Y	2	Y	Y	-	-	-	- *
4A	6X40	0	2-4-2	Y	4	Y	Y	-	-	3	- Y
4B	6X40	0	2-4-2	Y	4	Y	Y	-	-	15	- Y
5A	6X40	0	2-4-2	Y	5	Y	Y	-	-	15	- Y
6A	6X6	420	5	Y	6	Y	Y	-	-	-	- Y
6B	6X6	420	5	Y	6	Y	Y	-	-	-	- Y

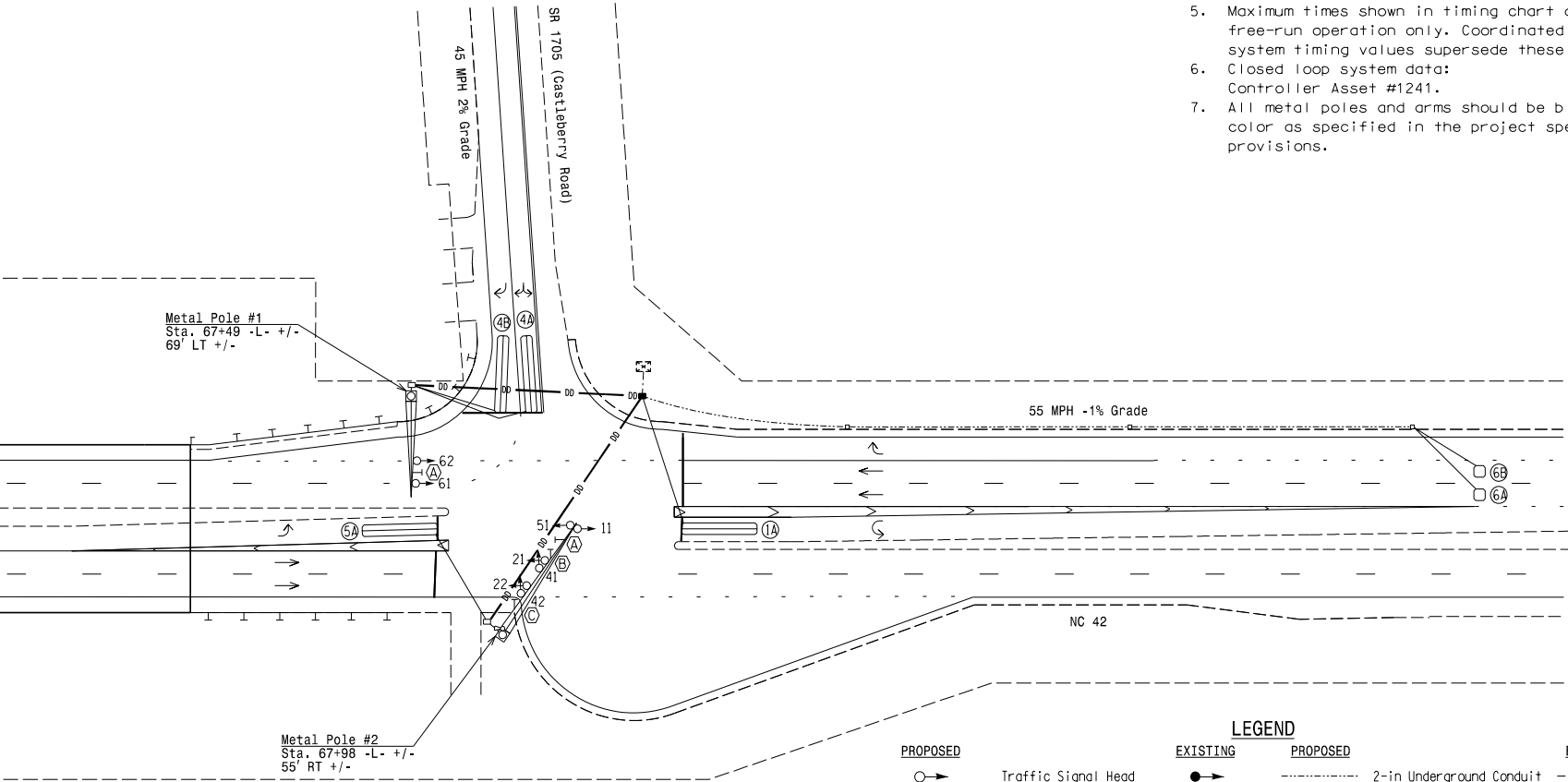
* Radar Detection Zone

SIGNAL FACE	PHASE					F L C D
	Ø 1 + 5	Ø 1 + 6	Ø 2 + 5	Ø 2 + 6	Ø 4	
11	←	←	←	←	←	←
21, 22	R	R	G	G	R	Y
41, 42	R	R	R	R	G	R
51	←	←	←	←	←	←
61	R	G	R	G	R	Y
62	R	G	R	G	R	Y



FEATURE	PHASE					
	1	2	4	5	6	
Min Green 1 *	7	14	7	7	14	
Extension 1 *	2.0	6.0	2.0	2.0	6.0	
Max Green 1 *	25	90	45	25	90	
Yellow Clearance	3.0	5.3	3.1	3.2	5.3	
Red Clearance	1.8	1.3	2.2	2.2	1.3	
Red Revert	2.0	2.0	2.0	2.0	2.0	
Walk 1 *	-	-	-	-	-	
Don't Walk 1	-	-	-	-	-	
Seconds Per Actuation *	-	1.8	-	-	1.8	
Max Variable Initial *	-	46	-	-	46	
Time Before Reduction *	-	15	-	-	15	
Time To Reduce *	-	30	-	-	30	
Minimum Gap	-	3.4	-	-	3.4	
Recall Mode	-	MIN RECALL	-	-	MIN RECALL	
Vehicle Call Memory	-	YELLOW	-	-	YELLOW	
Dual Entry	-	-	-	-	-	
Simultaneous Gap	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.



PROPOSED		EXISTING	
	Traffic Signal Head		2-in Underground Conduit
	Metal Pole with Mastarm Sign		Directional Drill
	Inductive Loop Detector		Right of Way
	Radar Loop Detector		Directional Arrow
	Video Detector		Street Name Sign (D3-1)
	Controller & Cabinet		Combined Left and Right Arrow Sign
	Junction Box		Right Arrow "ONLY" Sign (R3-5R)
	Oversized Junction Box		

New Installation - Final Design

Prepared by
URS
URS Corporation - North Carolina
1600 Perimeter Park Drive
Morrisville, North Carolina 27560
TELEPHONE (919) 461-1100 FAX (919) 461-1415
NC LICENSE - C-2243



NC 42 at SR 1705 (Castleberry Road)	
Division 4 Johnston County Clayton	
PLAN DATE: January 2018	REVIEWED BY: C. L. Kalencik
PREPARED BY: S. W. Cox	REVIEWED BY:
REVISIONS	INIT. DATE

DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED	
SIG. INVENTORY NO. 04-1241	



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

J. ERIC BOYETTE
SECRETARY

DELIVERY VIA EMAIL

December 7, 2020

Samantha L. Wullenwaber, MPA
Planning Director - Town of Clayton
PO Box 879
Clayton, NC 27528

COUNTY: Johnston

SUBJECT: **TIA Review of Proposed Riverwood Golf Club – Section 2 TIA**

Dear Ms. Wullenwaber,

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 actual TIA or 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 current Department policies. This review should not be mistaken for approval of the driveway permit, design/construction plans, final plat, site plans, or access locations. A driveway permit must be obtained prior to construction and NCDOT will approve site plan and access locations during this review. 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

- Any roadway improvements and right-of-way dedication necessary to accommodate the road construction shall be the responsibility of the owner/developers. All required ROW shall be dedicated as public ROW in the final plat. Installation of right turn lanes will typically require at least 15' of dedication.
- 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.
- These conditions are based on current traffic volumes and projected growth for the study area. If the proposed build out year for this development, as stated in the TIA, varies more than one year an addendum or revised TIA may be required.

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

- The installation of any improvements being identified by a TIA for an adjacent development does not dismiss or release this development from installation and/or participation of these improvements provided the other development does not move forward as intended. It is recommended that the Developers coordinate this installation with other committed developments. The Department will not participate in determining the value of each individual contribution to this roadway improvement.

INTERSECTIONS / SITE ACCESSES AND ASSOCIATED IMPROVEMENTS

The following comments are in addition to individual intersection improvements recommended by the TIA 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 recommendations.

Castleberry Road and Riverbend Dr./Pod E Driveway

- Castleberry Road
 - SB Left-Turn Lane with 100' of storage and appropriate taper.
 - NB Left-Turn Lane with 100' of storage and appropriate taper.
- Proposed Site Driveway Pod E
 - Two-lane cross-section: one ingress, one egress with full access.
 - 100' Internal Protected Stem

Castleberry Road and Pod F /Pod H Driveways

- Castleberry Road
 - SB Left-Turn Lane with 100' of storage and appropriate taper.
 - NB Left-Turn Lane with 100' of storage and appropriate taper.
- Proposed Site Driveways F & H
 - Two-lane cross-section: one ingress, one egress with full access.
 - 100' Internal Protected Stem

Castleberry Road and Pod J /Pod H Driveways

- Castleberry Road
 - SB Left-Turn Lane with 100' of storage and appropriate taper.
 - NB Left-Turn Lane with 100' of storage and appropriate taper.
- Proposed Site Driveways J & H
 - Two-lane cross-section: one ingress, one egress with full access.
 - 100' Internal Protected Stem

Castleberry Road and Stewarts Knob Dr

- Castleberry Road
 - NB Left-Turn Lane with 100' of storage and appropriate taper.

Castleberry Road and Covered Bridge Road

- Castleberry Road
 - NB Right-Turn Lane with 150' of storage and appropriate taper.

Castleberry Rd and NC 42

No required improvements at this intersection.

Other Requirements

- All driveways for this site on NCDOT ROW must be spaced 600' on secondary and 1,000' on primary routes. This is measured along the ROW line between the tangent projection of the inside edges of adjacent driveways apart measuring the distance between the radiuses of both driveways.
- Any additional improvements that are constructed by others and not shown on this TIA or review must be maintained, while constructing the improvements required by this letter.
- If any left turn lane taper overlaps with any existing or proposed middle turn lane or taper, the entire section will need to be widened to three lanes.
- Right-in/right only driveways will require channelization with a 4' concrete median and associated widening in the middle of the NCDOT roadway the driveway is accessing.

Feel free to contact me if you have any additional questions or concerns.

Sincerely,



Sam Lawhorn, PE
District Engineer

cc: Kevin Bowen, PE - Division Engineer
Andy Brown, PE - Division Traffic Engineer
Jim Dunlop, PE – Congestion Management Engineer
Travis Fluitt, PE– Kimley-Horn
Driveway Permit File



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

ROY COOPER
GOVERNOR

J. ERIC BOYETTE
SECRETARY

DEPARTMENT OF TRANSPORTATION
TRANSPORTATION MOBILITY AND SAFETY DIVISION
TRAFFIC MANAGEMENT UNIT
CONGESTION MANAGEMENT SECTION

December 3, 2020

Traffic Impact Analysis Review Report
Riverwood Golf Club – Section 2

TIA Project: SC-2020-262
Division: 4
County: Johnston
Description: Riverwood Golf Club – Section 2



James H. Dunlop 3 Dec 2020

James H. Dunlop, P. E.
Congestion Management Engineer

Charles Sorrell
Congestion Management Project Design Engineer

MAILING ADDRESS:
1561 Mail Service Center
Raleigh, North Carolina 27699-1561

Telephone: 919-814-5000

Website: WWW.NCDOT.ORG/DOH/Preconstruct/Traffic/Congestion/CM/

LOCATION:
750 North Greenfield Parkway
Garner, North Carolina 27529



Riverwood Golf Club – Section 2 TIA

SC-2020-262

Johnson County

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 for background conditions 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.

Key Dates	
Initially Received by CMS	11/25/20
Complete Information Received by CMS	11/25/20
Date of Preliminary Review Accepting TIA for Review	12/3/20
Sealed TIA Prepared by Kimley-Horn	9/28/20
Site Plan Prepared by STEWART	8/12/20

Proposed Development

According to the TIA, the proposed Riverwood Golf Club – Section 2 is to be located on Castleberry Rd in Access County. The TIA states the development is to be constructed by 2030 and is to consist of the following:

Land Use	Land Use Code	Size
Single-Family Detached Housing	210	435 units
Multifamily Housing (Low-Rise)	220	75 units
Multifamily Housing (Mid-Rise)	221	220 units

Trip Generation - Unadjusted Volumes During a Typical Weekday

Based on appropriate methodology outlined in the *ITE Trip Generation Manual, 10th Ed.*

	IN	OUT	TOTAL
AM Peak Hour	106	318	424
PM Peak Hour	349	208	557
Daily Trips			5746



Study Area

Study Area and Proposed Site Location - ↑ N



TIP Projects in Study Area

Project	Description	Let Date	Completion
R-3825	NC 42 from east of SR 1902 (Glen Laurel Rd) to SR 1003 (Buffaloe Rd.) widen to multi-lanes	10/02/18	8/21/21



TIA Comments

The following items vary from our recommended practices:

-

General Reference

For reference to various documents applicable to this review please reference the following links: <https://connect.ncdot.gov/resources/safety/Pages/Congestion-Management.aspx> and https://connect.ncdot.gov/resources/safety/Teppi/Pages/Teppi-Topic.aspx?Topic_List=C37.

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) 814-5000.

Recommendations

Legend

- ❶ Improvement by Developer. Congestion Management concurs with recommendation.
- ❷ Improvement by Developer. Additional or modified recommendation.
- ❸ Committed improvement by TIP Project R-3825B

Improvements By Others

The analysis includes background improvements by others. If these improvements are not in place at the time of construction, the site should provide these improvements or analysis demonstrating mitigation is not necessary.

Castleberry Road and Covered Bridge Road

- NB Castleberry Road
 - o 150' Right-Turn Lane ❷

Castleberry Road and Riverbend Dr./Pod E Driveway

- EB Pod E Driveway
 - o Two-lane cross-section: one ingress, one egress ❶
 - o Egress: Left/Thru/Right-Turn Lane ❶
 - o 100' Internal Protected Stem ❷



Castleberry Road and Pod F Driveway/Pod H Driveway

- **EB Pod F Driveway**
 - o Two-lane cross-section: one ingress, one egress ❶
 - o Egress: Left/Thru/Right-Turn Lane ❶
 - o 100' Internal Protected Stem ❷
- **WB Pod H Driveway**
 - o Two-lane cross-section: one ingress, one egress ❶
 - o Egress: Left/Thru/Right-Turn Lane ❶
 - o 100' Internal Protected Stem ❷
- **NB Castleberry Road**
 - o 100' Left-Turn Lane ❷

Castleberry Road and Pod J Driveway/Pod H Driveway

- **EB Pod J Driveway**
 - o Two-lane cross-section: one ingress, one egress ❶
 - o Egress: Left/Thru/Right-Turn Lane ❶
 - o 100' Internal Protected Stem ❷
- **WB Pod H Driveway**
 - o Two-lane cross-section: one ingress, one egress ❶
 - o Egress: Left/Thru/Right-Turn Lane ❶
 - o 100' Internal Protected Stem ❷
- **NB Castleberry Road**
 - o 100' Left-Turn Lane ❷

Castleberry Road and Stewarts Knob Drive

- **NB Castleberry Road**
 - o 100' Left-Turn Lane ❷

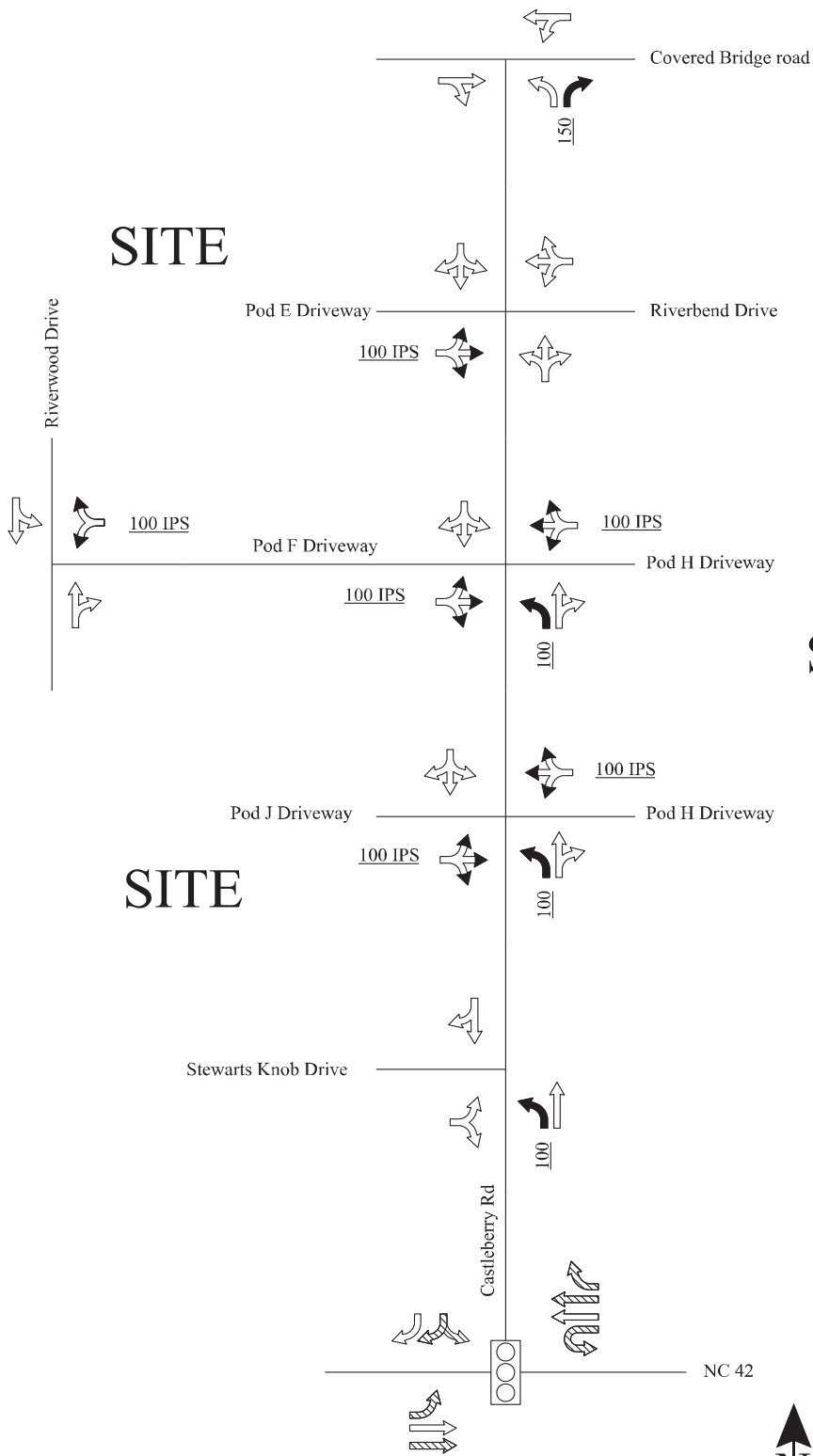


Castleberry Road and NC 42

- **SB Castleberry Road**
 - o 350' Left/Right-Turn Lane ③
- **EB NC 42**
 - o 525' Left-Turn Lane ③
 - o Dual Thru Lanes ③ (One existing)
- **WB NC 42**
 - o 550' Right-Turn Lane ③
 - o Dual Thru Lanes ③ (One existing)
 - o 475' U-Turn Lane ③

Riverwood Drive and Pod F Driveway

- **WB Pod F Driveway**
 - o Two-lane cross-section: one ingress, one egress ①
 - o Egress: Left/Right-Turn Lane ①
 - o 100' Internal Protected Stem ②



SITE

SITE

SITE

Riverwood Golf Club Section 2 SC-2020-262

- Existing Laneage
- Recommended Laneage
- Laneage Built By TIP R-3825B
- NCDOT Recommendation
- Existing Signal
- Monitor for Signal
- Developer Proposed Signal
- XXX Storage
- XXX NCDOT Recommended Storage
- <XXX> Distance Between Intersections
- IPS Internal Protected Stem
- All Distances in Feet
- Drawing Not to Scale

Charles Sorrell 12/1/20



INTERIM AD DRAFT

This is the proof of your ad scheduled to run in **Johnstonian News** on the dates indicated below. If changes are needed, please contact us prior to deadline at **(919) 284-2295**.

Notice ID: yJ5gQs4B6xQ3Mx17Ffb3 | **Proof Updated: Mar. 17, 2021 at 11:36am EDT**
Notice Name: Riverwood Golf Club PDD and SD

This is not an invoice.

FILER

Kimberly Moffett
kmoffett@townofclaytonnc.org

FILING FOR

Town of Clayton

Columns Wide: 1

Ad Class: Legals

Mar. 24, 2021 - Custom	\$76.95
Mar. 31, 2021 - Custom	\$76.95

Subtotal	\$153.90
Tax %	0.00
Processing Fee	\$15.39
Total	\$169.29

See Proof on Next
Page

PUBLIC NOTICE

In accordance with NC GS 160A-364 the Clayton Town Council will hold a public hearing and evidentiary hearing on Monday, April 5 2021, at 6 PM at Town Hall, 111 East Second Street, to consider the following requests:

· 2020-157-PDD Riverwood Golf Club Section 2 Rezoning; the request to rezone approximately +/- 300 acres of land from Residential-Estate (R-E - Clayton) & Agricultural-Residential (AR - Johnston County) & Planned Unit Development (PUD - Johnston County) to Planned Development-Residential (PD-R - Clayton). The properties are located between Castleberry Road and Riverwood Road; north of the Neuse River; TAG # 16I03012F; 16I03009; 16P99016A; 16I03009B; 16K05012E; 16J040.

· 2020-158-SD Riverwood Golf Club Section 2 Preliminary Plat Master Plan; the request for a Master Plan to develop approximately +/- 300 acres of land which will include up to 723 residential units. The properties are located between Castleberry Road and Riverwood Road; north of the Neuse River; TAG # 16I03012F; 16I03009; 16P99016A; 16I03009B; 16K05012E; 16J040.

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

For the Preliminary Plat (Master Plan) the Council will hold an evidentiary hearing. During an evidentiary hearing, the Clayton Town Council must make findings of fact based upon sworn testimony and other credible evidence. Citizens may give testimony in an evidentiary hearing after they have taken an oath.

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

Jeff Caines, AICP, Planner
919-553-5002

The Johnstonian Newspaper

Please advertise on the following dates:
3/24/2021
3/31/2021

Affidavit of publication required.
The Johnstonian
March 24, 31, 2021



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

April 1, 2021

David DeYoung, AICP
RiverWild
114 West Main Street
Clayton, NC 27520
Dave@hearthpointe.com

Re: 2020-158-SD, Riverwood Golf Club Section 2, Preliminary Plat (Master Plan)

Mr. DeYoung,

The Town of Clayton Planning staff is recommending to the Town Council that conditions of approval be placed upon the above referenced application, which proceeds to Town Council on April 5, 2021. These recommended conditions of approval are outlined on the back of this letter.

Please read through these potential conditions of approval, and sign below if you are in agreement with the conditions as proposed. If you are not in agreement please respond accordingly in writing. This will be included within the agenda packet for Council review.

Thank you.

Sincerely,

Jeff Caines, AICP
Planner – Town of Clayton

**Recommend Conditions of Approval (2020-158-SD, Riverwood Golf Club
Section 2, Preliminary Plat – Master Plan):**

General

1. Following Council approvals, three copies of the Planned Development Master Plan meeting the Conditions of Approval shall be submitted to Planning Department for final approval. The Conditions of Approval for the master plan shall be recorded on the cover sheet and shall be binding upon the master preliminary plat and upon the planned development rezoning. The Conditions of Approval for the master plan shall be included in all subsequent plan sets (e.g., subdivision/site plan, construction documents, and record drawings).
2. All traffic related signage shall be designed and installed per Town standard.
3. All decorative related signage shall be maintained solely by the developer or Homeowner's Association.
4. All phases of the development shall be planned to provide logical termination points for public infrastructure to ensure proper function; no mid-block phasing shall be permitted. Final determination shall be made by the Town Engineer.
5. Each phase of the development shall submit a site plan or subdivision plan for final review and approval by the Town Technical Review Committee.
6. All modifications to an approved master plan shall be reviewed by the Technical Review Committee. The Planning Director shall have final authority to determine if the proposed changes are considered "Major" or "Minor" modifications, as outlined in Article 7 of the Unified Development Code. If the Planning Director determines that the modifications are minor, these modifications shall be approved by the Director. If the Planning Director determines that the modifications are major, these modifications shall be processed as a Major Modification and shall require Town Council approval.
7. All modifications to an approved subdivision or site plan shall be reviewed as outlined in Article 7 of the Unified Development Code.
8. Each individual phase, park, greenway section, or amenity area shall be reviewed as a part of either a preliminary plat or site plan and construction document submittal, prior to plat recordation of the phase in which it is located.
9. All phases of the development are subject to the Construction Document, Land Disturbance, Stormwater Permit, Floodplain Development Permit (if required) and Record Drawing approval through the Engineering Department prior to commencement.
10. The Developer shall pay for debt service of the Archer Lodge Fire District Financial obligation in accordance with G.S. 160A-31.1.

Recreation/Amenities/Landscaping

11. No more than 180 total units shall be issued building permits prior to the commencement of the amenity center; this includes single-family lots, townhome lots, and apartment units or a combination of all three.
12. Prior to site grading and construction activities, a Land Disturbance Permit shall be issued by the Town of Clayton to include tree protection fencing installed around all Resource Conservation Areas and other areas of protected vegetation.
13. All required landscaping buffers or plantings shall be installed or bonded at 125% of the installed cost as determined by a Design Professional registered in the State of North Carolina and approved by the Town Engineer prior to the platting of the phase in which they occur.

Access/Traffic

14. Secondary Access point standards shall be met in accordance with master plan and NCDOT requirements, and reviewed and accepted by the Technical Review Committee prior to commencement of affected phases. This will be determined by the phasing and locations of the residential units.
15. Specific street cross-section and lane configuration for sections required for access by the development are to be determined by the Technical Review Committee at site plan and dependent on adjacent development timelines. At a minimum, the developer will be responsible for grading out the ultimate future ROW and cross section components (e.g., asphalt, curb and gutter, storm drain, and pedestrian facilities) as required in a standard Town Engineering Manual of Standards, Specifications and Design, as adopted, and Fire Code street cross section design standard.
16. Street, Parking Lot, and Cul-de-sac design and other elements related to access for emergency services shall be subject to Town Engineer and Fire Department review and approval during the subdivision and site plan reviews.
17. The developer shall be responsible for designing and installing all Transportation Impact Analysis (TIA) Road Improvements as reflected in the Master Plan. All off-site traffic improvements required by the North Carolina Department of Transportation (NCDOT) Congestion Management Analysis shall be installed or financially guaranteed prior to the issuance of 360 total units; this includes single-family lots, townhome lots, and apartment units or a combination of all three.
18. All traffic improvements are based on current traffic volumes and projected growth for the study area. If the build out year for this development, as stated in the TIA, varies more than one year an addendum or revised TIA may be required subject to review by Town in conjunction with NCDOT. If additional improvements are required due to delays in development it shall be the responsibility of the developer to mitigate the additional impacts, as determined by NCDOT with concurrence from the Town.

19. Any roadway improvements and right-of-way dedication necessary to accommodate road construction interior to, and along the frontage of the associated properties subject to the Master Plan Approval, shall be the responsibility of the developers. All required ROW shall be dedicated as public ROW in the final plat associated with the phase being developed, or at the request of the Town.

Utilities/Storm Water/ Environmental

20. The Developer shall be responsible for installation and all costs of the following:
- a. Interconnect master water meters at connections between Town of Clayton and Johnston County water systems.
 - b. Sanitary Sewer Flow meters at connections points between Town of Clayton and Johnston County sewer systems.
 - c. Improvements to Johnston County's Pump stations and force mains required to accept additional flow from the proposed development. This includes but is not limited to flow equalization at Stewart's Knob pump station. The developer shall be responsible for obtaining and dedicating any additional land area required for improvements to the pump station.
 - d. The Developer shall loop water mains at cul-de-sacs and dead ends and where requested following detailed utility plan review of the preliminary plat or site plan, to ensure system redundancy, water quality, and environmental permitting shall assessed. The Developer is responsible for obtaining all permits relating to utility extension and associated environmental impacts for the water lines.
 - e. The Developer shall provide easements for future connections to the water and sewer utilities as requested by the Town Engineer.
- ** The location, quantity, type and configuration of the above items shall be reviewed and approved by the Town of Clayton Engineering Department in coordination with Johnston County. **
21. Improvements to the Johnston County's sewer system including pump station improvements must be completed and accepted by the Johnston County prior to platting the first phase of the project.
22. Any roads and/or utilities outside a certain phase that are required to serve that particular phase must be installed and accepted prior to platting the phase to which they serve.
23. Sub dividing phases on the master plan is prohibited without written authorization from the Town Engineer.
24. A general paving plan for first and final lifts of asphalt in relation to phase buildout must be submitted and approved by the Town Engineer with each site plan.
25. Project is subject to Stormwater and Erosion Control Ordinance of the Town of Clayton and shall comply with all Ordinance requirements. Each phase of the development shall demonstrate compliance with state and local Stormwater regulations as the project progresses.

26. The Project shall comply with 15A NCAC 02B.0714 Neuse River Basin: Nutrient Sensitive Water Management Strategy: Protection and Maintenance of Existing Riparian Buffers.
27. Any impacts to the FEMA regulated floodplain or Floodway must be properly permitted prior to Construction Drawing approval.
28. All Environmental permits (NCDEQ, USACE, etc.) are required to be obtained prior to Construction Drawing approval.

Fire

29. The Project shall meet all applicable requirements of the North Carolina Fire Code, Ch. 5 & Appendix D, as they relate to dead end fire apparatus access roads 151 ft. to 750 ft. in length containing turnarounds of 96 ft. in diameter. All roadway widths should be develop in accordance to NFPA 1141section 5.2.3: Roadways shall have a clear minimum width of 12 ft. for each lane of travel (i.e., 24 ft. total width), excluding curbs, gutters, shoulders and parking lane, as required by the Fire Marshal's Office and Chapter 5 of the North Carolina Fire Code.
30. The Project will meet NFPA 1141 section 5.2.3: All roadways shall have a clear minimum width of 12 ft. (i.e., 24 ft. total width) for each lane of travel, excluding curbs, gutters, shoulders and parking lane.
31. The Project shall meet North Carolina Fire Code Ch. 5 - Sect. 503.2.1, Roadways shall have and unobstructed vertical clearance of not less than 13 ft. 6 in. (this includes trees and other obstructions).
32. For parking lots in the multi-family phases, the Project will meet the parking lot standards for the multi-family phase and amenity center as stated in NFPA 1141 Section 5.4 and Table 5.4.1 (e.g., design of aisles, travel lanes, parking stalls).
33. Amenity center road width, travel paths, and parking stalls will be addressed during site plan review and TRC approval.
34. All hydrants shall meet the installation requirements and location requirements as referenced in NFPA 1141, 1142, Ch. 5 of the North Carolina Fire Code and Appendix C of the North Carolina Fire Code and shall be subject to approval.

APPLICANT AFFIDAVIT

I/We, the undersigned, do hereby certify that I have reviewed the recommended conditions of approval and am in agreement with the conditions as they are outlined within this letter.

Print Name

Signature of Applicant

Date



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

*Town Council
April 5, 2021*

STAFF REPORT

Application Number: 2020-158-SD

Project Name: Riverwood Golf Club Section 2 Preliminary Plat (Master Plan)

Tag #: 16I03012F; 16I03009; 16P99016A; 16I03009B; 16K05012E; 16J04001

Location: Located east of Riverwood Drive and West of Castleberry Road

Overlay: N/A

Applicant: RiverWild – David DeYoung

Owner(s): Fred J. Smith Jr.; FSC Ranch, LLC; James W. & Janice C. Holloway LLC

Project Planner: Jeff Caines, AICP, Planner – Town of Clayton

Public Noticing Dates:

- **Neighborhood Meeting:** December 3, 2020
- **Sign Posted:** March 26, 2021
- **Letters Mailed:** March 26, 2021
- **Newspaper Ad Published:** March 24, 2021; March 31, 2021

REQUEST: Riverwood Golf Club Section 2 is a proposed 302+/- acre mixed-use neighborhood development located between Riverwood Drive on the western boundary and Castleberry Road on the eastern boundary, with the Neuse River being the southern boundary. The development plans to develop approximately 723 residential units (429 single family units, 74 townhome units, and 220 apartment units), a variety of open space amenities, and access to community amenities such as outdoor pools, workout facilities, walking trails, golf courses, and driving ranges. It is anticipated that the project will be developed in multiple phases over time, based on market demand and to meet the needs and functionality of the community during construction.

This application was submitted prior to the adoption of NC General Statute Chapter 160D by Clayton Town Council (2021-07-OA - Chapter 160D, February 1, 2021) and is being reviewed under the existing code at the time of submittal (submittal date: November 2, 2020).



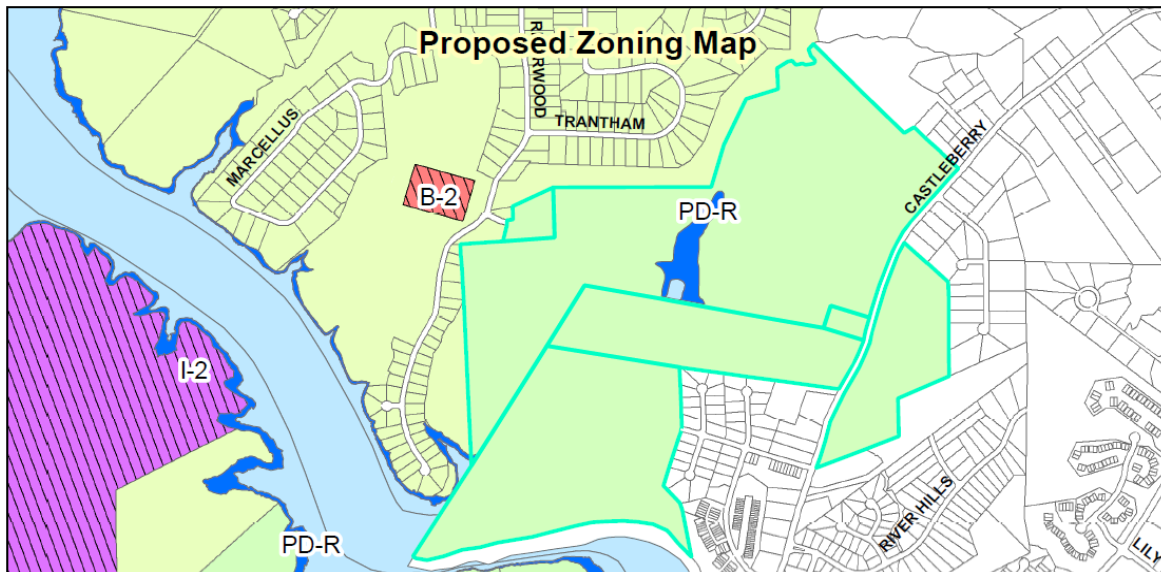
SITE DATA:

Acreage: +/- 302acres

Existing Use: Vacant & Single-Family Residence

ADJACENT ZONING AND LAND USES:

Direction	Zoning	Existing Use(s)
North	Residential Estate (R-E)	Single-Family Residential
South	Planned Development-Residential (PD-R) / Neuse River	Single-Family Residential / River
East	Residential-Estate (AR) / Single Family Residential (SFR)	Vacant / Single-Family Residential
West	Residential Estate (R-E)	Single-Family Residential



DEVELOPMENT DATA:

Proposed Uses:	Residential (mixture of single family, townhome, and apartment units) as well as non-residential uses (combination of open space, access to community amenities: i.e., outdoor pools, workout facilities, walking trails, golf courses, and driving ranges.)
Proposed Density:	Overall up to 723 units are proposed (mixture of single family, townhome, and apartment units) on a net project area of 298.67 (excluding Castleberry ROW) which would create an overall proposed residential density of 2.42 units/acre for the entire development
Proposed Impervious Surface:	25.22 % (75.34 ac) of site impervious area.
Fire Protection:	Archer Lodge Fire District
Access/Streets:	Access will be provided off NC HWY 42 W
Water Provider:	Johnston County – Archer Lodge Water District
Sewer Provider:	Johnston County – East Clayton WWPS Outfall
Electric Provider:	Duke Energy

STAFF ANALYSIS:

Overview

The applicant is requesting approval of a preliminary plat, acting as a master plan. There is an associated rezoning application, 2020-157-PDD and an annexation application, 2020-160-ANX, running concurrently with this

application to annex properties from Johnston County into the Town limits as well as rezone the subject properties from Residential-Estate (R-E) and Agricultural-Residential (AR) to Planned Development Residential (PD-R).

The overall development plans to develop approximately 723 residential units (429 single family units, 74 townhome units, and 220 apartment units), a variety of open space amenities, and access to community amenities such as outdoor pools, workout facilities, walking trails, golf courses, and driving ranges. It is anticipated that the project will be developed in multiple phases over time, based on market demand and to meet the needs and functionality of the community during construction.

Four Main Types of Residential Development:

Single-Family Large Lot Residential:

The Master Plan identifies approximately 153 “Type A” housing units that will be on minimum lot sizes of 10,000 square feet. This type of development is proposed to be located on the western side of the development project closest to Riverwood Drive. Stewarts Knob Drive is the main road through this portion of the development, south of the proposed amenity center. A smaller portion of these larger lots are proposed east of the amenity center on Timberlake Lane.

Single-Family Small Lot Residential:

The Master Plan identifies approximately 276 “Type B” housing units that will be on minimum lot sizes of 4,100 square feet. This type of development is located primarily east and west of Castleberry Road, as shown on the submitted site plan.

Townhome Residential Lots:

The Master Plan identifies approximately 74 “Type C” townhome residential units that will be on minimum lot sizes of 2,000 square feet. This type of development is located primarily east of Castleberry Road on “Road 12” and “Road 13”, as shown on the submitted site plan. The Master Plan shows a passive open space fronting the units that face Castleberry Road for the units on the west side of “Road 12”; while the east side and the townhomes on “Road 13” abut single family small lot residential.

Apartment Units:

The Master Plan identifies approximately 220 “Type D” apartment units located north and south of Timberlake Lane, west of Road 5 near Castleberry Road. The minimum lot size for the apartment units is identified as 20,000 square feet. Page 14 of the site plan set shows the general design of the apartments. Details will be forth coming during the site plan review stage of the development process.

Amenity Center:

The Master Plan proposes an Amenity Center and Maintenance area on the western side of the proposed Master Plan development. The Amenity Center is divided up into two parts, the northern portion is approximately 2.21 acres in size while the southern portion is approximately 4.39 acres in size. Sheet 15 of the plan set give details of eight (8) types of amenities this area may have for the residents of Riverwood Golf Section 2; the applicant will be required to install a minimum of three (3) of the eight (8) uses.

Traffic Impact Analysis along Castleberry Road

A TIA was performed for this development by Kimley Horn. NCDOT also provided the Town with requirements from the Congestion Management Section after the review of the TIA. Both the TIA and Congestion Management Section comments are included as attachments to this staff report. NCDOT has determined that both the TIA recommendations as well as additional comments, as identified in the letter sent to the applicant

out lining individual site and associated improvements are considered necessary for consistency with local District and Division policy. Please refer to the letter dated December 7, 2020 for specific details.

Landscaping/Buffering

The development will include required Class “C” landscaping buffers or natural vegetation along the perimeter of the development. The buffers vary by location around the development. For example, there is a Class “C” boundary surrounding the project area east of Castleberry Road within Phase 1, 12, and 13. The perimeter of the project west of Castleberry Road is surrounded by a combination of open space, Resource Conservation Area, Class “C” buffer or the Riverwood Golf Course. The Landscape Plan shows specific details and locations of the buffers located around the entire development project.

Consistency with Adopted Plans:

Consistency with the Comprehensive Plan 2040

The Town’s Comprehensive Plan – Future Land Use Map designates the properties inside the Town’s ETJ as Agricultural and Rural Residential, while the properties outside the Town’s ETJ are designated as Prime Growth Area, as designated on the Johnson County Comprehensive Plan Map. Agricultural and Rural Residential areas are primarily located outside of existing and future sewer service areas. Agricultural and Rural Residential areas are outlined to provide septic systems for wastewater treatment, have a limited road network and, in this case, lie within the watershed protection overlay of the Neuse River. This designation typically allows up to 2 units/acre as a part of a Planned Development. In this specific case the density is approximately 2.42 units/acre. The application states that the Comprehensive Plan allows “densities up to 7 dwelling units/acre may be approved as part of a Planned Development – Residential District.” This statement is stated under the Medium Density Residential area(s) which is comprised predominantly of neighborhoods with housing units that are more urban in character and in closer proximity to commercial services and centers. Finally, although the single-family density may be identified as 1.44 units/acre, the overall density taking into account all forms of housing types is 2.42 units/acre which is still consistent with the underlying Comprehensive plan designation of Agricultural and Rural Residential.

Overall, the proposed master plan is consistent with the Future Land Use map and Comprehensive Plan 2040 as it maintains the overall density of 2.4 units/acre. Although the development includes a varied mix of residential housing the development preserves large area of resource conservation areas and provides open space areas as well as an amenity center for future residents. The site plan is uniquely designed by keeping larger residential lots on the western side of the development near already existing development and providing higher density (i.e., multi-family) in the middle of the planned development. This is balanced out by smaller lot single-family and townhome residential units on the eastern side of the development.

If the associated rezoning is approved to PD-R the Future Land Use Map Designation would be updated accordingly.

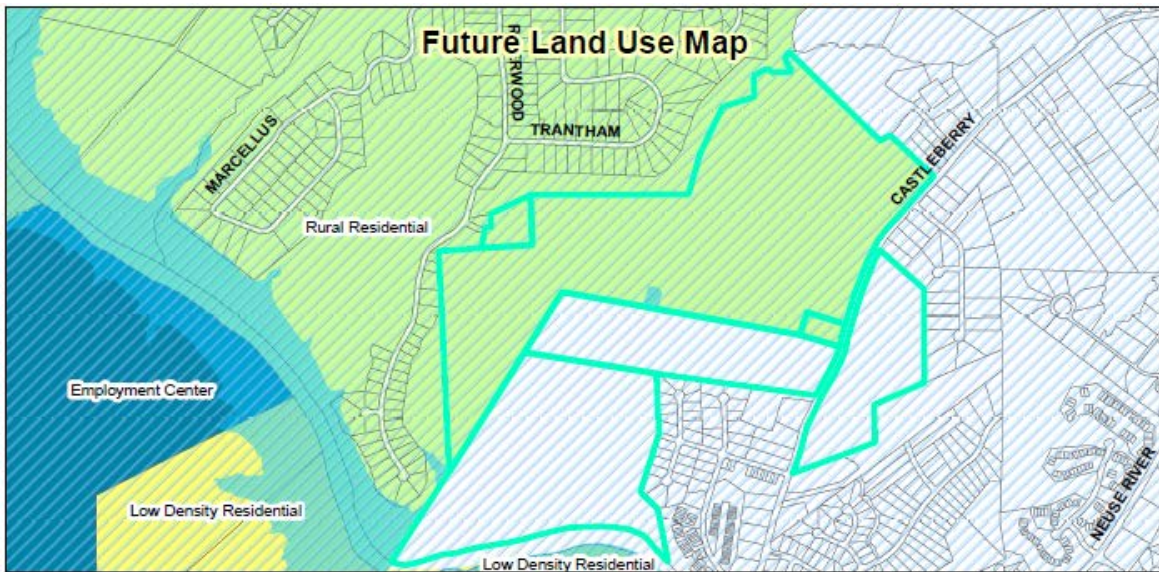
Comprehensive Plan Goals supporting the master plan request include:

- **Goal LU1:** Preserve Clayton’s small-town character while allowing for growth and development in appropriate areas.
- **Goal LU2:** Encourage quality development which maximizes existing infrastructure, promotes walking and biking, and enhances travel safety.
- **Strategy LU2.1.2:** Require vehicular interconnectivity between existing and future adjacent development.
- **Strategy LU2.1.4:** Require development to integrate sidewalks internally and provide pedestrian connections to existing and future adjacent development and/or destinations.

- **Goal H1:** Encourage a range of housing types and lot sizes that meets the needs of various income levels, family sizes, and ages.

Comprehensive Plan Goals not supporting the master plan request include:

- None.



- **Unified Development Code**

The proposed master plan is consistent with the requirements of the Unified Development Code for a plan at its level. Each phase of the development will be reviewed individually as a subdivision plan to ensure consistency with the Unified Development Code and regulating standards of the master plan, as approved by the Town Council.

Compatibility with Surrounding Land Uses

The proposed master plan is compatible with the surrounding land uses. Directly north of the proposed development is Riverwood (i.e., Riverwood Golf Club), which is zoned R-E. To the east of the proposed development are single-family residences located in Johnston County zoned Agricultural – Residential (AR). To the southeast of the proposed development are single-family residences also located in Johnston County which are zoned a combination of Planned Development and Agricultural – Residential (AR). Finally to the south of the proposed development is the Neuse River.

CONSIDERATIONS:

- Each phase of the development will be reviewed as a separate subdivision plan prior to plat recordation.
- If approved, this master plan will be recorded with Johnston County and shall guide future development for this land.
- Approval of the master plan is contingent upon specific conditions of approval which are agreed upon by both the applicant and the Town Council.

FINDINGS OF FACT:

The applicant has addressed the Findings of Fact outlined below, as listed in the Application.

1. Consistency with the adopted plans and policies of the Town.
 - Applicant Response:

Upon rezoning to PD-R the proposed subdivision will be consistent with the following Comprehensive Plan Implementation Goals:

Objective LU1.1 - Encourage developments which incorporate high-quality design and enhance the quality of life for existing and future residents of the Town.

Goal LU2 - Encourage quality development which maximizes existing infrastructure, promotes walking and biking, and enhances travel safety.

Strategy LU2.1.2 - Require vehicular interconnectivity between existing and future adjacent development. Strategy LU2.1.4 - Require development to integrate sidewalks internally and provide pedestrian connections to existing and future adjacent development and/or destinations.

Goal H1 – Encourage a range of housing types and lot sizes that meets the needs of various income levels, family sizes, and ages.

The project provides multiple stormwater control measures (SCM's) and complies with Phase II Watershed Rules - Neuse River Rules. This compliance through the use of SCM's, removes the maximum threshold for density. The overall density of the proposed project is 2.42 du/ac with single family density at 1.44 units per acre.

Staff Commentary:

The subject properties are located within both the Town's ETJ and in Johnston County. After annexation and rezoning the development to Planned Development – Residential (PD-R) the master plan meets the general requirements of the UDC and is consistent with the overall consistent with the Comp Plan 2040.

2. The subdivision meets all required specifications of the Unified Development Code.
 - Applicant Response:

The proposed Riverwood Golf Club Section 2 major subdivision, upon rezoning to Planned Development-Residential will meet the specifications of the Unified Development Code. No waivers or variances are requested as part of this submittal.

Staff Commentary:

The proposed master plan meets the required specifications of the Unified Development Code. The actual subdivision of outparcels will be subject to minor subdivision review in the future and will be required to meet the standards of the UDC and master plan narrative requirements.

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.

- Applicant Response:

The proposed 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 proposed neighborhood will include varying home options, densities, and price points necessary to satisfy continued demand for housing in the Town as well as provide an additional opportunity for commercial uses. Additionally, the proposed development meets Comprehensive Plan Goal H1 – to encourage a range of housing types and lot sizes that meets the needs of various income levels, family sizes, and ages.

Staff Commentary:

The proposed master plan is consistent with Comprehensive Plan Goal H which encourages a wide range of housing types. The proposed master plan provides for two (2) types of single family residential as well as townhome and multi-family residential styles. Besides a planned amenity center the road connections will allow for active recreation between this development and the Riverwood gold course in addition to walking and running opportunities.

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.

- Applicant Response:

The subdivision layout and roadway design are in accord with the September 2020, Traffic Impact Analysis and provide a thoughtful and connected pedestrian and vehicular network. As appropriate, public sidewalks will be located on each side of internal streets to provide pedestrian access to the adjacent existing development. All proposed improvements within the street ROW comply with the Town of Clayton Standards and Specifications. The subdivision layout was designed to avoid environmental conflicts by appropriately buffering streams and honoring floodplain requirements.

Staff Commentary:

The proposed master plan will be required to make internal street improvements in accordance with Town of Clayton standards and specifications. In addition the development will also be required to construct roadway improvements along Castleberry Road as outlined in the TIA and NCDOT requirements to mitigate congestion in the immediate area.

RECOMMENDED CONDITIONS OF APPROVAL:

If approved, staff is recommending conditions of approval be placed upon the application. These conditions are outlined in an attachment to the staff report. The applicant has reviewed the attachment and is in agreement with the conditions proposed by staff.

ATTACHMENTS:

- 1) Application
- 2) Neighborhood Meeting Materials
- 3) Site Plans / Master Plan
- 4) Adjacent Property Letter
- 5) Newspaper Notice
- 6) Traffic Impact Analysis – Traffic Study
- 7) NCDOT Congestion Management Comments
- 8) Signed TRC Certification
- 9) Recommended Conditions of Approval- Signed
- 10) Staff Report Map
- 11) Wastewater Treatment Letter



WATER & WASTEWATER ALLOCATION CRITERIA				
TOTAL POINTS = 90 MINIMUM 50 POINTS REQUIRED				
	Category	Points	Calc.	Notes
DEVELOPMENT TYPE ¹ (Choose 1 from this category)	Government/Public Admin./Public Safety	50		
	Non-residential (Commercial) - Retail & Restaurant	30		
	Non-residential (Commercial) - Office	20		
	Non-residential (Commercial) - Warehouse	15		
	Non-residential (Commercial) - Medical	25		
	Non-residential (Commercial) - Hotel/Motel	35		
	Industrial/Manufacturing	30		
	Institutional	15		
	Residential Existing Lot- Single Family Detached	40		Individual Existing Lot construction
	Residential Subdivision - Single Family Detached (> 0.25 Acre Lots)	20		Single Family Homes on Individual Lots greater than 0.25 acres
	Residential Subdivision - Single Family Detached (< 0.25 Acre Lots)	15		Single Family Homes on Individual Lots less than 0.25 Acres
	Residential Subd.- Single Family Attached (> 1,500 SF Heated Space)	10		Townhomes with heated square-footage greater than 1,500 SF
	Residential Subd.- Single Family Attached (< 1,500 SF Heated Space)	5		Townhomes with heated square-footage less than 1,500 SF
	Residential - Multifamily (Apartments)	10		
	Mixed-Residential	25	25	Mix of various lot sizes of Single-family, Townhomes, and Apartments
	Mixed-Use Commercial & Residential	30		Mix of Residential and Non-residential (Commercial) uses
	Downtown Redevelopment	30		
	Infill Development	25		Utilities already exist within 300 Feet of property
FUTURE TAX STATUS (Choose 1 from this category)	Exempt	0		
	Residential	5	5	
	Non-residential	10		
	Industrial	10		
COMMUNITY BENEFIT BONUS POINTS (Choose All that apply from this category)	Cultural Arts/Entertainment for Public	10		
	Sports/Recreation for Public	10		
	Town Electric Customer	20	20	
	Expansion of existing non-residential use	10		
	Re-development of an existing property	5		Must result in increased property value
	Residential Subdivision - Additional amenities included	5 - 15	15	Pool, Clubhouse, sports courts, etc. - 5 pts per, max 15 pts
	Job Creation - 10 to 25 new jobs	5		
	Job Creation - 26 to 100 new jobs	10		
	Job Creation - 100+ new jobs	15		
	Job creation - Jobs created will have salaries at or above median income	5		Must be greater than 50% of jobs added with documentation to confirm
	Residential - Multiple-Car Garages provided	5	5	
	Residential - Overflow Parking provided	5		Subject to Planning and Engineering support
	Masonry Elements included in Building Construction	10	10	
	Sustainable/High Efficiency Products and appliances used	5 - 15		5 pts per, max 15 pts
	Private trail connection to Public Greenway	10	10	
COMMUNITY IMPACT DEDUCT POINTS (Choose All that apply from this category)	Pump Station Improvements required ²	-10		Subject to Town policy and standards
	New Pump Station Required ²	-20		Subject to Town policy and standards
	Out-of Town Status (After construction)	-10		
	Outside Fire District	-5		
	Inconsistent with Comp Plan	-5		
CLARIFICATIONS	1	Any Development Type Category not listed is subject to Town Council discretion with staff recommendation.		
	2	The Town Engineer may waive these deductions if the improvements are consistent with Future utility service plans, replace/offline an aging station, or are in the best interest of the Town.		



TOWN OF CLAYTON
Engineering & Inspections Department
111 E. Second Street, Clayton, NC 27520
P.O. Box 879, Clayton, NC 27528
Phone: 919-553-5002
Fax: 919-553-1720

WASTEWATER ALLOCATION REQUEST

The Town of Clayton, in an effort to manage and maintain the sewer and water capacity for the Town, requires that this application be completed and submitted to the Town for consideration of a utility allocation. Review fee is due upon submittal of request.

Wastewater Allocation Request Review Fee: \$50

Application MUST be completed and sealed by a registered engineer unless otherwise approved by staff.

SITE INFORMATION

Name of Project: Riverwood Golf Club Section 2 **Acreeage of Property:** 301.91
County Tag Number: See attached **NC PIN:** See attached
Address/Location: 875 Castleberry Road
Zoning District: Residential Estate
Town Limits / ETJ: ☐ Town Limits ☒ ETJ (Extra-Territorial Jurisdiction)

APPLICANT INFORMATION – Applicant must be a registered engineer unless otherwise approved by Town Engineer

Applicant: Stewart
Mailing Address: 101 West Main St. Durham, NC 27701
Phone Number: 919.866.4794 **Fax:**
Contact Person: Tim Summerville
Email Address: tsummerville@stewartinc.com

PROPERTY OWNER INFORMATION

Name: See attached
Mailing Address:
Phone Number: **Fax:**
Email Address:

FOR OFFICE USE ONLY

Date Received: **File Number:** **Associated Project Number:**

PROJECT INFORMATION

Use: ☒ New ☐ Expanded ☐ Change

Use Type: ☒ Residential ☐ Non-Residential

Proposed Use(s): Residential Existing Use(s): Vacant

Invoice shall be mailed to the following:

Developer Name: RiverWild

Mailing Address: 114 W. Main Street Clayton, NC 27520

Phone Number: 919.901.3178 Fax Number:

Email Address: david@riverwildteam.com

ALLOCATION REQUEST

The following is required:

- For non-residential construction, submit a floor plan of proposed building.
- Use additional sheets if necessary.
- Provide any documentation supporting/justifying the request as an attachment (using a comparable use is recommended).
- If a phasing / take-down schedule is proposed, include as an attachment.

Residential:

Gross Acreage: 298.67

Single Family	# of Units	GPD per Unit	Total Requested GPD
1-2 Bedroom Units			
3 Bedroom Units	432	250	108,000
>3 Bedroom Units			
Total		-----	108,000

Multi-Family	# of Units	GPD per Unit	Total Requested GPD
1-2 Bedroom Units	220	240	52,800
3 Bedroom Units	74	240	17,760
>3 Bedroom Units			
Total		-----	70,560

Non-Residential: (Design Flow Guideline provided as Appendix A)*

**If design flow deviates from the flow rates presented in Appendix A, provide supporting documentation/justification as an attachment in the form of 12 months of water bills demonstrating gallons per day utilized.*

Gross Acreage: _____

Use	Measurement Unit	# of Units	GPD per Unit	Total Requested GPD
Total			-----	

TOTAL REQUESTED GALLONS PER DAY: 178,560

NOTE TO APPLICANT:

Invoicing:

Invoices are generated on the following schedule:

Non-Residential:

Generated with the application for a Zoning Compliance Permit.

Residential:

Multi-Family / Apartments:

Generated with the application for a Zoning Compliance Permit.

Subdivision / Subdivided Lots:

Generated at Final Plat submittal.

Fee Development:

Development Fees are calculated and invoiced based on the Town of Clayton adopted Comprehensive List of Fees and Charges. Invoiced fees include acreage fees, capacity fees, nutrient offset fees, recreation fees, fees-in-lieu, and electric department lot deposit. Please speak with Town staff with questions.

Approval:

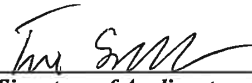
Requests over 10,000 GPD are approved by the Town Council, by resolution. All other requests are approved by the Town Manager.

APPLICANT AFFIDAVIT

I/We, the undersigned, do hereby make application and petition to the Town of Clayton to approve the subject Wastewater Allocation. 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.

Tim Summerville

Print Name


Signature of Applicant

11.02.2020

Date

Engineer Seal:



TOWN OF CLAYTON OFFICE USE ONLY:

Approved by: ☐ Town Manager

☐ Town Council (*requests of 10,000 GPD or more require Council approval by resolution*)

The **Town Manager / Town Council (circle one)** has authorized the allocation of _____

gallons per day for project # _____.

Date of Approval: _____

Signed:

Town Manager

If approved by Town Council:

Attach a copy of the resolution and any associated documentation.

APPENDIX A: DESIGN FLOW RATES

The following table from the North Carolina Administrative Code 02T.0114 shall be used to determine the minimum allowable design daily flow of wastewater facilities. Alternatively, the Town in its sole and absolute discretion may calculate the customer's initial average daily wastewater flow based on data from the customer's operations (or from similarly situated customers) with a comparable sanitary sewer system, where such data are available and reasonably current.

Establishment Type	Daily Flow Rate
Barber and Beauty Shops	
Barber Shops	50 gal/chair
Beauty Shops	125 gal/booth or bowl
Businesses, Offices and Factories	
General business and office facilities	25 gal/employee/shift
Factories, excluding industrial waste	25 gal/employee/shift
Factories or businesses with showers or food preparation	35 gal/employee/shift
Warehouse	100 gal/loading bay
Warehouse – self storage (not including caretaker residence)	1 gal/unit
Churches	
Churches without kitchens, day care or camps	3 gal/seat
Churches with kitchen	5 gal/seat
Churches providing day care or camps	25 gal/person (child & employee)
Fire, Rescue and Emergency Response	
Fire or rescue stations without on-site staff	25 gal/person
Fire or rescue stations with on-site staff	50 gal/person/shift
Food and Drink Facilities	
Banquet, dining hall	30 gal/seat
Bars, cocktail lounges	20 gal/seat
Caterers	50 gal/100 sq. ft. floor space
Restaurant, full Service	40 gal/seat
Restaurant, single service articles	20 gal/seat
Restaurant, drive-in	50 gal/car space
Restaurant, carry out only	50 gal/100 sq. ft. floor space
Institutions, dining halls	5 gal/meal
Deli	40 gal/100 sq. ft. floor space
Bakery	10 gal/100 sq. ft. floor space
Meat department, butcher shop or fish market	75 gal/100 sq. ft. floor space
Specialty food stand or kiosk	50 gal/100 sq. ft. floor space
Hotels and Motels	
Hotels, motels and bed & breakfast facilities, without in-room cooking facilities	120 gal/room
Hotels and motels, with in-room cooking facilities	175 gal/room
Resort hotels	200 gal/room
Cottages, cabins	200 gal/unit
Self-service laundry facilities	500 gal/machine
Medical, Dental and Veterinary Facilities	
Medical or dental offices	250 gal/practitioner/shift
Veterinary offices (not including boarding)	250 gal/practitioner/shift
Veterinary hospitals, kennels, animal boarding facilities	20 gal/pen, cage, kennel or stall
Hospitals, medical	300 gal/bed
Hospitals, mental	150 gal/bed
Convalescent, nursing, rest homes without laundry facilities	60 gal/bed
Convalescent, nursing, rest homes with laundry facilities	120 gal/bed
Residential care facilities	60 gal/person
Parks, Recreation, Camp Grounds, R-V Parks and other Outdoor Activity Facilities	
Campgrounds with comfort station, without water or sewer hookups	75 gal/campsite

Establishment Type	Daily Flow Rate
Campgrounds with water and sewer hookups	100 gal/campsite
Campground dump station facility	50 gal/space
Construction, hunting or work camps with flush toilets	60 gal/person
Construction, hunting or work camps with chemical or portable toilets	40 gal/person
Parks with restroom facilities	250 gal/plumbing fixture
Summer camps without food preparation or laundry facilities	30 gal/person
Summer camps with food preparation and laundry facilities	60 gal/person
Swimming pools, bathhouses and spas	10 gal/person
Public access restrooms	325 gal/plumbing fixture
Schools, Pre-school and Day Care	
Day care and preschool facilities	25 gal/person (child & employee)
Schools with cafeteria, gym and showers	15 gal/student
Schools with cafeteria	12 gal/student
Schools without cafeteria, gym or showers	10 gal/student
Boarding schools	60 gal/person (student & employee)
Service Stations and Car Wash Facilities	
Service stations, gas stations	250 gal/plumbing fixture
Car wash facilities	1200 gal/bay
Sports Centers	
Bowling center	50 gal/lane
Fitness, exercise, karate or dance center	50 gal/100 sq. ft.
Tennis, racquet ball	50 gal/court
Gymnasium	50 gal/100 sq. ft.
Golf course with only minimal food service	250 gal/plumbing fixture
Country clubs	60 gal/member or patron
Mini golf, putt-putt	250 gal/plumbing fixture
Go-kart, motocross	250 gal/plumbing fixture
Batting cages, driving ranges	250 gal/plumbing fixture
Marinas without bathhouse	10 gal/slip
Marinas with bathhouse	30 gal/slip
Video game arcades, pool halls	250 gal/plumbing fixture
Stadiums, auditoriums, theaters, community centers	5 gal/seat
Stores, Shopping Centers, Malls and Flea Markets	
Auto, boat, recreational vehicle dealerships/showrooms with restrooms	125 gal/plumbing fixture
Convenience stores, with food preparation	60 gal/100 sq. ft.
Convenience stores, without food preparation	250 gal/plumbing fixture
Flea markets	30 gal/stall
Shopping centers and malls with food service	130 gal/1000 sq. ft.
Stores and shopping centers without food service	100 gal/1000 sq. ft.
Transportation Terminals	
Air, bus, train, ferry, port and dock	5 gal/passenger

Source: North Carolina Administrative Code 02T.0114, January 1, 2007

PIN NUMBERS:	176000-70-3713; 176000-60-9362; 166900-78-4101; 166900-79-1467; 166900-88-7300; 166900-76-7649; 166900-67-5094	
TAG NUMBERS:	05H02013A; 05H02009A; 05H02012; 05H02013; 05H02010A; 05H02200B; 05H02015	
OWNER INFO:	MASSEY, JOHN WESLEY: 8041 ST ANDREWS DR LAURINBURG, NC 28352-0000	
	SMITH, JAMES D. JEAN K. SMITH TRUST: 1814 N ONEIL STREET EXT CLAYTON, NC 27520-6236	
	JONES, TRACY L: 1538 NORTH ONEIL STREET EXT CLAYTON, NC 27520-0000	
	ASHCROFT PARTNERS, LLC: 114 W MAIN ST STE 102 CLAYTON, NC 27520-2397	
TOTAL SITE AREA.:	256.15 AC.	11,157,720 SF

Johnston County
DEPARTMENT OF PUBLIC UTILITIES
PO BOX 2263
SMITHFIELD, NC 27577
(919) 989-5075

February 22, 2021

Mr. Rich Cappola, PE
Public Services Director
Town of Clayton
PO Box 879
Clayton, NC 27520

Re: Proposed Development
NC PIN: 167900-76-3795 & 167900-85-1824

Dear Mr. Cappola,

The Town of Clayton previously purchased and secured 1.44 MGD of wastewater treatment and transmission capacity allocation with Johnston County. Currently, the County receives discharge from the Town of Clayton at the Town's ECIA (East Clayton Industrial Area) wastewater pump station on US Hwy 70. It is the County's understanding that the Town is requesting to discharge a portion of their flow allocation to County facilities in the vicinity of NC 42 and Castleberry Road.

Per our prior conversations, proposed development to be located on NC PINs 167900-76-3795 and 167900-85-1824 would be a retail water and sewer customer of the Town of Clayton. The Town would discharge wastewater received from the development to the County's existing Stewart's Knob wastewater pump station. The Stewart's Knob wastewater pump station discharges to the County's East Clayton wastewater pump station. The facilities do not have existing available transmission capacity to serve the complete proposed project. The developer would be responsible for any necessary upgrades and flow equalization at the County's Stewart's Knob and East Clayton wastewater pump stations, in addition to any further downstream off-site improvements, in order to receive flow discharged from the proposed development.

The Town's existing transmission flow allocation from the County is based on flow equalization of 1.5 prior to entering the County's system. Therefore, any discharge from the Town at this location should meet the same criteria or the transmission capacity allocation analysis will include a pro-rata deduction for flow discharged without equalization at 1.5.

Please let me know if you have any questions or need additional information.

Sincerely,

Chandra Cox Farmer

Chandra C. Farmer, PE
Director of Utilities

Stormwater Impact Analysis Master Plan Submittal

For the proposed
Riverwood Golf Club Section 2
Clayton, North Carolina

Prepared By
Stewart Inc.



STEWART

November 2, 2020

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- 1. Table of Contents & Narrative**
- 2. Site Information**
 - a. USGS 7.5 Min. Quad Map**
 - b. FEMA Map**
 - c. USDA Web Soil Survey Map**
- 3. Plan Sheets**
 - a. SW 1.0 – Pre-Development 1- Year Drainage Area Map**
 - b. Map**
 - c. SW 1.2 – Post Development 1-Year Drainage Area Map**

STORMWATER NARRATIVE

RIVERWOOD GOLF CLUB SECTION 2

CLAYTON, NORTH CAROLINA

Site Development History

This project represents the first disturbance onsite since the baseline date of July 6, 2012.

Project Description

This stormwater analysis will address the various quality and quantity control standards per the Town of Clayton requirements and proposed changes in impervious surfaces on the subject property. The project area is 301.91 acres located in the Neuse River Basin. The site is composed of primarily Hydrologic Soils Group 'B' soil. The subject property is currently vacant and mostly wooded. The proposed project involves the construction of residential homes, townhomes, and apartments. Please see Figure 1.0 below for the location of the project parcel.

Figure 1.0 – Vicinity Map for Ashcroft Section 2



Quantity Measures

The proposed project includes construction of single and multi-family residential, commercial, and apartments. These improvements yield an increase of impervious surface area of 75.34 AC.

Stormwater management will be provided if the development increases peak flow rates for 1-year storm, 2-year, 10-year and 25-year storms.

Much of the water onsite flows into the stream that runs south through the center of the site. We've analyzed points on the 50' buffer line along the stream, *see SW1.0 for pre-development drainage areas. These are denoted as 1-year analysis points.* Peak flow will not be affected for 2/10/25-year storms. The analysis points consist of mostly woods and open space, there is little residential housing and driveway. A composite CN value and time of concentration was found for all analysis points in pre and post development.

In order to meet peak flow requirement at each analysis point, SCMs are proposed throughout the site. The drainage areas include roof, streets, and sidewalk. These SCMs are modeled as constructed wetlands for reference in this SIA. The types of SCMs utilized and size will be determined

when each individual phase is permitted. TR-55 method was used to calculate Time of Concentration for pre and post development.

Methodology and Procedures

Drainage patterns for the subject site were based upon topographic data and imagery from a field survey, Johnston County GIS, and Google Maps. Area calculations for all drainage basins were determined using 2019 AutoCAD Civil 3D. The NRCS TR-55 Method was used to calculate runoff for the 1, 2, 10 and 25-year storm events. The TR-55 Method was used to determine time of concentrations to the various analysis points throughout the site. A minimum 5-minute time of concentration (Tc) was used where calculations yielded a shorter Tc. Composite curve numbers (CN) were calculated using curve numbers for wooded, grassed, and impervious surfaces.

Conclusion

The proposed development plan for Riverwood Golf Club Section 2 will utilize multiple SCMs to meet onsite water quality requirements and attenuate peak flow. Post development flow rates for the 1, 2, 10 and 25-year storms are attenuated to below pre-development levels. All new impervious surfaces as reasonably practical from the site will drain to the proposed SCMs and will be designed per NCDEQ and Town of Clayton requirements.

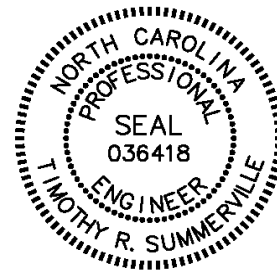
Submitted 2nd day of November 2020 by **STEWART**



Ashley Abbott



Tim Summerville, PE



Appendix 2

Site Information

- a. USGS 7.5 Min. Quad Map**
- b. FEMA Map**
- c. USDA Web Soil Survey Map**

Custom Soil Resource Report Soil Map



Custom Soil Resource Report

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

Water Features



Streams and Canals

Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

Background



Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Johnston County, North Carolina

Survey Area Data: Version 24, Jun 4, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Oct 22, 2018—Oct 25, 2018

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

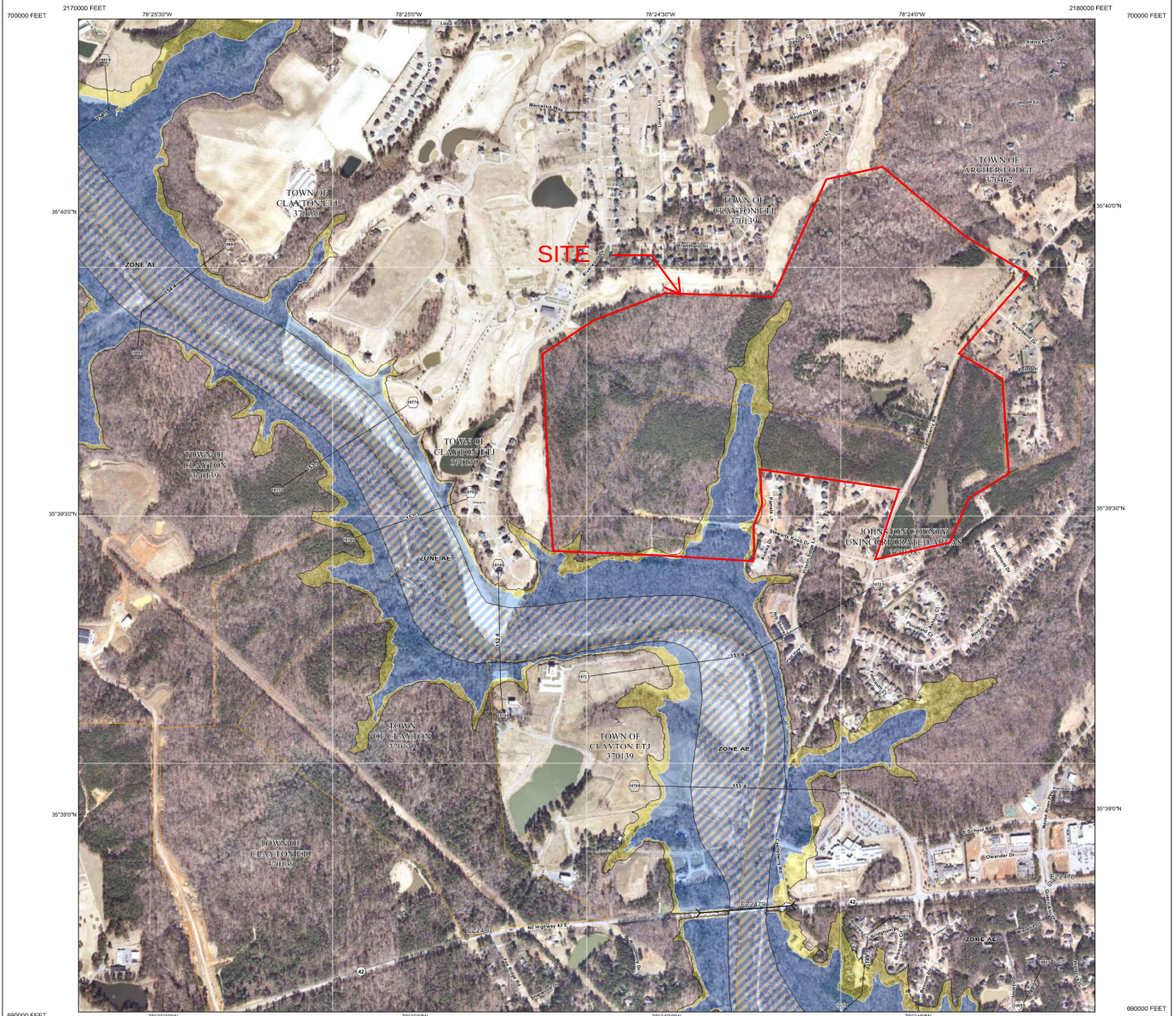
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
CeB	Cecil loam, 2 to 6 percent slopes	57.9	21.1%
Ch	Chewacla loam, 0 to 2 percent slopes, frequently flooded	27.9	10.2%
McB	Marlboro-Cecil complex, 2 to 8 percent slopes	14.7	5.4%
PaD	Pacolet loam, 10 to 15 percent slopes	60.7	22.1%
PaE	Pacolet loam, 15 to 25 percent slopes	76.9	28.0%
W	Water	0.0	0.0%
WoB	Wedowee sandy loam, 2 to 8 percent slopes	17.7	6.5%
Wt	Wehadkee loam, 0 to 2 percent slopes, frequently flooded	18.5	6.8%
Totals for Area of Interest		274.6	100.0%

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a



Cooperating Technical State
 NORTH CAROLINA
 This digital Flood Insurance Rate Map (FIRM) was produced through a unique cooperative partnership between the State of North Carolina and the Federal Emergency Management Agency (FEMA). The State of North Carolina has implemented a long-term approach to floodplain management to decrease the costs associated with flooding. This is demonstrated by the State's commitment to make flood hazard areas at the local level. As a part of this effort, the State of North Carolina has joined in a Cooperating Technical State agreement with FEMA to produce and maintain this digital FIRM.

FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR ZONE DESCRIPTIONS AND INDEX MAP
 THE INFORMATION DEPICTED ON THIS MAP AND SUPPORTING
 DOCUMENTATION ARE ALSO AVAILABLE IN DIGITAL FORMAT AT
[HTTP://FRIS.NC.GOV/FRIS](http://FRIS.NC.GOV/FRIS)

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE)
		Zone AE, AO, AH, VE, AR
OTHER AREAS OF FLOOD HAZARD		Regulatory Floodway
		0.2% Annual Chance Flood Hazard, Areas of 1% Annual Chance Flood with Average Depth Less Than One Foot or With Drainage Areas of Less Than One Square Mile Zone X
OTHER AREAS		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levee
GENERAL STRUCTURES		See Notes Zone X
		Channel, Culvert, or Storm Sewer Accredited or Provisionally Accredited Levee, Dike, or Floodwall
		Non-accredited Levee, Dike, or Floodwall
		North Carolina Geodetic Survey bench mark
		National Geodetic Survey bench mark
		Contractor Est. NCFMP Survey bench mark
		Cross Sections with 1% Annual Chance
		Water Surface Elevation (WSEL)

NOTES TO USERS

For information and questions about this map, available products, associated with this FIRM including historic versions of the FIRM, how to order products or the National Flood Insurance Program in general, please call the FEMA Map Information eXchange at 1-877-FEMA-MAP (1-877-362-6271) or visit the FEMA Map Service Center website at <http://msc.fema.gov>. An accompanying Flood Insurance Study report, Letter of Map Revision (LOR) or Letter of Map Amendment (LOMA) relating portions of this panel, and digital versions of this FIRM may be available. Visit the North Carolina Floodplain Mapping Program website at <http://www.ncfloodmaps.com> or contact the FEMA Map Service Center.

Communities annexing land on adjacent FIRM panels must obtain a current copy of the adjacent panel as well as the current FIRM sheet. These may be ordered directly from the Map Service Center at the number listed above.

For community and countywide map dates refer to the Flood Insurance Study report for this jurisdiction.

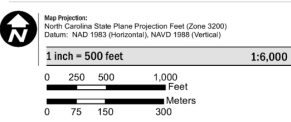
To determine if flood insurance is available in the community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

Flood Insurance Study (FIS) means an examination, evaluation, and determination of flood hazards, corresponding water surface elevations, flood hazard risk zones, and other flood data in a community issued by the North Carolina Floodplain Mapping Program (NCFMP). The Flood Insurance Study (FIS) is comprised of the following products used together: the Digital Flood Insurance Study, the Water Surface Elevation Report, the digital version of the Flood Insurance Rate Map and the Flood Insurance Study Report. A Flood Insurance Study is a compilation and presentation of flood risk data for specific watercourses, basins, and coastal flood hazard areas within a community. This report contains detailed flood elevation data, data sheets, and a Flood Insurance Study Report. It is completed for the NFIP, the digital information, reports and maps are assembled into an FIS. Information shown on the FIS is prepared in digital format by the NCFMP. Base map information shown on the FIS is provided in digital format by the NCFMP. The source of this information can be determined from the metadata available in the digital FLOOD database and in the Technical Report Data Notebook (TRDN).

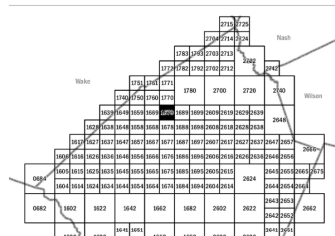
ACCREDITED LEVEE NOTES TO USERS: If an accredited levee note appears on this panel check with your local community to obtain more information, such as the estimated level of protection provided (which may exceed the 1 percent annual-chance level) and Emergency Action Plan, on the levee system(s) shown as providing protection. To maintain accreditation, the levee owner or community is required to submit the data and documentation necessary to comply with Section 65.12 of the NFIP regulations. If the community or owner does not provide the necessary data and documentation or if the data and documentation provided indicates the levee system does not comply with Section 65.10 requirements, FEMA will revise the flood hazard and risk information for this area to reflect de-accreditation of the levee system. To mitigate flood risk in residential risk areas, property owners and residents are encouraged to consider flood insurance and floodproofing or other protective measures. For more information on flood insurance, interested parties should visit the FEMA Website at <http://www.fema.gov/business/floodinsur>.

LIMIT OF MODERATE WAVE ACTION NOTES TO USERS: For some coastal flooding zones the AE Zone boundary is based on the 1% Annual Chance Flood Elevation (ACE). The location of wave hazards between the ACE Zone and the ACE boundary is based on the ACE boundary and the ACE boundary. The location of wave hazards between the ACE Zone and the ACE boundary is based on the ACE boundary and the ACE boundary.

SCALE



PANEL LOCATOR



National Flood Insurance Program

NORTH CAROLINA FLOODPLAIN MAPPING PROGRAM
NATIONAL FLOOD INSURANCE PROGRAM
FLOOD INSURANCE RATE MAP
NORTH CAROLINA
PANEL 1679

Panel Contains:

COMMUNITY	CID	PANEL	SUFFIX
CLAYTON, TOWN OF	370139	1679	K
JOHNSTON COUNTY	370138	1679	K
ARCHER LODGE, TOWN OF	370462	1679	K



U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY



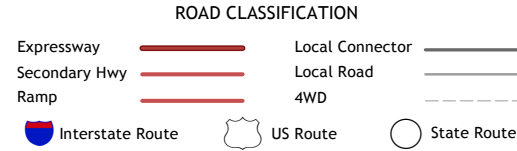
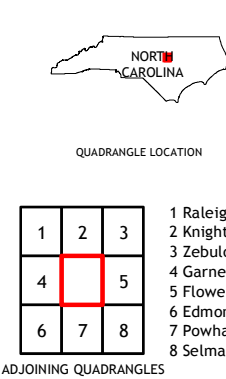
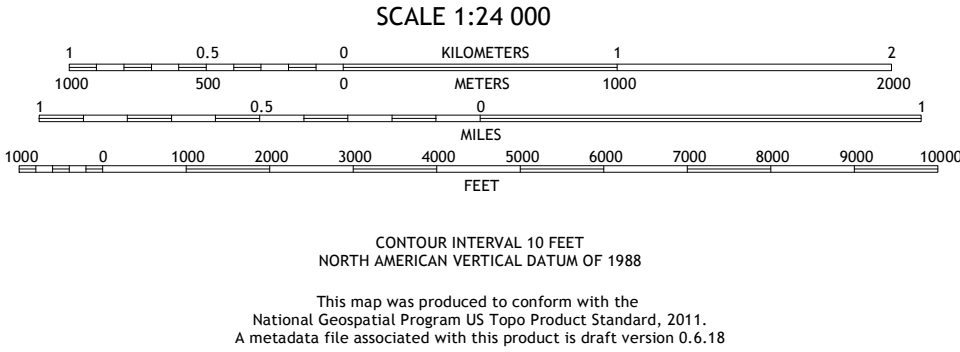
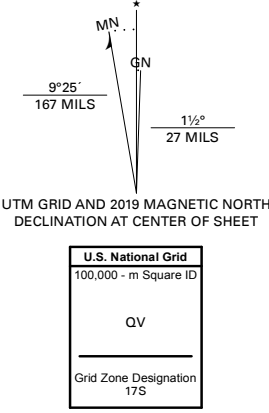
CLAYTON QUADRANGLE
NORTH CAROLINA
7.5-MINUTE SERIES



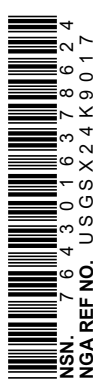
Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and
1 000-meter grid/Universal Transverse Mercator, Zone 17S
This map is not a legal document. Boundaries may be
generalized for this map scale. Private lands within government
reservations may not be shown. Obtain permission before
entering private lands.

Imagery.....NAP, June 2010 - November 2016
Roads.....U.S. Census Bureau, 2016
Names.....GNS, 1980 - 2019
Hydrography.....National Hydrography Dataset, 2001 - 2018
Contours.....National Elevation Dataset, 2008
Boundaries.....Multiple sources, see metadata file 2017 - 2018

Wetlands.....FWS National Wetlands Inventory 1983



CLAYTON, NC
2019



Appendix 4

Plan Sheets

- a. SW 1.0 – Pre-Development 1- Year Drainage Area Map**
- b. SW 1.2 – Post Development 1-Year Drainage Area Map**



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STEWART
101 WEST MAIN ST.
DURHAM, NC 27701
T 919.380.8750
FIRM LICENSE #: C-1051
www.stewartinc.com

Client:
RIVERWILD
114 W. MAIN STREET
CLAYTON, NC 27520

Consultants:
SOIL & ENVIRONMENTAL CONSULTANTS, PA
NORTH QUARTER OFFICE PARK
RALEIGH, NC 27615

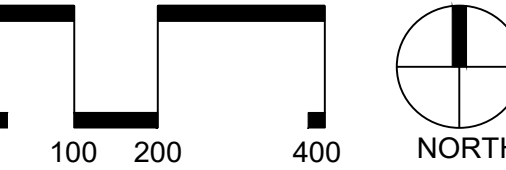
KIMLEY HORN
421 FAYETTEVILLE ST SUITE 600
RALEIGH, NC 27601

Agent:
RIVERWILD
114 W. MAIN STREET
CLAYTON, NC 27520
CONTACT: DAVID DEYOUNG, AICP

Vicinity map:



Seal:
PRELIMINARY - DO NOT
USE FOR CONSTRUCTION



SCALE: 1"=200'

Project:
**RIVERWOOD
GOLF CLUB
SECTION 2**

Issued for:
MASTER PLAN

No.	Date	Description

Title:
**PRE-DEVELOPMENT
DRAINAGE MAP**

Project number: L20030 Sheet #:
Issued Date: 10.02.2020
Drawn by: TS
Approved by: AW **SW-1.0**



STEWART
101 WEST MAIN ST.
DURHAM, NC 27701
T 919.380.8750
FIRM LICENSE #: C-1051
www.stewartinc.com

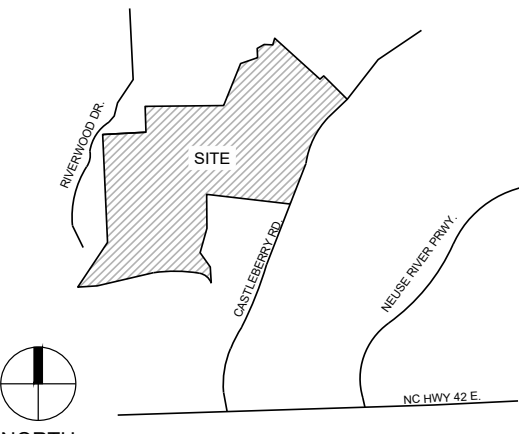
Client:
RIVERWILD
114 W. MAIN STREET
CLAYTON, NC 27520

Consultants:
SOIL & ENVIRONMENTAL CONSULTANTS, PA
NORTH QUARTER OFFICE PARK
RALEIGH, NC 27615

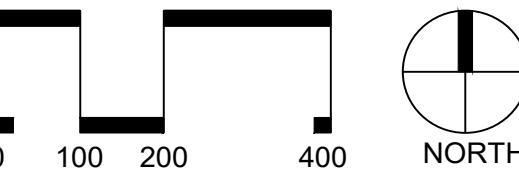
KIMLEY HORN
421 FAYETTEVILLE ST SUITE 600
RALEIGH, NC 27601

Agent:
RIVERWILD
114 W. MAIN STREET
CLAYTON, NC 27520
CONTACT: DAVID DEYOUNG, AICP

Vicinity map:



Seal:
PRELIMINARY - DO NOT
USE FOR CONSTRUCTION



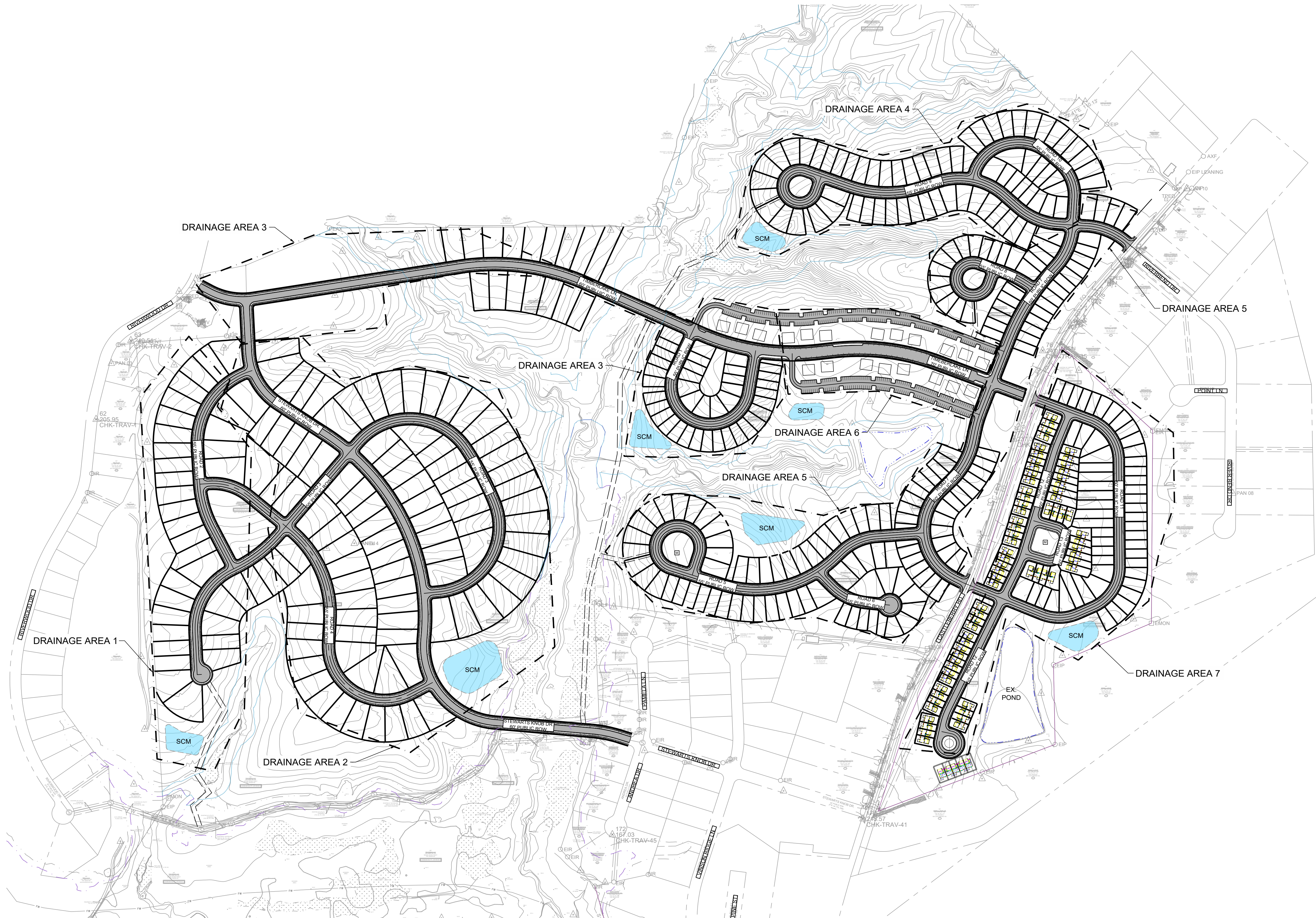
Project:
**RIVERWOOD
GOLF CLUB
SECTION 2**

Issued for:
MASTER PLAN

No.	Date	Description

Title:
**POST-DEVELOPMENT
DRAINAGE MAP**

Project number: L20030 Sheet #:
Issued Date: 10.02.2020
Drawn by: TS
Approved by: AW **SW-2.0**



L:\Projects\2020\20030 - Holloway\CALCS AND DATA\Stormwater\CAD Files\L20030_Eng - riverwild.dwg Nov 02, 2020 - 11:17am

Please submit as public record and read at the meeting as appropriate.

Dear Mr. Caines:

I am writing to you at 7am, on a Monday morning. It is barely daybreak, I just let the dog out, and Mariachi music is already blaring behind our home. I really do not mind the music, it is an improvement over the noise of construction equipment tearing down trees, leveling acreage, and assembling townhomes which has occurred most days, Monday through Saturday, and on occasional Sundays, for over the last two years. Not to mention the garbage and debris that has been in constant view and often blows into my backyard.

I live at 573 Castleberry Road, which is between Stewarts Knob and Vinson Ridge, where a Smith related company has been constructing townhomes behind our private residence. When we moved here 15 years ago this was a quiet neighborhood. That all changed with this *recent* development. Clearing the woods has removed the natural barrier to our property and has increased storm damage to our home and yard (costing repairs) and increased noise and wildlife seeking refuge on our property (requiring additional pest control). And now a smell from the water treatment facility, down at the Neuse River, emanates up to our front and back yard. This is where we like to spend most of our time (listening to the music provided by the construction crew), working in our yard, and enjoying peaceful nights with cows mowing in the background. Unfortunately, daily I see the nice things fading away. Although I know the property being developed was acquired years ago, and I cannot help wondering if this project was not put in place at this particular time simply to add validity to the claim that rezoning for Riverwood 2 would be in line with other housing in the area.

I believe that a property owner has the right to do what they want with their property. I also believe in Christian consideration for others and as a gesture of good faith I am hoping some compromise will be presented and actions will be put in place before the development, not after. I have been told the Town of Clayton needs to annex the Riverwood 2 property in order to provide water and sewer, and as a result the "Town" requires diverse housing i.e., apartments, townhomes, and single-family homes. I have heard the term multigenerational applied as a warm and fuzzy description implying that the same families will live and grow in this development for years to come. However, one of our daughters is currently selling her home in Riverwood because it has become primarily a rental area, with little effort put into homeowner property management. This may somehow benefit the development owner and the town, but overwhelming rentals do not normally improve property values for homeowners living within, and around the development. It makes our roads more dangerous, our schools more overcrowded, and simply makes the bad smells worse.

I have also been told that streetlights will be installed, and left turn lanes will be added at the entrances over the three mile stretch of Castleberry Road. As I am not thrilled with the idea of traffic backing up at my driveway due to a traffic light, or left turn lane, as I am trying to leave for work, I must question if anyone really thinks two lights and a few turn lanes will compensate for the influx of so many residential units being added to this tract of land?

The townhomes behind our property cannot begin to compare in size to the Riverwood 2 development, yet construction has been ongoing for over 2 years, maybe closer to 3. I have heard construction of Riverwood 2 is estimated at 5-10 years during which residents will be coping with ongoing construction vehicles, construction debris, and construction dust and grime, with no relief from poor roads, no enforcement of speed limits, problematic water drainage, and poor air and water quality. I would ask that the apartments be omitted from the project, or at least severely decreased, and I would request

Please submit as public record and read at the meeting as appropriate.

that the water treatment and road improvements be a priority, having them addressed and resolved prior to construction of the development. I know the environmental issues may need to be addressed with other offices and I urge you to assist the residents in getting our concerns noticed to the appropriate governmental departments so they can be resolved.

I have been led to believe that the tree line will remain on Castleberry Road, and landscaped berms will be built again along Castleberry Road to shield housing and recreate a barrier, hopefully decreasing noise and dust as well. I would formally request that the berms be implemented as early as possible.

We have a nice little town, on Main Street, in Clayton. There are several small businesses relying on local customers. The Chamber of Commerce works diligently to organize events for family fun, we have a farmers market selling local produce, meats, and crafts, that are competing for our support. There are also apartments in the area, as well as some potential spots for multifamily housing. I would ask that the Town of Clayton focus their direction on improving the downtown appeal instead of creating new areas for commerce. Riverwood has a downtown area that is basically abandoned. Food Lion and the surrounding stores provide most of the commerce, but there are two long streets of empty storefronts in Riverwood, so it seems irrational to create a similar environment in Riverwood 2.

I realize some of these issues are outside your control and I will be pursuing those offices as well. I hope that you will trust your better judgment and vote / recommend the actions that match what would be right for those of us already contributing to Johnston County and the Clayton Area.

Thank you in advance for your consideration of our concerns.

Dawn Wilkins

**Town of Clayton
Resolution Granting Wastewater Treatment Capacity
For Riverwood Golf Section 2**

WHEREAS, the Town of Clayton operates a wastewater treatment plant known and permitted as the "Little Creek Water Reclamation Facility"; and,

WHEREAS, said facility is permitted to treat a maximum average of 2.5 million gallons daily; and,

WHEREAS, the Town of Clayton holds several interlocal agreements which secure additional wastewater treatment capacity from other available sources; and,

WHEREAS, the North Carolina Department of Environment and Natural Resources (NCDENR) regulates, reviews, and permits flow tributary to newly extended or installed wastewater treatment collection facilities tributary to the Town of Clayton system; and,

WHEREAS, flow from sanitary sewer customers tributary to existing lines owned and operated as part of the Town of Clayton is bound to abide by the permitted average daily flow at the Little Creek Water Reclamation Facility in conjunction with other available sources and consistent with interlocal agreements regarding wastewater treatment.

NOW, THEREFORE, BE IT HEREBY RESOLVED BY THE TOWN COUNCIL FOR THE TOWN OF CLAYTON that the following is found:

1. The Town of Clayton has, according to the most recent accounting, sufficient excess and unallocated treatment capacity to approve additional allocation.
2. Such available capacity may be made available to users in accordance with regulatory and legal parameters established to ensure satisfactory treatment plant operation.
3. An allocation for wastewater treatment capacity is granted for a total amount of 181,050 GPD (Application herewith attached) to Riverwood Golf Section 2 based on the phasing table as shown below. Sewer permits and flow tracking for sewer extension (FTSE) forms may not be submitted prior to the date shown in chart below for the specified phase. Wastewater allocation is subject to availability of capacity for treatment of sanitary sewer. The Town Engineer may increase amounts by up to 5% in the event more wastewater is needed to complete a sub portion of phase. **Requests must be submitted in writing.**
4. Said allocation is subject to available transmission and hydraulic capacity within the County's conveyance system.

5. Said allocation is approved subject to and conditioned upon review and approval of all required regulatory processes.
6. Said allocation is nontransferable, non-assignable, and made for the projects as described and for the noted location unless explicitly approved by the Town of Clayton.
7. Said allocation may be revoked or reclaimed in accordance with the policies of the Town of Clayton as adopted or amended now or in the future. No property right is conferred with the granting of an allocation except as otherwise explicitly allowed by policy, ordinance, or action of the Town of Clayton.
8. Said allocation is subject to payment of applicable fees in accordance with adopted ordinances, policies, and fee schedules of the Town of Clayton.

				Wastewater (GPD) Available for permitting			
Phase		Lots/Units/SF	Wastewater (GPD)	Jun-21	Jun-22	Jun-23	Jun-24
1A	Single Family Lots	24	6000		6000		
	Townhome Lots						
	Apartment Units						
1B	Single Family Lots	35	8750	8750			
	Townhome Lots						
	Apartment Units						
2	Single Family Lots	74	18500		18500		
	Townhome Lots						
	Apartment Units						
3	Single Family Lots	75	18750	18750			
	Townhome Lots						
	Apartment Units						
4	Single Family Lots	16	4000			4000	
	Townhome Lots						

	Apartment Units						
5A	Amenity		2000	2000			
5B	Single Family Lots	18	4500			4500	
	Townhome Lots						
	Apartment Units						
6	Single Family Lots	31	7750	7750			
	Townhome Lots						
	Apartment Units						
7A	Single Family Lots	38	9500		9500		
	Townhome Lots						
	Apartment Units						
7B	Single Family Lots	30	7500			7500	
	Townhome Lots						
	Apartment Units						
8	Single Family Lots	36	9000				9000
	Townhome Lots						
	Apartment Units						
9	Single Family Lots						
	Townhome Lots						
	Apartment Units	132	31680				31680
10	Single Family Lots						
	Townhome Lots						
	Apartment Units	88	21120			21120	
11	Single Family Lots	53	13250			13250	
	Townhome Lots						
	Apartment Units						

12	Single Family Lots						
	Townhome Lots	46	11500		11500		
	Apartment Units						
13	Single Family Lots						
	Townhome Lots	29	7250				7250
	Apartment Units						
	Total	725	181050	37250	45500	50370	47930
	Cumulative Total			37250	82750	133120	181050

Duly adopted this 5th day of April, 2021 while in regular session.

Jody L. McLeod
Mayor

ATTEST:

Kimberly A. Moffett, CMC, NCCMC
Town Clerk



Town Council Agenda Cover Sheet

Meeting Date

April 5, 2021

Agenda Location

Old Business

Item Title

Donation Agreement – NC PIN 165808-98-0512 - Glennie Rae Corp Property

Presenter

Joshua Baird – Town Engineer

Summary/Description

On February 15, 2021, Town Council approved condemnation of sewer and electrical easements on property with PIN 165808-98-0512 with owner listed as Glennie Rea Corp. Following Notice of Action letter and further negotiations, the property owner proposed granting the easements and accepting the previously offered compensation if the Town was willing to accept the entire property as a donation. Town staff are supportive of this approach as the property is adjacent to existing Town owned property and the corridor could be used for additional utility easements and/or greenways along Little Creek. The Town would be responsible for reimbursing the current owner for remaining year taxes but no further financial costs associated with the donation. Staff propose a closing on of June 30, 2021 to allow staff to perform due diligence on the site. Staff have the right to back out of the donation if any concerns are found. The agreement has been drafted and reviewed by Town Council. Staff request approval for Town manager or designee sign Donation Agreement accepting the Property with NC PIN 165808-98-0512.

Requested Action

Approval/Denial

Funding Source (If Applicable):

N/A

Cost: N/A Yes ☒ No ☐

Additional Documents to be Included in Agenda Packet

Donation Agreement

Meeting Timeline

Click or tap here to enter text.

REAL PROPERTY DONATION AGREEMENT

This Real Property Donation Agreement ("Agreement") is made this the ___ day of March, 2021 (the "Effective Date") between The Glennie Rea Corporation, a corporation formed and existing under the laws of the State of North Carolina, ("Donor") and the Town of Clayton, North Carolina, a municipal corporation and political subdivision of the State of North Carolina, formed under the laws of the State of North Carolina ("Donee"). The parties to this Agreement may be referred to herein collectively as "Parties" or individually as "Party."

RECITALS

- A. The contact information of the Parties to this Agreement are as follows:

Donee

Town of Clayton
Attention: JD Solomon
Town Manager
PO Box 879
Clayton, NC 27520

Donor

The Glennie Rea Corporation
Attention: David Ricky Godwin
President
PO Box 3068
Wilson, NC 27895

- B. Donor is the sole owner of certain real property in Clayton, North Carolina having parcel identification number 165808-98-0512 and parcel identifier 05-H-03-029-S and more particularly described in **Exhibit A** (the "Land"). The Land, together with any and all improvements located thereon and all privileges, rights, easements appurtenant to the Land, including without limitation all minerals, oil, gas, and other hydrocarbon substances on and under the Land; all development rights, air rights, water, water rights relating to the Land; all right, title, and all interests of Donor in and to any streets, alleys, passages, water and sewer taps, sanitary or storm drain capacity or reservations and rights under utility agreements, and other easements and other rights-of-way included in, adjacent to, or used in connection with the beneficial use and enjoyment of the Land shall be collectively referred to in this Agreement as the "Property."
- C. The Donee is a political subdivision of the State of North Carolina and is exempt from taxation under Section 115 (1) of the Internal Revenue Code.
- D. Donor intends that the fair market value of the Property shall be a charitable contribution to the Donee. Donor understands and acknowledges that the Donee makes no representation as to the tax consequences of the transaction contemplated by this Agreement except as to Donee's obligations pursuant to paragraphs 3(b), 3(c), and 3(d) herein. Donor will be solely responsible for compliance with the gift value substantiation requirements of the Internal Revenue Code.

NOW THEREFORE, the Parties agree as follows:

1. Donation of the Property. Donor agrees to donate the Property to the Donee by charitable gift on the terms and conditions set forth in this Agreement subject to the Donee's obligations set forth in paragraph 3(b) below. The Donee shall not be obligated to accept title to the Property if the Donee does not approve of the title or condition of the Property at the time of Donation.

2. Donor's Value of the Property; Gift Irrevocable. Donor shall from the Effective Date to Closing determine the current fair market value of the Property. Donor understands that the gift being made pursuant to this Agreement will, upon Closing as defined in paragraph 4 herein, be irrevocable.

(a) Appraisal. Donor may obtained a "qualified appraisal", by a "qualified appraiser", both as defined in the Internal Revenue Code and Treasury Regulations. Donee makes no representation regarding the fair market value of the property.

(b) Charitable Deduction. It is understood that Donor intends to claim the fair market value of the Property as a noncash charitable contribution for income tax purposes and Donee agrees to sign the acknowledgment section of IRS Form 8283 that is to be completed and submitted to IRS by the Donor and Donor's appraiser. Provided further, that in the event Donee sells or transfers the Property within three (3) years of the donation the Donee shall be responsible for completing and filing IRS Form 8282, providing a copy of said form to Donor.

3. Closing. Closing shall occur on or before June 30, 2021. At Closing, Donor shall deliver to the Donee a General Warranty deed (the "Deed") to the Property from Donor to the Donee.

4. Prorations and Fees. Real property taxes on the Property shall be prorated as of Closing based upon the latest available tax bill. Any documentary tax or real property transfer tax arising out of the conveyance of the Property, the appraisal as provided in Section 3 above, and any other fees and costs of closing shall be paid by Donor unless otherwise stated. The premium for a title insurance policy (if the Donee desires title insurance) and any recording fees for the deed of conveyance shall be paid by the Donee at Closing.

5. Title. Donor shall convey good and marketable title free and clear of encumbrances to the Property to the Donee by way of the deeds described in paragraph 3, above.

6. Property/Conditions: The Property is being donated AS IS, WHERE IS, WITH ALL FAULTS.

7. Right to Inspect Property. As part of its due diligence, up to the date of Closing, Donee may conduct inspections, tests, and studies with respect to the physical and environmental condition of the Property and the state of the Property's title. The Donee and its consultants, agents, engineers, inspectors, contractors, and employees must be given reasonable access to the Property for the purpose of performing such due diligence. The Donee shall not conduct any intrusive or destructive inspections or borings without Donor's prior written consent, which consent shall be at Donor's sole and absolute discretion which will not be unreasonably withheld. If the Donee determines, in its sole discretion, that the physical, environmental or title condition of the Property is unacceptable to the Donee, then the Donee shall notify Donor and Donor may elect to remove such unacceptable condition. In the event Donor is unwilling or unable to remove any unacceptable conditions, the Donee may elect to terminate this Agreement in which case the Donee shall have no obligation to accept title to the Property.

By closing and accepting the donation of the Property, the Donee certifies that its inspections, tests, and studies have been satisfactory to it.

8. Donor's Promise not to Further Encumber. From the Effective Date, Donor shall not do any of the following without the prior written consent of the Donee: (i) make or extend any leases, contracts, options or agreements whatsoever affecting the Property; (ii) cause or permit any lien, encumbrance, mortgage, deed of trust, right, restriction or easement to be placed upon the Property; or (c) permit any mortgage, deed of trust or other lien to be foreclosed upon due to Donor's actions or omission, including

failure to make a required payment, or (d) convey any interest in the Property, including but not limited to conveyances of title and transfers of development rights.

9. Parties' Representations. Each Party represents the following:

a. Authorization. Each Party has full power and authority to enter into this Agreement and to convey title to the Property in accordance with this Agreement. No consent or authorization from any other person, entity or government agency is required for either Party to enter into and perform its respective obligations under this Agreement. The execution of the Agreement will not constitute a breach or default under any agreement to which either Party is bound and/or to which the Property is subject.

b. Compliance with Laws. The Property and its current use does not in any way violate any applicable laws, ordinances, rules, regulations, judgments, orders, or covenants, conditions and restrictions, whether federal, state, local, foreign, or private.

c. Litigation. There is no suit, action, arbitration, legal, administrative or other proceeding or inquiry pending or threatened against either Party which could adversely affect its ability to perform its obligations hereunder.

d. Other Proceedings. No attachments, execution proceedings, assignments for the benefit of creditors, insolvency, bankruptcy, reorganization, or other similar proceedings are pending or threatened against either Party, nor are any such proceedings contemplated by either Party.

e. Governmental Action. Neither Party has knowledge of, nor has it received written notice of, any plan, study, or effort by any agency or party that in any way would materially affect the use of the Property for exclusively public purposes.

f. No Receipt of Goods or Services. Donor shall not accept or receive from Donee, and Donee shall not offer or transfer to Donor, any goods or services in respect of this Agreement.

Each of the above representations is material and is relied upon by the Parties. Each of the above representations shall be deemed to have been made as of the Closing shall survive the Closing.

12. Notices. All notices pertaining to this Agreement shall be in writing delivered to the Parties hereto personally by hand, courier service or express mail, or by first class mail, postage prepaid, at the addresses set forth in Recital A. All notices shall be deemed given when deposited in the mail, first class postage prepaid, addressed to the party to be notified; or if delivered by hand, courier service or Express Mail, shall be deemed given when delivered. The Parties may, by notice as provided above, designate a different address to which notice shall be given.

13. Time of the Essence. Time is of the essence in this Agreement.

14. Binding on Successors. This Agreement shall inure to the benefit of and be binding on the Parties to this Agreement and their respective successors and assigns.

15. Additional Documents. Donor and the Donee shall execute such additional documents, including escrow instructions, as may be reasonable and necessary to carry out the provisions of this Agreement.

16. Entire Agreement; Modification. This Agreement constitutes the entire agreement between the Parties pertaining to the subject matter contained in it and supersedes all prior and contemporaneous agreements, representations, and understandings. No Supplement, modification, or amendment of this Agreement shall be binding unless executed in writing by the Parties.

17. Severability. If any provision of this Agreement as applied to either Party or to any circumstance is adjudged by a court of competent jurisdiction to be void or unenforceable for any reason, this fact shall in no way affect (to the maximum extent permissible by law) any other provision of this Agreement, the application of any such provision under circumstances different from those adjudicated by the court, or the validity or enforceability of this Agreement as a whole.

18. No Merger. This Agreement, each provision of it, and all warranties and representations in this Agreement shall survive the Closing and shall not merge in any instrument conveying title to the Donee. All representations, warranties, agreements, and obligations of the Parties shall, despite any investigation made by any party to this Agreement, survive Closing, and the same shall inure to the benefit of and be binding on the Parties' respective successors and assigns.

19. Counterparts. This Agreement may be signed in two or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument. Facsimile signatures shall be acceptable as evidence of execution of this Agreement, without the need for sending or receiving the original, executed, document. Facsimile signatures are deemed to be original signatures.

20. Assignability. No Part may assign its rights or obligations under this Agreement.

21. Governing Law. This Agreement will be governed by the laws of the State of North Carolina.

22. Waiver. The failure of either Party to enforce any provision of the Agreement shall not be construed as a waiver or limitation of that Party's right to subsequently enforce and compel strict compliance with every provision of this Agreement.

23. Waiver of Interpretation Presumption. This Agreement has been negotiated by the parties hereto and by the respective attorneys for each party. The parties represent and warrant to one another that each has, by counsel or otherwise, actively participated in the finalization of this Agreement, and in the event of a dispute concerning the interpretation of this Agreement, each party hereby waives the doctrine that an ambiguity should be interpreted against the party which has drafted the document.

{signature page to follow}

DONOR

**THE GLENNIE REA CORPORATION,
a North Carolina corporation**

**By: _____
David Ricky Godwin, President**

**DONEE
TOWN OF CLAYTON, NORTH CAROLINA**

**By: _____
JD Solomon, Town Manager**

Signature Page – Glennie Rea Donation Agreement

EXHIBIT A

Tract 1: BEGINNING at an iron stake on the southern right of way of NC Highway #42, said iron stake being on the western bank of Little Creek; thence with the western bank of Little Creek the following courses and distances: South 09° 48' 12" East 349.07 feet; South 29° 00' 37" East 141.95 feet; South 06° 30' 48" West 54.68 feet; South 18° 45' 47" East 91.88 feet; South 11° 38' 34" West 109.41 feet; South 75° 08' 39" East 53.14 feet; South 16° 43' 51" West 119.90 feet; South 25° 51' 09" East 48.41 feet; South 03° 25' 49" East 145.00 feet; South 55° 09' 10" East 59.04 feet; South 12° 53' 59" East 173.82 feet; South 24° 02' 59" East 100.14 feet; South 41° 06' 01" West 85.72 feet; South 03° 15' 01" West 60.83 feet; South 02° 09' 09" West 165.60 feet; South 49° 57' 31" West 43.33 feet; South 16° 31' 01" West 237.45 feet; South 47° 25' 01" West 151.90 feet; South 09° 46' 10" West 73.90 feet; South 36° 40' 34" East 44.93 feet; South 06° 14' 59" East 80.00 feet; and South 51° 35' 59" East 170.96 feet to an iron stake in the western bank of Little Creek, a corner with the land of F. w. Lee, Jr.; thence with the line of F. W. Lee, Jr., the following courses and distances: South 73° 04' 04" West 225.41 feet; South 35° 34' 04" West 71.20 feet; and South 66° 37' 19" West 62.53 feet to an iron stake, a corner with Paradise Village Mobile Home Park; thence with the line of Paradise Village Mobile Home Park the following courses and distances: North 20° 53' 41" West 456.31 feet to a concrete monument; North 69° 06' 20" East 160.00 feet to a concrete monument; North 20° 53' 43" West 449.79 feet to a concrete monument; North 67° 56' 52" East 371.90 feet to a concrete monument; North 21° 16' 16" West 573.04 feet to a concrete monument; North 66° 50' 41" East 207.86 feet to a concrete monument; North 21° 21' West 501.50 feet to a concrete monument; and South 68° 58' 41" West 43.65 feet to an iron stake a corner with Clayton estates; thence with the line of Clayton Estates, North 20° 53' 41" West 178.06 feet to an iron stake in the southern right of way of NC Highway #42; thence with the right of way of NC Highway #42 North 63° 22' 41" East 121.20 feet and North 60° 13' 54" East 178.63 feet to the point and place of beginning, containing 15.49 acres according to a map made by Ragsdale Consultants, P.A., dated January 4, 1980, as recorded in Plat Book No. 24, Page 107, Johnston County Registry.

Tract 2: BEGINNING at an iron stake in the southern right of way of NC Highway 42, said iron stake being a common corner with a tract of land owned by the Town of Clayton; thence as the town of Clayton line South 19° 30' 59" East 61.85 feet to an iron stake, another corner with the Town of Clayton; thence continuing as the Town of Clayton line South 59° 43' 01" West 247.08 feet to an iron stake on the West Bank of Little Creek, a corner with Paradise Village; thence along the western bank of said creek the following courses and distances: North 18° 45' 47" West 91.88 feet; North 06° 30' 48" East 54.68 feet; North 29° 0' 37" West 141.95 feet and North 09° 48' 12" West 349.07 feet to an iron stake in the southern right of way of NC Highway 42; thence as said right of way North 60° 13' 54" East 185.00 feet to the point and place of beginning, containing 3.12 acres as shown on a plat prepared by Ragsdale Engineers, P.A., entitled Mobile Home Industries, Inc. dated 1/4/80.



Town Council Agenda Cover Sheet

Meeting Date

April 5, 2021

Agenda Location

New Business

Item Title

Purchase of two new police canines

Presenter

JD Solomon, Town Manager

Summary/Description

One of our younger police canines has been placed into early retirement and another canine will move into longevity retirement later this year. That will leave the Town with one canine.

The requested approval is to purchase two new canines and 12 weeks of training at a total cost of \$30,000. Drug enforcement recovery monies, which are restricted to the police departments, would be used to cover the purchase.

Requested Action

Approval

Funding Source (If Applicable):

Transfer of Funds from Drug Enforcement Recovery monies

Cost: N/A **Yes** ☒ **No** ☐

Additional Documents to be Included in Agenda Packet

None

Meeting Timeline

Click or tap here to enter text.