



Agenda

1. Call to Order
2. Pledge of Allegiance
3. Invocation
4. Adjustment and approval of June 18, 2024 meeting agenda

RECOGNITIONS

5. William Ball IV, Powerlifter Champion
6. Juneteenth Proclamation
7. Proclaim July as Parks and Recreation Month

CONSENT AGENDA

8. May 28, 2024 Budget Workshop Minutes
9. End of Year Budget Amendments
10. Capital Associates Management, LLC Development Agreement Extension
11. Voluntary Annexation A24-02 - Operations Campus
12. Engineering Design & Construction Standards Supplement #10
13. Town Code of Ordinances Chapter 8 Environment, Article V- NPDES Phase II Post-Construction Stormwater Updates
14. Public Works Asset Surplus over \$30,000

PUBLIC HEARINGS

15. Aura Wildwood Rezoning 23-REZ-04 - Legislative Public Hearing
16. Ragan Mixed-Use Rezoning and Development Agreement 23-REZ-03 - Legislative Public Hearing
17. Semiannual UDO Text Amendments 24-UDO-01 - Legislative Public Hearing
18. Conditional Zoning Districts UDO Text Amendment 24-UDO-02 - Legislative Public Hearing
19. Economic Development Agreement (EDA) with Fujifilm Diosynth Biotechnologies

NEW BUSINESS

20. Adoption of Fiscal Year 2024 - 2025 Operating Budget and Community Investment Plan and Tax Collection Order
21. Oakview Development Agreement Amendment
22. Amendment to Ordinance Sec. 12-65(c)(8) - Cruelty to Animals - Tethering of Animals
23. 2024 Limited Obligation Bonds Initial Resolution

UNFINISHED BUSINESS

24. Water Sewer Revenue Bonds, Series 2024 Bond Order

PUBLIC COMMENT PERIOD

Each speaker may speak up to 3 minutes, and the total comment period will be 15 minutes or less. Citizens should sign up with the Town Clerk to speak prior to the start of the meeting. Although the Council is interested in hearing your concerns, speakers should not expect Council action or deliberation on subject matter brought up during the Public Comment segment. Topics requiring further investigation will be referred to

the appropriate town officials or staff and may be scheduled for a future agenda. Thank you for your consideration of the Town Council, staff, and other speakers.

OTHER BUSINESS

MANAGER'S REPORT

CLOSED SESSION

ADJOURNMENT

In accordance with ADA regulations please contact the Town Clerk's office at least 48 hours before the meeting to request an auxiliary aid or service needed to participate in this meeting:

linda.mckinney@hollyspringsnc.gov 919-557-3900



Holly Springs Town Council

Town Council Meeting Agenda Cover Sheet

Agenda Item#: 5.

Recognitions

Title: William Ball IV, Powerlifter Champion

Strategic Priority Area: Vibrant Community

Staff Resource: Mayor Mayefskie

Action(s):

Recognize William Ball IV

Explanation:

- Holly Springs High School senior William Ball IV won the 2024 National Powerlifter Championship in the 93 kg weight class in Austin, Texas.
- He had a 651 lb squat, a 414 lb bench press and a 685 lb deadlift;
- In the fall he heads to Malta as part of Team USA to compete in the International Powerlifting Federation's World Classic & Equipped Sub-Junior & Junior Powerlifting Championship.

Background:

- William Ball began lifting less than two years ago.
- He credits Holly Springs High School as the first place he started seriously lifting.

Funding Source(s):

N/A

Attachment(s):

None



Holly Springs Town Council

Town Council Meeting Agenda Cover Sheet

Agenda Item#: 6.

Recognitions

Title: Juneteenth Proclamation

Strategic Priority Area: Community Safety
Growth Management & Economic Vitality

Staff Resource: Mayor Mayefskie

Action(s):

Proclaim June 19, 2024 as Juneteenth in Holly Springs

Explanation:

- June 19th is celebrated as "Juneteenth" throughout many communities in the United States.
- Declared a state holiday in Texas in 1979, Juneteenth is now recognized as a state holiday in 40 states.

Background:

- President Abraham Lincoln issued the Emancipation Proclamation on January 1, 1863, which freed enslaved people.
- The 13th Amendment to the Constitution, abolishing slavery, was ratified on December 6, 1865.
- African-Americans in Galveston, TX adopted June 19, 1866 as Juneteenth in celebration of the news of the Emancipation Proclamation reaching their community.
- Since 1866, the celebration has spread throughout the United States.

Funding Source(s):

N/A

Attachment(s):

1. Juneteenth 2024

Town of Holly Springs



A Proclamation By The Mayor

Juneteenth 2024

WHEREAS, the Constitution of the United States details the rights of all its citizens based on the philosophy of government outlined in the Declaration of Independence, which states “all men are created equal, that they are endowed by their creator with certain unalienable rights, that among these are life, liberty, and the pursuit of happiness;” and

WHEREAS, the Emancipation Proclamation, an executive order issued January 1, 1863 by President Abraham Lincoln immediately freed approximately five hundred thousand from generational bondage in the rebellious states, but still left approximately 3.5 million enslaved people across the United States; and

WHEREAS, word about the signing of the Emancipation Proclamation was delayed some two and one half years, to June 1865, in reaching authorities and African-Americans in the South and Southwestern United States; and

WHEREAS, African-Americans in Galveston, Texas adopted June 19, 1866 as Juneteenth, a Black Independence Day in celebration of America’s commitment to liberty and equality that has become a part of national African American history and culture; and

WHEREAS, the 13th Amendment to the Constitution of the United States abolishing slavery everywhere, except for punishment of a crime, was ratified by Congress on December 6, 1865; and

WHEREAS, we understand that a declaration on a piece of paper is not enough, and that we as a people must be willing to do our part to ensure every citizen regardless of race, gender, or religion is afforded equal access to the opportunities America has to offer;

NOW, THEREFORE, I, Sean Mayefskie, Mayor of the Town of Holly Springs, North Carolina, am hereby honored to declare June 19th, 2024 as

Juneteenth

in Holly Springs, and call upon all residents to become more aware of the significance of this celebration in African-American History and in the heritage of our nation and Town.

Presented this 18th day of June, 2024

IN WITNESS WHEREOF, I have
Hereunto set my hand and caused the Seal of
the Town of Holly Springs, North Carolina
To be affixed on this 18th day of June, 2024

Sean Mayefskie, Mayor



Holly Springs Town Council

Town Council Meeting Agenda Cover Sheet

Agenda Item#: 7.

Requests & Communications

Title: Proclaim July as Parks and Recreation Month

Strategic Priority Area: Vibrant Community

Staff Resource: LeeAnn Plumer, Parks & Recreation

Action(s):

Proclaim July as Parks and Recreation Month in Holly Springs

Explanation:

- July is Parks and Recreation Month, a program of the National Recreation and Parks Association (NRPA).
- This year's theme, *Where You Belong*, celebrates the many ways park and recreation staff foster a sense of belonging in the Holly Springs community by providing welcoming programs, essential services for all ages and abilities, and safe, accessible spaces to build meaningful connections.
- In celebration of the month, staff has planned a variety of free activities for all ages and interests.
- Parks and recreation are vitally important to establishing and maintaining quality of life, ensuring the health of all residents, and contributing to the economic and environmental well-being of our community.

Background:

- Since 1985, communities across America have celebrated July as Parks and Recreation Month.
- The goal is to raise awareness of the vital impact that parks and recreation has on communities across the United States.

Funding Source(s):

N/A

Attachment(s):

1. July as Parks and Recreation Month

Town of Holly Springs



A Proclamation By The Mayor

July as Parks and Recreation Month

WHEREAS parks and recreation is an integral part of communities throughout this country, including the Town of Holly Springs; and

WHEREAS parks and recreation promotes health and wellness, improving the physical and mental health of people who use local parks; and

WHEREAS parks and recreation promotes time spent in nature, which positively impacts mental health by increasing cognitive performance and well-being, and alleviating illnesses such as depression, attention deficit disorders, and dementia; and

WHEREAS parks and recreation encourages physical activities by providing space for popular sports, hiking trails, playgrounds and many other activities designed to promote active lifestyles; and

WHEREAS parks and recreation programming and education activities, such as out-of-school time programming, youth sports and environmental education, are critical to childhood development; and

WHEREAS parks and recreation increases a community's economic prosperity through increased property values, expansion of the local tax base, increased tourism, the attraction and retention of businesses and crime reduction; and

WHEREAS parks and recreation is fundamental to the environmental well-being of our community; and

WHEREAS the Town of Holly Springs recognizes the benefits derived from parks and recreation programs and services.

NOW THEREFORE, I, Sean Mayefskie Mayor of Holly Springs, North Carolina do hereby proudly proclaim July, 2024 as

Parks and Recreation Month

and I urge all citizens to enjoy our parks, greenways, facilities, and centers that promote fulfilling and rewarding lifestyles through these abundant, healthy living options.

Proclaimed this, the 18th day of June, 2024

IN WITNESS WHEREOF, I have
hereunto set my hand and caused the Seal of
the Town of Holly Springs, North Carolina to be
affixed on this 18th day of June, 2024.

Sean Mayefskie, Mayor



Holly Springs Town Council

Town Council Meeting Agenda Cover Sheet

Agenda Item#: 8.

Consent Agenda

Title: May 28, 2024 Budget Workshop Minutes

Strategic Priority Area: Organizational Excellence

Staff Resource: Linda McKinney, Town Clerk

Action(s):

Approve the minutes of the May 28,, 2024 Budget Workshop meeting.

Explanation:

- Minutes in draft form are attached for the Council's review.
- If there are any corrections, please notify the Town Clerk in advance of Tuesday night's meeting so that corrected versions of the draft minutes can be circulated for review before adoption of the Consent Agenda.

Background:

Funding Source(s):

N/A

Attachment(s):

1. 5.28.24 budget workshop minutes - DRAFT

Mayor and Council Budget Workshop

6 p.m. May 28, 2024

Holly Springs Law Enforcement Center and livestream



MINUTES

The Holly Springs Town Council held a budget workshop meeting on Tuesday, May 28, 2024 at the Law Enforcement Center and via livestream. Mayor Mayefskie presided, calling the meeting to order at 6:00 p.m. A quorum was established as the Mayor and five Council members were present as the meeting opened.

Council Members Present in the room: Mayor Sean Mayefskie, Mayor Pro Tem Dan Berry, Council members Tim Forrest, Danielle Hewetson, Chris Deshazor and Annie Drees.

Council Members absent: none.

Staff Members Present in the room: Randy Harrington, Town Manager; Linda McKinney, Town Clerk (recording the minutes); Daniel Weeks, Assistant Town Manager; Scott Chase, Assistant Town Manager; Tina Stroupe, Finance Director; Corey Petersohn, and MaryBeth Spoehr, Budget, Innovation & Strategy; Jeff Wilson, IT director; Mathew Muter, IT; John Schifano, Town Attorney; LeeAnn Plumer, Parks and Recreation Director; LeRoy Smith, Fire Chief; Kendra Parrish, Executive Director of Utilities and Infrastructure; Seann Byrd, Utilities and Infrastructure; Sabrina McDonald, Director of Human Resources; Irena Krstanovic, Director of Economic Development; Paul Liquorie, Police Chief; Cassie Hack, Director of Communications and Marketing; Paige Scott, Director of Public Works; Chris Hills, Director of Development Services; Patty Dressen, Office of Customer Care.

Mayor Mayefskie said the intent of tonight's meeting was to review the recommended budget, give feedback and get answers to questions.

1. Overview: Randy Harrington, Town Manager, gave an overview of the budget process. He said that staff started working on the budget last fall; he made his presentation on the budget to the Council two weeks ago; last week was the public hearing; and now it was time for them to make sure that the budget meets their expectations and advances their priorities. He reminded them that any additions, deletions, or amendments to the recommended budget required support from at least three Council members, and that state law requires a balanced budget, so any additions require an offsetting expenditure reduction or identification of new funding. He said that he would highlight a few components that were not shared at the presentation: Wake County local government tax rate comparison, proposed future use of fund balance, and yard waste collection update.

2. Other Budget Highlights and Yard Waste Program Update:

a) Comparison of Wake County Local Governments' Recommended Property Tax Rates

Mr. Harrington said the recommended property tax rate for 2024-25 is 34.35 cents per \$100 valuation. He reminded Council and the public that the revenue neutral rate was 29.5 cents, but this was still a reduction from the previous year's 42.16 cents. This includes 3 cents for the voter-approved Park Bond, 1.35 cents for Public Safety recruitment/retention and two new police positions, and ½ cent of new debt affordability for Fire Station #4 and transportation improvements over the next couple of years.

Corey Petersohn, Budget, Innovation and Strategy, showed the recommended tax rates for each municipality in the County as well as Wake County's tax. Holly Springs' proposed tax rate is 6.35 cents below the County municipal average, and the third lowest proposal in the county. He also showed how it compared to the others in terms of cents above the revenue neutral rate, accounting for Bonds, and without Bonds included, in which case Holly Springs' proposal is the lowest increase.

b) Proposed Use of Fund Balance for Some Pay-As-You-Go Capital/One-Time Expenditures

Mr. Harrington said he had proposals for anticipated use of Fund Balance funds of \$1.93 million. These are one-time expenditures that could come back to Council after the expenses for design of Eagles Landing Park are reimbursed to the Town. These ranged from land acquisition for Fire Station 4, updating the Comprehensive Plan, Ting Park Parking lot repairs, offices and restroom replacement, Police records management software replacement, implementation of the Downtown Area Plan and enhancements, Ting Stadium safety net extension, Holiday and Town Celebration decorations and enhancements, gateway signage, and Fire Station 2 kitchen renovation and repairs. Council discussed the details of the reimbursement.

c) Yard Waste Program Update

Paige Scott, Director of Public Works, said this item was to review yard waste collection service data and assess if any service adjustments are warranted at this time, and to decide on any funding changes to the FY2024-25 budget to accommodate those changes. She reminded the public that the yard waste service model changed to bring the town into compliance with our Federal Stormwater Permit, reduce flooding on private property from clogged storm drains, provide safer, cleaner neighborhood streets, reduce equipment failures, and provide a safer work environment for employees. The new service model is also scalable as the Town continues to grow.

Ms. Scott showed data from March through May showing that the average set out rate is increasing, and non-compliance is decreasing. The use of scheduled excessive load pick-ups is increasing, showing that previously excessive loads were not being paid for. She said the 196 tons of "Spring Cleaning" debris collected indicate that proper enforcement and compliance are happening. The use of the free convenience center has been effective. Since opening in February, it has collected 86.98 tons of yard waste. She said that 22% of households have put their yard waste cart out for every pick-up; 78% of households are not using the maximum service offered, and 10% of households have used their cart only once or not at all. She said that 311 calls for yard waste service are decreasing as education and outreach efforts continue. She showed Council which neighborhoods had the highest set-out rates as well as the rates for the larger neighborhoods.

Ms. Scott said that streets and storm drains are cleaner and clear of debris. The convenience center is being utilized and the bi-weekly routes are being completed as scheduled. She said that some households fill a cart after mowing once and some find the cart heavy when filled, but there is also some reluctance among heavy users to obtaining multiple yard waste carts. She compared the number of households with multiple garbage or recycling carts to those with more than one yard waste cart.

Ms. Scott said staff's recommendation would be to stay the course, continuing the bi-weekly collection, using data to identify areas for improvement, provide additional outreach and education to reduce non-compliance and encourage heavy users to obtain additional carts. She said the program is working for the vast majority of households, and average set out rates have not exceeded industry standards. She said that calls to 311 are decreasing and non-compliance issues will decrease as the model normalizes.

Ms. Scott said some additional options for consideration would be to push for "heavy users" to obtain additional carts by providing an additional cart at a reduced rate or free, with

users paying an additional monthly collection fee. This would not require any additional staff or heavy equipment but would require additional outreach and would have some impact on the Town's disposal fees and operational costs. The estimated operational cost impact would be less than \$100,000.

Ms. Scott said another option would be the same program but with an increased weekly pick-up. This would require significant equipment and staff investments (about \$788,500) because it would require two public works technicians, two seasonal part-time positions and one additional Fleet Maintenance Technician; a yard-waste rear loader vehicle and EZ-dump vehicle, and increased operating costs. This option would require increasing the yard waste fee by \$2.33 per month or increasing the property tax rate by 0.36 cents.

Council discussed the number and location of excessive loads, and the enforcement currently being done. They discussed the change management of moving to this model, the fact that leaf pickup will stay the same as last year, and the possibility of "sweeps" in the future. Consensus was to stay the course with this program.

3. Mayor & Council Discussion on the Recommended FY 2024-25 Budget

Randy Harrington reminded Council that any additions, deletions, or amendments require support from at least three council members, and as state law requires a balanced budget, any additions require an offsetting expenditure reduction, or identification of new funding. He said that next steps would be the adoption of a budget at the June 4th meeting next week.

Council member Deshazor asked for more descriptive language regarding the Parks Bond on page 34.

Council members Hewetson and Drees asked about the half cent dedicated to Fire Station 4 and transportation and what that would actually fund. Mr. Harrington said it would leverage debt to allow Council flexibility and offered several possible projects that Council could choose to fund.

Council member Forrest said that with inflation he does not believe the half cent will bring in enough to fix the transportation issues. He said we have the lowest tax rate in the County if you do not count the Parks and Recreation Bond and he suggested raising the tax rate to 35.85, which would put Holly Springs between Raleigh and Fuquay Varina. Council member Hewetson said she agreed that we needed to put more toward transportation. Mayor Mayefskie asked when the benefit from recent economic development projects would enter the equation. Mr. Harrington said we are seeing some benefit now because we have one of the lowest tax rates in the county, but we will see more in the fiscal year 2028 time frame, because there is a 12-to-18-month lag between when they come online and when the Town sees the revenue.

Council discussed the impact of NC 540 opening, and the cost of construction now versus five years from now. The question was asked, if taxes were raised now, how often could they be lowered. Mr. Harrington said Council sets the tax rate each year, so they could adjust it any year they wanted to. Council discussed the community survey finding that traffic was the number one concern and said that if taxes were raised to address traffic they could be lowered again once the benefit of the large economic development projects comes online. Council discussed what transportation projects could be accomplished with a .5 cent increase.

MPT Berry said he didn't support moving taxes above revenue neutral plus the parks and recreation bond amount. He asked what had been done to lower operating costs. Mr. Harrington reminded him that last year all budgets were reduced by .5 cent worth of revenue and that those cuts were felt, particularly in Parks and Recreation. He said that inflation of 23%

is affecting the Town and that, unlike the private sector, there is no slack in demand, even in a recession.

Council discussed the proposed added positions and the effects of the current labor market on recruitment and retention. MPT Berry asked specifically about two higher end positions in the Police Department and why a Deputy Chief was needed. Police Chief Paul Liquorie explained that as the Town grows there is the need for a Deputy Chief, allowing the Chief to look outward and strategically, while the Deputy looks to processes and coordination inwardly. He discussed the changes to the department in terms of coordination with neighboring departments and the increase in responsibilities and workloads across the organization.

Mr. Harrington said that six years ago when he came to Holly Springs, Council had a long conversation about their top 5 priorities. They said that we need to evolve the organization to meet the huge growth we are seeing. We have organized, adjusted policies, and evolved service to better position ourselves. We have to evolve our leadership structure so that department directors can be strategic leaders and out of the day-to-day minutia. You have to adjust that structure to get the right span of control to get leaders doing leadership work. We're going to need that in Fire and HR over the next two or three years also. We need to evolve to where we have clear #2's so departments can function when #1 is out. This is a high-level adjustment. We've been so focused on the work, but we also need to invest in leadership.

Council member Deshazor said he was pleased with public safety but wanted more on traffic. He wants to trim things out of the recommended budget to add more to transportation to get the best of both worlds. What can wait so that we put money towards traffic without raising taxes?

Mayor Mayefskie polled Council for agreement. MPT Berry said he was against raising the rate more than 3 cents above the revenue neutral rate. Council members Deshazor and Drees wanted to keep the manager's recommended rate, but cut something in order to move more funds to transportation. Council members Forrest and Hewetson would consider increasing the rate in order to increase funding for transportation projects.

Council discussed how much would be gained from a 1 cent increase and what could be done with it. Mr. Harrington said if they want to remain within the recommended rate, he needs guidance of what \$650,000 they would like to cut. Council discussed various options but came to no consensus.

Mayor Mayefskie asked Council if a quarter cent increase, splitting the difference between the two who want to keep it the same and the two who want to increase by a half cent, would be acceptable.

Mr. Harrington said he needed more direction because there are a lot of "keep the lights on" expenses in the recommended budget. If Council is going to identify \$625,000 in cuts, he cannot balance the budget without having impact on all of those areas.

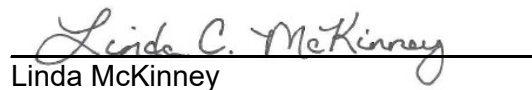
Council discussed what could be accomplished with the recommended budget and with the increase. Council member Forrest recommended going to 5 cents above revenue neutral, with Mr. Harrington instructed to find .1 cent to cut from somewhere else to make up the difference and balance the budget. Council consensus was to increase the tax rate to 5 cents

above revaluation, with debt affordability to .75 by cutting .1 cent from the general fund to balance the budget.

Mr. Harrington said Council member Forrest had asked about cutting the July workshop. He said that would work if Council can go to 9 or 9:30 at the June workshop to tackle some topics that would have come up in July. He listed the topics and asked Council if that was agreeable. Consensus was to cut the July meeting.

4. Adjournment: There being no further business for the evening, motion to adjourn was made by MPT Berry second by Council member Forrest and passed with a unanimous vote. The May 28, 2024 meeting of the Holly Springs Town Council was adjourned at 9:00 pm.

Respectfully Submitted on Tuesday, June 18, 2024.


Linda McKinney
Town Clerk



Holly Springs Town Council

Town Council Meeting Agenda Cover Sheet

Agenda Item#: 9.

Consent Agenda

Title: End of Year Budget Amendments

Strategic Priority Area: Organizational Excellence

Staff Resource: Corey Petersohn, Finance

Action(s):

- Receive Town Manager approved budget amendments.
- Approve the end of year budget amendments for Fiscal Year 2023-2024.

Explanation:

- The budget ordinance for the Town authorizes the Town Manager to approve inter-department budget amendments within the same fund up to \$50,000 with notification to Council by the following month.
- Each month, when applicable the Budget Office will provide a copy of these approved amendments:
 - Amendment 1 - Town Manager Approved Amendment for Fleet Maintenance - this amendment was to cover unanticipated repairs necessary for the operation of Fire apparatus vehicles.
- End-of-year budget amendments are necessary to perform:
 - technical adjustments for year-end reporting;
 - audit purposes;
 - estimates for year-end revenues/expenditures; and
 - transfers to project funds as necessary.
- All adjustments are expenditure net neutral unless otherwise stated to include an associated revenue adjustment.
- End of year adjustments are often made to maintain appropriate budget authority for all anticipated remaining expenses while providing contingency for any unforeseen circumstances in the last few weeks of the fiscal year.
- In some instances, final collection of revenues and expenditures pertaining to fiscal year 2023-2024 will not be received until after the end of the fiscal year. The Finance department will accrue these revenues and expenditures back to fiscal year 2023-2024 when appropriate.
- The end of year budget amendment for Fiscal Year 2023-2024 includes the following:
 - Adjustments to various operating accounts for salaries and benefits - these adjustments are routine every year to account for variances in salary/benefit projections. Lapse salary is utilized to cover all adjustments and has a net neutral impact on the budget.
 - Transferring \$43,000 for contract services from central services to Finance for

Town Council Business Meeting
June 18, 2024

- auditing / financial reporting. This adjustment is net neutral to the budget.
- Transferring \$100,000 in Administration funds to a PAYGO account to preserve the funds pending finalization of project scope and deliverables for Phase II of the project management project.
 - Transferring \$10,000 from the Office of Budget, Strategy, and Innovation to a PAYGO account for future potential innovation/pilot projects.
 - Appropriating \$200,000 in revenue and pass-through expense to ensure sufficient budget authority for solid waste services with the Town's contractor GFL.
 - Adjustments to various Utility Fund accounts for the purchase of bulk purchase of water, chemical treatment of wastewater, and utilities for the waste water treatment plant.
 - Total expenditure of bulk water purchases, chemical treatment, and utilities for operating waste water treatment are dependent on total usage of residents and commercial customers.
 - All adjustments have corresponding revenues and are budgeted to ensure sufficient budget authority for the purchase and treatment of water and waste water.
 - Adjustments to transfer unused funds from the General Fund and Utility Fund for IT for the development of asset management capabilities within Cityworks. These funds are being transferred to a PAYGO project account as expenditures are anticipated to span the fiscal year deadline. This item is being cost shared between the General and Utility Funds and all adjustments are expenditure net neutral with offsetting reductions totaling \$100,000.
 - Adjustment to transfer unused funds from General Fund Development Services Department that were appropriated for updating chapters of the comprehensive plan. This project is spanning the fiscal year divide and \$100,000 is being transferred to a PAYGO project account.
 - Adjustment to Development Services operating budget for development review expenses. This \$40,000 adjustment has an offsetting revenue to balance that has already been collected.
 - Adjustments to the General and Utility Debt Service Funds to match actuals on principal and interest payments for existing Town debt. These debts are covered using existing revenues and are accounted for in the Town's debt model.
 - Adjustments for uncollected billings in the General Fund and Utility Fund.
 - The majority of the uncollected billings are smaller amounts and this action is a clean up for legacy items that have sat on the Town's books for years in both the General and Utility Funds.
 - Within the General Fund adjustment for uncollected billing is \$624,271 that is being transferred back to the General Fund from Parks and Recreation Reserves. This pertains to a revenue recorded in a previous fiscal year regarding a supplemental tax agreement with CSL Seqirus but was ultimately not collected as Seqirus had reached the maximum payment per the agreement. To correct the Town's financial recordings of this revenue, a transfer must be executed back to the General Fund and recorded as an uncollected billing.
 - All other minor uncollected billings are being offset by General and Utility Fund interest earnings. The Town will continue to pursue collection of all uncollected billing where possible.
 - Adjustments pertaining to accounting requirements (Governmental Accounting Standards Board (GASB) rules 87 and 96) require updated accounting for leases

and Subscription Based IT Arrangements (SBITA). All expense adjustments have a corresponding and offsetting revenue adjustment to meet the financial reporting requirements.

- For administrative purposes, any adjustments transferring funds to project accounts will be included in the project ordinances associated with the FY2024-2025 Budget Adoption agenda item.
 - Project ordinances appropriate funds for all projects included within the associated fund.
 - Due to the deferment of budget adoption to the June 18 business meeting, the end of year transfer to projects must be included with the project ordinances included with budget adoption for fiscal year 2024-2025.

Background:

- All end of year adjustments maintain a balanced budget.

Funding Source(s):

Operating Budget Revenues

Attachment(s):

1. Amendment 1 - Fleet Maintenance
2. End of Fiscal Year 2023-2024 Budget Amendments

Town of Holly Springs FY2023-24 Budget Amendment Request

BE IT ORDAINED by the Town Council of the Town of Holly Springs, North Carolina, that the following amendment be made to the annual budget ordinance for the fiscal year ending June 30, 2024.

Department: Administration

Date: 5/30/2024

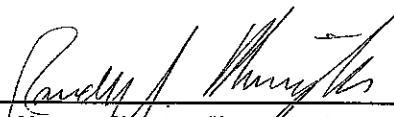
Reason for Budget Amendment:

Shifting operating contingency funds for Public Work Fleets Maintenance; these funds are for unplanned repair and maintenance of Fire apparatus.

Expense			
Account #	Account Description	Increase	Decrease
10-410-82.98	General Fund - Central Services - Op. Contingency		\$ 50,000
10-422-21-41.02	General Fund - Public Works - Fleet Maint.	\$ 50,000	
Total Expense:		\$ 50,000	\$ 50,000

Revenue			
Account #	Account Description	Increase	Decrease
Total Revenue:		\$ -	\$ -

Department Head Signature (or electronic submission)



 Town Manager Signature (if necessary)

Town Manager has authorized Department Directors to transfer operating funds within their department.
 Town Manager is authorized to approve transfers between departments within the same fund up to \$50,000.
 All inter-departmental transfers will be reported to Town Council by the following month.
 Amendments that change the total budget or departmental transfers over \$50,000 require Town Council approval.

Town of Holly Springs FY2023-24 Budget Amendment Request

BE IT ORDAINED by the Town Council of the Town of Holly Springs, North Carolina, that the following amendment be made to the annual budget ordinance for the fiscal year ending June 30, 2024.

Department: Administration **Date:** 6/18/2024

Reason for Budget Amendment:

End of year amendments to provide technical adjustments for year-end reporting, audit purposes, estimating year-end expenditures/revenues, and to transfer funds to multi-year project accounts where necessary.

Expense			
Account #	Account Description	Increase	Decrease
10-411-01.02	Op Budget - Salaries and Benefits Adjustment		\$ 11,000
10-411-01.03	Op Budget - Salaries and Benefits Adjustment		\$ 2,000
10-411-02.01	Op Budget - Salaries and Benefits Adjustment		\$ 3,000
10-412-10-01.01	Op Budget - Salaries and Benefits Adjustment	\$ 2,000	
10-412-11-02.01	Op Budget - Salaries and Benefits Adjustment	\$ 11,000	
10-412-12-01.01	Op Budget - Salaries and Benefits Adjustment	\$ 20,000	
10-412-13-01.01	Op Budget - Salaries and Benefits Adjustment	\$ 10,000	
10-412-14-01.01	Op Budget - Salaries and Benefits Adjustment	\$ 3,000	
10-412-15-01.01	Op Budget - Salaries and Benefits Adjustment	\$ 16,000	
10-413-01.01	Op Budget - Salaries and Benefits Adjustment		\$ 46,000
10-422-21-01.03	Op Budget - Salaries and Benefits Adjustment	\$ 6,000	
10-422-22-01.01	Op Budget - Salaries and Benefits Adjustment		\$ 6,000
10-425-27-01.01	Op Budget - Salaries and Benefits Adjustment	\$ 145,000	
10-425-28-01.01	Op Budget - Salaries and Benefits Adjustment		\$ 2,000
10-425-29-01.03	Op Budget - Salaries and Benefits Adjustment	\$ 2,000	
10-425-39-01.01	Op Budget - Salaries and Benefits Adjustment		\$ 145,000
10-450-005-01.01	Op Budget - Salaries and Benefits Adjustment	\$ 6,000	
10-450-010-01.01	Op Budget - Salaries and Benefits Adjustment		\$ 6,000
30-412-10-01.01	Op Budget - Salaries and Benefits Adjustment	\$ 2,000	
30-412-11-01.01	Op Budget - Salaries and Benefits Adjustment	\$ 2,000	
30-413-32-01.01	Op Budget - Salaries and Benefits Adjustment		\$ 14,000
30-413-42-01.01	Op Budget - Salaries and Benefits Adjustment		\$ 2,000
30-414-01.01	Op Budget - Salaries and Benefits Adjustment	\$ 2,000	
30-450-030-01.01	Op Budget - Salaries and Benefits Adjustment	\$ 10,000	
30-460-015-01.01	Op Budget - Salaries and Benefits Adjustment	\$ 6,000	
30-460-020-01.01	Op Budget - Salaries and Benefits Adjustment		\$ 6,000
31-412-10-01.01	Op Budget - Salaries and Benefits Adjustment	\$ 1,000	
31-450-01.01	Op Budget - Salaries and Benefits Adjustment		\$ 1,000
10-410-12.05	General Fund - Central Services Contract Services		\$ 43,000
10-413-12.05	General Fund - Finance contract services	\$ 43,000	

10-412-11-12.01	General Fund - Admin - Contract Services		\$ 100,000
10-95.11	General Fund - Transfer out to PAYGO	\$ 100,000	
10-412-15-15.02	General Fund - Admin - Budget, Strat., Innovation		\$ 10,000
10-95.11	General Fund - Transfer out to PAYGO	\$ 10,000	
10-422-24-12.15	Public Works - Solid Waste Collection	\$ 200,000	
30-410-20.06	Utility Fund - Central Services - Util. Water/sewer	\$ 360,000	
30-450-045-25.01	Utility Fund - U&I - Water Purchase	\$ 400,000	
30-450-055-62.08	Utility Fund - U&I - Pump Station Chemicals	\$ 100,000	
10-414-62.06	General Fund - IT - Computer Supplies		\$ 30,000
10-410-82.98	General Fund - Central Services - Op Contingency		\$ 20,000
10-95.75	General Fund Transfer to Utility PAYGO	\$ 50,000	
30-414-12.05	Utility Fund - IT - Contract Services		\$ 40,000
30-414-62.06	Utility Fund - IT - Computer Supplies		\$ 10,000
30-95	Utility Fund - Transfer to PAYGO	\$ 50,000	
10-460-020-12.03	General Fund - Dev Serv. - Consultant Fees		\$ 100,000
10-95.11	General Fund - Transfer out to PAYGO	\$ 100,000	
10-460-020-12.09	General Fund - Dev Serv. - Development Review	\$ 40,000	
60-413-82.09	Debt Service (General) - Debt Issuance Cost	\$ 220,000	
60-420-8525.003	Debt Service (General) - LOB Interest	\$ 280,000	
60-422-8525.003	Debt Service (General) - LOB Interest	\$ 40,000	
60-420-8515.014	Debt Service (General) - Fire Installment Financing	\$ 1,000	
60-422-8510.018	Debt Service (General) - PW Installment Financing	\$ 31,000	
60-425-8510.018	Debt Service (General) - Parks Installment Financing	\$ 24,000	
60-425-8515.018	Debt Service (General) - Parks Installment Financing	\$ 4,000	
61-430-8525.003	Debt Service (Utility) - LOB Interest	\$ 50,000	
10-410-82.12	General Fund - Central Services - Uncollected Billing	\$ 710,000	
30-410-82.12	Utility Fund - Central Services - Uncollected Billing	\$ 70,000	
10-413-90.09	General Fund - Capital Outlay (Lease/SBITA)	\$ 24,287	
10-414-90.08	General Fund - Capital Outlay (Lease/SBITA)	\$ 563,436	
Total Expense:		\$ 3,714,723	\$ 597,000

Revenue			
Account #	Account Description	Increase	Decrease
10-324.01	General Fund - Solid Waste Fees	\$ 200,000	
30-305.04	Utility Fund - Water Sales Industrial	\$ 280,000	
30-306.04	Utility Fund - Sewer Sales Industrial	\$ 80,000	
30-305.03	Utility Fund - Water Sales Office & Institutional	\$ 100,000	
30-306.02	Utility Fund - Water Sales Commercial	\$ 50,000	
30-307.01	Utility Fund Reclaimed Water Sales	\$ 350,000	
10-321.01	General Fund - Planning and Zoning Permit Fees	\$ 40,000	
60-352	Debt Service (General) - Interest Earnings	\$ 220,000	
60-360.16	Debt Service (General) - Debt Fund Balance	\$ 380,000	
61-352	Debt Service (Utility) - Interest Earnings	\$ 50,000	
10-355.21	General Fund - Transfer in P&R Reserves	\$ 624,271	
10-352	General Fund - Interest Earnings	\$ 85,729	
30-352	Utility Fund - Interest Earnings	\$ 70,000	
10-355.19	General Fund - Financing Source -Lease/SBITA	\$ 24,287	

10-355.18	General Fund - Financing Source -Lease/SBITA	\$ 563,436	
Total Revenue:		\$ 3,117,723	\$ -

Department Head Signature (or electronic submission)

Town Manager Signature (if necessary)

Town Manager has authorized Department Directors to transfer operating funds within their department.

Town Manager is authorized to approve transfers between departments within the same fund up to \$50,000.

All inter-departmental transfers will be reported to Town Council by the following month.

Amendments that change the total budget or departmental transfers over \$50,000 require Town Council approval.



Holly Springs Town Council

Town Council Meeting Agenda Cover Sheet

Agenda Item#: 10.

Consent Agenda

Title: Capital Associates Management, LLC Development Agreement Extension

Strategic Priority Area: Growth Management & Economic Vitality
Vibrant Community

Staff Resource: John Schifano, Town Attorney

Action(s):

Approve a continuation of the Sewer & Water System Development fee rate lock contained in the development agreement for 1 year to 6/30/2025

Explanation:

- On May 4, 2021 Town Council approved a development agreement with My Computer Career (MyCC) and DHIC for the creation of a joint economic/commercial and affordable housing project located at 1317 N. Main St.
- The Development Agreement was modified to remove MyCC as a partner for the project on September 20, 2022.
- The Development Agreement locks in water and sewer fees at 2021 levels for the 124 affordable units and noted that any system development fees (SDF) fees paid after 6/30/2024 may be subject to change.
- The fees are unlikely to be paid by 6/30/24 due to project delays and a 1-year extension to 6/30/2025 has been requested.

Background:

- This parcel was part of the land that was originally designated as the "borrow pit" for the South Wake Landfill. Since the property was removed from the landfill plans, Wake County sold the south half to the Town for the North Main Athletic Park (Ting Park) and the north half has remained under the ownership of the County.
- The Property was identified by Wake County as part of its Evaluation and Disposition of County-owned Land for Affordable Housing Policy, which evaluates publicly-owned land for disposition to include affordable housing development. In January 2020, Wake County issued its first public land disposition RFP under the newly adopted Policy for development proposals for 1317 N. Main Street.
- In May 2020, Wake County selected the proposal by the development team of My Computer Career (MyCC) and DHIC as the Lead Applicants for the potential development of 1317 N. Main Street. MyCC is no longer a partner in the project and Capital Associates Management is now the lead applicant.
- The town has sought opportunities for economic development projects for this parcel, and Wake County has had this parcel on "hold" while determining the appropriate use and disposition of the property.

- The Development Agreement changes will allow the DHIC affordable housing project to continue moving forward in the development process and supports the Wake County Department of Housing Affordability and Community Revitalization's efforts to increase housing options on County-owned property north of Ting Park while helping the town pursue a residential/non-residential tax base ratio of 70%/30%.
- The property was rezoned from LB: Local Business Limited to CB CU: Community Business Conditional Use and R-MF-15 CU: High-Density Multifamily Residential Conditional Use (reassigned to MXR Mixed-Use Residential on March 1, 2022) on April 6, 2021.
- The original Development Agreement was approved on May 4, 2021. This agreement includes terms related to:
 - Sewer Capacity
 - Transportation impact
 - Timing of Subdivision plat
 - Building height
 - System Development Fee
 - Parks & Recreation Fee
- The EDA gives the Town a first right of refusal on the property in the event that the Company does not reach the Target Capital Investment within 5 years, and requires a bond to complete the work of the Initial Capital Investment (ie, the site work).

Funding Source(s):

N/A

Attachment(s):

None



Holly Springs Town Council

Town Council Meeting Agenda Cover Sheet

Agenda Item#: 11.

Consent Agenda

Title: Voluntary Annexation A24-02 - Operations Campus

Strategic Priority Area: Growth Management & Economic Vitality

Staff Resource: Aaron Prichard, Development Services

Action(s):

Adopt Resolution 24-16 directing the Town Clerk to investigate the sufficiency of annexation petition A24-02 and setting the public hearing for July 16, 2024.

Explanation:

- The Town has received a petition for voluntary annexation of 30.95 +/- acres, located in the vicinity of Bumgardner Drive.
- The owner of the property is the Town of Holly Springs.
- The property is intended for a future Operations Campus.
- Annexation is being requested at this time in order to develop the property.
- Staff has requested feedback from all departments and there were no issues with this annexation.

Background:

Pursuant to NCGS § 160A-31(c) Council is required, upon receiving a petition for annexation, "to cause the clerk of the municipality to investigate the sufficiency thereof and to certify the result of the investigation" and to fix a date for a public hearing on the question of the annexation.

Funding Source(s):

N/A

Attachment(s):

1. A24-02 map
2. A24-02 Resolution of Sufficiency



Annexation Information

Annexation Number

A24-02

Total Acres

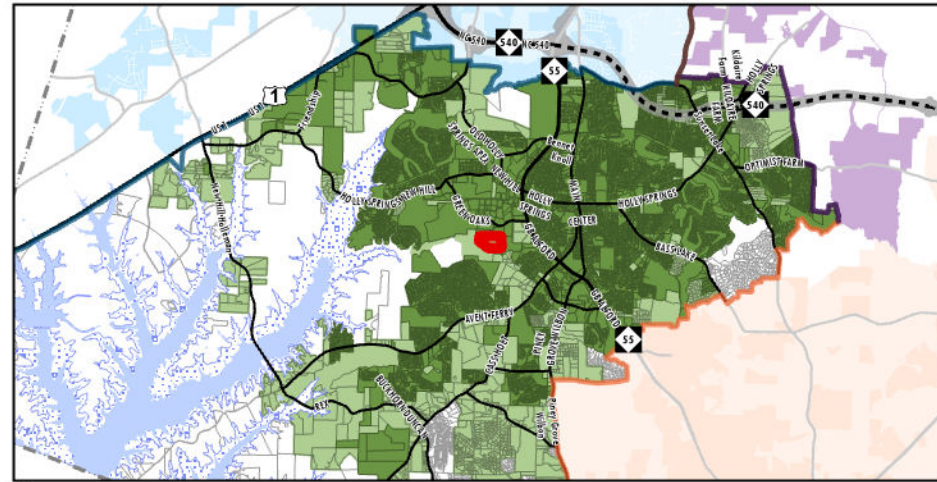
30.95 ac

Property Address

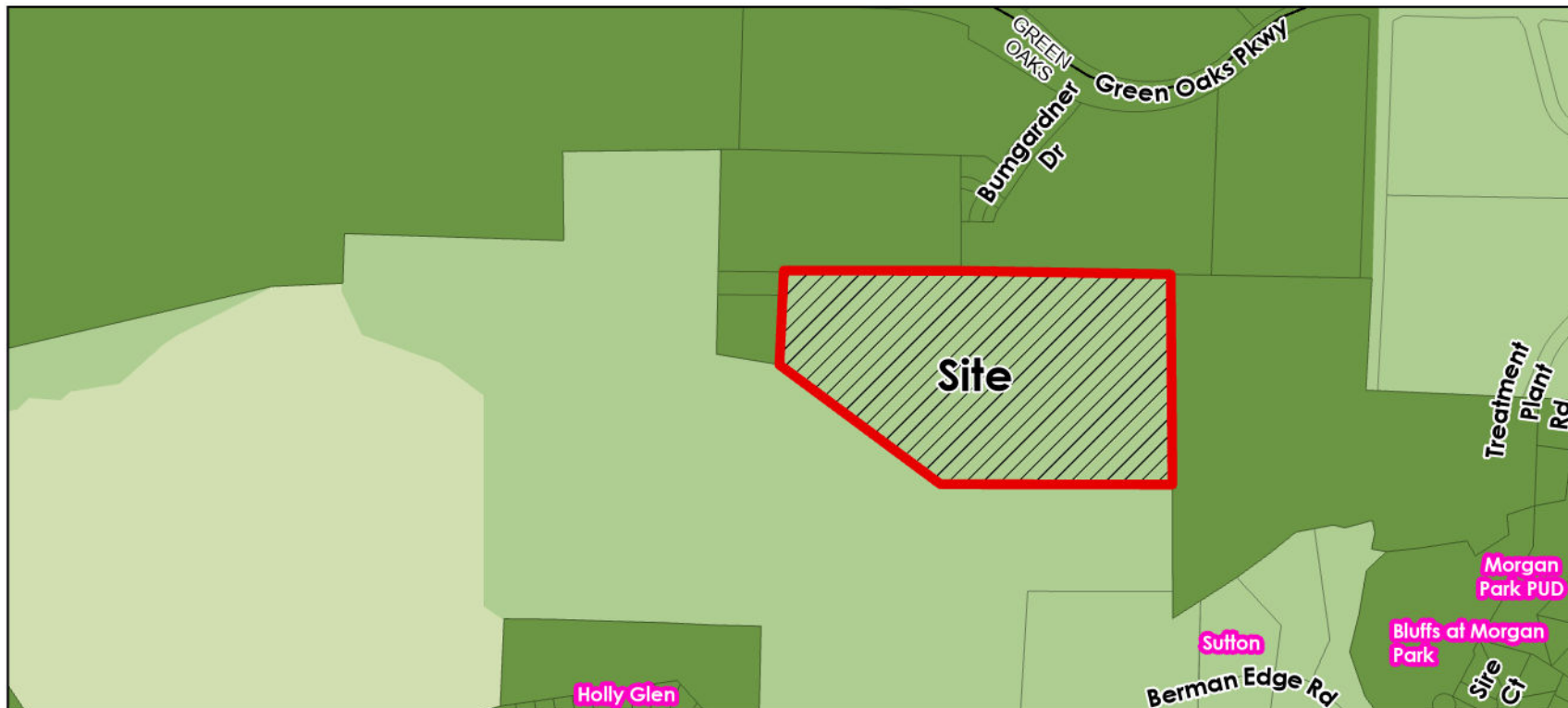
0 Bumgardner Dr

Contiguous to Town Limits

■ Yes □ No



Town Location Map



Property Location Map

Holly Springs



Apex



Fuquay-Varina



Cary



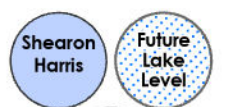
Subdivision

Apex/Cary
Annexation Agreement

Apex/Holly Springs
Annexation Agreement

Cary/Holly Springs
Annexation Agreement

FV/Holly Springs
Annexation Agreement



Parcels



Resolution No. 24-16

Date Adopted: June 18, 2024

Annexation No.: A24-02

**RESOLUTION OF THE HOLLY SPRINGS TOWN COUNCIL DIRECTING THE TOWN CLERK
TO INVESTIGATE A PETITION RECEIVED UNDER G.S. 160A-58 AND FIXING THE DATE
OF A PUBLIC HEARING ON THE QUESTION OF ANNEXATION**

WHEREAS, a petition requesting annexation of a contiguous area described in said petition was received by the Town of Holly Springs; and

WHEREAS, G.S. 160A-58.2 provides that the sufficiency of the petition shall be investigated by the Town Clerk before further annexation proceedings may take place; and

WHEREAS, the Town Council of the Town of Holly Springs deems it advisable to proceed in response to this request for annexation, subject to the Clerk's satisfactory investigation of the sufficiency of the petition; and

WHEREAS, the area proposed for annexation is described as follows:

Lying and being in Holly Springs Township, Wake County, North Carolina, and more particularly described as follows: Wake County PIN No. 0649206441

Beginning at an Existing Iron Pipe located at the Southeast corner of that parcel of land owned by Seqirus, Inc. (PIN No. 0649119084), said Pipe having North Carolina Geodetic Coordinates (NAD 83; 2011) N: 690,836.541', E: 2,042,500.717'. Thence, S 89°01'44" E a distance of 336.45' to an Existing Iron Pipe; Thence, S 88°58'24" E a distance of 279.40' to an Existing Iron Pipe; Thence, S 89°03'28" E a distance of 281.35' to an Existing Iron Pipe; Thence, S 00°26'37" E a distance of 900.14' to a New Iron Pipe; Thence, N 89°52'45" W a distance of 993.27' to an Existing Iron Pipe; Thence, N 53°26'05" W a distance of 858.29' to an Existing Iron Pipe; Thence, N 02°49'24" E a distance of 403.64' to an Existing Iron Pipe; Thence, S 89°54'59" E a distance of 758.70' to an Existing Iron Pipe, being the Point and Place of Beginning and containing 30.95 acres, more or less.

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

Section 1. The Town Clerk is hereby directed to investigate the sufficiency of the above described petition and to certify as soon as possible to the Holly Springs Town Council the result of her investigation.

Section 2. Subject to the Town Clerk's satisfactory result of her investigation, a public hearing on the question of annexation of the area described herein will be held at the Town Hall Council Chambers, located at 128 S. Main Street, at 7 p.m. (or as soon thereafter as is practicable) on Tuesday, July 16, 2024.

Section 3. Notice of the public hearing shall be published in the Raleigh News & Observer, newspapers having general circulation in the Town of Holly Springs, at least ten (10) days prior to the date of the public hearing.

Adopted this, the 18th day of June, 2024.

ATTEST:

Sean Mayefskie, Mayor

Linda McKinney, Town Clerk





Holly Springs Town Council

Town Council Meeting Agenda Cover Sheet

Agenda Item#: 12.

Consent Agenda

Title: Engineering Design & Construction Standards Supplement #10

Strategic Priority Area: Vibrant Community

Community Safety

Organizational Excellence

Staff Resource: Sara Emig, Utilities and Infrastructure, Kendra Parrish, Utilities and Infrastructure

Action(s):

Approve Supplement #10 to the Engineering Design and Construction Standards (ED&CS).

Explanation:

- The purpose of the Engineering Design and Construction Standards (EDCS) is to present typical standards for typical conditions encountered in construction of public infrastructure (example: streets and sidewalks, water and wastewater and stormwater). The EDCS is an essential tool for the town to ensure quality, safety, consistency, and efficiency of engineered-designed construction.
- The EDCS updates provide additional clarity about the requirements for design and construction of infrastructure to ensure best, up-to-date materials and practices for efficient operation and maintenance.
- Supplement #10 to the EDCS includes:
 - Corrected definition of "engineer" and add acronyms for new Chapter 13.
 - Updated Section 2.00 General Provisions, 2.06 Maintenance of Traffic to current version of Manual on Uniform Traffic Control Devices (MUTCD) Standard and Federal requirements.
 - Section 3.00 Streets, Driveways, and Parking Lots updated to include reference to requirements in the approved Comprehensive Transportation Plan (CTP) for improvement of existing thoroughfares and streets. Removed requirements covered by the CTP and language no longer consistent with current standards.
 - 3.02, F. Driveway/Access: Non-residential standard updated to accommodate longer vehicles.
 - Sub-section 3.07 Traffic Control, Traffic Signals and Street Name Signs updated with more specific description and information including State and International Standards and corresponding State and Town details.
 - Section 5.00 Pipe Trenches updated to clarify pavement and utility location requirements.
 - In Section 6.00 Water Distribution updates to Fire Hydrant, Automatic Fire Sprinkler System, and Fire Department Access standards.
 - Section 7.00 Sanitary Sewer updates to State standards and statutes, manhole requirements, Closed Circuit Television (CCTV) inspection requirements, and other clarifications. Relevant pump station and forcemain sub-sections moved to newly

Town Council Business Meeting
June 18, 2024

created Section 13.

- Updated Closed Circuit Television (CCTV) inspection requirements for Stormwater Drainage Inspections & Testing (8.06, I.)
- Section 11.00 Reclaimed Water design coverage and signage standards clarified in more detail.
- Creation of new Section 13.00 Wastewater Pumping Systems and Force mains.
- Details updated to be consistent with standards described in sections and new details added for standards in new Section 13.

Background:

- The Engineering Design and Construction Standards (EDCS) are the specifications required by the Town as minimum standards for construction of public infrastructure, including but not limited to utilities, roadways, and greenways.
- Both private development and capital improvements are required to adhere to these standards to ensure a quality product is received upon acceptance into the town-maintained public infrastructure system.
- Establishing and consistently enforcing these requirements results in infrastructure that is more efficient and cost-effective to maintain.
- Design and construction best practices and materials are constantly evolving and improving in quality, availability, and efficiency.
- Town staff from multiple departments regularly review and contribute updates to the standards to reflect current construction materials and best practices.

Funding Source(s):

N/A

Attachment(s):

1. EDCS Supplement #10 Summary of Changes
2. EDCS Supplement #10 Updates

Engineering Construction and Design Standards
Supplement # 10 Log - June 18, 2024

Section	Sub-Section	Item	Description
1.00 Definitions and Acronyms.	1.01 Definitions		Specified the term "engineer" to refer to design engineer.
	1.02 Abbreviations		Added abbreviations found within the new Section 13.
2.00 General Provisions	2.06 Maintenance of Traffic	A. General	Updated section number to match current version of the Manual on Uniform Traffic Control Devices (MUTCD) Standard documents.
		B. Materials	Updated federal requirements for retroreflective sheeting to the international requirements.
3.00 Streets, Driveways & Parking Lots	3.02 Design		Included Town's Comprehensive Transportation plan as a reference to requirements for improvement of existing thoroughfares and streets. Removed Traffic Assessment Report (TAR) from note at the end of the section as it is no longer used and included in the new Comprehensive Transportation Plan. Removal of Boulevards throughout section due to the Town not having boulevards.
		A. Street Classification: Alleys	Updated typical alleys width to 20 feet on 25-foot easement.
		A. Street Classification: Residential Cul-de-sac (1000 feet or less)	Removed language of the typical width due to streets no longer consistent with current standards and will be refer to the comprehensive transportation plan going forward.
		A. Street Classification: Residential Street	Removed language of the typical width due to streets no longer consistent with current standards and will be refer to the comprehensive transportation plan going forward.
			Removal of detail reference, will be included in the comprehensive transportation plan.
		A. Street Classification: Non-Residential 2-Lane Collector Street or Cul-de-sac (1000 feet or less)	Removed language of the typical width due to streets no longer consistent with current standards and will be refer to the comprehensive transportation plan going forward.
		A. Street Classification: Residential 2-Lane Collector Street- No Load	Removed language of the typical width due to streets no longer consistent with current standards and will be refer to the comprehensive transportation plan going forward.
			Removal of detail reference, will be included in the comprehensive transportation plan.
		A. Street Classification: Non-Residential 3-Lane Collector Street	Removed language of the typical width due to streets no longer consistent with current standards and will be refer to the comprehensive transportation plan going forward.
		A. Street Classification: Throughfare	Removal of detail reference, will be included in the comprehensive transportation plan.
		F. Driveways/Access: Non-Residential	Updated from WB40 to WB50 vehicle for accommodated turn outs.

	3.07 Traffic Control, Traffic Signals and Street Name Signs		Updated section with more specific description and information including State and International Standards and corresponding State and Town details.
5.00 Pipe Trenches	5.02 Pipe Laying and Backfilling		Updated maximum days for pavement cuts to match current detail standard HS326 to resolve conflicting information.
	5.03 Boring and Jacking		Added concise language to "3 feet under pavement" to clarify measured from top of pavement.
	5.04 Utility Locator Installation and Devices		Added new section to focus on utility locating.
6.00 Water Distribution	6.02 Fire Hydrants	A. Location	Updated Table A1 to be consistent with NC Fire Protection Code and removed items no longer permitted by NC Fire Protection Code.
			Removed "non-sprinklered" and "or hydrant" in "When new buildings are constructed, or existing buildings expanded, all points of exterior walls for non-sprinklered buildings shall be within 150' of a fire access lane or hydrant." to stay consistent with NC Fire Protection Code
			Clarified turn-a-rounds must be approved or meet alternative standard.
			Updated requirement for hydraulic report to be dated within 12 months to ensure report meets recent system conditions.
	6.07 Automatic Fire Sprinkler Systems	C. Installation	Clarified stone should be placed around hydrant.
		C. Post Indicator Valve (PIV)	Increased minimum of unobstructed access perimeter from 3 feet to 5 feet.
		E. Fire Department Connection (FDC)	Specified The Fire Department Connection should be red in color.
		G. Access	Updated direction to order specified box from the Town to website. Removal of "Forms are available from the Town Fire Department." as town no longer provides forms.
	6.08 Fire Department Access	A. Fire Access an Fire Lanes	Added "Alley ways" to general definition of a fire apparatus access roads.
	7.01 Gravity Sewer Mains	B. Design: Location	Correction of spelling "decholorination"
		B. Design: Size	Updated to include specifications of State standards and statutes.
			Removal of irregular pipe sizes from minimum grade chart.
		B. Design: Manholes	Updated to match NCDEQ specifications "Manholes shall be spaced at a maximum distance of 425 feet apart regardless of size unless documentation is provided showing capability to perform routine maintenance on sewer at distances greater than 425' apart."
			Added "Where manholes are located in streets inside the Triassic Basin (HS356) it will be required to have suitable off-site structural material or stone to backfill around excavation of manholes up to subgrade. Also see Section 3.02J of these standards."
	7.02 Force Sewer Mains		Relocated to New Section 13

7.00 Sanitary Sewer	7.05 Testing and Inspection		Removal of "All sewer mains shall require internal visual inspection by TV Camera at the expense of the developer prior to the beginning of the 1-year warranty and at the end of the warranty period if deemed necessary."
			Removal of "Contractor shall supply a DVD or flash drive to inspector of line camera"
			Addition of "Prior to the placement of any roadway structure, the Contractor shall clean and CCTV all newly installed sewer mains. A 3rd Party CCTV contractor shall televise the sewer main and all lateral connections installed from the upstream to the downstream manhole with no reverse setups or cutaways. This shall be done at the Developers expense. The contractor shall clean the sewer mains ahead of the video inspection with a high velocity water jet. The video inspection shall take place within two hours of the cleaning operation as witnessed by a Town of Holly Springs Development Inspector. All construction debris shall be collected in the downstream manhole and shall not be released into the sewer system. No other work shall be performed on the sewer lines after cleaning and prior to the video inspection. The contractor may not perform CCTV inspections on any utilities that they have installed. The contractor shall provide a DVD or Flash Drive, submitted to the inspector for review."
	7.07 Wastewater Pump Stations		Moved to New Section 13
8.00 Stormwater Design	8.06 Storm Drainage Design	I. Inspections & Testing	Replaced "manhole" with "structure"
			Standardizing CCTV instructions "Prior to the placement of any roadway structure, the Contractor shall clean and CCTV all newly installed storm drain lines 12" and larger. A 3rd Party CCTV contractor shall televise the storm drainage system with no reverse setups or cutaways. This shall be done at the Developers expense. The contractor shall clean the storm drainage ahead of the video inspection with a high velocity water jet. The video inspection shall take place within two hours of the cleaning operation as witnessed by a Town of Holly Springs Development Inspector. No other work shall be performed on the storm drainage system after cleaning and prior to the video inspection. The contractor may not perform CCTV inspections on any utilities that they have installed. The contractor shall provide a DVD or Flash Drive, submitted to the inspector for review. "
			Clarified CCTV approval requirements.
11.00 Reclaimed Water Distribution	11.01 Reclaim Water Distribution Pipe	A. Design	Updated minimum and maximum of reclaimed water main coverage.
			Added Major User Agreement to signage design specifications
13.00 Wastewater Pumping Systems and Forcemains			New Section specific for Pump Stations and Force Mains.

Revised DETAILS	Name
HS305A-J	Removed to remain consistent with updated Section 3.02 Street Classifications
HS306A-E	Removed to remain consistent with updated Section 3.02 Street Classifications
HS307A-E	Removed to remain consistent with updated Section 3.02 Street Classifications
HS357	Updated with new dimensions and specifics for road signs
HS358	Updated specifics for road signs
HS359	Corrected verbiage and added specifications for street signs and posts.
HS360	Corrected verbiage and added specifications for street signs and posts.
HS361	Corrected verbiage and added specifications for street signs and posts.
HS362	Removed to remain consistent with updated Section 3.
HS397	NEW- Greenway Sign Detail
HS401-413, 415-418, 420, 422-428, 432, 434-436	Updated all Section 4 Soil Erosion and Sedimentation Control for accuracy and consistency with current specs.
HS419	Removed as it is no longer relevant.
HS421	Removed as it is no longer relevant.
HS438	NEW- COIR FIBER BAFFLE. Breakout from existing HS409 Detail to provide more clarity.
HS601	Updated for consistency with sewer update.
HS615	Updated for consistency with Section 6.04 verbiage
HS720	Moved to Section 13 and renamed HS1304.
HS721	Moved to Section 13 and renamed HS1305.
HS1301	NEW Pump Station Site Layout and Minimum Dimensions
HS1302	NEW Typical Pump Station Layout
HS1303	NEW Typical Chain Link Fence
HS1304	NEW Typical Security Double Gate
HS1305	NEW Standard Pump Station Location Sign
HS1306	NEW Pump Station Access Road
HS1307	NEW Wet Well Hatch
HS1308	NEW Sewage Grinder Vault
HS1309	NEW Sewage Grinder Unit (Wet Well Installation)
HS1310	NEW Force Main Air Release Manhole
HS1311	NEW Combination Sewage Air Valve Manhole With Odor Scrubber
HS1312	NEW Standard Valve Box Installation
HS1313	NEW Force Main Discharge Manhole

SECTION 1.00
DEFINITIONS AND ABBREVIATIONS

SUB-INDEX

1.01 DEFINITIONS

1.02 ABBREVIATIONS

SECTION 1.00

DEFINITIONS AND ABBREVIATIONS

1.01 DEFINITIONS

CERTIFICATE OF OCCUPANCY - Approval granted by the Town for a new or renovated structure to be occupied.

CODE - The Town of Holly Springs Code of Ordinances, including the Unified Development Ordinance.

DEVELOPMENT INSPECTOR - The Development Inspector, an assistant, or other representative duly authorized by the Executive Director of Utilities and Infrastructure Services.

CONTRACTOR – Person or persons performing construction activity, either as a primary or sub-contractor within the Town, either for the Town, for owners/developers, for utility companies, or any other entity.

DETAILS – The drawings found within the Town of Holly Springs Engineering Design and Construction Standards Manual

DEVELOPMENT PLAN - Specific plans for residential, commercial/mixed use or industrial development of property filed in connection with an Architectural and Site Design Review or development incentives review under the terms of this UDO. A development plan may include, but not limited to: a site plan; landscape plan; Master Sign Plan; lighting plans; building elevations; and pedestrian and vehicular circulation plans, which are reasonably necessary to depict or describe certain information and data as required by this UDO.

DEVELOPMENT PROCEDURES MANUAL (DPM) – The Town of Holly Springs procedural manual companion document to the Unified Development Ordinance.

EXECUTIVE DIRECTOR OF UTILITIES AND INFRASTRUCTURE SERVICES – The Utilities and Infrastructure Services Director, an assistant, or other representative duly authorized by the Executive Director of Utilities and Infrastructure Services.

EASEMENT - A property right to use or control real property of another.

ENGINEER – Design engineer, or design engineer’s representative.

INVERT - The lowest point in the internal cross section of a pipe or other culvert.

MASTER PLAN - A drawing, map, plan or other graphic representation of an overall project, drawn to an appropriate scale by hand or other drawing method, but containing sufficient detail to depict the patterns proposed for an overall project and to determine compliance with the use and development standards provisions of this UDO

OWNER/DEVELOPER - Person or persons who are responsible financially for the construction activity.

PLANS – Town-approved plans, profiles, standard details, supplemental plans, and working drawings, which show the location, dimensions, and details of the work to be performed.

PROJECT - Any design, repair or construction activity occurring within the jurisdiction of the Town of Holly Springs.

RIGHT OF WAY - The land area between the back of curb or edge of pavement and the property boundary, including the area containing the street.

STANDARDS - The general term comprising all the directions, provisions, and requirements contained or referred to in this book entitled “Town of Holly Springs Engineering Design and Construction Standards” and in any subsequent revisions or additions to this document.

SUBGRADE - That portion of the roadbed prepared as a foundation for the pavement structure.

TOWN – The Town of Holly Springs, North Carolina

UNIFIED DEVELOPMENT ORDINANCE (UDO) – The Town of Holly Springs UDO regulates development within the Town.

1.02 ABBREVIATIONS

AASHTO	American Association of State Highway and Transportation Officials
ABS	Acrylonitrile Butadiene Styrene
ABMA	American Bearing Manufacturer Association (Formerly AFBMA)
AC/DC	Alternating Current/Direct Current
ACFM	Actual Cubic Feet per Minute
AFBMA	Antifriction Bearing Manufacturers Association
AFF	Above Finish Floor

AGMA	American Gear Manufacturers Association
AISI	American Iron and Steel Institute
ANSI	American National Standards Institute
ASME	American Society of Mechanical Engineers
ASSE	American Association of Safety Engineers
ASTM	American Society of Testing and Materials
AWWA	American Water Works Association
BHP	Brake Horsepower
°C	Degrees Centigrade
CO	Certificate of Occupancy
Cy/CuYd	Cubic Yard
DEMLR	Division of Energy, Mineral and Land Resources
DHS	Division of Health Services
DIP	Ductile Iron Pipe
DIPRA	Ductile Iron Pipe Research Association
DWR	Division of Water Resources
EEI	Electrical and Electronic Engineering Industries
ETJ	Extraterritorial Jurisdiction
°F	Degrees Fahrenheit
ft	foot
GPD	gallons per day
GPM	gallons per minute
HDPE	High Density Polyethylene
HEI	Heat Exchange Institute

HP	Horsepower
HGL	hydraulic grade line
ID	Internal Diameter
IEEE	Institute of Electrical and Electronics Engineers
in	inches
lbs	pounds
lb/hr	pound per hour
ISO	International Organization for Standardization
kW	Kilowatt
LED	Light Emitting Diode
MGD	Million Gallons per Day
MPE	Motor Protection Electronics
MSL	Mean Sea Level
MUTCD	Manual on Uniform Traffic Control Devices
NCDENR	North Carolina Department of Environmental and Natural Resources (now know as NCDEQ)
NCDEQ	North Carolina Department of Environmental and Quality (formerly NCDENR)
NCDOT	North Carolina Department of Transportation
NC DPS	North Carolina Department of Public Safety
NEC	National Electric Code
NFPA	National Fire Protection Association
NRCS	National Resource Conservation Service
NPT	National Pipe Thread
NYDOT	New York Department of Transportation

OC	On Center
oz	ounce
OD	Outside Diameter
OSHA	Occupational Safety & Health Administration
PC	Point of Curvature
PE	Professional Engineer, Registered in the State of North Carolina
PLC	Programmable Logic Control
PLS	Professional Land Surveyor, Registered in the State of North Carolina
PPM	parts per million
PSI	pounds per square inch
PT	Point of Tangency
PVC	Polyvinyl Chloride
PVC	Point of Curvature on Vertical Curve
PVT	Point of Tangency on Vertical Curve
$Q_{\max}$	maximum discharge
$Q_{\min}$	minimum discharge
RH	Relative Humidity
SAE	Society of Automotive Engineers
SCS	Soil Conservation Service
sec	second
Sq Ft	square feet
SU	Single Unit Truck (with 20 foot wheelbase and 30 foot overall length)
Sq Yd	square yard

TDH	Total Dynamic Head
TEFC	Totally Enclosed Fan Cooled
UL	Underwriters' Laboratories, Inc.
USACE	United States Army Corps of Engineers
USC	University of Southern California
V	Volts
VAC	Voltage - Alternating Current
VDC	Voltage (Direct Current)
WB-40	Semitrailer Truck (with 40 foot wheelbase and 45.5 ft overall length)
WB-50	Semitrailer Truck (with 50 foot wheelbase and 55 foot overall length)

END OF SECTION 1.00

**SECTION 2.00
GENERAL PROVISIONS**

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SECTION 2.00

GENERAL PROVISIONS

2.01 GENERAL

All construction, both Development and Town projects, shall conform to the requirements and dimensions on Town approved construction plans, the Town of Holly Springs Engineering Design and Construction Standards, and the Code of the Town of Holly Springs. The design of streets, water systems, sanitary sewer systems, storm drainage systems, dam design, and grading plans shall be signed and sealed by a licensed North Carolina Professional Engineer, Professional Land Surveyor, Architect or Landscape Architect in accordance with N.C. General Statute 89. All construction drawings shall be prepared using survey grade data in all areas where work is being proposed including utility crossings and other environmentally sensitive areas. In addition, refer to Section 9 of these standards “As-Built Drawing Requirements.”

2.02 QUALITY OF MATERIALS

It is the intent of this specification to provide materials of the highest standard known to the trade and to provide materials free from defects in workmanship and product. Equal materials not specified may be used if provided necessary documentation and samples necessary for the Engineer to determine their acceptability and ISSUE A WRITTEN APPROVAL are provided to him or her a MINIMUM of 14 DAYS before being brought onto the construction site. Current standards and/or the latest revisions shall apply in all cases where materials are described by these standards.

2.03 INSPECTIONS

The Contractor shall provide the necessary manpower and equipment required as a part of the inspection process. The contractor shall notify the Inspector at least 24 hours prior to required inspections. The presence of the Engineer or Development Inspector at the work site shall in no way lessen the Contractor’s responsibility for conformity with the plans and specifications. Should the Engineer or Construction Inspector accept materials, or work that does not conform with plans and specifications, whether from lack of discovery or for any other reason, it shall in no way prevent later rejection or corrections to the unsatisfactory materials or work when discovered. The Contractor shall have no claim for losses suffered due to any necessary removals or repairs resulting from the unsatisfactory work. Any work which has been covered without the Construction Inspector’s approval, shall, at the Development Inspector’s request, be uncovered and be made available for inspection at the Contractor’s expense. Work performed before or after Town staff’s normal work hours or during the weekend or Town holidays shall comply with the Town Code and shall include only such tasks that do not require

observation by a Development Inspector, unless previous arrangements have been made for overtime with the Town Inspection Services.

2.04 CLEARING AND GRUBBING

The work of clearing and grubbing shall consist of the cutting, removal, and satisfactory disposal of all vegetation and all surface debris. Clearing and grubbing shall be conducted in a manner to prevent damage to vegetation that is intended to remain growing and to prevent damage to adjacent property. Tree protection fencing shall be installed to protect all areas that are to remain undisturbed or protected. Removal of root structure during the clearing and grubbing process requires an erosion control plan approval and Environmental Development Permit for all projects with 20,000, Sq Ft or greater of disturbed area as outlined in Section 4 of this document and Chapter 8, Article II of the Town Code of Ordinances.

2.05 EARTHWORK

Earthwork shall be defined as removal of earth or soft rock from its natural location or as the depositing of such material into fills areas as designated on the plans.

Rock excavation shall be defined, in the opinion of the Engineer, as all ledge rock or boulders over 0.5 cubic yard that cannot be excavated without blasting.

Fill material shall be free from construction material, debris, frozen material, organic matter, other degradable materials, masonry, concrete, brick, other unsuitable materials or any materials, which would cause the site to be regulated as a landfill by the State. For the top 2 feet below finished sub grade, no fill material shall be used weighing less than 100 pounds per cubic foot. The top 2 feet of backfill material shall be free from stones greater than 4 inches.

For all areas under a proposed roadway, the top 12 inches of sub base, and the entire base course shall be compacted to a density of 100% maximum Standard Proctor dry density as determined by AASHTO method T99. For that portion of fill under roadways and extending at a slope of 1 to 1 beyond the back of curb, compact to a density of NO LESS THAN 95% of the maximum Standard Proctor dry density as determined by AASHTO method T99. Fill material shall be placed in lifts of 8 inches or less of uncompacted soil.

Other fill material shall be compacted to a density of NO LESS THAN 90% of the maximum Standard Proctor dry density as determined by AASHTO method T99. Backfill material shall be placed in lifts of 12 inches or less of uncompacted soil.

In areas where landscaping and vegetation is proposed within the median or behind the back of curb, the top 12" of material shall be prepared to support installation and growth of landscaping and vegetation.

2.06 MAINTENANCE OF TRAFFIC

A. General

When construction occurs in a traffic zone, traffic control devices must be erected, maintained, relocated, and removed in accordance with the plans, specifications, NCDOT Supplement to the MUTCD, and the MUTCD. This requirement shall apply for all construction occurring on public streets, including construction or repairs by utility companies. The MUTCD referred to in this provision shall be the current edition of the Manual on Uniform Traffic Control Devices for Streets and Highways, as prepared by the National Advisory Committee on Uniform Traffic Control Devices, including all standard documents referred to in Section 1A.05 of the MUTCD.

Traffic control devices shall include but not be limited to signs, drums, barricades, cones, delineators, flashing arrow panels, temporary guardrail, temporary concrete median barrier, vehicle-mounted temporary impact attenuators, pavement marking, raised reflective pavement markers, flaggers, and pilot vehicles.

B. Materials

Unless otherwise required, materials used in the fabrication and installation of construction traffic control devices shall be in accordance with the applicable provisions of the MUTCD.

All enclosed lens (Engineers Grade) sheeting required for use on traffic control devices shall have an identification mark on the surface. This mark signifies that the sheeting meets the requirements of ASTM-D4956 for Retroreflective Sheeting for Traffic Control. The identification mark shall not interfere with the function of the device but shall be visible both day and under illumination at night without the use of special devices.

C. Installation and Maintenance

Existing public streets or highways shall be kept open to traffic at all times by the Contractor unless permission to close the street, or portions thereof, is granted by the Executive Director of Utilities and Infrastructure Services. The Town of Holly Springs Police Department must be contacted BY THE

CONTRACTOR A MINIMUM OF 24 HOURS before any streets are closed or partially closed.

Work on any project shall not start until all traffic control devices required for the particular work activity are properly installed.

Traffic control devices shall be properly maintained, relocated as necessary, cleaned and operated during the time they are in use. During periods when use of the devices is not warranted, they shall be removed from the work area, covered, or otherwise positioned so that they do not convey their message to the traveling public.

The location, legends, sheeting, dimension, number of supports, and horizontal and vertical placement of warning signs, barricades, and other traffic control devices shall be as required by the plans or the MUTCD.

Weeds, brush, trees, construction materials, equipment, etc., shall not be allowed to obscure any traffic control device in use.

Competent and properly trained, attired, and equipped flaggers, using “stop” and “slow” paddles shall be provided when two-way traffic cannot be maintained.

The Contractor shall assume full responsibility for the continuous and expeditious maintenance or replacement of all construction-warning signs, barricades, and other traffic control devices. The Contractor shall continuously review and maintain all traffic control measures to assure that adequate provisions have been made for the safety of the public and workers. Failure to maintain all traffic control devices in a satisfactory condition shall be cause for suspension of construction operations until proper traffic control is re-established.

2.07 CONCRETE

Concrete shall be only plant-mixed or transit-mixed concrete conforming to ASTM C33 for aggregates and to ASTM C94 for ready-mixed concrete. Any concrete poured that has a slump over 4 inches as per ASTM C143, or has a batched time of more than 90 minutes, will be considered unacceptable. Concrete shall not be deposited on frozen sub grade. Concrete shall not be poured when the air temperature is falling below 40°F and the predicted low temperature for the succeeding 24-hour period is less than 32°F. All concrete when placed in the forms shall have a temperature of between 50° and 90°F and shall be maintained at a temperature of not less than 50°F for at least 72 hours for normal concrete and 24 hours for high early strength concrete, or for as much time as is necessary to secure proper rate of curing and designed compressive strength.

Concrete shall be air entrained with 5-7% air. Retarders and accelerators shall be used only as directed by the Engineer.

2.08 PERMITS

Prior to construction of any project, it is the responsibility of the Owner/Developer to insure that any applicable permits from the Town, County, and State and Federal Governments are obtained. Following is a list of the most common permits and/or approvals required:

A. Town Permits

1. **Construction Drawing Approval:** Every construction site within the Town of Holly Springs shall require the approval of a construction drawing by the Engineering Department. A preconstruction conference shall also be required prior to the beginning of construction.
2. **Work Permit:** The creation of excessive noise associated with the construction that is regulated under this document, including but not limited to, erection, alteration, repair or demolition of any earthmoving activities, land clearing activities, street paving, or utility construction in a residential or business district, other than between the hours of 7:00 a.m. and 6:00 p.m. Monday through Friday, and between the hours of 8:00 a.m. and 6:00 p.m. on Saturdays shall require approval by the Utilities and Infrastructure Services. The applicant shall designate an individual person or persons in control of the construction who shall be responsible for seeing that the activity complies with the terms of the approval.
3. **Driveway Permit:** A Driveway Permit is required for all new residential and non-residential driveways on existing Town-maintained streets. The location of the driveway shall be shown on a plot plan. This permit may be obtained from the Executive Director of Utilities and Infrastructure Services.
4. **Burning Permit:** A Burning Permit shall be obtained a minimum of 24 hours prior to any burning. This permit may be obtained from the Town of Holly Springs Fire Department for a fee.
5. **Blasting Permit:** A Blasting Permit is required any time there is to be Transportation, use or storage of explosive materials. This permit is required a minimum of 24 hours in advance of any explosive materials or blasting agents being transported into the corporate limits of the Town. This permit may be obtained from the Town of Holly Springs Fire Department for a fee.

6. **Town of Holly Springs Encroachment Agreement:** An Encroachment Agreement shall be obtained from the Executive Director of Utilities and Infrastructure Services for any work within the right of way of Town maintained streets. This includes (but is not limited to) utility installations, cuts and bores, irrigation systems, driveway modifications (such as paving or constructing a new driveway), and sidewalk modification. All repairs proposed for construction shall be in conformance with the Town of Holly Springs Engineering Design and Construction Standards. A fee may be charged for this permit if the work requires an inspection. Any encroachment within the right-of-way without approval from the Executive Director of Utilities and Infrastructure Services will be considered a trespass and will be prosecuted criminally.
7. **Environmental Development Permit:** An Environmental Development Permit is required whenever a project requires the approval of the Chapter 8 Article II. Soil Erosion & Sedimentation Control, Stream & Wetland Protection, Land Disturbance, Article III. Flood Damage Prevention, and Article V. NPDES Phase II Post-Construction Stormwater of the Holly Springs, NC Code of Ordinances. Holly Springs after all applicable environmental approvals (Erosion Control Plan, Post-Construction Stormwater Management Plan or Floodplain Development/Flood Study) have been granted by the Town, prior to any grading or site work may issue the Environmental Development Permit. No building permits will be issued by the Town until a Certificate of Compliance (indicating that all erosion and sedimentation control measures are installed) is issued by the Town.
8. **Timbering Plan:** A separate timbering plan is required for timbering or forestry activities that meet the criteria outlined in: Chapter 8 Article IV. Timbering of the Holly Springs, NC Code of Ordinances and Section 7.11 Forestry Activity, Timbering Operations and Site Clearing of the Unified Development Ordinance. Encroachment into buffer or tree save areas must be permitted by the Utilities and Infrastructure Services or the Department of Planning & Zoning as specified in the ordinances, and be in compliance with Town of Holly Springs Unified Development Ordinance Section 7.06 (D)(4)(e) Environmental Buffer Areas; 2003 N.C. Sess. Law Ch. 73, § 5.1; and North Carolina Administrative Code 15A NCGS 02B.0233 Neuse River Basin: Nutrient Sensitive Waters Management Strategy: Protection and Maintenance of Existing Riparian Buffers.

Other departments of the Town of Holly Springs may require additional permits.

B. State and Federal Permits

Applications for State Permits are to be submitted for Town approval before submission to the applicable State agency, or as indicated below. **It is the responsibility of the Owner/Developer to ensure all permit applications, fees, and final plans are submitted and approvals obtained by the appropriate agency, after Town Board, Technical Review Committee and/or Town staff approval. All applicable permits MUST BE OBTAINED PRIOR TO ANY CONSTRUCTION.**

1. **Sanitary Sewer System Extension:** For any proposed extension of the public sanitary sewer system or for the construction of a privately maintained sanitary sewer collection system, a Sanitary Sewer Extension Permit from the North Carolina Department of Environmental Quality Division of Water Resources, must be obtained. The application for the permit should be submitted for Town approval sometime after Town approval of construction drawings for the project. Three copies of the application, a set of plans, and any pump station or gravity sanitary sewer calculations are required for approval by the Town. Fee schedules and application forms may be obtained from the Town of Holly Springs website. As-builts and a P.E. certification for the system must be provided to the Construction Inspector prior to the sanitary sewer system being placed in service. The Town for any project shall not provide sewer capacities until respective sewer permits for the project are issued from the state. Sewer extension permits shall expire within one year of issuance if construction has not begun. The Town may limit the number of units, which are permitted in any development, or development phase at any one time.
2. **Water System Extension:** For all public water line extensions, a Water Main Extension Permit from the North Carolina Department of Environmental Quality Division of Water Resources-must be obtained. The application for a permit should be submitted for Town approval sometime after approval of construction drawings for the project. Three copies of the application, a set of plans, and any flow calculations are required for approval by the Town. Application forms may be obtained from the Town website. The permit fee is based on linear footage. As-builts and a P.E. certification must be provided to the Construction Inspector prior to the water system being placed in service. Water capacities shall not be provided by the Town for any project until respective water permits for the project are issued from the state. Water extension permits shall expire within one year of issuance if construction has not begun. The Town may limit the number of units, which are permitted in any development, or development phase at any one time.
3. **North Carolina Department of Transportation Encroachment Forms and Driveway Permit:** When any part of the project will encroach on NCDOT right of way, an encroachment form must be submitted and approved by NCDOT prior to construction. All encroachment applications

and driveway permits require 5 sets of plans and 5 copies of the encroachment form. Fee schedules and encroachment forms are available from the NCDOT.

- a) For installation of utilities a 3-party agreement between the Developer, the Town of Holly Springs and the NCDOT is required. The fee is determined by NC DOT.
- b) For roadway widening, sidewalk installation, addition of curb and gutter, storm drainage, etc., a 2-party agreement between the Developer and the NCDOT is required. Before submitted to NC DOT, the Town must first approve proposed improvement plans. The fee is determined by the NCDOT.
- c) Driveway Permits must be obtained prior to the installation of any driveway cuts to be made on a State maintained road. These permits must be approved by the Town before submittal to NC DOT. The fee is determined by the NCDOT.

- 4. **North Carolina Division of Water Resources and United States Army Corps of Engineers Permits:** Appropriate permits for impacts to jurisdictional streams, wetlands and riparian buffers is required for all projects. Permits shall be for all impacts associated with the entire project as defined by a master type plan, unless approval by the Utilities and Infrastructure Services. Copies of approval letters and corresponding maps must be provided prior to construction drawing approval unless approved by the Executive Director of Utilities and Infrastructure Services. USGS stream information and Wake County Soil Survey information for all projects are required at initial construction drawing submittal. An Environmental Development Permit will not be issued for any plan that reflects a discrepancy in the location of the Neuse River Buffer unless the buffer shown on the plan is more conservative, or NCDEQ-DWR has approved the new location of the buffer.
- 5. **Federal Emergency Management Agency (FEMA) & NCDPS:** Encroachment into floodplains which appear on a Flood Insurance Rate Map (FIRM) and/or Flood Risk Information System (FRIS) by the FEMA and the NC Floodplain Mapping Program must comply with the Town of Holly Springs Flood Damage Prevention Ordinance, the NCDPS, Division of Emergency Management, Risk Management Section. Final versions of approved studies, map, digital files and as-built information shall be submitted to the Utilities and Infrastructure Services for historical reference.

2.09 ACCEPTANCE PROCEDURES

All improvements intended for public maintenance are eligible for acceptance by the Town of Holly Springs following the procedures outlined below:

1. After the installation of improvements in accordance with the Town Engineering Design and Construction Standards, and with plans approved by the Town Board and Executive Director of Utilities and Infrastructure Services, the Owner/Developer or designee shall contact the Construction Inspector to schedule a warranty inspection. Note that this inspection must be performed prior to recordation of a final plat for the project.
2. The Engineering Department will respond with a punch list within 10 working days from the punchlist inspection date.
3. The Owner/Developer or designee must complete all items indicated on the punch list, and any additional items noted, within 60 days of the date of the warranty inspection, for the Town to accept the infrastructure and begin one-year warranty. The Owner/Developer or designee must then request another warranty inspection if more than 60 days passes before the punchlist work is complete.
4. In accordance with UDO, plats will be withheld on any project that does not receive a Beginning of One Year Warranty Acceptance Letter.
5. Upon the acceptable completion of all punch list items and payment of any outstanding fees, the Owner/Developer or designee will receive a Beginning of One Year Warranty letter from the Town of Holly Springs. This acceptance begins a warranty for materials and workmanship of not less than 1 year in duration from the date of acceptance. The warranty will be to the Town from the Owner/Developer or designee. The Town will perform routine maintenance during the warranty period. In Triassic soil areas, an additional extended one-year warranty is required. Reference Section 3-J.
6. A warranty bond is required to guarantee the workmanship and materials during the warranty period. Refer to the Town UDO Section 9.05f for more information.
7. Sixty days before the end of the warranty period, the Owner/Developer or Designee shall request a final (end of one-year warranty) inspection from the Construction Inspector.
8. The Engineering Department will respond with a punch list on workmanship or materials within 30 days of the request.
9. The Owner/Developer or designee must complete all items indicated on the punch list, and any additional items noted, within 60 days of the final inspection. The Owner/Developer or designee must request another final

inspection if more than 60 days passes before the punchlist work is complete.

10. Upon the acceptable completion of all final punchlist items, the Owner/Developer or designee will receive a final evaluation of One Year Warranty Acceptance Letter from the Engineering Department. The Town will begin total maintenance of the project as of the date of the letter.
11. In accordance with UDO, building permits may be withheld on any project that does not have an End of One Year Warranty Acceptance Letter by the time 90% of the building permits are issued for the project.

Until an End of One Year Warranty Acceptance Letter has been issued, all materials and workmanship are the responsibility of the Owner/Developer. The Town does not accept post-construction stormwater management devices for maintenance. The surety and operation & maintenance process are outlined in Section 8 of this document and in accordance with Chapter 8, Article VI. NPDES Phase II Post-Construction Stormwater Ordinance of the Holly Springs, NC, Town Code of Ordinances.

2.10 PLANTINGS, FENCES, OR STRUCTURES WITHIN TOWN UTILITY EASEMENTS

An “easement” shall mean any area to which the Town has unlimited access for servicing utility lines. Any plantings installed within an easement may be damaged or destroyed during the course of servicing. The Town will not be liable for any damage to plantings, fences, accessory structures located either within an easement or in any manner restricting access to the easement. Further, the Town shall not be liable for any incidental or consequential damage caused by the Town’s removal of any structure impairing the easement. Any contractor or landowner who has impaired the easement by allowing an obstruction to be placed on the easement shall indemnify and hold harmless the Town for any resulting incidental or consequential damages. The Town will reseed as necessary any bare or disturbed soil for erosion control purposes.

Small and medium shrubs, groundcovers, or grasses may be planted by the property owner within an easement (subject to the preceding paragraph) and as long as those planting do not inhibit access of the easement with required equipment by the Town and/or its agents.

Small trees (under 30 feet in height at maturity) may be planted a minimum of 10 feet from the centerline of the closest utility pipeline within the easement or 10 feet from the center of the easement, whichever is greater, and subject to the preceding paragraphs. Small trees as defined above shall include redbuds, fringe tree, serviceberry, crape myrtle, golden raintree, hawthorn, hornbeam, saucer or star magnolia, sassafras, smoke tree, sourwood, and sumac.

Large trees, fences, gates, or any type of structures (e.g. retaining walls or utility sheds) shall not be placed within any Town utility easement. Drainage Easements are private easements maintained by the property owner, requirements for private drainage easements is outlined in Section 8 of this document.

2.11 LICENSE REQUIREMENTS

All Contractors performing any construction activity involving the Town of Holly Springs utility system or street system shall be licensed to practice general contracting in the State of North Carolina. The Contractor shall be classified in the appropriate area of license for the type of construction to be performed and shall not perform construction activity which exceeds the limitations of the designated Contractor's license.

2.12 RETAINING WALLS

All retaining walls with a height of 4 feet or greater must be designed by either an Architect or Professional Engineer and shall be signed and sealed. The location of all retaining walls shall be shown on the construction drawings. Retaining walls including supports, foundations, reinforcement and any other wall appurtenances are not allowed within Town of Holly Springs right-of-way or easements. All necessary permits (e.g., building permit) must be obtained prior to any construction associated with retaining walls. Safety rails or fencing may also be required. Any public utility extend through retaining walls must be located inside steel encasement. Encasements shall extend 10' beyond retaining wall, foundation/footings and/or reinforcements or other appurtenances. All retaining walls that serve commonly owned property, cross multiple property lines or are otherwise necessary to ensure the proper installation of utilities, streets or stormwater control measures must be installed and certified prior to the beginning of the warranty punchlist.

2.13 OSHA STANDARDS

All Contractors and their employees must comply with all OSHA standards while working on Town projects, while on Town of Holly Springs property or rights of way, and for all development projects within the Town of Holly Springs.

2.14 SAFETY AND HEALTH HAZARDS

The operations of any Contractor shall not expose Town of Holly Springs employees or residents to any hazardous chemicals or other occupational safety and health hazards. All Contractors working on Town projects or on Town of Holly

Springs property or rights of way shall inform every individual who enters the project concerning hazardous chemicals which the Contractor might be using and to which the individual might become exposed by working in that area.

2.15 GEODETIC MONUMENTS

The Town of Holly Springs has installed a local geodetic monumentation grid, tied to NAD83, within and surrounding the Town limits. All surveyed information (when any portion of the project in design is within 2000 feet of the Town's geodetic monument) shall reference the nearest monument and shall be clearly noted on the first sheet of both construction plans and As-Builts submitted to the Town.

2.16 FAILURE TO RESPOND

Where the Project Owner does not respond to directives by the Town to complete certain repairs and/or work that, in the Town's opinion, causes a safety hazard or the potential for damages, the Town may have such work performed and charge the project owner all associated expenses plus a 25% mobilization fee (examples: trench repairs, street washing, etc.). This section shall not create an obligation of the Town to undertake such work or to be liable in any way for failure to undertake such work.

2.17 DUMPSTER PADS

The dumpster pad shall be designed and graded to minimize the amount of rainwater entering the dumpster pad area. Dumpster pads must be a minimum 20 feet from any curb inlet or yard inlet for stormwater collection. The outfall of any stormwater pipe that drains the area where a dumpster pad is located should traverse a minimum of 50 feet of vegetated area before reaching the bank of the watercourse. Where dumpster pads are adjacent to a watercourse and where stormwater drains in sheet flow directly into the watercourse, a minimum landscape area of 50 feet should be maintained between the pad and the bank of the watercourse. Dumpster pads cannot include area drains that connect to the sanitary sewer system.

2.18 CAR WASH STATIONS

Car wash stations for residential use, including single and multifamily developments, shall not be permitted.

2.19 UNDERGROUND POWER

All power shall be underground in residential subdivisions. All commercial power shall be underground.

END OF SECTION 2.00

SECTION 3.00
STREETS, DRIVEWAYS, AND PARKING LOTS

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3.14 BUS STOP AND BUS SHELTER

‘

3.01 GENERAL

The latest revision of the *Standard Specifications for Roads and Structures* of the North Carolina Department of Transportation shall apply unless otherwise specified herein.

Whenever the following terms are used in above said specifications the intended meaning of such terms shall be as follows:

“State” or “Commission” shall be replaced by “Town of Holly Springs.”

“Resident Engineer” shall be replaced by the words “Executive Director of Utilities and Infrastructure Services.”

“Sampling and testing by Commission” shall be replaced by the words “sampling and testing by the Town or its authorized testing agent.”

“Inspection by Commission” shall be replaced by “Inspection by Town or its duly authorized representative.”

All utility and roadwork that will affect the traveling public must follow the Town of Holly Springs Public Communication Guidelines so that proper notifications are given prior to work commencing and all safety measure in place. A notification must be conveyed to the Town of Holly Springs Development Inspector three (3) weeks prior to the start of road or utility work in the roadway or work will be shut down until proper notification is complete.

3.02 DESIGN

All streets (private and public) shall be designed and fully constructed to the Town of Holly Springs Engineering Design and Construction Standards in accordance with all ordinances and policies of the Town. Refer to the Town of Holly Springs UDO and Comprehensive Transportation Plan for requirements for improving existing thoroughfares and streets. NCDOT standards shall be used on all existing State roads, extensions of existing State roads, or roads to be maintained by NCDOT.

Street design is based primarily on criteria dictated by the street classification, design speed, surrounding terrain, and traffic volumes. The following factors shall also be considered in determining street and right of way widths: urban-type development, on-street parking, alley-loaded units, zoning, depth of lots (length of driveways), garages, street trees, street network, setbacks, street classification, speed limit, and sidewalks. The Executive Director of Utilities and Infrastructure Services shall make the final approval for necessary street and right of way widths. The following are intended to be recommended street and right of way widths for suburban-type developments. Specific information and documentation on development and/or product types to be serviced by roadways should be provided for consideration of street widths, and such information may be incorporated into development and/or plan approval conditions. Streets shall be designed to accommodate all movements necessary for WB-50 designed vehicle. Turning templates may be required to verify WB-50 movements.

Note that a Transportation Impact Analysis (TIA), or trip generation memorandum may be required to accompany plans submitted to the Town, or required as early as rezoning petition submittal, for consideration of traffic impacts due to development. The Executive Director of Utilities and Infrastructure Services will determine what level of analysis is required based on preliminary trip generation information provided to Staff by the Applicant. Impacts identified as part of a plan submittal or rezoning petition shall be the responsibility of the development.

For any development project submitted into the review process in a location where a Town road widening project has been identified in the Community Investment Plan Project List, the developer shall be responsible for the full cost of construction across the project's property frontage, until such time that the Town's road widening project is completed.

In special circumstances, the Town may elect to require payment of a fee-in-lieu of installation of roadway improvements.

A. Street Classifications for Town Specifications

*See above paragraph regarding factors that determine street cross-section and right of way section. Early communication (in preliminary design) with the Executive Director of Utilities and Infrastructure Services to determine the appropriate street and right-of-way width for the particular development is encouraged. The following street cross sections comprise the most typically utilized sections for the Town. The details at the end of these design and construction standards include additional cross sections that are utilized when other factors are considered. Note that reduced roadway cross sections may be permitted for streets serving areas for which a master land use plan is approved, with approval of the Executive Director of Utilities and Infrastructure Services.

In areas where an entrance median is desired, the width of the median shall be in addition to required cross sections as specified.

Alleys

Typical width: 20 feet on 25-foot private easement

All alleys are private. They are encouraged in the Downtown Village District and also in areas which feature neotraditional and mixed-use developments, and adjacent to limited-access facilities. The purpose of an alley is to provide utility and vehicular access along the rear or side of new residential and non-residential structures. All alleys are to be privately maintained with measures to ensure the travel way is not obstructed in any manner, including by parking or loading. Alleys that will be used for public services (e.g., sanitation) pavement design shall be designed and fully constructed to the Town of Holly Springs Engineering Design and Construction Standards in accordance with all ordinances and policies of the Town. A drainage system shall be provided and shall conform with all public street design drainage standards as outlined in this Manual.

The Town shall not be responsible for damage occurring to the pavement structure due to use of the private alley for access in providing public services. When alleys are used for the provision of these services, the Homeowner Association covenants for the development shall clearly state this. Alleys shall be constructed on a 25-foot private easement with a paved travel lane of 16 feet, and clear shoulders of a minimum width 4.5 feet along each side. Alley driveway entrance shall be as per TOHS Detail HS311.

Under unique, site-specific circumstances, including such factors as the absence of utility lines in the alley and/or lack of real property, consideration of a reduction of rights of way and travel lane widths may be made.

Residential Cul-de-sac (1000 feet or less)

A street which serves abutting residential land use and which terminates in a turnaround and originates at the intersection with another street. With the exception of cul-de-sacs, other street types shall not intersect onto this street classification segment. Cul-de-sacs shall only be permitted on a case-by-case basis where extreme topographical or environmental concerns exist, or where future connection to other streets is impossible due to pre-existing development. Where the design will accommodate double sided on-street parking the Executive Director of Utilities and Infrastructure Services shall determine the minimum width. Additional pavement marking and signage may be required where on-street parking is to be prohibited.

Residential Street

A street where the primary function is to serve the immediately abutting residential land use (i.e. only local traffic generated by the residents in proximity of the street). If traffic volumes flowing from other intersecting residential streets exceeds the traffic volumes generated by the land use abutting the street or this street classification serves more than 150 dwelling units, a different street classification shall be used. Where the design will accommodate double sided on-street parking the Executive Director of Utilities and Infrastructure Services shall determine the minimum width. Additional pavement marking and signage may be required where on-street parking is to be prohibited .

Non-Residential 2-Lane Collector Street or Cul-de-sac (1000 feet or less)

A street which serves various land use classifications, and whose primary function is traffic service, collecting traffic from streets intersecting it and funneling it to major thoroughfares. Design shall accommodate the vehicle type generally expected to use the roadway facility which is typically larger than a passenger car, for example WB-50 and SU type vehicles. Where the design will accommodate

double sided on-street parking the Executive Director of Utilities and Infrastructure Services shall determine the minimum width. Additional pavement marking and signage may be required where on-street parking is to be prohibited.

Residential 2-Lane Collector Street – No Load

A street which serves various land use classifications, and whose primary function is traffic service, collecting traffic from streets intersecting it and funneling it to major thoroughfares. A residential collector street shall be provided when the roadway is the sole traffic route for more than 150 dwelling units, collects traffic from a commercial area of 20 acres or more, or contains other land uses which would account for similar traffic volumes. Where the design will accommodate double sided on-street parking the Executive Director of Utilities and Infrastructure Services shall determine the minimum width. Additional pavement marking and signage may be required where on-street parking is to be prohibited. This type of roadway shall have no individual driveway accesses .

If project frontage is within 500 feet of a major intersection, additional turn lanes and right of way widths may be required as determined by the Executive Director of Utilities and Infrastructure Services.

Non-Residential 3-Lane Collector Street

A street which serves various land use classifications, and whose primary function is traffic service, collecting traffic from streets intersecting it and funneling it to major thoroughfares. Design shall accommodate the vehicle type generally expected to use the roadway facility which is typically larger than a passenger car, for example WB-50 and SU type vehicles. Where the design will accommodate double sided on-street parking the Executive Director of Utilities and Infrastructure Services shall determine the minimum width. Additional pavement marking and signage may be required where on-street parking is to be prohibited.

Thoroughfare

Typical width: as required on Town Comprehensive Transportation Plan

A street which serves as a primary traffic artery of the urban area, serving the major centers of activity and carrying traffic between such centers at moderate speeds. Access to abutting property may be permitted by the Executive Director of Utilities and Infrastructure Services only on a very limited, controlled basis and in cases of a divided roadway will be limited to right in/right out unless a median and turn lanes are approved. However, the primary function of this street is to carry traffic having origin and destination removed from the street proper. The thoroughfare classifications carry the majority of trips entering and leaving the urban area as well as the through trips. Access is primarily provided by at-grade intersections which may be signal controlled. Where the design will accommodate double sided on-

street parking the Executive Director of Utilities and Infrastructure Services shall determine the minimum width. Additional pavement marking and signage may be required where on-street parking is to be prohibited.

A slope easement of 20 feet in width shall be required adjoining each side of the right of way for this type of facility unless the complete facility is being constructed as part of the adjoining property development. The Executive Director of Utilities and Infrastructure Services may reduce or increase the slope easement width if necessary due to terrain.

If property owner submits to the Executive Director of Utilities and Infrastructure Services (prior to construction drawing or preliminary plan approval) sufficient information to show that improvements to be located in the slope easement do not interfere with the right of the public to construct within adjoining right of way, then the Executive Director of Utilities and Infrastructure Services may permit the proposed improvement to occur.

If project frontage is within 1000 feet of a major intersection, additional turn lanes and right of way widths may be required as determined by the Executive Director of Utilities and Infrastructure Services .

Limited Access Thoroughfare

Typical width: as required on Comprehensive Transportation Plan no on-street parking permitted

An urban major roadway where sole function is to carry large volumes of traffic safely and expediently through the urban area. Access onto the facility is controlled to occur only at intersections with major streets or in some cases limited to right-in/right-out access subject to approval by the Executive Director of Utilities and Infrastructure Services. Such intersections are spaced at intervals which promote traffic progression with the absolute minimal delays incurred. The highest practical level of design shall be incorporated into facilities of this classification.

A slope easement of 20 feet in width shall be required adjoining each side of a street right of way unless the complete facility is being constructed as part of the adjoining property development. The Executive Director of Utilities and Infrastructure Services may reduce or increase the slope easement width if necessary due to terrain.

If property owner submits to the Executive Director of Utilities and Infrastructure Services (prior to construction drawing or preliminary plan approval) sufficient information to show that improvements to be located in the slope easement do not interfere with the right of the public to construct within adjoining right of way then the Executive Director of Utilities and Infrastructure Services may permit the proposed improvement to occur.

If project frontage is within 1000 feet of a major intersection, as determined by the Executive Director of Utilities and Infrastructure Services, then additional turn lanes and right of way widths may be required.

Controlled Access Highway

*Typical width: as required by Federal Highway Administration and AASHTO
no on-street parking permitted*

A State highway, or section of State highway, especially designed for through traffic, from or to which highway owners or occupants of abutting property, or others, shall have only a controlled right or easement of access.

A slope easement of 20 feet in width shall be required adjoining each side of a street right of way unless the complete facility is being constructed as part of the adjoining property development. The Executive Director of Utilities and Infrastructure Services may reduce or increase the slope easement width if necessary due to terrain.

If property owner submits to the Executive Director of Utilities and Infrastructure Services (prior to construction drawing or preliminary plan approval) sufficient information to show that improvements to be located in the slope easement do not interfere with the right of the public to construct within adjoining right of way then the Executive Director of Utilities and Infrastructure Services may permit the proposed improvement to occur.

If project frontage is within 1000 feet of a major intersection as determined by the Executive Director of Utilities and Infrastructure Services, then additional turn lanes and right of way widths may be required.

B. Horizontal Street Design

All streets shall conform to the Town of Holly Springs Comprehensive Transportation Plan and shall be designed and located in proper relation to existing streets and environment. Collector streets and thoroughfares shall be as directional as possible but consistent with topography and preserving developed properties and community values. Residential streets shall be designed to minimize cuts and fills, and emphasis shall be placed on encouraging slower speeds in order to protect pedestrians using the facility and minimize persistent cut through traffic.

In addition to the Town of Holly Springs Comprehensive Transportation Plan, the Town maintains “Small Area Plans” to guide the development of various areas in Town. These Plans are for the purpose of master-planning various critical areas. Schematics include general roadway configurations and/or connections that are desirable and shall be used as a guideline for development of the areas and are approved in a Town Policy Statement. For development planned in those areas, the developer is encouraged to meet with Town Staff to review the “Small Area Plans”

approved by the Town for that area, and to develop plans consistent with that information.

The design of streets shall conform to the horizontal curve controls in Figure 1 at the end of this chapter.

A minimum tangent of 150 feet is required between reverse curves for major streets, highways, and collector and other non-residential streets. The tangent shall be extended as necessary to provide the minimum runoff lengths for the superelevated curves per AASHTO guidelines. The minimum tangent length approaching an intersection is 30 feet for residential streets. All intersections of streets classified as collector or greater shall have a tangent section not less than 100 feet approaching the intersection.

Compound horizontal curves with the same direction of curvature shall have the radius of the flatter circular arc no more than $1\frac{1}{2}$ times the radius of the sharper circular arc. Streets shall intersect each other at right angles whenever possible. The minimum desirable intersection angle is 80° . At no time shall a street intersect any other street at less than 75° .

Intersections with thoroughfares, or highways shall be at least 800 feet apart. Note that median spacing will require NCDOT and Town approval and shall require greater spacing. There shall be a minimum of 200 feet between centerlines of street jogs on collectors, and major streets. Residential and marginal access streets shall not be offset less than 125 from their centerlines.

Thoroughfares, and collectors shall be superelevated. Superelevation shall conform to Figure 1 at the end of this chapter and shall conform to NCDOT and AASHTO standards.

Tapers shall be used as necessary in street design. Approach tapers shall be used to shift lanes laterally. The following equations shall be used as applicable:

$$\begin{aligned} L &= WS \text{ for posted speeds of 45 mph and greater} \\ L &= WS^2 \text{ for posted speeds of 40 mph or less} \\ L &= \text{Length in feet} \\ S &= \text{Speed in miles per hour} \\ W &= \text{Lateral offsets in feet} \end{aligned}$$

Turn bay tapers shall be at least 15:1 for posted speeds of 45 miles per hour and more. The minimum turn bay taper allowed is 8:1. Symmetrical reverse curve tapers are recommended for streets classified as collector or less. Storage lengths for the turn bays shall be calculated using an acceptable method.

Streets with medians shall be designated to allow for proper turning movements for a SU (single unit truck) design vehicle. AASHTO guidelines shall be utilized for the actual median design and median opening dimension.

C. Vertical Design

Street grades shall be established with respect to existing topography to avoid excessive grading and the removal of existing trees and vegetation whenever practical.

The minimum grade allowed on any street shall be ½%.

The maximum grade allowed when approaching an intersection is 5% for the last 100 feet of pavement before the intersection unless otherwise approved by the Executive Director of Utilities and Infrastructure Services.

The vertical curve controls found in Figure 1 at the end of this chapter shall also be utilized in street design.

D. Geometrics-Radii

A minimum radius of 25 feet to the back of curb shall be required where residential streets intersect.

A minimum radius of 30 feet measured to the back of curb shall be required where a residential street intersects with a non-residential street. It is recommended that the designer consider larger radii or 3-centered compound curves where needed to provide for turning movements of larger vehicles.

A minimum radius of 40 feet shall be required where collectors intersect thoroughfare or boulevard streets.

E. Cul-de-sacs

The minimum allowable cul-de-sac radius is 37.5 feet. The maximum allowable length of a cul-de-sac is 1000 feet, measured from the last point of alternate access within the subdivision.

No median shall be allowed in a 37.5-foot radius cul-de-sac. A median may be permitted where the cul-de-sac radius is increased and it can be demonstrated that all emergency and service vehicles can be readily accommodated.

F. Driveways/Access

General

In the interest of public safety and convenience, the Town of Holly Springs may restrict the placement of a driveway to a particular location along the property owner's frontage. Driveways will not generally be allowed along acceleration or deceleration lanes and associated tapers. No driveway will be allowed within the intersection of radii of intersecting roadways.

Non-residential

Standard concrete driveway aprons as shown in the Standard Detail Section of these Standards shall be used when the ADT for the driveway is less than 500 vehicles.

Street type turnouts shall be used when the driveway ADT is greater than 500 vehicles or when access by larger trucks must be accommodated. The minimum radius for street type turnouts shall be designed to accommodate a WB-50 design vehicle and meet a minimum of 25' radius. Documentation using WB-50 templates will be required. The maximum vertical grade allowable for a distance of 25 feet into the site from the right of way line shall be 8%. In addition, the designer shall insure that adequate sight distance for all driveways are provided in accordance with AASHTO Standards.

Non-residential driveways that are unpaved shall have a minimum 30-foot paved surface strip measured from the back of the driveway apron.

Driveways without islands shall be a minimum of 22 feet wide, excluding curb and gutter or 27' back-to-back with standards curb and gutter. Driveways with islands shall have a 21-foot back to back of curb entrance lane. A 21-foot wide back to back curb exit lane shall be required when only one lane is specified, and a 22-foot wide exit lane shall be used when two exit lanes are specified (all minimum measurements stated exclude curb and gutter). A minimum throat distance of 80 feet shall be required at all egress and ingress points from thoroughfares.

The number of street and driveway connections permitted serving a single property frontage or commercial development shall be the minimum deemed necessary by the Executive Director of Utilities and Infrastructure Services for reasonable service to the property without undue impairment of safety, convenience, and utility of the roadway. Normally, one driveway shall be permitted for any single property frontage. The use of shared driveways and joint access easements may be required for new accesses to "managed access" roadways.

The arrangement of driveways should be related to adjacent driveways and nearby street intersections. Driveways close to street intersections shall be at least 25 feet from the point of tangency of the radius of curvature of the intersecting street. All driveways serving shopping center and other high volume generators shall be located a minimum of 200 feet from the intersection of public roads unless otherwise approved by the Executive Director of Utilities and Infrastructure Services.

Where two driveways are proposed and approved along a single property frontage to facilitate operations, the minimum distance between the centerlines of the drives shall be 100 feet. The minimum distance between the centerlines of driveways into shopping centers and other high volume generators shall be 400 feet.

For all median divided roadways, all driveways shall be limited to right in/right out unless located at approved planned median breaks.

Residential

Residential driveways shall measure 12 feet wide from the curb cut to the right of way for a single car garage/driveway, shall measure 16 feet wide from the curb cut to the right of way for a double or greater car garage/driveway, and shall conform to the applicable TOHS Detail HS320 for concrete driveway aprons. A minimum driveway length of 25 feet shall be provided between any building and the right of way line. Triple-width parking areas or any request to widen a driveway shall require a UDO Permit approval and may require additional length.

All lots shall be served off the more minor classification of roadway, and there shall be only one driveway per residential lot.

Residential driveways shall be located a minimum of 10 feet from the point of tangency of curb radii at street intersections. Additional distance will be required for roadways classified as collectors and higher.

For guidance needed regarding Fire Dept Access/turn around requirements, please reference Section 6.08 Fire Dept Access in these standards.

G. Curb and Gutter

Curb and gutter shall be required on all streets and parking lots (including loading areas), unless otherwise approved by the Executive Director of Utilities and Infrastructure Services. Exceptions may be granted by the Executive Director of Utilities and Infrastructure Services in instances where:

1. The curb and gutter will only be temporary in nature;
2. There are environmental restrictions;
3. Drainage problems will be created;
4. In non-gateway Industrial areas per the UDO.

Streets without curb and gutter may also be approved in very low density, wide-frontage lots. They must meet all of the following requirements and be approved by the Executive Director of Utilities and Infrastructure Services:

1. Minimum 50-foot right of way;
2. 5% maximum vertical grade and 0.5% minimum grade;
3. Adequate swale system to carry the 10-year storm in a non-erosive manner – this must be demonstrated by performance during the one-year warranty period or a change in the material of swales will be required;
4. Driveways across swales shall be constructed to provide for the passage of the 10-year storm;
5. All driveway pipes shall have flared end sections or headwalls on inlet and outlet ends of the pipe.

Exceptions for curb and gutter may not be issued for streets classified as collector or greater, all streets located in multi-family developments, and the Downtown Village District. In these areas, standard 2'6" curb and gutter shall be used. For other streets, 2'6" standard or 2'6" valley curb and gutter may be used. Median curb shall be a minimum width of 1'6" standard mountable curb or 1'6", 2'0" of 2'6" standard curb and gutter. In parking lots, curb and gutter may be 1'6", 2'0", or 2'6" standard curb and gutter. When flat curb is permitted, refer to Holly Spring Detail HS364.

Where 2'6" standard curb and gutter is used, driveway and utility service locations shall be shown in detail on construction drawings.

A minimum 5-foot section of curb and gutter shall remain when removing any section of curb for the installation of a driveway, street turnout or repair of curb and gutter. When less than 5 feet of the curb remains, the full section of curb shall be removed to the next joint. Full removal of both the curb and gutter is required when installing a driveway.

For parking lots, cut and fill slopes shall not begin immediately at the back of curb, instead a minimum 4 foot shoulder for fill slopes or 2 foot shoulder for cut slopes is required behind the back of curb. For roadways, cut and fill slopes shall begin outside a minimum 10' or 12' shoulder as shown on the details.

On streets a minimum depth of 3.5 inches of ABC shall be placed under the curb and gutter.

H. Parking Lots/Off Street Parking

Parking lots shall be designed to provide safe maneuverability of vehicles. A minimum parking stall dimension of 9' x 18' shall be provided. Refer to TOHS Detail HS350 for more information on parking dimensions. An aisle width of 24 feet is required for two-way traffic aisles. Handicap parking spaces shall reserve a minimum dimension of 8' wide with a 5' wide lane adjacent to the space, properly marked with signage in accordance with the N.C. Building Code. All parking facilities shall have dimensions per TOHS Detail HS350. All minimum stall depths and module widths shall be measured to the face of curb when curb and gutter is used. Parking bumpers, when used, shall be placed 2 feet from the face of the curb.

At locations where sidewalk and/or walkway abuts an 18-foot deep parking bay, the sidewalk shall be a minimum of 6 feet wide.

A minimum pavement structure consisting of 8 inches of ABC and 3 inches of S9.5C asphalt shall be used along the travel aisle on parking facilities for multi-family (excluding duplex and triplex development) and non-residential developments. Access drives for these facilities shall also meet this minimum pavement standard.

All paved parking facilities shall be striped in accordance with the MUTCD with 4-inch white lines, other than fire lanes which shall be yellow.

On all parking facilities, cut and fill slopes shall not begin immediately at the back of curb, instead a minimum 4 foot shoulder for fill slopes and 2 foot shoulder for cut slopes is required behind the back of curb.

Minimum throat distance of 80 feet shall be required for parking lot entrances off thoroughfares. Parking lots that exceed 1500 spaces will require a permit from NCDEQ.

Refer to Section G for additional parking lot requirements.

I. Sidewalks and Sidepaths

Sidewalks and sidepaths shall be constructed within the street right of way in accordance with these standards at locations as specified in the Town ordinances or within an approved Public Sidepath Easement. Sidewalks and sidepaths shall be installed at the time of roadway construction or widening unless otherwise approved by the Executive Director of Utilities and Infrastructure Services. The minimum thickness of a sidewalk or sidepath shall be 4 inches. At locations where a driveway crosses a sidewalk or sidepath, a 6-inch depth is required. (Sidewalks shall have a uniform slope toward the roadway of $\frac{1}{4}$ inch per foot.) The utility strip between the sidewalk or sidepath and the back of curb shall have a uniform slope of $\frac{1}{2}$ " per foot toward the roadway.

Sidewalks and sidepaths shall be located a minimum distance of 5 feet off the back of curb. This minimum requirement may not be varied without the approval of the Executive Director of Utilities and Infrastructure Services.

Where sidewalks, sidepaths and/or greenways intersect any section of curb and gutter, a wheelchair ramp shall be installed.

J. Pavement Design

A pavement design shall be required for all thoroughfares, and collector streets. The pavement design and traffic analysis shall be signed and sealed by a North Carolina Professional Engineer. Pavement design shall be based on subgrade conditions, a 20-year design life and projected traffic loading. Subgrade conditions shall be based upon corrected soaked CBR values at 0.1 inch penetration as per ASTM D1883. Soil samples used for these CBR tests shall be obtained at intervals not greater than 500 feet. Should a Professional Engineer with expertise in geotechnical engineering certify that the soil in question is of the same type with similar engineering properties this spacing may be increased to a 700-foot maximum spacing. Boring logs and scaled drawings designating boring locations with CBR tests and other pertinent data shall accompany the pavement design.

In streets and utilities located in the Triassic Basin as shown in TOHS Detail HS356 (where Triassic soils on compressible miniature Triassic sedimentary rock-like material exists) there will be certain special criteria required for roadway construction.

The following minimums will be required of developers:

1. Pre-qualified geo-technical firm approved by the town must be on site full time while the utilities and roadways are being constructed.
2. Documentation of moisture content, compaction, density, geogrid design criteria, etc. must be provided to town inspector.
3. All Roadways will have to be proof-rolled at both sub grade and stone grade by town inspector as well.
4. The standard roadway cross-section will be woven geo-fabric design criteria HP 270 or equal on entire road (and must be approved by the Town of Holly Springs), 7" ABC stone, with asphalt completed in staged construction of 2.5" I-19 asphalt and 1.5" S9.5C in stage one and 1.5" S9.5C final overlay Initial one-year warranty with an additional year extension starting after final overlay-shall be required for roadways. For the extended warranty period, it will be required to post a bond, LOC, or cash for 50% of actual cost of roadway (storm drainage, curb & gutter, sidewalk and pavement).
5. Where manholes are located in streets it will be required to have suitable off-site structural material or ABC stone to backfill around excavation of manholes up to subgrade.
6. An additional foot of stone will be required 10' either side of manhole for entire width of roadway.

Additional measures may be deemed necessary by the Town pending severity of the soils.

The pavement thickness of any street shall, at a minimum, equal the design shown in the Standard Details section of these standards for the various street widths.

Approved pavement design methods include those as proposed by NCDOT, the 1986 AASHTO Guidelines and the 1981 Asphalt Institute MS 1 document.

The AASHTO method will require use of a terminal serviceability index of 2.0 for collectors and 2.5 for thoroughfares, $S_o = 0.49$ for flexible pavement and $S_o = 0.39$ for rigid pavements, and a reliability of 98% for thoroughfares and a reliability of 95% for collectors.

All streets maintained by the NCDOT must receive approval of the pavement design from NCDOT prior to the beginning of construction. Normal crown for the pavement section shall be $\frac{1}{4}$ "/foot, except as approved for superelevated cross-sections.

K. Pavement Markings and Signage

All roadways shall be marked and signed in accordance with the latest revisions of the MUTCD unless otherwise approved by the Executive Director of Utilities and Infrastructure Services. Pavement markings and signage shall be shown on roadway and subdivision plans and shall be installed prior to the issuance of Certificates of Occupancy for the development or final acceptance of the roadway. The pavement markings for all collector streets, thoroughfares, and shall be thermoplastic.

The pavement markings along thoroughfares shall be installed such that the outside lanes are 14 feet in width to accommodate bicycle traffic unless otherwise approved by the Executive Director of Utilities and Infrastructure Services.

At any time prior to 1-year warranty additional pavement markings and/or signage may be required by the Executive Director of Utilities and Infrastructure Services, at the developer's expense.

L. Bridge Design

All public or private bridges shall be designed to withstand HS-20 highway loading unless otherwise approved by the Executive Director of Utilities and Infrastructure Services and shall be properly signed and sealed by a North Carolina Professional Engineer.

M. Shoulder Sections

Shoulders shall be sufficient to permit the adequate installation and maintenance of sidewalks and utilities, as well as provide sufficient clear zone distance as defined by NCDOT.

Shoulder sections without sidewalk shall be 12 feet wide on all streets with a cross section of 35 feet and greater.

Shoulder sections without curb and gutter must be a minimum of 6 feet wide.

N. Roadway Network

Developments shall provide at least one public vehicular access to each abutting property. This shall be accomplished via a public street and/or by joining adjacent parking lots and sharing driveways, at the discretion of the Executive Director of Utilities and Infrastructure Services. Development plans accomplishing this with parking lots and/or sharing driveways should provide a written, executed, and recorded cross-access easement and physically complete the connection if an immediate benefit can be derived by completing the link. If no immediate benefit can be derived, development plans should provide cross access and construction easements and arrange the site design so when the adjoining property owner extends the connection to the property line, the link will be completed. If the link is to be completed in the future, the grade of the connection, parking, landscaping

and/or other improvements must be designed and installed to allow for extension onto or into the adjacent properties in the supporting engineering design and calculations being provided.

For roadways that stub-out to adjacent properties, sufficient information shall be provided to demonstrate the feasibility of extending the roadway to the adjacent properties. This shall include both plan and profile information for the extensions. In the event that the roadway, when extended, will cross a stream or creek, the vertical and horizontal alignment design for a minimum distance of 200 feet, plus Town culvert report shall be completed. Design shall be per Town geometric standards. Information on State and Federal regulatory permit ability shall also be provided to further demonstrate feasibility of the extension. In some instances, these permits may be required.

All street stubs to adjacent properties or stubs to future phases that exceed 150' shall provide an all-weather turn around suitable for fire and rescue equipment as required in Fire Code Appendix D.

Whenever possible, internal access drives should be located to join together at existing public streets and/or connect to adjacent private drives so that the internal circulation functions as an integral part of the surrounding transportation network.

Where street networks have been approved with master plans of nearby developments, streets shall be designed for interconnection with those plans.

Any development with more than 150 dwelling units must have a secondary means of public access and with each additional 300 units, another public access must be added.

During all phases of construction roadway network construction may not be phased in such a manner to create a dead-end roadway or roadway network exceeding 2000 feet in length, or serving more than 150 dwelling units. Where a development plan or master plan has been approved and a development schedule can be provided that documents completion of future phases to eliminate the dead-end exceeding 2000 feet within a reasonable time frame, the Executive Director of Utilities and Infrastructure Services may approve an exception to this requirement if an alternate emergency access is approved and provided in the interim period. The Executive Director of Utilities and Infrastructure Services reserves the right to mandate more restrictive requirements after consultation with the other Department Directors or for other extenuating circumstances.

No subdivision sub-phase shall consist of less than 25 contiguous lots. All phasing will require that utility and roadway network will meet necessary standards.

Intersections shall be spaced no more than 1200 feet to 1500 feet in each direction.

O. Signal Poles

Metal poles with mast arms shall be employed at all intersections where utilities are underground. All other locations will be decided on a case by case basis. Where applicable, consideration should be given to standard designs of metal poles and mast arms and footings as approved by NCDOT.

All mast arms shall be monocurve in design. If the mast arm lengths exceed 60', then metal strain poles should be considered in place of the mast arm poles. Wooden poles should only be used for temporary signal installations

For signals located within the boundary of the Downtown Village District as specified in the Comprehensive Plan, Section 1 Land Use & Character, architectural powder coated black metal mast arms shall be used. The signal poles and mast arms will be treated with a low gloss two-part epoxy primer and have a semi-gloss two-part epoxy acrylic urethane finish. More details will be specified during the review process.

3.03 SIGHT DISTANCE

General

Sight distance triangles shall be shown on roadway layout sheet and the landscape sheet within the plant set.

Sight distance requirements, including but not limited to intersection, stopping, shall be subject to design standards for the preferred intersection sight distance as specified in the latest version of the AASHTO Policy on Geometric Design of Highways and Streets (Green Book) or as approved by the Executive Director of Utilities and Infrastructure Services.

Sight distance shall mean the length of roadway visible to the driver traveling along the roadway or waiting to enter or cross the roadway. The sight triangle shall include both the horizontal and vertical plane and shall exist at all street intersections, multi-family, site, and non-residential driveway intersections.

It shall be the responsibility of the designer for all proposed developments, including site, subdivision, landscape, infrastructure, and sign plans to meet these requirements as a part of the plan project design and approval process. Between the latest version of the AASHTO Green Book and the Standard's stated herein, the more restrictive standard shall apply.

Some objects located within sight distance areas may not significantly obstruct the required visibility of the driver. The driver may be able to see over, under, or around some objects within sight distance areas. Objects that may be required within sight distance areas include fire hydrants, utility poles and traffic control devices, which should be located to minimize visual obstruction. No plantings allowed within the sight distance triangles.

A sight distance easement will be required for any area that is within a sight distance triangle and is not within the right of way.

The information and tabular data herein are provided as a guideline. The registered engineer shall ultimately be responsible to determine the design criteria and design.

A. Intersection Sight Distance

In order for vehicles to safely maneuver into or through an intersection, sufficient sight distance must be provided so as to avoid collisions. The horizontal line of sight as shown in TOHS Detail HS334 is a visual line connecting the driver's eye and the approaching vehicle, both of which are in the center of the travelway as shown in TOHS Detail HS334. If this line of sight is impeded by any obstructions, either the obstruction should be moved or the alignment adjusted. The vertical stopping sight distance is measured along the centerline of the major street between the drivers of the two opposing vehicles. The vertical line of sight as shown in TOHS Detail HS337 is a visual line connecting the driver's eye, which is located 3.5 feet above the roadway surface, with the approaching vehicle, which is located 4.25 feet above the roadway surface as shown in TOHS Detail HS337. If this line of sight is impeded by any obstructions, either the obstruction should be moved or the alignment adjusted.

The amount of sight distance required at an intersection depends on the type of traffic control at the intersection and the speeds of the vehicles.

1. Yield Sign Control

This type of design requires that the side street be posted with yield signs. The sight distance for the driver on the side street must be sufficient for the driver to observe a vehicle on the through street approaching from either the left or the right and bring his/her vehicle to a stop prior to reaching the intersection as shown in TOHS Detail HS336. The assumed operating speed approaching the yield sign is 10 mph resulting in a stopping sight distance of 45 feet. Where proper sight distance cannot be achieved for the driver on the side street at the design speed of the roadway, it may be necessary to have a posted speed reduction on the approach to the intersection or to replace the yield sign with a stop sign. Due to the possibility that a vehicle must stop at the yield sign, adequate sight distance at the intersection shall be provided for safe departure from a stopped condition as required by the section on stop sign controlled intersections.

Stop Sign Control

At approaches to intersections that are controlled by stop signs or at driveways and alleys where the driver is required to stop before entering the street by the Town Code, the driver must have an unobstructed view of the

entire intersection and adequate sight distance for any of the various vehicular movements allowed upon departure of the intersection. These movements may include crossing the street, turning left or turning right onto the street. Where the through street is either undivided or divided with a median narrower than 20 feet, the crossing or left turn movements are treated as a single operation. Where the median can provide storage for the design vehicle (20 feet wide for a passenger car), the crossing or left turn movement may be considered in two phases of operation. The measurement method for determining the sight line for left, right, and through movements from the side street is based on values listed in Table 3.1 on the following page and illustrated per detail.

An obstruction to the driver's view shall not be located within the sight triangles as defined herein to permit adequate view of the intersection. In addition, there shall be no sight obstruction located in the triangular areas shown in TOHS Detail HS333 to allow for safe departure through the intersection. The measurement of intersection sight distance is along the centerline of the appropriate lane of the roadway and is measured from an eye height of 3.5 feet above the surface of the roadway to an object 4.25 feet above the surface of the roadway. The location of the driver's eye (d1) is dependent on the classification of the intersecting streets. For all intersections where the through street is a thoroughfare, the driver's eye location shall be 18 feet back from the face of curb extended through the intersection or the edge of pavement if there is no curb. At all intersections where the through street is a local or collector street, and for ramp type driveways, the driver's eye shall be located 15 feet behind the face of curb extended, or the edge of pavement if there is no curb. The sight distance lengths d2 and d3 shown in TOHS Detail HS333 for left or right turns onto the through street are dependent on the design speed of the roadway and are presented in Table 3.1 or the most current version of AASHTO guidelines. TOHS Detail HS335 shows the measurement method for determining the sight line for left turns from the through street and are presented in Table 3.1 or the most current version of AASHTO guidelines.

2. Traffic Signal Control

At intersections controlled by traffic signals, the minimum sight distance will be stopping sight distance (Tables 3.2 and 3.3) for all side street movements except for the right turn movement. The right turn movement shall have intersection sight distance to allow right turn on red, except where it is economically impractical due to existing major features such as permanent buildings and existing, large, mature trees. The minimum sight distance for the right turn movement limited by existing major features shall be stopping sight distance. Where intersection sight distance cannot be achieved, right turn on red will be restricted.

TABLE 3.1

B.

Vehicle Crossing the Roadway	Sight Distance (ft) per 10 mph of Design Speed for Appropriate Width of Crossing			
	2-Lanes	4-Lanes	6-Lanes	8-Lanes
Passenger	100	120	130	140
Single Unit Truck	130	150	170	190
Large TTST	170	200	210	220

Stopping Sight Distance

At minimum, stopping sight distance must be available to the driver at all locations along roadways. Stopping sight distance applies to horizontal as well as vertical alignments. Stopping sight distance on horizontal curves is measured along the centerline of the inside lane around the curve and the line of sight is a straight line between two points on the centerline of the lane. On vertical curves, stopping sight distance is measured on a straight line between the driver's eye and an object on the roadway surface. The height of the driver's eye shall be measured at 3.5 feet above the roadway surface and the object shall be 2.0 feet above the roadway surface. TOHS Detail HS334 and HS337 illustrate the measurement of stopping sight distance horizontally and vertically, respectively. A more detailed explanation of the measurement of stopping sight distance is included in *A Policy on Geometric Design of Highways and Streets*, 2001, by AASHTO (AASHTO Green Book). The minimum stopping sight distance required is based on wet pavements and depends on the design speed and the grade of the roadway. Table 3.2 presents the minimum stopping sight distances for various design speeds on level terrain. Table 3.3 presents adjustment factors for stopping sight distance on grades. Variable situations may require a greater length of stopping sight distance. Lengths in Table 3.2 and 3.3 are a guide and the registered engineer shall ultimately be responsible for the design criteria.

Table 3.2
MINIMUM STOPPING SIGHT DISTANCE FOR LEVEL AND WET
CONDITIONS

Design speed (MPH)	Stopping sight distance (feet)
10	45
15	80
20	115
25	155
30	200
35	250
40	305
45	360
50	425
55	495
60	570

Source: AASHTO Green Book, 2001.

TABLE 3.3**ADJUSTMENT FACTORS FOR
STOPPING SIGHT DISTANCE ON GRADES**

Design speed (MPH)	Increase for downgrades correction in stopping sight distance (feet)			Decrease for upgrades* correction in stopping sight distance (feet)		
	3%	6%	9%	3%	6%	9%
20	1	5	11	-6	-8	-11
25	3	10	18	-8	-12	-15
30	5	15	27	0	-16	-21
35	7	21	37	-13	-21	-28
40	10	28	49	-16	-27	-36
45	18	40	67	-16	-29	-40
50	21	49	82	-20	-37	-50
55	25	58	98	-26	-45	-62
60	28	68	116	-32	-55	-75

*Assumed speed is lower than the design speed since vehicles normally travel at a slower speed on an upgrade.

Source: AASHTO Green Book, 2001.

3.04 MATERIALS

Portland Cement Concrete for curb and gutter, driveways, and sidewalks shall have a minimum 28-day compressive strength of 3000 psi, a non-vibrated slump between 2.5 and 4 inches, a minimum cement content of 564 pounds per cubic yard, an air entrainment of 5 to 7%, and a maximum water-cement ratio of 0.532.

Joint Filler shall be a non-extruding joint material conforming to ASTM C1751.

Concrete Curing Agents shall be free from any impurities which may be detrimental to the concrete and shall meet Section 926 of NCDOT Standard Specifications for Roads and Structures.

Aggregate for portland cement concrete shall meet the requirements for fine and course aggregate of Section 1014 of the NCDOT Standard Specifications for Roads and Structures.

Portland Cement and Admixtures shall meet the requirements of Section 1000 of the NCDOT Standard Specifications for Roads and Structures.

Water for mixing or curing the concrete shall be free from injurious amounts of oil, salt acid, or other products injurious to the finished product.

Aggregate Base Course shall consist of an approved coarse aggregate produced in accordance with the requirements indicated for either Type A, B, or C aggregate as described in Section 910 of the NCDOT Standard Specifications for Roads and Structures.

Bituminous Surface Course, Type S9.5A and S9.5BC, shall consist of a mixture of coarse and fine aggregates, and asphalt cement, and shall meet the requirements of Section 645 of the NCDOT Standard Specifications for Roads and Structures. For NCDOT project the requirements of NCDOT for other types of asphalt (Superpave) shall apply

Bituminous Concrete Base Course, Type HB, shall conform to the general, material, and construction specifications as specified in Section 610 and Section 640 of the NCDOT Standard Specifications for Roads and Structures. For NCDOT project the requirements of NCDOT for other types of asphalt (Superpave) shall apply.

Tack Coat shall be asphalt or asphalt cement and shall meet the general, material, and construction specifications as specified in Section 605 of the NCDOT Standard Specifications for Roads and Structures.

Concrete Pavement shall meet Section 700 of the NCDOT Standard Specifications for Roads and Structures.

Concrete Pavers may be used on privately maintained streets or as approved by the Executive Director of Utilities and Infrastructure Services for pedestrian crossings in urban areas, in accordance with the applicable Standard Detail. The Town of Holly Springs will not maintain decorative type paved street surfaces such as pavers or imprinted designs within public right of way, unless approved by the Executive Director of Utilities and Infrastructure Services.

Geotextile Fabric may be used to stabilize a roadway, subgrades, slopes, and for other uses as necessary. At least one week prior to using this fabric, a sample and its associated engineering data shall be submitted to the Executive Director of Utilities and Infrastructure Services for approval. Areas stabilized with fabric shall be indicated on “as-built” drawings with the manufacturer name and type fabric specified.

3.05 CONSTRUCTION AND INSPECTION

No construction shall commence until the following applicable items have been obtained:

- All required permits and approvals
- Town of Holly Springs development plan approval
- Town of Holly Springs Construction Drawing approval
- Land Disturbance Permit

A. Streets

No base material shall be placed on a roadway until the storm sewer, subgrade, utilities, and all appurtenances have been inspected and meet Town of Holly Springs Engineering Design and Construction Standards.

The Construction Inspector may require field density testing of subgrade soils from a certified soils laboratory. The soils laboratory shall perform sufficient Proctors to evaluate the compaction characteristics of various soils used in the roadbed. The Construction Inspector may also require field density testing of the ABC used and an asphalt mix formula before either is inspected or approved. The final course of surface asphalt shall not be placed until the end of the warranty period.

The subgrade shall be compacted as described in Section 2.05 Earthwork. Proof rolls on subgrade will be conducted with a loaded tandem axle dump truck with 15 tons loaded on truck. A current weight ticket will be required by the Development Inspector. No loose material is allowed on top of compacted subgrade. Subgrade shall be packed and smooth on top with optimum moisture content and shall not have any deflection in surfaces for approval of proof roll. A stone grade proof roll will also be conducted following the same guidelines. All residential streets shall have asphalt placed in 2 lifts with the first being a minimum of 1.5" S9.5C and the second lift be a minimum of 1.5" S9.5C. The final course of surface asphalt shall not be placed until the end of the warranty period. (See details HS302, and HS305D through HS305J).

When thoroughfare widening takes place, the existing edge line of the travel lane shall be sawcut. Achieve an overlap of the final lift of new asphalt by at least 6" onto the existing roadway cross-section. The objective to have the joint between new and old asphalt to be offset from the joint between subgrades (this overlap shall exclude the overlay). In addition, whenever an overlay is required, milling of 1 ½ inch shall occur at both tie-in stations to insure a smooth connection.

Roadway patch shall be at a minimum of 4" I-19 and 2" of 9.5C asphalt. If deemed necessary by Inspector, additional asphalt may be required.

B. Curb and Gutter, Driveways, Sidewalks, and Concrete Sidepaths

No concrete shall be placed until all forms and subgrades have been approved by the Construction Inspector. The surface of sidewalks and sidepaths shall be finished to grade and cross section with a float, troweled smooth, and finished with a broom.

Subgrade shall be excavated to the required depth, and shaped to the proper cross-section. Where tree roots are encountered, they shall be removed to a depth of 1 foot for the full width of the excavation. The subgrade shall be stable and thoroughly compacted.

Forms shall be set and maintained true to the required lines, grades, and dimensions. Forms shall be constructed with material of such strength and rigidity to prevent any appreciable deflection between supports. Straight forms shall be within a tolerance of ½ inch in 10 feet from a true line horizontally or vertically. Forms shall be thoroughly cleaned of all dirt, mortar and foreign material before being used. All inside form surfaces shall be thoroughly coated with commercial quality form oil.

Grooved construction joints shall be cut to a depth equal to at least 1/3 of the total slab thickness. The joint shall be no less than 1/8 inch in width and cut at intervals equal to the width of the sidewalk. A 1/2-inch expansion joint filled with joint filler shall be placed between all rigid objects and placed no farther than 50 feet apart for sidewalks and curb and gutter, extending the full depth of the concrete with top of the filler 1/2 inch below the finished surface.

3.06 FIRE LANES

Fire lanes shall be installed and inspected in accordance with the public street requirements of Section 3.05 A and 3.05 B of these standards. The general requirement designates that any building located more than 150 feet from a public road, or which exceeds 30 feet in height and is set back more than 50 feet from a public road, shall have a fire lane.

Fire lanes shall be a minimum width of 20 feet and shall be properly marked and signed to designate the access as a “fire lane” as specified by the Fire Marshal. The surface of the fire lane shall be paved with a minimum of 8 inches of ABC stone and 3 inches of S9.5C asphalt. For projects located within the Triassic Basin, all Fire Lanes will be required to meet the design standards as located within section 3.02 J of these Engineering and Design Construction Standards.

All fire lanes shall be marked in accordance with one of the following requirements:

1. Continuously painted yellow striping along the fire lane with “No Parking - Fire Lane” printed with minimum 8-inch high letters at 40-foot intervals or as directed by the Fire Marshal;
2. Continuously painted yellow curb with “No Parking - Fire Lane” along the fire lane, and with “No Parking - Fire Lane” printed with minimum 8-inch high letters at 40-foot intervals or as directed by the Fire Marshal;
3. The installation of the MUTCD standard sign showing “No Parking - Fire Lane” placed at each end of the fire lane and at 50-foot intervals with arrows on the signs or a continuously painted yellow strip along the designated fire lane.

3.07 TRAFFIC CONTROL, TRAFFIC SIGNALS, AND STREET NAME SIGNS

All streets (public or private) require traffic signs and pavement markings. Traffic signs and pavement markings shall be installed in accordance with the latest revisions of the MUTCD, unless otherwise approved by the Executive Director of Utilities and Infrastructure Services. Where two public streets cross or where a private street meets a public roadway and signalization is not warranted, a stop bar and stop sign shall be used on minor street approaches. Stop bars must be located 4 feet behind a crosswalk, if present.

A pavement marking and signing plan showing description and placement of traffic signs, pavement markings, and specialty signs shall be submitted with all roadway and subdivision plans as a requirement of the Developer and shall be done prior to issuance of a Certificate of Occupancy for the development or final acceptance of the roadway by the Town of Holly Springs. Any time prior to 1-year warranty, additional signage may be required by the Executive Director of Utilities and Infrastructure Services, at the expense of the developer.

Traffic Control and Street Name Signs within subdivisions which will be maintained by Town of Holly Springs Public Works shall be consistent with the latest revisions of MUTCD. All specialty traffic control and street name signs and posts must comply with Policy Statement No. P-011 as well as details HS360 and HS361, including all amendments as approved by the Town Council. Requests for specialty signs shall be submitted to and approved by the Town of Holly Springs Public Works Department at the expense of the developer.

At signalized intersection, street name signs should be mounted overhead. The designer should determine the best attachment type. Oversized signs will be used at major intersections.

Street name signs should be mounted on the posts in a “staggered” fashion so each street name will be easily read from all directions. Non-staggered signs are not acceptable. Hardware must pass through post and be secured with a locking washer and nut on the backside of the post. Metallic shim is required between u-channel post and sign. All hardware shall be zinc-coated to prevent corrosion. See NCDOT Standard detail 903.20, for reference.

All signs must comply with the latest revision of the MUTCD including, but not limited to, color, size, placement, and reflectivity. All new signs must use prismatic sheeting and meet the minimum retro-reflectivity levels. All signs must meet MUTCD standards for height of lettering and visibility. In accordance with the MUTCD, all proposed signs should be located so as not to interfere with existing signs.

All temporary stub outs for future interconnectivity shall have proper MUTCD barricade and signage in addition to the proper street extension per detail. Any right of way and construction easements that are necessary for future connection shall be dedicated at the time of the construction of the stub out.

All traffic signals shall be decorative monocurve mast arm poles inside the Downtown Village District and shall be standard monocurve mast arm poles in all other locations across standard width roadways. Controlled access roadways shall require steel straight arm signal poles.

Preemption system shall be required with all traffic signals and include GPS with a 764 multi-mode phase selector, and a 1500 field length in all directions. In addition, fiber network connection is required to all signals and shall be Ethernet ready per NCDOT standards.

3.08 TRAFFIC CALMING DEVICES

The Town shall not allow the obstruction of any public street, private street or fire lane unless otherwise stipulated by the Town Council. This requirement is in accordance with the 1992 edition of the North Carolina State Fire Prevention Code. The reference to an “obstruction” shall include parking, speed bumps or any other device which may obstruct the free passage of emergency vehicles.

All traffic control devices must be shown and approved as a part of a site plan prior to installation and must be in conformance with the Town Standard Specifications. The traffic control devices and all related signs and pavement markings shall be maintained by the Owner as a part of the approval of the plan.

3.09 PEDESTRIAN CROSSINGS

All locations which are designated for pedestrian traffic crossings shall be designated as a crosswalk with pavement marking and signage (including advanced signage) in accordance with MUTCD, unless located in the Downtown Village District where decorative crosswalks may be required.

All locations that require traffic signals are also required to install signalized pedestrian crossings per NCDOT Standards and specifications. Signalized pedestrian crossings shall be included in the NCDOT approved signal plans.

3.10 STREET TREES

See Holly Springs Town Code Chapter 14: Public Works, Article IV, Streets, Sidewalks and Other Public Places, Division 6: Street Tree Maintenance.

Street tree shields shall be installed wherever street trees are required. Please refer to root guard detail HS816. Street trees may not be planted in a location to conflict

with sight distance requirements. The Town shall trim or remove any street trees or limbs that conflict with sight distance requirements.

3.11 THOROUGHFARE/MEDIAN PLANTINGS

With the construction of streets in the Thoroughfare classification and above, landscaping of medians and shoulders shall be per the thoroughfare median planting detail and requirements of Section 3.03 Sight Distance. In addition, all landscaped medians shall be installed with a minimum of 6 inches of topsoil with Tif-tuf 419 Bermuda sod along with any required median plantings. Thoroughfare median plantings shall be maintained by the Town of Holly Springs once the developers' 1-year warranty period has been deemed complete and the road widening has been accepted by the Town of Holly Springs.

An exception may be granted to allow a fee in lieu of median plantings if it is determined that only the first half of the ultimate median is required to be constructed.

3.12 GREENWAY SPECIFICATIONS

Greenway locations and alignments shall be as directed and approved by the Director of Parks and Recreation. Greenways alignment shall be finalized with the Director of Parks and Recreation prior to preliminary plan approval, with full construction plans and all permits provided prior to construction drawings approval for any project on which greenways are required.

Where greenway trails are required, the following guidelines shall be followed.

- Maximum cross slope grade shall be 2%. The maximum cross slope grade shall be across the entire width of the greenway easement.
- Maximum grade shall be 8%, unless approved by the Director of Parks and Recreation.
- Positive drainage shall be established.
- Concentrated flow across a greenway is not allowed. All areas of concentrated flow must be conveyed via approved storm drainage.
- At all drainage crossings, a Professional Engineer shall provide properly sized drainage pipe with supporting calculations.
- Bridge crossings may be required in some locations. If a bridge is required, it must carry a 10,000 lb load and shall be designed by a registered engineer and approved by the Town of Holly Springs and appropriate agencies.
- Greenways shall be 10 feet wide with an easement of 30 feet.

- At greenway and roadway intersections, a pedestrian tunnel may be warranted as determined by the Director of Parks and Recreation and Executive Director of Utilities and Infrastructure Services.
- At greenway and roadway intersections, a pedestrian tunnel may be warranted as determined by the Director of Parks and Recreation and Executive Director of Utilities and Infrastructure Services.
- When an at-grade intersection is permitted, a 10' wide, 6" thick concrete pad will be required extending from the back of curb to the right of way line, or 18', whichever is less. There shall be a handicap curb cut as shown in Town of Holly Springs details. At the end of the pad, concrete bollards will be required per Town of Holly Springs detail.
- Where the greenway trail intersects a roadway, pedestrian crosswalk striping and signage will be required. In addition, in cases where the greenway trail intersects a roadway and sidewalk is on opposite sides of road then handicap ramps will be required for accessibility
- Greenways shall be located and constructed so as to prevent damage from floodwaters.
- The minimum material must be 6" of approved Aggregate Base Course and 2" S9.5C Surface Course.
- Documentation of required permits, approvals, etc. shall be provided for greenways prior to construction drawing approval of the project on which the greenway is required.
- Greenways shall be subject to the same construction inspections, performance, and warranty requirements as roadway infrastructures.
- All stormwater shall be captured and conveyed below the greenway trail/bridge.

Figure 1
CURVE CONTROLS

	Horizontal Curve Controls			Vertical Curve Controls			
	Minimum Design speed (mph) ¹	Maximum Super-elevation (ft./ft.) ²	Minimum Radii (ft.)	Maximum Grade ³ (percent)	Length Crest	Length Sag	Minimum Length (ft.)
Limited Access Thoroughfare	Design standards to be determined for each case individually by the Executive Director of Utilities and Infrastructure Services						

Thoroughfare, Boulevard, Parkway	Design standards to be determined for each case individually by the Executive Director of Utilities and Infrastructure Services						
Non-Residential Collector	40	0.04	565	9%	44A	64A	120
Residential Collector Streets & No Load Residential Collector	25	0.04	300	9%	29A	49A	120
Residential streets	30	Normal crown	205	10%	12A	26A	75
Cul-de-sacs 1000' or less	30	Normal crown	150	10%	12A	26A	75
Loop road 1500' or less	30	Normal crown	150	10%	12A	26A	75

¹ Design speed shall be at least 5 mph greater than posted speed.

² The superelevation tables found in *A Policy on Design of Urban Highways and Arterial Streets - 2001* published by the American Association of State Highway Officials will be used for determining the actual “e” for various radii.

³ Design criteria can vary on a case-by-case basis if approved by the Executive Director of Utilities and Infrastructure Services.

⁴ Note: At the discretion of the Utilities and Infrastructure Services, the K values in sags may be adjusted with additional street lighting

A - Algebraic difference in grades.

3.13 SMALL WIRELESS TELECOMMUNICATION FACILITIES (LOCATED WITHIN THE PUBLIC RIGHT-OF-WAY)

Small wireless telecommunication facilities located within the public right of way shall be designed in compliance with the development standards of the Unified Development Ordinance section 8.01 H. Small wireless telecommunication facilities (located within the public right of way). Please refer to HS368.

3.14 BUS STOP AND BUS SHELTER

All bus stops and bus shelters shall comply with the most current GoTriangle specifications and detail sheets. For GoTriangle Provisional Shelter Specification and GoTriangle Provisional Detail Sheets, please contact:

GoTriangle
PO Box 13787
Research Triangle Park, NC 27709
Tel. 919-485-7510
www.gotriangle.org

END OF SECTION 3

**SECTION 5.00
PIPE TRENCHES**

SUB-INDEX

5.01 EXCAVATION AND PREPARATION OF PIPE TRENCHES

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5.03 BORING AND JACKING

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B. Tracer Wire

C. Tracer Wire Testing Station

SECTION 5.00

PIPE TRENCHES

5.01 EXCAVATION AND PREPARATION OF PIPE TRENCHES

Trenches for water distribution lines, sanitary sewer lines, force mains, and storm sewer lines shall be excavated to the required depth to permit installation of the pipe along the lines and grades shown on the construction drawings. The minimum trench width at the top of the pipe shall be at least 18 inches greater than the outside diameter of the pipe. Where excavation is in rock, the rock shall be removed to a depth of at least 6 inches below grade and shall be backfilled with materials in accordance with these specifications. Wet trenches shall be stabilized with #78 M stone or with a base layer of #57 stone.

5.02 PIPE LAYING AND BACKFILLING

All pipe shall be laid in accordance with the manufacturer's recommendations. The subgrade at the bottom of the trench shall be shaped to secure uniform support throughout the length of the pipe. A space shall be excavated under the bell of each pipe to provide space to relieve bearing pressure on the bell and to provide room to adequately make the joint. Open ends of pipe shall be plugged with a standard plug or cap at all times when pipe laying is not in progress. Trench water shall not be allowed to enter the pipe. Backfill material shall be free from construction material, debris, frozen material, organic material, or unstable material. The top 2 feet of backfill material shall be free from stones greater than 4 inches in diameter.

Under roadways and extending at a slope of 1 to 1 beyond the back of curb, measured perpendicular from centerline, backfill shall be compacted to a density of no less than 95% standard Proctor maximum dry density as measured by AASHTO method T99. Backfill shall be placed in lifts of 8 inches or less of the uncompacted soil. Other fill material shall be compacted to a density of no less than 90% of the maximum dry density as measured by AASHTO method T99. Backfill material shall be placed in lifts of 12 inches or less of the uncompacted soil. Suitable backfill material shall be utilized and compacted. Pavement repair shall be in accordance with the Standard Detail section of these standards.

All trenches shall be properly backfilled at the end of each working day. All pavement cuts shall be repaired within a maximum of 2 days from the date the cut is made. Trench repairs in roadways shall be backfilled with stone and binder or flowable fill as directed by the Inspector. If conditions do not permit a permanent repair within the given time limit, permission to make a temporary repair must be obtained from the Executive Director of Utilities and Infrastructure Services. If roadway repairs are not accomplished in accordance with these specifications, Town forces may make such repairs and back charge the project owner in an

amount equal to triple for all associated costs (See Section 2.16 of these specifications).

In locations where backfill material is temporarily stockpiled on the roadway surface, a layer of 1½ inches of screenings shall be used between the pavement surface and the backfill material.

5.03 BORING AND JACKING

All crossings of Town streets shall be by dry bore and jack method in order to minimize pavement cuts and maintenance problems. Crossing of streams and/or creeks shall also be by bore and jack method. Variations with extenuating circumstances may be granted by the Executive Director of Utilities and Infrastructure Services. The Town shall recommend that all crossings of State maintained streets within the Town corporate limits be by the dry bore and jack method. In cases where circumstances such as utility conflicts will not allow crossing by bore and jack method, the Town may consider approving other methods of crossing with additional requirements to minimize pavement failure and maintenance problems.

In locations where open pipe trenches are not allowed, dry bore and jack operations may be allowed.

Smooth wall or spiral welded steel pipe may be jacked through dry bores slightly larger than the pipe bored progressively ahead of the leading edge of the advancing pipe. The spoil material shall be mucked by the auger back through the pipe during the boring operation. As dry boring progresses, each new section of the encasement pipe shall be butt-welded to the section previously jacked into place.

In the event that an obstruction is encountered during the boring and jacking operation, the auger is to be withdrawn and the excess pipe is to be cut off, capped, and filled with 1:3 portland cement grout at a sufficient pressure to fill all voids before moving to another boring site.

If voids are encountered while installing encasement pipe 30 inches and larger, grout holes shall be installed at 10 foot centers and filled with 1:3 Portland cement grout at sufficient pressure to prevent settlement of the roadway, unless NCDOT approval stipulates otherwise. Other grout mixtures may be submitted for approval.

Steel pipe shall be manufactured of grade 'B' steel with a minimum yield strength of 35,000 psi in accordance with ASTM A139 and A283. When used along or under a roadway maintained by NCDOT, the encasement pipe shall be coated to meet NCDOT requirements.

In bore and jack installations that run beneath storm drainage culverts, carrier pipe shall be restrained joint type.

Size and wall thickness of smooth wall or spiral welded encasement pipe shall be as follows:

Pipe Size (O.D.) (inches)	Wall Thickness (inches)
12¾	0.188
16	0.250
18	0.250
20	0.250
24	0.250
30	0.312
36	0.375

Casing pipe shall be installed with a minimum cover of 3 feet under the top or surface of the pavement.

All carrier pipe shall be restrained joint resting on metal spiders as shown in the Standard Details section of these standards so as to prevent damage to the pipe bell. Pipe bells shall not contact the interior of the casing pipe. No blocks or spacers shall be wedged between the pipe and the top of the casing. Casing pipe shall have the following minimum sizes:

Carrier Pipe Size (inches)	Casing Pipe Size (inches)
4	12¾
6	12¾
8	18
10	20
12	24
14	26
16	28

All utilities crossing stream beds will be required to be installed with restrained joint pipe inside a steel casing pipe.

5.04 UTILITY LOCATOR INSTALLATION AND DEVICES

Utility locator devices manufactured by 3M Corporation shall be installed at 100 foot intervals and turns/bends. Locator tape, as manufactured by Allen or approved equal, shall also be required to be installed 2 feet above the pipe.

A. Marker Ball

Pressure Piping Systems (Water mains, Force mains and Reclaimed Water mains)

- A minimum of one marker ball shall be located along the alignment every 100 feet spaced equidistant.
- Marker balls shall be located at all fittings.
- Marker ball to be pre-programmed.
- Maximum depth of the marker ball shall 2-feet.

Piping with a Straight Alignment between Structures (Gravity Sewer)

- A minimum of one marker ball shall be located along the alignment at the start and stop of the encasement, if applicable.
- Marker ball to be pre-programmed.
- Maximum depth of the marker ball shall be 2-feet.

B. Tracer Wire

All underground mains and piping shall be electronically locatable.

A tracer wire shall be installed with all underground pipes with the following exclusions:

- Metallic piping can be located electronically with a metal detector.

Tracer wire shall have terminal ends accessible in tracer wire test stations located within a 3-foot radius of every fire hydrant for water lines, and within a 3-foot radius of air release valves and/or every five hundred feet in a concrete donut or mini-manhole for force mains. Other locating technologies may be approved by the Executive Director of Utilities and Infrastructure Services.

C. Tracer Wire Testing Station

Tracer wire testing stations shall be installed at a 500' maximum spacing.

- The box shall be constructed of a rigid plastic material conforming to ASTM B-253.
- The lid shall be constructed of cast iron or ductile iron.

END OF SECTION 5.00

**SECTION 6.00
WATER DISTRIBUTION**

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SECTION 6.00

WATER DISTRIBUTION

6.01 WATER DISTRIBUTION PIPE

A. General

Water system expansions shall meet all requirements of these standards. In addition, the *North Carolina Administrative Code Title 15A Chapter 18 Subchapter C – Water Supplies* (15A NCAC 18C) is hereby incorporated into the Town’s standards for water system expansions. This specification section identifies minimum equipment and construction requirements for water system expansions that are to be owned and operated by the Town of Holly Springs. This section does not address every aspect of water system expansion; it is the design engineer’s (Designer’s) responsibility to supplement these requirements as necessary to produce a complete set of plans and specifications.

All utility extension permits must be obtained prior to construction. Refer to the Town Code of Ordinances Section 16 for further requirements.

B. Design

Location: Water lines shall be extended along the entire roadway frontage length of any proposed project. All public water mains shall be located within dedicated right of way or dedicated easements with a minimum width of 20 feet. Landscape plantings, fences, or structures shall not be allowed within water line easements.

Sizing: Water lines shall be sized in accordance with the “Master Water Plan of the Town of Holly Springs” or as directed by the Executive Director of Utilities and Infrastructure Services. In residential areas, mains shall be 6-inch and 8-inch diameters. Six-inch mains shall be used only when a good grid exists. The total maximum length of 6-inch and 8-inch line, without connection to a larger main, is 1200 feet and 2000 feet, respectively. Four-inch water mains are permitted on residential cul-de-sacs less than 400 feet long, if no hydrant is required. Where a sufficient grid network does not exist, lines shall be upsized additionally to provide adequate fire flow as directed by the Executive Director of Utilities and Infrastructure Services. If there is adjacent developable property, an adequate size line to properly serve future development shall be provided sufficient for any future project to meet Town standards.

C. Material

All water mains shall be ductile iron. The use of Polyvinyl Chloride (PVC) pipe must be approved by the Executive Director of Utilities & Infrastructure Services,

and, if approved, must be blue in color and conform to the specifications of AWWA C900. The Engineering Department will maintain a list of approved manufacturers of other water distribution products. New manufacturers must submit requests for approval to the Engineering Department. Additional information such as catalogs, list of installations in the area, or material samples may be required. A written response will be mailed to the applicant accepting or rejecting the product within 90 days of the receipt of all necessary information.

Ductile Iron Pipe shall be designed and manufactured in accordance with AWWA C150 and C151 for a laying condition Type 2 and a working pressure as follows:

3-12 inches	350 psi
14-20 inches	250 psi
24 inches	200 psi
30-54 inches	150 psi

Pipe Joints shall be of the push-on type as per AWWA C111. Pipe lining shall be cement mortar with a seal coat of bituminous material in accordance with AWWA C104. Galvanized steel pipe will not be allowed as a material for water mains or water services lines.

Steel Encasement for water/sewer pipes are required for the following Street Classifications to avoid traffic disruption in the future:

- Controlled Access Highway

For carrier pipes that employ cathodic protection anticorrosion systems, the carrier and casing pipes shall be effectively insulated from one another. Carrier and casing shall be cathodically protected as a unit.

See Section 5.03 Boring and Jacking for more casing pipe size requirements.

D. Installation

Ductile iron pipe shall be manufactured and installed in accordance with requirements set forth in the most recent revision of AWWA C600/C605 and the Rules Governing Public Water Systems. Materials shall be handled in such a manner to protect them from damage at all times.

All water mains shall be installed with a minimum cover of 4 feet and maximum of 6 feet measured from the top of the pipe to the finished surface grade (or as otherwise directed by Executive Director of Utilities and Infrastructure Services). Where waterlines cross NCDOT roadways or major Town roadways, as determined by the engineer, pipe encasement shall be required. When water lines are installed along a roadway which does not have curb and gutter or which are planned to be widened in the future, the water line shall be installed at 4.5 feet minimum depth below edge of existing pavement. In addition, all waterline installation shall be

placed to prevent conflict with future road improvements or foreseeable vertical alignment changes. Where air release valves are located on water mains the lines should be a minimum of 6 feet below the existing edge of pavement in this area.

The laying conditions for ductile iron pipe shall be certified by a Professional Engineer licensed in the State of North Carolina and installed in accordance with AWWA C600 and the Ductile Iron Pipe Research Association.

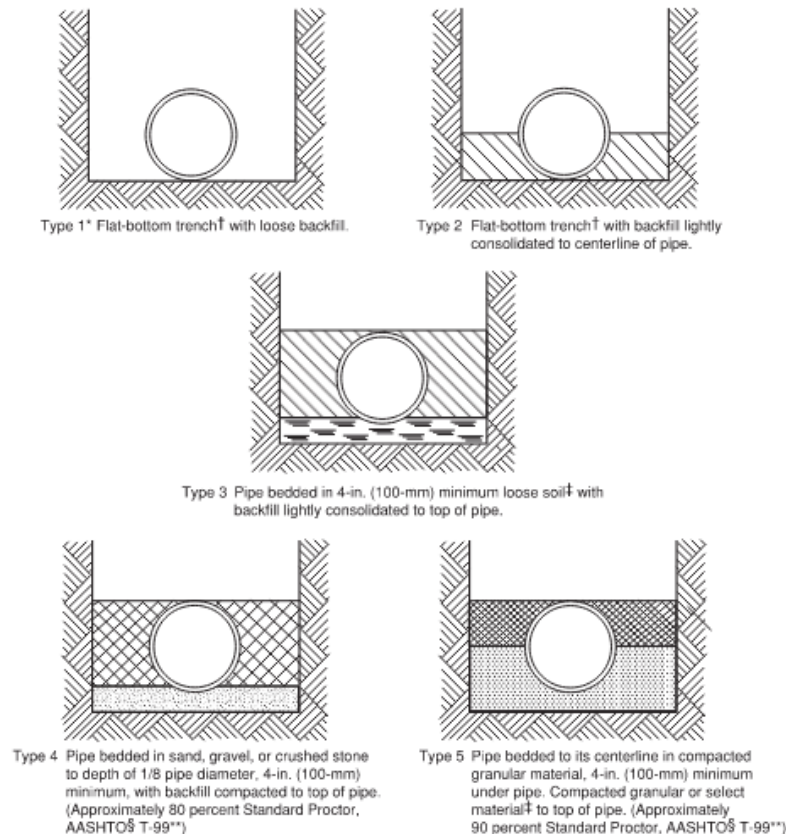


Figure 1: Laying Conditions for Ductile Iron Pipe (AWWA C600)

Locator devices as manufactured by 3M Corporation shall be placed directly on top of distribution water mains along major thoroughfares and cross-country installations (and as otherwise directed by the Executive Director of Utilities and Infrastructure Services) at 100 foot intervals and turns/bends. Locator tape shall also be required to be installed at 2 feet above the pipe.

All construction relating to the utility improvements which will be maintained by the Town must be performed by a contractor licensed in North Carolina. Proof of licensure will be required at the Project Preconstruction Meeting. Operation of existing valves and fire hydrants shall be by Town staff only.

Any connection to the 30 inch water main on Piney Grove Wilbon Road must be regional in nature and subject to hydraulic studies to confirm adequate pressure can be maintained in the system.

6.02 FIRE HYDRANTS (Public and Private)

A. Location

All fire hydrants shall be installed on a minimum 6-inch waterline with minimum of 20' width easement including 5 feet beyond fire hydrant. Only 1 fire hydrant may be installed on a dead end 6-inch line. There shall be at least 1 fire hydrant at each street intersection located in accordance with the Standard Detail section of these Standards (TOHS Detail HS613). Each fire hydrant shall have a valve on the hydrant service leg, located within 2 feet of tee on the main line.

No building lot shall be more than 350' from fire hydrant.

In residential areas, the maximum distance between fire hydrants, measured along street centerlines, shall be 500 feet. In residential areas, the minimum fire flow shall be 1000 gpm with a minimum system pressure of 25 psi for 1 hour.

In business, office and institutional, and industrial districts, the maximum distance between hydrants, measured along street centerline, shall be 300 feet. When business, office and institutional, and industrial intersections are not more than 450 feet apart, no hydrant is required between intersections. The minimum fire flow in these areas shall be 1500 gpm with a minimum system pressure of 25 psi for 2 hours.

The minimum number of fire hydrants available to a building shall not be less than that listed in Table A1. The number of fire hydrants available to a complex or subdivision shall not be less than that determined by spacing requirements listed in Table A1 when applied to fire apparatus access roads and perimeter public streets from which fire operations could be conducted.

Existing fire hydrants on public streets are allowed to be considered as available. Existing fire hydrants on adjacent properties shall not be considered available unless fire apparatus access roads extend between properties and easements are established to prevent obstruction of such roads.

The average spacing between fire hydrants shall not exceed that listed in Table A1.

Exception: The Office of the Fire Marshal is authorized to accept a deficiency of up to 10 percent where existing fire hydrants provide all or a portion of the required fire hydrant service.

Regardless of the average spacing, fire hydrants shall be located such that all points on streets and access roads adjacent to a building are within the distances listed in Table A1.

Table A1
NUMBER AND DISTRIBUTION OF FIRE HYDRANTS

FIRE-FLOW REQUIREMENTS (gpm)	MINIMUM NUMBER OF HYDRANTS	AVERAGE SPACING BETWEEN HYDRANTS (Feet) ^{a, b, c}	MAXIMUM DISTANCE FROM ANY POINT ON STREET OR ROAD FRONTAGE TO A HYDRANT ^d
1,750 or less	1	300	250
2,000-2,250	2	300	225
2,500	3	300	225
3,000	3	300	225
3,500-4,000	4	300	210
4,500-5,000	5	300	180
5,500	6	300	180
6,000	6	250	150
6,500-7,000	7	250	150
7,500 or more	8 or more ^e	200	120

^{a.} Reduce by 100 feet for dead-end streets or roads.

^{b.} Where streets are provided with median dividers that cannot be crossed by fire fighters pulling hose lines, or where arterial streets are provided with four or more traffic lanes and have a traffic count of more than 30,000 vehicles per day, hydrant spacing shall average 500 feet on each side of the street and be arranged on an alternating basis.

^{c.} Where new water mains are extended along streets where hydrants are not needed for protection of structures or similar fire problems, fire hydrants shall be provided at spacing not to exceed 1,000 feet to provide for transportation hazards.

^{d.} Reduce by 50 feet for dead-end streets or roads.

^{e.} One hydrant for each 1,000 gallons per minute or fraction thereof.

When new buildings are constructed, or existing buildings expanded, all points of exterior walls for buildings shall be within 150' of a fire access lane. When a fire access lane is provided then all portions of exterior walls are required to be within 300' of a hydrant. The maximum length of fire access lanes without an approved turn-a-round is 150'. Hydrants shall be located at least 40 feet from the building or as specified by the Town of Holly Springs Fire Department, Office of the Fire Marshal. See Section 6.07E for fire hydrants required for automatic fire sprinkler systems.

Where sprinkler systems or standpipe systems are used, the fire department connections (FDC) shall be located on the street side of the building and within 100 feet of a fire hydrant and at fall zone line or as specified by the Office of the Fire Marshal, and shall be located so that nothing obstructs direct access. Where a sprinkler system or a riser room are required, outside access in accordance with the N.C. Building Code shall be provided. Backflow prevention for sprinkler systems shall be as specified in Section 6.06 of these Standards. Flow data for system design shall be field-verified by the designer. The Town will provide assistance with opening valves and hydrants for the collection of data for system design. FDC's can be mounted on single story buildings only.

A hydraulic report signed, sealed, and dated within 12 months by an Engineer may be required by the Town to document meeting the minimum fire flow and system pressure requirements. On all thoroughfares and collectors with access points only at street intersections, hydrants shall be located at each street intersection and staggered at 1000 foot intervals along the street. Where these intersections are less than 1200 feet apart, no hydrant is required between the intersections.

B. Specifications

Hydrants shall conform to AWWA C502 with a minimum valve opening of 4½ inches. All fire hydrants shall be furnished with a 5 inch Storz/quick connect coupling on the steamer outlet with a chained cap. The Storz connection shall be by the hydrant manufacturer and only come as part of the hydrant assembly. No adapters for the Storz connection are allowed. Hydrants shall also be furnished with: double 2½-inch hose connections with caps and chains, National Standard Threads, mechanical joint, 1½-inch pentagon operating nut, open left, painted Sherwin Williams pro industrial urethane alkyd enamel safety yellow B54 Y157, bronze to bronze seating, a minimum 3½-foot bury depth with break away ground line flange and break away rod coupling. The hydrant bonnet will be designed with a sealed oil or grease reservoir with O-ring seals and a Teflon thrust bearing, as furnished by Mueller "Centurion" (A-421), Kennedy 'Guardian', American Darling (MK-73), Clow or Waterous. Fire hydrant caps shall be attached to the body of the hydrant with a minimum 2/0 twist link, heavy duty, non-kinking, machine chain. All fire hydrants shall be designed for a working pressure of 250 psi or greater.

All hydrants and Fire Access Lanes shall be installed and operational before any combustible material is brought onto the site.

C. Installation

Hydrants shall be set plumb, properly located with the pumper nozzle facing the closest curb. The back of the hydrant opposite the pipe connection shall be firmly blocked against the vertical face of the trench with 1/3 cubic yard of concrete. Double bridle rods and collars shall not be less than 5/8 inch diameter stock and coated with bituminous paint. All fire hydrants shall be newly painted in accordance with NFPA standards. A minimum of 8 cubic feet of stone shall be placed around the hydrant. The backfill around the hydrants shall be thoroughly compacted. Hydrant installation shall be in accordance with the Standard Details section of these Standards. Fire hydrants shall be installed on a clear level space with a minimum of five (5) feet clearance provided and maintained on all sides of a fire hydrant for immediate access. There must be clearance with a minimum of 18"-24" from center of 5" Storz cap to grade and shall be installed with positive drainage.

D. Relocation

For installations where hydrants will be relocated, all hydrants with greater than 20 years operational service, as indicated by the date of manufacture provided on the hydrant, shall be replaced with a new fire hydrant in accordance with Engineering Design and Construction Standards. The fire hydrant being replaced shall be returned to the Town of Holly Springs Public Works Department.

For installations where the hydrant to be relocated has less than 20-years of operational service, the existing hydrant may be relocated. The existing hydrant shall be disinfected, flushed and pressure tested prior to being placed back into service.

E. Fire Flow Requirements for Buildings

1. One- and two-family dwellings

The minimum fire-flow and flow duration requirements for one-and two-family dwellings having a fire-flow calculation area that does not exceed 3,600 square feet (344.5m²) shall be 1,000 gallons per minute at 25psi for 1 hour.

Fire-flow and flow durations for dwellings having a fire-flow calculation area in excess of 3,601 square feet and greater shall not be less than specified in tables E1 and E2 at 25psi.

2. Buildings other than one- and two-family dwellings.

The minimum fire-flow and flow duration for buildings other than one-and two-family dwellings shall be as specified in tables E1 and E3, but no less than 1,500 gallons per minute at 25psi.

3. Water supply for buildings equipped with an automatic sprinkler system.

For building equipped with an approved automatic sprinkler system, the water supply shall be capable of providing the greater of:

1. The automatic sprinkler system demand, including hose stream allowance.
2. The required fire-flow.

Table E1**MINIMUM REQUIRED FIRE-FLOW AND FLOW DURATION FOR BUILDINGS**

(Appendix B of the 2018 NC Fire Prevention Code)

FIRE-FLOW CALCULATION AREA (square feet)					FIRE-FLOW (gallons per minute) ¹	FLOW DURATION (hours)
Type 1A and 1B ²	Type IIA and IIIA ^a	Type IV and V-A ^a	Type IIB and IIIB ^a	Type V-B ^a		
0-22,700	0-12,700	0-8,200	0-5,900	0-3,600	1,500	2
22,701-30,200	12,701-17,000	8,201-10,900	5,901-7,900	3,601-4,800	1,750	
30,201-38,700	17,001-21,800	10,901-12,900	7,901-9,800	4,801-6,200	2,000	
38,701-48,300	21,801-24,200	12,901-17,400	9,801-12,600	6,201-7,700	2,250	
48,301-59,000	24,201-33,200	17,401-21,300	12,601-15,400	7,701-9,400	2,500	
59,001-70,900	33,201-39,700	21,301-25,500	15,401-18,400	9,401-11,300	2,750	
70,901-83,700	39,701-47,100	25,501-30,100	18,401-21,800	11,301-13,400	3,000	3
83,701-97,700	47,101-54,900	30,101-35,200	21,801-25,900	13,401-15,600	3,250	
97,701-112,700	54,901-63,400	35,201-40,600	25,901-29,300	15,601-18,000	3,500	
112,701-128,700	63,401-72,400	40,601-46,400	29,301-33,500	18,001-20,600	3,750	
128,701-145,900	72,401-82,100	46,401-52,500	33,501-37,900	20,601-23,300	4,000	4
145,901-164,200	82,101-92,400	52,501-59,100	37,901-42,700	23,301-26,300	4,250	
164,201-183,400	92,401-103,100	59,101-66,000	42,701-47,700	26,301-29,300	4,500	
183,401-203,700	103,101-114,600	66,001-73,300	47,701-53,000	29,301-32,600	4,750	
203,701-225,200	114,601-126,700	73,301-81,100	53,001-58,600	32,601-36,000	5,000	
225,201-247,700	126,701-139,400	81,101-89,200	58,601-65,400	36,001-39,600	5,250	
247,701-271,200	139,401-152,600	89,201-97,700	65,401-70,600	39,601-43,400	5,500	
271,201-295,900	152,601-166,500	97,701-106,500	70,601-77,000	43,401-47,400	5,750	
295,901-Greater	166,501-Greater	106,501-115,800	77,001-83,700	47,401-51,500	6,000	
—	—	115,801-125,500	83,701-90,600	51,501-55,700	6,250	
—	—	125,501-135,500	90,601-97,900	55,701-60,200	6,500	
—	—	135,501-145,800	97,901-106,800	60,201-64,800	6,750	
—	—	145,801-156,700	106,801-113,200	64,801-69,600	7,000	
—	—	156,701-167,900	113,201-121,300	69,601-74,600	7,250	
—	—	167,901-179,400	121,301-129,600	74,601-79,800	7,500	
—	—	179,401-191,400	129,601-138,300	79,801-85,100	7,750	
—	—	191,401-Greater	138,301-Greater		85,101-Greater	

a. Types of construction are based on the NC Building Code

b. Fire-Flow is measured at 25 psi residual pressure.

TABLE E2

**REQUIRED FIRE-FLOW FOR ONE-AND
TWO-FAMILY DWELLINGS**

FIRE-FLOW CALCULATION AREA (square feet)	AUTOMATIC SPRINKLER SYSTEM (Design Standard)	MINIMUM FIRE- FLOW (gallons per minute)	FLOW DURATION (hours)
0-3,600	No automatic sprinkler system	1,000	1
3,601 and greater	No automatic sprinkler system	Value in Table E1	Duration in Table E1 at the required fire-flow rate
0-3,600	Section 903.3.1.3 of the NC Fire Code Section P2904 of the NC Residential Code	1,000	Duration in Table E1 at the required fire-flow rate
3601 and greater	Section 903.3.1.3 of the NC Fire Code Section P2904 of the NC Residential Code	1/2 value in Table E1 but no less than 1,000	1

Table E3

REQUIRED FIRE -FLOW FOR BUILDINGS OTHER THAN ONE-TWO FAMILY DWELLINGS

Automatic Sprinkler System (Design Standard)	MINIMUM FIRE-FLOW (gallons per minute)	FLOW DURATION (hours)
No automatic sprinkler system	Value in Table E1	Duration in Table E1
Section 903.3.1.1 of the NC Fire Code	25% of the value in Table E1 but no less than 1,500	Duration in Table E1 at the reduced flow rate
Section 903.3.1.2 of the NC Fire Code	25% of the value in Table E1 but no less than 1,500	Duration in Table E1 at the reduced flow rate

6.03 VALVES AND APPURTENANCES

A. Location

Valves shall be installed on all branches from feeder mains and hydrants according to the following schedule: 4 valves at crosses; 3 valves at tees; and 1 valve on each hydrant branch. When a loop section of waterline is connected back into the feeder main within a distance of 200 feet or less, only 1 valve will be required in the feeder main.

Where no waterline intersections are existing, a main line valve shall be installed at every 100 feet per 1-inch diameter main up to a distance of 2000 feet between valves.

Blowoff assemblies shall be a minimum of 2 inches and installed at the end of all dead-end waterlines. Where there is not sufficient pressure or fire hydrants located to thoroughly flush the system, a larger blowoff may be required. On large diameter mains or other circumstances, larger blowoffs may be required by the Executive Director of Utilities and Infrastructure Services.

Combination air valves shall be installed at high points of waterlines 12 inches in diameter or larger, as directed by the Executive Director of Utilities and Infrastructure Services. All new air release valves shall be installed in precast manholes. Existing lines in which an air release valve is installed can use a dog house manhole. Water lines shall be installed at a grade which will allow the air to migrate to a high point where the air can be released through an air valve. A minimum pipe slope of 1 foot in 500 feet should be maintained. The size of air valve shall be designed by a Professional Engineer registered in North Carolina. Combination air valves or other types of air release valves may be required at other locations as directed by the Executive Director of Utilities and Infrastructure Services.

All new construction air release manholes shall be a precast manhole. Doghouse manholes can only be installed on existing water lines.

Water lines crossing stream beds will be required to be installed with restrained joint pipe inside a steel encasement pipe.

B. Specifications

Gate Valves greater than 2 inches shall meet all requirements of AWWA C500 for a working pressure of 150 psi. All shall be mechanical joint with iron body, resilient wedge seat type in accordance with AWWA C509 with a non-rising stem and open left with a double O-ring seal. Gate valves shall be installed in a vertical position.

Valve Boxes shall be cast iron of the screw or telescopic type with a 5-inch opening with "water" stamped on the cover. Valve box ring adjustments will not be allowed. Locking valve boxes may be required as determined by the Executive

Director of Utilities and Infrastructure Services. All castings shall be made in the United States.

Butterfly Valves shall be installed in waterlines 24 inches or greater. All shall meet the requirements of AWWA C504 with mechanical joints, 2-inch operating nut and open left.

Blowoff Assemblies shall be constructed as shown in the Standard Details Section of these Standards. The valves shall be an AWWA iron body gate valve with a non-rising stem and a 2-inch operating nut.

Pipe Fittings shall be compact fittings in accordance with AWWA C153. Joints for fittings shall be mechanical joint and lined with cement mortar with a seal coat of bituminous material, all in accordance with AWWA C104.

Reaction Blocking for all fittings or components subject to hydrostatic thrust shall be securely anchored by the use of concrete thrust blocks poured in place. The required reaction areas are shown in the Standard Details Section of these Standards. Concrete shall be installed so that it does not interfere with the removal of fittings. Material for reaction blocking shall be 3000 psi concrete. Alternative restraining methods may be considered only in unusual circumstances and must be designed by a Professional Engineer registered in North Carolina and approved by the Executive Director of Utilities and Infrastructure Services.

Tapping Sleeves shall be stainless steel sleeves with stainless steel flanges meeting the material requirement of AWWA C223 and AWWA C228. The sleeves shall be mechanical joint to the main line and flanged to the tapping valve. Mechanical joint outlet connections shall be compatible with ANSI/AWWA C111/A21.11.

Tapping Saddles shall be used on mains 16 inches and larger. Saddles shall be made of stainless steel providing a factor of safety of 2.5 with a working pressure of 250 psi. Saddles shall be equipped with an AWWA C110 flange connection on the branch. Sealing gaskets shall be O-ring type, high quality molded rubber having an approximate 70 durometer hardness, placed into a groove on the curved surface of the saddles. Straps shall be alloy steel.

The maximum size saddle outlet for each size of pipe to be tapped shall be as follows:

Size pipe to be tapped	Maximum size saddle outlet
16"	8"
18"	8"
20"	10"
24" and larger	12"

Combination Air Valves shall be of the single housing style that combines the operation of both an air/vacuum and air release valve. The valve shall be manufactured for a 150 PSIG working pressure and be sized by the Engineer. The valve must meet the requirements of AWWA C512 and be installed in accordance with the Standard Details Section of these Standards.

C. Installation

Valves shall be properly located, operable and at the correct elevation. All valves and reducers shall be rodded to a nearby tee or cross if possible. As shown in the Standard Details Section of these Standards. If reducers cannot be rodded, concrete blocking or other restraining methods will be required. The valve box shall be centered over the wrench nut and seated on compacted backfill without touching the valve assembly. The maximum depth of the valve nut shall be 5 feet, unless approved by the Executive Director of Utilities & Infrastructure Services. When valve extension kits are used, they must be manufactured by the same company which manufactured the valve.

All valve boxes in roadways shall be encased in a trowel-finished 30" diameter circle by 12" thick circular pad of 3000 psi concrete beneath the asphalt course with the cover flush with the top of the pavement.

Valve boxes outside roadways shall be flush with finished grade with a 2'x2'x6" concrete encasement or precast concrete donut.

Precast concrete valve box encasements may be used for valve box encasement outside of paved areas only.

6.04 WATER SERVICE TAPS

A. Materials

Corporation Stops shall be brass, complete with a flared or compression coupling and AWWA Standard threads as per AWWA C800. Taps shall be located at 10 or 2 o'clock on the circumference of the pipe. Service taps shall be staggered alternating from one side of the water main to the other, and at least 12 inches apart. The taps must be a minimum of 24 inches apart if they are on the same side of the pipe.

The maximum size of direct taps without a fitting, tapping sleeve or saddle for ductile iron water mains shall be as follows:

4" main - 3/4" tap
6" main - 1" tap
8" main - 1 1/4" tap

10" main - 1½" tap
12" main - 2" tap

No burned taps will be allowed and each corporation stop will be wrapped with Teflon tape for ductile iron pipe water mains.

Service Saddles shall be bronze body (85-5-5 waterworks brass) and double strap for taps with silicon bronze nuts conforming to ASTM A98 and factory-installed grade 60 rubber gaskets.

Copper Service Tubing shall be type K soft copper tubing per ASTM B88. The longest available length of service line should be used with no unions. As an example, for a ¾-inch service connection, no union shall be used in the installation of 100 feet or less. Unions shall be made with flare type couplings.

Meter Boxes for ¾-inch Services shall be 18 inch depth cast iron MBX-1 and a complete unit (less meter) for setting a 5/8 by 3/4-inch water meter. Meter box grade adjuster rings are not acceptable.

Meter Boxes for 1-inch Services shall be 18 inch depth cast iron box and cover with a meter yoke and/or copper resetter. Meter box grade adjuster rings are not acceptable.

Meter Boxes for 1½ and 2-inch Services shall be lightweight polymer concrete as indicated in the Standard Details Section of these Standards. Piping for 1½ and 2-inch water meters shall be constructed from brass and copper tubing and shall be equipped with angled check valve outlets and by-pass flanged valve or by-pass flanged ball valve inlets. Meter boxes shall not be allowed in travel lanes or traffic areas. Meter box grade adjuster rings are not acceptable.

Meters for ¾" services shall meet the requirements of AWWA C700 and be supplied and installed by the Town of Holly Springs.

Meters for services 1 inch and greater shall meet the requirements of AWWA C700 and be paid for by the Developer and installed by the Town of Holly Springs Public Works Department after approval by the Executive Director of Utilities and Infrastructure Services. **Meters 2 inches and greater** shall require a 2 inch bypass and shall require a meter test port. A strainer shall be provided upstream of the meter.

Meter Boxes shall not be located in sidewalk or travel lanes, except as noted below.

Meter Vaults within paved areas shall meet HS-20 loading requirements and shall be located outside travel areas. The access door shall be aluminum with a flush drop lift handle, stainless steel hinges and bolts, a stainless steel slam lock, an automatic hold open arm, and compression springs to allow for easy opening.

Positive drainage shall be provided for all meter vaults. Positive drainage shall be construed to mean a “daylight” drain not less than 4” schedule 40 PVC pipe with flap valve on the end. Vault dimensions must be sized to ensure pipe work will fit within the vault. When installing pipe work, ensure it is spaced evenly within the vault.

All vaults over 2” in size shall be in below ground vault unless in riser room.

B. Individual Water Services

Individual water services shall be provided from the main to each water meter for single family residences in accordance with the Standard Details section of these Standards. Multi-family units may be in accordance with the Standard Detail for multi-family units in the Standard Details section of these Standards. All connections shall be made by wet taps.

Service connections shall be made perpendicular from the main line and shall run straight horizontally toward the meter and then vertically to the meter which shall be located at the edge of the right of way or easement of the served property. Refer to the standard detail on water service installations for more information. No water meter box or vault shall be located in streets, sidewalks, or parking areas in residential areas. For non-residential development, individual services are required for each business space. In non-residential areas, meter locations shall be approved on a case-by-case basis. Provisions for backflow prevention shall be as specified in Section 6.06 of these Standards.

Service taps to existing water lines shall be made by the Town of Holly Springs Utilities and Infrastructure Services unless otherwise approved by the Executive Director of Utilities and Infrastructure Services. Service taps to new water lines shall be made by the Contractor in accordance with these Standards.

Water meters shall be sized based on water demand. Water meter size shall be determined from the following table; or as otherwise specified by the Executive Director of Utilities and Infrastructure Services. All non-residential projects shall submit sealed calculations prepared in conformance with the AWWA Manual of Practice for approval of type of meter and meter size by the Town.

WATER METER SIZING

Meter Size (inches)	Flow Range (GPM)	Load Range (number of fixture units)	
		Supply Systems Predominately for Flush Tanks	Supply Systems Predominately for Flush Valves
5/8" PD	0 - 20	1 – 22	1 - 8
1" PD	20 - 50	22 – 140	9 - 50
1½" PD	50 - 100	140 – 450	50 - 275
2" C	100 - 200	450 – 1000	275 - 1000
3" C	200 - 400	1000 – 2500	1000 - 2500
4" C	400 - 600	2500 – 5000	2500 - 5000

PD = Positive Displacement

T = Turbine (may be required on a case-by-case basis)

C = Compound (must be sized on a case-by-case basis)

6.05 CLEARANCE BETWEEN WATER MAINS, AND NON-POTABLE WATER LINES

Water mains shall be laid at least 10 feet laterally (measured edge to edge) from existing or proposed sanitary sewer unless local conditions or barriers prevent a 10-foot lateral separation--in which case:

- (1) The water main is laid in a separate trench, with the elevation of the bottom of the water main at least 18 inches above the top of the sewer; or
- (2) The water main is laid in the same trench as the sewer with the water main located at one side on a bench of undisturbed earth, and with the elevation of the bottom of the water main at least 18 inches above the top of the sewer.

Water mains shall be laid at least 10 feet laterally (measured edge to edge) or 18-inches above existing or proposed reclaimed water distribution lines, in accordance with the most recent revision to 15A NCAC 18C .0906 (e).

A water main that crosses a sewer/reclaimed line shall be laid a minimum vertical distance of 18 inches from the outside of the water main and the outside of the sewer/reclaimed, either above or below the sewer/reclaimed, with preference to the water main located above the sewer/reclaimed. One full length of water pipe shall be located so that both joints will be as far from the sewer/reclaimed as possible.

When water mains must cross sewer mains, the water mains shall cross at an approximate 90° angle unless adequate vertical separation is provided.

Where it is infeasible to maintain the required 18 inches of vertical separation between a water main and a sanitary sewer main, a Professional Engineer licensed in the state of North Carolina can submit justification of the deviation according to special conditions listed under the most recent revision of 15A NCAC .0906 (c) and .0906 (f).

To allow for construction and repair, a minimum distance of 12 inches shall be maintained between the outside of the water main and the outside of all other utilities. Where it is infeasible to maintain the required 12 inches of vertical separation between a water main and other utilities, a Professional Engineer licensed in the state of North Carolina must seek to defend a special consideration per 15A NCAC .0904(c).

Water lines that cross and run beneath storm drainage pipes that are greater than or equal to 42" diameter (single pipe) or 36" diameter (multiple pipes) and/or streams or creeks shall be installed as restrained joint pipe and enclosed in casing pipe. A minimum cover of 5 feet shall be provided over the pipe for underwater stream crossings, in accordance with the Recommended Standards for Water Works (Ten State Standards) and the Rules Governing Public Water Systems. Installation may be by bore and jack or excavation at discretion of Executive Director of Utilities and Infrastructure Services.

For required separation and clearance from water main to reclaimed water reference Section 11.00.

6.06 BACKFLOW PREVENTION AND CROSS CONNECTION

A. General

Cross-Connection shall mean any unprotected actual or potential connection or structural arrangement between a public or a consumer's water system and any other source or system through which it is possible to introduce any contamination or pollution, other than the intended potable water with which the system is supplied. All construction shall be required to comply with the Town of Holly Springs Ordinance for the Control of Backflow and Cross-Connection No. 03-09 in its entirety, in addition to the following:

All residential water services for domestic purposes shall be provided with a dual check backflow prevention device on the meter setter within the meter box. Dual check valves must comply with AWWA Standard C-510.

All irrigation services and non-residential services shall be provided with reduced pressure principle backflow prevention installed in accordance with the State of North Carolina and the Foundation for Cross Connection Control and Hydraulic Research at the University of South Carolina (USC) and AWWA Standard C-511.

This includes all service connections to fire sprinkler systems. Reduced pressure zone (RPZ) backflow preventers shall be installed aboveground immediately behind the meter (on the private side). Alternate installations shall comply with Town Ordinance 03-09 as noted above, and require approval of the Executive Director of Utilities and Infrastructure Services. Above-ground installations that service any use other than single family residential users will require an insulated box mounted on a 4" concrete slab, wired for a heater and provided with a heater. A 4" concrete slab shall be provided for underground RPZ's and for insulated boxes.

6.07 AUTOMATIC FIRE SPRINKLER SYSTEMS

A. General

Working drawings and calculations for all fire sprinkler systems and standpipe systems, prepared by a Professional Engineer registered in North Carolina, shall be submitted to the Town of Holly Springs Inspection Department for approval before installation begins.

B. Design

Approved working plans shall be in complete compliance with NFPA No. 13, 13D, 13R, 14, 231, 231C, 231F and Town specifications. A NFPA above ground material and test certificate, and a NFPA underground material and test certificate are required after completion of designated and approved work. Design shall include backflow prevention measures, details on any proposed fire pumps and/or tanks, calculations to ensure that the allowable pressures in the Town system are maintained. Flow data for system design shall be field-verified by the designer. The Town will provide assistance with opening valves and hydrants for the collection of data. Fire lanes are required in front of all FDC, Riser Rooms, Fire Hydrants, PIV, and other entrances and exits as determined by the Town or Office of the Fire Marshal.

C. Post Indicator Valve (PIV)

A post indicator valve (PIV) shall be provided on the Town's side at the right of way or edge of easement. The valve shall be locked in open position monitored by an electronic tamper switch. When backflow prevention devices are contained within a building, an outside access (above the finish floor elevation) shall be provided. The top of the post indicator valve shall be installed at 30-42 inches from the finished grade, minimum of 5' of unobstructed access perimeter shall be maintained around the PIV and must be protected from vehicular obstruction. The Town shall maintain up to, but not including, the post indicator valve. The post indicator valve shall be painted red and must be protected from vehicular obstruction with means of steel bollards when not located behind curb. In urban settings, a wall mounted indicator valve may be used where there is no suitable

location for a post mounted indicator valve. Wall mounted indicator valves shall be centered 30-42 inches above the finished grade. It shall be greater than 10 feet from any door, window or protected opening along the wall.

Post indicator valve is to be located as close as possible to the tap of the water main.

D. Backflow Prevention

When a fire protection system is proposed an RPZ type backflow prevention device as approved by USC (with make and model specified) shall be required. RPZ's shall be located inside a riser room in a location shown on the construction plans. Existing structures shall be exempt from this section until such time any structure is sold, remodeled or improvements to the property exceeding the sum of \$2,500.00 are made, or a new occupancy permit is otherwise required for the property.

E. Fire Department Connection (FDC)

Where automatic fire sprinkler systems or standpipe systems are used, a Fire Department Connection (FDC) with check valve [reference detail section 6, HS625] shall be red in color, provided on the street side of buildings, fully visible and recognizable from the street or nearest point of fire department vehicle access or as otherwise approved by the Office of the Fire Marshal. The Fire Department Connection shall be located 36 inches above proposed grade and within 100 feet of a fire hydrant and at fall zone line or as specified by the Office of the Fire Marshall, and shall be located so that nothing obstructs direct access. A 5 foot clearance shall be provided around the FDC connection and labeled with 6 inch contrasting colored letters. When a sprinkler system serves only part of a large structure, the fire department connection shall be labeled as to which section of the structure that sprinkler riser serves. This labeling shall be a minimum of 2 inch lettering on a permanent sign. FDC shall have a 5" Storz connection with chained cap. FDC's can be mounted on single story buildings only.

F. Dedicated Riser Room

A dedicated sprinkler riser room providing an entry door to the room from the exterior of the building in accordance with NC Building Code shall be provided. All dedicated riser rooms shall be equipped with a floor drain sized appropriately to prevent flooding. The floor drain shall be piped to storm system or main building drain. The floor drain shall be provided with a circular raised ring/hub around the floor drain to prevent debris and/or chemicals from entering the drain during an emergency spill. The hub shall be fabricated of cast iron or other corrosion resistant material and extend at least 3 inches above floor elevation. The exterior riser room door plus all other required or Town designated fire exits shall have a protected clearance of 5 feet from any obstruction by vehicular movement by means of curbing, bollards, or concrete bumpers.

G. Access

Any building, other than a residential building with less than four units, shall have installed a “Knox Box”, a key box entry system per North Carolina Fire Code, to be used by the local fire department in case of emergency. The key box shall contain master keys necessary for access to all portions of the premises. The Office of the Fire Marshal may specify such supplemental information as floor plans, lists of chemicals and hazardous materials located within the building to be required within the Knox Box.

This Knox Box shall be mounted on the exterior entrance to the dedicated riser room or at the normal fire department entrance when there is no dedicated riser room. Mount Knox Box on wall at 5 feet A.F.F. on door handle side of dedicated riser room door or normal fire department entrance door. This Knox Box shall be ordered online at www.knoxbox.com and shall be in place before a Certificate of Occupancy is issued. Keys to access the facility shall be provided to the Town Fire Department by the owner/manager.

Existing structures shall be exempt from this section until such time as any such structure is sold, remodeled or improvements to the property, exceeding the sum of \$2,500.00, are made, or a new occupancy permit is otherwise required for the property.

H. Identification

The exterior door leading to the dedicated sprinkler riser room shall be labeled with minimum 4 inch lettering designating “SPRINKLER RISER ROOM” in a contrasting color. Durable vinyl lettering is suggested.

I. Installation

All gas or electrical panels must be protected with steel bollards from vehicular traffic.

J. Fire Alarm Panel Location

When a building is protected by an automatic sprinkler system and has a fire alarm system, the fire alarm control panel or a remote annunciation of the fire alarm control panel shall be placed in the sprinkler riser room. This control panel shall have the capacity of silencing and resetting. Adjacent to the fire alarm control panel shall be a mounted framed zone map, removable from the wall. Nomenclature shall correspond with the zone map.

When there is no sprinkler system in building, the fire alarm control panel or remote annunciator shall be located at the normal fire department entrance.

6.08 FIRE DEPARTMENT ACCESS

A. Fire Access and Fire Lanes

Fire Access

The following guidelines represent the Town's efforts to maintain consistency concerning Fire Department emergency access. It is the Town's responsibility to ensure adequate access for the Fire Department and other responding agencies. The Town therefore reserves the right to require modifications to established requirements if, in the Town's opinion, the access cannot be provided or may be compromised.

All access roadways shall be built to street standards as described in the Town's Engineering Design and Construction Standards. The roadway design shall be prepared and certified by a Design Professional. All required access roadways shall be properly maintained and kept clear for emergency use at all times. Any alternatives to these specifications shall be reviewed and approved by the Office of the Fire Marshal prior to construction.

FIRE APPARATUS ACCESS ROAD – A road that provides fire apparatus access from a fire station to a facility, building or portion thereof. This is a general term inclusive of all other terms such as fire lane, Public Street, Private Street, parking lot lane, alley ways and access roadway.

FIRE LANE – A road or other passageway developed to allow the passage of fire apparatus. A fire lane is not necessarily intended for vehicular traffic other than fire apparatus.

Approved fire apparatus access roads shall be provided for every facility, building or portion of a building hereafter constructed or moved into or within the jurisdiction. The fire apparatus access road shall comply with the requirements of the NC Fire Code and Town Standards and shall extend to within 150 feet of all portions of the facility or all portions of the exterior wall of the first story of the building as measured by an approved route around the exterior of the building or facility. The fire official is authorized to increase the 150 feet where:

The building is equipped throughout with an approved automatic sprinkler system installed in accordance with the NC Fire Code and applicable NFPA standards.

Fire apparatus access roads cannot be installed due to location on property, topography, waterways, non-negotiable grades or other similar conditions, and an approved alternative means of fire protection is provided.

There are not more than two Group R-3 or Group U occupancies.

Fire department apparatus access to buildings used for high-piled combustible storage shall comply with the applicable provisions of the NC Fire Code.

Fire apparatus access roads shall have an unobstructed width of not less than 20 feet and an unobstructed vertical clearance of not less than 13 feet 6 inches.

The Office of the Fire Marshal shall have the authority to require an increase in the minimum access widths where they are inadequate for fire or rescue operations.

Fire apparatus access roads shall be designed and maintained to support the imposed loads of fire apparatus and shall be surfaced so as to provide all-weather driving capabilities.

Dead-end fire apparatus access roads in excess of 150 feet (45 720 mm) in length shall be provided with an approved area for turning around fire apparatus. Proposed turn around area shall not be located within proposed residential lots. See TOHS Detail HS367

Grass pavers are also an acceptable alternative to concrete, asphalt or gravel for the 120' Hammerhead or the acceptable alternative to the 120' Hammerhead. Specification and data sheets on the proposed pavers will need to be submitted to the Fire Department for approval

Where a bridge or an elevated surface is part of a fire apparatus access road, the bridge shall be constructed and maintained in accordance with AASHTO Standard Specification for Highway Bridges. Bridges and elevated surfaces shall be designed for a live load sufficient to carry the imposed loads of fire apparatus. Vehicle load limits shall be posted at both entrances to bridges when required by the code official. Where elevated surfaces designed for emergency vehicle use are adjacent to surfaces which are not designed for such use, approved barriers, approved signs or both shall be installed and maintained when required by the code official.

The grade of the fire apparatus access road shall be within the limits established by the Office of the Fire Marshal based on the fire department's apparatus.

B. Gates

Gates securing the fire apparatus access roads shall comply with all of the following criteria:

The minimum unobstructed gate width shall be 20 feet.

The gate shall have a Knox Box mounted to it, with keys or access cards to open the gate in the event of an emergency.

Gates shall be of the swinging or sliding type, unless approved by the Office of the Fire Marshal.

Gate components shall be maintained in an operative condition at all times and replaced or repaired when defective.

Electric gates shall be equipped with a means of opening the gate by fire department personnel for emergency access. Emergency opening devices shall be approved by Office of the Fire Marshal.

Manual opening gates shall not be locked with a padlock or chain and padlock unless they are capable of being opened by means of forcible entry tools; locking device specifications shall be submitted for approval by the Office of The Fire Marshal.

The Office of the Fire Marshal is authorized to require the installation and maintenance of gates or other approved barricades across fire apparatus access roads, trails or other access ways, not including public streets, alleys or highways. When required, gates and barricades shall be secured in an approved manner. Roads, trails and other access ways that have been closed or obstructed shall not be trespassed on or used unless authorized by the owner and the Office of the Fire Marshal.

The installation of security gates across a fire apparatus access road shall be approved by the Office of the Fire Marshal. Where security gates are installed, they shall have an approved means of emergency operation. The security gates and the emergency operation shall be maintained operational at all times. Electric gate operators, where provided, shall be listed in accordance with UL 325. Gates intended for automatic operation shall be designed, constructed and installed to comply with the requirements of ASTM F 2200.

C. Two Points of Access

The Office of the Fire Marshal may require more than one fire apparatus access road based on the potential for impairment of a single road by vehicle congestion, condition of terrain, climatic conditions or other factors that could limit access.

When two points of access are required, they shall be placed a distance apart of at least one half of the length of the maximum overall diagonal dimension of the property or area to be served, measured in a straight line between accesses. The Town shall not allow the second access point to be limited to use by emergency responders only. The second access shall always be available for public use in case the other access is blocked.

Buildings or facilities located in Commercial and Industrial Developments and exceeding 30 feet or 3 stories in height shall have at least 2 means of fire apparatus access. Buildings or facilities having a gross building area of more than 62,000 square feet shall have at least 2 means of fire apparatus access. If the buildings or facilities are provided with an approved automatic fire sprinkler system, the gross building area can be increased to 124,000 square feet with one access road.

Fire apparatus access roadways shall have a minimum unobstructed width of 26 feet in the immediate vicinity of any building or portion of building more than 30 feet in height. At least one of the required access routes meeting this condition shall be located within a minimum of 15 feet and a maximum of 30 feet from the building, and shall be positioned parallel to one entire side of the building.

Maintenance of the required access shall be considered during the planning stages and installation of Fire Department access roadways, fire hydrants, or connections. This includes the potential growth of trees and/or other vegetation over the years.

D. Fire Lanes

A plan shall be submitted for approval to the Office of the Fire Marshal which indicates all fire lanes and proposed fire lane sign placements for the project site.

The general requirement designates that any building located more than 150 feet from a public road, or which exceeds 30 feet in height and is set back more than 50 feet from a public road, shall have a fire lane.

Fire lanes shall be a minimum width of 20 feet and shall be properly marked and signed to designate the access as a “fire lane” as specified by the Office of the Fire Marshal. For specifications of the fire lane cross section, refer to Section 3 of these standards.

All fire lanes shall be marked in accordance with one of the following requirements:
Continuously painted yellow striping along the fire lane with “No Parking - Fire Lane” printed with minimum 8-inch high letters at 40-foot intervals or as directed by the Office of the Fire Marshal;

Continuously painted yellow curb along the fire lane with “No Parking - Fire Lane” printed with minimum 8-inch high letters at 40-foot intervals or as directed by the Office of the Fire Marshal;

The installation of the MUTCD standard sign showing “No Parking - Fire Lane” placed at each end of the fire lane and at 50-foot intervals with arrows on the signs or a continuously painted yellow strip along both sides of the fire lane (or an additional sign beneath the fire lane sign lettered as “both sides”). Signs shall be a type R8-31 or equivalent reflective sign no less than 12 inches x 18 inches in size, white background, with the wording “No Parking - Fire Lane” in red letters.

Signs shall be posted at the following minimum height:

60 inches to the top of the sign when pedestrians do not pass by or under the sign.
This application includes signs mounted on the building face, a column, or other fixed mounting surface;

84 inches to the top of the sign when the pedestrian path does pass by or beneath the sign. This application includes signs mounted on a fixed metal post located in a sidewalk and/or traffic island.

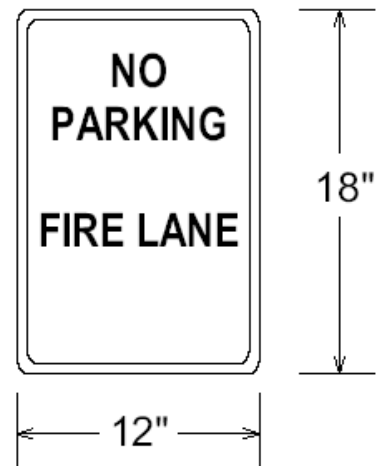
SIGN TYPE "A"



SIGN TYPE "C"



SIGN TYPE "D"



The above fire lane requirements shall also apply to all fire hydrant islands located along the face and sides of a hydrant.

Fire Lanes shall be installed and inspected in accordance with these Standard Specifications as well as the NC Fire Code. The Office of the Fire Marshal shall have the authority to designate fire lanes as deemed necessary for Fire Department access.

Roadways, driveways, and access ways shall not be marked as fire lanes without first obtaining approval from the Office of the Fire Marshal.

E. Fire Safety During Construction

There shall be no open burning within the Town's jurisdiction, unless approved by the Office of the Fire Marshal.

Fire Safety during construction, alteration, or demolition shall be maintained according to the NC Fire Code and other applicable provisions of NFPA 241.

Fire safety during construction and demolition is essential to maintain a safe and efficient project. The use of temporary heating equipment, flammable and combustible liquids storage, use and dispensing, explosives storage, handling and use, and all other general fire safety requirements shall be adhered to according to the NC Fire Code.

Vehicle access for firefighting shall be provided to all construction or demolition sites. Vehicle access shall be provided within 100 feet of temporary or permanent fire department connections. Vehicle access shall be provided by either temporary or permanent roads, capable of supporting vehicle loading under all weather conditions.

The fire protection water supply system, including fire hydrants, shall be installed and be in at least the functional status prior to placing combustible materials on the project site. If phased construction is planned, coordinated installation of the fire protection water system is permitted.

Any existing fire hydrant removed from service due to construction/demolition activities shall be placed back into service by the Owner/Developer within 14 calendar days from the date it was taken out of service or a timeframe approved by the Office of the Fire Marshal.

The Fire Department shall be notified at least 24 hours before fire hydrant(s) or water line impairment.

6.09 TESTING AND INSPECTION

Under no circumstance shall any waterline system valve be operated without prior approval by the Development Inspector. Damage to Town infrastructure resulting from illegal operation of valves shall be the responsibility of the Contractor. In addition, the Contractor shall be subject to a fine for operating a valve without prior approval.

All materials shall be inspected by the Development Inspector before they shall be allowed to be installed. Materials rejected by the Development Inspector shall be immediately removed from the job site.

The Contractor shall furnish all materials, labor, equipment, and shall pay for the water used to perform all testing and inspections to the satisfaction of the Development Inspector. The Contractor shall obtain a Water Blowoff Permit from the Town Engineering Department for use when blowing off water mains.

Water service taps shall not be made until after all water main testing is completed, and bacteriological testing is satisfactory.

A. Hydrostatic Testing

Hydrostatic testing shall be done in accordance with AWWA C600. No valve in the existing Town of Holly Springs water system shall be operated without authorization from the Construction Inspector via a Water Blowoff Permit. Each section of line which is to be hydrostatically tested shall be slowly filled with water at a rate which will allow complete evacuation of air from the line. Once the line is full, it shall be blown off at a minimum of 2.5 FPS to flush and remove any debris. The line must be pretested at 200 psi provided that 200 psi is no less than 1.25 times the stated working pressure of the pipeline measured at the highest elevation along the test section and no less than 1.5 times the stated working pressure of the pipeline measured at the lowest elevation along the test section for 2 hours prior to contacting inspector for testing. Hand pumps shall not be used for the pressure testing of water mains. Taps used for testing purposes shall be removed after testing in accordance with Section 6.11 of these Standards.

Each water line shall be tested to a pressure of 200 psi as measured at the lowest elevation of the line, provided that 200 psi is no less than 1.25 times the stated working pressure of the pipeline measured at the highest elevation along the test section and no less than 1.5 times the stated working pressure of the pipeline measured at the lowest elevation along the test section for a duration of 2 hours. The test pressure shall not exceed the thrust restraint design pressures or 1.5 times the pressure rating of the pipe or joint, whichever is less (as specified by the manufacturer). The pressure gauge used in the hydrostatic test shall be calibrated in increments of 10 psi or less. At the end of the test period, the leakage shall be measured with an accurate water meter. Note that all visible leaks are to be repaired regardless of the amount of leakage. The Development Inspector may require pressure tests to be performed in smaller segments to determine if there is a problem

with a particular section of waterline. No chlorine dosage will be allowed in line during testing.

Fire line need to be tested all the way up to the slab through the riser room by the Development Inspector.

ALLOWABLE LEAKAGE	
Pipe Size (inches)	Amount of Allowable Leakage (gallons per 1000 feet of pipe)
4	0.85
6	1.28
8	1.70
12	2.56
16	3.40
20	4.24
24	5.10

B. Chlorination

All additions or replacements to the water system shall be chlorinated before being placed in service. Such chlorination must take place under the supervision of the Construction Inspector.

Chlorination of a completed line shall be carried out in the following manner:

- 1) The specific procedure and order of testing shall follow ANSI/AWWA C651 and be approved by the Construction Inspector before beginning the chlorination process.
- 2) Taps shall be made at the control valve at the upstream end of the line and at all extremities of the line including valves.
- 3) Before the main is chlorinated, it shall be filled with potable water to eliminate air pockets and flushed to remove particulates. Flushing velocity in the main shall no be less than 3 feet per second.
- 3) Drinking water treatment chemicals and drinking water system components shall be ANSI/NSF Standard 60 and 61 compliant. In accordance with ANSI/AWWA C651 4.1.3., a solution of water containing calcium hypochlorite (HTH, 65% available chlorine by weight) shall be introduced into the line by regulated pumping at the control-valve tap. Using ANSI/AWWA C651 4.4

Continuous Feed Method of Chlorination, the solution shall be of such a concentration that the line shall have a uniform concentration of 50 ppm total chlorine immediately after chlorination.

- 4) The HTH solution shall be circulated in the main by opening the control valve and systematically manipulating hydrants and taps at the line extremities. The HTH solution must be pumped in at a constant rate for each discharge rate in order that a uniform concentration will be produced in mains. *Note that for projects that are surrounded by populated development areas, the Construction Inspector can require that the circulation of HTH solution be accompanied with mechanical pumping.*
- 5) HTH solution shall remain in lines for no less than 24 hours or as directed by the Executive Director of Utilities and Infrastructure Services.
- 6) Extreme care shall be exercised at all times to prevent the HTH solution from entering existing mains.

C. Bacteriological Sampling

All new water systems shall be valved off from the existing water system until a satisfactory bacteriological sample is obtained and the Construction Inspector has authorized the use of the new water system.

1. Free residual chlorine after 24 hours shall be at least 10 ppm or the Construction Inspector shall require that the lines be rechlorinated.
2. Flushing of lines may proceed after 24 hours, provided the free residual chlorine analysis is satisfactory. Flushing shall be continued until a chlorine test kit shows that the lines contain only the normal chlorine residual.
3. Samples for bacteriological analysis shall be collected by the Construction Inspector a minimum of 16 hours after flushing is completed. The Contractor shall furnish such help as may be required to secure the required samples. Samples shall be collected and delivered to the Utley Creek Water Reclamation Facility Laboratory or other state-approved, certified laboratory by the Construction Inspector.
4. If bacteriological test results are unsatisfactory, the Contractor shall immediately obtain another Water Blowoff Permit, rechlorinate and retest the lines, proceeding with such measures as are necessary to secure properly disinfected lines.

6.10 FIRE PROTECTION DURING CONSTRUCTION

The fire protection water supply system, including fire hydrants, shall be installed and tested prior to placing combustible materials on the project site.

6.11 IRRIGATION SYSTEMS

No mainlines or valves shall be allowed within the utility strip (between the sidewalk and curb). Lateral will be allowed and shall be placed within 1 ft of sidewalk. Pipe material for all lines within the public right of way shall be a minimum of 2 feet deep and Schedule 40 PVC or greater for all lateral irrigation lines.

Irrigation systems shall have a backflow preventer installed in accordance with Section 6.06 of these Standards. All irrigation systems are required to secure a plumbing permit from the Code Enforcement Department prior to installation and shall be inspected after installation. A separate meter is required for irrigation systems.

All irrigation line street crossings shall be contained within a ductile iron or steel encasement pipe. The Town may, in some instances, permit irrigation systems installed in the medians of Town-maintained roadways. These systems must also have french drains installed behind the curb and gutter and piped to a storm drainage collection system. These systems shall be allowed only when some permanent mechanism is established for the private perpetual maintenance of the system(s).

Wells may be kept maintained for irrigation purposes after public utility connection, if they are on the opposite side of the single-family dwelling where the public water and/or sewer service is located.

6.12 REPAIR OF WATER LINES

Joint Leaks of cast iron pipe, ductile iron pipe, and PVC pipe shall use a bell joint leak repair clamp as manufactured by Rockwell, or other approved equal.

Line Breaks or Punctures shall be repaired by a full circle repair clamp as manufactured by Rockwell, Mueller, or other approved equal.

Line Splits or Blow Outs shall be repaired by replacing the damaged section with ductile iron pipe with a cast iron coupling at each end. The following cast pipe couplings shall be used for each pipe material indicated:

A.C. Pipe - Rockwell 441 cast coupling or other approved equal

Ductile Iron Pipe - Rockwell 431 cast coupling or other approved equal

PVC Pipe - Rockwell 411 cast coupling or other approved equal

For A.C. Pipe to PVC or Ductile Iron Pipe connections, use a cast pipe coupling with different end diameters sized specifically for the pipe materials, and pipe outside diameter at each end.

Water Service Line Repairs

- A water service line severed between the water main and the water meter shall be repaired using new type K copper tubing and bronze or brass 3-piece flare unions.
- A corporation stop pulled out of a PVC pipe water main shall have a new service saddle and a new corporation stop installed on the water main.
- A corporation stop pulled out of a ductile iron pipe water main shall have a full circle repair clamp placed over the old tap hole. A new tap shall be made and a new corporation stop installed on the water main.

END OF SECTION 6.00

**SECTION 7.00
SANITARY SEWER**

SUB-INDEX

7.01 GRAVITY SEWER MAINS

- A. General**
- B. Design**
- C. Materials**
- D. Additional Requirements for Flexible and Semi-Rigid Sanitary Sewer Pipe**

7.02 MOVED to NEW Section 13

7.03 MANHOLES

- A. Materials**

7.04 SERVICE CONNECTIONS

- A. Materials**
- B. Installation**
- C. Grease Interceptor**

7.05 TESTING AND INSPECTION

7.06 REPAIR OF SANITARY SEWER LINES

7.07 MOVED to NEW Section 13

SECTION 7.00 SANITARY SEWER

7.01 GRAVITY SEWER MAINS

A. General

Gravity sewer extensions shall meet all requirements of these standards. In addition, the Minimum Design Criteria for the Permitting of Gravity Sewers and Alternative Design Criteria for Minimum Separation for Sewer Systems to Wetlands, prepared by the Division of Water Resources of NC DEQ, and the North Carolina Administrative Code Title 15A Chapter 02 Subchapter T Waste Not Discharged to Surface Waters (15A NCAC 02T) are hereby incorporated into the Town's standards for gravity sewer design. This specification section identifies minimum equipment and construction requirements for gravity sewer extensions that are to be owned and operated by the Town of Holly Springs. This section does not address every aspect of gravity sewer extensions; it is the design engineer's (Designer's) responsibility to supplement these requirements as necessary to produce a complete set of plans and specifications.

All utility extension permits must be obtained prior to construction. Refer to the Town Code of Ordinances Section 16 for further requirements.

B. Design

Location

1. All public sanitary sewer mains shall be installed in dedicated street right of way or in dedicated utility easements. Sanitary sewer mains installed in Town of Holly Springs maintained streets shall be located in the center of travel lanes. Mains located within N.C. Department of Transportation right of way shall be placed outside of pavement limits, in accordance with NCDOT standards. See Section 2.10 for landscape plantings within Utility easements.
2. Minimum widths of public sanitary sewer easements shall be:

<u>Pipe Size (inches)</u>	<u>Pipe Depth (feet)</u>	<u>Easement Width (feet)</u>
< 12	< 20	20
< 12	> 20	30
12 - 24	< 20	30
12 - 24	> 20	40

> 24	All depths	Executive Director of Utilities and Infrastructure Services Specified
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- a) Additional width of easement will be required when easement contains multiple utilities.
 - b) Additional temporary construction easement may be required for any sewer not constructed at the time the easement is recorded.
 - c) Sewer mains shall be centered within their easements.
 - d) All sewer mains that extend as an outfall between residential lots shall have a minimum 30ft easement.
3. Outfalls shall require accessibility with a maximum cross slope of 6:1.
4. Proposed sanitary sewers paralleling a creek shall be designed to a proper depth to allow lateral connections such that all creek crossings will be below stream bed elevation unless otherwise approved by the Executive Director of Utilities and Infrastructure Services. The top of the sewer main shall have a minimum of one foot of cover between steel encasement pipe and the stream bed. In addition, the following is required:
- a) Sewer lines crossing stream beds will be required to be installed with restrained joint pipe inside a steel encasement pipe in accordance with the Standard Details section of these standards (Reference TOHS HS607).
 - b) Sewer lines crossing under storm drainage pipe containing a single pipe greater than 42 inches or multiple pipes greater than 36-inches will be required to be installed with restrained joint pipe inside a steel casing pipe. Installation may be by bore and jack or excavation which will be at the discretion of the Executive Director of Utilities and Infrastructure Services. All encasements to be extended a minimum of 10 feet beyond the stream bank and/or storm drainage pipe.
5. Sanitary sewer mains shall not be installed under any portion of water impoundments unless approved by the Executive Director of Utilities and Infrastructure Services.
6. The following minimum separations must be maintained:
- a) Any private or public water supply source, including WS-1 waters or Class I or Class II impounded reservoirs used as a source of drinking water – 100 feet;

- b) Any waters classified WS-II, WS-III, B, SA, ORW, HQW or SB (from normal high water [or tide elevation] – 50 feet);
- c) Any other stream, lake, or impoundment – 25 feet or as required by State law.

Where the required minimum separations cannot be maintained, ferrous sanitary sewer pipe with joints equivalent to water main standards shall be used. However, in no instance may sanitary sewer lines be installed less than 25 feet from a private well or less than 100 feet from a public water supply source (or as required by State law).

- 7. Sanitary sewer lines shall be extended to adjacent upstream property lines, in order to serve all upstream properties. These lines shall be sized to serve all upstream tributary areas in accordance with the Master Land Use Plan or approved developments (whichever results in the larger flow).
- 8. All non-residential swimming pools shall be discharged into the storm sewer system after dechlorination.

Size

- 1. The minimum size of public gravity sanitary sewer mains shall be 8 inches.
- 2. Major interceptors shall be sized in accordance with the “Master Wastewater Plan of the Town of Holly Springs.” In areas not included in the master plan, new sewer interceptors shall be designed based on the proposed land use (in accordance with the Town’s Master Land Use Plan) of the contributory area. The following flow factors shall be used:

Residential, (Single-Family) flow rates:

Use flow factors as required by the North Carolina Department of Environmental Quality- (at the time of this specification revision, these flow rates are contained in 15A NCAC 02T.0114), or use the Town’s approved flow reduction of 255 gpd/unit, whichever is less.

Residential (Multi-Family) and Non-Residential flow rates:

Use flow factors as required by the North Carolina Department of Environmental Quality- (at the time of this specification revision, these flow rates are contained in 15A NCAC 02T.0114).

- 3. For existing sewer systems, an additional allowance shall be made to the above flow factors where the existing flow exceeds these values and immediate remedial measures are not proposed.

4. The ratio of peak to average daily flow shall be 2.5.
5. Sanitary sewers shall be designed to carry the projected peak flow at no more than $\frac{1}{2}$ full. The recommended minimum velocity for sanitary sewer lines is 2 fps. The minimum slope for the uppermost reach of a sanitary sewer line shall be 1.00%.

The minimum grades for public sanitary sewers shall be as follows:

Main Size (inches)	Minimum Slope (feet/100 feet)
8	0.40
12	0.22
16	0.14
18	0.12
21	0.10
24	0.08
30	0.06

6. The maximum grade for sanitary sewers is 10%. The maximum velocity in sanitary sewers is 15 feet per second. These limits may be exceeded with the approval of the Executive Director of Utilities and Infrastructure Services and with the incorporation of the following provisions:
 - a) All sewers of greater than 10% slope shall be ductile iron pipe;
 - b) High velocity manholes, in accordance with the Standard Details Section of these Standards shall be used on all sewers with a slope greater than 10%;
 - c) Concrete anchors shall be installed on all sewers of greater than 10% slope at the following spacings:
 - i) Not over 36 feet center to center on grades from 10% to 25%;
 - ii) Not over 24 feet center to center on grades from 25% to 40%;
 - iii) Not over 16 feet center to center on grades exceeding 40%.
7. Sewer extensions should be designed for projected flows even when the diameter of the receiving sewer is less than the diameter of the proposed extension.
8. Pipe diameter changes shall occur in a manhole with the invert of the larger pipe lowered sufficiently to maintain the same energy gradient. An approximate method of securing these results is to place the 0.8 depth point of both sewers at the same elevation.
9. All residential subdivision lots shall be served by public gravity sanitary sewer unless otherwise approved by the Executive Director of Utilities and Infrastructure Services. If a pump is approved, it shall be privately maintained, must pump into a gravity service connection placed on the lot, and must have a note on the construction plans and recorded plat indicating a private pump may be required to serve the lot with sanitary sewer service. In instances where private pump stations are approved, the gravity service

that received the force main shall be required to extend into private property so that the required private force main vent is located a minimum of 20 feet from public right of way.

10. Downstream receiving sewer infrastructure shall be evaluated to confirm adequate capacity by the design engineer for each project. In addition, a sewer study may be required to accompany plans submitted to the Town for consideration of impacts to downstream sewer infrastructure. Developer shall be required to upgrade insufficient infrastructure.

Installation

1. Sanitary sewer mains shall be deep enough to serve adjoining and upstream properties and allow for sufficient slope in lateral lines. All sanitary sewer mains shall have the following minimum of 4.5 feet of cover and be measured as follows:
 - a) 4.5 feet from the top of pipe to finished subgrade when under a roadway;
 - b) 4.5 feet from top of pipe to existing edge of pavement elevation when adjacent to a roadway which may be widened in the future;
 - c) 4.5 feet from top of pipe to finished grade in all other areas.

The above requirements may be waived at the direction of the Executive Director of Utilities and Infrastructure Services, in which case ductile iron pipe shall be installed.

2. The construction of all sanitary sewer lines which will be maintained by the Town must be performed by a contractor licensed in North Carolina.
3. Sewer mains from 14 to 20 feet deep shall require special bedding in accordance with the Standard Details Section of these Standards.
4. Sewers over 20 feet deep shall require ductile iron for the entire run between manholes and shall be 401 protectant lined.
5. Pipe trench excavation and backfilling shall be performed in accordance with Section 5.00 of these Standards.
6. Transitions of pipe material shall occur only at manholes.
7. Sewer mains shall be laid at least 10 feet laterally measured edge to edge from existing or proposed water mains unless it is determined that local conditions or barriers prevent a 10-foot lateral separation in which case:

- a) The water main is laid in a separate trench, with the elevation of the bottom of the water main at least 18 inches above the top of the sewer;
 - b) The water main is laid in the same trench as the sewer with the water main located at one side on a bench of undisturbed earth, and with the elevation of the bottom of the water main at least 18 inches above the top of the sewer.
- 8. Where sanitary sewers cross NCDOT roadways or major Town roads, as determined by the engineer, pipe encasement shall be required.
 - 9. Where sanitary sewers cross beneath water mains with a vertical separation of 18 inches or less or where water mains cross under sewer mains, the entire leg of sewer line shall be ductile iron pipe. The water line pipe shall be centered at the point of crossing and shall cross sanitary sewer lines at an approximate 90° angle.
 - 10. Where sanitary and storm sewers cross with a vertical separation of less than 24 inches the entire leg of sanitary sewer shall be of ductile iron pipe. There shall be a minimum 5-foot horizontal separation between sanitary sewer and storm sewer.
 - 11. For sanitary sewer and reclaimed separation, see Section 11.01.
 - 12. There shall be a minimum 5-foot horizontal separation between parallel gravity and/or force mains.
 - 13. Sewer line easements shall be completely cleared of all vegetation, graded smooth with minimum cross slope of 6:1, free from rocks, boulders, roots, stumps, and other debris, free from ponded water, and seeded and mulched upon the completion of construction.
 - 14. The first new downstream manhole(s) of any sanitary sewer line extension under construction shall be plugged on the outlet side with a masonry wall or a wing nut plug (to be determined and inspected by the Development Inspector); secured with a stainless steel cable with identification plate of contractor's name; and secured with stainless steel cable to prevent the passage of groundwater, runoff and sediment into the existing sanitary sewer system. All water upstream of the plug shall be pumped out of the sanitary sewer line and all sediment and solids shall be removed and properly disposed of by the Contractor prior to removal. The plug shall not be removed until the line has been inspected by the Development Inspector to ensure that all possible points of inflow or infiltration have been secured. Failure to meet this requirement will result in a \$1,000 per day fine. If the plug blows out and causes equipment or material damage or spills downstream, the Contractor shall be responsible for resulting fines and costs

of repairs. Authorization to remove the plug shall be required by Development Inspector. If the Contractor fails to obtain necessary approvals and removes the plug before the system is activated, the Contractor shall be responsible for resulting State and Town fines and damages resulting.

Manholes

1. All manhole cone sections shall be the eccentric type.
2. Manholes shall be spaced at a maximum distance of 425 feet apart regardless of size unless documentation is provided showing capability to perform routine maintenance on sewer at distances greater than 425' apart.
3. Manholes for sewers under 21 inches in diameter shall be a minimum of 4 feet in diameter. Manholes for sewers 21 inches in diameter or greater shall be 5 feet in diameter. Manholes requiring inside drops shall be a minimum of 5 feet in diameter. When 2 or more inside drops occur at one manhole, a minimum 6-foot diameter manhole shall be used.
4. All manholes that are over 20 feet deep shall be 5 feet in diameter.
5. Manholes shall be installed at each deflection of line and/or grade. The flow channel through manholes should be smooth and shall conform to the shape of the entering/exiting sewer line. A standard 0.20-foot drop shall be provided at each manhole. Inverts “in” and “out” shall be as designated on the approved plans. Sewers shall be designed to minimize free drops in manholes.

Either precast or brick and mortar inverts may be used conforming to these Standards. The invert shall be smooth and uniform in shape along the entire length.

6. Inside drops shall be used when free drops exceed 12 inches. For inside drop manholes, the entire upstream leg of sewer must be ductile iron. For inside drop manholes, see the Standard Details Section of these Standards. Outside drops shall not be permitted except when necessary to connect to existing manholes.
7. Manholes not located in roadways shall have a top elevation a minimum of 12 inches above finished grade. Manholes located along outfalls shall have a top elevation a minimum of 24 inches above finished grade or 100 year flood plain, or 12 inches above 500 year flood plain, whichever is higher.
8. Watertight manhole rings and covers shall only be allowed upon approval by the Executive Director of Utilities and Infrastructure Services. Manholes

with watertight tops shall be vented in accordance with the Standard Details Section of these Standards.

9. Manholes located within flood plain areas, on outfalls, and within any areas of high groundwater shall be waterproofed by wrapping all joints with a minimum 8-inch width band of butyl joint wrap. Waterproofing shall be installed by mopping asphalt over the joint area, then wrapping butyl joint wrap around the joints, and finally mopping the wrap with another coat of asphalt. The total asphalt coat thickness shall be a minimum of 20 mils.
10. Manholes for sewers 12 inches and above shall be coated with an epoxy coating system such as Cor-Cote SC as manufactured by Sherwin-Williams, Raven 405 as manufactured by Raven Lining Systems, Sewer Kote Duramer 1030 or an approved equivalent.
11. Manholes with an exterior height of four feet or greater from finished grade shall have exterior steps.
12. Manholes on outfalls shall have frames and rotating covers as detailed in HS722 with vent holes.
13. All sanitary sewer manholes in areas of special concern shall be required to be vacuum tested in accordance with ASTM C-1244.
14. Where manholes are located in streets inside the Triassic Basin (HS356) it will be required to have suitable off-site structural material or stone to backfill around excavation of manholes up to subgrade. Also see Section 3.02J of these standards.

C. Materials

The Executive Director of Utilities and Infrastructure Services will maintain a list of approved manufacturers for all sanitary sewer collection system products. New manufacturers must submit requests for approval to the Executive Director of Utilities and Infrastructure Services. Additional information such as catalogs, lists of installations in the area or material samples may be required. A written response will be mailed to the applicant accepting or rejecting the product within 90 days of the receipt of all necessary information.

Each length of sanitary sewer pipe installed shall have plainly and permanently marked thereon the following information:

1. Pipe class or strength designation;
2. Manufacturer's name or trademark;

3. Nominal pipe size.

A.B.S. Composite (Truss) Pipe

A.B.S. composite pipe shall meet the requirements of ASTM D 2680. Pipe joints shall be chemically welded or gasket joints in accordance with ASTM D 3212. See Section 7.01-C for additional installation requirements. See the Standard Drawing Details Section of these Standards for bedding requirements.

Ductile Iron Pipe

Ductile iron pipe for gravity sewer use shall be designed and manufactured in accordance with AWWA C150 and C151 for a laying condition Type 2 and a working pressure as follows:

3 – 12 inches	350 psi
14 – 20 inches	250 psi
24 inches	200 psi
30 – 54 inches	150 psi

Pipe joints shall be of the push-on type as per AWWA C1211. Pipe lining shall be cement lined. All ductile sewer lines 12” and above shall be 401 protectant lined

Polyvinyl Chloride (PVC) Pipe

PVC pipe shall be made of PVC plastic having a cell classification of 12454-B, 12454-C or 13364-B (with minimum tensile modulus of 500,000 psi) as defined in Specification D1784. PVC pipe shall have integral wall bell and spigot joints for the conveyance of domestic sewage. Fittings shall be made of PVC plastic having a cell classification of 12454-B, 12454-C or 13343-C as defined in Specification D1784. Fittings must be manufactured by pipe supplier or approved equal, and have bell and/or spigot configurations compatible with that of the pipe. Compounds with superior properties are also acceptable.

All pipe less than 18 inches in diameter shall have a maximum Standard Dimension Ratio (SDR) of 35. Where laying conditions so warrant, and in accordance with manufacturer’s recommendations, lower SDR values (stronger pipe) may be required.

PVC pipe 18 inches in diameter and larger must be SDR-35 as defined in ASTM 679. Pipe strength shall be equal to or exceed that required for pipe less than 18” in size. Pipe shall have special bedding as per Detail HS 703.

Installation shall consist of Class I bedding material (as defined in Section 7.01 C) placed 4 inches below the pipe barrel and continuing to 4 inches above the pipe barrel, as per ASTM D2321. In addition, the installation of PVC pipe shall satisfy

the requirements of Section 7.01-C below. See the Standard Details Section of these Standards for bidding requirements.

PVC Composite (Truss) Pipe

PVC thermoplastic material shall be a rigid PVC plastic conforming to ASTM D-1784 for a minimum cell class of 12454-B. The Portland Cement Perlite concrete or other inert filler material shall be as described in Section 6.3 of ASTM D-2680.

Joints shall be chemical welded or gasketed in accordance with ASTM D3212. Solvent cement for joining PVC to PVC shall comply with ASTM D-2564. Pipe test specimens shall meet all the manufacturing requirements established in ASTM D-2680.

All recommendations of the manufacturer shall be followed in shipping, handling, laying, joining and backfilling of the pipe, and the pipe shall be installed in full and complete compliance with Recommended Practice D2321. In addition, the installation of PVC composite pipe shall satisfy the requirements of Section 7.01-C below. See the Standard Details Section of these Standards for bedding requirements.

Steel Encasement for water/sewer pipes are required for the following Street Classifications to avoid traffic disruption in the future:

- Controlled Access Highway

For carrier pipes that employ cathodic protection anticorrosion systems, the carrier and casing pipes shall be effectively insulated from one another. Carrier and casing shall be cathodically protected as a unit.

See Section 5.03 Boring and Jacking for more casing pipe size requirements.

D. Additional Requirements for Flexible and Semi-Rigid Sanitary Sewer Pipe

Installation of flexible and semi-rigid sanitary sewer pipe shall satisfy the requirements of the manufacturer and/or the following, whichever is more stringent:

1. Installation shall follow the recommendations of ASTM D-2321 “Underground Installation of Flexible Thermoplastic Sewer Pipe.” For flexible and semi-rigid pipes, bedding and embedment material shall be Class I. In any area where the pipe will be installed below existing or future ground water levels or where the trench could be subject to inundation, additional Class I material shall be used for bedding. Refer to the Standard Details Section of these Standards for embedment requirements.

2. The manufacturer's specifications or otherwise approved method shall be used in determining the stiffness class of the pipe to be installed so as to attain the required deflection control. The class of the pipe must be approved by the Executive Director of Utilities and Infrastructure Services prior to installation.
3. The maximum allowable deflection after installation shall be less than 5% for flexible pipe and 3% for semi-rigid pipe. The mandrel (go/no-go) deflection test must be performed on each line prior to acceptance, and no less than 30 days after installation. The Contractor shall supply the mandrel used for this performance test. The mandrel device shall be cylindrical in shape having 9 possible contact points with the pipe. The mandrel's length and diameter (ID of proving ring) shall equal the dimensions in the following table, and shall be subject to the Construction Inspector's approval. A mandrel test on truss pipe shall only be required if the Construction Inspector finds a problem during the visual inspection.

For polyethylene pipe, the following shall apply:

Nominal Diameter (inches)	Mandrel Length (inches)	Mandrel Diameter (inches)
18	12 (minimum)	16.53
21	"	19.30
24	"	22.08
27	"	24.84
30	"	27.62
33	"	30.38
36	"	33.15
42	"	38.68
48	"	44.21
54	"	49.74
60	"	55.27

For other flexible pipes the following shall apply:

Nominal Diameter (inches)	Mandrel Length (inches)	Mandrel Diameter (inches)
6	6	5.65
8	8	7.40
10	10	9.31
12	10	11.22
15	12	14.09

For semi-rigid (truss) pipes the following shall apply:

Nominal Diameter (inches)	Mandrel Length (inches)	Mandrel Diameter (inches)
8	8	7.52
10	10	9.46
12	10	11.40
15	12	14.31

4. For PVC and Polyethylene pipe, the pipe shall be produced with bell and spigot end construction. Joining will be accomplished by rubber gasket in accordance with manufacturer's recommendation, unless otherwise directed or approved by the Executive Director of Utilities and Infrastructure Services. Flexible watertight elastomeric seals in accordance with ASTM D3212-81, may also be used. Each pipe length shall be clearly marked with information including pipe size, profile number, and class number.

5. Minimum trench width shall be one pipe diameter plus 9 inches on each side of the pipe.
6. Special Bedding (6-inch minimum) and embedment materials shall be per ASTM D2321. Embedment materials shall be installed from trench wall to trench wall and from 6" below the invert to a minimum of 6 inches above the crown of the pipe, for all pipe 14-20 feet deep.
7. The bedding and embedment material shall be compacted to a minimum of 90% Standard Proctor density for Class I materials.
8. If hydraulic jack shoring is utilized for trench walls where shoring is used, it shall be kept to the area just above the top of the pipe. This will ensure the embedment materials and pipe will not be disturbed when removal is made.
9. Bedding and embedment material classifications shall be defined as follows:

Class I - Angular, ($\frac{1}{4}$ to $1\frac{1}{2}$ inch) graded stone, including a number of fill materials that have regional significance such as coral, slag, cinders, crushed stone, crushed gravel, and crushed shells.

Class II - Coarse sands and gravels with maximum particle size of $1\frac{1}{2}$ inch, including variously graded sands and gravels containing small percentages of fines, generally granular and non-cohesive, either wet or dry. Soil types GW, GP, SW and SP are included in this class.

Class III - Fine sand and clayey gravels, including fine sands, sand-clay mixtures, and gravel-clay mixtures. Soil types GM, GC, SM, and SC are included in this class.

Class IV - Silt, silty clays, and clays, including inorganic clays and silts of medium to high plasticity and liquid limits. Soil types MH, ML, CH and CL are included in this class. These materials are not recommended for embedment.

7.02 **MOVED to NEW Section 13**

7.03 **MANHOLES**

A. **Materials**

Manholes shall be precast concrete. No hoop steel base or riser sections are allowed. All manholes shall have eccentric cone sections.

Precast concrete manholes shall meet ASTM C478 as to design and manufacturer. The standard joint shall be sealed with a plastic cement putty meeting Federal Specification SS-S-00210, such as Ram-Nek or a butyl rubber sealant. All lift holes must be plugged with non-shrinking grout after installation. For precast concrete manholes, see the Standard Details Section of these Standards.

Manhole frames and covers (including rotating covers) shall be cast in ductile iron, conforming to ASTM A-48 Class 30, with “Sanitary Sewer” stamped on the cover and two 1-inch perforated holes in roadways and four 1-inch perforated holes in outfalls unless covers required to be watertight. Castings shall be machined to give even and continuous bearing on the full length of the frame. Castings shall be Grey Iron ASTM 48, CL 35B made in the U.S.A. Manhole frames shall be bolted to the manhole as per the Standard Details Section of these Standards. All manhole rings in roadways shall be encased in a concrete collar, 18 inches by 12 inches, of 3,000 psi concrete beneath the asphalt, with the cover flush with the top of pavement and rated for an AASHTO loading Class HS-20, as shown in the Standard Details Section of these Standards.

Watertight manhole frames and covers shall have neoprene gasket, machine bearing surfaces. Bolts shall be standard hexagonal-head, countersunk such that when fully tightened bolt head is flush with the top of the cover. Castings shall be Gray Iron ASTM 48, CL 35B, made in the U.S.A., free of porosity and blow holes. Watertight manhole frames and covers shall only be permitted in lieu of elevating the manhole tops above the 100 and/or 500-year flood plain with specific approval by the Executive Director of Utilities and Infrastructure Services. Watertight manholes shall require venting per the Standard Details section of these standards.

Manhole steps shall be furnished with the precast sections. Steps shall be of polypropylene material reinforced with a half-inch diameter grade 60 reinforcing steel rod. Manhole steps shall be designed for a vertical load of 400 pounds and a horizontal pull out load of 1,000 pounds. Steps shall be set 16” on center. Holes for the installation of manhole steps shall not project through the manhole wall. There shall be a minimum of 1-inch wall thickness from the deepest penetration of the step installation hole and the outside wall. Steps shall be at least 10” clear width

and shall project at least 4" from the wall into which it is embedded. Steps shall not be located over the influent or effluent pipes and shall be installed along a vertical manhole wall from the shelf to the top of cone.

All manholes shall have 6-inch, 3,000 psi concrete bottoms resting on a minimum of 6 inches of #57 stone. Sewer mains shall enter and exit radially through the manhole. Inverts shall be constructed with a width and height equal to half that of the effluent pipe and shall be so brushed and troweled that a minimum energy loss occurs in the manhole.

At each inlet and outlet of line 8 inches or greater, wastewater lines are to be connected to the manholes by means of compression connectors (flexible sleeves) cast into the manhole section. Flexible connectors are to be manufactured of high-quality rubber or synthetic rubber and all strap clamps or draw bolts are to be manufactured from stainless steel.

7.04 SERVICE CONNECTIONS

A. Materials

Cast iron soil pipe shall be service weight hub and spigot meeting Federal Specifications WW-401. The joints shall be rubber type elastomeric as per ASTM C425.

PVC pipe shall be schedule 40 or greater supplied in 18 foot lengths. The pipe may be joined by elastomeric gaskets.

Ductile iron pipe shall be used for sanitary sewer services with less than 3 feet of cover or in excess of 20 feet of cover.

Services for new lines shall use in-line wyes of like material unless otherwise approved by the Executive Director of Utilities and Infrastructure Services.

Service saddles for existing PVC or ABS lines shall be of the same material as the main, solvent welded and fastened with double stainless steel bands as shown on the Standard Details Section of these Standards.

Service saddles for existing cast iron soil pipe services may be "ROMAC C" sewer saddles consisting of a virgin SBR gasket compounded for sewer service, a ductile iron saddle casting, a 304 stainless steel adjustable strap for fastening the gasket and the saddle casting to the sewer main and a 304 stainless steel adjustable circle clamp for securing the service line into the SBR gasket.

B. Installation

Individually owned structures shall require individual sewer taps to public sewer. All service connections to existing sanitary sewer mains shall be made by the Town of Holly Springs Utilities and Infrastructure Services Department.

Service taps into mains shall be made on the top quarter of the main with the wye angled with the direction of flow in the main. All services installed on new lines shall be inline wyes unless otherwise approved by the Executive Director of Utilities and Infrastructure Services.

All service lines shall require Class I bedding from 6 inches below service line to 6 inches above the service line. All service lines shall have a minimum of 8 inches separation from other utilities. Service lines greater than 20 feet or less than 3 feet in depth must be ductile iron.

Service connections to the main lines shall be perpendicular to the main line to the edge of the right of way or easement line. Services shall have a minimum slope of 1.0 feet per 100 feet. Cleanouts shall be required on all sewer services at a maximum spacing of 75 feet on 4-inch services and 100 feet on 6-inch services. A cleanout shall be placed on all service lines at the right of way line or at the edge of the easement. All cleanouts shall extend a minimum of 6 inches above finished grade or meet the optional installation requirements in accordance with the Standard Details Section of these Standards. Sewer cleanouts located in paved areas must have traffic load bearing mini-manhole.

All 6-inch service lines shall tie directly into a manhole.

All service lines which are connected into manholes shall be installed less than 2½ feet above the invert or shall be installed with a standard drop as shown on the Standard Details Section of these Standards. Service lines shall not be installed through manhole cone sections or manhole joints. The use of service saddles will only be permitted for connection to existing sewer lines.

Service connections made using a “ROMAC C” sewer saddle shall be made only when the service line is cast iron soil pipe and only when the sewer main is 8, 10, or 12-inch diameter concrete, ductile iron, or PVC sewer pipe. This service connection shall not be used when the sewer main material is truss sewer pipe.

The opening in the sewer main for the “ROMAC C” sewer saddle shall be cut with a hydraulically driven or a pneumatically driven circular tapping saw of the same nominal diameter as the sewer service line.

C. **Grease Interceptor**

All grease traps/interceptors shall be designed according to minimum standards of the North Carolina Plumbing Code and any requests of the Town. The Town prohibits joint use of a tap or interceptor between establishments. All cooking establishments shall have grease interceptors installed and maintained at the User's expense. Non-cooking establishments or other commercial, institutional and/or industrial establishments may also be required to install a grease-handling device(s) when deemed necessary by the Town.

The discharge from the following fixtures shall be connected to the grease interceptor: all sinks, dishwashers, floor drains in food preparation and storage areas, and any other fixtures through which grease may be discharged. See Detail HS725.

7.05 TESTING AND INSPECTION

All materials used must be inspected by the Construction Inspector before they shall be allowed to be installed. Materials rejected by the Construction Inspector shall be immediately removed from the job site.

The Contractor shall furnish all materials, labor, and equipment, and shall pay for the water used to perform all testing and inspection to the satisfaction of the Construction Inspector. The Contractor shall obtain a meter from the Town of Holly Springs for use.

Sanitary sewer lines shall be free and clean from obstructions and shall be visually inspected from every manhole to ensure all lines exhibit a fully circular pattern. Lines which do not exhibit a true line and grade or have structural defects shall be corrected. Sanitary sewer service connections shall be visually inspected prior to backfilling.

Prior to the placement of any roadway structure, the Contractor shall clean and CCTV all newly installed sewer mains. A 3rd Party CCTV contractor shall televise the sewer main and all lateral connections installed from the upstream to the downstream manhole with no reverse setups or cutaways. This shall be done at the Developers expense. The contractor shall clean the sewer mains ahead of the video inspection with a high velocity water jet. The video inspection shall take place within two hours of the cleaning operation as witnessed by a Town of Holly Springs Development Inspector. All construction debris shall be collected in the down stream manhole and shall not be released into the sewer system. No other work shall be performed on the sewer lines after cleaning and prior to the video inspection. The contractor may not perform CCTV inspections on any utilities that they have installed. The contractor shall provide a DVD or Flash Drive, submitted to the inspector for review.

See Section 7.01 C for additional testing requirements for flexible and semi-rigid pipe.

Low-pressure air testing shall be performed after all laterals or stubs are installed on the line and after the main has been backfilled to finished grade. Plugs shall be installed at each manhole to seal off the section of line to be tested. The line will be pressurized with a single hose and monitored by a separate hose connection from the plug. Air shall be slowly introduced into the sealed line until the internal air pressure reaches 4.0 psig. The air pressure shall then be allowed to stabilize for a minimum of 2 minutes to no less than 3.5 psig (plus groundwater pressure, if any). When the pressure reaches 3.5 psig, the time required for the pressure to drop 1.0 psi shall be observed and recorded. The line shall be termed “acceptable” if the pressure does not drop more than 1.0 psi in the time prescribed for the test in the following table:

STANDARD AIR TEST TABLE Specification time (min:sec) required for pressure drop from 3½ to 2½ psig when testing one pipe diameter only									
Length of Pipe (feet)	Pipe Diameter (inches)								
	4	6	8	10	12	15	18	21	24
25	0:04	0:10	0:18	0:28	0:40	1:02	1:29	2:01	2:38
50	0:09	0:20	0:35	0:55	1:19	2:04	2:58	4:03	5:17
75	0:13	0:30	0:53	1:23	1:59	3:06	4:27	6:04	7:55
100	0:18	0:40	1:10	1:50	2:38	4:08	5:56	8:05	10:34
125	0:22	0:50	1:28	2:18	3:18	5:09	7:26	9:55	11:20
150	0:26	0:59	1:46	2:45	3:58	6:11	8:30		
175	0:31	1:09	2:03	3:13	4:37	7:05			
200	0:35	1:19	2:21	3:40	5:17				12:06
225	0:40	1:29	2:38	4:08	5:40			10:25	13:36
250	0:44	1:39	2:56	4:35			8:31	11:35	15:07
275	0:48	1:49	3:14	4:43			9:21	12:44	16:38
300	0:53	1:59	3:31				10:12	13:53	18:09
350	1:02	2:19	3:47			8:16	11:54	16:12	21:10
400	1:10	2:38			6:03	9:27	13:36	18:31	24:12
450	1:19	2:50			6:48	10:38	15:19	20:50	27:13
500	1:28			5:14	7:34	11:49	17:01	23:09	30:14

If the section of line tested fails to meet these requirements, the source of leakage shall be determined and repaired. The section of line shall then be retested.

The Construction Inspector may require that an infiltration test be performed. Infiltration shall not exceed 100 GPD per inch per mile.

At the discretion of the Executive Director of Utilities and Infrastructure Services, sanitary sewer manholes in areas of special concern may be required to be vacuum tested in accordance with ASTM C-1244 as shown.

C 1244 – 05a ^{e1}																			
Table 1 Minimum Test Times for Various Manhole Diameters (30-120 in.) in Seconds										Table 1 Minimum Test Times for Various Manhole Diameters (30-120 in.) in Seconds (continued)									
Diameter, in.										Diameter, in.									
Depth (ft)										Depth (ft)									
	30	33	36	42	48	54	60	66	72		78	84	90	96	102	108	114	120	
Time, in seconds										Time, in seconds									
<4	6	33	7	9	10	12	13	15	16	<4	18	19	21	23	24	25	27	29	
6	9	10	11	13	15	18	20	22	25	6	26	29	31	34	36	38	41	43	
8	11	12	14	17	20	23	26	29	33	8	35	38	41	45	48	51	54	57	
10	14	15	18	21	25	29	33	36	41	10	44	48	52	56	60	63	67	71	
12	17	18	21	25	30	35	39	43	49	12	53	57	62	67	71	76	81	85	
14	20	21	25	30	35	41	46	51	57	14	62	67	72	78	83	89	94	100	
16	22	24	29	34	40	46	52	58	67	16	70	76	83	89	95	101	108	114	
18	25	27	32	38	45	52	59	65	73	18	79	86	93	100	107	114	121	128	
20	28	30	35	42	50	53	65	72	81	20	88	95	103	111	119	126	135	142	
22	31	33	39	46	55	64	72	79	89	22	97	105	114	122	131	139	148	156	
24	33	36	42	51	59	64	78	87	97	24	106	114	124	133	143	152	161	170	
26	36	39	46	55	64	75	85	94	105	26	114	124	134	144	155	164	175	185	
28	39	42	49	59	69	81	91	101	113	28	123	133	145	155	167	177	188	199	
30	42	45	53	63	74	87	98	108	121	30	132	143	155	166	178	189	202	213	

7.06 REPAIR OF SANITARY SEWER LINES

The repair of damaged sanitary sewer lines shall be as follows:

1. PVC Pipe - Replace damaged section with PVC pipe. Install PVC couplings or ductile sleeves and mechanical bolt at each end (encased in concrete).
2. ABS/PVC Truss Pipe - Replace damaged section with D.I.P. Install PVC couplings or ductile sleeves and mechanical bolt at each end (encased in concrete).

All repairs to damaged sanitary sewer lines shall be backfilled with ABC stone (crusher run) to a density of 95% Standard Proctor.

7.07 MOVED to NEW Section 13

END OF SECTION 7.00

**SECTION 8.00
STORMWATER DESIGN**

SUB-INDEX

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SECTION 8.00 STORMWATER DESIGN

8.01 GENERAL

This section outlines the design and construction requirements to obtain plan approvals associated with stormwater management which includes NPDES Phase II Post-Construction Management, Floodplain Development and general stormwater conveyance principals. Due to the location and nature of stormwater management it is the developer's responsibility to ensure that the project is in compliance with all applicable Federal, State and Town regulations when impacting streams, wetlands, riparian buffers, floodplain and creating impoundments. Consideration of avoiding and minimizing impacts should be taken into account with the entire project's design. However, when impacts to such features are unavoidable appropriate permitting shall be required prior to issuance of the Environmental Development Permit and a draft Preconstruction Notification Form to be included in the preliminary stormwater plan submittal which shall include all temporary and permanent impacts required for construction at each specific location.

8.02 STORMWATER PERMIT PROCESS

There are three general stages for stormwater projects: the Concept Stage, Construction Stage and Post-Construction Stage. Each has been outlined and summarized in this section. Subsequent chapters of Section 8 of this manual outline specific design and submittal requirements specific to each stage of the project's development.

A Concept Stage

The Concept Stage is the review process for the following plan review types outlined in the Unified Development Ordinance (UDO), (Major Residential Subdivision Plan, Master Plan, Special Exception Use, Development Plan or Planned Unit Development (PUD) Master Plan), hereafter referred to as "Preliminary Plan". The Town's stormwater staff will review preliminary engineering early in the development process in order to assist the developer with proper planning in accordance with stormwater management requirements. As a part of this review, Town staff will provide comments to the developer. Additional developer guidance may be needed between this stage and the first Construction Drawing submittal to finalize conditions of preliminary plan approval.

Scoping and Concept Plan Review meeting will be held first with staff to discuss the items to be included in the first preliminary plan submittal package. The Scoping Meeting is an optional meeting that is recommended for applicants to attend prior to the required Concept Plan Review Meeting to discuss submittals and general project information. Applicants shall bring a sketch plan and a Natural Resource Inventory, (NRI) with supporting documentation to the Concept Plan Review Meeting to

determine stormwater, floodplain and other environmental regulations that the project will be subject to.

The preliminary stormwater plan submittal minimally includes preliminary documents to determine the existing environmental features in the project limits, proposed impacts to the environmental features, and permits from outside agencies required prior to the first Construction Drawing Submittal. It will also identify the general location, size and type of stormwater conveyances and Stormwater Control Measures (SCMs) required to meet stormwater quality, quantity and infrastructure regulations. For projects where it has been determined that a new or updated flood study will be required, projects shall determine flood limits by performing preliminary analysis outlined in Section 8.07 of this document.

B Construction Stage

The Construction Stage consists of Construction Drawing, Stormwater and Environmental Plan Review, plan approval, permitting and actual construction. This is the step in the review process where the preliminary stormwater plans are enhanced as needed for constructability and demonstration of compliance with all applicable TOHS design requirements. The developer must also incorporate any approval stipulations included as part of the Preliminary Plan approval.

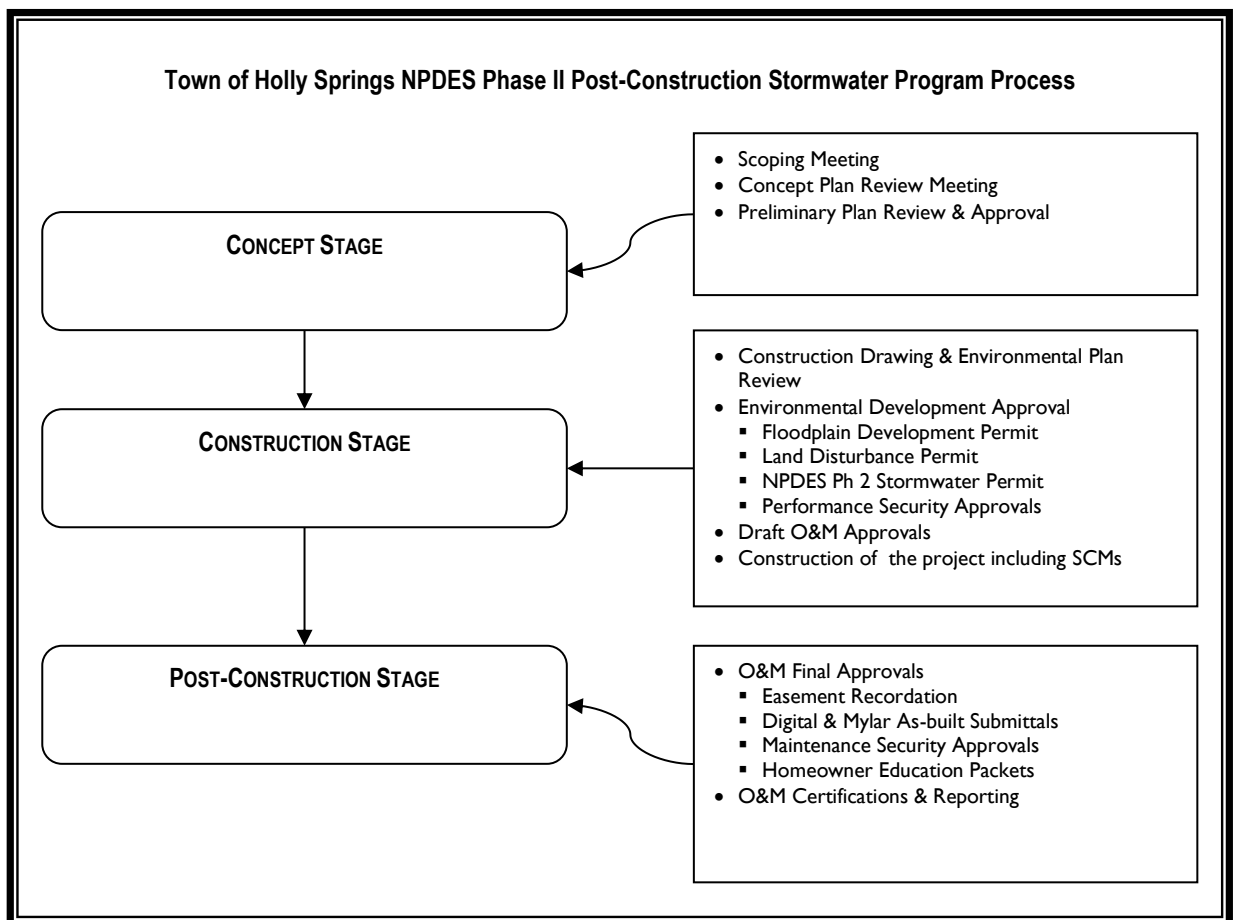
As part of the Construction Stage process, it is advisable to contact the TOHS Engineering Department prior to submittal to determine if a pre-submittal meeting may be appropriate. After submittal, TOHS staff will review the submittal package for compliance with the Holly Springs Engineering Design and Construction Standards and other Town policies, ordinances, checklists, and standards. Submittal requirements are outlined in Section 8.04 of this document and will minimally include applicable 401/404 permits, stormwater infrastructure plan, grading and erosion control sheets, the Stormwater Management Report and calculations, flood study and draft Post-Construction Stage documents.

Once all of the environmental plan review requirements have been met, an Environmental Development Permit will be issued for the project which will include the applicable approvals: NPDES Phase II Stormwater Permit, Floodplain Development Permit and Land Disturbance Permit (erosion control plan approval). This permit will be issued at the preconstruction meeting upon receipt of six sets of Construction Drawings, final stormwater management and flood study reports and payment of development fees for the project, the storm drainage infrastructure can be installed once the permit and the Certificate of Compliance for installation of Erosion Control Measures has been issued. SCMs that are planned in the same location as the erosion control measures must be installed once the Projects Development Inspector has approved the removal of the temporary erosion control devices.

C Post-Construction Stage

The Post-Construction Stage begins once all permits have been acquired and construction activities have commenced. This stage has two main components, acceptance of infrastructure and long term operation and maintenance. The acceptance requirements of the Post-Construction Stage are related to verification that the project has been constructed in substantial accordance with the approved plans and specifications and that all appropriate easements and financial securities have been secured. The long term operation and maintenance portion of this stage will consist of the property owner's implementation of the project's recorded Operations and Maintenance (O&M) Agreement and Town's enforcement of its ordinance. Section 8.03 of this document outlines specific requirements for all stages of the project's development. Chart 8.02a outline this process.

Chart 8.02a Post-Construction Stormwater Process



8.03 POST-CONSTRUCTION STORMWATER MANAGEMENT

A. Introduction

Development can dramatically alter the hydrologic response of an area and, ultimately, an entire watershed. As the TOHS continues to develop, the impervious surfaces that are created will increase the proportion rainfall that is runoff during rain events, disrupting the natural hydrologic cycle. Without controls in place, the increased runoff can erode stream channels, increase pollutant loadings, cause flooding, and prevent groundwater recharge. The contaminants involved in urban stormwater runoff are primarily sediment, nutrients, and to a lesser extent, toxics, such as heavy metals and hydrocarbons. Protecting waters is vital for a number of reasons, including the protection of fish and wildlife habitat, human health, recreation, and drinking water supplies.

Stormwater Control Measures (SCMs) and Best Management Practices, (BMPs), are structural and nonstructural practices, or a combination of practices, designed to act as effective, practicable means of minimizing the impacts of development on surface water quality and quantity. SCMs operate by trapping stormwater runoff and detaining it until unwanted nutrients, sediment, and other harmful pollutants are allowed to settle out or be filtered. These trapped pollutants must be managed or disposed of through periodic maintenance as prescribed in this manual.

B. Purpose

The purpose of this manual is to establish minimum standards for the design and implementation of measures to prevent and control peak stormwater runoff rates, stormwater volume, erosion, sedimentation and other forms of stormwater pollution. This section of the TOHS Engineering Design and Construction Standards is intended to assist developers, engineers, contractors, inspectors and property owners in the selection of SCMs for the design of new or existing facilities to improve the environmental quality of stormwater and attenuate increases in the rate of stormwater runoff resulting from new development.

The most current NCDEQ Minimum Design Criteria (MDC) shall be used for design standards and specifications for post-construction SCMs that will meet the water quality objectives required by the Town of Holly Springs NPDES Phase II Stormwater Permit and Chapter 8, Article VI Post-Construction Stormwater of the Holly Springs NC Town Code of Ordinance.

The Engineering Department reserves the right to accept or reject designs (whole or in part) from the NCDENR Manual, based on policy, site conditions or other factors deemed appropriate by the Town. This document shall supplement the NCDENR manual where additional information is required for a project to comply with the Town regulations.

C. Regulations

The TOHS, like many towns and cities across the United States, is required by the Clean Water Act to have a National Pollutant Discharge Elimination System (NPDES) permit to discharge stormwater from the municipal separate storm sewer system (MS4). Because development activity may significantly increase the discharge of pollutants, the NPDES permit requires that the Town encourage, promote and require implementation of certain practices and procedures for the purpose of reducing or limiting discharge to stormwater channels.

To achieve this goal, the Town has implemented a Stormwater Ordinance which requires SCM installation, inspection and maintenance as part of land development activities. Development of this Design Manual is also required by the Town's NPDES Phase II Stormwater Permit NCS000495 effective December 1, 2005.

This section of the TOHS Engineering Design and Construction Standards also addresses State mandates for watershed management in the Neuse and Cape Fear River basins.

When alternative standards are shown to conform to applicable policies and regulations, the Town may accept such alternative standards in lieu of the standards herein. Similarly, where a particular site is characterized by substantial impediments to development in compliance with existing policies and standards, or where technological changes provide for practices and techniques that better ensure compliance, the Town itself may modify or substitute additional standards for the design standards contained herein.

D. Applicability

Development and re-development within the TOHS Planning Jurisdiction, Town Limits and Extraterritorial Jurisdiction (ETJ), must manage stormwater in accordance with the Town of Holly Springs Phase II Post-Construction Stormwater Ordinance, (November 6, 2007), hereafter referred to as "Ordinance".

The Ordinance requires that development and re-development activities properly manage and control stormwater runoff rate, volume, and pollutants as necessary to protect and safeguard the environment, property, health, safety and welfare of citizens within the Town's jurisdiction. This section of the TOHS Engineering Design and Construction Standards provides information on the design and application of acceptable SCMs to comply with the requirements of the Ordinance. Post-construction stormwater management is part of the Preliminary, Construction Drawing and Environmental Review Process' which is outlined in various sections of the TOHS Development Procedures Manual (DPM).

Acceptable stormwater management practices include those found in this Design Manual, the UDO and in the DPM. Additionally, methods described in the latest version of the NCDENR Stormwater Best Management Practices Manual. (Considerations for selecting and using stormwater management SCMs for a specific development will include, but are not limited to: site applicability, public safety, spatial

requirements, soil characteristics, hydrologic benefits, slope, existing land use conditions, maintenance requirements, location within the watershed, overlay districts, buffer requirements, tree protection, and easements. In addition to the items listed above, it is the Town's goal to make stormwater features amenities for projects and assets to the overall aesthetics of the development project and the Town.

As a part of the development permit application process, conceptual methods, calculations, and designs must be presented to the Engineering Department at the concept plan, construction drawing review, and post construction review stages of the permitting process for comprehensive review, evaluation, optimization and approval. Revisions to the preliminary plan may be necessary to obtain Town Construction Drawing and Environmental Plan approvals.

In addition to standard Holly Springs' submittal requirements, there are specific development permit application requirements for stormwater features outlined in Section 8.04 of this manual.

E. Structural & Non-structural Best Management Practices

1. Performance Standards

- a. **Peak Discharge:** There shall be no increase in stormwater runoff peak discharge rate leaving the project site between the pre- and post- development conditions for, at a minimum, the 1-Year, 24-Hour Storm (2.83 inches). Runoff volume drawdown time shall be a minimum of twenty-four (24) hours, but not more than one hundred and twenty (120) hours.
- b. **Total Nitrogen:** The total nitrogen (TN) export limitations, per the Neuse Basin Rules, 15A NCAC 2B.0233, will be required throughout the Town and extra territorial jurisdiction. The Town Council shall establish Fee in Lieu and may amend and update the fees and policies from time to time. Fee costs and policies will be outlined in Section 8.03 of this Design Manual.
- c. **85% Average Annual TSS:** A minimum of 85% average annual removal for Total Suspended Solids (*note: for most SCMs this will be based on the 1 inch run off volume, some specific SCMs may be based on alternative design criteria. On occasion NCDENR BMP Stormwater Manual will require 90% TSS removal.*)
- d. **General:** General engineering design criteria for all projects shall be in accordance with 15A NCAC 2H .1008c, as explained in the Design Manual;
- e. **Stream Setback:** All Built-Upon Area shall be at a minimum of 30-feet landward of all perennial and intermittent surface waters, as described in Section 7.06 of the UDO. "Where applicable, stormwater management facilities may be located within the outer 50' of the TOHS riparian buffer but are not permitted within the Neuse Riparian Buffers unless specifically approved in writing by the TOHS Executive Director of Utilities and Infrastructure Services or designee. SCMs outfalls are permitted in riparian buffers as consistent with NCDENR policies and 401 approvals." Additionally, Section 8.03 of this

manual outlines the TOHS Restored Riparian Buffer requirements for removed ponds.

The above performance standards shall apply to all projects within the TOHS jurisdiction. Note that the Town's Stormwater Ordinance is a performance based ordinance and does not specifically limit the amount of impervious cover or utilize high or low density development thresholds to control development intensity. Instead, all pertinent development must meet the above standards as applicable. Note that additional stormwater reviews, permitting, and impervious area limitations may be required by NCDENR for projects requiring 401/404 and riparian buffer approvals.

Each phase of development shall be designed to meet the performance standards upfront to eliminate the need for retrofitting. These performance standards apply to the parent parcel of the development at the time of the first phase of development for any new development project. The overall development must remain in full compliance with the stormwater performance standards with each phase. In special cases, the Executive Director of Utilities and Infrastructure Services may allow proposed development that will disturb only a small fraction of a larger parcel to phase the project with the understanding that all of the standards must still be met as the project is developed. For example, the first phase of development may include a limited amount of impervious cover. That first phase of development may not require TN treatment or buy-down at the time it is constructed but would likely require SCMs to address other stormwater performance standards such as TSS removal and peak flow attenuation. Further development of the parent tract will require that the first phase development be reconsidered for all performance criteria. In the event that nitrogen export thresholds for the overall parent parcel are exceeded, the first phase of development would be factored into the analysis. This may mean that the existing first phase of development would need to be retrofitted with nitrogen reduction measures or that the new development needs to remove additional nitrogen to compensate for a lack of nitrogen reduction in the first phase of development.

Some development sites may have impervious cover that was in-place prior to the enactment of the Ordinance. In such situations, this impervious cover may be considered on the pre-development side of the peak stormwater runoff calculations. Also, this impervious cover or an equivalent impervious area is exempt from 85% TSS removal and nitrogen removal requirements. However, in many cases, it may be more difficult and costly to by-pass this impervious cover around proposed SCMs. This is particularly true when the existing impervious cover is small relative to the impervious area associated proposed conditions.

Built-upon area shall be considered the portion of a development project that is covered by impervious or partially impervious coverage including buildings, pavement, gravel roads and parking areas, recreational facilities (e.g. tennis courts), etc. (Note: Wooden slatted decks and the water area of a swimming pool are considered pervious.) The design engineer shall use conservative assumptions when creating a stormwater management plan, allowing some consideration for future individual lot or home improvement projects, such as a home addition or

additional parking areas. In addition, the assumptions that were used during the design process should be incorporated and explained in the Homeowner Education Packet, in order to provide clear guidance for homeowners and homeowner associations with regarding to increasing impervious surface on the development site in association with post-development individual home improvement projects.

2. Stormwater Control Measures (SCMs)

SCMs should be designed according to the latest version of NCDEQ Minimum Design Criteria (MDC). Additional design requirements may be necessary for SCMs that are utilized as detention basins for flood control.

Because they are permanent features, choosing the correct SCM or group of SCMs for a site is an important decision that should be thoroughly and carefully considered at the outset. Because every site is unique and has its own challenges, there is no one SCM solution that is best suited for every site. When selecting a SCM for a site:

- Understand which SCMs will work within the physical constraints of the site,
 - Evaluate how the possible SCMs address the regulatory requirements relevant to the site, including pollutant removal and water quantity control, and
 - Consider other factors such as construction costs, maintenance and access, ownership issues, safety, aesthetic, and environmental factors at the site.
- a. General Design, Operations, and Maintenance Requirements: Certain general design, operation, and maintenance requirements apply to all SCMs in the TOHS:
- Sizing shall take into account all runoff at ultimate build-out including off-site drainage that is not diverted.
 - Pretreatment, or the removal of sediment or other suspended solids through velocity dissipating devices such as check-dams, forebays, sumps, vegetation, etc. is required for all SCMs.
 - All structural SCMs shall be designed to be aesthetically pleasing (to the extent the SCM type allows, and defined by compliance with the UDO) and not include fencing (i.e. chain link or privacy) unless approved by the Engineering Department and under special circumstances where the public health and safety is a reasonable concern. All fences must meet UDO design requirements applicable for the specific project.
 - All SCMs must be designed with an emergency bypass or overflow system, where applicable.
 - All SCMs shall be located in a recorded drainage easement with a recorded access easement to a public right-of-way.
 - Adequate access to the entire SCM structure is mandatory and must be provided for maintenance, access to forebay and outlet.

- All SCMs shall have an Operations and Maintenance Agreement signed by the responsible party or owner and recorded with the deed.
- Infiltration SCMs shall be designed and constructed with smooth walled perforated underdrains, unless the in-situ soils meet the required permeability standards. All underdrain systems shall have clean-outs.
- All underdrains installed for dewatering of SCMs will be smooth walled pipe. No sock pipe will be allowed for use as an underdrain,
- Infiltration SCMs shall be designed and constructed with soils (existing or engineered) that meet the specifications for texture and permeability, testing and certifications of the soils used in the construction of the SCM shall be submitted to the TOHS with the Engineer's Certification of the SCM installation.
- All SCMs shall be certified by a registered PE for SCM installation. SCMs that will be used as an erosion control device during construction shall be certified twice: 1.) to verify that the volume and surface area has been established and the outlet has been constructed in accordance with the approved plan. 2.) at the time of the final construction of the SCM. Mylar and digital as-builts and soil certifications shall be provided at the time of final construction with the PE certification.
- Due to the soils in the Triassic Basin SCM design may be subject to additional engineering requirements and/or may not be permitted for use in the Triassic Basin.
- Infiltration SCM construction shall avoid the use of heavy equipment on the bottom of the basin, or any areas of the SCM where infiltration is a design component.
- The entire system must be designed to safely pass the 10-year storm event without causing scour, rills, gulleys or other reasonably expected failure, unless otherwise indicated in the design manual or ordinance.
- Parking lots without curb and gutter that are designed to directly drain into a SCM must provide flat curb and gutter and a gravel verge at the edge of the parking lot to ensure sheet flow into the SCM. Flat curb and gutter shall be designed in accordance with section 3.02 of this document.
- Drought tolerant species of vegetation and warm weather grasses should be use on the SCMs.
- Trees/woody vegetation shall not be planted on the SCM dam, planting of trees/woody vegetation is allowable around other perimeter slopes of the SCM.
- Reference the most recent NCDENR Design Manual and N.C. State University Cooperative Extension Office for further design considerations, specifically SCM plantings.
- Sand Filters must be designed as a "Closed-Basin" as described in the NCDENR BMP Manual.
- Both barrel and riser structure shall be concrete and the riser shall be located in or near the embankment.
- On-site disposal areas capable of receiving sediment from at least two clean-out cycles shall be reserved in adjacent open space if area is available. In

the event that area is not available sediment must be taken to an approved off site location. Method and location of sediment removed from SCMs shall be outlined in the O&M document for the project.

- A one-time application of fertilizer shall be allowed for new construction to establish vegetation for the purpose of stabilization with regard to erosion control or establishment of plantings associated with Structural SCMs. Soil testing may be required for proper application rates of fertilizer for vegetation establishment. Fertilization of existing lawns should be preceded by soil testing and recommended application rates should be followed. Any Person(s) that is found to be over-fertilizing may be subject to penalty in accordance with the Illicit Discharge Detection and Elimination Ordinance.
- Cross sections of all SCMs will be required on Construction Drawings.
- Road widening associated with a development project will be considered Built upon Area (BUA) for the project.
- One foot minimum freeboard required from the top of riser to bottom of spillway.
- Aquatic shelf shall be at least 50% submerged at normal pool elevation.
- Stormwater wet pond shall utilize clay liner or documentation must be provided that SHWT intersects water level at normal pool.
- Emergency spillways shall be armored to the toe-of-slope or existing Ground.

Best Management Practices (BMPs)

Best Management Practices are passive or programmatic and tend to be source control or pollution prevention policies and programs that reduce pollution in runoff by reducing the opportunity for the stormwater runoff to be exposed to the pollutants. BMPs usually work by changing behavior through government regulation (e.g., planning and ordinances), and/or economic instruments (density, etc.). BMPs also include institutional, educational or pollution prevention practices.

- a. Incentives: The TOHS has no existing non-structural incentives or credits, but this policy may change with future water quality practices.
- b. Signage: The TOHS requires signage at development sites as a part of meeting the NPDES Phase II Public Education program requirement. Per the Stormwater Ordinance. All signs must meet UDO requirements for signage.

SCMs shall be posted with a conspicuous sign stating who is responsible for required maintenance and annual inspection and the SCMs purpose. The sign shall be maintained so as to remain visible and legible.

- c. Homeowner Education Packets All residential developments must provide a Homeowner Education Packet to be distributed to each property owner educating them on the environmental features, protection/ conservation measures and development regulations associated with their development; this

may include but is not limited to floodplain, riparian buffers, streams, wetlands and land disturbance. The homeowner education packet should include language informing the homeowners of through the neighborhood development requirements may restrict impervious surface through the improvements to their property, proper disposal of pet waste, proper disposal of yard waste, including grass clippings and proper fertilization applications and soil testing.

- d. **Public Education and Participation:** Public education can address a multitude of pollutant sources by raising the general level of understanding of how individual actions can contaminate surface runoff and downstream water bodies. Public education may be targeted at specific stakeholders, the general public, and/or TOHS Staff. Public education efforts can include conducting workshops, open houses, surveys, signage, and curb inlet markings (“dump no waste, drains to waterway”), and other means of educating and including the public in providing input into, participating in, and commenting on stormwater management efforts. This may be accomplished by distributing educational materials to the community, installing signage at SCM facilities, or by conducting equivalent outreach activities about the impacts of stormwater discharges on water bodies and the steps the public can take to reduce pollutants in urban stormwater runoff. All storm drain hoods and lids must have “dump no waste, drains to waterway” or similar language cast into each structure. Existing storm drain structures that are within the project limits shall be marked consistent with the Town’s storm drain marker program and standard detail.

2. Stormwater Fee-In-Lieu Option

- a. **Purpose & Goal:** The purpose of the TOHS Stormwater Fee-In-Lieu is to provide the development community with additional tools to meet the Town’s nutrient offset requirements in both the Neuse and Cape Fear River Basins in a consistent and streamlined approach. Paying fees to offset nutrient requirements is a normal practice in jurisdictions where Nutrient Sensitive Water (NSW) Management Regulations are required (i.e. the Neuse Stormwater Regulations.) These nutrient offset payments are typically made to the North Carolina Ecosystem Enhancement Program (EEP). The Town has coordinated with the NC DWR and the EEP to set up its own Stormwater Fee-In-Lieu program to provide a nutrient offset program for development projects within the Town’s jurisdiction. Payment to the Town’s Stormwater Fee-in-lieu program will be required for all development projects that have requested and have been approved to use the stormwater fee-in-lieu to meet the Town’s performance standards for nutrient reduction. Projects that are required to meet both the Town’s performance standards and NC DWQ 401 Stormwater requirements may be required to make a payment to the EEP rather than payment to the Town, this will be determined during on a case-by-case basis during the project’s plan review and stormwater requesting process.

To meet this goal, the Town accepts payments of a Stormwater Fee-In-Lieu according to the approved Stormwater Fee-In-Lieu request with the

development projects approved Stormwater Management Plan. The payment carries out Stormwater Management Projects within the Town to provide for mitigation on behalf of the projects that pay into the Fee-In-Lieu program. By providing the Fee-In-Lieu program the Town is able to implement both small and large-scale watershed projects that will enhance the water quality of the Town's watersheds and will predominantly focus on nutrient reduction. The Town will identify and implement Stormwater projects on an annual basis through the Capital Improvement Project (CIP) process. These projects will be selected and designed for construction, maintenance and conservation.

- b. Administration: The TOHS Stormwater Fee-In-Lieu is administered by the Utilities and Infrastructure Services and is implemented by staff that approves the Stormwater Management Plans and the NPDES Phase II Stormwater Program within the Town limits and ETJ. It is a voluntary program that was established by the Town to give developers who needed mitigation an option of paying a specified fee, or "buying down" their nutrient requirements where their project's Stormwater Control Measures (SCMs) have been not met a portion of the nutrient removal requirements for the proposed project.
- c. Stormwater Project Process: With fees collected and accumulated from Holly Springs permitted development projects permitted by the TOHS the Town can design and construct both SCMs and BMPs that could include but is not limited to construction of a specific SCM like a constructed wetlands or a riparian buffer restoration project. It can also provide maintenance to stormwater structures; provide watershed planning, education and participation projects to benefit the overall water quality of the Town's watersheds with a goal of restoring and maintaining ecosystem functions such as water quality and habitat throughout the Town. The Town will report annually and as requested by the N.C. Division of Water Quality on the status of the program including fees collected on future and proposed projects. Payments made to Town are based on a fee schedule approved by the Holly Springs Town Council. Developers have two mitigation options available to comply with nutrient-reduction requirements:
 - 1. Load reductions eligible for Stormwater Fee-in-lieu credit shall not including reductions used to satisfy other requirements under the same nutrient strategy.
 - 2. Construct an adequately sized on-site device or series of devices, often called SCMs. Examples of SCMs include retention ponds and stormwater wetlands.
 - 3. Purchase approved reduction credits from the TOHS or other approved entity. The developer may opt to pay a fee to the Town based on the amount of nitrogen needing to be offset over the 30-year period for all or a portion of their project.

Before a developer can receive final Stormwater Management Plan approval, the anticipated nutrient reduction requirement for nitrogen in pounds above a certain threshold over a 30-year period is calculated by the developer and verified by the Town's stormwater staff. The calculated amount of nutrient reduction must then be offset by the developer. If the developer chooses to pay a fee to the Town, the developer makes the payment, and it is then issued a receipt by the Town which allows the developer to receive final Stormwater Management Plan approval from the Town. Upon receiving the payment the Town assumes the responsibility for the mitigation requirement including mitigation site construction and monitoring for success.

- d. Design Criteria: Projects shall use a nitrogen export standard of 3.6 lbs/ac/yr. However, before using offset payments, the development must attain, at a minimum, a nitrogen export that does not exceed 6.0 lbs/ac/yr for residential development and 10.0 lbs/ac/yr for multi-family, commercial or industrial development. The total nitrogen (TN) export limitations, in a manner consistent with the Neuse Basin Rules, 15A NCAC 2B.0233, will be required throughout the Town and extra territorial jurisdiction.
- e. Fees
 - Neuse River Basin In-Lieu fee for projects will be \$18/.49 / lbs of nitrogen. The per pound rate listed above is then multiplied by the total number of pounds of offset required for the total area of the development for a 30-year period this amount is consistent with the current Ecosystem Enhancement Program Fee at the time of development of the Town's Stormwater In-Lieu fee program.
 - Cape Fear River Basin In-Lieu fee for projects will be \$14.00 / lbs of nitrogen. The per pound rate listed above is then multiplied by the total number of pounds of offset required for the total impervious area of the development for a 30-year period. This amount was determined at a lower rate than the Neuse River Basin since NCDENR does not have mandatory nutrient sensitive waters management regulations in the Town's sub-basin of the Cape Fear River Basin. In the future, if Nutrient Sensitive Water Management is required by NCDENR in the Cape Fear River Basin the Town will update their fees for the Cape Fear River Basin to be consistent with House Bill 859 and rules adopted by the Environmental Management Commission (EMC).
- f. Required Information: The project developer or their agent (design consultant) will calculate the amount of the payment to be made by the development. For each submittal the development will provide the following information on the TOHS Stormwater Fee-In-Lieu Request Form during the Stormwater Management Review Process. Once reviewed and approved the TOHS can accept the payment and issue a receipt (payments based on letters not including

this information will not be accepted). The Stormwater Fee-In-Lieu Request Form requires general contact and project information as well as the Total Site Area, Existing Impervious Area, Proposed Impervious Area, Pre-Development Nitrogen Load, Post-Development Nitrogen Load, Nitrogen removed by SCM(s), Total Nitrogen Offset by fee, Fee Amount to be paid to the TOHS, Supporting calculations for determining fee amount Operation & Maintenance Agreement.

- **Neuse River Basin** In-Lieu fee for projects will be \$18/.49 / lbs of nitrogen. The per pound rate listed above is then multiplied by the total number of pounds of offset required for the total area of the development for a 30-year period this amount is consistent with the current Ecosystem Enhancement Program Fee at the time of development of the Town's Stormwater In-Lieu fee program.
- **Cape Fear River Basin** In-Lieu fee for projects will be \$14.00 / lbs of nitrogen. The per pound rate listed above is then multiplied by the total number of pounds of offset required for the total impervious area of the development for a 30-year period. This amount was determined at a lower rate than the Neuse River Basin since NCDENR does not have mandatory nutrient sensitive waters management regulations in the Town's sub-basin of the Cape Fear River Basin. In the future, if Nutrient Sensitive Water Management is required by NCDENR in the Cape Fear River Basin the Town will update their fees for the Cape Fear River Basin to be consistent with House Bill 859 and rules adopted by the Environmental Management Commission (EMC).

g. Required Information: The project developer or their agent (design consultant) will calculate the amount of the payment to be made by the development. For each submittal the development will provide the following information on the TOHS Stormwater Fee-In-Lieu Request Form during the Stormwater Management Review Process. Once reviewed and approved the TOHS can accept the payment and issue a receipt (payments based on letters not including this information will not be accepted). The Stormwater Fee-In-Lieu Request Form requires general contact and project information as well as the Total Site Area, Existing Impervious Area, Proposed Impervious Area, Pre-Development Nitrogen Load, Post-Development Nitrogen Load, Nitrogen removed by SCM(s), Total Nitrogen Offset by fee, Fee Amount to be paid to the TOHS, Supporting calculations for determining fee amount Operation & Maintenance Agreement.

3. Operations and Maintenance

a Operations and Maintenance Requirements

SCMs are crucial in protecting water quality from the impacts of development projects. If designed correctly, SCMs can also be an aesthetic asset to the development. However, no matter how well they are designed and constructed,

SCMs will not function correctly nor look attractive unless they are properly maintained. Most maintenance problems with SCMs are less costly to correct when they are caught early.

This section details operations, inspections and maintenance procedures for all SCMs. Inspection and Maintenance of each SCM is required through an Operation and Maintenance Agreement attached to the property deed. An example Operation and Maintenance Agreement is provided in Appendix D.

b Inspection Procedures

Regular inspection and maintenance is an ongoing legal requirement after the SCM is constructed. Inspections must be completed quarterly and annually (certified by a qualified professional engineer) throughout the year and inspection records must be made available to the TOHS upon request and PE certifications shall be submitted to the Town annually.

Tables in this section provide the following information for each SCM type:

- Components of the SCM to be inspected,
- Types of problems possible with each component, and
- Appropriate remedies.

These tables provide a starting point; additional components or problems may arise with certain SCMs, the position of the SCM in the landscape, and/or individual circumstances.

During each inspection, the inspector shall consult the appropriate Operations and Maintenance Table as described in this section and note which problems are seen and which remedies are recommended. The resulting inspections report will include any of the listed remedies required, as well as a narrative describing special circumstances and schedule for that individual SCM that needs to be addressed.

1. Schedule

Recommended inspection frequencies for SCM types are described in Table 8.03d below. Specific schedules for individual SCMs may be required and will be documented as a part of the Inspection and Maintenance Agreement.

Table 8.03d Inspection Frequency for SCMs in the Town of Holly Springs

Inspection Frequency	Inspection Type
Quarterly and within 24 hours after every water quality storm (greater than 1.0 inch)	Inspection must be conducted by a trained, qualified party. These inspections are intended to identify obvious maintenance needs early in order to prevent more extensive corrective actions.
Annual Certification	Inspection must be conducted by a Professional Engineer. These inspections are intended to provide a more thorough assessment of the facility. Annual inspection reports (sealed by the PE) must be submitted to the TOHS Engineering Department. Field survey calculations to confirm storage volume and embankment stabilization, etc. may be required on a case by case basis.

2. Operation and Maintenance Log and Reporting

Quarterly Operation and Maintenance Logs will be kept on file by the Owner or Responsible Party for each Structural SCM.

Forms to be used to create Inspection and Maintenance Logs for each SCM are provided in the Appendix to this SCM Manual. The tables in this section provide a listing of the minimum criteria to be considered in the inspection of each SCM feature.

Annual inspection and maintenance certifications must be filed with the TOHS. A digital photograph must be taken at the time of inspection and after maintenance for each SCM. These must be kept on file, with a hard copy filed in the Inspection and Maintenance Log.

There are various training, qualification and certification programs for available for SCM inspectors, it is recommended that all parties filling out quarterly operation and maintenance logs to be trained appropriately for each SCM inspected.

c Maintenance Procedures

1. Initial Maintenance

Initial maintenance, to complete the construction of the SCM and monitor until plants are established, is needed for certain SCM features, and includes activities such as:

- After the first time fertilization to establish grass or other plants in SCMs, fertilizer will not be applied.
- Other final maintenance measures to ensure proper functioning

I. Emergency Maintenance

Emergency maintenance will often be required immediately after storms and other emergencies. This may include the following, as needed:

- Replanting and repairs to structures.
- Vegetation is likely to need at least minor repairs.
- Mosquito control should be considered if standing water poses health risks because of mosquitoes.
- Obstructions and debris deposited during storm events should be removed immediately. Exceptions include debris that provides habitat and does not damage vegetation or divert currents to, from, or in the SCM. Because of the high quality habitat that can be found in woody debris, careful re-positioning rather than complete removal may be desirable. There may be instances where debris is even added. Such locations should be noted so that this debris is not accidentally removed.

- If the basin of a SCM must be drained for an emergency or to perform maintenance, the flushing of sediment through the emergency or to perform maintenance, the flushing of sediment through the emergency drain should be minimized to the maximum extent practical.

II. Corrective Maintenance

Regular maintenance is critical to the continued function of SCMs. The Operations and Maintenance Logs for all SCMS shall include descriptions of the corrective actions and maintenance required for each item, as noted in the inspection. If possible, inspections should occur during wet weather to verify that the facility is maintaining desirable retention times. One important purpose of inspections is to ascertain the operational condition and safety of the facility, particularly the condition of embankments, outlet structures, and other safety-related features. Other general objectives are to prevent clogging of any outlets, development of standing water, and growth of weeds and noxious plants.

All maintenance must adhere to the following:

- All maintenance needs cited at quarterly, semi-annually and annual certification inspections must be addressed within 60 days of each inspection report unless noted circumstances dictate that it be done in a shorter timeframe.
 - All corrective actions involving structural repairs or use of heavy equipment shall be coordinated and approved by the TOHS Engineering Department through notification prior to and following the corrective actions(s).
 - Minor repairs do not require prior TOHS approval.
6. Operations and Maintenance Guidelines for Specific SCM Types shall meet the criteria outlined in the most current version of the most current NCDEQ Minimum Design Criteria (MDC).
 7. Performance & Maintenance Guarantees (Stormwater Sureties)
 - a Performance Surety for Installation is Required

Town requires the submittal of a performance security or bond with surety, cash escrow, or a letter of credit prior to issuance of the Post-Construction Stormwater Permit for development projects or as a part of the other Completion Bonds required by the development in order to ensure that the SCMs are installed by the permit holder. Bonds shall be placed either prior to issuance of the Stormwater Permit or with the establishment of the other completion bonds required for the project as determined by staff during the Construction Drawing Review Process. Documentation to put the security in place will be reviewed during the Construction Stage, document submittal requirements are outlined in Section 8.04 of this manual. This surety will be

released after all check-list items have been received and approved by Engineering Department Staff and the Maintenance Security has been put in place.

b Maintenance Surety for long term Operation & Maintenance is Required

Town requires a cash payment to the Stormwater Facility Replacement Fund (SFRF) as described in The Post-Construction Stormwater Ordinance, for the purpose of operation and maintenance of SCMs approved in the permit by the property owner or HOA. Documentation to put the surety in place will be reviewed during the Construction Stage and then revised as necessary prior to the payment into the SFRF, document submittal requirements are outlined in Section 8.04 of this manual. This surety will be kept in place in perpetuity and may be updated on an annual basis.

8. Easements & Access

Private drainage easements are required for all SCMs by the Post-Construction Stormwater Ordinance. These easements shall be shown on the final plat and recorded with the Wake County Register of Deeds as outlined in Chapter 8, Article VI of the Holly Springs, NC Town Code of Ordinances. The final plat shall reference all applicable Operation and Maintenance Agreements, also to be recorded with the Wake County Register of Deeds, pertaining to each SCM associated with the project. All easements associated with the SCMs shall include access to the public right-of-way and shall be demonstrated to provide adequate coverage for access and maintenance for the SCM and outlet works. Access roads shall be provided and deeded as open space and not located on private property. Easement and access sizing and alignment must take into consideration the existing and design grades as well as the equipment needed to maintain the SCM. SCMs that impound water such as bio retention areas, constructed wetlands, dry extended detention basins, and wet detention ponds require an easement at least ten feet from the toe of slope of the dam. Such easements shall not encroach into any undisturbed or Neuse Riparian Buffers unless otherwise permitted by NCDENR. See also Section 8.06 of this document for private storm drainage easements. An Engineers Certification will be required on the Recorded Plat as described in the Final Plat Packet, Appendix A.18 of the DPM.

9. Covenants

Town requires the review and approval of HOA covenants to allow for the establishment of easements, the operation, maintenance and enforcement of SCMs outlined in the Ordinance. The covenants shall reference the recorded easement plats as well as the recorded Operation and Maintenance Agreements for the project. Appendix D. of this document has an outline of submittal requirements and documents to be filled out by the permit holder. This documentation will be reviewed during the Construction Stage and approved and recorded prior to the Post-Construction Stage of development.

10. Construction Sequence

The basic construction sequence for conversion of an erosion control device to a structural stormwater SCM shall be outlined as in the Town's Standard Details. Note that a more detailed construction sequencing may be required for site conditions that have environmental features on or adjacent to it, downstream citizen concerns, or site constraints. Corresponding erosion control and stormwater management plans shall be provided in addition to the construction sequence.

8.04 DOCUMENTATION AND SUBMITTAL REQUIREMENTS

As part of the review process, the developer must provide documentation to the Town that each stage of the development plan's stormwater design is consistent with the Town's policies and requirements at each stage of the review process. This section includes general lists of required items to be provided to the Town at each development review stage. See Section 8.00 for a detailed description of each review stage and the Appendixes for additional submittal information.

A. Concept Stage

1. Scoping Meeting

- This is highly recommended but an optional meeting that is requested by the applicant to discuss and obtain the information listed below.
 - Exchange of general information about the project between the developer and TOHS staff
 - TOHS Engineering Department staff will provide guidance to the developer for critical items to consider prior to the Concept Plan Review Meeting

2. Concept Plan Review Meeting

- Sketch Plan: showing general site layout and proposed stormwater concepts
- Completed Natural Resources Inventory: This document will assist staff in determining if a Flood Study will be required by the Town, applicable environmental regulations in the development such as but not limited to riparian buffers and possible locations and types of SCM may be appropriate for the development. This form is located in Appendix A of the Design Manual

3. Preliminary Plan

- Preliminary Stormwater Submittal Checklist: checklist includes a detailed description of the requirement for the items described below. If items included on the submittal checklist have not been received with each submittal, plans will be rejected and will not be able to return until the next review cycle until all submittal requirements have been provided for review. This form is located in Appendix B of the Design Manual.
- Preliminary Stormwater Infrastructure Plans: (included as part of the plan set) shall include but not necessarily be limited to the items shown below. Note that

in some cases, it may be acceptable to combine the plans shown below onto a single Preliminary Stormwater Infrastructure Plan.

- Preliminary Grading Plan: Existing and proposed grades shall be shown at a minimum of two foot contour intervals along with existing and proposed building finished floor elevations. Also, all other related information such as existing FEMA or TOHS floodplains and draft TOHS floodplains shall be shown.
- Preliminary Stormwater Conveyance Plan: Existing and proposed drainage features including streams, open channels, pipe networks, storm piping, etc. Plans should indicate approximate sizing of such features.
- Preliminary Stormwater Quality Plan: Proposed SCMs including type, size, and location in relation to pertinent site features such as riparian buffers, proposed site improvements, and stormwater conveyance systems.
- Preliminary Stormwater Management Report and Calculations: shall be a bound document and include at a minimum the following items:
 - Cover Sheet: Name of project, name of developer, name of engineering firm, date of first issuance, all subsequent revision dates, and seal/signature of a registered professional engineer.
 - Project Narrative: Narrative with a brief description of existing drainage patterns, environmental features, topography, proposed improvements, proposed drainage patterns, stormwater management objectives, and proposed stormwater management approach.
 - Stormwater Design Executive Summary: Insert completed form found in Appendix C of the Design Manual.
 - Unless otherwise critical to other approvals such as 401/404 approvals (bypass channel from SCM for instance) full SCM design/routing calculations and stormwater conveyance calculations are not typically required for the Preliminary Stormwater Management Report and Calculations.
 - Existing and Proposed Drainage Area Maps: Maps showing and labeling land cover conditions, sub-shed drainage areas, proposed SCMs, time of concentration segments, drainage patterns/pipe networks, and interconnectivity of sub-shed areas. Separate maps maybe needed for stormwater management and storm drainage design purposes.
 - Preliminary Sizing Calculations: Basic sizing calculations only to demonstrate compliance with required footprint (square feet) or length and DWQ sizing forms found at http://h2o.enr.state.nc.us/su/bmp_forms.htm .
 - Preliminary Nitrogen Export Calculations: Nitrogen Export Calculations based upon methodologies outlined in Section 8.03 and included in the Stormwater Design Executive Summary found in Appendix C of the Design Manual.
 - TSS Removal Calculations: In many situations, this will simply be a statement of how 85% TSS is being removed. However, if impervious area

is being bypassed from proposed SCMs or SCMs in series are being utilized to achieve 85% TSS, then calculations demonstrating compliance shall be provided.

- Soils Information: Site boundary overlay on USGS Quadrangle Maps and USDA Soils Maps.
- Preliminary Stormwater Fee-In-Lieu Request Form: Projects desiring to utilize the Stormwater Fee-In-Lieu to offset TN for the project must complete this form and provide it with supporting documentation in the preliminary stormwater report. Staff will conditionally approve or deny the request based on the site plan and preliminary calculations. This form will be finalized during the construction stage and is found in Appendix C of the Design Manual.
- Preliminary Flood Study or Stormwater Impact Analysis:
 - Flood Study Narrative: Narrative with a brief description of existing drainage patterns, hydrologic/hydraulic conditions, environmental features, topography, proposed improvements, proposed drainage patterns, stormwater management objectives, and proposed stormwater management approach.
 - Flood Study Schematic: Graphic schematic of the reach or reaches in the study with all cross-sections delineated, existing/proposed buildings with finished floor elevations, and existing/proposed water surface elevations.
 - Drainage Basin Map: Map showing the drainage area used for the model. Show location for existing studies as appropriate. Show existing and proposed floodplain limits.
 - Digital copy of HEC-RAS or HEC-HMS model
 - Hard Copy of hydrology Calculations
 - Approved Land Use Map (8.5"x11"): Obtain from www.hollyspringsnc.us
- PE Certification: For matching the last applicable submittal
- Draft Preconstruction Notification (PCN), Supporting Documentation, Wetlands determinations, and Buffer/Stream Determinations: Obtain PCN form from <http://h2o.enr.state.nc.us> or <http://www.saw.usace.army.mil>

B. Construction Stage

- Stormwater Submittal Checklist: This checklist includes a detailed description of the requirement for the items described below. If items included on the submittal checklist have not been received with each submittal, plans will be rejected and will not be able to return until the next review cycle until all submittal requirements have been provided for review. This form is found in Appendix C of the Design Manual.
- Final Stormwater Infrastructure Plans: Shall include but not limited to the following items.
 - Final Grading Plan: Existing and proposed grades shall be shown at a minimum of two foot contour intervals along with existing and proposed

building finished floor elevations. Also, all other related information such as existing FEMA or TOHS floodplains and final TOHS floodplains per the Final Flood Study shall be shown. Include spot elevations as required for constructability and to ensure stormwater goals are met.

- Stormwater Conveyance Plan: Existing and proposed drainage features including streams, open channels, pipe networks, storm piping, etc. Plans must include final design of all stormwater conveyance features including detailed information pertaining to the construction of pipe systems such as structure type, top elevations, invert elevations, pipe material, and pipe slope. Open channel systems shall include grading and appropriate design details as needed for construction including dimensions, appropriate lining, and energy dissipation as needed.
- Stormwater Quality Plan: Final SCM design including type, size, grading, location, section through outlet control structure, typical cross-section, pretreatment systems, level spreaders, by-pass structures, maintenance access, sub-drainage, spillways, easements/buffers, notes, and SCM planting (including source for nursery plants). Plans shall cross-reference Erosion Control Plans as necessary, especially for the construction sequence. Plans shall also include a table showing key design information with blanks for the contractor to verify this information during construction. Refer to the Sample SCM As-built Table located in Appendix C of the Design Manual.
- Final Stormwater Management Report and Calculations: Shall be a bound document and include at a minimum the following items:
 - Cover Sheet: Name of project, name of developer, name of engineering firm, date of first issuance, all subsequent revision dates, and seal/signature of a registered professional engineer.
 - Project Narrative: Narrative with a brief description of existing drainage patterns, environmental features, topography, proposed improvements, proposed drainage patterns, stormwater management objectives, and proposed stormwater management approach.
 - Stormwater Design Executive Summary: Insert completed form found in Appendix C of the Design Manual.
 - Existing and Proposed Drainage Area Maps: Maps showing and labeling land cover conditions, sub-shed drainage areas, proposed SCMs, time of concentration segments, drainage patterns/pipe networks, and interconnectivity of sub-shed areas. Separate maps maybe needed for stormwater management and storm drainage design purposes.
 - Final Sizing Calculations: Basic sizing calculations only to demonstrate compliance with required footprint (square feet) or length and NCDEQ Minimum Design Criteria (MDC) sizing documents.
 - First Flush Volume Calculations: Calculations demonstrating the first flush volume.

- Stormwater Management Routing Calculations: Calculations for routing of stormwater through each SCM. Include a system schematic, flow summaries for each node, design storm data used, Tc calculations, runoff coefficient calculations, hydrograph summaries or hydrographs, SCM volume calculations (elevation/area table), outlet structure design data, outlet structure flow calculations, and drawdown time calculations (first flush and 1-year storm).
- Anti-floatation Calculations: Calculations for vertical stability of the riser/barrel systems at the most buoyant condition.
- Preliminary Nitrogen Export Calculations: Nitrogen Export Calculations based upon methodologies outlined in Section 8.03 and included in the Stormwater Design Executive Summary found in Appendix C of the Design Manual.
- TSS Removal Calculations: In many situations, this will simply be a statement of how 85% TSS is being removed. However, if impervious area is being bypassed from proposed SCMs or SCMs in series are being utilized to achieve 85% TSS, then calculations demonstrating compliance shall be provided.
- Storm Drainage Design Calculations: Detailed calculations demonstrating compliance with TOHS storm system design and performance requirements. Typical storm drainage system design tables are located in Appendix C of the Design Manual. See also above for Drainage Area Map requirements.
- Erosion Control Calculations: Detailed calculations for all erosion control measures such as sediment basins, channels/diversion ditches, skimmers, etc.
- Soils Information: Site boundary overlay on USGS Quadrangle Maps and USDA Soils Maps. Where SCM design requires infiltration, provide appropriate geotechnical soils information such as infiltration testing.
- Stormwater Fee in Lieu Request Form: The preliminary form will be revised to reflect the final stormwater management plan and the Town's conditional approval. Payment must be received by the preconstruction meeting and prior to issuance of the stormwater permit. This form is located in Appendix D
- Final Flood Study
 - Flood Study Narrative: Narrative with a brief description of existing drainage patterns, hydrologic/hydraulic conditions, environmental features, topography, proposed improvements, proposed drainage patterns, stormwater management objectives, and proposed stormwater management approach.
 - Flood Study Schematic: Graphic schematic of the reach or reaches in the study with all cross-sections delineated, existing/proposed buildings with finished floor elevations, and existing/proposed water surface elevations.

- Drainage Basin Map: Map showing the drainage area used for the model. Show location for existing studies as appropriate. Show existing and proposed floodplain limits.
- Digital copy of HEC-RAS or HEC-HMS model
- Paper copy of HEC-RAS or HEC-HMS model
- Approved Land Use Map (8.5"x11"): Obtain from www.hollyspringsnc.us
- CAD file: (dwg format) with floodplain, cross-section, 100-year water surface elevation and adjacent buildings with finished floor elevations.
- Preconstruction Notification (PCN), Supporting Documentation, Wetlands determinations, and Buffer/Stream Determinations: Provide documents and approvals received from outside agencies as appropriate. Please note that permit modifications may result due to changes made during the plan review process. All final permits must be received prior to issuance of the Land Disturbance Permit for the project.
- PE Certification: for applicable submittal & consistency with the approved preliminary plans
- Preliminary versions of Post-Construction Documents as appropriate such as:
 - Preliminary Operations & Maintenance Agreement: This agreement between the owner or HOA and the Town outlines the SCMs that exist on the project and the required O&M criteria for each SCM. A sample O&M documents and O&M log templates are located in Appendix D.
 - Preliminary Performance Guarantee submittal: Performance and Maintenance Securities will be required for each SCM, cost estimates and the SCM Summary Sheet shall be submitted. If a Performance Security is required prior to issuance of the Stormwater Permit rather than at Plat recordation or later in the construction process the preliminary forms must be finalized prior to issuance of the Stormwater Permit. See Appendix D for the Stormwater Bonding Checklist.
 - Preliminary Covenants: Covenants will be reviewed by the Town Attorney and staff to determine that all requirements of the HOA have been adequately outlined to meet O&M requirements for the project.

C. Post-Construction Stage

- Recorded Operations and Maintenance Agreement: Refer to Appendix D of the Design Manual for a Sample O&M Manual, SCM Maintenance Log Forms and Stormwater Bonding Checklist. Preliminary documents shall be updated, approved by the Town and recorded with the Wake County Register of Deeds.
- Recorded easements (plat or deed): Easements shall be reviewed by the Town and recorded with the Wake County Register of Deeds

- Record Drawings (“as-built drawings”) of SCM(s) with Engineer’s Certification: Provide in both digital (dwg format) and Mylar. Shall be submitted upon completion of construction of each SCM. Soils certifications shall be attached with this certification.
- Performance Guarantee:
 - Stormwater Bonding Checklist: found in Appendix D of the Design Manual. Preliminary documents required for starting the security will be updated, the Maintenance Security will be updated with actual construction costs. The Performance guarantee cannot be released until the Maintenance Security has been approved.
- Covenants (if applicable): Will be finalized, approved by the Town and recorded with the Wake County Register of Deeds
- Environmental Education Packet: Packet generally describing the Town’s Environmental programs and how they directly relate to the project. These documents will provide general guidance to homeowners regarding their property and common areas in respect to stewardship, maintenance, and development. See Appendix D for outline and sample document.

8.05 DESIGN METHODOLOGIES

A Hydrology Modeling

The objective of utilizing SCMs is to minimize the adverse effects of development by meeting the criteria established in the TOHS Stormwater Ordinance. The preferred stormwater management approach is to preserve the natural storage, infiltration, and pollutant-treatment functions of each drainage area where practical, and where not practical to construct SCMs that mimic those natural functions.

Stormwater calculations for discharge estimates for specified design storms shall be calculated assuming full development of the contributing watershed based on the most recent Land Use Plan or on existing development, whichever is greater. Routing of discharges through lakes, ponds, or other impoundments is not acceptable unless the impoundment is publicly owned and operated as a permanent discharge control structure. Additional calculations are required to design SCMs with appropriate treatment capacity and correctly sized outlet structures. Diversions of stormwater flow across drainage area boundaries are not acceptable due to the resulting change in the watershed. If no alternative to diversion is possible, then the development must evaluate the entire watershed to ensure no adverse effects in regards to water quantity and water quality.

The table below summarizes the stormwater calculations and allowable methods that will be presented in this chapter.

Table 8.05a Allowable Methods for Stormwater Calculations

Calculation Value	Section	Allowable Methods
Peak Flow	A.1	a) Rational Method b) NRCS (SCS) c) Regional Regression Equation Analysis (National Flood-Frequency Program)
Runoff Volume	A.2	a) Simple Method b) NRCS (SCS)
Storage Volume	A.3	Stage-Storage Table
Stage-Storage Discharge	A.4	Chainsaw Routing (upon pre-approval from TOHS Engineering Dept only), NRCS (SCS), HEC-HMS, WinTR-55, SWMM, other approved method or software

1 Peak Flow Calculations

- a. Rational Method: The rational method provides a simple yet reliable way to determine peak runoff rates for drainage areas that do not exceed 20 acres and do not utilize any stormwater attenuation devices.

The Rational equation is given as:

$$Q = C * I * A$$

Where:

Q = Estimated design discharge (cfs)

C = Composite runoff coefficient (unit less) for the watershed. See Table 8.05d for C values based upon soil type.

I = Rainfall intensity (in/hr) for the designated design storm. *Please refer to the following Table 8.05c for rainfall intensity, I.

A = Watershed area (acres)

Although there is no conversion factor, the units are resolved because one acre-inch per hour is about the same as one cubic foot per second.

Please note that the precipitation intensity can be calculated either by equation as shown below or by interpolating values from Table 8.05c:

$$I = g / (h+T)$$

Where:

I = Precipitation intensity (in/hr)

g and h = empirically derived constants (See Table 8.05b for values)

T = Time of concentration (minutes, 5 minutes min.)

Time of Concentration, T_c :

Time of concentration for the rational method may be calculated by the Kirpich equation as described below or by using Kinematic Wave Equation. The Kirpich Equation is best used in areas of low development intensities. Kinematic wave equation may also be used but is not described in this manual. Time of concentration shall be calculated using a segmented approach as reasonable based upon changes in slope, land cover conditions, or flow type.

Kirpich T_c Equation (Applicable to Rational Method only): Kirpich's equation (1940) was developed for small, agricultural watersheds. It was derived by examining the required time for the stream to rise from low to maximum stage during a storm. The time of concentration was then assumed equal to that time.

$$T_c = \frac{[L^3/H]^{0.38}}{128}$$

where:

T_c = Time of concentration in minutes

L = Longest flow path in feet

H = Elevation of difference along L in feet

The above equation was developed for overland flow on bare earth. For overland flow on grassy earth T_c should be multiplied by 2.0. On concrete and asphalt surface it should be multiplied by 0.4.

Table 8.05d Curve Numbers and Rational C

Cover Description	SCS Curve Number				Rational C				Percent Impervious
	HSG A	HSG B	HSG C	HSG D	HSG A	HSG B	HSG C	HSG D	
Fully developed urban areas									
Open space									
Poor condition (<50% grass)	68	79	86	89	0.36	0.58	0.72	0.78	
Fair condition (50 -75% grass)	49	69	79	84	0.15	0.38	0.58	0.68	
Good condition (>50% grass)	39	61	74	80	0.15	0.22	0.48	0.60	
Impervious areas									
Pavement, roofs	98	98	98	98	0.96	0.96	0.96	0.96	
Gravel	76	85	89	91	0.52	0.70	0.78	0.82	
Dirt	72	82	87	89	0.44	0.64	0.74	0.78	
Urban districts									
Commercial and business	89	92	94	95	0.78	0.84	0.88	0.90	85
Industrial	81	88	91	93	0.62	0.76	0.82	0.86	72
Residential areas (by lot size)									
1/8 acre (town houses, condos)	77	85	90	92	0.54	0.70	0.80	0.84	65
1/4 acre	61	75	83	87	0.22	0.50	0.66	0.74	38
1/3 acre	57	72	81	86	0.15	0.44	0.62	0.72	30
1/2 acre	54	70	80	85	0.15	0.40	0.60	0.70	25
1 acre	51	68	79	84	0.15	0.36	0.58	0.68	20
2 acres	46	65	77	82	0.15	0.30	0.54	0.64	12
Agricultural areas									
Pasture, grassland									
Poor	68	79	86	89	0.36	0.58	0.72	0.78	
Fair	49	69	79	84	0.15	0.38	0.58	0.68	
Good	39	61	74	80	0.15	0.22	0.48	0.60	
Meadow (mowed)	30	58	71	78	0.15	0.16	0.42	0.56	
Brush					0.15	0.15	0.15	0.15	
Poor	48	67	77	83	0.15	0.34	0.54	0.66	
Fair	35	56	70	77	0.15	0.15	0.40	0.54	
Good	30	48	65	73	0.15	0.15	0.30	0.46	
Woods and grass (orchard)									
Poor	57	73	82	86	0.15	0.46	0.64	0.72	
Fair	43	65	76	82	0.15	0.30	0.52	0.64	
Good	32	58	72	79	0.15	0.16	0.44	0.58	
Woods									
Poor	45	66	77	83	0.15	0.32	0.54	0.66	
Fair	36	60	73	79	0.15	0.20	0.46	0.58	
Good	30	55	70	77	0.15	0.15	0.40	0.54	
Row crops, straight, good	67	78	85	89	0.34	0.56	0.70	0.78	
Row crops, contoured, good	65	75	82	86	0.30	0.50	0.64	0.72	
Small grain, good	63	75	83	87	0.26	0.50	0.66	0.74	
Farmsteads	59	74	82	86	0.18	0.48	0.64	0.72	

In the table values of Rational C were computed from $C = 0.020 \text{ CN} - 1.0$

Source: Malcom 2003, Supplement to Elements of Urban Stormwater Design

- b. NRCS (SCS) Method: See Section 8.5.A.2 for both peak flow and volume calculations.
- c. Regional Regression Equation Analysis: Regression equations for rural and urban areas in North Carolina for various return periods are listed in the documents WRIR 96-4114 and WRIR 96-4084, The National Flood-Frequency Program—Methods for Estimating Flood Magnitude and Frequency in Rural

and Urban Areas in North Carolina, 2001, otherwise known as USGS Fact Sheet 007-00, January, 2002. Fact sheets can be found at the following USGS website [http:// water.usgs. gov/osw /programs/ nffpubs.html](http://water.usgs.gov/osw/programs/nffpubs.html).

A typical North Carolina Rural Regression Equation:

$$Q_T = K * (DA)^X$$

Where:

Q_T = Peak discharge in cubic feet per second for a storm event of recurrence interval T

T = Recurrence interval that ranges from 2 to 500 years

DA = Drainage Area in Square Miles

K, X = Empirical Constants (Vary with equation. Refer to WRIR 96-4112)

A typical North Carolina Urban Regression Equation:

$$U_T = L * (DA)^X * (IA)^Y$$

Where:

U_T = Peak discharge in cubic feet per second for a storm event of recurrence interval T

T = Recurrence interval that ranges from 2 to 100 years

DA = Drainage Area in Square Miles

IA = Percentage of drainage area covered by impervious surfaces

L, X, Y = Empirical Constants (Vary with equation. Refer to WRIR 96-4084)

The Regional Regression Analysis shall be used for flood analysis only as approved by the TOHS Engineering Department. This method shall not be used for SCM routing or analysis.

2. Runoff Volume

- a. Simple Method: The Simple Method (1" first flush volume) uses a minimal amount of information such as watershed drainage area, impervious area, and design storm depth to estimate the volume of runoff associated with the water quality storm (first flush volume). The Simple Method was developed by measuring the runoff from many watersheds with known impervious areas and curve-fitting a relationship between percent imperviousness and the fraction of rainfall converted to runoff (the runoff coefficient). The Simple Method shall be used for calculating first flush volumes only and shall not be used for any other purpose.

This relationship is presented below:

$$R_V = 0.05 + 0.9 * I_A$$

Where:

R_V = Runoff coefficient [storm runoff (in)/storm rainfall (in)], unitless

I_A = Impervious fraction [impervious portion of drainage area (ac) / drainage

area (ac)], unitless.

Once the runoff coefficient is determined, the volume of runoff that must be controlled is given by the equation below:

$$V = 3630 * R_d * R_v * A$$

Where:

V = Volume of runoff that must be controlled for the design storm (ft³)

RD = Design storm rainfall depth = 1" for water quality treatment

A = Watershed area (ac)

- b. NRCS (SCS) Method:** The SCS method (SCS, 1985; NRCS, 1986) is an alternative method for calculating the volume of stormwater runoff that is generated from a given amount of rainfall. It may not be used for calculating the water quality volume, but should be used for SCM routing/analysis and low impact development projects. First flush volumes for water quality treatment shall be based upon the Simple Method as described above. The following is a brief summary of the SCS Method. Refer to Technical Release 55 for a full description of this calculation methodology. This method should not be used on drainage areas exceeding 640 acres.

The SCS runoff equation is given below:

$$Q^* = \frac{(P-0.2S)^2}{P+0.8S}$$

Where:

Q* = Runoff depth (in)

P = Rainfall depth (in)

S = Potential max. retention after rainfall begins (in)

S is related to the soil and surface characteristics of the drainage area through the curve number (CN) by the following equation:

$$S = (1000/CN) - 10$$

The curve number, CN, describes the characteristics of the drainage area that determine the amount of runoff generated by a given storm: hydrologic soil group and ground cover. Soils are classified into four hydrologic soil groups (A, B, C, and D) based on their minimum infiltration rate, with A having the highest infiltration potential and D having the lowest. Refer to Technical Release 55 (TR-55) for a detailed list of soil names and associated hydrologic soil groups. Curve numbers should be prorated based upon actual land cover conditions in the event that land use is not homogenous. The four soil groups are summarized in the table below:

Table 8.05e – Hydrologic Soil Groups

Soil group	Characteristics
Group A	A soils have low runoff potential and high infiltration rates even when thoroughly wetted. They consist chiefly of deep, well to excessively drained sand or gravel and have a high rate of water transmission (greater than 0.30 in/hr). The textures of these soils are typically sand, loamy sand, or sandy loam.
Group B	B soils have moderate infiltration rates when thoroughly wetted and consist chiefly of moderately deep to deep, moderately well to well drained soils with moderately fine to moderately coarse textures. These soils have a moderate rate of water transmission (0.15-0.30 in/hr). The textures of these soils are typically silt loam or loam.
Group C	C soils have low infiltration rates when thoroughly wetted and consist chiefly of soils with a layer that impedes downward movement of water and soils with moderately fine to fine texture. These soils have a low rate of water transmission (0.05-0.15 in/hr). The texture of these soils is typically sandy clay loam.
Group D	D soils have high runoff potential. They have very low infiltration rates when thoroughly wetted and consist chiefly of clay soils with a high swelling potential, soils with a permanent high water table, soils with a claypan or clay layer at or near the surface, and shallow soils over nearly impervious material. These soils have a very low rate of water transmission (0-0.05 in/hr). The textures of these soils are typically clay loam, silty clay loam, sandy clay, silty clay, or clay.

As described in 8.6.A.1.a, the time of concentration shall be based upon a segmented approach. Although not needed to calculated runoff volumes, the time of concentration is important for both peak flow analysis and SCM routing. For the SCS method, the time of concentration segments may include sheet flow, shallow concentrated flow, and open channel flow. All calculations in the TOHS shall be based upon a Type II, 24-hour rainfall distribution. Again, refer to Technical Release 55 for more detailed information on this methodology.

Table 8.05f: Local Rainfall Depth

Precipitation Frequency Estimates (inches)																		
ARI * (years)	5 min	10 min	15 min	30 min	60 min	120 min	3 hr	6 hr	12 hr	24 hr	48 hr	4 day	7 day	10 day	20 day	30 day	45 day	60 day
1	0.39	0.63	0.79	1.08	1.34	1.56	1.65	2.00	2.37	2.83	3.26	3.63	4.21	4.79	6.39	7.92	10.12	12.16
2	0.46	0.74	0.93	1.28	1.61	1.86	1.98	2.39	2.84	3.42	3.92	4.35	5.02	5.69	7.54	9.32	11.84	14.16
5	0.53	0.85	1.07	1.52	1.95	2.29	2.44	2.95	3.52	4.27	4.86	5.35	6.10	6.82	8.90	10.83	13.55	15.98
10	0.59	0.94	1.19	1.72	2.24	2.65	2.83	3.44	4.11	4.93	5.58	6.13	6.95	7.72	9.98	12.00	14.87	17.38
25	0.65	1.03	1.31	1.93	2.58	3.08	3.33	4.06	4.89	5.83	6.55	7.19	8.10	8.92	11.45	13.54	16.59	19.17
50	0.69	1.10	1.39	2.09	2.83	3.43	3.74	4.57	5.56	6.54	7.30	8.02	9.01	9.86	12.61	14.72	17.91	20.53
100	0.73	1.15	1.46	2.23	3.08	3.76	4.15	5.09	6.22	7.26	8.07	8.87	9.93	10.81	13.78	15.89	19.19	21.83
200	0.76	1.20	1.52	2.36	3.31	4.09	4.56	5.62	6.93	8.00	8.84	9.73	10.88	11.77	14.96	17.06	20.47	23.09
500	0.79	1.25	1.58	2.51	3.60	4.51	5.10	6.33	7.88	8.99	9.88	10.89	12.15	13.06	16.57	18.62	22.14	24.70
1000	0.82	1.29	1.62	2.62	3.82	4.84	5.55	6.92	8.69	9.77	10.68	11.79	13.14	14.05	17.81	19.80	23.39	25.90
Raleigh-Durham Airport Data Reference: NOAA																		

3. Storage Volume

Volume control for peak flow attenuation is typically provided through detention structures with volume above the water operating level and below the required freeboard. Some SCMs do not have the capability to provide this volume control due to their design, and others can include storage volume within the media of the SCM. Each individual SCM chapter discusses the specific calculations for meeting the volume control requirements. However, since many of the SCMs use storage volume in a detention structure, this section will discuss an acceptable method of calculating that volume. Storage volume within a detention structure shall be calculated using a stage-storage method. A table shall be provided showing

incremental elevations of the SCM with square footage values at the listed elevations. The elevation increments shall be no more than 1 foot. Columns can then be produced showing the incremental volume and cumulative volume of storage provided. The drainage areas used in this analysis shall not exceed that allowed by the methodology used to generate the runoff volumes being analyzed.

- a. **Stage-Storage Table:** This method can be used for basin shapes as simple as a rectangle or as intricate as a curved, landscape designed wetland feature. It can also be used to calculate sediment storage volume and operating volume within SCMs. Below is an example of a Stage-Storage volume calculation table.

Table 8.05g. Stage Storage Volume Table

Elevation	Surface Area (sf)	Incremental Volume (cf)	Cumulative Volume (cf)
less than 725	operating volume	0	0
725	10,000	0	0
726	13,000	11,500	11,500
727	16,500	14,750	26,250
728	21,500	19,000	45,250
729	26,000	23,750	69,000
Over 729	freeboard	0	69,000

4. Stage-Storage-Discharge Model

Creating a stage-storage-discharge model is crucial for SCMs that involve detention of stormwater, particularly stormwater wetlands and wet detention basins. These SCMs provide volume control for the specified storm (for example, the 1-inch storm) in a temporary pool that is above the permanent pool.

- a. **Models:** The following models may be used to assist in determining stage-storage-discharge through a detention SCM. These models include:
 - HEC-HMS, developed by the U.S. Army Corps of Engineers, provides a variety of options for simulating precipitation-runoff processes. This model can simulate unit hydrograph and hydrologic routing options. The latest version also has capabilities for continuous soil moisture accounting and reservoir routing operations. <http://www.hec.usace.army.mil/software/hec-hms/download.html>.
 - WinTR-55, develop by the NRCS, can be used to analyze the hydrology of small watersheds. A final version (including programs, sample data, and documentation) is now complete. <http://www.wcc.nrcs.usda.gov/hydro/hydro-tools-models-intr55.html>.
 - SWMM, developed by the EPA, can be used to analyze stormwater quantity and quality associated with runoff from urban areas. Both single-event and continuous simulation can be performed on catchments having storm sewers, or combined sewers and natural drainage, for

prediction of flows, stages and pollutant concentrations.
<http://www.epa.gov/ceampubl/swmm.htm>.

- Other programs may be used upon approval from the TOHS Engineering Department.
- b. Chainsaw Routing: The Chainsaw Routing method is appropriate for the routine design of some small systems. Chainsaw routing is not appropriate for many applications and shall only be used upon pre-approval from the TOHS. Three sets of source data are needed to apply the Chainsaw Routing method:
- The inflow hydrograph
 - The size and shape of the storage basin
 - The hydraulics of the outlet device.

The application of the Chainsaw Routing method is described in detail in Elements of Urban Stormwater Design (Dr. H. Rooney Malcom, P.E. 1989).

B Hydraulics Modeling

1. Channel Geometry: The Manning Equation is the equation of choice for determining the cross-section for a trapezoidal stormwater channel. It is applicable where (Malcom 1989):
 - Stormwater is flowing under the influences of gravity, and
 - Flow is steady – it does not vary with time (Although discharge does vary during the passage of a flood wave, it is essentially steady during the time around the peak, the time of interest in channel design.)

The Manning Equation can be stated as:

$$Q = \frac{1.489}{n} A R^{0.667} S^{0.5}$$

Where:

Q = Peak discharge to the channel (cfs)

n = Manning roughness coefficient (dimensionless)

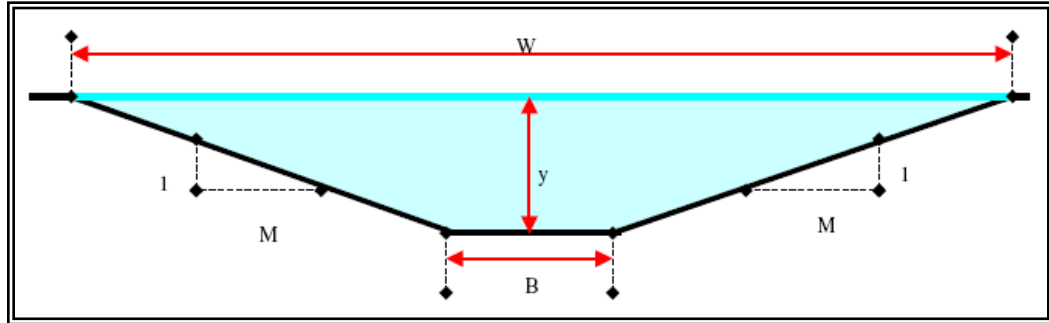
A = Cross-sectional area of flow (sq ft), the area through which flow takes place

(see below)

R = Hydraulic radius (ft), found by dividing cross-sectional area, A (sq ft), by wetted perimeter, P (ft) (see below)

S = Longitudinal slope of the invert of the channel (ft fall/ft run).

Figure 8.04a Diagram of a trapezoidal channel



The Manning roughness coefficient is an experimentally determined value that is a function of the nature of the channel lining.

Table 8.05h Rational runoff coefficients (Munson, et al., 1990 and Chow et al., 1988)

Channel lining	Manning roughness coefficient, n
Asphalt	0.016
Concrete, finished	0.012
Concrete, unfinished	0.014
Grass	0.035
Gravel bottom with riprap sides	0.033
Weeds	0.04

The cross-sectional area of flow, A, can be determined by the following equation:

$$A = By + My^2$$

The wetted perimeter, P, is the distance along the cross section against which the water is flowing. It does not include the free water surface. P can be determined by the following equation:

$$P = B + 2y (1 + M^2)^{0.5}$$

The hydraulic radius, R, can be determined by the following equation:

$$R = \frac{A}{P}$$

For the three equations above, the variables have the following meanings:

- A = Cross-sectional area of flow (sq ft)
- B = Bottom width of the channel (ft)
- M = Side slope ratio (ft horizontal/ft vertical)

P = Wetted perimeter (ft)
 R = Hydraulic radius (ft)
 y = Depth of flow (ft)

The tractive force for a channel flowing at a specific depth can be calculated as: $T = y \times S \times W$, where W is the unit weight of water (62.4 #/cf). The tractive force experienced in the channel must be less than the resistance provided by the channel surface or channel lining for the design storm (10-year event, typical).

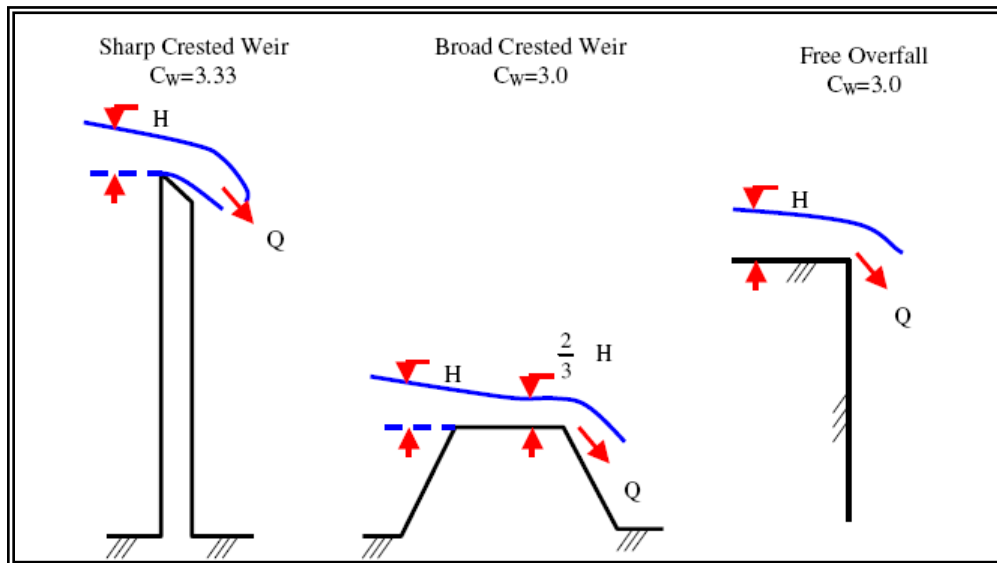
2. Weir Equations: Three kinds of weirs are typically used: sharp-crested, broad-crested and v-notch. For sharp-crested and broad-crested weirs, the basic equation is:

$$Q = C_w L H^{1.5}$$

Where:

Q = Discharge (cfs)
 C_w = Coefficient of discharge (dimensionless) – see below
 L = Length of weir (ft), measured along the crest
 H = Driving head (ft), measured vertically from the crest of the weir to the water surface at a point far enough upstream to be essentially level.

Figure 8.05b: Schematic sections through weirs (Malcom 1989)



For v-notch weirs, the basic equation is:

$$Q = C_v H_w^{5/2}$$

Where:

Q = Discharge (cfs)

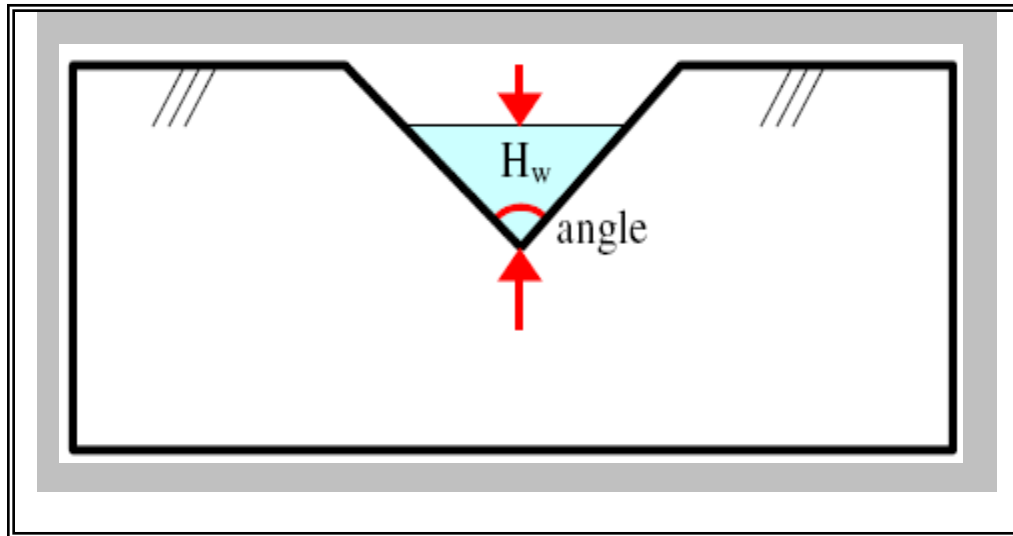
C_w = Weir flow coefficient for V-notch weirs

2.50 for 90 degrees

1.44 for 60 degrees

1.03 for 45 degrees

H = Difference between pool elevation and notch (ft)



3. Orifice Equation

The basic equation for orifices is:

$$Q = C_o A (2gH_o)^{0.5}$$

Where:

Q = Discharge (cfs)

C_o = Coefficient of discharge (dimensionless) – see below

A = Cross-sectional area of flow at the orifice entrance (sq ft)

g = Acceleration of gravity (32.2 ft/sec²)

H_o = Driving head (ft), measured from the centroid of the orifice area to the water surface – Note: Usually use $H_o / 3$ to compute drawdown through an orifice to reflect the fact that head is decreasing as the drawdown occurs. Alternatively, designer may use a incremental falling head calculation to better simulate actual performance.

Figure 8.05d: Schematic section through an orifice

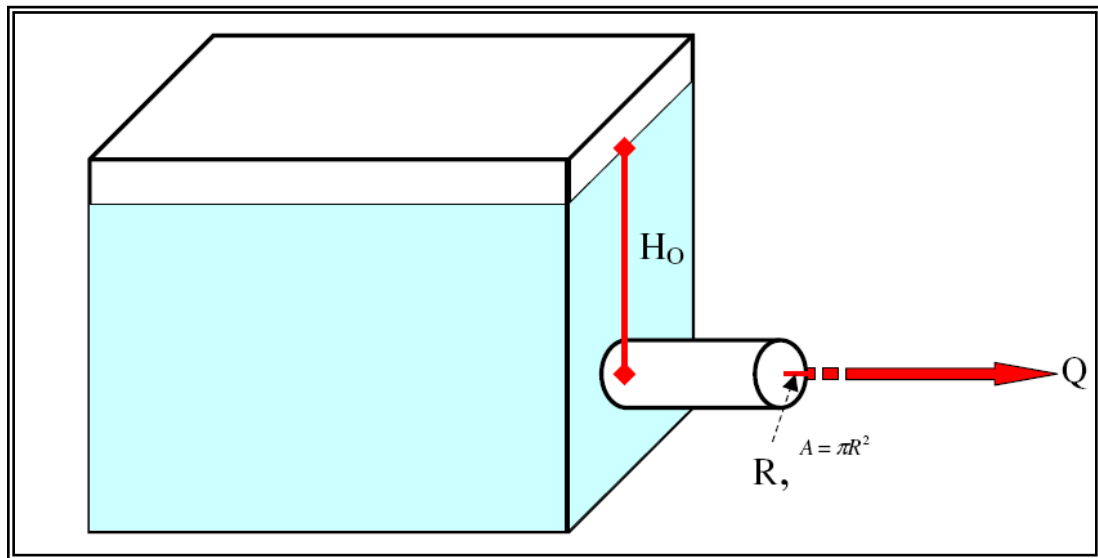


Table 8.05i: Values of Coefficient of Discharge, Co (Malcom, 1989)

Entrance Condition	CD
Typical default value	0.6
Square-edged entrance	0.59
Concrete pipe, grooved end	0.65
Corrugated metal pipe, mitred to slope	0.52
Corrugated metal pipe, projecting from fill	1

4. Pipe Systems: HEC-22. Nomograph, Inlet control, outlet control or other method approved by the Town Engineer.

8.06 STORM DRAINAGE DESIGN

When development of an area changes the flow regime from existing to developed or redeveloped flow conditions, drainage systems shall be designed according to the following standards:

A Applicability

The following design standards apply to all development within the TOHS corporate limits or ETJ, except for storm drainage systems constructed within the NCDOT right-of-way. Storm drainage facilities constructed in the NCDOT right-of-way shall be reviewed and approved by NCDOT and shall be in compliance with NCDOT standards and specifications, unless otherwise stated. Storm drainage facilities constructed

within NCDOT right-of-way shall be subject to all applicable NCDOT's design requirements.

B Private Drainage Easements

Private drainage easements are required for any development which accepts or conveys stormwater runoff. Exemptions may be permitted by the Executive Director of Utilities and Infrastructure Services in instances where it can be proven that the storm drainage system on non-residential parcel(s) has been designed to serve lands only internal to the property. Drainage easements are intended to provide access, inspection, maintenance, and repair of structural portions of storm drainage conveyance systems. In addition to SCMs, all other portions of the storm drainage systems shall be maintained by the property owner, unless otherwise dedicated to and accepted by the Town of Holly Springs. In the event that privately-owned storm drainage systems are not maintained by the property owner, and are causing an emergency situation, the Town of Holly Springs may take corrective action and charge the property owner for all costs associated with the corrective action. All private drainage easements shall be recorded after construction but prior to certificate of occupancy.

Private drainage easements shall be provided on all storm drainage and structures, including but not limited to:

- All drainage conveyance systems and structures, such as: pipes, channels, inlets, junction boxes, etc.
- All stormwater management SCMs, such as: ponds, wetlands, devices, etc.
- All new impoundments or existing impoundments on or adjacent to new development
- Streams, wetlands and other natural stormwater conveyances
- Other locations deemed appropriate by the TOHS Engineering Department
- Existing impoundments off site and adjacent to development must have a minimum 20-foot easement adjacent to the device and the property line.

Private drainage easements shall be indicated on the final plat, labeled and recorded as "Private Drainage Easement". Such easements shall be located on commonly owner property unless it is required for individual lot use. All private drainage easements shall be at least twenty (20) feet in width unless otherwise specified in the Town of Holly Springs Engineering and Design Construction Standards.

Easements widths shall be as follows:

1. Pipe Systems: Pipe systems shall be a minimum of 20' or 10' + 2 times the invert depth rounded to the nearest 5' (whichever is greater) and shall be centered on the pipe unless otherwise approved by the TOHS Engineering Department. Multiple culverts will be reviewed on a case-by-case basis but should generally have easements no less than the outside dimensions plus 40'.

2. Open Channel Systems: Easement widths shall be provided (unless an engineering study is provided to and approved by the TOHS Engineering Department that demonstrates that a lesser width will allow for proper construction, access, and maintenance) as follows as measured from top of bank or centerline of channel if there is no discernable top of bank:

Table 8.06a: Required easement widths for channels based on drainage areas

Drainage Area, ac	Easement Width, ft
<10 ac	10' on each side
10 - <25 ac	20' on each side
25 - <50 ac	30' on each side
50 - <100 ac	40' on each side
> 100 ac	The greater of the floodway width or 50'

The owners of real estate containing drainage features shall ensure that actions performed on the owned property do not negatively impact upstream or downstream neighbors, including other uses included in a common development. Any changes to existing natural drainage ways or other stormwater conveyance systems shall be subject to TOHS review as needed to evaluate potential impacts to upstream or downstream neighbors.

Structures are not permitted on/in private drainage easements with the exception of the following:

1. Pipe Systems: Structure cannot be placed over piped systems contained in a private drainage easement with the exception of fences, landscaping, and driveways that may encroach into the private drainage easements in a manner that will not impede the flow of stormwater or damage the storm drainage pipe in anyway or block access to a SCM.
2. Open Channel Systems: Structures cannot be placed in an open channel system such as ditches swales or natural drainage features contained in private drainage easements with the exception of fences or landscaping that is installed in a manner that is above the bank-full elevation and does not impede flow of the stormwater or damage the storm drainage system in anyway or block access to a structure stormwater SCM.
3. Retaining walls are not permitted within private drainage easements regardless if it is a piped or open channel system. Retaining walls maybe permitted on a case by case basis by the Executive Director of Utilities and Infrastructure Services in areas adjacent to the structural SCMs.

C Gutter Spread

The horizontal width of stormwater runoff conveyed along a curb system is known as gutter spread. Gutter spread requirements apply only to public roadways to be owned and maintained by the TOHS. The following is a list of required design criteria:

Table 8.06b: Required Design Criteria

Hydraulic Analysis	HEC – 12 or HY – 22
Hydrology	Rational Method
Design Storm Intensity	5.76 IN/HR (2-year storm with 5 minute time of concentration)
Manning's 'N'	0.016
Inlet Clogging Factor	50% Clogging for sag inlets
By-Pass	Consider All By-Pass (No By-Pass Across Streets, Through Intersections, or Around Radius Allowed)
Required Inlet Locations	2 At Every Sag Point (one on each side of road if road is crowned) As Required For Accessibility Where no overflow outlet is available, double inlets must be used (4 total if road is crowned).
Allowable Spread: Roads without Roadside Parking Roads With Roadside Parking	Maximum of either ½ outermost travel lane or 8 feet from flow line of curb No Encroachment Into Travel Lanes

D Storm Drainage Piping

All storm drainage piping systems shall sized in accordance with Manning's equation and shall be in compliance with the following unless otherwise approved by the TOHS Engineering Department:

Table 8.06c Storm Drainage Piping Requirement

Materials (Town Right-of-Way or Property)	Class III RCP or Greater (15" Min.) as Required by Depth or Loading.
Materials (Private Property)	Designer's Discretion – specify rcp, hdpe, or hdpp. All pipe connections to the public right-of-way must be RCP. HDPP or HDPE Pipe material shall meet the product specifications of ASTM F667 and shall have a smooth interior. Pipe shall meet all load requirements.
Hydraulic Grade Line (HGL) Analysis - Based on Full Buildout Conditions	HEC – 22 Energy Loss or Approved Alternative 10-Year HGL Inside Pipe 25-Year HGL 1' Freeboard to Inlet Grate or Lid
Min. Slope	0.5%
Max. Slope Concrete Pipes	10% Without Submittal of Structural Calculations and Supporting Documentation
Max. Flow Velocity at Outfall	20 fps for the 25-year storm, unless otherwise approved by the TOHS Engineering Dept.
Outfall Protection	Outfalls shall be protected by riprap as needed to meet NCDENR-DLQ standards (see also Section 4 of the TOHS Engineering Design and Construction Standards).
Outlets	Outlets less than 36" require Flared End Sections. Outlets 36" and Over require Endwalls (Endwalls must meet criteria specified in table 8.06e)
Flared End Sections Used as Inlets	Flared End Sections May Only Be Used as Inlets when: a) Drainage area is less than or equal to 3 lots or equivalent b) 3 CFS max.
Tailwater	Use Known Tailwater Conditions Where Appropriate, use 7/8 pipe diameter min. at outlet pipe

Analyze 100-Year Storm	>20 AC Cumulative Drainage Area or as required by the TOHS Engineering Department
Min. Cover (Town R/W or Property)	2' of cover to Subgrade
Min. Cover (Private/ non-load bearing)	1' of cover to Subgrade
Bedding Class	As Appropriate for Proposed Conditions
Deflection	True to Grade, No Vertical or Horizontal Deflection
RCP Joints	Ram-Nek, Butyl Rubber Sealant, or Approved Equal
Max. Distance Between Access	300 Feet (less than 48" diameter) 400 Feet (48" diameter Or Greater)
Pipe Separation	See sections 6.00 and 7.00 for these Standards for horizontal and vertical separation requirements between storm drainage pipe, water lines, and sanitary sewer lines.
Discharge on Residential Lots	Unless prevented by topographic constraints, storm sewer shall not discharge into front yards of lots, but shall extend within 20 feet of the rear property line in lots up to ½ acre in size shall extend a minimum of 150 feet from right of way in lots larger than ½ acre.

E Storm Drainage Structures

All storm drainage structures shall be in compliance with the following unless otherwise approved by the TOHS Engineering Department:

Table 8.06d: Storm Drainage Structure Requirements

Applicability	May Not Apply to SCMs or Private Systems
Allowable Structure Materials	Masonry Concrete Block Precast Concrete may be installed only to depths certified acceptable by the manufacturer. Waffle Boxes are <u>NOT</u> permitted
Structure Materials: Masonry (clay brick)	ASTM C32, Grade MS Mortar Joints $\leq 3/8$ " (non-shrink mortar required) May not be appropriate for structures with large drops or high HGL's
Concrete Block or Brick	ASTM C139 ½" Mortar Joints (non-shrink mortar required) May not be appropriate for structures with large drops or high HGL's
Precast Manholes	ASTM C478 Eccentric Cone Joints Conforming to Federal Spec SS-S-00210 (Ram-Nek, Butyl Rubber, or Approved Equal) Shall not be used for curb inlets
Manhole Frames and Covers	Cast Iron or Ductile Iron Stamped "Storm Sewer - Flows Into Waterways, Do Not Dump Waste" (2) 1" Holes Continuous Bearing On Bottom Casting shall be grey iron made in the USA free of porosity and blowholes ASTM 48CL35B Solid Lids may be required in site specific locations
Catch Basins (Combination Inlets) Drop Inlets and Yard Inlets	NCDOT Standards - 840.03 Cast "Flows Into Waterways, Do Not Dump Waste" as Appropriate For New Structure, Weather Resistant Plaque For Existing Casting shall be grey iron made in the USA free of porosity and blowholes ASTM 48CL35B

	No stormwater inlets shall be placed within the travel lane areas of the roadway.
Structure Steps	10" Wide Min. Polypropylene w/ ½" Rebar 16" O.C. 4" Projection Steps In Precast By Manufacturer
Minimum Drop Inside Structure	0.1' (0<Ø<45°) 0.2' (45°≤Ø≤90°) Ø>90° Not Allowable w/o Approval of Town of Holly Springs Engineering Department

F Culverts

All culverts shall be in compliance with the following unless otherwise approved by the TOHS Engineering Department:

Table 8.06e: Culvert and Channel Requirements

Hydraulic Modeling	a) Consider cross-sectional area loss due to siltation. b) Consider inlet control and outlet control methods and use controlling method. c) Others as deemed appropriate by Town Engineer d) 25-yr. design storm for culverts required e) 25-yr. design storm for channels required
Allowable Materials	a) RCP (18" Min.) b) If weep holes used, non-clogging filter material around pipe is required
Design Storm Frequency/Duration: 1. Thoroughfare Roads 2. Collector Roads 3. Minor (Local) Roads 4. Streams with FEMA Floodplains 5. Temporary Culverts 6. Streams with TOHS 100-yr. Floodplain	100 – Year, 24-hour 50 – Year, 24-hour 25 – Year, 24-hour 100 – Year, 24-hour - Case-by-case - See Section 8.7
100 – Year Analysis For All Culverts To Ensure:	a) Post-Developed Backwater Does Not Flood Upstream Properties, b) Roadway Embankment Remains Stable c) Proposed & Existing Utilities Are Not Inundated Due To Culvert
Backwater Analysis (If Applicable)	a) Free Outfall Critical Depth And Equivalent Hydraulic Grade Line b) Stage-Discharge Curve To Determine Flow Depths c) Consideration Of Actual Site Conditions Such As Other Culverts Or Water Bodies
Minimum Free Board (100yr-24hr storm): Culverts 18" – 36" Diameter Culverts > 36" Diameter	1.0' 1.5'
Inlet/Outlet Conditions	a) Energy Dissipaters (10-year or largest required design storm min.) At All Discharge Points To Prevent Scour (See Also Section 4 of the TOHS Engineering Design and Construction Standards) b) Additional channel and channel stability analysis is required downstream of the culvert until either the next structure is encountered or a point representing 110% of the drainage area to the subject culvert, whichever is met sooner.

	c) Geotextile Filter Fabric Between Stone and Natural Ground d) Headwalls are Required on Driveway Pipes 24" and greater e) Precast Headwalls/Endwalls For Single Pipes Only f) Headwalls, Endwalls, or Flared End Sections Required At All Inlets/Discharges. Flared End Sections Are Not Permitted For Pipes 36" Or Greater. g) Headwalls and Endwalls are required at all locations where multiple discharges occur at the same point. h) Headwalls Required Where Skew Is Less Than 75° Or Greater Than 105° i) Wingwalls Recommended As Appropriate j) Headwalls and Endwalls must be made of solid poured concrete below and equal to the 100-year water surface elevation k) Headwalls and Endwalls 4 foot in height or taller must be engineered and obtain a building permit prior to construction.
Deflection	True To Grade, No Vertical Or Horizontal Deflection Unless Otherwise Approved
Allowable Depths	Depths Shall Not Exceed Those Certified By The Manufacturer For The Service Condition
Allowable Skew	45° Maximum As Measured Perpendicular To Roadway Without Approval From Town Engineer
Allowable Flow Velocity RCP	a) No Maximum But Ensure Stability At Entrance And Outlet
Other	a) To Be Reviewed On A Case-By-Case Basis
3-sided or Bottomless Culvert	a) An estimate of potential Scour depth is required for all bridge sites. The procedure for this analysis is presented in HEC-18 reference (12) and HEC-20 reference (14). 100 yr. 24 hr. storm must be analyzed. b) Channel stability analysis is required; if channel is not stable downstream of the structure an energy dissipation device will be required. c) Hydraulic analysis of the structure, 100 yr. 24 hr. storm event must be analyzed. d) Headwall and endwalls are required. e) True to grade no vertical or horizontal deflection. f) Footing required to be attached to non-weathered crystalline rock, standard penetration test to refusal in accordance with ASTM D1586 shall be used to determine the location of rock. For the purposes of this provision, "Rock" is defined as a continuous intact natural material in which the penetration rate with a rock auger is less than 2 in (50mm) per 5 minutes of drilling at full crowd force. This definition excludes discontinuous loose natural materials such as boulders and man-made materials such as concrete, steel, timber, etc. g) All other requirements set forth for the culvert in section.
Debris Control Structures	Per USACE Hydraulic Engineer Circular No. 9
Roadways Used As Dams	Must Be ≤ 15 Feet In Height Measured From Upstream Inlet To Water Source Elevation Any dam determined to be high hazard must be permitted by NCDEQ
Pipe Separation	See sections 6.00 and 7.00 for these Standards for horizontal and vertical separation requirements between storm drainage pipe, water lines, and sanitary sewer lines.
Limitation Of Property Damage	a) Existing And Proposed Inhabited Areas, HVAC Equipment, And Other Significant Improvements Subject To Flooding

	Damage Shall Be 2' Above Elevation Established By Design Frequency Analysis, Unless Otherwise Approved By The Town Engineer b) Compliance With Flood Prevention Ordinances And Other Applicable State/Federal Regulations c) Upstream And Downstream Must Remain Stable. Use Aprons And Other Stabilization Methods As Needed
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- a. An estimate of potential Scour depth is required for all bridge and bottomless culvert sites. The procedure for this analysis is presented in HEC-18, reference,(12). And HEC-20, reference (14), 100 yr. 24 hr. storm must be analyzed.
- b. Channel stability analysis is required, if channel is not stable downstream of the structure an energy dissipation device will be required.
- c. Hydraulic analysis of the structure, 100 yr. 24 hr. storm event must be analyzed.
- d. Headwall and end walls are required.
- e. Bridge and bottomless culverts must be true to grade, no vertical or horizontal deflection.
- f. Footing required to be attached to non-weathered crystalline rock, standard penetration test to refusal in accordance with ASTM D1586 shall be used to determine the location of rock. For the purposes of this provision, "Rock" is defined as a continuous intact natural material in which the penetration rate with a rock auger is less than 2 in (50 mm) per 5 minutes of drilling at full crowd force. This definition excludes discontinuous loose natural materials such as boulders and man-made materials such as concrete, steel, timber, etc.

G Open Channels

All open channels shall be in compliance with the following unless otherwise approved by the Town Engineer:

Table 8.06f Open Channel Requirements

Hydraulic Analysis	Manning's Equation, HEC – RAS (Particularly For Non-uniform Flow Conditions) Or Other Methodology Approved By Town Engineer
Hydrology	Rational Method SCS Method Other As Approved By Town Engineer Use Full Build-Out Conditions
Channel Stability	Must Remain Stable Up To And Including 10 – Year Storm Un-reinforced Grass Swales Shall Have A Max. Velocity Of 4 fps For The 10 – Year Storm Full Vegetation Must be Established If Applicable
Capacity	10– Year Storm Within Banks 100 – Year Storm Must Be Analyzed To Determine Flood Impacts Based Upon Worst Hydraulic Condition Of Channel (Low Slope, High Weeds, Etc.)
Maximum Side Slopes	Vegetated 2:1 Stone 1.5:1 Grid Pavers 2:1 Gabions Vertical Retaining Wall Vertical

H Installation

1. All storm sewers shall be installed to provide a true line and grade between structures.

2. Structures shall be installed at each deflection of line and/or grade.
3. The maximum length between access points shall meet specifications outlined in Table 8.06c.
4. No inaccessible storm drainage structures shall be allowed.
5. Pipe may enter through the corner of all structure material types as long as it has been certified by a Professional Engineer.
6. A reinforced concrete slab, designed by a Professional Engineer, may be used at oversized structures to adjust an inlet to standard horizontal dimensions.
7. The minimum cover for storm sewer pipe shall meet specifications outlined in Table 8.06c. Trench excavation and backfilling shall be in accordance with Section 5.00 of these standards.
8. Pipe shall not project into a drainage structure but shall be finished flush with the inside of the structure.
9. Catch basins between 5 and 20 feet in depth shall have minimum interior dimensions of 4 feet by 4 feet, and those over 20 feet in depth shall have minimum interior dimensions of 5 feet by 5 feet.
10. Each drainage structure shall have a shaped invert constructed from concrete, and a bench with a maximum 5:1 slope. The bench shall begin at a height of one-half the pipe diameter for 15 to 24-inch pipe, one-third the pipe diameter for 30 to 48-inch pipe, and one-fourth the diameter for pipe greater than 48 inches in diameter.
11. Precast concrete structures may be installed only to depths certified as acceptable by the manufacturer.
12. All voids in structures shall use concrete brick and block with non-shrink mortar.

I Inspections & Testing

The contractor shall furnish all materials, labor, and equipment to perform inspections of storm drainage systems. Below is a summary of the Town inspections requirements:

1. Materials used must be approved by the Town Inspector prior to installation. Rejected materials shall be immediately removed from the construction site.
2. Town Inspector may require any materials installed without previous inspection or installed in a manner not consistent with the approved plans and specifications to be removed and reinstalled
3. Storm Drain lines shall be free and clean from obstructions and shall be visually inspected from every structure to ensure all lines exhibit a fully circular pattern. Lines which do not exhibit a true line and grade or have structural defects shall be corrected. Prior to the placement of any roadway structure, the Contractor shall clean and CCTV all newly installed storm drain lines 12" and larger. A 3rd Party CCTV contractor shall televise the storm drainage system with no reverse setups or cutaways. This shall be done at the Developers expense. The contractor shall clean the storm drainage ahead of the video inspection with a high velocity water jet. The video inspection shall take place within two hours of the cleaning operation as witnessed by a Town of Holly Springs Development Inspector. No other work shall be performed on the storm drainage system after cleaning and prior to the video inspection. The contractor

may not perform CCTV inspections on any utilities that they have installed. The contractor shall provide a DVD or Flash Drive, submitted to the inspector for review.

4. All piping and structures, including CCTV, must be approved by the Town of Holly Springs Development Inspector prior to paving.

J Retaining Wall Drainage

When subsurface of surface drainage is discharged, it shall be discharged in such a manner that it will not cause and increase hazard to the stability of any cut and fill slope or any building or structure. Drainage shall not be discharged in quantities or velocities above which existed prior to grading except in approved drainage system. Every yard shall be properly graded in order to obtain positive drainage and to prevent the ponding of stagnant water.

8.07 FLOOD STUDIES

There are two types of flood studies that a project may be subject to: a Town regulated flood study or a FEMA regulated flood study. Flood studies are required pursuant to the Post-Construction Stormwater Ordinance, Basin Models Required and as outlined in the Town of Holly Springs Policy Statement P-018, and the TOHS Flood Damage Prevention Ordinance. Drainage basins where a current flood study exist or established downstream finished floor elevations are within the basin, the existing flood study shall be updated and no-rise to the downstream 100 yr. water surface elevation will be allowed. Any new flood study required in areas with downstream drainage complaints or established downstream finished flood elevations shall demonstrate there is no-rise to existing downstream 100 year water elevations.

A Stages of Review

For each stage of the review process, there may be a flood study component depending on existing and proposed conditions. The following is a general description of the required submittal items for flood studies at various stages of review. See Section 8.04 and Appendices for a more detailed description of the overall development plan review process and submittal items referenced below.

1. Concept Stage

The first step for flood studies in the Concept Stage is attendance of the Scoping Meeting. At the scoping meeting, TOHS Engineering Department staff will review any information the developer has available regarding the proposed project area and share any information that the staff can at that point in time.

- a.** Concept Plan Review Meeting: Following the Scoping Meeting (if applicable), the next step is the Concept Plan Review Meeting. At the Concept Plan Review Meeting, the developer will present such items as a sketch plan for the proposed project along with general stormwater approach including general SCM information. The developer must bring a copy of the completed Natural Resources

b. Preliminary Plan Review: The Preliminary Plan Stage represents the first formal development submittal to the Town. Along with the other submittal requirements at this stage as discussed in Section 8.04, a Preliminary Flood Study (AKA “Draft Flood Study” or “Draft Stormwater Impact Analysis”) must be submitted. The Preliminary Flood Study may be based upon Wake County GIS topography. The flood plain established by the Preliminary Flood Study shall be represented on the Preliminary Plans.

At the Construction Stage, the developer is responsible for finalizing the Flood Study. The final Flood Study shall be based upon surveyed cross-section data (GIS topography is NOT acceptable for use at the Construction Plan Review Stage.)

Depending on the location and nature of the proposed improvements, the TOHS has three different types flood studies. These include a Stormwater Impact Analysis (a more limited detail Town flood study), Town Flood Studies, and FEMA Flood Studies as described below. Where applicable, all flood studies must tie to existing flood studies based upon the same methodology.

Stormwater Impact Analysis generally apply to areas where the receiving stream has five to 20 acres of drainage area at the analysis point and none of the following apply:

- Stormwater Impact Analysis typically include the following (See also Appendices for other pertinent submittal data) and are used to establish natural and/or man-made drainage or backwater easements:

- Current Land Use Map (11"x17")
- Drainage Area Map showing adjacent property grading, topography, property lines, proposed development, hydrology information, structures w/ finished floor elevations, reaches, etc.
- Stormwater Infrastructure Plan
- Hydrologic and Hydraulic Calculations with cross-sections (HEC-RAS, typical. HEC-HMS may be required in areas where current data exists, or as determined by the TOHS Policy Statement P-018). HEC-RAS to be used to determine water surface elevations. However, additional HEC-HMS modeling will also be required to determine peak flows for areas where current watershed models exist.
- Study revisions as needed due to plan changes during the review process

2. Town Flood Studies

Town Flood Studies are required for all drainage features with 20 acres or more of drainage area. Note that special consideration shall be made when studies are performed within or directly adjacent to existing mapped FEMA floodplains.

Town Flood Studies typically include the following (See also Appendices for other pertinent submittal data) and are used to establish the 100-year floodplain and drainage/backwater easements:

- Current Land Use Map (11"x17")
- Drainage Area Map showing adjacent property grading, topography, property lines, proposed development, hydrology information, structures w/ finished floor elevations, reaches, etc.
- Stormwater Infrastructure Plan
- Hydrologic and Hydraulic Calculations with cross-sections (HEC-RAS, typical. HEC-HMS may be required in areas where current data exists, or as determined by the TOHS Policy Statement P-018)
- Hydraulic and hydrologic analysis for TOHS Flood Studies shall typically be taken to a point downstream of the site that represents 110% of the peak flow discharges generated by the undetained, post-developed conditions. The TOHS Engineering Department may require additional analysis especially where there are site specific concerns or existing downstream studies.
- Surveyed cross-sections
- Study revisions as needed due to plan changes during the review process

3. FEMA Flood Studies

In areas where FEMA floodplain is present on or adjacent to the project Flood Studies, maps must be required in a manner consistent with Town's Flood Damage Prevention Ordinance, National Flood Insurance Program (NFIP) and the North Carolina Floodplain Mapping Program's regulations. Coordination will be

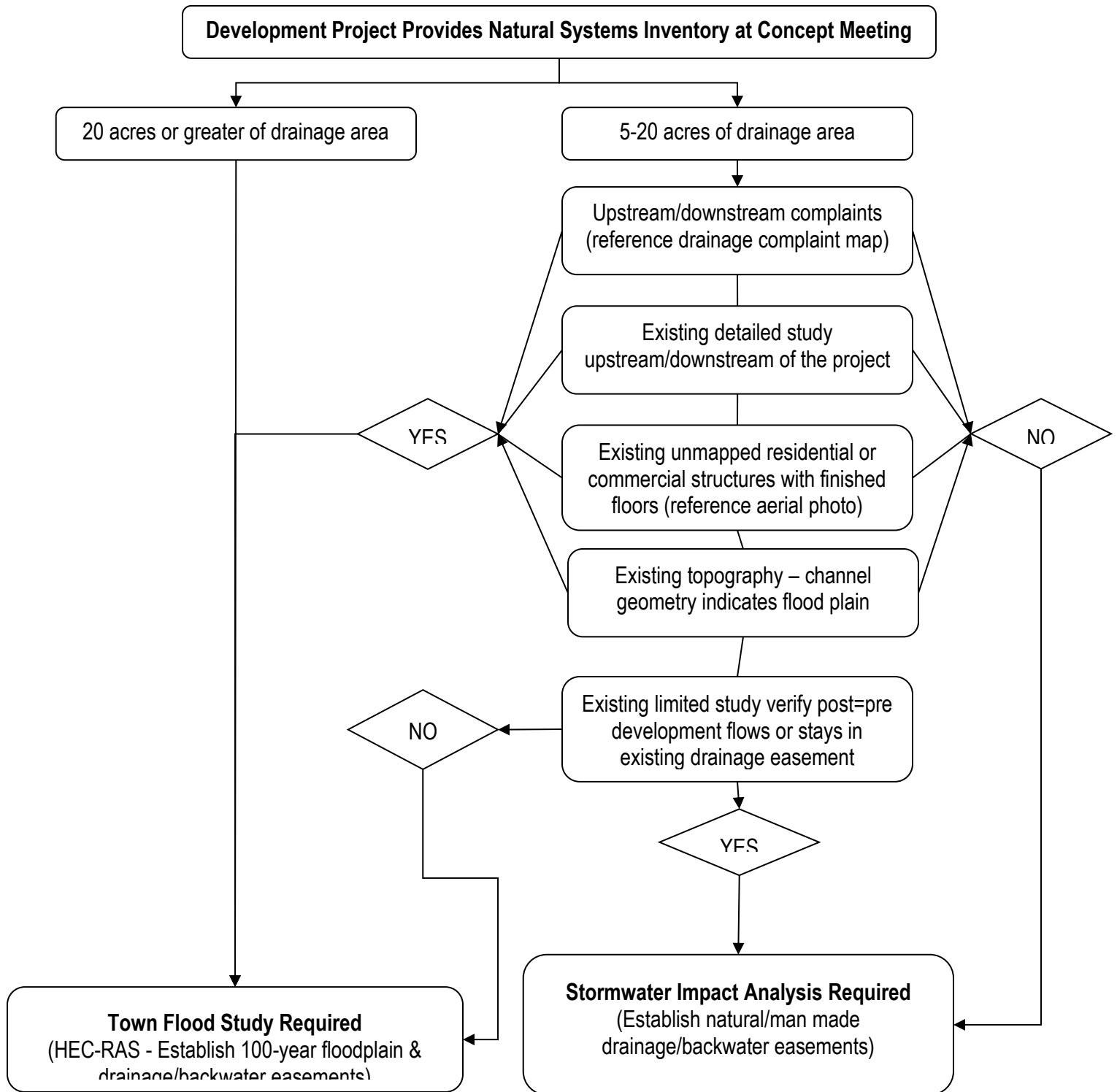
required with Engineering Staff and regional representatives to determine the process required to update the maps and studies.

All residential development projects must take into consideration the Town's Flood Damage Prevention Ordinance requirements that prohibit residential development in the floodplain, this includes both fill and structures on residential lots and fill associated with the overall grading of the project unless associated with an approved perpendicular crossing location. The ordinance also requires that the lowest finished floor elevation must be at minimum 2-feet above the 100-year floodplain and a minimum buildable area on lots outside of the floodplain (100-year, 100-year future conditions and 500-year floodplain), based on the zoning of the lot. Both Preliminary Plans and Construction Drawings must identify the actual buildable area outside of the floodplain and the minimum finished floor elevation (Min. FFE) on all lots with floodplain on or adjacent to them.

8.08 FLOOD PLAIN STANDARDS

1. Fill is not allowed in any flood plain for the purpose of residential development or construction of stormwater control measures.
2. Road crossings are allowed in flood plain. It must be demonstrated that any proposed fill does not increase base flood elevation on any existing structures.

Table 8.06a Flood Study Selection Flow Chart



* Note: FEMA Flood Studies & Town Basin Models may have additional requirements

END OF SECTION 8.00

**SECTION 11.00
RECLAIMED WATER DISTRIBUTION SYSTEM**

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11.06 REPAIR OF RECLAIMED WATER SYSTEM

11.00 GENERAL

- A. All aspects of the design and construction of any portion of the reclaimed water distribution system shall, at a minimum, meet the requirements of the North Carolina Department of Environmental Quality (NCDEQ) Division of Water Resources (DWR). Requirements presented in the Town of Holly Springs Standard Specifications hereunder that are more restrictive or go above and beyond the requirements of DWR are required by the Town of Holly Springs.
- B. All Reclaimed water systems must be designed per North Carolina Administrative Code Title 15A (15A NCAC) – Environmental Quality, Subchapters 02T, 02U, and 18C latest revisions, the governing regulations.
- C. Extensions of the existing reclaimed water distribution system must adhere to any and all Policy Statements and/or Master Plans pertaining to the reclaimed water distribution system and receive prior approval from the Executive Director of Utilities and Infrastructure Services, prior to consideration.
- D. Reclaimed water main extensions may require a detailed hydraulic report, signed and sealed by a North Carolina Professional Engineer, be submitted to the Executive Director of Utilities and Infrastructure Services and receive approval prior to construction drawing submittal.
- E. All utility extension permits must be obtained prior to construction. Refer to the Town Code of Ordinances Section 16 for further requirements.
- F. Reclaimed water shall be utilized and distributed in accordance with 15A NCAC 02U Sections .0500 through 0.0700.
- G. Any reclaimed water that leaves the reclaimed water distribution system other than by means of a properly permitted use must be disposed of into the Town of Holly Springs sanitary sewer system. This includes any reclaimed water line flushing, and/or line breaks unless otherwise allowed by NCDEQ rules. Deminimus runoff from distribution air relief valves and blow-off is deemed permitted per NCDEQ rules. Any reclaimed water that is not a properly permitted use or sent to a sanitary sewer must be reported and handled as if it were a wastewater spill.

11.01 RECLAIMED WATER DISTRIBUTION PIPE

All new irrigation systems located within the Town's reclaimed service area desiring to obtain water service for such system from the Town must connect to the reclaimed water system, if reclaimed water is available to the property. Design must be in accordance with Chapter 16 Article IV of the Holly Springs Town Code of Ordinances. These areas are shown on the Reclaimed Water Distribution Service Area Map located on the Town's website.

A. DESIGN

1. Location: Reclaimed water lines shall be extended along the roadway to the adjacent property line. All public reclaimed water mains shall be located within dedicated right of way or dedicated easements with a minimum width of 20 feet. See Section 2.10 for allowable landscape plantings within a Town of Holly Springs easement.
2. Sizing: Reclaimed water mains shall be sized in accordance with good design procedures to provide adequate pressures throughout the system or as directed by the Executive Director of Utilities and Infrastructure Services. The minimum pipe size for reclaimed water mains shall be 4 inches in accordance with the reclaim hydraulic model.
3. Installation: All utility extension permits must be obtained prior to construction utilizing appropriate application forms from NCDEQ and/or the town. All reclaimed water mains shall have a minimum cover of 4 feet and a maximum of 6 feet measured from the top of the pipe to the finished grade. When reclaimed water mains are installed along a roadway which does not have curb and gutter, the reclaimed water main shall be installed at sufficient depth to prevent conflict with future road improvements or vertical alignment changes.
4. Relation to Potable Water Mains and Other Utilities
 - a) Reclaimed water distribution lines shall be located at least 10-feet horizontally from any water line, unless local conditions or barriers prevent a 10-foot lateral separation. If these separation distances cannot be met, the piping and integrity testing procedures shall meet water main standards in accordance with 15A NCAC 18C. Reclaimed water distribution lines shall meet the separation distances to sewer lines in accordance with 15A NCAC 02T .0305.
 - b) Reclaimed water mains should only cross sanitary sewer mains or potable water mains at an approximate 90 degree angle.
 - d) The minimum separation between reclaimed water mains and storm sewer mains must be either 5 feet horizontal or 2 feet horizontal with a vertical separation of 24 inches unless otherwise approved by the Executive Director of Utilities and Infrastructure Services. Where storm sewers cross reclaimed water with a vertical separation of less than 24 inches the segment of reclaimed water pipe shall be ductile iron pipe at least one whole pipe length from the crossing point with joints equivalent to water main standards.

- e) Where reclaim water main crosses under storm sewer main with a vertical separation less than 24 inches then reclaim water must be ductile iron minimum of 10 feet each side of crossing and properly marked as reclaim.
- f) Where sanitary sewer crosses reclaimed mains, a vertical separation of 18 inches must be maintained.
- g) Reclaimed water distribution lines shall not be less than 50 ft from a well unless the piping and integrity testing procedures meet water main standards, but in no case shall they be less than 25 feet from a private well or 50 ft from a public well.

5. Identification of Reclaimed Piping

a. General:

- i. All new distribution piping in the reclaimed water system, including service lines, valves and other appurtenances should either be colored purple (Pantone 522 or similar) and embossed or be integrally stamped/marked “CAUTION: RECLAIMED WATER – DO NOT DRINK,” or be installed with a purple identification tape, and a purple polyethylene vinyl wrap.
- b) Polyethylene Wrap: Buried ductile iron pipe and fittings shall be wrapped with a purple colored polyethylene membrane conforming to ANSI A21.5, and installed in accordance with AWWA C105. The polyethylene sheets shall be 8 mils thick, minimum, and be colored purple (Pantone 522 or similar).
- c) Tracer Wire: Tracer wire shall be installed on all reclaimed piping. Tracer wire shall be installed as shown in the Details. Approved Wire Connectors shall be used to attach wire together.

d) Identification Tape:

- i. Identification tape should be prepared with white or black printing on a purple field (Pantone 522 or similar) having the words “CAUTION: RECLAIMED WATER – DO NOT DRINK.” The overall width of the tape should be at least 3 inches.
- ii. Identification tape should be installed on the top of the distribution piping longitudinally and should be centered over the pipe. The identification should be continuous in its coverage on the pipe and should be fastened to each pipe length no more than 10 feet apart. Tape attached to sections of pipe before they are placed in the trench should

have flaps sufficient for continuous coverage. Other satisfactory means of securing the tape during backfill of the trench may be used if suitable for the work, as determined by the Executive Director of Utilities and Infrastructure Services.

- iii. The identification tape differentiating the reclaimed water piping from other utility lines should be consistent throughout the service area.

e) Signage:

- i. The public shall be notified of the use of reclaimed water.
- ii. Advisory signs shall be posted around reclaimed water irrigation activities in public areas, adjacent to ponds used to store reclaimed water in public areas, at decorative water features that use reclaimed water, and at other locations indicated in a Major User Agreement.
- iii. All advisory signs should be colored purple (Pantone 522 or similar), should read “CAUTION: RECLAIMED WATER – DO NOT DRINK,” The sign shall reference the TOHS Utilities and Infrastructure Services Department. Additionally, signage shall provide emergency number of 919-577-1090 and the Town’s website.

B. MATERIALS

- 1. Material: All reclaimed water main distribution pipe 4” thru 12” diameter shall be C900 PVC pipe. All reclaimed water main distribution pipe greater than 12” diameter shall be C905 PVC. Ductile Iron Pipe shall only be used in special cases and with the Executive Director of Utilities and Infrastructure Services approval. New manufacturers must submit requests for approval to the Executive Director of Utilities and Infrastructure Services. Additional information such as catalogs, list of installations in the area or material samples may be required. A written response will be mailed to the applicant accepting or rejecting the product within 90 days of the receipt of all necessary information.

- 2. Ductile Iron Pipe:

- a) This material shall only be used for reclaimed water lines with Executive Director of Utilities and Infrastructure Services’ approval.
- b) Buried ductile iron pipe and fittings shall be wrapped with a purple colored polyethylene membrane conforming to ANSI A21.5, and installed in accordance with AWWA C105. The polyethylene sheets shall be 8 mils thick, minimum, and be colored purple (Pantone 522 or similar).
- c) Ductile iron pipe shall be designed and manufactured in accordance with AWWA C150 and C151. The minimum required pressure ratings for ductile iron pipe installed at a Type 2 laying condition are tabulated below. For all

other installations other than specified, the laying condition or the minimum pressure class rating shall be increased in accordance with AWWA C151.

Pipe Diameter	Depth of Cover	Pressure Class
6-8 -inch	3-20 feet	350 psi
10-12 -inch	3-14 feet	350 psi
14-20 -inch	3-10 feet	250 psi
24-64 -inch	3 - 8 feet	150 psi

- d) Pipe joints shall be of the push-on type as per AWWA C111. Pipe lining shall be cement mortar with a seal coat of bituminous material in accordance with AWWA C104. Galvanized steel pipe will not be allowed as a material for reclaimed water mains or reclaimed water service lines.

3. PVC Pipe:

- a) PVC pipe (4" to 12") shall be designed and manufactured in accordance with AWWA C900. PVC pipe larger than 12" shall be designed and manufactured in accordance with AWWA C905. The PVC pipe shall be made of virgin PVC resin that provides chemical and physical properties that meet or exceed cell class 12454-B as defined in ASTM D1784. All PVC pipe shall be supplied in standard laying lengths of 20 feet. Pipe shall be furnished in factory packaged units, with each joint plainly marked with the manufacturer's name, pressure class, size, etc. PVC pipe shall have integral wall, bell and spigot joints fabricated with elastomeric gaskets that meet or exceed the performance requirements of ASTM D3139 and F477. Fittings used on PVC pipe shall be AWWA C153 compact ductile iron fittings.
- b) All PVC pipe supplied for reclaimed water applications shall be color coded purple (Pantone 522 or similar) as required by 15A NCAC 02U – Reclaimed Water).
- c) Furnish pipe for the following minimum pressure classes as indicated. Diameter 4"-12", C900 Pressure Class 150, SDR 18 Diameter 14" and larger, C905 Pressure Class 165, DR18.

4. Steel Encasement for reclaimed water pipes are required for the following Street Classifications to avoid traffic disruption in the future:

- Controlled Access Highway

For carrier pipes that employ cathodic protection anticorrosion systems, the carrier and casing pipes shall be effectively insulated from one another. Carrier and casing shall be cathodically protected as a unit.

See Section 5.03 Boring and Jacking for more casing pipe size requirements.

C. INSTALLATION

1. Ductile iron pipe shall be installed in accordance with the requirements of AWWA C600 and the Ductile Iron Pipe Handbook published by the Ductile Iron Pipe Research Association. At a minimum, all ductile iron pipe shall be installed at a Type 2 laying condition as specified by AWWA C600.
2. PVC pipe shall be installed in accordance with AWWA C605. At a minimum, all PVC pipe shall be installed at a Type 3 laying condition as specified by AWWA C605.
3. Materials at all times shall be handled with mechanical equipment or in such a manner to protect them from damage. At no time shall pipe and fittings be dropped or pushed into ditches.
4. Pipe and fitting interiors shall be protected from foreign matter and shall be inspected for damage and defects prior to installation. In the event foreign matter is present in pipe and fittings, it shall be removed before installation. Open ends of pipe shall be plugged or capped when pipe laying is not in progress.
5. All pipes shall be in nominal lengths of eighteen or twenty feet and shall be installed with at least 48 inches of cover below the finished subgrade. Pipe shall be laid on true lines as directed by the Executive Director of Utilities and Infrastructure Services. Trenches shall be sufficiently wide to adjust the alignment. Bell holes shall be dug at each joint to permit proper joint assembly. The pipe shall be laid and adjusted so that the alignment with the next succeeding joint will be centered in the joint and the entire pipeline will be in continuous alignment both horizontally and vertically. Pipe joints shall be fitted so that a thoroughly watertight joint will result. All joints will be made in conformance with the manufacturer's recommendations for the type of joint selected. All transition joints between different types of pipe shall be made with transition couplings approved on shop drawings showing the complete assembly to scale.
6. Prior to beginning construction, the Contractor shall contact local utility companies and verify the location of existing utilities. The Contractor shall be completely and solely responsible for locating all existing buried utilities inside the construction zone before beginning excavation. The Contractor shall be solely responsible for scheduling and coordinating the utility location work. When an existing utility is in conflict with construction, it shall be exposed prior to beginning construction to prevent damage to the existing utility.
7. Valves in the existing Town of Holly Springs water system shall not be operated without a minimum notice of 24 hours to the Executive Director of Utilities and Infrastructure Services and the Director of Public Utilities. The Contractor shall

operate valves only in accordance with Town of Holly Springs Engineering Design and Construction Standards.

11.02 VALVES AND APPURTENANCES

A. VALVES

1. General

- a) Valves shall be installed on all branches from feeder reclaimed water mains according to the following schedule: 4 valves at crosses; 3 valves at tees. When a loop section of reclaimed water line is connected back into the feeder reclaimed water main within a distance of 200 feet or less, only one valve will be required in the feeder reclaimed main. Reclaimed water main extensions or mains extending at a project phase line shall include a valve and one additional standard length of pipe with a cap and a temporary blow-off assembly.
- b) Where no reclaimed water line intersections are existing, a main line valve shall be installed at every 100 feet per 1-inch diameter main up to a distance of 1000 feet between valves. In addition, the Town of Holly Springs reserves the right to require additional isolation valves where necessary for efficient operation and maintenance.
- c) Valves shall be properly located, operable and at the correct elevation. All valves and reducers shall be rodded to the tee or cross if one is located within 10 feet as shown in the Details. If reducers cannot be rodded, concrete blocking or other restraining methods will be required. The maximum depth of the valve nut shall be 5 feet. When valve extension kits are used, they must be manufactured by the same company which manufactured the valve.

2. Combination Air Valves

- a) Combination air valves shall be installed at all high points of reclaimed water lines 12" inches in diameter or larger and at other locations as directed by the Town of Holly Springs. The reclaimed water main shall be installed at a grade which will allow the air to migrate to a high point where the air can be released through an air valve. A minimum pipe slope of 1 foot in 500 feet should be maintained. The valve shall have a minimum two (2) inch NPT inlet and 200-PSIG working pressure. Combination air valves shall be sized by the Engineer and approved by the Town of Holly Springs.
- b) Combination air valves shall be of the single housing style that combines the operation of both an air/vacuum and air release valve. The valve must meet the requirements of AWWA C512 and be installed in accordance with the Details.

- c) Manholes installed for the combination air valves shall meet all requirements of Section 7.00.
3. Gate Valves
- a) Gate valves 2 inches and greater shall meet all requirements of AWWA C500 for a working pressure of 200 psi. All gate valves shall be mechanical joint with iron body, bronze mounting double disc parallel seat type with a non-rising stem and open left with a double O-ring seal.
 - b) Gate valves, up to and including 12 inches, shall be installed in a vertical position.
 - c) Gate Valves 16 inches and larger must be approved by the Executive Director of Utilities and Infrastructure Services. They may be installed horizontally and equipped with bevel gears, grease case, rollers, tracks scrapers, and a bypass located on the side of the body (fully revolving disc valves shall not require rollers), or vertically and be equipped with spur gears enclosed in a grease case and with a bypass located on the side of the body. In either case, the roller and scraper operators shall be installed in a manhole that meets all requirements of Section 7.00.
4. Resilient Seat Wedge Gate Valves: Resilient seat wedge gate valves shall be manufactured in accordance with AWWA C509 for a working pressure of 200 psi. All shall be mechanical joint with iron body, open left with a non-rising stem and two O-ring stem seals. All ferrous surfaces, both inside and outside, shall be protected by a fusion-bonded epoxy coating.
5. Butterfly Valves: Butterfly Valves may be installed in reclaimed water mains 24 inches or greater with the permission of the Executive Director of Utilities and Infrastructure Services. All butterfly valves shall meet the requirements of AWWA C504 with mechanical joints, 2 inch open left operating nut. Valves installed on reclaimed waterlines at depths greater than 6' (measured to top of pipe) shall be installed in a manhole (see Section 7.00) as shown in the Details. Valves designated by the Town of Holly Springs to potentially have a remote actuator shall be installed in a manhole (see Section 7.00) as shown in the Details.
6. Valve Boxes
- a) Valve boxes shall be cast iron, screw or telescopic type, with a 5-inch opening. Valve box ring adjustments will not be allowed. All valve boxes shall be furnished with an approved operating key which shall allow operation by authorized personnel only.
 - b) Valve box covers shall be square in shape (NOT round) and shall be designed for AASHTO H-20 truck loadings. All valve box covers shall be of non-

interchangeable shape with potable water covers, and cast on the top surface with a recognizable inscription indicating “Reclaimed Water”. All valve box covers shall be painted purple (Pantone 522 or similar).

- c) The valve box shall be centered over the wrench nut and seated on compacted backfill without touching the valve assembly. All valve boxes shall be encased in a trowel finished 2' x 2' x 6" pad of 3000-psi concrete beneath the asphalt with the cover flush with the top of the pavement or flush with the finished grade. Precast concrete valve box encasements may not be used for valve box encasement outside of paved areas. The maximum depth of the valve nut shall be 5 feet. When valve extension kits are used, they must be manufactured by the same company that manufactured the valve.

B. APPURTENANCES

1. Pipe Fittings: Pipe fittings shall be cast or ductile iron designed and manufactured as per AWWA C110. Sizes of fittings up to and including 12 inches shall be designed for an internal pressure of 250 psi, and larger size fittings shall be designed for an internal pressure of 150 psi. Compact ductile iron mechanical joint fittings designed and manufactured as per AWWA C111 are also acceptable. Joints for fittings shall be mechanical and lined with cement mortar with a seal coat of bituminous material, all in accordance with AWWA C104.

2. Blowoffs

- a) Blowoffs installed at the end of cul-de-sacs shall be a minimum of 2 inches. Blowoffs installed on transmission and distribution mains shall be a minimum of 2 inches. Where there is not sufficient pressure to thoroughly flush the system, a larger blowoff will be required.
- b) Blowoff assemblies shall be constructed as shown in the Details. The valves shall be gate type with a non-rising stem and a 2-inch operating nut, O-ring seals and screwed ends. A full-size valve is required on mains that are planned to be extended.
- c) Blowoffs shall be directed in a non-erosive manner to a stabilized grassed area at least 50 ft. from a jurisdictional feature or directed into the closest sanitary sewer manhole. Blowoffs installed at the end of cul-de-sacs should be tied into a sanitary sewer manhole where available.

3. Thrust Restraint: Reaction blocking for all fittings or components subject to hydrostatic thrust shall be securely anchored by the use of concrete thrust blocks poured in place or restrained joint piping as described below

- a. Concrete thrust blocks shall be poured in place with reaction areas as shown in the Details. No concrete shall interfere with the removal of fittings. Material for reaction blocking shall be 3000 psi concrete. A minimum 4 mil plastic shall

cover the fitting to ensure that no concrete will interfere with removal of the fitting.

- b. PVC Bell Joint Restraint - All PVC bell joints shall be restrained for both C900 and C905 PVC pipe. The bell joint restraint shall consist of either an approved restrained PVC joint provided by the same manufacturer of the PVC pipe or an approved bell joint restraint harness. All bell joint restraint harness assemblies shall be made of ductile iron pipe (DIP), coated with a manufacturer applied epoxy coating or polyester powder coating, including stainless steel bolts, nuts and rods. The bell joint restraint harness shall be manufacturer approved for use with PVC pipe and rated for at least 200-psi with a 3:1 safety factor.
- c. All valves and fittings shall be restrained to C900 or C905 pipe with an approved wedge action retainer gland or other approved restraining method. All DIP fittings for reclaimed water use shall be identified by purple painting or wrapping with polyethylene wrap (Pantone 522 or similar). Alternative restraining methods and mechanical joint restraints may be used upon approval by the Executive Director of Utilities and Infrastructure Services.

11.03 RECLAIMED WATER SERVICE TAPS

A. DESIGN

- 1. Individual reclaimed water services, and multiple branch services, shall be provided from the reclaimed water main to each reclaimed water meter for single customer locations in accordance with the Details. All connections shall be made by wet taps. Service connections shall be made perpendicular to the reclaimed water main and shall run straight to the reclaimed water meter.
- 2. All reclaimed water meter boxes and vaults shall be located at the edge of the serviced lot's right of way or easement. Reclaimed water meter boxes shall not be placed in streets, sidewalks, parking areas or obstructed by fencing or buildings. Exceptions to these conditions will be at the direction of the Executive Director of Utilities and Infrastructure Services.
- 3. Service taps to existing reclaimed water mains shall be made by the Town of Holly Springs. Service taps to new reclaimed water mains shall be made by the Contractor in accordance with the Specifications.
- 4. Water meters shall be sized based on applicant water budget calculations using the approved method. Water meter size shall be determined from the following table; or as otherwise specified by the Executive Director of Utilities and Infrastructure Services. Multiple branch services size shall be determined by the designer.

METER SIZING GUIDE		
Meter Size (inches)	Flow Range (GPM)	
3/4" PD	0 - 20	
1" PD	20 - 50	
1½" PD	50 - 100	
2" C	100 - 200	
3" C	200 - 400	
4" C	400 - 600	
PD = Positive Displacement T = Turbine (may be required on a case-by-case basis) C = Compound (must be sized on a case-by-case basis)		

5. Service taps greater than 2 inches shall be made by a Contractor of the Developer.

B. MATERIALS

1. Taps:

Direct taps shall not be allowed on C900 or C905 PVC mains. The maximum allowable size for saddle taps is 2". All taps larger than 2-inches shall be installed by inline fittings or tapping sleeves. All tapping of C900 or C905 PVC mains shall be implemented with shell type cutting tools classified for use with PVC pipe that retains the coupon cut while penetrating the pipe wall, use of twist drill bits and auger bits shall be prohibited.

The maximum size of direct taps without a fitting, tapping sleeve or saddle for ductile iron mains shall be as follows:

Main Size (inches)	Tap Size (inches)
4" main	3/4" tap
6" main	1" tap
8" main	1 1/4" tap
10" main	1 1/2" tap
12" main	2" tap

2. **Tapping Sleeves:** Tapping Sleeves shall be made of either cast iron or stainless steel. The sleeve shall be two-piece with mechanical joint to the main line and flanged to the tapping valve. Cast iron shall meet AWWA C110

specifications. Stainless steel shall meet AWWA C223 specifications. All sleeves shall require full circumferential gasket. All tapping sleeves shall be manufactured and approved for installation on the specific main line pipe material (DIP, C900, C905).

3. Tapping Saddles: Tapping Saddles shall be used on reclaimed water mains 16 inches and larger. Saddles shall be made of ductile iron providing a factor of safety of 2.5 with a working pressure of 250 psi. Saddles shall be equipped with an AWWA C110 flange connection on the branch. Sealing gaskets shall be O-ring type, high quality molded rubber having an approximate 70 durometer hardness, placed into a groove on the curved surface of the saddles. Straps shall be alloy steel. The maximum size saddle outlet for each size of pipe to be tapped shall be as follows:

<u>Size pipe to be tapped</u>	<u>Maximum size Saddle Outlet</u>
16"	8"
18"	8"
20"	10"
24" and larger	12"

4. Corporation Stops: Corporation Stops shall be ball type, made of brass and complete with a compression or flared coupling and AWWA Standard threads as per AWWA C800. Taps shall be located at 10:00 or 2:00 o'clock on the circumference of the pipe. Service taps shall be staggered alternating from one side of the reclaimed water main to the other and at least 12 inches apart. The taps must be a minimum of 24 inches apart if they are on the same side of the pipe. No burned taps will be allowed and each corporation stop will be wrapped with Teflon tape for ductile iron pipe reclaimed water mains. No tapping shall be made where rodding is placed.
5. Service Saddles: Service saddles shall be bronze body (85-5-5 waterworks brass) and double strap for taps with silicon bronze nuts conforming to ASTM A98 and factory installed grade 60 rubber gaskets. Service saddles shall be approved by the manufacturer for use on C900/C905 PVC mains.
6. Service Tubing: Copper service tubing shall be type K soft copper tubing per ASTM B88. No union shall be used in the installation of the service connection of 100-feet or less. The longest available length of service line shall be used with no unions (e.g. for 3/4 inch, only 1 union will be allowed for each 100 foot section). Unions shall be made with flare or compression type couplings. Copper service tubing shall be installed reclaimed locating tape, spirally wrapped from the tap through the setter.
7. Coppersettters for ¾ and 1-inch Reclaimed Water Services: All ¾ and 1-inch reclaimed water services shall be installed with coppersettters as shown in the

Details. All coppersetters shall be as manufactured by Mueller or Ford at the dimensions shown in the Details. All coppersetters shall be installed with a lockable angle ball valve assembly and outlet angle check valve on all size setters. Coppersetters shall be installed with flare fittings and all coppersetter assemblies shall be provided as shown in the Details with galvanized brace pipes for additional stability. All installations shall provide the coppersetter properly aligned with the meter box reader lid such that the meter is clearly visible below the reader lid.

8. Meter Boxes for ¾-inch services: ¾-inch meter boxes shall be light weight polymer concrete as shown in the Details. Meter boxes for ¾-inch reclaimed water services shall provide a cover opening of 11 X 18 inches and boxes shall measure at least 18-inches in depth. Meter boxes and covers shall be rated for “heavy duty” uses, such as alleys, driveways, parking lots, etc. Standard meter box covers shall not bolt down to the box. The box interior walls and covers shall be consistently color-coded purple (Pantone 522 or similar). All covers shall include a 4 X 6 inch cast iron reader lid with the words “RECLAIMED WATER – DO NOT DRINK” cast into the lid in 1-1/2” tall lettering. The Town of Holly Springs reserves the right to require all meter box covers to include brackets and housing for “ITRON” compatible transponders for automated meter reading systems. All meter boxes and covers shall be installed as shown in the Details.
9. Meter boxes for 1-inch services: 1-inch meter boxes shall be light weight polymer concrete as shown in the Details. Meter boxes for 1-inch reclaimed water services shall provide a cover opening of 11 X 18 inches and boxes shall measure at least 18-inch in depth. Meter boxes and covers shall be rated for “heavy duty” uses, such as alleys, driveways, parking lots, etc. Standard meter box covers shall not bolt down to the box. The box interior walls and covers shall be consistently color-coded purple (Pantone 522 or similar). All covers shall include a 4 X 6 inch cast iron reader lid with the words “RECLAIMED WATER – DO NOT DRINK” cast into the lid in 1½” tall lettering. The Town of Holly Springs reserves the right to require all meter box covers to include brackets and housing for “ITRON” compatible transponders for automated meter reading systems. All meter boxes and covers shall be installed as shown in the Details.
10. Meter boxes for 1½ and 2-inch services: 1 1/2” and 2” meter boxes shall be light weight polymer concrete as indicated in the Standard Details. All meter box interiors and covers shall be consistently color-coded purple (Pantone 522 or similar). Covers shall be marked on the top surface with a recognizable inscription indicating “RECLAIMED WATER – DO NOT DRINK” in 1-1/2” tall lettering. Piping for 1 1/2 and 2 inch reclaimed water meters shall be constructed from brass and copper tubing and shall be equipped with angled check valve outlets and by-pass flanged valve or by-pass flanged ball valve inlets. The box shall have an open bottom to allow drainage through stone.

11. Meter Vaults: Meter vaults and access doors within street right of way shall meet HS-20 loading requirements and shall be located outside of travel areas. The access double doors shall be aluminum with a flush drop lift handle, stainless steel hinges and bolts, a stainless steel slam lock, an automatic hold open arm, and compression springs to allow for easy opening. Covers shall be marked on the top surface with recognizable inscription indicating “Reclaimed Water-Do Not Drink”
12. Reclaimed Water Meters: Reclaimed water meters for ¾” to 2” services will be provided by the Town of Holly Springs. Larger meters shall be provided by the developer as directed by the Executive Director of Utilities and Infrastructure Services. Reclaimed water meters, registers and covers shall be purple (Pantone 522 or similar).

11.04 RECLAIMED WATER IRRIGATION SYSTEMS

A. GENERAL

All reclaimed water irrigation systems within public street right of way require an encroachment agreement from the Town of Holly Springs or NCDOT prior to installation. Plans designating the location, size, material, and depth shall be submitted with the agreement application to the Engineering Department.

Pipe material for the irrigation mainline proposed to be used within the public right of way shall be Schedule 40 PVC or greater. All pipe, fittings, and appurtenances shall be purple (Pantone 522 or similar). A minimum depth of 2 feet of cover shall be provided.

A soil evaluation is necessary in order to determine the loading rate for irrigation permits. All development within the reclaim service area will need to complete an independent soil evaluation prior to submitting a reclaim irrigation permit.

All reclaimed water irrigation systems are required to secure permits from the Code Enforcement Department and the Utilities and Infrastructure Services prior to installation and shall be inspected after installation. A separate meter is required for irrigation systems.

For single family irrigation design, a CID, PE, or LA is required to develop the plan. For non-single family irrigation system designs, a PE must develop the plan.

Impoundments for reclaimed water storage for large scale irrigation systems or aesthetic/decorative water features shall be designed in accordance with 15A NCAC 02U – Reclaimed Water.

Service lines from mainline tap to the meter are installed and identified per the Town of Holly Spring’s Standard Details. There shall be no direct cross-connection between potable and reclaimed water supplies.

B. **DESIGNS**

Sprinklers chosen and located to maintain the following setbacks from the irrigation area to the following features:

- 1.) 25 feet from surface waters [perennial and intermittent streams, wetlands] not classified as tidal salt waters or high-quality water (SA).
- 2.) 100 feet from surface waters [perennial and intermittent streams, wetlands] classified as tidal salt waters or high-quality water (SA).
- 3.) 100 feet from any water supply well (not including monitoring wells).
- 4.) Sprinklers located on a steep slope have check valves installed on all the heads on that irrigation zone.
- 5.) No mainlines or valves shall be allowed within the utility/devil strip. Laterals will be allowed and shall be placed within 1 ft of sidewalk.
- 6.) The zoning of the irrigation system must allow that plants with different water requirements (such as grass and shrubs) are on separate zones. In addition, the irrigation design should consider the different microclimates found in most landscapes (such as north facing grass areas vs. south facing grass areas) and separate those microclimates into zones. These zoning practices may add slightly to the installation cost of an irrigation system, but can have a dramatic effect on system efficiency.
7. Guidelines on pressure at the head/emitter: Spray Heads 20 to 35 psi; gear rotors 60 psi or less; impact rotors 60 psi or less; drip emitters 40 psi or less.
8. Large commercial systems which have the potential to place undue burdens (demand or pressure requirements) on the Town of Holly Springs' public reclaimed distribution system must include on-site storage and/or pumping facilities. This determination will be made by the Executive Director of Utilities and Infrastructure Services. Design, operation, and maintenance of such on-site facilities shall be the sole responsibility of the applicant. These additional facilities must be designed in accordance with 15A NCAC 02U – Reclaimed Water.
9. Rain sensors must be installed to reduce the likelihood of overwatering. Rain sensors are required to remain in service at all times to prevent overwatering and/or ponding of reclaimed water.

C. **STREET CROSSING**

All irrigation line street crossings shall be contained within a ductile iron or steel casing pipe. The Town of Holly Springs may, in some instances, permit irrigation systems installed in the medians of Town-maintained roadways. These systems must also have french drains installed behind the curb and gutter and piped to a storm drainage collection system. These systems shall be allowed only when some permanent mechanism is established for the private perpetual maintenance of the system(s).

D. HOSE BIDS

Hose bibs are not permitted for the reclaimed water system.

E. RAIN SENSORS

Rain sensors must be installed to reduce the likelihood of overwatering. Rain sensor must remain in operation to prevent ponding or runoff.

11.05 TESTING AND INSPECTION

A. GENERAL

1. All reclaimed water used in testing and inspection must be disposed of properly as described in Section 11.00.
2. All materials must be approved by the Inspector prior to installation. Materials rejected by the Town of Holly Springs' Inspector shall be immediately removed from the job site.
3. Under no circumstance shall any waterline system valve be operated without prior approval by the Construction Inspector. Damage to Town of Holly Springs infrastructure resulting from illegal operation of valves shall be the responsibility of the Contractor. In addition, the Contractor shall be subject to a fine for operating a valve without prior approval.
4. The Contractor shall furnish all materials, labor, equipment, and shall pay for the water used to perform all testing and inspections to the satisfaction of the Construction Inspector. The Contractor shall obtain a Blowoff Permit from the Town of Holly Springs Engineering Department for use when blowing off reclaimed water mains.
5. Reclaimed water service taps shall not be made until after all main testing is completed, and bacteriological testing is satisfactory.

B. TESTING

1. Hydrostatic Testing

- a) All valves in the Town of Holly Springs reclaimed water system shall be operated by the Town of Holly Springs. A section of reclaimed water main which is to be hydrostatically tested shall be slowly filled with water at a rate which will allow complete evacuation of air from the line. Hand pumps shall not be used for the pressure testing of reclaimed water mains. Taps used for testing purposes shall be removed after testing. The corporation stops shall be removed and a threaded tapered plug shall be installed on the line.

When approved by the Town of Holly Springs, the Contractor may utilize potable water or reclaimed water via an approved hydrant meter and RPZ assembly for testing and disinfection of new reclaimed mains which are not physically connected to a live reclaimed water supply. Once reclaimed water has been introduced into the system no direct connection to potable water will be allowed and an approved air gap assembly must be used.

- b) Any measured leakage not within the allowable limits as specified in the following table shall require repair of the reclaimed water main and additional testing until the standards are met. For pipe sizes other than those shown, the Contractor shall test within the allowable leakage amounts as specified by AWWA C600-99. All visible leaks shall be repaired regardless of the amount of leakage.

Pipe Size (Inches)	Allowable Leakage at 200-psi (Gal./Hr. per 1000 feet of pipe)
4	0.43
6	0.64
8	0.85
12	1.28
16	1.70
20	2.12
24	2.55

2. Chlorination

- a) All additions or replacements to the reclaimed water system shall be chlorinated before being placed in service under the supervision of the Town of Holly Springs' Inspector in the following manner:
 - i. Taps shall be made at the control valve at the upstream end of the reclaimed water main and at all extremities of the line including valves.
 - ii. A solution of water containing 70% HTH available chlorine shall be introduced into the reclaimed water main by regulated pumping at the control-valve tap. The solution shall be of such a concentration that the reclaimed water main shall have a uniform concentration of 50 ppm total

chlorine immediately after chlorination. The chart below shows the required quantity of 70% HTH compound to be contained in solution in each 1,000 feet section of line to produce the desired concentration of 50 ppm.

Pipe Size (inches)	Pounds High Test Hypochlorite (70%) per 1000 feet of line
6	1.76
8	3.12
10	4.84
12	7.00
14	9.52
16	12.44
20	19.52
24	28.00

- iii. The HTH Solution shall be circulated in the reclaimed water main by opening the control valve and systematically manipulating blowoffs and taps at the reclaimed water main extremities. All reclaimed water leaving the system during this test must be disposed of through either an approved use or sent to the sanitary sewer. The HTH solution must be pumped in at a constant rate for each discharge rate so a uniform concentration will be produced in reclaimed water mains.
- iv. HTH solution shall remain in reclaimed water mains for no less than 24 hours or as directed by the Town of Holly Springs' Inspector.
- v. Extreme care shall be exercised at all times to prevent the HTH solution from entering existing reclaimed water mains.

3. Bacteriological Sampling

- a) Free residual chlorine after 24 hours shall be at least 10 ppm or the Town of Holly Springs' Inspector will require that the lines be re-chlorinated.
- b) Flushing of reclaimed water mains may proceed after 24 hours, provided the free residual chlorine analysis is satisfactory. Reclaimed water leaving the system because of line flushing must be returned to a sanitary sewer. Flushing shall be continued until an orthotolidine check (or other method approved by the Town of Holly Springs) shows that the reclaimed water mains contain only the normal chlorine residual. Samples for bacteriological analysis shall be collected by the Town of Holly Springs' Inspector 24 hours after flushing is completed. The Contractor shall furnish the sample bottles, the testing agency and such help as may be required to secure these samples. The Contractor shall also submit the test results to the Town of Holly Springs' Development Inspector.

- c) If test results are unsatisfactory, the Contractor shall immediately rechlorinate reclaimed water mains and proceed with such measures as are necessary to properly sterilize those reclaimed water mains.
- d) The new reclaimed water system shall be valved off from the existing reclaimed water system until a satisfactory bacteriological sample has been obtained and the Town of Holly Springs' Inspector has authorized the use of the new reclaimed water system.

C. INSPECTIONS

- 1. Approved plans and permit must be issued and available on-site before any inspections are performed.
- 2. Underground Inspections – before work is covered up/back filled:
 - a) Inspection of main line tap and piping to meter box;
 - b) Inspection of underground piping from meter box through irrigation system from meter to end of system to insure compliance with approved plan and standards;
- 3. Final Inspection
 - a) Includes inspection of the location of all heads, type of heads, spacing of heads and throw pattern of each head and correct pressure;
 - b) Testing the system to ensure compliance with approved plans and Town of Holly Springs Ordinance;
- 4. A map of the approved valve and head layout shall be provided by the Contractor to the property owner and a copy placed near or with the timer.
- 5. All zones shall be clearly labeled in the timer cabinet.
- 6. Responsible entity shall be listed on inner door of timer (for emergency contact purposes).
- 7. Verification of required setbacks (reclaimed water).

D. CROSS CONNECTION CONTROL

- 1. Backflow prevention on potable water services serving any property that is also served with reclaimed water is required in accordance with the Federal Safe Drinking Water Act. At all locations where reclaimed water service is provided, the public potable water supply shall be protected by installation of an approved backflow prevention device.

- a. For Residential Properties: prior to receiving reclaimed water service, a dual check valve shall be installed on each residential customer's potable water meter in order to protect the potable water system. A Reduced Pressure Principal (RPZ) type backflow prevention device downstream of the potable water meter is not required when the only reclaimed water use is landscape irrigation.
- b. For Multi-family complexes and commercial properties: master-metered potable water service and master-metered reclaimed water service shall be required to install a Reduced Pressure Principal (RPZ) type backflow prevention device downstream of the master potable water meter.

11.06 REPAIR OF RECLAIMED WATER SYSTEM

Reclaimed water that leaves the system due to a leak or break in the system must be reported and handled as if it were a wastewater spill.

A. Reclaimed Water Main Line Repairs

1. Joint leaks of Cast Iron Pipe, Ductile Iron Pipe, and PVC pipe shall be repaired by use of a bell joint leak repair clamp as manufactured by Rockwell, or other approved equal.
2. Line Breaks or Punctures shall be repaired by a full circle repair clamp as manufactured by Rockwell, Mueller, or other approved material.
3. Line Splits or Blow Outs shall be repaired by replacing the damaged section with ductile iron pipe with a cast iron coupling at each end. The following cast pipe couplings shall be used for each pipe material indicated:
 - a) Ductile Iron Pipe - Rockwell 431 cast coupling or other approved equal.
 - b) PVC Pipe – Rockwell 411 cast coupling or other approved equal.

B. Reclaimed Water Service Line Repairs

1. A reclaimed water service line severed between the reclaimed water main and the reclaimed water meter shall be repaired using new type K copper tubing and bronze or brass 3-piece flared unions.
2. A corporation stop pulled out of a reclaimed PVC pipe water main shall have a new service saddle and a new corporation stop installed on the reclaimed water main.
3. A corporation stop pulled out of a ductile iron pipe shall have a full circle repair clamp placed over the old tap hole. A new tap shall be made and a new corporation stop installed on the reclaimed water main.

END OF SECTION 11.00

**SECTION 13.00
WASTEWATER PUMP SYSTEMS AND FORCE MAINS**

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13.01 PUMP STATION GENERAL

A. GENERAL

1. All aspects of pump station design shall, at a minimum, meet the requirements of the latest version of the:
 - a) North Carolina Department of Environmental Quality (NCDEQ) Minimum Design Criteria for the (Fast-Track) Permitting of Pump Stations and Force Mains (Minimum Design Criteria),
 - b) Alternative Design Criteria for Minimum Separation for Sewer Systems to Wetlands,
 - c) North Carolina Administrative Code Title 15A Chapter 02 Subchapter T Waste Not Discharged to Surface Waters (15A NCAC 02T),
 - d) North Carolina (NC) Building Code,
 - e) Occupational Safety and Health Administration (OSHA) regulations, and
 - f) Town of Holly Springs (Town) Engineering Design & Construction Standards (Standards).

Town Standards identify minimum equipment and construction requirements for a wastewater pump station to be owned and operated by the Town. This section does not address every aspect of pump station design; it is the North Carolina Professional Engineer's (NCPE's) responsibility to supplement these requirements as necessary to produce a complete set of plans and specifications. Requirements in the Town Standards that are more restrictive or exceed the requirements of the Minimum Design Criteria are required by the Town.

2. Gravity sewer shall always be preferred over pump station and force main construction. A request for a pump station in lieu of gravity sewer service requires approval from the Executive Director of Utilities & Infrastructure (Director).
3. The Town reserves the right to disallow pump stations that are not in alignment with the Town's Comprehensive Plan, other adopted long-range plans, or other instances where it is not efficient or desirable to have a pump station.
4. If a pump station is allowed, the following criteria must be met:
 - a) The design and construction of the station will be compliant with all applicable federal, state, and local regulations.

- b) The design and construction will ensure reliable, continuous, and consistent operation, during all operating conditions, such as flooding or loss of utility system power.
 - c) The station's design will allow for easy operation and maintenance (O&M) of the installed equipment.
 - d) The station will provide pumping capacity and configuration to pump all wastewater flows tributary to the station and readily accommodate future expansion, where required.
 - e) The station will avoid septic conditions and excessive release of odors in the pump station and collection system.
 - f) The station will minimize impacts on the environment and Town.
5. New development may be required to take upstream/downstream pump stations offline or upgrade pump stations per the Town's Comprehensive Plan, other adopted long-range plans, or as determined by the Director.
 6. Pump Stations will not be allowed to discharge to another pump station unless the receiving pump station is identified as a regional pump station in the Town's Comprehensive Plan or other adopted long-range plans, or exception granted by the Director.
 7. Private pump stations will require an exception from these Standards. A Basis of Design Report, signed and sealed by a NCPE, should be submitted for review prior to a determination by the Director. Private pump station design is not covered by these Standards, and the applicant should look for guidance from other appropriate agencies, such as NCDEQ, NC Plumbing Code, etc. Documentation of future private pump station maintenance shall be required. Prior to operation, private pump stations shall be equipped with a sign indicating owner, responsible party, and 24-hour on call phone number.

B. PRE-DESIGN

1. Pre-Design Meeting

- a) The developer and NCPE shall be required to meet with the Director and/or representative(s) in a "Pre-Design meeting" to discuss the preliminary design report, preliminary site plan, site layout, and other requirements for any proposed pump station, before design begins.

2. Preliminary Design Report

- a) A detailed economic analysis consisting of a minimum 20-year present worth evaluation shall be submitted by the NCPE, comparing the extension of gravity sewer with construction of a pump station and force main alternative. The analysis shall include related improvements to the existing gravity collection system required to receive the station's discharge. The Town will consider economic evaluations, service area configuration, O&M costs, the Comprehensive Plan, other adopted long-range plans, and external factors before accepting pump station plan submittals in lieu of gravity sewer extensions.
- b) A preliminary design report (PDR), signed and sealed by the NCPE, is required prior to, or with, the submittal of plans and specifications for pump stations. The PDR shall contain, at a minimum, the following criteria:
 - 1) *Total dynamic head (TDH) calculations* for all pumping situations.
 - 2) *Pump selection calculations*, based on survey information and force main diameter and length. System head curves shall be developed for Hazen-Williams "C" factors of 100 and 140, combined with pump curves for the selected pump. Calculations shall indicate flow rates for one and all pump(s) in operation. Pump selection shall be based on a "C" factor of 100, and proposed motor sizing shall be based on power required with a "C" factor of 140 and no utilization of the motor's service factor. Motors shall be non-overloading over the entire range of operation.
 - 3) *Pump station cycle and pump run times* covering high, low, and average flows over the entire expected operating period of the pump station. Calculate minimum cycle time based on inflow rate equal to one-half of the pumping rate.
 - 4) *Emergency Response time* (time between the high water alarm and the first system overflow, at average and peak flow).
 - 5) *Pump station flotation/buoyancy design calculations*. Submerged soil weight on any extended bases should be limited to the soil directly above the extended base.
 - 6) *Minimum velocity within the force main*, including an analysis of the capabilities of the pumps to completely flush any depressed sections of the force main in a single pumping cycle.
 - 7) *Preliminary surge/water hammer analysis* with estimates of the maximum and minimum pressures (including negative pressures) that may occur during pump starts and stops. Depending upon the maximum and minimum estimated pressures, design flow, TDH, force main velocities, force main length, and force

main profile, the Town may require a detailed computer surge analysis be performed by the NCPE.

- 8) *An evaluation of the receiving sewer system.* Evaluate the receiving sewer (at the force main discharge and downstream) to determine the capacity of the collection system to accept the pumped flow. Identify upgrades required in the existing collection system to accommodate the proposed flow.
- 9) *Odor Control equipment sizing and chemical dosing calculations.*
- 10) *Grinder flow capacity and head loss calculations.*
- 11) *Generator calculations.* The generator must be sized adequately to start and operate all connected loads (pumps to be started sequentially and controls specified).
- 12) *Number of lots/parcels served, off-site drainage area, zoning, average daily flow, and peak daily flow.*

3. Preliminary Site Plan

- a) A preliminary site plan shall be submitted, consisting of the following:
 - 1) *Cover Sheet* with index of drawings and vicinity map
 - 2) *Existing Conditions Plan*
 - 3) *Site Plan*, at minimum, with
 - a). All property lines, fences, gates, generator, etc.
 - b). Layout of structures
 - c). Driveway and access dimensions
 - 4) *Turning Template* for a WB-50 service vehicle
 - 5) *Grading Plan* with existing and proposed contours
 - 6) *Utility Plan* with gravity sewer, force main, water, and storm drainage piping (show pipe size/material and identify the force main discharge location)
 - 7) *Landscape Plan* with plant lists, planting/staking details, and buffers
- b) If design changes between PDR approval and Preliminary Site Plan submittal, a revised PDR should be submitted to the Town.

C. FINAL DESIGN REQUIREMENTS

1. After preliminary design approval, a Final Design Report, detailing final pump station design and signed and sealed by the NCPE, is required. All aspects of pump station design shall be submitted for review and approval to the Town. Pump station review may be more extensive than the typical development site plan process. Materials necessary for review and requiring approval include, but are not limited to, complete plans, specifications, and Final Design Reports.
2. Wastewater flow rates for the entire natural drainage basin upstream of the anticipated pump station location must be accounted for, based upon the Town's proposed land use plan or approved developments, whichever flow is greater.
3. The Town may consider phased construction, if the peak flow rate tributary to the pump station exceeds 1,000 gallons per minute (GPM). If phased construction is allowed, the NCPE shall examine pump selection with impeller sizes sufficient to meet initial and future conditions or design the pump station to accommodate additional pump(s). As a general statement, the initial electrical service, standby power system, solids grinder, equipment hoisting system, and odor control system must be sized for ultimate station capacity (no phasing of these components allowed).
4. All stations shall be submersible pump stations consisting of wet well and other precast concrete structures, piping and valves, pump control systems, SCADA, solids grinder, odor control, jib crane/hoisting equipment, back-up power source, and related appurtenances.
5. All equipment, except for the generator, shall be designed for a sound rating of ≤ 55 decibels A (dBA), 21-feet from the operating equipment. The generator shall include a sound attenuating enclosure and hospital grade silencer. The generator shall have a sound rating of < 71 dBA (generators < 150 kW), < 73 dBA (generators 150 kW- 250 kW), or < 75 dBA (generators > 250 kW), 21-feet from the operating equipment. Sound ratings are based on generator operating at 100% load. Warning horns and sirens have no sound restrictions.

Pump station design shall minimize sound levels leaving the site. Factors to consider include equipment layout, cumulative sound levels, and walls that reflect sound. Equipment submittals that include the sound ratings for all major equipment shall be supplied and approved by the Town, prior to ordering equipment.

Pump stations shall not be accepted by the Town until sound testing demonstrates that the above requirements are met. All sound testing shall be performed by reputable personnel to assure accuracy. The Director reserves the right to require certified sound engineers, certified testing equipment, corrections, and/or retesting to demonstrate that the pump station and all components are performing as designed.

6. The Final Design plans shall include, at minimum, the following information:
- a) *Cover Sheet* with index of drawings and vicinity map
 - b) *Existing Conditions Plan*
 - c) *Site Plan* with all property lines, fences, gates, and locations of driveway and structures
 - d) *Grading plan* with existing and proposed contours on 1-foot intervals, storm water measures, and 100-year flood elevations
 - e) *Utility Plan and Profile* with gravity sewer, force main, water, and storm drainage piping (show pipe size/material and identify the force main discharge location), valves, and chemical feed
 - f) *Landscaping Plan* with plant lists, planting/staking details, and buffers
 - g) *Plan and Section drawings* of all precast concrete structures including influent manhole, grinder manhole, wet well, valve vault, and miscellaneous structures
 - h) *Building Plan, Section, and Elevations*; typical wall section(s)
 - i) *Mechanical drawings* showing pumps, valves, piping, odor control, ventilation, and heating/air conditioning systems
 - j) *Electrical plans*, including electrical site plan, one-line diagram, panel schedules, light fixture schedule, wire and conduit sizing, generator details, SCADA inputs and details, and grounding requirements and locations
 - k) *Instrumentation and Control (I&C) Plan*

D. CONSTRUCTION PHASE REQUIREMENTS

1. Equipment Submittals

- a) The NCPE (or representative) shall observe construction to allow for preparation of the Engineer's Certification, as required by the NCDEQ. The NCPE shall also review all equipment and material submittals (shop drawings) to confirm that finished construction will comply with approved plans and specifications. The NCPE shall also be responsible for forwarding submittals, as specified herein, to Town staff for review, comment, and approval, prior to the NCPE returning them to the Contractor. Review and approval by Town staff shall not relieve the NCPE from the responsibility of ensuring that all the project components meet these Standards.

- b) At a minimum, Equipment Submittals shall include name of manufacturer; model supplied; fabrication and assembly drawings; detailed specifications; and data covering material, parts, devices, and accessories. Submittals shall also include system hydraulic schematics, electrical wiring diagrams, and control panel schematics. Additional information required for specific equipment is listed in the appropriate equipment section. Submittals for the following equipment shall be forwarded to the Town staff by the NCPE:

Table 1: Submittals

SECTION	SUBMITTAL NAME
13.01.C	Site Plan
13.02.B	Fencing and Gates
	Eye Wash/Shower Wash Station
13.02.C	Precast Concrete Wet Wells, Vaults, and Manholes
	Precast Concrete Building
13.02.D	Check Valves and Plug Valves
	Pressure Gauge
	Air Release Valves
	Magnetic Flow Meter
13.03.A	Pumps and Motors
13.03.B	Pump Control Panel
13.03.C	SCADA System
13.03.D	Grinder and Control Panel
13.03.E	Odor Control System
13.03.F	Jib Crane/Hoisting Equipment
13.03.G	Generator
13.03.H	Automatic Transfer Switch (ATS)

- c) The table below identifies equipment manufacturers that are considered most suitable for the anticipated service in wastewater pump stations.

Table 2: Equipment/Manufacturer List

SECTION	EQUIPMENT	MANUFACTURER
13.02.B	Reduced Pressure Zone (RPZ) Backflow Prevention	Watts Hersey Wilkins
13.02.C	Access Hatch	Halliday, Bilco
	Manhole/Wet Well Coatings	Duramer 1030 (SewerCote), Cor-Cote SC (Sherwin-Williams), Raven 405 (Raven Lining Systems)
	Precast Concrete Buildings	Easi Span Building
13.02.D	Magnetic Flow Meter	Badger M-3000
	Valves	American Mueller APCO swing check valve (ValMatic)
	Force Main Combination Air Release Valves (ARVs)	Val-Matic (stainless steel isolation ball valve and handle with flushing hardware, model to be determined at time of review)
13.03.A	Pumps and Pump Motors	ABS USA (Sultzter) Fairbanks Morse (Pentair Water) Flygt USA (Xylem)
13.03.B	Electrical Cabinets and Enclosures	Control Interface (pump manufacturer recommended)
	Float Switches	Roto Float (Anchor Scientific, Inc), compatible (SJE Rhombus, Conery)
13.03.C	VT SCADA	Inframark
13.03.D	Grinder	Muffin Monster w/ guide rails (JWC Environmental)
13.03.E	Odor Control System	Evoqua
13.03.F	Jib Crane/Hoisting Equipment	Acco Industries Yale Lift-Tech International
13.03.G	Generator System	Caterpillar, Inc. Cummins Power Generation Onan Division Detroit Diesel Corp. Kohler
13.06.B	Internal Pipe Lining	Protecto (401)

- d) Equipment submittals must receive approval from the Director or representative(s) prior to purchasing equipment. Purchasing equipment in no way obliges the Town to accept equipment that does not meet the Standards.
- e) Alternative equipment submittals (for manufacturers not listed in Table 2) shall include the following information, at a minimum:
 - 1) Current catalog data sheets and technical data to support compliance with these Standards.
 - 2) A detailed list stating differences between the named item and proposed alternate and a separate list stating all exceptions to these Standards. If no exceptions are listed, then no exceptions will be allowed.
 - 3) Contact name, address, and phone number for five (5) installations where the proposed equipment has been used in a similar capacity for two (2) or more years. The date for placing equipment in service, at each installation, shall be provided.
- f) Equipment that meets the Alternative Equipment submittal requirements, the Standards, technical specification requirements, and all other requirements of the Town, will be approved by the Director.

2. Testing Results Submittals

- a) Perform drawdown test to verify pump capacity flow rates. Town representatives shall be present during the test. Documentation of the test shall be provided to the Town for approval.
- b) Test results shall be submitted for review prior to continuing progress on any equipment. If shop testing is required, results shall be submitted prior to start-up, testing and final acceptance of the equipment.
- c) A final, compiled summary of all equipment testing shall be provided upon completion of the project, prior to project closeout and final acceptance. This final, compiled summary shall consist of a single bound printed copy, and an electronic copy.

E. POST CONSTRUCTION PHASE REQUIREMENTS

1. Warranty

- a) All components must come with a warranty from the manufacturer that equipment shall be free of defects in workmanship and material, and shall operate as intended under the known conditions, for a minimum of 1-year after acceptance of the

system by the Town. The warranty shall be in printed form and made applicable to the Town (as Warrantee) at the time of acceptance for maintenance.

2. Operation and Maintenance (O&M) Manuals

- a) O&M manuals are required for all equipment and systems. **An electronic copy shall be supplied to the Town prior to startup of the subject equipment or systems.** The O&M manuals shall contain all necessary information for proper operation and maintenance of the subject equipment and systems. At a minimum, the O&M manuals shall contain the following:
 - 1) *Cover Sheet* listing the following: Pump manufacturer, source of repair parts with address and phone number, operating conditions (rated capacity and TDH of each pump), model number, serial number, impeller diameter, data plate information, and data on all other equipment included as components in the pump station
 - 2) *Pump Performance Design Curve* with operating conditions and manufacturer's Certified Pump Curve
 - 3) *Detailed dimensional drawings of the pump and pump base elbow*
 - 4) *Detailed dimensional drawings of the pump and pump motor*
 - 5) *Wiring diagram and logic diagram for each control panel*
 - 6) *Pump and Motor Installation and Service Manual*
 - 7) *Detailed information related to other components of the pump station including, but not limited to, solids grinder, odor control, generator, ATS, jib crane/hoist, and HVAC systems*
 - 8) *Mylar as-built drawings showing all changes to approved construction plans made during construction*
 - 9) *Annotated hard copy and downloadable electronic copy of application program for all field programmable equipment (e.g. PLCs, operator interfaces, etc.)*
 - 10) *P.E. certification*
 - 11) *Warranty letter*
 - 12) *Documentation of recorded site plus access easement and/or right-of-way (ROW) dedicated to the Town*
 - 13) *Copy of vendor reports for the start-up testing of their equipment*

- 14) *Operating instructions*
- 15) *Troubleshooting techniques*
- 16) *Maintenance schedules*
- 17) *Assembly and disassembly instructions*
- 18) *Instructions for start-up/shutdown, calibration, and adjustment*
- b) A final, compiled O&M manual covering all equipment and systems supplied, shall be provided to the Town upon completion of the project, prior to project closeout and final acceptance. This final, compiled summary shall consist of **three printed copies and an electronic copy (Flash Drive) of the subject equipment or systems.**
- c) Any spare parts listed in the O&M manuals and/or recommended by the manufacturer shall be provided to the Town. At minimum, Contractor shall furnish one (1) set of spare parts as follows:
 - 1) One (1) spare pump with guide rail bracket attached to pump discharge flange
 - 2) One (1) lower seal assembly
 - 3) One (1) upper seal assembly
 - 4) One (1) set of bearings
 - 5) One (1) set of wear rings (unless an adjustable wear plate is provided)
 - 6) One (1) complete set of O-rings
 - 7) One (1) float switch with 50-feet of cable
 - 8) One (1) chain grip device with each pump (that can be lowered to the bottom of the pump lifting chain, engage a chain link, and hoist the pump out of the wet well without re-positioning the hoist hook)
 - 9) One (1) stainless steel chain with each pump (to guide and engage the chain grip device, provided by the pump supplier and rated for the weight of the pump/motor/manufacturer's standard safety factor)

3. Inspections

- a) All equipment must be verified for compliance with the Standards by Town staff prior to installation. Non-conforming materials or equipment shall be immediately removed from the job site.
- b) Compliance with plans, Standards, and specifications shall be verified on a regular basis throughout the duration of construction by a representative from the Town.

13.02 PUMP STATION SITE AND STRUCTURES

A. GENERAL

1. Pump station sites shall be conveyed to the Town via deed and/or recordation for Town ownership and operation. A preliminary site plan for all pump stations shall be discussed in the Pre-Design meeting.
2. The site shall be directly connected to a dedicated public ROW or have a dedicated access easement to a public ROW.
3. The Town requires solids grinders, on-site backup power, and odor control facilities at all pump stations. Sizing of these items will be based on expected flow volumes and characteristics.
4. All stations shall have a minimum of three (3) pumps of equal capacity; two (2) operational and one (1) uninstalled spare. Duplex pump stations shall be capable of handling flows exceeding the expected peak flow. The design peak flow shall be a minimum of 2.5 times the average daily flow. If the pump exceeds 1,000 GPM, or motor size exceeds 100 Horsepower (hp), the NCPE shall investigate duplex and triplex pump station requirements. Where three pumps are required, two pumps should have capacity to pump the peak sewage flows. Stations that require more than three pumps shall utilize dual wet wells, with the ability to isolate each for maintenance. Pumps and force mains shall be sized to provide a minimum force main velocity of 3.5 feet per second (ft/s) with one pump operating and a maximum velocity of 8 ft/s at firm capacity. The Town reserves the right to require a larger force main, at no cost to the Town, based upon operating (power) costs.

B. SITE WORK

1. The site shall be graded to drain away from the pump station, and to remove stormwater runoff in a non-erosive manner. Drainage swales shall be incorporated, if necessary.
2. The site shall be stabilized and consist of compacted subgrade, low maintenance vegetative ground cover, or other suitable materials in accordance with Town Standards and Details. Visual screening and landscaping shall be provided.

3. Access

- a) The site shall feature adequate turnaround for a WB-50 service vehicle. If chemical feed systems are included, additional turning radii may be required.
- b) Access shall be a minimum 16-foot wide all-weather road, on a minimum 25-foot wide easement (or ROW) with grades $\leq 10\%$. Shoulders and side ditches should be included.
- c) Access shall be standard concrete curb tie and apron through the ROW and transition to an asphalt-concrete section, with an 8-inch stone base and 3-inch surface course, in accordance with Section 3 of the Town Standards and Details.
- d) Alternatively, after 40-feet of asphalt section, the access may transition to 12-inch of crushed stone over minimum 98% compacted subgrade.

4. Fencing, Gates, and Landscaping

- a) Fencing shall be provided around the entire perimeter. The site shall be secured by an 8-foot high black UV resistant vinyl coated chain link fence with 3-wire vinyl coated barb arms, set at an outward facing 45-degree angle and located at the top of each post (the 8-foot height does not include the barb arms). Each wire is to be 3 strand barb wire Class III galvanized or aluminized. The outer barbed wire shall hold a load of 250-pounds (lbs). All fence posts shall be black vinyl coated over the galvanized steel. The pump station address must be labeled in 6-inch lettering and clearly posted on the fence.
- b) Manual swing gates for pump stations shall permit 180-degree opening and be minimum 16-feet wide (minimum two 8-foot-wide swing gates). All gate posts and corner posts shall be minimum 4-inch diameter. Fence gates shall be black vinyl coated with privacy slats rated for a minimum life span of 12-years.
- c) Fence shall be screened with an opaque buffer, in accordance with the Town's Unified Development Ordinance (UDO). If site conditions do not allow an opaque buffer, privacy slats across the entire surface area of the fence, including gates, may be allowed, at the discretion of the Director.
- d) Buffers shall be provided along both sides of the access road and surrounding the gravel vehicular area. Buffers shall extend 50-feet from the gravel vehicular area, 25-feet along the sides of the access easement. Opaque buffers shall be planted as defined in Town's UDO.
- e) The Town shall reserve the right to establish other appearance requirements.
- f) Developer shall maintain the buffers for 2-years from the date of final (end of year) acceptance of the pump station.

5. The site shall feature locks and security features, as dictated by the Town, along with all necessary OSHA signage. Additionally, signage shall be provided on the gate which provides the name of the station, address, and emergency number of 919-557-9111 (blue lettering on a utility sign).
6. An LED light equivalent to a high-pressure sodium vapor light with a minimum 600-watt capacity is required. The light shall be mounted on a utility pole that retracts or pivots for bulb maintenance from the ground level. The light shall be at a height of 30-feet and controlled by means of a photocell and a Hand-Off/Reset-Auto (HOA) switch located on the light pole (with the photocell wired through the Auto position of the switch). All area lighting shall be provided in a downward projecting fixture, such as shoe box type light or approved equal. Open globe lighting shall be prohibited.
7. A minimum 2-inch public water service shall be provided [minimum 50 GPM with a residual pressure of 30 pounds per square inch (psi)]. A Town water meter and an above-ground Reduced Pressure Backflow Preventer (RPZ) in a heated hot box shall be required. Any, and all, water connections shall be made downstream of the RPZ. A freeze proof yard hydrant (≥ 50 GPM) shall be provided to allow the wet well and grinder manhole to be washed down periodically. A freeze proof eyewash and shower wash station with tepid water system (including water heater) shall be provided adjacent to the chemical storage facility.
8. A grounding electrode system shall be provided for all wiring systems and shall be connected to the fence, generator, and electrical service.

C. STRUCTURES

1. General

- a) The submersible pump station structures shall consist of, at minimum, a grinder manhole, a wet well, and a valve vault. Large, integrated structures are permissible, however, there shall be walls separating the portions of the structure listed above. Electric motor operated grinders will be required at all stations. Pump station structures, other than the wet well, shall be provided with a means to remove accumulated water and wastewater from the structure.
- b) Wastewater pump stations, all related structures, and controls shall be protected from physical damage by the 100-year and 500-year local and FEMA flood plains and shall be elevated to 2-feet above the most restrictive elevation. Flood elevations shall be supported by a flood study on the tributary basin based on future land uses in accordance with the Town's Comprehensive Plan. Pump stations shall remain fully functional, operational, accessible, and free from physical damage during a 100-year flood. All structures not meeting the elevation requirement shall be sealed watertight with a vent elevated a minimum of 2-feet above the 100-year flood elevation.

- c) Cover slabs for wet well and valve vaults shall be reinforced concrete with integral cast in place access hatch covers. Cover slabs shall be reinforced as per ACI Code and specially reinforced around openings.
- d) Access covers for wet well and vaults shall be square lockable hatch, aluminum diamond pattern plate with stainless steel hinges and hardware capable of withstanding 300 pounds per square foot (psf), on an aluminum frame cast in place in the cover slab. All access covers shall be centered over equipment to accommodate service and removal. Access covers shall be double leaf or single leaf (as required) aluminum diamond pattern floor hatch capable of withstanding 300 psf without permanent damage. Each leaf shall open 90 degrees and be attached to the frame by stainless steel hinges and hardware. The door shall have a lock in the open position and vinyl grip handle to release lock for closing.
- e) Fall protection grating shall be installed at all access hatches. The system shall be a grate consisting of two leafs made of 6061-T6 aluminum hinged on the same side of the hatch. The grate shall be designed to withstand a minimum pedestrian load of 300 psf. The grate openings shall be 4-inch x 6-inch force to allow both visual inspection and limited accessibility for maintenance purposes when the grate is closed. The leafs will pivot on aluminum hinge devices with 316 stainless steel hardware that permit them to rotate upward 90 degrees and automatically lock in place. Aluminum pull rods will be attached to the grate's leafs, so the operator is positioned with the grate between him and the hatch's opening whenever he raises a leaf. Each grate leaf will have a rod made from 316 stainless steel that automatically engages to secure the leaf in open position and can be lifted upward to permit the grate leaf to close. The hatch cover will not be able to shut until the grate is closed, thereby ensuring the grate is in position when the next operator opens the hatch cover. The grate shall have an OSHA safety yellowish finish to increase visual awareness of the safety hazard.
- f) All structures shall be designed to withstand hydrostatic forces, including uplift, and shall be equipped with anti-floatation.

2. Wet Well

- a) The wet well shall have a minimum inside dimension of 6-feet and shall be large enough to easily accommodate the removal of each pump. The wet well shall be designed to have an operating volume sufficient to provide pump operating cycles to match the manufacturer's recommendations. The pump operating cycles must be between two and eight times per hour at design daily flow (without being excessively deep). All wet wells must be concentric. Well point is required when setting wet well structure and must be utilized to accept a minimum 8-inch pipe to accommodate a portable sump pump. Avoid conflicts, particularly with electrical equipment. Upon completion it shall be capped and left in place for future use.

- b) The wet well shall be constructed of precast concrete manhole sections or cast-in-place concrete. Extended bases or another foundation shall be used to provide adequate bearing surface and floatation protection, if needed. All concrete shall have a minimum 28-day compressive strength of 4000 psi. Design must be per manufacturer specifications and engineered design requirements.
- c) Precast concrete manhole wet wells shall conform to ASTM C-478. Manhole section joints shall be of a durable mastic sealing material and be watertight in accordance with ASTM C-443. The precast sections for the wet well and valve vault shall be further waterproofed on the outside of the wet well by sealing the exterior of the joints with ConSeal CS 212 polyolefin-backed exterior joint wrap – 6-inch minimum width – with compatible primer.
- d) Cast-in-place wet wells shall be properly designed by a NCPE and include appropriate structural support, waterproofing, exterior coating, structure covers, access hatches, etc.
- e) At a minimum, wet wells shall have a vent made from ductile iron (DI) with flanged joint pipe fittings. A bronze or aluminum insect screen shall be included at the exposed end of the vent pipe.
- f) Wet wells and wet well piping shall be coated with a monolithic epoxy coating system per Table 2 and installed in accordance with manufacturer specifications, in no more than 2 applications, with no runs and no holidays. High voltage holiday testing shall be utilized to verify there are no voids in the coating. Epoxy coatings shall only be applied to adequately cured concrete structures that have been sufficiently washed and prepared for epoxy coating installation. Properly applied coating shall provide a smooth finish and fill all pores in concrete substrate.
- g) Care will be taken to ensure no epoxy coating is applied to the pump coupling face, the guide rails, or any other part that needs to allow movement or replacement on a regular basis.
- h) Each wet well that is 6-feet in depth or deeper, shall be equipped with a removable extension ladder and ladder cover protection to enable access. The Town shall designate the location during the review process.
- i) All bolted connections, including pipe flanges, inside the wet well shall be made using stainless steel bolts, nuts, and washers.

3. Valve/Meter Vaults

- a) The valve/meter vault shall consist of a custom-built section, or a precast concrete rectangular structure at least 6-feet square. Maintain 18-inches or 24-inches clearance from the sidewalls to the nearest edge of pipe or valve. The valve/meter vault shall be complete with a drain that goes to the wet well, or where a gravity

drain cannot be included, a sump with a minimum ½-hp mercury float switch activated sump pump discharging to the wet well. The valve vault shall include an access ladder attached to the vault wall and access cover cast in the top slab with an extendable/retractable grab bar. The drainpipe between the valve vault and the wet well shall be made of PVC and have a PVC back water valve at the wet well end. Stainless steel stands shall be used to support valves and other appurtenances requiring support.

4. Manholes

- a) Any manholes installed on the pump station site need to meet requirements of Section 7 of these Standards. The exterior of all manholes within the 100-year flood elevation and in wetland areas shall be coated per Table 2 to prevent weepage or attack by acidic soils. Individual joints shall be wrapped with Conwrap, Conseal, or approved equal and approved by the Town prior to backfilling.

5. Buildings

- a) Pump motors ≥ 10 -hp shall have a precast concrete building to house the control and electrical panels. Buildings shall have climate control systems to provide air conditioning (for dehumidification) and heating. Pump stations with ultimate pump motor sizes < 10 -hp may utilize an aluminum backplate, under a weather hood and mounted on galvanized posts, to mount all control and electrical panels.

D. PIPING AND VALVES

1. Piping: Discharge piping shall be minimum Class 53 DI flanged pipe as manufactured under AWWA specification C151. Discharge piping shall be flanged ductile pipe (Class 53 minimum) sized to produce a minimum head loss while maintaining a minimum velocity. All exposed piping shall be painted/coated and have adequately sized and located thrust restraint.
2. Pump piping: The discharge connection elbow shall be a straight through fitting with no flap valve and shall be permanently installed in the wet well along with the discharge piping. The pumps shall be automatically connected to the discharge connection elbow when lowered into place. The entire weight of the pump shall bear upon the guides and base support with no part of the pump bearing directly on the floor of the wet well. All hardware used shall be 316 stainless-steel.
3. Force Main: The force main within the pump station site shall be constructed of ductile iron pipe (DIP) and fittings with interior coating. The site shall also include an emergency bypass with a flanged connection for a portable, diesel driven pump. The bypass connection shall be the same size as the force main and shall include a gate valve to isolate the flange connection from the force main. The NCPE shall submit calculations confirming that the anticipated operating and surge pressures will be within the pressure ratings of the proposed DI force main and fittings.

4. All piping, couplings, fittings, valves, etc. shall be Class 125 for flanges meeting ANSI B16.1, unless Class 250 flanges are required for high head installations.
5. Check valve: An external weighted lever check valve shall be provided for the discharge pipe of each pump, in conformance with AWWA C508 standards. Check valves shall be cast iron/DI bodied, double bronze side plug construction with resilient seated disc assembly and replaceable rubber disc. The valve shall be capable of being mounted in the horizontal position with a minimum of 3-feet of separation between each valve body and the outside walls. All valves shall be centered on the vault door for maintenance access and valve removal. For valve sizes ≤ 12 -inches, provide a minimum of 200 psi working pressure rating and 400 psi hydrostatic pressure rating; for valves > 12 -inches, provide minimum 150 psi working pressure rating with 300 psi hydrostatic pressure rating.
6. Plug Valve: A plug valve shall be provided on the discharge pipe from the valve vault (beginning of the force main). Plug valves shall be eccentric action and resilient plug facing with heavy-duty stainless-steel bearings and welded-in corrosion resistant nickel seat. Pump station plug valves shall be "full port" cross sectional area perpendicular to the flow of at least 100% of the adjoining pipe.

Plug valves and check valves on the discharge side of each pump shall be in a valve vault separate from and adjacent to the wet well. A restrained flanged coupling adapter shall be installed on each discharge main between the wet well and the valve vault. An isolation plug valve shall be installed downstream approximately 50-feet from the valve/meter vault to isolate the force main from the vault and equipment. Valves shall be rated for a minimum of 175 psi working pressure and be able to pass a 3-inch solid.

7. Pressure gauge: $\pm 2\%$ accuracy pressure gauges with a 3-inch or larger liquid filled dial, stainless steel case, and graduated to 150% of the force main static pressure shall be provided on each discharge pipe. A pressure gauge shall be installed on the pump side of the check valve and on the static side of the check valve. Isolation seals and the cut-off ball valve shall be provided between the gauge and force main. The gauges shall be easily visible and legible from the valve vault hatch opening. The gauges shall also be capable of delivering an electronic remote signal compatible with SCADA.
8. Air Release Valve (ARV): There shall be an ARV installed in a manhole on the force main, outside of the valve vault, prior to the main leaving the pump station site.
9. Magnetic Flow Meter: The NCPE may propose a meter with a smaller diameter than the force main to improve the velocity profile, if the projected flows allow. The magnetic (mag) flow meter shall be installed in a precast concrete manhole with sump pump, as indicated on the plans. A restrained flanged coupling adapter is to be provided to facilitate the mag meter removal/replacement. The amplifier should be remotely mounted in the building (or electrical rack). There shall be valved bypass piping (3 valves required) around the mag meter manhole, to allow the meter to be serviced or replaced without interrupting the pump station's operation. Submit shop drawings that

include information on the construction of the flow tube and liner, junction box, and amplifier.

10. Anchor Bolts

- a) Anchor bolts and nuts shall be furnished for each item per the manufacturer's specification in accordance with Table 2. Anchor bolts and associated hardware shall be 316 stainless steel.
- b) Anti-seize compound will be applied to the threads of all stainless-steel bolts before assembly.

E. ELECTRICAL – GENERAL

- 1. All electrical systems shall meet all applicable electrical standards and code requirements, including, but not limited to: ANSI, ASTM, NEMA, IEEE, EEI, HEI, ISO, NFPA, SAE, NEC, UL508, as well as any other federal, state, or local codes.
- 2. Electrical service to all pump stations shall be appropriately sized 3 phase power, 480-VAC with ATS to automatically start on-site emergency generators. The electrical power entrance shall be through a meter base, followed by a NEMA 3R heavy duty, single throw, and circuit breaker. This shall be followed by a heavy-duty ATS. There shall be a NEMA 3R heavy-duty single throw fusible safety switch between the main power and the ATS.
- 3. Electrical equipment inside the wet well shall meet the requirements for Class I, Division I, and Group C/D service.
- 4. All electrical components shall be suitably sized to be capable of service with all electrically powered equipment running.
- 5. All electrical components, including panels, shall be sealed off from the wet well in accordance with the latest editions of the NEC and NFPA 820 requirements for electrical service to Class I Division I.
- 6. The use of rigid conduits is required. Generally, PVC shall be used below ground and aluminum shall be used above ground. All conduits from the wet well shall extend to disconnect switches or junction boxes, with the conduits terminated 24-inches below the switch/box, providing an air gap above the classified space. All cables shall be supported with liquid tight cord connectors with strain relief grips.
- 7. Pump station electrical and control equipment shall be in a building as described above, or under a weather hood for small pump stations <10-hp. An aluminum weather hood with a clear height of 7-feet, an overhang of at least 4-feet and a thickness of 3/16 inch shall be provided for control equipment exposed to the weather (the back panel and side panel shall also be 3/16-inch-thick aluminum). The support structure shall be

structural steel members assembled to provide individual, direct support to the control equipment panel, transfer switch, safety switches, meter base and the weather hood. The steel frame shall be painted with a two component, high build epoxy polyamide paint system designed for severe service. All weather hoods shall be provided with a light and GFI protected 120V outlet. Weather hoods shall be installed to eliminate runoff to the front side.

8. All electrical equipment, including non-submersible motors, electrical panels, control panels, backup generators, etc., shall be located a minimum of 2-feet above the 100-year flood elevation. All electrical enclosures shall have hinged doors/covers. The control panel shall include a concrete pad, minimum 8-feet X 4-feet X 6-inch thick.
9. A non-fused electrical disconnect is to be supplied and installed mid-way from the wet well and the pump control panel. This disconnect shall be NEMA type 4X suitably sized to house all pump power and control wiring. Rigid metal conduit shall be utilized with the necessary seal-off fittings. Terminal strips shall be provided to properly split the power termination to facilitate pump removal from the disconnect and not the pump control panel.

Exposed outlet boxes for the outdoor and indoor wet process areas used for lighting fixtures, switches, and receptacles shall be aluminum with rubber neoprene gasketed covers of similar metal. Junction and pull boxes shall be NEMA 4X stainless steel construction and of ample size to house the required devices. Boxes shall be provided with hasps.

The minimum size of boxes shall be according to the NEC. No box shall be filled to more than 40% capacity.

Where control wires must be interconnected in a junction box, terminal strips consisting of an adequate number of screw terminals shall be installed. Current carrying parts of the terminal blocks shall be of ample capacity to carry the full load current of the circuits connected. Approximately 20% of the terminals provided shall consist of spare terminals. Terminals shall be lettered and/or numbered to conform with the wiring diagram.

13.03 PUMP STATION EQUIPMENT

A. PUMPS

1. General

- a) Submersible pumps and major accessories shall be supplied by a single manufacturer per Table 2.

- b) Each pump unit shall be complete with a closed-coupled, submersible electric motor, and other appurtenances required for proper operation.
- c) The equipment shall be suitable for the service conditions and shall be capable of meeting all operating requirements of the pump system.
- d) Each pumping unit including motor and all integral controls shall be rated and labeled for use in a Class I, Division I, Group C/D area as defined by the NEC.
- e) Each item shall be identified with indelible markings for the intended service. Tag numbers shall be clearly marked on all shipping labels and on the outside of all containers.

2. Submittals

- a) Complete fabrication and assembly drawings, together with detailed specifications and data covering materials, parts, devices, and accessories, shall be submitted in accordance with the submittals section. The data and specifications for each unit shall include, but are not limited to, the following:

1) Pumps

- a). Name of manufacturer
- b). Type and model
- c). Rotating speed
- d). Size of discharge elbow outlet or nozzle
- e). Net weight (mass) of the pump and motor only
- f). Complete performance curves showing capacity versus head, brake horsepower (bhp) (kW), NPSH required, and efficiency
- g). Data on shop painting

2) Motors

- a). Name of manufacturer
- b). Type and Model
- c). Type of bearings and method of lubrication
- d). Rated size of motor, hp (kW), and service factor

- e). Insulation class and temperature rise
- f). Full load rotative speed
- g). Net weight
- h). Efficiency at full load and rated pump condition
- i). Full load current
- j). Locked rotor current

b) O&M Manuals shall include, at a minimum, the following information:

- 1) Equipment function, normal operating characteristics, and limiting conditions
- 2) Assembly, installation, alignment, adjustment, and checking instructions
- 3) Operating instructions for startup, routine and normal operation, regulation and control, shutdown, and emergency conditions
- 4) Lubrication and maintenance instructions
- 5) Guide to troubleshooting
- 6) Parts list and predicted life of parts subject to wear
- 7) Outlined, cross-section, and assembly drawings; engineering data; and wiring diagrams
- 8) Test data and performance curves

3. Pumps

- a) Pumps shall be submersible, non-clog sewage pumps capable of passing a 3-inch sphere. Pumps shall be capable of handling raw, unscreened sewage. Major pump components shall be of gray cast iron devoid of burrs, pits, or other irregularities.
- b) The impeller casing shall have well-rounded water passages and smooth interior surfaces free from cracks, porosity, blowholes, or other irregularities. The discharge nozzle shall be flanged and sufficiently rigid to support the pumping unit under all operating conditions.
- c) All mating surfaces of major components shall be machined and fitted with O-rings where watertight sealing is needed. Sealing shall be accomplished by O-ring contact on four surfaces and O-ring compression in two planes, without reliance on

a specific fastener torque or tension to obtain a watertight joint. The use of elliptical O-rings, gaskets, or seals requiring a specific fastener torque value to obtain and maintain compression and watertightness will not be acceptable. The use of secondary sealing compounds, gasket cement, grease, or other devices to obtain watertight joints will not be acceptable.

4. Pump Motors

- a) Motor shall be provided by the pump manufacturer; air-filled, totally submersible; and appropriately sized 3 phase power, 60-Hertz (Hz) motors with a maximum speed of 1800 revolutions per minute (RPM). The motors shall meet the requirements of Class I, Division I, and Group D for hazardous locations, and shall be sized to non-overloading throughout the entire operating range of the selected impeller. The motor shall meet the requirements of NEMA MG1 Part 30 and 31 for operation on pulse width modulation (PWM) type Variable Frequency Drives (VFD).
- b) A heat sensor thermostat shall be attached to and embedded in the winding and be connected in series with the motor starter contactor coil to stop motor if temperature of winding is more than 200 degrees Fahrenheit (F). Thermostat shall reset automatically when motor cools to safe operating temperature. The common pump motor shaft shall be of 416 stainless steel.
- c) The motor shall be protected by a mechanical seal system. A double electrode shall be mounted in the seal chamber to detect any water entering the chamber through the lower seal. Water in the chamber shall cause a red light to turn on at the control panel. This signal shall not stop the motor but shall act as a warning only.
- d) Power cables to pumps shall be American Wire Gauge (AWG) (min) Hypalon jacketed type silver plated copper (SPC) cable a minimum of 50-feet in length.
- e) Motor nameplate rating shall exceed the maximum power required by the pump in the operating head range. Each motor shall have a voltage, frequency, and phase rating as required and shall have a service factor of 1.15. The stator housing shall be an air-filled, watertight casing. A cooling jacket shall encase the motor housing for each pump where needed to maintain adequate cooling. Cooling jacket shall require no external source of cooling water. Motor insulation shall be moisture resistant, Class F, 180 degrees Celsius (C). Each motor shall be NEMA Design B for continuous duty at 40 degrees C ambient temperature and designed for at least 10 starts per hour.
- f) Each motor housing shall be provided with a moisture detection system provided by the motor manufacturer, complete with all sensors, control power transformer, intrinsically safe control modules, and relays.

- g) The motor bearings shall be antifriction, permanently lubricated type. The bearing shall be fixed to carry the pump thrust and the upper bearing free to move axially. The bearings shall have a calculated ABMA L10 Live Rating of 40,000 hours when operating at maximum operating head. Maximum shaft runout at the mechanical seals shall not exceed 2 mils at any point in the operating head range.
- h) Thrust bearings shall be protected by bearing temperature switches. The switches shall be normally closed automatic reset type rated 5-amperes (amps) at 120V AC.
- i) Each motor shall be capable of continuous operating in air (unsubmerged) for at least 24-hours under pump full load conditions, without exceeding the temperature rise limits for the motor insulation system.
- j) Each pump shall be equipped with one or more multiconductor cable assemblies for power and control. Each multiconductor assembly containing power cables shall be provided with a separate grounding conductor. Each cable assembly shall bear a permanently embossed code or legend indicating the cable is suitable for submerged use. Cable sizing shall conform to NEC requirements.
- k) All cables shall be of sufficient length to terminate in a junction box outside the wet well, with 10-feet of slack that shall be coiled on a cable hook at the top of the wet well. Each cable shall be supported by AISI Series 300 corrosion-resistant PVC Style woven Kellem Grips to prevent damage to the cable insulation. Mounting of cable supports in the wet well shall be coordinated to prevent damage to the cable.
- l) The cable entry water seal shall include a strain relief and a grommet type seal designed so that a specific fastener torque is not required to ensure a watertight submersible seal. The cable entry junction box and motor shall be separated by a stator lead sealing gland or a terminal board. The junction box shall isolate the motor interior from moisture gaining access through the top of the stator housing.
- m) Motors with an adjustable frequency speed controller shall be derated to compensate for harmonic heating effects and reduced self-cooling capability at low-speed operation so the motor does not exceed Class B temperature rise when operating in the installed condition at load with power received from the adjustable frequency drive. All motors driven by adjustable frequency drives shall be supplied with full phase insulation on the end turns and shall meet the requirements of NEMA MG 1, Part 31. In addition, motors shall be designed to be continually pulsed at the motor terminals with a voltage of 1600-volts AC.
- n) Adjustable Speed Drives: Adjustable frequency drives shall be provided as specified by the Director or if the projected flow ≥ 5 MGD.
- o) Station pumps 15-30-hp shall have a 30-hp rated reduced voltage soft starter (RVSS). Stations with pumps > 30-hp shall utilize variable frequency drives with appropriately sized RVSS.

5. Appurtenances

- a) The lift out systems shall consist of a straight elbow that bolts on the bottom of the basin, a combination disconnect assembly with a seal flange that mounts to the pump, rail support guides that fasten to the wall of the basin, and guide and support brackets that mount to the pump. The guide rails shall be type 316 stainless steel, 2-inch minimum diameter, schedule 40.
- b) Guiderail Mounted Base. A discharge base and discharge elbow shall be furnished by the pump manufacturer. The base shall be sufficiently rigid to firmly support the guiderails, discharge piping, and pumping unit under all operating conditions. The base shall have one or more integral support legs or pads suitable for bolting to the floor of the wet well. The face of the discharged elbow inlet flange shall be perpendicular to the floor and shall contact the face of the pump discharge nozzle flange. The diameter and drilling of the elbow outlet flange shall conform to ANSI B16.1, Class 125. The pump and motor assembly shall be automatically connected to and supported by the discharge base and guiderails so that the unit can be removed from the wet well and replaced without the need for operating personnel to enter the wet well.
- c) Sliding Bracket. Each guiderail mounted pumping unit shall be provided with an integral, self-aligning guiderail sliding bracket. The bracket shall be designed to obtain a wedging action between flange faces as final alignment of the pump occurs in the connected position. The bracket shall maintain proper contact and a suitably sealed connection between flange faces under all operating conditions. The sliding bracket shall be non-sparking.
- d) Guiderails. Each guiderail mounted pumping unit shall be equipped with one or more guiderails. Guiderails shall be sized to fit the discharge base and the sliding bracket and shall extend upwards from the discharge base to just below the bottom of the access hatch. An upper guiderail bracket shall be provided at the pump access opening. Guiderails shall be made of stainless steel.
- e) Lifting Chain. Each guiderail mounted pumping unit shall be provided with a chain suitable for removing and installing. The chain shall be stainless steel with 4X6 lifting eyes at 10-foot intervals starting at the top. A suitable chain hook shall be provided at the top of the wet well. The pump shall be equipped with an open lifting hoop suitable for attachment of standard chain fittings, or for hooking from the wet well surface. The hoop shall be ductile cast iron ASTM A536 (60-40-18) and shall be rated to lift a minimum of four times the pump weight. A 6-foot length (minimum) stainless steel chain shall be attached to the bail with a stainless steel shackle. Pump lift chains are required to be stainless steel and must extend a minimum of 5-feet above normal wet well operating level.
- f) Special Tools and Accessories. Equipment requiring periodic repair and adjustment shall be furnished complete with all special tools, instruments, and accessories

required for proper maintenance. Equipment requiring special devices for lifting or handling shall be furnished complete with those devices.

- g) A replica of the nameplate with serial number, model number, manufacturer, operating conditions, etc. shall be provided for each pump.

6. Shop Painting

- a) All iron and steel parts which will be in contact with pumped liquid or submerged after installation, including the inside of the casing, the impeller, and the discharge elbow, shall be shop cleaned in accordance with the coating manufacturer's recommendations and painted with the epoxy coating system specified. At least 1 quart of the finished coat material shall be furnished with each pump for field touchup.
- b) All other iron and steel surfaces, except stainless steel and machined surfaces, shall be protected with suitable protective coatings applied in the shop. Surfaces of the equipment that will be inaccessible after assembly shall be protected for the life of the equipment. Exposed surfaces shall be finished, thoroughly cleaned, and filled as necessary to provide a smooth, uniform base for painting. Electric motors, speed reducers, starters, and other self-contained or enclosed components shall be shop primed or finished with an oil resistant enamel or universal type primer suitable for top coating in the field with a universal primer and aliphatic polyurethane system.
- c) Surfaces to be coated after installation shall be prepared for painting as recommended by the paint manufacturer for the intended service, and then shop painted with one or more coats of the specified primer.

B. PUMP CONTROL SYSTEMS

- 1. Submittals: Complete fabrication and assembly drawings, together with detailed specifications and data covering materials, parts, devices, and accessories shall be submitted in accordance with the submittal section. The data and specifications for the Control panel shall include, but not be limited to, the following:
 - a) Name of acceptable manufacturer per Table 2
 - b) Type and model
 - c) Enclosure rating
 - d) Dimensions of complete panel
 - e) Electrical schematics and wiring diagram
 - f) Liquid level sensors with mounting details, cable lengths, and pump controls

- g) Published descriptive data on each item and all accessories, indicating all specific characteristics and options
2. **Enclosure:** The Control Equipment Enclosure shall be a NEMA type 4X fiberglass and be of suitable size to house all components. A locking hasp shall be provided with no screw clamp type latches. Enclosure shall be fabricated from fiberglass. The top of the enclosure shall serve as a drip shield and the seam free sides shall prevent rain and sleet from entering. Inner panel shall be made of fiberglass.
 3. **Hinged Inner Door:** An inner door shall be furnished. Overload reset push buttons, circuit breakers, switches pilot lights, and hour meters shall be the only components accessible with door closed. The door shall be hinged and may be opened when service is required.
 4. **Line Terminal Block:** A terminal block shall be furnished with properly sized line lugs to accept the main power source entering the control panel. Load lugs shall be adequate to accept all required load size wiring requirements. All live parts shall be fully shielded.
 5. **Motor Circuit Breaker (440-480-VAC):** A properly sized, molded case, thermal hydraulic-magnetic circuit breaker or motor protector shall be provided for each pump motor. Line and load sides shall be equipped with lugs properly sized for the horsepower and current rating of the motor(s). The interrupting rating shall be 5,000 root mean square (RMS) symmetrical amps.
 6. **Transformer Primary Circuit Breaker:** A properly sized, two pole, molded case circuit breaker shall be furnished ahead of the control power 120-VAC power transformer for short circuit protection and disconnecting power to the transformer.
 7. **Control Power Transformer:** An industrial quality control transformer shall be furnished to provide control voltage. The transformer shall be furnished to provide more than adequate kilovolt amperes (kVA) rating to provide 120-VAC power for all items required in the control and alarm circuits. Transformers shall be protected in their secondary by properly sized supplement circuit breaker(s).
 8. **Magnetic Contactors and Overload Relays:** A magnetic contactor shall be furnished for each motor. A separate panel mounted, 3 leg (3 phase) overload relay or motor protector shall be supplied for each motor. Each leg of the overloaded relay shall be equipped with a properly sized overload heater. Electronic overloads are not acceptable. Contractor and overload relay shall be properly sized for the required horsepower, voltage, and phase.
 9. **Elapsed Time Meters:** Six-digit, non-resettable elapsed time meters shall be mounted in the control panel enclosure inner door to record the run time for each pump.

10. **Condensation Strip Heater with Thermostat:** A strip heater shall be furnished to prevent condensation within the control panel enclosure. The heater shall be controlled by a panel mounted, adjustable thermostat.
11. **Phase & Voltage:** A phase failure, reversal and under voltage monitor shall be supplied to prevent the motors from running under low voltage, phase loss, or phase reversal conditions. The monitor shall lock out the control circuit until the problem is corrected and automatically reset. The phase and voltage monitor shall be adjustable.
12. **Lighting and Surge Suppressors:** Suitable lighting and transient level surge suppressors shall be provided to protect motors and control equipment from lightning induced or other line surges. Surge suppressors shall meet current UL standards.
13. **Thru-Door Overload Reset Push Buttons:** Overload reset push buttons shall be provided for each overload relay. Push buttons shall be mounted so that with inner door closed, overloaded relays maybe reset without entering high voltage compartment.
14. **Switches:** Heavy-duty industrial grade oil tight 22-millimeter (mm) switches shall be provided for each pump for “Hand/off/Automatic” operation selection. All switch components shall be made of see-through polycarbonate for simplified inspection of contracts. Cams and strokers shall be Teflon impregnated for abrasion free service without lubrication. The switches required shall be as follows:

Table 3: Switches

Switch Function (Name Plate)	Voltage
HOA	120-VAC

15. **Pilot Lights:** Full voltage, push to test, heavy-duty industrial grade oil-tight pilot lights shall be provided. All pilot light components shall be made of corrosion resistant metals and polyesters. An insulated socket shall be furnished to eliminate the possibility of shock during bulb change. Bulb change shall not require removal of the socket. Bulbs shall be “super bright” LED type. Lens shall be 22-mm and made of lexan. The pilot lights required shall be as follows:

Table 4: Pilot Lights

Pilot Light Function (Name Plate)	Voltage	Lens Color
PUMP 1	120-VAC	GREEN
PUMP 2	120-VAC	GREEN

16. **Seal Fail Alarm Circuit with Test Push Button:** The control panel shall be equipped with a conductance actuated control relay that shall respond to current from a moisture sensor in the pump seal chamber. Relay contacts shall be rated at 10-amps minimum.

All molded structural parts shall be of high mechanical and dielectric strength, structural dimensionally stable, arc resistant, thermosetting plastic. Base plate shall be high strength, diecast aluminum alloy. Solid state type relays shall not be considered acceptable for seal fail monitoring applications. An amber alarm pilot light shall illuminate upon alarm condition. Each pilot light shall include contacts that shall allow testing of the seal failure circuit and pilot light bulb by pushing. Bulb change shall not require removal of the socket. Bulbs shall be “super bright” LED type.

17. Seal Failure Circuit Test Push Button (Illuminated): Heavy-duty industrial grade oil-tight push buttons shall be provided. All push button components shall be furnished to eliminate the possibility of shock during bulb change. Bulb change shall not require removal of the socket. Bulbs shall be “super bright” LED type. Lens shall be 22-mm and made of Lexan. The push buttons required shall be as follows:

Table 5: Seal Failure Circuit Test Push Button

Pilot Button Function (Name Plate)	Voltage	Lens Color
PUMP 1 SEAL FAIL	120-VAC	AMBER
PUMP 2 SEAL FAIL	120-VAC	AMBER

18. Pump Alternator Circuit (For Duplex Pump): The electro-mechanical alternator relay shall be of industrial design specifically for use in pump applications. It shall have single-pole double-throw heavy-duty 10-amp silver cadmium oxide contacts enclosed in a transparent cover. The snap action contacts shall transfer when the unit is de-energized. The circuit shall never be closed or opened while current is being conducted. The alternator circuit shall alternate the lead pump position between the pumps and shall allow the lag pump to start in response to a rising water level in the wet well. A four-position switch shall be provided on the exterior of the pump control panel inner door. The switch shall have a position for: Pump 1, Pump 2, or Both.
19. Control Relay(s): Plug-in control relays with 120-VAC coils shall be provided as required. Contact rating shall be 5-amps (minimum). Sockets shall be of the same manufacturer as the relays and hold-down clips shall be furnished to prevent relay from sliding out of the socket. Relays shall have indicator lights showing when they are engaged.
20. High Wet Well Level Alarm: The control panel shall be provided with a suitable alarm circuit, activated by a separate level control. This alarm shall signal a high water condition in the wet well. Terminals shall be furnished in the control panel of externally mounted alarm devices. A red flashing light shall be provided as a visual alarm of the high water in the wet well. A continuous sounding horn shall also be provided as an audible alarm of the high water in the wet well. Provide a pushbutton to silence audible alarm.

21. Liquid Level Controls: Level control will be achieved by means of a corrosion resistant level sensing pressure transducer. Float-actuated mercury level control switches shall serve as a backup for low level alarm and high level alarm functions. The mercury switch shall be encapsulated in polyurethane foam for corrosion and shock resistance. Floats shall have sufficient chain length to reach from the splice box panel to the bottom of the wet well. Float switches shall be securely attached to a weighted stainless steel chain, in the location indicated in the drawings. Level switches shall be weighted to hold desired position in the wet well. The cord connection to the control shall be numbered 16-2, rated for 13-amps, and shall be type SJTO. To ensure optimum longevity contacts shall be rated for 20-amps at 115-VAC and shall be sealed in a heavy-duty glass enclosure. All pressure transducers shall have a separate 115-VAC power source. No junction boxes or cable splices of any kind will be allowed in the wet well.
22. High Temperature Shutdown Circuit(s): The pump motor high temperature circuit shall provide terminals for connection of the leads from the temperature sensor provided in the pump motor windings. Upon a high temperature condition, the control power to the pump motor contact shall be disconnected, thus stopping the pump motor. The pump shall automatically restart when the pump motor temperature returns to an acceptable level.
23. Ground Lug(s): Equipment ground lug(s) shall be provided for grounding the enclosure. The ground lug(s) shall be suitable for the service provided the enclosure is sized per table 250-95 of the NEC. In all cases, the enclosure must be adequately grounded per article 250 of the NEC, except for fiberglass enclosures where a grounding bus shall be provided.
24. Terminals: Terminals shall be provided for connecting mercury float switch leads, temperature sensor, and seal fail sensor leads. Terminal blocks shall be rated for 600-volt use and accept a wire range of #22-8. All live parts shall have insulating walls on all sides of the lug. Blocks must be US recognized.
25. Construction Standards: Subpanel shall be drilled and tapped to accept machine thread bolts (self-tapping screws are not acceptable). All control wiring shall be 16-AWG machine tool wire, Carol type 76512 or equal. All control wire shall be color-coded or numbered in accordance with applicable standards. Power (motor) shall be in accordance with the current NEC. Major groups of wires shall be contained in plastic wiring trough equal to Panduit type E.
26. Nameplates: All indicator lights, alarms, selector switches, pushbuttons and major control system components shall be identified with engraved phenolic plastic nameplates, white lettering on a black background.

27. Control Panel: The control panel shall include the following elements:

- a) Separate Manual Disconnect for each pump and grinder with 2-pole adjustable overload protection for each phase.
- b) Magnetic starter for each pump motor with all leg quick trip ambient compensated overload protection for each motor. Overloads are to have an auxiliary contact for auto dialer.
- c) Hand-Off-Auto selector switch for each pump.
- d) Automatic Electric Alternator with the ability to designate either Pump 1 or Pump 2 as lead.
- e) Circuit Breaker for Control Circuit.
- f) Motor Thermal protection – Motor control circuit is to shut down if high temperature occurs. Manual resets to be provided.
- g) MPE LPC420-R_RM Level Control Mode.
- h) MPE Level Probe-Model-LLP-10.
- i) Backup float system with 3 floats as backup to the MPE Level Control.
- j) SCADA shall be provided to allow simulation of wet well on MPE Control.
- k) > 40-hp shall be ‘soft start’.
- l) Horn signaling.
- m) Control signaling.
- n) Seal failure light for each pump and contact closure for automatic dialer.
- o) High temperature light for each pump and contact closure for automatic dialer.
- p) Running light for each pump.
- q) Non-resettable, elapsed time meter for each pump, reading in tenths of hours. Capacity 100,000 hours.
- r) High level alarm light with Red Globe and contact closure for automatic dialer.
- s) All necessary internal wiring, relays, etc. to provide the operation as described.

- t) All functions and internal wiring shall be labeled accordingly.
- u) Junction box shall be stainless and installed 4-feet above final grade to ensure water does not damage the internal wiring.
- v) Automatic Dialer/SCADA.
- w) AC Voltmeter.

C. SCADA

The Contractor shall furnish a complete SCADA system that in conformance with Table 2.

- 1. SCADA shall provide a remote silence for high level alarm conditions.

D. GRINDERS

1. General

- a) A wastewater grinder shall be provided at each pump station for the intended purpose of grinding solids in the flow influent to the pump station.
- b) The entire grinder unit and accessories necessary to provide a fully functional wastewater grinder system shall be supplied and warranted by a single manufacturer in conformance with Table 2.
- c) The wastewater grinder shall be placed in a separate manhole, or other influent structure prior to the wet well but still within the pump station site. The minimum diameter of the manhole shall be 5-feet. The grinder shall be removable without entering the structure by means of a stainless steel guide rail and stainless steel lifting chain with 4X6 lifting eyes at 10-foot intervals, starting at the top assembly. Another means of solids removal, such as a bar rack, must be provided when the grinder unit is out of service for extended periods.
- d) The wastewater grinder shall be electrically driven. The electric motor shall be a minimum 5-hp, 60-Hz, appropriately sized immersible motor. The motor shall be NEMA Design "B" and TEFC.
- e) The wastewater grinder unit will have a complete and separate control panel providing all settings, monitoring, and control options required, as well as the ability to send alarm signals back to the SCADA system.
- f) The equipment shall be installed as recommended by the manufacturer, and in compliance with all OSHA, local, state, and federal codes, and regulations.

- g) The grinder unit power supply shall match the pump station power supply. Standard pump station power supply is 3 phase AC power.
- h) Identification. Each unit of equipment shall be provided with a corrosion resistant substantial metal nameplate, securely affixed in a conspicuous place. Nameplate information shall include equipment model number, serial number, manufacturer's name, and location important performance data.

2. Submittals

Submittals shall include electrical diagrams, complete field wiring, terminal identifications, and control panel schematics. Electrical and control information shall be provided to allow coordination of field wiring to place the system in the desired operation. Submittals shall also include complete mounting and installation instructions (including size, length and spacing of all supports and anchor bolts) and painting instructions.

3. Quality Assurance

- a) All equipment shall meet the requirements of applicable standards, including but not limited to: ASTM, AISI, NEMA, NEC, UL, and other State and Local codes.
- b) Grinder Control Panel
 - 1) Each grinder system shall be provided with a single control panel suitable for mounting on an electrical rack, building wall, or as a secondary panel located under the weather hood. The control panel shall include all power and circuits to provide the functional requirements.
 - 2) A programmable controller shall be included in the panel. The programmable logic controller shall talk directly with the SCADA PLC without a third-party communication device. Upon the grinder encountering a jam or overload condition, the controller shall stop the grinder and screen and reverse the direction of rotation to clear the obstruction. If the jam is cleared, the controller shall return to normal operation. If the jam condition persists, the controller shall repeat the reversing cycle up to eight additional times within 45-seconds (total of nine cycles) before signaling a grinder overload condition. Upon a grinder overload condition, the controller shall shut down the grinder and screen and activate an overload contact.
 - 3) If power failure occurs while the grinder is running, the grinder shall resume running when the power is restored. A 0-60 second adjustable time delay device shall be included in the control panel to select time delay until restart after power restoration. If the grinder is stopped due to an overload condition and a power failure occurs, the overload indicator shall reactivate when power is restored.

- 4) The control panel shall provide overcurrent protection. The overload relay shall be adjustable so that the range selected includes the full load amperage (FLA) rating and service factor. Grinder control panel shall be positioned either under the weather hood at the electrical riser or in the control building, if included. A standalone control panel will not be accepted.
- 5) The control panel shall be equipped with a HOA selector switch. In the Off/Reset position, the motor shall not run. In the Hand position, the motor shall run continuously. In the Auto position, the grinder shall stop and start by remote control signal. The control panel shall include dry contacts for future addition by others of a remote maintained contact start/stop control signal when in Auto mode. The control panel shall not allow remote resetting of overload condition. Overload reset shall be accomplished by switching the HOA switch to the Off/Remote position.
- 6) The controller shall indicate each of the following statuses with an indicator light on the panel face:
 - a). Power On
 - b). Grinder Overload
 - c). Motor Overload
 - d). Run
- 7) Engraved phenolic laminated plastic identification nameplates, with white letters on the black background, shall be provided for each switch, indicator light, gauge, etc. on the control panel and system.
- 8) The controller shall be properly rated 3 phase power, 60-Hz.
- 9) A single enclosure shall house all power and control devices, relays, terminal blocks, and motor starter. Control and indicating devices shall be mounted in the front of the enclosure. Indicating lights shall be integral transformer type with low voltage long life 6-volt lamps. Lamps and selector switches shall be heavy-duty type. The control panel and all control devices shall be NEMA 4X. Enclosure shall be a NEMA 4X fiberglass reinforced polymer equipped with full hinged door, suitable for exterior mounting as shown on the drawings.
- 10) A lockable disconnect switch shall be provided on the outside of the control panel to disconnect power to the entire grinder system.
- 11) One set of normally open (NO) contacts shall be provided in the control panel for remote indication of each grinder “fail” and grinder “run” status. Grinder overload, motor overload, oil over temperature, low oil level and oil pressure alarms shall be ganged together to a common grinder “fail” alarm. The control panel shall provide 120-VAC power to these alarm circuits for remote indication at an existing SCADA system.

- 12) Contacts shall be provided for a future remote maintained contact emergency stop pushbutton, to be provided by others. These contacts shall be jumpered.
- 13) Motor starter shall be full voltage type with 120-volt operating coil and captive terminal screws. Overload relay shall be mounted directly to the contactor. The relay shall be sized to the motor FLA.
- 14) Control panel shall incorporate a manual momentary or spring return reversing switch for the grinder control.
- 15) The Following spare parts shall be provided for each grinder as a minimum:
 - a). Three (3) of each type of fuse found in the system
 - b). Three (3) of each type of lamp bulb found in the system
- 16) The motor controller shall have sufficient space within its enclosure for the storage of the motor controller spare parts. Grinder spare parts shall be packaged in suitable containers for long-term storage and shall bear labels clearly designating the contents of each package and the equipment for which they are intended.

E. ODOR CONTROL

1. Odor control measures shall be evaluated for all possible sources of odor related to wastewater pump systems. Source locations to be analyzed shall include, but not limited to, the wet well at the pump station, the force main discharge location, and force main ARVs. Odor control measures to be analyzed shall include, but not limited to, oxidizing agent added to the wastewater, odor masking agents added to the air, activated carbon treatment, biofilter treatment, and wet scrubber treatment. Odor Control measures shall be provided in accordance with Table 2.
2. The chemical feed system, with variable dose controller, shall be capable of reducing the hydrogen sulfide concentration estimated to occur (with no treatment) in the pump station force main discharge at the receiving gravity sewer down to or below 0.1 mg/L using the chemical designated by the Town in the Pre-Design meeting.
3. Solutions that include chemical feed must consider the feasibility of chemical delivery to the site, provide appropriate chemical storage facilities; including double walled containment, and must incorporate chemical feed systems as listed in Table 2. A containment system may also be required, in case of tank or piping failure.
4. The Town reserves the right to require mechanical ventilation and treatment of exhaust from the wet well to address anticipated or existing proximity odors.
5. Odor Control facilities not located on the pump station site (ARVs and discharge points for instance) shall be constructed in underground vaults or if necessary to be above

ground, shall be housed in a structure. Requirements for odor control facilities not located on the pump station site are in the Force Main section of these Standards.

F. JIB CRANE/HOISTING EQUIPMENT

1. A pedestal-mounted jib crane with an electric chain hoist and motorized trolley of 360-degree swing shall be provided. Electric hoist and trolley shall be furnished with any optional equipment and accessories as required for permanent operation in an exterior location. Jib crane shall be provided with a “doghouse” shelter at the mast end of the crane beam, to provide shelter for and protection of the parked motorized trolley and hoist from precipitation and extended exposure to sunlight. The minimum capacity of the hoisting system shall be equal to the combined weight of the pump, motor, chains, and cables, times a factor of 1.25. Jib crane must be tall enough to lift pumps so that there is a 4-foot minimum clearance from the bottom of the pump to the concrete slab. The motor and handheld control pendant shall have NEMA 4 ratings. Jib crane must be capable of accessing and lifting both pumps and must be certified to be in accordance with OSHA. Crane shall be equipped with chain buckets.

G. GENERATORS

1. General
 - a) Backup power shall be provided by an automatically starting on-site generator controlled by an ATS. The generator shall be capable of supplying all necessary electrical power for complete operation of the pump station in the event of a failure of the electrical feed supplied by the local grid.
 - b) The entire generator set, switchgear, and accessories necessary to provide a fully functional backup power system, shall be supplied and warranted by a single manufacturer in accordance with Table 2.
 - c) Engine-generator unit, controls, and transfer switch shall be new; a standard product of a single manufacturer; and a packaged type of unit, full shop assembled, wired, and tested, requiring no field assembly of critical moving parts.
 - d) The generator shall be sized to sequentially start and continuously run all pumps, motors, and other electrical equipment. Simultaneous starting of pumps is not required. The pump starting conditions (including delay timers, VFDs, soft starts, reduced voltage starters, etc.) should be verified for the site. The kW rating needed shall be calculated by a NCPE by the generator manufacturer.
 - e) The voltage, amps, phase, etc., shall be coordinated with the design of the electrical equipment. Generators will be 3 phase, 60-Hz, and capable of multiple voltages through re-strapping.

- f) The engine generator set will have a complete and separate control panel mounted inside the generator enclosure providing all settings, monitoring, and control options required, as well as the ability to send alarm signals back to the SCADA system.
- g) Each unit shall be provided with a corrosion resistant substantial metal nameplate, securely affixed in a conspicuous place. Nameplate information shall include equipment model number, serial number, manufacturer's name and location, and important performance data.
- h) If the generator is elevated 30-inches or greater from the existing grade, a generator enclosure shall be furnished with an access platform with safety railing, metal grating, and stairs, to provide safe and convenient access to all parts of the generator and controls that require operator maintenance or inspection. The access platform shall be designed and located so that all generator maintenance can be performed without the need for ladders. The access platform shall be located within five vertical feet of the top of the uppermost maintenance access door/panel in the sidewalls of the generator enclosure.
- i) The engine-generator set supplier shall be an authorized dealer of the engine-generator set manufacture and shall be fully qualified and authorized to provide service and parts for the engine and generator 24-hours per day, 7-days per week from a location within a 100-mile radius of the installation site.

2. Submittals

- a) The contractor shall submit complete shop drawings for assembly and installation, together with detailed specifications covering materials, drive unit, parts, devices, and accessories forming a part of the equipment. The data for each unit shall include, but shall not be limited to, the following:
 - 1) Manufacturer, model, and type: engine, alternator, enclosure, battery charger and battery, silencer, switchgear, transformer, etc.
 - 2) Listing of standard and operational accessories.
 - 3) Engine output horsepower and efficiency curves at specified conditions.
 - 4) Engine mechanical data including heat rejection, exhaust gas emission data (maximum values at loads of $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$, and full for carbon monoxide (CO) (lb/hr), nitrogen oxides (NO_x)(lb/hr), temperature (F), flow (ACFM), combustion air and ventilation air flows, and fuel consumption at specified conditions).

- 5) Generator electrical data including temperature and insulation data, winding pitch, cooling requirements, excitation ratings, voltage regulation, voltage regulator, efficiencies, waveform distortion and telephone influence factor.
- 6) Ratings at specified conditions: engine (net horsepower), engine (maximum performance horsepower bare engine), generator kW at specified power factor, volts, amps.
- 7) Overall dimensions (length, width, height) and net weight.
- 8) Concrete pad recommendation (including size, length, and spacing of all necessary supports and anchor bolts) and layout/stub-up locations for electrical conduits.
- 9) Wiring diagrams and schematics for the entire system, including the engine control panel, generator breaker, ATS, auxiliary transformer, and remote alarm indicators.
- 10) Calculations or test results showing compliance with specified motor starting and voltage dip requirements.
- 11) Line circuit breaker rating.
- 12) Control panel layout, identifying location of all instrumentation being supplied.
- 13) Operation instructions.
- 14) Letter from the engine-generator manufacturer confirming that the unit will provide the specified minimum kW rating at the specified design conditions and time duration.
- 15) Battery sizing calculations.
- 16) Battery charger sizing calculations.
- 17) Maximum output short circuit kVA available.
- 18) A certificate of compliance, when required.
- 19) Manufacturers and dealer's written warranty.

3. Quality Control

- a) All equipment and materials shall be designed and constructed in accordance with the latest applicable requirements of these Standards, specifications and codes of

ANSI, ASTM, NEMA, IEEE, EEI, HEI, ISO, NFPA, SAE, NEC, UL508, and other such regularly published and accepted standards, as well as state and local codes.

4. Generator Equipment

a) Engine

- 1) Engine shall be compression ignition type diesel powered. Diesel fueled generators shall be 4 stroke, liquid cooled, American made, with a minimum of 130-hp, or equal. Any alternative to this requirement shall be approved by the Director.
- 2) Engine shall operate at ≤ 1800 RPM.
- 3) The engine will be equipped with an electronic governor to maintain 4% drop from no load to full load and $\pm 0.25\%$ steady state. The electronic governor control shall be furnished as a complete governor and control package.
- 4) Engine shall have dry type air cleaner, coolant, fuel filters, and oil filters with replaceable elements.
- 5) Engine shall be liquid cooled and shall have a radiator, coolant pump, thermostat, and fan.
- 6) Governor shall be mechanical flyweight type with a speed regulation of 5% maximum.
- 7) Lubrication shall be by a positive displacement lube oil pump with positive pressure lubrication to all bearings. Full flow lube oil filter shall be provided.
- 8) Starting system shall be 12-volts, 35-amps with solid state voltage regulator. A battery float charger shall be provided.
- 9) An engine block heater shall be provided with control thermostat. The unit shall be 120-volts.

b) Generator

- 1) The synchronous generator shall be a single bearing, self-ventilated, drip-proof design in accordance with NEMA MG 1 and directly connected to the engine flywheel.
- 2) Voltage regulation shall be within $\pm 0.5\%$ at steady state from no load to full load. The momentary voltage drop shall not exceed the specified percent without starter coils dropping out or stalling the engine at any time when applying or starting the specified loads. Recovery to stable operation shall occur

within 2-seconds. Unit shall be capable of adjusting voltage under varying load conditions within 16-milliseconds.

- 3) The voltage regulator shall be a totally solid state design, and include electronic voltage buildup, volts per hertz regulation, overexcitation protection, shall limit voltage overshoot on startup, and shall be environmentally sealed.
- 4) The insulation material shall meet NEMA standards for Class H insulation and be fungus resistant.
- 5) The generator shall be a self-excited generator type. The excitation system shall be of brushless construction.
- 6) The generator shall be supplied with a 240-volt single phase anti-condensation heater protected by a circuit breaker inside the main control panel. When the generator set is not running the heater is automatically connected to the AC supply through a power relay mounted in the control panel. Upon receiving a start signal the AC supply is automatically disconnected by the power relay and automatically reconnected when the start signal is removed, and the engine has stopped. A temperature set point shall determine the start and stop signal.

c) Fuel System

- 1) Each engine-generator unit shall be furnished with a complete fuel system, including an integral fuel tank, fuel filter, fuel shut off valve, air filter, pressure regulator (if applicable), and piping along with all other accessories as required for proper operation. All items shall be suitable for the specified fuel and located inside the enclosure above the base plate and serviceable from inside the enclosure. The fuel system shall conform to NFPA 58.
- 2) The fuel tank shall have a capacity of at least 250-gallons to provide fuel for a minimum run time of 72 continuous hours at 100% prime load.
- 3) The fuel tank shall be double walled with a rupture basin of 110% capacity. It shall be pressure tested for leaks prior to shipment and have all necessary venting per US142 standards. A locking fill cap, a mechanical reading fuel level gage, low fuel level alarm contact, and fuel tank rupture alarm contact shall be provided. The fuel system shall require a polishing/filtration system for larger units to be determined by the Town. Any drain lines associated with the generator need to include brass plugs. Plastic plugs will not be accepted.
- 4) Fuel piping shall be designed for a working pressure of 250-psi. Sizing shall be in accordance with the manufacturer's recommendations, but not less than ½-inch in diameter.

- 5) A vapor withdrawal system shall be installed, to include a manual shut-off valve at the tank(s), a vaporizer, dry fuel filter, line service regulator, solenoid fuel shut-off valve to pen when engine runs, flexible pipe connection at the engine, and a gas flow regulator.
- 6) An 80% charge of propane in the propane storage tank shall be provided at the time of final acceptance.
- 7) Complete charges of antifreeze and oil shall be provided.

d) Lubrication

- 1) Equipment shall be adequately lubricated by systems which require attention no more frequently than weekly during continuous operation. Lubrication systems shall not require attention during startup or shutdown and shall not waste lubricants.
- 2) Lubricants shall be provided in sufficient quantities to fill all lubricant reservoirs and to replace all consumption during testing, startup, and operation prior to acceptance of equipment. Unless otherwise specified or permitted, the use of synthetic lubricants will not be acceptable.
- 3) Lubrication facilities shall be convenient and accessible. Oil drains and fill openings shall be easily accessible from the normal operating area or platform. Drains shall allow for convenient collection of waste oil in containers from the normal operating area or platform without removing the unit from its normal installed position.

e) Alternator

- 1) Alternators shall be revolving, broad range, brushless type designed for minimum resistance, low voltage, waveform distortion, and maximum efficiency. Rotor shall be dynamically balanced permanently aligned to engine by flexible disc coupling. Maximum allowable voltage dip shall be 30%.
- 2) Exciter shall be 3 phase, full wave rectified with silicon diodes mounted on a common motor shafted for maximum motor starting.
- 3) Voltage regulator shall be solid state with silicon-controlled rectifiers with phase-controlled sensing circuits.
- 4) Temperature rise at rated load shall be within limits for Class F insulation in accordance with NEMA MG 1-22.40.
- 5) Insulation system shall be Class F in accordance with NEMA MG1-1.65. Rotor shall be vacuum impregnated with 100% solid epoxy resin for complete

environmental protection. Stator shall be impregnated twice with varnish conforming to MIL-1-24092, Type M, Class 155.

- 6) Output circuit breaker shall be 3-pole, rated at 145% of alternator full load current.

f) Exhaust System

- 1) Each engine-generator unit shall be furnished with a complete exhaust system including an exhaust silencer, exhaust piping, expansion joints, and accessories required for a complete operating system.
- 2) A rain cap shall be provided to prevent rain from entering the exhaust pipe. The rain cap shall open from exhaust pressure and shall close when exhaust flow stops. The cap shall be stainless steel counter balancing with vertical discharge.

g) Starting System

- 1) Each engine-generator unit shall be furnished with a complete electric motor start system including starting motors, maintenance free starting batteries, battery pack with rack, cables, and battery charger.
- 2) The engine starter shall be a 12-volt DC or 24-volt DC, solenoid shaft, electric starting system with positive engagement.
- 3) The batteries shall be of high rate, diesel starting, lead acid type. The batteries shall be sized for five 10-second cranks with battery and engine oil temperature of 30 degrees F and a battery end voltage of 70% of system voltage.
- 4) The battery charger shall be current limiting and shall be furnished to automatically recharge the batteries. The charger shall be dual charge rate with automatic switching to the boost rate when required. Output voltage regulation shall not exceed 1%. The charger shall include temperature compensation, NEMA 2 corrosion resistant enclosure, overload protection, silicon diode full wave rectifiers, voltage surge suppressor, DC ammeter, DC voltmeter, and fused AC input, on/off switch, remote annunciation of loss of AC power, low battery voltage, and high battery voltage, AC input and DC output circuit breakers or fuses, floating voltage equalization, equalizing timer. AC input voltage shall be 120-volts or 240-volts, single phase.
- 5) The battery charger shall have a DC output suitable to supply power to all continuous loads and to recharge the batteries from a full discharge state to normal operating voltage within 8-hours.

- 6) The batteries, battery rack, and battery charger shall be located within the engine-generator enclosure. The battery rack frame shall be constructed of corrosion resistant material.
- 7) The engine-generator shall automatically supply power to the battery charger when it is operating, and utility power is not available.

h) Cooling System

- 1) Engine-generator unit shall be cooled with unit mounted radiator cooling system complete with radiator, expansion tank, water pump, belt driven fan, fan guard, thermostatic control, high water temperature cutout, and all accessories required for proper operation. The radiator shall be sized to provide sufficient capacity for cooling of the engine and all accessories at an ambient temperature of 125 degrees F, considering the enclosure static pressure restriction. The fan shall draw air over the engine and discharge through the radiator.
- 2) The cooling system shall be filled with a permanent antifreeze mixture of ethylene glycol type with rust inhibitor.
- 3) The engine generator unit shall have a 240-volt coolant heater protected by a safeguard breaker inside the main control panel. A controller shall be included to regulate the output temperature to within safe limits. When the generator set is not running, the heater is automatically connected to the AC supply through a power relay mounted in the control panel. Upon receiving a start signal, the AC supply is automatically disconnected by the power relay and automatically reconnected when the start signal is removed and the engine has stopped.

i) Enclosure

- 1) The engine-generator unit, fuel system, control panel, battery rack, battery charger, power panel, exhaust silencer, and other ancillary equipment, shall be housed in a weatherproof enclosure.
- 2) The enclosure shall consist of a roof, side walls, and end walls, and shall be weatherproofed and sufficiently sealed to prevent the entry of rodents.
- 3) The enclosure shall be constructed of 12 gage or heavier metal panels that can be easily removed, or doors.
- 4) Doors shall be lockable with stainless steel hardware for access to the engine generator, controls, and accessories. Doors shall also provide easy accessibility for maintenance. Doors shall have lock arm to prevent swinging when open.
- 5) The enclosure shall be provided prewired, requiring only external connection to the power panel and ATS.

- 6) Lube oil and coolant drains shall be extended to the exterior of the enclosure and terminated with drain valves.
- 7) All moving parts inside of enclosure, including cooling fan and charging alternator, shall be fully guarded to prevent injury.
- 8) Lifting points shall be provided on base frame suitable for lifting combined weight of base tank, engine generator unit, and enclosure.
- 9) An LED floodlight shall be provided with a switch mounted on the generator control panel.

j) Control System

- 1) Provide a generator set mounted control panel for complete control and monitoring of the engine and generator set functions. Critical components shall be environmentally sealed to protect against failure from moisture and dirt. Components shall be housed in a NEMA 1/IP22 enclosure with hinged door secured with a twist lock hatch. The panel door will have a voltage shunt switch. The panel itself shall be mounted on a separate support stand and shall be mounted inside the enclosure such that the face of the panel faces outward and is isolated from vibrations of the engine/generator arrangement. Panel/breaker arrangements shall be mounted in such a manner as to not restrict access to the generator, engine, or other parts of the system that need periodic maintenance or repair.
- 2) The control panel shall be automatic and safety type and shall include at least all items required by NFPS 110 Level 1.
- 3) Panel shall include the following I&C (at a minimum): AC voltmeter, AC ammeter, frequency/tachometer, engine running hours, coolant temperature gauge, lube oil pressure gauge, battery condition voltmeter, run/off/auto switch, emergency stop push button, lamp test pushbutton, 7 position voltmeter phase selector switch, 4 position ammeter phase selector switch, 3 attempt start timer, cool down timer, remote start/stop terminals for 2 wire starting from ATS, charge rate ammeter, and exciter circuit breaker with manual reset.
- 4) Panel shall include the following emergency shutdowns with individual warning lamps (at a minimum): fail to start, high coolant temperature, low lube oil pressure, overspeed, overcrank protection, and alarm contact for auto dialer (generator fail signal).
- 5) Panel shall include the following alarms with individual warning lamps (at a minimum): approaching low oil pressure, approaching high engine temperature, low/high battery voltage, battery charger failure, control switch not in auto mode.

- 6) Panel shall have at least 2 spare shutdown channels and 1 spare alarm channel and 4 additional fault channels for shutdown or alarm programming.
- 7) Panel shall have the ability to send up to 8 channels back to existing SCADA system at the pump station.
- 8) Engine generator unit shall be provided with a fuel level gauge indicating relative fuel tank level in % values.
- 9) The panel shall be provided with a switched light that illuminates the panel face.
- 10) The panel shall include a stainless-steel canopy with LED hood lights.

k) Circuit Breaker

Provide a generator mounted, molded case or insulated case construction, UL rated, 3 pole, and circuit breaker, sized as required. Breaker shall utilize a thermal magnetic trip. Breaker shall be housed in a steel NEMA 1 enclosure mounted on a separate support stand vibration isolated from the engine/generator arrangement. Bus bars, sized for the cable type shown on drawing, shall be supplied on the load side of breaker.

l) Receptacles

The engine generator will be supplied with two 120-volt, 20-amp duplex receptacles and two 120-volt, 20-amp twist lock receptacles. Receptacles will have individual circuit breakers and will be placed inside the enclosure or will have weatherproof covers.

m) Shop Painting

- 1) All steel and iron surfaces shall be protected by suitable coatings applied in the shop. Surfaces which will be inaccessible after assembly shall be protected for the life of the equipment. Coatings shall be suitable for the environment where the equipment is installed. Exposed surfaces shall be finished, thoroughly cleaned, and filled as necessary to provide a smooth, uniform base for painting. Electric motors, engine, alternator, enclosure, piping, and valves shall be shop primed and finish painted prior to shipment to the site.
- 2) Stainless steel, nonferrous, and nonmetallic surfaces shall not be painted.

n) Power Transformer

An externally mounted power transformer shall be supplied to provide required 240-volt single phase power to the coolant heater and anti-condensation heater for

each engine generator unit. The amp load shall be calculated by a NCPE or the generator manufacturer.

H. AUTOMATIC TRANSFER SWITCH

1. An automatic transfer switch (ATS) shall be provided on all pump stations for switching power to the onsite backup generator when normal grid power fails. The ATS shall be provided by the same manufacturer as the generator and included under the same warranty as the generator.
2. General
 - a) The ATS shall be rated for the voltage and ampacity as shown on the plans and shall have 600-volt insulation on all parts in accordance with NEMA standards.
 - b) The current rating shall be a continuous rating when the switch is installed in an unventilated enclosure and shall conform to NEMA temperature rise standards. Designs which require cabinet ventilation are unacceptable and do not meet these Standards.
 - c) The unit shall be rated based on all classes of loads, i.e., resistive, tungsten, ballast, and inductive load.
 - d) Switches rated ≤ 400 -amps shall be UL listed for 100% tungsten lamp load.
 - e) As a precondition for approval, all transfer switches complete with accessories shall be listed by Underwriters Laboratories, under Standard UL 1008 (ATS) and approved for use on emergency systems.
 - f) The withstand current capacity of the main contacts shall not be less than 20 times the continuous duty rating when coordinated with any molded case circuit breaker established by certified test data.
 - g) Temperature rise tests in accordance with UL 1008 shall have been conducted after the overload and endurance tests to confirm the ability of the units to carry their rated currents within the allowable temperature limits.
 - h) Transfer switches shall comply with the applicable standards of UL, ANSI, NFPA, IEEE, NEMA, IEC and all applicable federal, state, and local standards.
 - i) The transfer switches shall be supplied with a microprocessor-based control panel as detailed further in these Standards.
 - j) The transfer switch shall be capable of detecting if the source switch was successful and if the pump station is receiving power. It shall also be capable of transmitting

a failure signal if it was not successful in switching sources and the pump station is not receiving power.

3. Sequence of Operation

- a) The ATS shall incorporate adjustable 3 phase under-voltage sensing of the normal source.
- b) When the voltage of any phase of the normal source is reduced to 80% of the nominal voltage, for a period of 0-10 seconds (programmable) a pilot contact shall close to initiate starting of the engine generator.
- c) When the emergency source has reached a voltage value within 10% of the normal voltage and achieved frequency within 5% of the rated value, the load shall be transferred to the emergency source after a programmable time delay.
- d) When the normal source has been restored to not less than 90% of rated voltage on all phases, the load shall be re-transferred to the normal source after a time delay of 0-30-minutes (programmable). The generator shall run unloaded for 5-minutes (programmable) and then automatically shut down. The generator shall be ready for automatic operation upon the next failure of the normal source.
- e) If the engine generator should fail while carrying the load, retransfer to the normal source shall be made instantaneously upon restoration of proper voltage (90%) on the normal source.
- f) The transfer switch shall be equipped with a microprocessor-based control panel. The control panel shall perform the operational display functions of the transfer switch. The display functions of the control panel shall include ATS position and source availability.
- g) The front panel display shall include indicators for timing functions, capability to bypass the TD on transfer or retransfer, and an ATS test switch and afford on-board diagnostic capability.
- h) The control panel shall be provided with calibrated pots (accessible only by first opening the lockable cabinet door) to set time delays, voltage, and frequency sensors. Designs which make use of DIP switches to render such adjustments are unacceptable.
- i) The control panel shall be opto-isolated from its inputs to reduce susceptibility to electrical noise and provided with the following inherent control functions and capabilities:
 - 1) An LED display for continuous monitoring of the ATS functions.

- 2) Built-in diagnostic display.
- 3) Capability to support external communication and network interface through an optional RS 485 port.
- 4) Mechanical test switch to simulate a normal source failure.
- 5) Time delay to override momentary normal source failure prior to engine start. Field programmable 0-10-minutes (continuously adjustable via a calibrated potentiometer factory set at 3-minutes).
- 6) Time delay on retransfer to normal source, continuously adjustable 0-30-minutes, factory set at 15-minutes. If the emergency source fails during the retransfer time delay, the transfer switch controls shall automatically bypass the time delay and immediately retransfer to the normal position.
- 7) Time delay on transfer to emergency, continuously adjustable 0-15-minutes, factory set at 1-minute.
- 8) An in-phase monitor shall be provided. The monitor shall compare the phase angle difference between the normal and emergency sources and be programmed to anticipate the zero-crossing point to minimize switching transients.
- 9) An interval-type automatic clock exerciser shall be incorporated within the microprocessor.
- 10) Provide a momentary pushbutton to bypass the time delays on transfer and retransfer.

4. Construction and Performance

- a) The ATS shall be of double throw construction operated by a reliable electrical mechanism momentarily energized. There shall be a direct mechanical coupling to facilitate transfer in 6 cycles or less.
- b) The normal and emergency contacts shall be mechanically interlocked such that failure of any coil or disarrangement of any part shall not permit a neutral position.
- c) For switches installed in systems having ground fault protective devices, and/or wired to be designated a separately derived system by the NEC, a 4th pole shall be provided. This additional pole shall isolate the normal and emergency neutrals. The neutral pole shall have the same withstand and operational ratings as the other poles and shall be arranged to break last and make first to minimize neutral switching transients. Add-on or accessory poles that are not of identical construction and withstand capability are not acceptable.

- d) The contact structure shall consist of a main current carrying contact, which is a silver alloy with a minimum of 50% silver content. The current carrying contacts shall be protected by silver tungsten arcing contacts on all sizes above 400-amps.
- e) The transfer switch manufacturer shall submit test data for each size switch, showing it can withstand fault currents of the magnitude and the duration necessary to maintain the system integrity. Minimum UL listed withstand and close into fault ratings shall be as follows:

Table 6: Any molded case breaker

Size (amps)	(RMS Symmetrical)
Up to 200	10,000
201-260	35,000
261-400	35,000
401-1200	50,000
1201-4000	100,000

Table 7: Specific coordinated breakers

Size (amps)	(RMS Symmetrical)
Up to 150	30,000
151-260	42,000
261-400	50,000
401-800	65,000
801-1200	85,000
1201-4000	100,000

Table 8: Current limiting fuse

Size (amps)	(RMS Symmetrical)
Up to 4000	200,000

*All values 480 volt, RMS symmetrical, less than 20% power factor.

- f) A dielectric test at the conclusion of the closing tests shall be performed.
- g) The ATS manufacturer shall certify sufficient arc interrupting capabilities for 50 cycles of operation between a normal and emergency source that are 120-degrees out of phase at 480-volts, 600% of the rated current at 0.50 power factor. This

certification is to ensure that there will be no current flow between the two isolated sources during switching.

- h) All relays shall be continuous duty industrial type with wiping contacts. Customer interface contacts shall be rated 10-amps minimum. Coils, fuses, relays, timers, and accessories shall be readily front accessible. The control panel and power section shall be interconnected with a harness and keyed disconnect plugs for maintenance.
- i) Main and arcing contacts shall be visible without major disassembly to facilitate inspection and maintenance.
- j) A manual handle shall be provided for maintenance purposes with the switch de-energized. An operator disconnect switch shall be provided to defeat automatic operation during maintenance, inspection, or manual operation.
- k) The switch shall be mounted in a NEMA 3R enclosure unless otherwise indicated on the plans.
- l) Switches composed of molded case breakers, contactors or components thereof not specifically designed as an ATS will not be acceptable.

13.04 PUMP STATION TESTING AND TRAINING

A. TESTING

1. General

- a) The Contractor shall furnish all materials, labor, and equipment to perform all testing and start up services. Water for testing purposes may be obtained from the Town. The Contractor shall reimburse the Town for all water used at inside Town Utility Rates.
- b) All water or wastewater used during testing of the pump station, force main, or any of the systems described in this section, must be returned to the Town after proper coordination with the Town.
- c) Before the operational tests are conducted, the required copies of the O&M Manuals shall be delivered to the Town.
- d) The Town reserves the right to require further testing, as necessary, to assure that all components and infrastructure are performing in accordance with the manufacturer's recommendations and these Standards. All testing, repairs and/or readjustments, and necessary re-testing, shall be at no additional cost to the Town.

- e) All on-site testing and/or installation verification shall be performed in the presence of the NCPE and representatives authorized by the Town.
- f) All testing, installation verification, and training shall be performed in the presence of, or by an experienced, competent, and authorized manufacturer's representative.
- g) Factory testing shall consist of testing all operating functions of the equipment under varying operating conditions to assure that it will perform as specified. Any specific testing that may be required is discussed under the individual equipment items below. Results of factory testing shall be presented to the Town prior to delivery.
- h) Installation Verification shall consist of a visit to the site by a manufacturer's representative to inspect, check, adjust, and approve the equipment installation. The manufacturer's representative shall certify that the equipment has been properly installed and lubricated, is in accurate alignment, and is free from any undue stress imposed by connecting piping or anchor bolts. Any specific verification requirements are discussed under the individual equipment items below. Results of the installation verification shall be presented to the Town prior to start-up of the equipment.
- i) On-site Testing shall consist of all manual and automatic operating functions under various operating conditions, including full load conditions. The equipment shall also be tested under adverse or emergency conditions. All alarms and remote signals shall also be tested. Any specific testing is discussed under the individual equipment items. Results of the on-site testing shall be presented to the Town prior to final acceptance.
- j) All functions and systems, even those not specifically listed below, shall be tested to ensure proper operation under normal and emergency situations.
- k) All defective equipment or malfunctioning systems shall be replaced or corrected, and the full system placed in a fully operational condition to the satisfaction of the Town.
- l) Results of all factory testing, installation certifications, and on-site operational testing shall be provided to the Town in the final construction documents.

2. Pump Testing

- a) Each pump shall be tested at the factory for capacity, power requirements, and efficiency at specified rated head, shutoff head, operating head extremes, and at as many other points as necessary for accurate performance curve plotting. All tests and test reports shall conform to the requirements and recommendations of the Hydraulic Institute Standards (HIS). Acceptance testing shall be Level A, with no minus tolerance or margin allowed. The test result report shall include data and test

information as stipulated in the HIS, copies of the test log originals, test reading to curve conversion equations, and certified performance curves. The curves shall include head, bhp (kW), pump efficiency, and shop test NPSH available, plotted against capacity. The curves shall be easily read and plotted to scales consistent with performance requirements. All test points shall be clearly shown.

- b) All pumps shall receive installation verification.
- c) On-site testing shall be performed to the maximum extent possible (flow availability could limit the range of testing conditions).

3. Grinder Testing

- a) Each grinder unit shall be factory tested.
- b) Each grinder unit shall receive installation verification.
- c) Each grinder unit shall receive on-site testing.

4. Generator Testing

- a) Each engine generator set shall be fully assembled with its control panel and factory tested to demonstrate that the equipment conforms to specified requirements for load capacity. The tests shall consist of repeated starts and stops operation under a load bank at specified capacity for minimum of 4 continuous hours, and tests to demonstrate that each safety shutdown device is working properly.
- b) Each engine generator set shall receive installation verification.
- c) Each engine-generator set shall receive on-site testing to demonstrate that the equipment conforms to specified requirements for load capacity and starting duty. The complete system (engine, generator, control panel, and ATS) shall be field tested together by the manufacturer or manufacturer's representative as a complete system to assure compatibility. A resistive load bank with temporary connections shall be provided to complete the field testing. Each unit shall be mechanically checked for proper operation. Each alarm and safety shutdown shall be checked by artificially simulating an alarm condition. The testing shall consist of repeated starts and stops, a "cold start", normal operation under full load conditions at the specified power rating for a minimum of 4 continuous hours, a one-step rated load pickup test in accordance with NFPA 110. The following items shall be measured, recorded, and submitted in a field test report: outdoor ambient temperature, barometric pressure, kW output, engine speed (RPM), engine jacket water temperature, engine oil pressure, start time, completion time. Test reports shall verify that the specified tests have been performed and shall state results.

5. ATS Testing

- a) Each ATS shall receive field verification.
- b) Each ATS shall receive on-site testing in conjunction with the engine generator. At a minimum, the main power supply from the commercial power grid shall be cut and the switch automatically properly transfers the power feed to the standby generator.

6. Control System Testing

- a) All electrical, I&C, and telemetry systems shall receive on-site testing to ensure complete operation. At a minimum the testing shall include the following:
 - 1) Pump automatic control and operation
 - 2) Level-sensing equipment operation
 - 3) Alarm and telemetry system automatic operation
 - 4) Backup power generation automatic control and operation
 - 5) Vibration testing of all rotating equipment

7. Structure Testing

- a) Wet wells and other structures shall be inspected and tested for watertightness. Structures shall be thoroughly cleared of dirt, mud, gravel, and other foreign debris prior to testing.
- b) The watertightness test shall be performed in accordance with ACI 350.1R “Testing Reinforced Concrete Structures for Watertightness”. If the structure is a small diameter precast manhole, a vacuum test in accordance with ASTM C1244 “Standard Test Method for Concrete Sewer Manholes by Negative Test Pressure (Vacuum) Test” may be used in lieu of the hydrostatic test.
- c) Watertightness testing shall not commence until the structure is fully assembled and backfilled.
- d) Any structure that fails to meet the requirements of the watertightness test shall be inspected, made watertight, and retested until the structure passes.

B. OPERATOR TRAINING

- 1. Suppliers of major equipment packages shall provide training to the Town as to the proper operation and maintenance of their equipment.

2. Training shall be performed by an experienced, competent, and authorized manufacturer's representative.
3. Training shall be at no additional cost to the Town.
4. Training shall be provided for, but not limited to, the equipment listed in the table below. The training times presented below for O&M are the minimum required. Complicated systems can require more than the minimum requirements.

Table 9: Operator Training

Equipment System	Operation Training (hours)	Maintenance Training (hours)
Pumps and Pump Control Systems	1	2
Grinder System	1	2
Engine Generator and ATS	1	2
Odor Control Systems	1	2
SCADA	1	1

5. Operational training shall include, but not be limited to, the following procedures or information: normal startup of the unit, normal shutdown of the unit, emergency shutdown of the unit, normal operation of the unit (typical temperature, pressures, signals, RPM, etc., for gauges and instruments which are displayed on the panel), a presentation of all operational features (alternative run modes, bypasses, other features not typically used in day-to-day operation, etc.), presentation of all alarm signals, etc.
6. Maintenance training shall include, but not be limited to, the following procedures or information: standard lubrication procedures and schedules, removal and replacement of equipment, disassembly and re-assembly, replacement of wear parts or common replacement parts, standard troubleshooting procedures, etc.
7. Simplified operation instructions shall be submitted for review in accordance with the submittals section. When the review is complete, the instruction sheets shall be printed on heavy paper or cardboard stock and laminated with clear plastic. Two copies of the laminated instructions shall be furnished with the unit. The reserve copy shall be delivered to the Town. The instructions specified here are in addition to the required O&M manuals.

13.05 WASTEWATER FORCE MAINS

A. GENERAL

1. All aspects of force mains design shall, at a minimum, meet the requirements of the latest version of the:
 - a) NCDEQ Minimum Design Criteria for the (Fast-Track) Permitting of Pump Stations and Force Mains (Minimum Design Criteria),
 - b) Alternative Design Criteria for Minimum Separation for Sewer Systems to Wetlands,
 - c) 15A NCAC 02T,
 - d) NC Building Code,
 - e) OSHA regulations, and
 - f) Town Standards.

Town Standards identify minimum equipment and construction requirements for force mains to be owned and operated by the Town. This section does not address every aspect of force main design; it is the NCPE's responsibility to supplement these requirements as necessary to produce a complete set of plans and specifications. Requirements in the Town Standards that are more restrictive or exceed the requirements of the Minimum Design Criteria are required by the Town.

2. All aspects of the design of force mains and associated facilities shall be submitted for review and approval.
3. Wastewater force main interconnections shall be prohibited. All wastewater force mains shall extend to the nearest gravity sewer or pump station wet well that has sufficient, long- term capacity.
4. Private force mains will require an exception from these Standards. A Basis of Design Report, signed and sealed by a NCPE, should be submitted for review prior to a determination by the Director. Private force main design is not covered by these Standards, and the applicant should look for guidance from other appropriate agencies, such as NCDEQ, NC Plumbing Code, etc. Documentation of future force main maintenance shall be required.

B. DESIGN

1. All force mains shall be located within dedicated ROW of Town roads, outside of the ROW on NCDOT roads, or within dedicated utility easements. When wastewater force

mains are constructed adjacent to gravity sewer mains or for construction of parallel wastewater force mains, the horizontal clearance shall be a minimum 10-feet from pipe edge to pipe edge. Clearances for pipelines greater than 10-feet depth shall be designed by the NCPE and approved by the Town. Easement widths outlined below shall be widened by at least the clearance between the pipelines when constructing a shared utility corridor. Within road ROW, a utility easement, or Town owned property, there shall be no permanent structures, equipment, retaining walls, embankments, impoundments, or other elements that would inhibit utility maintenance operations, unless approved by the Director.

2. All force mains shall be installed outside of buffers whenever practical. Sewer main shall be installed outside of all flood plains, unless No Practical Alternative is available and prior approval is obtained from the Director.
3. The minimum wastewater force main size shall be 4-inches in diameter, unless otherwise allowed by the Director.
4. Dedicated easements for force mains and appurtenances shall be recorded as “Town of Holly Springs Public Utility Easement”. Town force main easements shall contain only Town utilities unless otherwise approved by an encroachment agreement.

Table 10: Standard Easement Width for Sewer Force Mains

Pipe Depth*	Permanent Easement Width	Town Owned ROW
<8-feet	20-feet	Allowed
8-15-feet	30-feet	Requires Director approval
15-20-feet	40-feet	Not Allowed
>20-feet	As Specified by the Director	Not Allowed

*Depth of the sewer main shall be measured from the top of the pipe to the final grade or road subgrade at the deepest point between manholes.

5. Force Main Odor Control Systems: Force main odor control shall be included in the design plans for any proposed force main at discharge locations, intermediate air release locations and otherwise as directed by the Town. ARVs located in isolated areas may be approved without odor control systems, at the discretion of the Director. The suggested odor control technology shall be designed by the NCPE to achieve 95% or greater hydrogen sulfide removal. All systems, including those utilizing active carbon, shall be manufactured specifically for addressing hydrogen sulfide gas. Forced air systems should be avoided due to the need to include provisions for electrical power to the odor control system.

Odor control systems shall be provided with sufficient easement area to accommodate long term maintenance. The maintenance easement for odor control systems shall be

sized on site specific conditions and provide sufficient area for operations, such as refilling media/chemicals, replacing equipment, etc.

6. Sewer force mains shall not discharge directly into existing gravity sewer lines. Sewer force mains shall typically discharge into a receiving manhole that has been epoxy coated. The receiving manhole shall be provided in the typical eccentric tapered design at minimum 4-foot diameter, and a diameter capable of receiving flow without exceeding 50% surcharge conditions in the existing gravity sewer. The invert elevation of the force main shall be one-tenth of a foot higher than the gravity sewer discharge invert elevation. Force mains shall be as close as possible to 180-degrees from the outlet pipe. Provide a smooth channel from force main to gravity sewer main. Force main installations greater than 10-feet will require approval by the Director.
7. Drop connections into force main receiver manholes are discouraged and require approval by the Director.
8. Force main design shall facilitate cleaning and inspection. The use of 90-degree bends is prohibited.
9. Force mains shall be constructed with a pigging/bypass connection located within 50-feet of the pump station valve vault.
10. Force main minimum design velocity shall ≥ 2.5 ft/s throughout the length of the force main. As a design preference, force main systems operating at higher flows shall reach velocities of 3-5 ft/s to resuspend any settled solids.
11. Force mains shall be designed and sized to effectively convey the ultimate peak flows from the pump station to the discharge point.
12. The force main shall be routed to minimize the number of combination ARVs, to the extent possible. Combination ARVs rated for use with raw wastewater shall be installed at high points or runs exceeding 3000-feet, on all force mains. A high point shall be determined as any location where the vertical separation between the adjacent low point and high point in the force main ≥ 10 vertical feet.
13. Restraint:
 - a) General: All pipes, valves, and fittings shall be restrained. Pipe joints shall also be restrained an adequate length away from valves and fittings in accordance with AWWA manual M41 (or the latest edition of Thrust Restraint Design for DIP, as published by the Ductile Iron Pipe Research Association). In all cases, there must be a pipe restraint plan prepared by the NCPE, showing the method of restraint to be used and the length of pipe to be restrained. All restraint systems shall be factory produced by the manufacturer.

- b) Pipe joints: The standard joint restraint method shall use manufacturer provided restrained joint (RJ) pipe. Pipe diameter ≤ 12 -inches may utilize mechanical joint (MJ) pipe with approved wedge action retainer glands (for the specified distance). All joint restraint products that include the means of restraint within the joint gasket shall be prohibited. Fusible C-900 DR 18 PVC may be utilized as an acceptable means of restraint.
 - c) Valves: Valves shall be restrained in a manner consistent with operation as a dead end. This includes restraining the valve to the pipe and restraining enough pipe joints on both sides of the valve to accommodate dead end restraint.
14. A plug valve shall be installed at least every 3000-feet of force main length, or as determined by the Director.
15. All ARVs, plug valves > 12 -inches, or other appurtenances that have moving or operating parts and require maintenance and routine access shall have a manhole placed over the operating portion of the device.
16. Separation Requirements:
- a) Separation between Sewer Force Main and Storm Water Pipes:

Sewer force mains shall have a minimum vertical separation of 24-inches between storm pipes and minimum horizontal separation of 10-feet. Where sanitary and storm sewers cross with a vertical separation of less than 24-inches, the entire leg of sanitary sewer shall be made of standard DIP with joints rated for water main service and the void space between the pipe crossing shall be backfilled with 3000-psi concrete or minimum 500-psi, quick setting, non-excavatable flowable fill that meets or exceeds NCDOT specifications.
 - b) Separation between Sanitary Sewer and Sewer Force Main:

There shall be a minimum 10-foot horizontal separation between parallel gravity and/or force mains.
 - c) Separation between Sewer Force Main and Water Main:

There shall be a minimum 10-foot lateral separation (pipe edge to pipe edge) between parallel water and sewer force mains. If local conditions or barriers prevent a 10-foot lateral separation:

 - 1) The water main shall be laid in a separate trench, with the elevation of the bottom of the water main at least 18-inches above the top of the sewer; or

- 2) The water main shall be laid in the same trench as the sewer, with the water main located at one side on a bench of undisturbed earth and with the elevation of the bottom of the water main at least 18-inches above the top of the sewer.

d) Crossings (Water Main over Sewer Force Main):

At a minimum, 18-inches of clearance shall be maintained measured from pipe edge to pipe edge between the water main and the sewer force main. The water main shall be installed above the sewer force main.

If 18-inches of clearance is not maintained, the NCPE must submit justification to demonstrate that it is impracticable to maintain the separation distances required, taking into consideration feasibility, cost, and the factors set forth in 15A NCAC 18C. The proposed deviation may be approved, on a case-by-case basis, by the permitting authority.

e) Crossing (Water Main under Sewer Force Main):

Allowed only as approved by the Director when not possible to cross the water main above the sewer force main. See Crossings above for direction.

f) Sanitary Sewer Force main and Stream Crossings:

The top of the sewer force main shall be at least 3-feet below the stream bed. If 3-feet of cover cannot be achieved, prior approval from the Director must be obtained and concrete encasement and DIP shall be required.

Sewer force mains shall not be installed under any part of water impoundments or area to impounded. Sewer mains shall not be installed through, above, or below any retained earth structure. Sewer main location and depth shall not be within the theoretical 1:1 slope of any impoundment dam or structure or shall maintain a minimum of 10-feet horizontal separation from the toe of slope, whichever is greater. The entire easement shall be outside of the toe of slope unless prior approval is obtained from the Director.

The following minimum horizontal separations shall be maintained:

- 1) 100-feet from any private or public water supply source, including wells, WS-1 waters or Class I or Class II impounded reservoirs used as a source of drinking water (except as noted below).
- 2) 50-feet from any waters (from normal high water) classified WS-II, WS-III, WS-IV, B, SA, ORW, HQW, or SB (except as noted below).
- 3) 10-feet from any stream, lake, or impoundment (except as noted below).

- 4) 100-feet from private wells.

Where the required minimum separations cannot be obtained, an exception may be considered by the Director, in accordance with 15A NCAC 02T.

17. All retaining walls shall have a separation from the easement boundary of at least 1:1, vertical to horizontal. For example, if the retaining wall is 10-feet tall, it shall be placed no closer than 10-feet from the easement.

C. MATERIALS

1. Pipe Materials

- a) Outside of a pump station site, PVC C900 DR 18 pipe shall be required for all sewer force mains. In some cases, DIP is preferred and shall conform to the Standards.
- b) PVC pipe shall meet the requirements of AWWA C900 and be green in color. Pipe shall be Class 150, SDR 18, integral bell with strength equal to the pipe wall, DI outside diameter, 18-foot length, with a solid elastomeric ring.
- c) PVC pipe for force mains with a diameter of 4-inches shall be SDR-21 or Schedule 40 in accordance with ASTM D1785.
- d) DIP shall be designed and manufactured in accordance with AWWA C150 and C151 and provided in normal 20-foot lengths. All DIP shall be marked in conformance with ASTM A-746. The minimum requirements for DIP and required laying conditions are tabulated below. For all other installations other than specified, the laying condition, bedding requirements or the minimum pressure class rating and/or thickness class shall be increased in accordance with AWWA C151. A pipe thickness design shall be submitted for external loading in all cases where the pipe depth exceeds the specified range of depths outlined in the following table.

**Table 11: Pressure Class, Maximum Depth and Laying Condition for
DI Wastewater Force Mains**

Pipe Diameter	AWWA C150, Laying Condition	Pressure Class	Maximum Depth of Cover*
4-8-inch	Type 1	350-psi	3-16-feet
4-8-inch	Type 4	350-psi	16-20-feet
10-12-inch	Type 1	350-psi	3-10-feet
10-12-inch	Type 4	350-psi	10-20-feet
14-20-inch	Type 4	350-psi	3-25-feet
24-inch	Type 4	350-psi	3-25-feet

*Unless otherwise recommended by the manufacturer

Note: For cases not specified, a DIP and bedding design certified by a NCPE shall be required in compliance with AWWA C150 and the Ductile Iron Pipe Research Association.

The following table lists approved manufactures of DIP, DIP fittings, and RJDIP that are allowable for installation within the Town's system.

Table 12: Approved Manufacturers for DIP

Product Category	Approved Manufacturer	Model/Series	Pressure/ Load Rating	Reference Standard	Requirements
DIP $\geq$ 4-inch Diameter, Protecto 401 Lined	US Pipe	Tyton Joint	250-350 psi	AWWA C150 and C151 and DIPRA Standards	40-mils of Protecto 401 Lining (lining must be less than 1 year old); McWane pipe stamped “McWane by Atlantic States or Clow” only
	American (ACIPCO)	Fastite Joint			
	McWane	Tyton Joint			
DI Fittings $\geq$ 4-inch Diameter, Protecto 401 Lined	Sigma	Mech. Joint	250-350 psi	AWWA110/ C111 And AWWA C153	Shall always meet or exceed pipe pressure rating
	Tyler Union				
	SIP Industries				
	Star				
	American				
Ductile Iron Restrained Joint (RJDIP) Pipe $\geq$ 4-inch Diameter, Protecto 401 lined	US Pipe	TR Flex	250-300 psi	AWWA C150 and C151	Boltless restraint unless otherwise specified
	American (ACIPCO)	Flex Ring			
	McWane	TR Flex (pipes 24-inches and smaller)			

- e) All DI force mains and fittings for sewer construction shall receive an interior ceramic epoxy coating, consisting of an amine cured novalac epoxy,—as manufactured by Protecto 401. The interior coating shall be applied at a nominal dry film interior thickness per the manufacturer’s specifications. All DIP bells and spigots shall be lined with Protecto 401 joint compound and applied by brush to ensure full coverage. All pipe supplied with Protecto 401 interior lining shall be provided free of holidays. Pipe installed with defects in the lining will be rejected. Patching of Protecto 401 coating defects after installation shall not be approved. Protecto 401 lined pipe must be installed within one year of the application date on the pipe.

Alternate liner manufacturers shall have a minimum of 10-years of successful experience and be able to demonstrate successful performance on comparable projects.

Permeability rating of 0.00 when tested according to Method A of ASTM E-96-66, Procedure A with a test duration of 30 days.

- f) Pipe fittings shall be made of DI per AWWA C110 or C153. All fittings ≤ 24 -inches in diameter shall be designed for a minimum internal pressure of 350-psi, unless otherwise approved by the Town. Fittings shall be MJ or proprietary manufacturer provided restrained joint. Gaskets shall be in accordance with AWWA C111. All fittings shall be interior coated with Protecto 401. Two 45-degree fittings shall be used in lieu of 90-degree fittings in all horizontal and vertical installations.
- g) Restrained Joint Pipe shall be the boltless type unless otherwise approved. For installations requiring welded locking rings, the rings shall be factory welded. The restrained joints shall provide a minimum of 4-degrees of deflection for pipe sizes, 4- 12-inches in diameter.

All proprietary pipe restraint systems shall be approved by the Town and provided in compliance with all standards for coatings, linings, pressure classes, etc. as required for PVC C900 or DIP. All restrained joint pipe shall be installed based on laying conditions, pressure class, etc. as required for typical DIP.

Pipe and fitting manufacturer(s) must have a supplier within 200-miles of the Town.

2. Manhole Materials:

- a) All sewer force main manholes shall be installed according to Town Standards.
- b) Combination ARV Manholes: Manholes for combination ARV installation shall be provided in flat top configuration to accommodate the length of wastewater combination ARV. In cases where the combination ARV shall be located in a paved area, provide typical eccentric, tapered manhole design with typical manhole frame and cover for paved areas. The minimum manhole diameter for combination ARV shall be 5-feet. Minimum 6-foot diameter manholes shall be used with force mains 20-inches and larger and when an odor control system is required. Any manholes located in NCDOT or street ROW shall be provided flush with finish grade. ARVs shall be 2-inch sewage dual ARV with plastic body, per the manufacturer specifications. Refer to Table 2.
- c) Manhole Epoxy Coating: Sewer force main receiver manholes, downstream manholes within 1200-feet of receiving manhole, sewer force main combination ARV manholes, and other concrete structures subject to high levels of hydrogen sulfide gas shall be provided with an approved monolithic epoxy coating system per the manufacturer's recommendations, and all blemishes shall be touched up prior to acceptance. Refer to Table 2. Coatings shall conform to the USACE specification C-200.

- 1) Surface Preparation: Concrete manholes must be well cured prior to application of the protective epoxy coating. A minimum of 28-days cure time for standard Portland cement is required. If earlier application is desired, compressive or tensile strength of the concrete can be tested to determine if acceptable cure has occurred. (Note: Bond strength of the coating to the concrete surface is generally limited to the tensile strength of the concrete itself. An Elcometer pull test to determine suitability of concrete for coating may be required).

Surface preparation shall be based on the requirements of the manufacturer of the epoxy coating and applicable National Association of Corrosion Engineers (NACE) International standards.

- 2) Installation: A minimum thickness as determined by the manufacturer shall be applied to new manholes and existing manholes. During application a wet film thickness gage, meeting ASTM D4414 – Standard Practice for Measurement of Wet Film Thickness of Organic Coatings by Notched Gages – shall be used to ensure a monolithic coating and uniform thickness during application.

Temperature of the surface to be coated should be maintained per manufacturer's recommendations during application. Prior to and during application, care should be taken to avoid exposure of direct sunlight or other intense heat source to the structure being coated. Where varying surface temperatures do exist, care should be taken to apply the coating when the temperature is falling versus rising or in the early morning. The humidity should also be observed to ensure compliance with the epoxy manufacturers' recommendations.

Manufacturer approved heated plural component spray equipment shall be used in the application of the specified protective epoxy coating. The spray equipment shall be specifically designed to accurately ratio and apply the specified protective coating materials and shall be regularly maintained and in proper working order.

If necessary, subsequent top coating or additional coats of the protective coating should occur as soon as the basecoat becomes tack free, but no later than the recoat window for the specified products. Additional surface preparations procedures will be required if this recoat window is exceeded.

D. INSTALLATION

1. General

DIP shall be installed in accordance with the requirements of AWWA C600 and the Ductile Iron Pipe Handbook published by the Ductile Iron Pipe Research Association. Materials at all times shall be handled with mechanical equipment or in such a manner

to protect them from damage. At no time shall pipe and fittings be dropped or pushed into ditches.

Pipe trench excavation and backfilling shall be performed in accordance with Section 5 of these Standards.

Pipe and fitting interiors shall be protected from foreign matter and shall be inspected for damage and defects prior to installation. In the event foreign matter is present in pipe and fittings, it shall be removed before installation. Open ends of pipe shall be plugged or capped when pipe laying is not in progress.

Force mains shall be installed with a minimum cover of 4.5-feet measured from the top of the pipe and shall be measured as follows:

- a) 4.5-feet from the top of pipe to finished subgrade when under a roadway;
- b) 4.5-feet from top of pipe to existing edge of pavement elevation when adjacent to a roadway and installed in existing ROW or future ROW;
- c) 4.5-feet from top of pipe to finished grade in all other areas.

Pipe shall be laid on true lines as directed by the NCPE. The wastewater force main shall be installed at a grade which will allow air to migrate to a high point where the air can be released through an ARV. A minimum pipe slope of 1-foot in 500-feet should be maintained, and there shall be no intermediate high points in the line.

Trenches shall be sufficiently wide to adjust the alignment. Bell holes shall be dug at each joint to permit proper joint assembly. The pipe shall be laid and adjusted so that alignment with the next succeeding joint will be centered in the joint and the entire pipeline will be in continuous alignment both horizontally and vertically. Pipe joints shall be fitted so that a thoroughly watertight joint will result. All joints will be made in conformance with the manufacturer's recommendations for the type of joint selected. All transition joints between different types of pipe shall be made with transition couplings approved on equipment submittals and shop drawings showing the complete assembly to scale.

Force mains shall not be installed within roundabouts or alleys.

All PVC fore mains shall have tracer wire, tracer wire clips, and detector tape marked "Sewage Force Main." Refer to Section 5 of these Standards for detailed requirements for Utility Locator Installation and Devices.

2. Utility Coordination

Prior to beginning construction, the Contractor shall contact local utility companies and verify the location of existing utilities. The Contractor shall be completely and solely

responsible for locating all existing buried utilities inside the construction zone before beginning excavation. The Contractor shall be solely responsible for scheduling and coordinating the utility location work. When an existing utility is in conflict with construction, it shall be exposed prior to beginning construction to prevent damage to the existing utility.

E. VALVES AND APPURTENANCES

1. General: The rated working pressure of all valves and appurtenances shall meet the maximum design pressure of the pump station and pipeline.
2. Check Valve: Check valves shall be cast iron body, bronze mounted full opening swing check valves in conformance with AWWA C508. Valves shall have renewable bronze or stainless steel seat ring and resilient faced clapper. Provide valve with outside weight and lever unless noted otherwise. Provide valve body constructed with a solid bronze or stainless steel shaft extending through bronze brushed bearings and "O" ring seals or adjustable graphite/composition packing.
3. Plug Valve: Plug valves shall be non-lubricating, eccentric action and resilient plug facing with heavy duty Type 316 stainless steel bearings. Plug valves shall be designed for a minimum working pressure of 175-psi for valves ≤ 12 -inches, 150-psi for valves ≥ 14 -inches. Valves shall be bi-directional and meet the pressure rating in both directions of flow. The plug valve body shall be cast iron ASTM A126 Class B with welded-in overlay of 90% nickel alloy content on all surfaces contacting the face of the plug. Sprayed plated, nickel welded rings or seats screwed into the body are not acceptable.

All plug valves ≤ 12 -inches shall have round port design that provides a minimum 80% port area. The valve plug shall be DI ASTM A536 Grade 65-45-12 ≤ 20 -inches in diameter, with Ethylene Propylene Diene Monomer (EPDM), Buna N, or Neoprene resilient seating surface to mate with the body seat. Valves ≥ 24 -inches may have plugs made of cast iron in accordance with ASTM A126 Class B. Large plug valves with rectangular plugs shall provide clean passage for a solid sphere $> 67\%$ of the adjoining pipe diameter to facilitate pigging of the force main. Force main plug valves with rectangular port shall be "full port" cross-sectional area perpendicular to the flow of at least 100% of the adjoining pipe.

All buried plug valves shall be provided with a worm gear actuator. All plug valves shall be buried and provided with a 2-inch operator nut and a valve box. Plug valves greater than 12-inches shall be installed such that the actuator and gearing is accessible in a manhole. All plug valves shall be provided with typical mechanical joint end connections and restrained with wedge action retainer glands on both ends of the valve assembly.

Valves shall be installed according to the manufacturer's recommendations. Typically for wastewater this means installing the seat side toward the pump station so that the

flow is against the face of the plug in the closed position. In the open position, the plug should rotate up to the top of the pipeline which may require installing the valve on its side.

4. Rubber Seated Ball Valve: For larger diameter force mains where plug valves are not available, rubber seated ball valves shall be of the tight-closing, shaft mounted type that fully comply with AWWA Standard C507 to provide a full port unobstructed waterway with no additional pressure drop. Design pressure ratings shall be ≥ 150 -psi and provide tight shutoff against flow. With the valve in the closed position, the rubber seated valve shall be bubble tight at rated pressure. All ball valves shall be provided in an epoxy coated manhole with worm gear actuators and a handwheel.
5. Valve Box Covers: Force main plug valves or ball valves shall have locking valve box covers and/or manhole lids with the word "Sewer" cast into them.
6. Combination ARV: Shall be provided to purge air from the system at startup, vent small pockets of air while the system is being pressurized and running and prevent critical vacuum conditions during draining. The combination ARV shall automatically exhaust large volumes of air from the system when it is being filled and allow air to re-enter the pipe when the system is being drained. Combination ARVs shall be sized by the NCPE and approved by the Town.
 - a) Combination ARVs shall be of the single housing style with Type 304 or 316 stainless steel body. The valve must meet the requirements of AWWA C512 and be installed in accordance with the Details. The valve shall have a minimum 145-psi working pressure unless the pipeline design requires a higher-pressure rating.
 - b) The valve shall have a minimum 2-inch male NPT inlet for a 2-inch valve assembly. Combination ARVs sized from 3-inches to 8-inches shall be provided with studded inlet connectors or flanged connections. The combination ARV shall be provided with cylindrical shaped floats and antishock orifice made of high-density polyethylene. Combination ARVs with spherical floats shall not be accepted.
 - c) Installation of Combination ARV Assembly:
 - 1) All combination ARVs shall be connected to the main by an MJ tee with a branch diameter equal to at least half of the main diameter.
 - 2) The 2-inch combination ARV shall be provided with male NPT threads and isolated with a 2-inch gate valve. The isolation valve shall be provided with NPT threads and connected with brass or bronze piping.
 - 3) Combination ARVs ≥ 3 -inches shall be connected by flange or studs. If needed due to larger diameter tee, a flanged reducer shall be provided between the tee and the isolation valve. Gate valves shall be used for 3-inch assemblies.

Combination ARVs ≥ 4 -inches shall be isolated with a plug valve. In all cases, the isolation valve shall be sized equal to the combination ARV.

- 4) The ARV shall be installed in a 4-foot diameter manhole per the standard detail.
7. Pigging Station: Force mains shall be constructed with a pigging/bypass connection located within 50-feet of the pump station valve vault. This pigging leg shall consist entirely of Protecto 401 coated DIP of the same diameter as the main. A restrained MJ wye shall be provided in the main line and valved on each branch. The pigging leg shall extend out of the ground and be closed with a blind flange. The protruding pipe shall be protected by concrete bollards spaced 6-feet apart.
8. Bypass Connection Assembly: An additional bypass connection assembly may be required. The size, criticality and proximity to a downstream manhole are factors used to determine the need for this connection. The bypass assembly shall include a ball valve on the upstream side of the bypass assembly to prevent bypass flow from draining back to the pump station. The bypass assembly shall be brought to the final graded surface with a visible blind flange assembly for connection by an outside pump contractor. The protruding pipe shall be protected by concrete bollards spaced 6-feet apart.

13.06 FORCE MAIN INSPECTIONS AND TESTING

A. INSPECTIONS

1. All materials and equipment used in the construction of the force main must be verified for compliance with the Standards prior to installation. Non-conforming materials or equipment shall be immediately removed from the job site.
2. Compliance with plans and Standards will be verified on a regular basis.

B. TESTING

1. General
 - a) The Contractor shall furnish all materials, labor, and equipment to perform all testing.
 - b) All water or wastewater used during testing of the force main must be returned to the Town's sanitary sewer system after proper coordination with the Town.
 - c) All on-site testing and/or installation verification shall be performed in the presence of Town staff.
2. Force main Testing

- a) The force main shall be tested in accordance with the water main standards set forth in Section 6.
- b) The following tests must be run on coupons from factory lined DIP:
 - 1) ASTM B-117 Salt Spray (scribed panel) – Results to equal 0.0 undercutting after two years
 - 2) ASTM G-95 Cathodic Disbondment 1.5-volts @ 77 F. Results to equal no more than 0.5-mm undercutting after 30 days
 - 3) Immersion testing rated using ASTM D-714-87
 - a). 20% Sulfuric Acid – no effect after two years
 - b). 140 F 25% Sodium Hydroxide – no effect after two years
 - c). 160 F Distilled Water – no effect after two years
 - d). 120 F Tap Water (scribed panel) – 0.0 undercutting after two years with no effect
 - 4) An abrasion resistance of no more than 3 mils (0.075-mm) loss after one million cycles using European Standard EN 598: 1994, Section 7.8 Abrasion Resistance.



GUIDELINES FOR PUMP STATION FINAL FIELD INSPECTION AND OPERATIONAL TEST

Project: _____

The following items shall be provided by the Developer to the Town before the Final Field Inspection and Operational Test begins:

	Three (3) copies O&M Manuals signed and sealed by the design engineer, including:
	Cover Sheet
	Pump manufacturer
	Source of repair parts (phone and address)
	Rated capacity (GPM) of pumps
	Total dynamic head (TDH) of pumps
	Model number of pumps
	Serial number of each pump
	Impeller diameter each pump
	Data plate information from each motor
	Data on all other pump station equipment
	Pump Performance Design Curves
	CERTIFIED pump performance curves (including pump cut-off lines) with operating conditions
	As-built detailed, dimensioned drawings of pump and pump base elbow
	As-built detailed, dimensioned drawings of pump motor
	As-built control panel wiring diagram
	Pump and motor Installation and Service Manual
	Detailed information on:
	Control panel
	Alarm dialer
	Generator
	Mylar As-built one (1) copy
	PE certification
	Warranty Letter
	Recorded Easement or Right-of-Way documentation for access
	Documentation of site dedication
	Pump Station Maintenance Agreement
	Crane Certification will be required to document compliance with OSHA Standards
	Ownership of power with Duke Energy transferred to Town of Holly Springs
	Ensure the pump station address is the permanent address.

Date of Inspection: _____

Inspector: _____

Attendees: _____

Final Field Inspection and Operational Test-Required Inspections:

The following items should be field inspected for compliance with approved plans and Town Standards. All employees shall conform to the Town of Holly Springs Safety Policies and Procedures in the course of making the following inspections. Attention is directed especially to the Town's existing policies pertaining to electrical systems and confined space entry. Owner shall ensure that the NCPE, subconsultant design professionals, equipment representatives, and laborers are present for the field inspection.

Site: Section 13.02

	Positive drainage away from station
	16-foot access road with good drainage and cross drainage
	Adequate gravel area for vehicular turn-around installed
	8-foot chain link fence with 3 strands barb wire (galvanized or aluminum)
	Signage "Town of Holly Springs _____ [station to be named by the Town] Pump Station, [address here], Emergency 919-557-9111" (white on blue lettering)
	Ground cover outside fence
	Vehicular accessibility to pumps
	Concrete pad inside fence area
	16-foot minimum width manual swing gates with 180-degree opening (non-obstructed)
	600-watt sodium vapor light with photocell (30' mounting height) with switch on pole
	Opaque buffers installed
	Power to pump station converted to Town of Holly Springs account with Duke Energy
	Water service converted to Town of Holly Springs account

Valve Vault: Section 13.02

	Valve Vault
	Check valve as designed
	Gate valve as designed
	Pressure gauge
	Vault drains back to wet well with Back Flap

Wet Well: Section 13.02

	Cleaned of all debris and filled with water
	6' minimum diameter
	Interior joints grouted
	Koppers super service black coating (2 coats)
	All bolts stainless steel
	Independent hatch for raising basket
	Access hatch and steps (check location)
	D.I. vent with bronze insect screen
	Class 50 DIP suction discharge and piping
	Well Point

Final Field Inspection and Operational Test-Required Inspections:

Pumps: Section 13.03

	Two pumps - field check the plates on pumps to insure conformance with design plans and O&M manuals (Manufacturer, GPM, TDH, Model Number, Serial Number, Impeller Size)
	Pump start-up (both pumps) on regular power feed
	Pump start-up (both pumps) on back-up power feed (generator)
	Verify automatic switch to back-up power source during power failure
	Verify automatic cycling between two pumps

Pump Motor Controls: Section 13.03

	Aluminum weather hood 7' height with 4' overhang with severe service paint
	NEMA 3R enclosure with locking hasp
	Hinged inner door with overload reset buttons, circuit breakers, switches, 2 nd pilot lights as the only accessible components when closed
	Line terminal block
	Circuit breaker for each pump motor 10,000 RMS for 200-240-VAC, 5,000 RMS for 440-480 VAC
	Transformer primary circuit breaker (when required)
	Control power transformer (when required)
	Magnetic contactor and overload relay for each motor
	Six-digit, non-resettable elapsed time meters
	Condensation strip heater with thermostat in control panel enclosure
	Phase and voltage monitor
	Lighting arrestor
	Thru-door overload reset push buttons
	Two "hands-off-automatic" switches
	Two green pilot lights
	Two seal failure circuit test push buttons
	Pump alternator circuit
	Control relays
	High wet well level alarm device (flashing red light)
	Aluminum float switches
	High temperature shutdown circuit
	Groundings

Final Field Inspection and Operational Test-Required Inspections:

Alarm Dialer/SCADA: Section 13.03

	Lockable NEMA 4 enclosure
	120 VAC electrical supply
	Backup battery
	Surge protectors on power and telephone lines
	Dialer programmed with emergency phone numbers
	Approved model in accordance with plans
	Telephone line installed
	SCADA installed

Odor Control: Section 13.03

	Chemical feed facility for odor control
	2500-gallon liquid chemical storage tank
	Evoqua Bioxide® chemical feed system complete with a VersaDose® LT(VDLT) control system
	Containment system in case of chemical spill
	Freeze proof eyewash and shower wash station with a tepid water system and water heater
	Mechanical ventilation (if required)

Jib Crane/Hoisting Equipment: Section 13.03

	Pedestal mounted jib crane
	Electric hoist and trolley
	Doghouse shelter
	Provide lifting rings every 6-feet on lifting chain
	Chain bucket

Electrical: Section 13.02

	Generator-field check plate on generator to ensure conformance with design plans and O&M Manual
	3 Phase 240 VAC or 480 VAC
	Meter Base
	NEMA 3R single throw safety switch
	NEMA 3R double throw safety switch
	Building: electrical inspector has approved
	Automatic maintenance operation on timer (minimum weekly)

Final Field Inspection and Operational Test-Required Inspections:

Force Main: Section 13.05

	Force main including air release valves – Verify all valves are open
	Force main hydrostatic testing
	Air Release Valve manholes are epoxy coated

Development Construction Manager

Date

Development Inspection Supervisor

Date

Development Inspector

Date

Executive Director of Utilities & Infrastructure

Date

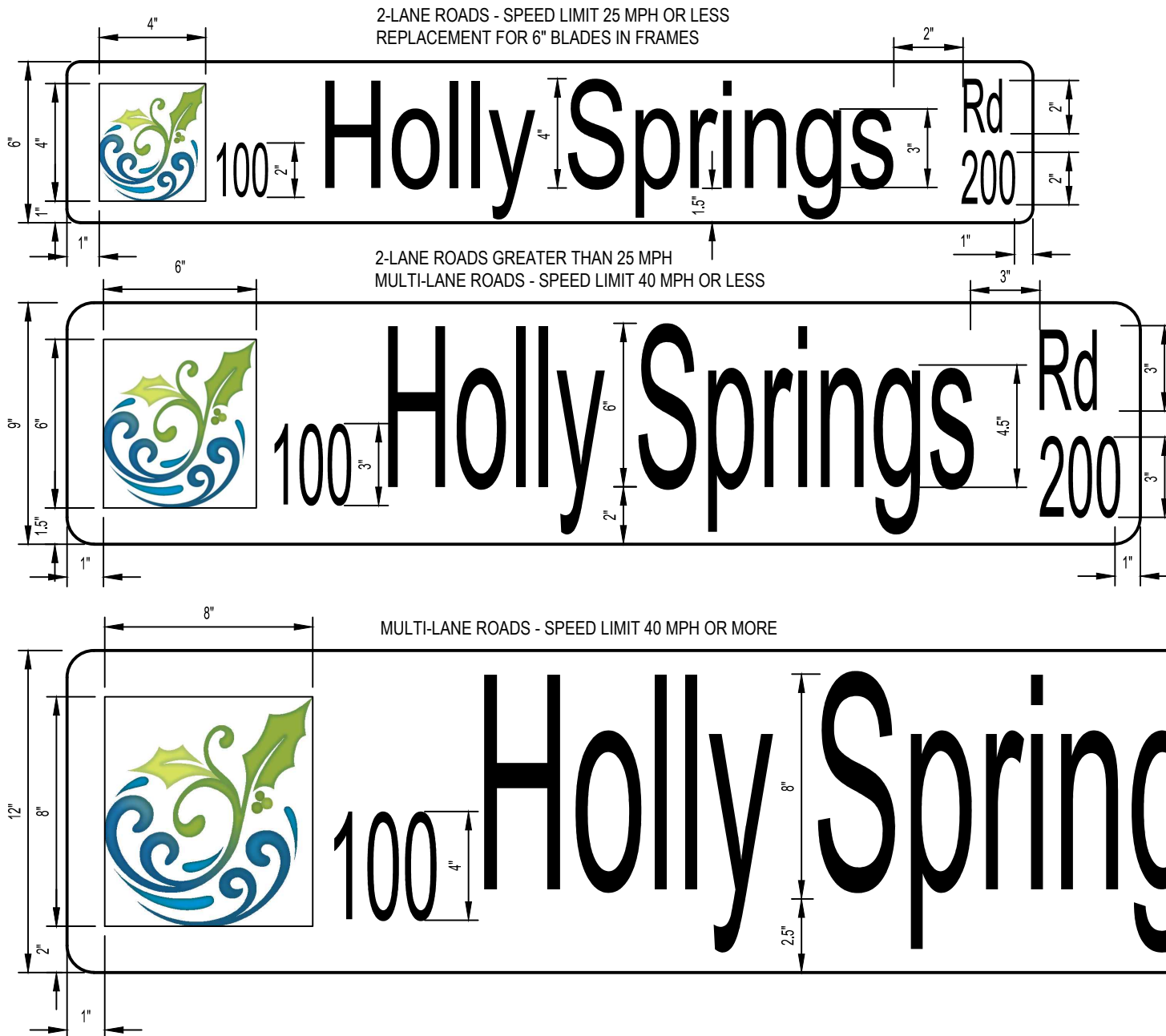
Deputy Director of Utilities

Date

Owner's Representative

Date

END OF SECTION 13.00



NOTES:

1. ALL CURRENT MUTCD STANDARDS SHALL PREVAIL (2D.45 STREET NAME SIGNS).
2. 36" MIN. LENGTH OF BLADE WILL VARY DEPENDING ON THE NUMBER OF LETTERS IN THE STREET NAME. FOR STREET NAMES LONGER THAN THE MANUFACTURED SIGN BLADE LENGTH, REFER TO THE TOWN ENGINEER.
3. IN THE CASE OF PRIVATE STREETS, THERE WILL BE NO HOLLY LEAF LOGO. THE WORDS "PRIVATE STREET" IN BLACK ON A YELLOW BACKGROUND AS SHOWN BELOW SHALL BE ON THE LEFT SIDE INSTEAD.
4. BLADE THICKNESS: 0.08 IN (36"-47.9"); 0.125 IN (48")
5. GREEN RETROREFLECTIVE BACKGROUND WITH WHITE REFLECTIVE LETTERS.
6. THE TOWN LOGO (PICTOGRAPH) SHALL HAVE A WHITE BACKGROUND AND ALWAYS BE TO THE LEFT OF THE STREET NAME.
7. FONT SHALL BE: ARTISTIC SERIES B2000.



DRAWING NOT TO SCALE

POST-MOUNTED STANDARD TOWN STREET NAME SIGN BLADE

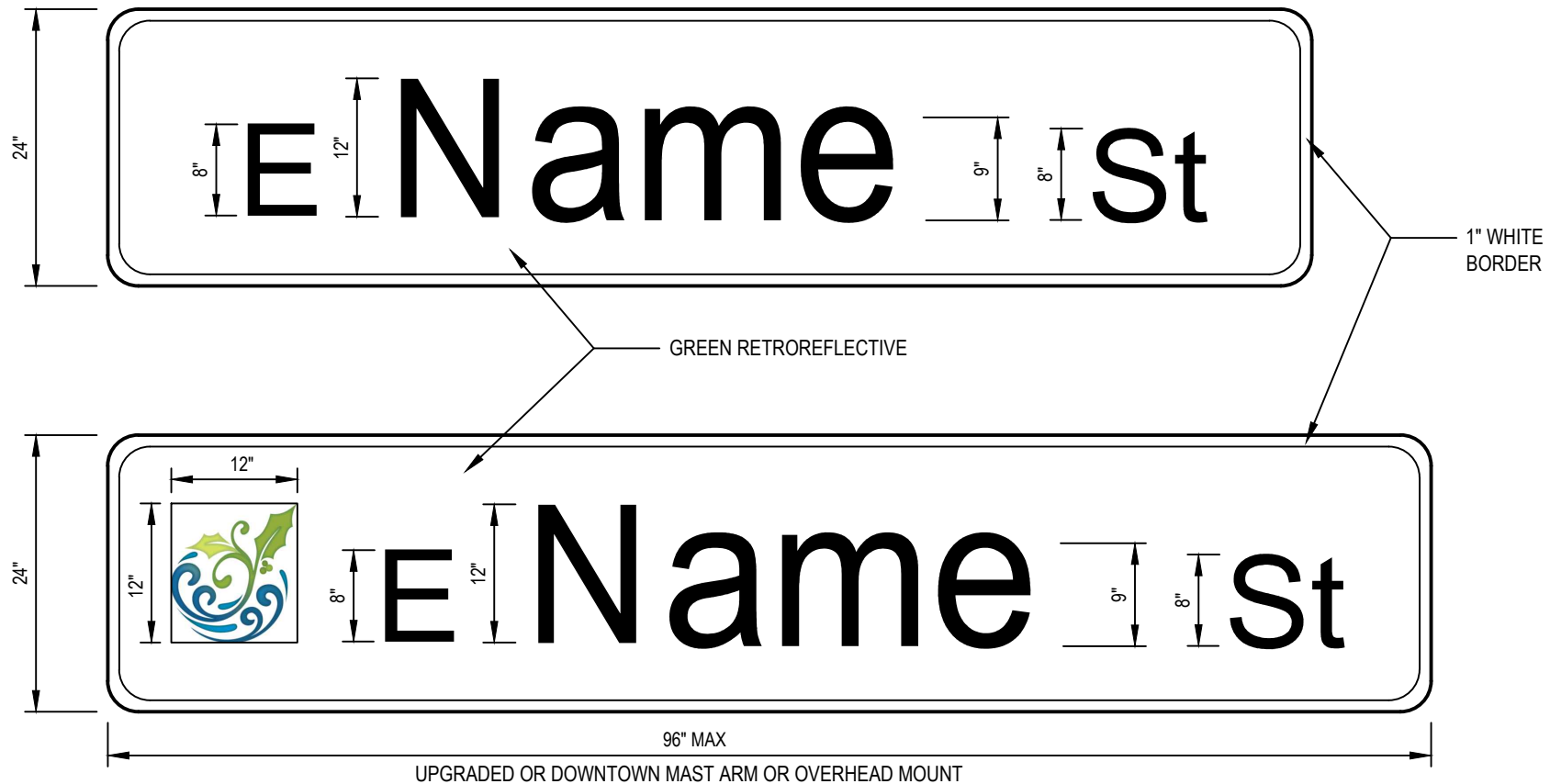
TOWN OF HOLLY SPRINGS

STANDARD DETAIL NUMBER: HS357

DATE REVISIONS

2/23/24
6/11/24





NOTES:

1. ALL CURRENT MUTCD STANDARDS SHALL PREVAIL (2D.45 STREET NAME SIGNS)
2. BLADE THICKNESS: 0.080 IN (36"-47.9"); 0.125 IN (≥ 48 ")
3. GREEN RETROREFLECTIVE BACKGROUND WITH WHITE REFLECTIVE LETTERS.

DRAWING NOT TO SCALE

MAST ARM/OVERHEAD MOUNTED STANDARD TOWN STREET NAME BLADE SIGN

STANDARD DETAIL NUMBER: HS358

DATE REVISIONS

11/16/18

2/23/24

6/11/24

TOWN OF HOLLY SPRINGS



NOTES:

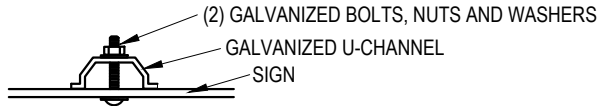
1. 42" MINIMUM BURY DEPTH FOR SIGN TYPES WITH THIS DETAIL, PER NCDOT STANDARDS.

2. IF MORE THAN ONE SIGN IS TO BE MOUNTED ON A POST THE BOTTOM EDGE OF THE LOWER SIGN MUST BE 7 FT (84") TO BOTTOM OF PRIMARY SIGN. PLAQUES MAY BE LOWER. ANY PRIMARY SIGN HEIGHTS UNDER 7 FT BY ENGINEER APPROVAL.

3. FOR BLADE INFORMATION SEE DETAIL HS357.

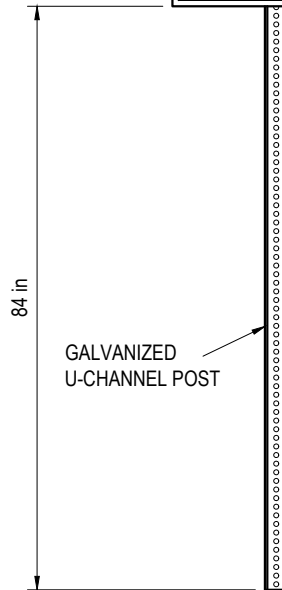
4. ALL SIGNS MUST MEET MUTCD STANDARDS AND GUIDELINES.

THE SIGN BLADE CONNECTOR IS FURNISHED BY NC DEPT. OF CORRECTIONS: BLADE BRACKETS & CROSS PIECES.

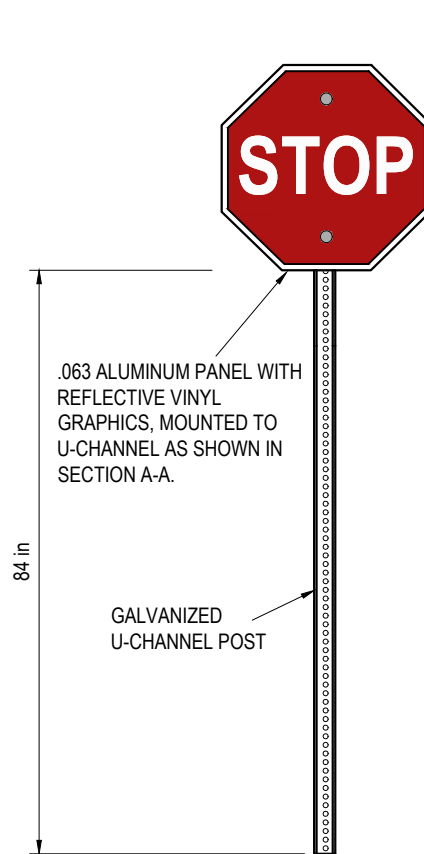


SECTION A-A
TYPICAL SIGN TO
POST CONNECTION

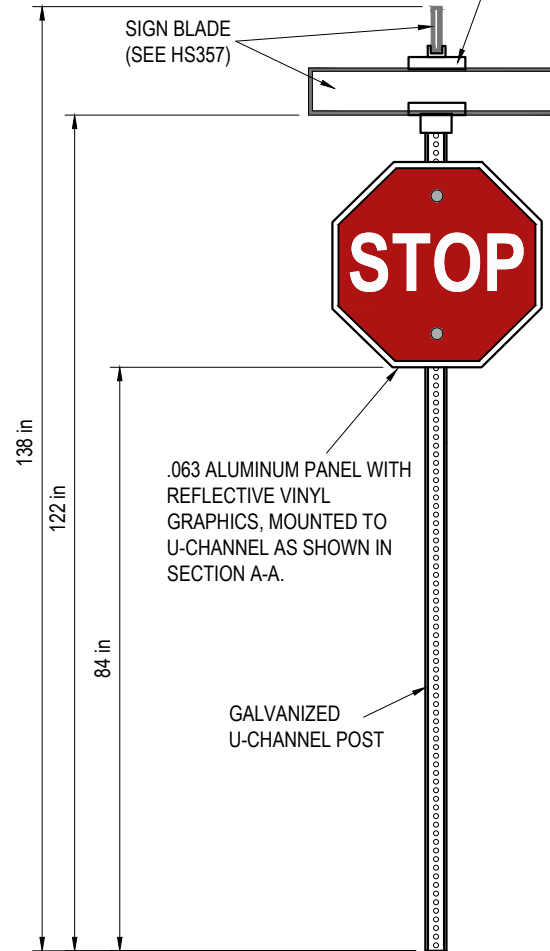
TRAFFIC
CONTROL SIGN
SIZE VARIES



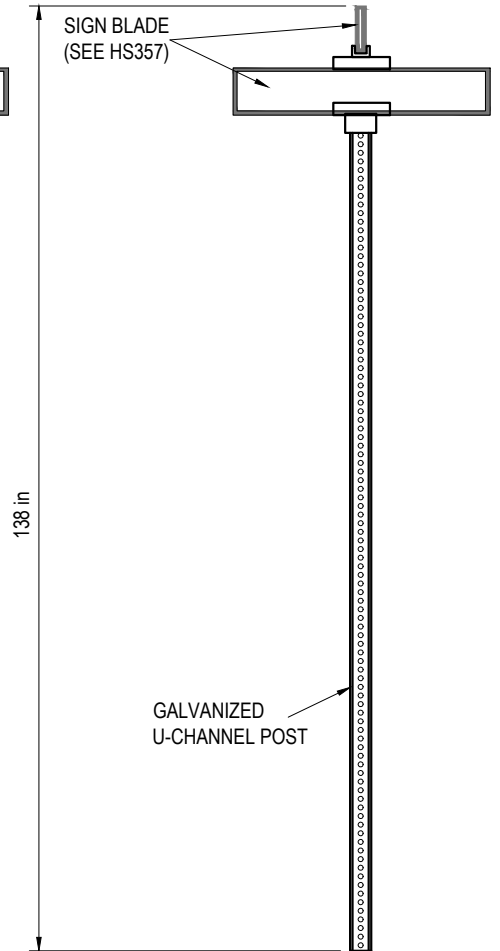
TRAFFIC CONTROL
SIGN



STOP SIGN



STOP & STREET
SIGN COMBO



STREET NAME
BLADE ONLY

DRAWING NOT TO SCALE

STANDARD TRAFFIC CONTROL AND STREET NAME SIGN AND POSTS
FOR LOCAL, COLLECTOR AND MINOR THOROUGHFARES

TOWN OF HOLLY SPRINGS

STANDARD DETAIL NUMBER: HS359

DATE REVISIONS

4/18/11
6/11/24



NOTES:

1. 42" MINIMUM BURY DEPTH FOR SIGN TYPES WITH THIS DETAIL, PER NCDOT STANDARDS.
2. ALL POLES SHALL BE BREAKAWAY.
3. SUPPLIERS MUST SUBMIT FHWA AND/ OR NCDOT APPROVAL LETTER WITH QUOTES REGARDING PROPOSED BREAKAWAY DETAILS.
4. IF MORE THAN ONE SIGN IS TO BE MOUNTED ON A POST THE BOTTOM EDGE OF THE LOWER SIGN MUST BE 7 FT (84") TO BOTTOM OF PRIMARY SIGN. SECONDARY PLAQUES MAY BE LOWER. ANY PRIMARY SIGN HEIGHTS UNDER 7 FT BY ENGINEER APPROVAL.
5. FOR BLADE INFORMATION SEE DETAIL HS357.
6. ALL SIGNS MUST MEET MUTCD STANDARDS AND GUIDELINES.
7. ALL MOUNTING HARDWARE SHALL BE BLACK.

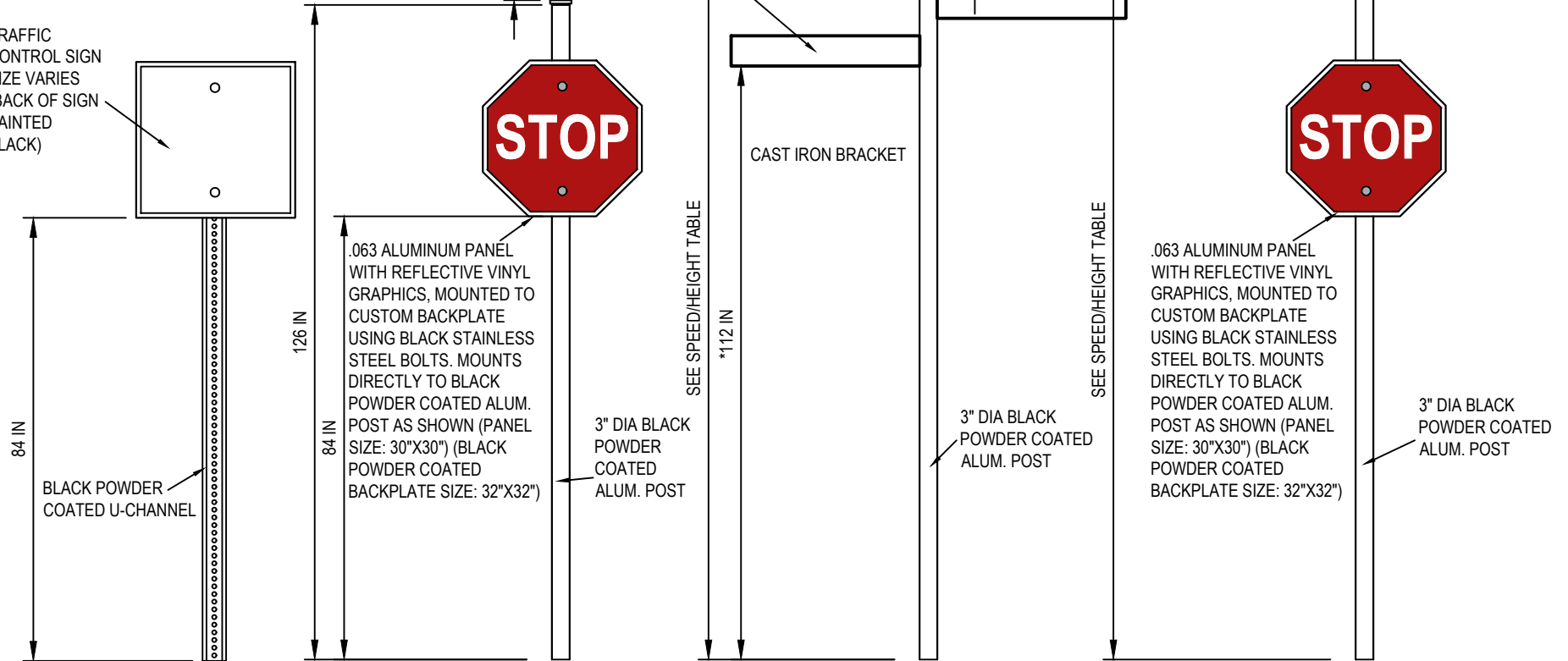
DECORATIVE BLACK POWDER COATED ALUM. PINEAPPLE FINIAL IMPERIAL POST SYSTEMS D SERIES FINIAL #7 OR EQUIVALENT.

TOWN STANDARD STREET BLADE MOUNTS INSIDE A CUSTOM EXTRUDED BLACK POWDER COATED ALUM. FRAME. (2 BLADES PER UNIT)

TOWN STANDARD STREET BLADE MOUNTS INSIDE A CUSTOM EXTRUDED BLACK POWDER COATED ALUM. FRAME. (2 BLADES PER UNIT)

DECORATIVE BLACK POWDER COATED ALUM. PINEAPPLE FINIAL IMPERIAL POST SYSTEMS D SERIES FINIAL #7 OR EQUIVALENT.

TRAFFIC CONTROL SIGN SIZE VARIES (BACK OF SIGN PAINTED BLACK)



TRAFFIC CONTROL SIGN
*HEIGHT VARIES DEPENDING ON SPEED OF ROAD. SEE DETAIL HS357 FOR BLADE SIZES.
W/ TRAFFIC CONTROL BLADE ONLY

- LOCAL ROAD - UP TO 25 MPH	162"	150"
- SPEED LIMIT - 26-40 MPH	170"	158"
- SPEED LIMIT - OVER 40 MPH	182"	182"

STANDARD TRAFFIC CONTROL AND STREET NAME SIGN
AND POSTS FOR THOROUGHFARES

TOWN OF HOLLY SPRINGS

STREET NAME
BLADE ONLY

STOP SIGN
WITH BLADES

STANDARD DETAIL NUMBER: HS360

DATE REVISIONS

4/5/19
6/11/24

DRAWING NOT TO SCALE

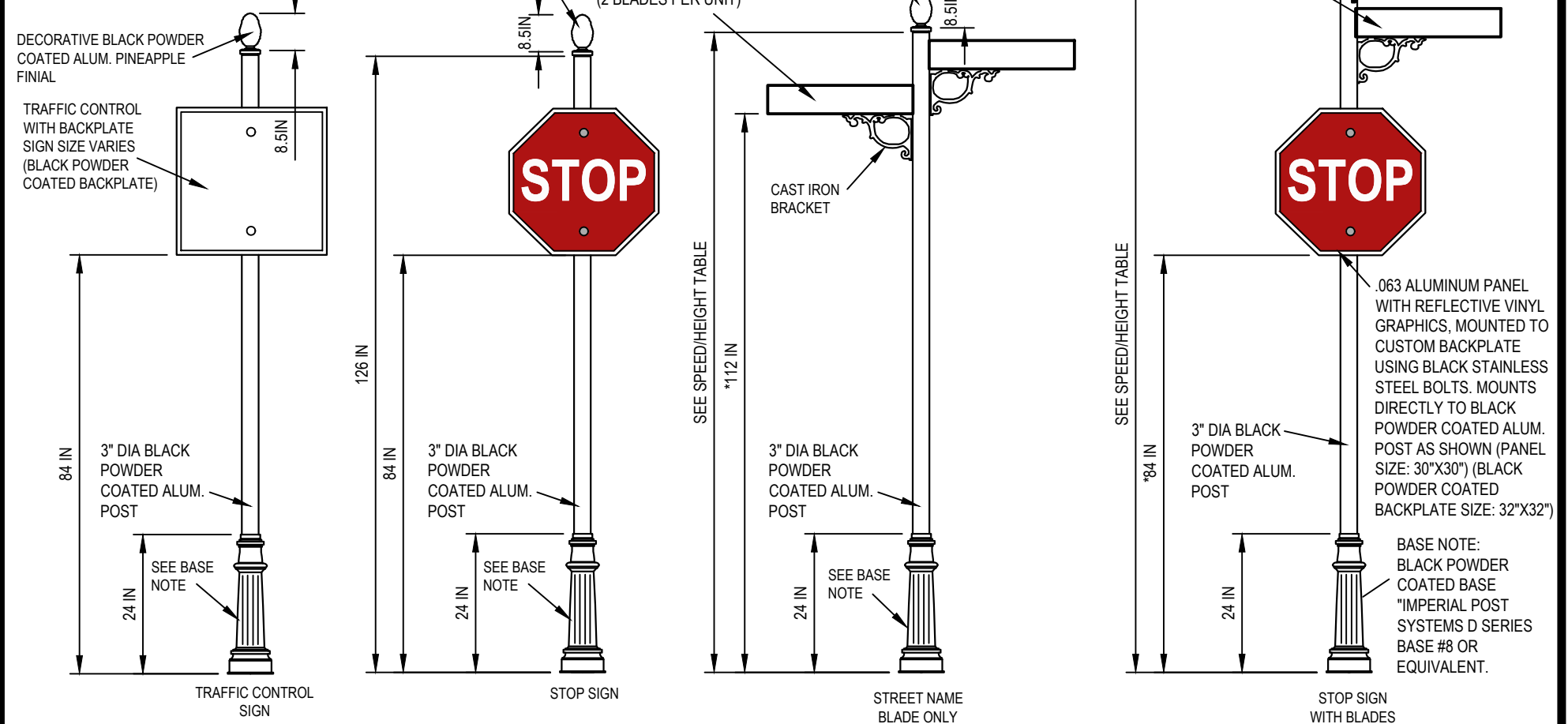


NOTES:

1. 42" MINIMUM BURY DEPTH FOR BREAKAWAY GALVANIZED U-CHANNEL PER NCDOT STANDARDS.
2. ALL POLES SHALL BE BREAKAWAY, SUPPLIERS TO SUBMIT FHWA AND/OR NCDOT APPROVAL LETTER WITH QUOTES REGARDING PROPOSED BREAKAWAY DETAIL.
3. FOR SIGN BLADE INFORMATION SEE DETAIL HS357.
4. ALL SIGNS MUST MEET MUTCD STANDARDS AND GUIDELINES.

5. ALL MATERIAL TO MEET REQUIRED SPECS. AS ATTACHED.

6. ALL MOUNTING HARDWARE SHALL BE BLACK.



*HEIGHT VARIES DEPENDING ON SPEED OF ROAD. SEE DETAIL HS357 FOR BLADE SIZES.

W/ TRAFFIC CONTROL BLADE ONLY

- LOCAL ROAD - UP TO 25 MPH	162"	150"
- SPEED LIMIT - 26-40 MPH	170"	158"
- SPEED LIMIT - OVER 40 MPH	182"	182"

DRAWING NOT TO SCALE

UPGRADED TRAFFIC CONTROL AND STREET NAME SIGN AND POSTS

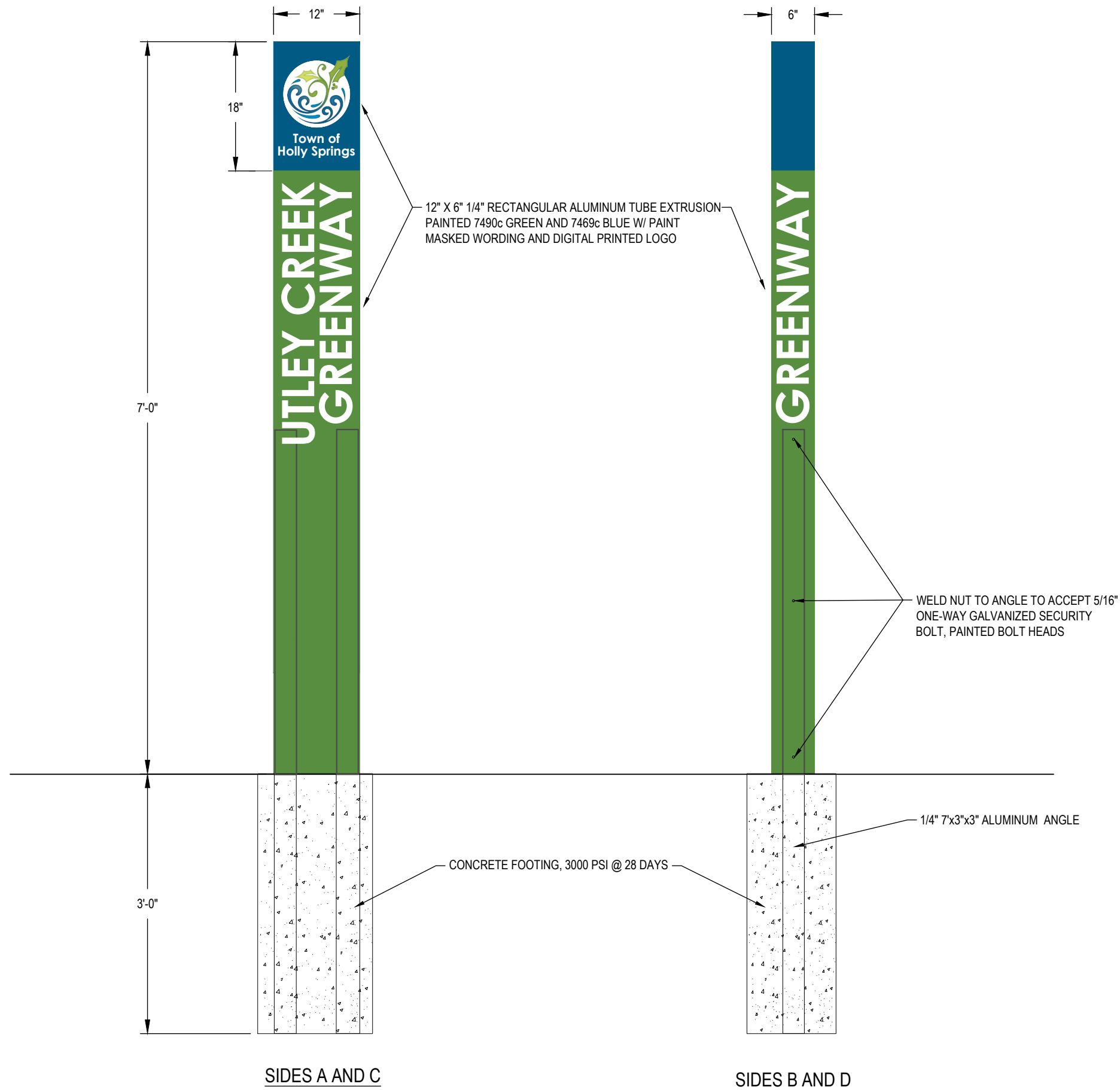
TOWN OF HOLLY SPRINGS

STANDARD DETAIL NUMBER: HS361

DATE REVISIONS

4/5/19
6/11/24





- PMS 7490c
- PMS 7469c
- White

SIDES A AND C

SIDES B AND D

DRAWING NOT TO SCALE

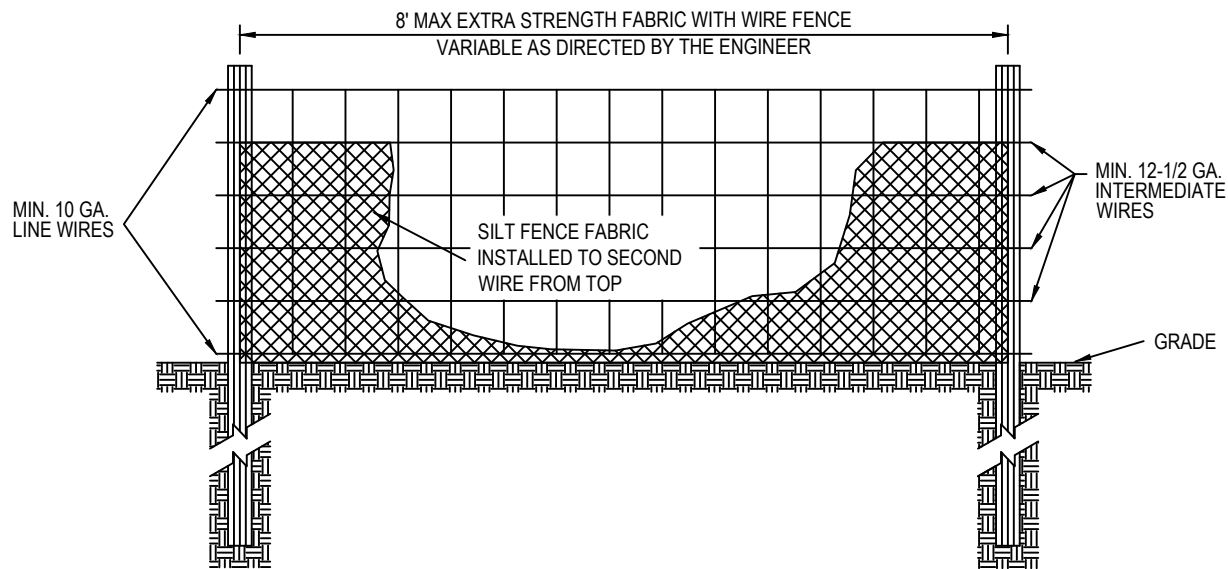
GREENWAY MARKER - RECTANGLE

TOWN OF HOLLY SPRINGS

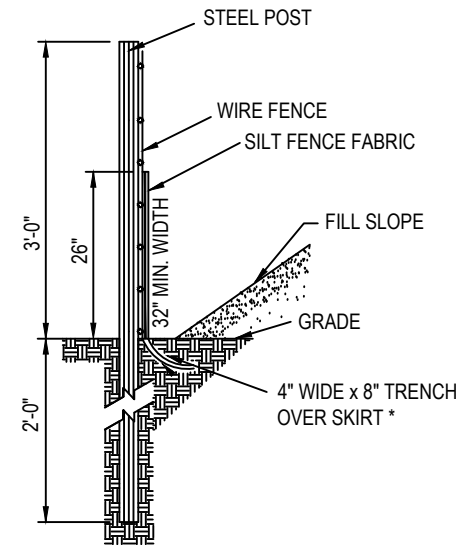
STANDARD DETAIL NUMBER: HS397

DATE REVISIONS

6/11/24



FRONT VIEW



SIDE VIEW

NOTES:

1. USE SILT FENCE ONLY WHEN DRAINAGE AREA DOES NOT EXCEED 1/4 ACRE AND NEVER IN AREAS OF CONCENTRATED FLOW.
2. UV RESISTANT SILT FENCE FABRIC MUST BE USED NO ORANGE SILT FENCE PERMITTED.

MAINTENANCE:

INSPECT SEDIMENT FENCES AT LEAST ONCE A WEEK AND AFTER EACH RAINFALL. MAKE ANY REQUIRED REPAIRS IMMEDIATELY.

SHOULD THE FABRIC OF A SEDIMENT FENCE COLLAPSE, TEAR, DECOMPOSE, OR BECOME INEFFECTIVE, REPLACE IT PROMPTLY

REMOVE SEDIMENT DEPOSITS AS NECESSARY TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN AND TO REDUCE PRESSURE ON THE FENCE. TAKE CARE TO AVOID UNDERMINING THE FENCE DURING CLEANOUT.

DRAWING NOT TO SCALE

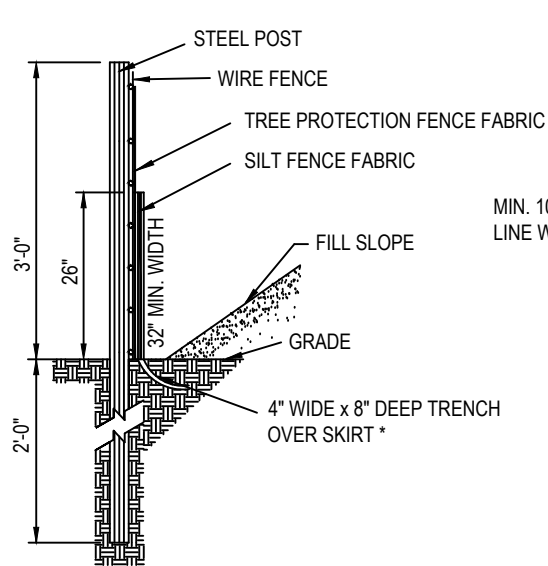
STANDARD TEMPORARY SILT FENCE

TOWN OF HOLLY SPRINGS

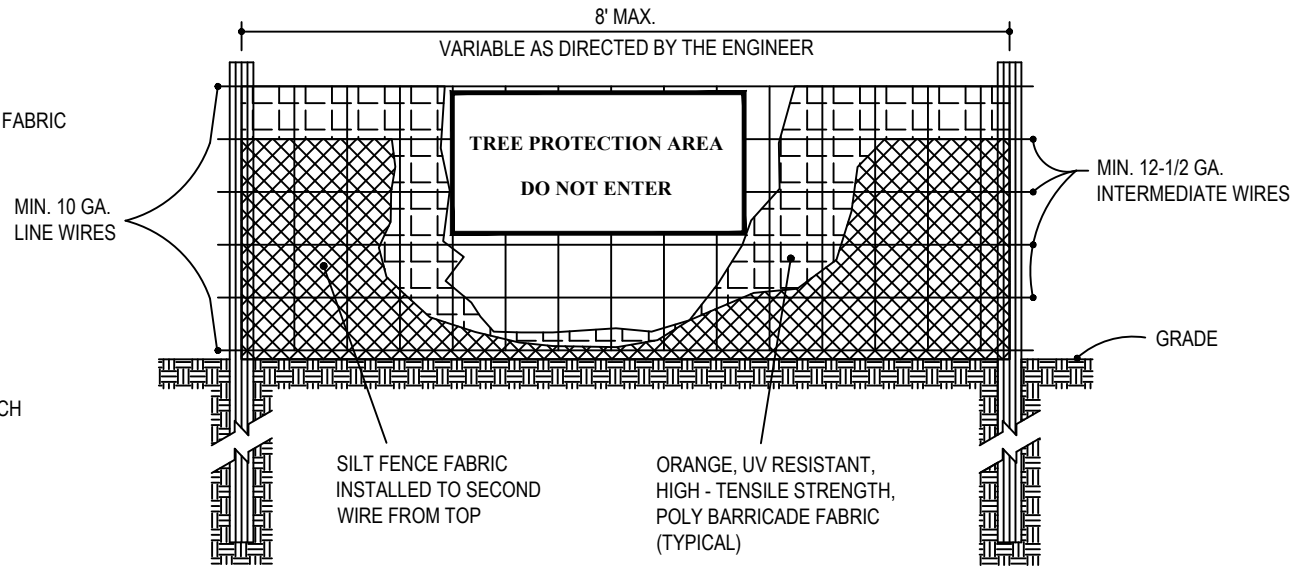
STANDARD DETAIL NUMBER: HS401

DATE	REVISIONS
7/24/09	
6/11/24	





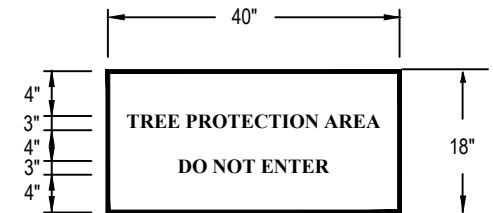
SIDE VIEW



FRONT VIEW

NOTES:

1. NO ORANGE SILT FENCE PERMITTED.
2. USE SILT FENCE ONLY WHEN DRAINAGE AREA DOES NOT EXCEED 1/4 ACRE AND NEVER IN AREAS OF CONCENTRATED FLOW.
3. TREE PROTECTION FENCE MUST BE ORANGE, UV RESISTANT, HIGH-TENSILE STRENGTH POLY BARRICADE FABRIC.
4. END OF SILT FENCE NEEDS TO BE TURNED UPHILL
5. WARNING SIGNS TO BE MADE OF DURABLE, WEATHERPROOF MATERIAL.
6. LETTERS TO BE 3" HIGH MINIMUM, CLEARLY LEGIBLE AND SPACED AS DETAILED.
7. SIGNS SHALL BE PLACED AT 50' MAXIMUM INTERVALS.
8. PLACE A SIGN AT EACH END OF LINEAR TREE PROTECTION AND 50' ON CENTER THEREAFTER.
9. FOR TREE PROTECTION AREAS LESS THAN 200' IN PERIMETER, PROVIDE NO LESS THAN ONE SIGN PER PROTECTION AREA.
10. ATTACH SIGNS SECURELY TO FENCE POSTS AND FABRIC.
11. MAINTAIN TREE PROTECTION FENCE THROUGHOUT DURATION OF PROJECT.
12. ADDITIONAL SIGNS MAY BE REQUIRED BY TOWN OF HOLLY SPRINGS ENGINEERING DEPARTMENT BASED ON ACTUAL FIELD CONDITIONS.



WARNING SIGN DETAIL

MAINTENANCE:

INSPECT SEDIMENT FENCES AT LEAST ONCE A WEEK AND AFTER EACH RAINFALL. MAKE ANY REQUIRED REPAIRS IMMEDIATELY.

SHOULD THE FABRIC OF A SEDIMENT FENCE COLLAPSE, TEAR, DECOMPOSE, OR BECOME INEFFECTIVE, REPLACE IT PROMPTLY.

REMOVE SEDIMENT DEPOSITS AS NECESSARY TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN AND TO REDUCE PRESSURE ON THE FENCE. TAKE CARE TO AVOID UNDERMINING THE FENCE DURING CLEANOUT.

DRAWING NOT TO SCALE

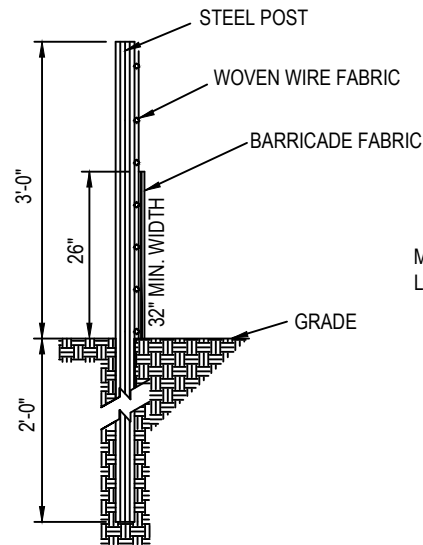
COMBINATION SILT / TREE PROTECTION FENCE

TOWN OF HOLLY SPRINGS

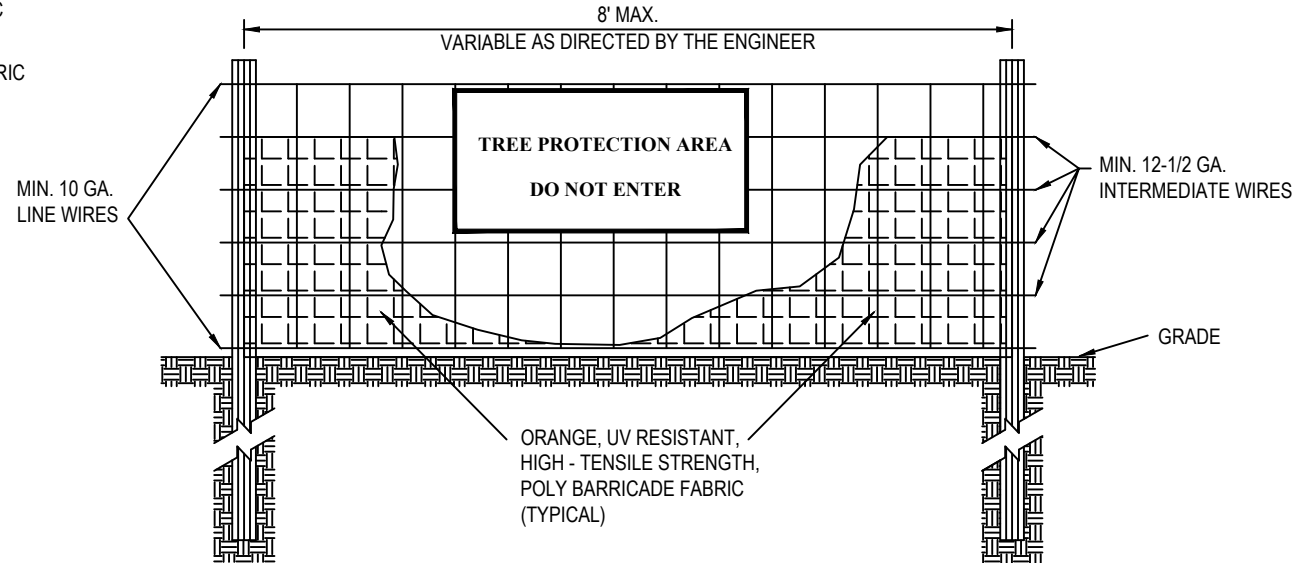
STANDARD DETAIL NUMBER: HS402

DATE	REVISIONS
9/22/16	
6/11/24	





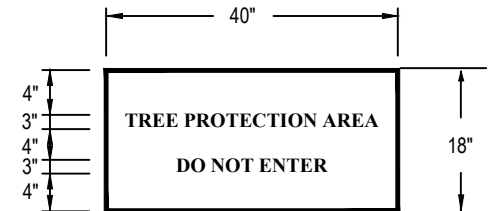
SIDE VIEW



FRONT VIEW

NOTES:

1. NO ORANGE SILT FENCE PERMITTED.
2. TREE PROTECTION FENCE MUST BE ORANGE UV RESISTANT HIGH-TENSILE STRENGTH POLY BARRICADE FABRIC.
3. WARNING SIGNS TO BE MADE OF DURABLE, WEATHERPROOF MATERIAL.
4. LETTERS TO BE 3" HIGH MINIMUM, CLEARLY LEGIBLE AND SPACED AS DETAILED.
5. SIGNS SHALL BE PLACED AT 50' MAXIMUM INTERVALS.
6. PLACE A SIGN AT EACH END OF LINEAR TREE PROTECTION AND 50' ON CENTER THEREAFTER.
7. FOR TREE PROTECTION AREAS LESS THAN 200' IN PERIMETER, PROVIDE NO LESS THAN ONE SIGN PER PROTECTION AREA.
8. ATTACH SIGNS SECURELY TO FENCE POSTS AND FABRIC.
9. MAINTAIN TREE PROTECTION FENCE THROUGHOUT DURATION OF PROJECT.
10. ADDITIONAL SIGNS MAY BE REQUIRED BY TOWN OF HOLLY SPRINGS INSPECTIONS DEPARTMENT BASED ON ACTUAL FIELD CONDITIONS.



WARNING SIGN DETAIL

DRAWING NOT TO SCALE

STANDARD TREE PROTECTION DETAIL

TOWN OF HOLLY SPRINGS

STANDARD DETAIL NUMBER: HS403

DATE REVISIONS

7/24/09
6/11/24



NOTES:

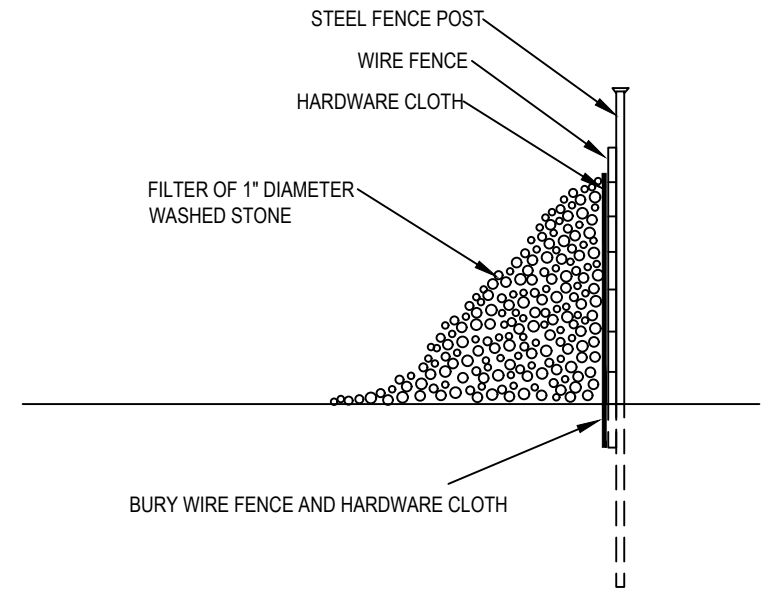
1. MINIMUM 6" OVERLAP OF HARDWARE CLOTH AND SILT FENCE.
2. HARDWARE CLOTH TO BE INSTALLED ON UPSLOPE SIDE OF SILT FENCE.

MAINTENANCE:

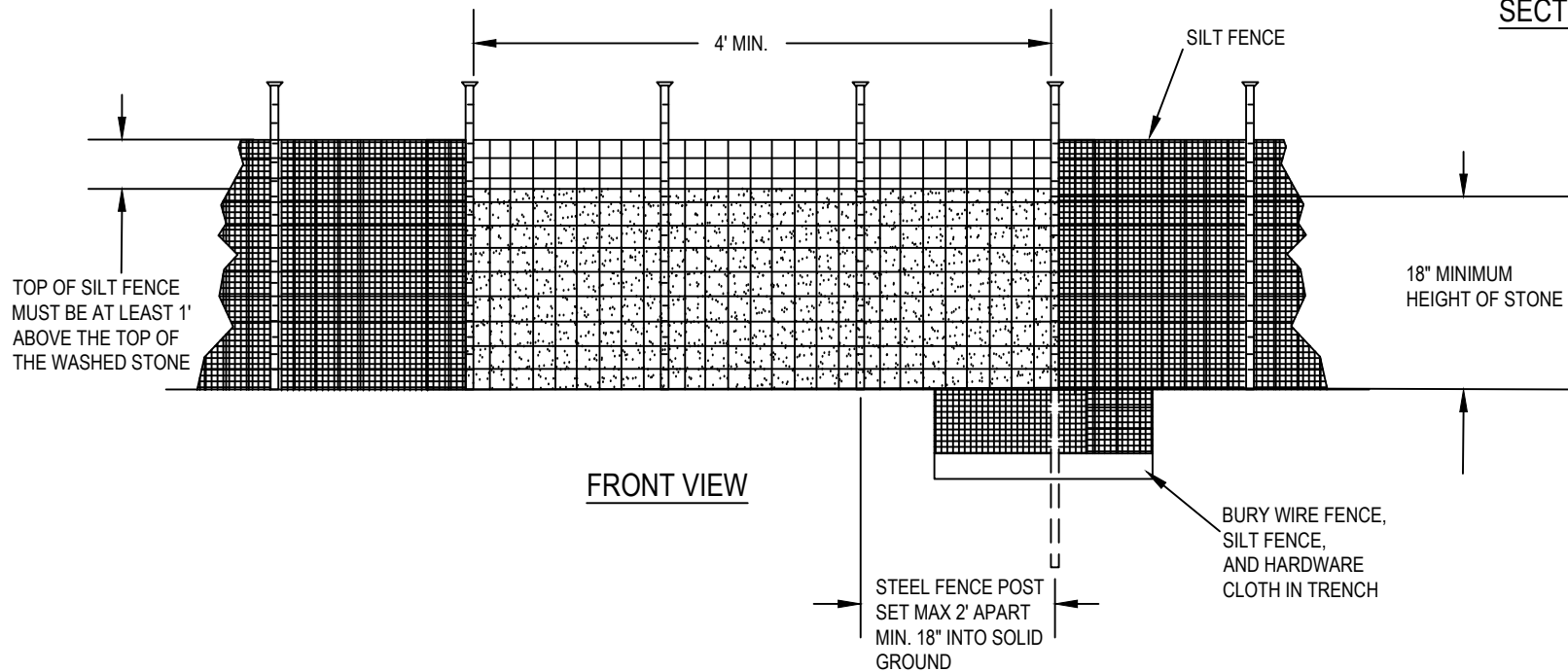
INSPECT SILT FENCE OUTLETS AT LEAST ONCE A WEEK AND AFTER EACH RAINFALL. MAKE ANY REQUIRED REPAIRS IMMEDIATELY.

SHOULD THE STONE BECOME INUNDATED WITH SEDIMENT OR OTHER DEBRIS, OR HARDWARE CLOTH AND STONE DAMAGED OR WASHED OUT, REPLACE IMMEDIATELY WITH CLEAN WASH STONE AND NEW HARDWARE CLOTH. REPAIR OR REPLACE T-POSTS IF NEEDED.

REMOVE SEDIMENT DEPOSITS AS NECESSARY TO PROVIDE PROPER FLOW THROUGH THE STONE. TAKE CARE TO AVOID DAMAGING THE HARDWARE CLOTH DURING CLEANOUT.



SECTION VIEW



DRAWING NOT TO SCALE

SILT FENCE OUTLET

TOWN OF HOLLY SPRINGS

STANDARD DETAIL NUMBER: HS404

DATE REVISIONS

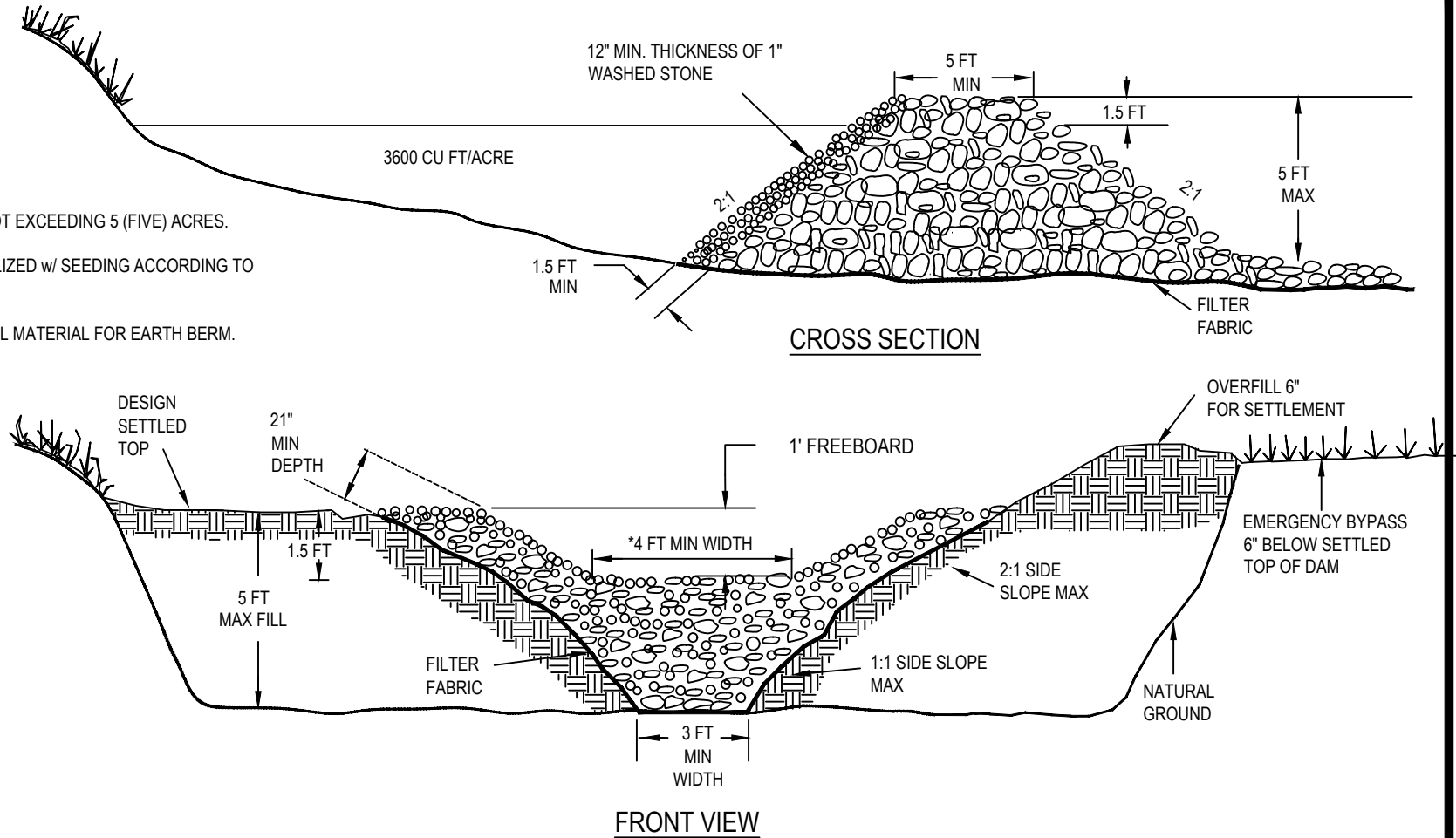
4/6/17

6/11/24



NOTES:

1. USE FOR DRAINAGE AREAS NOT EXCEEDING 5 (FIVE) ACRES.
2. EARTH BERM SHALL BE STABILIZED w/ SEEDING ACCORDING TO TOWN SPECIFICATIONS.
3. USE CLEAN COMPACTABLE FILL MATERIAL FOR EARTH BERM.
4. USE POROUS BAFFLES.



*MAINTENANCE

INSPECT TEMPORARY SEDIMENT TRAPS AFTER EACH PERIOD OF SIGNIFICANT RAINFALL. REMOVE SEDIMENT AND RESTORE TRAP TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO ONE-HALF THE DESIGN DEPTH OF THE TRAP. PLACE THE SEDIMENT THAT IS REMOVED IN A DESIGNATED DISPOSAL AREA AND REPLACE THE CONTAMINATED PART OF THE GRAVEL FACING.

CHECK THE STRUCTURE FOR DAMAGE FROM EROSION OR PIPING. PERIODICALLY CHECK THE DEPTH OF THE SPILLWAY TO ENSURE IT IS A MINIMUM OF 1.5 FT BELOW THE LOW POINT OF THE EMBANKMENT. IMMEDIATELY FILL ANY SETTLEMENT OF THE EMBANKMENT TO SLIGHTLY ABOVE DESIGN GRADE. ANY RIPRAP DISPLACED FROM THE SPILLWAY MUST BE REPLACED IMMEDIATELY.

STABILIZE THE EMBANKMENT AND ALL DISTURBED AREAS ABOVE THE SEDIMENT POOL AND DOWNSTREAM FROM THE TRAP IMMEDIATELY AFTER CONSTRUCTION WITH SEEDING.

DRAWING NOT TO SCALE

TEMPORARY SEDIMENT TRAP

TOWN OF HOLLY SPRINGS

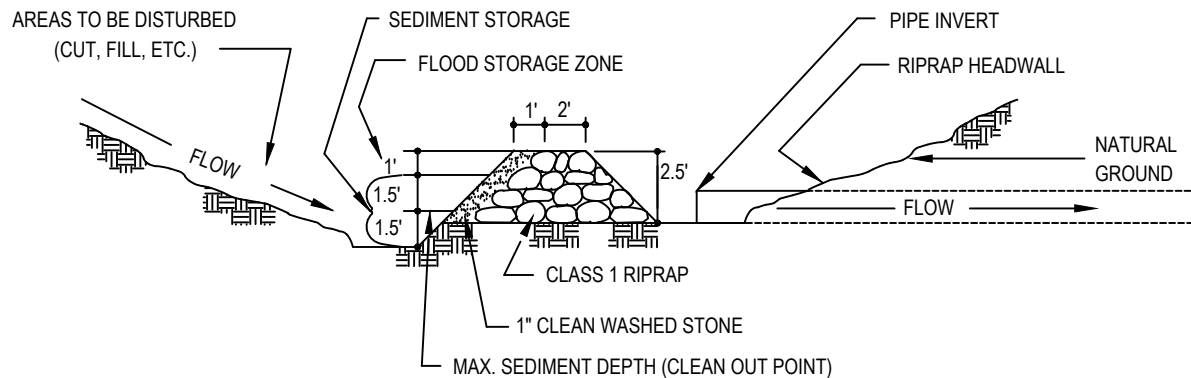
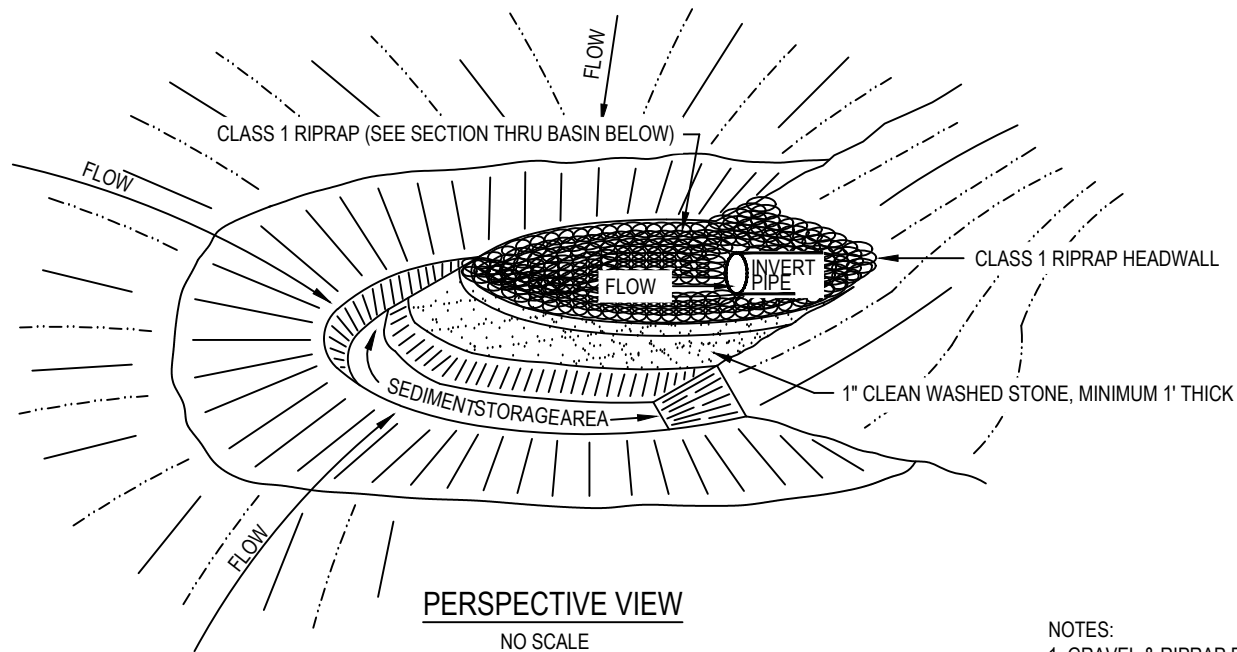
STANDARD DETAIL NUMBER: HS405

DATE REVISIONS

7/24/09

6/11/24





NOTES:

1. GRAVEL & RIPRAP FILTER BERM BASIN DETAIL IS DESIGNED TO PROTECT EXISTING PIPE INVERTS THAT DRAIN 5 ACRES OR LESS.

2. DIMENSIONS ARE MINIMUM ACCEPTABLE UNLESS OTHERWISE NOTED.

MAINTENANCE:

INSPECT ROCK PIPE INLET PROTECTION AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT (1/2 INCH OR GREATER) RAINFALL EVENT AND REPAIR IMMEDIATELY. REMOVE SEDIMENT AND RESTORE THE SEDIMENT STORAGE AREA TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO ONE-HALF THE DESIGN DEPTH OF THE TRAP. PLACE THE SEDIMENT THAT IS REMOVED IN THE DESIGNATED DISPOSAL AREA AND REPLACE THE CONTAMINATED PART OF THE GRAVEL FACING.

CHECK THE STRUCTURE FOR DAMAGE. ANY RIPRAP DISPLACED FROM THE STONE HORSESHOE MUST BE REPLACED IMMEDIATELY.

DRAWING NOT TO SCALE

(EXISTING PIPE INVERTS)
GRAVEL & RIPRAP FILTER BERM BASIN

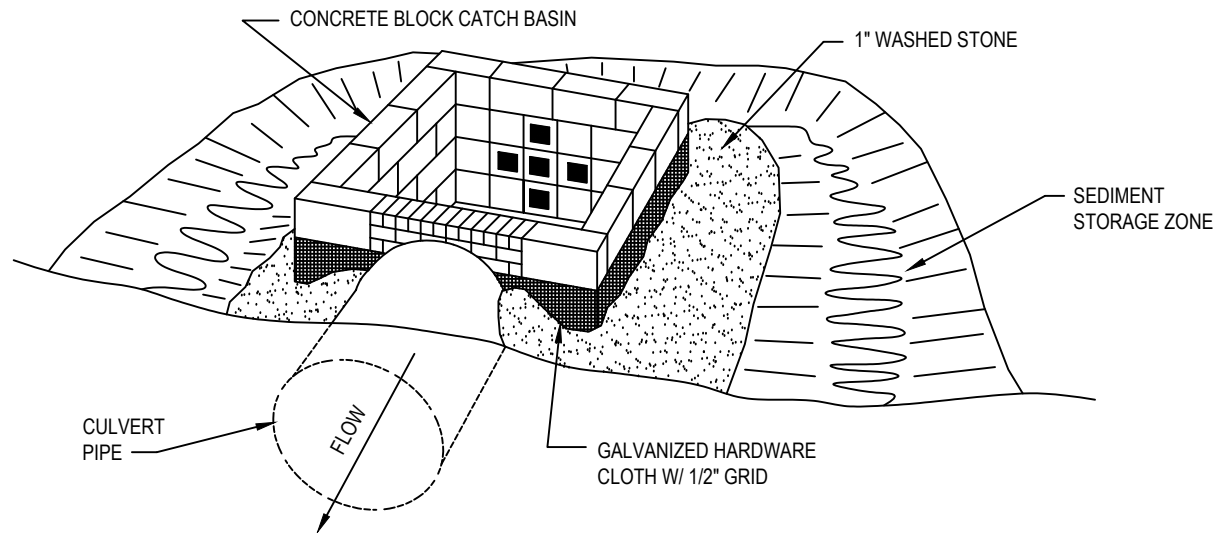
TOWN OF HOLLY SPRINGS

STANDARD DETAIL NUMBER: HS407

DATE REVISIONS

8/19/09
6/11/24





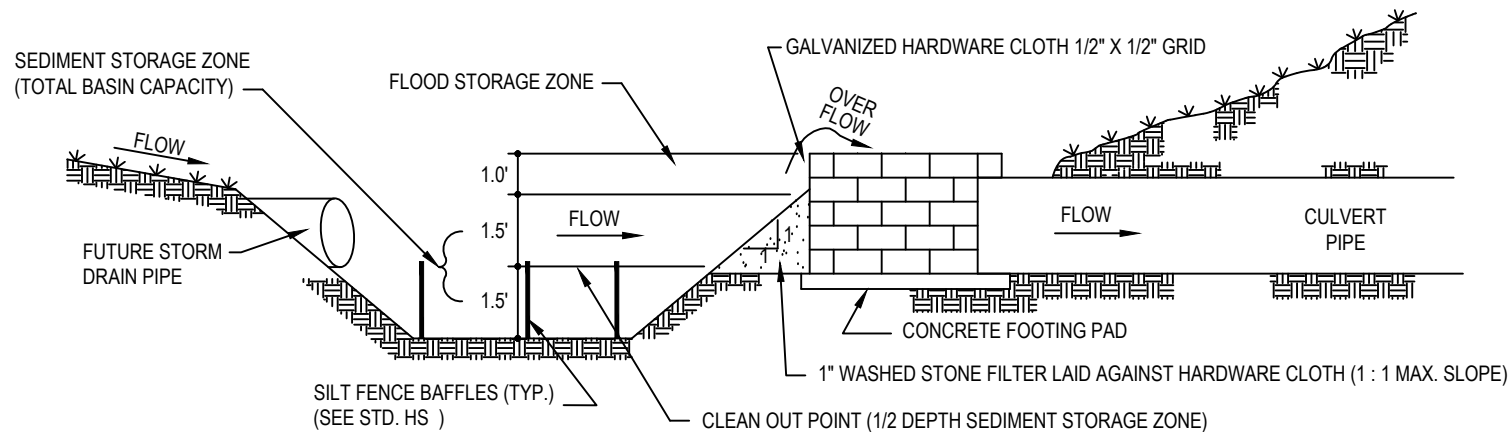
PERSPECTIVE VIEW

MAINTENANCE:
INSPECT WEEKLY AND AFTER EACH SIGNIFICANT RAIN EVENT. REMOVE SEDIMENT AND RESTORE BASIN AND BAFFLES TO ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO ONE-HALF THE DESIGN DEPTH.

SHOULD THE STONE BECOME INUNDATED WITH SEDIMENT OR OTHER DEBRIS, OR HARDWARE CLOTH AND STONE DAMAGED OR WASHED OUT, REPLACE IMMEDIATELY WITH CLEAN WASH STONE AND NEW HARDWARE CLOTH.

NOTES:

1. AT END OF PROJECT, CATCH BASIN CAN BE RAISED AS NEEDED PLUGGING OPEN COURSE OF BLOCK WITH MORTAR.
2. RISER CAN BE BUILT AS A STANDARD CATCH BASIN/JUNCTION BOX (WITH WEEP HOLES) IN RECEIVING WALL AND BE UTILIZED AS SUCH WHEN PROJECT IS STABLE.
3. IF DRAINAGE AREA IS OVER 5 ACRES THEN THIS STRUCTURE NEEDS TO BE TREATED AS A RISER STRUCTURE AND ALL RELATED INFORMATION NEEDS TO BE SUPPLIED. (TRASH RACK, ELEVATIONS, ETC.).



SECTION VIEW

DRAWING NOT TO SCALE

CATCH BASIN RISER/FILTER

TOWN OF HOLLY SPRINGS

STANDARD DETAIL NUMBER: HS408

DATE REVISIONS

7/24/09
6/11/24



MAINTENANCE:

INSPECT SKIMMER SEDIMENT BASINS AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT RAINFALL EVENT AND REPAIR IMMEDIATELY. REMOVE SEDIMENT AND RESTORE THE BASIN TO ITS ORIGINAL DIMENSIONS WHEN SEDIMENT ACCUMULATES TO ONE-HALF THE HEIGHT OF THE FIRST BAFFLE. PULL THE SKIMMER TO ONE SIDE SO THAT THE SEDIMENT UNDERNEATH IT CAN BE EXCAVATED. EXCAVATE THE SEDIMENT FROM THE ENTIRE BASIN, NOT JUST AROUND THE SKIMMER OR THE FIRST CELL. REPAIR THE BAFFLES IF THEY ARE DAMAGED. RE-ANCHOR THE BAFFLES IF WATER IS FLOWING UNDERNEATH OR AROUND THEM. IF THE SKIMMER IS CLOGGED WITH TRASH AND THERE IS WATER IN THE BASIN, USE ROPE TO SHAKE AND TRY TO DISLODGE THE DEBRIS AND RESTORE FLOW. IF THIS DOES NOT WORK, PULL THE SKIMMER OVER SEE IF IT IS CLOGGED; IF SO REMOVE THE DEBRIS. ENSURE VEGETATION GROWING IN THE BOTTOM OF THOSE BASIN DOES NOT HOLD DOWN THE SKIMMER.

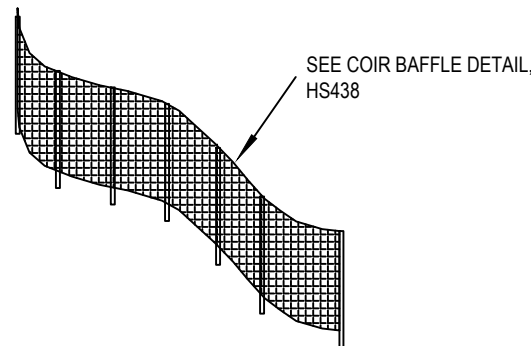
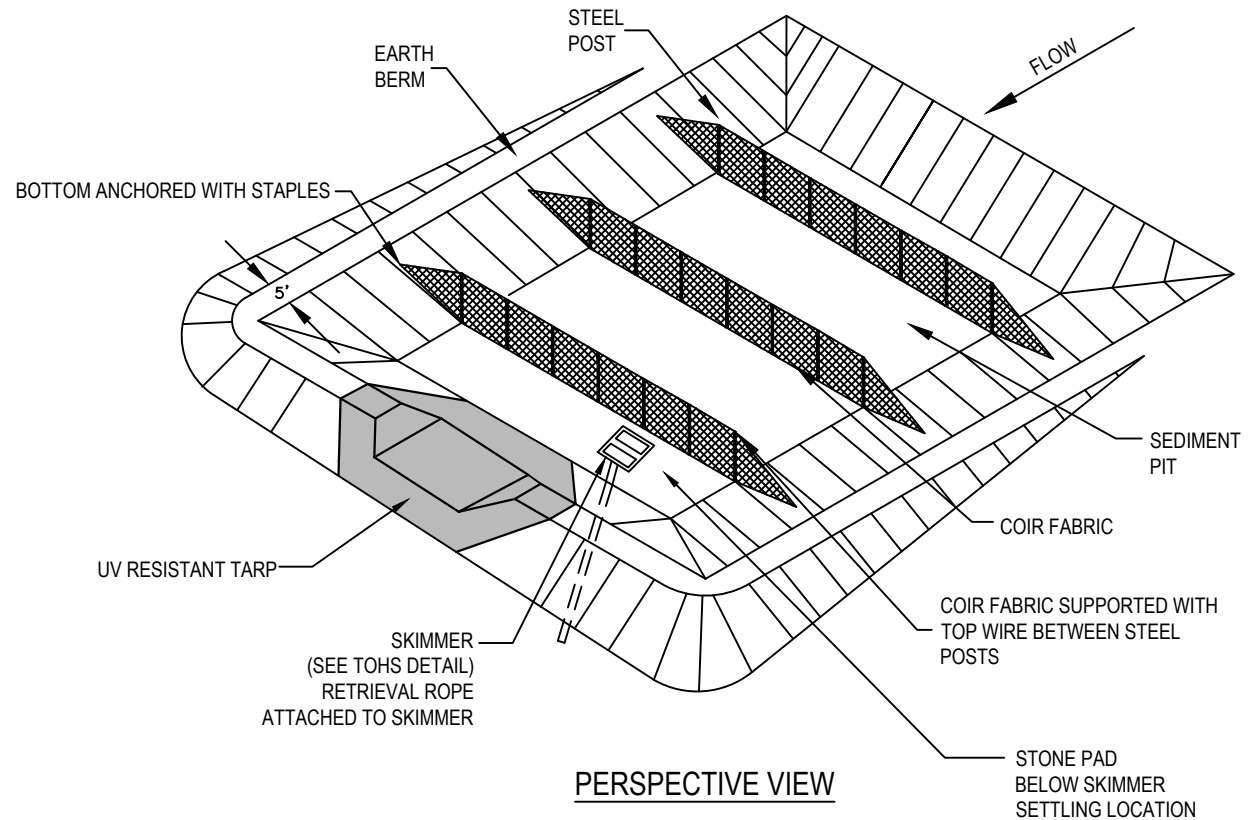
IF THE SKIMMER ARM OR BARREL PIPE IS CLOGGED, THE ORIFICE CAN BE REMOVED AND THE OBSTRUCTION CLEARED WITH A PLUMBER'S SNAKE OR BY FLUSHING WITH WATER. BE SURE AND REPLACE THE ORIFICE BEFORE REPOSITIONING THE SKIMMER.

CHECK THE FABRIC LINED SPILLWAY FOR DAMAGE AND MAKE ANY REQUIRED REPAIRS WITH FABRIC THAT SPANS THE FULL WIDTH OF THE SPILLWAY. CHECK THE EMBANKMENT, SPILLWAYS, AND OUTLETS FOR EROSION DAMAGE, AND INSPECT THE EMBANKMENT FOR PIPING AND SETTLEMENT. MAKE ALL NECESSARY REPAIRS IMMEDIATELY. REMOVE ALL TRASH AND OTHER DEBRIS FROM THE SKIMMER AND POOL AREAS.

NOTES:

1. STONE PAD INSTALLED AT LOCATION SKIMMER SETTLES (3'X3'X1'D)

*IF BASIN WILL BE CONVERTED TO PERMANENT SCM, PERMANENT RISER STRUCTURE MUST BE INSTALLED PRIOR TO ISSUANCE OF CERTIFICATE OF COMPLIANCE, WITH THE SKIMMER ATTACHED TO THE RISER STRUCTURE AT THE PROPER ELEVATION.



DRAWING NOT TO SCALE

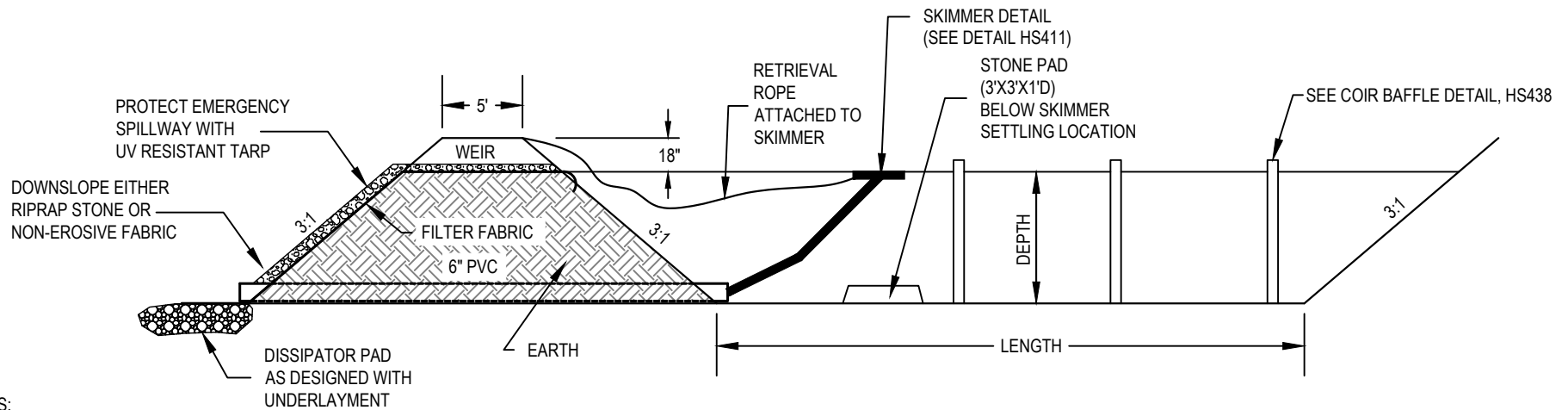
STANDARD SKIMMER FILTER BASIN (PLAN VIEW)

TOWN OF HOLLY SPRINGS

STANDARD DETAIL NUMBER: HS409

DATE	REVISIONS
4/16/19	
6/11/24	





NOTES:

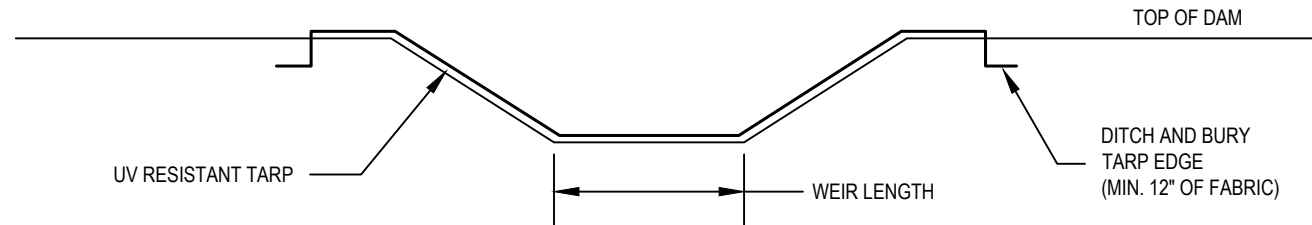
1. USE FOR DRAINAGE AREAS NOT EXCEEDING 5 (FIVE) ACRES.
2. EARTH BERM SHALL BE STABILIZED W/ SEEDING ACCORDING TO TOWN SPECIFICATIONS.

EMERGENCY SPILLWAY DETAIL

DESIGN OF SPILLWAYS

DRAINAGE AREA (ACRES)	WEIR LENGTH (FT)	¹
1	4.0	
2	6.0	
3	8.0	
4	10.0	
5	12.0	

¹ DIMENSIONS SHOWN ARE MINIMUM



MAINTENANCE

INSPECT TEMPORARY SEDIMENT TRAPS AND EMPTY SKIMMER OF ALL DEBRIS AFTER EACH PERIOD OF SIGNIFICANT RAINFALL. REMOVE SEDIMENT AND RESTORE TRAP TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO ONE-HALF THE DESIGN DEPTH OF THE TRAP. PLACE THE SEDIMENT THAT IS REMOVED IN A DESIGNATED DISPOSAL AREA AND REPLACE THE CONTAMINATED PART OF THE GRAVEL FACING.

CHECK THE STRUCTURE FOR DAMAGE FROM EROSION OR PIPING. PERIODICALLY CHECK THE DEPTH OF THE SPILLWAY TO ENSURE IT IS A MINIMUM OF 1.5 FT BELOW THE LOW POINT OF THE EMBANKMENT. IMMEDIATELY FILL ANY SETTLEMENT OF THE EMBANKMENT TO SLIGHTLY ABOVE DESIGN GRADE. ANY RIPRAP DISPLACED FROM THE SPILLWAY MUST BE REPLACED IMMEDIATELY.

STABILIZE THE EMBANKMENT AND ALL DISTURBED AREAS ABOVE THE SEDIMENT POOL AND DOWNSTREAM FROM THE TRAP IMMEDIATELY AFTER CONSTRUCTION WITH SEEDING.

DRAWING NOT TO SCALE

STANDARD SKIMMER FILTER BASIN (PROFILE VIEW)

TOWN OF HOLLY SPRINGS

STANDARD DETAIL NUMBER: HS410

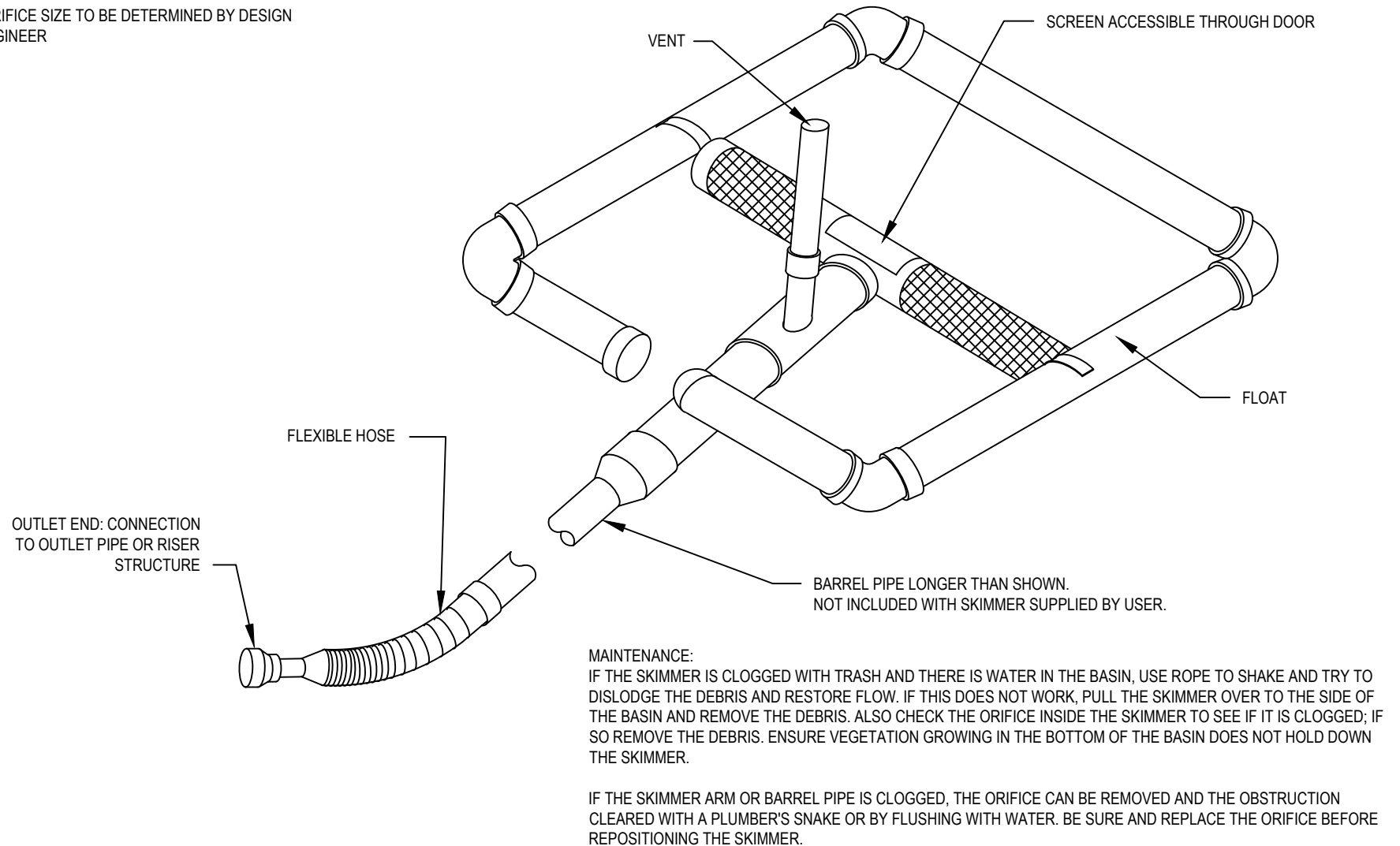
DATE **REVISIONS**

4/16/19
6/11/24



NOTES:

1. SKIMMER IS TO BE A SURFACE DEWATERING DEVICE SUCH AS BMP SKIMMER OR APPROVED DEVICE.
2. *ORIFICE SIZE TO BE DETERMINED BY DESIGN ENGINEER



DRAWING NOT TO SCALE

STANDARD SKIMMER DETAIL

TOWN OF HOLLY SPRINGS

STANDARD DETAIL NUMBER: HS411

DATE

REVISIONS

7/24/09

6/11/24



	DIMENSIONS	ELEV.
EMERGENCY SPILLWAY		
TOP OF DAM WIDTH		
ANTI-SEEP COLLAR		
RIPRAP DISSIPATER PAD		
ANTI-FLOATATION DEVICE		
TOP OF RISER		
OUTLET PIPE INVERT IN		
OUTLET PIPE INVERT OUT		
SEDIMENT STORAGE AREA		

MAINTENANCE:

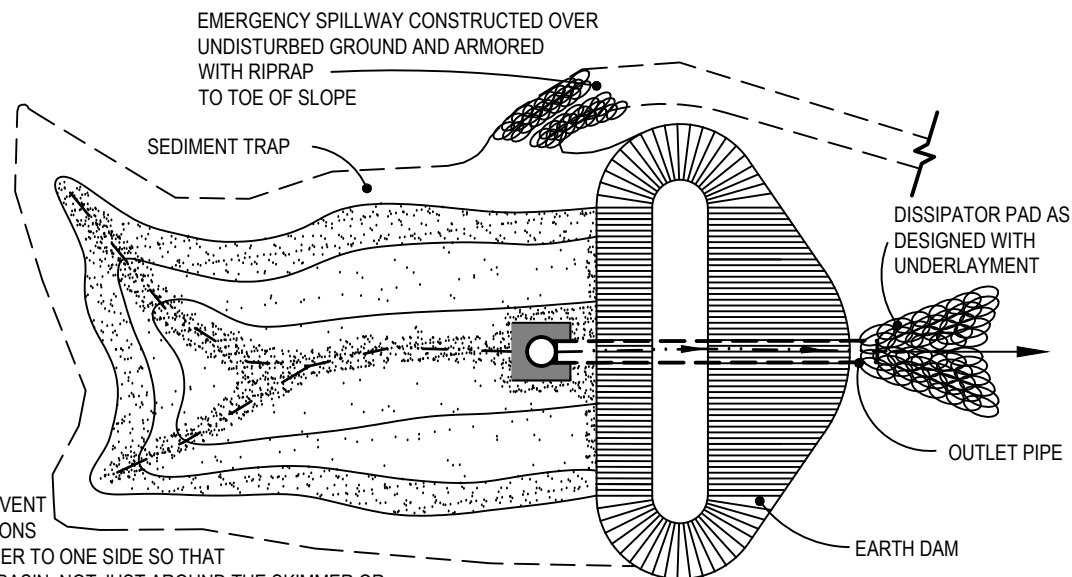
INSPECT SKIMMER SEDIMENT BASINS AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT RAINFALL EVENT AND REPAIR IMMEDIATELY. REMOVE SEDIMENT AND RESTORE THE BASIN TO ITS ORIGINAL DIMENSIONS WHEN SEDIMENT ACCUMULATES TO ONE-HALF THE HEIGHT OF THE FIRST BAFFLE. PULL THE SKIMMER TO ONE SIDE SO THAT THE SEDIMENT UNDERNEATH IT CAN BE EXCAVATED. EXCAVATE THE SEDIMENT FROM THE ENTIRE BASIN, NOT JUST AROUND THE SKIMMER OR THE FIRST CELL. REPAIR THE BAFFLES IF THEY ARE DAMAGED. RE-ANCHOR THE BAFFLES IF WATER IS FLOWING UNDERNEATH OR AROUND THEM.

IF THE SKIMMER IS CLOGGED WITH TRASH AND THERE IS WATER IN THE BASIN, USE ROPE TO SHAKE AND TRY TO DISLODGE THE DEBRIS AND RESTORE FLOW. IF THIS DOES NOT WORK, PULL THE SKIMMER OVER TO THE SIDE OF THE BASIN AND REMOVE THE DEBRIS. ALSO CHECK THE ORIFICE INSIDE THE SKIMMER TO SEE IF IT IS CLOGGED; IF SO REMOVE THE DEBRIS. ENSURE VEGETATION GROWING IN THE BOTTOM OF THE BASIN DOES NOT HOLD DOWN THE SKIMMER.

IF THE SKIMMER ARM OR BARREL PIPE IS CLOGGED, THE ORIFICE CAN BE REMOVED AND THE OBSTRUCTION CLEARED WITH A PLUMBER'S SNAKE OR BY FLUSHING WITH WATER. BE SURE AND REPLACE THE ORIFICE BEFORE REPOSITIONING THE SKIMMER.

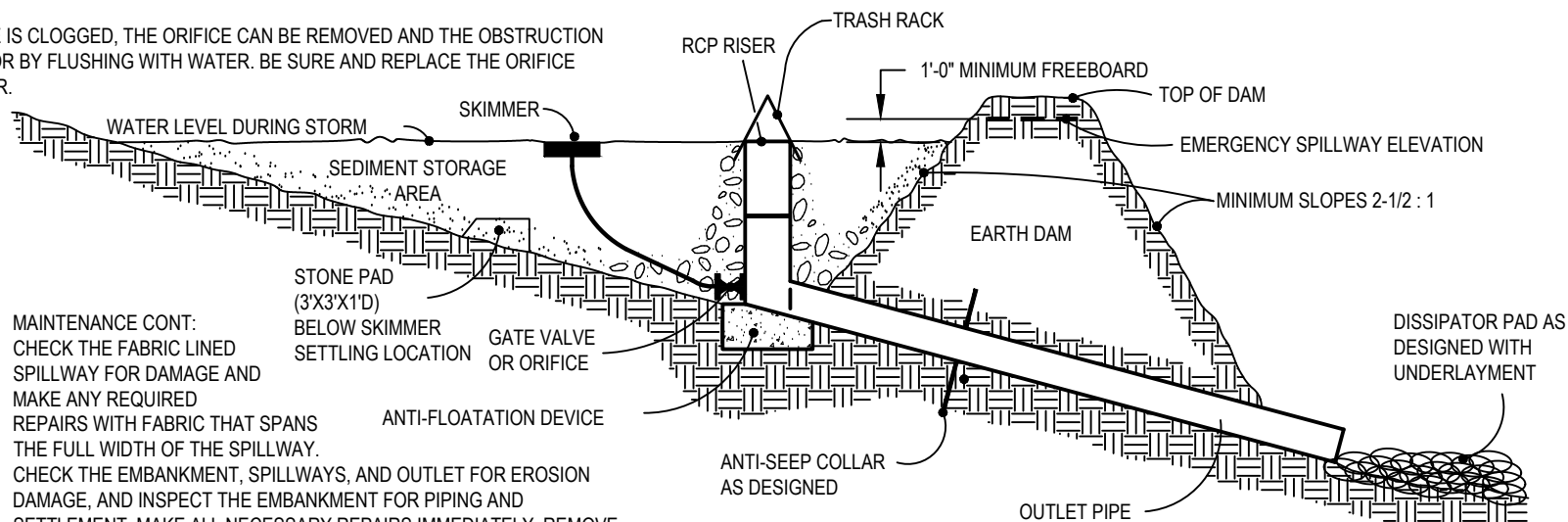
DESIGN ENGINEER MUST SIGN AND SEAL BASIN DESIGN BELOW

MAINTENANCE CONT:
CHECK THE FABRIC LINED SPILLWAY FOR DAMAGE AND MAKE ANY REQUIRED REPAIRS WITH FABRIC THAT SPANS THE FULL WIDTH OF THE SPILLWAY. CHECK THE EMBANKMENT, SPILLWAYS, AND OUTLET FOR EROSION DAMAGE, AND INSPECT THE EMBANKMENT FOR PIPING AND SETTLEMENT. MAKE ALL NECESSARY REPAIRS IMMEDIATELY. REMOVE ALL TRASH AND OTHER DEBRIS FROM THE SKIMMER AND POOL AREAS.



PLAN VIEW

NOTE:
RETRIEVAL ROPE ATTACHED TO SKIMMER



CROSS SECTION

DRAWING NOT TO SCALE

STANDARD RISER-BARREL SEDIMENT BASIN (WITH SKIMMER)

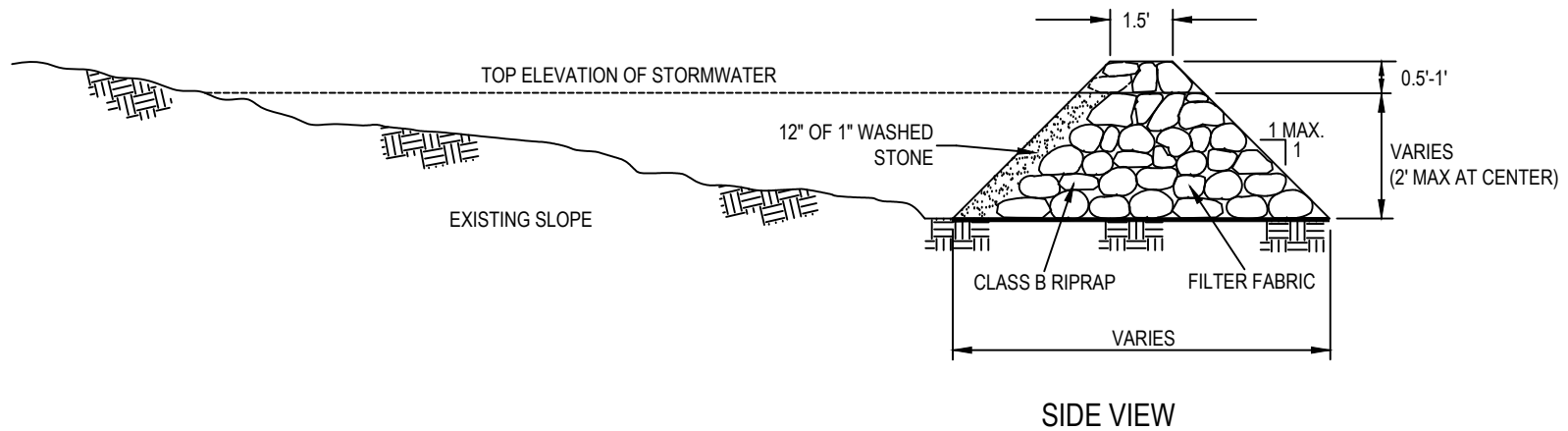
STANDARD DETAIL NUMBER: HS412

DATE REVISIONS

12/18/18
6/11/24

TOWN OF HOLLY SPRINGS

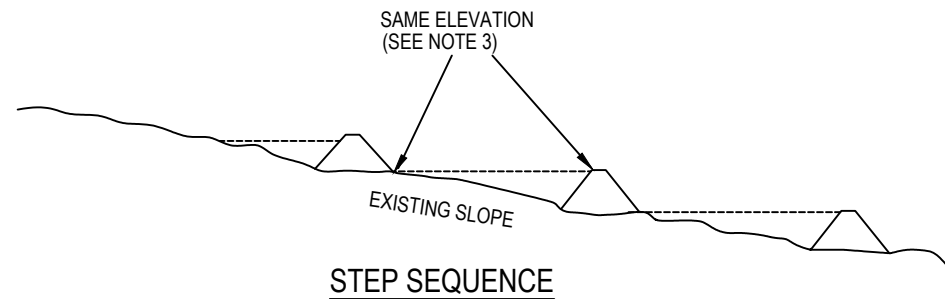




- NOTES:
1. HEIGHT & WIDTH DETERMINED BY EXISTING TOPOGRAPHY AND SEDIMENT STORAGE REQUIRED.
 2. KEY RIPRAP INTO THE DAM FOR STABILIZATION.
 3. TOP OF DOWNHILL CHECK DAM IS TO BE SAME ELEVATION OF BOTTOM OF UPHILL CHECK DAM.

MAINTENANCE;
INSPECT CHECK DAMS AND CHANNELS AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT RAINFALL EVENT AND REPAIR IMMEDIATELY. CLEAN OUT SEDIMENT, STRAW, LIMBS, OR OTHER DEBRIS THAT COULD CLOG THE CHANNEL AND STONE AS NEEDED.

INSPECT FOR EROSION AROUND EDGES OF CHECK DAM AND UNDERMINING. CORRECT ALL DAMAGE IMMEDIATELY. REPLACE STONE AS NEEDED.



DRAWING NOT TO SCALE

CHECK DAM

TOWN OF HOLLY SPRINGS

STANDARD DETAIL NUMBER: HS413

DATE	REVISIONS
9/21/16	
6/11/24	

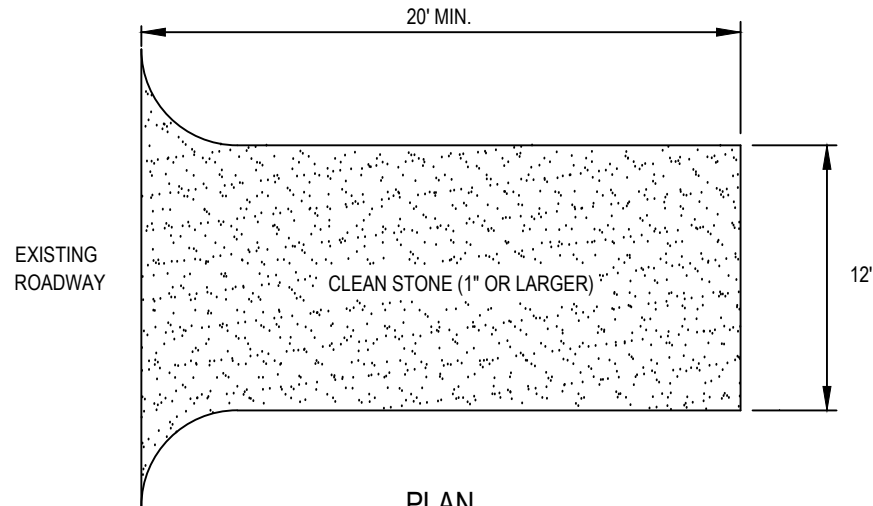


MAINTENANCE:
 MAINTAIN THE GRAVEL PAD IN A CONDITION TO PREVENT TRACKING OF SEDIMENT FROM LEAVING THE CONSTRUCTION SITE. THIS MAY REQUIRE PERIODIC TOPDRESSING WITH MINIMUM SAME SIZE STONE.

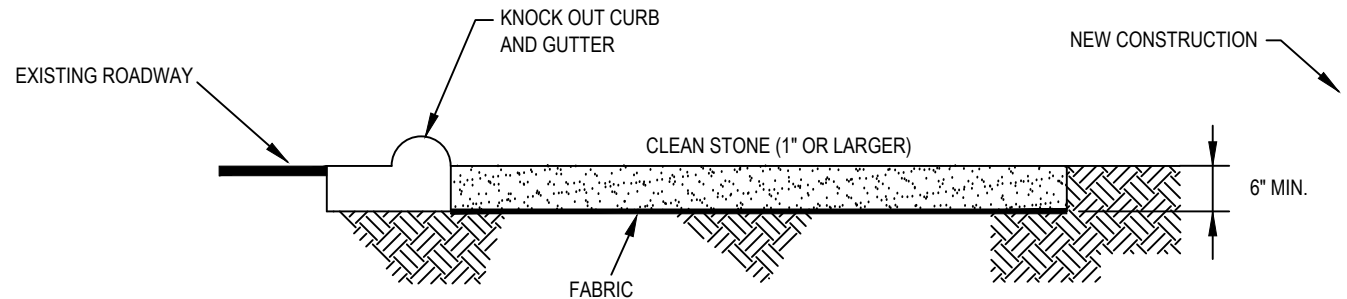
ANY MATERIAL WHICH STILL MAKES IT ONTO STREET MUST BE CLEANED IMMEDIATELY.

NOTES:

1. REFER TO DWG. STD. HS320 STANDARD DRIVEWAY APRON
2. REFER TO DWG. STD. HS323 STANDARD METHOD OF ENDING CURB AND GUTTER
3. FABRIC TO BE ADDED UNDER THE STONE



PLAN



CROSS SECTION

DRAWING NOT TO SCALE

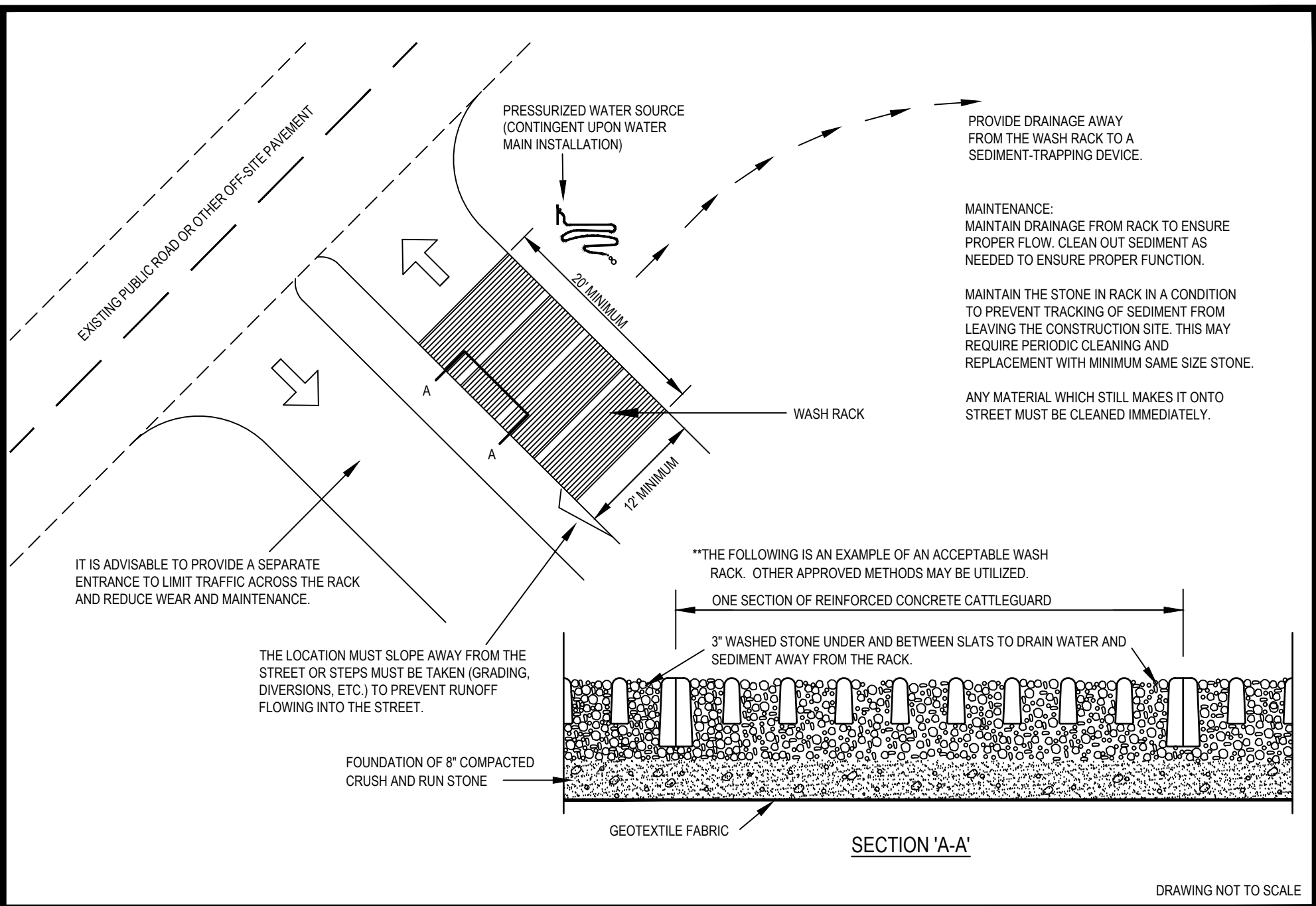
RESIDENTIAL CONSTRUCTION ENTRANCE (INDIVIDUAL LOT)

TOWN OF HOLLY SPRINGS

STANDARD DETAIL NUMBER: HS415

DATE	REVISIONS
7/24/09	
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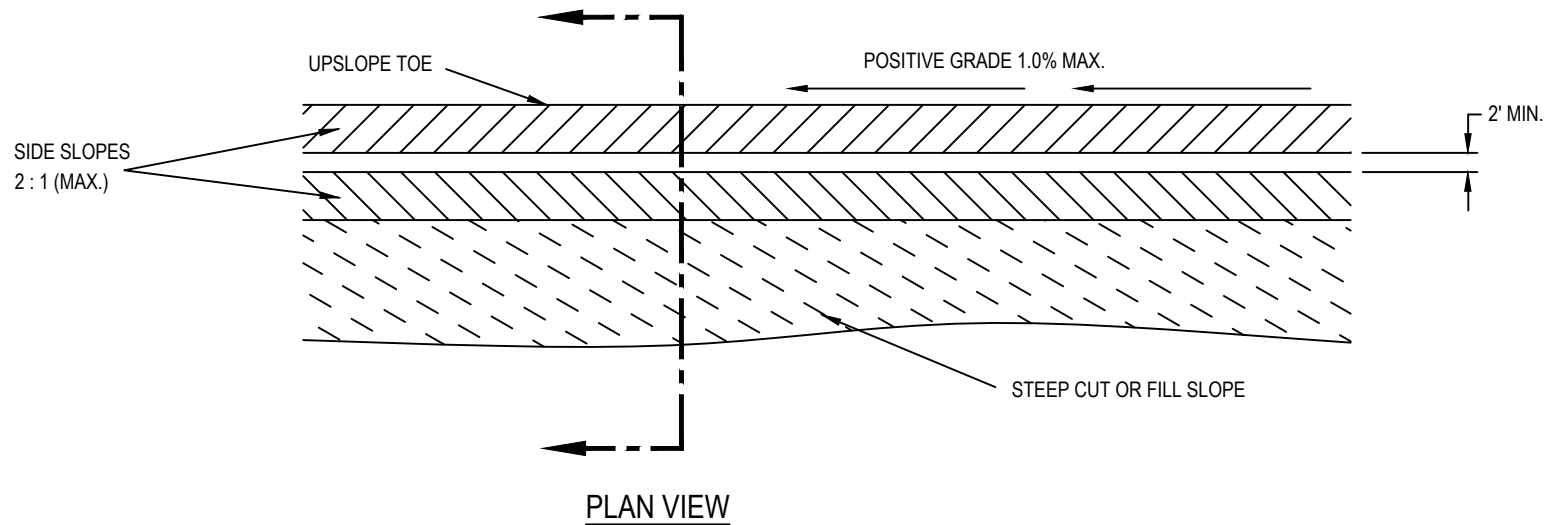
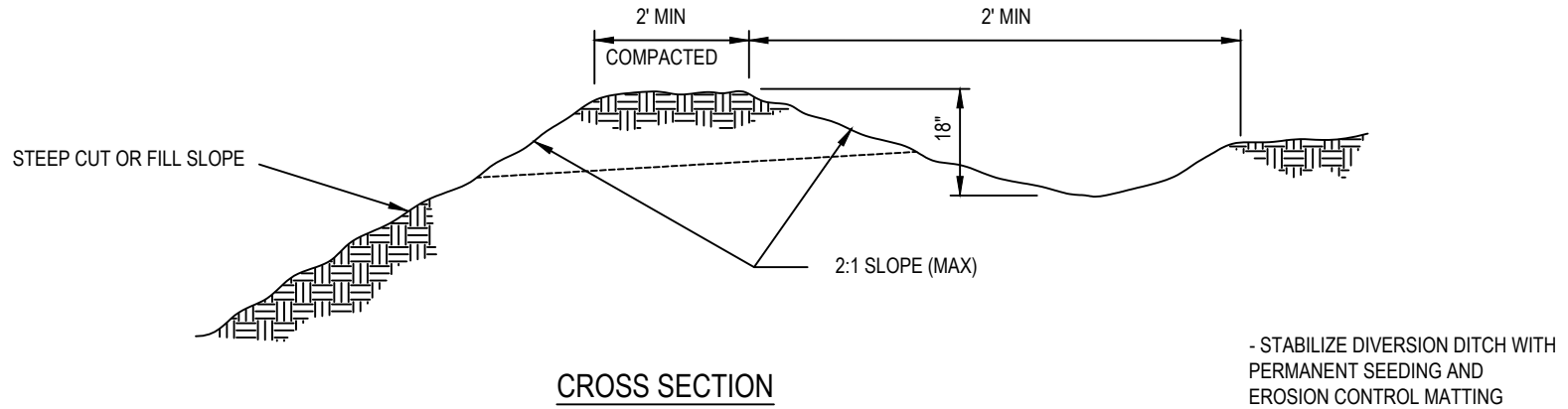
STANDARD CONSTRUCTION EXIT WASH RACK

TOWN OF HOLLY SPRINGS

STANDARD DETAIL NUMBER: HS416

DATE	REVISIONS
7/24/09	
6/11/24	





MAINTENANCE:
 INSPECT DIVERSIONS ONCE A WEEK AND AFTER EVERY RAINFALL.
 IMMEDIATELY REMOVE SEDIMENT FROM THE FLOW AREA AND REPAIR THE
 DIVERSION RIDGE. CAREFULLY CHECK OUTLETS AND MAKE TIMELY
 REPAIRS AS NEEDED.

DRAWING NOT TO SCALE

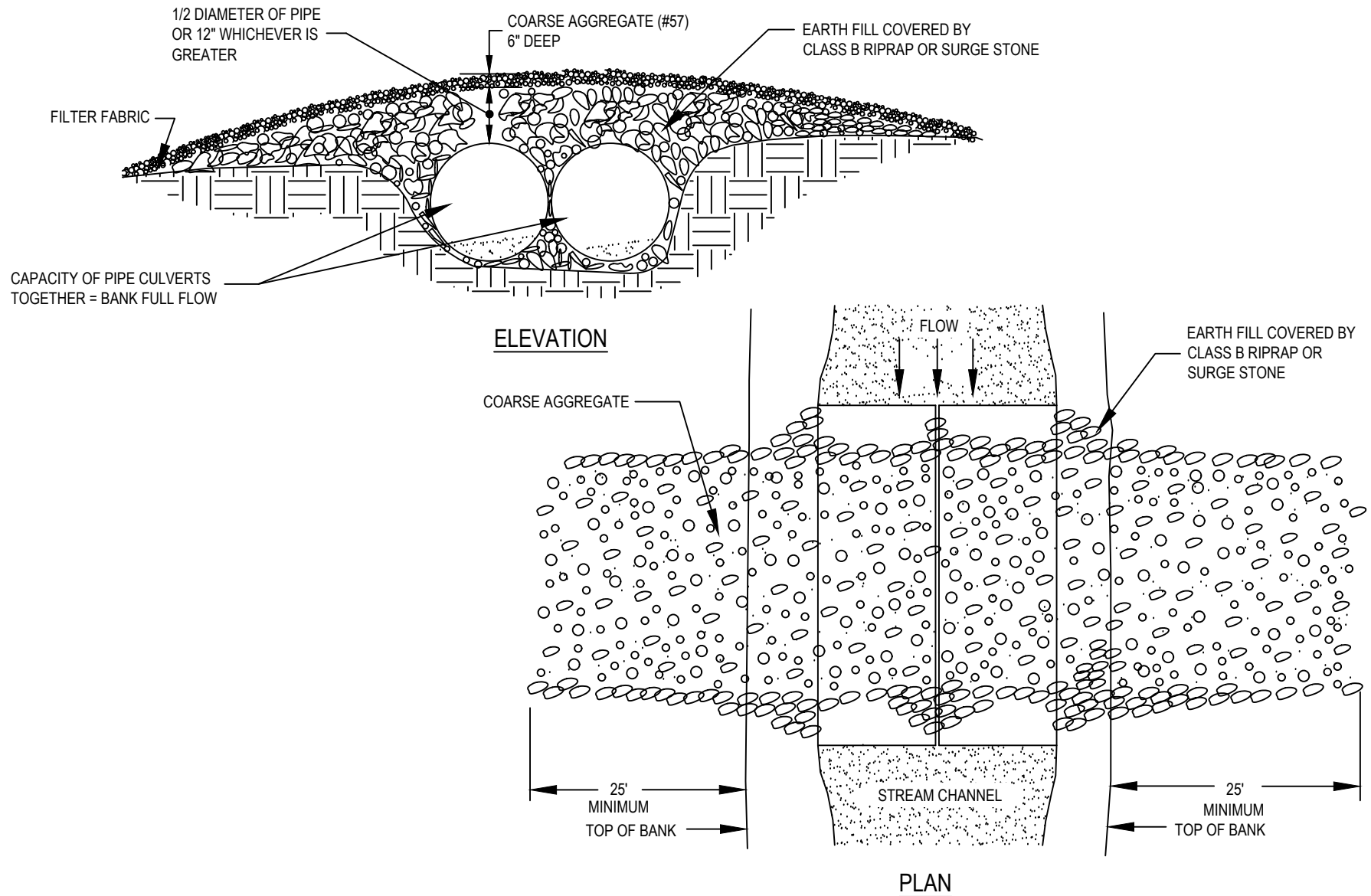
PERMANENT DIVERSION DITCH

TOWN OF HOLLY SPRINGS

STANDARD DETAIL NUMBER: HS417

DATE	REVISIONS
7/24/09	
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MAINTENANCE:

INSPECT TEMPORARY STREAM CROSSINGS AFTER RUNOFF-PRODUCING RAINS TO CHECK FOR BLOCKAGE IN CHANNEL, EROSION OF ABUTMENTS, CHANNEL SCOUR, RIPRAP DISPLACEMENT, OR PIPING. MAKE ALL REPAIRS IMMEDIATELY TO PREVENT FURTHER DAMAGE TO THE INSTALLATION.

DRAWING NOT TO SCALE

TEMPORARY STREAM CROSSING

TOWN OF HOLLY SPRINGS

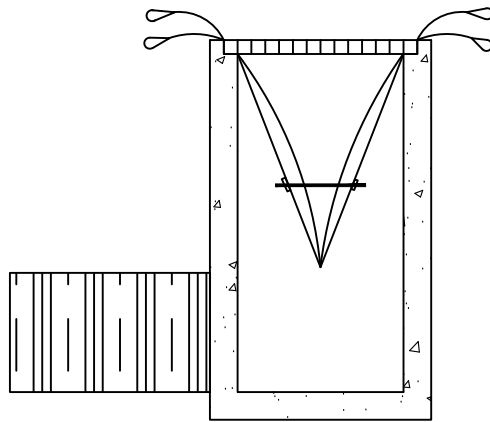
STANDARD DETAIL NUMBER: HS418

DATE	REVISIONS
7/24/09	
6/11/24	

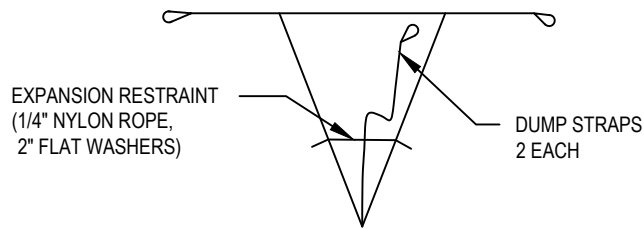
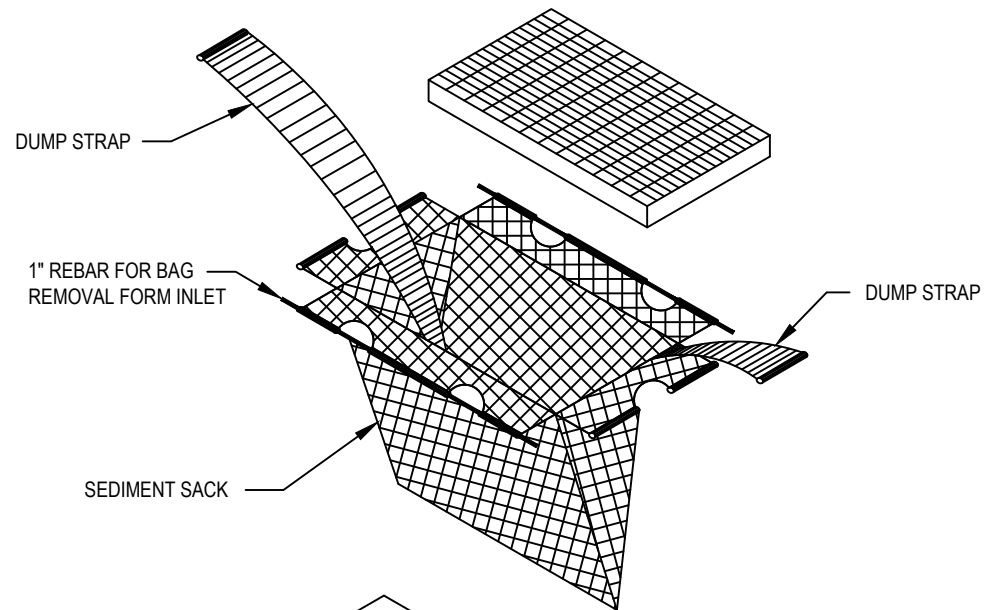


NOTES:

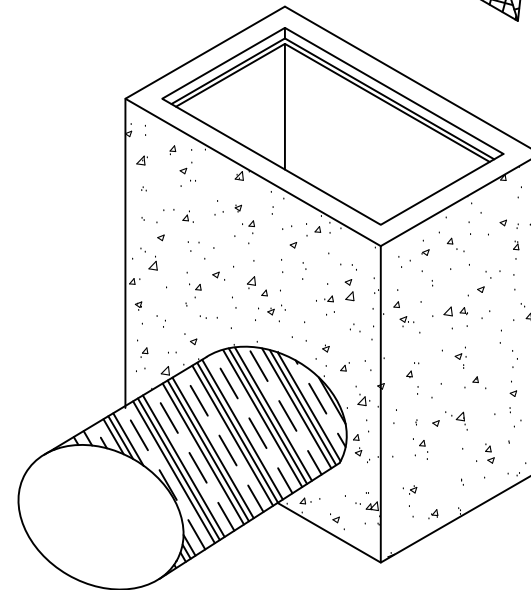
1. ALTERNATE SILT SACKS MAY BE USED PROVIDED THEY MEET MINIMUM DESIGN CRITERIA AND FUNCTION



INSTALLATION DETAIL



BAG DETAIL



MAINTENANCE:

CLEAN OUT DEVICE WHEN HALF FULL OF SEDIMENT.

CHECK FOR RIPS, TEARS, AND HOLES AND REPLACE IF ANY ARE PRESENT.

ENSURE DEVICE IS SEATED IN INLET, NOT FALLING IN.

DRAWING NOT TO SCALE

STANDARD INLET SEDIMENT CONTROL DEVICE

TOWN OF HOLLY SPRINGS

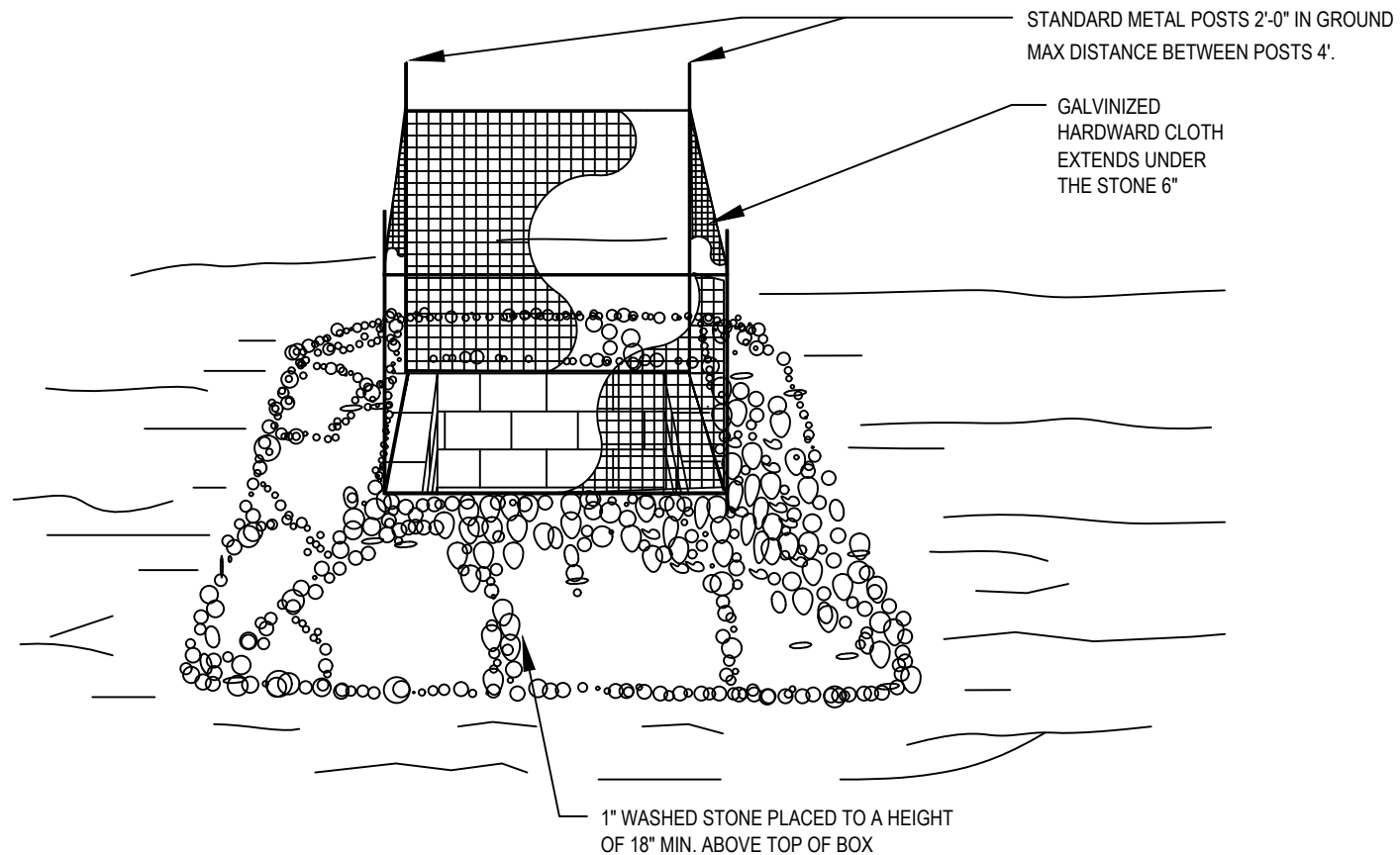
STANDARD DETAIL NUMBER: HS420

DATE REVISIONS

7/24/09

6/11/24





MAINTENANCE:

INSPECT INLETS AT LEAST WEEKLY AND AFTER EACH SIGNIFICANT RAIN EVENT.
CLEAR THE HARDWARE CLOTH OF ANY DEBRIS OR OTHER OBJECTS TO PROVIDE
ADEQUATE FLOW FOR SUBSEQUENT RAINS. TAKE CARE NOT TO DAMAGE OR
UNDERCUT THE HARDWARE CLOTH DURING SEDIMENT REMOVAL.

REPLACE STONE AND REPAIR HARDWARE CLOTH AS NEEDED.

DRAWING NOT TO SCALE

STANDARD CATCH BASIN/YARD INLET PROTECTION

TOWN OF HOLLY SPRINGS

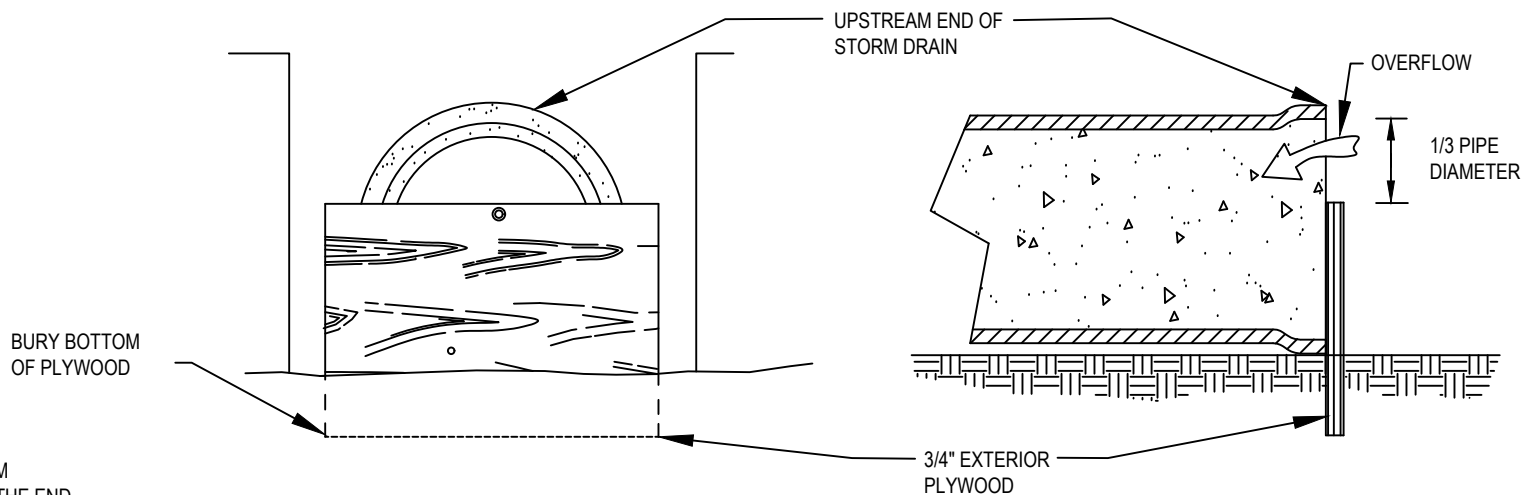
STANDARD DETAIL NUMBER: HS422

DATE REVISIONS

9/21/16

6/11/24

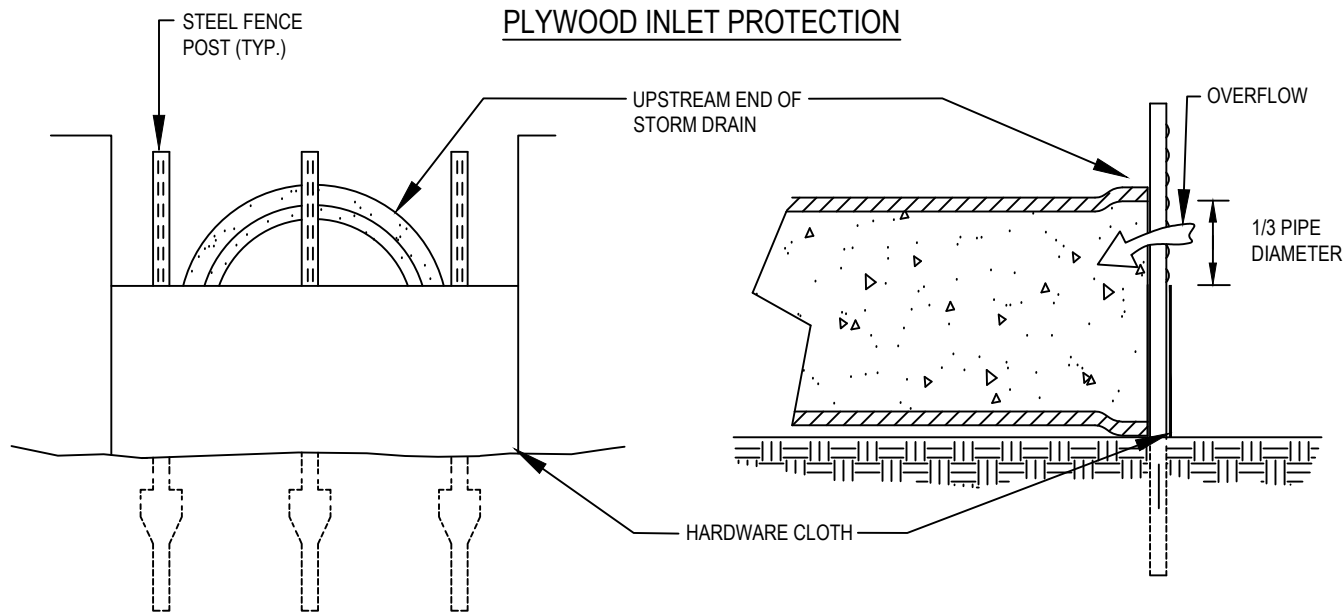




NOTES:

1. ALL PARTIALLY COMPLETED STORM DRAINS SHALL BE PROTECTED AT THE END OF EACH DAY IN ACCORDANCE WITH THESE DETAILS.

PLYWOOD INLET PROTECTION



STONE FILTER INLET PROTECTION

MAINTENANCE:

CLEAN SEDIMENT AND RESTORE THE SEDIMENT STORAGE AREA TO ITS ORIGINAL DIMENSIONS WHEN ACCUMULATED HALFWAY UP THE PIPE OR GREATER.

INSPECT AND REPAIR AS NEEDED THE PLYWOOD OR HARDWARE CLOTH/STONE AT LEAST WEEKLY AND AFTER EVERY SIGNIFICANT RAIN EVENT.

DRAWING NOT TO SCALE

PIPE INLET PROTECTION (PLYWOOD AND STONE)

STANDARD DETAIL NUMBER: HS423

DATE REVISIONS

9/21/16

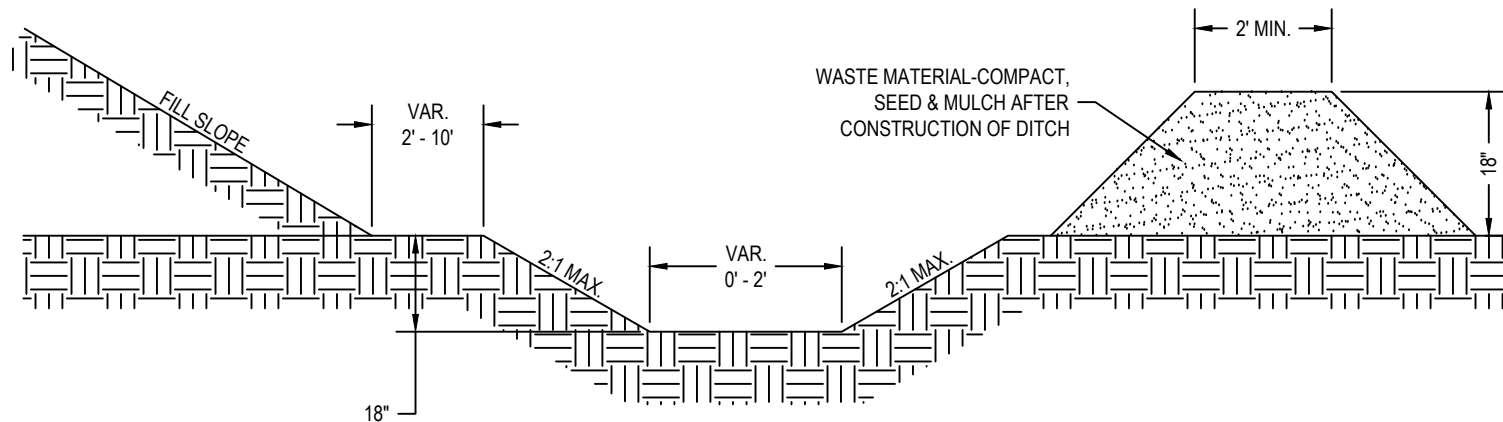
6/11/24



TOWN OF HOLLY SPRINGS

NOTES:

1. TEMPORARY DIVERSION TO BE USED WHERE TOE OF FILL SLOPES EXCEEDS 3 FEET IN VERTICAL HEIGHT AND ALONG STREAMS TO INTERCEPT FLOW AND/OR DIVERT TO A CONTROLLED OUTLET.
2. SILT SHALL BE REMOVED WHEN SILT TEMPORARY DIVERSION IS ONE-HALF FULL.
3. TEMPORARY DIVERSION SHALL BE RECONSTRUCTED WHEN DAMAGED BY EQUIPMENT OR COVERED BY FILL.
4. ALL TEMPORARY AND PERMANENT DIVERSIONS ARE REQUIRED TO BE LINED WITH AN EROSION CONTROL MATTING THAT MEETS DESIGN CRITERIA.



CROSS SECTIONAL VIEW

DRAWING NOT TO SCALE

TEMPORARY DIVERSION

TOWN OF HOLLY SPRINGS

STANDARD DETAIL NUMBER: HS424

DATE REVISIONS

7/24/09

6/11/24

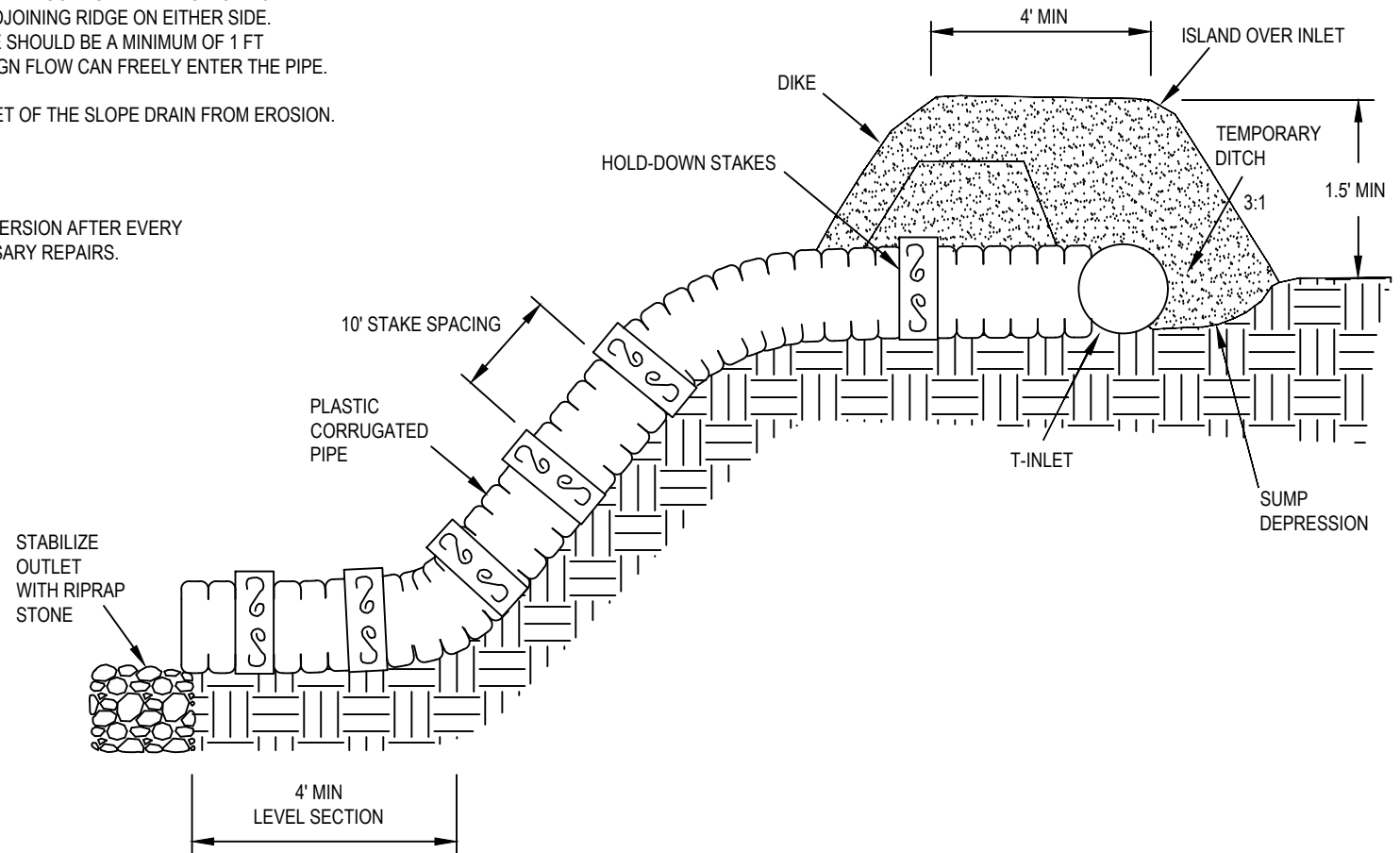


NOTES:

1. ENTRANCE-CONSTRUCT THE ENTRANCE TO THE SLOPE DRAIN OF A STANDARD FLARED-END SECTION OF PIPE WITH A MINIMUM 6-INCH METAL TOE PLATE (CROSS-SECTION VIEW). MAKE ALL FITTINGS WATERTIGHT. A STANDARD T-SECTION FITTING MAY ALSO BE USED AT THE INLET.
2. TEMPORARY DIVERSION-GENERALLY, USE AN EARTHEN DIVERSION WITH A DIKE RIDGE TO DIRECT SURFACE RUNOFF INTO THE TEMPORARY SLOPE DRAIN. MAKE THE HEIGHT OF THE RIDGE OVER THE DRAIN CONDUIT A MINIMUM OF 1.5 FT AND AT LEAST 6 INCHES HIGHER THAN THE ADJOINING RIDGE ON EITHER SIDE. THE LOWEST POINT OF THE DIVERSION RIDGE SHOULD BE A MINIMUM OF 1 FT ABOVE THE TOP OF THE DRAIN SO THAT DESIGN FLOW CAN FREELY ENTER THE PIPE.
3. OUTLET PROTECTION-PROTECT THE OUTLET OF THE SLOPE DRAIN FROM EROSION.

MAINTENANCE:

INSPECT SLOPE DRAIN AND SUPPORTING DIVERSION AFTER EVERY RAINFALL AND PROMPTLY MAKE ANY NECESSARY REPAIRS.



CROSS-SECTION VIEW

DRAWING NOT TO SCALE

TEMPORARY SLOPE DRAIN

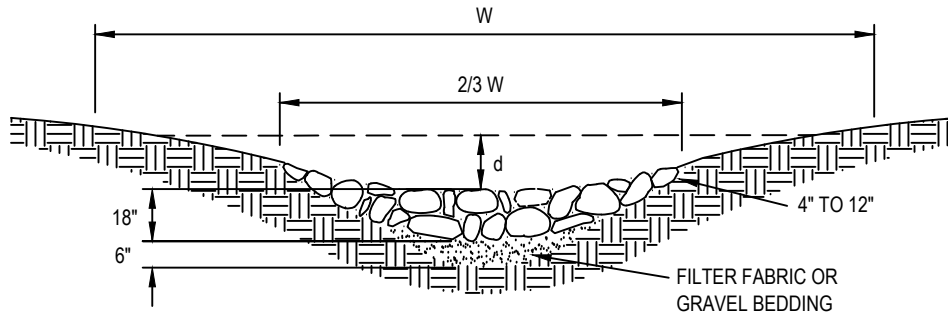
TOWN OF HOLLY SPRINGS

STANDARD DETAIL NUMBER: HS425

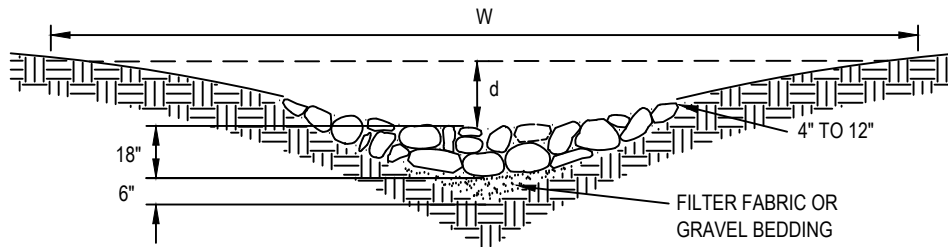
DATE REVISIONS

7/24/09
6/11/24





PARABOLIC-SHAPED WATERWAY WITH STONE CENTER DRAIN
(SHAPED BY BULLDOZER)



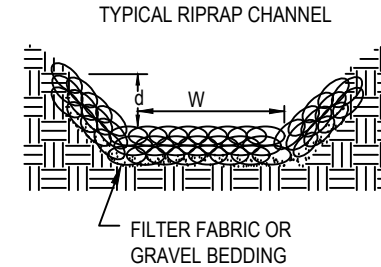
V-SHAPED WATERWAY WITH STONE CENTER DRAIN
(SHAPED BY MOTOR GRADER)

MAINTENANCE:

INSPECT CHANNELS AT REGULAR INTERVALS AS WELL AS AFTER MAJOR RAINS, AND MAKE REPAIRS PROMPTLY. GIVE SPECIAL ATTENTION TO THE OUTLET AND INLET SECTIONS AND OTHER POINTS WHERE CONCENTRATED FLOW ENTERS.

CAREFULLY CHECK STABILITY AT ROAD CROSSINGS, AND LOOK FOR INDICATIONS OF PIPING, SCOUR HOLES, OR BANK FAILURES. MAKE REPAIRS IMMEDIATELY.

MAINTAIN ALL VEGETATION ADJACENT TO THE CHANNEL IN A HEALTHY, VIGOROUS CONDITION TO PROTECT THE AREA FROM EROSION AND SCOUR DURING OUT-OF-BANK FLOW.



TRAPEZOIDAL

NOTES:

1. TO BE USED WHERE EXCESSIVE STORMWATER VELOCITIES PROHIBIT VEGETATIVE LININGS.
2. SIZE OF STONE MUST BE DETERMINED BY APPROPRIATE DESIGN PROCEDURE.
3. DIMENSIONS FOR d & W VARIES ACCORDING TO DESIGN.
4. RIPRAP DEPTH AS PER DESIGN OR REFER TO TABLE.

TABLE

STONE CLASSIFICATION	RIPRAP DEPTH
A	9"
B	18"
CLASS 1	24"
CLASS 2	24" - 36"

DRAWING NOT TO SCALE

RIPRAP LINED CHANNEL

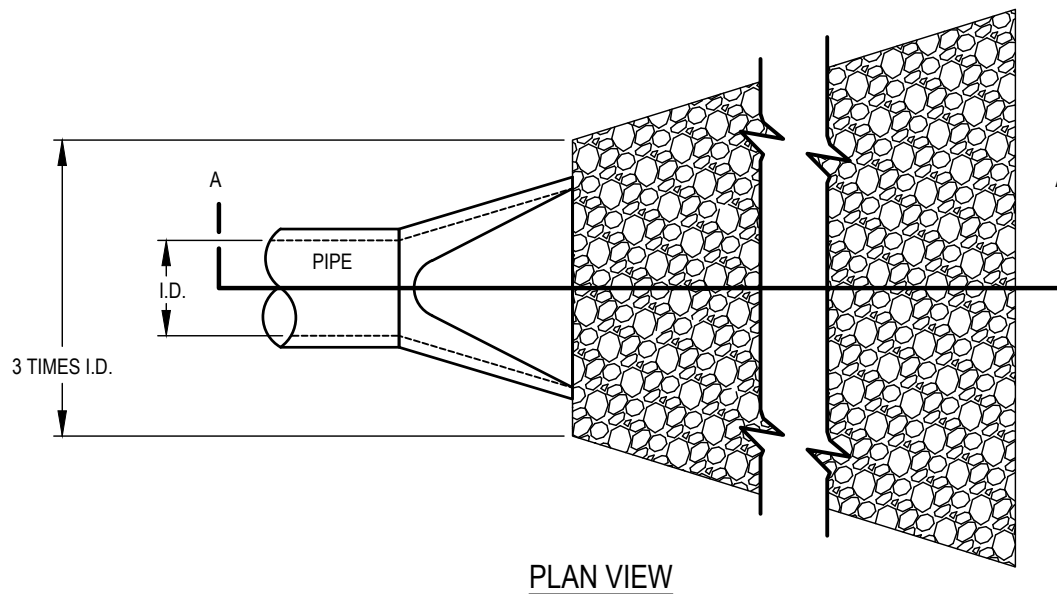
TOWN OF HOLLY SPRINGS

STANDARD DETAIL NUMBER: HS426

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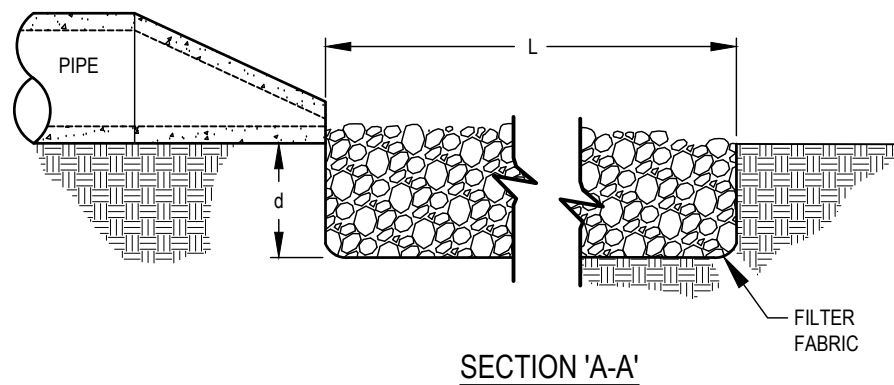


MAINTENANCE:
 INSPECT RIPRAP OUTLET STRUCTURES WEEKLY AND AFTER SIGNIFICANT RAIN EVENTS TO SEE IF ANY EROSION AROUND OR BELOW THE RIPRAP HAS TAKEN PLACE, OR IF STONES HAVE BEEN DISLODGED. IMMEDIATELY MAKE ALL NEEDED REPAIRS TO PREVENT FURTHER DAMAGE.

CLEAN OUT SEDIMENT/REPLACE ONCE INUNDATED WITH SEDIMENT AND NO LONGER FUNCTIONING TO DIFFUSE OR SLOW DOWN FLOW.

NOTES:

1. L = THE LENGTH OF THE RIPRAP APRON.
2. $d = 1.5$ TIMES THE MAXIMUM STONE DIAMETER BUT NOT LESS THAN 6" (INCHES).
3. A FILTER BLANKET OR FILTER FABRIC SHOULD BE INSTALLED BETWEEN THE RIPRAP AND SOIL FOUNDATION.
4. TOP OF STONE MUST BE BELOW OUTLET ELEVATION TO PREVENT OBSTRUCTION.



DRAWING NOT TO SCALE

PIPE OUTLET TO FLAT AREA (NO WELL-DEFINED CHANNEL)

STANDARD DETAIL NUMBER: HS427

DATE

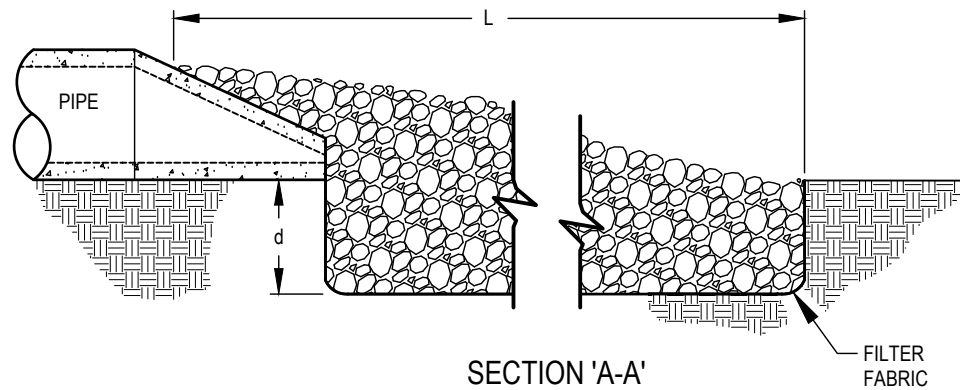
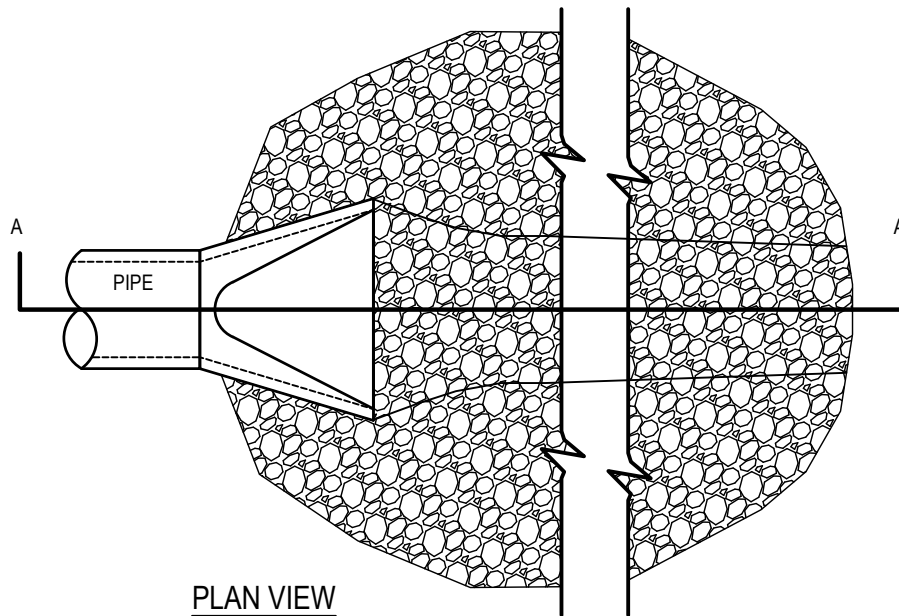
REVISIONS

7/24/09

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TOWN OF HOLLY SPRINGS





MAINTENANCE:

INSPECT RIPRAP OUTLET STRUCTURES WEEKLY AND AFTER SIGNIFICANT RAIN EVENTS TO SEE IF ANY EROSION AROUND OR BELOW THE RIPRAP HAS TAKEN PLACE, OR IF STONES HAVE BEEN DISLODGED. IMMEDIATELY MAKE ALL NEEDED REPAIRS TO PREVENT FURTHER DAMAGE.

CLEAN OUT SEDIMENT/REPLACE RIPRAP ONCE INUNDATED WITH SEDIMENT AND NO LONGER FUNCTIONING TO DIFFUSE OR SLOW DOWN FLOW.

NOTES:

1. L = THE LENGTH OF THE RIPRAP APRON.
2. d = 1.5 TIMES THE MAXIMUM STONE DIAMETER BUT NOT LESS THAN 6" (INCHES).
3. IN A WELL-DEFINED CHANNEL EXTEND THE APRON UP THE CHANNEL BANKS TO AN ELEVATION OF 6" (INCHES) ABOVE THE MAXIMUM TAILWATER DEPTH OR TO THE TOP OF THE BANK, WHICHEVER IS LESS.
4. A FILTER BLANKET OR FILTER FABRIC SHOULD BE INSTALLED BETWEEN THE RIPRAP AND SOIL FOUNDATION.
5. TOP OF STONE MUST BE BELOW OUTLET ELEVATION TO PREVENT OBSTRUCTION.

DRAWING NOT TO SCALE

PIPE OUTLET TO WELL-DEFINED CHANNEL

TOWN OF HOLLY SPRINGS

STANDARD DETAIL NUMBER: HS428

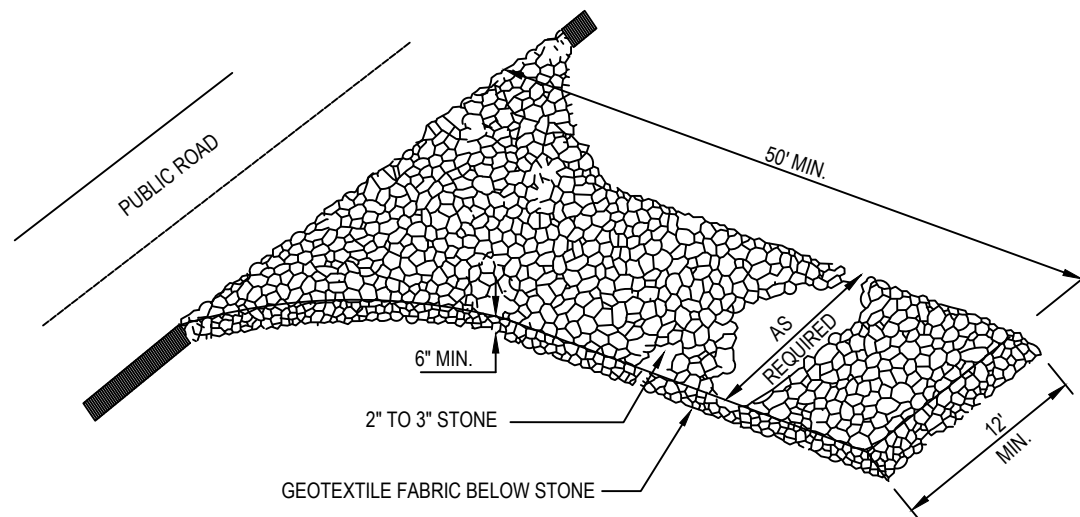
DATE

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APPLICABLE AT ALL POINTS OF INGRESS & EGRESS UNTIL SITE IS STABILIZED. FREQUENT CHECKS OF THE DEVICE AND TIMELY MAINTENANCE MUST BE PROVIDED.

NOTES:

1. TURNING RADIUS SUFFICIENT TO ACCOMMODATE LARGER TRUCKS IS TO BE PROVIDED.
2. ENTRANCE(S) SHOULD BE LOCATED TO PROVIDE FOR MAXIMUM UTILIZATION BY ALL CONSTRUCTION TRUCKS.
3. MUST BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR DIRECT FLOW OF TRAFFIC ONTO STREETS. PERIODIC TOP DRESSING WITH STONE WILL BE NECESSARY, KEEP SOME ON HAND.
4. ANY MATERIAL WHICH STILL MAKES IT ONTO THE ROAD MUST BE CLEANED IMMEDIATELY.

DRAWING NOT TO SCALE

CONSTRUCTION ENTRANCE

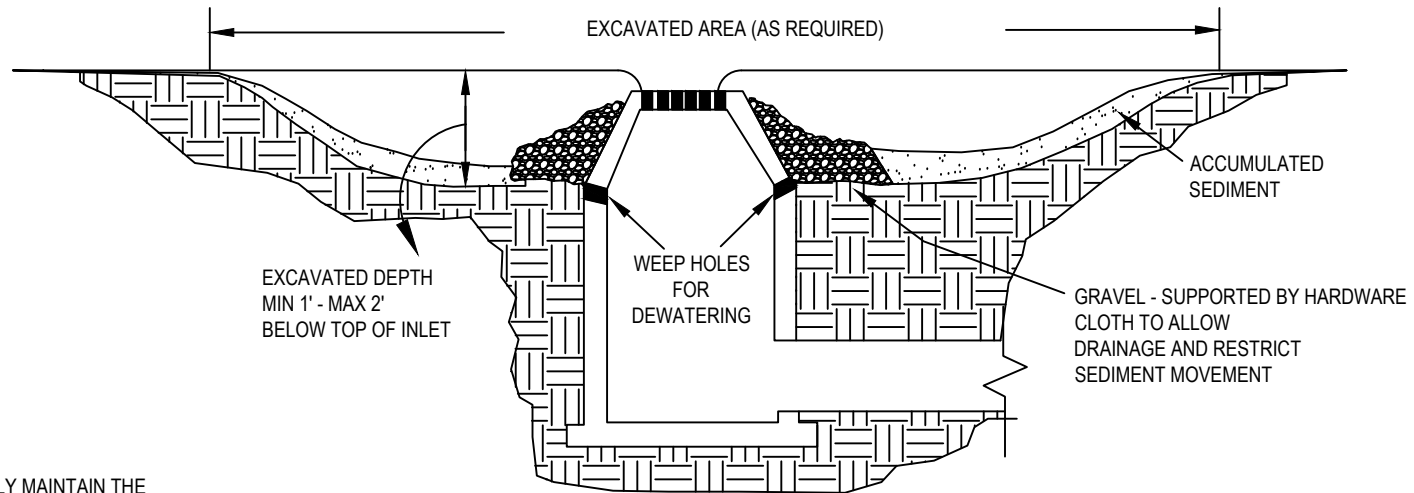
TOWN OF HOLLY SPRINGS

STANDARD DETAIL NUMBER: HS432

DATE	REVISIONS
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6/11/24	

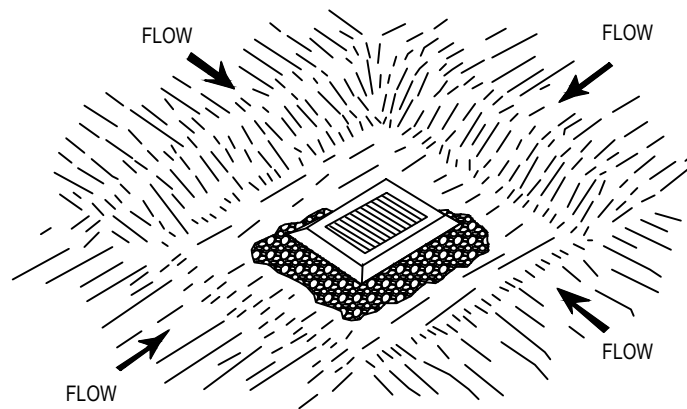


HOLLY
SPRINGS
North Carolina



MAINTENANCE:
INSPECT, CLEAN, AND PROPERLY MAINTAIN THE
EXCAVATED BASIN AFTER EVERY SIGNIFICANT RAIN
EVENT UNTIL THE CONTRIBUTING DRAINAGE AREA HAS
BEEN PERMANENTLY STABILIZED.

REMOVE SEDIMENT WHEN THE VOLUME OF THE BASIN
HAS BEEN REDUCED BY ONE-HALF.



DRAWING NOT TO SCALE

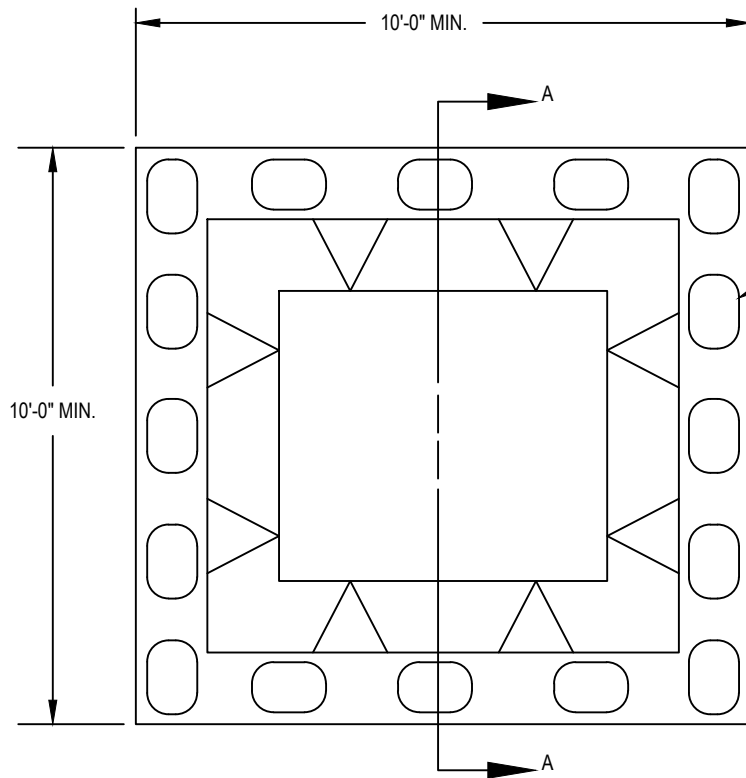
EXCAVATED DROP INLET PROTECTION

TOWN OF HOLLY SPRINGS

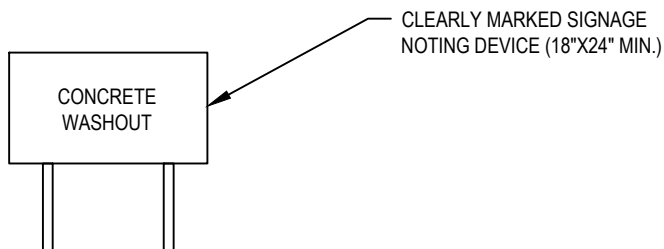
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DATE	REVISIONS
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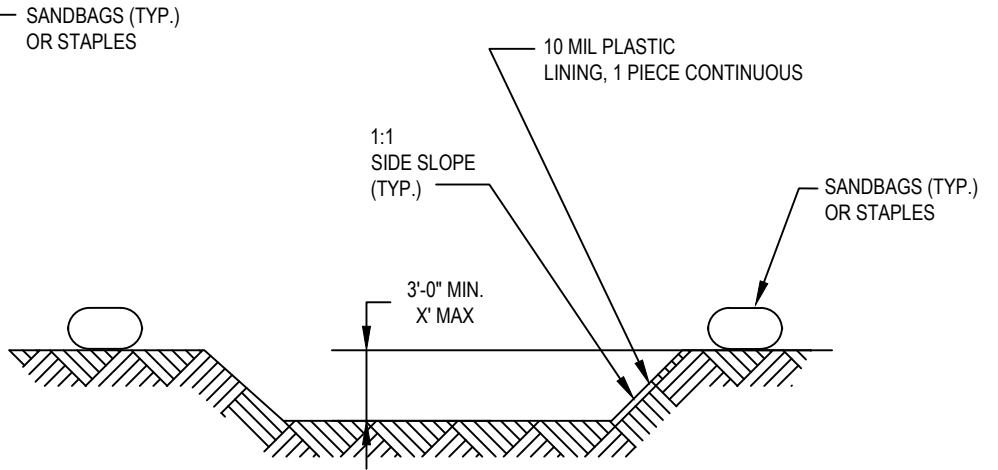




PLAN



CLEARLY MARKED SIGNAGE
NOTING DEVICE (18"X24" MIN.)



SECTION A-A

*THE CONCRETE WASHOUT SHOULD BE LOCATED A MINIMUM OF 50' FROM
STORM DRAIN INLETS, BUFFERS, SEDIMENT BASINS OR WATERCOURSES

NOTES:

1. THE CONCRETE WASHOUT STRUCTURES SHALL BE MAINTAINED WHEN THE LIQUID AND/OR SOLID REACHES 75% OF THE STRUCTURES CAPACITY.
2. CONCRETE WASHOUT STRUCTURE NEEDS TO BE CLEARLY MARKED WITH SIGNAGE NOTING DEVICE.
3. SELECT LOCATION SO CONCRETE EFFLUENT DOES NOT FLOW INTO ROADS.
4. MODIFIED CONSTRUCTION ENTRANCE MUST BE INSTALLED BETWEEN ROAD AND WASHOUT.

DRAWING NOT TO SCALE

BELOW GRADE CONCRETE WASHOUT STRUCTURE

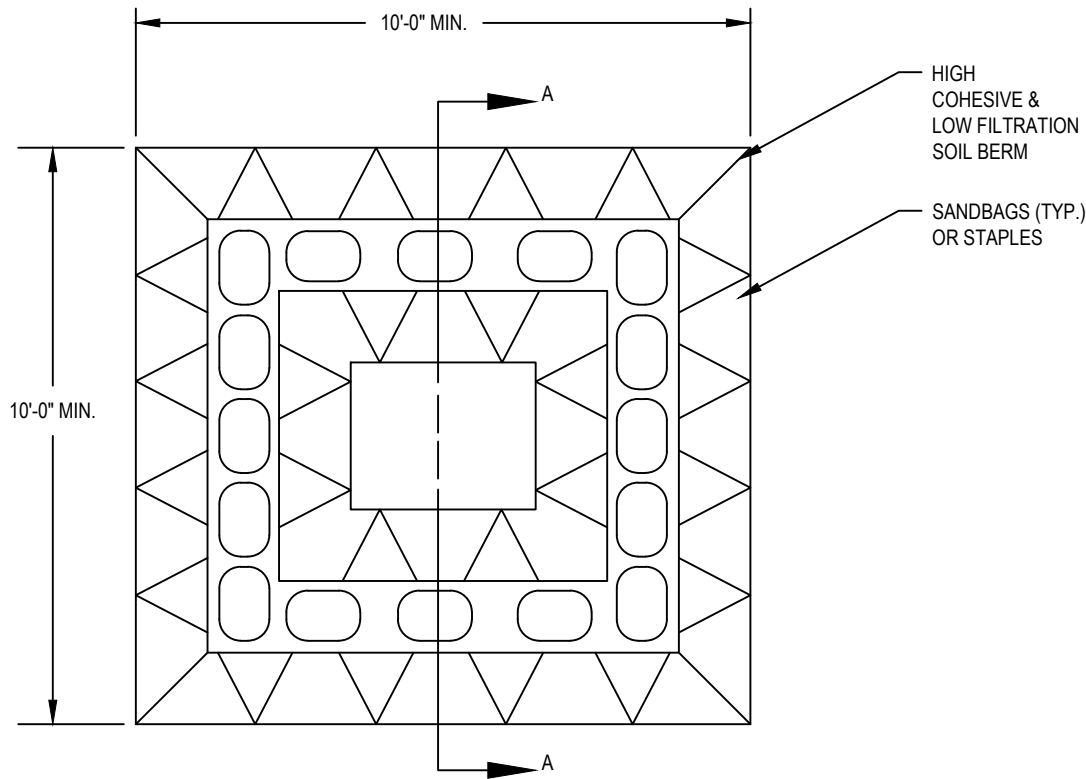
TOWN OF HOLLY SPRINGS

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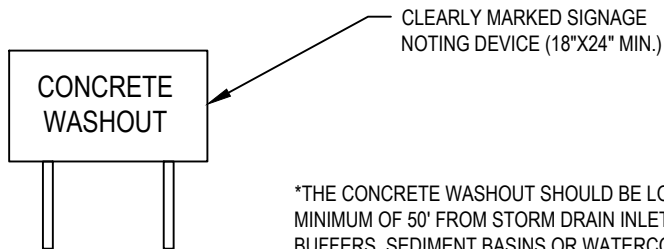
DATE REVISIONS

4/15/19
6/11/24

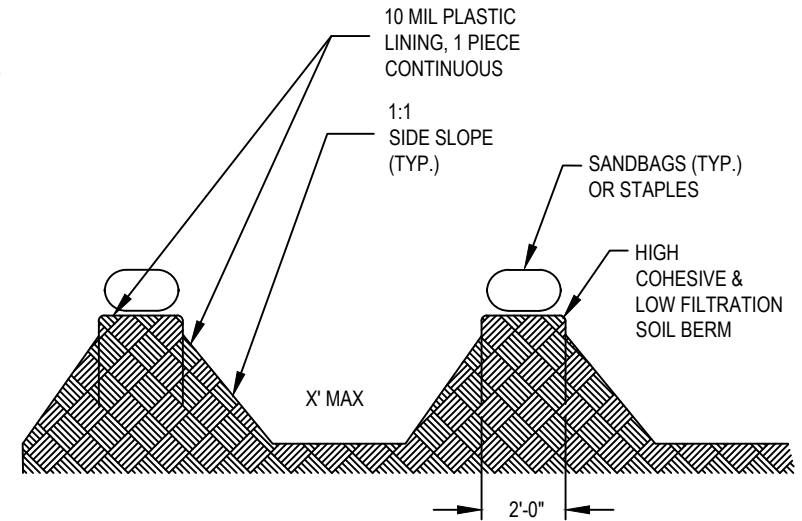




PLAN



*THE CONCRETE WASHOUT SHOULD BE LOCATED A MINIMUM OF 50' FROM STORM DRAIN INLETS, BUFFERS, SEDIMENT BASINS OR WATERCOURSES.



SECTION A-A

NOTES:

1. THE CONCRETE WASHOUT STRUCTURES SHALL BE MAINTAINED WHEN THE LIQUID AND/OR SOLID REACHES 75% OF THE STRUCTURES CAPACITY TO PROVIDE ADEQUATE HOLDING CAPACITY WITH A MINIMUM 12 INCHES OF FREEBOARD.
2. CONCRETE WASHOUT STRUCTURE NEEDS TO BE CLEARLY MARKED WITH SIGNAGE NOTING DEVICE.
3. SELECT LOCATION SO CONCRETE EFFLUENT DOES NOT FLOW INTO ROADS.
4. MODIFIED CONSTRUCTION ENTRANCE MUST BE INSTALLED BETWEEN ROAD AND WASHOUT.

DRAWING NOT TO SCALE

ABOVE GRADE CONCRETE WASHOUT STRUCTURE

TOWN OF HOLLY SPRINGS

STANDARD DETAIL NUMBER: HS436

DATE REVISIONS

4/6/17

6/11/24



MAINTENANCE NOTES:

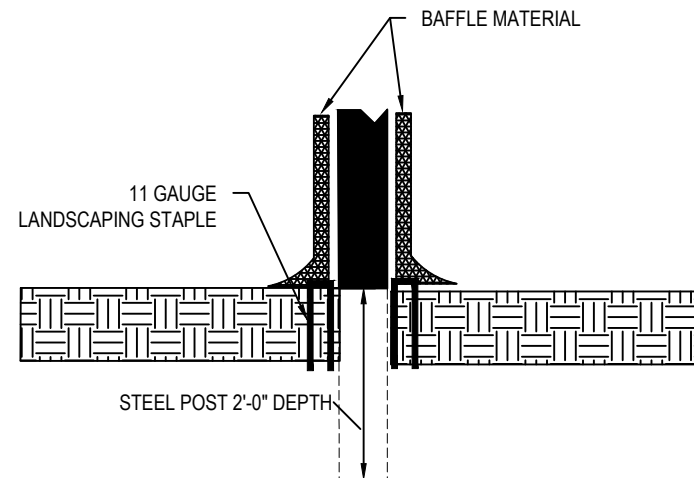
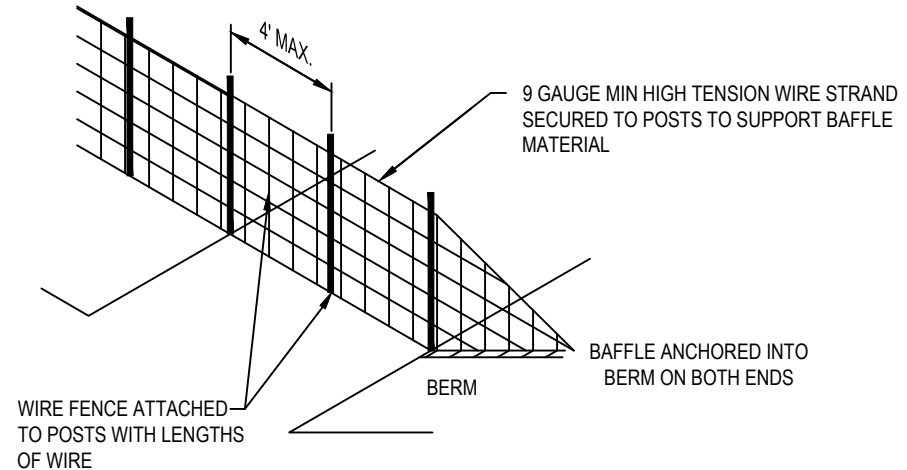
INSPECT BAFFLES AT LEAST ONCE A WEEK AND AFTER EACH RAINFALL. MAKE ANY REQUIRED REPAIRS IMMEDIATELY.

BE SURE TO MAINTAIN ACCESS TO THE BAFFLES. SHOULD THE FABRIC OF A BAFFLE COLLAPSE, TEAR, DECOMPOSE, OR BECOME INEFFECTIVE, REPLACE IT PROMPTLY.

REMOVE SEDIMENT DEPOSITS WHEN IT REACHES HALF FULL, TO PROVIDE ADEQUATE STORAGE VOLUME FOR THE NEXT RAIN AND TO REDUCE PRESSURE ON THE BAFFLES. TAKE CARE TO AVOID DAMAGING THE BAFFLES DURING CLEANOUT, AND REPLACE IF DAMAGED DURING CLEANOUT OPERATIONS. SEDIMENT DEPTH SHOULD NEVER EXCEED HALF THE DESIGNED STORAGE DEPTH.

NOTES:

1. DRIVE STEEL FENCE POST AT LEAST 18" INTO SOLID GROUND.
2. WOOD POSTS ARE NOT ACCEPTABLE.
3. USE STAPLES 1' APART TO ATTACH FABRIC TO BOTTOM OF BASIN.
4. 4' MAX BETWEEN POSTS.
5. CLEAN OUT BASIN WHEN 1/2 FULL AND RESTORE TO ORIGINAL DIMENSIONS.
6. 700-900 GRAMS PER SQ. METER COIR FABRIC AS POROUS BAFFLE.
7. BAFFLES SHALL BE INSTALLED PERPENDICULAR TO FLOW.
8. INSTALL THREE COIR BAFFLES IN BASINS BETWEEN THE INLETS AND THE SKIMMER/OUTLET TO CREATE A SPACING OF 1/4 OF THE BASIN LENGTH BETWEEN BAFFLES.
9. BAFFLES SHOULD BE THE HEIGHT OF THE EMERGENCY SPILLWAY OR TOP OF THE RISER ELEVATION.



BAFFLE MATERIAL SHOULD BE SECURED TO THE BOTTOM AND SIDES OF BASIN USING 12" LANDSCAPE STAPLES

DRAWING NOT TO SCALE

COIR FIBER BAFFLE

TOWN OF HOLLY SPRINGS

STANDARD DETAIL NUMBER: HS438

DATE REVISIONS

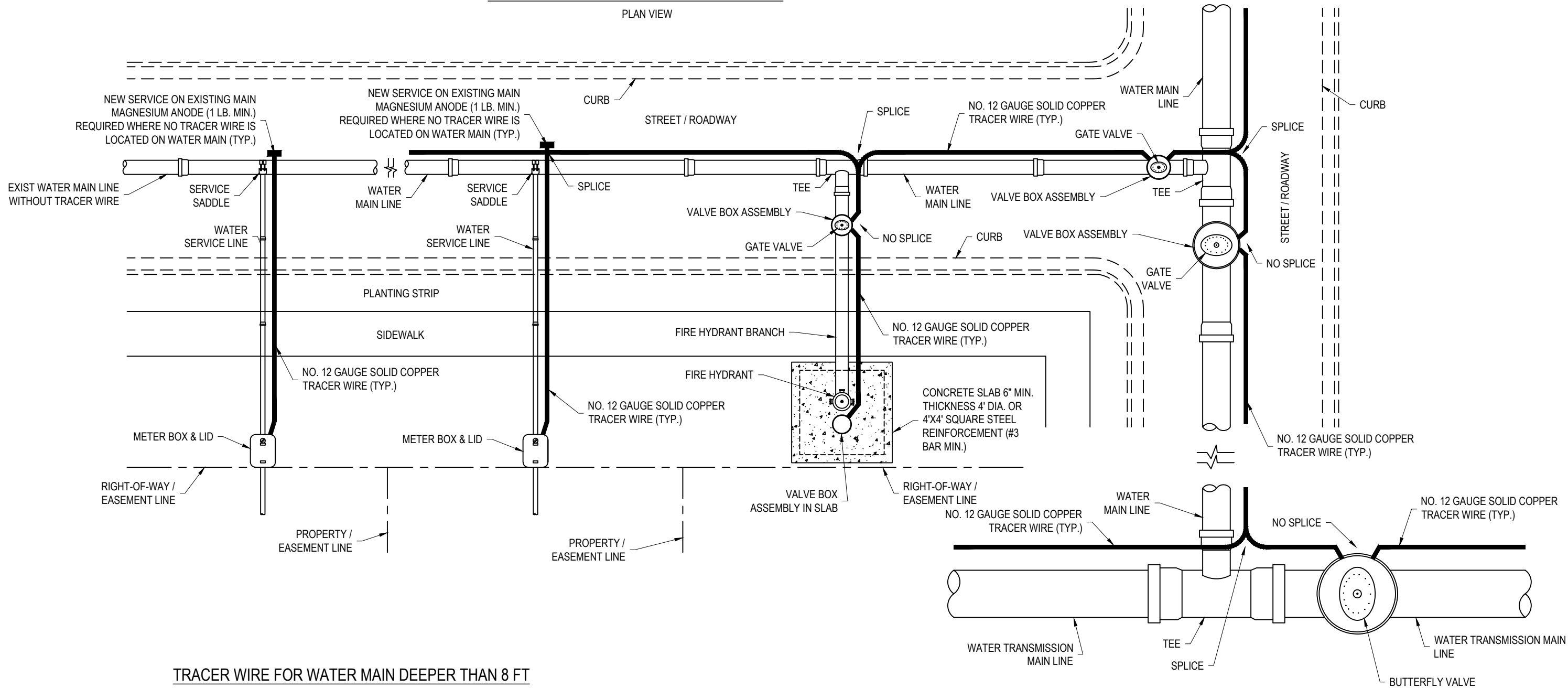
4/16/19

6/11/24



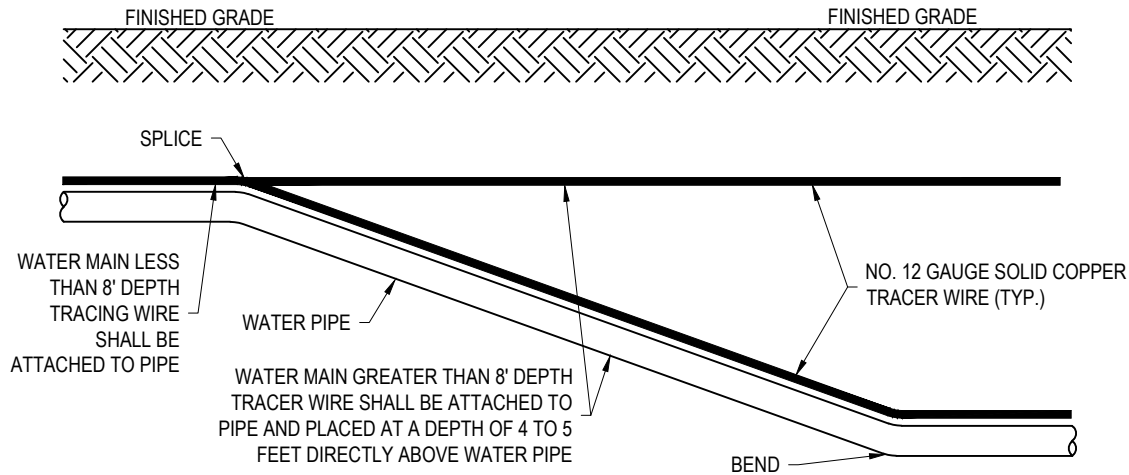
STREET VIEW - WATER MAIN TRACER WIRE

PLAN VIEW



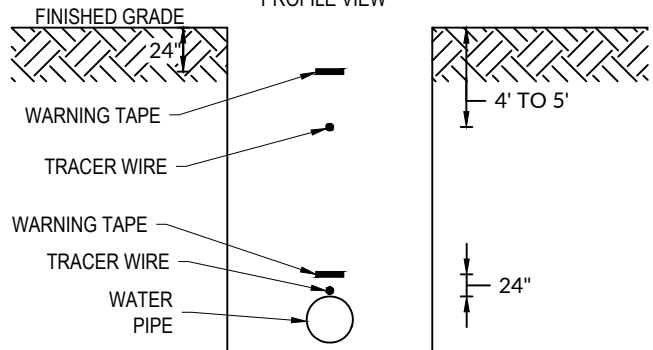
TRACER WIRE FOR WATER MAIN DEEPER THAN 8 FT

SECTION VIEW



TRENCH DETAIL

PROFILE VIEW



- NOTES:
1. TRACER WIRE SHOWN AWAY FROM PIPE FOR CLARITY. TRACER WIRE SHALL BE INSTALLED IMMEDIATELY ADJACENT TO WATER MAIN.
 2. TRACER WIRE SHALL BE SOLID COPPER NO. 12 WITH 30 MILS BLUE HDPE INSULATION.
 3. NEED LOCATOR POST FOR 30 INCH AND LARGER DISTRIBUTION MAINS ONLY.

1 OF 2 DRAWING NOT TO SCALE

TRACER WIRE - PRESSURE PIPE (WATER AND RECLAIMED WATER MAIN)

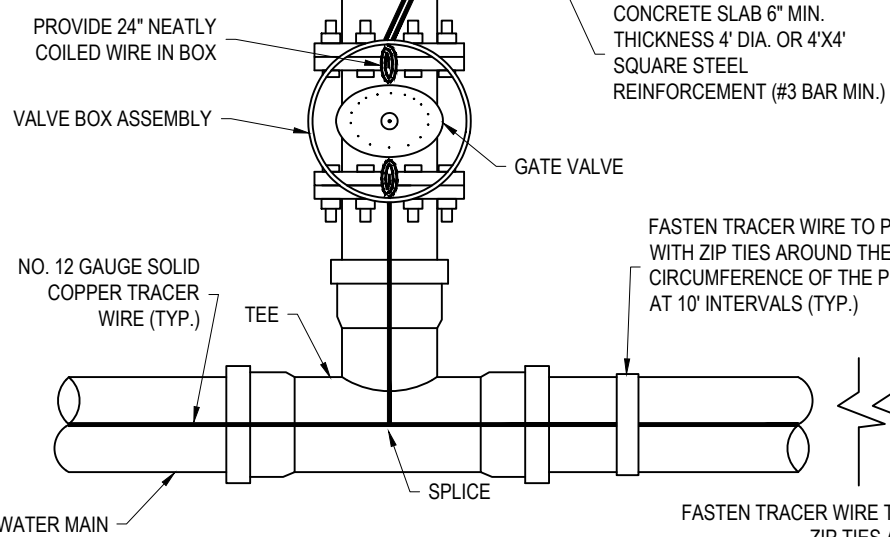
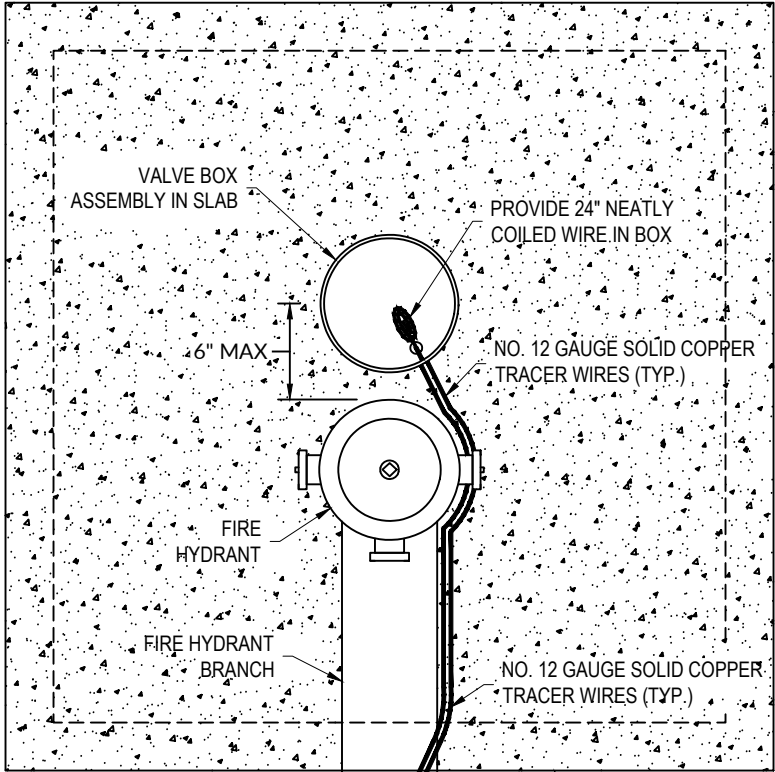
TOWN OF HOLLY SPRINGS

STANDARD DETAIL NUMBER: HS501

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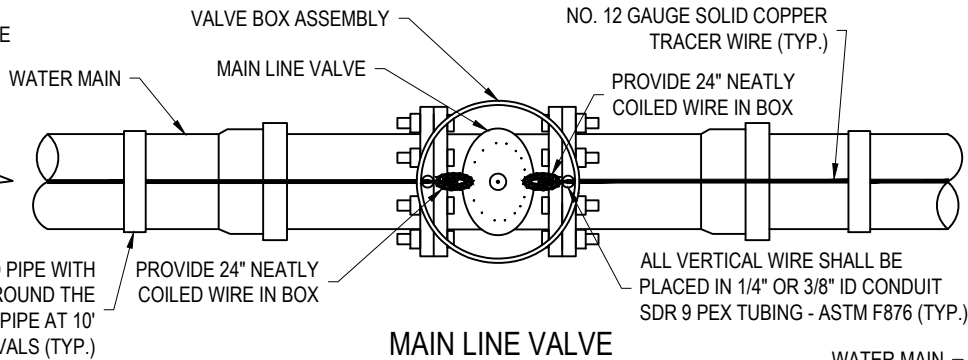
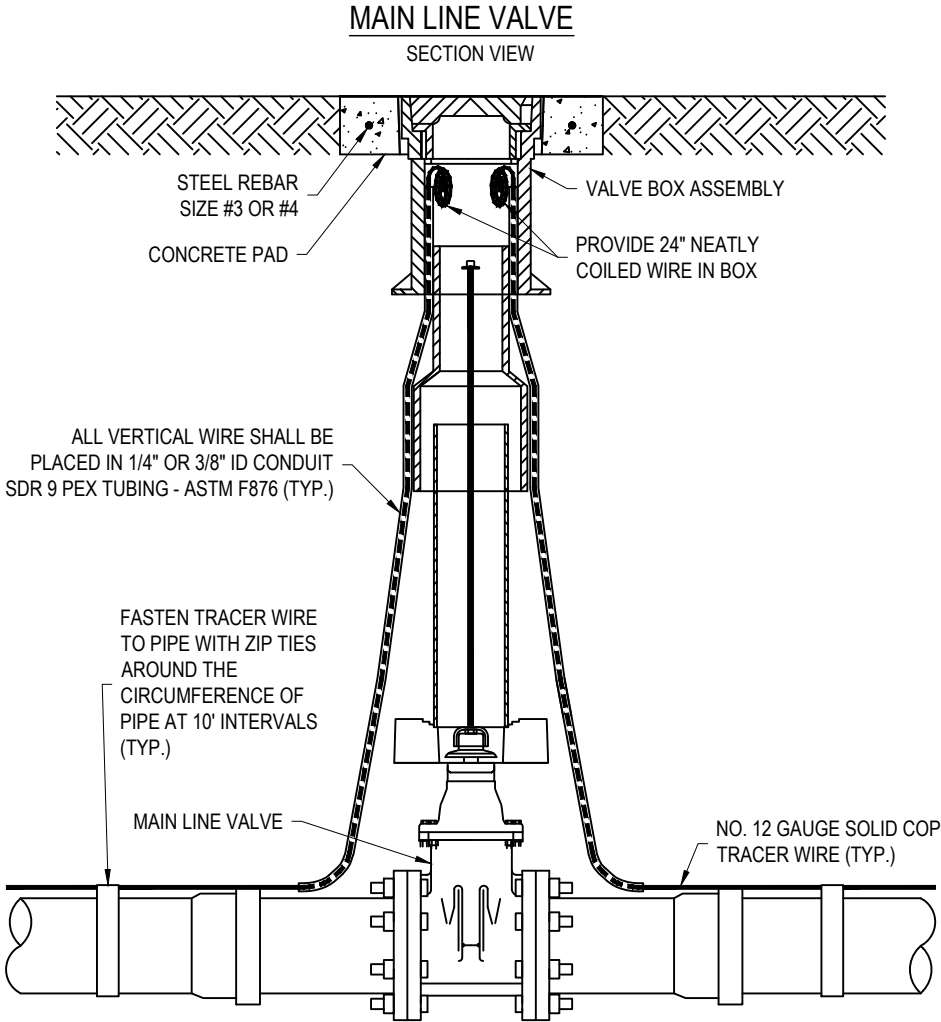
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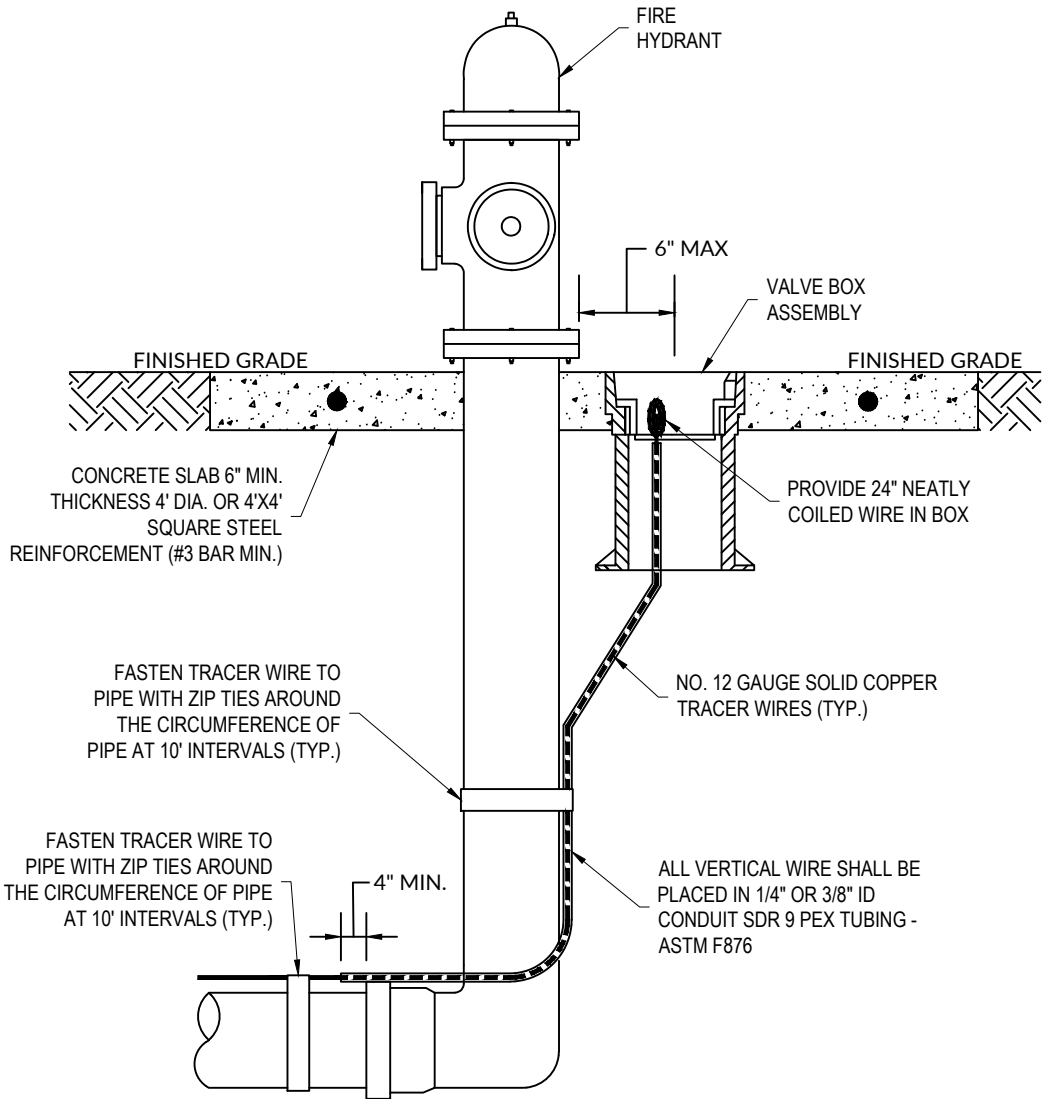


FIRE HYDRANT
PLAN VIEW

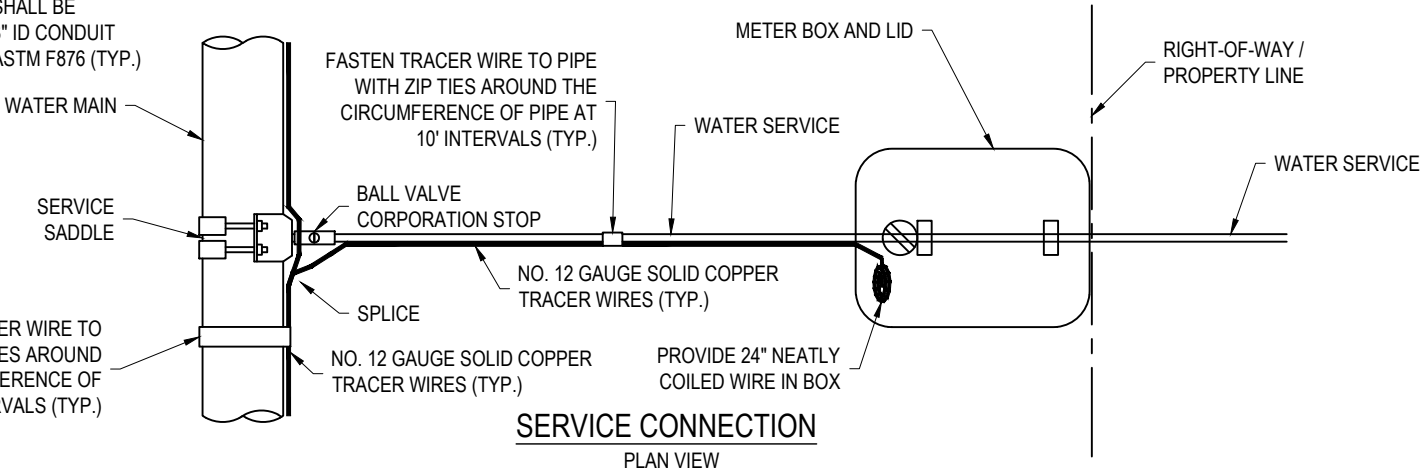
- NOTES:
1. TRACER WIRE SHALL BE AWG NO. 12 GAUGE SOLID COPPER WITH 30 MILS BLUE HDPE INSULATION.
 2. THE TRACER WIRE SHALL BE CONTINUOUS TO THE GREATEST EXTENT POSSIBLE. WHERE SPLICES ARE NECESSITATED IN THE WIRE, THE SPLICES SHALL BE SECURELY BONDED TOGETHER WITH AN APPROVED INDUSTRIAL CONNECTOR TO PROVIDE ELECTRICAL CONTINUITY. CONNECTOR SHALL BE COPPER AND INSULATION SHALL BE REPAIRED AS DETAILED TO SEAL OUT MOISTURE AND CORROSION AND SHALL BE INSTALLED SO AS TO PREVENT ANY UNINSULATED WIRE EXPOSURE.
 3. SPLICED CONNECTIONS SHALL BE ALLOWED BETWEEN THE MAIN TRACER WIRE AND THE WATER SERVICE TRACER WIRE.
 4. TRACER WIRE SHALL BE PROTECTED FROM DAMAGE DURING THE EXECUTION OF THE WORK. NO BREAKS OR CUTS IN THE TRACER WIRE OR INSULATION SHALL BE PERMITTED.
 5. PRIOR TO ACCEPTANCE (POST PUNCH LIST) EACH WIRE SEGMENT SHALL PASS A CONDUCTIVITY TEST, WITNESSED BY THE ENGINEER OR ENGINEER'S REPRESENTATIVE.
 6. WHERE 2 OR MORE WIRES ENTER A VALVE BOX ASSEMBLY, (PROVIDE 24 INCHES OF NEATLY COILED WIRE) AFTER ACCEPTANCE TESTING, CONNECT ENDS OF ALL WIRES WITH WATERPROOF WIRE CONNECTOR NUT AND 3\"/>
 7. SPLICES IN THE PRIMARY TRACER WIRE ALONG THE WATER MAIN SHALL INCLUDE 3 FEET OF SLACK WIRE ON EACH SIDE OF EACH SPLICE.
 8. FOR INSTALLING A NEW SERVICE LINE ON AN EXISTING MAIN WITH TRACER WIRE, ONLY SPLICE TO EXISTING WIRE WITH 3 FEET OF SLACK ON NEW SERVICE LINE.



MAIN LINE VALVE
PLAN VIEW



FIRE HYDRANT
SECTION VIEW



SERVICE CONNECTION
PLAN VIEW

TRACER WIRE - PRESSURE PIPE (WATER AND RECLAIMED WATER MAIN)

TOWN OF HOLLY SPRINGS

STANDARD DETAIL NUMBER: HS501

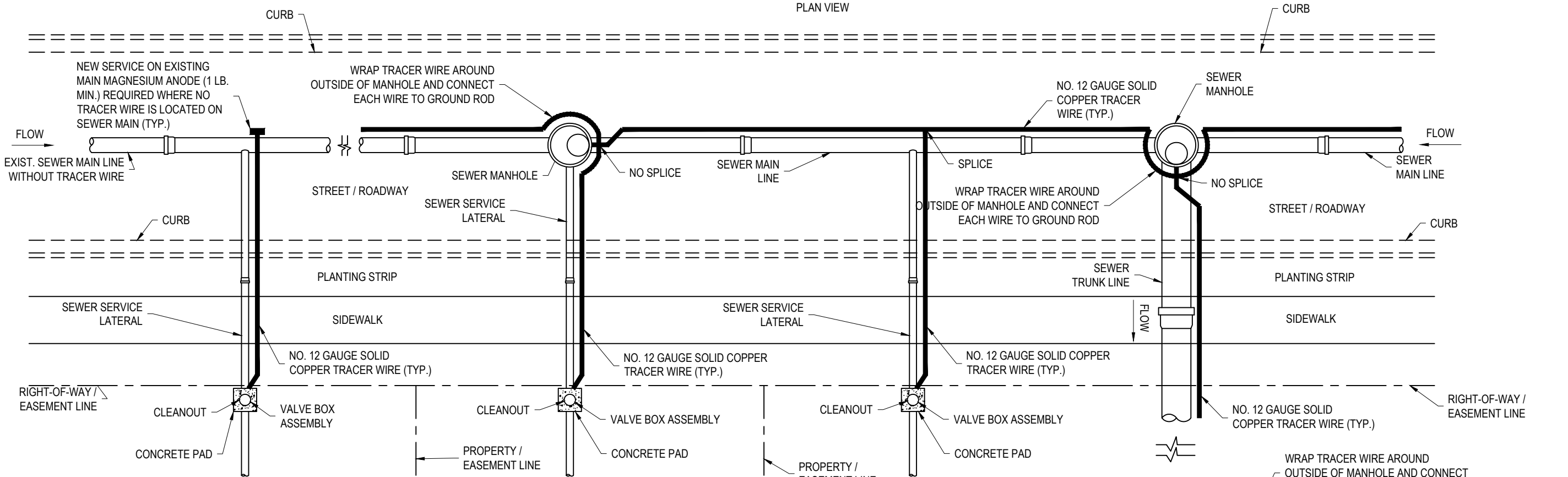
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REVISIONS

DRAWING NOT TO SCALE

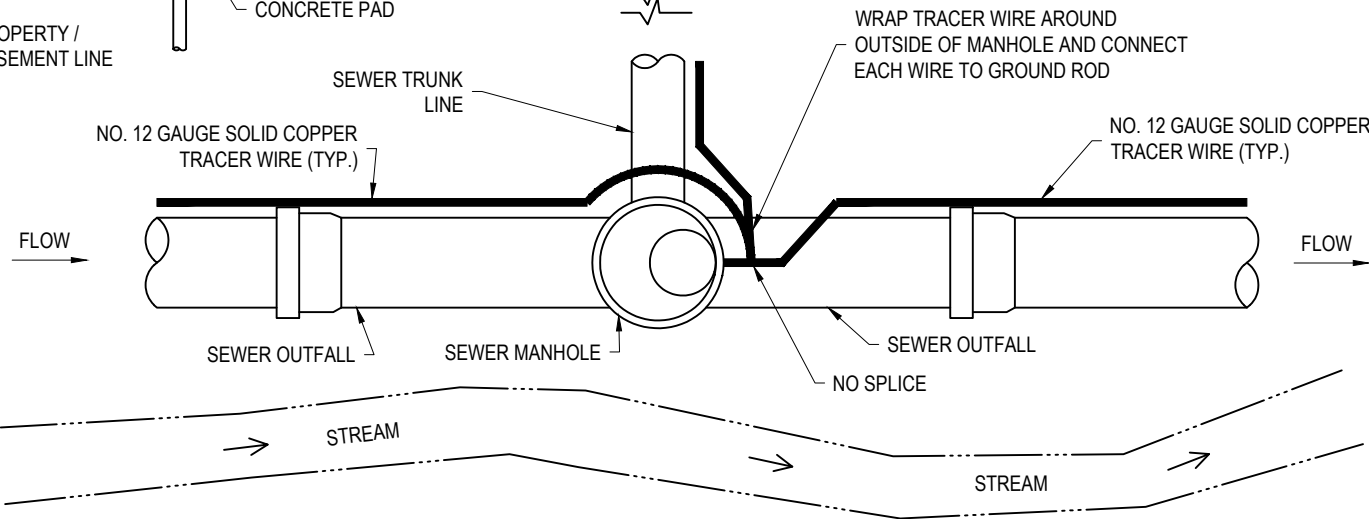
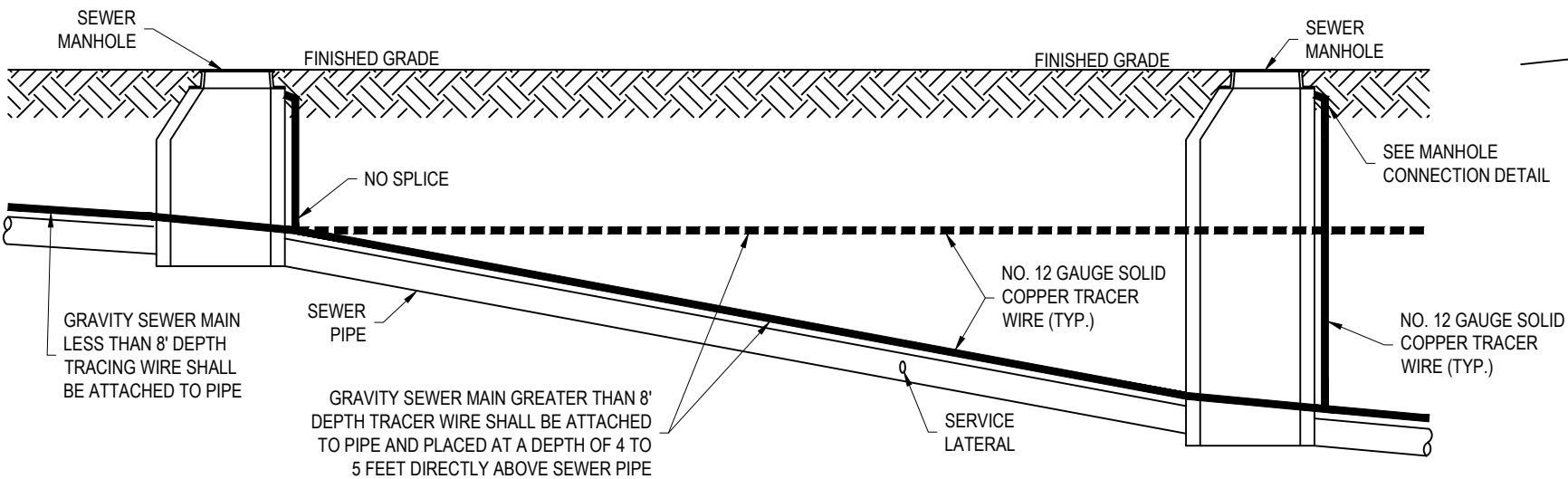
STREET VIEW - GRAVITY SEWER TRACER WIRE

PLAN VIEW



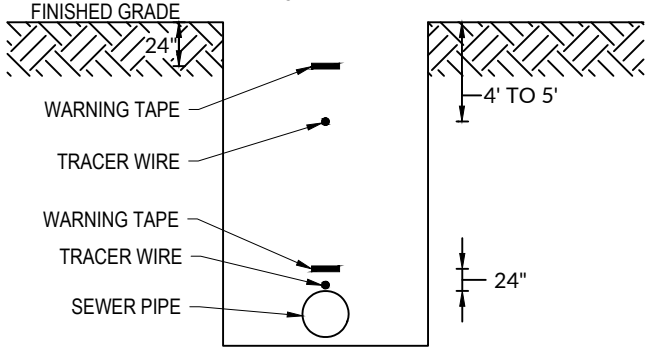
TRACER WIRE FOR GRAVITY SEWER DEEPER THAN 8 FT

SECTION VIEW



TRENCH DETAIL

PROFILE VIEW



- NOTES:
1. TRACER WIRE SHOWN AWAY FROM PIPE FOR CLARITY. TRACER WIRE SHALL BE INSTALLED IMMEDIATELY ADJACENT TO THE SEWER PIPE. TRACER WIRE SHALL BE FASTENED TO THE PIPE WITH ZIP TIES AT 10 FOOT INTERVALS.
 2. TRACER WIRE SHALL BE SOLID COPPER NO. 12 GAUGE WITH 30 MILS GREEN HDPE INSULATION.

1 OF 2 DRAWING NOT TO SCALE

TRACER WIRE - GRAVITY SEWER DETAILS

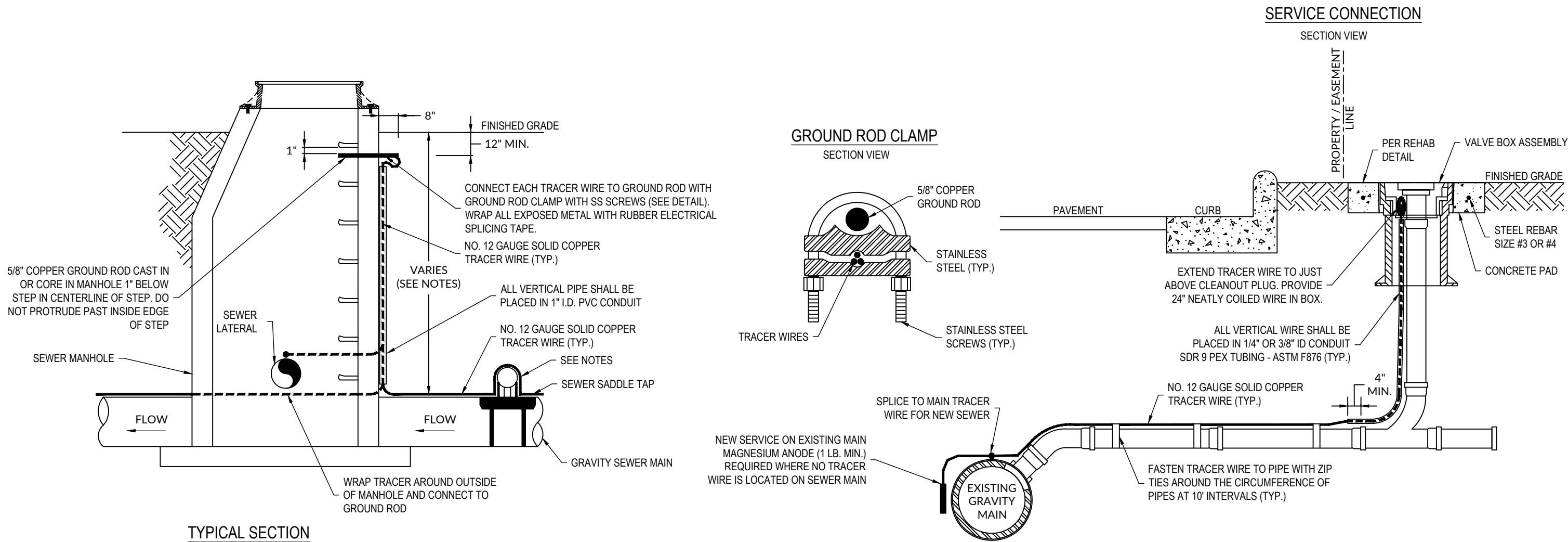
TOWN OF HOLLY SPRINGS

STANDARD DETAIL NUMBER: HS502

DATE REVISIONS

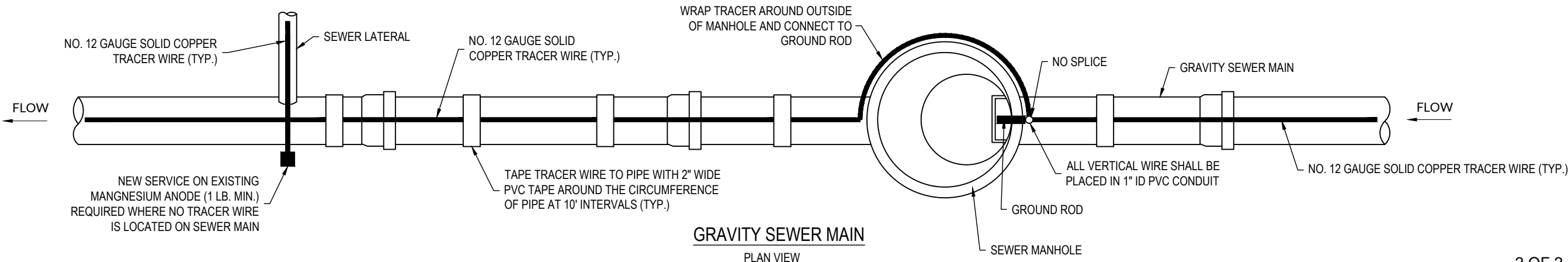
6/11/24





- NOTES:
1. TRACER WIRE SHALL BE AWG NO. 12 GAUGE SOLID COPPER WITH 30 MILS GREEN HDPE INSULATION.
 2. FOR GRAVITY MAIN AND OR LATERAL INSTALLATIONS LESS THAN 8 FEET, THE TRACING WIRE SHALL BE ATTACHED TO THE PIPE. TRACER WIRE SHALL BE LAID FLAT AND SECURELY AFFIXED TO THE PIPE AT 10 FOOT INTERVALS USING ZIP TIES. FOR GRAVITY MAIN AND OR LATERAL INSTALLATION DEEPER THAN 8 FEET, THE TRACING WIRE SHALL BE ATTACHED TO THE PIPE AND PLACED AT A DEPTH OF 4 TO 5 FEET DIRECTLY ABOVE THE SEWER PIPE. THE WIRE SHALL BE PROTECTED FROM DAMAGE DURING THE EXECUTION OF THE WORK. NO BREAKS OR CUTS IN THE TRACER WIRE OR INSULATION SHALL BE PERMITTED.
 3. WHERE LATERAL TAPS ARE MADE BY SERVICE SADDLES, THE TRACER WIRE SHALL NOT BE ALLOWED TO BE PLACED BETWEEN THE SADDLE AND MAIN.
 4. SPLICES IN THE PRIMARY TRACER WIRE ALONG THE SEWER MAIN SHALL INCLUDE 3 FEET OF SLACK WIRE ON EACH SIDE OF EACH SPLICE.
 5. FOR INSTALLING A NEW LATERAL ON AN EXISTING MAIN WITH TRACER WIRE, ONLY SPLICE TO EXISTING WIRE WITH 3 FEET OF SLACK ON NEW LATERAL.

- NOTES:
1. THE TRACER WIRE SHALL BE CONTINUOUS TO THE GREATEST EXTENT POSSIBLE. WHERE SPLICES ARE NECESSITATED IN THE WIRE, THE SPLICES SHALL BE SECURELY BONDED TOGETHER WITH AN APPROVED INDUSTRIAL CONNECTOR TO PROVIDE ELECTRICAL CONTINUITY. CONNECTOR SHALL BE COPPER AND INSULATION SHALL BE REPAIRED TO SEAL OUT MOISTURE AND CORROSION AND SHALL BE INSTALLED IN A MANNER SO AS TO PREVENT ANY UNINSULATED WIRE EXPOSURE.
 2. THE CLEANOUT AT THE RIGHT OF WAY AND OR EASEMENT SHALL SERVE AS THE TEST PORT.
 3. SPLICED CONNECTIONS SHALL BE ALLOWED BETWEEN THE MAIN LINE TRACER WIRE AND THE LATERAL TRACER WIRE.
 4. FOR NEW SEWER TAPS ON EXISTING MAINS VOID OF ANY TRACER WIRE, PROVIDE A 1 LB. MAGNESIUM ANODE FOR THE TRACING WIRE TERMINATION AT THE POINT OF THE NEW TAP ON THE EXISTING SEWER MAIN. PLACE ANODE AT BOTTOM EDGE OF TRENCH AWAY FROM MAIN & LATERAL.
 5. PRIOR TO ACCEPTANCE (POST PUNCH LIST) EACH WIRE SEGMENT SHALL PASS A CONDUCTIVITY TEST, WITNESSED BY THE ENGINEER OR ENGINEER'S REPRESENTATIVE.

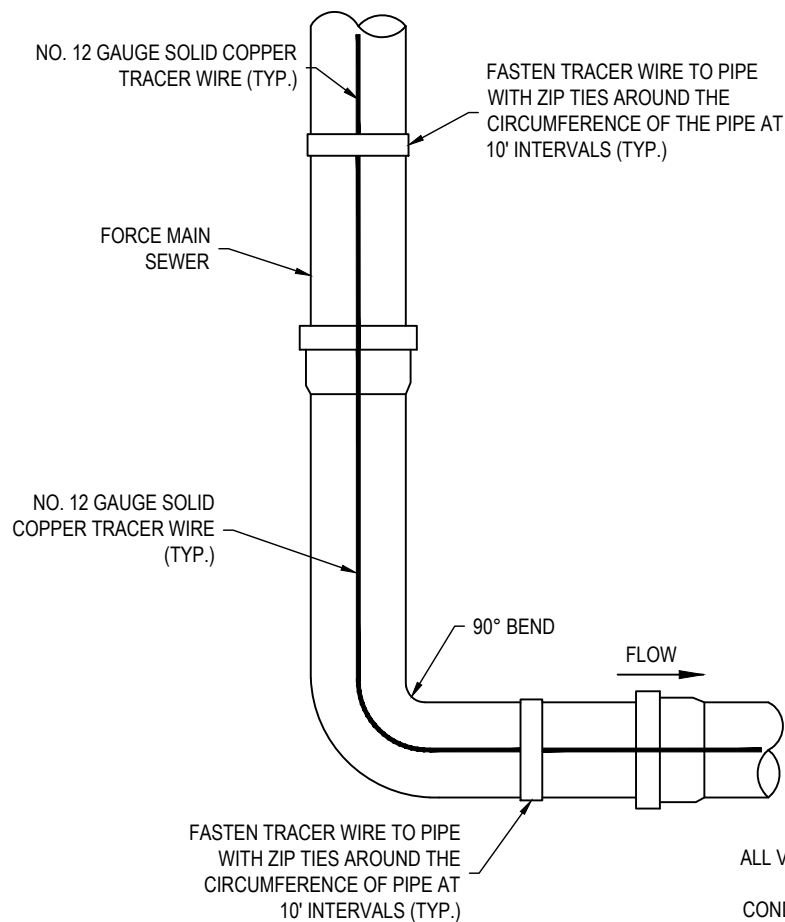
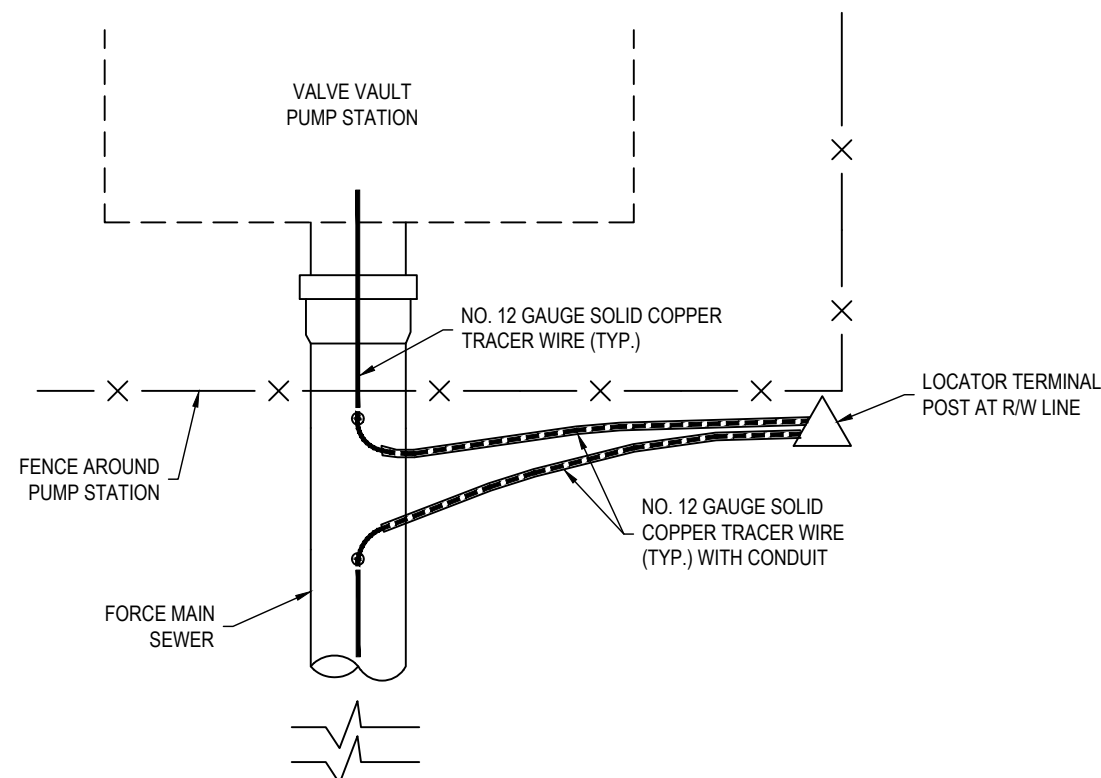


TRACER WIRE - GRAVITY SEWER DETAILS

TOWN OF HOLLY SPRINGS

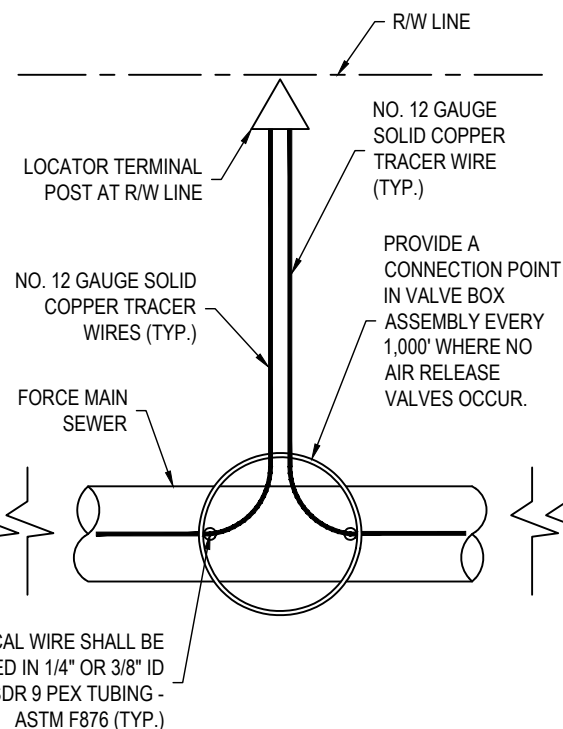
STANDARD DETAIL NUMBER: HS502

DATE	REVISIONS
6/11/24	



TERMINATION AT PUMP STATION

PLAN VIEW

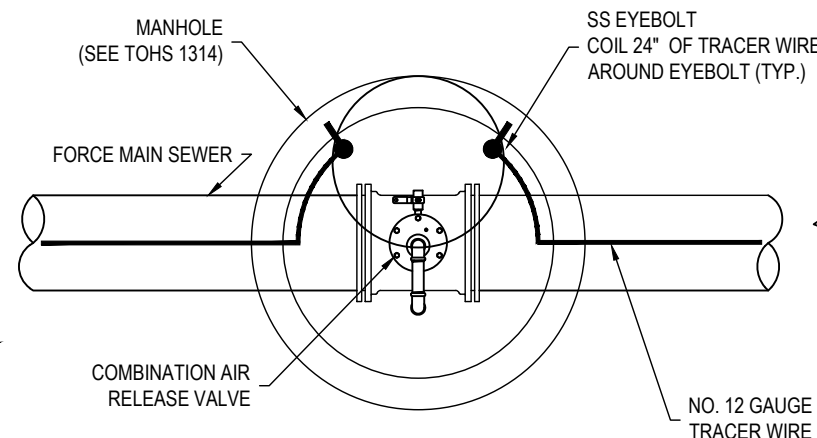
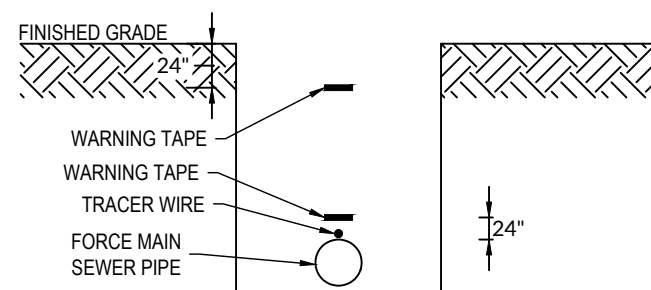


LOCATOR POST

PLAN VIEW

TRENCH DETAIL

PROFILE VIEW

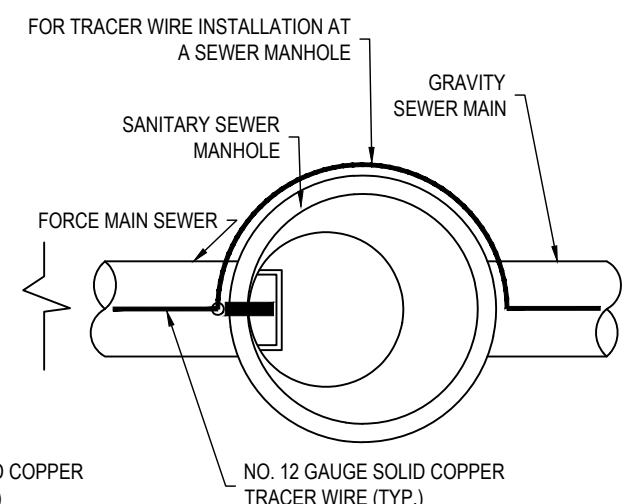
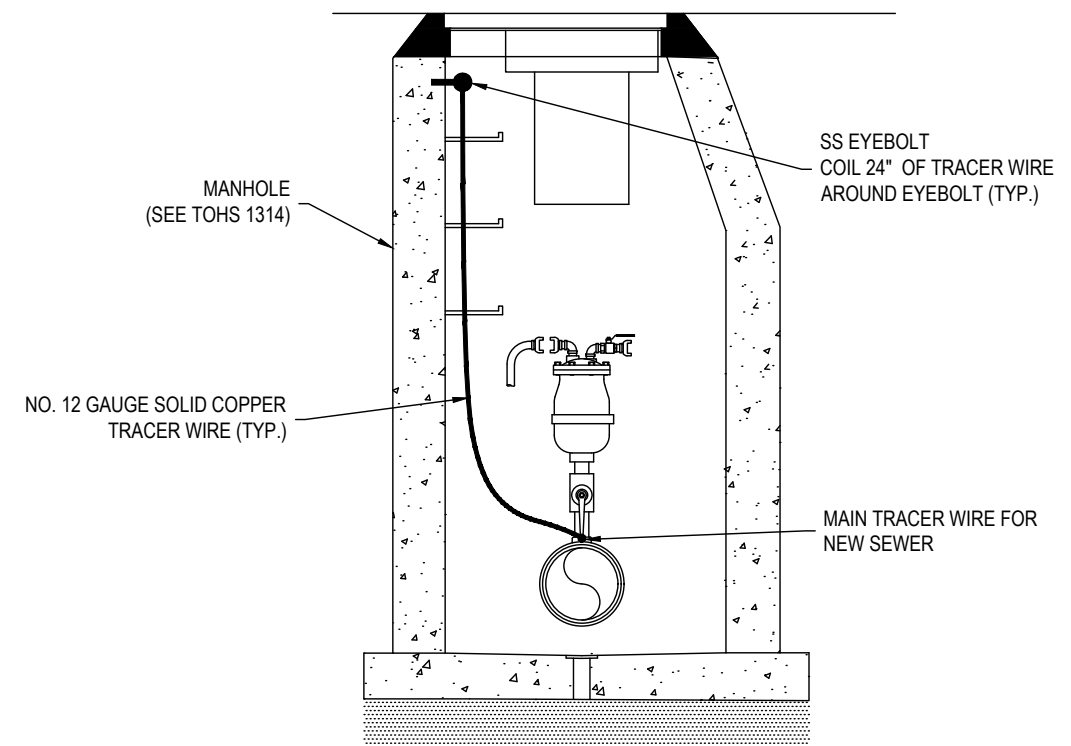


AIR RELEASE VALVE IN MANHOLE

PLAN VIEW

**AIR RELEASE VALVE IN
MANHOLE**

PROFILE VIEW



TERMINATION AT MANHOLE

PLAN VIEW

DRAWING NOT TO SCALE

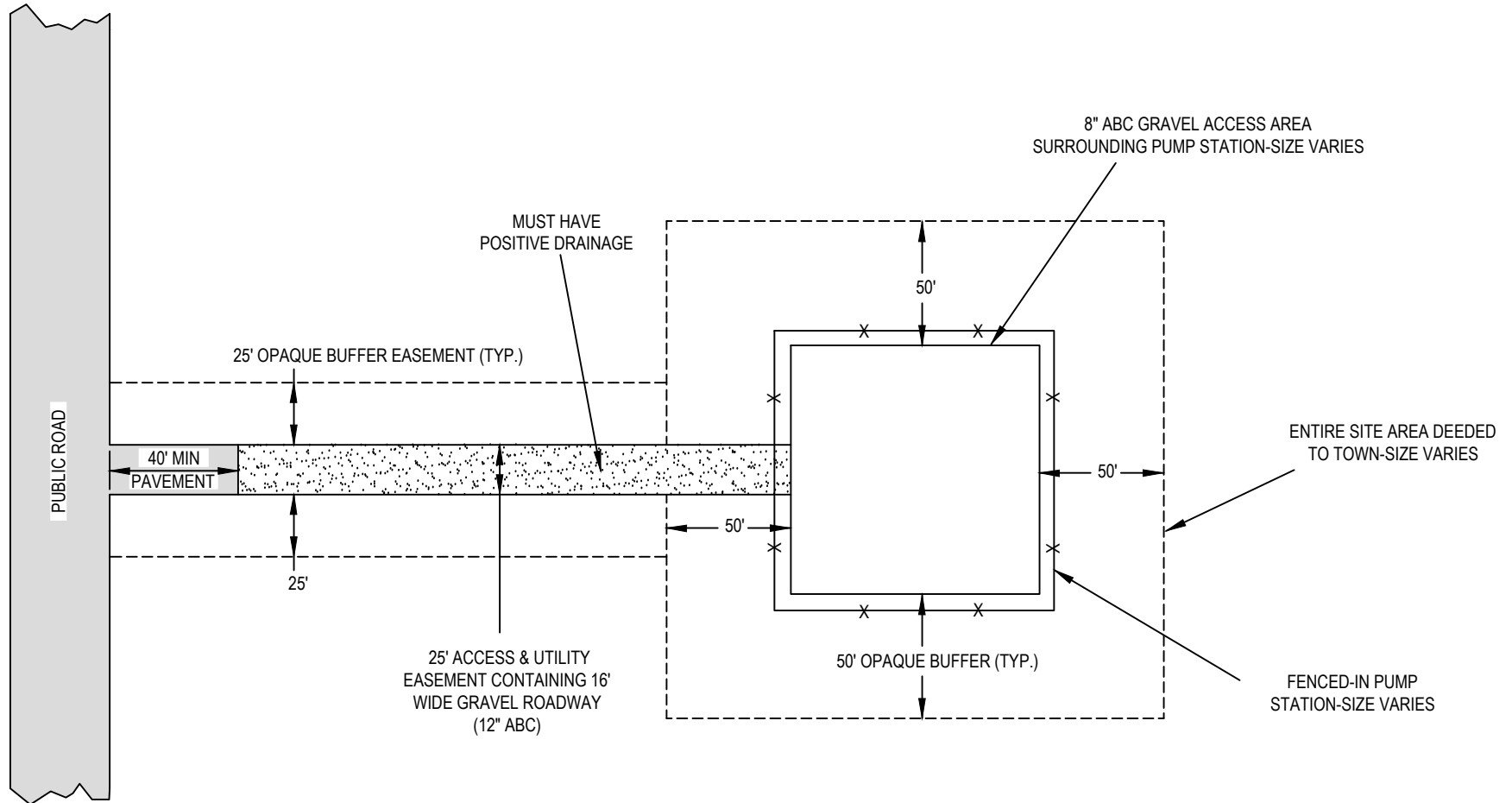
TRACER WIRE - FORCE MAIN

TOWN OF HOLLY SPRINGS

STANDARD DETAIL NUMBER: HS503

DATE REVISIONS

6/11/24



DRAWING NOT TO SCALE

PUMP STATION SITE LAYOUT AND MINIMUM DIMENIONS

TOWN OF HOLLY SPRINGS

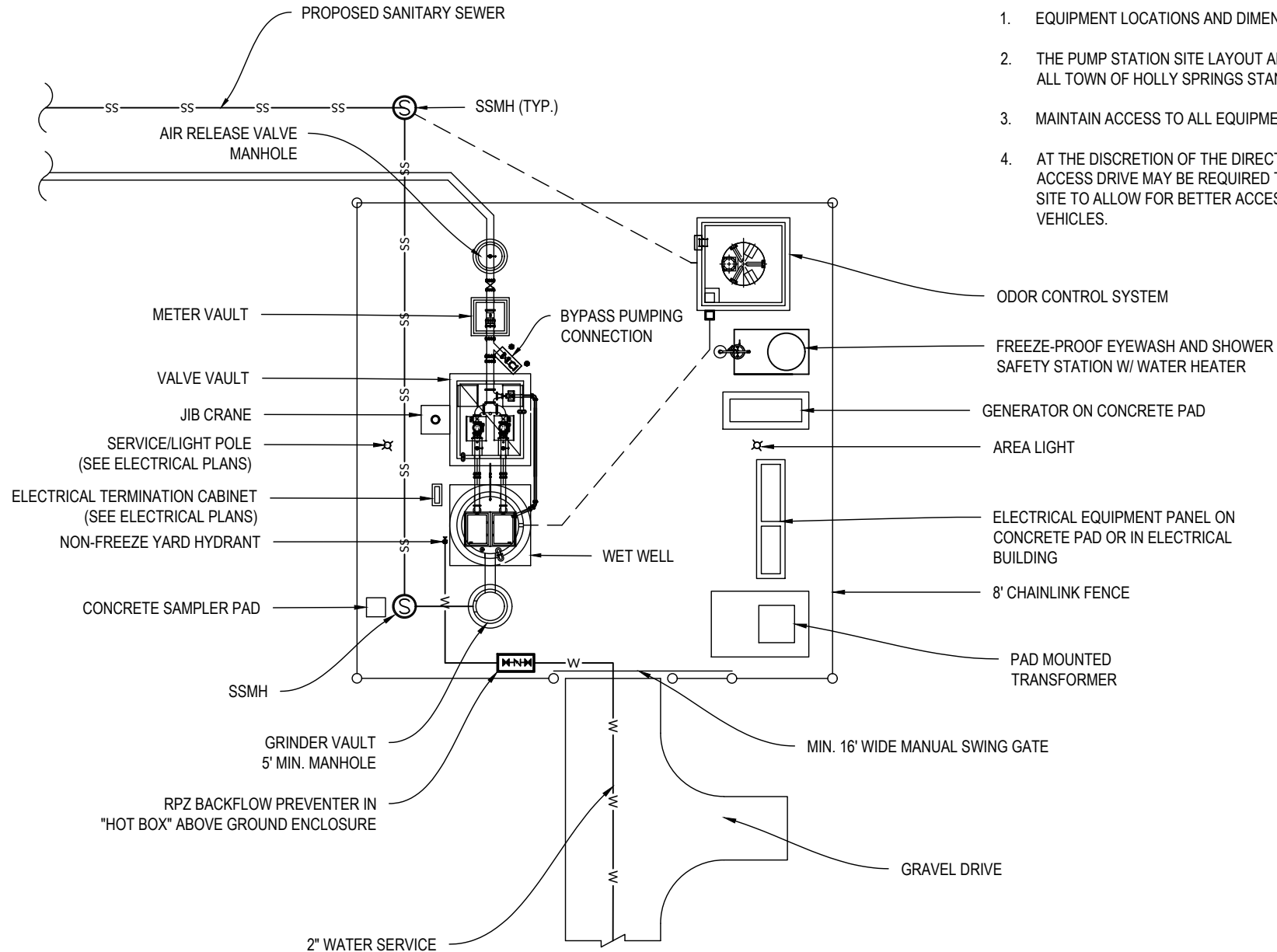
STANDARD DETAIL NUMBER: HS1301

DATE	REVISIONS
7/24/09	
6/11/24	



NOTES:

1. EQUIPMENT LOCATIONS AND DIMENSIONS MAY VARY
2. THE PUMP STATION SITE LAYOUT AND DESIGN SHALL MEET ALL TOWN OF HOLLY SPRINGS STANDARD REQUIREMENTS.
3. MAINTAIN ACCESS TO ALL EQUIPMENT AND STRUCTURES
4. AT THE DISCRETION OF THE DIRECTOR, THE GRAVEL ACCESS DRIVE MAY BE REQUIRED TO LOOP AROUND THE SITE TO ALLOW FOR BETTER ACCESS AND /OR LARGE VEHICLES.



1 OF 2

DRAWING NOT TO SCALE

TYPICAL PUMP STATION LAYOUT

TOWN OF HOLLY SPRINGS

STANDARD DETAIL NUMBER: HS1302

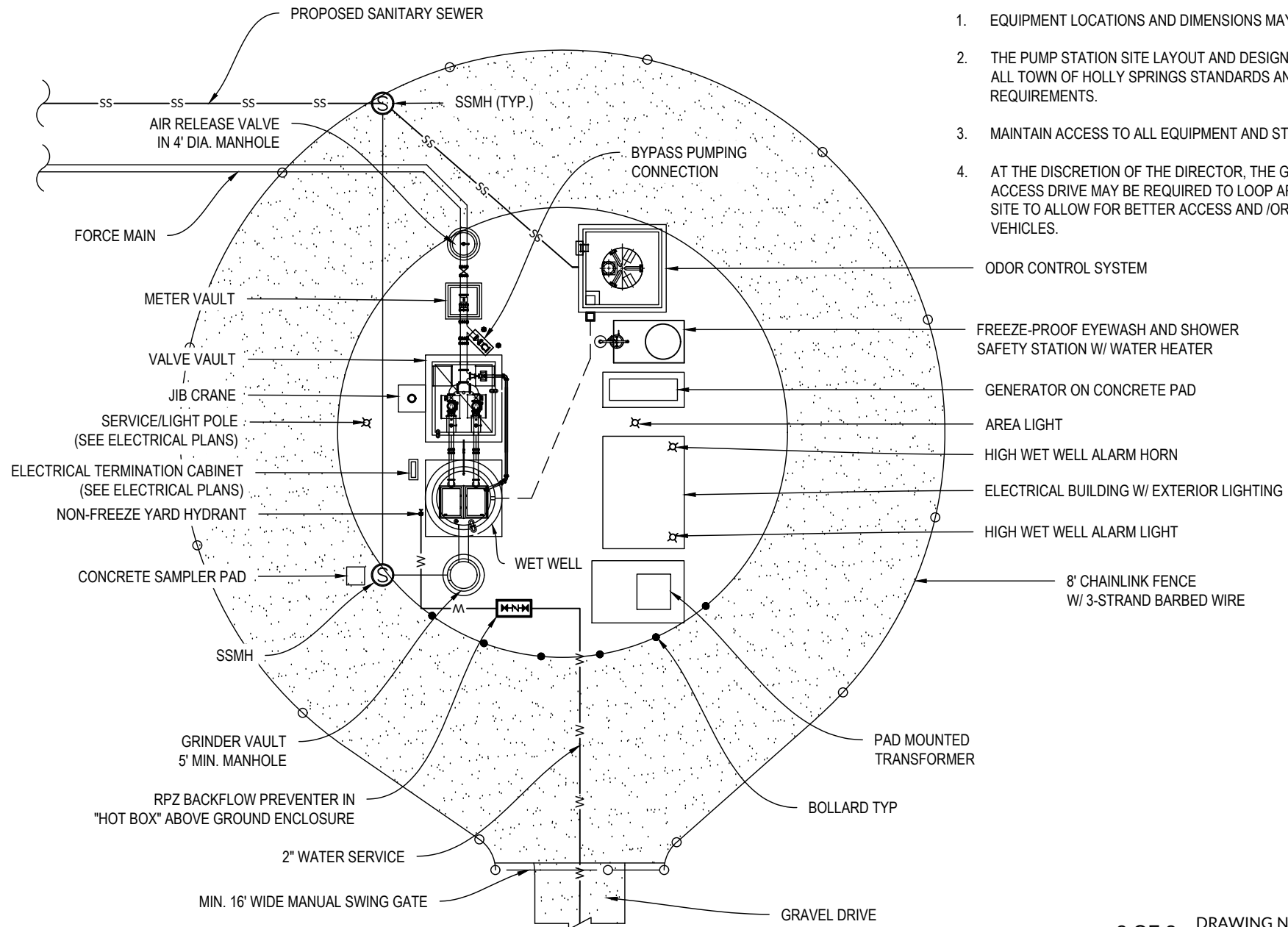
DATE	REVISIONS
6/11/24	

6/11/24



NOTES:

1. EQUIPMENT LOCATIONS AND DIMENSIONS MAY VARY
2. THE PUMP STATION SITE LAYOUT AND DESIGN SHALL MEET ALL TOWN OF HOLLY SPRINGS STANDARDS AND REQUIREMENTS.
3. MAINTAIN ACCESS TO ALL EQUIPMENT AND STRUCTURES
4. AT THE DISCRETION OF THE DIRECTOR, THE GRAVEL ACCESS DRIVE MAY BE REQUIRED TO LOOP AROUND THE SITE TO ALLOW FOR BETTER ACCESS AND /OR LARGE VEHICLES.



2 OF 2 DRAWING NOT TO SCALE

TYPICAL PUMP STATION LAYOUT

TOWN OF HOLLY SPRINGS

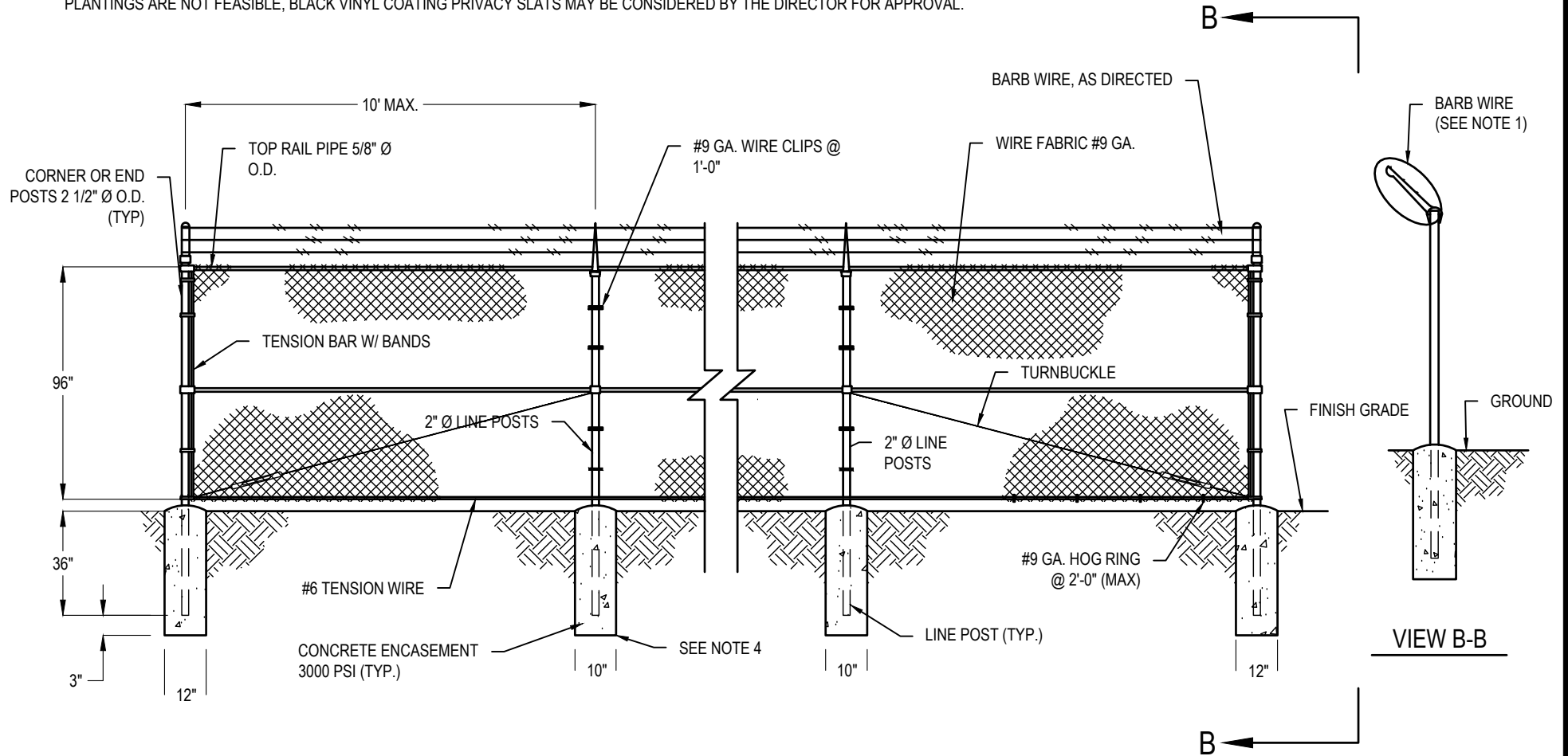
STANDARD DETAIL NUMBER: HS1302

DATE	REVISIONS
6/11/24	



NOTES:

1. ADD 3 STRANDS OF BARB WIRE ALONG THE TOP OF FENCE AS DIRECTED (SEE SPECS).
2. ALL RAILS AND POSTS TO BE SCH. 40 GALV. STEEL PIPE WITH BLACK VINYL COATING.
3. POSTS TO BE SET IN CONCRETE.
4. IF ROCK IS ENCOUNTERED WHEN SETTING POSTS, DRILL HOLES 4-INCHES LARGER IN DIAMETER THAN POSTS AND BACKFILL TO GRADE WITH CLASS "B" CONCRETE.
5. PERIMETER OF FENCE SHALL BE SCREENED WITH PLANTINGS IN ACCORDANCE WITH TOWN ORDINANCES AND STANDARDS REQUIREMENTS. IF PLANTINGS ARE NOT FEASIBLE, BLACK VINYL COATING PRIVACY SLATS MAY BE CONSIDERED BY THE DIRECTOR FOR APPROVAL.



TYPICAL CHAIN LINK FENCE

TOWN OF HOLLY SPRINGS

STANDARD DETAIL NUMBER: HS1303

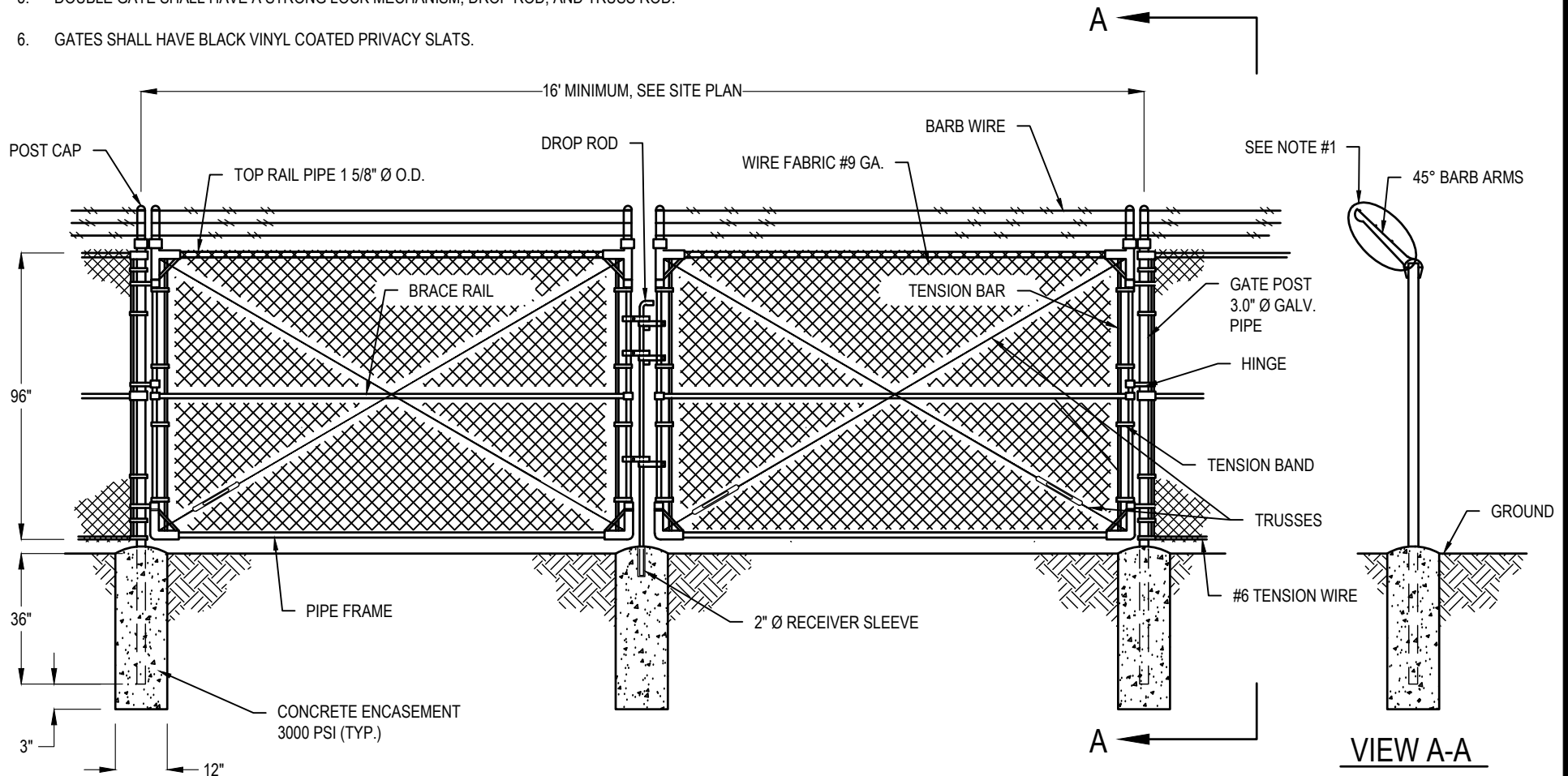
DATE REVISIONS

6/11/24



NOTES:

1. ADD 3 STRANDS OF BARB WIRE ALONG THE TOP OF FENCE AS DIRECTED (SEE SPECS).
2. ALL RAILS AND POSTS TO BE SCH. 40 GALV. STEEL PIPE WITH BLACK VINYL COATING.
3. POSTS TO BE SET IN CONCRETE
4. IF ROCK IS ENCOUNTERED WHEN SETTING POSTS, DRILL HOLES 4-INCHES LARGER IN DIAMETER THAN POSTS AND BACKFILL TO GRADE WITH CLASS "B" CONCRETE.
5. DOUBLE GATE SHALL HAVE A STRONG LOCK MECHANISM, DROP ROD, AND TRUSS ROD.
6. GATES SHALL HAVE BLACK VINYL COATED PRIVACY SLATS.



DRAWING NOT TO SCALE

TYPICAL SECURITY DOUBLE GATE

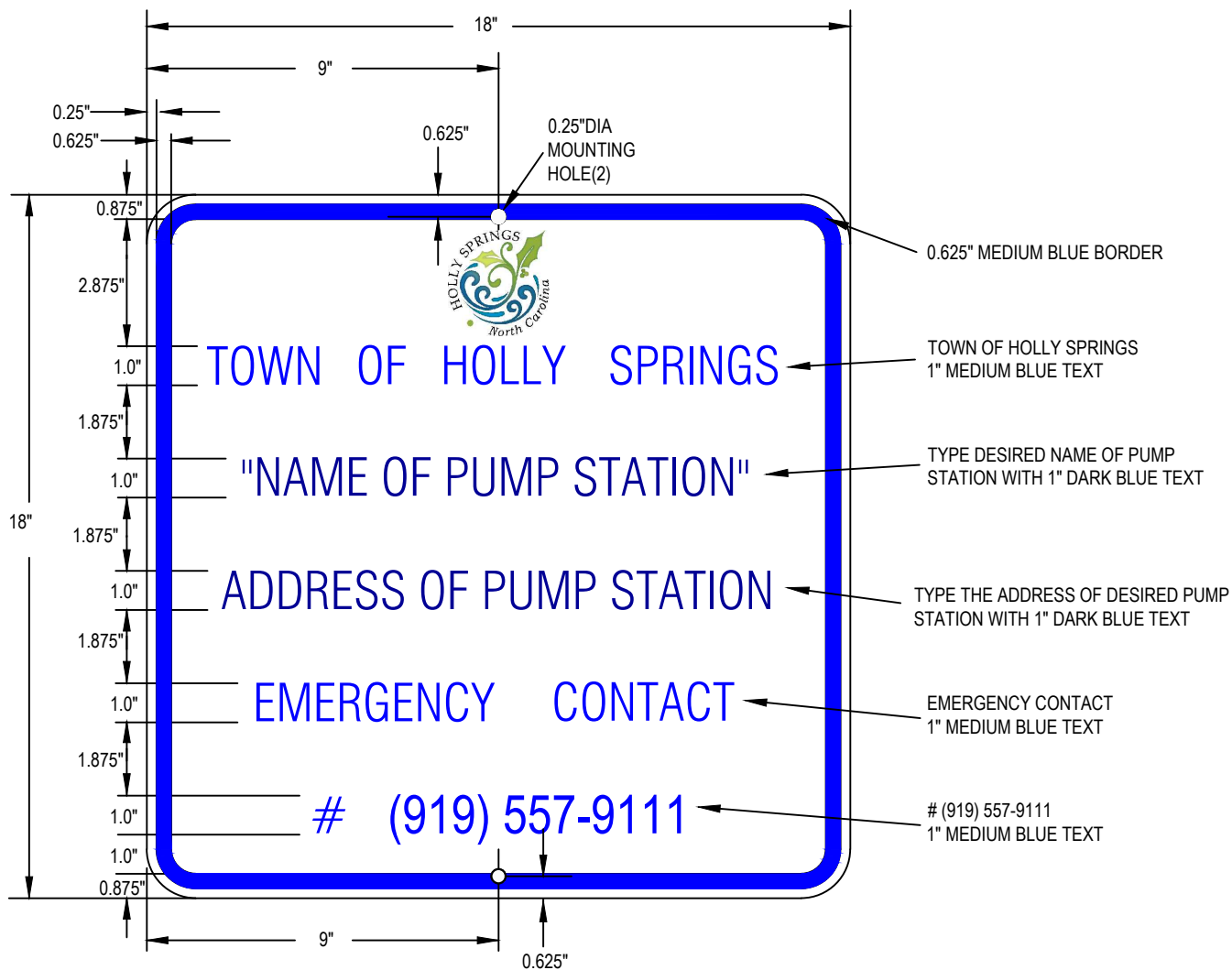
TOWN OF HOLLY SPRINGS

STANDARD DETAIL NUMBER: HS1304

DATE REVISIONS

6/11/24





NOTES:

1. 18" x 18" NON-REFLECTIVE 18 GAUGE STEEL
2. TEXT TO BE CENTERED ON SIGN

DRAWING NOT TO SCALE

STANDARD PUMP STATION LOCATION SIGN

TOWN OF HOLLY SPRINGS

STANDARD DETAIL NUMBER: HS1305

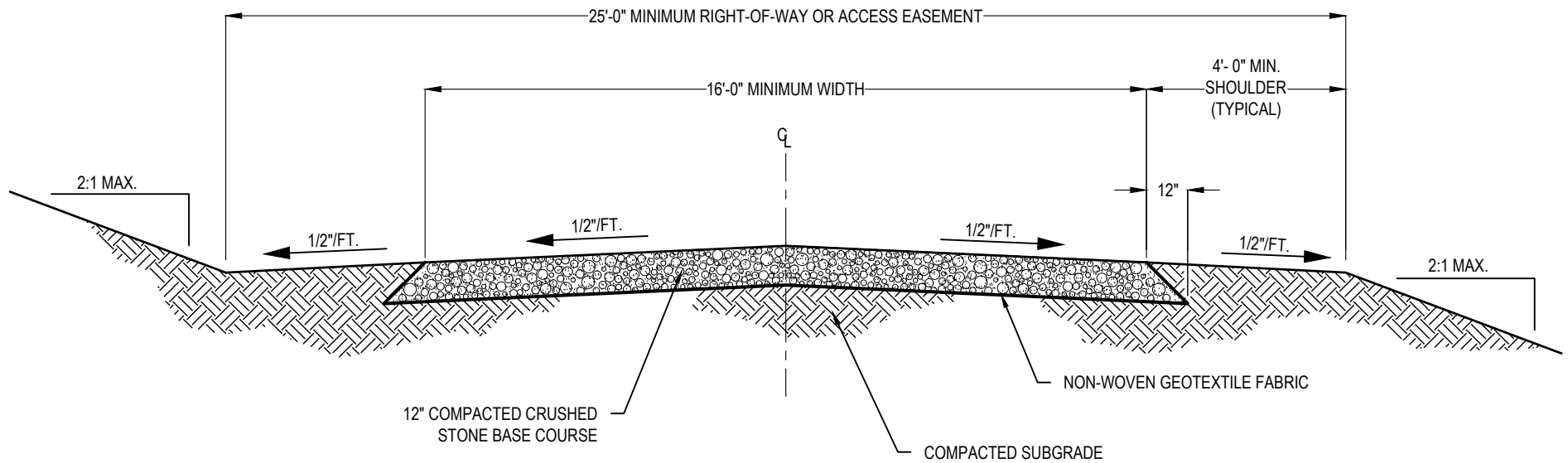
DATE

REVISIONS

7/24/09

6/11/24





NOTES:

1. MAXIMUM ROADWAY SHALL BE 10%.
2. THE SITE SHALL FEATURE ADEQUATE TURN AROUND AREAS FOR SERVICE VEHICLES IN ACCORDANCE WITH SPECIFICATION SECTION 13.
3. MUST HAVE POSITIVE DRAINAGE.

DRAWING NOT TO SCALE

PUMP STATION ACCESS ROAD

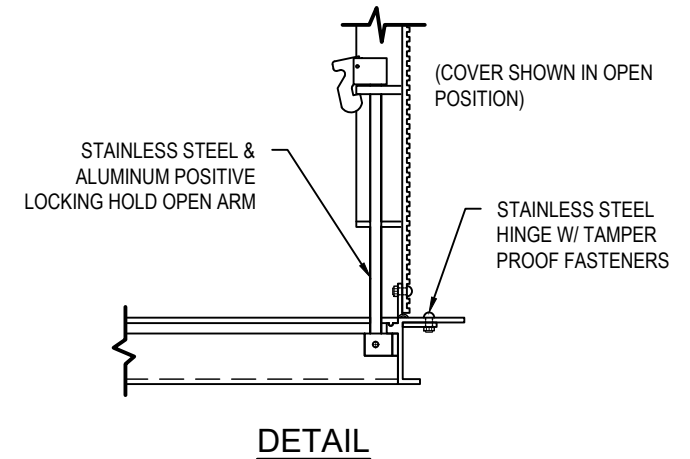
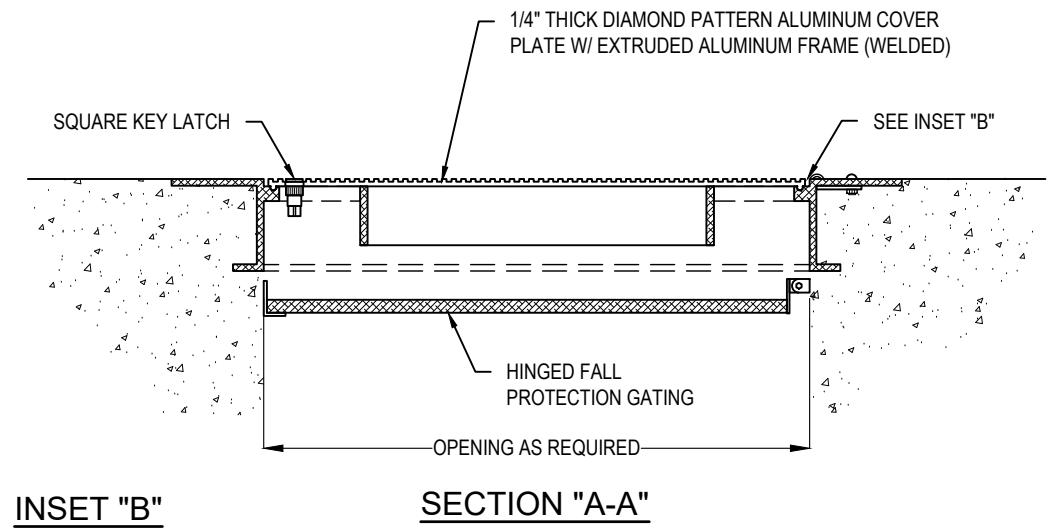
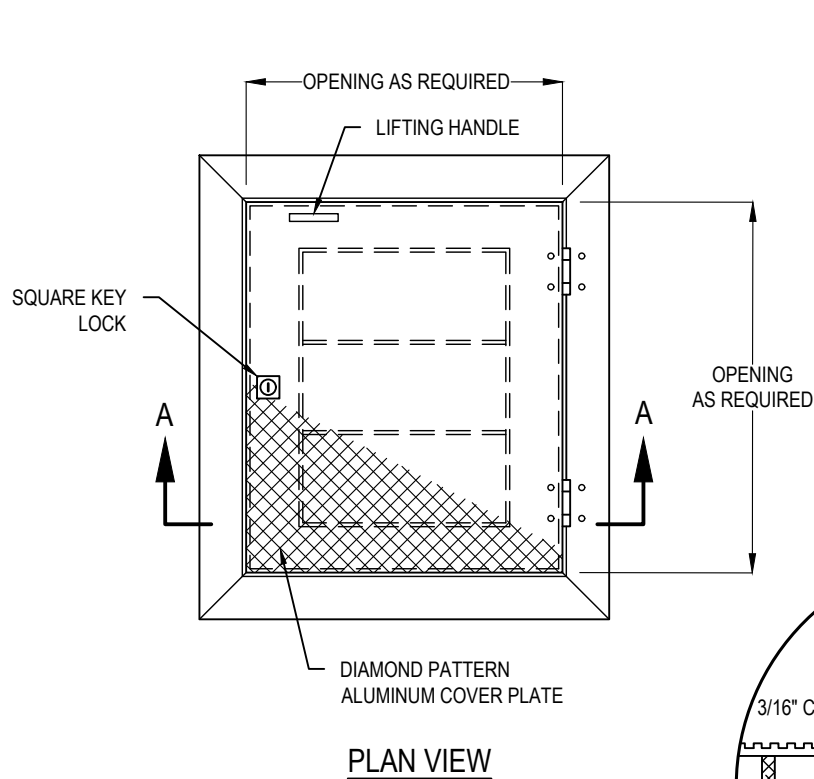
TOWN OF HOLLY SPRINGS

STANDARD DETAIL NUMBER: HS1306

DATE **REVISIONS**

6/11/24





NOTES:

1. ALL ALUMINUM SURFACES IN CONTACT WITH CONCRETE OR GROUT SHALL BE COATED WITH BITUMINOUS MATERIAL FOR PROTECTION.
2. HATCHES SHALL BE SINGLE OR DOUBLE HATCH DEPENDING ON OPENING SIZE AND MANUFACTURER'S RECOMMENDATIONS.

DRAWING NOT TO SCALE

WET WELL HATCH

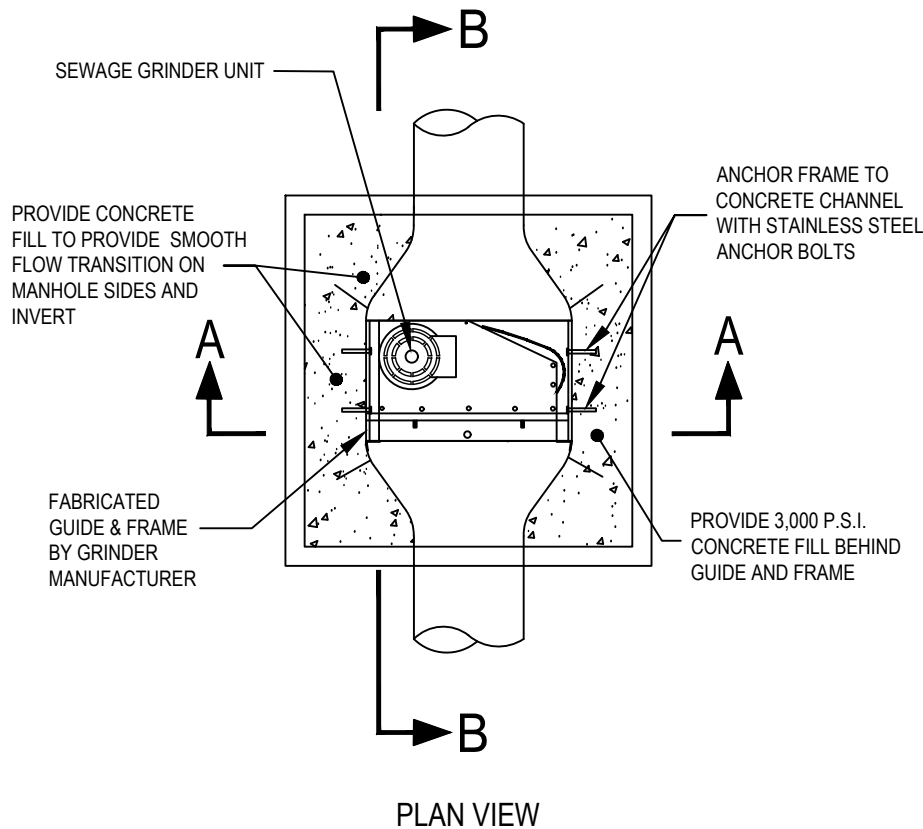
TOWN OF HOLLY SPRINGS

STANDARD DETAIL NUMBER: HS1307

DATE **REVISIONS**

6/11/24

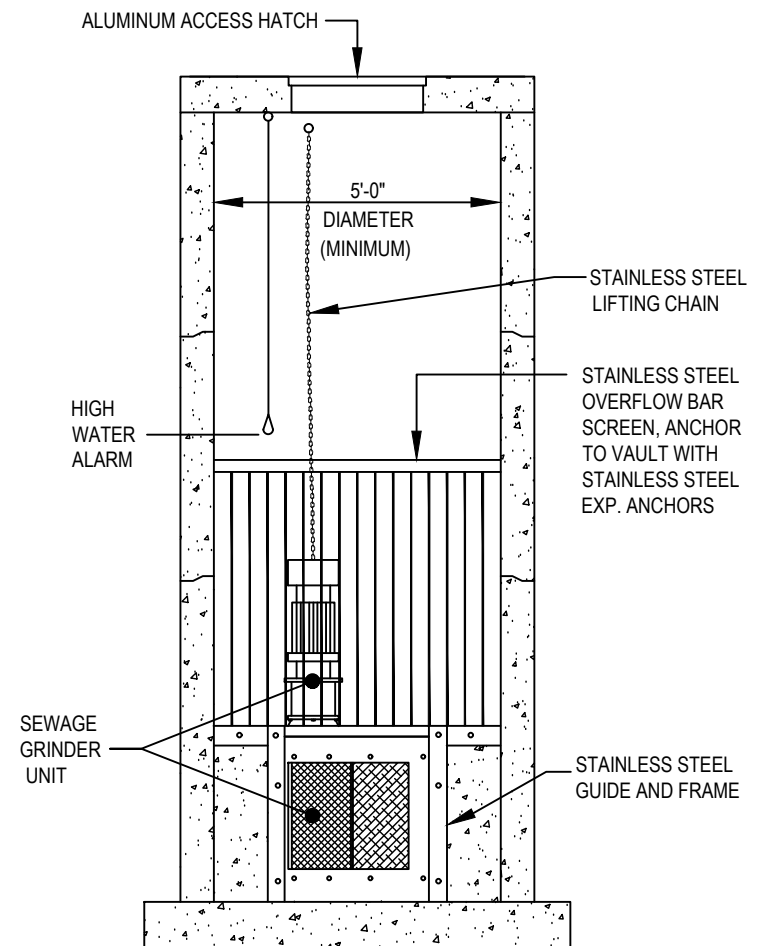




SEE SHEET 2 OF 2 FOR SECTION "B-B"

NOTES:

1. THERE SHALL ONLY BE A SINGLE INFLUENT LINE INTO THE GRINDER VAULT.
2. ALUMINUM ACCESS HATCH SHALL BE SIZED TO ALLOW INSTALLATION AND REMOVAL OF GRINDER UNIT.
3. COAT INTERIOR OF VAULT WITH APPROVED EPOXY OR POLYURETHANE COATING APPLIED PER THE MANUFACTURER'S SPECIFICATIONS. COATINGS SHALL CONFORM TO TOWN OF HOLLY SPRINGS STANDARDS SECTION 13.



1 OF 2

DRAWING NOT TO SCALE

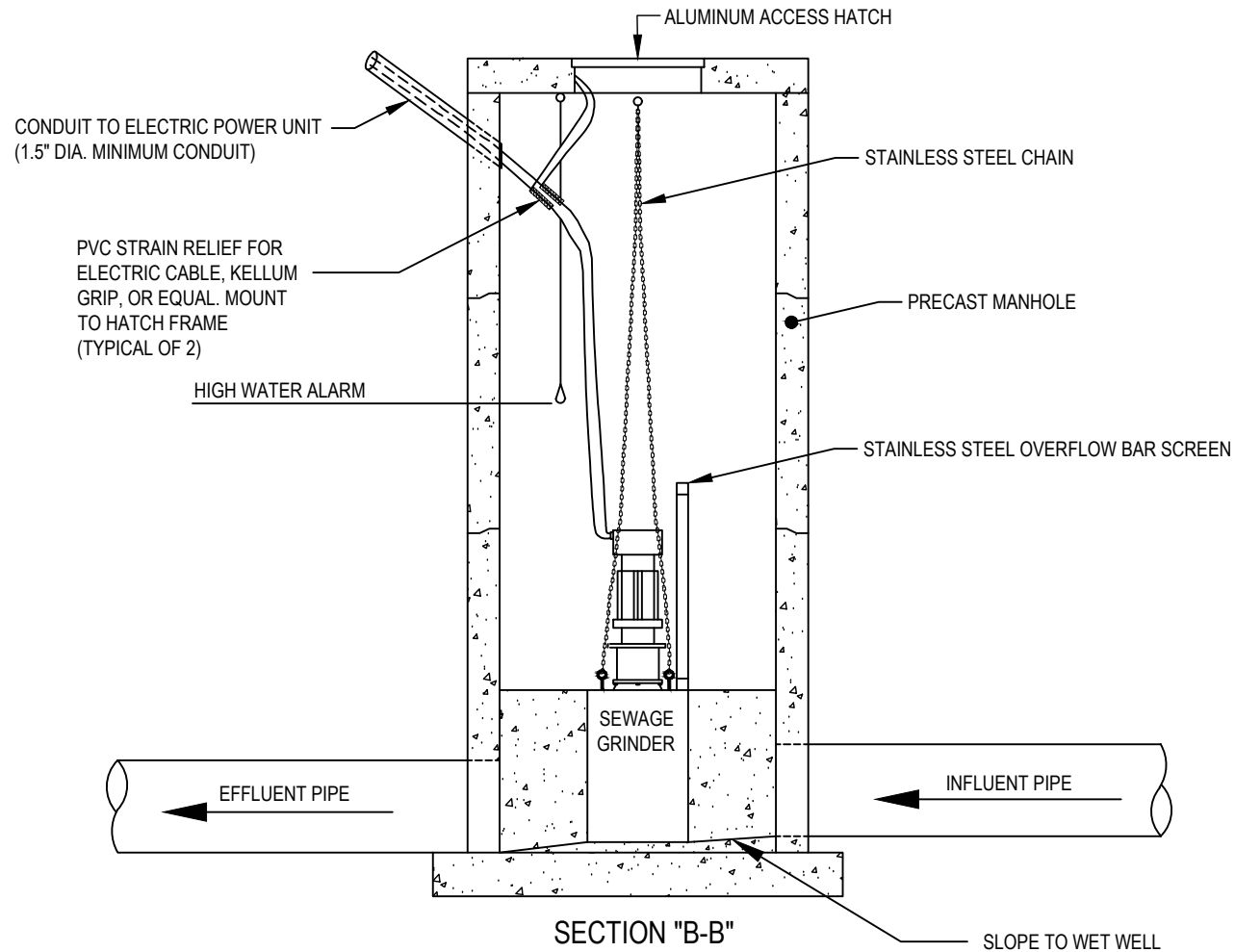
SEWAGE GRINDER VAULT

TOWN OF HOLLY SPRINGS

STANDARD DETAIL NUMBER: HS1308

DATE	REVISIONS
8/30/19	
8/17/23	RJ/RI/TF
6/11/24	





SEE SHEET 1 OF 2 FOR SECTION "A-A"

NOTES:

1. ALUMINUM ACCESS HATCH SHALL BE SIZED TO ALLOW INSTLLATION AND REMOVAL OF GRINDER UNIT.

2 OF 2

DRAWING NOT TO SCALE

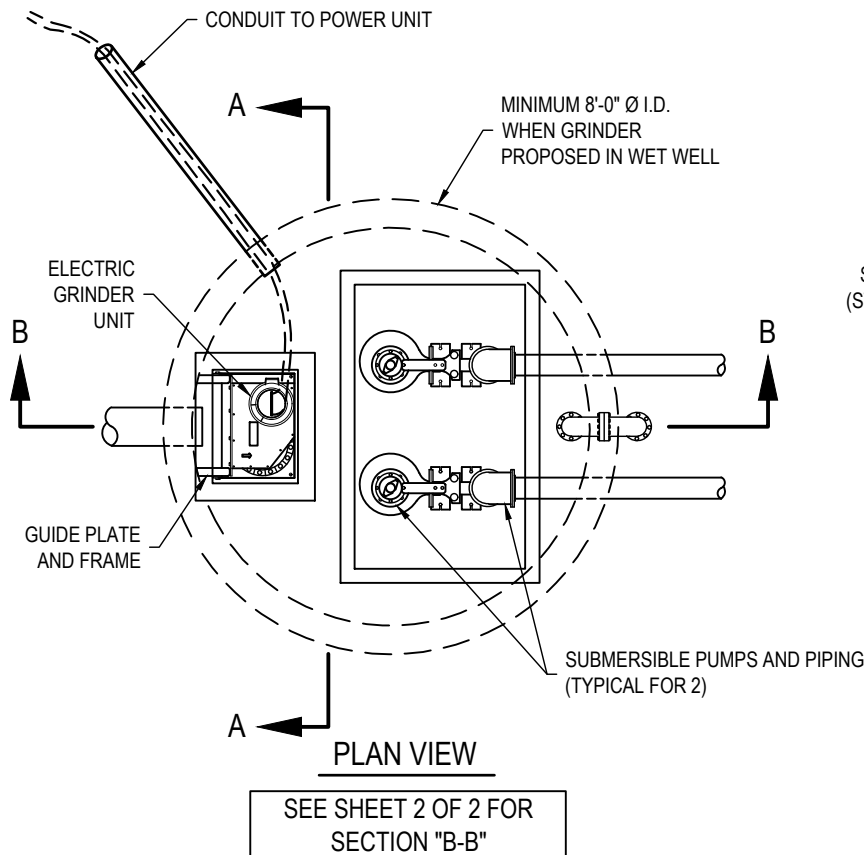
SEWAGE GRINDER VAULT

TOWN OF HOLLY SPRINGS

STANDARD DETAIL NUMBER: HS1308

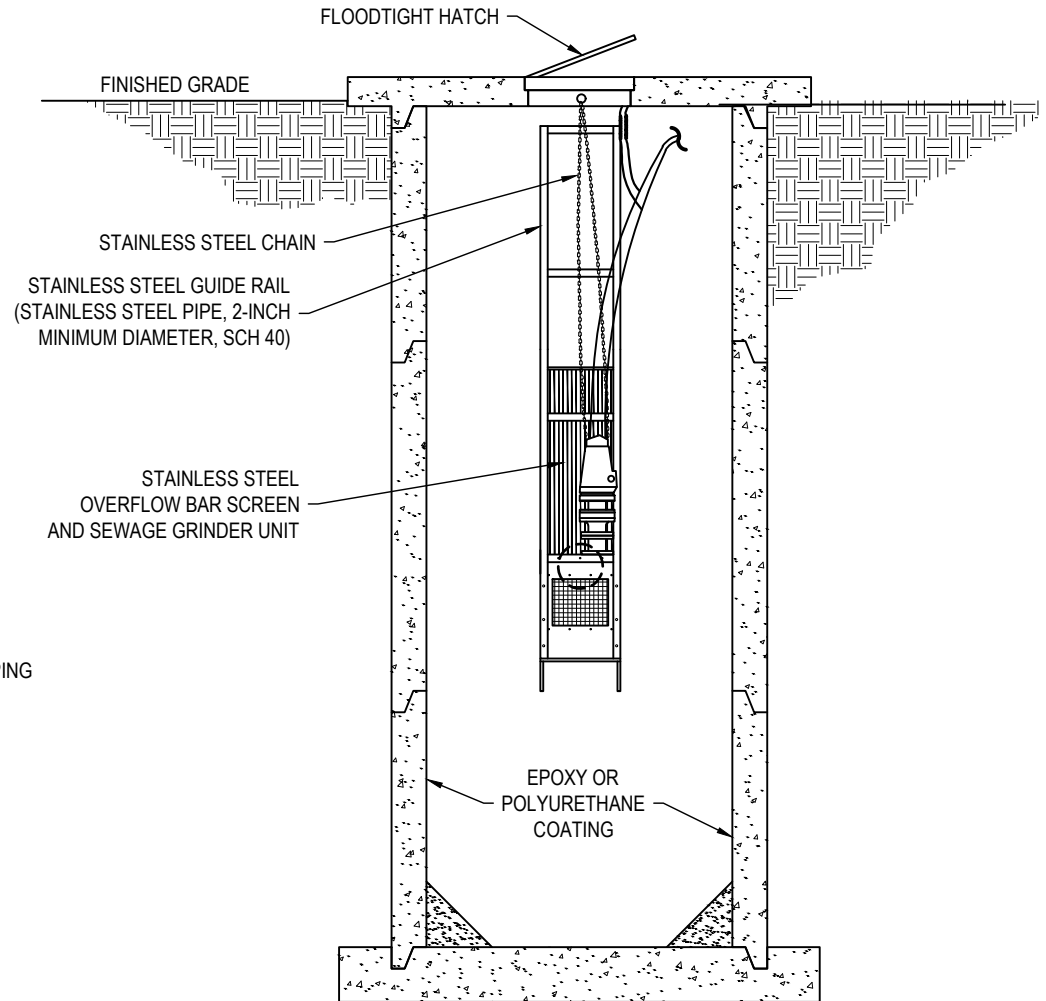
DATE	REVISIONS
8/30/19	
8/17/23	RJ/RJ/TF
6/11/24	





NOTE:

1. ACCESS HATCH SHALL BE SIZED TO ALLOW FOR INSTALLATION AND REMOVAL OF GRINDER UNIT.
2. ALL BOLTED CONNECTION (INCLUDING PIPE FLANGES) INSIDE THE WETWELL SHALL BE MADE USING STAINLESS STEEL BOLTS, NUTS, AND WASHERS.
3. ALL WETWELLS MUST BE CONCENTRIC.
4. ENGINEER SHALL ENSURE WETWELL HAS SUFFICIENT CONCRETE FOR ANCHORING. BUOYANCY CALCULATIONS SHALL BE SUBMITTED.
5. STATION SHALL MEET REQUIREMENTS IN THE TOWN'S STANDARD RELATED TO ELEVATION AND/OR PROTECTION FROM FLOODING.



SECTION "A-A"

SEE SHEET 2 OF 2 FOR
SECTION "B-B"

1 OF 2

DRAWING NOT TO SCALE

SEWAGE GRINDER UNIT (WET WELL INSTALLATION)

TOWN OF HOLLY SPRINGS

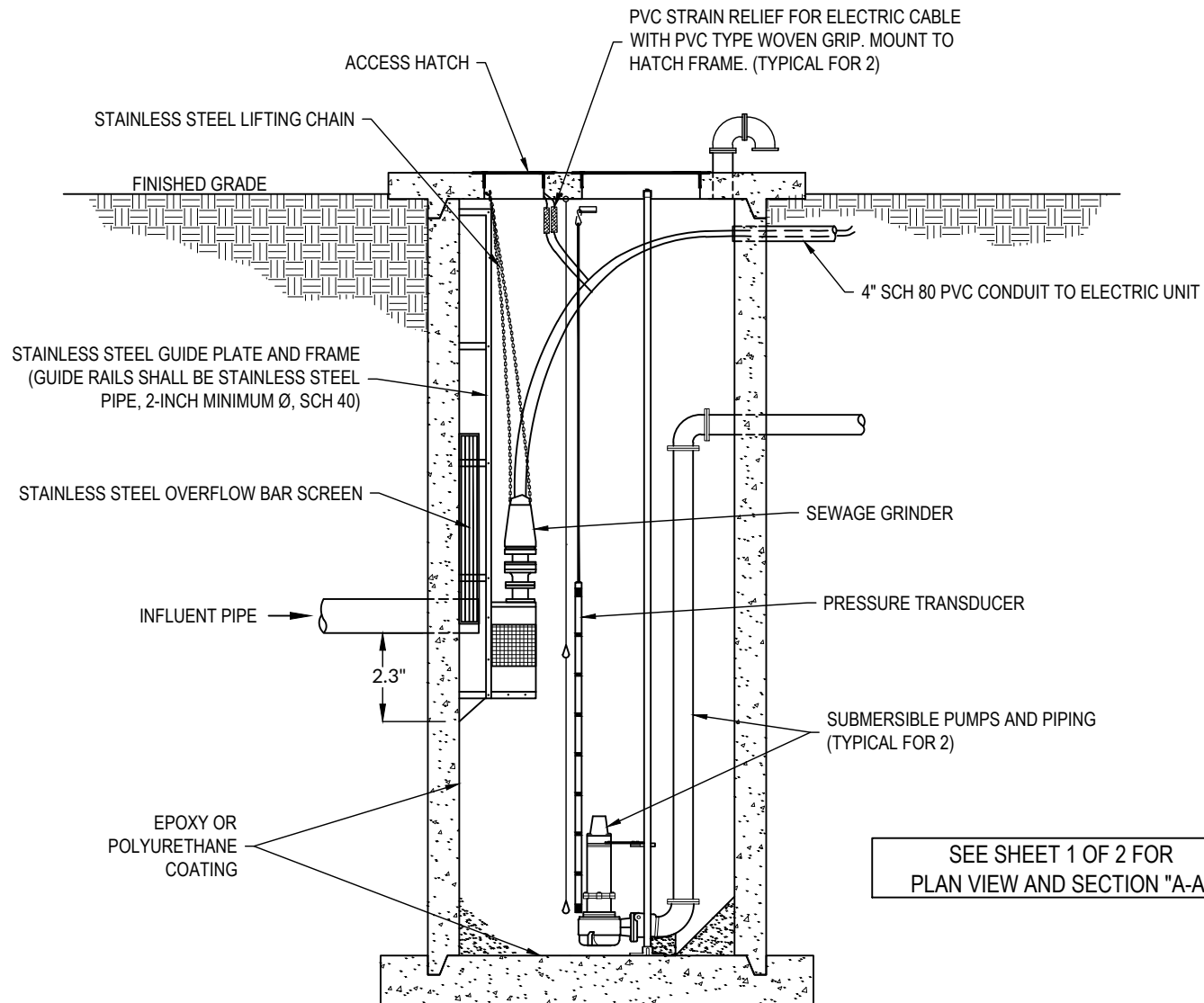
STANDARD DETAIL NUMBER: HS1309

DATE REVISIONS

3/23/21

6/11/24





SECTION "B-B"

SEE SHEET 1 OF 2 FOR
PLAN VIEW AND SECTION "A-A"

2 OF 2

DRAWING NOT TO SCALE

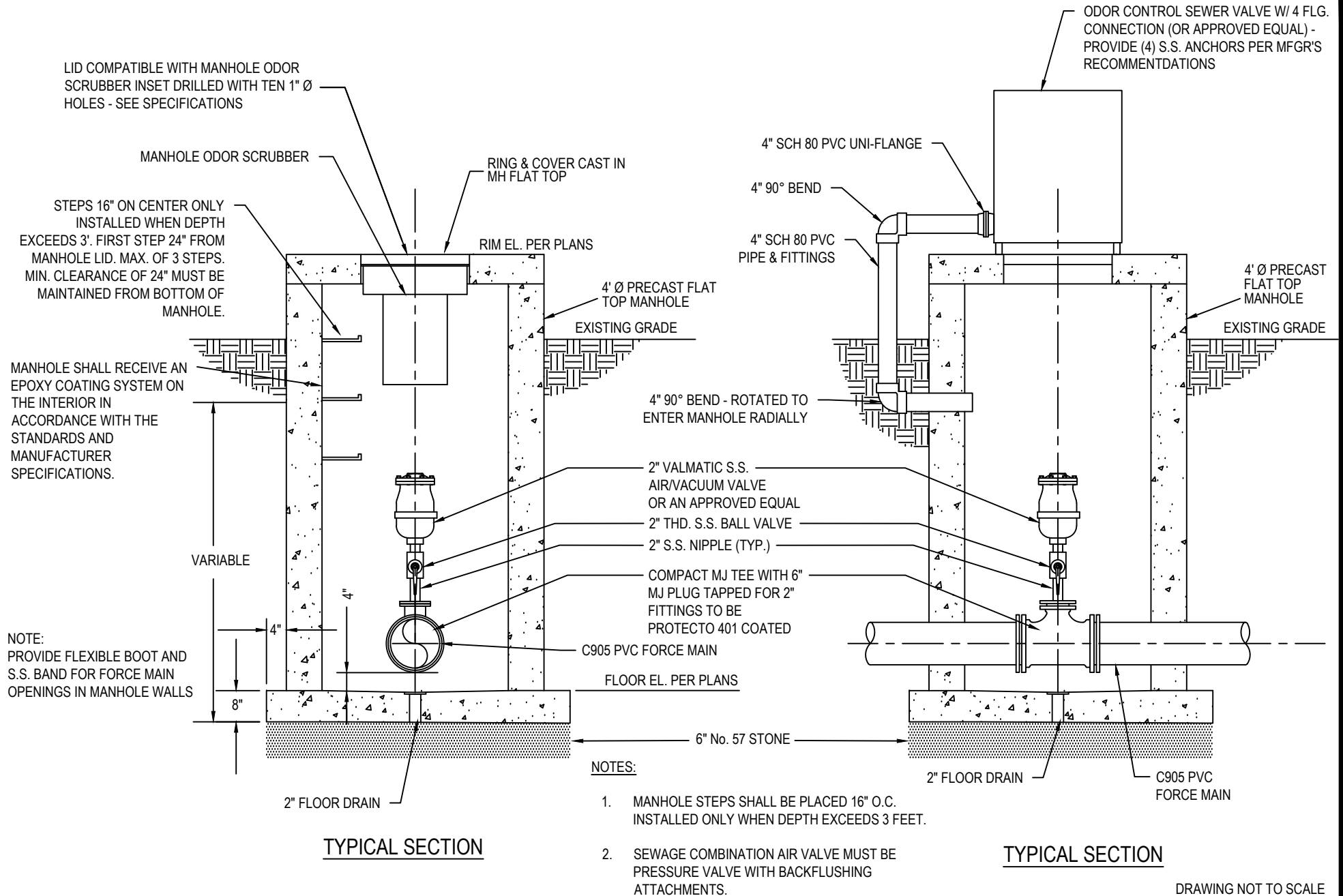
SEWAGE GRINDER UNIT (WET WELL INSTALLATION)

TOWN OF HOLLY SPRINGS

STANDARD DETAIL NUMBER: HS1309

DATE	REVISIONS
3/23/21	
6/11/24	





FORCE MAIN AIR RELEASE MANHOLE

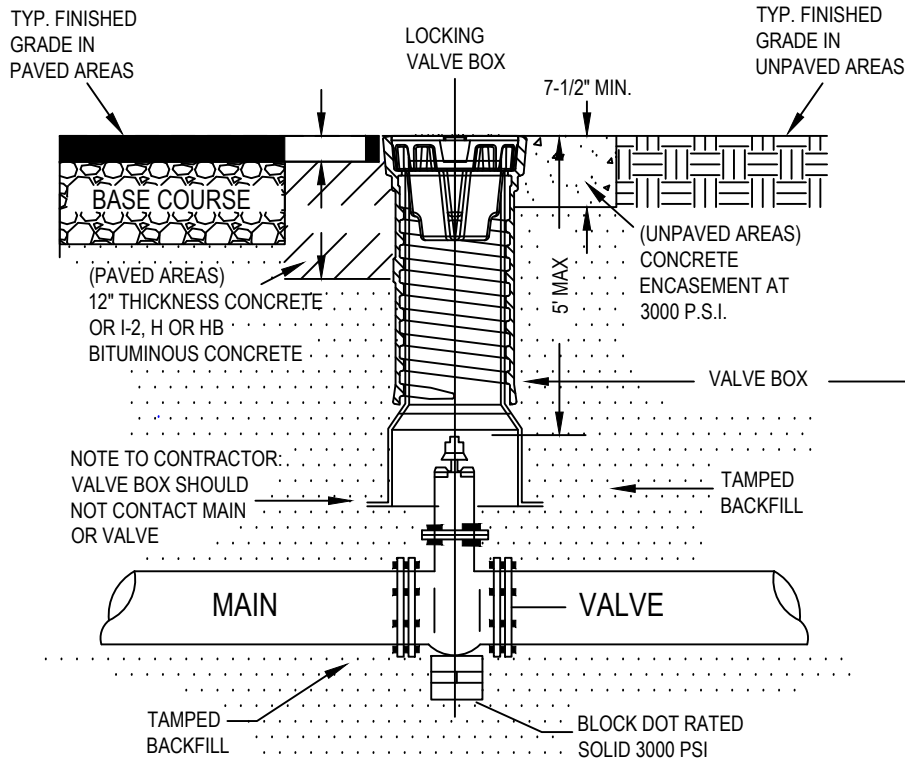
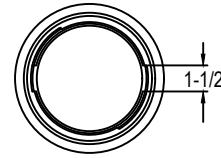
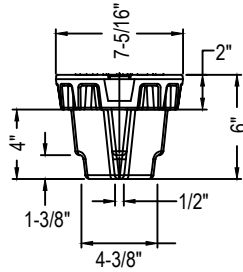
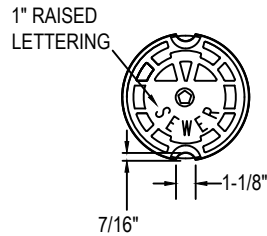
TOWN OF HOLLY SPRINGS

STANDARD DETAIL NUMBER: HS1310

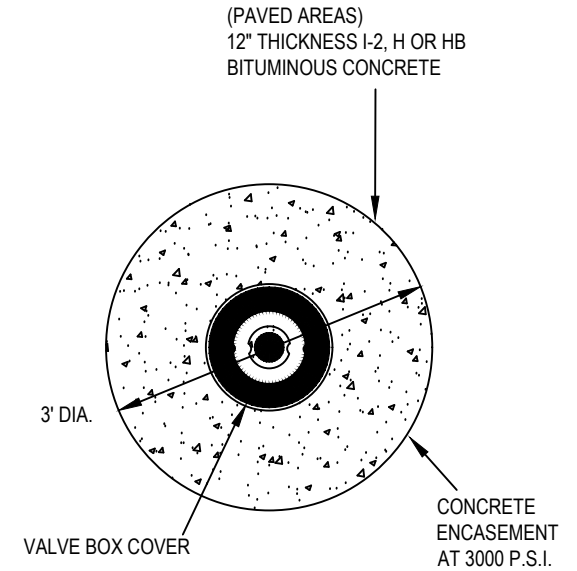
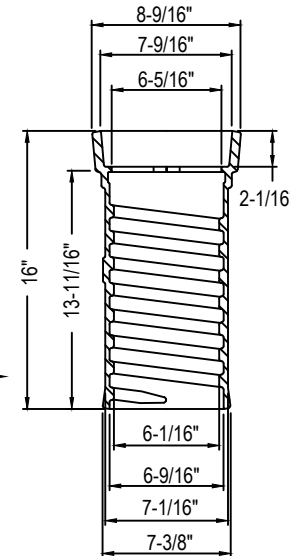
DATE REVISIONS

6/11/24





SECTION



PLAN

NOTES:

1. D.I.P. SHALL BE USED FOR VALVE BOX EXTENSIONS, PVC MAY BE SUBSTITUTED IN NON-TRAFFIC AREAS.
2. VALVE OPERATING NUT MUST BE EXTENDED SO THAT THE DEPTH IS NO GREATER THAN 5' FROM THE SURFACE USING A MANUFACTURER APPROVED EXTENSION KIT.
3. PRECAST CONCRETE ENCASEMENT IS ALLOWED OUTSIDE OF PAVED AREAS.
4. DOMESTIC MADE IN USA.

DRAWING NOT TO SCALE

SEWER VALVE BOX INSTALLATION

TOWN OF HOLLY SPRINGS

STANDARD DETAIL NUMBER: HS1312

DATE REVISIONS

8/30/19

9/22/23

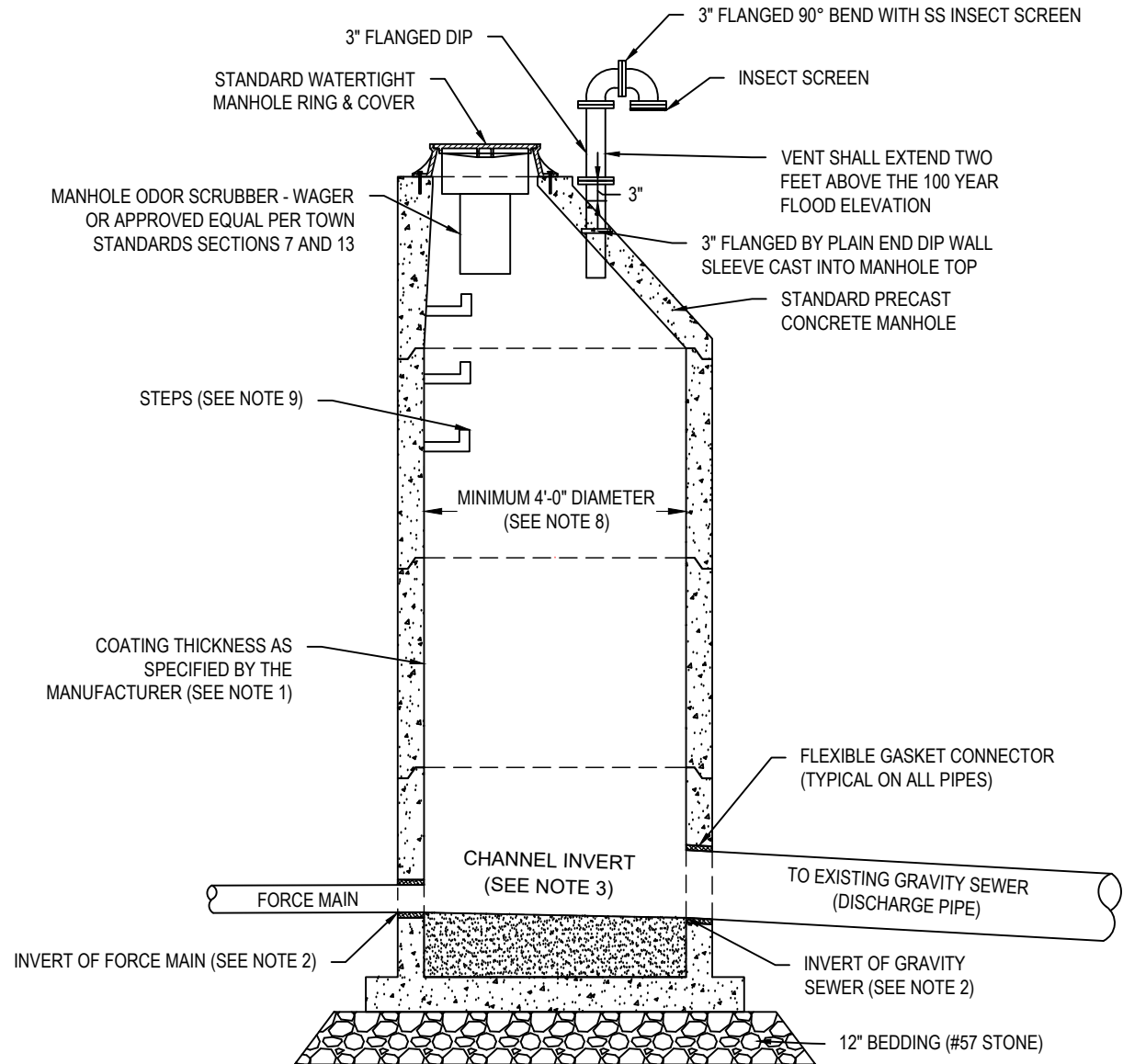
6/11/24

RJ/RJ



NOTES:

1. COAT INTERIOR OF MANHOLE WITH APPROVED EPOXY OR POLYURETHANE COATING APPLIED PER THE MANUFACTURER'S SPECIFICATIONS. COATINGS SHALL CONFORM TO TOWN OF HOLLY SPRINGS STANDARDS SECTION 13.
2. ELEVATION OF FORCE MAIN INVERT SHALL BE 1/10 OF A FOOT HIGHER THAN GRAVITY DISCHARGE INVERT ELEVATION. INSTALLATIONS GREATER THAN 10-FT WILL REQUIRE APPROVAL BY THE DIRECTOR.
3. PROVIDE SMOOTH CHANNEL FROM FORCE MAIN TO GRAVITY SEWER.
4. FORCE MAINS SHALL BE CONSTRUCTED OF C900 PVC PIPE AND SHALL CONFORM TO TOWN STANDARDS SECTION 13.
5. ANY DUCTILE IRON PIPE SHALL BE LINED WITH PROTECTO 401 AND CONFIRM TO ALL CRITERIA IN TOWN STANDARDS SECTION 13.
6. ALL FORCE MAINS SHALL BE SUBJECTED TO A HYDROSTATIC TEST ACCORDING TO THE PROVISIONS OF TOWN STANDARDS SECTION 13.
7. A CHECK VALVE AND PLUG VALVE SHALL BE PROVIDED FOR THE DISCHARGE LINE OF EACH PUMP.
8. MANHOLE DIAMETER SHALL BE CAPABLE OF RECEIVING FLOW WITHOUT EXCEEDING 50% SURCHARGE CONDITIONS IN THE EXISTING GRAVITY SEWER.
9. STEPS 16" ON CENTER ONLY INSTALLED WHEN DEPTH EXCEEDS 3'. FIRST STEP 24" FROM MANHOLE LID. MAXIMUM OF 3 STEPS. MINIMUM CLEARANCE OF 24" MUST BE MAINTAINED FROM BOTTOM OF MANHOLE.



DRAWING NOT TO SCALE

FORCE MAIN DISCHARGE MANHOLE

TOWN OF HOLLY SPRINGS

STANDARD DETAIL NUMBER: HS1313

DATE REVISIONS

8/30/19

6/21/23

6/11/24

RJ





Holly Springs Town Council

Town Council Meeting Agenda Cover Sheet

Agenda Item#: 13.

Consent Agenda

Title: Town Code of Ordinances Chapter 8 Environment, Article V- NPDES Phase II Post-Construction Stormwater Updates

Strategic Priority Area: Organizational Excellence

Staff Resource: Daniel Colavito, Utilities and Infrastructure

Action(s):

Adopt Ordinance 24-29, the Phase II Post-Construction Stormwater Ordinance, to Comply with NC Department of Environmental Quality (DEQ) Approved Local Program Requirements

Explanation:

- Beginning on July 1, 2024, the Town will be subject to additional environmental regulations as required by North Carolina Department of Environmental Quality ("NCDEQ.")
- The state-mandated Nutrient Sensitive Watershed (NSW) regulations were enacted as a strategy to reduce nutrient pollution entering the Neuse River basin, as well as other watersheds that NCDEQ/EPA similarly finds to be impaired.
- The Town is now considered a "Named Neuse Community" and is required to implement a program to comply with the NSW regulations. Staff submitted the required program materials to NCDEQ and the Draft Local Program was approved by the Environmental Management Commission (EMC) on November 9, 2023. This EMC approval requires that the Town adopt these new stormwater measures by July 1, 2024. These measures mandate strategies to reduce pollution in the watershed including, among other things, 1) stormwater management for impervious surfaces associated with development, 2) public education and outreach and 3) routine inspections of existing stormwater control measures.
- Chapter 8 Environmental, Article V NPDES Phase II Post-Construction Stormwater has been revised in accordance with the NCDEQ model ordinance and also includes additions accounting for local specifics such as stormwater control measure performance sureties. This ordinance has also been reviewed and updated to comply with recent, relevant session laws passed by the North Carolina General Assembly.

Background:

Highlights of the revised Chapter V include:

- Authority for approval and inspections of additional impervious surfaces and associated stormwater control measures;
- Authority for enforcing approved stormwater control requirements in perpetuity
- Revised language regarding stormwater sureties and the definition of "Built Upon Area", as required by recently enacted state legislation.

Funding Source(s):

N/A

Attachment(s):

1. Ordinance - Proposed Amendment - Stormwater - Post Construction



Ordinance No. 24-29

Date Submitted: June 18, 2024

Date Adopted: June 18, 2024

AN ORDINANCE TO AMEND THE TOWN CODE OF THE TOWN OF HOLLY SPRINGS, N.C. TO AMEND CHAPTER 8, ENVIRONMENT, ARTICLE V – NPDES PHASE II POST-CONSTRUCTION STORMWATER

BE IT ORDAINED by the Holly Springs Town Council of the Town of Holly Springs, North Carolina, as follows:

Part 1: Amending Article V, showing all additions in Underline and all deletions in ~~Strikethrough~~, as follows:

ARTICLE V. NPDES PHASE II AND NSW POST-CONSTRUCTION STORMWATER

DIVISION 1. GENERALLY

Sec. 8-191. Title.

This article shall be officially known as "The Phase II and NSW Post-Construction Stormwater Ordinance." It is referred to herein as "this article."

(Ord. No. 07-17, § 2(Exh. A), 11-6-2007)

Sec. 8-192. Authority.

The Holly Springs Town Council is authorized to adopt this article pursuant to North Carolina law, including but not limited to Article 14, Section 5 of the Constitution of North Carolina; Town of Holly Springs; North Carolina General Statutes 143-214.7 and rules promulgated by the Environmental Management Commission thereunder; ~~Session Law 2004-163~~; Chapter 143-215.6A; Chapter 153A-454; Chapters 160A, §§ 174, 185, 459 and Article 19 of Chapter 160A.

(Ord. No. 07-17, § 2(Exh. A), 11-6-2007)

Sec. 8-193. Findings.

The Holly Springs Town Council hereby finds that development and ~~redevelopment~~expansion of development alter the hydrologic response of local watersheds and increase stormwater runoff rates and volumes, flooding, soil erosion, stream channel erosion, nonpoint and point source pollution, and sediment transport and deposition, as well as reducing groundwater recharge;

These changes in stormwater runoff contribute to increased quantities of water-borne pollutants and alterations in hydrology which are harmful to public health and safety as well as to the natural environment; and

These effects can be managed and minimized by applying proper design and well-planned controls to manage stormwater runoff from development sites.

Further, the Federal Water Pollution Control Act of 1972 ("Clean Water Act") and federal Phase II Stormwater Rules (Phase II Rules) promulgated under it, as well as rules of the North Carolina Environmental Management Commission promulgated in response to federal Phase II requirements, compel certain urbanized areas, including this jurisdiction, to adopt the minimum stormwater controls such as those included in this article.

Further, the Commission has identified the Neuse River Estuary, as nutrient sensitive waters (NSW); has identified all or a portion of the estuary as impaired waters under the federal Clean Water Act due to exceedances of the chlorophyll a standard and has promulgated rules (the "Neuse River Rules") to reduce the average annual loads of nitrogen and phosphorus delivered to the estuary from all point and nonpoint sources of these nutrients located within its watershed, including stormwater from new development in this jurisdiction.

Therefore, the Holly Springs Town Council ("town council") establishes this set of water quality and quantity regulations to meet the requirements of state and federal law regarding control of stormwater runoff and discharge for development. Development located in the watershed of the Neuse River Estuary are subject to the requirements of the Neuse River Rules, the NPDES Phase II rules, the provisions of this article and the Town's Engineering Design and Construction Standards.

Development in other portions of the town that do not discharge to the Neuse River Estuary are subject to the NPDES Phase II Rules, the provisions of this article and the Town's Engineering Design and Construction Standards.

(Ord. No. 07-17, § 2(Exh. A), 11-6-2007)

Sec. 8-194. Purpose.

(a) General. The purpose of this article is to protect, maintain and enhance the public health, safety, environment and general welfare by establishing minimum requirements and procedures to control the adverse effects of ~~increased post-development~~nitrogen in stormwater runoff and nonpoint and point source pollution associated with new development and ~~redevelopment~~expansion of development in the watershed of the Neuse River estuary. It has been determined that proper management of construction-related and post-development stormwater runoff will minimize damage to public and private property and infrastructure; safeguard the public health, safety, and general welfare; and protect water and aquatic resources. This article works cooperatively with the flood damage prevention ~~ordinance~~and erosion and sediment control ordinances to achieve this purpose.

(b) Specific. This article seeks to meet its general purpose through the following specific objectives and means:

(1) Establishing decision-making processes for development that protects the integrity of watersheds and preserves the health of water resources;

(2) Requiring that new development ~~and redevelopment in the Neuse River Estuary watershed not exceed export targets for nitrogen in stormwater runoff for the watershed through site layout, stormwater SCMs, or permanent nutrient offset credits;~~

(3) Requiring that new development maintain the pre-development hydrologic response in their post-development state ~~as nearly as practicable~~ for the applicable design storm ~~in order~~ to reduce flooding, streambank erosion, nonpoint and point source pollution and increases in stream temperature, and to maintain the integrity of stream channels and aquatic habitats;

(~~34~~) Establishing minimum post-development stormwater management standards and design criteria for the regulation and control of stormwater runoff quantity and quality;

(~~45~~) Establishing design and review criteria for the construction, function, and use of structural stormwater structural control measures ("SCMs") that may be used to meet the minimum post-development stormwater management standards;

(~~56~~) Encouraging the use of better management and site design practices, such as the use of vegetated conveyances for stormwater and the preservation of green space, riparian buffers, and other conservation areas to the maximum extent practicable;

(~~67~~) Establishing provisions for the long-term responsibility for and maintenance of structural stormwater SCMs to ensure that they continue to function as designed, are maintained appropriately, and pose no threat to public safety;

(~~78~~) Establishing administrative procedures for the submission, review, approval and disapproval of stormwater management plans, for the inspection of approved projects, and to assure appropriate long-term maintenance.

(Ord. No. 07-17, § 2(Exh. A), 11-6-2007; Ord. No. 20-07, § 1, 12-1-2020)

Sec. 8-195. Applicability and jurisdiction.

(a) General. Beginning with and subsequent to its effective date, this article shall be applicable to all development and ~~redevelopment~~expansion of development, including, but not limited to, development plan applications, preliminary plan applications, and grading applications, unless exempt pursuant to subsection (c) of this section, exemptions, below.

(b) Jurisdiction. This article is hereby adopted by the town council to apply to the corporate limits of the Town of Holly Springs ("town") and its extraterritorial jurisdiction ("ETJ").

(c) Exemptions. ~~Development that cumulatively disturbs less than one acre and is not part of a larger common plan of development or sale is exempt from the provisions of this article.~~

Redevelopment ~~(1) Single family and duplex residential and related recreational development and expansion of development~~ that ~~cumulatively~~ disturbs less than one acre ~~and is~~ is exempt from provisions of this article.

(2) Commercial, industrial, institutional, multifamily, residential, or local government development that disturbs less than one half acre and does not ~~part of~~ expand existing structures on a larger common plan of development or sale parcel is exempt from the provisions of this article.

(3) Commercial, industrial, institutional, multifamily, residential, or local government development that disturbs less than one half acre and expands existing structures on a parcel, but does not result in a cumulative built-upon area for the parcel exceeding twenty-four (24) percent is exempt from the provisions of this article.

(4) Development ~~and redevelopment that disturb one acre~~ that disturbs less than the above thresholds are not exempt if such activities are part of a larger common plan of development or sale ~~and the larger common plan exceeds the relevant threshold~~, even though multiple, separate or distinct activities take place at different times on different schedules.

~~Activities exempt from permit requirements of section 404 of the Federal Clean Water Act, as specified in 40 CFR 232 (primarily, ongoing farming and forestry activities) are exempt from the provisions of this article.~~

(5) Development of an individual single-family ~~or duplex~~ residential lot that ~~cumulatively disturbs one acre or more and~~ is not part of a larger common plan of development or sale ~~may be and~~ does not result in greater than five (5) percent built-upon area on the lot ~~is~~ exempt from ~~portion~~the provisions of this article ~~provided~~.

(6) Existing development or redevelopment is exempt from the provisions of this article. Existing development or "built-upon area" means impervious surface and partially impervious surface to the extent ~~that they utilize nonstructural SCM~~the partially impervious surface does not allow water to infiltrate through the surface and into the subsoil. "Built-upon area" does not include a slatted deck; the water area of a swimming pool; a surface of number 57 stone, as designated by the American Society for Testing and Materials, laid at least four inches thick over a geotextile fabric; a trail ~~as outlined~~defined in the design manual, G.S. 113A-85 that is either unpaved or paved as long as the pavement is porous with a hydraulic conductivity greater than 0.001 centimeters per second (1.41 inches per hour); or landscaping material, including, but not limited to, gravel, mulch, sand, and vegetation, placed on areas that receive pedestrian or bicycle traffic or on portions of driveways and parking areas that will not be compacted by the weight of a vehicle, such as the area between sections of pavement that support the weight of a vehicle.

(7) Activities subject to requirements of the Neuse River Agriculture Rule, 15A NCAC 02B.172 are exempt from the provisions of this article.

(8) Development or expansion of development with a vested right per the standards of N.C.G.S. 160D-108 is exempt from the provisions of this article.

(9) Development or expansion of development for which the permit application was submitted prior to adoption of this article is optionally exempt from the provisions of this article per the requirements of N.C.G.S. 143-755.

(d) No development or redevelopment until compliance and permit. No development or redevelopment shall occur except in compliance with the provisions of this article or unless exempted. ~~No~~No development or expansion of development for which a permit is required pursuant to this article shall occur except in compliance with the provisions, conditions, and limitations of the permit.

(e) Map. ~~A~~ "The provisions of this article shall apply within the areas designated on the map titled "Town of Holly Springs Stormwater Map" ("stormwater map") shall" ("stormwater map"), which is adopted simultaneously herewith. The stormwater map and all explanatory matter contained thereon accompanies and is hereby made a part of this article.

The stormwater map shall be kept on file by the utilities and infrastructure services. ~~The stormwater map will apply to the town and its ETJ. The stormwater map may and shall~~ be ~~amended from time to time~~ updated to include changes to the geographic boundaries of the town due to annexation or extension of the town's ETJ. The stormwater map shall be updated to take into account the geographic location of all structural SCMs permitted under this article. In the event of a dispute, the applicability of this article to a particular area of land or structural SCM shall be determined by reference to the North Carolina Statutes, the North Carolina Administrative Code, and local zoning (Unified Development Ordinance (UDO)) and jurisdictional boundary ordinances.

(Ord. No. 07-17, § 2(Exh. A), 11-6-2007; Ord. No. 15-04, § 1, 5-5-2015; Ord. No. 20-07, § 1, 12-1-2020)

Sec. 8-196. Interpretation.

(a) Meaning and intent. All provisions, terms, phrases, and expressions contained in this article shall be construed according to the general and specific purposes set forth in Section 104, Purpose. If a different or more specific meaning is given for a term defined elsewhere in the Holly Springs Town Code, the meaning and application of the term in this article shall control for purposes of application of this article.

(b) Text controls in event of conflict. In the event of a conflict or inconsistency between the text of this article and any heading, caption, figure, illustration, table, or map, the text shall control.

(c) Authority for interpretation. The executive director of utilities and infrastructure services, or utilities and infrastructure services, has authority to determine the interpretation of this article. Any person may request an interpretation by submitting a written request to the utilities and infrastructure services who shall respond in writing within 30 days. The utilities and infrastructure services shall keep on file a record of all written interpretations of this article.

(d) References to statutes, regulations, and documents. Whenever reference is made to a resolution, ordinance, statute, regulation, manual (including the design manual), or document, it shall be construed as a reference to the most recent edition of such that has been finalized and published with due provision for notice and comment, unless otherwise specifically stated.

(e) Computation of time. The time in which an act is to be done shall be computed by excluding the first day and including the last day. If a deadline or required date of action falls on a Saturday, Sunday, or holiday observed by the town, the deadline or required date of action shall be the next day that is not a Saturday, Sunday or holiday observed by the town. References to days are calendar days unless otherwise stated.

(f) Delegation of authority. Any act authorized by this article to be carried out by the utilities and infrastructure services of the town may be carried out by his or her designee.

(g) Usage.

(1) Mandatory and discretionary terms. The words "shall," "must," and "will" are mandatory in nature, establishing an obligation or duty to comply with the particular provision. The words "may" and "should" are permissive in nature.

(2) Conjunctions. Unless the context clearly indicates the contrary, conjunctions shall be interpreted as follows: The word "and" indicates that all connected items, conditions, provisions ~~or~~and events apply. The word "or" indicates that one or more of the connected items, conditions, provisions or events apply.

(3) Tense, plurals, and gender. Words used in the present tense include the future tense. Words used in the singular number include the plural number and the plural number includes the singular number, unless the context of the particular usage clearly indicates otherwise. Words used in the masculine gender include the feminine gender, and vice versa.

(h) Measurement and computation. Lot area refers to the amount of horizontal land area contained inside the lot lines of a lot or site.

(Ord. No. 07-17, § 2(Exh. A), 11-6-2007; Ord. No. 20-07, § 1, 12-1-2020)

Sec. 8-197. Design manual.

(a) Reference to design manual. The utilities and infrastructure services shall use the policy, criteria, and information, including technical specifications and standards, in the Town of Holly Springs Stormwater Design Manual ("design manual"), which is contained in Section 8 of the Town of Holly Springs Engineering Design Standards and Specifications, as the basis for decisions about ~~stormwater permits~~Environmental Development Permits and about the design, implementation and performance of structural SCMs and nonstructural SCMs for compliance with this article.

The design manual includes a list of acceptable stormwater treatment practices, including the specific design criteria for each stormwater practice. Stormwater treatment practices that are designed, constructed, and maintained in accordance with these design and sizing criteria will be presumed to meet the minimum water quality performance standards of the Phase II laws- or Neuse River Rules, as applicable.

(b) Relationship of design manual to other laws and regulations. If the specifications or guidelines of the design manual are more restrictive or apply a higher standard than other laws or regulations, that fact shall not prevent application of the specifications or guidelines in the design manual.

(c) Changes to standards and specifications. If the standards, specifications, guidelines, policies, criteria, or other information in the design manual are amended subsequent to the submittal of an application for approval pursuant to this article but prior to approval, the ~~new information~~applicant shall control and shall be utilized have the choice of using the new design manual in reviewing and the application and in implementing this article with regard to the application, or using the old design manual.

(d) Amendments to design manual. The design manual may be updated and expanded from time to time, based on advancements in technology and engineering, changes to State minimum design criteria, improved knowledge of local conditions, or local monitoring or maintenance experience.

Prior to amending or updating the design manual, proposed changes shall be generally publicized and made available for review, and an opportunity for comment by interested persons shall be provided.

(Ord. No. 07-17, § 2(Exh. A), 11-6-2007; Ord. No. 20-07, § 1, 12-1-2020)

Sec. 8-198. Relationship to other laws, regulations and private agreements.

(a) Conflict of laws. This article is not intended to modify or repeal any other ordinance, rule, regulation or other provision of law. The requirements of this article are in addition to the requirements of any other ordinance, rule, regulation or other provision of law, ~~and~~. Where any provision of this article imposes restrictions different from those imposed by any other ordinance, rule, regulation or other provision of law, whichever provision is more restrictive or imposes higher protective standards for human or environmental health, safety, and welfare, shall control.

(b) Private agreements. This article is not intended to revoke or repeal any easement, covenant, or other private agreement. However, where the regulations of this article are more restrictive or impose higher standards or requirements than such easement, covenant, or other private agreement, then the requirements of this article shall govern. Nothing in this article shall modify or repeal any private covenant or deed restriction, but such covenant or restriction shall not legitimize any failure to comply with this article. In no case shall the town be obligated to enforce the provisions of any easements, covenants, or agreements between private parties.

(Ord. No. 07-17, § 2(Exh. A), 11-6-2007)

Sec. 8-199. Severability.

If the provisions of any section, subsection, paragraph, subdivision or clause of this article shall be adjudged invalid by a court of competent jurisdiction, such judgment shall not affect or invalidate the remainder of any section, subsection, paragraph, subdivision or clause of this article.

(Ord. No. 07-17, § 2(Exh. A), 11-6-2007)

Sec. 8-200. Effective date and transitional provisions.

(a) Effective date. This article shall take effect on ~~November 6, 2007~~ xxx 2024

(b) Final approvals, complete applications. All development and ~~redevelopment expansion of development~~ projects for which complete ~~major residential subdivision plan, master plan, development plan, special exception use and PUD master plan where a complete petition has been full applications~~ were submitted ~~and remains active in the development review process or approved by the to the~~ town prior to the effective date of this article ~~and otherwise valid pursuant to the Town of Holly Springs Unified Development Ordinance ("UDO") shall~~ may be ~~exempt~~ exempted from complying with all provisions of this article dealing with the control and/or management of ~~post-construction runoff, but stormwater by choice of the developer.~~

A phased development plan shall be required deemed complete prior to comply with all other applicable provisions. the effective date of this article if it shows:

(1) For the initial or first phase of development or expansion of development, the type and intensity of use for a specific parcel or parcels, including at a minimum, the boundaries of the project and a subdivision plan that has been approved.

(2) For any subsequent phase of development or expansion of development, sufficient detail so that implementation of the requirements of this article to that phase of development would require a material change in that phase of the plan.

(c) Violations continue. Any violation of provisions existing on the effective date of this article shall continue to be a violation under this article and be subject to penalties and enforcement under this article unless the use, development, construction, or other activity complies with the provisions of this article.

(Ord. No. 07-17, § 2(Exh. A), 11-6-2007)

Sec. 8-201. Responsibility for extending stormwater.

All development shall extend stormwater connections, contained in private drainage easements, sized to receive and to convey stormwater to and from adjacent properties built out conditions shown on the most current version of the town future land use plan and in accordance with the town engineering design and construction standards.

(Ord. No. 12-02, § 5, 3-20-2012)

Secs. 8-202—8-210. Reserved.

DIVISION 2. ADMINISTRATION AND PROCEDURES

Sec. 8-211. Review and decision-making entities.

(a) Executive director of utilities and infrastructure services. The executive director of utilities and infrastructure services, or utilities and infrastructure services, shall administer and enforce this article.

(b) Powers and duties. In addition to the powers and duties that may be conferred by other provisions of the Town of Holly Springs Town Code and other laws, the ~~utilities and infrastructure services~~Town shall have the following powers and duties under this article:

(1) To review and approve, approve with conditions, or disapprove applications for approval of plans pursuant to this article.

(2) To make determinations and render interpretations of this article.

(3) To establish application requirements and schedules for submittal and review of applications and appeals, to review and make recommendations to the town council on applications for development or ~~redevelopment~~expansion of development approvals.

(4) To enforce the provisions of this article in accordance with its enforcement provisions.

(5) To maintain records, maps, and official materials as relate to the adoption, amendment, enforcement, ~~or~~and administration of this article.

(6) To provide expertise and technical assistance to the town council, upon request.

(7) To designate appropriate other person(s) who shall carry out the powers and duties of the utilities and infrastructure services.

(8) To take any other action necessary to administer the provisions of this article.

(Ord. No. 07-17, § 2(Exh. A), 11-6-2007; Ord. No. 20-07, § 1, 12-1-2020)

Sec. 8-212. Review procedures.

(a) Permit required; shall apply for permit. ~~A stormwater~~An Environmental Development Permit ("permit") is required for all development and ~~redevelopment~~expansion of development unless exempt pursuant to this article. A permit may only be issued subsequent to a properly submitted and reviewed ~~stormwater~~Environmental Development Permit application, pursuant to this section.

(b) Effect of permit. ~~A stormwater~~An Environmental Development Permit shall govern the design, installation, and construction of stormwater management and control practices on the site, including structural stormwater SCMs and elements of site design for stormwater management other than structural stormwater SCMs.

The permit is intended to provide a mechanism for the review, approval, and inspection of the method to be used for the management and control of stormwater for the development or ~~redevelopment~~expansion of development site consistent with the requirements of this article, whether the approach consists of structural stormwater SCMs or other techniques such as low-impact or low-density design. The permit does not continue in existence indefinitely after the completion of the project; rather, compliance after project construction is assured by the maintenance provisions of this article.

(c) Authority to file applications. All applications required pursuant to this article shall be submitted to the utilities and infrastructure services by the landowner, a lessee or person holding an option or contact to purchase or lease land, or the landowner's duly authorized agent. An easement holder may also apply for development approval for such development as is authorized by the easement.

(d) Establishment of application requirements, schedule, and fees.

(1) Application contents and form. ~~The utilities and infrastructure services~~The Town shall establish requirements for the content and form of all applications and shall amend and update those requirements from time to time. At a minimum, the ~~stormwater~~Environmental Development Permit application shall describe in detail how post-development stormwater runoff will be controlled and managed, the design of all ~~stormwater facilities~~structural SCMs and practices, and how the proposed project will meet the requirements of this article.

(2) Submission schedule. ~~The utilities and infrastructure services~~The Town shall establish a submission schedule for applications, which shall be in accordance with other schedules for plan approval ~~as described in~~ accordance with the ~~Town of Holly Springs~~Unified Development Procedures Manual ("DPM"). Ordinance (UDO) and Engineering Design and Construction Standards. The schedule shall establish deadlines by which complete applications shall be submitted for the purpose of ensuring that there is adequate time to review applications and that the various stages in the review process are accommodated.

(3) Permit review fees. The town council shall establish permit review fees and may amend and update the fees and policies from time to time. Fees will be set based on the effective schedule of fees and approved by the town council.

(4) Administration. For application required under this article, the Town shall compile the application requirements, submission schedule, fee schedule, a copy of this article, and information on how and where to obtain the design manual in the UDO, which shall be made available to the public.

(e) Submittal of complete application. Applications shall be submitted to the ~~utilities and infrastructure services~~Town pursuant to the application submittal schedule in the form established by the ~~utilities and infrastructure services~~Town, along with the appropriate fee established pursuant to this section.

An application shall be considered as timely submitted only when it contains all elements of a complete application pursuant to this article, along with the appropriate fee. If the utilities and infrastructure services finds that an application is incomplete, the applicant shall be notified of the deficient elements and shall be provided with an opportunity to submit a complete application. However, the submittal of an incomplete application shall not suffice to meet a deadline contained in the submission schedule established above.

(f) Review. The utilities and infrastructure services shall review the application and determine whether the application complies with the standards of this article. The review will take place in accordance with schedules set forth in the ~~DPM~~UDO.

(1) Approval. If the ~~utilities and infrastructure services~~Town finds that the application complies with the standards of this article, the utilities and infrastructure services shall approve the application. The utilities and infrastructure services may impose conditions of approval as needed to ensure compliance with this article. The conditions shall be included as part of the approval.

(2) Fails to comply. If the ~~utilities and infrastructure services~~Town finds that the application fails to comply with the standards of this article, the utilities and infrastructure services shall notify the applicant and shall indicate how the application fails to comply. The applicant shall have an opportunity to submit a revised application.

(3) Revision and subsequent review. A complete revised application shall be reviewed by the ~~utilities and infrastructure services~~Town after its resubmittal and shall be approved, approved with conditions or disapproved in accordance with time schedules set forth in the ~~DPM~~UDO.

If a revised application is not resubmitted within 30 calendar days from the date the applicant was notified, the application shall be considered withdrawn, and a new submittal for the same or substantially the same project shall be required along with the appropriate fee- for a new submittal.

One resubmittal of a revised application may be submitted without payment of an additional permit review fee. Any resubmittal after the first resubmittal shall be accompanied by a permit review ~~fee~~ additional fee, as established pursuant to this article.

(Ord. No. 07-17, § 2(Exh. A), 11-6-2007; Ord. No. 20-07, § 1, 12-1-2020)

Sec. 8-213. Applications for approval.

(a) ~~Preliminary review.~~ Concept plan and consultation meeting. Before ~~a stormwater an~~ Environmental Development Permit application is deemed complete, ~~it shall be preliminarily reviewed by~~ the utilities and infrastructure services ~~at may request a consultation on a meeting concept plan for the post-construction stormwater management system to be utilized in the proposed development project.~~ This ~~concept plan consultation~~ meeting shall take place a minimum of 14 days prior to submittal of a development plan at the time of the preliminary review process. The purpose of this meeting is to discuss the post-construction stormwater management measures necessary for the proposed project, as well as to discuss and assess constraints, opportunities and potential approaches to stormwater management designs before formal site design engineering is commenced. Local watershed plans, the current stormwater map, the current open space master plan, and other relevant resource protection plans may be consulted in the discussion of the concept plan.

To accomplish this goal the following information should be included in the concept plan, which ~~shall~~should be submitted ~~14 days~~ in advance of the meeting:

- (1) Existing conditions/proposed site plans. Existing conditions and proposed site layout sketch plans, which illustrate at a minimum: existing and proposed topography; perennial and intermittent streams; mapping of predominant soils from soil surveys (~~when if~~ available); stream and other buffers and features used in designing buffers and meeting any applicable buffer requirements; boundaries of existing predominant vegetation ~~and~~; proposed limits of clearing and grading; and location of existing and proposed roads, buildings, parking areas and other impervious surfaces.
 - (2) Natural resources inventory. A natural resource inventory is a written or graphic inventory of the natural resources at the site and surrounding area, as it exists prior to the commencement of the project. This description should include a discussion of soil conditions, forest cover, geologic features, topography, wetlands, and native vegetative areas on the site, as well as the location and boundaries of other natural feature protection and conservation areas such as lakes, ponds, floodplains, stream buffers and other setbacks (e.g., drinking water well setbacks, septic setbacks, etc.). Particular attention should be paid to environmentally sensitive features that provide opportunities or constraints for development ~~and stormwater management.~~
 - (3) Stormwater management system concept plan. A stormwater management system concept plan is a written or graphic concept plan of the proposed post-development stormwater management system including: preliminary selection and location of proposed structural ~~stormwater controls~~SCMs; low-impact design elements; location of existing and proposed conveyance systems such as grass channels, swales, and storm drains; flow paths; location of floodplain/floodway limits; relationship of site to upstream and downstream properties and drainages; and preliminary location of proposed stream channel modifications, such as bridge or culvert crossings.
- (b) Stormwater management permit application. The stormwater management permit application shall detail how post-development stormwater runoff will be controlled and managed and how the proposed project will meet the requirements of this article, including Division 3, Standards. All such plans shall be prepared by a qualified registered North Carolina Professional Engineer, ~~and the~~ engineersurveyor, soil scientist or landscape architect, and the engineer, surveyor, soil scientist or landscape architect shall perform services only in their area of competence, and shall verify that the

design of all stormwater management facilities and practices meets the submittal requirements for complete applications, that the designs and plans are sufficient to comply with applicable standards and policies found in the design manual, and that the designs and plans ensure compliance with this article.

The submittal shall include all of the information required in the submittal checklist established by the ~~utilities and infrastructure services~~.Town. Incomplete submittals shall be treated pursuant to section 8-212(e).

(c) As-built plans and final approval. Upon completion of a project, and before a certificate of occupancy shall be granted, a licensed professional engineer ("PE") for the applicant shall certify that the completed project is substantially in accordance with the approved stormwater management plans and designs, and shall submit actual "as-built" plans for all structural SCMs after final construction is completed.

The plans shall show the final design specifications for all structural SCMs and the field location, size, depth, and planted vegetation of all measures, controls, and devices, as installed. The designer of the structural SCMs and plans shall certify, under seal, that the as-~~built~~built stormwater measures, controls and devices are in compliance with the approved stormwater management plans and designs and with the requirements of this article. A final inspection and approval by the utilities and infrastructure services shall occur before the release of any performance securities. Such plans shall be submitted in mylar and in an approved electronic format to the utilities and infrastructure services.

(d) Private drainage easements. The approval of the stormwater management plan shall require documentation, approved by the town, of an enforceable restriction on property usage that runs with the land, such as recorded deed restrictions or protective covenants, to ensure that future development and redevelopment maintains the site consistent with the approved project plans.

Private drainage easements are intended to provide access for inspection, maintenance, and access for repair of structural portions of storm drainage conveyance systems. In addition to structural SCMs, all other portions of the storm drainage systems located on private property shall be maintained by the property owner(s). In the event that privately-owned storm drainage systems are not maintained by the property owner and are causing an emergency situation or threat to public rights-of-way, the town may take corrective action, then charge the property owner(s) for all costs associated with the corrective action. All private drainage easements shall be recorded after construction but prior to certificate of occupancy and shall meet all other requirements outlined in this article.

Private drainage easements shall be provided on all storm drainage systems and structures including, but not limited to, the following: pipes, channels, inlets, junction boxes, structural post-construction stormwater SCMs, new impoundments, existing impoundments on or off site and/or adjacent to new development, streams, wetlands, other natural stormwater conveyances, and any other drainage locations deemed appropriate by the town's utilities and infrastructure services. Private drainage easements shall be indicated on the final plat, labeled and recorded as a private drainage easement.

Such easements shall be located on commonly owned property unless it is required for individual lot use. All private drainage easements shall be at least 20-[feet] in width unless otherwise specified in the town engineering design and construction standards.

Private drainage easements shall be required on site for any and all development which accepts and/or conveys stormwater runoff. Exemptions can be permitted by the executive director of utilities and infrastructure services in instances where it can be proven that the storm drainage system on non-residential parcel(s) has been designed to serve lands only internal to the property.

(e) Other permits. No certificate of compliance or occupancy, building permits, or inspections may be issued by the town without final as-built plans, recorded deeds and plats and a final inspection and approval by the utilities and infrastructure services, except where multiple units are served by the structural SCMs, in which case the town may elect to withhold a percentage of permits or certificates of occupancy until as-built plans are submitted and final inspection and approval has occurred.

(Ord. No. 07-17, § 2(Exh. A), 11-6-2007; Ord. No. 11-10, pt. 1, 12-20-2011; Ord. No. 20-07, § 1, 12-1-2020)

Sec. 8-214. Approvals.

(a) Effect of approval. Approval authorizes the applicant to go forward with only the specific plans and activity authorized in the permit. No deviations from the terms of the application or the approval shall be made until written approval of proposed changes or deviations has been obtained through permit revision and review. The approval shall not be construed to exempt the applicant from obtaining other applicable approvals from local, state, and federal authorities.

(b) Time limit/expiration. An approved plan shall become null and void if the applicant has failed to make substantial progress on the site within one year after the date of approval. The utilities and infrastructure services may grant a single, one-year extension of this time limit, for good cause shown, upon receiving a written request from the applicant before the expiration of the approved plan.

In granting an extension, the utilities and infrastructure services may require compliance with standards adopted since the original application was submitted unless there has been substantial reliance on the original permit and the change in standards would infringe the applicant's vested rights.

(Ord. No. 07-17, § 2(Exh. A), 11-6-2007; Ord. No. 20-07, § 1, 12-1-2020)

Sec. 8-215. Appeals.

Right of appeal. Except as provided in N.C.G.S. 160D-1408.1, any aggrieved person affected by any decision, order, requirement, or determination relating to the interpretation or application of this article and made by the utilities and infrastructure services may file an appeal to the environmental appeal committee within 30 days from notification as outlined by the provisions provided in chapter 8, article VII/VIII of the town's Code of Ordinances. ~~In the absence of a petition of appeal within 30 days from notification, the assessment of the town shall be final.~~

Appeals of variance requests shall be made as provided in the section on Variances. In the case of requests for review of proposed civil penalties for violation of this article, the environmental appeal committee or board of adjustment shall make a final decision on the request for review within 90 days of receipt or of the date the request for review is filed.

(Ord. No. 07-17, § 2(Exh. A), 11-6-2007; Ord. No. 10-03, pt. 6, 5-4-2010; Ord. No. 20-07, § 1, 12-1-2020)

Secs. 8-216—8-230. Reserved.

DIVISION 3. STANDARDS

Sec. 8-231. General standards.

All ~~development and redevelopment projects~~ to which this article applies shall comply with the standards of this section. The approval of the Environmental Development Permit shall require an enforceable restriction of property usage that runs with the land, such as recorded deed restriction or protective covenants, to ensure that future development and expansion of development maintains the site consistent with the approved project plan.

(Ord. No. 07-17, § 2(Exh. A), 11-6-2007)

Sec. 8-232. ~~Development Built upon area~~ standards.

~~All development for which a land disturbance permit is required (one acre or greater of disturbed area) shall implement structural and nonstructural SCMs that comply with each of the following performance standards. The structural and nonstructural SCMs shall control and treat:~~

~~(1) — The difference in stormwater runoff peak discharge rate leaving the project site between the pre-development and post-development conditions for, at a minimum, the one-year, 24-hour storm (2.83 inches). Runoff volume drawdown time shall be a minimum of 24 hours, but not more than 120 hours.~~

~~(2) — The total nitrogen (TN) export limitations, in a manner consistent with the Neuse Basin Rules, 15A NCAC 2B.0233, will be required throughout the town and extra territorial jurisdiction. The town council may establish fee in lieu for nitrogen export and may amend and update the fees and policies from time to time. Fee costs and policies will be outlined in the design manual.~~

~~(3) — A minimum of 85 percent average annual removal for total suspended solids (TSS);~~

~~(4) — General engineering design criteria for all projects shall be in accordance with 15A NCAC 2H.1008©, as explained in the design manual;~~

~~(5) — All built-upon area shall be at a minimum of 30 feet landward of all perennial and intermittent surface waters, as described in section 7.06 of the UDO.~~

~~(Ord. No. 07-17, § 2(Exh. A), 11-6-2007; Ord. No. 15-04, § 1, 5-5-2015; Ord. No. 20-07, § 1, 12-1-2020)~~

Sec. 8-233.(a) When determining BUA to meet the requirements of this Section, the entire impervious area of development shall not include any portion of a project that is within a North Carolina Department of Transportation or municipal right-of-way. When a development in existence prior to the date of ordinance adoption is redeveloped, increased stormwater controls shall only be required for the amount of BUA being created that exceeds the amount of BUA that existed before the redevelopment, irrespective of whether the BUA that existed before redevelopment is to be demolished or relocated during the development activity. For all lots or portions of lots in existence prior to date of ordinance adoption and established outside subdivisions after that date, additional built upon area (BUA) may be added to the property, which would result in BUA coverage equal or less than allowed by the following table.:

Area BUA (sq ft) limitation BUA overage requirements

Single-family residential/duplex disturbing greater than 1 acre >24% BUA High-density stormwater standards

Single-family residential/duplex disturbing greater than 1 acre 5% < BUA < 24% Low-density stormwater standards

Commercial/industrial disturbing greater than 0.5 acre >24% BUA High-density stormwater standards

Commercial/industrial disturbing greater than 0.5 acre 5% < BUA < 24% Low-density stormwater standards

(b) Additional BUA and expansion of BUA beyond the above limitations must comply with the stormwater treatment and nutrient requirements of the above table. Only BUA on the lot, and that existing after or proposed to be added after the date of ordinance adoption, is included in BUA calculations.

(c) Subject to the requirements of this Section, for all lots, portions of lots, planned rights-of-way, and common areas established within subdivisions after the date of ordinance adoption, new built upon area may be added to the property which would result in BUA coverages equal to or less than allowed by the following table:

Area BUA (sq ft) limitation BUA overage requirements

Single-family residential disturbing greater than 1 acre <5% Low-density stormwater standards

Sec. 8-233. Nitrogen loading rate targets.

(a) The project shall meet either a nitrogen stormwater loading rate of 3.6 pounds per acre per year (lb/ac/yr) or meet “runoff volume match” as defined in 15A NCAC 02H .1002.

(b) The project area used for nutrient calculation and stormwater requirements includes the site area less any existing built upon area. The project density used for determining stormwater requirements is the amount of built-upon area subject to this article at project completion divided by the project area.

(c) The developer shall determine the nitrogen load and loading rate generated from the project area without structural SCMs and determine the needed nitrogen load reduction to meet nutrient targets using the approved accounting tool.

Sec. 8-234. Nitrogen standard is supplemental.

 The nitrogen loading standard in this article is supplemental to, not replacements for, stormwater standards otherwise required by federal, state, or local law, including without limitation any riparian buffer requirements applicable to the location of the development. This includes, without limitation, the riparian buffer protection requirements of 15A NCAC 02B .0714 and .0295.

Sec. 8-235. Control and treatment of runoff volume.

(a) All projects shall meet the stormwater system design requirements set forth in 15A NCAC 02H .1003. Projects shall use a project density threshold of greater than twenty-four (>24%) percent built-upon area whereupon high-density stormwater design is required. All structural SCMs will meet the standards set in the Design Manual and the State's Minimum Design Criteria, 15A NCAC 02H .1050 through .1062.

(b) Where high-density stormwater design is required, stormwater systems shall meet the standards set forth in 15A NCAC 02H .1003(3) and be designed to control and treat the volume of runoff generated from all built-upon area by one inch of rainfall or equivalent runoff in one or more primary SCMs. These projects may utilize offsite Primary SCMs dedicated to treating an area encompassing the project.

(c) Where high-density stormwater design is not required, stormwater systems shall meet the low-density stormwater design standards set forth in 15A NCAC 02H .1003(2).

Sec. 8-236. Methods to meet nutrient control requirements

Projects subject to this article shall meet nitrogen loading targets through a combination of the following methods:

(1) Projects may reduce export of nitrogen through any combination of structural SCMs treating runoff on the site, in an approved offsite regional structural SCM or through the acquisition of permanent nutrient offset credit. The developer shall calculate the nitrogen reduction provided by these controls using the approved accounting tool.

(2) Proposed development undertaken by a local government solely as a public road expansion or public sidewalk project, or proposed development subject to the jurisdiction of the Surface Transportation Board, may meet nitrogen reduction needs for the project entirely through the use of permanent nutrient offset credits pursuant to the Nutrient Offset Credit Trading Rule.

Sec. 8-237. Use of permanent offset credits

(a) Sufficient permanent nutrient offset credits to meet the project nutrient reduction needs not provided by the structural SCMs serving the project shall be acquired prior to the approval of the development plan. The utilities and infrastructure services shall issue an approval letter for development that documents the needed nitrogen credits and where the development is located relative to the Neuse Rules' geographic requirements. All permanent nutrient offset credits permitted by this article shall meet the requirements of 15A NCAC 02B .0703.

(b) Permanent nutrient offset credits shall be acquired pursuant to N.C.G.S. 143-214.26 and 15A NCAC 02B .0703 prior to the start of construction of the project.

(c) A development subject to this article may acquire permanent nutrient offset credits through one of the following methods:

a. Through a private nutrient bank;

b. Through offsite offset provided by the developer and approved by the town;

c. Through payment into the Riparian Buffer Restoration Fund established in N.C.G.S. 143-214.21.

(d) Excess permanent nutrient offset credit acquired beyond what is required for the development may not be applied to any other development.

Sec. 8-238. Comprehensive watershed plan.

(a) In general. Based upon the most current version of the comprehensive watershed plan, the town may choose to implement previously identified projects with the intent to meet the minimum NPDES Phase II requirements for post-construction discharges and other local, state or federal regulations. This plan may be for planned development or for watersheds in general. They may be developed in conjunction with existing or planned structural and nonstructural SCMs. Such measures include but are not limited to: stormwater master planning, riparian buffers, floodplain protections, open space preservation, conservation or drainage easements, and erosion and sediment control.

(b) Basin models required. The town shall require hydrologic and hydraulic studies to be prepared (or updated whichever is applicable) for development which occurs upstream or downstream of existing or potential drainage problems and/or flooding problems, as determined by the executive director of utilities and infrastructure services. In addition, if development occurs upstream or downstream of any existing flood study or basin model, then the flood study or basin model shall be modified. This determination shall be made by the executive director of utilities and infrastructure services after an evaluation of the project and the downstream basin with respect to information contained in Holly Springs Policy Statement P-18. New studies and updates under this requirement shall be required to be submitted to the town as part of the development review process.

(Ord. No. 07-17, § 2(Exh. A), 11-6-2007; Ord. No. 20-07, § 1, 12-1-2020)

Sec. 8-234.239. Evaluation of standards for stormwater control measures.

(a) Evaluation according to contents of design manual. All structural and nonstructural SCMs required under this article shall be evaluated by the utilities and infrastructure services according to the policies, criteria, and information, including technical specifications and standards and the specific design criteria for each stormwater practice in the design manual. The utilities and infrastructure services shall determine whether they will be adequate to meet the requirements of this article.

(b) Determination of adequacy; presumptions and alternatives. Structural stormwater SCMs that are designed, constructed, and maintained in accordance with the criteria and specifications in the design manual will be presumed to meet the minimum water quality and quantity performance standards of this article. Whenever an applicant proposes to utilize structural stormwater SCM(s) not designed and constructed in accordance with the criteria and specifications in the design manual, the applicant shall have the burden of demonstrating that the structural stormwater SCM(s) will satisfy the minimum water quality and quantity performance standards of this article. The utilities and infrastructure services may require the applicant to provide such documentation, calculations, and examples as necessary for the utilities and infrastructure services to determine whether such an affirmative showing is made.

(Ord. No. 07-17, § 2(Exh. A), 11-6-2007; Ord. No. 20-07, § 1, 12-1-2020)

Sec. 8-235240. Variances.

(a) Petitions for variances. Any person may petition the environmental appeal committee as outlined in chapter 8, article ~~VH~~VIII of the town's Code of Ordinances for a variance granting permission to use the person's land in a manner otherwise prohibited by this article.

In the Neuse River Estuary watershed, variances may be considered major or minor. A major variance is one that applies to requests that would affect compliance with the Neuse Rules or other state requirements. Variances related to town requirements or for sites located in other portions of the town shall be considered minor variances.

For all proposed major variances from the requirements of this article, the town Board of Adjustment shall make findings of fact in accordance with the procedures of N.C.G.S. 160D-406 showing that:

(1) There are practical difficulties or unnecessary hardship that prevent compliance with the strict letter of the article;

(2) The variance is in harmony with the general purpose and intent of this article and preserves its spirit;

(3) In granting the variance, the project will ensure equal or better protection of waters of the State than the requirements of 15A NCAC 02B .0711 (Neuse Stormwater Rule) and that the public safety and welfare have been assured and substantial justice has been done.

In the case of a request for a minor variance, the town may vary or modify any of the regulations or provisions of this article so that the spirit of the article shall be observed, public safety and welfare secured, and substantial justice if it shows that:

(1) Unnecessary hardships would result from strict application of this article-;

(2) The ~~hardships result~~hardship results from conditions that are peculiar to the property, such as the location, size, or topography of the property-;

(3) The ~~hardship~~hardship did not result from actions taken by the petitioner-;

(4) The requested variance is consistent with the spirit, purpose, and intent of this article; will secure public safety and welfare; and will preserve substantial justice.

~~(b) —Safeguards upon variances. The town may impose reasonable and appropriate conditions and safeguards upon any variance it grants.~~

(b) Safeguards upon variances. The town may attach conditions to the major or minor variance approval that support the purpose of this article. If the variance request qualifies as a major variance, and the town decides in favor of granting the major variance, the Board shall then prepare a preliminary record of the hearing and submit it to the North Carolina Environmental Management Commission (Commission) for review and approval. If the Commission approves the major variance or approves with conditions or stipulations added, then the Commission shall prepare a Commission decision which authorize the town to issue a final decision which would include any conditions or stipulations added by the Commission. If the Commission denies the major variance, then the Commission shall prepare a decision to be sent to the town. The town shall prepare a final decision denying the major variance.

(c) Appeals from the local government decision on a major or minor variance request are made on certiorari to the local Superior Court. Appeals from the Commission decision on a major variance request are made on judicial review to Superior Court.

(Ord. No. 07-17, § 2(Exh. A), 11-6-2007; Ord. No. 10-03, pt. 6, 5-4-2010)

Sec. 8-~~236~~241. Vested rights.

The purpose of this section is to provide for the establishment of certain vested rights in order to ensure reasonable certainty, stability and fairness to the reasonable expectations of landowners affected by this article in recognition that approval of land development projects or subdivisions typically follows significant landowner investment in site development.

A vested right shall be established upon the approval of a major residential subdivision plan, master plan, special exception use, development plan or approved PUD master plan with an approval that is currently valid.

(1) Exceptions. Excepted from this provision is any vesting of rights on property located partially or entirely within Zone 1 or Zone 2 of the Neuse River Basin, as defined by 15A NCAC 02B.022. Vested rights within these zones shall be determined in accordance with 15A NCAC 02B.022, et seq.

(2) Vested rights shall run with the land. The right to carry out development in accordance with the major residential subdivision plan, master plan, special exception use, development plan or approved PUD master plan approval shall attach and run with the land, and is not a personal right to the landowner. All successors and heirs to the original landowner shall be entitled to exercise such rights, as long as development occurs in accordance within the approved plan as noted above.

(3) Subsequent changes prohibited.

a. A vested right, once established as provided for in this article, precludes any zoning action by the town which would change, alter, impair, diminish, or otherwise delay the development or use of the property as set forth in the major residential subdivision plan, master plan, special exception use, development plan or approved PUD master plan as submitted, except:

b. Upon written consent of the landowner;

c. Upon a finding by the town council after notice and public hearing that natural or manmade hazards on or in the immediate vicinity of the property, if uncorrected, would pose a serious threat to the public health, safety and welfare if the project were to proceed as contemplated in the major residential subdivision plan, master plan, special exception use, development plan or approved PUD master plan;

d. To the extent that the landowner receives compensation for all costs, expenses and other losses incurred by the landowner.

e. Where the Holly Springs Town Council finds, after notice and public hearing, that the landowner or his representative supplied intentionally inaccurate information or made material misrepresentations which made a difference in the approval of the major residential subdivision plan, master plan, special exception use, development plan or approved PUD master plan;

f. Upon the enactment of a state or federal law or regulation which precludes development as contemplated in the major residential subdivision plan, master plan, special exception use, development plan or approved PUD master plan, in which case the town council may after notice and public hearing, allow for a modification of the plan so as to comply with the new state or federal law or regulation;

g. Vested rights under this article shall not preclude the application of overlay zoning which may impose additional requirements but does not affect the allowable type or use density, or other ordinances or regulations which are general in nature and are applicable to all property subject to land use regulation by the town.

(4) Changes to major residential subdivision plan, master plan, special exception use, development plan or approved PUD master plan. Changes made by the owner of the project as listed in the development petition to a major residential subdivision plan, master plan, special exception use, development plan or approved PUD master plan shall be approved by the utilities and infrastructure services as not significantly deviating from the original plan or PUD. Other changes to the plan will terminate the vested rights.

(Ord. No. 07-17, § 2(Exh. A), 11-6-2007; Ord. No. 20-07, § 1, 12-1-2020)

Secs. 8-~~237242~~—8-~~259264~~. Reserved.

DIVISION 4. PERFORMANCE AND MAINTENANCE

Sec. 8-~~260265~~. Function of SCMs as intended.

~~The applicant, permit holder, or~~The owner of each structural SCM installed pursuant to this article shall ~~maintain~~ensure adequate maintenance and shall operate it so as to preserve and continue its function in controlling stormwater quality and quantity at the degree or amount of function for which the structural SCM was designed.

(Ord. No. 11-10, pt. 2, 12-20-2011; Ord. No. 20-07, § 1, 12-1-2020)

Editor's note(s)—Ord. No. 20-07, Editor's note(s)—, § 1, adopted December 1, 2020, amended § 8-~~260260~~Editor's note(s)— and in so doing changed the title of said section from function of BMPs as intended to read as set out herein.

Sec. 8-~~261266~~. Inspection program.

Inspections. The town may conduct or establish on any reasonable basis, including, but not limited to, routine inspections; random inspections; inspections based upon complaints or other notice of possible violations; and joint inspections with other agencies inspecting under environmental or safety laws. Inspections may include, but are not limited to: reviewing maintenance and repair records; sampling discharges, surface water, groundwater, and material or water in SCMs; and evaluating the condition of SCMs. If the ~~applicant, permit holder,~~ owner or occupant of any property refuses to permit such inspection, the utilities and infrastructure services shall proceed to obtain an administrative search warrant pursuant to G.S. 15-27.2. No person shall obstruct, hamper or interfere with the utilities and infrastructure services while carrying out his or her official duties.

(Ord. No. 11-10, pt. 2, 12-20-2011; Ord. No. 20-07, § 1, 12-1-2020)

Sec. 8-262. Stormwater facility replacement fund (SFRF).

~~(a) — *In general.* The town shall establish a SFRF to provide means for the town to implement the use of stormwater maintenance surety funds paid by applicant, permit holder, or owner(s) for the purpose of operation and maintenance of structural SCMs at the town's discretion.~~

~~(b) — *Purpose.* The SFRF is to ensure that adequate funds are available for the maintenance, repair, replacement and reconstruction of structural SCMs required by this article. To that end, funds expended from the SFRF shall be made for no other purpose other than for repair, maintenance, reconstruction and replacement of structural SCMs that have paid into that fund. No funds from the SFRF shall be used for administration of the program. Payments collected by the town pursuant to this section shall be kept separate from other revenue of the town. Any funds on deposit not immediately necessary for expenditure shall be invested as allowed in G.S. 159-30; all income derived shall be deposited in the separate account and can only be used as noted above. Monies expended from the SFRF together with interest may be recouped by the town from lot owners served by stormwater water control facilities maintained, repaired, reconstructed and replaced by the town or its contractors. All recouped monies and interest shall be returned to the SFRF. Payment into the fund is not intended as a substitute for surety that ensures the construction of the facilities, which surety may be required at such point in the development process as specified in town ordinances and policies.~~

~~(Ord. No. 11-10, pt. 2, 12-20-2011; Ord. No. 20-07, § 1, 12-1-2020)~~

Sec. 8-263268. Performance surety for installation of structural SCMs.

Performance surety is required. Town requires the establishment of a performance surety to guarantee completion of construction plus one year of performance for structural SCMs. The performance surety for sites shall be required to be in place prior to/ or at the time of the pre-construction meeting and the performance surety for subdivisions shall be in place prior to recording of the first plat, at the beginning of the infrastructure one year warranty period.

(1) In general. Town requires the submittal of a surety in the form of a bond, cash escrow, ~~or~~ letter of credit, or other acceptable legal arrangement prior to issuance of a permit in order to ensure that the structural SCMs are installed by the permit holder as required.

(2) Amount. The amount of the installation performance surety shall be the total estimated construction cost of the structural SCMs sealed by a registered professional engineer approved under the permit plus 25 percent.

(3) Stormwater development project improvements agreement (SDPIA). An executed SDPIA is required to establish and outline the requirements of the performance surety. For all structural SCMs required pursuant to this article the required SDPIA shall include all the following provisions:

a. Requiring the applicant, permit holder, owner(s) or association to construct all required structural SCMs at its own expense and maintain those structural SCMs, and shall state the terms, conditions, and schedule of maintenance for the structural SCMs are transferred from the developer to the owner(s) or association.

b. Granting to the town a right of entry in the event that the utilities and infrastructure services has reason to believe it has become necessary to inspect, monitor, maintain, repair, or reconstruct the structural SCMs; however, in no case shall the right of entry, of itself, confer an obligation on the town to assume responsibility for the structural SCMs.

c. A statement that this agreement shall not in any way diminish, limit, or restrict the right of the town to enforce any of its ordinances as authorized by law.

d. A provision indemnifying and holding harmless the town for any costs and injuries arising from or related to the structural SCMs.

e. The SDPIA shall be executed by one of the following:

1. The person(s) financially responsible,
2. The owner(s) of the land, and
3. Any registered agents.

If the person(s) financially responsible or the owner(s) is not a resident of this state, a [state] agent must be designated in the statement for the purpose of receiving notice of compliance or non-compliance with the plan, the act, this chapter, or rules or orders adopted or issued pursuant to this chapter.

(4) Forfeiture provisions. The performance surety and SDPIA shall contain forfeiture provisions for the failure to construct the SCMs, failure to annually renew the surety, ~~or failure to maintain the SCMs, or to initiate or to maintain any action which may be required of the applicant or owner~~ after proper notice from the town in accordance with this article or approval issued pursuant to this article.

(5) Default. Upon default of the ~~applicant, permit holder, or~~ owner with respect to the performance surety the town may shall obtain and use all or any portion of the surety to make necessary improvements based on an engineering estimate. Such expenditure of funds shall only be made after requesting the ~~applicant, permit holder, or~~ owner to comply with the stormwater management plan or the SDPIA. In the event of a default triggering the use of performance surety, the town shall ~~not return any of the unused funds; use the performance surety to meet the owner's obligations for the site.~~

(6) Costs in excess of performance surety. If the town takes action ~~to correct upon~~ such failure by the applicant, ~~permit holder,~~ or owner, the town may collect ~~additional monies~~ from the applicant, ~~permit holder,~~ or owner the difference between the amount of the security held, in addition to any other penalties or damages due.

(7) Release of guarantee. ~~The~~ Within sixty days of final approval, the installation performance ~~surety~~ security shall be released to the applicant, ~~permit holder, owner,~~ or terminated, ~~after the following items have occurred or been completed:~~

a. ~~Construction of the~~ except any amount attributable to the cost (plus 25%) of landscaping and other issues associated with the structural SCMs ~~have been completed;~~

b. ~~All applicable documentation and certifications have been received;~~

c. ~~The maintenance surety has been received; covered by the surety. Any such landscaping shall be inspected one (1) year after installation with replacement for compliance with the approved plans and~~

specifications and, if in compliance, the portion of the financial security attributable to landscaping shall be released.

(Ord. No. 11-10, pt. 2, 12-20-2011; Ord. No. 20-07, § 1, 12-1-2020)

Editor's note(s)—Ord. No. 20-07, Editor's note(s)—, § 1, adopted December 1, 2020, amended § 8-263263Editor's note(s)— and in so doing changed the title of said section from performance surety for installation of structural BMPs to read as set out herein.

Sec. 8-264. ~~Operation~~269. Operations and Maintenance ~~surety for structural SCMs~~Agreement.

~~Maintenance surety is required. Town requires payment of a maintenance surety to the town's SFRF for the purpose of operation and maintenance of structural SCMs at the town's discretion. Prior to the release of the performance surety, after completion of construction of the SCMs and the end of the stormwater performance monitoring period (SPMP) the applicant, permit holder, owner(s) or association of the site shall execute a stormwater maintenance agreement (SMA) with the town that shall be binding on all subsequent owners of the site, portions of the site, and other lots or parcels served by the structural SCM. Until the transfer or conveyance of all property, sites, or lots served by the structural SCM, the original applicant, permit holder, or owner shall have sole responsibility for carrying out the provisions of the SMA.~~

~~(1)——In general. Town requires the submittal of a surety in the form cash to the SFRF in order to ensure that adequate funds are available for the maintenance, repair, replacement and reconstruction of structural SCMs required by this article.~~

~~(2)——Amount. The original applicant, permit holder, or owner shall make a payment to the town's SFRF in the amount of 35 percent of the actual cost of constructing all structural SCMs shown on applicable stormwater management plans. Cash will be deposited in a town account without regard to interest being accrued for the applicant, developer, owner(s) or association.~~

~~(3)——Stormwater maintenance agreement (SMA). An executed SMA is required to establish and outline the requirements of the maintenance surety. The SMA shall be approved by the utilities and infrastructure services prior to the transfer of maintenance responsibility from the original applicant, permit holder, or owner to the association or owner(s). For all structural SCMs required pursuant to this article the required SMA shall include all of the following provisions:~~

~~a.——Acknowledgment that the applicant, permit holder, owner(s) or association shall continuously operate and maintain the structural SCMs.~~

~~b.——Requiring the applicant, permit holder, owner(s) or association There shall be an Operation and Maintenance Manual (O&M manual) for every structural SCM. The O&M manual shall specify all operation and maintenance work necessary for the function of all structural SCM components, including the stormwater conveyance system, perimeter of the device, inlet(s), pretreatment measures, main treatment area, outlet, vegetation, and discharge point.~~

The O&M manual shall require the owner to maintain, repair and, if necessary, reconstruct the structural SCMsSCM, and shall state the terms, conditions, and schedule of maintenance for the structural SCMs. The O&M manual shall specify methods to be used to maintain or restore the structural SCMs to design specifications in the event of failure.

c. ~~Granting~~The O&M manual shall grant to the town a right of entry in the event that the utilities and infrastructure services has reason to believe it has become necessary to inspect, monitor, maintain, repair, or reconstruct the structural SCMs; however, in no case shall the right of entry, of itself, confer an obligation on the town to assume responsibility for the structural SCMs.

d. ~~A statement that~~ This agreement shall not in any way diminish, limit, or restrict the right of the town to enforce any of its ordinances as authorized by law.

e. ~~A provision indemnifying and holding harmless the town for any costs and injuries arising from or related to the structural SCMs.~~

f. All inspection records shall remain with the owner or responsible party. A copy of the approved operation and maintenance (O&M) manual for the structural SCMs, including a provision requiring an annual inspection and certification by a registered professional engineer.

g. The SMAO&M manual shall ~~be executed by one of~~ include language that addresses the following:

(1. ~~The person(s) financially responsible,~~

2. ~~The owner(s) of)~~ Acknowledgement that the land, and

3. ~~Any registered agents.~~

If the person(s) financially responsible or the owner(s) is not a resident of this state, a [state] agent must be designated in the statement for the purpose of receiving notice of compliance or non-compliance with the plan, the act, this article, or rules or orders adopted or issued pursuant to this article.

(4) ~~Forfeiture provisions.~~ The maintenance surety and SMA shall contain forfeiture provisions for the failure to ~~association or other party responsible shall continuously~~ operate and maintain the structural SCMs after proper notice from the town. ~~according to the specifications laid out in the operation and maintenance plan.~~

(5) ~~Default.~~ Upon default of the applicant, permit holder, owner(s) or association with respect to the maintenance surety the town may obtain and use all or (2) Establishment of an escrow account held by the owner, which can be spent solely for sediment removal, structural, biological or vegetative replacement, major repair, or reconstruction of the structural SCMs. If structural SCMs are not performing adequately or as intended or are not properly maintained, the town in its sole discretion, may remedy the situation and in such instances the town shall be fully reimbursed from the escrow account. Any town expenses that exceed the escrow account balance shall be owed by the association, owner or other responsible party to the town. Escrowed funds may be spent by the holder of the escrow account for sediment removal, structural, biological or vegetative replacement, major repair, and reconstruction of the structural SCMs, provided that the town shall first consent to the expenditure. The escrow account shall not exceed ten percent (10%) of the original cost of construction of the stormwater control project. The owner of the stormwater control project shall have up to five (5) years from the time the stormwater control project is accepted by the town to fully fund the escrow account. t Any funds drawn down from the escrow account shall be replaced by the owner. If, prior to August 16, 2023, the town required the owner to make payments to the town to address issues addressed by this

Section, the town shall make such funds accessible to the owner to cover associated with addressing those issues. s.

(3) Allowing the town to recover from the association and its members, or other party responsible, any portion of the surety paid to the SFRF as outlined in section 8-262.

(6) ~~Recovering and all~~ costs ~~and costs in excess of maintenance surety~~. If the town takes action ~~the town expends~~ to maintain or repair the structural SCMs or to correct any operational deficiencies. ~~The town shall take action to collect monies from the applicant, permit holder, owner(s), or association to recover expenditures~~. Failure to pay the town all of its expended costs, after ~~180 days~~ forty-five days written notice, shall constitute a breach of the ~~SMA agreement~~. In case of a deficiency, the town shall thereafter be entitled to bring an action against the ~~applicant, permit holder, owner(s), or~~ association and its members to pay, or foreclose upon the lien hereby authorized by the agreement against the property, or both, ~~in case of a deficiency~~. Interest, collection costs, ~~staff administrative costs~~, and attorney fees shall be added to the recovery.

(7) ~~Release of guarantee~~. Release of guarantee~~4~~) A statement that this agreement shall only occur if the not obligate the town to maintain or repair any structural SCM is, in the opinion of SCMs, and the town, no longer required shall not be liable to any person for controlling stormwater quality.

(Ord. No. 11-10, pt. 2, 12-20-2011; Ord. No. 20-07, § 1, 12-1-2020)

Editor's note(s) — Ord. No. 20-07, § 1, adopted December 1, 2020, amended § 8-264 and in so doing changed the title of said section from the condition or operation and maintenance surety for or structural BMPs to read as set out herein. SCMs.

(5) A statement that this agreement shall not in any way diminish, limit, or restrict the right of the town to enforce any of its ordinances as authorized by law.

(6) A provision indemnifying and holding harmless the town for any costs and injuries arising from or related to the structural SCMs unless the town has agreed in writing to assume the maintenance responsibilities for the structural SCMs and has accepted dedication of any and all rights necessary to carry out that maintenance.

The O&M manual shall be signed by the owner and notarized. The owner shall keep maintenance records, and these shall be available upon request by the utility and infrastructure services.

Sec. 8-~~265~~272. Notice to owners.

(a) Deed recordation and indications on plat. The applicable SMA, O&M manual, and private drainage easement pertaining to every structural SCM shall be referenced on the final plat and shall be recorded at the expense of the owner with the county register of deeds upon final plat approval. The following statement shall be required on all plats that include structural SCMs:

"Structural Stormwater" SCMs are contained in Private Drainage Easements shown on this plat and shall be operated and maintained as described in the executed Stormwater Maintenance Agreement and ~~recorded~~ Stormwater Operation and Maintenance Manual ~~for this project.~~ "as recorded in Wake County Register of Deed Book Page ."

If no plat is recorded for the project, then the O&M manual and the easement shall be recorded at the expense of the owner with the county register of deeds, ~~with the current owner's name in the grantor index~~ so as to appear in the chain of title of all subsequent purchasers under generally accepted searching principles. ~~A certified copy of the recorded the O&M manual and the easement deed shall be given to the utilities and infrastructure services within 14 days following its recordation.~~

(b) Signage. Structural SCMs shall be posted with a conspicuous sign stating who is responsible for required maintenance and annual inspection, ~~professional engineer's certification, and the structural SCM's purpose.~~ The sign shall be maintained ~~by the owner~~ so as to remain visible and legible and shall otherwise comply with the town sign ordinances and the engineering design and construction standards.

(Ord. No. 11-10, pt. 2, 12-20-2011; Ord. No. 20-07, § 1, 12-1-2020)

Sec. 8-~~266~~273. Records of required escrow account holdings, installation and maintenance activities.

The owner of each structural SCM shall keep records of required escrow account holdings, inspections, maintenance, and repairs for at least five years from the date of creation of the record and shall submit the same upon reasonable request to the utilities and infrastructure services.

(1) Annual maintenance inspection and report. The person responsible for maintenance of any structural SCM installed pursuant to this article shall annually submit to the utilities and infrastructure services an inspection report ~~and certification~~, from a qualified registered state professional engineer, performing services only in their area of competence, or a professional certified by the North Carolina Cooperative Extension Services for stormwater treatment practice inspection and maintenance. The inspection report and certification shall contain all of the following:

- a. The name and address of the landowner;
- b. The recorded book and page number of the lot of each structural SCM;
- c. A statement that an inspection was made of all structural SCMs;
- d. The date the inspection was made;
- e. Statements that all inspected structural SCMs are performing properly and are in compliance with the terms and conditions of the approved O&M manual required by this article. If maintenance measures are required, a statement of what maintenance is required shall be included, including the schedule of performing the maintenance; ~~and andf.~~ The original signature and seal of the engineer.
- f. ~~_____ The original signature and seal of the engineer.~~

(2) Certification of required escrow account holdings. The owner or other person responsible for the structural SCM(s) installed pursuant to this article shall annually submit to the utilities and infrastructure services a signed, certified statement that the owner has funded the escrow account in the manner required by Sec. 8-269 of this ordinance and as required by Chapter 160D-925(d1) of the North Carolina General Statutes.

All documents shall be supplied in a format approved by the utilities and infrastructure services as described in the recorded O&M manual.

(Ord. No. 11-10, pt. 2, 12-20-2011; Ord. No. 20-07, § 1, 12-1-2020)

Sec. 8-~~267~~274. Nuisance.

The owner of each structural SCM shall maintain it so as not to create or result in a nuisance condition. For the purpose of this section, nuisance includes, but is not limited to, the following:

- (1) Structural SCMs that have maintenance issues such as overgrowth, trash accumulation, erosion, odor, standing water, mosquito infestation and other issues that could negatively affect the public.
- (2) Structural SCMs that are in the need of repair that negatively affect the public, public rights-of-way or other properties.

(Ord. No. 11-10, pt. 2, 12-20-2011; Ord. No. 20-07, § 1, 12-1-2020)

Sec. 8-~~268~~275. Maintenance access easement.

In addition to the private drainage easement as outlined in section 8-213(d), every structural SCM and its associated maintenance accesses on privately owned land, except for those located on single family residential lots, installed pursuant to this article shall be made accessible for adequate maintenance ~~access to public rights-of-way~~ and repair by a maintenance access easement. The easement shall be recorded by plat and its terms shall specify who may make use of the easement and for what purposes pursuant to the design manual. The structural SCM will be shown and labeled within the easement. The easement shall be granted in favor of the utilities and infrastructure services.

(Ord. No. 11-10, pt. 2, 12-20-2011; Ord. No. 20-07, § 1, 12-1-2020 }

Sec. 8-~~269~~. Insurance.

~~As part of the routine costs and expenses of maintaining any structural SCM, the owner of the structural SCM (or the owner(s) or association responsible for maintenance, as either may be applicable) must procure and maintain in full force and effect liability insurance in an amount of not less than \$1,000,000.00 of coverage.~~

~~(Ord. No. 11-10, pt. 2, 12-20-2011; Ord. No. 20-07, § 1, 12-1-2020)~~

Secs. ~~8-276—8-270—8-300~~306. Reserved.

DIVISION 5. ENFORCEMENT AND VIOLATIONS

Sec. 8-~~301~~307. General.

- (a) Authority to enforce. The provisions of this article shall be enforced by the utilities and infrastructure services, his or her designee, or any authorized agent of the town. Whenever this section refers to the utilities and infrastructure services, it includes his or her designee as well as any authorized agent of the town.
- (b) Violation unlawful. Any failure to comply with an applicable requirement, prohibition, standard, or limitation imposed by this article, or the terms or conditions of any permit or other development ~~or redevelopment~~ approval or authorization granted pursuant to this article, is unlawful and shall constitute a violation of this article.
- (c) Each day a separate offense. Each day that a violation continues shall constitute a separate and distinct violation or offense.
- (d) Responsible persons/entities. Any owner or person who erects, constructs, reconstructs, alters (whether actively or passively), or fails to erect, construct, reconstruct, alter, repair or maintain any structure, structural or nonstructural SCM, practice, or condition in violation of this article shall be subject to the remedies, penalties, and/or enforcement actions in accordance with this section. Persons subject to the remedies and penalties set forth herein may include any architect, engineer, builder, contractor, developer, agency, or any other person who participates in, assists, directs, creates, causes, or maintains a condition that results in or constitutes a violation of this article, or fails to take appropriate action, so that a violation of this article results or persists; or an owner, any tenant or occupant, or any other person, who has control over, or responsibility for, the use or development of the property on which the violation occurs.

For the purposes of this article, responsible person(s) shall include but not be limited to:

- (1) Person maintaining condition resulting in or constituting violation. An architect, engineer, builder, contractor, developer, agency, or any other person who participates in, assists, directs, creates, causes, or maintains a condition that constitutes a violation of this article, or fails to take appropriate action, so that a violation of this article results or persists.
- (2) Responsibility for land or use of land. The owner of the land on which the violation occurs, any tenant or occupant of the property, any person who is responsible for stormwater controls or practices pursuant to a private agreement or public document, or any person who has control over, or responsibility for, the use, or development ~~or redevelopment~~ of the property has responsibility for the use or development of that ~~land~~property.

(Ord. No. 07-17, § 2(Exh. A), 11-6-2007; Ord. No. 20-07, § 1, 12-1-2020)

Sec. 8-~~302~~308. Remedies and penalties.

The remedies and penalties provided for violations of this article, whether civil or criminal, shall be cumulative and in addition to any other remedy provided by law, and may be exercised in any order.

(1) Remedies.

a. Withholding of a building permit. The utilities and infrastructure services or other authorized agent may refuse to issue a building permit for a building or other improvements constructed or being constructed on ~~any development the~~ site and served by the structural ~~SCMSCMs~~ in question until the applicant or other responsible person has taken the remedial measures set forth in the notice of violation or has otherwise cured the violations described therein.

b. Withholding of certificate of occupancy. The utilities and infrastructure services or other authorized agent may refuse to issue a certificate of occupancy for a building or other improvements constructed or being constructed on ~~any development the~~ site and served by the structural ~~SCMSCMs~~ in question until the applicant or other responsible person has taken the remedial measures set forth in the notice of violation or has otherwise cured the violations described therein.

c. Disapproval of subsequent permits and development approvals. As long as a violation of this article continues and remains uncorrected, the utilities and infrastructure services or other authorized agent may withhold, and the town council may disapprove, any request for permit or development approval or authorization provided for by this article or the zoning, subdivision, and/or building regulations, as appropriate for the land on which the violation occurs.

d. Injunction, abatements, etc. The utilities and infrastructure services, with the authorization of the town manager, may institute an action in a court of competent jurisdiction for a mandatory or prohibitory injunction and order of abatement to correct a violation of this article. Any person violating this article shall be subject to the full range of equitable remedies provided in the General Statutes or at common law.

e. Correction as public health nuisance, costs as lien, etc. If the violation is deemed dangerous or prejudicial to the public health or public safety and is within the geographic limits prescribed by North Carolina G.S. 160A-193, the utilities and infrastructure services, with the authorization of the town manager, may cause the violation to be corrected and the costs to be assessed as a lien against the property.

f. Stop work order. The utilities and infrastructure services may issue a stop work order to the person(s) violating this article. A copy of the order shall be delivered to the holder of the development permit and to the owner of the property involved (if that person is not the holder of the development permit) by personal delivery, electronic delivery, or first-class mail. The stop work order shall remain in effect until the person has taken the remedial measures set forth in the notice of violation or has otherwise cured the violation or violations described therein. The stop work order may be withdrawn or modified to enable the person to take the necessary remedial measures to cure such violation or violations.

(2) Civil penalties. ~~Violation of this article may subject the violator to a civil penalty to be recovered in a civil action in the nature of a debt if the violator does not pay the penalty within 30 days after notice of the violation is issued by the Town of Holly Springs executive director of~~The utilities and infrastructure services may assess a civil penalty against any person who violates any provision of this article or designee of a permit or other requirement pursuant to this article. Civil penalties may be ~~issued~~assessed up to the full amount of penalty ~~to which the Town of Holly Springs is subject for~~

~~violations of its Phase II stormwater permit, or \$32,500.00 per day per violation, authorized by N.C.G.S. 143-215.6A.~~

(3) Criminal penalties. Violation of this article may be enforced as a ~~misdemeanor subject to the maximum fine permissible~~criminal matter under North Carolina law.

(Ord. No. 07-17, § 2(Exh. A), 11-6-2007; Ord. No. 20-07, § 1, 12-1-2020)

Sec. 8-~~303~~309. Remedies and penalties procedures.

(a) Initiation/complaint. Whenever a violation of this article occurs, or is alleged to have occurred, any person may file a written complaint, or the town may commence enforcement action on its own. Such complaint shall state fully the alleged violation and the basis thereof, and shall be filed with the utilities and infrastructure services, who shall record the complaint. The complaint shall be investigated promptly by the utilities and infrastructure services.

(b) Inspection. The utilities and infrastructure services shall have the authority, upon presentation of proper credentials, to enter and inspect any land, building, structure, or premises to ensure compliance with this article.

(c) Notice of violation and order to correct. When the utilities and infrastructure services finds that any building, structure, or land is in violation of this article, the utilities and infrastructure services shall notify, in writing, the property owner or other person violating this article. The notification shall indicate the nature of the violation, contain the address or other description of the site upon which the violation is occurring, order the necessary action to abate the violation, and give a deadline for correcting the violation. If civil penalties are to be assessed, the notice of violation shall also contain a statement of the civil penalties to be assessed, the time of their accrual, and the time within which they shall be paid or be subject to collection as a debt.

The utilities and infrastructure services may deliver the notice of violation and correction order by certified or registered mail, return receipt requested, or by any means authorized for the service of documents by Rule 4 of the North Carolina Rules of Civil Procedure.

If a violation is not corrected within ~~a reasonable~~the period of time, ~~as~~ provided in the notification, the ~~utilities and infrastructure services~~Town may take appropriate action under this article to correct and abate the violation and to ensure compliance with this article.

(d) Extension of time. A person who receives a notice of violation and correction order, or the owner of the land on which the violation occurs, may submit to the utilities and infrastructure services a written request for an extension of time for correction of the violation. On determining that the request includes enough information to show that the violation cannot be corrected within the specified time limit for reasons beyond the control of the person requesting the extension, the utilities and infrastructure services may extend the time limit as is reasonably necessary to allow timely correction of the violation, up to, but not exceeding 60 days. The utilities and infrastructure services may grant 30-day extensions in addition to the foregoing extension if the violation cannot be corrected within the permitted time due to circumstances beyond the control of the person violating this article. The utilities and infrastructure services may grant such extensions only by a written notice of extension. The notice

of extension shall state the date prior to which correction shall be made, after which the violator will be subject to the penalties described in the notice of violation and correction order.

(e) Enforcement after time to correct. After the time has expired to correct a violation, including any extension(s) if authorized by the utilities and infrastructure services, the utilities and infrastructure services shall determine if the violation is corrected. If the violation is not corrected, the utilities and infrastructure services may act to impose one or more of the remedies and penalties authorized by this article.

(f) Emergency enforcement. If delay in correcting a violation would seriously threaten the effective enforcement of this article or pose an immediate danger to the public health, safety, or welfare, then the utilities and infrastructure services may order the immediate cessation of a violation. Any person so ordered shall cease any violation immediately. The utilities and infrastructure services may seek immediate enforcement, without prior written notice, through any remedy or penalty authorized by this article.

(Ord. No. 07-17, § 2(Exh. A), 11-6-2007; Ord. No. 20-07, § 1, 12-1-2020)

Secs. 8-~~304~~310—8-~~320~~326. Reserved.

DIVISION 6. DEFINITIONS

Sec. 8-~~321~~327. Terms defined.

When used in this article, the following words and terms shall have the meaning set forth in this section, unless other provisions of this article specifically indicate otherwise.

Approved accounting tool. The most recent version of the accounting tool for calculating nutrient loading and reduction approved by the Division for the relevant geography and development type under review. This is the SNAP Tool or equivalent method meeting criteria provided in the rule.

Basin model. Engineering hydraulic and hydrologic models performed to calculate discharges and water surface elevations as required by the executive director of utilities and infrastructure services.

Built-upon area. As defined in N.C.G.S. 143-214.7(b2). That portion of a development project that is covered by impervious ~~or surface and~~ partially impervious surface ~~including, but not limited to, buildings; pavement and gravel areas such as roads, parking lots, to the extent that the partially impervious surface does not allow water to infiltrate through the surface and paths; and recreation facilities such as tennis courts, into the subsoil.~~ "Built-upon area" does not include a ~~wooden~~-slatted deck; ~~the water area of a swimming pool, or other;~~ a surface of number 57 stone, as designated by the American Society for Testing and Materials, laid at least four inches thick over a geotextile fabric; a trail as defined in NCGS 143B-135.94 that is either unpaved or paved as long as the pavement is porous with a hydraulic conductivity greater than 0.001 centimeters per second (1.41 inches per hour); or landscaping material defined as pervious per the NCDEQ minimum design criteria (MDC); including, but not limited to, gravel, mulch, sand, and vegetation, placed on areas that receive pedestrian or bicycle traffic or on portions of driveways and parking areas that will not be compacted by the weight of a vehicle, such as the area between sections of pavement that support the weight of a vehicle.

Common plan of development. A contiguous area where multiple separate and distinct land disturbing activities may be taking place at different times and on different schedules under one common plan. The "common plan" of development or sale is broadly defined as any announcement or piece of documentation (including a sign, public notice or hearing, ~~sales~~ pitch, advertisement, drawing, permit application, zoning request, computer design, etc.) or physical demarcation (including boundary signs, lot stakes, surveyor markings, etc.) indicating construction activities are planned to occur on a specific plot regardless of ownership of the parcels.

Concept plan. An informal site plan of a proposed subdivision, project, planned unit development or other development intended to convey the scope, content and nature of a proposed development, but lacking sufficient detail to determine compliance with UDO requirements.

Consultation meeting. The concept plan review meeting held in the development review process as outlined in DPMUDO Section 1.01.

Design manual. The stormwater design manual developed by the town and approved by NCDEQ as at least as stringent as the stormwater design manual approved for use in Phase II jurisdictions by NCDEQ for the proper implementation of the requirements of the federal Phase II stormwater program for the town. The design manual is Section 8 of the Town of Holly Springs Engineering Design Standards and Specifications. All references herein to the design manual are to the latest published edition or revision.

Development. Any land disturbing activity for which a Town of Holly Springs Land Disturbance Permit is required is considered a development in the context of this article. For the purposes of the Neuse Rules, "development" is consistent with the definition from statute N.C.G.S. 143-214.7.

Development petition. Any petition or review process required by this UDO prior to the issuance of a UDO permit, including but not limited to petitions for: zoning map changes; variances of development standards; special exception uses; master plans or preliminary plans for subdivisions; final plats; vacations of land in a recorded plat; or, development plans.

Unified Development ~~Procedures Manual (DPM)~~ Ordinance (UDO). The Town of Holly Springs Unified Development ~~Procedures Manual~~ Ordinance.

Drainage easement. See private drainage easement.

Executive director of utilities and infrastructure services. The ~~direction~~ [director] of the Town of Holly Springs Utilities and Infrastructure Services.

Flood study. Engineering flood studies performed to calculate discharges and water surface elevations as required by the executive director of utilities and infrastructure services.

Impervious area. An impervious area is an area of hardened surface (concrete, rooftop, asphalt, compacted gravel, etc.) that does not absorb stormwater. Impervious surface areas cause increased pollutant loading, increased volume and rate of stormwater runoff, lower stream base flows, and decreased infiltration of stormwater into the soil.

Load. Means the mass quantity of a nutrient or pollutant released into surface waters over a given time period. Load in this article refers to pounds of nitrogen per year.

Loading rate. Means the mass quantity of a nutrient or pollutant released from a given area into surface waters over a given time period. Loading rate in this article refers to pounds of nitrogen per acre per year.

Major variance. A variance that is not a “minor variance” as that term is defined in this Rule. For provisions in this article that are more stringent than the state’s minimum water supply protection rules and Neuse Rules, a variance to this article is not considered a major variance as long as the result of the variance is not less stringent than the state’s minimum requirements.

Maintenance access easement. An easement recorded on a plat that shall ensure that every structural SCM installed pursuant to this article shall be made accessible for adequate maintenance access to public rights-of-way and repair by a maintenance access easement.

Maintenance surety. A legally binding agreement whereby the original applicant, permit holder, or owner posts a surety in a form acceptable to the town for the operation and maintenance of structural SCMs authorized by this article.

Minor variance. A variance from the minimum Neuse Stormwater rules that results in the relaxation of up to 10 percent of any vegetated setback, density, or minimum lot size requirement applicable to low density development, or the relaxation of up to five percent of any vegetated setback, density, or minimum lot size requirement applicable to high density development. For variances to a vegetated setback requirement, the percent variation shall be calculated using the footprint of built-upon area proposed to encroach within the vegetated setback divided by the total area of the vegetated setback within the project.

Nitrogen. Nitrogen means total nitrogen unless otherwise specified.

Nonstructural SCM. Policy related approaches to stormwater management such as reduced land disturbance, stream buffer requirements, low impact development, and similar measures.

Nuisance. For the purpose of this section, nuisance includes, but is not limited to, structural SCMs that have maintenance issues such as overgrowth, trash accumulation, erosion, odor, standing water, mosquito infestation and other issues that could negatively affect the public. It may also include structural SCMs that are in the need of repair that negatively affect the public, public rights-of-way or other properties.

One-year, 24-hour storm. The surface runoff resulting from a 24-hour rainfall of an intensity expected to be equaled or exceeded, on average, once in 12 months and with a duration of 24 hours (and equal to 3.0 inches).

Operation and maintenance agreement. An agreement that defines the guidelines under which a structural SCM shall be operated and maintained.

Operation and maintenance manual. A document that defines the guidelines under which a structural SCM shall be operated and maintained including, but not limited to, frequency of inspections and inspection logs.

Owner. The legal or beneficial owner of land, including, but not limited to, a mortgagee or vendee in possession, receiver, executor, trustee, or long-term or commercial lessee, or any other person or entity

holding proprietary rights in the property or having legal power of management and control of the property. "Owner" shall include long-term commercial tenants; management entities, such as those charged with or engaged in the management of properties for profit; and every person or entity having joint ownership of the property. A secured lender not in possession of the property does not constitute an owner, unless the secured lender is included within the meaning of "owner" under another description in this definition, such as a management entity.

Performance security. A legally binding agreement whereby the owner posts a surety in a form acceptable to the town for the operation and maintenance of structural SCMs authorized by this article, any other applicable ordinances of the town, and any requirements, covenants, or conditions which may be imposed pursuant to the Town of Holly Springs UDO.

Performance surety. A legally binding agreement whereby the applicant, permit holder, or owner posts a surety in a form acceptable to the town for the installation and performance of structural SCMs authorized by this article.

Permanent nutrient offset credits. Means the same as defined in 15A NCAC 02B .0701(38).

Planned Unit Development (PUD) master plan. A master plan filed in connection with a zoning map change requesting a planned unit development outlined in UDO Section 5.

Primary SCM. Refers to a wet pond, stormwater wetland, infiltration system, sand filter, bioretention cell, permeable pavement, green roof, rainwater harvesting, or an approved new stormwater technology that is designed, constructed and maintained in accordance with the MDC.

Private drainage easement. Documentation, approved by the town, of an enforceable restriction on property usage that runs with the land, such as recorded deed restrictions or protective covenants, to ensure that future development and redevelopment maintains the site consistent with the approved project plans.

Redevelopment. Any rebuilding activity other than a rebuilding activity that results in no net increase in built-upon area and provides equal or greater stormwater control than the previous development.

State minimum design criteria. As defined in 15A NCAC 02H .1050 through .1062.

Stormwater development project improvements agreement (SDPIA). An agreement that defines the guidelines under which performance surety funds will be administered.

Stormwater easement. See private drainage easement.

Stormwater facility replacement fund (SFRF). A fund administered by the town to maintain, repair or replace structural SCMs in emergency situations or after all other enforcement actions have been exhausted.

~~Stormwater maintenance agreement (SMA). An agreement that defines the guidelines under which a structural SCM shall be operated and maintained and establishment of the permittee's payment into the town's stormwater replacement fund.~~

Stormwater management plan. A plan for an applicant, developer or owner to construct, operate and maintain structural stormwater structural control measures as required pursuant to this article.

~~Stormwater~~Environmental Development Permit. A permit granted for compliance with stormwater requirements pursuant to this article.

~~Stormwater~~Environmental Development Permit application. An application made to the town for a stormwater approval pursuant to this article and the Phase II rules under the Clean Water Act.

Stormwater performance monitoring period (SPMP). Approximately a one-year time period starting after construction of the structural SCM has occurred to allow for monitoring of the structural SCM to ensure that it is performing as designed.

Structural SCM. A physical device designed to trap, settle out, or filter pollutants from stormwater runoff; to alter or reduce stormwater runoff velocity, amount, timing, or other characteristics; to approximate the pre-development hydrology on a developed site; or to achieve any combination of these goals. Structural SCMs include physical practices such as constructed wetlands, vegetative practices, filter strips, grassed swales, underground storage facilities, and other methods installed or created on real property. "Structural SCM" is synonymous with "structural practice," "stormwater control facility," "stormwater control practice," "stormwater treatment practice," "stormwater management practice," "stormwater control measures," "structural stormwater treatment systems," and similar terms used in this article. _

Subdivision. All divisions of a tract or parcel of land into two or more lots, building sites, or other divisions for the purpose of sale or building development (whether immediate or future) and shall include all divisions of land involving the dedication of a new street or a change in existing streets; but the following shall not be included within this definition nor be subject to the regulations of this UDO pertaining to preliminary plan approval:

- (1) The combination or recombination of portions of previously subdivided and recorded lots where the total number of lots is not increased and the resultant lots are equal to or exceed the standards of this UDO;
- (2) The division of land into parcels greater than ten acres where no street right-of-way dedication is involved;
- (3) The public acquisition by purchase of strips of land for the widening or opening of streets;
- (4) The division of a tract in single ownership whose entire area is no greater than two acres into not more than three lots, where no street right-of-way dedication is involved and where the resultant lots are equal to or exceed the standards of the UDO;
- (5) A division of land into cemetery plots for the purpose of burial; and
- (6) A division of a lot of record, which is or may be legally developed with a two-family dwelling or a multifamily dwelling, into sub-lots for the purpose of transfer of ownership of the individual dwelling units and their associated portion of the lot of record, provided that no additional development sites are created by the division and that no sublots are created which do not contain a dwelling unit.

Substantial progress. For the purposes of determining whether sufficient progress has been made on an approved plan, one or more of the following construction activities toward the completion of a site or subdivision plan shall occur: obtaining a grading permit and conducting grading activity on a continuous

basis and not discontinued for more than 30 days; or installation and approval of on-site infrastructure; or obtaining a building permit for the construction and approval of a building foundation. "Substantial progress" for purposes of determining whether an approved plan is null and void is not necessarily the same as "substantial expenditures" used for determining vested rights pursuant to applicable law.

Unified Development Ordinance (UDO). The Unified Development Ordinance of the Town of Holly Springs.

(Ord. No. 07-17, § 2(Exh. A), 11-6-2007; Ord. No. 11-10, pt. 3, 12-20-2011; Ord. No. 20-07, § 1, 12-1-2020)

Secs. 8-322—8-339. Reserved.

Adopted this, the _____ day of June 2024.

Town of Holly Springs by

Sean Mayefskie, Mayor

ATTEST:

Linda McKinney, Town Clerk





Holly Springs Town Council

Town Council Meeting Agenda Cover Sheet

Agenda Item#: 14.

Consent Agenda

Title: Public Works Asset Surplus over \$30,000

Strategic Priority Area: Organizational Excellence

Staff Resource: Tina Stroupe, Finance

Action(s):

Approval to Surplus Asset Valued over \$30,000 – Public Works Asset #12818 John Deere Motor Grader

Explanation:

- The Public Works Department is requesting to identify a 1999 John Deere 670C Motor Grader, Asset# 12818, Fleet Unit#184, as surplus personal property.
- Per the Fleet Policy-Section IV: Surplus, the asset is past its service life and is no longer necessary for the conduct of public business. Sound property management principles and financial considerations indicate that the interests of the Town would best be served by disposing of the property via the electronic public auction surplus process.
- The Town's Fleet Manager anticipates the public auction resale value will be greater than \$30,000 due to current fair market value comparisons for this equipment.

Background:

- The asset was purchased in used condition in 2007.
- This unit will not be replaced based on current operating model needs.
- General Statute Chapter 160A-266 authorizes methods of sale for personal property valued at \$30,000 or more and requires Council approval for public transparency and to ensure impartial asset disposal.

Funding Source(s):

N/A

Attachment(s):

None



Holly Springs Town Council

Town Council Meeting Agenda Cover Sheet

Agenda Item#: 15.

Public Hearings

Title: Aura Wildwood Rezoning 23-REZ-04 - Legislative Public Hearing

Strategic Priority Area: Growth Management & Economic Vitality

Staff Resource: Grayson Taylor, Development Services, Catherine Jacobs, Development Services

Action(s):

- Conduct Legislative Public Hearing.
- Adopt Ordinance RZ24-05 (Version A, B, or C) to adopt the statement of compatibility and take action on the Rezoning.

Explanation:

- The Town has received a request to rezone 61.19 acres at 7450 GB Alford Highway from CB - Community Business to RMX-CD - Regional Mixed-Use Conditional Zoning District.
- An approval would allow future mixed-use development that would include five development PODs separated by type of use.
- Separate Development Plans and Major Subdivision Plan must be submitted for future development of the site.
- A Wake County Public School System Capacity Letter is included as an attachment.

Staff Recommendation: Deny

Planning Board Recommendation: Approve (4-1) [4 absent]
A summary of the Planning Board discussion is in the staff report.

Note: There are three possible ordinances for the Town Council to consider for the application:

1. Version A: If the Town Council finds the application is inconsistent with the Comprehensive Plan, is not reasonable and in the public interest, and the action is to deny the rezoning (staff recommendation).
2. Version B: If the Town Council finds the application is inconsistent with the Comprehensive Plan, but is reasonable and in the public interest, and the action is to approve the rezoning (Planning Board recommended).
3. Version C: If the Town Council finds the application is consistent with the Comprehensive Plan, is reasonable and in the public interest, and the action is to approve the rezoning.

Background:

- The parcel was rezoned from R-30: Residential to CB Community Business on August 19, 2008.

Funding Source(s):

N/A

Attachment(s):

1. 23REZ04_AuraWildwood_StaffReport_TC061824
2. 23REZ04_AuraWildwood_ORD_VersionA
3. 23REZ04_AuraWildwood_ORD_VersionB
4. 23REZ04_AuraWildwood_ORD_VersionC
5. 23REZ04_AuraWildwood_WCPSSImpactLetter
6. 23REZ04_RichardAdamsFarmHouse_CAPReport2020
7. 23REZ04_AuraWildwood_Petition
8. 23REZ04_AuraWildwood_PlanSet
9. 23REZ04_AuraWildwood_DesignManual



Project Type: Zoning Map Amendment (Rezoning)

Concurrent Applications:

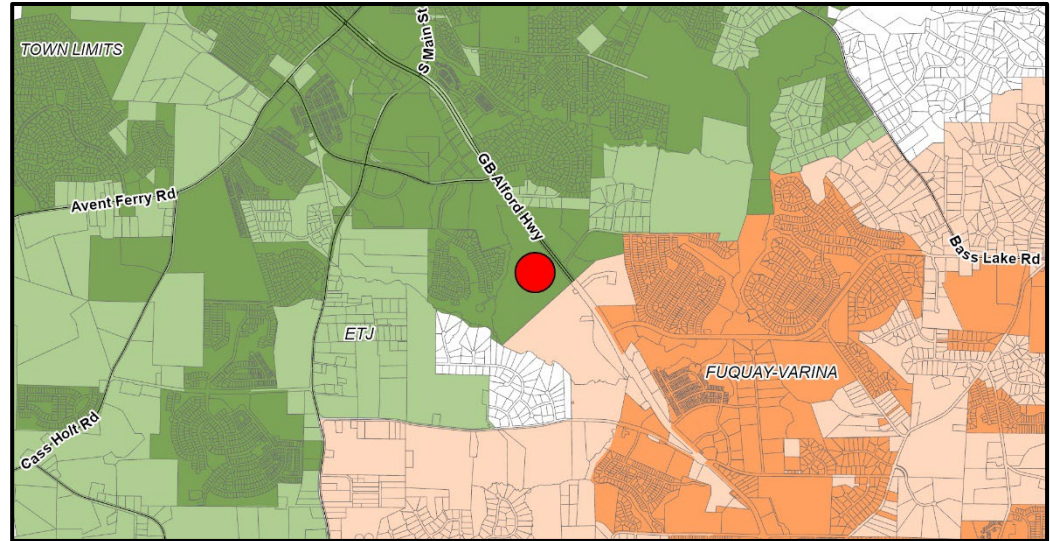
☐ n/a

Applicant / Petitioner:

Ryan Stewart / Trinsic Acquisition Company LLC
(See Petition)

Property Address: 7450 GB Alford Highway

Property Area: 61.19 ac.



Located in: ☒ Holly Springs Corporate Limits ☐ Holly Springs ETJ ☐ Annexation Pending

Project Summary:

A rezoning of 61.19 acres from CB – Community Business to RMX-CD – Regional Mixed-Use Conditional Zoning District at 7450 GB Alford Highway. The proposal includes 5 “Pods,” each separated by type of use. Pod A proposes ~400 multifamily units, Pod B ~200 townhome units, Pod C a Health and Fitness Center, Pod D as Shopping and Dining space, and Pod E as Office/Retail.

Requested Action:

Legislative Decision: The Town Council must hold a Legislative public hearing to receive public comments regarding the proposal and make a determination on whether or not to approve the policy or modification.

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Case Summary

Current Zoning:

CB: Community Business

☐ Conditional Zoning District

Proposed Zoning:

RMX Regional Mixed-Use

☒ Conditional Zoning District



Aerial Photograph

Growth Strategy Map:

Places to Transform

Small Area Plan Designation:

N/A

Future Land Use Plan Designation:

Mixed-Use Center

Natural Area

Staff Analysis:

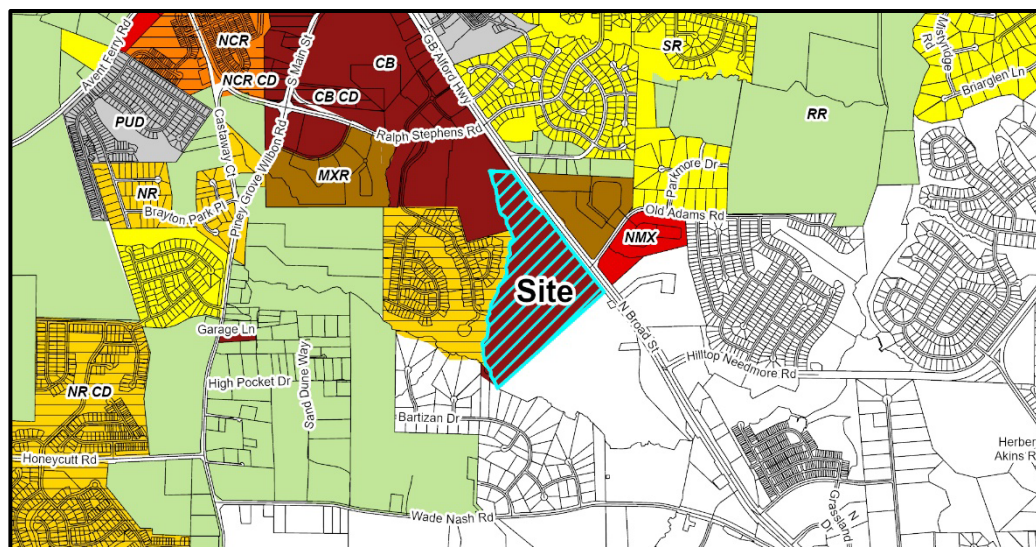
The requested Zoning Map Amendment is: ☐ Consistent with Adopted Plans ☒ Inconsistent with Adopted Plans

The proposed Conditional Zoning District is for a prominent parcel of land with historic significance, along the Town's most traveled thoroughfare at the edge of its jurisdiction. It offers some uses that may benefit Town residents, but does not offer these uses in a way that meets the Town's goals and objectives as identified in the Comprehensive Plan or the Unified Development Ordinance. The proposed Regional Mixed-Use Conditional Zoning District is not reasonable nor in the public interest as it fails to meet these Town goals and expectations, which include higher quality development and design, a pedestrian-oriented community, appropriate commercial space, and a visually and functionally connected community.

Staff Recommendation: ☐ Approve ☒ Deny

**Current Zoning Information**

Parcel #	Zoning	Area
0658138067	CB	61.19
Total Area		61.19 acres



Current Zoning Map

Adjacent Property Current Zoning Information

Subject Property	Zoning	Existing Land Use
North	CB -- Community Business	Mixed Use Center
South	(Town of Fuquay-Varina ETJ) RA – Residential Agricultural	(Town of Fuquay-Varina ETJ) SC – Suburban Commercial
East	NMX – Neighborhood Mixed Use; MXR -- Mixed-Use Residential	Mixed Use Center
West	NR-CD – Neighborhood Residential Conditional Zoning District	Mixed Residential Neighborhood

Parcel Rezoning History

Rezoning Number: 08-REZ-03

Original Zoning: R-30 - Residential

Approved Zoning: CB – Community Business

Approval Date: August 19, 2008



Land Use & Character Information

Growth Strategy Map: Places to Transform

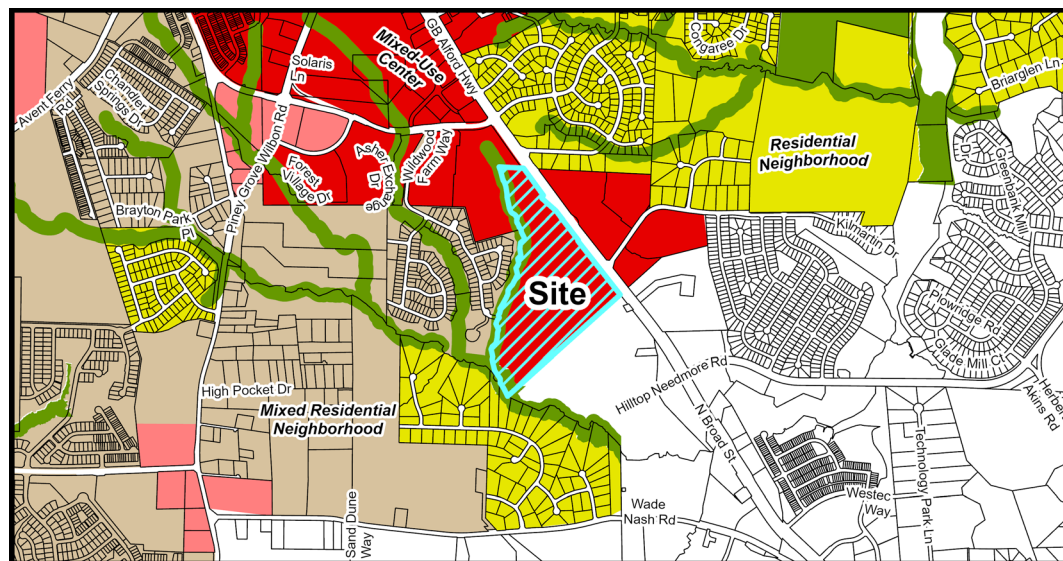
Future Land Use: Mixed-Use Center
Natural Area

Small Area Plan: N/A

The Requested Zoning Map Amendment is:

- ☐ Consistent with adopted plans
☒ Inconsistent with adopted plans

If a Zoning Map Amendment is adopted and the action is deemed inconsistent with adopted plans, the Zoning Map Amendment has the effect of also amending the Future Land-use Map.



Future Land Use Map

Important Themes for Transforming Holly Springs:

Eight important themes for Holly Springs are highlighted as high-priority principles for transforming the Town. The following theme(s) should be considered with this request:

Theme	Summary
☒ Establish Mixed-Use Activity Centers Throughout Holly Springs	Mixed-use and walkable development
☐ Suburban Remix	Activate neighborhood centers
☒ Suburban Retrofit	Redevelop existing centers into mixed-use, multi-modal, activated centers
☐ Context-Sensitive Infill Development Choices	Infill around single use residential areas
☒ Transitions	Complement existing development and avoid incompatibilities
☒ Increase Home & Neighborhood Choices in Holly Springs	Variety of integrated housing products
☒ Increase Diversity & Affordability of Housing in Holly Springs	Adequate supply of affordable housing
☒ More Transportation-Land Use Coordination in the Community	Equal emphasis on land use (demand), transportation (supply) and urban design (character)



Land Use & Character Information (cont.)

Growth Strategy Map: Places to Transform

Specific focus areas in Holly Springs provide opportunities to grow and transform in the future. These areas will evolve over time in terms of land use mix, density and intensity, home choices, and transportation options. These are the areas where the Town should emphasize public and private investment — increasing allowable densities and intensities, adding infrastructure capacity, improving access from nearby neighborhoods, investing in the public realm, and encouraging private investment — to diversify the Town's development strategy and support continued growth and economic prosperity in the future. Some areas identified to transform over time will require redevelopment of existing suburban shopping centers or infill development in the Downtown Village District.

Future Land Use: Mixed-Use Center

A Mixed-Use Center offers the opportunity to serve broader economic, entertainment, and housing needs in the community. Land uses and buildings on small blocks in the core may stand three or more stories tall and encourage active public spaces between the buildings. Residential units or office space are found above storefronts. Homes surrounding the core offer several choices to live and experience the center. Parking is satisfied using on-street parking, structured parking, and shared rear-lot parking strategies. The compact, walkable environment and mix of residential and non-residential uses in the center supports multiple modes of transportation, including the potential for transit-oriented development if-when a decision is made to invest in premium transit along the NC 55 corridor.

Key Characteristics of a Mixed-Use Center include:

- Redevelopment and new development in these areas will utilize formal small block patterns and relocate parking to the interior of blocks.
- Parking between the street and the building should be limited.
- These areas include a variety of shared public open spaces throughout a walkable, activated environment, and may include formal and informal open spaces such as greens, squares, plazas, and community gardens. The linear nature can provide opportunities for greenway links to other parts of the Town.
- Front setbacks are variable, but in new development should be as small as possible. Side and rear setbacks are variable.
- Multi-dwelling housing in a Mixed-Use Center should be stacked over ground floor retail in the core of the development, or interspersed on small blocks within the larger development so that all multi-dwelling buildings are within short walking distance of a community green or block with nonresidential uses.
- Multi-dwelling housing in a Mixed-Use Center should not extend more than two consecutive blocks in any direction unless included in a vertical mixed-use building.

Future Land Use: Natural Area

Natural Areas are largely undeveloped and reserved for preservation and low-impact recreation (trails and greenways) because of their outstanding beauty, environmental features, or proximity to Harris Lake.



Land Use & Character Information (cont.)

Small Area Plan: N/A

Historic Structures: Richard L. Adams Farm (WA0612)

The site includes a home and several outbuildings. The home is described as a Late 19th century double pile hip roof frame house. Capital Area Preservation completed a site visit in September 2020 and determined the house was in excellent condition and a good candidate for preservation. The site has not been reevaluated since the initial site visits and conditions may have changed. The house and property are eligible for the National Historic Register.

Future Land Use Staff Analysis:

The requested Zoning Map Amendment is: ☐ Consistent ☒ Inconsistent

Character Area Consistency:

Per the Unified Development Ordinance, a Regional Mixed-Use zoning district is potentially compatible with the Mixed-Use Center and Natural Area character areas.

The applicant has proposed certain characteristics as part of the Conditional Zoning District that meet Mixed-Use Center guidelines:

- Lower density housing furthest from the project core, with increased density closer to the center and road.
- Taller buildings closer to GB Alford Highway, with shorter buildings adjacent to existing neighborhoods.

However, the proposed Conditional Zoning District fails to meet other key characteristics:

- A compact walkable environment with primarily vertical-mixed use buildings. Only one building within Pod A includes residential units above retail, which totals 11,000 square feet of available commercial space.
- Small blocks connecting residential and non-residential uses around a community green or open space.
- The proposed site layout incorporates suburban development characteristics, in conflict with the theme of Suburban Retrofit in which the Town seeks to convert its existing auto-oriented uses into more sustainable activity centers.

The proposed rezoning also fails to meet the following Community Character Recommendations:

- **CC-3 Improve Parking Design** – The proposal includes significant surface parking throughout the site, primarily in Pods A and C.
- **CC-8 Increase Walkability** – The overall site design does not sufficiently create safe and inviting conditions for walking throughout the site.
- **CC-9 Enhance Character and Walkability by Orienting All Buildings to the Street** – Pod C: Health and Fitness orients its building to a large surface parking lot.
- **CC-10 Mitigate the Impacts of Auto-Oriented Uses** – The outdated parking design and separated uses encourage traveling to each Pod via car, creating traffic and less safe conditions for residents and visitors who prefer to travel via other means.



Land Use & Character Information (cont.)

- **CC-20 Protect and Maintain Holly Springs's Historic Structures** - The applicant has proposed to relocate the primary farm house and potentially another outbuilding within the site "if feasible." While the proposal has the potential to meet CC-20, the language in the proposed Design Manual states "if feasible", which leaves the potential for not meeting this recommendation. Capital Area Preservation has also advised staff that relocating the farm house from its relationship to the road will almost certainly remove any opportunity for the house to be considered for the National Historic Register.

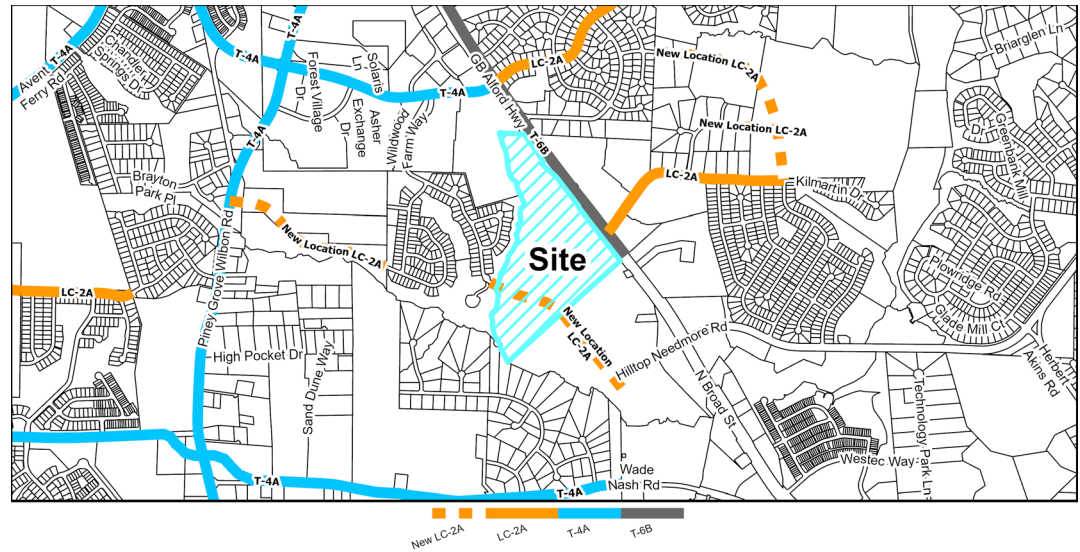
While meeting some characteristics of the character area and specific recommendations of the Comprehensive Plan, the proposed Conditional Zoning District contains significant inconsistencies. Staff finds that the proposed Conditional Zoning District is not consistent with the Vision Holly Springs Land Use & Character Plan.



Transportation Information

Comprehensive Transportation Plan

Road Widening along Project Frontage	☒ Required	☐ Not Required
New Location Roadways	☒ Required	☐ Not Required
Hotspot/Safety Study Location	☐ Yes	☒ No



Roadway Map

Comprehensive Transportation Plan Summary

Road Widening along Project Frontage:

In accordance with the Unified Development Ordinance (UDO) and the Comprehensive Transportation Plan (CTP), road widening is required across the property frontage of GB Alford Highway to meet ½ of the ultimate cross section. The development is proposing three driveway accesses along GB Alford Highway, a connection to the adjacent Lowe's Home Improvement driveway, and a connection to the existing Wildwood Farm Way.

New Location Roadways:

There is a new CTP roadway affecting this property: the extension of the existing Wildwood Farm Way across the property. It will be extended across the property and stubbed to the southern property line for future extension to the future Fuquay Parkway and Wade Nash Road. The design and construction of this CTP extension is included as part of this development. The development is proposing an internal street network with several proposed street cross sections that deviate from the approved cross sections set forth within the Comprehensive Transportation Plan. The proposed modifications that do not meet the standards set forth by the Comprehensive Transportation Plan include reduced planting strip widths, altered lane widths, and perpendicular parking spaces along public streets.

Hotspot/Safety Study Location:

There are no Hot Spot Studies impacting this project.

Improvement Prioritization: n/a

**Transportation Information (cont.)****Traffic Study Policy**

- ☒ Traffic Study Required ☐ Tier 1
 ☐ Tier 2
 ☒ Tier 3
 ☐ Traffic Verification Memo

Traffic Study Summary

A Traffic Impact Analysis (TIA) and associated Transportation Mitigation Agreement (TMA) was completed with this rezoning petition. This development will be required to adhere to and construct all recommended improvements within the approved TIA as follows:

NC 55 Bypass at S. Main Street

- Construct a second northbound/westbound left-turn lane on NC 55 Bypass to provide dual left-turn lanes on that approach.
- Modify the existing traffic signal to accommodate the additional lane.

NC 55 Bypass between Ralph Stephens Road and the northern project property line

- Reconfigure southbound NC 55 Bypass (between Ralph Stephens Road and the northern project property line) to provide a third southbound through lane that extends to the frontage widening provided as part of this project.
- The existing right-turn lane into the Lowes Driveway will be restriped as a shared through/right with this widening in place.

NC 55 Bypass Southbound at Northern Site Driveway

- Construct the Northern Site Driveway as a right-in/right-out access.
- In addition to the additional southbound lane along NC 55 Bypass, provide an exclusive southbound right-turn lane.

NC 55 Bypass Southbound at Central Site Driveway

- Construct the Central Site Driveway as a right-in/right-out access with one ingress lane and one egress lane with 100' of Internal Protection Stem (IPS) per NCDOT's review of the TIA.
- In addition to the additional southbound lane along NC 55 Bypass (provided as part of thoroughfare widening), provide an exclusive southbound right-turn lane with 100 feet of storage and appropriate tapers.

NC 55 Bypass at Southern Site Driveway

- Construct the Southern Site Driveway as a left-in/right-in/right-out access (at the existing median break aligning with Old Adams Road).
- Stripe the additional southbound lane along NC 55 Bypass as an exclusive right-turn lane at this intersection.



Transportation Information (cont.)

- Install a traffic signal for the Southern Site Driveway approach of the intersection if warranted and approved by the Town and NCDOT.

NC 55 Bypass Northbound at Proposed U-Turn South of Southern Site Driveway

- Construct a new U-turn bulb-out on NC 55 Bypass south of the Southern Site Driveway.
- Provide a U-turn lane on NC 55 Bypass.
- Install a traffic signal if warranted and approved by the Town and NCDOT.

NC 55 Bypass at Ralph Stephens Road

- Construct a southbound/eastbound right-turn lane on NC 55 Bypass if not completed by another development prior to Aura Wildwood.

Ralph Stephens Road and Wildwood Farm Way

Conduct signal warrant analysis at the time of public street connection made to Wildwood Farm Way. If warranted and approved by NCDOT and the Town of Holly Springs, install a traffic signal if not completed by another development prior to Aura Wildwood.

Transportation Staff Analysis:

The requested Zoning Map Amendment is: ☐ Consistent ☒ Inconsistent

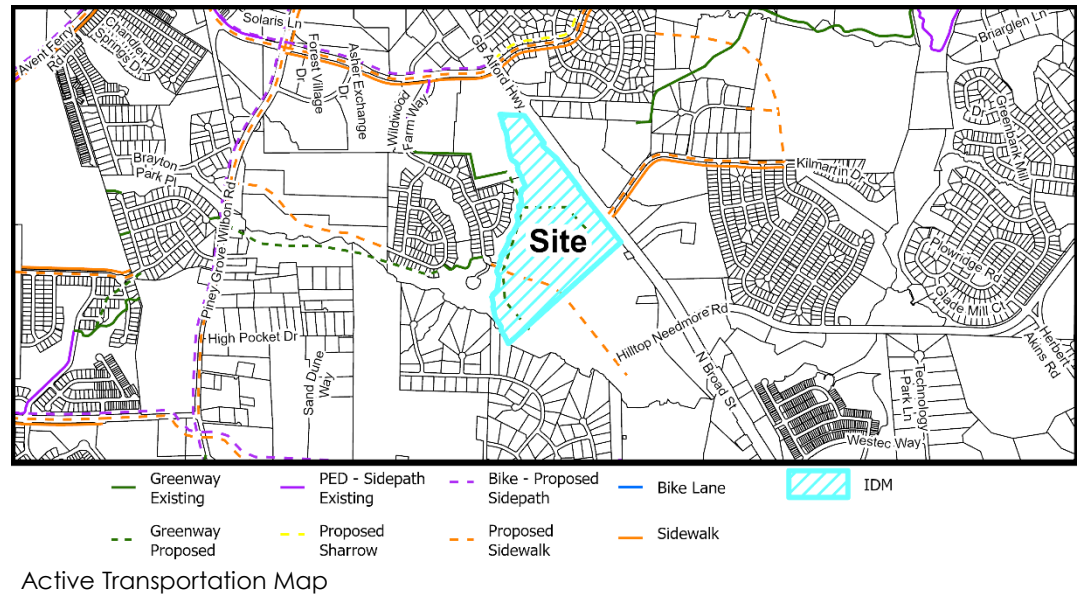
The Traffic Study and associated mitigation improvements are consistent with the Traffic Study policy; however, the proposed modified internal street cross sections that include reduced planting strip widths, altered lane widths, and perpendicular parking spaces along public streets are not consistent with the Town's Comprehensive Transportation Plan.



Parks, Recreation, & Greenways Information

Park Search Area

☐ Yes

☒ No


Required Active Transportation Improvements

☒ Greenway

☐ Sidepath

The Active Transportation Map shows several proposed Greenways on and adjacent to the site. This location was also identified in the Town's Parks, Recreation, and Greenways Master Plan as a Regional Connection point with future Greenway/Sidepath improvements with the Town of Fuquay-Varina. The proposed rezoning follows these plans as well as Section 7.6 of the Town's UDO by showing two Greenway connections to existing trails within the adjacent Wildwood community as well as two Greenway stubs on the southern edge of the project where the Town of Fuquay-Varina has proposed Greenways and Sidepaths to be built in the future.

Parks, Recreation, & Greenways Summary

This property proposed for Rezoning is located outside of all Park Search Areas identified in the Town's Comprehensive Plan Chapter 3: Parks, Recreation, & Greenways Master Plan. The applicant will be required to pay a fee-in-lieu of Parkland Dedication rather than dedicate land directly.

Parks, Recreation, & Greenways Staff Analysis:

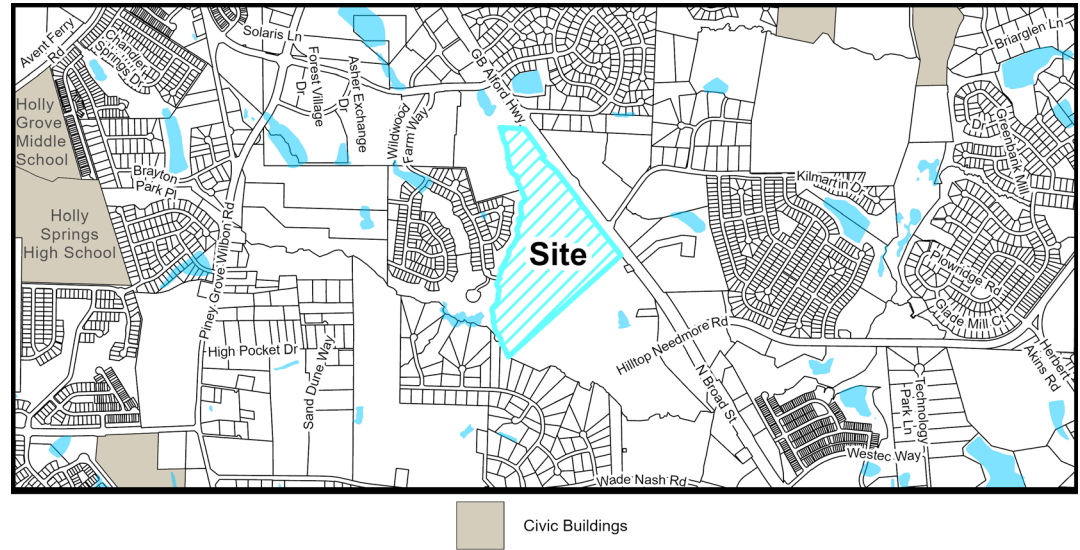
The requested Zoning Map Amendment is: ☒ Consistent ☐ Inconsistent

The proposed Rezoning petition shows compliance with all Parks, Recreation and Greenway-related UDO Ordinance requirements and represents an excellent opportunity to improve Greenway connectivity within the Town and Regionally.



Community Facilities Information

Population growth increases demand for public services. In order to fulfill this demand, community facilities must be appropriately planned for and constructed. These facilities may range from additional public safety stations, such as police and fire, to new schools to handle the influx of school-aged children into an area.



Community Facilities Map

WCPSS Coordination

A Letter of Impact from Wake County Public School System (WCPSS) was received for this rezoning and is included in the attachments.

Schools at the following grade levels within the current assignment area for the proposed rezoning are anticipated to have insufficient capacity for future students; transportation to schools outside of the current assignment area should be anticipated:

- ☒ Elementary ☐ Middle ☐ High School ☐ N/A: All grade levels are anticipated to have sufficient capacity

The following mitigation of capacity concerns due to school construction or expansion is anticipated:

- ☐ School expansion or construction within the next five years is not anticipated to address concerns.
☒ School expansion or construction within the next five years may address concerns at these grade levels:
☒ Elementary ☐ Middle ☐ High School
☐ Not applicable – existing school capacity is anticipated to be sufficient.

Community Facilities Staff Analysis:

The requested Zoning Map Amendment is: ☒ Consistent ☐ Inconsistent

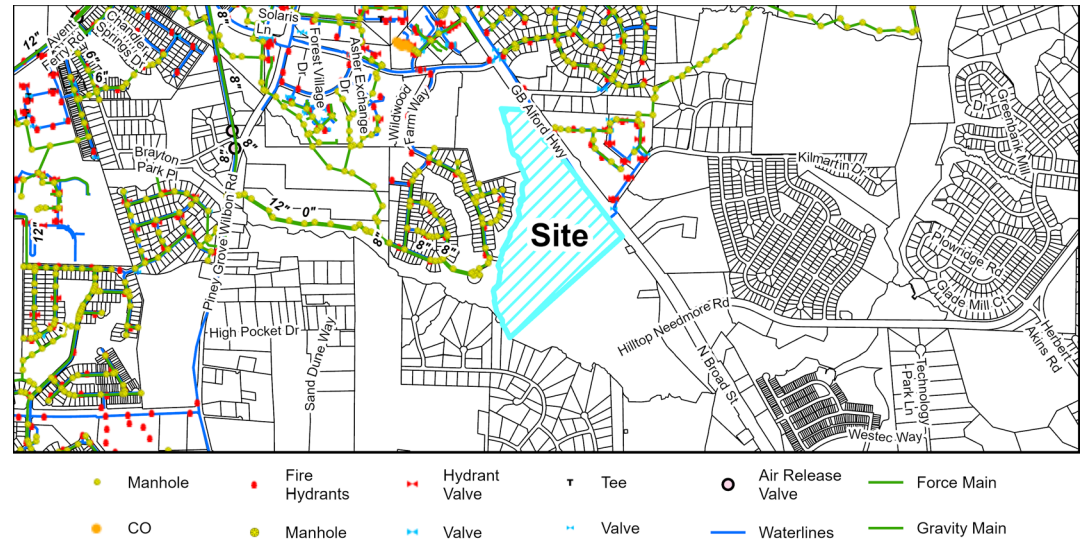
The subject property is outside of a search area for a public safety station as designated on the Community Facilities Map. As a project proposing residential units, the applicant is required to report the potential number of units to the Wake County Public School System for their facility planning.



Infrastructure & Utility Information

Utility Availability

Water	☒ Yes	☐ No
	☐ Study Required	
Sanitary Sewer	☒ Yes	☐ No
	☒ Study Required	
Reclaim	☐ Yes	☒ No
	☐ Study Required	



Utility Map

Infrastructure & Utility Summary

Water:

The project is required to tie to and extend Town water facilities across the property frontage of GB Alford Highway as well as throughout the site to serve the proposed development. These waterlines will be installed by the developer in accordance with Town Policies.

Sanitary Sewer:

Sewer service to the proposed development will be via extension of a gravity sewer network ultimately draining to the existing Basal Creek Pump Station. A downstream sewer study, including a pump station capacity analysis for the existing pump station, was completed and it concluded the existing downstream sewer infrastructure and the existing pump station do not have adequate capacity and improvements are necessary to support this development. Improvements include upsizing a section of gravity sewer pipe, upgrading the existing Basal Creek Pump Station with the Phase 3 improvements laid out in the previously approved study associated with the Lowe's development, as well as additional improvements to the existing pump station laid out in this study as "Phase 4." These improvements take into consideration the impacts from this development, previously approved but not yet built projects, and provides an additional capacity to the pump station of approximately 150,000 gallons per day (gpd).

Reclaim:

This project is not located within the Town's Reclaim Water Service Area.



Infrastructure & Utility Information (cont.)

Water Resource Management (WRMP) Policy

- | | | | |
|---|---------------------------------|---------------------|---|
| ☐ WRMP Applicable | ☐ Tier 1 | Allocation Elements | ☐ Public Infrastructure Improvements |
| ☒ WRMP Not Applicable | ☐ Tier 2 | | ☐ Sustainable Design |
| | ☐ Tier 3 | | ☐ Work Force Housing |
| | | | ☐ Open Space/Tree Preservation |

Water Resource Management Policy Summary

This rezoning was submitted on June 30, 2023, and is therefore not subject to the Water Resource Management Policy (effective July 1, 2023).

Infrastructure & Utility Staff Analysis:

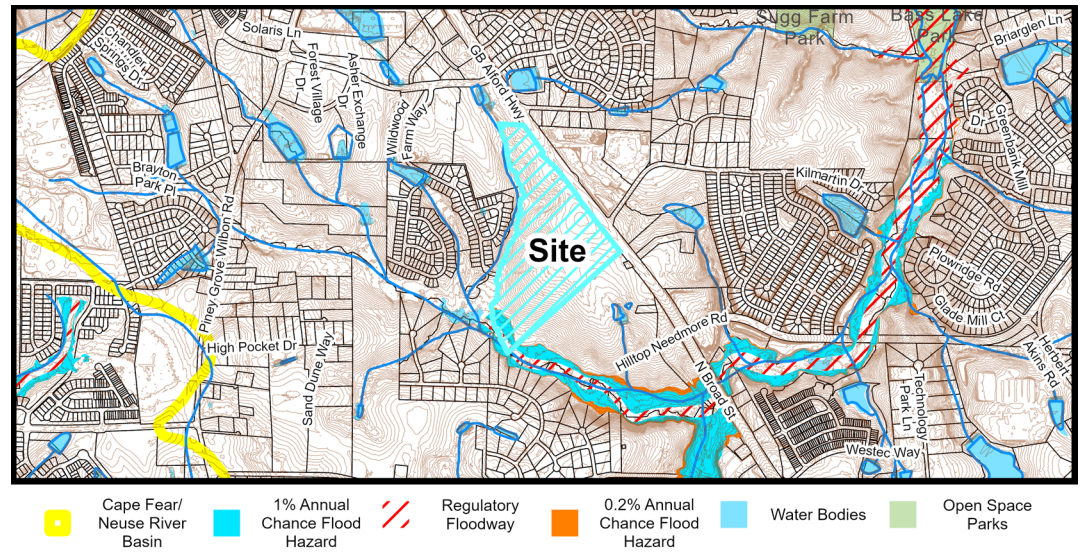
The requested Zoning Map Amendment is: ☒ Consistent ☐ Inconsistent

The proposed improvements to the Basal Creek Pump Station are consistent with the requirements of the sewer study and the Comprehensive Plan. However, the impact of the increased intensity of the proposed project was not considered holistically and will tie up station capacity originally planned for other parcels. With this proposed rezoning, this development is proposing to significantly increase the amount of sewer flow than was planned for this parcel in a previous analysis of the overall Basal Creek Pump Station basin (70,000 gpd *planned* to 210,000 gpd *proposed*). Staff recommended the developer provide additional improvements (in addition to those listed above) to the pump station to offset their impact on other parcels within the Basal Creek Pump Station basin that will be displaced by Aura Wildwood's increased flow. The developer did not commit to any additional improvements. This will ultimately require additional improvements to increase the overall capacity of this pump station to allow for the full buildout of the proposed land uses within the basin.



Natural Resources & Open Space Information

Total Required Open Space:	15% or 9.18 ac.
Tree Preservation Area	0% or 0 ac.
Active Recreation Area	2% or 1.22 ac.
Urban Civic Space	0.5% or 0.3 ac.
Flexible Space	12.5% or 7.65 ac.



Natural Resources Map

Natural Resources & Open Space Summary

Open Space:

The applicant has proposed 16.5 acres of open space. Tree preservation is proposed furthest from GB Alford Hwy, in the southwest corner of the property. Active Recreation includes the Multi-Family Dwelling amenity center, and various pocket parks and plazas throughout the Townhome Pod. The Urban Civic Space is provided as the interior plaza Area in Pod D: Dining and Shopping.

Stormwater:

The project is located within the Neuse River Basin proposing to treat all new impervious surfaces onsite with a Stormwater Control Measure. There are several jurisdictional features located on and adjacent to the site such as floodplains, wetlands, streams and Riparian buffers.

Natural Resources & Open Space Staff Analysis:

The requested Zoning Map Amendment is: ☒ Consistent ☐ Inconsistent

The applicant has proposed various open space types in locations throughout the site. Generally, the open spaces serve each particular Pod and fail to connect the Pods together. The proposed Urban Civic Space has potential for a nice outdoor seating and gathering area, but could be better located closer to residences. The pocket parks and plazas help create green spaces around the proposed townhomes. The greenway along the side facing Wildwood and Lowe's appears to be an interesting concept

**Natural Resources & Open Space (cont.)**

for the townhomes that front it, however staff cannot recommend approval of the proposed trail and townhomes fronting the stormwater control measure as it does not seem to provide accessible open space to all residents of the development.

Any and all permits required to construct this development must be obtained prior to Civil Construction Drawing approval. This project has been designed in a way to minimize impacts to the existing environmental features and is consistent with the Comprehensive Plan.



Conditional Zoning District Standards Information

Conditional Zoning Districts (CD) are intended to provide flexibility within the planning and development process, while creating additional controls to ensure quality development. The Conditional District allows the applicant the option of requesting this flexibility in exchange for higher quality, innovative, and sustainable development.

CD Design Goals. CD proposals shall demonstrate that the project and development therein will incorporate and/or achieve the following design goals:

1. The incorporation of existing natural features such as wooded areas and slopes into the design of new development in such a manner as to preserve the site's natural character;
2. The preservation of significant view corridors; development of out-lying areas of the Town and its Extraterritorial Jurisdiction in a manner which retains elements of traditional historical land use patterns;
3. Development of pedestrian oriented communities; development of traditional style neighborhoods;
4. Development of communities that are visually and functionally connected to one another;
5. Protection of significant watershed areas in order to preserve water quality;
6. Creativity and imagination in the process of development;
7. Unique architecture or sustainable design;
8. Efficient, aesthetic and desirable use of open space;
9. Variety in housing types and physical development patterns; and,
10. Special considerations for property with a unique history or outstanding physical features.

Conditional Zoning District Summary

The standards shown below are modifications of the Unified Development Ordinance allowed via Conditional Zoning District. Any standards not listed must adhere to those set by the UDO.

Development Standards (UDO Chapter 2):

Development Density	UDO Standard	Proposed Standard
Maximum Gross Density (Units/Acre)	15 Units/Acre (915 units)	9.8 units/acre (600 units)

POD A: Multi-Family and Mixed-Use

Lot Configuration	UDO Standard	Proposed Standard
Minimum Lot Width at Setback Line • Apartment Dwellings	N/A	50'



Building Placement	UDO Standard	Proposed Standard
Front Setback Maximum	20'	0'
Side Setback Interior Minimum	0'	5'
Setback Adjacent to RR/SR/NR Districts (Minimum)	50'	30'

Building Height	UDO Standard	Proposed Standard
Maximum Building Height	55'/5 stories	55'/5 stories
Accessory Structure Minimum	25'/2 stories	20'/1 story*

*Applies only to Leasing Office/Amenity Center

POD B: Townhomes

Lot Configuration	UDO Standard	Proposed Standard
Minimum Lot Width at Setback Line Attached Dwellings	N/A	20'
Minimum Lot Frontage	0'	18'
Minimum Frontage for a Driveway	60'	18' (for rear loaded)

Building Placement	UDO Standard	Proposed Standard
Front Setback Maximum	20'	25'
Setback Adjacent to RR/SR/NR Districts (Minimum)	50'	30'
Accessory Structure(s) < 144sf (Minimum)	5'	3'
Accessory Structure(s) > 144sf	0'	5'
Accessory Structure(s) > 144 sf Setback from Alley	0'	< 5' or > 20'

Building Height	UDO Standard	Proposed Standard
Primary Structure(s) Minimum	25'/2 stories	20'/2 stories
Primary Structure(s) Maximum	55'/5 stories	40'/3 stories
Accessory Structure(s) Maximum	55'/5 stories	25'

**POD C: Health & Fitness; POD D: Shopping & Dining; POD E: Office & Retail**

Building Placement	UDO Standard	Proposed Standard
Front Setback Maximum	20'	0'

Building Height	UDO Standard	Proposed Standard
Primary Structure(s) Minimum	25' / 2 stories	20' / 1 story
Accessory Structure(s) Maximum	55' / 5 stories	20' / 1 story

Permitted Uses (UDO Chapter 3):

The RMX – Regional Mixed-Use zoning district offers the opportunity to serve broader economic, entertainment, and housing needs of the community in a compact walkable environment. It allows for a mix of residential and non-residential uses, with certain uses such as attached dwellings, permitted via Conditional Zoning District only.

The proposed Conditional Zoning District lists permitted uses for each Pod, and omits all other RMX uses not specified. Permitted uses would still be required to follow additional standards set by the UDO, if applicable. The applicant has limited the Drive-In/Drive-Through use in Pod D and Pod E, by setting a maximum of 2 in Pod D, and 1 in Pod E.

The applicant has stated in the Design Manual that “Accessory uses, buildings, or structures are permitted on a lot without a primary building.” Staff cannot support this proposed, unrestricted modification to the UDO without any further clarity as to the purpose of this modification.

PERMITTED USES	
POD A (Multifamily and Mixed Use Pod) (N1)	Apartment Dwelling, Recreation Facility Indoor, Recreation Facility Outdoor (<50 acres), Business Services, Office Use, Personal Services, Food/Restaurant Uses, Retail uses, Fitness Facilities / Studios, Bar/Nightclub/Tasting Room, Theater, Assembly Use, Amusement (Indoor), Child Care Center, Laundry Self-Service
POD B (Townhouse Pod)	Attached Dwelling, Recreation Facility Indoor, Recreation Facility Outdoor (<50 acres)
POD C (Health and Fitness Pod)	Fitness Facilities / Studios, Recreation Facility Indoor, Recreation Facility Outdoor (<50 acres), Business Services, Child Care Center, Medical Office, Office Use, Personal Services, Food / Restaurant Uses, Retail Uses
POD D (Dining and Shopping Pod) (N2)	Bar/Nightclub/Tasting Room, Food / Restaurant Uses, Drive In/Drive Through (maximum 2 drive throughs permitted), Retail Uses, Bed and Breakfast, Personal Services, Theater, Assembly Use, Business Services, Amusement (Indoor), Food/Restaurant Uses
POD E (Office and Retail Pod) (N3)	Office Use, Medical Office, Retail Uses, Bed and Breakfast, Personal Services, Fitness Facilities / Studios, Assembly Use, Civic Building, Hotel, Inn, Community Support Facility, Religious Use, Business Services, Child Care
	Center, Laundry Self-Service, Infrastructure / Utilities (Minor), Bar/Nightclub/Tasting Room, Amusement (Indoor), Food/Restaurant Uses, Drive In/Drive Through (maximum 1 drive through permitted) Parking Garage, Wireless Telecommunications Equipment
N1	Business Services, Office Use, Personal Services, Food/Restaurant Uses, and Retail Uses are permitted only on the ground floor in the area shown on the master plan either as standalone uses or in live-work units. The Office Use shall include coworking.
N2	Drive throughs shall comply with the design requirements of UDO 3.3.5.D.
N3	Drive throughs shall comply with the design requirements of UDO 3.3.5.D. Within POD E, only banks or financial institutions shall be permitted to have a drive-through.

**Landscaping (UDO Chapter 5):**

Required Buffering	UDO Standard	Proposed Standard
NC-55 Thoroughfare Buffer	50'	50'
Adjacent to SR – Suburban Residential	20' Type C	20' Type C
Adjacent to CB – Community Business	5' Type A	10' Type B

Building, Site, and Subdivision Lot Design Standards (UDO Chapter 8):

	UDO Standard	Proposed Standard
Pod A		
Façade Materials	Type 2 Materials: wood siding; fiber cement siding; stucco; tile; EIFS; or similar material determined by the Administrator.	Additional Type 2 materials: wood trim and fiber cement trim
Façade Activation	Residential Building Standards: Residential Buildings shall provide a minimum of 3 activation features listed in 8.2.G.2.d.ii.	Changed an activation feature from: Covered Porch to: Covered porches/balconies
Horizontal Variation	Two Variations; A clearly defined Base, Middle, and Top; Minimum 50% Base	None
Maximum Residential Building Length	250'	360'
Pod B		
Building Design standards do not apply to Townhomes, but the applicant has proposed the following standards: - With 2+ façade materials, each material will be different but complementary colors - Vinyl may only be used for window trim, shutters, soffits, fascia, and/or corner boards - Adjacent Units shall not utilize the same elevation or primary color - Main roof pitches fronting the street townhomes shall be at least 6:12 - For every 30' of continuous side elevation, there shall be one window or door added to side elevation. Any siding break on the side of the home such as fireplace, side porch, wall offsets, etc. may be used as alternate to windows. - Townhomes shall have a minimum width of 20' and a minimum heated area of 1,700sf - All homes shall include architectural style shingles		
Pod C		
Additional standard: 3' screen wall added to Thoroughfare Buffer to screen views of Health and Fitness Center parking lot from NC-55'		



Pod D & E		
Transparency	Ground floor windows should be traditional storefront style and generally vertical in orientation	Windows and storefront glazing shall be divided to be either square or vertical in proportion so that each section is taller than it is wide

Conditional Zoning District Standards Staff Analysis

The applicant must demonstrate that the proposed zone map change and property owner offered conditions (if any) or unique conditions associated with this request support the Town's comprehensive plan objectives and/or policies and why the proposed zoning change is reasonable and in the public interest. The applicant has provided a statement in the petition.

Staff has reviewed the application and has determined the requested Zone Map Change is:

☐ Consistent with Adopted Plans ☒ Inconsistent with Adopted Plans

The 2019 Future Land Use and Character Plan established the Regional Center Character Area designation and strategically located these Regional Centers on the Future Land Use Map adjacent to the NC 540 interchanges at Holly Springs Road and at Old Holly Springs Apex Road. A Regional Center is envisioned as a hub for entertainment and employment, containing a mix of business, entertainment, civic, and cultural activities with a mix of housing types within and surrounding the center. As a magnet to surrounding towns and neighborhoods, a Regional Center becomes an iconic symbol and exciting focal point in southern Wake County.

The 2022 UDO subsequently established a new zoning district, the Regional Mixed-Use District (RMX), to allow for the implementation of this Character Area. While the RMX district is not restricted to areas only designated as a Regional Center on the Future Land Use Map, the RMX district was created to support the goals and policies of the Future Land Use and Character Plan in or near the designated Regional Centers. The UDO indicates that the requested RMX district may be compatible with the Mixed-Use Center Character Area designation currently established on the subject property, however, it is important to note that the UDO only provides general guidance on where particular Base Zoning districts are appropriate in the Town and not every application of the district is automatically consistent with the Land Use and Character Plan.

The proposed rezoning to RMX-CD is consistent with several Comprehensive Plan and CD design goals and includes several positive aspects with the proposal:

- Incorporating creativity and imagination through its greenway and trail design and proposed Urban Civic Space.
- The applicant has worked to incorporate the historic Adams House within its proposal, and consideration to keep it onsite (with the caveat that the applicant has left non-committal language in the application).
- Two separate housing types are provided with apartment and attached dwellings.
- The applicant also has been willing to meet with staff on their proposal, and incorporate staff feedback into their designs. The changes the applicant made based on staff comments include the proposed roundabouts, Adams house enhancements, and the central vertical mixed-use building.



- After significant communication with the surrounding neighborhood, considerations for the neighboring Wildwood residents have also been included, ensuring connections and buffers.
- The applicant has also committed to 11,000 square feet of non-residential development to start prior to the 200th multi-family Certificate of Occupancy.

However, staff has also found that the proposed Conditional Zoning District fails to meet several Comprehensive Plan and CD Design Goals and Town objectives:

- The overall design and Pod layout of the site creates separated uses and functions, limiting walkability and development of a traditional neighborhood.
- While the design of the townhome layout in Pod B is creative in some areas, there are visual and accessible concerns in others.
- The placement of Pod C: Health & Fitness disconnects the residential and commercial uses, both visually and functionally. The significant surface parking and auto-oriented uses create safety and sustainability concerns, and there was insufficient creativity on finding solutions to these concerns. The primary commercial component of the site is not located on the lower floor.
- The lack of commitment to the completion of the shopping, dining, office, and retail aspects creates uncertainty over the inclusion of these project components.
- The less-restrictive standards proposed do not meet the intent of the Regional Mixed-Use Zoning District or the Mixed-Use Center Character Area. These include reducing the height of buildings and increasing setbacks in what is intended to be a more walkable and sustainable built environment, for both the residential and non-residential structures.
- The multifamily Pod includes a separated one-story amenity building, indicative of garden-style apartments rather than multifamily envisioned for Regional Mixed-Use.

The UDO indicates that the current Community Business (CB) Zoning District may also be compatible with the Mixed-Use Center Character Area designation currently established on the subject property. The current zoning provides opportunities to create mixed-use developments which are predominately commercial in land use while supporting residential dwelling units primarily located above non-residential uses. The primary distinction between permitted uses in Community Business compared to Regional Mixed-Use is that attached dwellings are not allowed within the current zoning of Community Business.



Decision-Making Information

Zoning Map Amendment (Rezoning) Staff Analysis

The proposed Conditional Zoning District is for a prominent parcel of land with historic significance, along the Town's most traveled thoroughfare at the edge of its jurisdiction. It offers some uses that may benefit Town residents, but does not offer these uses in a way that meets the Town's goals and objectives as identified in the Comprehensive Plan or the Unified Development Ordinance. The proposed Regional Mixed-Use Conditional Zoning District is not reasonable nor in the public interest as it fails to meet these Town goals and expectations, which include higher quality development and design, a pedestrian-oriented community, appropriate commercial space, and a visually and functionally connected community.

Staff Recommendation: ☐ Approve ☒ Deny

Previous Case Related Items

Neighborhood Meeting

The applicant must hold a neighborhood meeting with all property owners within 500 feet of the project prior to submitting an application. A report of the neighborhood meeting has been submitted and is included in the agenda item attachments.

Meeting Date: 6/28/2023

Summary of Issues: Neighbors asked questions over concerns regarding:

- The required CTP connection to Wildwood Farm Way
- How the project will function as a gateway into the Town
- Traffic
- Proposed number of units
- A tree survey
- Historic Preservation of the site, specifically the house
- The Review process
- Applicant response to neighbor concerns
- The type of commercial and potential retail tenants
- Stormwater runoff

The applicant responded to each question provided by attendees.



Planning Board Action

Planning Board Meeting Date: 5/28/2024

Planning Board Decision Type: Advisory Decision

Advisory Decision

The Planning Board must review the application and make a recommendation to the Town Council.

The Planning Board should consider whether or not the land use standards and densities allowed in the proposed zoning district are appropriate for the property and consistent with the Vision of Holly Springs Comprehensive Plan. Technical standards of the Unified Development Ordinance are addressed once a Development Plan or Subdivision Plan is submitted for review.

The Planning Board discussed the following issues and concerns:

- Utility improvements
- Walkability of site, shifting building frontages
- Overall parking
- Three driveways and their locations
- Commitment to commercial square feet
- Commitment to relocation of Adams House
- Development for Fuquay-Varina ETJ parcel to the south
- Greenway and stub connection to Fuquay-Varina ETJ parcel

Planning Board Recommendation:

The Planning Board adopted the following Comprehensive Plan Consistency Statement:

The requested Zoning Map Amendment from CB Community Business to RMX-CD Regional Mixed-Use Conditional Zoning District is inconsistent with the Vision Holly Springs Comprehensive Plan since the Future Land Use Plan Map indicates this property as Mixed Use Center, as the proposed Conditional Zoning District fails to meet the intent of the Mixed-Use Center character area, and it does not meet specific Community Character recommendations. The requested rezoning is reasonable and in the public interest as it meets the Town's overall goals and objectives as outlined in the Comprehensive Plan.

The Planning Board voted in favor of the motion (4 - 1) [4 absent]

Those voting against the motion:

- Mr. Crandall – Voted against the motion due to viewing the request as not reasonable nor in the public interest.



Recommend **approval** of Zoning Map Amendment #23-REZ-04 to change the zoning of 61.19 acres of Wake County PIN #0658138067 from CB Community Business to RMX-CD Regional Mixed-Use Conditional Zoning District as submitted by Trinsic Acquisition Group LLC.

The Planning Board voted in favor of the motion (4 - 1) [4 absent]

Those voting against the motion:

- Mr. Crandall – Voted against the motion due to the inconsistencies with the Comprehensive Plan and overall Town goals and objectives as outlined in the Staff Report.

Town Council Consideration & Action

Legislative Public Hearing

Prior to the Legislative Public Hearing:

- Mailed notice was sent to all property owners within 500 feet of the project.
- Published notice was made twice in the News & Observer.
- Posted notice was made with a public hearing sign on the property.

Town Council Decision Type: Legislative Decision

Legislative Decision:

Legislative public hearings are held prior to a change in policy that may affect the entire community, including decisions on land use. The public hearing allows the Town Council to receive public comments regarding the proposal and then have discussion and deliberation. Based on the information provided on the proposal, the Town Council will make a determination on whether or not to approve the policy or modification.

Potential Zoning Map Amendment Petition Motion

Adopt Ordinance RZ24-05 (Version A, B, or C) to adopt the statement of compatibility and take action on the Rezoning.

- **Version A:** If the Town Council finds the application is inconsistent with the Comprehensive Plan, is not reasonable and in the public interest, and the action is to deny the rezoning (staff recommendation).
- **Version B:** If the Town Council finds the application is inconsistent with the Comprehensive Plan, but is reasonable and in the public interest, and the action is to approve the rezoning (Planning Board recommended).
- **Version C:** If the Town Council finds the application is consistent with the Comprehensive Plan, is reasonable and in the public interest, and the action is to approve the rezoning.



Ordinance No. RZ24-05

Date Submitted: June 18, 2024

Date Adopted: June 18, 2024

**AN ORDINANCE TO DENY A PROPOSED AMENDMENT
TO MODIFY APPENDIX A: UNIFIED DEVELOPMENT ORDINANCE: OFFICIAL ZONING MAP
AND ADOPT THE COMPATIBILITY STATEMENT REQUIRED BY
NORTH CAROLINA GENERAL STATUTES 160D-605**

WHEREAS, the Town of Holly Springs Town Council adopted Vision Holly Springs: Town of Holly Springs Comprehensive Plan in November 2007; and

WHEREAS, the Town of Holly Springs Town Council has maintained and updated Vision Holly Springs: Town of Holly Springs Comprehensive Plan by adopting Section 1: Land Use & Character Plan in 2019; Section 2: Comprehensive Transportation Plan in 2022, and Section 3: Parks, Recreation and Greenways Master Plan in 2021; and

WHEREAS, the Town of Holly Springs has received a request to modify the Official Zoning Map for 61.19 acres of Wake County PIN: 0658-13-8067 from CB: Community Business to RMX-CD: Regional Mixed-Use Conditional Zoning District; and

WHEREAS, the *Vision Holly Springs: Town of Holly Springs Comprehensive Plan* designates said parcels on the *Future Land Use Map* as Mixed-Use Center and Natural Area; and

WHEREAS, the requested zoning district proposes land uses that are inconsistent with the adopted *Vision Holly Springs: Town of Holly Springs Comprehensive Plan*, and

WHEREAS, the Holly Springs Planning Board reviewed this request at a Public Meeting on May 28, 2024 and recommended approval by a vote of 4-1; and

WHEREAS, in accordance with NCGS § 160D-601, the Town of Holly Springs held a legislative hearing on June 18, 2024, to consider the proposed changes to the Official zoning map; and

WHEREAS, after considering the recommendation of the Holly Springs Planning Board and the public input offered in a public hearing before the Town Council, the Town Council finds amending the Official Zoning Map is inconsistent with Vision Holly Springs: Town of Holly Springs Comprehensive Plan as the proposed Zoning Map Amendment for the following reasons:

The proposed Conditional Zoning District is for a prominent parcel of land with historic significance, along the Town's most traveled thoroughfare at the edge of its jurisdiction. It offers

some uses that may benefit Town residents, but does not offer these uses in a way that meets the Town's goals and objectives as identified by the Future Land Use designation of Mixed-Use Center in the Vision Holly Springs: Town of Holly Springs Comprehensive Plan, and the Conditional Zoning District Design Goals of the Unified Development Ordinance; and,

WHEREAS, the Town of Holly Springs Town Council finds the proposed amendment to the Official Zoning Map is not reasonable and not in the public interest by failing to meet Town goals and expectations, which include higher quality development and design, a pedestrian-oriented community, appropriate commercial space, and a visually and functionally connected community.

THEREFORE, BE IT ORDAINED by the Holly Springs Town Council, having found the proposed Zoning Map Amendment to be incompatible with the Comprehensive Plan nor reasonable nor in the public interest, that the following zoning request: #23-REZ-04 to change the zoning of PIN# 0658-13-8067 from CB Community Business to RMX-CD Regional Mixed-Use Conditional Zoning District, is denied.

SEVERABILITY

If any section, part of a section, paragraph, sentence, clause, phrase, or word of this Ordinance, or application of this Ordinance to any one parcel or group of parcels is for any reason held or declared to be unconstitutional, inoperative or void, such holdings shall not affect the remaining portion of this Ordinance or application of this Ordinance to other parcels and it shall be construed to have been the legislative intent to pass the Ordinance without such unconstitutional, invalid or inoperative part therein, and the remainder of this Ordinance after the exclusion of such part or parts shall be deemed to be held valid as if such part or parts had not been included therein, or if this Ordinance or any of the provisions thereof shall be held inapplicable to any person, group of persons, property, kind of property, circumstances, or set of circumstances, such holdings shall not affect the applicability thereof to any other person, property or circumstances.

EFFECTIVE DATE

The provisions of this ordinance shall become effective June 18, 2024 in accordance with the laws of the State of North Carolina.

Adopted this, the 18th day of June, 2024.

Town of Holly Springs by

Sean Mayefskie, Mayor

ATTEST:

Linda McKinney, Town Clerk





Ordinance No. RZ24-05

Date Submitted: June 18, 2024

Date Adopted: June 18, 2024

**AN ORDINANCE TO AMEND SECTIONS OF THE CODE OF ORDINANCES
TO MODIFY APPENDIX A: UNIFIED DEVELOPMENT ORDINANCE: OFFICIAL ZONING MAP
AND ADOPT THE COMPATIBILITY STATEMENT REQUIRED BY
NORTH CAROLINA GENERAL STATUTES 160D-605**

WHEREAS, the Town of Holly Springs Town Council adopted Vision Holly Springs: Town of Holly Springs Comprehensive Plan in November 2007; and

WHEREAS, the Town of Holly Springs Town Council has maintained and updated Vision Holly Springs: Town of Holly Springs Comprehensive Plan by adopting Section 1: Land Use & Character Plan in 2019; Section 2: Comprehensive Transportation Plan in 2022, and Section 3: Parks, Recreation and Greenways Master Plan in 2021; and

WHEREAS, the Town of Holly Springs has received a request to modify the Official Zoning Map for 61.19 acres of Wake County PIN 0658138067 from CB: Community Business to RMX-CD: Regional Mixed-Use Conditional Zoning District; and

WHEREAS, the *Vision Holly Springs: Town of Holly Springs Comprehensive Plan* designates said parcels on the *Future Land Use Map* as Mixed-Use Center and Natural Area; and

WHEREAS, the requested zoning district proposes land uses that are inconsistent with the adopted *Vision Holly Springs: Town of Holly Springs Comprehensive Plan*, and

WHEREAS, the Holly Springs Planning Board reviewed this request at a Public Meeting on May 28, 2024 and recommended approval by a vote of 4-1; and

WHEREAS, in accordance with NCGS § 160D-601, the Town of Holly Springs held a legislative hearing on June 18, 2024, to consider the proposed changes to the Official zoning map; and

WHEREAS, after considering the recommendation of the Holly Springs Planning Board and the public input offered in a public hearing before the Town Council, the Town Council finds amending the Official Zoning Map is inconsistent with Vision Holly Springs: Town of Holly Springs Comprehensive Plan as the proposed Zoning Map Amendment for the following reasons:

The proposed Conditional Zoning District is for a prominent parcel of land with historic significance, along the Town's most traveled thoroughfare at the edge of its jurisdiction. It offers

some uses that may benefit Town residents, but does not offer these uses in a way that meets the Town's goals and objectives as identified by the Future Land Use designation of Mixed-Use Center in the Vision Holly Springs: Town of Holly Springs Comprehensive Plan, and the Conditional Zoning District Design Goals of the Unified Development Ordinance; and,

WHEREAS, the Town of Holly Springs Town Council finds the proposed amendment to the Official Zoning Map is reasonable and in the public interest despite the plan inconsistency, as it meets the Town's overall goals and objectives as outlined in the Comprehensive Plan; and,

THEREFORE, BE IT ORDAINED by the Holly Springs Town Council of the Town of Holly Springs, North Carolina, that the Unified Development Ordinance of the Town is amended as follows:

Part 1: **Amend Unified Development Ordinance Section 1.7 Official Zoning Map** with the following rezoning request: #23-REZ-04 to change the zoning of PIN# 0658-13-8067 from CB Community Business to RMX-CD Regional Mixed-Use Conditional Zoning District.

The property is subject to all the conditions listed in the Rezoning Master Plan and Design Manual dated 5/8/2024 and 5/10/2024 respectively, by Trinsic Residential Group LLC.

Part 2:

REPEAL OF CONFLICTING ORDINANCES

All ordinances or parts of the Unified Development Ordinance of the Town of Holly Springs conflicting or inconsistent with the provisions of this rezoning ordinance are hereby repealed.

Part 3:

SEVERABILITY

If any section, part of a section, paragraph, sentence, clause, phrase, or word of this Ordinance, or application of this Ordinance to any one parcel or group of parcels is for any reason held or declared to be unconstitutional, inoperative or void, such holdings shall not affect the remaining portion of this Ordinance or application of this Ordinance to other parcels and it shall be construed to have been the legislative intent to pass the Ordinance without such unconstitutional, invalid or inoperative part therein, and the remainder of this Ordinance after the exclusion of such part or parts shall be deemed to be held valid as if such part or parts had not been included therein, or if this Ordinance or any of the provisions thereof shall be held inapplicable to any person, group of persons, property, kind of property, circumstances, or set of circumstances, such holdings shall not affect the applicability thereof to any other person, property or circumstances.

Part 4:

INCLUSION IN UDO

It is the intention of the Town Council entered as hereby ordained, that the provisions of this Ordinance shall become and be made part of the Unified Development Ordinance of the Town of Holly Springs, North Carolina; that the Section(s) of this Ordinance may be renumbered or relettered to accomplish such intention, and that the word "Ordinance" may be changed to "Section, or "Article" or other word.

Part 5:

EFFECTIVE DATE

The provisions of this ordinance shall become effective June 18, 2024 in accordance with the laws of the State of North Carolina.

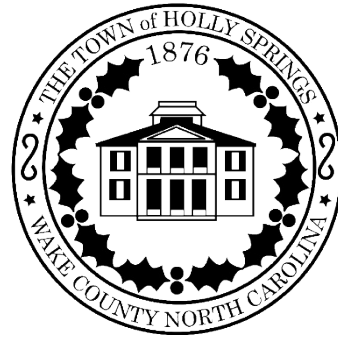
Adopted this, the 18th day of June, 2024.

Town of Holly Springs by

Sean Mayefskie, Mayor

ATTEST:

Linda McKinney, Town Clerk





Ordinance No. RZ24-05

Date Submitted: June 18, 2024

Date Adopted: June 18, 2024

**AN ORDINANCE TO AMEND SECTIONS OF THE CODE OF ORDINANCES
TO MODIFY APPENDIX A: UNIFIED DEVELOPMENT ORDINANCE: OFFICIAL ZONING MAP
AND ADOPT THE COMPATIBILITY STATEMENT REQUIRED BY
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WHEREAS, the Town of Holly Springs has received a request to modify the Official Zoning Map for 61.19 acres of Wake County PIN# 0658-13-8067 from CB: Community Business to RMX-CD: Regional Mixed-Use Conditional Zoning District; and

WHEREAS, the *Vision Holly Springs: Town of Holly Springs Comprehensive Plan* designates said parcels on the *Future Land Use Map* as Mixed-Use Center and Natural Area; and

WHEREAS, the requested zoning district proposes land uses that are consistent with the adopted *Vision Holly Springs: Town of Holly Springs Comprehensive Plan*, and

WHEREAS, the Holly Springs Planning Board reviewed this request at a Public Meeting on May 28, 2024 and recommended approval by a vote of 4-1; and

WHEREAS, in accordance with NCGS § 160D-601, the Town of Holly Springs held a legislative hearing on June 18, 2024, to consider the proposed changes to the Official zoning map; and

WHEREAS, after considering the recommendation of the Holly Springs Planning Board and the public input offered in a public hearing before the Town Council, the Town Council finds amending the Official Zoning Map is consistent with Vision Holly Springs: Town of Holly Springs Comprehensive Plan as the proposed Zoning Map Amendment for the following reasons:

The proposed Conditional Zoning District is for a prominent parcel of land with historic significance, along the Town's most traveled thoroughfare at the edge of its jurisdiction. It offers a mixed-use development including townhomes, apartments, and commercial space in

appropriate locations, and the proposal also preserves the historic structures onsite. The proposed district meets the Town's goals and objectives as identified by the Future Land Use designation of Mixed-Use Center in the Vision Holly Springs: Town of Holly Springs Comprehensive Plan, and the Conditional Zoning District Design Goals of the Unified Development Ordinance; and,

WHEREAS, the Town of Holly Springs Town Council finds the proposed amendment to the Official Zoning Map is reasonable and in the public interest despite the plan inconsistency, as the proposed Conditional Zoning District provides multiple land uses that contribute to more mixed-use centers in the community, multiple housing choices, a transition to adjacent neighborhoods, and indicates a path to preserving the historic structures onsite; and,

THEREFORE, BE IT ORDAINED by the Holly Springs Town Council of the Town of Holly Springs, North Carolina, that the Unified Development Ordinance of the Town is amended as follows:

Part 1: **Amend Unified Development Ordinance Section 1.7 Official Zoning Map** with the following rezoning request: #23-REZ-04 to change the zoning of PIN# 0658-13-8067 from CB Community Business to RMX-CD Regional Mixed-Use Conditional Zoning District.

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Part 2:

REPEAL OF CONFLICTING ORDINANCES

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Part 3:

SEVERABILITY

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INCLUSION IN UDO

It is the intention of the Town Council entered as hereby ordained, that the provisions of this Ordinance shall become and be made part of the Unified Development Ordinance of the Town of Holly Springs, North Carolina; that the Section(s) of this Ordinance may be renumbered or relettered to accomplish such intention, and that the word "Ordinance" may be changed to "Section, or "Article" or other word.

Part 5:

EFFECTIVE DATE

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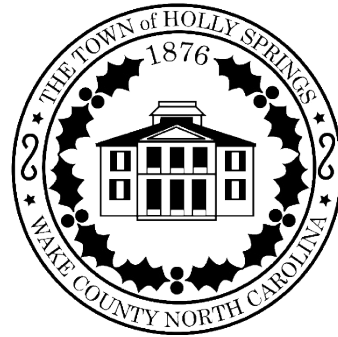
Adopted this, the 18th day of June, 2024.

Town of Holly Springs by

Sean Mayefskie, Mayor

ATTEST:

Linda McKinney, Town Clerk





WAKE COUNTY PUBLIC SCHOOL SYSTEM

Student Assignment

5625 Dillard Drive
Cary, NC, 27518
Email: studentassignment@wcpss.net

tel: (919) 431-7333
fax: (919) 694-7753

June 5, 2024

Chris Hills, AICP
Director, Development Services
Town of Holly Springs
chris.hills@hollyspringsnc.gov

Dear Chris,

The Wake County Public School System (WCPSS) Office of School Assignment received information about a proposed rezoning/development within the Town of Holly Springs planning area. We are providing this letter to share information about WCPSS's capacity related to the proposal. The following information about the proposed rezoning/development was provided through the Wake County Residential Development Notification database:

- Date of application: June 30, 2023
- Name of development: Aura Wildwood
- Address of rezoning: 7450 GB Alford Highway (PIN 0658138067)
- Total number of proposed residential units: 600
- Type(s) of residential units proposed: 400 Apartment Dwellings, 200 Attached Dwellings (townhomes)

Based on the information received at the time of application, the Office of School Assignment is providing the following assessment of possible impacts to the Wake County Public School System:

- ☐ Schools at all grade levels within the current assignment area for the proposed rezoning/development are anticipated to have sufficient capacity for future students.
- ☒ Schools at the following grade levels within the current assignment area for the proposed rezoning/development are anticipated to have insufficient capacity for future students; transportation to schools outside of the current assignment area should be anticipated:
- ☒ Elementary ☐ Middle ☐ High

The following mitigation of capacity concerns due to school construction or expansion is anticipated:

- ☐ Not applicable – existing school capacity is anticipated to be sufficient.
- ☐ School expansion or construction within the next five years is not anticipated to address concerns.
- ☒ School expansion or construction within the next five years may address concerns at these grade levels:
- ☒ Elementary ☐ Middle ☐ High

Thank you for sharing this information with the Town of Holly Springs Planning Board and Town Council as they consider the proposed rezoning/development.

Sincerely,

Susan W. Pullium, MSA
Senior Director



Historic Resource Report

Property Name: Richard Adams Farm

Survey Number: WA0612

Location: 7450 GB Alford Highway, Holly Springs

PIN Number: 0658138067

Date of Visit: September 21, 2020

Classification:

- ☐ Local Inventory
- ☒ Study List for the National Register of Historic Places (Individual)
- ☐ National Register of Historic Places
- ☐ Wake County Historic Landmark

Observations:

The c. 1900 Richard L. Adams Farm is an intact farm complex with an impressive frame farm house as its centerpiece. The property has been identified as important by the State Historic Preservation Office and is on the State Study List for the National Register of Historic Places. This property is also a prime candidate to be designated as a local historic landmark by the Wake County Historic Preservation Commission. The frame double-pile house retains more than 95% of its historic architectural elements and has experienced very few changes since its construction. In fact, this is likely one of the most architecturally and historically intact properties in all of Holly Springs with its collection of farming outbuildings.

The house is in excellent condition and is a good candidate to be preserved in place or moved to an appropriate setting, maintaining its current relationship with the road. In order to guarantee that this important historic resource retains its integrity at a new location and is restored and preserved in an appropriate manner in keeping with the Secretary of the Interior's Standards for the Treatment of Historic Properties, a preservation easement and rehabilitation agreement should be placed on the property with a qualified preservation organization (such as CAP). This situation provides the perfect opportunity to save and restore a National Register Study List property to its former architectural glory.

Historic Integrity:

House

- ☒ Yes
- ☐ No

Outbuildings

- ☒ Yes
- ☐ No

I, Jeremy Bradham, inspector of the above property, state that this report provides an accurate representation of the historic integrity of the property as of:

Date 9/22/2020

Signature 

North Carolina State Historic Preservation Office

Historic Property Survey Summary

County: **Wake**

SSN: **WA0612**

Blockface#

Quad: Apex
PIN: 0658139246
X: -78.8247 Y: 35.62924
DOT Project #:
OSA#:

Update Mo: 01 Yr: 2015

☒ No Alt ☐ Alt ☐ Det ☐ Rehab
☐ Removed ☐ Outbldg Loss
☒ No Acc. ☐ Not Fnd ☐ FileMsg
☐ Newly ID'd ☒ Needs Resch.

Property Name: **Richard L. Adams Farm**

Street or 911 Address: **1600 S. Main Street**

Location Description: **W side NC 55, 0.3 mi. SE of jct. w/SR 1114**

Town/vicinity: **Holly Springs**

District: **None ()**

District Dates: NRdate:

SLdate:

DOEdate:

Local District:

☐ Recommended for SL ☐ StudyList SLDate: **7/12/1990** ☐ NR NRDate: **NR #: None**
☐ DOE DOEdate: **6/2/1997**
DOE Type: Local Status: **None** Ownership: **Private**

Principal Resource Material Integrity: **High** Condition: **Good** Location Integrity: **Original**

Architectural Data: Date(s): **1900-1915**

Major Style Group(s) **Colonial Revival**

Construction: **Not specified**

Ext. Material: **Weatherboard: Plain**

Later Covering:

Height: **2 story**

Roof: **Hip**

Plan:

Core Form (Domestic): **Double Pile**

Design Source and attribution: **Not specified**

Major Theme: **Architecture**

2nd Theme:

Group Association:

Religious Affiliation

Historic Function:

Written Summary

2015 Update:

No change since 2005 update, but now appears vacant. Intact dwelling and nice complex of buildings plus pecan grove. A painted board fence encloses the yard and pecan grove. At the driveway entrance are modern brick piers topped with lanterns and a plaque that reads "Greenacres". Outbuildings were observed but not photographed due to gate at road. Should consider for local designation.

2005-2007 County Survey Update:

Two-story, double-pile house with a hipped roof and front-facing gable

1988-1991 County Survey:

Richard L. and Annie Adams built this two-story, double-pile house around the turn of the century. The dwelling, which features simple Colonial Revival details, displays a tall hip roof with interior brick chimneys and a wrap-around porch supported by Doric columns which is pedimented at the entry. A number of frame domestic and farm outbuildings surround the house, and the yard is landscaped with various trees and bushes and separated from the road by a wood fence. Just south of the residence is a pecan grove that may have lined an earlier driveway leading to the house.

R. L. Adams was a native of Wake county who evidently took his family to Georgia in the late 1880s and returned to the county around 1895. By 1900 he was engaged in the lumber business, in addition to carrying on a farming operation. He purchased 94 acres from his parents, James and Elizabeth Adams, in 1885, later

Monday, May 18, 2015

acquiring 222 contiguous acres from other relatives between the years 1899 and 1906. The 1910 census shows that Adams was overseer of a lumber company (perhaps that of the Holly Springs Land and Improvement Company), while his wife supervised the farming operations, in which four of their sons (ages ten to sixteen) and one hired hand (a nineteen-year-old black man named Lofton Matthews) were employed. One of the most prominent houses along Highway 55 between Fuquay-Varina and Apex in terms of size and setting, their former residence reflects the wealth and status made possible by their two sources of income. (SL)

--possibly endangered by future widening of NC 55
--Nice farm complex; house is common type
--good condition

Outbuildings/Features

Actions

Year	Month	Surveyor	Action/Report
2006		Edwards Pitman Environmental	Wake County Survey Update Phase I
2015	01	Ellen Turco, New South Associates	Survey update

Monday, May 18, 2015

REZONING, COMPREHENSIVE PLAN/ UDO AMENDMENT PETITION



The current Filing Fees can be found on-line in the Town of Holly Springs Fee Schedule: www.hollyspringsnc.us/2170/Development-Services

Petition Type (check one- each request must be on separate petitions)

- ☒ Zoning Map Change: ☐ General Use District or ☒ Conditional Zoning District
☐ Comprehensive Plan Amendment (check all that apply)
☐ Text Amendment ☐ Future Land Use Map Amendment
☐ Area/Corridor Plan Map Amendment / Name: _____
☐ UDO Amendment (UDO Section: _____)

For DS Use only

Project # _____

Fees Paid: \$ _____

Date Received: _____

Project Information

Project Name: Aura WildwoodProject Location: 7450 GB Alford Hwy*Use street address. If none, use the closest intersection*

- ☒ Within Corporate Limits ☐ Within Holly Springs ETJ ☐ Pending Annexation
 PIN: 0658138067 Real Estate ID: 0000239

Project Acreage: (Rounded to nearest tenth) 61.19 Partial Parcel: ☒ No ☐ YesSketch Plan Review (Pre-Submittal) Meeting Date: June 29, 2023

If the Sketch Plan Review (Pre-Submittal) Meeting Date is not within 8 weeks of the submittal date, another Sketch Plan Review (Pre-Submittal) Meeting is required prior to submittal.

Petition Request

Current Zoning: Community Business (CB)Proposed Zoning: Regional Mixed Use Conditional District (RMX-CD)Current Future Land Use Designation: Mixed Use CenterProposed Future Land Use Designation: No change proposedArea Plan Designation (if applicable): N/A

Petition Contact Information (complete each contact in its entirety- please print or type)

Project Applicant/Contact

(check one) ☐ Owner ☐ Owner's Agent ☐ Design Professional ☒ Developer ☐ Other _____

Is the applicant applying on behalf of the property owner(s)? ☒ Yes ☐ No If yes, please complete the Affidavit of Property Owner Consent form and attach. If applicant contact is not the Owner or representing the Owner(s), please complete Property Owner Notification Affidavit and attach.

Name Ryan Stewart Company Trinsic Acquisition Company LLCMailing Address 242 S Main StreetCity Holly Springs State NC Zip 27540Telephone # () _____ E-Mail c/o colliermarsh@parperpoe.comHow would you like to receive staff review comments? ☐ E-Mail ☐ US MailHow would you like to receive Official Action Notices? ☐ E-Mail ☐ US Mail- Certified

Property Owner(s) if different than Applicant/Contact-REQUIRED attach additional sheets if necessary

Name David Dahl (executor, Estate of D. Carlyle Adams, Jr; and trustee, Carlyle Adams Foundation) Company _____Mailing Address 1033 Vestavia Woods Dr., BateCity Raleigh State NC Zip 27615Telephone # (919) 819-9384 E-Mail dave@dahl1lawpllc.comHow would you like to receive staff review comments? ☒ E-Mail ☐ US MailHow would you like to receive Official Action Notices? ☒ E-Mail ☐ US Mail- Certified

Owner's Authorization

Owner's Signature(s)

PIN/REID

Date

0658138067/00002396/26/2023David Dahl
Executor/Trustee

PLAN CONSISTENCY STATEMENT



Describe how the proposed Zone Map Change request is consistent or supported by the objectives and policies of *Vision Holly Springs: Town of Holly Springs Comprehensive Plan* and how it is inconsistent with the Plan.

You must respond to each section; please type or print legibly in blue or black ink

Project Information:

Project Name: Aura Wildwood

Proposed Zoning District: Regional Mixed Use Conditional District (RMX-CD)

Proposed Land Use/Density: Mixed Use - apartments, townhouses, commercial, and community amenities

Future Land Use Plan Map Designation: Mixed Use Center

Future Land Use Plan Designation Land Use/Density: Mixed Use Center

For DS Use only

Project # _____

Date Received: _____

Plan Consistency Statement:

In accordance with NCGS § 160D-605 prior to adopting or rejecting any zoning amendment, the Town Council shall adopt a statement of zoning consistency or inconsistency. Please include as much detailed information about the proposed zoning change and developer offered conditions (if any) or unique conditions associated with this request that support the Town's comprehensive plan objectives and/or policies and why the proposed zoning change is reasonable and in the public interest. If the proposed zoning amendment is not in compliance with the comprehensive plan, the Town Council is required to determine why the proposed zoning change is reasonable and in the public interest if approved. Please provide detailed documentation to assist the Council in making their determination. *Attach Additional Sheets as needed*

Petitioner's Response

Executive Summary

See attached Design Narrative

Section 1: Future Land Use & Community Character

See attached Design Narrative

Section 2: Transportation / Comprehensive Transportation Plan

See attached Design Narrative

Section 3: Parks, Recreation & Open Space/Beyond the Green: A Parks & Recreation Master Plan
See attached Design Narrative

Section 4: Community Facilities
See attached Design Narrative

Section 5: Infrastructure and Utilities
See attached Design Narrative

Section 8: Natural Resources
See attached Design Narrative

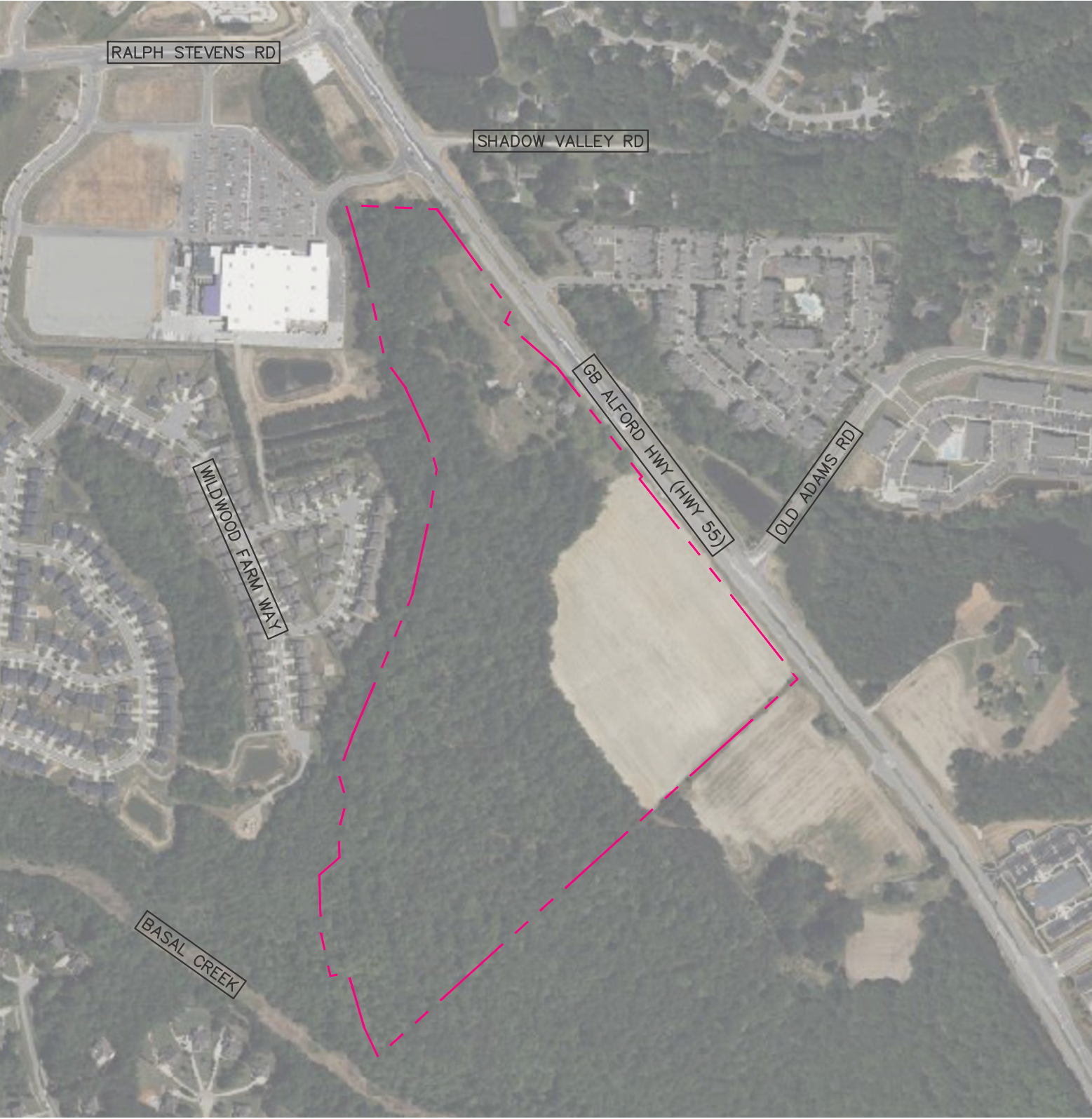
Plan Consistency Response Prepared by:

Preparer's Signature(s)

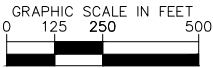
Date



6/29/23



AURA WILDWOOD VICINITY MAP



AURA WILDWOOD

CONSISTENCY STATEMENT

A MIXED USE COMMUNITY IN HOLLY SPRINGS,
NORTH CAROLINA



SUBMITTED TO



The Town of Holly Springs
128 S Main Street
Holly Springs, NC 27540

PREPARED FOR



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First Submittal:	June 29, 2023
Second Submittal:	September 15, 2023
Third Submittal:	October 20, 2023
Fourth Submittal:	January 18, 2024
Fifth Submittal:	March 15, 2024
Sixth Submittal:	April 26, 2024

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PROJECT OVERVIEW

This document and the accompanying exhibits submitted herewith (collectively, the “Rezoning”) are provided pursuant to Town of Holly Springs Unified Development Ordinance (“UDO”) provisions for Conditional Zoning Districts. This Rezoning addresses the development of approximately 61 acres located at 7450 GB Alford Highway with PIN 0658138067 (the “Property”). The Property is within Town limits and at the southern limits of the Town’s jurisdiction fronting GB Alford Highway, with Fuquay Varina’s ETJ directly to the south. This Rezoning proposes to rezone the Property to Regional Mixed Use - Conditional District (RMX-CD) to allow the development of mixed use community known as Aura Wildwood.

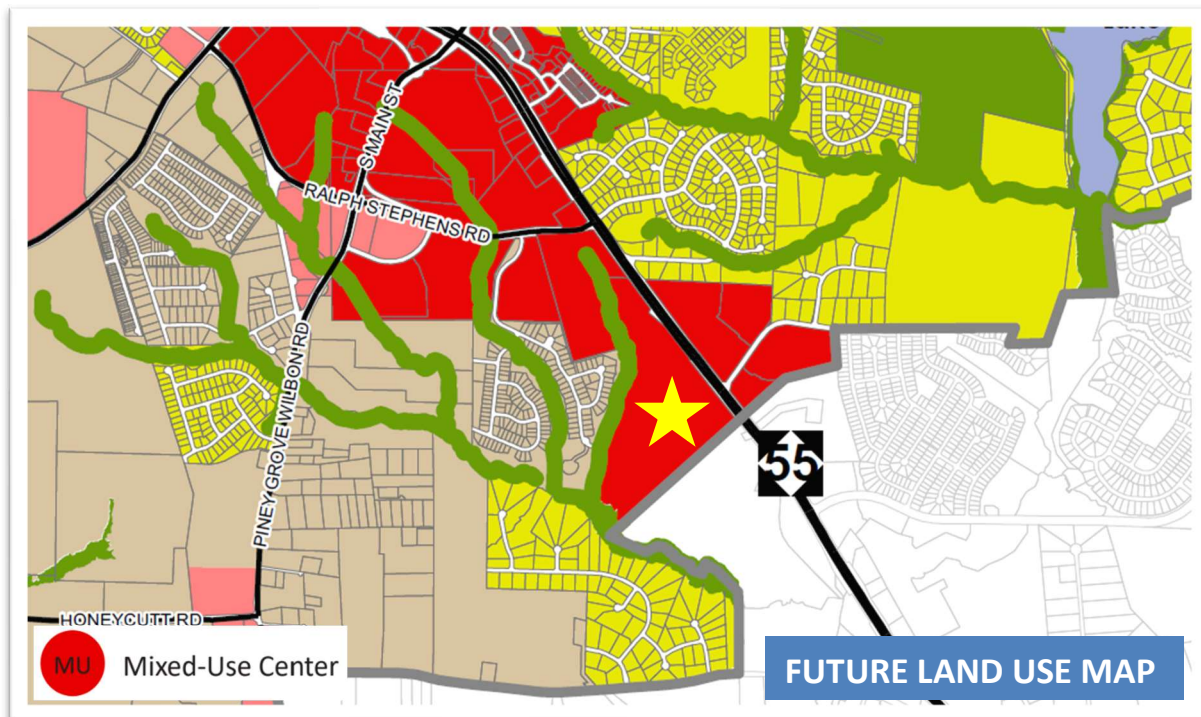
Aura Wildwood proposes vertical and horizontal mixed uses including apartments, townhomes, commercial uses, and community amenities. Aura Wildwood’s apartments raise the bar for Holly Springs with high quality design and first to the market features. The apartments will be elevator served and the first in Holly Springs with closed, conditioned corridors. Some units will be located above ground floor retail and other units will be live work units with working space on the ground floor. Aura Wildwood’s townhomes will ensure sufficient residential density to support the project’s nonresidential uses, while also providing effective height and use transitions to the adjacent residential neighborhoods. The project’s commercial uses will stand out in Holly Springs. Anchored by a large health, fitness, and wellness resort, Aura Wildwood also features a dining and shopping district distinguished by a central green space flanked with restaurants and stores that will serve as an outdoor dining and gathering area for the community. A historic home on the property, dating to 1915 (the “Adams Home”), will be relocated to the dining and shopping district, repurposed for nonresidential purposes, and featured as a gateway to Aura Wildwood’s greenways and amenity space.

Thoughtful building design and site layout will ensure that Aura Wildwood is well integrated both internally and with the surrounding community. The Adams Home sets the tone for Aura Wildwood’s architecture with farmhouse design elements carried throughout the development. Aura Wildwood’s apartments will feature modern farmhouse style architecture and the townhomes will feature similar design elements. Aura Wildwood’s complimentary mix of uses are well integrated and linked by greenways, sidewalks, gathering areas, open spaces, and streets. Existing tree coverage in the most environmentally sensitive areas will be preserved and utilized to provide effective buffers and transitions to the surrounding community.

CONSISTENCY STATEMENT

A. FUTURE LAND USE & COMMUNITY CHARACTER

The Future Land Use Map (“FLUM”) of the Comprehensive Plan (“Comp Plan”) designates Aura Wildwood as a Mixed Use Center. Mixed Use Centers are intended to serve the broader economic, entertainment, and housing needs of the community. Multi-dwelling housing in a Mixed-Use Center should be stacked over ground floor retail in the core of the development, or interspersed on small blocks within the larger development so that all multi-dwelling buildings are within short walking distance of a community green or block with nonresidential uses. A large-scale, Mixed-Use Center may be surrounded by one or more residential neighborhoods that provide additional nearby home choices and encourage active living with a comprehensive and interconnected network of walkable streets. Buildings should be 3 to 5 stories along the corridor, but may be 2 to 3 stories in transitional areas. Comp Plan, pp. 66-67. The RMX zoning district is recommended for Mixed Use Centers. UDO §2.1



The proposed RMX zoning is consistent with the FLUM’s Mixed Use Center designation. However, through review comments, Town staff has noted that the RMX district is only envisioned for select sites in other parts of Holly Springs. Aura Wildwood responds to the Town’s feedback by scaling certain of the project’s dimensional standards down from the large scale RMX district requirements and closer to the Neighborhood Mixed Use (NMU) dimensional requirements. By falling between RMX and NMU, Aura Wildwood provides an appropriate scale mixed-use development for the site.

Aura Wildwood proposes a mix of multifamily, townhomes, and commercial uses to serve the Town's broader economic, entertainment, and housing needs. Multifamily housing will be interspersed on small blocks within short walking distance of community greens and nonresidential uses. Residential units are stacked over ground floor retail in the core of the development. Notably, all residential uses within Aura Wildwood are all connected to the nonresidential uses either physically or by Greenway trails, providing safe pedestrian and bicycle connectivity between uses.

Buildings will be up to 5 stories, with the tallest heights at the core of the development and lower heights transitioning to adjacent communities. Aura Wildwood's townhome pod follows the comprehensive plan's guidance to surround mixed use centers with one or more residential neighborhoods. The Townhomes will serve as a height and density transition to nearby neighborhoods and will provide additional housing choices with walkable streets and greenways connecting the neighborhood to the mixed use core.

Mixed Use Centers also "include a variety of shared public open spaces throughout a walkable, activated environment, and may include formal and informal open spaces such as greens, squares, plazas, and community gardens. The linear nature can provide opportunities for greenway links to other parts of the Town." Comp Plan, pg. 67. Aura Wildwood includes public open spaces throughout the entire development. One of Aura Wildwood's most prominent and defining features is a central, linear green space in the dining and shopping pod. This green space will include outdoor dining and seating areas to link the surrounding restaurants and stores. The historic Adams Home will also be relocated to the dining and shopping pod. The Adams Home will be centrally located at an entrance to one of the project's greenways. Green space will be programmed around the Adams Home and nonresidential uses are permitted in the Adams Home to facilitate reuse of the house as more fully described in subsequent sections.

The Growth Strategy Map of the Comp Plan designates the Property as a Place to Transform. Places to Transform "are the areas where the Town should emphasize public and private investment — increasing allowable densities and intensities, adding infrastructure capacity, improving access from nearby neighborhoods, investing in the public realm, and encouraging private investment — to diversify the Town's development strategy and support continued growth and economic prosperity in the future." Comp Plan, p.10.



Aura Wildwood advances the Growth Strategy Map goals and will transform the Property to a vibrant mixed use center. Aura Wildwood offers a mix of residential options to serve the Town’s housing needs that are integrated with commercial uses to serve residents of Aura Wildwood and the surrounding community. Aura Wildwood’s streets, greenways, and sidewalks will connect nearby neighborhoods with pedestrian and vehicular access to the project’s mixed uses.

Aura Wildwood is also consistent with the following Specific Recommendations:

FLU-14: Build a Community Attractive to Today’s Businesses and Their Employees. This policy encourages new development to appeal to today’s idea-based economy, where creativity and innovation are often valued more than experience and seniority, and a new type of business environment has taken shape. Today, many companies will only locate in a community that is walkable, mixed-use, and diverse. Aura Wildwood will appeal to this new generation of businesses and employees by creating a mixed use community. The combination of commercial, retail, and office uses directly connected to dense multifamily and townhome communities will create a vibrant community with unique and active gathering spaces.

CC-1: Establish a Discernable Neighborhood Structure. This policy provides guidance for new neighborhoods in Holly Springs to contain a discernible center and a clear edge in order to provide an identity to the community. The center of neighborhoods should include a civic open space such as a park, square, or plaza. Neighborhoods should also be organized around a pedestrian shed, or a circle with a radius of approximately one-quarter mile in length, which represents a five-minute walk distance from the center to the edge. Aura Wildwood embodies the neighborhood structure described by this policy. A discernable center is established by the commercial and mixed-use area, which features civic gathering spaces. The residential portions

of Aura Wildwood radiate outward from the center to create clear edges of the community. Pedestrian routes are interwoven throughout the community in order to create a pedestrian shed. All residential uses are connected to nonresidential uses either physically or via greenways and sidewalks. In addition, prominent civic spaces are included within the development including a central greenspace within the dining and shopping pod.

CC-6: Promote Compact Mixed-Use Development in Appropriate Character Areas. Promote and allow compact mixed-use development patterns in Neighborhood, Town, and Regional Centers with the Town. Encourage a vertical mix of uses with retail or commercial on the ground floor and office or residential uses above. In more rural areas of the Town, preserve open space land by developing in conservative development patterns, in which new housing is concentrated in specific areas and large amounts of open space are preserved. Aura Wildwood is designated as a Mixed Use Center. Aura Wildwood's proposed mix of residential, commercial, and retail uses, including vertically mixed uses, is consistent with this policy.

CC-7: Improve Multi-Modal Connectivity Throughout the Town. This policy encourages enhanced connectivity through street connections and increased pedestrian and bicycle routes. Aura Wildwood will support this policy by providing additional street connectivity from 55 to the residential neighborhoods to the west. The extension of Wildwood Farm Way will also be constructed with this project, consistent with the Comprehensive Transportation Plan's Cross Section Map. Pedestrian and bicycle connectivity will be improved through an extensive network of sidewalks, greenways, and side paths that exceed the recommendations of the Future Active Transportation Map.

CC-8: Increase Walkability. This policy envisions an environment where there is a balance between many modes of transportation, and most importantly, an environment in which people feel comfortable walking. Aura Wildwood directly conforms to this vision by providing a multimodal transportation network to encourage pedestrian movement. Sidewalks are provided throughout the development and the Town's greenways are extended throughout the site with connections to all five distinct areas of the community.

CC-19: Provide and Program a Variety of Civic Open Spaces and Amenities. This policy encourages all new development to include a broad range of community open spaces. More urban areas should include plazas, squares, pocket parks, and activated sidewalks with outdoor dining and pedestrian amenities. More rural areas should include parks, greenways, sports fields, and natural open spaces. Aura Wildwood provides the full range of civic spaces. The more urban dining and shopping pod includes a central linear green space flanked by restaurants and stores with outdoor dining and seating areas. Amenity spaces transition to a more rural type within the townhome community, with more open areas adjacent to environmental features. Public greenways will also provide pedestrian connections across the entire development.

CC-20: Protect and Maintain Holly Springs' Historic Structures. This policy aims to protect known historic or cultural resources from demolition, including strategies such as adaptive reuse or relocation. The Adams Home, currently located on the property, has been owned by the same family since it was built in 1915. While the home is not currently used or designated as a historical

landmark, the home will be preserved and relocated to the Dining and Shopping Pod, where it will serve as an entry feature to the project's greenway trails and will be reused for nonresidential purposes.

B. TRANSPORTATION/COMPREHENSIVE TRANSPORTATION PLAN

The Transportation Plan's Future Active Transportation Map calls for a sidewalk connection from Wildwood Farm Way through the site. Aura Wildwood conforms with the Transportation Plan and includes this planned sidewalk connection.

A Traffic Impact Analysis ("TIA") has been performed in connection with this Rezoning and in accordance with the Town's Traffic Study Policy. Recommended improvements by the TIA shall be designed and constructed according to Town standards, subject to NCDOT and Town approval. All public roads with property frontage shall be improved to meet ½ the ultimate cross sections defined in the CTP. Stub streets shall be provided to all adjacent properties, and proposed roads identified by the CTP on this Property shall be constructed.

C. PARKS, RECREATION & OPEN SPACE/BEYOND THE GREEN: A PARKS & RECREATION MASTER PLAN

The project is consistent with the goals and themes of the Parks, Recreation, and Greenways Master Plan (the "Parks Plan"). The Parks, Recreation, and Greenways Master Plan calls for a greenway running along the Property's northern boundary, connecting through the Property. Aura Wildwood includes the planned greenway along the Property's northern boundary and connects the greenway to the project's internal pedestrian network to provide convenient access to the project's mixed uses. Aura Wildwood exceeds the Parks Plan's recommendations by also include a second greenway connection, running through the site to the property's southern boundary.

D. COMMUNITY FACILITIES

As discussed above, the project will feature public sidewalks, greenways, and publicly accessible open spaces throughout. The project will be organized in blocks where practical, anchored by plazas and community gathering spaces. The multifamily and mixed use pod will also feature an amenity area that includes a clubhouse, pool, and gathering areas. The shopping and dining pod will also be defined by a central green space that will be used for outdoor dining, seating, and events.

E. INFRASTRUCTURE AND UTILITIES

The Property is within Town limits and will be served by Town water and sewer services. A Sanitary Sewer Evaluation and a Water System Evaluation are being completed with this Rezoning, and any required improvements will be designed and constructed with this project. It is anticipated that 3 connections will be made to the existing 16' water line in NC55 to service the site. A gravity line will be proposed for the site and connect to the stub provided at the Wildwood development which flows to the Basal Creek Pump Station. This development shall

also comply with the Town's requirements related to the fiber optic network and water metering network. Finally, Aura Wildwood will stub water and sewer to adjacent properties that are not currently connected.

F. NATURAL RESOURCES

The project will meet or exceed minimum requirements for open space, tree preservation area, and active recreation area in UDO Section 4. The Master Plan identifies tree preservation areas on the Property that are currently forested in order to minimize disturbance of the existing environmental features. Tree conservation areas are generally concentrated along the Property's boundary with existing neighborhoods to ensure appropriate buffering between uses. Aura Wildwood also proposed green building commitments that exceed town requirements and set a precedent for sustainable development in Holly Springs.

DESIGN GOALS

The project will incorporate and/or achieve the following design goals as described in UDO Section 2.4.3.A.

1. The incorporation of existing natural features such as wooded areas and slopes into the design of new development in such a manner as to preserve the site's natural features.

The topography of the Property slopes toward the property's western boundary. The western boundary is forested and basal creek runs through the property's southwest corner. Tree conservation areas will be concentrated in these environmentally sensitive areas on the western portions of the site to maintain the property's natural features and to create a meaningful buffer between Aura Wildwood and adjacent properties.

The greatest intensity of development will be concentrated along the Property's eastern boundary with GB Alford Highway. This portion of the Property is well suited for development because it has limited slope and is already cleared for agricultural purposes.

2. The preservation of significant view corridors; development of out-lying areas of the Town and its Extraterritorial Jurisdiction in a manner which retains elements of traditional historical land use patterns.

The Property is in town limits and fronts GB Alford Highway. Although located on the Town's border with Fuquay Varina's ETJ, the Property is in an area where the Comp Plan calls for a transformation to a dense, mixed use development. As set forth above, Aura Wildwood is consistent with the Comp Plan and the Town's vision to transform this Property. In addition, Aura Wildwood honors the History of Holly Springs by preserving and relocating the Adams Home to a central point in the development in the Dining and Shopping Pod. The Adams Home will be repurposed for nonresidential uses and will serve as an entry feature to the project's greenways.

3. Development of pedestrian oriented communities; development of traditional style neighborhoods.

Aura Wildwood will incorporate several features to create a pedestrian oriented community. The internal sidewalk lined street network is proposed in a grid with small blocks, while also acknowledging and working with the site's constraints, including environmental features. These sidewalk lined streets, the amenity areas, and the preserved natural areas are all connected to provide a cohesive pedestrian network throughout the community and to encourage pedestrian travel between uses. The project's integrated mixed uses also encourage walkability and parking is located at the side or rear of multifamily and commercial buildings to create a more pedestrian friendly environment. The development also includes greenways will connect all pods within the development to each other and to existing greenways in adjacent communities.

4. Development of communities that are visually and functionally connected to one another.

Aura Wildwood is a functionally connected mix of multifamily, townhome, and commercial uses. The project's mixed uses are integrated with small blocks, bringing different uses close to each other. The mix of uses will also incorporate common design elements that ensure they are visually connected with a farmhouse theme honoring the Adams Home. The townhome section provides a transition from the project's more dense commercial and multifamily uses to adjacent residential properties, but remains connected through streets, sidewalks and greenways. Within the townhome section, separate homes are connected through a network of common open space that will provide opportunities for recreation and community gathering. A street and sidewalk connection is provided to the existing stub street in the Wildwood community, and street stubs are provided to the south for future connection. The public greenway behind the Lowes and along Wildwood Farm Way will also be extended through the site with stubs at the Property's southwest and southeast corners.

5. Protection of significant watershed areas in order to preserve water quality.

The Property is not located in a critical watershed. The property is located in the Neuse River Basin and will be subject to stormwater regulations for this basin. Stormwater design will comply with Town of Holly Springs and State requirements. The site will not increase the peak flows from pre-development conditions for the 1-year, 24-hour storm event and will treat total nitrogen as required by the Town of Holly Springs.

6. Creativity and imagination in the process of development.

Aura Wildwood uses creative design to integrate the various uses across the Property. Common design elements will be carried through the different uses and the uses will be connected through common open space, streets, sidewalks, and greenways. The Adams Home plays a central role in the project's design and the farmhouse theme is carried throughout the development with architectural details. Enhanced architectural standards are provided for each building type, and unique gathering spaces are proposed

in each area of the Property, including the prominent, central green space in the dining and shopping pod.

7. **Unique architecture or sustainable design.**

Common design elements honoring the Adams Home will be carried through the different uses. The uses will be connected through common open space, streets, sidewalks, and greenways. Enhanced architectural standards are also provided for each building type.

Aura Wildwood's mixed uses are sustainable by offering residents the opportunity to live, work, and play in one area. In addition, electric vehicle charging stations are provided in the development and multifamily buildings will meet green building certifications. Vehicle miles traveled are also greatly reduced through the integration of residential and nonresidential uses in a pedestrian friendly environment.

8. **Efficient, aesthetic, and desirable use of open space.**

The project will meet, if not exceed, the Town's open space requirements. The Property's topography slopes toward the its western boundary. The western boundary is forested and Basal Creek runs through the Property's southwest corner. Tree conservation areas will be concentrated in these environmentally sensitive areas on the western portions of the site to maintain the property's natural features and to create a meaningful buffer between Aura Wildwood and adjacent properties. These preserved open spaces will then be activated with a greenway trail. Within the townhome pod, separate units are connected through a network of common open space that will provide opportunities for recreation and community gathering. The shopping and dining pod will also be defined by a central green space flanked by restaurants that will be used for outdoor dining and events.

9. **Variety in housing types and physical development patterns.**

Aura Wildwood is a mixed use development that provides multiple housing options: standalone multifamily apartments, multifamily apartments stacked over ground floor retail, live-work units, and townhomes. These residential uses will be mixed with substantial commercial uses to create a vibrant mixed use center. Townhomes are also oriented to provide a transition from the project's more dense commercial and multifamily uses to adjacent single family detached residential properties. Aura Wildwood also proposes mixed-use and nonresidential pods that will provide diverse uses within walking distance of each other.

10. **Special considerations for property with a unique history or outstanding physical features.**

Although the home has fallen into disrepair in recent years, Aura Wildwood aims to preserve the Adams Home and make it a central feature of the development. Prior to submission of the first site plan for Aura Wildwood, the Adams Home shall be evaluated by one or more licensed professionals for relocation on site. If relocation is deemed feasible by the licensed professional(s), the Adams Home shall be relocated to the Dining

and Shopping Pod as conceptually shown on the Master Plan. By integrating the Adams Home into the Dining and Shopping pod, the Adams Home will become a defining feature of the mixed use community, with common architectural themes throughout the development to honor the Adams Home. The Adams Home is envisioned as a gateway to the proposed greenway trails within Aura Wildwood and will be activated with outdoor amenity space. Once relocated, the nonprofit Carlyle Adams Foundation plans to repurpose the Adams Home to create a unique gathering space for the community. All uses permitted within the Dining and Shopping pod are applicable, and the Adams Home may integrate multiple uses.



NEIGHBORHOOD MEETING REPORT



Before submitting an application, the Petitioner must hold at least one (1) neighborhood meeting and submit to Development Services a written summary report of the neighborhood meeting. For more information, refer to UDO Section 11.5.

☒ Neighborhood Meeting Date: June 28, 2023
Time: 6:00 pm
Location: Holly Springs Cultural Center
300 W Balentine St
Holly Springs, NC 27540

Notification of Owners:

1. The Petitioner or Petitioner's Agent shall prepare a Neighborhood Meeting Notification to be sent via first class mail to the owner(s) of the land specified on the Petition, owner of land within a **500 foot radius** of the subject property. Mailing notices shall include surrounding property owners and property owners' associations (or equivalent). Where the tax records reflect a mailing address for an owner of property to be different than the address of the property owned, notification shall also be mailed to the address of the property itself.
2. The Notice shall include the date, time, and location of the Neighborhood Meeting; the name of the Petitioner; the location of the proposed request (address, tax property identification number, or metes and bounds description); and an explanation of the nature of the request.
3. The Notice shall be deposited in the mail not less than ten (10) days nor more than 25 days before the date of the Neighborhood Meeting.

For DS Use only

Project # _____

Date Received: _____

☐ Complete ☐ Incomplete

Prior to mailing the written notices, the applicant shall notify the Town of the scheduled meeting date and time.

☒ Date of Notification Mailing: June 16, 2023

Conduct of Meetings:

At the Neighborhood Meeting, the Petitioner shall explain the proposal and petition, answer any questions, respond to concerns neighbors have about the petition and proposed resolutions to these concerns. Town Staff will not attend the Neighborhood Meeting.

Summary of Issues:

See attached neighborhood meeting report.

Attach Additional Sheets as needed

Changes made to the Petition by the Petitioner as a result of the meeting:

See attached report

Attach Additional Sheets as needed

Additional attachments required for the report:

- ☒ A listing of those persons and organizations that were sent notification about the Neighborhood Meeting.
- ☒ A copy of the signed attendance list that includes names and addresses of those in attendance.

Neighborhood Meeting Report Prepared by:

Preparer's Signature(s)

Date

6/29/23

Aura Wildwood Rezoning - Neighborhood Meeting Report

On June 28, 2023 at 6:00 pm, the applicant team held a neighborhood meeting at the Holly Springs Cultural Center. Approximately 36 neighbors attended the meeting. After a presentation of the project, the applicant team answered questions about the project. The following is a summary of the questions and comments from the neighbors in attendance.

Summary of Questions and Comments:

1. Multiple questions were asked about the proposed street connection to the Wildwood Farm Way stub and whether a connection could be made to the Lowe's access drive to 55. Neighbors asked questions and expressed concerns related to cut through traffic and pedestrian safety on Wildwood Farm Way.

Response: The connection to Wildwood Farm Way is a required connection. Traffic cutting through the Wildwood community cannot be completely avoided, but the goal in designing this site is to provide more convenient and efficient routes to deter traffic from using Wildwood Farm Way as a cut through. Traffic calming devices can also be considered to promote safe pedestrian routes. The development team will also evaluate whether a connection can be made to the Lowe's access drive.

2. Question and comments about how this project can serve as a gateway into the Town of Holly Springs.

Response: The development team appreciates the prominence of the site at the southern boundary of Holly Springs. Our goal is to establish a vibrant mixed use project that invites and welcomes people to Holly Springs. The development team is excited about what this project will bring to the Town and how it can function as a gateway.

3. Multiple questions about how this project will manage the additional traffic.

Response: The development team's traffic engineer explained the TIA process and the results of the TIA. A traffic study was performed to evaluate the additional traffic this project will create and how any traffic impacts can be mitigated. The study incorporates data from the surrounding area and intersections, other projects that are approved but not yet constructed, and evaluates how the proposed uses of this project will impact the existing infrastructure. The study recommends certain infrastructure improvements to mitigate the additional traffic from this project. The recommended improvements would be constructed by the developer in connection with this project. The recommended improvements include an additional southbound lane on 55, turn lanes into the site, three access points to the site off of 55, as well as modifications to the U-turns and bulb outs on 55. The traffic study will be reviewed by the Town and NCDOT, and the development team will continue to work with all parties to ensure traffic impacts from this project are mitigated. Specific locations of traffic concerns were also raised by neighbors and were discussed by the team.

4. Question about the number of residential units this project proposes.

Response: The project proposes a combination of apartments and townhomes. Currently we envision 350-400 apartments and 150-200 townhomes.

5. Question about whether a tree survey has been performed.

Response: A tree survey has not been performed yet, but will be performed during the approval process.

6. There were multiple questions and comments regarding the history of this property and its importance to the Town, including the existing farmhouse on the site. Neighbors expressed a strong desire to preserve the farmhouse.

Response: Preservation of the farmhouse is a priority of this project and will be a commitment of the rezoning. The development team has engaged consultants to explore the available options for preservation and relocation of the farmhouse. The development team has also been communicating with the property owner and relatives to learn about the history of the property and the farmhouse, to discuss preservation options, and to understand their preferences. The team will continue its analysis of the preservation options and will solidify plans as the project progresses.

7. Several questions were asked about the review process and whether additional meetings with neighbors will be scheduled.

Response: The development team described the Town's rezoning process, including the additional opportunities the public will have to provide input and ask questions. Additional neighborhood meetings can also be scheduled throughout the process. The team will coordinate with the surrounding community to schedule additional meetings and the team welcomes an ongoing dialogue with the community.

8. Question about how this project will be able to change to respond to neighbor's concerns.

Response: The development team will regroup to evaluate the questions and concerns raised by the surrounding community. The team will also respond to staff comments. Through the rezoning process, with several rounds of submission expected, the team plans to make revisions to the project to adapt to feedback where feasible.

9. Question regarding the type of commercial and retail tenants.

Response: Final commercial tenants have not been identified, but the development team is evaluating available options. The team is currently focusing on securing an anchor tenant, which is expected to be a large fitness and athletic user. As the residential plans are solidified, the team hopes to attract high quality commercial tenants that are desirable to the surrounding community.

10. Question about how stormwater runoff will be managed.

Response: The town and state have strict requirements on managing stormwater runoff volume and quality, which this project will conform to. The main stormwater control device is located at the rear of the property, which is the natural drainage location.

7450 GB Alford Hwy Rezoning -- Neighborhood Meeting Sign-In Sheet

Name Address Email

Matt Watkins	Fuguey Varina	m.watkins@etriprop.com
David Adams	2624 Broad St. Holly Springs	gratefaldad3@hotmail.com
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Pat Hargrett	5313 Skidmore Valley Rd Holly Sp.	HargrettPatriciaR@earthlink.com
Paige Myers	Fuguey Varina	tpaigemyers@hotmail.com
Angie Staheli	" "	angie@staheli.org
Jimmie Cochran	108 Mystwood Hollow Cir, HS	jimmie_cochran@yahoo.com
Rob Rousseau	6428 Cross Ridge Dr. H.S.	rarousse@gmail.com
Jess + Karen Ailes	144 Greenhurst Cir	SpeedLifer@hotmail.com
Jack Montgomery	116 Greenhurst Cir. Holly Springs	BJMONTGOM@yahoo.com
Kat Forst	Greenhurst Cir H.S.	wildwoodhoakat@gmail.com
Autumn Hefler	604 Wildwood Farm Way	autumn_helfer@hotmail.com
Jessie Jones		
Judy Classen	5208 Old Adams Rd HS	jbclassen@earthlink.net

7450 GB Alford Hwy Rezoning – Neighborhood Meeting Sign-In Sheet

Name

Address

Email

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Alicia Urbas	Atwood Dr. H.S.	l-alicia16@hotmail.com
Juniter + John Haynes	5317 Shadow Valley Rd. HS	jenhyn427@gmail.com
Bruce & Claire Rousseau	6236 Lake Ter Dr HS	warrentwindzpring.com
Dennis Sullivan	705 Wildwood Farm Way	DS42L1530@gmail.com
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Anthony Lee		escott1969@gmail.com
		cdsglobalmillennia@gmail.com
		bigscout7@gmail.com

AFFIDAVIT OF OWNER CONSENT



If the Owner(s) of the subject property is giving authorization for another person to apply for a General Use or Conditional Zoning District on their property, this affidavit must be completed and signed by all record owners of the subject property.

The persons listed below do hereby appear before a Notary Public and swear or affirm that they are the legal owners of the described property, and further give authorization to

Ryan Stewart of Trinsic Acquisition Company LLC
(Name of Representative) (Name of Company)

to submit a Petition for Zoning Map Change for my (our) property from
Community Business (CB) to Regional Mixed Use Conditional District (RMX-CD)
(Current Zoning District) (Proposed Zoning District)

and to offer additional use and/or standard restrictions as a part of the request for a Conditional Zoning District.

For DS Use only

Project # _____

Date Received: _____

Signature of Owner(s):

[Signature]
executor/trustee

Wake County PIN/REID:

0658138067/0000239

State of NORTH CAROLINA

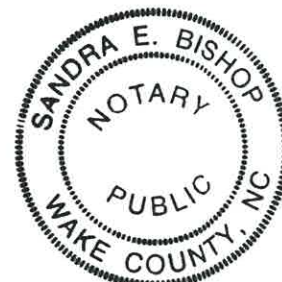
County of WAKE

Sworn to and subscribed before me the 29 day of JUNE, 2023.

Notary Public in and for the State of North Carolina. My Commission expires: 6-20-2027

[Signature] / SANDRA E BISHOP
Notary Public Printed

Seal



AFFIDAVIT OF OWNER NOTIFICATION



The following Affidavit of Owner Notification shall be provided at time of petition submittal if the Applicant is requesting a Zoning Map Change for property(s) he/she does not own at the time of the petition submission.

The following form or a separately prepared document in substantially the same form may be used for submitting the Notice of the requested Zoning Map Change and the public hearing in association with a request for a Zoning Map Change to the property owner(s). **The form must be sent to the owner(s) via certified mail.** This Affidavit is to be signed by the Applicant of the requested Zoning Map Change and have attached thereto the USPS green certified mail receipt and a copy of the form sent to the owner(s) to ensure that all record owners of the property have been notified by the Applicant(s).

For DS Use only

Project # _____

Date Received: _____

AFFIDAVIT

STATE OF NORTH CAROLINA
COUNTY OF WAKE

I hereby certify to the Town of Holly Springs that the owner of the property described by Wake County Real Estate ID 0000239 and PIN 0658138067 was served the notification attached to this Affidavit indicating the requested zoning map change petition and public hearing date and time. As evidence of the service of the notification, I hereby attach the return receipt from the certified mailing of this notice.

This the 26th day of JUNE, 2023.

Applicant Signature [Signature]

Printed name of Applicant DAVID D. DAHL, EXECUTOR/TRUSTEE

NOTARY STATEMENT

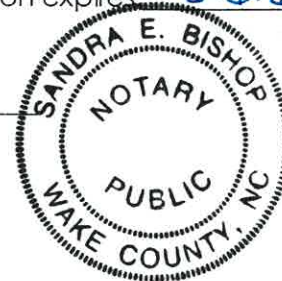
Sworn to and subscribed before me the 26 day of JUNE, 2023.

Notary Public in and for the State of North Carolina. My Commission expires: 6.20.2027

[Signature]
Notary Public

/ SANDRA E BISHOP
Printed

Seal



Attached thereto the USPS green certified mail receipt and a copy of the form sent to the owner(s)

NOTIFICATION TO PROPERTY OWNER

Dear Property Owner,

I am requesting the Holly Springs Town Council to rezone your property described by:

Wake County Real Estate ID# 0000239

and PIN 0658138067

located at 7450 GB Alford Hwy

from Community Business (CB) (existing zoning district) to

Regional Mixed Use Conditional District (RMX-CD) (proposed zoning district).

The public hearing before the Holly Springs Town Council on the matter will be heard on _____ (date) at 7:00 PM.

Additional information can be obtained by contacting Holly Springs Development Services at (919) 557-3908.

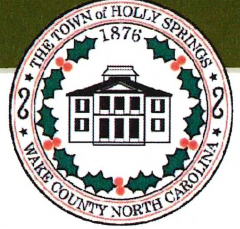
Thank you,

Signature of Applicant:

Date:

Name Ryan Stewart Company Trinsic Acquisition Company LLC
Mailing Address 242 S Main Street
City Holly Springs State NC Zip 27540
Telephone # () Fax # () E-Mail _____

AFFIDAVIT OF OWNER NOTIFICATION



The following Affidavit of Owner Notification shall be provided at time of petition submittal if the Applicant is requesting a Zoning Map Change for property(s) he/she does not own at the time of the petition submission.

The following form or a separately prepared document in substantially the same form may be used for submitting the Notice of the requested Zoning Map Change and the public hearing in association with a request for a Zoning Map Change to the property owner(s). **The form must be sent to the owner(s) via certified mail.** This Affidavit is to be signed by the Applicant of the requested Zoning Map Change and have attached thereto the USPS green certified mail receipt and a copy of the form sent to the owner(s) to ensure that all record owners of the property have been notified by the Applicant(s).

For DS Use only

Project # _____

Date Received: _____

AFFIDAVIT

STATE OF NORTH CAROLINA
COUNTY OF WAKE

I hereby certify to the Town of Holly Springs that the owner of the property described by Wake County Real Estate ID 0000239 and PIN 0658138067 was served the notification attached to this Affidavit indicating the requested zoning map change petition and public hearing date and time. As evidence of the service of the notification, I hereby attach the return receipt from the certified mailing of this notice.

This the 9th day of May, 20 24.

Applicant Signature Justin Brown

Printed name of Applicant Justin Brown

NOTARY STATEMENT

Sworn to and subscribed before me the 9th day of May, 20 24.

Notary Public in and for the State of North Carolina. My Commission expires: April 12th, 2028

Paul Im / Paul Im
Notary Public Printed

Seal

PAUL IM
NOTARY PUBLIC
Wake County
North Carolina
My Commission Expires April 12, 2028

Attached thereto the USPS green certified mail receipt and a copy of the form sent to the owner(s)

NOTIFICATION TO PROPERTY OWNER

Dear Property Owner,

I am requesting the Holly Springs Town Council to rezone your property described by:

Wake County Real Estate ID# 0000239

and PIN 0658138067

located at 7450 GB Alford Hwy

from Community Business (CB) (existing zoning district) to

Regional Mixed Use Conditional District (RMX-CD) (proposed zoning district).

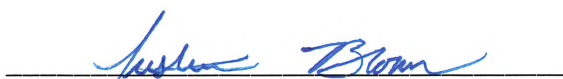
The public hearing before the Holly Springs Town Council on the matter will be heard on June 18, 2024 (date) at 7:00 PM.

Additional information can be obtained by contacting Holly Springs Development Services at (919) 557-3908.

Thank you,

Signature of Applicant:

Date:



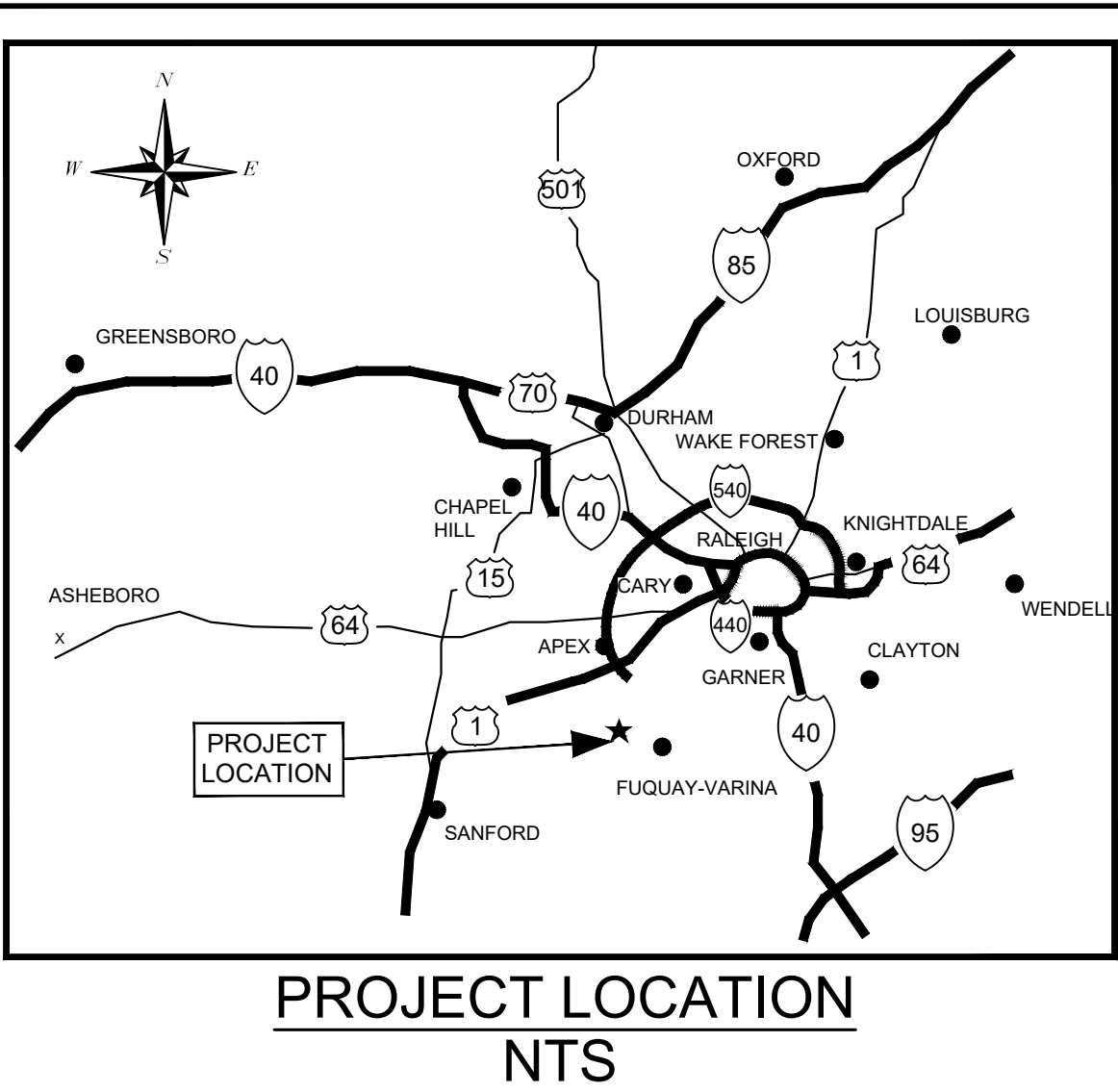
5/9/2024

Name Justin Brown Company Trinsic Acquisition Company LLC
Mailing Address 242 S Main Street
City Holly Springs State NC Zip 27540
Telephone # () Fax # () E-Mail JBrown@trinsicres.com

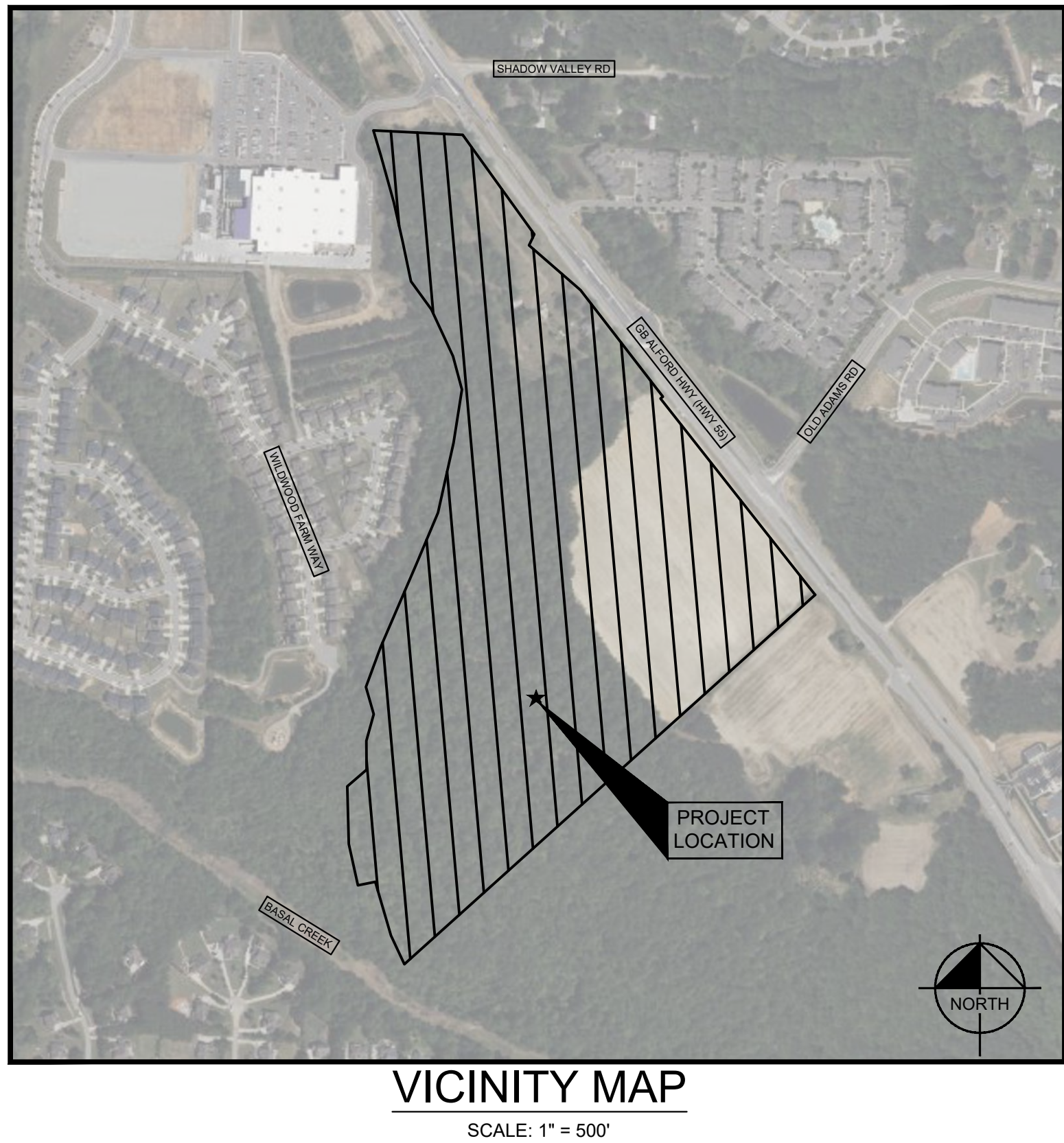
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U.S. Postal Service™ 36925-00005 CC	
CERTIFIED MAIL® RECEIPT	
Domestic Mail Only	
For delivery information, visit our website at www.usps.com ®.	
OFFICIAL USE	
Certified Mail Fee	\$
Extra Services & Fees (check box, add fee as appropriate)	
☐ Return Receipt (hardcopy)	\$
☐ Return Receipt (electronic)	\$
☐ Certified Mail Restricted Delivery	\$
☐ Adult Signature Required	\$
☐ Adult Signature Restricted Delivery	\$
Postage	\$
Total Postage and Fees	
\$	David Dahl
Se	1033 Vestavia Woods Drive
Str	Raleigh, NC 27615
Cit	
PS Form 3800, 1/12	See Reverse for Instructions

CENTURY STATION
MAY 14 2024
Postmark Here
RALEIGH, NC 27602



CONDITIONAL DISTRICT REZONING
SUBMITTAL FOR
AURA WILDWOOD
7450 GB ALFORD HWY.
HOLLY SPRINGS, NC 27540
PIN: 0658138067



PROJECT OWNERS & CONSULTANTS

DEVELOPER TRINISIC ACQUISITION COMPANY LLC 242 SOUTH MAIN STREET HOLLY SPRINGS, NC 24540 JUSTIN J. BROWN, P.E. PHONE: 919-417-3051 EMAIL: JBROWN@TRINISICRES.COM	SURVEYOR EBS&A 414 FAYETTEVILLE ST. 3RD FLOOR, SUITE 306 RALEIGH, NORTH, NC 27601 MICHAEL BATTIS, P.L.A. LEED AP, ASLA PHONE: 954-524-3330
CIVIL ENGINEER KIRLEIGH-ORNI AND ASSOCIATES, INC. KATIE WITT, P.E. 300 S MAIN STREET, SUITE 212 HOLLY SPRINGS, NC 27540 PHONE: 984-275-3559	SURVEYOR KCI ASSOCIATES OF NC, P.A. 4505 FALLS OF NEUSE RD, 4TH FLOOR RALEIGH, NC 27609 ROB BAUMGARTNER PHONE: 919-280-7944 EMAIL: ROB.BAUMGARTNER@KCI.COM

SITE DATA TABLE	
PIN NUMBER:	0658138067
PARCEL ACREAGE:	61.2 ACRES
CURRENT ZONING:	COMMUNITY BUSINESS (CB)
PROPOSED ZONING:	REGIONAL MIXED-USE CONDITIONAL DISTRICT (RMX-CD)
CURRENT LAND USE:	AGRICULTURE
PROPOSED LAND USE:	APARTMENTS, TOWNHOUSES, COMMERCIAL USES AND COMMUNITY AMENITIES
FUTURE LAND USE MAP DESIGNATION:	MIXED-USE CENTER
MAXIMUM UNITS:	POD A: 400 UNITS POD B: 200 UNITS
MAXIMUM HEIGHT:	POD A: 55' AND 5 STORIES POD B: 40' AND 3 STORIES POD C: 55' AND 5 STORIES POD D: 55' AND 5 STORIES
REQUIRED SETBACKS:	REFER TO DESIGN MANUAL
REQUIRED BUFFER YARDS:	10' TYPE B BUFFER 20' TYPE C BUFFER 50' THOROUGHFARE BUFFER
REQUIRED OPEN SPACE	15% (9.18 ACRES)
PROVIDED OPEN SPACE	16.5% (10.09 ACRES) SEE OPEN SPACE CHART BELOW

OPEN SPACE CHART			
OPEN SPACE COMPONENT	MINIMUM REQUIRED	TOTAL PROVIDED	FLEXIBLE SPACE DISTRIBUTED IN EACH COMPONENT
TREE PRESERVATION	0% (0 ACRES)	5.8% (3.56 ACRES)	5.8% (3.56 ACRES)
RECREATIONAL AREA	2% (1.22 ACRES)	9.8% (5.98 ACRES)	7.0% (4.33 ACRES)
URBAN CIVIC SPACE	0.5% (0.3 ACRES)	0.9% (0.55 ACRES)	0% (0 ACRES)
FLEXIBLE SPACE	12.5% (7.65 ACRES)		
TOTAL	15% (9.18 ACRES)	16.5% (10.09 ACRES)	12.8% (7.89 ACRES)

NOTES

1. WETLAND AND STREAM IMPACTS ARE ANTICIPATED AND WILL REMAIN UNDER 0.5 ACRES IN ORDER TO QUALIFY FOR NATIONWIDE PERMIT.
2. OTHER SPACE AREAS ARE CONCEPTUAL, AND WILL BE FINALIZED DURING DETAILED DESIGN.
3. THE TOWN REQUIRES, PURSUANT TO N.C.G.S. 100D-804, THE DEDICATION AND CONSTRUCTION OF RIGHTS AND INTERESTS IN, AS SHOWN IN THE APPROVED COMPREHENSIVE TRANSPORTATION PLAN AND THE APPROVED TRAFFIC IMPACT ANALYSIS, TO CREATE CONDITIONS ESSENTIAL TO PUBLIC HEALTH, SAFETY, AND THE GENERAL WELFARE. A REZONING MAY BE DELAYED UNTIL SUCH TIME AS NECESSARY TRANSPORTATION IMPROVEMENTS (TO INCLUDE OFFSITE IMPROVEMENTS) MAY BE MADE UNLESS THE TOWN AND DEVELOPER ENTER INTO AN AGREEMENT TO ACCELERATE THE TIME FOR COMPLETION OF THESE NEEDED IMPROVEMENTS.
4. THE TOWN REQUIRES CERTAIN FEES TO BE PAID UPON DEVELOPMENT OF LAND AND ON THE GRANTING OF A BUILDING PERMIT. SAID FEES ARE LISTED IN THE TOWN'S ANNUAL BUDGET, AND WITH THIS REZONING THE DEVELOPER AGREES HEREBY (I) IS FAMILIAR WITH THESE FEES, (II) DOES NOT DISPUTE THE REASONABLENESS OF THESE FEES AS SET FORTH IN THE TOWN'S ANNUAL BUDGET, (III) NOTWITHSTANDING ANY REMEDURATIONS DEVELOPED AT THIS TIME, THRORE UPON INFRASTRUCTURE REIMBURSEMENT AGREEMENT, HEREBY AGREES TO TIMELY PAY ALL NORMAL AND CUSTOMARY FEES APPLICABLE TO DEVELOPER IN CONNECTION WITH THE PROJECT. SUCH FEES ARE LISTED IN THE CURRENT YEAR ANNUAL BUDGET OF FEES AT THE TIME THE FEE IS DUE UNDER THE ORDINARY COURSE OF DEVELOPMENT.

Sheet List Table	
Sheet Number	Sheet Title
C0.0	COVER SHEET
C0.1	BIRDS-EYE RENDERING
C0.2	ILLUSTRATIVE RENDERING
C0.3	PERSPECTIVE 1 FARMHOUSE
C0.4	PERSPECTIVE 2 MIXED USE BUILDING
C0.5	PERSPECTIVE 3 GREENWAY
C0.6	PERSPECTIVE 4 DINING DISTRICT
C1.0	EXISTING SITE
C2.0	CONCEPT PLAN
C2.1	CONCEPT PLAN
C3.0	TRANSPORTATION & MOBILITY PLAN
C3.1	ROADWAY CROSS SECTIONS
C4.0	OVERALL UTILITY PLAN
C5.0	OVERALL GRADING & DRAINAGE PLAN
C6.0	OPEN SPACE & PRESERVATION PLAN
L1.0	LANDSCAPE PLAN

AURA WILDWOOD PREPARED FOR TRINISC RESIDENTIAL GROUP		COVER SHEET		KHA PROJECT 013652003 DATE 06/29/2023		KIMLEY HORN © 2023 KIMLEY-HORN AND ASSOCIATES, INC. #F-0102 WWW.KIMLEY-HORN.COM PHONE: 919-677-2000 FAX: 919-677-2050 300 SOUTH MAIN STREET, SUITE 212, HOLLY SPRINGS, NC 27540		KIMLEY HORN		KHA PROJECT 013652003 DATE 06/29/2023		KIMLEY HORN © 2023 KIMLEY-HORN AND ASSOCIATES, INC. #F-0102 WWW.KIMLEY-HORN.COM PHONE: 919-677-2000 FAX: 919-677-2050 300 SOUTH MAIN STREET, SUITE 212, HOLLY SPRINGS, NC 27540		KIMLEY HORN			
HOLLY SPRINGS		NC		SCALE AS SHOWN DESIGNED BY JMC DRAWN BY JMC		CHECKED BY KLV		NOT FOR CONSTRUCTION PRELIMINARY		5 PER TOWN COMMENTS 4 PER TOWN COMMENTS 3 PER TOWN COMMENTS 2 PER TOWN COMMENTS 1 PER TOWN COMMENTS		5 PER TOWN COMMENTS 4 PER TOWN COMMENTS 3 PER TOWN COMMENTS 2 PER TOWN COMMENTS 1 PER TOWN COMMENTS		04/26/2024 JMC 03/15/2024 JMC 01/18/2024 JMC 10/20/2023 JMC 09/15/2023 JMC		DATE BY	

GENERAL NOTE: DEVELOPMENT OF THE PROPERTY SHALL BE IN SUBSTANTIAL CONFORMANCE WITH THIS MASTER PLAN. LOCATIONS SHOWN FOR COMMITTED ELEMENTS INCLUDING, BUT NOT LIMITED TO BUILDINGS, DRIVEWAYS, AND OPEN AREAS ARE CONCEPTUAL AND PROVIDED FOR ILLUSTRATION AND CONTEXT ONLY. FINAL LOCATIONS OF ELEMENTS SHALL BE DETERMINED AT SUBSEQUENT STAGES OF APPROVAL.



Plotted By:Angie Kaseley Sheet Set:##### Layout:CO.1 - BIRDS EYE AERIAL April 26, 2024 02:49:41pm G:\Teams\OPS\SPS\2020115 Aura Wildwood\EDSAdoc05-CAD\0220115 REZONING SUBMITTAL.dwg
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AURA WILDWOOD
PREPARED FOR
TRINSCIC RESIDENTIAL
GROUP
HOLLY SPRINGS NC

BIRDS EYE AERIAL

KHA PROJECT
013652003
DATE
6/28/2023
SCALE AS SHOWN
DESIGNED BY MBE
DRAWN BY ALK
CHECKED BY MBE

PRELIMINARY
NOT FOR CONSTRUCTION

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No.	REVISIONS	DATE	BY
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4	PER TOWN COMMENTS	03/15/2024	JMC
3	PER TOWN COMMENTS	01/18/2024	JMC
2	PER TOWN COMMENTS	10/20/2023	JMC
1	PER TOWN COMMENTS	09/15/2023	JMC



AURA WILDWOOD

PREPARED FOR

TRINSIC RESIDENTIAL GROUP

HOLLY SPRINGS NC

SHEET NUMBER

C0.2

ILLUSTRATIVE RENDERING

KHA PROJECT
013652003

DATE
6/28/2023

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5	PER TOWN COMMENTS	04/26/2024	MBE	
4	PER TOWN COMMENTS	03/15/2024	JMC	
3	PER TOWN COMMENTS	01/18/2024	JMC	
2	PER TOWN COMMENTS	10/20/2023	JMC	
1	PER TOWN COMMENTS	09/15/2023	JMC	
No.	REVISIONS			BY DATE

Page 465 of 806



AURA WILDWOOD
PREPARED FOR
TRINISC RESIDENTIAL
GROUP
HOLLY SPRINGS NC

PERSPECTIVE 1
FARMHOUSE

KHA PROJECT
013652003
DATE
6/28/2023
SCALE AS SHOWN
DESIGNED BY MBE
DRAWN BY ALK
CHECKED BY MBE

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NOT FOR CONSTRUCTION

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300 SOUTH MAIN STREET, SUITE 212, HOLLY SPRINGS, NC 27540

No.	REVISIONS	DATE	BY
5	PER TOWN COMMENTS	04/26/2024	MBB
4	PER TOWN COMMENTS	03/15/2024	JMC
3	PER TOWN COMMENTS	01/18/2024	JMC
2	PER TOWN COMMENTS	10/20/2023	JMC
1	PER TOWN COMMENTS	09/15/2023	JMC



AURA WILDWOOD
PREPARED FOR
TRINSCIP RESIDENTIAL
GROUP
HOLLY SPRINGS NC

PERSPECTIVE 2
MIXED USE BUILDING

KHA PROJECT 013652003	DATE 6/28/2023	SCALE	AS SHOWN
DESIGNED BY	MB	DRAWN BY	AL
CHECKED BY	MB		

PRELIMINARY
NOT FOR CONSTRUCTION

Kimley»»Horn

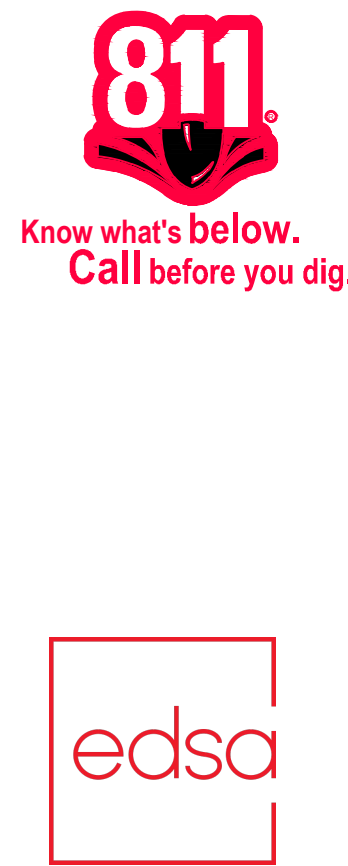
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No.	REVISIONS	DATE	BY
5	PER TOWN COMMENTS	04/26/2024	MBB
4	PER TOWN COMMENTS	03/15/2024	JMC
3	PER TOWN COMMENTS	01/18/2024	JMC
2	PER TOWN COMMENTS	10/20/2023	JMC
1	PER TOWN COMMENTS	09/15/2023	JMC

Plotted By:Angie Kaseley Sheet Set:##### Layout:CO.5-PERSPECTIVE 3 GREENWAY April 25, 2024, 02:51:31pm G:\Teams\EO\SP\20115 Aura Wildwood\EDS\doc\05-CAD\EO20115_REZONING SUBMITTAL.dwg
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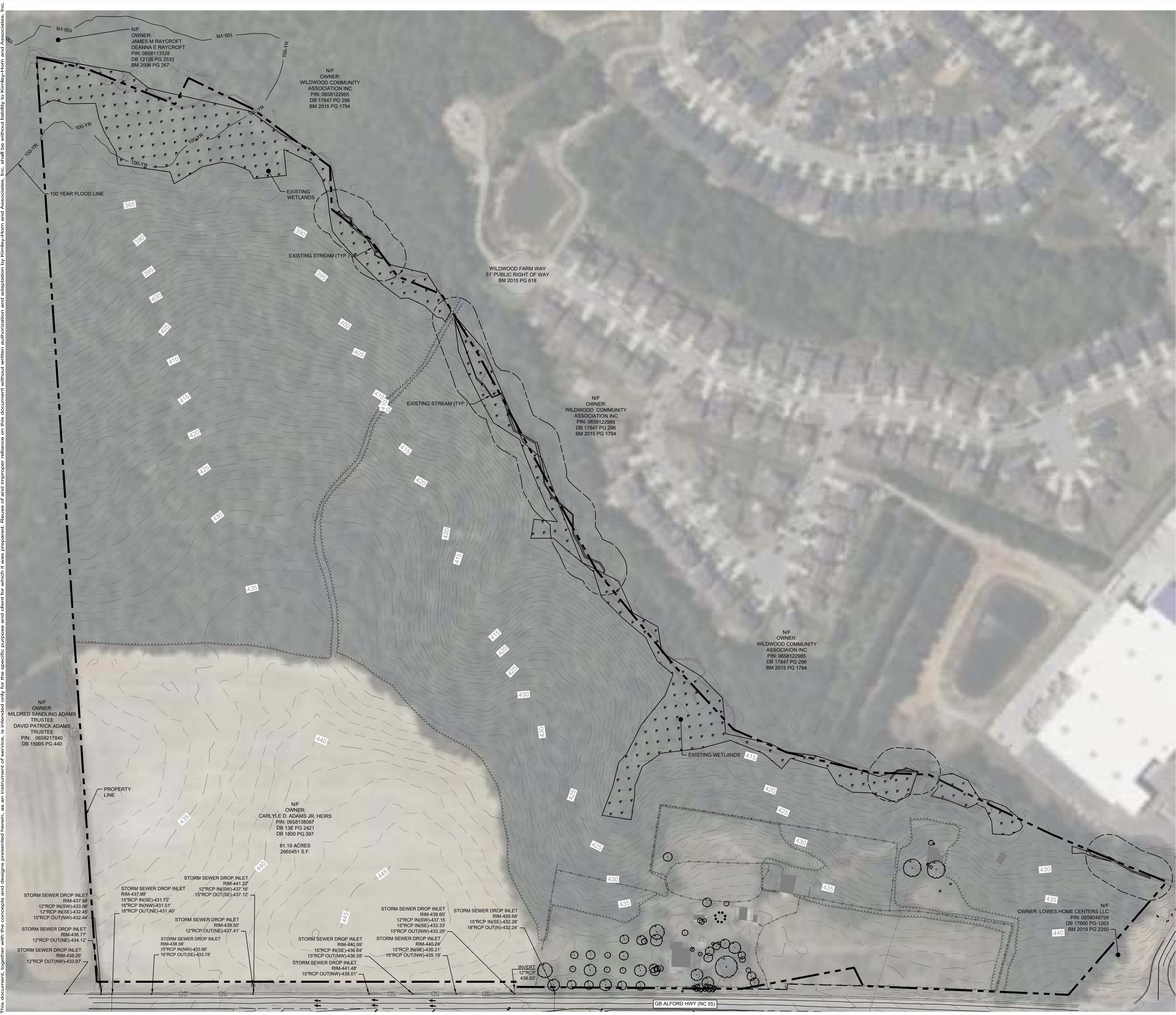


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AURA WILDWOOD PREPARED FOR TRINISC RESIDENTIAL GROUP		NC	PERSPECTIVE 3 GREENWAY		KHA PROJECT 013652003		DATE 6/28/2023		SCALE AS SHOWN		DESIGNED BY MBB		DRAWN BY ALK		CHECKED BY MBB		PRELIMINARY NOT FOR CONSTRUCTION		Kimley»Horn		© 2023 KIMLEY-HORN AND ASSOCIATES, INC. #F-0102 WWW.KIMLEY-HORN.COM PHONE: 919-677-2000 FAX 919-677-2050 300 SOUTH MAIN STREET, SUITE 212, HOLLY SPRINGS, NC 27540		PER TOWN COMMENTS		04/26/2024	MBB	
SHEET NUMBER C0.5																											PER TOWN COMMENTS
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																							PER TOWN COMMENTS		09/15/2023	JMC	
																							REVISIONS		No.	DATE	BY

Plotted By: Cavalieri, Jessica Sheet Set: Aura Wildwood Layout: C1.0 EXISTING SITE April 26, 2024, 10:55:19am K:\HSP_LDEV\013652003_Aura Wildwood\010_CAD Files\PlanSheets\Re zoning\C1.0 - EXISTING SITE.dwg
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EXISTING CONDITIONS LEGEND

PROPERTY LINE

EXISTING STREAM

50' STREAM BUFFER

EXISTING WETLANDS

100-YR

100 YR FLOOD LINE

NOTES

1. WETLAND AND STREAM IMPACTS ARE ANTICIPATED AND WILL REMAIN UNDER 0.5 ACRES IN ORDER TO QUALIFY FOR NATIONWIDE PERMIT.

GENERAL NOTE:
DEVELOPMENT OF THE PROPERTY SHALL BE IN SUBSTANTIAL CONFORMANCE WITH THIS MASTER PLAN. LOCATIONS SHOWN FOR COMMITTED ELEMENTS INCLUDING, BUT NOT LIMITED TO BUILDINGS, DRIVEWAYS, AND OPEN AREAS ARE CONCEPTUAL AND PROVIDED FOR ILLUSTRATION AND CONTEXT ONLY. FINAL LOCATIONS OF ELEMENTS SHALL BE DETERMINED AT SUBSEQUENT STAGES OF APPROVAL.

811

Know what's below.
Call before you dig.

GRAPHIC SCALE IN FEET

0 50 100 200

AURA WILDWOOD

PREPARED FOR

TRINISC RESIDENTIAL GROUP

SHEET NUMBER

C1.0

EXISTING SITE

NC

KHA PROJECT

013652003

DATE

06/29/2023

SCALE

AS SHOWN

DESIGNED BY

JMC

DRAWN BY

JMC

CHECKED BY

KLW

Kimley»Horn

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#F-0102 WWW.KIMLEY-HORN.COM PHONE: 919.677.2000 FAX: 919.677.2050
300 SOUTH MAIN STREET, SUITE 212, HOLLY SPRINGS, NC 27540

PRELIMINARY

NOT FOR CONSTRUCTION

PER TOWN COMMENTS

04/26/2024

JMC

PER TOWN COMMENTS

03/15/2024

JMC

PER TOWN COMMENTS

01/16/2024

JMC

PER TOWN COMMENTS

10/20/2023

JMC

PER TOWN COMMENTS

09/15/2023

JMC

No.

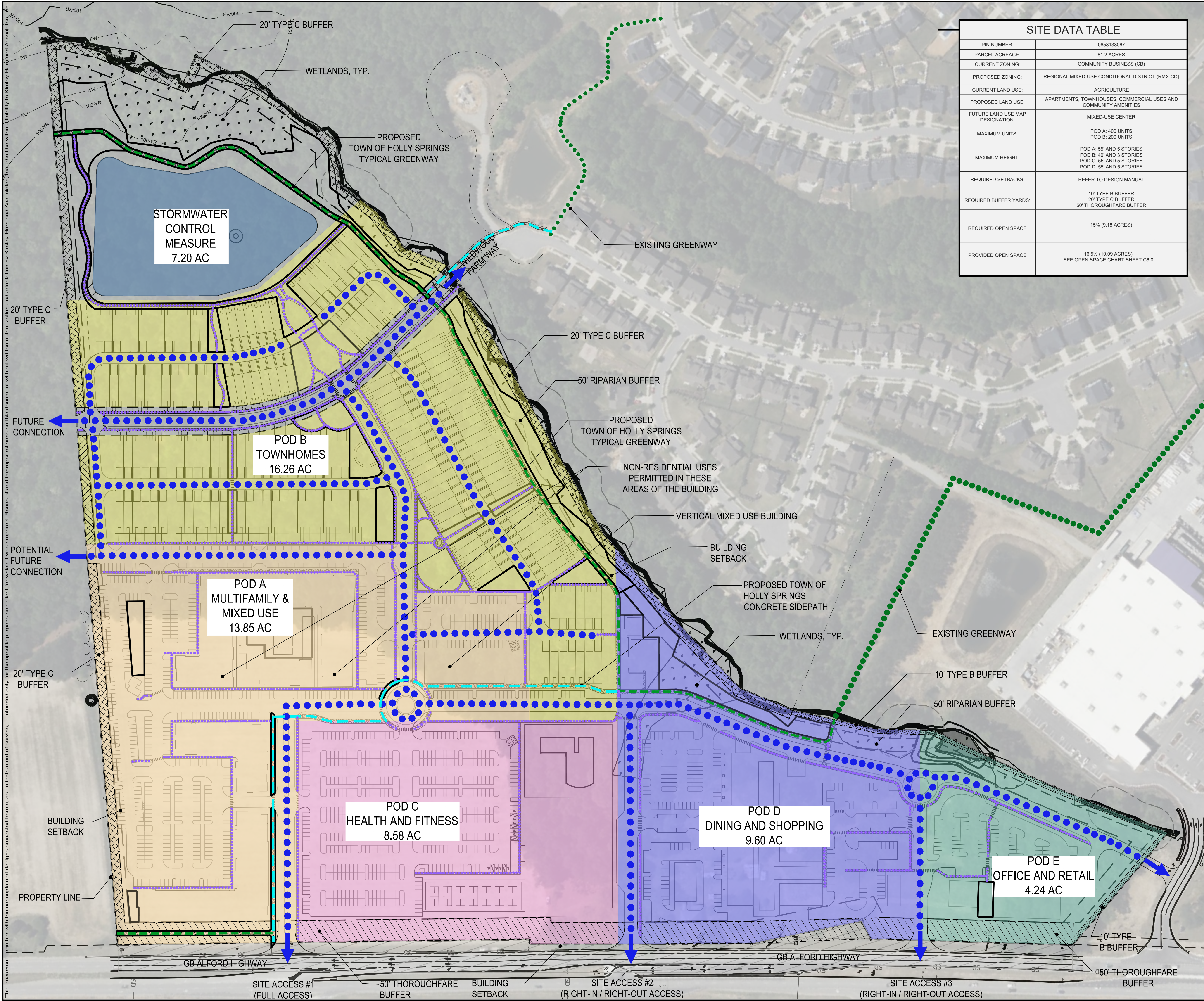
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REVISIONS

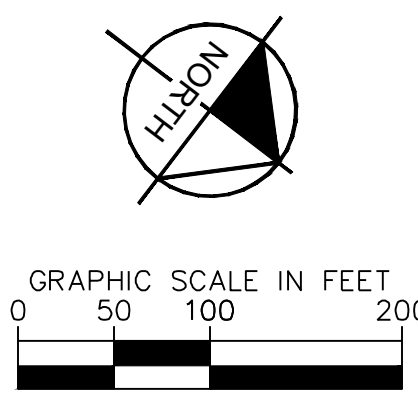
DATE

BY

Page 470 of 806



SITE DATA TABLE	
PIN NUMBER:	0658138067
PARCEL ACREAGE:	61.2 ACRES
CURRENT ZONING:	COMMUNITY BUSINESS (CB)
PROPOSED ZONING:	REGIONAL MIXED-USE CONDITIONAL DISTRICT (RMX-CD)
CURRENT LAND USE:	AGRICULTURE
PROPOSED LAND USE:	APARTMENTS, TOWNHOUSES, COMMERCIAL USES AND COMMUNITY AMENITIES
FUTURE LAND USE MAP DESIGNATION:	MIXED-USE CENTER
MAXIMUM UNITS:	POD A: 400 UNITS POD B: 200 UNITS
MAXIMUM HEIGHT:	POD A: 55' AND 5 STORIES POD B: 40' AND 3 STORIES POD C: 55' AND 5 STORIES POD D: 55' AND 5 STORIES
REQUIRED SETBACKS:	REFER TO DESIGN MANUAL
REQUIRED BUFFER YARDS:	10' TYPE B BUFFER 20' TYPE C BUFFER 50' THOROUGHFARE BUFFER
REQUIRED OPEN SPACE	15% (9.18 ACRES)
PROVIDED OPEN SPACE	16.5% (10.09 ACRES) SEE OPEN SPACE CHART SHEET C6.0



- POD A - MULTIFAMILY & MIXED USE
- POD B - TOWNHOMES
- POD C - HEALTH AND FITNESS
- POD D - DINING AND SHOPPING
- POD E - OFFICE AND RETAIL
- STORM WATER CONTROL MEASURE
- EXISTING GREENWAY
- PROPOSED GREENWAY
- CONCRETE SIDEPATH
- PEDESTRIAN SIDEWALK
- PROPOSED VEHICULAR CIRCULATION
- PROPOSED SITE ACCESS
- 10' TYPE B BUFFER
- 20' TYPE C BUFFER
- 50' THOROUGHFARE BUFFER

MBE

04/28/2024

JMC

03/15/2024

JMC

01/18/2024

JMC

10/20/2023

JMC

09/15/2023

BY

DATE

PER TOWN COMMENTS

5

PER TOWN COMMENTS

4

PER TOWN COMMENTS

3

PER TOWN COMMENTS

2

PER TOWN COMMENTS

1

REVISIONS

No.

Kimley»Horn

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#F-0102 WWW.KIMLEY-HORN.COM PHONE: 919-677-2000 FAX: 919-677-2050
300 SOUTH MAIN STREET, SUITE 212, HOLLY SPRINGS, NC 27540

PRELIMINARY

NOT FOR CONSTRUCTION

KHA PROJECT

013652003

DATE

06/29/2023

SCALE

AS SHOWN

DESIGNED BY

MBE

DRAWN BY

ALK

CHECKED BY

MBE

CONCEPT PLAN

AURA WILDWOOD

PREPARED FOR

TRINISC RESIDENTIAL GROUP

NC

811

Know what's below.
Call before you dig.

edsa

SHEET NUMBER

C2.0

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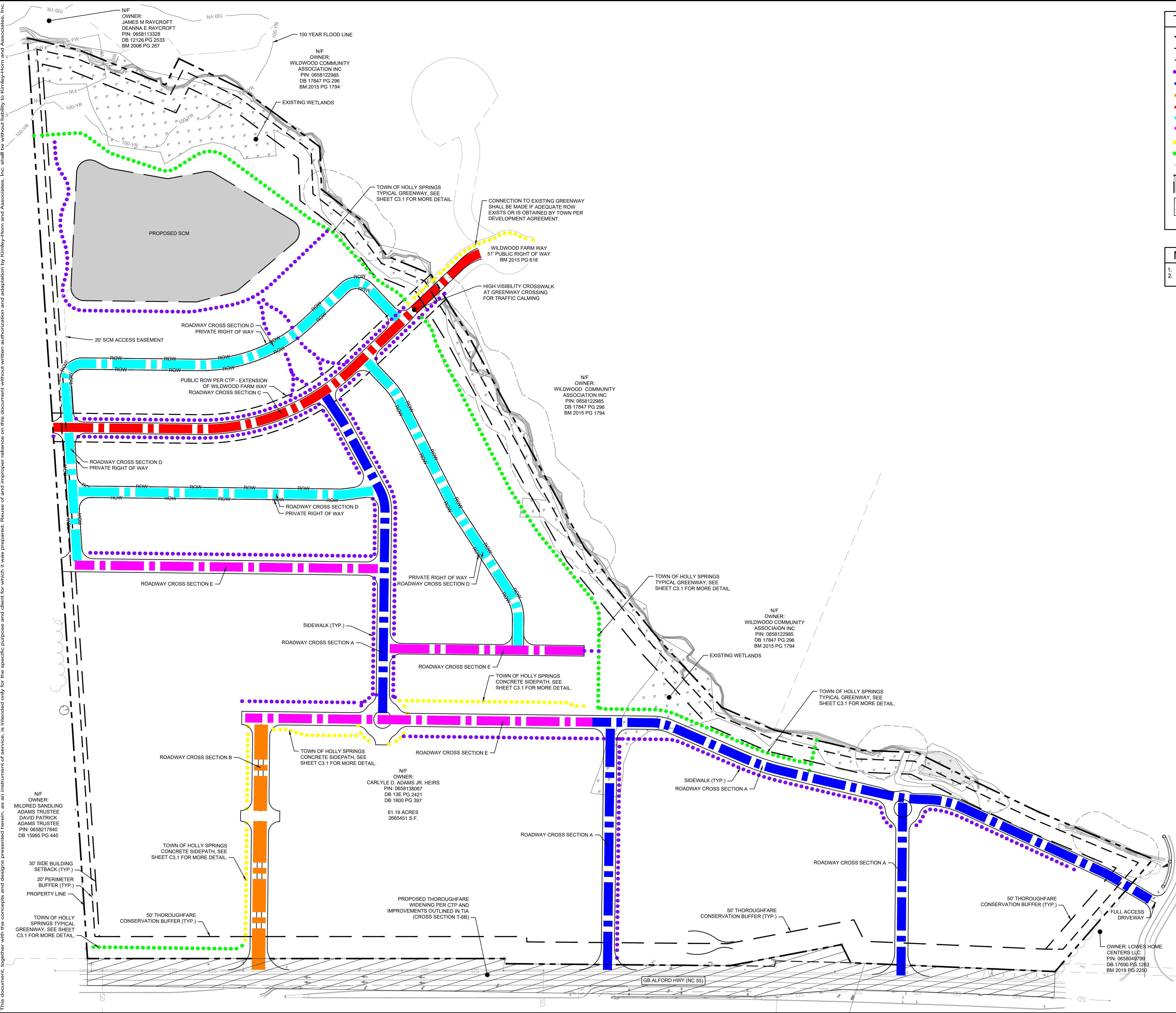
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TRG TRINSLC
RESIDENTIAL GROUP



Plotted By: Jessica, Jessica Sheet Set: Aura Wildwood Layout: C3.0 TRANSPORTATION & MOBILITY PLAN April 26, 2024, 10:55:28am K:\HSP_LDEV\013652003_Aura Wildwood\PI\0_CAD Files\PlanSheets\Revised\C3.0_TRANSPORTATION & MOBILITY PLAN.dwg
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TRANSPORTATION & MOBILITY LEGEND

	PROPERTY LINE
	PUBLIC RIGHT OF WAY
	PRIVATE RIGHT OF WAY
	SIDEWALK
	ROADWAY CROSS SECTION A
	ROADWAY CROSS SECTION B
	ROADWAY CROSS SECTION C
	ROADWAY CROSS SECTION D
	ROADWAY CROSS SECTION E
	TOWN OF HOLLY SPRINGS CONCRETE SIDEPATH
	TOWN OF HOLLY SPRINGS TYPICAL GREENWAY
	STREAM BUFFER
	STORM CONTROL MANAGEMENT POND
	EXISTING WETLANDS

NOTES

1. FOR MORE DETAILED ROADWAY CROSS SECTIONS, SEE SHEET C3.1.
2. ALL RECOMMENDED IMPROVEMENTS IN THE TIA WILL BE DESIGNED AND CONSTRUCTED WITH THIS DEVELOPMENT.

GENERAL NOTE:
DEVELOPMENT OF THE PROPERTY SHALL BE IN SUBSTANTIAL CONFORMANCE WITH THIS MASTER PLAN. LOCATIONS SHOWN FOR COMMITTED ELEMENTS INCLUDING, BUT NOT LIMITED TO BUILDINGS, DRIVEWAYS, AND OPEN AREAS ARE CONCEPTUAL AND PROVIDED FOR ILLUSTRATION AND CONTEXT ONLY. FINAL LOCATIONS OF ELEMENTS SHALL BE DETERMINED AT SUBSEQUENT STAGES OF APPROVAL.

GRAPHIC SCALE IN FEET
0 50 100 200

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JMC

DRAWN BY

JMC

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TRANSPORTATION & MOBILITY PLAN

AURA WILDWOOD
PREPARED FOR
TRINISC RESIDENTIAL GROUP

NC

SHEET NUMBER

C3.0

5

PER TOWN COMMENTS

04/26/2024

JMC

4

PER TOWN COMMENTS

03/15/2024

JMC

3

PER TOWN COMMENTS

01/18/2024

JMC

2

PER TOWN COMMENTS

10/20/2023

JMC

1

PER TOWN COMMENTS

09/15/2023

JMC

No.

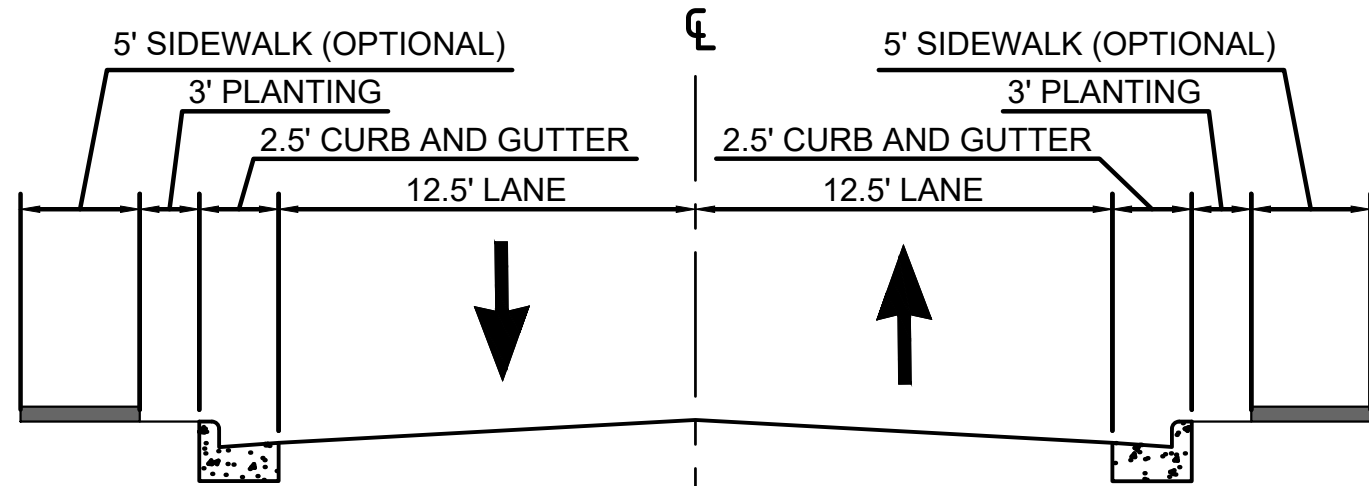
REVISIONS

DATE

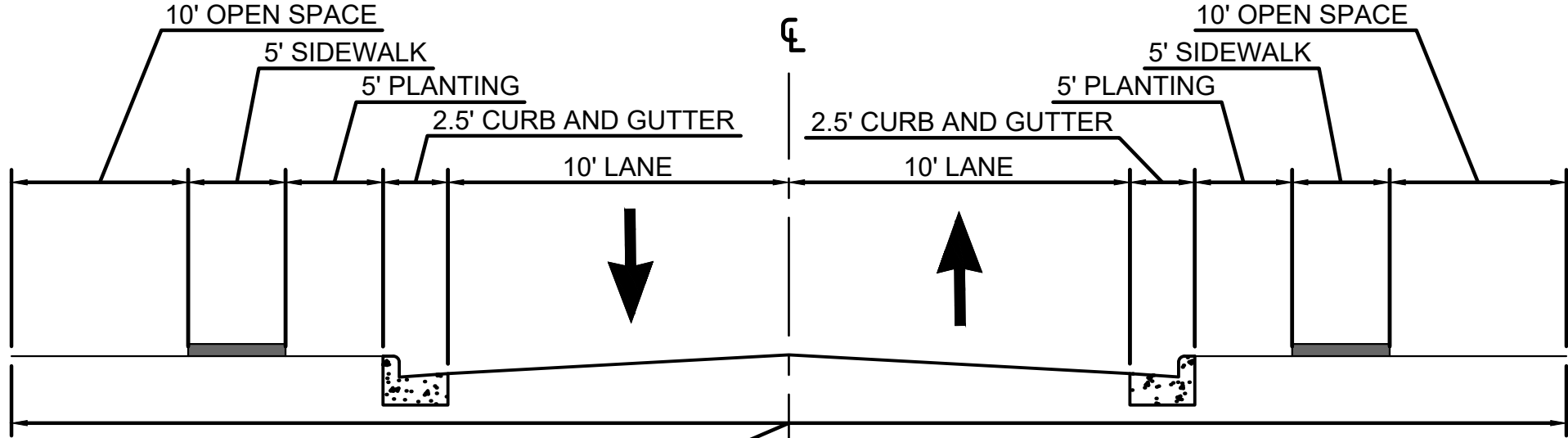
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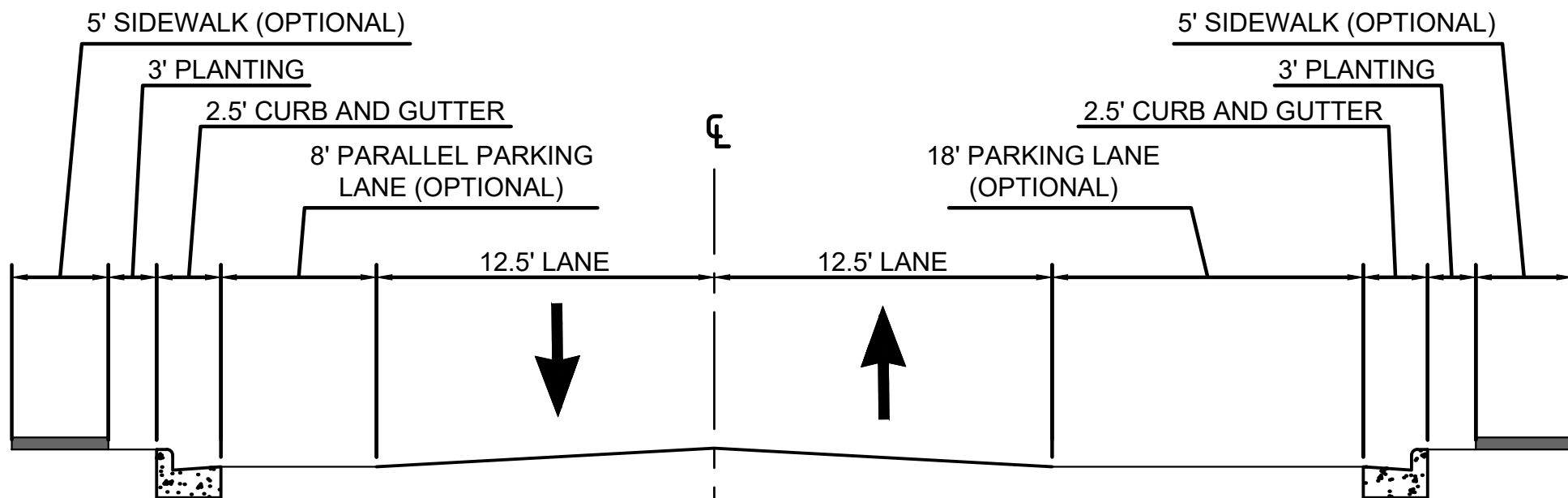
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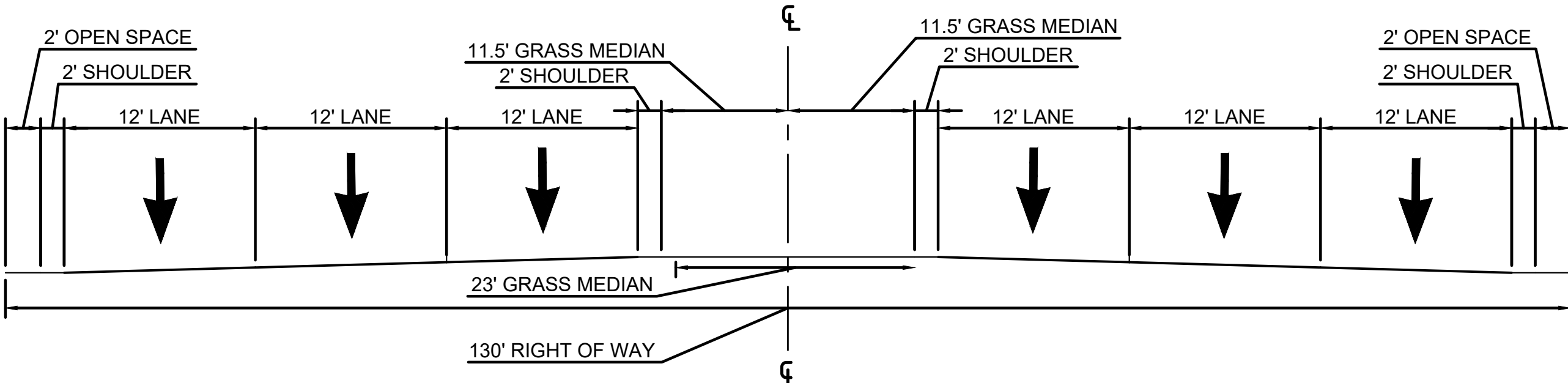
MODIFIED TOWN OF HOLLY SPRINGS LC-2A
MINIMUM CROSS SECTION A: (BLUE)
N.T.S.
SIDEWALK REQUIRED ON MINIMUM OF ONE SIDE



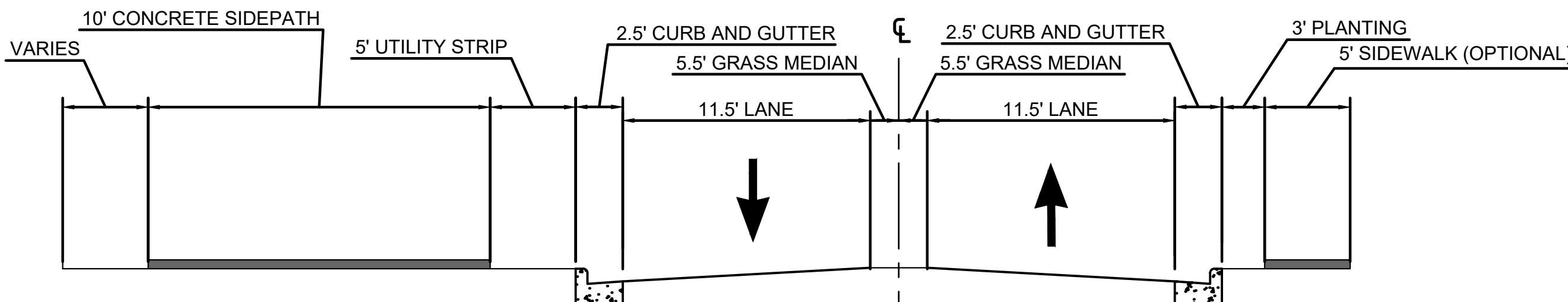
TOWN OF HOLLY SPRINGS LC-2A MINIMUM
CROSS SECTION C: (RED)
N.T.S.



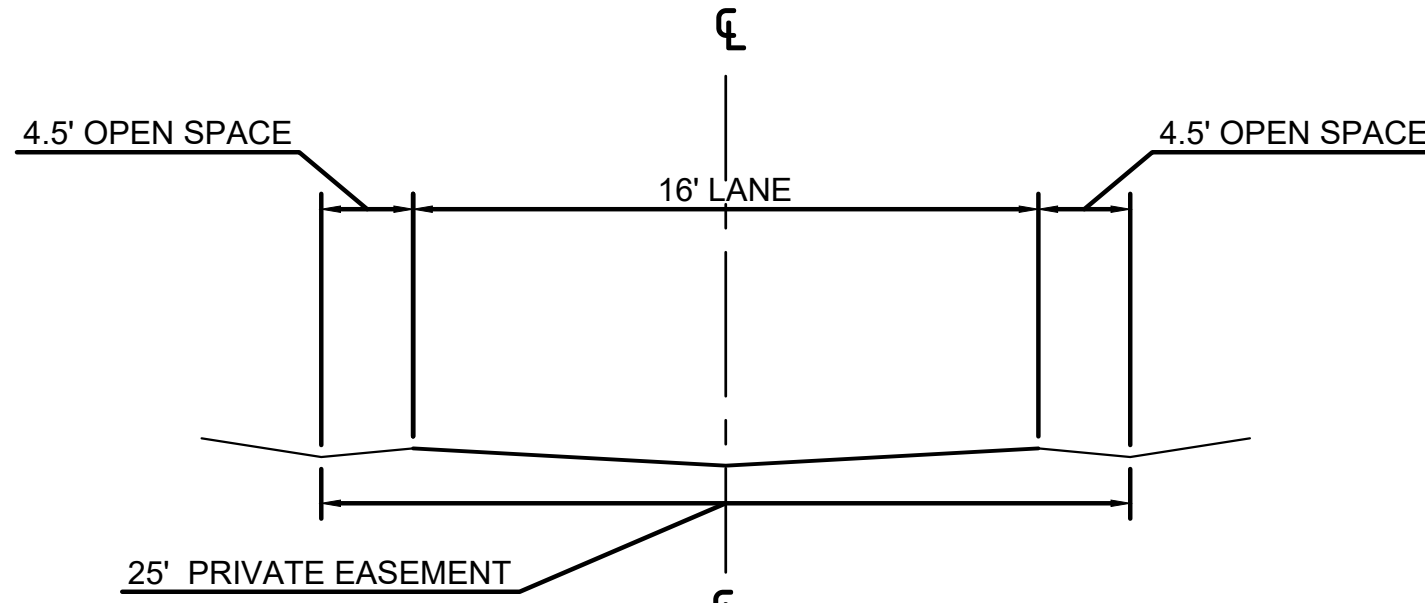
MODIFIED TOWN OF HOLLY SPRINGS C-2B
CROSS SECTION E: (MAGENTA)
N.T.S.
SIDEWALK REQUIRED ON MINIMUM OF ONE SIDE



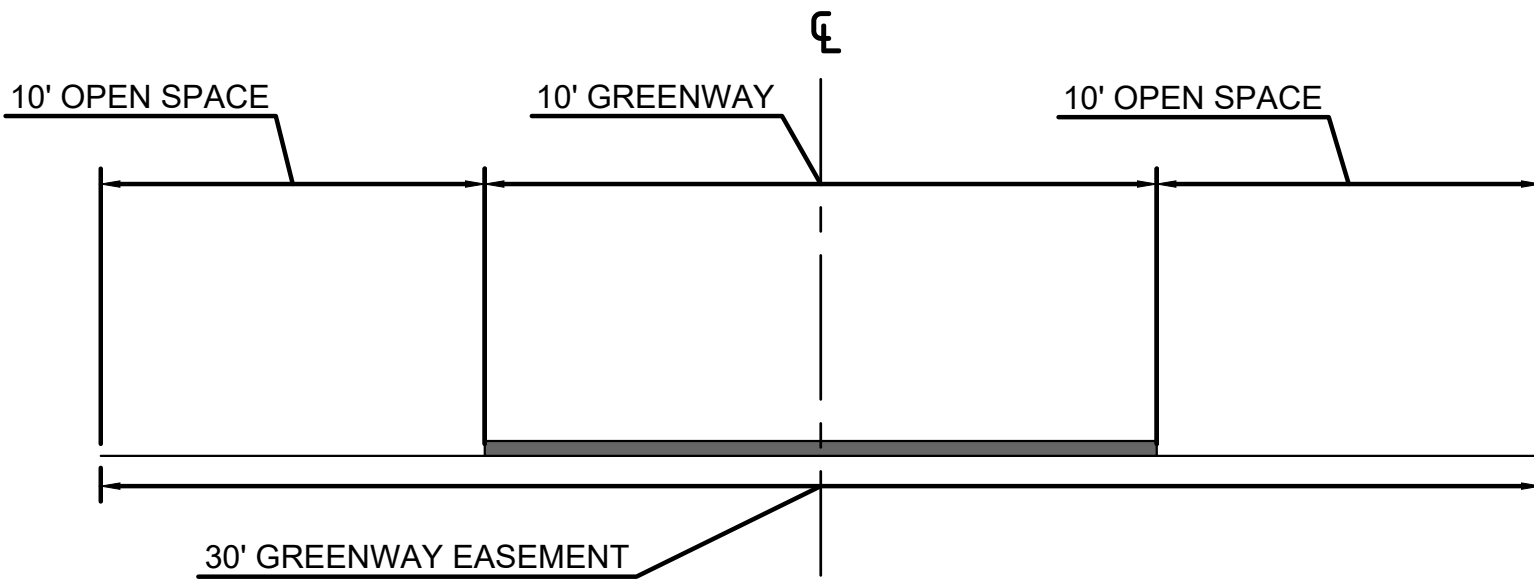
TOWN OF HOLLY SPRINGS T-6B MINIMUM
CROSS SECTION: (STRIPED HATCH)
N.T.S.



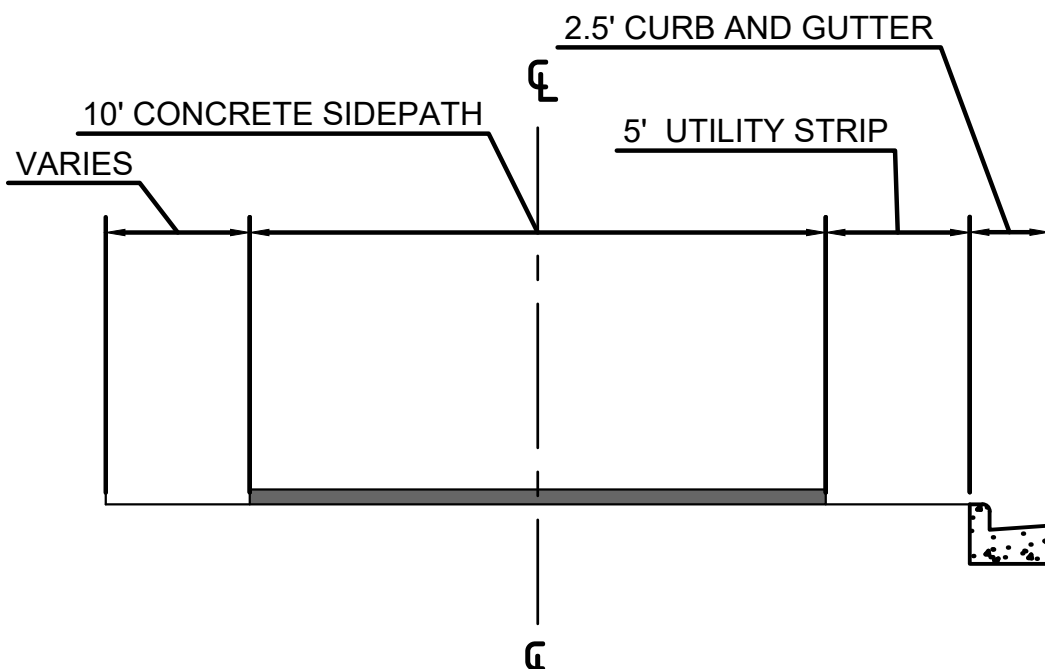
MODIFIED TOWN OF HOLLY SPRINGS LC-2A
MINIMUM CROSS SECTION B: (ORANGE)
N.T.S.



TOWN OF HOLLY SPRINGS STANDARD ALLEY
HS311 CROSS SECTION D: (CYAN)
N.T.S.



TOWN OF HOLLY SPRINGS TYPICAL
GREENWAY HS340 (GREEN):
N.T.S.



TOWN OF HOLLY SPRINGS CONCRETE
SIDEPATH HS380: (YELLOW)
N.T.S.

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AND PROVIDED FOR ILLUSTRATION AND CONTEXT ONLY.
FINAL LOCATIONS OF ELEMENTS SHALL BE DETERMINED AT
SUBSEQUENT STAGES OF APPROVAL.



KHA PROJECT 013652003				DATE 06/29/2023				SCALE AS SHOWN				DESIGNED BY JMC				DRAWN BY JMC				CHECKED BY KLW				REVISIONS				BY DATE			
5				PER TOWN COMMENTS				JMC				04/26/2024				JMC															
4				PER TOWN COMMENTS				JMC				03/15/2024				JMC															
3				PER TOWN COMMENTS				JMC				01/18/2024				JMC															
2				PER TOWN COMMENTS				JMC				10/20/2023				JMC															
1				PER TOWN COMMENTS				JMC				09/15/2023				JMC															
No.																															

AURA WILDWOOD

PREPARED FOR

TRINISC RESIDENTIAL GROUP

HOLLY SPRINGS

NC

ROADWAY CROSS SECTIONS

811

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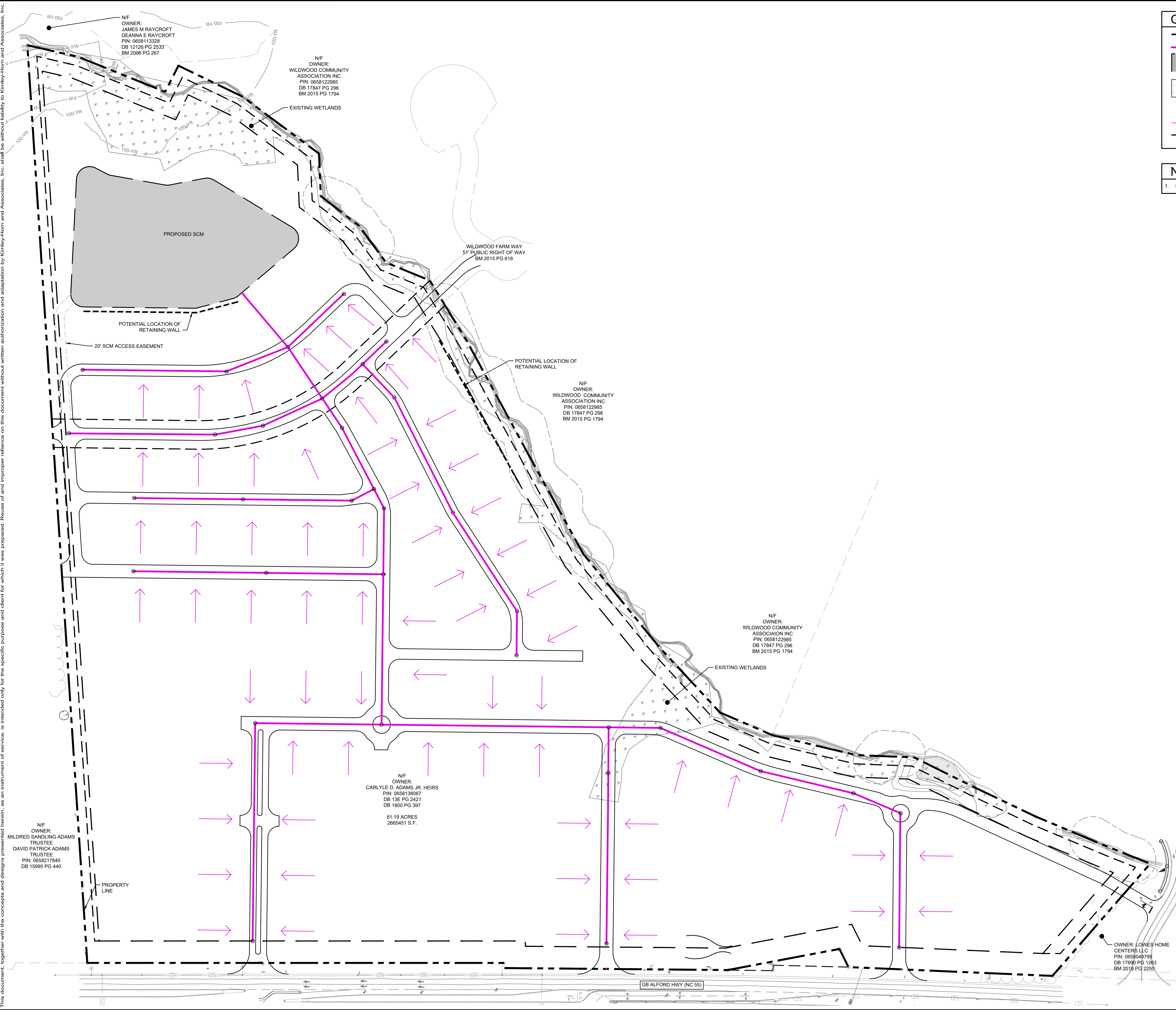
1 PER TOWN COMMENTS | JMC | 09/15/2023 |

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Page 474 of 806



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GRADING AND DRAINAGE LEGEND

PROPERTY LINE

STORM DRAINAGE

STORM CONTROL MANAGEMENT POND

EXISTING WETLANDS

MANHOLE

FLOW ARROW

POTENTIAL RETAINING WALL LOCATION

NOTES

1. FINAL WALL LOCATIONS TO BE DETERMINED DURING DETAILED DESIGN.

811

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GRAPHIC SCALE IN FEET

0 50 100 200

1/4"=1'-0"

5

PER TOWN COMMENTS

04/26/2024

JMC

4

PER TOWN COMMENTS

03/15/2024

JMC

3

PER TOWN COMMENTS

01/16/2024

JMC

2

PER TOWN COMMENTS

10/20/2023

JMC

1

PER TOWN COMMENTS

09/15/2023

JMC

Revisions

DATE

BY

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KLW

OVERALL GRADING & DRAINAGE PLAN

AURA WILDWOOD

PREPARED FOR

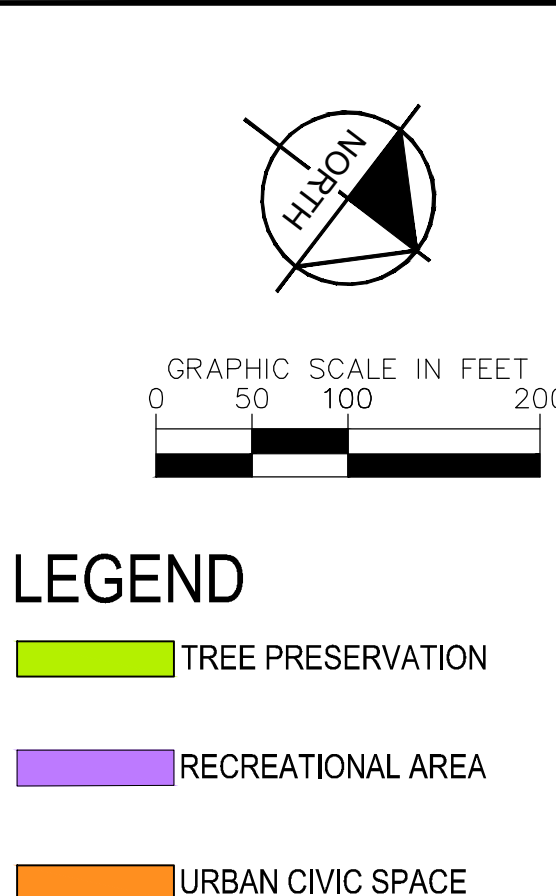
TRINISC RESIDENTIAL GROUP

HOLLY SPRINGS

NC

SHEET NUMBER

C5.0



OPEN SPACE COMPONENT	REQUIRED	TOTAL PROVIDED	FLEXIBLE SPACE DISTRIBUTED IN EACH COMPONENT
TREE PRESERVATION	MIN 0% (0 ACRES)	5.8% (3.56 ACRES)	5.8% (3.56 ACRES)
RECREATIONAL AREA	MIN 2% (1.22 ACRES)	9.8% (5.98 ACRES)	7.0% (4.33 ACRES)
URBAN CIVIC SPACE	MIN 0.5% (0.3 ACRES)	0.9% (0.55 ACRES)	0% (0 ACRES)
FLEXIBLE SPACE	12.5% (7.65 ACRES)		
	15% (9.18 ACRES)	16.5% (10.09 ACRES)	12.8% (7.89 ACRES)

AURA WILDWOOD PREPARED FOR TRINSC RESIDENTIAL GROUP		OPEN SPACE & PRESERVATION PLAN		KHA PROJECT 013652003 DATE 6/28/2023		Kimley»»Horn © 2023 KIMLEY-HORN AND ASSOCIATES, INC. #F-002 WWW.KIMLEY-HORN.COM PHONE: 919-877-2000 FAX: 919-877-2050 300 SOUTH MAIN STREET, SUITE 212, HOLLY SPRINGS, NC 27540		5 PER TOWN COMMENTS		04/26/2024		MBB	
				SCALE AS SHOWN				4 PER TOWN COMMENTS		03/15/2024		JMC	
				DESIGNED BY MBB				3 PER TOWN COMMENTS		01/18/2024		JMC	
				DRAWN BY ALK				2 PER TOWN COMMENTS		10/20/2023		JMC	
				CHECKED BY MBB				1 PER TOWN COMMENTS		09/15/2023		JMC	
HOLLY SPRINGS		NC						No.		REVISIONS		BY DATE	
SHEET NUMBER		C6.0											



AURA WILDWOOD

DEVELOPMENT & DESIGN MANUAL

A MIXED-USE COMMUNITY IN
HOLLY SPRINGS, NORTH CAROLINA



SUBMITTED TO



The Town of Holly Springs
128 S Main Street
Holly Springs, NC 27540

PREPARED FOR



Trinsic Acquisition Company, LLC
242 S Main Street, Suite 206
Holly Springs, NC 27540

PREPARED BY



Parker Poe Adams & Bernstein LLP
301 Fayetteville Street, Suite 1400
Raleigh, NC 27601



Kimley-Horn and Associates, Inc
300 S Main Street, Suite 212
Holly Springs, NC 27540



EDSA
2710 Wycliff Road, Suite 110
Raleigh, NC 27607



Womack + Hampton Architects, LLC
4311 Oak Lawn Avenue, Suite 50
Dallas, TX 75219

First Submittal:	June 29, 2023
Second Submittal:	September 15, 2023
Third Submittal:	October 20, 2023
Fourth Submittal:	January 18, 2024
Fifth Submittal:	March 15, 2024
Sixth Submittal:	April 26, 2024

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1. PROJECT DATA

NAME OF PROJECT

Aura Wildwood

PROPERTY OWNERS

Adams, D Carlyle Jr Heirs
1033 Vestavia Woods Drive
Raleigh, NC 27615

DEVELOPER

Trinsic Acquisition Company, LLC
242 S Main Street, Suite 206
Holly Springs, NC 27540

PREPARED BY

Parker Poe Adams & Bernstein LLP
301 Fayetteville Street, Suite 1400
Raleigh, NC 27601

Kimley-Horn and Associates, Inc
300 S Main Street, Suite 212
Holly Springs, NC 27540

EDSA
2710 Wycliff Road, Suite 110
Raleigh, NC 27607

Womack + Hampton Architects, LLC
4311 Oak Lawn Avenue, Suite 50
Dallas, TX 75219

SITE ADDRESS

7450 GB Alford Hwy
Holly Springs, NC 27540

PROPERTY IDENTIFICATION NUMBER

0658138067

TOTAL ACREAGE

61.19 acres

CURRENT LAND USE

Agriculture

CURRENT ZONING

Community Business (CB)

FUTURE LAND USE MAP

Mixed-Use Center

PROPOSED LAND USE

Apartments, Townhomes, Commercial Uses, and
Community Amenities

PROPOSED ZONING

Regional Mixed Use Conditional District (RMX-CD)

2. LAND USE

The Property may be used for the uses and building types listed immediately below. All other uses are prohibited. The permitted uses are subject to the limitations and standards stated in the Town of Holly Springs Unified Development Ordinance (“UDO”), and any additional standards provided herein.

All accessory uses permitted in the Regional Mixed-Use district are permitted and subject to the use specific standards in the UDO, except where modified herein. Accessory uses, buildings, or structures are permitted on a lot without a primary building.

PERMITTED USES	
POD A (Multifamily and Mixed Use Pod) (N1)	Apartment Dwelling, Recreation Facility Indoor, Recreation Facility Outdoor (<50 acres), Business Services, Office Use, Personal Services, Food/Restaurant Uses, Retail uses, Fitness Facilities / Studios, Bar/Nightclub/Tasting Room, Theater, Assembly Use, Amusement (Indoor), Child Care Center, Laundry Self-Service
POD B (Townhouse Pod)	Attached Dwelling, Recreation Facility Indoor, Recreation Facility Outdoor (<50 acres)
POD C (Health and Fitness Pod)	Fitness Facilities / Studios, Recreation Facility Indoor, Recreation Facility, Outdoor (<50 acres), Business Services, Child Care Center, Medical Office, Office Use, Personal Services, Food / Restaurant Uses, Retail Uses
POD D (Dining and Shopping Pod) (N2)	Bar/Nightclub/Tasting Room, Food / Restaurant Uses, Drive In/Drive Through (maximum 2 drive throughs permitted), Retail Uses, Bed and Breakfast, Personal Services, Theater, Assembly Use, Business Services, Amusement (Indoor), Food/Restaurant Uses
POD E (Office and Retail Pod) (N3)	Office Use, Medical Office, Retail Uses, Bed and Breakfast, Personal Services, Fitness Facilities / Studios, Assembly Use, Civic Building, Hotel, Inn, Community Support Facility, Religious Use, Business Services, Child Care

	Center, Laundry Self-Service, Infrastructure / Utilities (Minor), Bar/Nightclub/Tasting Room, Amusement (Indoor), Food/Restaurant Uses, Drive In/Drive Through (maximum 1 drive through permitted) Parking Garage, Wireless Telecommunications Equipment
N1	Business Services, Office Use, Personal Services, Food/Restaurant Uses, and Retail Uses are permitted only on the ground floor in the area shown on the master plan either as standalone uses or in live-work units. The Office Use shall include coworking.
N2	Drive throughs shall comply with the design requirements of UDO 3.3.5.D.
N3	Drive throughs shall comply with the design requirements of UDO 3.3.5.D. Within POD E, only banks or financial institutions shall be permitted to have a drive-through.

PERMITTED BUILDING TYPES	
POD A	Residential/Mixed Use
POD B	Residential
POD C	Commercial/Mixed Use
POD D (N1)	Commercial/Mixed Use/Residential
POD E	Commercial/Mixed Use
N1	The Residential building type shall be limited to the existing historic home that will be relocated to POD D.

3. DIMENSIONAL STANDARDS

The base development standards described below shall apply to the Property. Where a standard is not defined below, the development standards for the **RMX District in UDO Section 2.2.2** shall apply.

DIMENSIONAL STANDARDS	
Development Intensity	
Development Density	
<i>Maximum Gross Density (units/acre) (N1)</i>	9.8
<i>Maximum Multifamily Units</i>	400
<i>Maximum Townhome Units</i>	200
N1	The Total Allowable Units shall be equal to the Gross Site Area X Maximum Units Per Acre. Here: 61.21 acres X 9.8 units per acre = 600 units.

POD A (MULTIFAMILY AND MIXED USE POD) DIMENSIONAL STANDARDS		
	RMX Standard	POD A Standard
Lot Configuration		
Minimum Lot Width at the Setback Line (ft)		
<i>Apartment Dwellings</i>	0	50
<i>Other Buildings/Uses (N1)</i>	60	60
Minimum Lot Frontage (ft)		
<i>All Buildings</i>	0	0
Minimum Frontage for a Driveway (ft)		
<i>All Buildings/Uses</i>	60	60
Building Placement (N2)		
Thoroughfare Setback (ft)	50	50
Primary Building Setbacks (ft)		
<i>Front Setback (minimum)</i>	5	5
<i>Front Setback (maximum) (N3)</i>	20	N/A
<i>Side Setback – corner (minimum)</i>	5	5
<i>Side Setback – interior (minimum)</i>	0	5
<i>Rear Setback (minimum)</i>	0	0
<i>Setback to Adjacent RR/SR/NR Districts (minimum)</i>	50	30
Building Height (ft)		
Primary Structure(s) (minimum)	25 and 2 stories	25 and 2 stories
Primary Structure(s) (maximum)	55 and 5 stories	55 and 5 stories
Residential Primary Structure(s) Finished Floor Elevation Above Sidewalk Grade	1.5	1.5
Accessory Structure(s) (minimum) (N4)	0	20 and 1 story

POD A DIMENSIONAL STANDARDS – NOTES	
N1	Reference UDO Chapter 8 Building, Site & Subdivision Lot Design Standards.
N2	Building placement standards shall also apply to accessory structures.
N3	Applies to buildings that front public right-of-way.
N4	Accessory structures shall include, but are not limited to, the amenity clubhouse / leasing center. The 20' minimum shall apply only to the amenity clubhouse / leasing center. All other accessory structures shall have no minimums as permitted by the UDO.

POD B (TOWNHOUSE POD) DIMENSIONAL STANDARDS		
	RMX Standard	POD B Standard
Lot Configuration		
Minimum Lot Width at the Setback Line (ft)		
<i>Attached Dwellings</i>	0	20
<i>Other Buildings/Uses (N1)</i>	60	60
Minimum Lot Frontage (ft) (N2)		
<i>All Buildings</i>	0	18
Minimum Frontage at the Right-of-Way for a Driveway (ft) (N3)		
<i>Attached Dwellings</i>	60	18
<i>Other Buildings/Uses</i>	60	60
Building Placement		
Thoroughfare Setback (ft)	50	50
Primary Building Setbacks (ft)		
<i>Front Setback (minimum)</i>	5	5
<i>Front Setback (maximum)</i>	20	25
<i>Side Setback – corner (minimum)</i>	5	5
<i>Side Setback – interior (minimum) (N4)</i>	0	0
<i>Rear Setback (minimum)</i>	0	0
<i>Setback to Adjacent RR/SR/NR Districts (minimum)</i>	50	50
Accessory Building Setbacks (ft)		
Accessory Structure(s) <144 sf (minimum)	5	3
Accessory Structure(s) >144 sf	0	5
Setback from Alley >144 sf (minimum) (N6)	0	5 or 20+
Building Height (ft)		
Primary Structure(s) (minimum)	25 and 2 stories	20 and 2 stories
Primary Structure(s) (maximum)	55 and 5 stories	40 and 3 stories
Residential Primary Structure(s) Finished Floor Elevation Above Sidewalk Grade	1.5	1.5

Accessory Structure(s) (minimum)	0	0
Accessory Structure(s) (maximum) (N7)	55 and 5 stories	25

POD B DIMENSIONAL STANDARDS – NOTES	
N1	Reference UDO Chapter 8 Building, Site & Subdivision Lot Design Standards.
N2	The Lot Frontage is measured along the front property line abutting a Public Street. Where no Public Street exists and the Lot fronts a Private Street or common Open Space, the Frontage shall be measured along the Lot Line abutting the Private Street or Alley and each Lot shall gain access to and from a Public Street across a perpetual recorded public access easement.
N3	The Lot Frontage is measured along the front property line abutting a Public Street. Where no Public Street exists and the Lot fronts a Private Street or common Open Space, the Frontage shall be measured along the Lot Line abutting the Private Street or Alley and each Lot shall gain access to and from a Public Street across a perpetual recorded public access easement.
N4	Attached dwelling units are allowed a 0-ft side setback where the unit shares a common wall with another dwelling unit.
N5	Measured from right of way to face of garage.
N6	This setback applies to both public and private alleys. The building may be less than 5 ft or more than 20 ft from the right-of-way to avoid haphazard parking arrangements that may be disruptive to alley access.
N7	Accessory structures shall not exceed the height of the primary structure on the lot/property.

POD C (HEALTH AND FITNESS POD) DIMENSIONAL STANDARDS		
	RMX Standard	POD C Standard
Lot Configuration		
Minimum Lot Frontage (ft) (N1)	0	0
Building Placement		
Thoroughfare Setback (ft)	50	50
Primary Building Setbacks (ft)		
Front Setback (minimum)	5	5
Front Setback (maximum)	20	N/A
Side Setback – corner (minimum)	5	5
All other setbacks (Side and Rear) (minimum)	0	0
Setback to Adjacent RR/SR/NR Districts (minimum)	50	50
Building Height (ft)		
Primary Structure(s) (minimum)	25 and 2 stories	20 and 1 story
Primary Structure(s) (maximum)	55 and 5 stories	55 and 5 stories
Primary Structure(s) (minimum-ground floor story nonresidential)	14	14
Accessory Structure(s) (minimum)	0	0
Accessory Structure(s) (maximum) (N2)	55 and 5 stories	20 and 1 story

POD C DIMENSIONAL STANDARDS – NOTES	
N1	The Lot Frontage is measured along the front property line abutting a Public Street. Where no Public Street exists and the Lot fronts a Private Street or common Open Space, the frontage shall be measured along the Lot Line abutting the Private Street or Alley and each Lot shall gain access to and from a Public Street across a perpetual recorded public access easement.
N2	Accessory structures shall not exceed the height of the primary structure on the lot/property.

POD D (DINING AND SHOPPING POD) DIMENSIONAL STANDARDS		
	RMX Standard	POD D Standard
Lot Configuration		
Minimum Lot Frontage (ft) (N1)	0	0
Building Placement		
Thoroughfare Setback (ft)	50	50
Primary Building Setbacks (ft)		
<i>Front Setback (minimum)</i>	5	5
<i>Front Setback (maximum)</i>	20	N/A
<i>Side Setback – corner (minimum)</i>	5	5
<i>All other setbacks (Side and Rear) (minimum)</i>	0	0
<i>Setback to Adjacent RR/SR/NR Districts (minimum)</i>	50	50
Building Height (ft) (N2)		
Primary Structure(s) (minimum)	25 and 2 stories	20 and 1 story
Primary Structure(s) (maximum)	55 and 5 stories	55 and 5 stories
Primary Structure(s) (minimum-ground floor story nonresidential)	14	14
Accessory Structure(s) (minimum)	0	0
Accessory Structure(s) (maximum) (N3)	55 and 5 stories	20 and 1 story

POD D DIMENSIONAL STANDARDS – NOTES	
N1	The Lot Frontage is measured along the front property line abutting a Public Street. Where no Public Street exists and the Lot fronts a Private Street or common Open Space, the frontage shall be measured along the Lot Line abutting the Private Street or Alley and each Lot shall gain access to and from a Public Street across a perpetual recorded public access easement.
N2	The Adams Home is exempt from height requirements.
N3	Accessory structures shall not exceed the height of the primary structure on the lot/property.

POD E (OFFICE AND RETAIL POD) DIMENSIONAL STANDARDS		
	RMX Standard	POD E Standard
Lot Configuration		
Minimum Lot Frontage (ft) (N1)	0	0
Building Placement		
Thoroughfare Setback (ft)	50	50
Primary Building Setbacks (ft)		
<i>Front Setback (minimum)</i>	5	5
<i>Front Setback (maximum)</i>	20	N/A
<i>Side Setback – corner (minimum)</i>	5	5
<i>All other setbacks (Side and Rear) (minimum)</i>	0	0
<i>Setback to Adjacent RR/SR/NR Districts (minimum)</i>	50	50
Building Height (ft)		
Primary Structure(s) (minimum)	25 and 2 stories	20 and 1 story
Primary Structure(s) (maximum)	55 and 5 stories	55 and 5 stories
Primary Structure(s) (minimum-ground floor story nonresidential)	14	14
Accessory Structure(s) (minimum)	0	0
Accessory Structure(s) (maximum) (N2)	55 and 5 stories	20 and 1 story

POD E DIMENSIONAL STANDARDS – NOTES	
N1	The Lot Frontage is measured along the front property line abutting a Public Street. Where no Public Street exists and the Lot fronts a Private Street or common Open Space, the frontage shall be measured along the Lot Line abutting the Private Street or Alley and each Lot shall gain access to and from a Public Street across a perpetual recorded public access easement.
N2	Accessory structures shall not exceed the height of the primary structure on the lot/property.

4. DESIGN STANDARDS

In addition to the thoughtful and creative site layout, Aura Wildwood will provide distinctive architecture with notable quality and craftsmanship.

POD A Design Standards (Multifamily and Mixed Use Pod)

The Multifamily and Mixed Use POD offers high quality apartment buildings designed in the Modern Farmhouse architectural style. As outlined in the architectural commitments and depicted in the representative imagery, the proposed Modern Farmhouse style blends traditional farmhouse style with contemporary accents. Color schemes include light or neutral colored facades accented with contrasting darker trim, elements. The modern farmhouse style advances the project's overall theme to balance the preservation of the existing early 1900's farmhouse with the development of a modern mixed use center. The proposed apartment buildings will be elevator served and the first in Holly Springs with conditioned, closed corridors. The Multifamily and Mixed Use Pod will feature a vertically mixed use building with apartments stacked over ground floor retail. Live-work Units will also be included within this Pod. In addition, specialty paving shall be placed at the primary axis intersection in front of the clubhouse/leasing center, creating a focal point, promoting pedestrian priority and safety, and providing an enhanced visual experience.



All multifamily and mixed use buildings located in **Pod A** shall be elevator served and shall have conditioned, closed corridors. All multifamily and mixed use buildings located in **Pod A** shall also meet the applicable Building, Site & Subdivision Lot Design Standards described in **Chapter 8 of the UDO**, except where modified or further restricted by the architectural standards below (as shown in *italicized text*).

Facade Standards

1. Buildings shall be designed in compliance with 360-degree design standards, with visually interesting and compatible designs on front, side, and rear facades.
2. Primary Façade Compliance. Any Building façade in which any portion of a Lot or Integrated Center is determined to be visible from a Public/Private Street Frontage, Interior Access Drive, or a Side or Rear Lot Line abutting a Residential Use District pursuant to the following regulations:
 - a. Façade Materials.
 - i. Type 1 Materials: brick, stone (e.g., natural/cultured, limestone, marble, or granite); split-face block (integral color); architectural or precast concrete, if the surface is designed to simulate brick or stone; glass; a combination thereof; or similar material determined by the Administrator.
 - ii. Type 2 Materials: wood siding; **wood trim**; fiber cement siding; **fiber cement trim**; stucco; tile; EIFS; or similar material determined by the Administrator.
 - iii. Type 3 Materials: high quality, smooth finished metal panel or similar material determined by the Administrator.
 - iv. Type 4 Materials: vinyl siding; smooth-faced gray concrete block; painted or stained brick, stone, or concrete (including concrete block); metal siding except as specified as Type 3 material; plastic; or similar material determined by the Administrator.
 - v. Durability. All façade materials should be durable. Façade materials shall, to the greatest extent practical, be applicable to accessory structures to maintain a consistent and compatible appearance.
 1. Primary Façade Materials. The primary façade material (excluding: windows, display windows, doors, balconies, roofing, fascia, or soffit materials) must constitute a minimum of 35% of the façade. Multiple building materials and colors shall be provided to provide variation in texture, with heavier and courser materials placed lower on the building, and lighter and smoother materials placed near the top. The maximum number of colors shall not be limited, provided however, that there shall be no more than 3 discernable color families.
 - a. Allowable Primary Façade Materials: Type 1 Materials.
 - b. Allowable Secondary Façade Materials: Type 2 Materials.
 - c. Prohibited Façade Materials: Type 3 and Type 4 Materials.

Bulk and Massing

1. Proposed buildings in the Multifamily and Mixed use pod shall not be required to meet horizontal variations requirements found in the UDO Section 8.2.G.4.b.
2. Maximum Building Length.

- a. The maximum building wall length for attached dwellings and apartment dwellings is 360 feet.
 - i. A vertical wall offset of 40 feet shall constitute a separate façade length for the purposes of maximum wall length.
- b. Facades shall incorporate wall offsets, in the form of projections or recesses in the façade plane, spaced no more than 50 feet apart. Wall offsets shall be a minimum of 1 foot in depth.

Roof Expression

1. Sloped roofs on buildings over 100 feet in length shall include two or more different sloping roof planes, each with a minimum pitch between 3:12 and 12:12.
2. Flat roofs shall be concealed by parapet walls. All sides of parapet walls visible from public view shall be finished to match the primary façade and shall extend an appropriate depth that is proportionate with the building size.
3. Alternative roof forms or pitches may be allowed for small roof sections over porches, entryways, or similar features.

Façade Activation

1. Blank Walls. Expanses of blank walls (i.e., without articulation or windows) may not exceed 20 feet in any direction. Building walls shall meet this standard using a variety of features such as windows, entrances, arcades, arbors, awnings, trellises, friezes, living walls, signs, works of art, substantial change in material color, change in material pattern, or alternate architectural detail that activates building walls. Walls required for multiple pack electric metering are exempt from this requirement.
2. Building Entries.
 - a. All buildings shall have a Primary Entry visible from either a public right-of-way or private drives. Entrances shall be easily identifiable and well-lit for convenience, visual interest, and increased safety.
3. Residential Buildings shall provide a minimum of 3 of the following activation features:
 - a. 1 or more dormer windows or cupolas;
 - b. A recessed entrance(s);
 - c. **Covered porches/balconies;**
 - d. Pillars, posts, or columns next to doorway(s);
 - e. 1 or more bay windows projecting at least 12 inches from the façade plane;
 - f. **Eaves projecting at least 6 inches from the façade plane;**
 - g. Raised corniced parapets over the entrance door(s);
 - h. **Multiple windows with a minimum 4-inch wide trim; or**
 - i. Integrated planters that incorporate landscaped areas or places for sitting.

Screening

1. Rooftop mechanical equipment shall not be visible from any street or adjacent Residential Use District. Equipment that is no longer in use must be removed. When the roof line is below such grade, rooftop mechanical equipment shall be painted to match the color of the roof material to reduce the visual impact.
2. The following project elements shall be concealed and contained or screened from public right-of-way view with materials similar to the structure or landscaping, or they shall be located so as not to be visible from any public right-of-way.
 - a. Utility meters (must also be painted to match building material color);
 - b. Storage areas;
 - c. Solid waste containers;
 - d. Transformers; to the extent practical;
 - e. Generators; and
 - f. Similar features or other utility hardware on the building, roof, or ground.
3. Building mounted equipment or pipes, excluding gutter and downspouts, shall be painted to match the building regardless of visibility.

Green Building Standards

All primary buildings shall be designed to meet the requirements of a green building program. Acceptable green building programs include, but are not limited to, LEED, Energy Star, BREEAM, Green Globes, NGBS (gold, silver, or bronze), and GreenGuard.

POD A Representative Imagery

The following representative elevations are conceptual only, are not separate commitments, and are provided as an example of the intended architectural style. In the event of a conflict with the text commitments of this section, the text commitments shall apply.





POD B Design Standards (Townhouse Pod)

The Townhouse pod offers high quality townhomes to diversify the housing stock within this mixed use center and the surrounding area. The three story, rear loaded townhomes are designed with a charming farmhouse style, providing a warm and inviting atmosphere that is consistent with Aura Wildwood's overall design theme honoring the Adams House. The townhomes are also designed to meet green building standards, are solar and EV ready, which all set a precedent for environmentally friendly and sustainable development in Holly Springs.



Façade Standards

All buildings located in **Pod B** shall meet the applicable Building, Site & Subdivision Lot Design Standards described in **Chapter 8 of the UDO**, except where modified or further restricted by the architectural standards below.

1. All townhomes shall have a combination of two or more of the following materials on the front façade (not counting foundation): stone, brick, lap siding, fiber cement siding, shakes or board and batten.
2. The exterior material on the side and rear facades, except for interior townhome units, shall be fiber cement.
3. When two facade materials are used, the materials shall be different but complementary colors.
4. Vinyl may be used only for window trim, shutters, soffits, fascia, and/or corner boards.
5. Adjacent units shall not utilize the same elevation or primary color.
6. Main roof pitches (excluding porches) fronting the street townhomes shall be at least 6:12.
7. For every 30 feet (or fraction) of continuous side elevation (calculated on a per floor basis), there shall be one window or door added to the side elevations. Any siding

break on the side of the home such as fireplace, side porch, wall offsets, etc. may be used as an alternate to windows.

8. All homes shall include architectural style shingles.
9. Townhomes shall have a minimum width of 20 feet and a minimum heated area of 1,700 square feet.

Green Building Standards

All townhomes shall be designed to meet the requirements of a green building program. Acceptable green building programs include, but are not limited to, LEED, Energy Star, BREEAM, Green Globes, NGBS (gold, silver, or bronze), and GreenGuard. All townhomes shall be solar and EV ready.

POD B Representative Imagery

The following representative elevations are conceptual only, are not separate commitments, and are provided as an example of the intended architectural style. In the event of a conflict with the text commitments of this section, the text commitments shall apply.









POD C Design Standards (Health and Fitness Pod)

The Health and Fitness Pod includes a single health, fitness, and wellness resort that will anchor the nonresidential portion of Aura Wildwood and will serve as an attraction to the Holly Springs community. Although multiple uses are permitted within the Health and Fitness Pod, all such uses are related to the single anchor tenant and are interconnected to one another to create the health, fitness and wellness resort.



Façade Standards

All buildings located in **Pod C** shall meet the applicable Building, Site & Subdivision Lot Design Standards described in **Chapter 8 of the UDO**.

Enhanced Parking Lot Screening

Where a parking lot directly abuts the thoroughfare buffer, a 3' tall screen wall shall be added to the thoroughfare buffer to screen views of the parking lot. The wall will integrate with the overall entry features and frontage design, including materials inspired by the regional vernacular. These materials include walls clad with a stone or stone-like material and 3-rail fencing matching the existing fence at the historic Adams Home. The wall will also step back in multiple sections to provide visual interest and integrate with the landscaping.

POD C Representative Imagery

The following representative elevations are conceptual only, are not separate commitments, and are provided as an example of the intended architectural style. In the event of a conflict with the text commitments of this section, the text commitments shall apply. All signage shown in the attached renderings is conceptual only and will be approved in subsequent stages of development.









POD D Design Standards (Dining and Shopping Pod)

The dining and shopping pod offers a unique mix of restaurant and retail options that does not exist in Holly Springs today. The focal point of the Dining and Shopping Pod is a large common green space flanked on both sides by restaurants and stores. The green space will serve as outdoor dining and gathering space for the uses and will create a distinctive social atmosphere. Aura Wildwood's farmhouse theme is carried through the Dining and Shopping Pod through these outdoor open spaces, which are meant to be reminiscent of a farmhouse backyard.



Façade Standards

All buildings located in **Pod D** shall meet the applicable Building, Site & Subdivision Lot Design Standards described in **Chapter 8 of the UDO**, except where modified or further restricted by the architectural standards below. Conceptual elevations to be provided in future submissions.

1. Architectural treatments such as varying roof forms, façade articulation, breaks in roof, walls with texture materials and ornamental details shall be incorporated to add visual interest.
2. Large expanses of blank walls, greater than 20 feet in length or height, shall be broken up with windows or other architectural features to reduce visual impacts.
3. Roof features may include flat roofs with parapet, hip roofs, or awnings with metal or canvas material.
4. Windows and storefront glazing shall be divided to be either square or vertical in proportion so that each section is taller than it is wide.
5. Building exteriors shall incorporate variation in materials. The primary (front) façade and other facades located along a public right-of-way may include:
 - a. Brick and/or stone masonry;
 - b. Stone accents;

- c. Aluminum storefronts with anodized or pre-finished colors (windows and doors);
 - d. EIFS cornices, and parapet trim;
 - e. EIFS or synthetic stucco shall not be used in the first four feet above grade and shall be limited to only 25% of each building façade;
 - f. Soffit and fascia materials to be considered include EIFS with crown trim elements; or
 - g. Cementitious siding.
6. Rear elevations facing opaque landscape buffers or not visible from vehicular use areas or public rights-of-way may incorporate decorative concrete masonry, metal coping, or EIFS trim.

POD D Representative Imagery





POD E Design Standards (Office and Retail Pod)

The Office and Retail Pod will serve as a transition to the adjacent Lowe's and Wegman's development and is envisioned to include a second anchor tenant for Aura Wildwood.



Façade Standards

All buildings located in **Pod E** shall meet the applicable Building, Site & Subdivision Lot Design Standards described in **Chapter 8 of the UDO**, except where modified or further restricted by the architectural standards below. Conceptual elevations to be provided in future submissions.

1. Architectural treatments such as varying roof forms, façade articulation, breaks in roof, walls with texture materials and ornamental details shall be incorporated to add visual interest.
2. Large expanses of blank walls, greater than 20 feet in length or height, shall be broken up with windows or other architectural features to reduce visual impacts.
3. Roof features may include flat roofs with parapet, hip roofs, or awnings with metal or canvas material.
4. Windows and storefront glazing shall be divided to be either square or vertical in proportion so that each section is taller than it is wide.
5. Building exteriors shall incorporate variation in materials. The primary (front) façade and other facades located along a public right-of-way may include:
 - h. Brick and/or stone masonry;
 - i. Stone accents;
 - j. Aluminum storefronts with anodized or pre-finished colors (windows and doors);
 - k. EIFS cornices, and parapet trim;
 - l. EIFS or synthetic stucco shall not be used in the first four feet above grade and shall be limited to only 25% of each building façade;

- m. Soffit and fascia materials to be considered include EIFS with crown trim elements; or
 - n. Cementitious siding.
6. Rear elevations facing opaque landscape buffers or not visible from vehicular use areas or public rights-of-way may incorporate decorative concrete masonry, metal coping, or EIFS trim.

POD E Representative Imagery



5. OPEN SPACE AND CONSERVATION

This Rezoning will allow the existing natural features on the Property to be largely preserved and featured as amenities for the community. Development of the Property will either meet or exceed the Open Space and Conservation standards defined in UDO Section 4, and described below.

On-Site Private Open Space

The Town requires new development projects to provide On-Site Private Open Space to serve their tenants, residents, and/or patrons. On-Site Open Space may include a combination three components: Tree Preservation, Active Recreation, and Urban Civic Space. The Property shall meet or exceed the requirements below.

ON-SITE PRIVATE OPEN SPACE			
	UDO Requirement	Proposed	Flex Space in Each Component
Tree Preservation Area	Min 0% (0 acres)	5.8% (3.56 acres)	5.8% (3.56 acres)
Active Recreation Area	Min 2% (1.22 acres)	9.8% (5.98 acres)	7.0% (4.33 acres)
Urban Civic Space	Min 0.5% (0.3 acres)	0.9% (0.55 acres)	0% (0 acres)
Flex Space	12.5% (7.65 acres)		
TOTAL AREA	15% (9.18 acres)	16.5% (10.09 acres)	12.8% (7.89 acres)

Public Park Space

The Town finds that new residential projects shall provide land and/or a cash payment to off-set their impact on the public parks system and to maintain the Town's adopted level of service for parks. New projects that contain residential dwelling units (including all subdivisions) shall dedicate public park land and/or provide a payment in lieu (subject to the limitations of Section 4.7) to the Town for the creation and development of public parks and recreation serving its residents. This Rezoning shall include a park dedication fee according to the standards of UDO Section 4.7.2.





Conservation Areas

The Town finds that conservation buffers and use restrictions are warranted along riparian corridors, designated greenways, and other critical environmental features to ensure their perpetual ecological and habitat functions. The conservation buffer standards are intended to protect natural resources (including riparian corridors and wetlands), specific watersheds, and areas along major roadway corridors and are intended to mostly remain in their natural state; where applicable, the buffers shall be enhanced with native trees and vegetation. This Rezoning shall comply with the Conservation Area requirements of UDO Section 4.8.



Landscaping and Perimeter Buffers

Common open space and amenity areas will be designed and landscaped with native and locally adapted plants, including pollinator species where appropriate. Buffer yards are provided at the perimeter of the Property, although a large portion of the northern perimeter buffer will be provided as Tree Preservation Area. Landscape design elements will employ features that emphasize the importance of “placemaking”, including but not limited to, decorative pavers, benches, wayfinding signs, and plant features.

POD A Gathering Space (Multifamily and Mixed Use Pod)

The Multifamily and Mixed Use Pod shall include a minimum of 30,000 square feet of private open space spread across several amenity areas. These amenities shall include, but are not limited to, a leasing clubhouse featuring both interior and exterior clubrooms, a fitness club, a coworking/business center, and a resort-style pool. Additionally, there will be passive green space around the exterior of the multifamily buildings that is available for use to residents and residents’ guests. A pedestrian connection to the public greenway shall be provided in order to promote walkability between Pods.







POD B Gathering Space (Townhouse Pod)

The Townhouse Pod shall include a minimum of 70,000 square feet of private open space spread across a minimum of four areas. A pedestrian connection to the public greenway shall be provided in order to promote walkability between Pods.





POD C Gathering Space (Health and Fitness Pod)

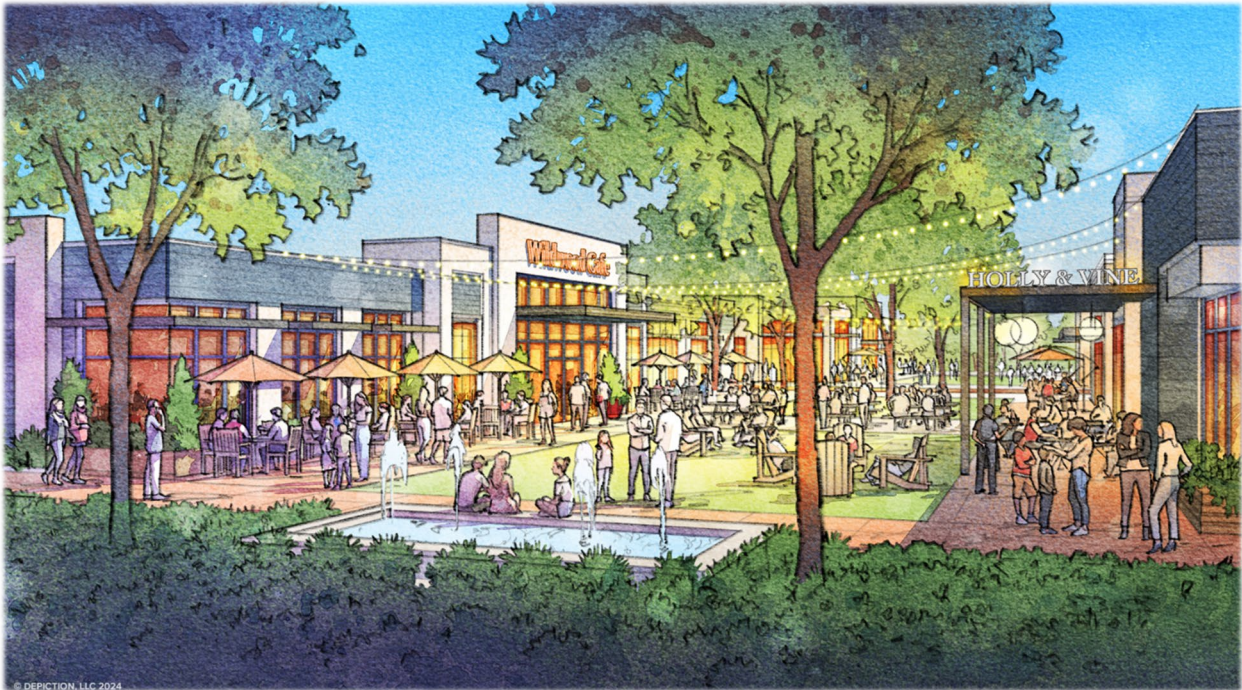
The Health and Fitness Pod shall include a minimum of 50,000 square feet of private open space.. This open space shall include, but is not limited to, a resort-style pool, full-service restaurant/bar, fitness lawn, tennis and/or pickleball courts, and childcare-associated playground area. A pedestrian connection to the public greenway shall be provided in order to promote walkability between Pods.



POD D Gathering Space (Dining and Retail Pod)

The Dining and Retail Pod will be a foot-traffic driven area that prioritizes pedestrian connectivity and the use of public spaces. The private open space shall include a minimum of 18,000 square feet of private open space framed by dining and retail buildings, which shall conform to the UDO requirements for “Urban Civic Space”. These gathering areas are intended to act in congruence with the restaurant and retail spaces (e.g., outdoor seating), or to operate individually as their own attraction. The gathering spaces shall include, but are not limited to, outdoor dining areas, decorative lighting, shade structures, seating elements, an event lawn, hardscaping, enhanced landscaping, and pedestrian walkways. A pedestrian connection to the public greenway shall be provided in order to promote walkability between Pods.

The illustrations below are conceptual only, are not separate commitments, and are provided as an example of the POD D linear open spaces. In the event of a conflict with the text commitments of this section, the text commitments shall apply.



POD E Gathering Space (Office and Retail Pod)

The Office and Retail Pod shall include a minimum of 2,000 square feet of private open space. A pedestrian connection to the public greenway shall be provided in order to promote walkability between Pods.



6. HISTORIC PRESERVATION



Preservation of the Adams Home

A historic home and barn are currently located on the property, which has been owned by the Adams family and descendants since it was built in 1915 (the “Adams Home”). Although the home has fallen into disrepair in recent years, Aura Wildwood aims to preserve the Adams Home and the barn and make it a central feature of the development.

Prior to submission of the first site plan for Aura Wildwood, the Adams Home and barn shall be evaluated by one or more licensed professionals for relocation on site. If relocation is deemed feasible by the licensed professional(s), the Adams Home and/or barn shall be relocated to the Dining and Shopping Pod as conceptually shown on the Master Plan. By integrating the Adams Home into the Dining and Shopping pod, the Adams Home will become a defining feature of the mixed use community, with common architectural themes throughout the development to honor the Adams Home. The Adams Home is envisioned as a gateway to the proposed greenway trails within Aura Wildwood and will be activated with outdoor amenity space. In addition, pecan trees shall be planted in the vicinity of the relocated Adams Home in order to recreate the setting and characteristics of the original location.

Once relocated, the nonprofit Carlyle Adams Foundation plans to repurpose the Adams Home to create a unique gathering space for the community. All uses permitted within the Dining and Shopping pod are applicable, and the Adams Home may integrate multiple uses.



The Adams Home



Concept: The Adams Home Relocated and Repurposed



Precedent Imagery: Triangle Land Conservancy's Bailey and Sarah Williamson Preserve, Wake Forest, NC

7. INFRASTRUCTURE

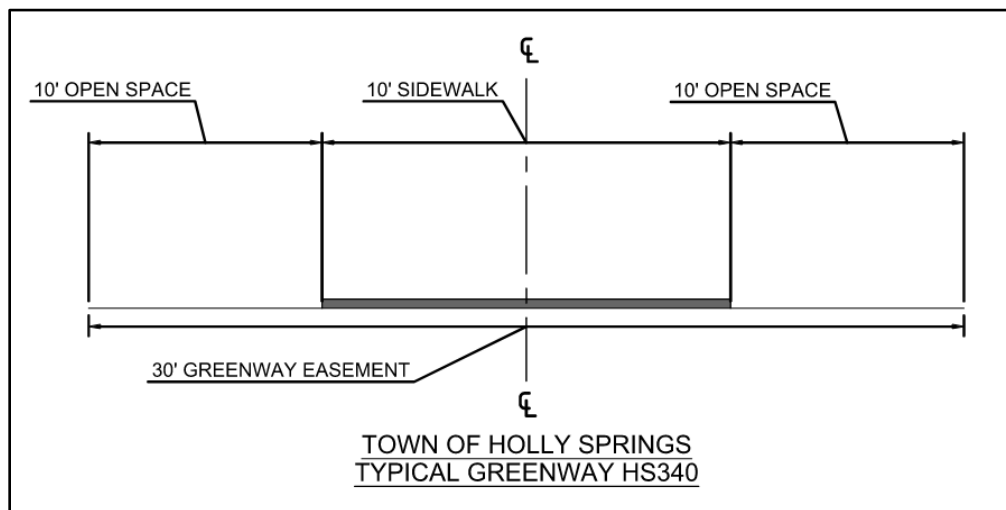
Internal Street Network

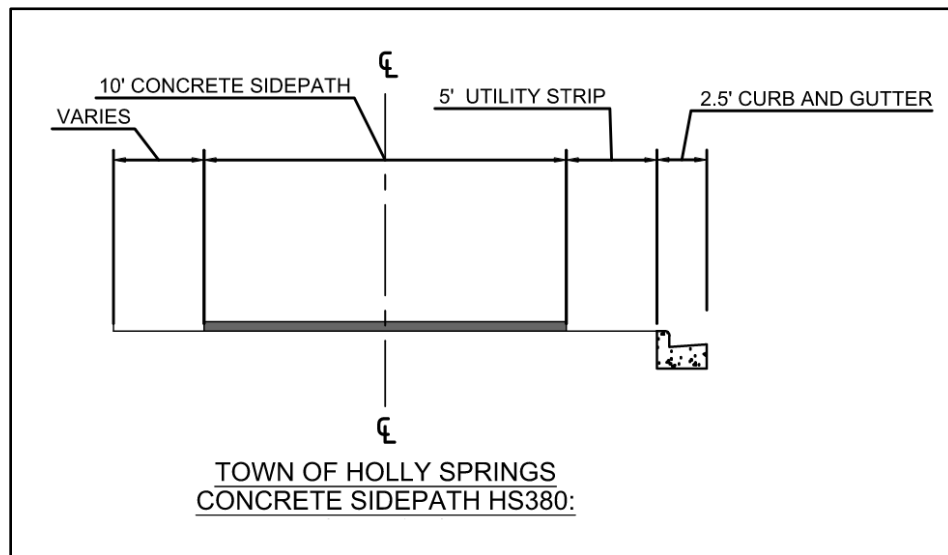
Aura Wildwood shall provide an internal private street network that provides sufficient access and circulation for the amount of traffic expected to be generated. Internal roads shall include a variety of cross sections constructed according to the Town's Transportation Plan requirements. A public connection will be provided from the Northern Wildwood Residential Neighborhood to the Southern property line per the Town's Comprehensive Plan. Traffic calming measures are provided in critical areas, including a high visibility crosswalk and road narrowing at the connection to Wildwood neighborhood to the northeast and a roundabout in the center of the project, which will feature a public art installation.

Greenways

Aura Wildwood shall provide public greenway extensions throughout the site. Two connections will be made to the existing greenway on the northwestern property boundary. The greenway will follow the stream and wetlands along the western boundary and stub to the southwestern corner of the property. The greenway will also be routed throughout the development to provide a connection at the southeastern corner, consistent with the Parks, Recreation, and Greenways Master Plan. The approximate alignment of the greenway and greenway cross sections are shown in the Master Plan. However, final locations shall be determined at site plan.

A concrete side path cross section is provided through the center of the site in order to promote a more urban setting. The urban side path cross section provides the full width of pavement and reduced open space corridors surrounding it. All other greenways shall comply with the Town's typical greenway cross section.









Street Trees

Street trees shall be planted along all streets in accordance with UDO Section 5.3.5.



8. NONRESIDENTIAL PHASING

Aura Wildwood is expected to be developed in three or more phases. In order to ensure delivery of nonresidential development, construction of 11,000 square feet of nonresidential development shall commence prior to the issuance of the 200th multifamily Certificate of Occupancy.



Holly Springs Town Council

Town Council Meeting Agenda Cover Sheet

Agenda Item#: 16.

Public Hearings

Title: Ragan Mixed-Use Rezoning and Development Agreement 23-REZ-03 - Legislative Public Hearing

Strategic Priority Area: Growth Management & Economic Vitality
Vibrant Community

Staff Resource: Grayson Taylor, Development Services, Elliot Blonshine, Development Services

Action(s):

- Open Legislative Public Hearing.
- Continue public hearing to July 16th.

Explanation:

- The town and the developer are continuing to work through some final details of a draft development agreement. The public hearing will need to be opened and continued.
- The Town has received a request to rezone 56.90 acres at 3313 Avent Ferry Rd from RR - Rural Residential to NMX-CD - Neighborhood Mixed-Use Conditional Zoning District.
- An approval would allow future development of the site that would include commercial at the intersection of Avent Ferry Road and Rex Road, residential (quadruplexes and townhomes), and a public park, which will require separate Development Plan and Major Subdivision Plan review.
- If the rezoning is adopted, the rezoning also has the effect of also amending the Future Land Use map.
- A Wake County Public School System Capacity Letter is included as an attachment.
- The developer has worked with the Town on a Development Agreement regarding onsite Parkland Dedication.

Staff Recommendation: Approve

Planning Board Recommendation: Approve (5-0) [4 absent]
A summary of the Planning Board discussion is in the staff report.

Background:

- The parcel was zoned R:30 Residential (reassigned to RR Rural Residential) on June 7, 2016.

Funding Source(s):

N/A

Attachment(s):

1. 23REZ03_RaganMixedUse_StaffReport_TC061824
2. 23REZ03_RaganMixedUse_Ordinance
3. 23REZ03_RaganMixedUse_WCPSSIImpactLetter
4. 23REZ03_RaganMixedUse_Petition
5. 23REZ03_RaganMixedUse_PlanSet
6. 23REZ03_RaganMixedUse_DesignManual



Project Type: Zoning Map Amendment (Rezoning)

Concurrent Applications:

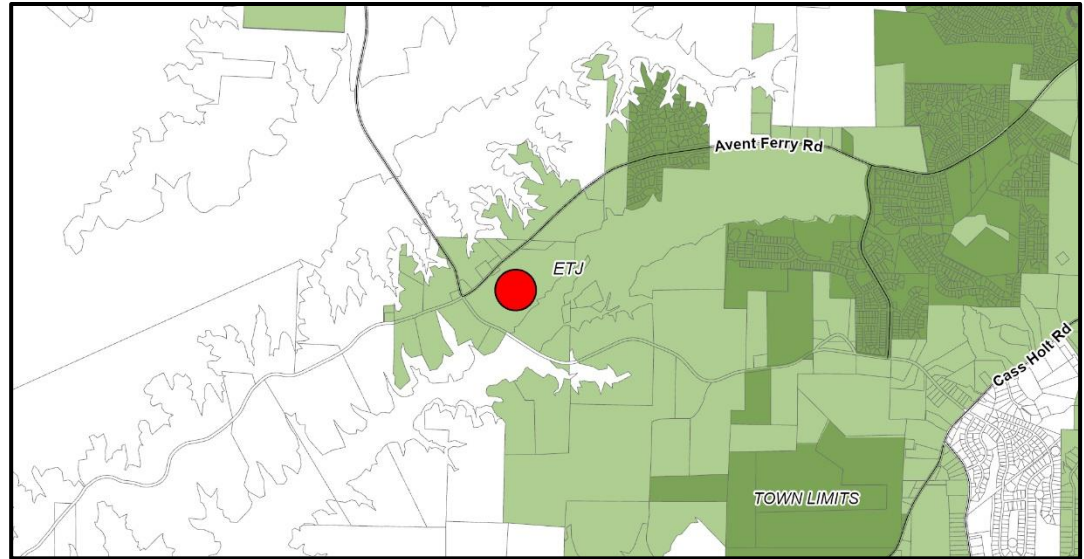
☒ 23-CPA-03

Applicant / Petitioner:

Laura Holloman / McAdams
(See Petition)

Property Address: 3313 Avent Ferry Road

Property Area: 56.90 ac.



Located in: ☐ Holly Springs Corporate Limits ☒ Holly Springs ETJ ☐ Annexation Pending

Project Summary:

A rezoning of 56.9 acres from RR – Rural Residential to NMX-CD – Neighborhood Mixed-Use Conditional Zoning District location at 3313 Avent Ferry Road. The application proposes 32,000 square feet of commercial space, 115 attached dwellings (townhomes), and 164 “Cottage” (quadruplex) units.

Requested Action:

Legislative Decision: The Town Council must hold a Legislative public hearing to receive public comments regarding the proposal and make a determination on whether or not to approve the policy or modification.

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**Case Summary****Current Zoning:**

RR Rural Residential

☐ Conditional Zoning District**Proposed Zoning:**

NMX Neighborhood Mixed-Use

☒ Conditional Zoning District

Aerial Photograph

Growth Strategy Map:

Places to Transform

Places to Enhance

Small Area Plan Designation:

N/A

Future Land Use Plan Designation:

Neighborhood Center

Conservation Neighborhood

Natural Area

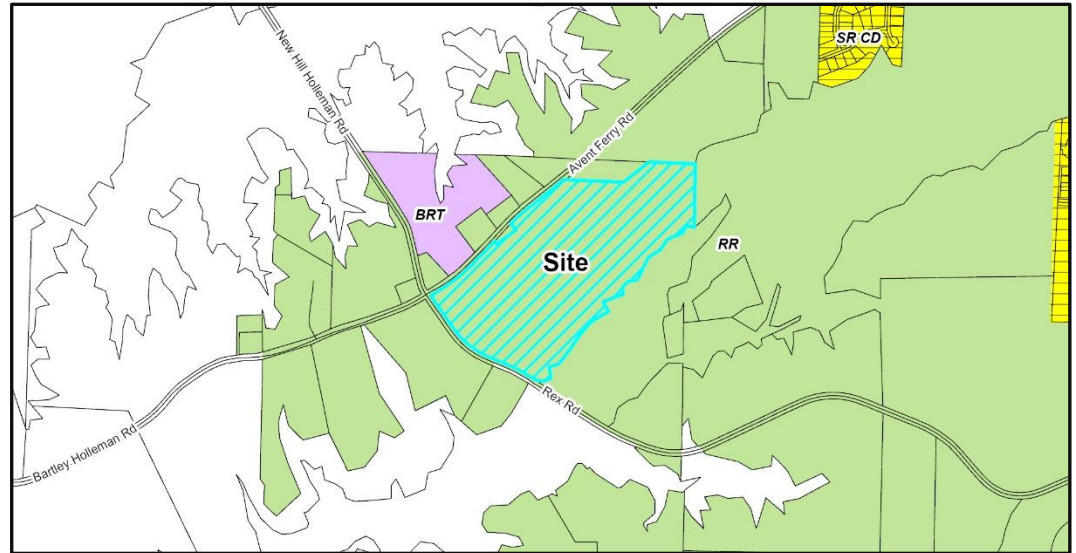
Staff Analysis:The requested Zoning Map Amendment is: ☐ Consistent with Adopted Plans ☒ Inconsistent with Adopted Plans

The proposed Conditional Zoning District achieves several significant themes from the Town's Comprehensive Plan that support the Town's overall goals and objectives. These goals and objectives include adding public park space to the Town's inventory, adding new housing types available to Town residents, and creating commercial development contextual to the community. The proposed modifications to the base standards through the Conditional Zoning District process support a more unique design less seen within the Town's corporate limits. While the proposed Neighborhood Mixed-Use Conditional Zoning District has inconsistencies with the current Future Land Use Map designation, it is reasonable and in the public interest to the Town of Holly Springs as public park space, new housing choices, and conditions which reduce potential impacts to adjacent properties and the neighborhood are provided.

Staff Recommendation: ☒ Approve ☐ Deny

**Current Zoning Information**

Parcel #	Zoning	Area
0627890439	RR	56.9 acres
Total Area		56.9



Current Zoning Map

Adjacent Property Current Zoning Information

	Zoning	Existing Land Use
Subject Property	RR – Rural Residential	Conservation Neighborhood; Neighborhood Center
North	RR – Rural Residential	Conservation Neighborhood
South	RR – Rural Residential	Conservation Neighborhood
East	RR – Rural Residential	Conservation Neighborhood
West	RR – Rural Residential; BRT – Business & Research Technology	Conservation Neighborhood; Neighborhood Center

Parcel Rezoning History

Rezoning Number: 15-REZ-07 (establish ETJ)

Original Zoning: R-80 (Wake County)

Approved Zoning: R-30 – Residential

Approval Date: June 7, 2016



Land Use & Character Information

Growth Strategy Map: Places to Transform
Places to Enhance

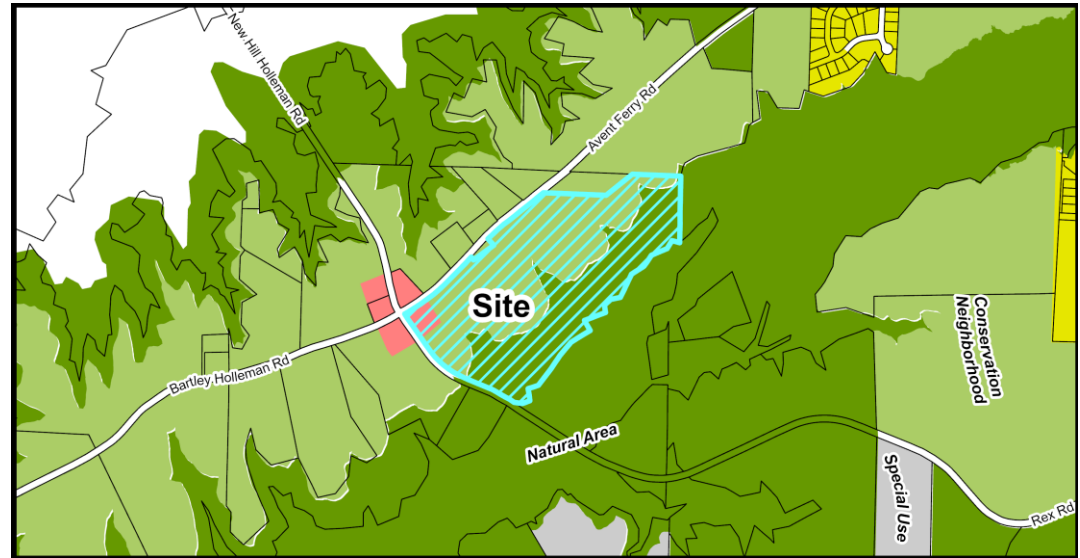
Future Land Use: Neighborhood Center
Conservation Neighborhood
Natural Area

Small Area Plan: N/A

The Requested Zoning Map Amendment is:

- ☐ Consistent with adopted plans
☒ Inconsistent with adopted plans

If a Zoning Map Amendment is adopted and the action is deemed inconsistent with adopted plans, the Zoning Map Amendment has the effect of also amending the Future Land-use Map.



Future Land Use Map

Important Themes for Transforming Holly Springs:

Eight important themes for Holly Springs are highlighted as high-priority principles for transforming the Town. The following theme(s) should be considered with this request:

Theme	Summary
☒ Establish Mixed-Use Activity Centers Throughout Holly Springs	Mixed-use and walkable development
☐ Suburban Remix	Activate neighborhood centers
☐ Suburban Retrofit	Redevelop existing centers into mixed-use, multi-modal, activated centers
☐ Context-Sensitive Infill Development Choices	Infill around single use residential areas
☒ Transitions	Complement existing development and avoid incompatibilities
☒ Increase Home & Neighborhood Choices in Holly Springs	Variety of integrated housing products
☐ Increase Diversity & Affordability of Housing in Holly Springs	Adequate supply of affordable housing
☒ More Transportation-Land Use Coordination in the Community	Equal emphasis on land use (demand), transportation (supply) and urban design (character)



Land Use & Character Information (cont.)

Growth Strategy Map: Places to Transform

Specific focus areas in Holly Springs provide opportunities to grow and transform in the future. These areas will evolve over time in terms of land use mix, density and intensity, home choices, and transportation options. These are the areas where the Town should emphasize public and private investment — increasing allowable densities and intensities, adding infrastructure capacity, improving access from nearby neighborhoods, investing in the public realm, and encouraging private investment — to diversify the Town's development strategy and support continued growth and economic prosperity in the future. Some areas identified to transform over time will require redevelopment of existing suburban shopping centers or infill development in the Downtown Village District.

Growth Strategy Map: Places to Enhance

Places to enhance in Holly Springs celebrate existing and future residential neighborhoods, and the small activity centers that serve them, as the building blocks for a strong community. They generally include Conservation Neighborhoods, Residential Neighborhoods with single dwelling detached homes on varying lot sizes, or Mixed Residential Neighborhoods with two or more home types (single dwelling detached, single dwelling attached, and multi dwelling) in the same development. Future infill development in the enhancement areas should be sensitive to the uses and densities along the perimeter of adjacent neighborhoods.

Future Land Use: Neighborhood Center

Small scale, Neighborhood Centers provide goods and services to surrounding neighborhoods. Their proximity to neighborhoods requires that operations be low-intensity, unobtrusive, and at a scale and design compatible with nearby residential development. The design of Neighborhood Centers transitions effectively between residential and nonresidential uses, and includes safe and convenient pedestrian and bicycle access for nearby residents. While this is primarily a commercial category, some Neighborhood Centers may include upper story residential or office. Sites also effectively minimize the impact of cut-through traffic on nearby neighborhood streets by orienting vehicle access and circulation away from adjacent neighborhoods.

Future Land Use: Conservation Neighborhood

A Conservation Neighborhood preserves 30% to 50% of the buildable land on a site for permanent open space — protecting environmental features, tree stands, or outstanding viewsheds — by closely clustering homes together of varying lot sizes and densities. Conservation Neighborhood design should respond to specific features on the site; however, goals to reallocate gross allowable densities into compact development areas that minimize infrastructure investments and maximize large, continuous areas for permanent open space are encouraged. Resident amenities in these neighborhoods should include walking trails and neighborhood gardens. Conservation Neighborhoods are primarily residential but may include limited civic or other non-residential (non-commercial) uses.

Future Land Use: Natural Area

Natural Areas are largely undeveloped and reserved for preservation and low-impact recreation (trails and greenways) because of their outstanding beauty, environmental features, or proximity to Harris Lake.



Land Use & Character Information (cont.)

Historic Structures: ☒ None

Across Avent Ferry Road from the subject property is the Samuel Bartley Holleman House, one of three Holly Springs properties on the National Historic Register. Next to the house is Collins Grove Baptist Church and Cemetery, a National Historic Register Eligible property.

Future Land Use Staff Analysis:

The requested Zoning Map Amendment is: ☐ Consistent ☒ Inconsistent

The subject property has three designations on the Future Land Use Map: Neighborhood Center, Conservation Neighborhood, and Natural Area. The proposed Zone Map Amendment is consistent with the Neighborhood Center designated portion, as the application proposes a commercial component at the intersection of Avent Ferry Road and Rex Road. While the proposed Neighborhood Mixed-Use Conditional Zoning District is suitable for a Neighborhood Center, it is not typically a suitable zoning district within a Conservation Neighborhood character area, per the Unified Development Ordinance. The proposed Conditional Zoning District does not achieve the goal of 30-50% preserved buildable land, but does propose 19% open space, with several types of active and passive areas, and dedication of a public park. There is also a significant portion of Natural Area on the site, bordering the southwest property line. The proposed stormwater control measures take up the majority of Natural Area space, and the majority of the site's streams and wetlands are preserved with the proposed district.

The applicant is requesting consideration of a companion Comprehensive Plan Amendment (23-CPA-03) with this application. The request is for the portions of the property designated as Conservation Neighborhood and Natural Area on the Future Land Use Map to be changed to Mixed Residential Neighborhood if the rezoning is approved. The rezoning petition meets several of the characteristics of the Mixed Residential Neighborhood character area, including:

- A mix of housing types - the proposal includes a mix of townhomes and "cottage" dwellings (quadruplexes). The quadruplex "cottages" provide a housing type generally not found within Holly Springs.
- Off-street parking at the side/rear of lots and buildings to enhance streetscape and walkability.
- 32,000 square feet of commercial space
- Development sensitivity to existing natural resources.
- Building materials and design standards fit the area's rural character and existing structures.

The proposed district meets several important themes for Transforming Holly Springs by creating a new mixed-use activity center at a historic road intersection and creating a new gateway transition into the Town. The proposed commercial portion of the district may also reduce transportation impacts by reducing automobile trips for those living within the site, increasing land use-transportation coordination. These themes connect to specific recommendations in the Land Use & Character Plan including CC-8: Increase Walkability and CC-10: Mitigate Impacts of Auto-Oriented Uses.



Land Use & Character Information (cont.)

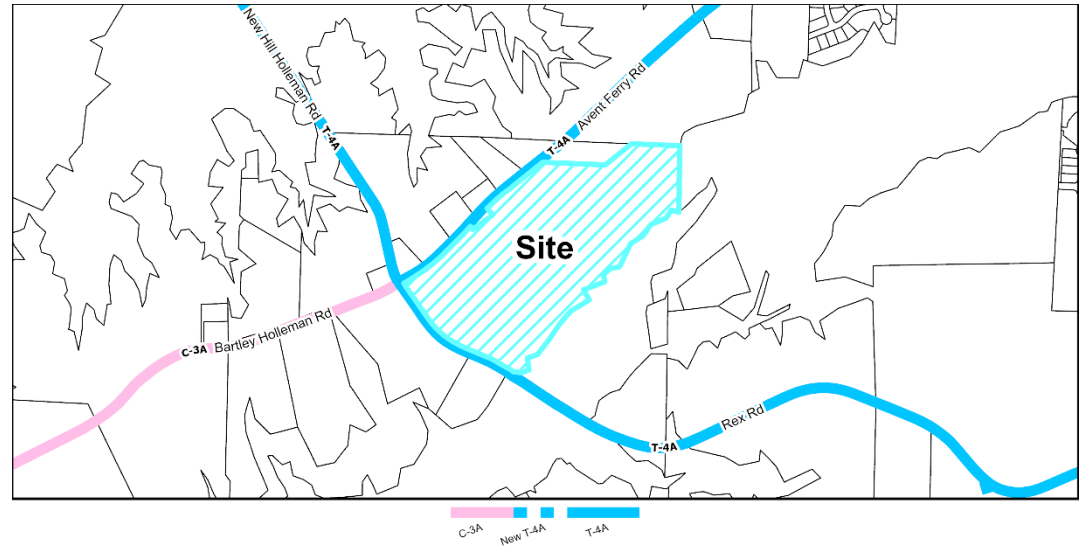
While the proposal does not meet the specific style of development intended by the Conservation Neighborhood character area and is not fully consistent with the Vision Holly Springs Land Use & Character Plan, the proposed Conditional Zoning District meets several important characteristics of the Growth Strategy Map, themes for development, and specific recommendations in the Comprehensive Plan.



Transportation Information

Comprehensive Transportation Plan

Road Widening along Project Frontage	☒ Required	☐ Not Required
New Location Roadways	☐ Required	☒ Not Required
Hotspot/Safety Study Location	☐ Yes	☒ No



Roadway Map

Comprehensive Transportation Plan Summary

Road Widening along Project Frontage:

In accordance with the Unified Development Ordinance (UDO) and Comprehensive Transportation Plan (CTP), road widening is required across the property frontages of Avent Ferry Road and Rex Road to meet ½ of the ultimate cross-sections. The development is proposing two driveway accesses along Avent Ferry Road and 2 driveway accesses along Rex Road.

The Comprehensive Transportation Plans cross section potentially impacts historic structures on the north side of Avent Ferry Road. The applicant has provided a new right-of-way design to minimize impacts to these historic sites. This change by the applicant meets the Land Use & Character Plan's recommendation CC-20: Protect and Maintain Holly Springs's Historic Structures.

New Location Roadways:

There are no new CTP public roads proposed on this parcel.

Hotspot/Safety Study Location:

There are no Hotspot/Safety studies adjacent to this parcel.

Improvement Prioritization:

N/A

**Transportation Information (cont.)****Traffic Study Policy**

- ☒ Traffic Study Required ☐ Tier 1
 ☐ Tier 2
 ☒ Tier 3
 ☐ Traffic Verification Memo

Traffic Study Summary

A Traffic Impact Analysis (TIA) and associated Transportation Mitigation Agreement (TMA) was completed with the rezoning petition. This development is required to design and construct all recommended improvements within the approved TIA and TMA as follows:

Avent Ferry Road/Bartley Holleman Road at Rex Road/New Hill Holleman Road

- Provide exclusive northbound right-turn on Rex Road.
- Provide exclusive southbound left-turn on New Hill Holleman Road.
- Modify westbound approach of Avent Ferry Rd to provide exclusive right turn lane and shared left-turn/through lane.
- Install traffic signal.

Avent Ferry Road

- Provide asymmetrical widening to eliminate future conflicts with Collins Grove Baptist Church and its cemetery and also comply with CTP required frontage widening.

Avent Ferry Road at West Site Driveway

- Construct site driveway with left-in/right-in/right-out movements.
- Provide westbound left-turn lane on Avent Ferry Road.
- Provide an eastbound right-turn lane on Avent Ferry Road.

Avent Ferry Road at East Site Driveway

- Construct full-movement site driveway.
- Provide westbound left-turn lane on Avent Ferry Road.
- Provide an eastbound right-turn lane on Avent Ferry Road.

Rex Road at West Site Driveway

- Construct site driveway with right-in/right-out movement.
- Provide westbound right-turn lane on Rex Road.



Transportation Information (cont.)

Rex Road at East Site Driveway

- Construct full-movement site driveway.
- Provide eastbound left-turn lane on Rex Road.
- Provide westbound right-turn lane on Rex Road.

Transportation Staff Analysis:

The requested Zoning Map Amendment is: ☒ Consistent ☐ Inconsistent

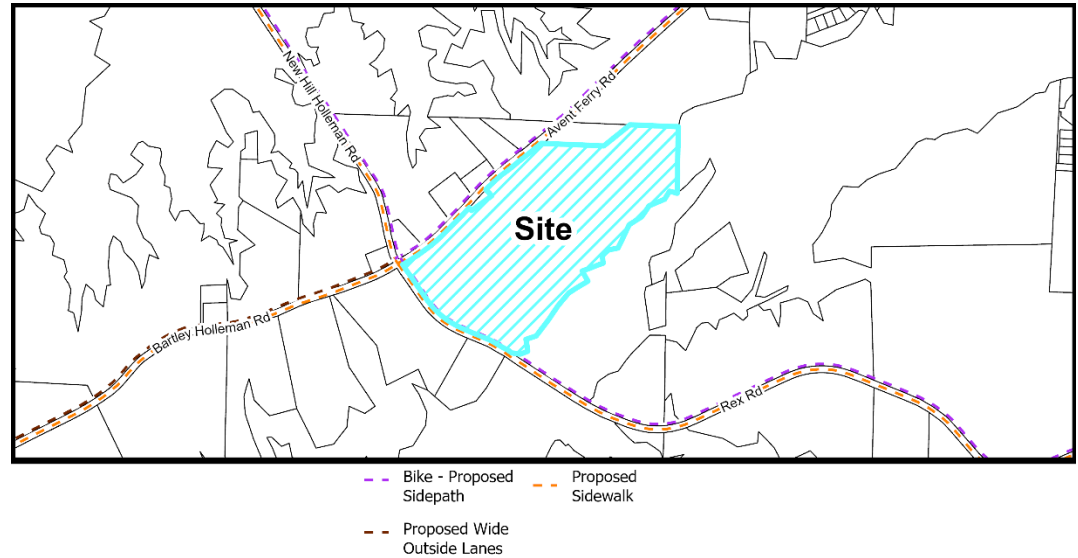
The mitigation improvements within the Transportation Mitigation Agreement set forth by the Traffic Impact Analysis are consistent with the Comprehensive Plan.



Parks, Recreation, & Greenways Information

Park Search Area

☒ Yes

☐ No


Active Transportation Map

Required Active Transportation Improvements

☐ Greenway

☒ Sidepath

The Comprehensive Transportation Plan shows a 10' Sidepath required for both the Rex Rd and Advent Ferry Rd frontage. The application has shown both improvements, including a section across an off-site "notch" as required by UDO Section 7.6 Sidewalks, Sidepaths, and Greenways. Should sufficient right-of-way not already exist across the "notch," the applicant shall endeavor to obtain the necessary right-of-way, and if they are not able to, the Town will be able to assist in the condemnation of the necessary right-of-way to enable the applicant's construction of the Sidepath.

Parks, Recreation, & Greenways Summary

The proposed Rezoning is located within Park Search Area #7 as shown in Comprehensive Plan Section 3. As this proposal contains a residential component and is located within a Park Search Area, they will be required to dedicate Parkland pursuant to the requirements of UDO Section 4.7 Public Park Space. The applicant has identified an approximate 6.9-acre area in the northeast corner of their proposed development, which would be dedicated to meet this UDO requirement. In addition to the land dedication, the applicant has proposed some initial improvements to the park site which would provide an immediate benefit to the future residents of their development upon completion of their buildout. The applicant is working with Town Staff on a Development Agreement to codify the terms of the dedication and improvement/reimbursement. At the time of this report, that Agreement was not yet completed.



Parks, Recreation, & Greenways (cont.)

Parks, Recreation, & Greenways Staff Analysis:

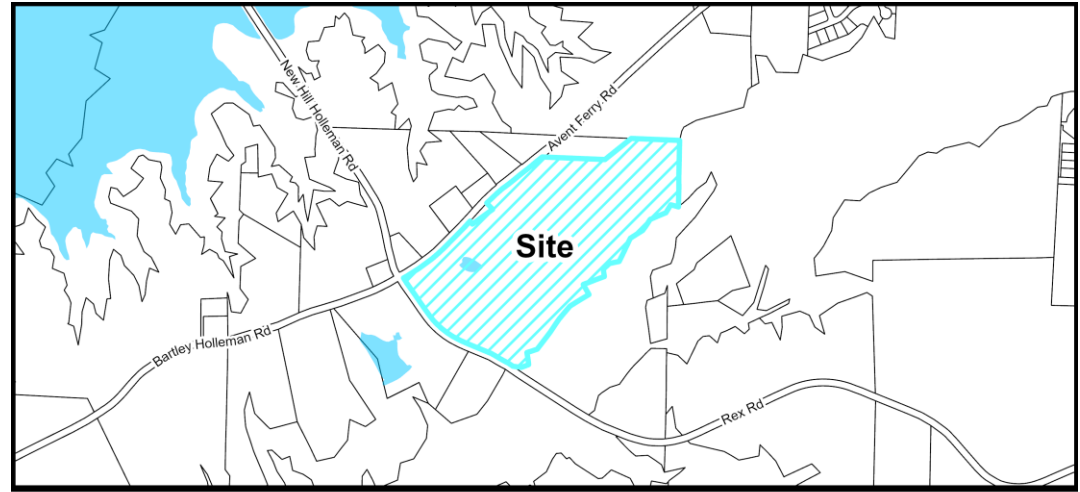
The requested Zoning Map Amendment is: ☒ Consistent ☐ Inconsistent

The proposed Rezoning petition shows compliance with all Parks, Recreation and Greenway-related UDO Ordinance requirements, and reflects the vision of Park Search area #7 as proposed in the Town's Comprehensive Plan Section 3. This would be the first occurrence of our Parkland Dedication requirement actually resulting in the dedication of Parkland rather than a payment of the fee-in-lieu of Parkland Dedication.



Community Facilities Information

Population growth increases demand for public services. In order to fulfill this demand, community facilities must be appropriately planned for and constructed. These facilities may range from additional public safety stations, such as police and fire, to new schools to handle the influx of school-aged children into an area.



No Community Facilities

Community Facilities Map

WCPSS Coordination

A Letter of Impact from Wake County Public School System (WCPSS) was received for this rezoning and is included in the attachments.

Schools at the following grade levels within the current assignment area for the proposed rezoning are anticipated to have insufficient capacity for future students; transportation to schools outside of the current assignment area should be anticipated:

☒ Elementary ☐ Middle ☒ High School ☐ N/A: All grade levels are anticipated to have sufficient capacity

The following mitigation of capacity concerns due to school construction or expansion is anticipated:

- ☐ School expansion or construction within the next five years is not anticipated to address concerns.
☒ School expansion or construction within the next five years may address concerns at these grade levels:
☒ Elementary ☐ Middle ☒ High School
☐ Not applicable – existing school capacity is anticipated to be sufficient.

Community Facilities Staff Analysis:

The requested Zoning Map Amendment is: ☒ Consistent ☐ Inconsistent

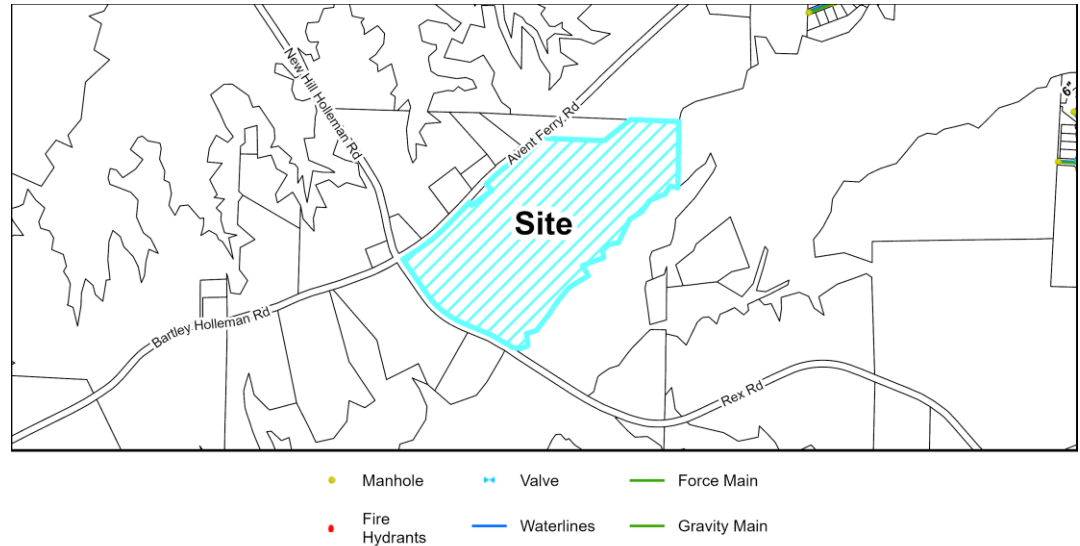
The subject property is outside of a Study Area as designated on the Community Facilities Map. As a project proposing residential units, the applicant is required to report the potential number of units to the Wake County Public School System.



Infrastructure & Utility Information

Utility Availability

Water	☐ Yes ☒ No
	☐ Study Required
Sanitary Sewer	☐ Yes ☒ No
	☒ Study Required
Reclaim	☐ Yes ☒ No
	☐ Study Required



Utility Map

Infrastructure & Utility Summary

Water:

The project is required to tie to and extend Town water facilities to serve the proposed development. Watermains extensions are proposed from the Lochridge Subdivision and along each property frontage of Avent Ferry Road and Rex Road in accordance with the Town's Long-Range Water plan. These waterlines will be installed by the developer in accordance with Towns Policies.

Sanitary Sewer:

Sewer service is proposed to be provided via an onsite pump station and forcemain to discharge to the existing Avent Ferry Pump Station. Easement acquisition and construction associated with the forcemain route are included as part of this development. The Long-Range Wastewater Plan identifies this site for a regional pump station. The developer worked with Town Staff to determine a mutually beneficial solution. However, after coordination with Town Administration and the Utilities and Infrastructure department, it was determined the funding needed to offset the cost for a regional solution is not available at this time. Therefore, the proposed pump station will be sized to serve this development only.

A sewer study, including a pump station capacity analysis for the existing Avent Ferry pump station and the proposed pump station was completed with this rezoning. The study does not anticipate improvements to the Avent Ferry pump station are necessary, but the study must be revisited at Major Subdivision for the Ragan only pump station solution.

Reclaim:

The project is located outside the Town's Reclaim Water Service Area.



Infrastructure & Utility Information (cont.)

Water Resource Management (WRMP) Policy

- | | | | |
|---|---------------------------------|---------------------|---|
| ☐ WRMP Applicable | ☐ Tier 1 | Allocation Elements | ☐ Public Infrastructure Improvements |
| ☒ WRMP Not Applicable | ☐ Tier 2 | | ☐ Sustainable Design |
| | ☐ Tier 3 | | ☐ Work Force Housing |
| | | | ☐ Open Space/Tree Preservation |

Water Resource Management Policy Summary

This rezoning was submitted on June 2, 2023, and is therefore not subject to the Water Resource Management Policy (effective July 1, 2023).

Infrastructure & Utility Staff Analysis:

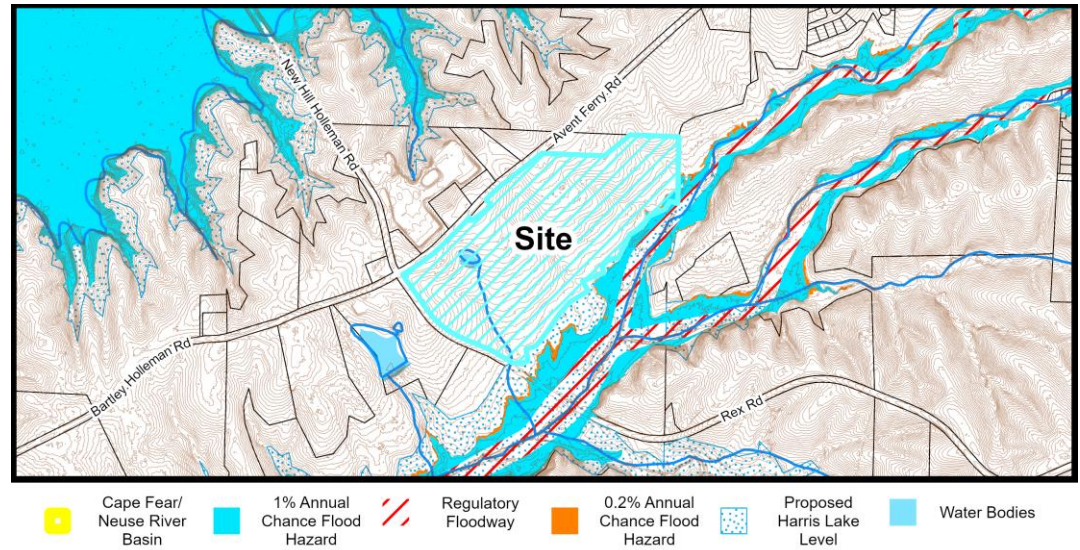
The requested Zoning Map Amendment is: ☒ Consistent ☐ Inconsistent

While the Long-Range Wastewater Plan identifies this site for a regional pump station and the developer worked with Town Staff to determine a mutually beneficial solution, it was determined the Town funding to support a regional solution is not available at this time. Therefore, the proposed pump station will be sized to serve the Ragan development only. The proposed utility connections and extensions are consistent with the Comprehensive Plan as well as the Engineering Studies associated with the Rezoning Petition.



Natural Resources & Open Space Information

Total Required Open Space	12 % or 6.83 ac.
Tree Preservation Area	10% or 5.7 ac.
Active Recreation Area	0% or 0 ac.
Urban Civic Space	0.5% or 0.28 ac.
Flexible Space	1.5% or 0.85 ac.



Natural Resources Map

Natural Resources & Open Space Summary

Open Space:

The proposed district requires 12% minimum Open Space of the total area (10% Tree Preservation, 0% Active Recreation, 0.5% Urban Civic Space, and 1.5% as Flexible Area). The applicant has proposed a total of 19%, which includes Tree Preservation throughout the site, taking into account the site's natural landscape. The applicant has also proposed Active Recreation includes trails, a pool, pickleball court, dog parks, and tot lots. The flexible space incorporates additional urban civic space and tree preservation.

Stormwater:

The project is located within the Cape Fear River Basin and proposes to treat all new impervious surfaces onsite with several Stormwater Control Measures. There are several jurisdictional features located on and adjacent to the site such as wetlands, a stream, floodplains, and Riparian buffers.

Natural Resources & Open Space Staff Analysis:

The requested Zoning Map Amendment is: ☒ Consistent ☐ Inconsistent

The applicant has met the required Open Space regulations of the proposed NMX-CD – Neighborhood Mixed-Use Conditional Zoning District, per the Town's Unified Development Ordinance. Any and all permits required to construct this development must be obtained prior to Civil Construction Drawing approval. This has been designed in a way to minimize impacts to the existing environmental features and is consistent with the Comprehensive Plan.



Conditional Zoning District Standards Information

Conditional Zoning Districts (CD) are intended to provide flexibility within the planning and development process, while creating additional controls to ensure quality development. The Conditional District allows the applicant the option of requesting this flexibility in exchange for higher quality, innovative, and sustainable development.

CD Design Goals. CD proposals shall demonstrate that the project and development therein will incorporate and/or achieve the following design goals:

1. The incorporation of existing natural features such as wooded areas and slopes into the design of new development in such a manner as to preserve the site's natural character;
2. The preservation of significant view corridors; development of out-lying areas of the Town and its Extraterritorial Jurisdiction in a manner which retains elements of traditional historical land use patterns;
3. Development of pedestrian oriented communities; development of traditional style neighborhoods;
4. Development of communities that are visually and functionally connected to one another;
5. Protection of significant watershed areas in order to preserve water quality;
6. Creativity and imagination in the process of development;
7. Unique architecture or sustainable design;
8. Efficient, aesthetic and desirable use of open space;
9. Variety in housing types and physical development patterns; and,
10. Special considerations for property with a unique history or outstanding physical features.

Conditional Zoning District Summary

Development Standards (UDO Section 2):

Development Density	UDO Standard	Proposed Standard
Maximum Gross Density (Units/Acre)	15 units/acre	5.27 units/acre

Building Placement	UDO Standard	Proposed Standard
Exterior Setback Minimum to Adjacent Residential Districts	5'	10'
Exterior Setback to Adjacent Commercial*	20'	25'

*Applies to Avent Ferry Road and Rex Road frontages



Building Height	UDO Standard	Proposed Standard
Maximum Building Height	45'	45'
Accessory Structure Maximum	N/A	15'

Permitted Uses (UDO Section 3):

The applicant has proposed no additional uses to the NMX district per the Unified Development Ordinance. The NMX – Neighborhood Mixed-Use zoning district allows for a mix of residential and non-residential uses, with certain uses permitted via Conditional Zoning District only.

The proposed Conditional Zoning District lists permitted uses, as seen in the table from the Design Manual below. Several uses were omitted from standard UDO permitted uses such as Residential Care Facilities, Amusement (Indoor), and School (Commercial, Trade, & Business).

PERMITTED USE TABLE

The uses listed in the permitted use table shall be the only uses permitted as part of this development.

Use	NMX
Apartment Dwelling	P
Attached Dwelling	P
Bed and Breakfast	P
Hotel	P
Inn	P
Business Services	P
Childcare Center	P
Medical Office	P
Office Use	P
Personal Services	P
Veterinary Clinic/Hospital	P
Bar/Nightclub/Tasting Room	P
Food/Restaurant Uses	P
Retail Uses	P
Civic Building	P
Community Support Facility	P
Assembly	P
Religious Use	P
Fitness Facilities	P
Recreation Facility, Indoor	P
Solar Energy Systems-Small	P
Transit Station/Terminal	P
Wireless Telecommunications Equipment	P
P = Permitted.	

Landscaping (UDO Chapter 5):

Required Buffering	UDO Standard	Proposed Standard
Thoroughfare Buffer	5' Type A	10' Type B (Commercial) 20' Type B (Residential)

**Building, Site, and Subdivision Lot Design Standards (UDO Chapter 8):**

	UDO Standard	Proposed Standard
Commercial Primary Façade Material Requirements	Type 1 Material: Minimum 60% of Building Façade No more than 3 discernable color families	Type 1 Material: Minimum 40% on Primary Building Façade No color requirements
Commercial Primary Façade Definition	Any Building façade in which any portion of a Lot or Integrated Center is determined to be visible from a Public/Private Street Frontage, Interior Access Drive, or a Side or Rear Lot Line abutting a Residential Use District	Facades facing Avent Ferry Road or Rex Road
Commercial Ground Floor Transparency	Small Buildings (<25,000sf): 40% Medium, Large Buildings (25,000-200,000sf): 20% Extra Large Buildings (>200,000sf): 10%	All Commercial Buildings: 40%
Residential Façade Type 1 Materials	Brick; stone (e.g., natural/cultured, limestone, marble, or granite); split-face block (integral color); architectural or precast concrete, if the surface is designed to simulate brick or stone; a combination thereof; or similar material determined by the Administrator	Brick; stone or synthetic equivalent; cementitious siding; fiber cement (Hardie Plank); stucco
Residential Façade Type 2 Materials	Wood siding; fiber cement siding; stucco; tile; EIFS; or similar material determined by the Administrator	Tile; EIFS, metal
Residential Façade Type 3 Materials	High quality, smooth finish metal panel or similar material determined by the Administrator.	Vinyl siding, trim, accent
Residential Primary Façade Material Requirements	Type 1 Material: Minimum 35% of Building Façade Type 3 Material: Prohibited	Type 1 Material: Minimum 40% of Building Façade Type 3 Material: Maximum 10%

To commit to the rural “farmhouse” theme, the applicant has offered specific elements to commercial buildings such as cupolas, weather vanes, and/or public art pieces of various materials. Commercial roofs may be composed of shingles or metal. Residential facades will have masonry watertables across the front of each building.



Conditional Zoning District Standards Staff Analysis

The applicant must demonstrate that the proposed zone map change and property owner offered conditions (if any) or unique conditions associated with this request support the Town's comprehensive plan objectives and/or policies and why the proposed zoning change is reasonable and in the public interest. The applicant has provided a statement in the petition.

Staff has reviewed the application and has determined the requested Zone Map Change is:

☒ Consistent with Adopted Plans ☐ Inconsistent with Adopted Plans

Staff has found the application to be generally consistent with CD Design Goals. The applicant has proposed a mixed-use development at the edge of the Town's Extraterritorial Jurisdiction, with rural, "farmhouse" architectural elements that are in character with nearby properties and land uses. This will contribute to a more unique design less seen within the Town's corporate limits. The applicant has proposed less density than what would normally be permitted in the district and is only slightly higher than what could be achieved using a conservation subdivision. The proposed layout creates opportunities for residents to safely walk within the community, as well as to potential commercial options that can serve the site and community.

The proposed Conditional Zoning District offers a guarantee of the construction of commercial space within a designated Neighborhood Center on the Future Land Use Map. The applicant has committed to a minimum of 10,000 sf of commercial to be constructed prior to the 150th certificate of occupancy, ensuring development of a more traditional-style neighborhood.

Staff has noted some modifications to the UDO are less restrictive than what is currently required. There are less restrictive material requirements for UDO-defined primary commercial facades, and the possible inclusion of UDO Type 2 and 3 materials where not typically allowed. The deviations may inform the farm house style intended by the applicant and it should be considered if the proposed deviations are indicative of higher quality and innovative development.



Decision-Making Information

Zoning Map Amendment (Rezoning) Staff Analysis

The proposed Conditional Zoning District achieves several significant themes from the Town's Comprehensive Plan that support the Town's overall goals and objectives. These goals and objectives include adding public park space to the Town's inventory, adding new housing types available to Town residents, and creating commercial development contextual to the community. The proposed modifications to the base standards through the Conditional Zoning District process support a more unique design less seen within the Town's corporate limits. While the proposed Neighborhood Mixed-Use Conditional Zoning District has inconsistencies with the current Future Land Use Map designation, it is reasonable and in the public interest to the Town of Holly Springs as public park space, new housing choices, and conditions which reduce potential impacts to adjacent properties and the neighborhood are provided.

Staff Recommendation: ☒ Approve ☐ Deny

Previous Case Related Items

Land Use Advisory Committee Discussion

The LUAC discussed the initial concept for this project on May 2, 2023.

Planning Board Representatives: Thomas Urquhart, Rick Madoni

Town Council Representatives: Mayor Sean Mayefskie, Mayor Pro Tem Daniel Berry

Summary of Discussion: Land Use Advisory Committee members offered feedback on general layout of the site, a potential regional pump station, more opportunity for commercial, Comprehensive Plan compatibility with the current character area, and concerns over density.

Neighborhood Meeting

The applicant must hold a neighborhood meeting with all property owners within 500 feet of the project prior to submitting an application. A report of the neighborhood meeting has been submitted and is included in the agenda item attachments.

Meeting Date: 3/22/2023

Summary of Issues: The neighbors asked questions regarding the following:

- Avert Ferry Road widening
- Pump Station appearance, impacts to nearby properties, odor concerns
- Impacts to neighboring driveways, barn across Rex Road
- Buffering
- Utility Connections (Water, Fiber, etc)
- Fencing



Planning Board Action

Planning Board Meeting Date: 5/28/2024

Planning Board Decision Type: Advisory Decision

Advisory Decision

The Planning Board must review the application and make a recommendation to the Town Council.

The Planning Board should consider whether or not the land use standards and densities allowed in the proposed zoning district are appropriate for the property and consistent with the Vision of Holly Springs Comprehensive Plan. Technical standards of the Unified Development Ordinance are addressed once a Development Plan or Subdivision Plan is submitted for review.

The Planning Board discussed the following issues and concerns:

- External traffic generation from proposed development
- Traffic calming through development
- Onsite parking
- Proposed traffic signal at Avent Ferry Road and Rex Road Intersection
- Proposed cross-section location on subject property
- The proposed pump station as regional or site-only
- Rental vs ownership housing

Planning Board Recommendation:

The Planning Board adopted the following Comprehensive Plan Consistency Statement:

While the requested Zoning Map Amendment from RR – Rural Residential to NMX-CD Neighborhood Mixed-Use Conditional Zoning District has inconsistencies with the Vision Holly Springs Comprehensive Plan since the current Future Land Use Map destination for a majority of the site is conservation neighborhood, the proposed district meets the characteristics of the Neighborhood Center Future Land Use designation, Conditional District Design Goals, and specific Community Character recommendations as outlined in the Comprehensive Plan. The requested rezoning is reasonable and in the public interest because it provides additional housing choices, appropriate commercial space, and increased public park space to the Town.

The Planning Board voted in favor of the motion (5 - 0) [4 absent]

Motion to recommend that the Town Council **approve** Zoning Map Amendment Petition #23-REZ-03 to change the zoning of 56.9 acres of Wake County PIN #0627890439 from RR – Rural Residential to NMX-CD – Neighborhood Mixed-Use Conditional Zoning District,



thereby amending the Future Land Use Map for the portion designated as Conservation Neighborhood to Mixed Residential Neighborhood, as submitted by Laura Holloman of McAdams.

The Planning Board voted in favor of the motion (5 - 0) [4 absent]

Town Council Consideration & Action

Legislative Public Hearing

Prior to the Legislative Public Hearing:

- Mailed notice was sent to all property owners within 500 feet of the project.
- Published notice was made twice in the News & Observer.
- Posted notice was made with a public hearing sign on the property.

Town Council Decision Type: Legislative Decision

Legislative Decision:

Legislative public hearings are held prior to a change in policy that may affect the entire community, including decisions on land use. The public hearing allows the Town Council to receive public comments regarding the proposal and then have discussion and deliberation. Based on the information provided on the proposal, the Town Council will make a determination on whether or not to approve the policy or modification.

Potential Zoning Map Amendment Petition Motion

Adopt Ordinance #RZ24-06 to adopt the statement of compatibility and approve rezoning.



Ordinance No. 24-06

Date Submitted: June 18, 2024

Date Adopted: June 18, 2024

**AN ORDINANCE TO AMEND SECTIONS OF THE CODE OF ORDINANCES
TO MODIFY APPENDIX A: UNIFIED DEVELOPMENT ORDINANCE: OFFICIAL ZONING MAP AND
VISION HOLLY SPRINGS COMPREHENSIVE PLAN SECTION 1: LAND USE & CHARACTER
PLAN, FUTURE LAND USE MAP;
AND ADOPT THE COMPATIBILITY STATEMENT REQUIRED BY
NORTH CAROLINA GENERAL STATUTES 160D-605**

WHEREAS, the Town of Holly Springs Town Council adopted Vision Holly Springs: Town of Holly Springs Comprehensive Plan in November 2007; and

WHEREAS, the Town of Holly Springs Town Council has maintained and updated Vision Holly Springs: Town of Holly Springs Comprehensive Plan by adopting Section 1: Land Use & Character Plan in 2019; Section 2: Comprehensive Transportation Plan in 2022, and Section 3: Parks, Recreation and Greenways Master Plan in 2021; and

WHEREAS, the Town of Holly Springs has received a request to modify the Official Zoning Map for 56.90 acres of Wake County PIN 0627890439 from RR: Rural Residential to NMX-CD: Neighborhood Mixed-Use Conditional Zoning District; and

WHEREAS, the *Vision Holly Springs: Town of Holly Springs Comprehensive Plan* designates said parcels on the *Future Land Use Map* as Neighborhood Center, Conservation Neighborhood, and Natural Area; and

WHEREAS, the requested zoning district proposes land uses that are inconsistent with the adopted *Vision Holly Springs: Town of Holly Springs Comprehensive Plan* but meets overall Town goals, objectives, and policies of the *Vision Holly Springs: Town of Holly Springs Comprehensive Plan*; and

WHEREAS, the Holly Springs Planning Board reviewed this request at a Public Meeting on May 28, 2024 and recommended approval by a vote of 5-0; and

WHEREAS, in accordance with NCGS § 160D-601, the Town of Holly Springs held a legislative hearing on June 18, 2024 to consider the proposed changes to the Official zoning map; and

WHEREAS, after considering the recommendation of the Holly Springs Planning Board and the public input offered in a public hearing before the Town Council, the Town Council adopts the following plan consistency statement:

While the requested Zoning Map Amendment from RR – Rural Residential to NMX-CD Neighborhood Mixed-Use Conditional Zoning District has inconsistencies with the Vision Holly Springs Comprehensive Plan since the current Future Land Use Map destination for a majority of the site is conservation neighborhood, the proposed district meets the characteristics of the Neighborhood Center Future Land Use designation, Conditional District Design Goals, and specific Community Character recommendations as outlined in the Comprehensive Plan; and

WHEREAS, the Town of Holly Springs Town Council finds the proposed amendment to the Official Zoning Map is reasonable and in the public interest by providing a unique and integrated community with additional housing choices for Town residents, public park space, and contextual commercial development; and,

THEREFORE, BE IT ORDAINED by the Holly Springs Town Council of the Town of Holly Springs, North Carolina, that the Unified Development Ordinance of the Town is amended as follows:

Part 1: Amend Unified Development Ordinance Section 1.7 Official Zoning Map with the following rezoning request: 23-REZ-03 to change the zoning of PIN# 0627890439 from RR Rural Residential to NMX-CD Neighborhood Mixed Use Conditional Zoning District.

The property is subject to all the conditions listed in the Rezoning Master Plan and Development and Design Manual dated Revised 5/14/2024 by McAdams.

Part 2: The Zone Map Amendment hereby amends Vision Holly Springs Comprehensive Plan Section 1: Land Use & Character Plan, Future Land Use Map to change the *Future Land Use Map* Designation of portion of said parcel from Conservation Neighborhood to Mixed Residential Neighborhood (23-CPA-03).

Part 3: REPEAL OF CONFLICTING ORDINANCES

All ordinances or parts of the Unified Development Ordinance of the Town of Holly Springs conflicting or inconsistent with the provisions of this rezoning ordinance are hereby repealed.

Part 4: SEVERABILITY

If any section, part of a section, paragraph, sentence, clause, phrase, or word of this Ordinance, or application of this Ordinance to any one parcel or group of parcels is for any reason held or declared to be unconstitutional, inoperative or void, such holdings shall not affect the remaining portion of this Ordinance or application of this Ordinance to other parcels and it shall be construed to have been the legislative intent to pass the Ordinance without such unconstitutional, invalid or inoperative part therein, and the remainder of this Ordinance after the exclusion of such part or parts shall be deemed to be held valid as if such part or parts had not been included therein, or if this Ordinance or any of the provisions thereof shall be held inapplicable to any person, group of persons, property, kind of property, circumstances, or set of circumstances, such holdings shall not affect the applicability thereof to any other person, property or circumstances.

Part 5: INCLUSION IN UDO

It is the intention of the Town Council entered as hereby ordained, that the provisions of this Ordinance shall become and be made part of the Unified Development Ordinance of the Town of Holly Springs, North Carolina; that the Section(s) of this Ordinance may be

renumbered or relettered to accomplish such intention, and that the word “Ordinance” may be changed to “Section, or “Article” or other word.

Part 6: EFFECTIVE DATE

The provisions of this ordinance shall become effective June 18, 2024 in accordance with the laws of the State of North Carolina.

Adopted this, the 18th day of June 2024.

Town of Holly Springs by

Sean Mayefskie, Mayor

ATTEST:

Linda McKinney, Town Clerk





WAKE COUNTY PUBLIC SCHOOL SYSTEM

Student Assignment

5625 Dillard Drive
Cary, NC, 27518
Email: studentassignment@wcpss.net

tel: (919) 431-7333
fax: (919) 694-7753

June 5, 2024

Chris Hills, AICP
Director, Development Services
Town of Holly Springs
chris.hills@hollyspringsnc.gov

Dear Chris,

The Wake County Public School System (WCPSS) Office of School Assignment received information about a proposed rezoning/development within the Town of Holly Springs planning area. We are providing this letter to share information about WCPSS's capacity related to the proposal. The following information about the proposed rezoning/development was provided through the Wake County Residential Development Notification database:

- Date of application: June 2, 2023
- Name of development: Ragan Mixed-Use
- Address of rezoning: 3313 Avent Ferry Road (PIN 0627890439)
- Total number of proposed residential units: 279
- Type(s) of residential units proposed: 115 Attached Dwellings (townhomes); 164 Attached Dwellings (quadruplex)

Based on the information received at the time of application, the Office of School Assignment is providing the following assessment of possible impacts to the Wake County Public School System:

- ☐ Schools at all grade levels within the current assignment area for the proposed rezoning/development are anticipated to have sufficient capacity for future students.
- ☒ Schools at the following grade levels within the current assignment area for the proposed rezoning/development are anticipated to have insufficient capacity for future students; transportation to schools outside of the current assignment area should be anticipated:
- ☒ Elementary ☐ Middle ☒ High

The following mitigation of capacity concerns due to school construction or expansion is anticipated:

- ☐ Not applicable – existing school capacity is anticipated to be sufficient.
- ☐ School expansion or construction within the next five years is not anticipated to address concerns.
- ☒ School expansion or construction within the next five years may address concerns at these grade levels:
- ☒ Elementary ☐ Middle ☒ High

Thank you for sharing this information with the Town of Holly Springs Planning Board and Town Council as they consider the proposed rezoning/development.

Sincerely,

Susan W. Pullium, MSA
Senior Director

REZONING, COMPREHENSIVE PLAN/ UDO AMENDMENT PETITION

The current Filing Fees can be found on-line in the Town of Holly Springs Fee Schedule: www.hollyspringsnc.us/2170/Development-Services



Petition Type (check one- each request must be on separate petitions)

- ☒ Zoning Map Change: ☐ General Use District **or** ☒ Conditional Zoning District
☐ Comprehensive Plan Amendment (check all that apply)
☐ Text Amendment ☐ Future Land Use Map Amendment
☐ Area/Corridor Plan Map Amendment / Name: _____
☐ UDO Amendment (UDO Section: _____)

For DS Use only

Project # _____

Fees Paid: \$ _____

Date Received: _____

☐ Initial ☐ Revised ☐ Final

Project Information

Project Name: Ragan Mixed- Use

Project Location: 3313 Avent Ferry Road

Use street address. If none, use the closest intersection

☐ Within Corporate Limits ☒ Within Holly Springs ETJ ☐ Pending Annexation

PIN: 0627890439

Real Estate ID: 0058074

Project Acreage: (Rounded to nearest tenth) 56.9 Partial Parcel: ☒ No ☐ Yes

Sketch Plan Review (Pre-Submittal) Meeting Date: March 16, 2023 LUAC Meeting: May 2, 2023

If the Sketch Plan Review (Pre-Submittal) Meeting Date is not within 8 weeks of the submittal date, another Sketch Plan Review (Pre-Submittal) Meeting is required prior to submittal.

Petition Request

Current Zoning: Rural Residential Proposed Zoning: Neighborhood Mixed-Use (Conditional)

Current Future Land Use Designation: Neighborhood Center/Conservation Neighborhood

Proposed Future Land Use Designation: Neighborhood Center Mixed Residential Neighborhood

Area Plan Designation (if applicable): N/A

Petition Contact Information (complete each contact in its entirety- please print or type)

Project Applicant/Contact

(check one) ☐ Owner ☒ Owner's Agent ☒ Design Professional ☐ Developer ☐ Other _____

Is the applicant applying on behalf of the property owner(s)? ☒ Yes ☐ No If yes, please complete the Affidavit of Property Owner Consent form and attach. If applicant contact is not the Owner or representing the Owner(s), please complete Property Owner Notification Affidavit and attach.

Name Laura Holloman Company McAdams

Mailing Address 621 Hillsborough Street, Suite 500

City Raleigh State NC Zip 27603

Telephone # (919) 287-0770 E-Mail holloman@mcadamsco.com

How would you like to receive staff review comments? ☒ E-Mail ☐ US Mail

How would you like to receive Official Action Notices? ☒ E-Mail ☐ US Mail- Certified

Property Owner(s) if different than Applicant/Contact -REQUIRED attach additional sheets if necessary

Name Agarwal Family LLC Company Greenhawk Corporation

Mailing Address 1330 Sunday Drive, Suite 105

City Raleigh State NC Zip 27607

Telephone # (919) 258-2087 E-Mail jmedlin@greenhawkcorp.com

How would you like to receive staff review comments? ☒ E-Mail ☐ US Mail

How would you like to receive Official Action Notices? ☒ E-Mail ☐ US Mail- Certified

Owner's Authorization

Owner's Signature(s)

PIN/REID

Date

0627890439/0058074

May 24, 2023

PLAN CONSISTENCY STATEMENT



Describe how the proposed Zone Map Change request is consistent or supported by the objectives and policies of *Vision Holly Springs: Town of Holly Springs Comprehensive Plan* and how it is inconsistent with the Plan.

You must respond to each section; please type or print legibly in blue or black ink

Project Information:

Project Name: Ragan Mixed-Use

Proposed Zoning District: Neighborhood Mixed-Use (Conditional)

Proposed Land Use/Density: 4.84 d/u per acre

Future Land Use Plan Map Designation: Neighborhood Center/Conservation Neighborhood

Future Land Use Plan Designation Land Use/Density: 5 d/u per acre

For DS Use only

Project # _____

Date Received: _____

Plan Consistency Statement:

In accordance with NCGS § 160D-605 prior to adopting or rejecting any zoning amendment, the Town Council shall adopt a statement of zoning consistency or inconsistency. Please include as much detailed information about the proposed zoning change and developer offered conditions (if any) or unique conditions associated with this request that support the Town's comprehensive plan objectives and/or policies and why the proposed zoning change is reasonable and in the public interest. If the proposed zoning amendment is not in compliance with the comprehensive plan, the Town Council is required to determine why the proposed zoning change is reasonable and in the public interest if approved. Please provide detailed documentation to assist the Council in making their determination. *Attach Additional Sheets as needed*

Petitioner's Response

Executive Summary

Section 1: Future Land Use & Community Character

Section 2: Transportation / Comprehensive Transportation Plan

Section 3: Parks, Recreation & Open Space/Beyond the Green: A Parks & Recreation Master Plan

Section 4: Community Facilities

Section 5: Infrastructure and Utilities

Section 8: Natural Resources

Plan Consistency Response Prepared by:

Preparer's Signature(s)



Date

6/2/2023

Plan Consistency Statement: Petitioner's Response

Executive Summary:

The Executive Summary, found in the Comprehensive Plan, lays out themes and recommendations for the Town as it guides new development. Many of these statements are applicable to the rezoning request and are very much consistent with this rezoning request. Specifically:

- *To enable all residents with the ability to live within walking distance of a neighborhood commercial center and central civic space*
 - The proposed development would provide a variety housing, pocket parks, open civic green spaces, and commercial uses in a walkable development with ample pedestrian access.
- *To accommodate a variety housing types that includes single family, executive housing, townhouses, condominiums, and apartments*
 - This project will provide increased housing options for Holly Springs residents. The proposed development will allow for both cottage style homes and townhome units as a part of this mixed-use development. The variety of housing types will increase housing stock and choice for the growing population. The cottage style homes will be a new housing type in the town, diversifying the housing stock made available to the community.

Section 1: Future Land Use and Community Character

The Future Land Use and Community Character sections of the Town's Comprehensive Plan seek to define the characteristics of what Holly Springs should be striving for, this idea of maintaining a village atmosphere.

A. Future Land Use

The subject site is identified in the Future Land Use Plan as a Place to Transform and a Place to Enhance.

"Specific focus areas in Holly Springs provide opportunities to grow and transform in the future. These areas will evolve over time in terms of land use mix, density and intensity, home choices, and transportation options. These are the areas where the Town should emphasize public and private investment — increasing allowable densities and intensities, adding infrastructure capacity, improving access from nearby neighborhoods, investing in the public realm, and encouraging private investment — to diversify the Town's development strategy and support continued growth and economic prosperity in the future. Some areas identified to transform over time will require redevelopment of existing suburban shopping centers or infill development in the Downtown Village District."

"Places to enhance in Holly Springs celebrate existing and future residential neighborhoods, and the small activity centers that serve them, as the building blocks for a strong community. They generally include Conservation Neighborhoods, Residential

Neighborhoods with single dwelling detached homes on varying lot sizes, or Mixed Residential Neighborhoods with two or more home types (single dwelling detached, single dwelling attached, and multi-dwelling) in the same development. Future infill development in the enhancement areas should be sensitive to the uses and densities along the perimeter of adjacent neighborhoods.”

This project proposes a mix of commercial and residential (including multi-family and single-family attached)uses, increasing the much needed density in this area of town. The improved transportation access, variety of uses, and increased density will position this community to alignment with the vision for Holly Springs established in the Comprehensive Plan.

B. Community Character

Community character speaks to creating a sense of community and identity for the residents and businesses of the town. To achieve this, the Comprehensive Plan has several Community Character Objectives, several of which the rezoning petition achieves:

Land Use Patterns

The subject site is located toward the southwestern boundary of Holly Springs, serving as a key connection point and gateway to town. The proposed development will serve as a vibrant mixed-use project, welcoming residents and visitors to the Holly Springs community. This area of town is currently under-developed, and the proposed development would serve as an anchor to encourage further growth and expansion of the Town’s tax-base.

Open Space

Mixed-use developments are required to provide open space areas in the form of linear parks, courtyards, and pocket parks. Specifically, this project proposes a community gathering area envisioned as a central village green, a network of walking trails, and reforestation areas. Additionally, several active recreation areas will be incorporated throughout the development. These open space amenities will create a sense of place and encourage social interaction throughout the development, while maintaining the natural feel of a conservation neighborhood.

Transportation Networks

Prior to submitting a rezoning petition, applicants must establish a TIA Scope of Work with Engineering and NCDOT. This ensures the applicant ample time to complete the study and evaluate associated recommended improvements.

- The project incorporates a connected street and alley network paired with sidewalks and connections to Avent Ferry and Rex Roads.
- The project provides bicycle parking and storage compliant with UDO requirements.
- Thoroughfare streetscape planting requirements along Avent Ferry and Rex Roads are intended to be used as energizers to shape and define the public realm. Additionally, the development will meet street tree requirements, in

conjunction with the approved thoroughfare planting plan, installed at the developer's expense, along Avent Ferry and Rex Roads. Internal streets will continue this same vision by incorporating on-street parking and street tree installation to encourage natural traffic calming and a traditional main street feel.

Parking Location

- Parking will be located behind buildings so as not to be visible from the street. This will enhance community character by preventing a "sea of parking," which can be visually distracting from the rest of the development. On-street parking will also be provided throughout the residential and commercial areas of the development. Townhomes will have rear-access driveways and garages along alleys. A variety of garage, on-street, and surface parking options will be provided for the cottage units.

Lot Size and Building Placement

- Commercial buildings will be oriented to interact with the development and the intersection at Avent Ferry and Rex Roads. Many of the townhome and cottage buildings will front open space or natural areas, and townhomes will have rear alley access throughout the development.

C. Future Land Use Map

As part of the Future Land Use and Community character section of the Comprehensive Plan, there is also a Future Land Use Map which places specific land use designations on specific parcels, guiding current property owners and developers on the Town's vision. The Future Land Use Plan designates this parcel as a Conservation Neighborhood along Avent Ferry Road and a Neighborhood Center at the intersection of Avent Ferry and New Hill Holleman Roads. Per the Future Land Use Plan, the Conservation Neighborhood and Neighborhood Center areas shall be as described:

"A Conservation Neighborhood preserves 30% to 50% of the buildable land on a site for permanent open space — protecting environmental features, tree stands, or outstanding viewsheds — by closely clustering homes together of varying lot sizes and densities. Conservation Neighborhood design should respond to specific features on the site; however, goals to reallocate gross allowable densities into compact development areas that minimize infrastructure investments and maximize large, continuous areas for permanent open space are encouraged. Resident amenities in these neighborhoods should include walking trails and neighborhood gardens. Conservation Neighborhoods are primarily residential but may include limited civic or other non-residential (non-commercial) uses."

"Small scale, Neighborhood Centers provide goods and services to surrounding neighborhoods. Their proximity to neighborhoods requires that operations be low-intensity, unobtrusive, and at a scale and design compatible with nearby residential

development. The design of Neighborhood Centers transitions effectively between residential and nonresidential uses and includes safe and convenient pedestrian and bicycle access for nearby residents. While this is primarily a commercial category, some Neighborhood Centers may include upper story residential or office. Sites also effectively minimize the impact of cut-through traffic on nearby neighborhood streets by orienting vehicle access and circulation away from adjacent neighborhoods.”

Because the proposed zoning is not currently aligned with the Conservation Neighborhood designation along Avent Ferry Road, the applicant has requested a Comprehensive Plan Amendment to the Future Land Use Plan to Mixed Residential Neighborhood. It should be noted that the site has been timbered significantly. The Mixed Residential Neighborhood designation would better align with the Neighborhood Center designation at the intersection, as it would provide for the level of density needed to support a small-scale commercial development. Per the Future Land Use Plan the Mixed Residential Neighborhood shall be as described:

“A Mixed Residential Neighborhood includes several housing types — single dwelling detached, single dwelling attached, and multi-dwelling — that provide a range of home choices (densities) in the same neighborhood. This mixed approach allows residents at all stages of life, with different housing needs and preferences, to live in a multi-generational community for a lifetime. Residents can start in a smaller, less expensive option like an apartment or townhome early in life and move to larger detached single dwelling homes on larger lots as their families grow and change. Empty nesters can downsize to a townhome or senior living option without ever leaving the neighborhood.”

The proposed rezoning to Neighborhood Mixed Use Conditional zoning, will achieve the goals of both the Neighborhood Center and Mixed Residential Neighborhood. The residential portion of the development will consist of a mix of townhomes and cottage-style multi-plex units, which will cater to residents at many stages of life, including young professionals, small families, and empty nesters. On-street parking and a variety of open spaces, recreation areas, and pocket parks will be located throughout the development, along with pedestrian connections to the commercial area. The proposed development intends to preserve existing trees where possible and has committed to significant reforestation across the site. The development will incorporate a performance-based enhanced landscaping plan, as well as ample open space, and reforestation areas to align the intent of the Future Land Use Plan with the rural character of the surrounding area. Green stormwater infrastructure will be implemented across the site. Walking trails, pocket parks, and reforested spaces throughout the development creating a natural and welcoming environment.

Section 2: Transportation/Comprehensive Transportation Plan

As the town grows, traffic will become an increasingly critical issue. As a new development, it is only fair that this potential project contributes to the mitigation of its potential impacts. This will be done in conjunction with the Town’s engineers and NCDOT. While the project does propose to dedicate the necessary right-of-way to meet half of future row-width per the CTP, a number of constraints exist

creating constructability issues to provide ultimate section at this time. The subject development will coordinate with the Town and NCDOT on the appropriate provisions for roadway improvements, avoiding impacts to historic properties, and managing access impacts to existing uses (such as the church) that may otherwise occur with the construction of the median section.

The project meets several goals under the CTP:

- *“Promote a pedestrian-friendly environment by filling gaps and improving connectivity throughout the sidewalk system and to key destination or activity nodes.”*
 - This project will yield much needed high-quality development near the edge of town resulting in a mixed-use destination, accessible to pedestrians and cyclists from nearby neighborhoods, resulting in an activated pedestrian climate.

The CTP outlines the same goals or objectives as the transportation section of the Comprehensive Plan. The project proposes a multimodal transportation network, fostering healthy growth in the surrounding environment. This is done through three elements: roadway, bicycle and pedestrian, and transit. Avent Ferry Road and Rex Road are shown as four-lane thoroughfare with a side path in the CTP. The ultimate right-of-way section along Rex Road will be accommodated, but consistent with item 1a, the project will coordinate with staff to determine which portions of the roadway section are appropriate for implementation. These improvements are aimed at improving existing traffic and accommodate the proposed project traffic. Analyses indicated that long delays and queues would be expected at the Avent Ferry Road – Rex Road intersection in the future study year even without the project. However, the improvements proposed as part of the TIA (which include the installation of a traffic signal) are substantial enough that the future build-out delays are shorter than the future no-build delays. As such, these improvements (which are not known to be proposed as part of any other public or private projects) are sufficient to address both site and non-site traffic impacts. This project shall incorporate its design of the road segment within its property only, and, at time of development plan, shall confirm that the remaining extension shall be constructible in the future.

The bicycle and pedestrian element is achieved through the integrated pedestrian network via sidewalks and trails throughout the development.

The transit element is dependent upon future transit service in the area. Currently there are no nearby transit stops. As part of the development plan, staff will evaluate the need for an additional shelter adjacent to the project. If it is determined one is necessary, it will be constructed at the cost of the developer.

Section 3: Parks, Recreation & Open Space/Beyond the Green: Parks and Recreation Master Plan

The purpose of the Parks & Recreation Master Plan is to acknowledge the importance of providing open space and active opportunities for all Town residents. The master plan has several guiding principles, and our rezoning request meets the following:

- *Offer recreation access to people of all ages and ability levels*
 - The project proposes several recreational and open space areas as a part of the development including walking trails, pocket parks, civic gathering spaces, play areas, and green space located throughout the site. Residents will have convenient access to these amenities that offer a range of recreational activities for them to enjoy.

- *Amenities that encourage physical activity*
 - The proposed development will feature walking trails, pocket parks, outdoor play spaces, and other active areas that will promote physical activity.
- *Seek excellence in everything the Town provides to its residents by: placemaking compliance, updated technology.*
 - The project proposes to meet active open space requirements by providing plazas and programmed amenities throughout the development. In addition, the project will be required to meet all NC ADA requirements. The proposed project will also be installing multiple EV charging stations, consistent with the new UDO, ensuring that the site will meet updated technology needs.

Section 4: Community Facilities

Community facilities address the need to be mindful of the increased demand for public services as the growth continues. Community facilities can include fire, police, EMS, as well as public school facilities. The Comprehensive Plan contains several community facility objectives, specifically the project achieves the following:

“Inform developers when proposing new subdivisions-of the need for residents’ access to community facilities and the importance to plan appropriately to enable this access.”

Developers plan for community facilities such as police, fire and EMS when designing a development. Drive aisles are designed to accommodate the largest emergency response vehicle. A turning-move template is reviewed by staff to ensure vehicles can safely maneuver through all access points and parking areas. Emergency response facilities exist within reasonable proximity to the subject site and no issues are perceived with regards to insufficient response time.

Section 5: Infrastructure and Utilities

The Comprehensive Plan strives to ensure that infrastructure such as water, wastewater, stormwater, electric, telecommunications, and so forth, can adequately handle new growth resulting from development. Holly Springs has smartly planned for rapid growth by entering into a water agreement with Harnett County serving the town by abundant water from the Cape Fear River.

The project will utilize Town of Holly Springs public water and sewer to service the development. Currently, a 12” water main exists within Avent Ferry Road (in front of Lochridge Subdivision) which will be extended down Avent Ferry Road to the subject property and across the property frontages of both Avent Ferry and Rex Roads. Public sewer will be serviced by gravity design throughout the development, and a Pump Station is anticipated in the southeast corner of the development. The pump station will discharge to the existing Avent Ferry Pump Station. A Sanitary Sewer Evaluation is being reviewed by the Town of Holly Springs in relation to the proposed pump station and will be approved in conjunction with a successful rezoning petition. Site stormwater will be treated and controlled by stormwater control measures located on site to meet the UDO requirements of the Town of Holly Springs. The project will likely require at least two (2) SCMs to address the post construction runoff for both quantity and quality. The project will likely need to construct a Pump Station and a traffic signal at the intersection of Avent Ferry Road and Rex Road. Both of these facilities, if constructed, will be connected to the Town’s fiber optic network at the developer’s expense.

The Town requires certain fees to be paid upon development of land and for the granting of a building permit. Said fees are listed in the Town's annual budget, and with this petition, the developer agrees he/she (i) is familiar with these fees, (ii) does not dispute the reasonableness of these fees as set forth in the Town's annual budget; and (iii) notwithstanding any reimbursements discussed at this time through an Infrastructure Reimbursement Agreement, hereby agrees to timely pay all normal and customary fees applicable to Developer in connection with the Non-Residential Project. Such fees are listed in the current year annual budget of fees at the time the fee is due under the ordinary course of development

Section 8: Natural Resources

The town is tasked with the challenge of finding a balance between development and preserving the natural environment. Fortunately, the town has many tools it uses during the development process to ensure that there is some thought to that balance. First, the town must verify each project, subject request included, meets all state, federal, and local requirements to protect stream and wetland features. As part of the master planning process, an environmental scientist is retained by the developer to perform any needed delineations of streams and wetlands on-site. These delineations are then confirmed by the appropriate state and federal agencies through an on-site visit. Once this visit is performed, the agency will then issue an official determination letter that is valid for a period of five (5) years (if no development of the property occurs). This letter must be submitted to town staff to verify that all environmental features on-site have been accounted for and protected accordingly.

On March 1, 2023, the town adopted a new UDO. As part of that ordinance, a tree preservation section must be adhered to and include tree preservation requirements.

NEIGHBORHOOD MEETING REPORT



Before submitting an application, the Petitioner must hold at least one (1) neighborhood meeting and submit to Development Services a written summary report of the neighborhood meeting. For more information, refer to UDO Section 11.5.

☐ Neighborhood Meeting Date: March 22, 2023
Time: 6:00pm to 7:00pm
Location: Virtual

For DS Use only

Project # _____

Date Received: _____

☐ Complete ☐ Incomplete

Notification of Owners:

1. The Petitioner or Petitioner's Agent shall prepare a Neighborhood Meeting Notification to be sent via first class mail to the owner(s) of the land specified on the Petition, owner of land within a **500 foot radius** of the subject property. Mailing notices shall include surrounding property owners and property owners' associations (or equivalent). Where the tax records reflect a mailing address for an owner of property to be different than the address of the property owned, notification shall also be mailed to the address of the property itself.
2. The Notice shall include the date, time, and location of the Neighborhood Meeting; the name of the Petitioner; the location of the proposed request (address, tax property identification number, or metes and bounds description); and an explanation of the nature of the request.
3. The Notice shall be deposited in the mail not less than ten (10) days nor more than 25 days before the date of the Neighborhood Meeting.

Prior to mailing the written notices, the applicant shall notify the Town of the scheduled meeting date and time.

☐ Date of Notification Mailing: March 6, 2023

Conduct of Meetings:

At the Neighborhood Meeting, the Petitioner shall explain the proposal and petition, answer any questions, respond to concerns neighbors have about the petition and proposed resolutions to these concerns. Town Staff will not attend the Neighborhood Meeting.

Summary of Issues:

See meeting summary attached.

Attach Additional Sheets as needed

Changes made to the Petition by the Petitioner as a result of the meeting:
Amenity was moved to more central location.

Attach Additional Sheets as needed

Additional attachments required for the report:

- ☒ A listing of those persons and organizations that were sent notification about the Neighborhood Meeting.
- ☒ A copy of the signed attendance list that includes names and addresses of those in attendance.

Neighborhood Meeting Report Prepared by:

Preparer's Signature(s)

Date

6/2/23

OWNER	ADDR1	ADDR2	ADDR3
AGARWAL FAMILY III LLC	1330 SUNDAY DR STE 105	RALEIGH NC 27607-5196	
BANE, LUCY MCDONALD	3424 AVENT FERRY RD	NEW HILL NC 27562-9298	
COLLINS GROVE BAPTIST CHURCH	2305 AVENT FERRY RD	HOLLY SPRINGS NC 27540-8941	
COLLINS GROVE BAPTIST CHURCH INC	2305 AVENT FERRY RD	HOLLY SPRINGS NC 27540-8941	
DUKE ENERGY PROGRESS INC	550 S TRYON ST	CHARLOTTE NC 28202-4200	
DUKE ENERGY PROGRESS INC	550 S TRYON ST	CHARLOTTE NC 28202-4200	
DUKE ENERGY PROGRESS INC	550 S TRYON ST	CHARLOTTE NC 28202-4200	
DUKE ENERGY PROGRESS INC NC EASTERN MUNICIPAL POWER AGENCY	550 S TRYON ST	CHARLOTTE NC 28202-4200	
HARRIS LAKE BOAT STORAGE LLC	8712 HOLLY SPRINGS RD	APEX NC 27539-9120	
HARRISON REALTY, LLC	FAHRENHEIT GROUP	4508 FOREST DR	HOLLY SPRINGS NC 27540-9430
HOBBY, GREGORY W HOBBY, JULIE K	5401 HARDISON RD	CHARLOTTE NC 28226-6427	
HONER, MICHAEL P HONER, SHARON JEAN	3516 BARTLEY HOLLEMAN RD	NEW HILL NC 27562-9744	
HUDSON, JEREMY D	5524 REX RD	HOLLY SPRINGS NC 27540-9728	
JONES, ALAN B JONES, SUSAN H	3128 AVENT FERRY RD	NEW HILL NC 27562-9292	
LATCHAW, KRISTA LATCHAW, STEVEN M	417 BENFIELD RD	SEVERNA PARK MD 21146-2708	
MITCHELL, WILLIAM ALLEN	3309 AVENT FERRY RD	NEW HILL NC 27562-9297	
PARKER HOLDINGS LLC	PO BOX 339	APEX NC 27502-0339	
RAGAN, EDITH BALL	WILLIAM RAGAN	753 ATHERTON WAY	ROCK HILL SC 29730-8095
SMITH, PHILIP C	8802 THREE CHOPT RD APT 208	HENRICO VA 23229-4731	

Ragan Meeting

Zoom Meeting on March 22, 2023, from 6-7pm

Attendees (14 attendees, including project team)

Project Team: Ben Glass, Jeremy Medlin, Skylar White, Megan Ledbetter, Laura Holloman, Tyler Probst, Kate Murdoch, Tish Shapiro, Kevin Dean

Neighbors (based on Zoom name): scmacon (scmacon@splithousevineyard.com), Frans iPhone, Jeremy Hudson (5524 Rex Road), 919-669-0931 (no name, just #), ipcsa (Mrs. Mitchell0, joined around 6:30)

Overall Submittal Process Summary

- No rezoning request submitted to date
- 1st step is pre-submittal meeting, which was conducted recently
- Neighborhood meeting (this call)
- Rezoning request submittal anticipated this Spring
- Staff review process (7-10 months)
- Public meetings
 - o Planning Board
 - o Town Council
- Even if rezoning were approved, won't start construction right away; still have to work through preliminary development plans (which also have associated public hearings) & then construction drawings (administrative review at Staff level)
- Total process start to finish is ~18-24 months

Site Summary

- Currently zoned Rural Residential
- Project would also require annexation to get public utilities
- Have reviewed Future Land Use Plan
 - o Corner of Rex at Avent Ferry has been designated as Neighborhood Center (allows for appropriately scaled commercial/retail, so not "big box" like out on GB Alford)
 - o Majority of remainder is light green as Conservation Neighborhood
 - Discussions with Town Staff since this site has been timbered, and only real tree cover is in wetlands
 - May be changing with mixed residential given existing conditions and to complement Neighborhood Center designation at corner

Sharing Concept Plan

- Proposing to rezone to neighborhood mixed use – conditional district
- When going with CD, have to provide a Master Plan and conditions to help narrow the "unknowns" and work towards Concept Plan; will also provide elevations
- As you see on the concept plan, different colors represent the various "pods"
 - o Red: neighborhood mixed use area in the corner; walkable neighborhood retail area

- Dark yellow: “cottage style” units/quadplexes – two-story buildings, 4 units, 1-2 bedrooms each; rented units; options for garage, on-street, or off-street parking
- Lighter beige: townhomes; instead of having front-loaded units, expecting these to be rear loaded with alley access to create a more attractive streetscape
- Purple: active recreation areas; shown options for linear and pocket parks, gathering areas
- Light blue: tree preservation; site has recently been timbered so not a lot of trees, but are looking to save what trees we can and replant native vegetation to get back to tree coverage
- Dark Green: stormwater ponds
- Gray: pump station

Sharing Circulation Plan

- Avent Ferry Road and Rex Road will have to improve to Comprehensive Plan standards
 - Plan shows 4-lane median divided sections on both
 - 10’ multiuse paths, which sets up for future connections to proposed elementary school further to Rex Road
- Red street is commercial access, while pink are more residential-nature streets
 - Residential streets will have on-street parking, which will act as traffic calming

Sharing Landscape Plan

- Dominated by the tree preservation and reforestation areas across the site
- Also have a 20’ landscaped buffer along Rex and Avent Ferry Roads
- 10’ buffer along northern and eastern property lines (The vacant Duke Energy property is to the east)

Proposed Open Space and Landscaping

- Meant to enhance the community, and will include walking trails, sidewalks, pollinators, native vegetation, etc.

Questions:

- Jeremy Hudson (on south side of Rex Road): what will the 20’ buffer along Rex Road consist of? Will there be a berm?
 - Laura: The Town’s UDO was revamped in order to create a more-urbanized streetscape; will be a Type A streetscape which, per the street tree planting plan, will include street trees outside the R/W; will have street trees, large and small shrubs, and deciduous trees; not intended to be a fully opaque buffer (so visibility to commercial buildings) per the Town’s requirements; not proposing any berm
- Jeremy Hudson: what will the buildings look like?
 - Laura: They will look more like townhomes instead of apartments
- Fran: how will the widening work given the proximity to church, cemetery, historic home?
 - Laura/Kevin: The developer will work with the Town to identify appropriate widening
- Jeremy Hudson: how will the widening work? Is it just Avent Ferry that’s a 4-lane roadway or will that include Rex as well?

- Kevin: We will be widening along our frontage and providing turn lanes (may look at median alternatives); and yes, both Rex and Avent Ferry designated as 4-lane roadways
- Jeremy Hudson: what will be the area around the pump station look like around the pump station? Impacts to property
 - Tyler/Laura: The Wildwood Subdivision near Lowe's is a good example of a neighborhood with a pump station – there are very nice single-family homes near the pump station; the pump station will be required to be fenced & screened with evergreen & planting materials; will have to submit separate plans for the pump station to prove that it meets the UDO requirements, and then the Town inspects the pump station before it goes online
 - Jeremy Medlin: sensitive to that concern, but have worked to surround it with tree conservation/reforestation (and it is pushed back off the road)
- Jeremy Hudson: driveway across from his house and concerns with turning out of the driveway
- Jeremy Hudson: there's a red barn across the street from the project; will that be impacted?
 - Kevin/Jeremy: thoroughfare widening only done as part of developments and not compelled to widen on the opposite side of the road; know of important structures in the area and aim to work to avoid those structures; no planned projects to widen Rex Road (other than through development) so not compelled to impact opposite side
- Jeremy Hudson: how does the topography work and could he/Parker family tie into the pump station?
 - Tyler: haven't set the elevation/depths of pump station at this point of the project so not sure how that could tie in; plans for a future pump station to the southwest of this area (that may allow for a tie-in) but that also would occur through development
 - Tyler: also correct that there was going to be a regional pump station south of Rex Road, but this pump station with our site will take the place of that
- Jeremy Hudson: are there mitigation efforts related to pump station odor control? Concerns with existing Avent Ferry pump station?
 - Tyler: yes, the Town requires those accommodations and the Town's inspections team takes over maintenance of the pump station and monitors/addresses those odors once online
 - Laura/Tyler: the Avent Ferry pump station predates the new requirements, so this on-site pump station should be better-designed and addressed than that one
- "ipsca" (Mrs. Mitchell?): would like a 20' buffer, and concerns about the impacts to property? Will these be wells or Town water? Will this have fiberoptic cable?
 - Laura: The 10' Type C is proposed (and the Type C is the most-dense planting and will have 75% evergreens to provide year-round coverage); also, have less-dense uses on the perimeter and more-dense towards the interior (so will have townhomes along north side, with tree preservation/replanting adjacent and there will not be any structures there)
 - Tyler: These will have Town utilities
 - Jeremy Medlin: dry utility providers typically follow development, so would be reasonable to think that those would follow
 - Jeremy Hudson: there has been some fiber run through here to the power plant but no "nodes" to date
- ipsca" (Mrs. Mitchell): will there be a fence provided between the development and the Mitchell property?
 - Laura: The developer will take a look at what provisions can be made (maybe increase planting materials, privacy fence, etc.); we'll take a look at that to address that concern

Jeremy gave quick overview of GreenHawk as a company

- Jeremy Medline noted that they are proposing farmhouse style architecture in this area, and while rentals these would have fixtures and feel much higher than typical “rental” product
- Mr. Medlin added that he would be happy to meet/discuss in the future.

AFFIDAVIT OF OWNER CONSENT



If the Owner(s) of the subject property is giving authorization for another person to apply for a General Use or Conditional Zoning District on their property, this affidavit must be completed and signed by all record owners of the subject property.

The persons listed below do hereby appear before a Notary Public and swear or affirm that they are the legal owners of the described property, and further give authorization to

Laura Holloman of McAdams
(Name of Representative) (Name of Company)

to submit a Petition for Zoning Map Change for my (our) property from
Rural Residential to Neighborhood Mixed-Use (Conditional)
(Current Zoning District) (Proposed Zoning District)

and to offer additional use and/or standard restrictions as a part of the request for a Conditional Zoning District.

For DS Use only

Project # _____

Date Received: _____

Signature of Owner(s):

[Signature]

Wake County PIN/REID:

0627890439/0058074

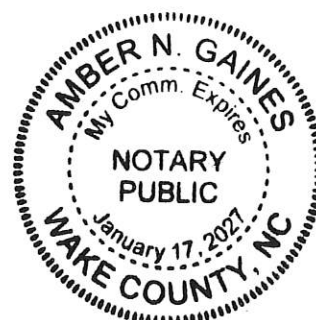
State of North Carolina
County of Wake

Sworn to and subscribed before me the 26th day of May, 2023.

Notary Public in and for the State of North Carolina. My Commission expires: 1/17/2027

[Signature] / Amber N Gaines
Notary Public Printed

Seal



CERTAIN ITEMS WITHIN THESE PLANS HAVE BEEN PRODUCED
IN COLOR FOR CLARITY OF THE PLANS. THESE PLANS MUST BE
PLOTTED IN COLOR TO BE VALID.

RAGAN MIXED-USE

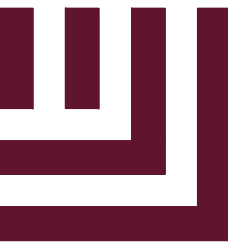
MASTER PLAN
3313 AVENT FERRY ROAD
NEW HILL, NC 27562

23-REZ-03/PLRZ202300140

MASTER PLAN
PROJECT NUMBER: GHK-22001
DATE: JUNE 2, 2023

SHEET INDEX

C1.00	EXISTING CONDITIONS
C2.00	CONCEPT PLAN
C2.01	TRANSPORTATION PLAN
C2.02	OPEN SPACE & PRESERVATION PLAN
C3.00	GRADING PLAN
C4.00	UTILITY PLAN
C8.00	TYPICAL SECTIONS
L5.00	LANDSCAPE PLAN



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CLIENT

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RALEIGH, NC 27607
JEREMY MEDLIN
PHONE: 919. 258. 2087



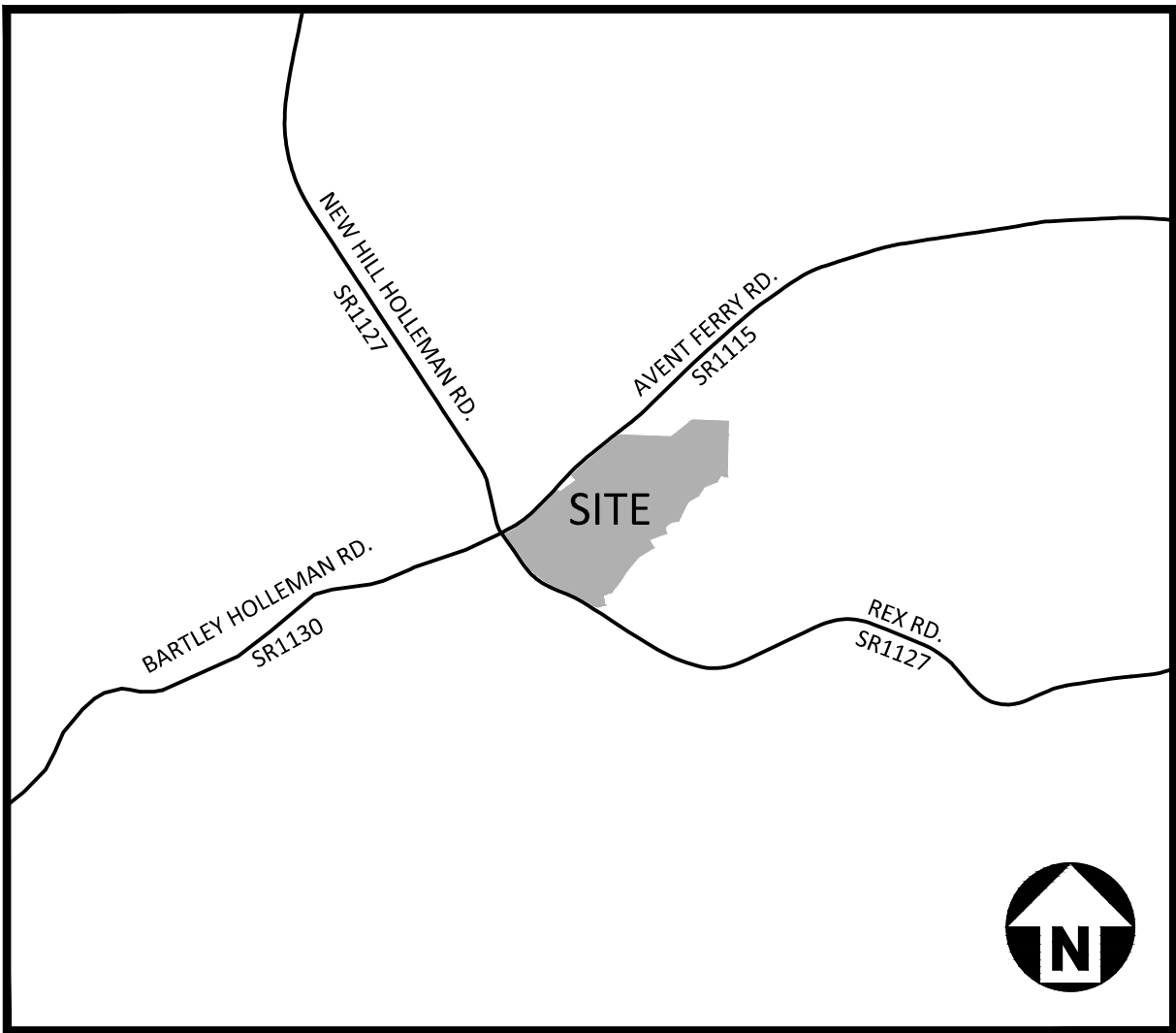
SITE DATA				NMX ZONING OPEN SPACE SITE DATA	
OWNERS	NAME AGARWAL FAMILY III LLC 1330 SUNDAY DR STE 105 RALEIGH NC 27607-5196	PIN 0627890439	REAL ESTATE ID 0058074	GROSS SITE AREA 56.91 ACRES (2,479,152 SF)	
SITE ADDRESS	3313 AVENT FERRY RD NEW HILL, NC 27562			ON-SITE PRIVATE OPEN SPACE REQUIRED: 6.83 ACRES (12%) PROVIDED: 11.20 ACRES (19% MIN.)	
DEVELOPER	GREENHAWK CORPORATION			TREE PRESERVATION AREA REQUIRED: 5.69 ACRES (10%) PROVIDED: 5.7 ACRES (10% MIN.)	
EXISTING ZONING	RURAL RESIDENTIAL			ACTIVE RECREATION AREA REQUIRED: 0.00 ACRES (0%) PROVIDED: 3.0 ACRES (5%)	
PROPOSED ZONING	NEIGHBORHOOD MIXED-USE CONDITIONAL DISTRICT (NMX-CD)			URBAN CIVIC SPACE REQUIRED: 12,396 SF (0.5%) PROVIDED: 12,396 SF (MIN.)	
SITE AREA	GROSS SITE AREA: 56.913 ACRES (2,479,152 SF)* RIGHT OF WAY DEDICATION: 8.54 ACRES (371,865 SF) NET SITE AREA: 48.38 ACRES (2,107,287 SF) *INCLUDES ACREAGE WITHIN AVENT FERRY R/W			FLEXIBLE SPACE REQUIRED: 0.85 ACRES (1.5%) PROVIDED: 2.5 ACRES (4% MIN.)	
RIVER BASIN	CAPE FEAR RIVER BASIN				
WATERSHED OVERLAY	NONE APPLICABLE				
EXISTING USE	FORESTRY/ VACANT				
PROPOSED USES	COMMERCIAL; ATTACHED DWELLING; MULTI-FAMILY				

PROPOSED DEVELOPMENT STANDARDS

Development Intensity	UDO Standard	Proposed Standard
Maximum Gross Density		
Maximum Gross Residential Density Allowed	15 units/acre	5.27 units/acre
Maximum Gross Floor Area		
Floor Area: Ground Floor Story Allowed	16,000 sf	16,000 sf
Open Space and Gathering Area		
Overall Minimum Open Space Required	12%	30%
Interior Building Setbacks - All Structures (ft)		
Front	Min: 5' Max: 20'	Min: 5' Max: 20'
All other setbacks (Side and Rear)	5'	Min: 5'
Side - Corner Setback	5'	5'
Exterior Building Setbacks - All Structures (ft)		
Exterior Setback to Adjacent All Other Residential Districts (minimum)	5'	10'
Exterior Setback to Adjacent Commercial	20'	25'
Thoroughfare Setback	25'	25'
Buffers		
RR Buffer (Single Family Parcel)	10' Type B	10' Type C
RR Buffer (Duke Energy Parcel)	10' Type B	10' Type B
Thoroughfare Buffer	5' Type A	10' Type B (commercial) 20' Type B (residential)
Building Height		
All Primary Structures (maximum)	45'	45'
Primary Structures - Minimum number of stories	1	1
Primary Structures - Maximum number of stories	3	3
Accessory Structures (maximum)	n/a	15'
Residential Primary Structure(s) Finished Floor Elevation Above Sidewalk Grade (ft)	1.5'	1-1.5'
All other applicable development standards not listed here shall follow UDO standards and requirements.		

GENERAL NOTES

- STREETS, VEHICULAR DRIVES, SIDEWALKS, MUTLI-USE/SIDE PATHS, AND PEDESTRIAN CONNECTIONS SHOWN ON THIS PLAN ARE APPROXIMATE. AT THE TIME OF DEVELOPMENT PLAN REVIEW, THE LOCATION AND DESIGN OF SUCH FEATURES SHALL COMPLY WITH THE APPLICABLE STANDARDS OF THE HOLLY SPRINGS UDO AND OTHER APPLICABLE LAWS, STANDARDS, POLICIES AND GUIDELINES.
- EXCEPT AS OTHERWISE DESCRIBED OR PERMITTED IN THIS MASTER PLAN, DEVELOPMENT ON THIS SITE SHALL COMPLY WITH ALL THE REQUIREMENTS OF THE TOWN OF HOLLY SPRINGS UDO, ALL OF WHICH SHALL CONSTITUTE THE ZONING REGULATIONS FOR THE APPROVED DISTRICT AND ARE BINDING ON THE PROPERTY.
- ALL MODIFICATIONS TO MASTER PLAN SHALL BE APPROVED IN ACCORDANCE WITH UDO SECTION 11.16.
- BOUNDARY SHOWN PER ESP ASSOCIATES, INC..
- THE LOCATION OF ACCESS POINTS AND INTERNAL STREETS SHOWN ON THE MASTER PLAN ARE ILLUSTRATIVE, WITH FINAL LOCATIONS TO BE DETERMINED AT THE TIME OF DEVELOPMENT PLAN.
- CHANGES TO THE USE/INTENSITY AND PROPOSED USES SHALL REQUIRE A REZONING.

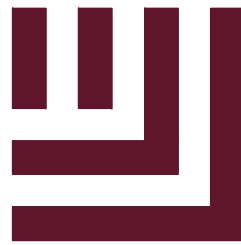


VICINITY MAP
1" = 2000'

REVISIONS

NO.	DATE	
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MASTER PLAN FOR:
RAGAN MIXED-USE
MASTER PLAN
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PROJECT NUMBER: GHK-22001



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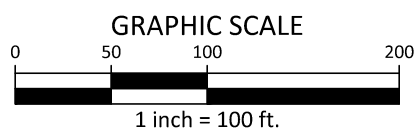
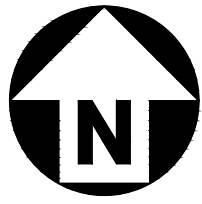
Parcel Curve Table					
Curve #	Radius	Length	Bearing	Chord	Delta
C1	1959.04	216.00	N 47°07'04" E	215.89	6°19'33"
C2	9257.25	214.35	N 31°04'14" E	214.34	1°19'36"
C3	1665.53	244.21	N 60°36'56" V	243.98	8°42'35"
C4	1185.34	134.07	N 64°10'01" V	134.00	6°28'50"
C5	627.06	277.34	N 48°31'15" V	275.08	25°20'27"
C6	1012.87	190.97	N 53°37'45" E	190.69	10°48'10"
C7	2466.95	333.10	N 44°29'10" E	333.05	3°29'28"

Parcel Line Table		
Line #	Direction	Length
L1	N 54°15'30" E	216.99
L2	N 38°30'26" V	104.00
L3	N 51°55'33" E	397.21
L4	N 50°28'08" E	105.49
L5	S 87°22'49" E	47.57
L6	S 51°32'48" V	234.88
L7	S 87°23'24" E	550.01
L8	N 51°30'05" E	295.08
L9	S 87°23'18" E	389.21
L10	S 1°27'38" V	594.85
L11	N 77°21'51" V	4.18
L12	N 76°32'52" V	641.3
L13	S 31°17'21" V	82.93
L14	S 68°02'16" V	147.74
L15	S 33°23'21" V	111.43
L16	S 59°09'57" V	132.02
L17	S 26°06'31" V	225.29
L18	S 77°58'55" V	87.29
L19	S 49°10'23" V	74.71

Parcel Line Table		
Line #	Direction	Length
L20	S 8°05'09" E	68.03
L21	N 69°48'41" V	195.77
L22	S 29°59'19" E	99.58
L23	S 58°39'16" V	193.23
L24	S 40°38'36" V	146.26
L25	S 34°16'57" V	170.75
L26	S 37°42'08" V	158.33
L27	S 70°08'18" V	96.92
L28	S 9°28'35" E	104.68
L29	S 70°42'11" V	71.32
L30	N 81°41'07" V	34.99
L31	N 56°29'27" V	26.61
L32	N 66°56'52" V	188.18
L33	N 34°58'23" V	433.98
L34	N 60°01'53" E	139.98
L35	N 47°28'54" E	76.26
L36	S 36°56'04" E	56.69
L37	N 87°23'18" V	530.01
L38	N 25°39'56" E	106.63

LEGEND

AG... ABOVE GROUND	△... VRS CONTROL POINT
BL... BELOW GROUND	▲... NEW MGN NAIL SET
BL... BOOK	●... NIR... NEW IRON REBAR
BL... BOUNDARY LINE	○... EXISTING IRON PIPE/REBAR/AXLE
BL... BOOK OF MAPS	■... EXISTING CONCRETE MONUMENT
CGF... COMBINED GRID FACTOR	●... TOPO OBJECT
CONC... CONCRETE	◆... POWER POLE
DA... DATED BOOK	CP / TP... UTILITY COMBO / TELEPHONE POLE
EASE... EASEMENT	●... TREE
ECM... EXISTING CONCRETE MONUMENT	□... AC UNIT
ED... EXISTING IRON PIPE/REBAR/REDUCABLE	
ELEV... ELEVATION	
EP... EDGE OF PAVEMENT	
EX... EXISTING	---... OVERHEAD UTILITY LINE
L... ARC LENGTH	---... EXISTING EASEMENT LINE
N/E... NOW OR FORMERLY	---... BOUNDARY LINE
N/S... NOT TO SCALE	---... BOUNDARY LINE (NOT SURVEYED)
PG... PAGE	---... ROW LINE (NOT SURVEYED)
POS... PARCEL IDENTIFIER NUMBER	---... TIE LINE
POB... POINT OF BEGINNING	
REAL... REAL ESTATE ID	
R/W... RIGHT OF WAY	
W... WITH	



PRELIMINARY DRAWING - NOT RELEASED FOR CONSTRUCTION

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PLAN INFORMATION

PROJECT NO.	GHK-22001
FILENAME	GHK22001-XC1
CHECKED BY	TEP
DRAWN BY	TEP
SCALE	1" = 100' XREF
DATE	06.02.2023

SHEET

EXISTING CONDITIONS

C1.00

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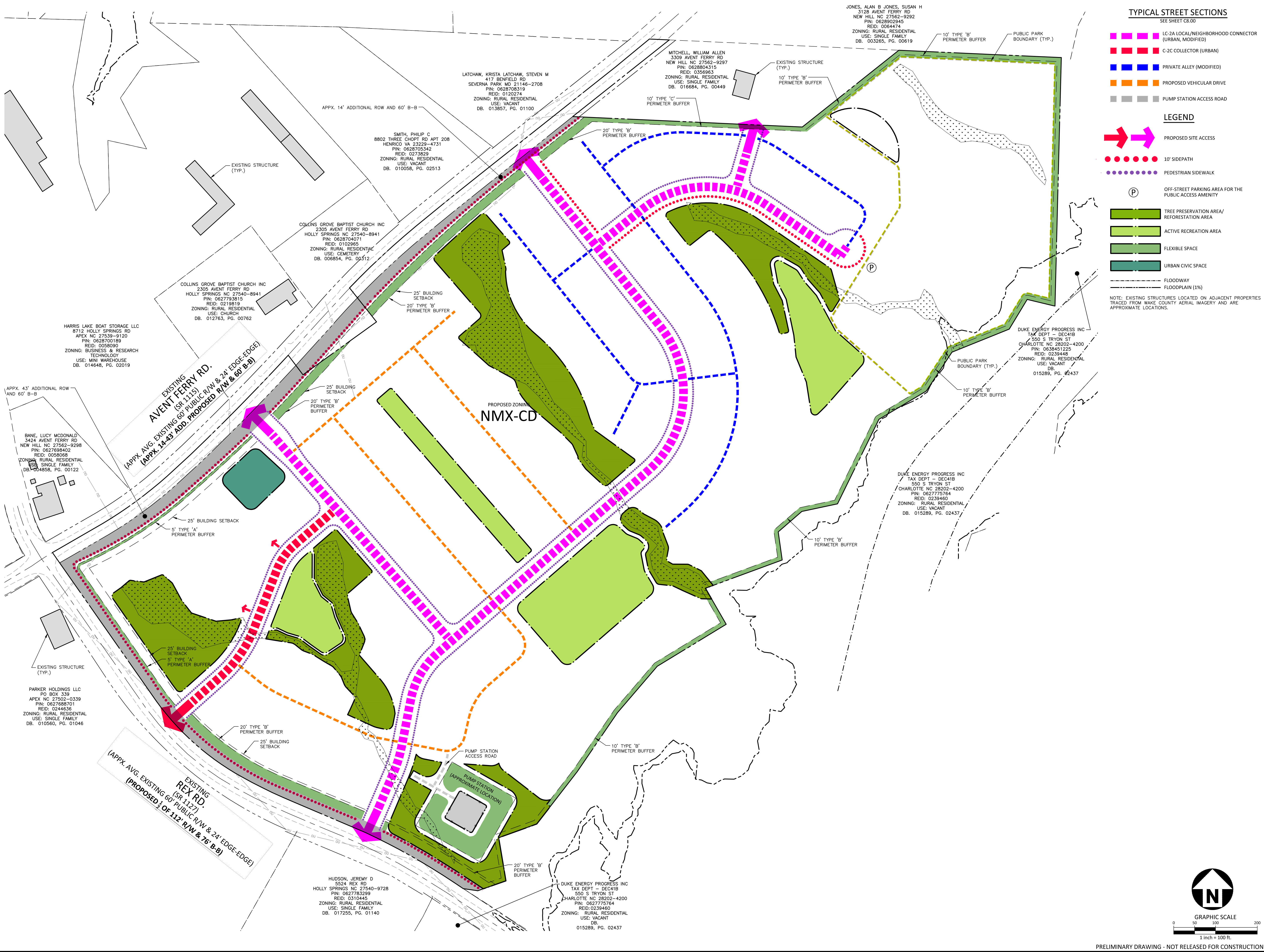
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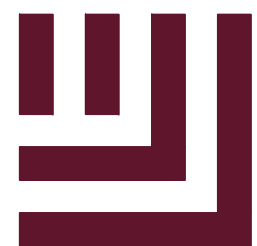
**RAGAN MIXED-USE
MASTER PLAN
3313 AVENT FERRY ROAD
NEW HILL, NC 27562**



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PLAN INFORMATION		
PROJECT NO.	GHK-22001	
FILENAME	GHK22001-S1	
CHECKED BY	MV	
DRAWN BY	SMV	
SCALE	1"=100'	
DATE	06.02.2023	
SHEET		
CONCEPT PLAN		
C2.00		

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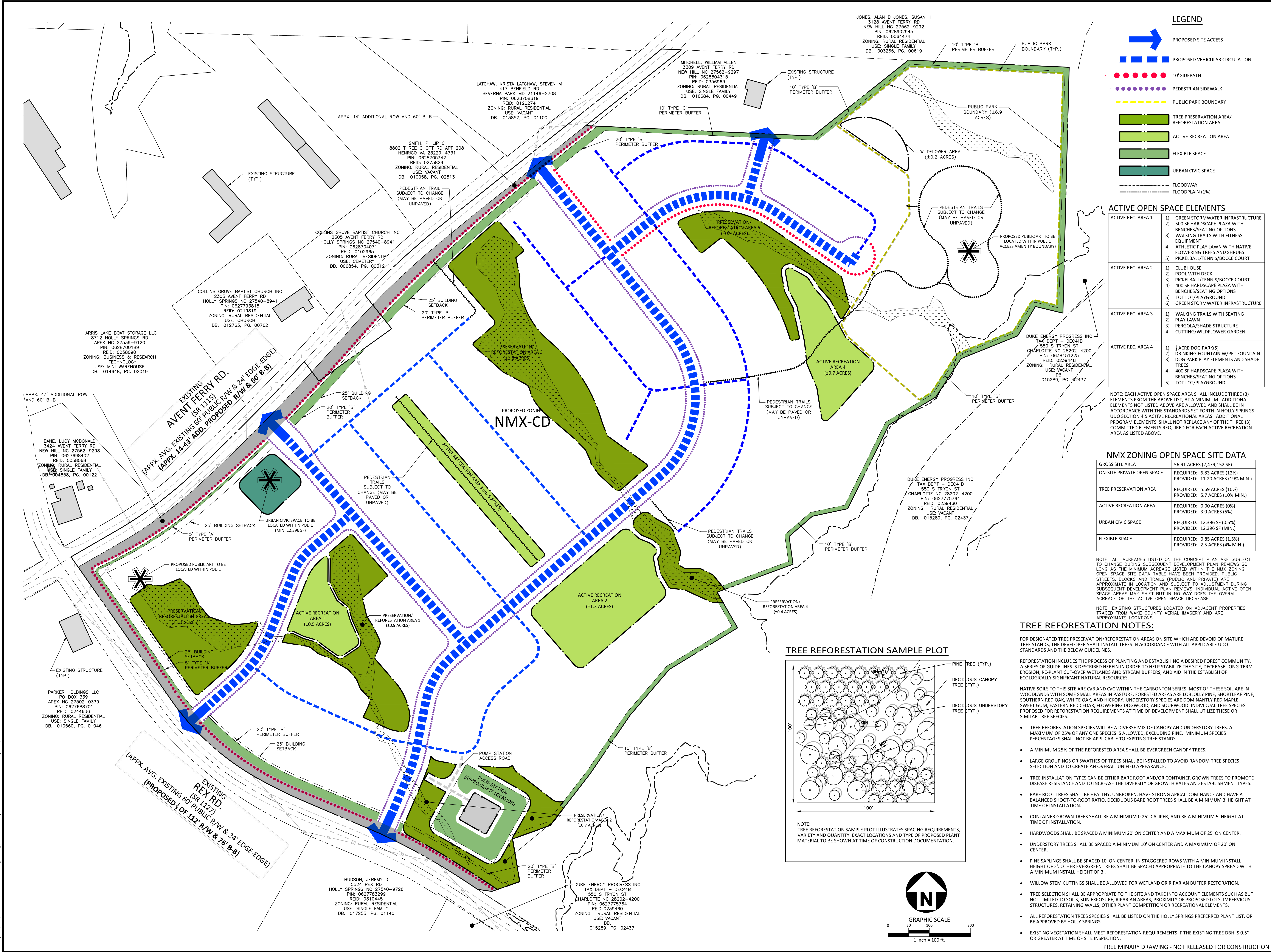


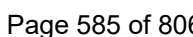
RAGAN MIXED-USE MASTER PLAN 3313 AVANT FERRY ROAD NEW HILL, NC 27562



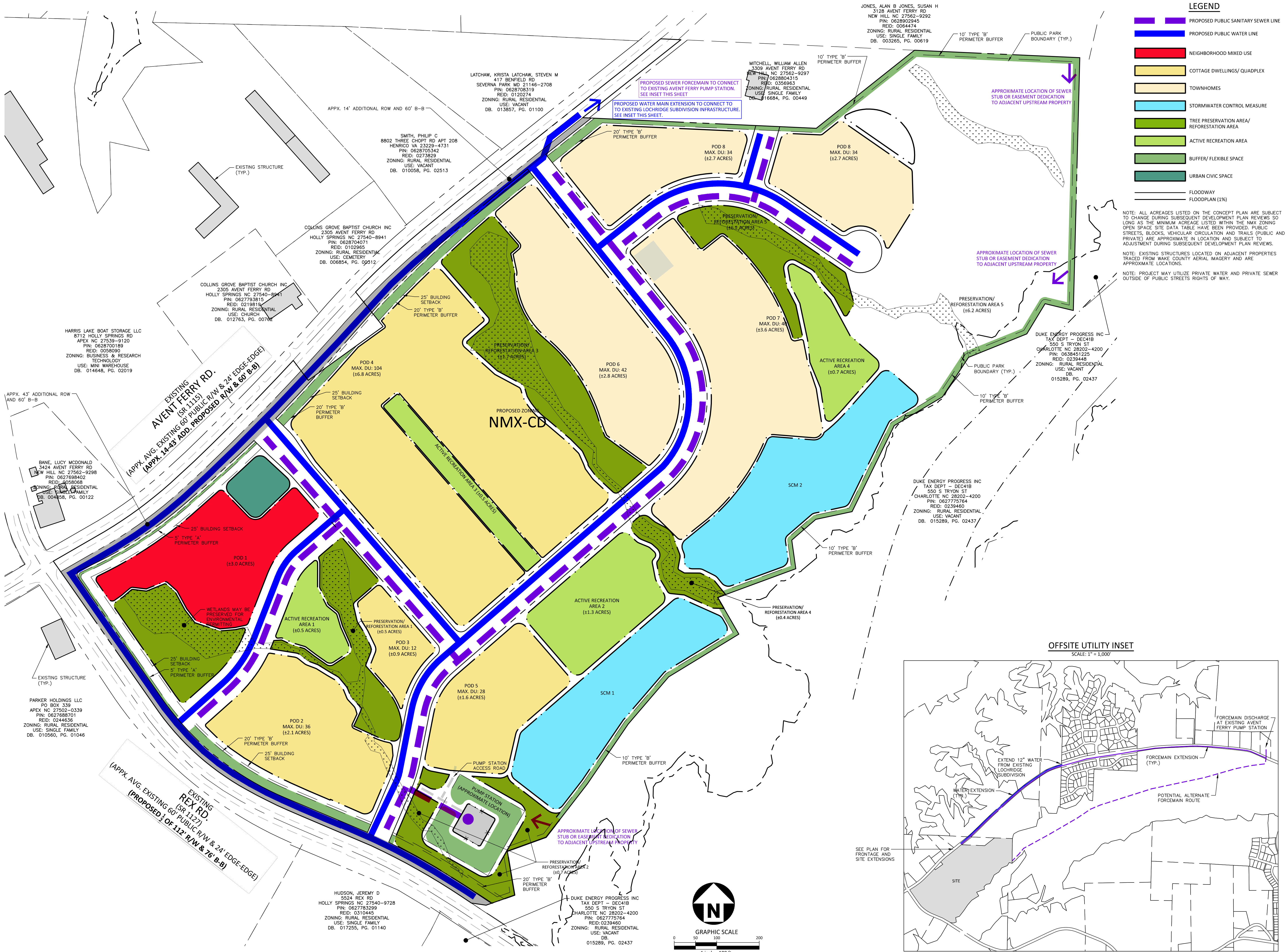
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DATE	06. 02. 2023	
SHEET		
TRANSPORTATION PLAN		
C2.01		

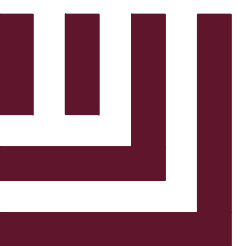
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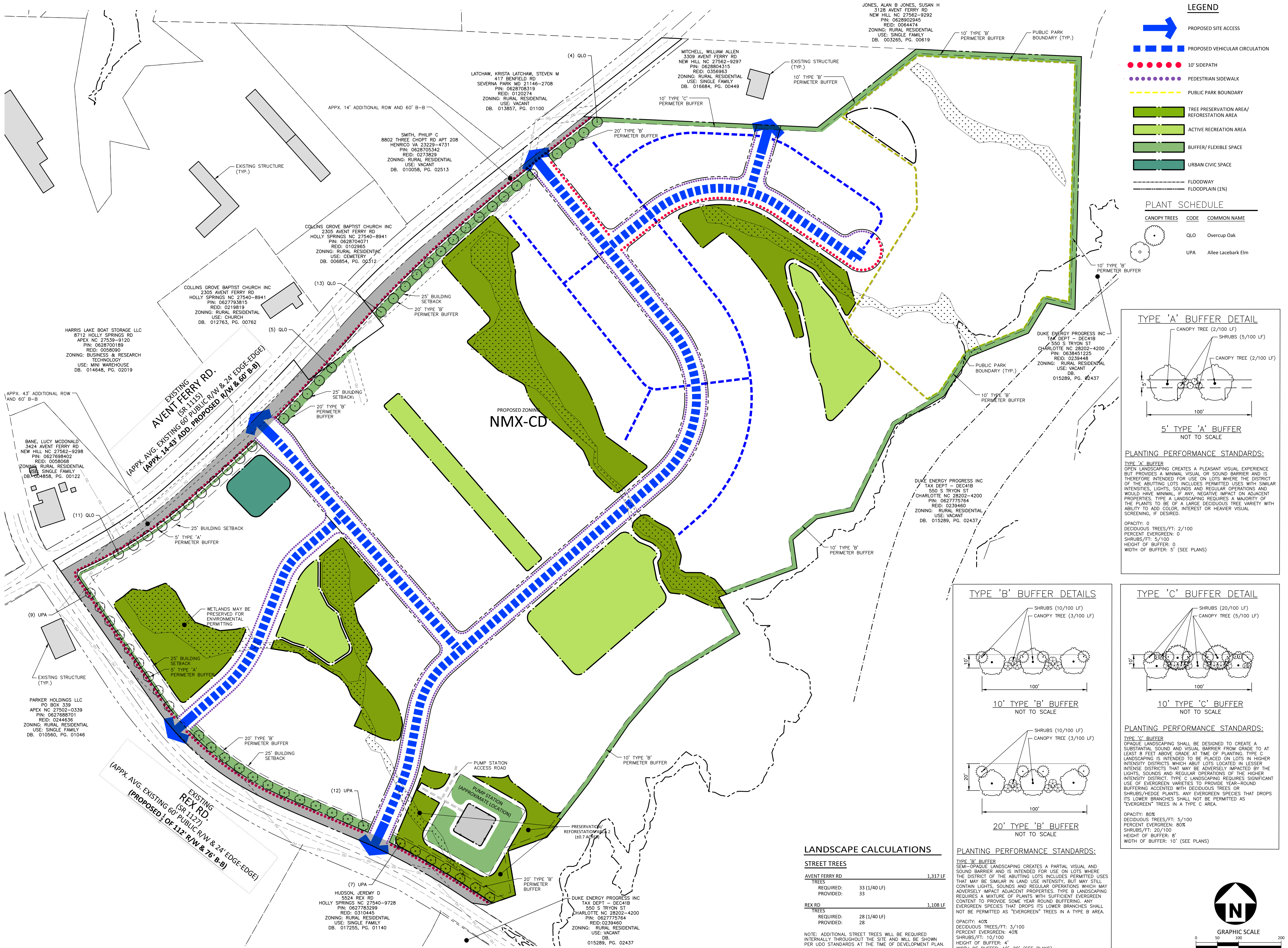


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PROJECT NO.	GHK-22001	
FILENAME	GHK22001-U1	
CHECKED BY	TEP	
DRAWN BY	TEP	
SCALE	1" = 100'	
DATE	06.02.2023	
SHEET		

C4.00

PRELIMINARY DRAWING - NOT RELEASED FOR CONSTRUCTION

\\Projects\GHK\22001\04-Production\Engineering\Current Drawings\MasterPlan\GHK22001-L5.dwg, 5/14/2024 3:16:04 PM, Tyler Probst



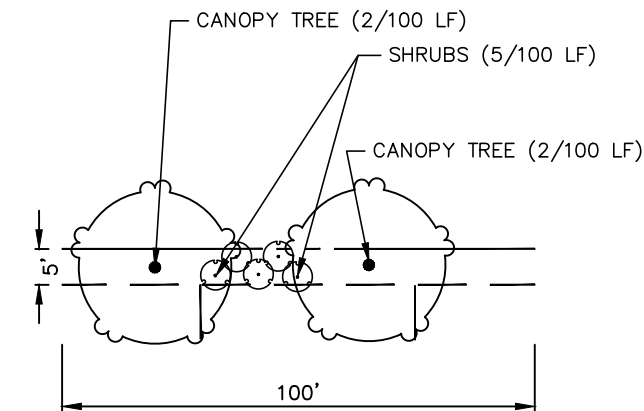
LEGEND

- PROPOSED SITE ACCESS
- PROPOSED VEHICULAR CIRCULATION
- 10' SIDEPATH
- PEDESTRIAN SIDEWALK
- PUBLIC PARK BOUNDARY
- TREE PRESERVATION AREA/ REFORESTATION AREA
- ACTIVE RECREATION AREA
- BUFFER/ FLEXIBLE SPACE
- URBAN CIVIC SPACE
- FLOODWAY
- FLOODPLAIN (1%)

PLANT SCHEDULE

CANOPY TREES	CODE	COMMON NAME
QLO		Overcup Oak
UPA		Allee Lacebark Elm

TYPE 'A' BUFFER DETAIL



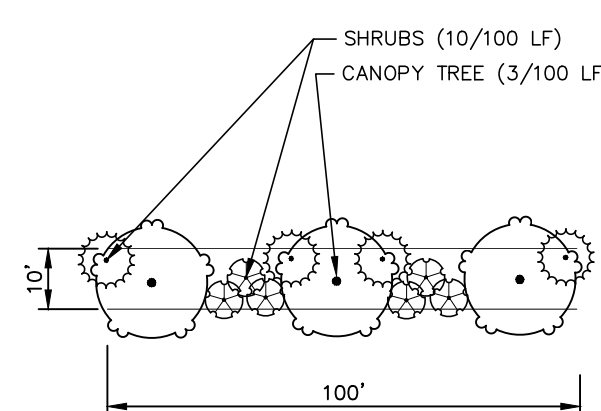
5' TYPE 'A' BUFFER
NOT TO SCALE

PLANTING PERFORMANCE STANDARDS:

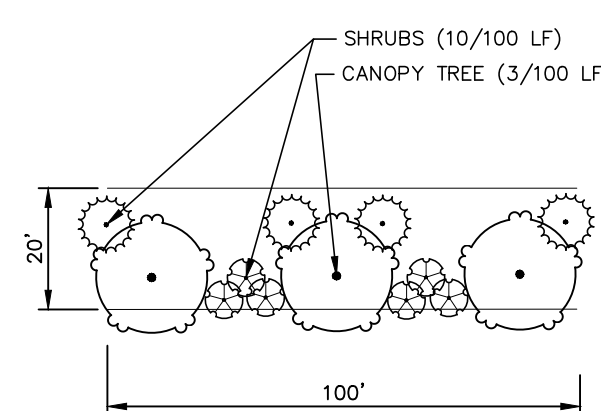
TYPE 'A' BUFFER
OPEN LANDSCAPING CREATES A PLEASANT VISUAL EXPERIENCE BUT PROVIDES A MINIMAL VISUAL OR SOUND BARRIER AND IS THEREFORE INTENDED FOR USE ON LOTS WHERE THE DISTRICT OF THE ADJACENT LOTS INCLUDES PERMITTED USES WITH SIMILAR INTENSITIES, LIGHTS, SOUNDS AND REGULAR OPERATIONS AND WOULD HAVE MINIMAL, IF ANY, NEGATIVE IMPACT ON ADJACENT PROPERTIES. TYPE A LANDSCAPING REQUIRES A MAJORITY OF THE PLANTS TO BE OF A LARGE DECIDUOUS TREE VARIETY WITH ABILITY TO ADD COLOR, INTEREST OR HEAVIER VISUAL SCREENING, IF DESIRED.

OPACITY: 0
DECIDUOUS TREES/FT: 2/100
PERCENT EVERGREEN: 0
SHRUBS/FT: 5/100
HEIGHT OF BUFFER: 0
WIDTH OF BUFFER: 5' (SEE PLANS)

TYPE 'B' BUFFER DETAILS



10' TYPE 'B' BUFFER
NOT TO SCALE



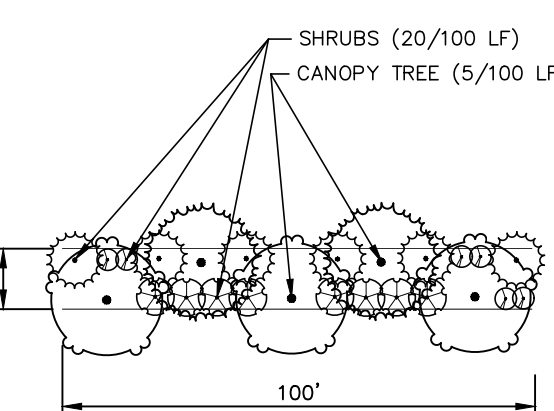
20' TYPE 'B' BUFFER
NOT TO SCALE

PLANTING PERFORMANCE STANDARDS:

TYPE 'B' BUFFER
SEMI-OPAQUE LANDSCAPING CREATES A PARTIAL VISUAL AND SOUND BARRIER AND IS INTENDED FOR USE ON LOTS WHERE THE DISTRICT OF THE ADJACENT LOTS INCLUDES PERMITTED USES THAT MAY BE SIMILAR IN LAND USE INTENSITY, BUT MAY STILL CONTAIN LIGHTS, SOUNDS AND REGULAR OPERATIONS WHICH MAY ADVERSELY IMPACT ADJACENT PROPERTIES. TYPE B LANDSCAPING REQUIRES A MIXTURE OF PLANTS WITH SUFFICIENT EVERGREEN CONTENT TO PROVIDE SOME YEAR ROUND BUFFERING. ANY EVERGREEN SPECIES THAT DROPS ITS LOWER BRANCHES SHALL NOT BE PERMITTED AS "EVERGREEN" TREES IN A TYPE B AREA.

OPACITY: 40%
DECIDUOUS TREES/FT: 3/100
PERCENT EVERGREEN: 40%
SHRUBS/FT: 10/100
HEIGHT OF BUFFER: 4'
WIDTH OF BUFFER: 10'-20' (SEE PLANS)

TYPE 'C' BUFFER DETAIL



10' TYPE 'C' BUFFER
NOT TO SCALE

PLANTING PERFORMANCE STANDARDS:

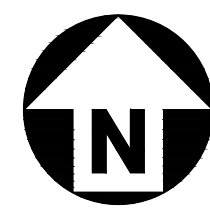
TYPE 'C' BUFFER
OPAQUE LANDSCAPING SHALL BE DESIGNED TO CREATE A SUBSTANTIAL SOUND AND VISUAL BARRIER FROM GRADE TO AT LEAST 8 FEET ABOVE GRADE AT TIME OF PLANTING. TYPE C LANDSCAPING IS INTENDED TO BE PLACED ON LOTS IN HIGHER INTENSITY DISTRICTS WHICH ADJUT LOTS LOCATED IN LESSER INTENSE DISTRICTS THAT MAY BE ADVERSELY IMPACTED BY THE LIGHTS, SOUNDS AND REGULAR OPERATIONS OF THE HIGHER INTENSITY DISTRICT. TYPE C LANDSCAPING REQUIRES SIGNIFICANT USE OF EVERGREEN VARIETIES TO PROVIDE YEAR-ROUND BUFFERING ACCENTED WITH DECIDUOUS TREES OR SHRUBS/HEDGE PLANTS. ANY EVERGREEN SPECIES THAT DROPS ITS LOWER BRANCHES SHALL NOT BE PERMITTED AS "EVERGREEN" TREES IN A TYPE C AREA.

OPACITY: 80%
DECIDUOUS TREES/FT: 5/100
PERCENT EVERGREEN: 80%
SHRUBS/FT: 20/100
HEIGHT OF BUFFER: 8'
WIDTH OF BUFFER: 10' (SEE PLANS)

LANDSCAPE CALCULATIONS

STREET TREES		
AVENT FERRY RD		1,317 LF
TREES		
REQUIRED:	33 (1/40 LF)	
PROVIDED:	33	
REX RD		1,108 LF
TREES		
REQUIRED:	28 (1/40 LF)	
PROVIDED:	28	

NOTE: ADDITIONAL STREET TREES WILL BE REQUIRED INTERNALLY THROUGHOUT THE SITE AND WILL BE SHOWN PER UDO STANDARDS AT THE TIME OF DEVELOPMENT PLAN.



GRAPHIC SCALE
0 50 100 200
1 inch = 100 ft.

PRELIMINARY DRAWING - NOT RELEASED FOR CONSTRUCTION



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RAGAN MIXED-USE
MASTER PLAN
3313 AVENT FERRY ROAD
NEW HILL, NC 27562



REVISIONS

NO.	DATE	REV PER TOWN COMMENTS
1	07.14.2023	REV PER TOWN COMMENTS
2	08.18.2023	REV PER TOWN COMMENTS
3	10.20.2023	REV PER TOWN COMMENTS
4	01.19.2024	REV PER TOWN COMMENTS
5	05.03.2024	REV PER TOWN COMMENTS
6		

PLAN INFORMATION

PROJECT NO. GHK-22001
FILENAME GHK22001-L51
CHECKED BY MV
DRAWN BY SMV
SCALE 1" = 100'
DATE 06.02.2023

SHEET

LANDSCAPE PLAN

L5.00

RAGAN MIXED-USE

Development and Design Manual



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1 Introduction

PURPOSE

Ragan Mixed-Use is located at a key gateway into Holly Springs, at the intersection of Avent Ferry and Rex Road. This mixed-use community will allow for high-quality multifamily housing as well as walkable, neighborhood-scale commercial options. This Design Manual utilizes conceptual images to properly convey design elements which speak to: caliber of design, overall quality of materials, and the type, character, and relationship of design elements that may be used and combined to create a unique sense of place. As a result, the actual design will naturally vary from the Town’s architectural standards with the overall design including materials and design elements substantially similar to those pictured and described in this Design Manual to achieve a high quality development.

This Manual is also designed to provide the developer with opportunities for flexibility and creativity in achieving the committed level of design and quality. The pictures and descriptions in this Manual are conceptual examples of the high quality of materials and caliber of design envisioned for Ragan Mixed-Use. The materials, architectural features, fixtures, hardscape, and landscape components depicted (“design elements”) are i) not intended to be exclusive, (ii) not exhaustive examples of design elements that will meet the level of quality required, and (iii) not required to be duplicated in the design or construction of Ragan Mixed-Use. Instead, these design elements are intended to be used as examples of acceptable building massing and articulation, street level architecture, fenestration and materials, lighting and art, historic preservation, landscaping, and gathering and open spaces (together “Guideline elements”). Guideline elements are intended to be applied in a manner that promotes variability and variation, in order to achieve the overall goal of creating Ragan Mixed-Use as a high quality development all its own.

VISION

Generally, Ragan Mixed-Use will accomplish the design objectives by:

- » Utilizing green space and reforestation areas to create a natural and peaceful environment, inviting visitors and residents to explore and linger throughout the development;
- » Including a high level of sophistication in style, character, and design throughout Ragan Mixed-Use, in a manner that accentuates the individual uses while weaving an overall blended fabric that speaks to the project’s unique amenities and architecture;
- » Designing each building in a manner to present the building in a distinguished and appealing way, consistent with the overall development;
- » Thoughtfully integrating attractive hardscaping and performance landscaping throughout well-designed community gathering spaces; and
- » Utilizing high quality materials to construct the buildings, architectural features, fixtures, hardscaping, and landscaping.

APPLICATION

This Design Manual was developed for the Ragan Mixed-Use rezoning as a zoning condition for the project to help facilitate Ragan’s development as a high quality, mixed use development. The purpose of this Design Manual is to ensure that Ragan Mixed-Use is developed with a higher level of quality and an overall higher caliber of design than would otherwise be required by the Town of Holly Springs’ existing building & design standards which are contained in the Town’s Unified Development Ordinance (“UDO”).

The Manual pursues these purposes by identifying specific types of design elements and then illustrating the level of quality required for Ragan Mixed-Use. This Design Manual utilizes pictures to convey the caliber of design, overall quality of materials, and the type, character, and relationship of design elements that may be used and combined to create a unique and special sense of place for Ragan Mixed-Use.

1 Introduction

VICINITY MAP

dated November 2022

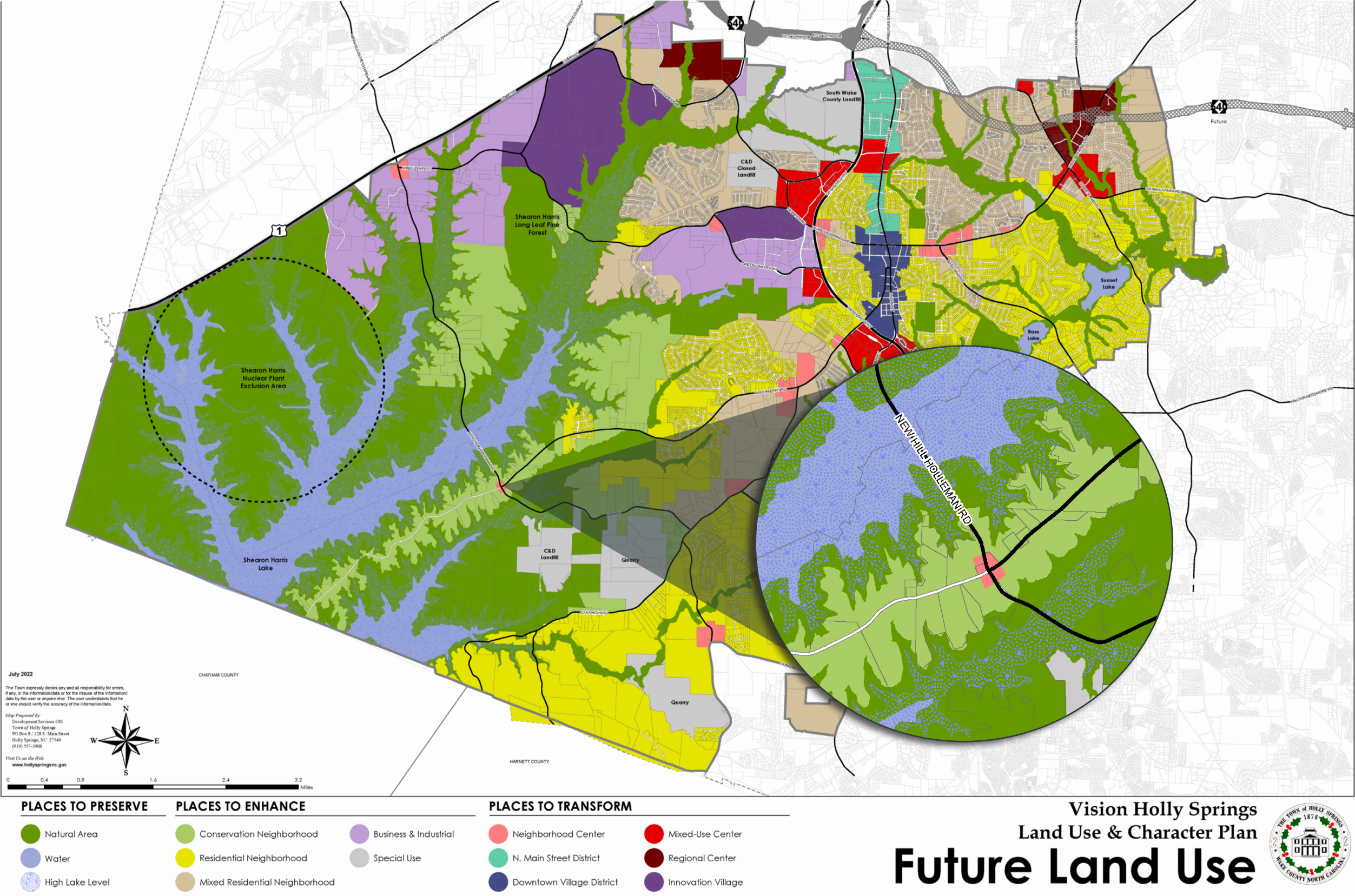


2 Land Use

Ragan Mixed-Use is a mixed-use project proposed in the southeast quadrant of the Avent Ferry Rd and Holleman Hill Rd intersection. The current zoning for this parcel is Rural Residential (RR), however Holly Spring's Future Land Use Map (FLUM) identifies the project site as a place to transform into a Neighborhood Center and Conservation Neighborhood. However the requested zoning district for this project is Neighborhood Mixed-Use. It will maintain the intent of the Comprehensive Plan by enabling the development of a small commercial center at the intersection of Avent Ferry Road and Rex Road. In addition, existing environmental features are protected and key forestation areas will be established. Furthermore, this district will enable the project to develop at a density level which will offset the infrastructure costs associated with the required improvements that will serve the sewer basin.

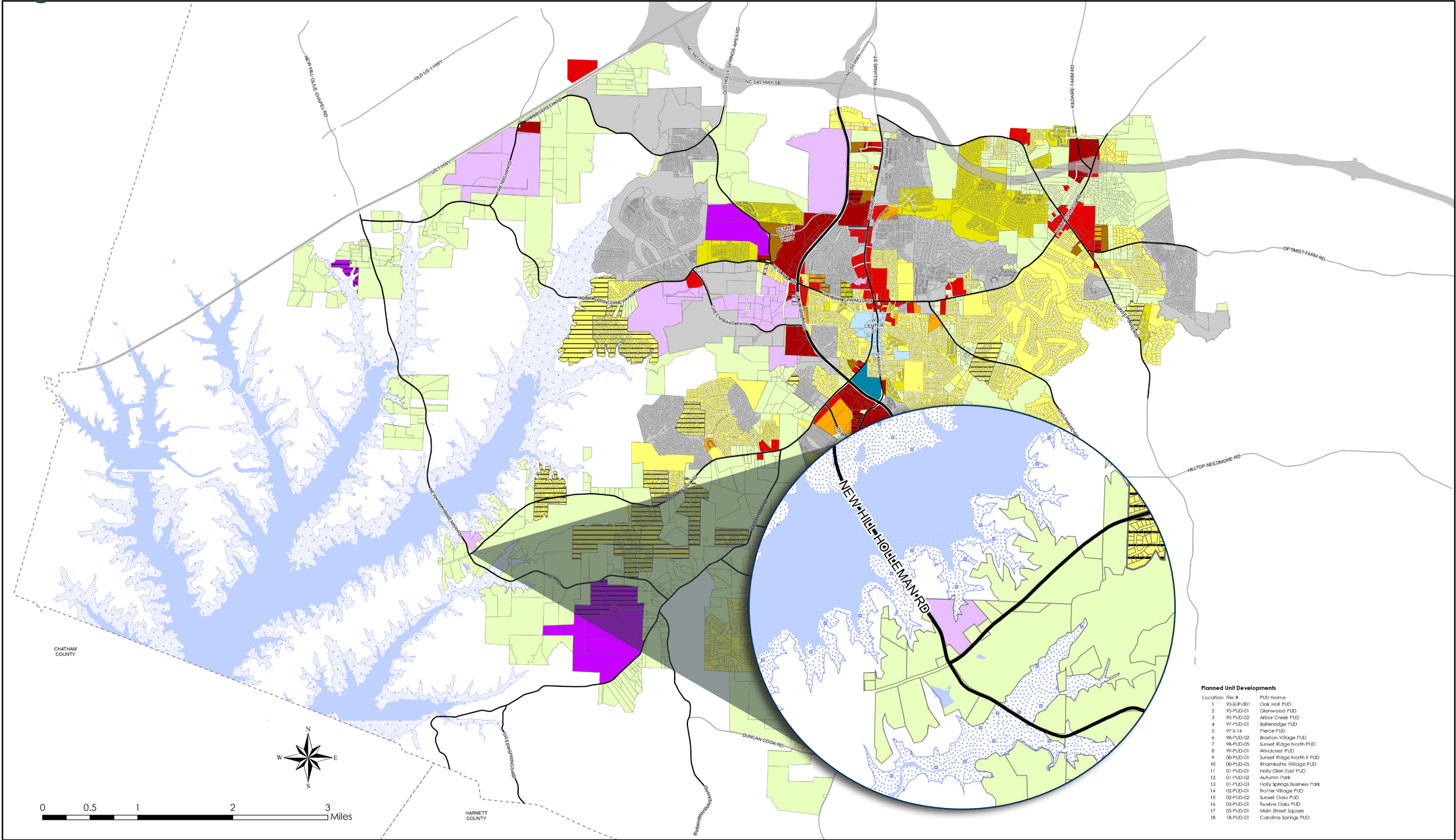
2 Land Use

dated July, 2022



3 Zoning

dated March 22, 2002



Parcels	Conditional Use	RR Rural Residential	NCR Neighborhood Center Res	DMX Downtown Mixed Use	SP CU Special District
Shearon Harris Lake		SR Suburban Residential	MXR Mixed Use Residential	PUD Planned Unit Development	BRT Business Research Technology
Proposed Shearon Harris Lake Level		NR Neighborhood Residential	NMX Neighborhood Mixed Use	CB Community Business	HI Heavy Industrial

The Town expressly denies any and all responsibility for errors, if any, in the information/data or for the misuse of the information/data by the user or anyone else. The user understands that he or she should verify the accuracy of the information/data.

Map Prepared By:
Development Services GIS
Town of Holly Springs
PO Box 8 / 125 N. Main Street
Holly Springs, NC 27540
(919) 557-3908

Visit Us on the Web:
www.hollyspringsnc.gov

Planned Unit Developments		
Location	File #	PUD Name
1	93-SUP-001	Oak Hill PUD
2	95-PUD-01	Glenwood PUD
3	95-PUD-02	Alabar Creek PUD
4	97-PUD-01	Balfordridge PUD
5	97-S-14	Pierce PUD
6	98-PUD-02	Braxton Village PUD
7	98-PUD-05	Sunset Ridge North PUD
8	99-PUD-01	Windcrest PUD
9	00-PUD-01	Sunset Ridge North II PUD
10	00-PUD-05	Rhankirkle Village PUD
11	01-PUD-01	Holly Glen East PUD
12	01-PUD-02	Autumn Park
13	01-PUD-03	Holly Springs Business Park
14	02-PUD-01	Roller Village PUD
15	02-PUD-02	Sunset Oaks PUD
16	03-PUD-01	Twelve Oaks PUD
17	05-PUD-01	Main Street Square
18	18-PUD-01	Caroline Springs PUD

Town of Holly Springs
Zoning Map



Updated: March 22, 2022

3 Zoning

The proposed rezoning to Neighborhood Mixed-Use - Conditional District (NMX-CD) is partially consistent with Holly Springs’ Future Land Use Map, and the intent of the Comprehensive Land Use Plan. Currently the land is zoned Rural Residential. The rezoning to NMX-CD will allow for a higher quality development that will fill both a much-needed housing gap, and function as a destination for existing residents. The project will make use of performance landscaping features, reforestation areas, and preservation of existing trees where possible to mediate the fact that the site had been timbered. The small, neighborhood scale commercial area would be located at the intersection of Avent Ferry Road and Rex Road, where the Future Land Use plan calls for a Neighborhood Center.

PERMITTED USE TABLE

The uses listed in the permitted use table shall be the only uses permitted as part of this development.

Use	NMX
Apartment Dwelling	P
Attached Dwelling	P
Bed and Breakfast	P
Hotel	P
Inn	P
Business Services	P
Childcare Center	P
Medical Office	P
Office Use	P
Personal Services	P
Veterinary Clinic/Hospital	P
Bar/Nightclub/Tasting Room	P
Food/Restaurant Uses	P
Retail Uses	P
Civic Building	P
Community Support Facility	P
Assembly	P
Religious Use	P
Fitness Facilities	P
Recreation Facility, Indoor	P
Solar Energy Systems-Small	P
Transit Station/Terminal	P
Wireless Telecommunications Equipment	P
P = Permitted.	

4 Proposed Development

Ragan Mixed-Use is a mixed use center proposed on approximately 56.91 acres comprised of one existing parcel on the western side of Holly Springs. This project will consist of townhomes, cottages, and neighborhood scale commercial uses. Reforestation areas, pocket parks, walking paths, and enhanced performance landscaping will be incorporated throughout the project to create a natural and calming village character. The proposed commercial section of the development will provide much needed business infusion in this part of town, and provide increased commercial access to the residents of Ragan Mixed-Use and the surrounding neighborhoods.

This project will provide increased housing options for Holly Springs residents. The development will include both cottage style homes and townhome units as a part of this mixed-use development. The variety of housing types will increase housing stock and choice for the growing population of the Town. The cottage style homes will be a new housing type to the Town and increase the housing diversity of the community.

The project will incorporate significant active, passive, and reforested open space throughout the site, as well Green Stormwater Infrastructure, in the form of bio-retention devices, permeable pavement, rain cisterns, and/or integrated rain gardens, which will enhance sustainability in the community. In addition the development proposes a public park for residents of Holly Springs to recreate at.

The proposed deviations from the UDO Standards for the NMX district will help to maintain the rural character of the community, while still allowing small-scale commercial uses to develop in the area identified as a neighborhood center.

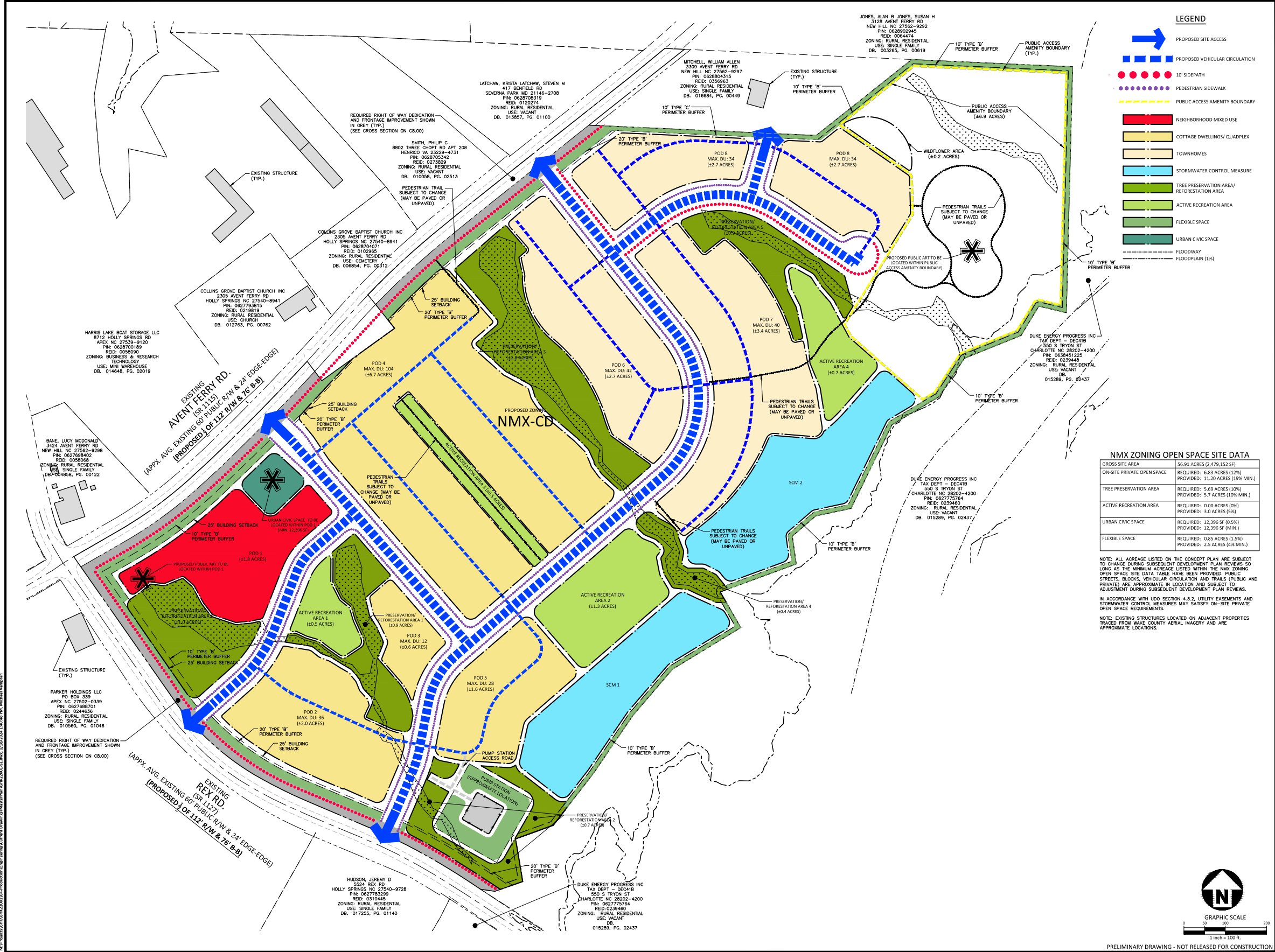
Proposed Uses	Units/Square Footage
Commercial*	32,000 sf
Single Family Attached	115 units
Multi-Family (Cottages)**	164 units

* A minimum of 10,000 sf of commercial shall be constructed prior to the 150th residential certificate of occupancy.

**Cottages shall be defined, for this conditional zoning, as: Multiplex units composed of four (4) individual dwelling units, each with their own entrance and outdoor yard or deck space. Parking for these units shall be provided through a combination of garages, on-street parking, and limited off-street parking spaces connected to the unit.



4 Proposed Development



4 Proposed Development

DEVELOPMENT STANDARDS

The following standards shall apply to all proposed buildings within the development. Building and Site Design shall be in accordance with UDO Sections 3,4,and 5, except as modified in this section:

Development Intensity	UDO Standard	Proposed Standard
Maximum Gross Density		
Maximum Gross Residential Density Allowed	15 units/acre	5.27 units/acre
Maximum Gross Floor Area		
Floor Area: Ground Floor Story Allowed	16,000 sf	16,000 sf
Open Space and Gathering Area		
Overall Minimum Open Space Required	12%	19%
Interior Building Setbacks - All Structures (ft)		
Front	Min: 5' Max: 20	Min: 5' Max: 20'
All other setbacks (Side and Rear)	5'	Min: 5'
Side - Corner Setback	5'	5'
Exterior Building Setbacks - All Structures (ft)		
Exterior Setback to Adjacent All Other Residential Districts (minimum)	5'	10'
Exterior Setback to Adjacent Commercial	20'	25'
Thoroughfare Setback	25'	25'
Buffers		
RR Buffer (Single Family Parcel)	10' Type B	10' Type C
RR Buffer (Duke Energy Parcel)	10' Type B	10' Type B
Thoroughfare Buffer	5' Type A	10' Type B (commercial) 20' Type B (residential)
Building Height		
All Primary Structures (maximum)	45'	45'
Primary Structures - Minimum number of stories	1	1
Primary Structures - Maximum number of stories	3	3
Accessory Structures (maximum)	n/a	15'
Residential Primary Structure(s) Finished Floor Elevation Above Sidewalk Grade (ft)	1.5'	1-1.5' (does not apply to alleys)
All other applicable development standards not listed here shall follow UDO standards and requirements.		

PARKING STANDARDS

The following shall apply to all proposed commercial buildings within the development. Parking Standards shall be in accordance with UDO section: 6 except as modified below:

- » On-street parking shall be used to meet parking space requirements for the commercial buildngs on site.
- » Parking areas shall be allowed to front on rear access streets.

4 Proposed Development: Cottages

Elevations are for demonstration purposes only.



LEFT ELEVATION
FARMHOUSE 1/8" = 1'-0"



REAR ELEVATION
FARMHOUSE 1/8" = 1'-0"



RIGHT ELEVATION
FARMHOUSE 1/8" = 1'-0"

Only change to this elevation is the stone water table around the building



COLOR SCHEME 2
BUILDING A2 | YARDLY QUAD BUILDINGS | CAROLINA REGIONAL PRODUCT

8-10-2023

taylor
morrison

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4 Proposed Development: Cottages

Elevations are for demonstration purposes only.



COLOR SCHEME 2
BUILDING A3 | YARDLY QUAD BUILDINGS | CAROLINA REGIONAL PRODUCT

8-10-2023

taylor
morrison

FELTENGROUP

4 Proposed Development: Cottages

Elevations are for demonstration purposes only.



LEFT ELEVATION
FARMHOUSE 1/8" = 1'-0"



REAR ELEVATION
FARMHOUSE 1/8" = 1'-0"



RIGHT ELEVATION
FARMHOUSE 1/8" = 1'-0"



COLOR SCHEME 2
BUILDING B1 | YARDLY QUAD BUILDINGS | CAROLINA REGIONAL PRODUCT

8-10-2023

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4 Proposed Development: Cottages

Elevations are for demonstration purposes only.



LEFT ELEVATION
TRADITIONAL 1/8" = 1'-0"



REAR ELEVATION
TRADITIONAL 1/8" = 1'-0"



RIGHT ELEVATION
TRADITIONAL 1/8" = 1'-0"



COLOR SCHEME 3
BUILDING B2 | YARDLY QUAD BUILDINGS | CAROLINA REGIONAL PRODUCT

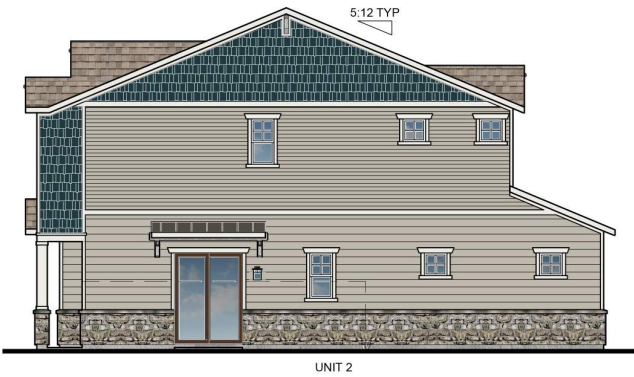
8-10-2023

taylor
morrisson
Homes Inspired by You
4900 N Scottsdale Rd #2000 Scottsdale, AZ 85251
Phone: (480) 845-8100

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4 Proposed Development: Townhomes

Elevations are for demonstration purposes only.



RIGHT ELEVATION
CRAFTSMAN 1/8" = 1'-0"



REAR ELEVATION
CRAFTSMAN 1/8" = 1'-0"



LEFT ELEVATION
CRAFTSMAN 1/8" = 1'-0"



FRONT ELEVATION
CRAFTSMAN 1/4" = 1'-0"

4 Proposed Development: Townhomes

Elevations are for demonstration purposes only.



RIGHT ELEVATION
CRAFTSMAN 1/8" = 1'-0"



REAR ELEVATION
CRAFTSMAN 1/8" = 1'-0"



LEFT ELEVATION
CRAFTSMAN 1/8" = 1'-0"



4 Proposed Development: Commercial

*Precedent imagery are conceptual and for demonstration purposes only.



5 Building Design Standards

The following standards shall apply to all proposed buildings within the development. Building and Site Design shall be in accordance with UDO Section 8, except as modified in this section:

VERTICAL VARIATIONS

Building walls shall consist of a building bay or structural building system visually established by architectural features such as columns, ribs, pilasters or piers, changes in plane, or an equivalent element that subdivides the wall into human scale proportions. Minimum change shall be two (2) inches depth.

COMMERCIAL FACADE STANDARDS

The following shall be in place of UDO Section 8.2. G.4.a in order to create a rural character that aligns with the surrounding areas:

- » **Type 1 Materials:** brick; stone (e.g., natural/cultured, limestone, marble, or granite); split-face block (integral color); architectural or precast concrete, if the surface is designed to simulate brick or stone; glass; a combination thereof; or similar material determined by the Administrator.
- » **Type 2 Materials:** wood siding; fiber cement siding; stucco; tile; EIFS; trim; or similar material determined by the Administrator.
- » **Type 3 Materials:** high quality, smooth finish metal panel or similar material determined by the Administrator.
- » **Primary Façades (facades facing Avent Ferry Road and/or Rex Road)-** minimum 40% Type 1 Materials
- » **Secondary Façade-** Type 2 materials Secondary facades are defined as facades not facing the primary (public) road.
- » **Accents-** maximum 10% Type 3 materials
- » Commercial buildings shall have a minimum of 40% transparency on the ground floors up to 10' above the finish floor at grade to maintain the rural character of the development.
- » Concrete, concrete paver, or brick paver accents at walkways;
- » 'Trex' or similar decking at decks and porches;
- » Wood, synthetic wood, metal or vinyl soffits;
- » Feature elements such as cupolas, weather vanes, and/or public art pieces of various materials.
- » Commercial roofs may be composed of shingles or metal.

RESIDENTIAL FACADE STANDARDS

The following shall be in place of UDO Section 8.2. G.4 in order to create a rural character that aligns with the surrounding areas:

- » **Type 1 Materials:** brick; stone or synthetic equivalent; cementitious siding; fiber cement (Hardie Plank), stucco
- » **Type 2 Materials:** tile, EIFS, metal
- » **Type 3 Materials:** vinyl siding, trim, accents
- » **Primary Façades-** shall consist primarily of Type 1 materials
- » **Secondary Façades-** shall consist primarily of Type 2 materials
- » **Accents-** maximum 10% Type 3 materials
- » The primary facades shall include a masonry watertable along the entire front of the building.
- » Different brick colors, textures and finishes shall be used to create different architectural looks.
- » No buildings of the same exterior color will be located immediately adjacent to each other or across the street from each other.



Different colors and materials create unique architectural looks.



A variety of materials including cementitious siding, brick, and stone shall be used on residential buildings



Awnings and varying materials create inviting and cohesive spaces



Cupolas and art installations such as weathervanes enhance the rural character of the community

5 Design Standards

LANDSCAPE DESIGN

KEY ELEMENTS

- » Plant species shall be selected that offer strong, bold seasonal colors and a variety of textures.
- » Wildflower meadows shall be located in the large open space area on the northeastern side of the project. These will enhance the natural landscape and biodiversity of the site through the planting of pollinator species which will help to preserve wildlife, including monarch butterflies.
- » Placemaking shall be encouraged in commercial areas, which may contain decorative pavers, benches, trash receptacles, as well as supplemental plantings.
- » Whenever foundation landscaping is not feasible along commercial buildings, potted planters shall be installed along the front building facade. Final pot design and placement shall be approved by Development Services.
- » A 20' perimeter buffer shall be utilized where residential areas border Rex Road and Avent Ferry Road.
- » A 10' perimeter buffer shall be utilized where commercial areas border Rex Road and Avent Ferry Road.
- » Street trees shall be required to be placed every 40 feet along Rex Road and Avent Ferry Road.
- » Reforestation areas will be located across the development and distributed to ensure access for all residents. These will be planted in accordance with UDO section 4.4.3. A.

GREEN STORMWATER INFRASTRUCTURE

- » Green Stormwater Infrastructure will be used on the project site to treat a portion of stormwater runoff from development. The specific usage will include at least one of the specific GSI type devices below:
 - » Bio-retention Basin; Permeable Pavement; Rainwater Cistern; Planter Boxes; Integrated Rain Gardens
 - » Rain Gardens shall be implemented in the commercial section of the development and at the residential amenity center.



Pocket park areas throughout the site encourage active recreation.



Reforestation areas will planted throughout the site in accordance with UDO standards.



Buffers will planted along roadways. 20' buffers will be used for residential uses and a 10' buffer will be used for commercial uses.



Wildflower meadows will protect biodiversity and enhance the natural environment of the site.



Street trees will be planted along Avent Ferry and Rex Road.

5 Design Standards

GATHERING & OPEN SPACE

KEY ELEMENTS

- » Urban civic space shall be met by introducing plaza areas that will be available for all residents and business patrons alike. These plaza areas shall contain the following elements: benches, trash receptacles, decorative pavers and supplemental landscaping.
- » The overall open space provided shall be 11.2 acres.
- » Pocket parks shall be distributed throughout the entire development and connected via sidewalks for easy bicycle and pedestrian access.
- » A public park shall be constructed as part of the Town’s park search area program.
- » A pedestrian network of trails and sidewalks shall be dispersed across the development area.
- » Active Recreation space shall include walking trails, native flowers, a pickle ball court, shade structures, benches, a clubhouse, play lawns, a pool, dog parks, and tot lots.
- » Community art pieces shall be installed at the commercial corner at the intersection of Avent Ferry and Rex Road and within the pollinator garden located in the public access recreation area on the eastern side of the site.

OPEN SPACE SITE DATA TABLE		
Total Site Area: 56.91 acres	UDO Standard	Proposed Standard
On-site Open Space	12% 6.83 acres	19% 11.2 acres
Tree Preservation Area	10% 5.7 acres	10% 5.7 acres
Active Recreation Area	0% 0 acres	5% 3.1 acres
Urban Civic Space	0.5% 12,396 sf	0.5% 12,396 sf
Flexible Space	1.5% 0.85 acres	4% 2.5 acres



Pocket parks dispersed across the project area



Balance of hardscape and landscape



Benches, seating and other amenities will activate open spaces



Supplemental plantings and varied planters add visual interest



Walking paths and trails

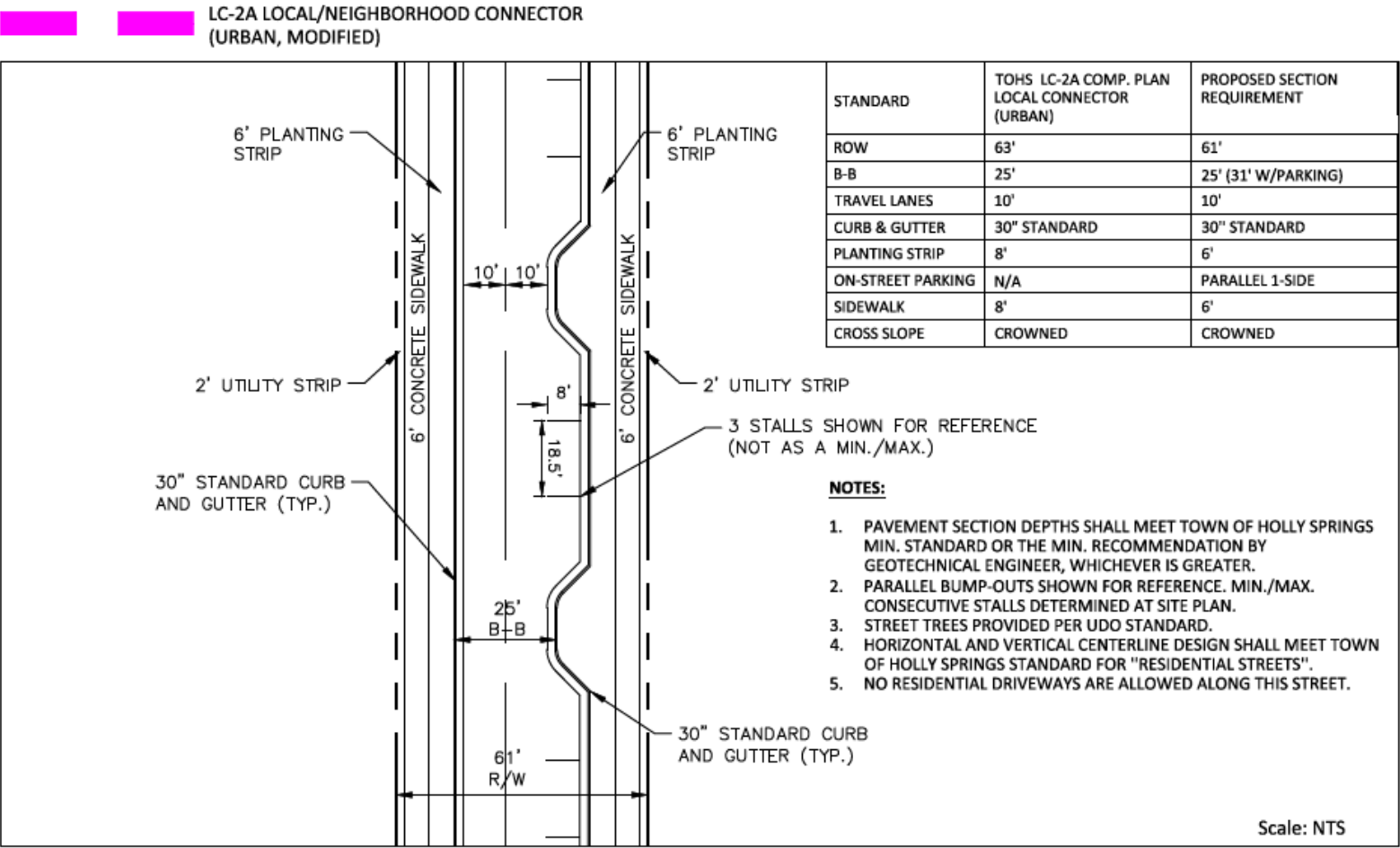


Variation assures interest is maintained within the gathering space

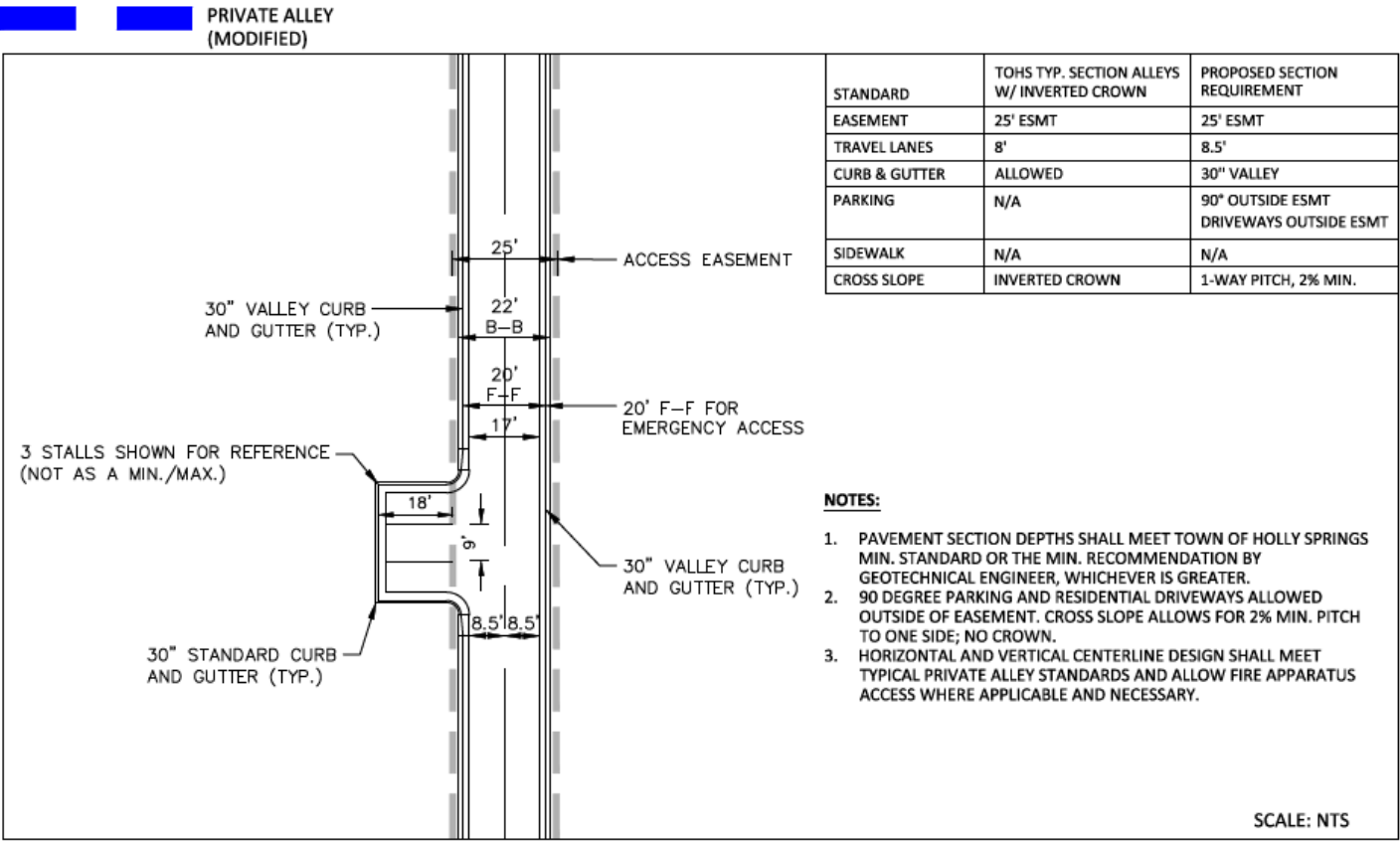
6 Streetscape and Mobility Standards

The internal streets for Ragan Mixed-Use shall be constructed to the standards outlined in this section.

PUBLIC RESIDENTIAL STREETS

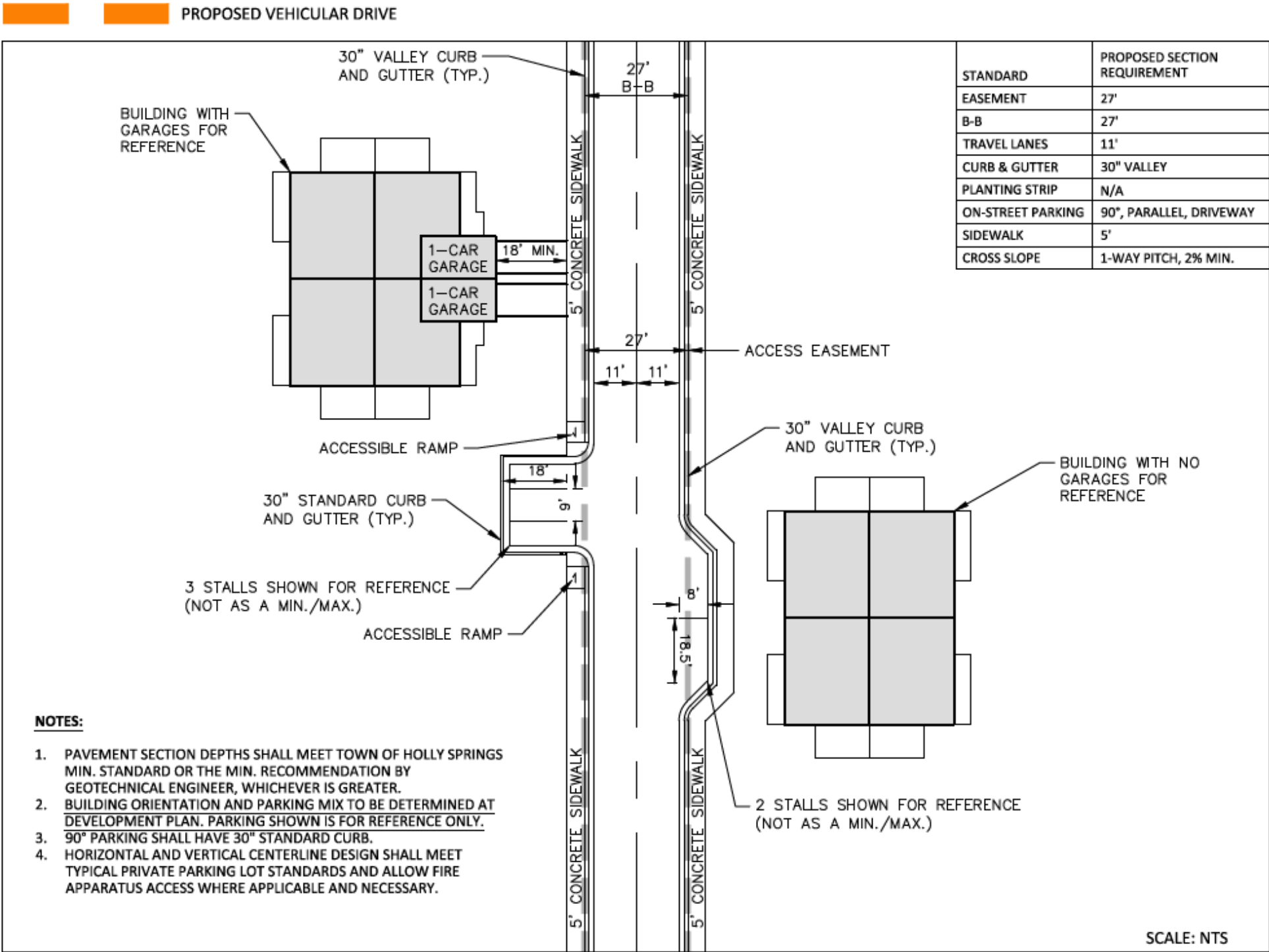


RESIDENTIAL ALLEYS



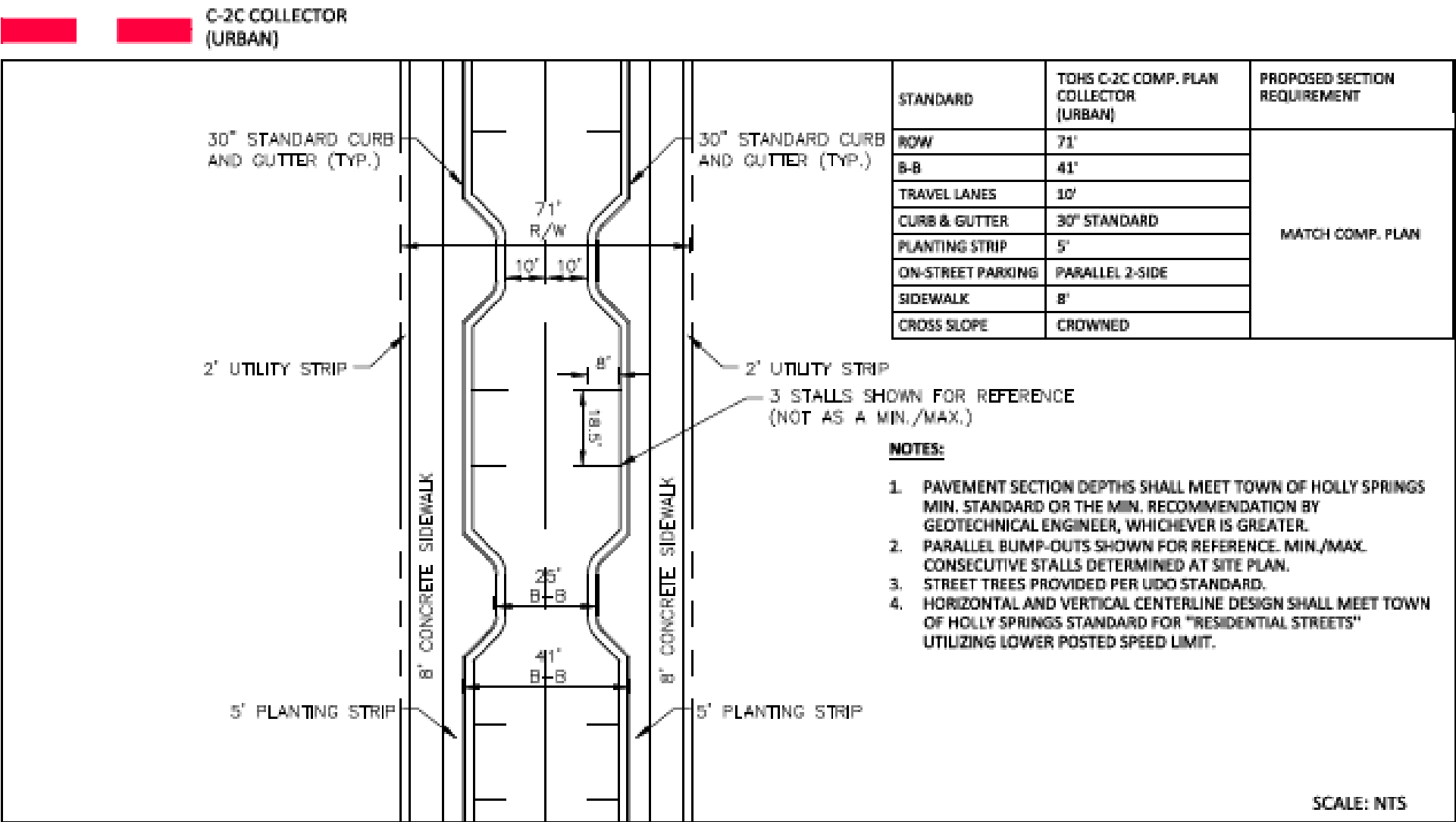
6 Streetscape and Mobility Standards

Private Drives



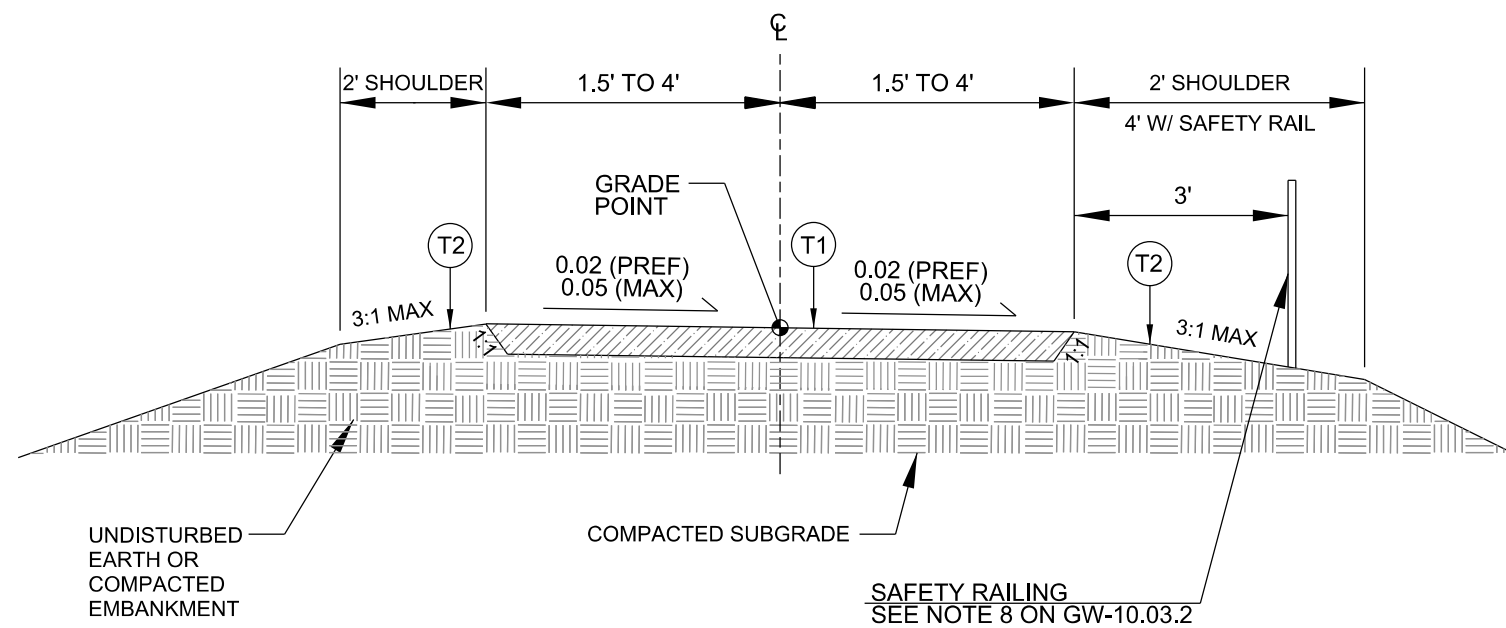
6 Streetscape and Mobility Standards

COMMERCIAL ACCESS STREETS

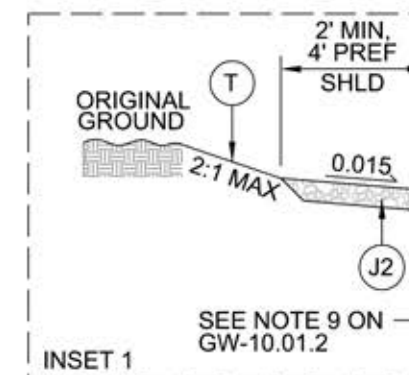
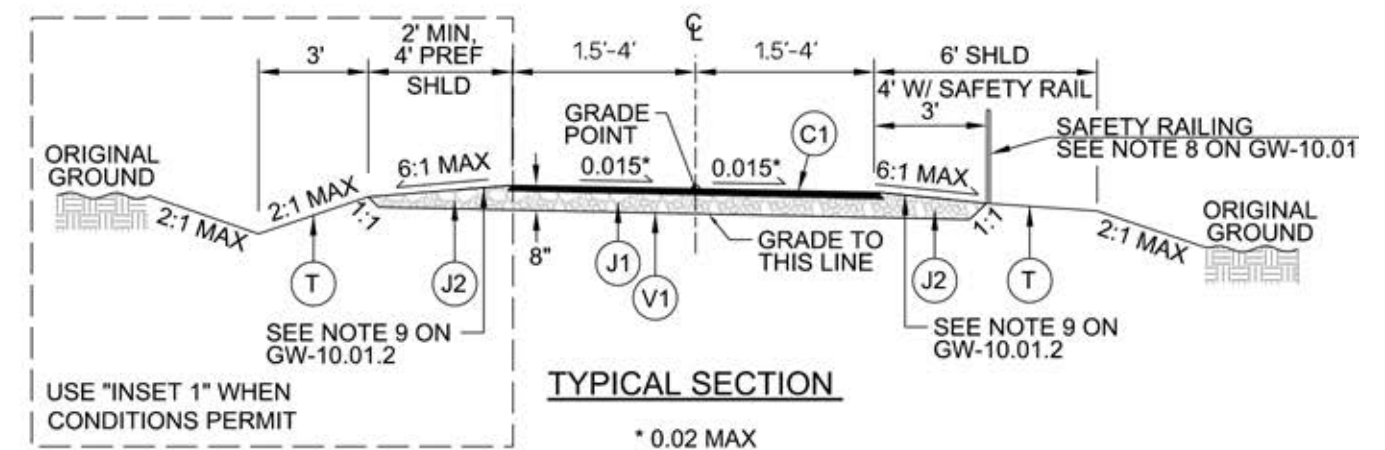


6 Streetscape and Mobility Standards

Pedestrian Trails Furniture location and detail to be finalized at time of development plan.



UNPAVED TRAIL



ASPHALT TYPICAL TRAIL SECTION VARIABLE WIDTH



Holly Springs Town Council

Town Council Meeting Agenda Cover Sheet

Agenda Item#: 17.

New Business

Title: Semiannual UDO Text Amendments 24-UDO-01 - Legislative Public Hearing

Strategic Priority Area: Growth Management & Economic Vitality

Staff Resource: Sean Ryan, Development Services

Action(s):

- Adopt Consistency Statement.
- Adopt Ordinance 24-27 to adopt the statement of compatibility and approve UDO Text Amendments.

Explanation:

- This UDO text amendment package contains the Spring 2024 amendments for consideration as part of the Town's normal twice-yearly initiative to review and amend the Ordinance where appropriate.
- The proposed UDO text amendment package contains a series of amendments to various sections of the UDO that have been identified by staff during the implementation and administration of the ordinance. Amendments contained in this ordinance include changes to minimum residential lot sizes to increase the minimum lot sizes in the base district standards for NR Neighborhood Residential and NCR Neighborhood Center Residential Districts to accommodate a 10,000 sq. ft. minimum lot size, revise the variation in lot size standard for Conditional Zoning Districts in the SR Suburban Residential and NR Neighborhood Residential districts from percentage based to lot average, identifying the use types within residential building type categories such as duplexes, triplexes, and quadruplexes, modifying the parking requirements in the Downtown Mixed-Use Districts to eliminate the parking exemption, and various clarifications and technical corrections.
- Detailed language of the proposed amendment can be found in the attached draft ordinance.
- As a living document, it is customary for the ordinance to need clarification or changes as town policies change, interpretations are made, or community expectations evolve.

Staff Recommendation: Approve

Planning Board Recommendation: Approve 5 - 0 [4 absent]

A summary of the Planning Board discussion is in the staff report.

Background:

- In October 2021, the Town Council adopted the 2022 UDO with an effective date of March 1, 2022.

Town Council Business Meeting
June 18, 2024

- Staff provided an overview of some of these amendments at their workshop on April 9, 2024.

Funding Source(s):

Attachment(s):

1. 24UDO01_SemiAnnualUDOAmdments_TC06182024
2. 24UDO01_SemiannualUDOTextAmend_FINAL



Project Type: Unified Development Ordinance (UDO) Text Amendment

Applicant / Petitioner:

Town of Holly Springs

Amendment Overview

This UDO text amendment package contains the Spring 2024 amendments for consideration as part of the Towns normal twice-yearly initiative to amend the Ordinance. Detailed language of the proposed amendment can be found in the attached draft ordinance. The proposed UDO text amendment package contains a series of amendments to various sections of the UDO that have been identified by staff during the implementation and administration of the ordinance. As a living document, it is customary for the ordinance to need clarifications or changes as town policies change, interpretations are made, or community expectations evolve.

Requested Action:

Legislative Decision: The Town Council must hold a Legislative public hearing to receive public comments regarding the proposal and make a determination on whether or not to approve the Unified Development Ordinance (UDO) Text Amendment.

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Unified Development Ordinance (UDO) Text Amendment Information	Page 2
Decision-Making Information	Page 4



Unified Development Ordinance (UDO) Text Amendment Information

The proposed amendments table below provides a summary of the proposed changes to the Town of Holly Springs Unified Development Ordinance (UDO) and an explanation of why the change is needed.

Purpose of Amendment Key	
Legal Compliance	Change made to comply with North Carolina General Statutes or other legal change.
Clarification or Correction	Change made to provide clarification on UDO intent, prevent misinterpretations, or correct grammatical errors.
Minor Change	Minor changes made to further achieve goals and policies outlined in the Comprehensive Plan or changes made to better implement the established policy based on resident, business, and development community feedback.
Major Change	Major changes to support a specific town policy or substantially change current UDO regulations.

List of Amendments		
Ordinance Part	Purpose of Amendment	Amendment Summary
1	Minor Change	Clarifying intent of where the RMX District should be used and more closely aligning the CB district with the Mixed-Use Center character area from the Land Use & Character Plan.
2; 4; 6	Clarification or Correction	Clarifying and making consistent across all Use Districts how to interpret the Development Standards tables and symbology.
3	Major Change	Clarifying Attached and Apartment Dwelling Allocation; correcting an acreage gap in the Non-Residential Use Allocation allowances; revising Minimum Lot Areas in the NR and NCR by-right districts; modifying the method allocating different lot areas when using a Conditional Zoning Districts in the SR and NR Districts; clarifying Attached, Apartment, and Manufactured Dwelling Lot Areas, modifying "Other Use" Lot Areas; & corrections to terminology
	Minor Change	
	Clarification or Correction	
5	Minor Change	Reducing Minimum Development Area in the RMX district as recommended by the Northeast Gateway Master Plan; establishing a Minimum Lot Frontage on Public Streets for non-residential uses with corresponding changes to notes; & corrections to terminology
	Clarification or Correction	
7	Minor Change	Establishing a Minimum Lot Frontage on Public Streets for the IVMX District with corresponding changes to notes; & corrections to terminology



List of Amendments		
Ordinance Part	Purpose of Amendment	Amendment Summary
8; 10	Minor Change	Modifying residential uses to clarify the broader range of dwelling types within each category (Detached, Attached, and Apartments Dwellings) as recommended by the Northeast Gateway Master Plan; modifies Apartments Dwellings and Attached Dwellings from "P" (permitted) to "CD" and "PS" (permitted with standards) to ensure the min/max allocation requirements for new subdivisions outlined in Chapter 2 are tied to the specific use and apply to all new subdivisions not just CD applications (corresponding to changes proposed in Part 3); & clarifies the additional standards for Apartment Dwellings and Attached Dwellings (corresponding to changes proposed in Part 3).
9; 11; 12; 17	Minor Change	Combines Amusement and Entertainment Uses into single category to eliminate overlapping definitions; modifying the Use in the RR district from SUP to CD to move the decision-making process from quasi-judicial (BOA) to legislative (Town Council); add the use as CD in the DMX District to support the implementation of the Downtown Area Plan; & correct Terminology of the defined term "Shooting Range."
13; 14	Clarification or Correction	Clarify Side-Corner fences in Residential Use Districts; & eliminate SUP fencing requirements (typically non-residential uses) that duplicate already required standards found in the non-residential use fence section of the UDO.
15	Minor Change	Modifying when Active Recreation areas are required to be installed and proving an option to provide a construction guarantee in lieu.
16	Clarification or Correction	Corrects an inconsistency with the maximum driveway width allowed per Chapter 3.
18	Major Change	Removes the exemption for parking in the DMX District to support implementation of the Downtown Area Plan.
19	Legal Compliance	Complies with changes to NC General Statutes.
20	Minor Change	Modifies defined terms consistent with changes made to other parts of this amendment.
	Clarification or Correction	



Decision-Making Information

Unified Development Ordinance (UDO) Text Amendment Staff Analysis

The proposed UDO amendments further the implementation of the character-based land use approaches outlined in *Section 1: Land Use & Character Plan* and provides the tools necessary for staff and the development community to implement the goals and objectives stated in the Plan as follows:

- Provides increased opportunities to diversify home & neighborhood choices in the community
- Provides lot frontage requirements on public streets to protect public safety
- Ensures active recreation areas are provided for residents in new subdivisions
- Implements recommendations from the Northeast Gateway Master Plan and Downtown Area Plan
- Corrects technical errors and makes clarifications to ensure consistent interpretation

Staff Recommendation: ☒ Approve ☐ Deny

Previous Case Related Items

Town Council Workshop Discussion

The Town Council discussed some of these amendments at their workshop on April 9, 2024.

Planning Board Action

Planning Board Meeting Date: 5/28/2024

Planning Board Decision Type: Advisory Decision

Advisory Decision

The Planning Board must review the application and make a recommendation to the Town Council.

The Planning Board should consider whether or not the land use standards and densities allowed in the proposed zoning district are appropriate for the property and consistent with the Vision of Holly Springs Comprehensive Plan. Technical standards of the Unified Development Ordinance are addressed once a Development Plan or Subdivision Plan is submitted for review.



The Planning Board discussed the following issues and concerns:

- The reasoning for changes to Amusement and Entertainment Uses, including the setback from adjacent residential properties.

Planning Board Recommendation:

The Planning Board adopted the following Comprehensive Plan Consistency Statement:

The proposed Unified Development Ordinance (UDO) amendments provide the Town of Holly Springs the necessary policies and development standards to implement Vision Holly Springs. Specifically, the proposed UDO amendments implement the character-based land use approaches outlined in Section 1: Land Use & Character Plan and provides opportunities for more mixed-use activity centers thought Holly Springs, provides context sensitive infill opportunities, and provides increased opportunities to diversify home & neighborhood choices in the community. The proposed UDO amendments also implement the goals and policies of Section 2: Comprehensive Transportation Plan, by providing the standards needed to implement the Town's transportation infrastructure needs and Section 3: Parks, Recreation and Greenways Master Plan by providing the standards to implements the Town's Parks and Recreation needs. Finally, the proposed UDO text amendments provide the tools necessary for staff and the development community to implement the goals and objectives stated in the Plan.

The Planning Board voted in favor of the motion (5 - 0) [4 absent]

Recommend **approval** of Unified Development Ordinance (UDO) Text Amendment 24-UDO-01 to modify the Unified Development Ordinance as submitted by the Town of Holly Springs.

The Planning Board voted in favor of the motion (5 - 0) [4 absent]

Post Planning Board Action

A correction was made to Part 10, Sections A.1. and B.1. (page 20) to add the word "Unit" following "Attached Dwelling" (Attached Dwelling Unit) and "Apartment Dwelling" (Apartment Dwelling Unit).



Town Council Consideration & Action

Legislative Public Hearing

Prior to the Legislative Public Hearing:

- Published notice was made twice in the News & Observer.

Town Council Decision Type: Legislative Decision

Legislative Decision:

Legislative public hearings are held prior to a change in policy that may affect the entire community, including decisions on land use. The public hearing allows the Town Council to receive public comments regarding the proposal and then have discussion and deliberation. Based on the information provided on the proposal, the Town Council will make a determination on whether or not to approve the policy or modification.

Potential UDO Text Amendment Petition Motion

Adopt Ordinance #24-27 to adopt the statement of compatibility and approve UDO Text Amendments.



Ordinance No. 24-27

Date Submitted: June 18, 2024

Date Adopted: June 18, 2024

**AN ORDINANCE TO AMEND SECTIONS OF THE CODE OF ORDINANCES
TO MODIFY APPENDIX A: UNIFIED DEVELOPMENT ORDINANCE
AND ADOPT THE COMPATIBILITY STATEMENT REQUIRED BY
NORTH CAROLINA GENERAL STATUTES 160D**

WHEREAS, the Town of Holly Springs Town Council adopted *Vision Holly Springs: Town of Holly Springs Comprehensive Plan* in November 2007; and

WHEREAS, the Town of Holly Springs Town Council has maintained and updated *Vision Holly Springs: Town of Holly Springs Comprehensive Plan* by adopting *Section 1: Land Use & Character Plan* in 2019; *Section 3: Parks, Recreation and Greenways Master Plan* in 2021; *Section 2: Comprehensive Transportation Plan* in 2022; *Section 1: Land Use & Character Plan Appendix E: Downtown Area Plan* in 2023; and *Section 1: Land Use & Character Plan Appendix F: Northeast Gateway Master Plan* in 2022, and

WHEREAS, Town of Holly Springs desires to amend the Unified Development Ordinance in accordance with the goals and policies contained within *Vision Holly Springs: Town of Holly Springs Comprehensive Plan*; and

WHEREAS, the Holly Springs Planning Board has reviewed this request at a Public Meeting and recommended approval; and

WHEREAS, an opportunity for public input into the suggested amendment has been offered in a public hearing before the Town Council; and

WHEREAS, the Holly Springs Town Council finds that the proposed UDO amendments are consistent with the *Vision Holly Springs: Town of Holly Springs Comprehensive Plan* as follows: The proposed Unified Development Ordinance (UDO) amendments provide the Town of Holly Springs the necessary policies and development standards to implement *Vision Holly Springs*. Specifically, the proposed UDO implements the character-based land use approaches outlined in *Section 1: Land Use & Character Plan* and provides opportunities for more mixed-use activity centers thought Holly Springs, provides context sensitive infill opportunities, and provides increased opportunities to diversify home & neighborhood choices in the community. The proposed UDO amendments also implement the goals and policies of *Section 2: Comprehensive Transportation Plan*, by providing the standards needed to implement the Town's transportation infrastructure needs and *Section 3: Parks, Recreation and Greenways Master Plan* by providing the standards to implements the Town's Parks and Recreation needs. Finally, the proposed UDO text amendments provide the tools necessary for staff and the development community to implement the goals and objectives stated in the Plan; and

THEREFORE, BE IT ORDAINED by the Holly Springs Town Council of the Town of Holly Springs, North Carolina, that the Code of Ordinances Appendix A: Unified Development Ordinance of the Town is

amended as follows:

Part 1: Amending Section 2.1.2 Districts; Base District; Commercial & Mixed-Use Districts:

Add text as indicated in **bold** and remove text as indicated in ~~strikethrough~~ to modify the descriptions of Regional Mixed-Use and Community Business Districts to be more consistent with the Comprehensive Plan Land Use & Character Area descriptions and more reflective of the permitted uses within the districts, as follows:

RMX Regional Mixed-Use

The Regional Mixed-Use District offers the opportunity to serve broader economic, entertainment, and housing needs in the community **within or near areas designated as Regional Center on the Future Land Use Map**. The compact, walkable environment and mix of residential and non-residential uses in the district supports multiple modes of transportation, including the potential for future transit-supportive development. In addition to new projects, RMX Districts also allow for the transformation of existing suburban, single-use, auto-oriented centers into mixed-use districts that encompass a wide array of uses including shopping, office, entertainment, lodging and housing on an interconnected network of walkable streets and high-quality open spaces.

CB Community Business

The Community Business District accommodates locations **along major corridors** for ~~auto-oriented, moderate to~~ high volume and ~~high~~ intensity commercial **and mixed-use centers** ~~uses along major corridors~~. Activities in this district ~~are often~~ **may include** large format retail stores and centers ~~which may include~~ **with** limited amounts of outdoor sales or outdoor operations. Developments within the CB District shall be coordinated to facilitate pedestrian, bicycle, and vehicular access from nearby Residential **Use** Districts. **In addition to new projects, CB Districts also allow for the transformation of existing suburban, single-use, auto-oriented centers into mixed-use districts that encompass a wide array of uses including shopping, office, entertainment, lodging and housing on an interconnected network of walkable streets and high-quality open spaces.**

Part 2: Amending Section 2.2.1.A Districts, Development Standards for Residential Use Districts; Applicability:

Add text as indicated in **bold** to clarify interpretation of table values and provide consistency between use tables, as follows:

A. Applicability. All development and land use activity on properties within the Residential Use Districts is subject to the development standards outlined in Table 2.2.1-A below. Exceptions may apply where the property obtained separate Town approvals related to Planned Unit Developments (PUDs) or Conditional Zoning Districts (CD) – in those instances, the associated approvals/permits may establish the development standards for said properties. (Refer to Chapter 1 relating to those instances).

The numbers shown in the tables are minimums or maximums depending on the item (row). In the case of maximums, developments can be compliant with a lower number; with minimums, developments can be compliant with a higher number. In the chart "--"

means the use is not permitted in the District **and “n/a” means the development standard does not apply in the District.**

Part 3: Chapter 2 Development Standards; Table 2.2.1-A Development Standards for Residential Use Districts and Table 2.2.1-A Notes.

Add text as indicated in **bold** and remove text as indicated in ~~strikethrough~~ to make clarifications, correct a missing gap in Non-Residential Use Allocation, modify minimum lot standards, provide lot configuration standards for Manufactured Dwellings, and make technical corrections as follows:

Table 2.2.1-A - Development Standards for Residential Use Districts					
	RR	SR	NR	NCR	MXR
Development Intensity					
Development Density (N1)					
Maximum Gross Density by-right (units/acre)	0.5	3	5	8	15
Maximum Gross Density (Conservation Subdivision) (units/acre) (N2)	0.5	3	5	--	--
Maximum Gross Density with Conditional Zoning District (CD) (units/acres)	1	4	8	12	N3
Open Space and Conservation Area (N4)	See Chapter 4				
Attached Dwelling Unit and Apartment Dwelling Unit Allocation (in New Subdivision Only with Conditional Zoning District (CD)) (N5)					
Minimum Dwelling Units	--	--	10%	10%	10%
Maximum Dwelling Units	--	--	50%	100%	100%
Non-Residential Use Allocation by Acreage (NR, NCR, MXR Permitted Uses in New Subdivisions Only by total Project Area) (N5)					
< 25 300 acres or-less (maximum total area)	--	--	5%	5%	5%

Table 2.2.1-A - Development Standards for Residential Use Districts					
	RR	SR	NR	NCR	MXR
< 25 300 acres or less (maximum contiguous area)	--	--	3 acres	3 acres	3 acres
Greater than ≥ 300 acres (minimum total area)	--	--	3 acres	3 acres	3 acres
Lot Configuration					
Minimum Lot Area (sf)					
Detached Dwellings (Standard Subdivision) (N2)	2 acres	15,000	5,000 10,000	None 5,000	none
Detached Dwellings (Conservation Subdivision) (N2)	none	none	none	--	--
Detached Dwellings with Conditional Zoning District (CD)	1 acre	7,500 and average ≥ 10,000 (20% min. 7,500-9,999, 30% min. 10,000-11,999, 30% min. 12,000 or larger, 20% flexible)	average ≥ 5,000 None (50% min. no min. Lot size, 20% min. 3,500-4,999, 20% min. 5,000 or larger, 10% flexible)	none	none
Attached/ Apartment Dwellings (N5)	--	--	none	none	none
Apartment Dwellings (N5)	--	--	--	none	none
Manufactured Dwellings (N5)	2 acres	--	--	--	--
Other Buildings/Uses	20,000 2 acres	10,000 15,000	10,000	10,000 5,000	10,000 none

Table 2.2.1-A - Development Standards for Residential Use Districts					
	RR	SR	NR	NCR	MXR
Minimum Lot Width at the Setback Line (ft)					
Detached Dwellings	100	60	26	26	26
Attached Dwellings	--	--	18	18	18
Apartment Dwellings	--	--	--	50	50
Manufactured Dwellings	100	--	--	--	--
Other Buildings/Uses	-- 100	60	60	60	60
Minimum Lot Frontage (ft) (N6)					
All Buildings/Uses	50	20	18	18	18
All Buildings/Uses (Conservation Subdivision Option) (N7)	20	20	20	--	--
Minimum Lot Frontage for a Driveway (ft)					
Detached/Attached Dwellings Permitted by Right (N8)	-- 60	60	60	60	60
Building Placement (N9)					
Thoroughfare Setbacks (ft)					
Freeway - NC 540/US 1	100	100	100	100	100
Freeway - NC 55	100	100	100	100	100
Thoroughfare	50	50	25	25	25

Table 2.2.1-A - Development Standards for Residential Use Districts

	RR	SR	NR	NCR	MXR
Primary Building Setbacks (ft) (N910)					
Front Setback (minimum)	20	20	5	5	5
Front Setback (maximum) (N1011)	-- n/a	-- n/a	20	15	15
Side - Corner Setback (minimum)	20	20	5	5	5
Side - Interior Setback (minimum) (N1112)	10	10	5	5	5
Rear Setback (minimum)	25	25	20	20	30
Rear Setback from Alley Centerline (minimum)	-- 15	15	15	15	15
Accessory Building/Structure Setbacks (ft)					
Accessory Building/Structure(s) <144 sf	5	5	3	3	3
Accessory Building/Structure(s) ≥ 144 sf	10	6	5	5	5
Accessory Building/Structure(s) ≥ 144 sf Setback from Alley Right of Way ≥ 144 sf (minimum) (N1213)	-- 5 or 20+	-- 5 or 20+	5 or 20+	5 or 20+	5 or 20+
Building Height (ft)					
Primary Building/Structure(s) (maximum)	35	35	35	35	35
Primary Building/Structure(s) (maximum with Conditional Zoning District (CD))	50	50	50	50	60

Table 2.2.1-A - Development Standards for Residential Use Districts					
	RR	SR	NR	NCR	MXR
Accessory Building Structure(s) (maximum) (N13 14)	25	25	25	25	30
Residential Primary Building Structure(s) Finished Floor Elevation Above Sidewalk Grade (ft)	-- n/a	-- n/a	1.5	1.5	1.5

Table 2.2.1-A Notes	
N1	For individual Lots or Projects containing multiple Districts, calculated based on the District in which a majority (50% of buildable area or greater) of the buildable area of a Lot is located. The Total Allowable Units shall be equal to the Gross Site Area X Maximum Units Per Acre.
N2	Reference Chapter 8 Building, Site & Subdivision Lot Design Standards.
N3	Maximum Gross Density shall be established with a Conditional Zoning District (CD). Maximum Gross Density that exceeds 15 units/acre may be considered if the Project is: 1. Designated on the Future Land Use Map as N. Main Street District, Downtown Village District, Mixed-Use Center, or Regional Center, or, within the boundary of the Northeast Gateway Master Plan; and, 2. The Project includes either a Parking Garage, or, a minimum of 40% of Dwelling Units located within a vertically integrated mixed-use Building with Office and Service Uses or Retail, Dining, and Entertainment Uses located on the ground floor story.
N4	Common Open Space and/or conversation areas are required for all Residential Major Subdivisions where the resulting plat/Subdivision action results in 5 or more Lots and Site Plans that include Apartment Dwellings and Attached Dwellings.
N5	Reference uses in Chapter 3.
N6	The Lot Frontage is measured along the Front property Lot Line abutting a Public Street. Where no Public Street exists and the Lot fronts a Private Street or common Open Space, the Frontage shall be measured along the Lot Line abutting the Private Street or Alley and each Lot shall gain access to and from a Public Street across a perpetual recorded public access easement.
N7	The minimum shared easement width as measured at Right-of-Way.
N8	For Lots existing prior to the effective date of this UDO, the UDO Permit review process may consider alternate methods of providing Lot access if the provision of an alley or rear lane is not feasible in the following priority order: shared driveway between 2 or more Lots; 1 single driveway a maximum of 12 feet in width. For new Lots or for Lots existing prior to the effective date of this UDO, flexibility is available through the Conditional Zoning District (CD) process.
N9	The Building Placement standards shall apply to all buildings and structures unless specifically permitted otherwise. Refer to Section 2.3.5 Setback Encroachment Allowances.
N9 N10	Residential Dwellings in established neighborhoods may be eligible for a Front Setback reduction based on the Building placement on adjacent Lots. See Section 2.3.5. for allowances.

N10 N11	Not applicable to Detached Dwellings with front-loaded driveways. Exceptions may be granted by the Administrator to accommodate tree preservation area, steep topographic conditions, or similar environmental features.
N11 N12	Attached Dwelling Units are allowed a 0-ft Side Setback where the unit shares a common wall with another Dwelling Unit.
N12 N13	The Building may be less than 5 ft or more than 20 ft from the right-of-way to avoid haphazard parking arrangements that may be disruptive to alley access.
N13 N14	Accessory Buildings /Structures shall not exceed the height of the primary Building structure on the Lot/property.

(Ordinance Note: All table notes shall be reordered accordingly)

Part 4: Amending Section 2.2.2.A Districts, Development Standards for Commercial & Mixed-Use Districts; Applicability:

Add text as indicated in **bold** to clarify interpretation of table values and provide consistency between use tables, as follows:

A. Applicability. All development and land use activity on properties within the Commercial & Mixed-Use Districts is subject to the development standards outlined in Table 2.2.2-A below. Exceptions may apply where the property obtained separate Town approvals related to Planned Unit Developments (PUDs) or Conditional Zoning Districts (CD) – in those instances, the associated approvals/permits may establish the development standards for said properties. (Refer to Chapter 1 relating to those instances).

The numbers shown in the tables are minimums or maximums depending on the item (row). In the case of maximums, developments can be compliant with a lower number; with minimums, developments can be compliant with a higher number. In the chart “--” means the use is not permitted in the District and “n/a” means the development standard does not apply in the District.

Part 5: Chapter 2 Districts, Development Standards for Employment/Campus Use Districts; Table 2.2.3-A Employment/Campus Use Districts Development Standards and Table 2.3.3-A Notes.

Add text as indicated in **bold** and remove text as indicated in ~~strikethrough~~ to modify minimum development area in RMX as recommended by the Northeast Gateway Master Plan, modify minimum lot frontage, and make clarifications and technical corrections, as follows:

Table 2.2.2-A - Commercial & Mixed-Use Districts Development Standards				
	NMX	DMX	RMX	CB
Development Intensity				
Minimum Development Area (acres) (N1)	0	0	20 10	0

Table 2.2.2-A - Commercial & Mixed-Use Districts Development Standards				
	NMX	DMX	RMX	CB
Development Density (N2)				
Maximum Gross Residential Density (units/acre)	8	15	15	15
Maximum Gross Residential Density with Conditional Zoning District (CD) (units/acre)	15	N3	N3	N3
Maximum Gross Main Floor Area (sf) per Building				
Single Use Site	16,000	50,000	none	none
Integrated Center (N4)	24,000	none	none	none
Integrated Center (Maximum with Conditional Zoning District (CD)) (N4)	125,000	none	none	none
Open Space and Conservation Area (N5)	See Chapter 4			
Lot Configuration				
Minimum Lot Frontage (N6)	0 50	0 50	0 50	0 50
Minimum Frontage for a Driveway (ft)				
Detached/Attached Dwellings Permitted by Right (N7)	60	60	60	--
Building Placement (N8)				
Thoroughfare Setbacks (ft)				
Freeway - NC 540/US 1	100	100	100	100
Freeway - NC 55	50	50	50	50
Thoroughfare	25	--	25	25

Table 2.2.2-A - Commercial & Mixed-Use Districts Development Standards

	NMX	DMX	RMX	CB
Building Setbacks - All Buildings /Structures (ft)				
Front Setback (minimum)	5	0	5	30
Front Setback (maximum)	20	20	20	n/a
Side - Corner Setback (minimum)	5	0	5	30
All other setbacks (Side and Rear) (N89)	5	0	0	5
Setback to Adjacent RR/SR/NR Districts (minimum)	20	10	50	50
Building Height (ft)				
Primary Building Structure(s) (minimum) (N910)	20	25 and 2 stories	25 and 2 stories	25
Primary Building Structure(s) (minimum -ground floor story nonresidential)	n/a	14	14	14
All Building /Structure(s) (maximum)	45 and 3 stories	45 and 3 stories	55 and 5 stories	60
All Building /Structure(s) additional story maximum with recess (12-20 ft) (N1011)	4 stories	-- not permitted	6 stories	-- not permitted
All Building /Structure(s) (maximum subject to Conditional Zoning District (CD))	-- not permitted	60 and 4 stories (N11)	110 and 10 stories	-- not permitted
Residential Primary Building Structure(s) Finished Floor Elevation Above Sidewalk Grade	1.5	1.5	1.5	1.5

Table 2.2.2-A - Notes

N1	Applicable to sites that are greater than 5 acres.
N2	For individual Lots or Projects containing multiple Districts, calculated based on the District in which a majority (50% of buildable area or greater) of the buildable area of a Lot is located. The Total Allowable Units shall be equal to the Gross Site Area X Maximum Units Per Acre.
N3	Maximum Gross Density shall be established with a Conditional Zoning District (CD). Maximum Gross Density that exceeds 15 units/acre may be considered if the Project is: 1. Designated on the Future Land Use Map as N. Main Street District, Downtown Village District, Mixed-Use Center, or Regional Center, or, within the boundary of the Northeast Gateway Master Plan; and, 2. The Project includes either a Parking Garage, or, a minimum of 40% of Dwelling Units located within a vertically integrated mixed-use Building with Office and Service Uses or Retail, Dining, and Entertainment Uses located on the ground floor story.
N4	Integrated Centers include multiple Buildings or multiple uses within one Building.
N5	Common open space and/or conservation areas are required for all Residential Major Subdivisions where the resulting plat/subdivision action results in 5 or more Lots and Site Plans that include Apartment Dwellings and Attached Dwellings. Required tree preservation areas may also be used to satisfy other requirements including conservation areas, floodplains, Perimeter Buffers, Open Space, etc.
N6	Each Single Use Site, Subdivision, or Integrated Center, Business Park or Industrial Park shall have the minimum Lot Frontage on a Public Street. The Lot Frontage is measured along the front property lot line abutting a the Public Street. Where no Public Street exists and the Lot an Outlot fronts a Private Street or common Open Space, the Frontage shall be measured along the Outlot Lot Line abutting the Private Street or Alley and each Lot Outlot shall gain access to and from a Public Street across a perpetual recorded public access easement.
N7	For Lots existing prior to the effective date of this UDO, the UDO Permit review process may consider alternate methods of providing Lot access if the provision of an alley or rear lane is not feasible in the following priority order: shared driveway between 2 or more Lots; 1 single driveway a maximum of 12 feet in width. For new Lots or for Lots existing prior to the effective date of this UDO, flexibility is available through the Conditional Zoning District (CD) process.
N8	The Building Placement standards shall apply to all buildings and structures unless specifically permitted otherwise. Refer to Section 2.3.5 Setback Encroachment Allowances.
N8 N9	Attached Dwelling Units are allowed a 0-ft Side Setback where the unit shared a common wall with another Dwelling Unit - end units shall provide a 5-ft Side Setback for the side that does not share a common wall or a minimum of 10 feet between Buildings.

N9 N10	Accessory Building /Structures have no minimum.
N10 N11	Example of upper story recess / Building step-back. 
N11 N12	For Lots with multiple Street Frontages, maximum Stories greater than 4 may be considered provided that the Building does not exceed 4 stories as measured from the proposed finished Grade at the Front of the Building along Main Street.

(Ordinance Note: All table notes shall be reordered accordingly)

Part 6: Amending Section 2.2.3.A. Districts, Development Standards for Employment/Campus Use Districts; Applicability.

Add text as indicated in **bold** to clarify interpretation of table values and provide consistency between use tables, as follows:

A. Applicability. All development and land use activity on properties within the Employment/Campus Use Districts is subject to the development standards outlined in Table 2.2.3-A below. Exceptions may apply where the property obtained separate Town approvals related to Planned Unit Developments (PUDs) or Conditional Zoning Districts (CD) – in those instances, the associated approvals/permits may establish the development standards for said properties. (See other sections within Chapter 1 relating to those instances).

The numbers shown in the tables are minimums or maximums depending on the item (row). In the case of maximums, developments can be compliant with a lower number; with minimums, developments can be compliant with a higher number. In the chart “--” means the use is not permitted in the District and “n/a” means the development standard does not apply in the District.

Part 7: Chapter 2 Districts, Development Standards for Employment/Campus Use Districts; Table 2.2.3-A Employment/Campus Use Districts Development Standards and Table 2.3.3-A Notes.

Add text as indicated in **bold** and remove text as indicated in ~~strikethrough~~ to modify minimum lot frontage, and make clarifications and technical corrections, as follows:

Table 2.2.3-A - Employment/Campus Use Districts Development Standards				
	SP	IVMX	BRT	HI
Development Intensity				
Development Density (N1)				
Maximum Gross Residential Density (units/acre)	--	15	--	--
Maximum Gross Residential Density with Conditional Zoning District (CD) (units/acre)	--	N2	--	--
Open Space and Conservation Area (N3)	See Chapter 4			
Lot Configuration				
Minimum Lot Frontage (ft) (N4)	100	-- 50	100	150
Minimum Lot Frontage for a Driveway (ft)				
Detached/Attached Dwelling Permitted by Right (N5)	--	60	--	--
Building Placement (N6)				
Thoroughfare Setbacks (ft)				
Freeway - NC 540/US 1	100	100	100	100
Freeway - NC 55	50	50	50	50
Thoroughfare	30	30	30	30
Building Setbacks - All Buildings /Structures (ft)				

Table 2.2.3-A - Employment/Campus Use Districts Development Standards				
	SP	IVMX	BRT	HI
Front Setback (minimum)	5	5	30	30
Front Setback (maximum)	-- n/a	20 (N67)	n/a	n/a
Side - Corner Setback (minimum)	5	5	30	30
All other setbacks (Side and Rear)	5	5	5	5
Perimeter Buffer (ft) (N78)				
Adjacent to Residential Use Districts	50	50	50	150
Adjacent to Commercial & Mixed-Use Districts	50	25	50	150
Adjacent to Employment/Campus Use Districts	50	0	0	100
Building Height (ft)				
All Building/Structure(s)	N89	45	100	N89
All Building/Structure(s) (maximum with Conditional Zoning District (CD))	-- N9	100	-- not permitted	-- N9
Residential Primary Building/Structure(s) Finished Floor Elevation Above Grade (ft)	-- n/a	1.5	-- n/a	-- n/a

Table 2.2.3-A - Notes	
N1	For individual Lots or Projects containing multiple Districts, Development Density is calculated based on the District in which a majority (50% of buildable area or greater) of the buildable area of a Lot is located. The Total Allowable Units shall be equal to the Gross Site Area X Maximum Units Per Acre.

N2	Maximum Gross Density shall be established with a Conditional Zoning District (CD). Maximum Gross Density that exceeds 15 units/acre may be considered if the Project is: 1. Designated on the Future Land Use Map as N. Main Street District, Downtown Village District, Mixed-Use Center, or Regional Center, or, within the boundary of the Northeast Gateway Master Plan; and, 2. The project includes either a Parking Garage, or, a minimum of 40% of Dwelling Units located within a vertically integrated mixed-use Building with Office and Service Uses or Retail, Dining, and Entertainment Uses located on the ground floor story.
N3	Common Open Space and/or conservation areas are required for all Residential Major Subdivisions where the resulting plat/Subdivision action results in 5 or more Lots and Site Plans that include Apartment Dwellings and Attached Dwellings. Required tree preservation areas may also be used to satisfy other requirements including conservation areas, floodplains, Perimeter Buffers, Open Space, etc.
N4	Each Single Use Site, Subdivision, or Integrated Center, Business Park or Industrial Park shall have the minimum Lot Frontage on a Public Street. The Lot Frontage is measured along the Front property Lot Line abutting a the Public Street. Where no Public Street exists and the Lot an Outlot fronts a Private Street or common Open Space, the Frontage shall be measured along the Outlot Lot Line abutting the Private Street or alley and each Lot Outlot shall gain access to and from a Public Street across a perpetual recorded public access easement.
N5	For Lots existing prior to the effective date of this UDO, the UDO Permit review process may consider alternate methods of providing Lot access if the provision of an alley or rear lane is not feasible in the following priority order: shared driveway between 2 or more Lots; 1 single driveway a maximum of 12 feet in width. For new Lots or for Lots existing prior to the effective date of this UDO, flexibility is available through the Conditional Zoning District (CD) process.
N6	The Building Placement standards shall apply to all buildings and structures unless specifically permitted otherwise. Refer to Section 2.3.5 Setback Encroachment Allowances.
N6 N7	Maximum setback not applicable to Agriculture, Manufacturing and Distribution Uses.
N7 N8	External buffer around the entire development; setbacks apply to internal Lots. Where existing vegetation exists, this Perimeter Buffer shall be left undisturbed and supplemented to meet the minimum landscape buffer opacity.
N8 N9	Maximum Building Height shall be established with a Conditional Zoning District (CD).

(Ordinance Note: All table notes shall be reordered accordingly)

Part 8: Chapter 3 Uses, Table 3.2-A Table of Permitted Uses; Residential Uses.

Add text as indicated in **bold** and remove text as indicated in ~~strikethrough~~ to modify attached dwellings by specifying variation types as recommended by the Northeast Gateway Master Plan, and modify Attached Dwelling from P to CD in the NR district to correspond to the allocation requirements for new subdivisions in Chapter 2, as follows:

TABLE 3.2-A - TABLE OF PERMITTED USES														
	RESIDENTIAL USE DISTRICTS					COMMERCIAL & MIXED-USE DISTRICTS				EMPLOYMENT / CAMPUS USE DISTRICTS				ADDITIONAL STANDARDS
DISTRICTS	RR	SR	NR	NCR	MXR	NMX	DMX	RMX	CB	SP (CD ONLY)	IVMX	BRT	HI (CD ONLY)	
Residential Uses														3.3.2
Apartment Dwelling	--	--	--	CD	PS	PS	PS	PS	PS	--	PS	--	--	
Apartment Dwelling – Upper Story Unit	--	--	--	CD	PS	PS	PS	PS	PS	--	PS	--	--	
Attached Dwelling - Duplex	--	--	P CD	PS	PS	CD	CD	CD	--	--	CD	--	--	
Attached Dwelling - Triplex	--	--	CD	PS	PS	CD	CD	CD	--	--	CD	--	--	
Attached Dwelling - Quadruplex	--	--	CD	PS	PS	CD	CD	CD	--	--	CD	--	--	
Attached Dwelling – Townhome	--	--	CD	PS	PS	CD	CD	CD	--	--	CD	--	--	
Detached Dwelling	P	P	P	P	P	CD	--	CD	--	--	--	--	--	
Detached Dwelling -Cottage Dwelling	P	P	P	P	P	CD	--	CD	--	--	--	--	--	
Family Care Home	P	P	P	P	P	--	--	--	--	--	--	--	--	

Part 9: Chapter 3 Uses, Table 3.2-A Table of Permitted Uses; Residential Uses.

Add text as indicated in **bold** and remove text as indicated in ~~strikethrough~~ to modify Amusement, Entertainment, and Recreation Uses to eliminate overlap in defined terms and simplify implementation (this change corresponds to subsequent changes in the defined terms), modify use from SUP to CD, and allow use by CD in DMX to support implementation of the Downtown Area Plan, as follows:

TABLE 3.2-A - TABLE OF PERMITTED USES														
	RESIDENTIAL USE DISTRICTS					COMMERCIAL & MIXED-USE DISTRICTS				EMPLOYMENT / CAMPUS USE DISTRICTS				ADDITIONAL STANDARDS
DISTRICTS	RR	SR	NR	NCR	MXR	NMX	DMX	RMX	CB	SP (CD ONLY)	IVMX	BRT	HI (CD ONLY)	
Retail, Dining, and Entertainment Uses														3.3.5
Adult Establishments	--	--	--	--	--	--	--	--	--	--	--	--	PS	
Amusement & Entertainment, Indoor (Indoor)	--	--	--	--	--	PS	PS	P	P	--	--	P	--	
Amusement & Entertainment, Outdoor (Outdoor)	-- CD	--	--	--	--	--	-- CD	--	CD	--	--	--	--	
Bar/Nightclub/Tasting Room	--	--	--	--	--	CD	PS	PS	PS	--	PS	PS	--	
Drive In/Drive Through	--	--	--	--	--	SUP	--	PS	PS	PS	--	--	--	
Electronic Gaming Operations	--	--	--	--	--	--	--	--	--	--	--	--	SUP	
Food/Restaurant Uses	--	--	CD	CD	CD	P	P	P	P	--	P	A	--	

TABLE 3.2-A - TABLE OF PERMITTED USES														
	RESIDENTIAL USE DISTRICTS					COMMERCIAL & MIXED-USE DISTRICTS				EMPLOYMENT / CAMPUS USE DISTRICTS				ADDITIONAL STANDARDS
DISTRICTS	RR	SR	NR	NCR	MXR	NMX	DMX	RMX	CB	SP (CD ONLY)	IVMX	BRT	HI (CD ONLY)	
Fueling Station	--	--	--	--	--	--	--	PS	PS	--	PS	PS	PS	
Large Vehicle and Heavy Equipment Sales and Service	--	--	--	--	--	--	--	--	--	--	--	P	P	
Manufactured Home Sales	--	--	--	--	--	--	--	--	CD	--	--	--	--	
Retail Uses	--	--	CD	CD	P	P	P	P	P	--	P	A	--	
Theater	--	--	--	--	--	--	P	P	P	--	P	--	--	
Tobacco Stores	--	--	--	--	--	--	--	--	--	--	--	CD	--	
Vehicle Leasing and Rental	--	--	--	--	--	--	--	--	CD	--	--	--	--	
Vehicle Sales	--	--	--	--	--	--	--	--	CD	--	--	--	--	
Public and Institutional Uses														3.3.6
Assembly Use	--	--	--	--	--	--	P	P	P	--	P	--	--	
Cemetery	PS	--	--	--	--	--	PS	--	--	PS	--	--	--	
Civic Building	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	PS	
Community Support Facility	SUP	SUP	SUP	SUP	SUP	P	P	P	P	P	P	P		

TABLE 3.2-A - TABLE OF PERMITTED USES														
	RESIDENTIAL USE DISTRICTS					COMMERCIAL & MIXED-USE DISTRICTS				EMPLOYMENT / CAMPUS USE DISTRICTS				ADDITIONAL STANDARDS
DISTRICTS	RR	SR	NR	NCR	MXR	NMX	DMX	RMX	CB	SP (CD ONLY)	IVMX	BRT	HI (CD ONLY)	
Penal or Correctional Institution	--	--	--	--	--	--	--	--	--	--	--	--	SUP	
Religious Use	PS	PS	PS	PS	PS	P	P	P	P	--	P	--	--	
School (Commercial, Trade or Business)	--	--	--	--	--	P	P	P	P	P	P	P	P	
School (K-12)	CD	CD	CD	CD	CD	--	--	--	--	--	--	--	--	
Recreation Uses														3.3.7
Campground	SUP	--	--	--	--	--	--	--	--	--	--	--	--	
Entertainment Facility (Outdoor)	SUP	--	--	--	--	--	--	--	--	--	--	--	--	
Fitness Facilities/Studios	--	--	--	--	P	P	P	P	P	--	P	--	--	
Golf Course	CD	CD	CD	CD	CD	--	--	--	--	--	--	--	--	
Recreation Facility, Indoor	PS	PS	PS	PS	PS	PS	PS	PS	PS	P	PS	--	--	
Recreation Facility, Outdoor (<50 acres)	PS	PS	PS	PS	PS	PS	PS	PS	PS	--	PS	--	--	

TABLE 3.2-A - TABLE OF PERMITTED USES														
	RESIDENTIAL USE DISTRICTS					COMMERCIAL & MIXED-USE DISTRICTS				EMPLOYMENT / CAMPUS USE DISTRICTS				ADDITIONAL STANDARDS
DISTRICTS	RR	SR	NR	NCR	MXR	NMX	DMX	RMX	CB	SP (CD ONLY)	IVMX	BRT	HI (CD ONLY)	
Recreation Facility, Outdoor (>50 acres)	CD	CD	CD	CD	CD	CD	CD	CD	CD	P	CD	--	--	
Shooting Range, Outdoor Outdoor	SUP	--	--	--	--	--	--	--	--	--	--	--	--	

Part 10: Section 3.3.2. Uses; Additional Use Provisions and Special Use Permit Standards; Residential Uses – Additional Use Provisions.

Add text as indicated in **bold** and remove text as indicated in ~~strikethrough~~ to clarify and make consistent additional use standards for Apartment and Attached Dwelling allocations found in Chapter 2 and correct a typographical error, as follows:

A. Apartment Dwelling.

1. Residential Use Districts. Apartment Dwellings are permitted only in new Projects or Subdivisions in accordance with the minimum and maximum allocation allowances in Table 2.2.1-A - Development Standards for Residential Use Districts, Attached Dwelling Unit and Apartment Dwelling Unit Allocation.

~~1. Location~~ **2. Non-residential Use Districts.** Apartments Dwellings are only permitted **as** when located on upper ~~story dwellings only by right~~ stories within a **vertically integrated mixed-use Building with non-residential Uses permitted in the District on the ground floor story.** Alternate locations and configurations are permitted by Conditional Zoning District (CD).

B. Attached Dwelling.

1. Residential Use Districts. Attached Dwellings are permitted only in new Subdivisions in accordance with the minimum and maximum allocation allowances in Table 2.2.1-A - Development Standards for Residential Use Districts, Attached Dwelling Unit and Apartment Dwelling Unit Allocation.

~~1. Location.~~ **2. Non-residential Use Districts.** Attached Dwellings are not permitted to front on Main Street between Earp Street and Elm Street, but are allowed to front on side streets in the case of sites with multiple frontages.

C. Group Home

1. Location. A Group Home may not be located within a 1/2 mile radius of an existing Group Home, as measured between Lot lines.

D. Manufactured Dwelling.

1. Location. A Manufactured Dwelling is permitted only on Lots greater than 1 acre or in previously existing mobile home parks.

Part 11: Section 3.3.5.B Uses; Additional Use Provisions and Special Use Permit Standards; Retail, Dining, And Entertainment Uses – Additional Use Provisions.

Add text as indicated in **bold** and remove text as indicated in ~~strikethrough~~ to combine Amusement and Entertainment into a single use category by moving Entertainment from the recreation use category to the retail, dining, and entertainment use category, as follows:

B. Amusement & Entertainment, Indoor (~~Indoor~~).

1. Maximum Area. ~~Indoor amusement uses are limited to~~ 5,000 square feet of **Building gross floor** area.

C. Amusement & Entertainment, Outdoor.

1. Locational Limitations. In the RR District, uses are limited to amphitheater and outdoor theater.

2. Setbacks. In the RR District, amphitheaters and outdoor theaters shall be set back a minimum of 200 feet from a Residential Use District.

3. Buffers. A Type B buffer shall be provided along the property boundaries that abut a Residential Use District. Natural and native site vegetation shall be maintained within the required buffers.

4. Noise Study. A noise study may be required to identify the potential audible impacts and best management practices to mitigate said impacts to neighboring properties. A Conditional Zoning District (CD) may include conditions that limit the capacity, hours-of-operation, and spatial arrangement.

(Ordinance Note: remaining subsections shall be re-lettered accordingly)

Part 12: Section 3.3.7. Uses; Additional Use Provisions and Special Use Permit Standards; Recreation Uses – Additional Use Provisions.

Add text as indicated in **bold** and remove text as indicated in ~~strikethrough~~ to combine Amusement and Entertainment into a single use category by moving Entertainment from the recreation use category to the retail, dining, and entertainment use category, correct terminology, revise the order of the section so that it follows the order in the permitted use table, and align standards with defined terms, as follows:

~~B. Entertainment Facilities (Outdoor).~~

- ~~1. Setbacks. Amphitheaters and outdoor theaters shall be set back a minimum of 200 feet from a Residential Use District.~~
- ~~2. Buffers. A Type B buffer shall be provided along the property boundaries that abut a Residential Use District. Natural and native site vegetation shall be maintained within the required buffers.~~
- ~~3. Noise Study. When a part of a Special Use Permit, a noise study may be required to identify the potential audible impacts and best management practices to mitigate said impacts to neighboring properties. Based on the findings, the approving authority may impose conditions of approval to limit the capacity, hours of operation, and spatial arrangement.~~

~~C. Outdoor Shooting Ranges. Outdoor shooting ranges are subject to the following standards.~~

- ~~1. The minimum Lot area shall be 10 acres.~~
- ~~2. The use shall include and maintain a projectile-proof backstop, consisting of concrete, steel, earth or a combination thereof, at least 15 feet high behind all target areas.~~
- ~~3. The hours of operation shall be limited to 9:00 a.m. and 7:00 p.m.~~
- ~~4. The noise level shall not exceed 63 dBA as measured at the property boundary.~~
- ~~5. The perimeter of the shooting range activity, including the firearm discharge area and surrounding 5. berms, shall be enclosed by a fence or wall, a minimum of 6 feet in height.~~

~~B~~D. Recreation Facility, Indoor.

1. Accessory Use. An indoor recreation facility less than 10,000 square feet is permitted as an accessory use to a residential Subdivision or Development Plan.
2. All projects are subject to Development Plan Review as described in Chapter 11.

~~C~~E. Recreation Facility, Outdoor.

1. Setbacks. Playgrounds and recreational elements areas shall be subject to the setbacks for the district. This shall not include picnic Structures/tables, paths, trails, and/or sidewalks.
2. Lighting. Lighting shall be directed away from neighboring properties.
3. Concession Services. Concession services ~~may be allowed as accessory use to provide food and beverage to recreation patrons. Said services~~ shall be limited to the hours of 8:00am and 6:00pm – these hours may be adjusted to coincide with a town-permitted event (e.g., night-time movie showing, special community event, wedding, and similar activity).

D. Shooting Ranges, Outdoor. Outdoor shooting ranges are subject to the following standards.

- 1. The minimum Lot area shall be 10 acres.**
- 2. The use shall include and maintain a projectile-proof backstop, consisting of concrete, steel, earth or a combination thereof, at least 15 feet high behind all target areas.**
- 3. The hours of operation shall be limited to 9:00 a.m. and 7:00 p.m.**
- 4. The noise level shall not exceed 63 dBA as measured at the property boundary.**
- 5. The perimeter of the shooting range activity, including the firearm discharge area and surrounding berms, shall be enclosed by a fence or wall, a minimum of 6 feet in height.**

Part 13: Section 3.4.2.H. Uses; Accessory Structures and Uses, Residential Use Districts and Residential Uses in All Other Districts, Fences and Walls.

Add text as indicated in **bold** and remove text as indicated in ~~strikethrough~~ to eliminate unnecessary text already covered by fencing standards, as follows:

H. Fences and Walls

1. Applicability. These provisions are applicable to all fences and walls.
2. Maximum Heights (as measured above grade).
 - a. Front Yard: 4 feet
 - b. **Side-Corner Yard: 6 feet** ~~Perimeter Street Frontage of a Subdivision: 6 feet~~
 - c. Side and Rear Yards: 6 feet
 - d. **Perimeter Street Frontage of a Subdivision: 6 feet**
3. Finished Side to Face Outward. The finished side of the fence shall face outward from the Lot upon which the fence is placed.
4. Permitted Materials.
 - a. Front ~~Yard, or Corner-Side~~ **Side-Corner Yard, or Perimeter Street Frontage of a Subdivision:** Wood or vinyl picket, brick wall or Ornamental only.
 - b. Side or Rear Yard: Wood, vinyl, Ornamental, brick wall, or chain link.
- ~~5. Special Use Permits. All fencing located between a front Lot line and the front line of the primary Building shall be ornamental.~~
- ~~5. 6-~~Control of Access Fencing. All new or replacement of control of access fencing along the Right-of-Way shall be **Black** Ornamental.

Part 14: Section 3.4.3.C. Accessory Structures and Uses, Commercial & Mixed-Use & Employment/
Campus Use Districts and Non-Residential Uses in Residential Use Districts, Fences and Walls.

Add text as indicated in **bold** and remove text as indicated in ~~strikethrough~~ to eliminate unnecessary text already covered by fencing standards as follows:

C. Fences and Walls.

1. Applicability. These provisions are applicable to all fences and walls ~~including but not limited to chain link, solid, shadow box, stockade, architectural screen, lattice work or masonry.~~
2. Maximum Heights (as measured above grade).
 - c. Front and Side-Corner Yard: 6 feet.
 - d. Side and Rear Yards: 10 feet.
 - e. Exceptions: Front and Side-Corner Yard Fencing in Employment/Campus Use Districts: 8 feet.
3. Permitted Materials/Type.
 - f. Front and Side-Corner Yard: **Black** Ornamental Fence only.
 - g. Side or Rear Yard: Black vinyl coated chain link or Ornamental Fence.
 - h. Exceptions: Fencing in Employment/Campus Use Districts is exempt from the Permitted Materials/Type requirements if the fencing is not visible from the Right-of-Way or any adjacent Residential Use District.
- ~~4. Special Use Permits. All fencing located between a Front Lot Line and the Front line of the primary Building shall be Ornamental Fence.~~
- ~~5.~~ **4.** Control of Access fencing. All new or replacement of control of access fencing along the Right-of-Way shall be **Black** Ornamental ~~Fence~~.

Part 15: Section 4.5.C Open Space and Conservation; Active Recreation Areas; Certificate of Occupancy.

Add text as indicated in **bold** and remove text as indicated in ~~strikethrough~~ to modify the timing of improvements of required active recreation areas, as follows:

C. **Final Plat**/Certificate of Occupancy. ~~When~~ **The Town shall withhold any approval including but not limited to final plat approval or certificate of occupancy until such time as all active recreation** active recreation areas ~~are~~ required by this ordinance or otherwise approved and shown on a Development Plan or Subdivision Plan, ~~no more than 85 percent of certificates of occupancy shall be issued prior to the completion of such active recreational areas, have been constructed or the applicant has posted Construction Guarantees for the required improvements of such active recreation areas in accordance with Chapter 11.14.~~

Part 16: Section 6.3 Parking; Permitted Vehicle Parking Locations; Table 6.3-A Vehicle Parking Location Specifications.

Add text as indicated in **bold** and remove text as indicated in ~~strikethrough~~ to correct a discrepancy with the requirements in UDO Chapter 3 for driveways, as follows:

All Yards with Restrictions: Parking permitted in all Yards. Parking in front of a Building is restricted to a driveway or paved surface ~~not to exceed 40% of the lot width, except and shall~~ **comply with requirements** for grade level improvements ~~as discussed in Chapter 3.~~ **Refer to Section 3.4 for additional standards.**

Part 17: Section 6.4.4. Parking; Minimum and Maximum Vehicle Parking Requirements; Table 6.4-A Vehicle Parking Requirements.

Add text as indicated in **bold** and remove text as indicated in ~~strikethrough~~ to combine Amusement and Entertainment into single use category, as follows:

TABLE 6.4-A - VEHICLE PARKING REQUIREMENTS (N1)				
LAND USE	MINIMUM VEHICLE PARKING RATIO	MAXIMUM VEHICLE PARKING RATIO (N2)	EXEMPT FROM BICYCLE PARKING	ADDITIONAL REQUIREMENTS
RETAIL, DINING, AND ENTERTAINMENT USES				
Amusement & Entertainment, Outdoor (Outdoor)	None	None	No	-- See 6.4.1.C
	Study Required			
Bar/Nightclub/Tasting Room	5 / 1,000 sf	10 / 1,000 sf	No	Outdoor seating is included in the parking ratio calculation
Food/Restaurant Uses	3 / 1,000 sf	5 / 1,000 sf	No	Outdoor seating is included in the parking ratio calculation
Nightclub	5 / 1,000 sf	None	No	Outdoor seating is included in the parking ratio calculation
Theater	1 / 3 seats	None	No	--

TABLE 6.4-A - VEHICLE PARKING REQUIREMENTS (N1)				
LAND USE	MINIMUM VEHICLE PARKING RATIO	MAXIMUM VEHICLE PARKING RATIO (N2)	EXEMPT FROM BICYCLE PARKING	ADDITIONAL REQUIREMENTS
Integrated Center or all other Retail, Dining, and Entertainment Uses	2 / 1,000 sf	4 / 1,000 sf	No	Outdoor seating is included in the parking ratio calculation
PUBLIC AND INSTITUTIONAL USES				
Religious Use	1 / 4 fixed seats in main assembly area, or if no fixed seats, 1 / 50 sf in main assembly area	None	No	--
All other Public and Institutional Uses	Study Required		No	See 6.4.1.C
RECREATION USES				
Campground	None	None	No	--
Entertainment Facility (Outdoor)	Study Required		No	See 6.4.1.C
Golf Course	4 / hole	None	No	--
Recreation Facility	Study Required		No	See 6.4.1.C
All other Recreation Uses	2 / 1,000 sf	4 / 1,000 sf	No	--

Part 18: Section 6.4.4. Parking; Minimum and Maximum Vehicle Parking Requirements; Exceptions to Vehicle Parking Requirements.

Add text as indicated in **bold** and remove text as indicated in ~~strikethrough~~ to eliminate the exemption for parking in the Downtown Mixed-Use District to support implementation of the Downtown Area Plan, as follows:

6.4.4 Exceptions to Vehicle Parking Requirements.

A. ~~DMX Exemption. There shall be no minimum vehicle parking requirement in the DMX district.~~ **Reserved**

Part 19: Section 8.2.B. Building, Site & Subdivision Lot Design Standards, Building Design Standards, Exceptions.

Remove text as indicated in ~~strikethrough~~ for compliance with Session Law 2023-108 which expands the scope of the Residential Code to 3- and 4-family dwellings, as follows:

B. Exceptions

1. Detached and Attached Dwellings subject to regulation under the North Carolina Residential Code ~~for One- and Two-Family Dwellings~~, unless otherwise regulated by Conditional Zoning District (CD) ~~district~~ requirements.

Part 20: Definitions

Add text as indicated in **bold** and remove text as indicated in ~~strikethrough~~ to modify definitions to correspond with other ordinance changes made within this amendment, as follows:

Amusement & **Entertainment**, Indoor. ~~An establishment providing indoor amusement and entertainment services for a fee or admission charge, including movie theaters, live performance theaters, bowling alleys, ice skating and roller skating, pool, and billiard rooms as primary uses.~~ **Amusement and entertainment Uses conducted primarily within a Building or Structure including arcade, bowling alley, ice skating and roller skating, pool and billiard rooms, go-cart tracks, miniature golf courses, and their customary indoor Accessory Uses such as concession services, pro shops, and locker rooms which are designed and intended primarily for the use of patrons of the principal amusement and entertainment. This use category does not include Accessory On-site Private Open Space required by Chapter 4 of this UDO. Amusement & entertainment Uses include** any establishment with 4 or more electronic games or amusement devices (e.g., pool or billiard tables, pinball machines, etc.) or a premise where 50% or more of the floor area is occupied by electronic games or amusement devices; 3 or fewer machines or devices are not considered a use separate from the primary use of the site. Does not include Adult Establishments or Electronic Gaming Operations.

Amusement & **Entertainment**, Outdoor. ~~A development providing amusement facilities outdoors played by patrons for entertainment (e.g., amusement parks, go-cart tracks, and miniature golf courses).~~ **Amusement and entertainment Uses not primarily conducted within a Building or Structure such as amusement park, amphitheater and outdoor**

theater, drive-in theater, racetrack, sports arena, miniature golf courses, and their customary Accessory Uses such as concession services, pro shops, and locker rooms which are designed and intended primarily for the use of patrons of the principal amusement and entertainment. This use category does not include Accessory On-site Private Open Space required by Chapter 4 of this UDO. Amusement & entertainment Uses include any establishment with 4 or more electronic games or amusement devices (e.g., pool or billiard tables, pinball machines, etc.) or a premise where 50% or more of the floor area is occupied by electronic games or amusement devices; 3 or fewer machines or devices are not considered a use separate from the primary use of the site. Does not include Adult Establishments or Electronic Gaming Operations.

Density, Gross. A unit of measurement which represents the number of Dwelling Units per acre of land on the aggregate total land to be developed, provided, however, the aggregate total land to be developed shall specifically exclude any portion of such land located in the Right-of-Way of a perimeter street.

Dwelling. Any Building, or portion of a Building, which is designed or used primarily for residential purposes, including Apartment, ~~Manufactured home~~, Attached, Detached, and ~~Apartment~~ ~~Manufactured~~ Dwellings but not including Hotels, Motels, Inns, Short-term Rentals, boarding houses, lodging houses, Bed and Breakfast, and tourist home.

Dwelling, Apartment. A Building or portion thereof containing 3 or more Dwelling Units regardless of ownership on a single Lot where each unit has a separate entrance from the outside or through a common vestibule including but not limited to condominiums and apartments, excluding anything defined as a Manufactured Dwelling, Detached Dwelling, or Attached Dwelling. An Apartment Dwelling where Dwelling Units are available for lease or rent for less than one month shall be considered lodging.

Dwelling, Apartment – Upper Story Unit. A Building or portion thereof containing 2 or less Dwelling Units regardless of ownership on a single Lot where each unit has a separate entrance from the outside or through a common vestibule and where each unit is located on an upper story above a non-residential use permitted in the District. An Apartment Dwelling – Upper Story where Dwelling Units are available for lease or rent for less than one month shall be considered lodging.

Dwelling, Attached. A dwelling unit that is attached to another dwelling unit by a wall, floor, or ceiling that separates living spaces including ~~Cottage Dwellings, Two-Family Dwellings, Multi-family Townhouses, Multi-Unit Houses~~ Duplexes, Triplexes, Quadruplexes, Townhomes, and similar variants.

Dwelling, Attached – Duplex. An Attached Dwelling Building containing 2 Dwelling Units, regardless of ownership, that may or may not be on sublots, where each Dwelling Unit has a separate entrance from the outside or through a common vestibule. Dwelling Units may be either in a side-by-side or stacked configuration.

Dwelling, Attached – Triplex. An Attached Dwelling Building containing 3 Dwelling Units, regardless of ownership, that may or may not be on sublots, where each Dwelling Unit has a separate entrance from the outside or through a common vestibule. Dwelling Units may be either in a side-by-side or stacked configuration.

Dwelling, Attached – Quadruplex. An Attached Dwelling Building containing 4 Dwelling

Units, regardless of ownership, that may or may not be on sublots, where each Dwelling Unit has a separate entrance from the outside or through a common vestibule. Dwelling Units may be either in a side-by-side or stacked configuration.

Dwelling, Attached – Townhome. An Attached Dwelling Building with all Dwelling Units constructed side-by-side in a row; with each Dwelling Unit having an individual front and rear ingress and egress; and, no Dwelling Unit located stacked over another Dwelling Unit.

Dwelling, Detached. A residential Building containing 1 Dwelling Unit, which is physically separate from any other residential ~~Building Dwelling Unit~~, and does not include a Manufactured ~~home Dwelling~~. This includes Single Family Dwellings, **Cottage Dwellings**, and Family Care Homes; ~~the latter defined as a home with support and supervisory personnel that provides room and board, personal care, and habilitation services in a family environment for not more than 6 resident persons with disabilities in accordance with NCGS Section 160D-907.~~ Dwelling, **Detached – Cottage Dwelling.** A **small** Detached ~~single family~~ Dwelling Unit which is arranged around an area of shared common open space with other Cottage Dwellings **to form a cottage court residential development.**

Dwelling, Manufactured Home. A Structure, transportable in 1 or more sections which, in the traveling mode, is 8 body feet or more in width or 40 body feet or more in length or when erected on site is 320 or more square feet and which is built on a permanent chassis and designed to be used as a Dwelling with or without a permanent foundation when connected to the required utilities and includes the plumbing, heating, air conditioning, and electrical systems contained in it. The term "Manufactured ~~home Dwelling~~" does not include a "Recreational Vehicle."

Fitness Facilities/Studios: Active recreation Uses such as fitness center, aerobics, dance and cheerleading, martial arts, yoga, weight lifting, exercise classes, health clubs and health spas, and their customary Accessory Uses such as concession services, pro shops, and locker rooms which are designed and intended primarily for the use of patrons of the principal Use. This Use category does not include accessory On-site Private Open Space required by Chapter 4 of this UDO.

Personal Services. Establishments that provide non-medical services to individuals as a primary use. Examples of these uses include barber and beauty shops, ~~fitness facilities/studio~~, clothing rental, dry cleaning pick-up stores with limited equipment, home electronics and small appliance repair, laundromats (self-service laundries), locksmiths, massage (licensed, therapeutic, nonsexual), nail salons, pet grooming (with no overnight boarding), shoe repair shops, tailors, and tanning salons. These uses may also include accessory retail sales of products related to the services provided.

~~Recreation Facilities, Outdoor. Parks and other open space used for active or passive recreation such as ball fields, batting cages, skateboard parks, playgrounds, greenway trails, driving ranges, tennis courts, riding stables, campgrounds, and golf courses and their customary accessory uses including, but not limited to, maintenance sheds, clubhouses (with or without food service), pools, restrooms, and picnic shelters. This definition is inclusive of both non-profit and public operations.~~

~~Recreation Facility, Indoor. Uses or structures for active recreation including a gymnasium, natatorium, fitness center, athletic equipment, indoor running track, climbing facility, court facility~~

~~and their customary accessory uses. This definition is inclusive of both non-profit and for-profit operations but does not include facilities smaller than 2,500 square feet in total area located in community centers, neighborhood amenity buildings, or similarly scaled structures.~~ Active or passive recreation Uses conducted primarily within a Building or Structure including gymnasium, natatorium, indoor running track, climbing facility, athletic court facility, and their customary indoor Accessory Uses such as concession services, pro shops, and locker rooms which are designed and intended primarily for the use of patrons of the principal recreational Use. This use category does not include Accessory On-site Private Open Space required by Chapter 4 of this UDO.

Recreation Facility, Outdoor. ~~Predominantly participant uses conducted in open or partially enclosed or screened facilities. Typical uses include driving ranges, miniature golf, swimming pools, tennis courts, outdoor racquetball courts, motorized cart and motorcycle tracks, and motorized model airplane flying facilities.~~ Active or passive recreation Uses not primarily conducted within a Building or Structure such as Park, Playground, Swimming Pool, tennis court, Ball Field or Court, skateboard Park, and their customary Accessory Uses such as concession services, pro shops, maintenance buildings, and locker rooms which are designed and intended primarily for the use of patrons of the principal recreational Use. This use category does not include accessory On-site Private Open Space required by Chapter 4 of this UDO.

Shooting Range, **Outdoor** ~~(Outdoor)~~. A permanently located and improved area that is designed and operated for the use of rifles, shotguns, pistols, silhouettes, skeet, trap, black powder, or any other similar sport shooting in an outdoor environment. May include areas for archery. Outdoor shooting range does not include a totally enclosed facility that is designed to offer a totally controlled shooting environment that includes impenetrable walls, floor and ceiling, adequate ventilation, lighting systems and acoustical treatment for sound attenuation suitable for the range's approved use; or any area that is used for shooting on a private lot or parcel of land that is not open to the public on a commercial or membership basis.

Part 21: **REPEAL OF CONFLICTING ORDINANCES**

All ordinances or parts of the UDO of the Town of Holly Springs conflicting or inconsistent with the provisions of this Ordinance are hereby repealed.

Part 22: **SEVERABILITY**

If any section, part of a section, paragraph, sentence, clause, phrase, or word of this Ordinance is for any reason held or declared to be unconstitutional, inoperative or void, such holdings shall not affect the remaining portion of this Ordinance and it shall be construed to have been the legislative intent to pass the Ordinance without such unconstitutional, invalid or inoperative part therein, and the remainder of this Ordinance after the exclusion of such part or parts shall be deemed to be held valid as if such part or parts had not been included therein, or if this Ordinance or any of the provisions thereof shall be held inapplicable to any person, group of persons, property, kind of property, circumstances, or set of circumstances, such holdings shall not affect the applicability thereof to any other person, property or circumstances.

Part 23: **INCLUSION IN CODE**

It is the intention of the Town Council entered as hereby ordained, that the provisions of this Ordinance shall become and be made part of the Unified Development Ordinance of

the Town of Holly Springs, North Carolina; that the Section(s) of this Ordinance may be renumbered or relettered to accomplish such intention, and that the word “Ordinance” may be changed to “Section, or “Article” or other word.

Part 24: EFFECTIVE DATE

The provisions of this ordinance shall become effective June 18, 2024 in accordance with the laws of the State of North Carolina.

Adopted this, the 18 day of June 2024.

Town of Holly Springs by

Sean Mayefskie, Mayor

ATTEST:

Linda McKinney, Town Clerk





Holly Springs Town Council

Town Council Meeting Agenda Cover Sheet

Agenda Item#: 18.

New Business

Title: Conditional Zoning Districts UDO Text Amendment 24-UDO-02 - Legislative Public Hearing

Strategic Priority Area: Growth Management & Economic Vitality

Staff Resource: Sean Ryan, Development Services

Action(s):

- Adopt Consistency Statement.
- Adopt Ordinance 24-28 to adopt the statement of compatibility and approve UDO Text Amendments.

Explanation:

- The proposed UDO text amendment is to modernize the Conditional Zoning District (CD) process in response to feedback received from Town Council and stakeholders. Detailed language of the proposed amendment can be found in the attached draft ordinance.
- The primary purpose of the amendment is to create an optional CD rezoning process that allows an applicant to provide a site-specific Development or Subdivision Plan as a condition of the rezoning.
 - This optional process is intended to provide the Town Council, and the community at large, additional information on the proposed development of a site while also seeking to reduce the timelines associated with the current development process.
 - This amendment creates an optional 2-step Rezoning and Development or Subdivision Plan process. The current, 3-step process will remain an option for applicants.
 - A single, legislative public hearing for applications seeking approval with the new 2-step process will be required which eliminates a secondary quasi-judicial public hearing.
 - Clarification on which development standards may be modified with Conditional Zoning Districts is included with the amendments.
 - The legislative public hearing process for development cases (Type 6 Reviews, which includes Rezoning, Comprehensive Plan Amendments, and UDO Text Amendments) is moved prior to Planning Board review and recommendation.

Staff Recommendation: Approve

Planning Board Recommendation: Approve 5 - 0 [4 absent]

A summary of the Planning Board discussion is in the staff report.

Background:

- In October 2021, the Town Council adopted the 2022 UDO with an effective date of March 1, 2022.
- An overview of these amendments was provided to the Town Council at their September 12, 2023 workshop and April 9, 2024 workshop.
- The draft ordinance was shared with development community stakeholders. Initial feedback included a desire to see development and subdivision approvals move to an administrative review process, a request to ensure that both CD options remain acceptable pathways for approval, and a request to allow minor modifications to approved plans. Updates were made to the draft in response to the feedback to clarify the intended schematic nature of master plans filed with the Option 2 CD process and clarifications on acceptable minor modifications.

Funding Source(s):

Attachment(s):

1. 24UDO02_ConditionalZoningDistricts_TC06182024
2. 24UDO02_CDZoningProcess_FINAL



Project Type: Unified Development Ordinance (UDO) Text Amendment

Applicant / Petitioner:

Town of Holly Springs

Amendment Overview

A proposed UDO text amendment to modernize the Conditional Zoning District (CD) process in response to feedback received from Town Council and stakeholders. Detailed language of the proposed amendment can be found in the attached draft ordinance.

The primary purpose of the amendment is to create an optional CD rezoning process that allows an applicant to provide a site-specific Development or Subdivision Plan as a condition of the rezoning. This optional process is intended to provide the Town Council, and the community at large, additional information on the proposed development of a site while also seeking to reduce the timelines associated with the current development process. An overview of these amendments was provided to the Town Council at their September 12, 2023 workshop and April 9, 2024 workshop. The amendments provide the following:

- Creates an optional 2-step Rezoning and Development or Subdivision Plan process. The current, 3-step process will remain and option for applicants.
- Creates a single, legislative public hearing for applications seeking approval with the new 2-step process and eliminates a secondary quasi-judicial public hearing.
- Clarifies which development standards may be modified with Conditional Zoning Districts.
- Moves the legislative public hearing process for development cases (Type 6 Reviews, which includes Rezoning, Comprehensive Plan Amendments, and UDO Text Amendments) prior to Planning Board review and recommendation.

Requested Action:

Legislative Decision: The Town Council must hold a Legislative public hearing to receive public comments regarding the proposal and make a determination on whether or not to approve the Unified Development Ordinance (UDO) Text Amendment.

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Unified Development Ordinance (UDO) Text Amendment Information	Page 2
Decision-Making Information	Page 3



Unified Development Ordinance (UDO) Text Amendment Information

The proposed amendments table below provides a summary of the proposed changes to the Town of Holly Springs Unified Development Ordinance (UDO) and an explanation of why the change is needed.

Purpose of Amendment Key	
Legal Compliance	Change made to comply with North Carolina General Statutes or other legal change.
Clarification or Correction	Change made to provide clarification on UDO intent, prevent misinterpretations, or correct grammatical errors.
Minor Change	Minor changes made to further achieve goals and policies outlined in the Comprehensive Plan or changes made to better implement the established policy based on resident, business, and development community feedback.
Major Change	Major changes to support a specific town policy or substantially change current UDO regulations.

List of Amendments		
Ordinance Part	Purpose of Amendment	Amendment Summary
1	Major Change	Updates UDO Chapter 2 regarding Conditional Zoning Districts (CD) by clarifying purpose of CD Districts; consolidating and clarifying limitations for using CDs; updating CD procedures; establishing criteria for determining public benefit; & clarifying allowable standards eligible for CD modification.
2	Major Change	Updates UDO Chapter 11 regarding Conditional Zoning Districts (CD) by creating an optional 1-step Rezoning and Development or Subdivision Plan process; modifying expectations for schematic design for Master Plans; clarifying eligible modifications for approved CDs; and adjusting the timing of the legislative public hearing for all Type 6 Legislative Reviews cases to a time prior to Planning Board review and consideration.
3	Minor Change	Modifies the list of acceptable minor modifications to include building area reductions and possible modifications to subdivision lot design, utilities, and streets.



Decision-Making Information

Unified Development Ordinance (UDO) Text Amendment Staff Analysis

Since the implementation of the UDO in 2022, Town Staff has received feedback from stakeholders regarding the development process, specifically the length of time it takes to rezone and secure Development Plan or Subdivision Plan approval. The current process requires 3-steps – the rezoning, the subsequent Development Plan or Subdivision Plan, and the Civil Construction Drawings. This 3-step process requires 2 different neighborhood meetings, 2 appearances before the Planning Board, and 2 public hearings (both a legislative public hearing and a quasi-judicial public hearing) and can often take 18-24 months from initial application to approval for construction.

The primary purpose of the amendment is to create an optional CD rezoning process that allows an applicant to provide a site-specific Development or Subdivision Plan as a condition of the rezoning. This optional process is intended to provide the Town Council, and the community at large, additional information on the proposed development of a site while also seeking to reduce the timelines associated with the current development process. Staff estimates that projects using the new optional process could see a reduction in the timeline of 5-6 months.

Staff Recommendation: ☒ Approve ☐ Deny

Previous Case Related Items

Town Council Workshop Discussion

An overview of these amendments was provided to the Town Council at their September 12, 2023 workshop and April 9, 2024 workshop.

Planning Board Action

Planning Board Meeting Date: 5/28/2024

Planning Board Decision Type: Advisory Decision

Advisory Decision

The Planning Board must review the application and make a recommendation to the Town Council.

The Planning Board should consider whether or not the land use standards and densities allowed in the proposed zoning district are appropriate for the property and consistent with the Vision of Holly Springs Comprehensive Plan. Technical standards of the Unified Development Ordinance are addressed once a Development Plan or Subdivision Plan is submitted for review.



The Planning Board discussed the following issues and concerns:

- The timing of the legislative public hearing.
- If the resulting changes modified the applicant's requirement to hold a neighborhood meeting.

Planning Board Recommendation:

The Planning Board adopted the following Comprehensive Plan Consistency Statement:

The proposed UDO amendments are consistent with the Vision Holly Springs: Town of Holly Springs Comprehensive Plan as follows: The proposed Unified Development Ordinance (UDO) amendments provide the Town of Holly Springs the necessary policies and development standards to implement Vision Holly Springs. Specifically, the proposed UDO amendment provides additional opportunities, through Conditional Zoning Districts, to implement the character-based land use approaches outlined in Section 1: Land Use & Character Plan, the goals and policies of Section 2: Comprehensive Transportation Plan, and the goals and policies of Section 3: Parks, Recreation and Greenways Master Plan. The proposed UDO text amendments provide the tools necessary for staff and the development community to implement the goals and objectives stated in the Plan and provide a more streamlined approach for development approvals.

The Planning Board voted in favor of the motion (5 - 0) *[4 absent]*

Recommend **approval** of Unified Development Ordinance (UDO) Text Amendment 24-UDO-02 to modify the Unified Development Ordinance as submitted by the Town of Holly Springs.

The Planning Board voted in favor of the motion (5 - 0) *[4 absent]*

Post Planning Board Action

An addition was made to Part 1, Section 2.4.3.C, Table 2.4.3-A (page 4) to add in the Chapter 3 Use Provisions, Eligible Base District Standards, that Permitted Uses when designated as SUP in Table 3.2-A - Table of Permitted Uses may be converted to CD when submitted with an Option 1 Conditional Zoning District (CD) application in accordance with Section 11.6.1.

This addition ensures that the new, 2-step process, is available to applicants submitting an application that would require an additional Special Use Permit (SUP) from the Board of Adjustment for a project already considered and approved by the Town Council.



Town Council Consideration & Action

Legislative Public Hearing

Prior to the Legislative Public Hearing:

- Published notice was made twice in the News & Observer.

Town Council Decision Type: Legislative Decision

Legislative Decision:

Legislative public hearings are held prior to a change in policy that may affect the entire community, including decisions on land use. The public hearing allows the Town Council to receive public comments regarding the proposal and then have discussion and deliberation. Based on the information provided on the proposal, the Town Council will make a determination on whether or not to approve the policy or modification.

Potential Zoning Map Amendment Petition Motion

Adopt Ordinance #24-28 to adopt the statement of compatibility and approve UDO Text Amendments.



Ordinance No. 24-28

Date Submitted: June 18, 2024

Date Adopted: June 18, 2024

**AN ORDINANCE TO AMEND SECTIONS OF THE CODE OF ORDINANCES
TO MODIFY APPENDIX A: UNIFIED DEVELOPMENT ORDINANCE
AND ADOPT THE COMPATIBILITY STATEMENT REQUIRED BY
NORTH CAROLINA GENERAL STATUTES 160D**

WHEREAS, the Town of Holly Springs Town Council adopted *Vision Holly Springs: Town of Holly Springs Comprehensive Plan* in November 2007; and

WHEREAS, the Town of Holly Springs Town Council has maintained and updated *Vision Holly Springs: Town of Holly Springs Comprehensive Plan* by adopting *Section 1: Land Use & Character Plan* in 2019; *Section 3: Parks, Recreation and Greenways Master Plan* in 2021; *Section 2: Comprehensive Transportation Plan* in 2022; *Section 1: Land Use & Character Plan Appendix E: Downtown Area Plan* in 2023; and *Section 1: Land Use & Character Plan Appendix F: Northeast Gateway Master Plan* in 2022, and

WHEREAS, Town of Holly Springs desires to amend the Unified Development Ordinance in accordance with the goals and policies contained within *Vision Holly Springs: Town of Holly Springs Comprehensive Plan*; and

WHEREAS, the Holly Springs Planning Board has reviewed this request at a Public Meeting and recommended approval; and

WHEREAS, an opportunity for public input into the suggested amendment has been offered in a public hearing before the Town Council; and

WHEREAS, the Holly Springs Town Council finds that the proposed UDO amendments are consistent with the *Vision Holly Springs: Town of Holly Springs Comprehensive Plan* as follows: The proposed Unified Development Ordinance (UDO) amendments provide the Town of Holly Springs the necessary policies and development standards to implement *Vision Holly Springs*. Specifically, the proposed UDO amendment provides additional opportunities, through Conditional Zoning Districts, to implement the character-based land use approaches outlined in *Section 1: Land Use & Character Plan*, the goals and policies of *Section 2: Comprehensive Transportation Plan*, and the goals and policies of *Section 3: Parks, Recreation and Greenways Master Plan*. The proposed UDO text amendments provide the tools necessary for staff and the development community to implement the goals and objectives stated in the Plan and provide a more streamlined approach for development approvals; and

THEREFORE, BE IT ORDAINED by the Holly Springs Town Council of the Town of Holly Springs, North Carolina, that the Code of Ordinances Appendix A: Unified Development Ordinance of the Town is amended as follows:

Part 1: Amending Section 2.4 Districts; Conditional Zoning Districts (CD):

Add text as indicated in **bold** and remove text as indicated in ~~strikethrough~~ to modify the CD process and standards:

2.4 Conditional Zoning Districts (CD)

2.4.1 ~~Purpose of~~ Conditional Zoning Districts (CD)

- A. Purpose and Intent. There are certain development proposals which – because of their nature, scale, or location – have particular impacts on their immediate surrounding areas and the community as a whole. In some instances, such development proposals may not be adequately accommodated by the Base ~~Zoning~~ Districts. In accordance with NCGS 160D-703 (b) the provisions set forth in this section establish a one-step, legislative, ~~conditional rezoning process for property within the Town's zoning jurisdiction.~~ Conditional Zoning District (CD) **process are intended** to provide flexibility within the planning and development process, while creating additional ~~controls~~ **standards** to ensure quality development.
- B. Conditional Zoning Districts (CD) Districts may be established **in any Base District** for the following purposes:
 - 1. ~~To allow innovative planning or design ideas for development in any district. To implement the Character Areas of the Comprehensive Plan when projects cannot be adequately accommodated by the Base District.~~
 - ~~1- 2.~~ 2. To allow innovative planning or design ideas for development in any **Base District**.
 - ~~2- 3.~~ 3. To **afford flexibility**, amend, ~~or~~ expand, ~~or restrict~~ the ~~following uses of Buildings as noted in the use table~~ **development standards and land Use provisions of the Base Districts and other UDO provisions.**
 - 4. **To impose special limitations and/or conditions on the Use of the property.**
- C. **Conditional Zoning Districts (CD) are established on an individualized basis, at the request of all owners of the property included in the application. The application must be made by the owners of the property or their authorized agents.**
- D. **A Conditional Zoning District (CD) is not intended for securing early or speculative rezoning of property. It is expected that, in most cases, the standards of the Base Districts appropriately regulate the site-specific impacts of Permitted Uses and Structures on surrounding areas.**
- E. **Limitations.**

1. All development standards or land Use provisions that apply to the corresponding Base District which are not modified as part of the Conditional Zoning District (CD) shall also apply to the Conditional Zoning District (CD).
2. Conditional Zoning Districts (CD) shall not allow Permitted Uses which are not expressly permitted in the underlying Base District.
3. Conditional Zoning Districts (CD) shall not propose modified development standards or land Use provisions, nor propose special limitations and/or conditions, which are less restrictive than the requirements of this UDO, other town requirements, or other applicable state or federal laws, unless otherwise expressly permitted by this Section. Development standards, land Use provisions, special limitations, and/or conditions may be more restrictive than the requirements of this UDO.
4. Conditional Zoning Districts (CD) shall not propose development standards, land use provisions, special limitations, and/or conditions that are a repetition of an already applicable requirement of this UDO.
5. Conditional Zoning Districts (CD) are not intended to relieve hardships that would otherwise be handled using a Variance procedure.

2.4.2 Conditional Zoning District (CD) Procedure

- A. ~~CD Rezone. CD Districts may be based on any district, but are not intended to relieve hardships that would otherwise be handled using a variance procedure. The CD process will result in a rezone for the property. The rezone action is tied to a Master Plan (or equivalent) and may include conditions of approval. An application for Conditional Zoning District (CD) shall be tied to a Development Plan or Subdivision Plan (Preliminary Plat), or Master Plan, and made in accordance with the procedures established in Chapter 11 of this UDO.~~
- B. ~~Review Procedures. A CD District application must be made by the owners of the property or their authorized agents in accordance with the procedures established in Chapter 11.~~

2.4.3 Standards and Allowances for Conditional Zoning Districts (CD)

- A. ~~CD Design Goals. CD proposals~~ **The application for Conditional Zoning District (CD)** shall demonstrate **how** ~~that~~ the Project ~~and development therein will incorporate and/or~~ achieves the following design goals:
 1. The incorporation of existing natural features such as wooded areas and slopes into the design of new development in such a manner as to preserve the site's natural character;

2. The preservation of significant view corridors; development of out-lying areas of the Town and its Extraterritorial Jurisdiction in a manner which retains elements of traditional historical land use patterns;
3. Development of pedestrian oriented communities; development of traditional style neighborhoods;
4. Development of communities that are visually and functionally connected to one another;
5. Protection of significant watershed areas in order to preserve water quality;
6. Creativity and imagination in the process of development;
7. Unique architecture or sustainable design;
8. Efficient, aesthetic and desirable use of open space;
9. Variety in housing types and physical development patterns; and,
10. Special considerations for property with a unique history or outstanding physical features.

B. Public Benefits. The application for Conditional Zoning District (CD) shall demonstrate that the proposed Project provides sufficient benefits to the general public. Public benefit may include:

1. Infrastructure improvements such as improvements to existing Streets, intersections, medians, Sidewalks, greenways, sidepaths, pedestrian crossings, and public utilities.
2. Publicly accessible Open Space such as Parks and Playgrounds, dog parks, Urban Civic Spaces, Plazas, Squares, public art, and similar outdoor amenities.
3. Sustainable design and/or architecture such as adaptive reuse of existing buildings, preservation of significant on-site environmental features, on-site renewable energy generation, compliance with established standards such as Leadership in Energy and Environmental Design (LEED), Energy Star, Earthcraft, etc., or other actions that further sustainability of the project.
4. Additional public benefits not listed above may be considered by the decision-making body.

~~B. C. Development Standards~~ **Flexibility** and **Land Use Provisions Allowances**. ~~The provisions of this section are intended to afford flexibility to and/or deviations from the development standards and land use allowances of the base districts and other UDO provisions to achieve more quality, innovative, and sustainable neighborhoods that are otherwise restricted by the specific~~

application of this UDO. As part of the initial CD establishment, the applicant/development Conditional Zoning Districts (CD) may establish modify the development standards and land Use provisions to be less restrictive than the Base District that will apply to all future development within the Project boundaries CD-proposal may establish the following-unique standards subject to the allowances/limitations of this section: Table 2.4.3-A. and the limitations identified in each Chapter.

TABLE 2.4.3-A – ELIGIBLE DEVELOPMENT STANDARDS AND LAND USE PROVISIONS	
UDO Chapter	Eligible Base District Standard
Chapter 2 Development Standards	Maximum Gross Density.
	Minimum Lot Area.
	Minimum Lot Width.
	Minimum Lot Frontage for a Driveway.
	Building Placement.
	Perimeter Buffer.
	Building Height/Stories.
Chapter 3 Use Provisions	Maximum Gross Floor Area.
	Permitted Uses when designated as CD in Table 3.2-A - Table of Permitted Uses.
	Permitted Uses designated in Table 3.2-A - Table of Permitted Uses for the establishment or expansion of a SP Special District or HI Heavy Industrial District.
	Apartment Dwelling locations and configurations when designated as PS in Table 3.2-A - Table of Permitted Uses.
	Permitted Uses when designated as SUP in Table 3.2-A - Table of Permitted Uses may be converted to CD when submitted with an Option 1 Conditional Zoning District (CD) application in accordance with Section 11.6.1.

Chapter 4 Open Space and Conservation	No Base District standards may be modified.
Chapter 5 Landscaping	Landscaping and buffering standards.
Chapter 6 Parking	Permitted Vehicle Parking locations. Minimum and Maximum Vehicle Parking ratios.
Chapter 7 Streets, Utilities and Other Infrastructure	No Base District standards may be modified.
Chapter 8 Building, Site & Subdivision Lot Design Standards	Building Design Standards, when the resulting Building design aligns with the Town's Land Use and Character goals and provides for exceptional design equal or greater to the Base District requirements.
Chapter 9 Signs	Sign standards subject to the Waiver of Sign Regulations established in Section 9.2.B.

- ~~1. Development Standards (Chapter 2.0) — The applicant may propose development standards relating to Lot area, Lot width, setbacks, driveway width at frontage, and Building height that may differ from the base district.~~
- ~~2. Additional Residential Building Types (Chapter 3) — The CD may include additional residential housing types that are otherwise restricted in the base district. However, the CD may not exceed the density limitations established in the base district.~~
- ~~3. Landscaping (Chapter 5) — The applicant may proposed landscaping and buffering standards for the CD and the Lots/parcels therein which may different from the other provisions of the UDO.~~
- ~~4. Parking (Chapter 6) — The applicant may propose unique Vehicle Parking ratio standards or permitted vehicle parking locations which may be different from the other provisions of the UDO.~~
- ~~5. Street Design (Chapter 7) — A CD may include an internal street design which are hybrids of the Town's standard street section designs.~~

- ~~6. Building, Site & Subdivision Lot Design Standards (Chapter 8)—A CD may provide alternative Building, Site, and/or Subdivision Lot design options that are otherwise required in this UDO where the resulting designs align with the Town's land use and character intent for the vicinity.~~

~~C. Ineligible Activities. The following activities are ineligible for CDs.~~

- ~~1. Prohibited Land Use Establishment: Uses which are not expressly allowed in the underlying base district are prohibited in the CD District.~~
- ~~2. Public Park Space, Conservation Areas and Environmental Reductions: A reduction in the amount of required On-Site Private Open Space, Public Park Space, or Conservation Areas pursuant to Chapter 4 shall not be permitted.~~

Part 2: Amending Section 11.6 Administration and Decision-Making Bodies; Zoning and Comprehensive Plan Amendments:

Add text as indicated in **bold** and remove text as indicated in ~~strikethrough~~ to modify the CD process and standards:

11.6 Zoning **Map, and** Comprehensive Plan, **and UDO Text** Amendments

- A. Purpose and Intent. The provisions listed in this section are intended to establish the allowances, limitations, and procedure for applicants to request amendments to the ~~UDO text~~, Zoning Map, ~~the~~ Comprehensive Plan, **UDO Text**, and other land Use related policy documents/plans.
- B. Submittal Requirements. Applicants shall provide the following information as part of all amendments to the ~~UDO~~, Zoning Map, Comprehensive Plan, **UDO Text**, and/or other land use related policy documents/plans.
 1. Application. The applicant shall submit a formal application. ~~The Administrator shall create and provide said application.~~ **The Administrator may waive any application requirement where the type of Use or scale of Project makes providing that information unnecessary or impractical.**
 2. Site Survey / Existing Conditions. For amendments involving specific sites/properties ("site specific amendments"), the applicant shall provide a land survey depicting the existing site conditions and improvements. In lieu of a survey, applicants may submit a current aerial photograph with labeling of existing conditions and printed to scale.
 3. Project Narrative. Applicants shall provide a Project narrative the describes the request, identifies existing conditions, and provides an analysis of the request and its consistency with the ~~application~~ Comprehensive Plan ~~policies~~. The Administrator shall list the narrative requirements on the application form for **amendments to the** Zoning

Map, and Comprehensive Plan, and UDO Text Amendments.

~~4. Neighborhood Meeting Report. The applicant shall submit a Neighborhood Meeting Report pursuant to 11.5.F.5 of this Chapter. The report may be provided to the Administrator as part of the initial application submittal.~~

- C. Approval Limitations. The Town Council shall have the authority to limit its approval of the proposed amendment (e.g., lessen the land area for map amendments) to protect the interests of the surrounding area, preserve the spirit and intent of the UDO, and to promote the health, safety, enjoyment, and welfare of people residing or working in or adjacent to the property.
- D. Procedures. The following provisions establish the review procedures for amendments to the **UDO text**, Zoning Map, ~~the~~ Comprehensive Plan, **UDO Text**, and other land use related policy documents/plans.
1. The Town Council shall review and take action on **applications for amendments to the Zoning Map, and Comprehensive Plan, and UDO Text Amendment applications** pursuant to Table 11.4-A: Review Matrix of this Chapter.
 2. ~~The applicant shall host a neighborhood meeting pursuant to 11.5.F of this Chapter and provide a Neighborhood Meeting Report as part of its initial application submittal to the Town. When required pursuant to Tables 11.4-A and 11.5-A, the applicant shall host a neighborhood meeting and provide a neighborhood meeting summary report as part of its initial application submittal to the Town.~~
 3. Applicants shall provide the submittal items listed in 11.6.B.
 4. The Administrator will review the amendment application and provide written technical comments to the applicant based on the proposal's compliance with the applicable UDO standards and Comprehensive Plan policies. The Administrator (through their written comments) may require revisions to the proposal to achieve compliance with the Town's policy/regulatory documents. The applicant shall revise its submittal, as necessary, to respond to the Administrator's comments. The Administrator will direct a staff member to write a staff report with findings and a recommendation. The Administrator will forward the revised application materials and its staff report to the ~~Planning Board~~ **Town Council** for review ~~and recommendation~~.
 5. ~~The Planning Board shall conduct a public meeting and vote to recommend to Town Council to approve, approve with limitations, or deny the proposed amendment application. The Town Council shall conduct a legislative public hearing. After the legislative public hearing, and prior to the consideration of an amendment to the Zoning Map, Comprehensive Plan, or UDO Text, the proposed amendment shall be forwarded to the Planning Board for review~~

and recommendation.

6. ~~The Town Council shall conduct a public hearing and vote to approve, approve with limitations, or deny the proposed amendment application.~~ The Planning Board shall conduct a public meeting and vote to recommend Town Council approve or deny the proposed amendment application.
7. The Town Council shall conduct a public meeting and vote to approve, approve with limitations, or deny the proposed amendment application.

11.6.1 Conditional Zoning District (CD)

- A. Applicability. The provisions of this subsection establish additional submittal requirements for Zoning Map Amendments to a Conditional Zoning District (CD).
- B. Additional Submittal Requirements. Applicants requesting a Zoning Map Amendment to a Conditional Zoning District (CD) shall provide the following information with their submittal in addition to those items required in subsection 11.6.B:
 1. ~~Narrative Addition / CD~~ Design Goals. The applicant shall ~~add~~ **provide** a section to the Project narrative that lists the ~~CD~~ Design Goals as provided in Section 2.4 of this UDO. The narrative shall ~~provide an analysis of how the proposed CD~~ **demonstrate how the Project** is consistent with those goals.
 2. ~~CD Master Plan (Plan Set)~~ **Plan Required. There are 2 Plan options available for Conditional Zoning Districts (CD):** ~~applicant shall provide a series of plan sheets that, collectively, form the Master Plan for the specific CD. The Master Plan establishes the future regulatory components for land use, transportation/mobility, and open space/ preservation in the CD. The Master Plan shall be provided to the Administrator in a printed and electronic format. The Master Plan shall include the following sheets:~~
 - a. **Option 1: Development Plan or Subdivision Plan (Preliminary Plat). A Development Plan or Subdivision Plan (Preliminary Plat) shall be tied to the Conditional Zoning District (CD).**
 - i. **Development Plans and Subdivision Plans (Preliminary Plat) shall meet all requirements of this Chapter and UDO.**
 - ii. **Subdivision Plans (Final Plats) shall be reviewed following the processes and procedures outlined in this Chapter.**
 - iii. **Modified Procedures.**

(a) Development Plans or Subdivision Plans

(Preliminary Plat) tied to the Conditional Zoning District (CD) shall be reviewed as a Type 6 - Legislative Action.

(b) Construction Drawings. Following approval of the Option 1 Conditional Zoning District (CD), the applicant shall prepare and submit Construction Drawings for the Development Plan or Subdivision Plan (Preliminary Plat) as a separate application to the Town pursuant to Table 11.4-A: Review Matrix and the requirements of Section 11.14.

(c) Major Subdivisions – Non-residential. Subsequent Development Plans for lots or out lots within a Major Subdivision – Non-residential shall be reviewed pursuant to Table 11.4-A: Review Matrix of this Chapter unless otherwise authorized by the Town Council.

b. Option 2: Master Plan. A Master Plan shall be tied to the Conditional Zoning District (CD).

i. The Master Plan is a schematic design that is intended to illustrate the proposed layout of land Uses, Lots, Buildings, Streets, Open Spaces, and other features. The Master Plan shall depict the location of:

(a) Proposed land Uses, including the acreage for each land Use and planned Density limitations for each; and

(b) Proposed Lots, property lines, Lot dimensions, and Building Setback lines; and

(c) Proposed Building locations, vehicle parking areas, and loading areas; and

(d) Proposed Streets (with Street dimensions), alleys, sidewalks or sidepaths, and greenways; and

(e) Proposed parks, tree preservation areas, and other open spaces; and

(f) Proposed Perimeter Buffer landscaping areas including widths, materials, quantities, and design scheme; and

(g) Proposed primary utility line locations, sizes, and connections.

ii. Following approval of the Option 2 Conditional Zoning District (CD), the applicant shall submit a Development Plan or Subdivision Plan (Preliminary Plat).

(a) Development Plans and Subdivision Plans (Preliminary Plat) shall meet all requirements of this Chapter and UDO.

(b) Development Plans or Subdivision Plans (Preliminary Plat) shall be reviewed and approved pursuant to Table 11.4-A: Review Matrix of this Chapter.

(c) Subdivision Plans (Final Plats) shall be reviewed following the processes and procedures outlined in this Chapter.

c. Exceptions. The Administrator may waive the Development Plan, Subdivision Plan (Preliminary Plat), or Master Plan requirement if the only purpose of the Conditional Zoning District (CD) is to modify the Use Provisions of the Base District and where the type of Use or scale of Project makes providing that information unnecessary or impractical.

~~a. Concept Plan/Zoning Plan. A plan sheet shall depict the proposed spatial layout of the planned development within the CD including primary roadways, land use areas (zoning), and open space/preservation areas. The plan shall designate internal zoning districts based on the Town's base zones listed in Chapter 2 of this UDO. The plan shall include a site statistics table that lists the acreage for each internal zone and planned density limitations for each.~~

~~b. Transportation and Mobility Plan. A plan sheet shall depict the proposed primary roadways and multi-use trail network (as applicable). The plan shall depict proposed roadway and access connections to the surrounding public right-of-way network. The plan shall also designate each proposed roadway as a specific classification or streetscape type.~~

~~c. Open Space and Preservation Plan. A plan sheet shall depict the proposed open space and preservation areas. The plan shall identify the proposed use for each area in terms of recreation, or preservation/conservation. The plan shall include a site statistics table that lists the acreage of each open space/ preservation area, the planned uses and activities for each, and the calculation of required open space conservation based on Chapter 4 of this UDO.~~

~~d. Landscaping Plan. A plan sheet shall depict the primary landscaping areas and typical planting arrangements for each~~

~~area. The plan shall include a site statistics table that summarizes the planting area widths, materials, quantities, and design scheme.~~

~~e. Utilities Plan. As applicable, a plan sheet shall depict proposed primary utility line locations, sizes, and connections. The plan shall include a site statistics table that summarizes the line sizes and flow capacity.~~

~~f. Grading Plan. As applicable, a plan sheet shall depict the proposed site grading.~~

3. **Proposed Development and Design Manual Standards.**

The applicant shall ~~prepare and submit~~ **identify on the Development Plan, Subdivision Plan (Preliminary Plat), or Master Plan a the** development and design Manual (the “Manual” in this subsection) **standards** that would establish the land use, development, and design requirements for the properties within the proposed CD; the manual shall coincide with the Master Plan (Plan Set). The manual shall be provided to the Administrator in an electronic format, and editable by the Administrator to accommodate potential future amendments thereto (e.g., Microsoft Word or PDF file formats). **of the Base District that apply to all developments within the Project boundaries. The manual shall include the following components. The development standards shall identify any development standard and/or land Use provision modified from the Base District standard subject to the provisions in Section 2.4 of this UDO.**

~~a. Land Use. The manual shall establish internal zoning which corresponds to the Concept Plan/Zoning Plan in the Master Plan (Plan Set). The manual shall include a list of land uses/Building types that would be allowed at specific locations within the proposed CD.~~

~~b. Dimensional Standards. The manual shall establish the dimensional standards (e.g., setbacks, height limitations.) that would be applied to future development within each of the internal zoning districts pursuant to the proposed Concept Plan/Zoning Plan in the Master Plan (Plan Set) and as limited in Section 2.5 of this UDO.~~

~~c. Design Standards. The manual shall establish Building and site design standards for future development within the CD and based on the internal zones pursuant to the proposed Concept Plan/Zoning Plan in the Master Plan (Plan Set). The Design Standards shall coincide with or exceed the Town’s design standards pursuant to Chapter 8 of this UDO. As appropriate, the Design Standards shall include color and material samples, and utilize and repeat architectural styles within the Projects for design compatibility and consistency.~~

- ~~d. Streetscape and Mobility Standards. The manual shall establish the typical cross-section design for all internal streets, multi-use trails, and pedestrian facilities. The cross-sections shall coincide with the Transportation and Mobility Plan in the Master Plan (Plan Set) and the “Public Realm” descriptions in the Comprehensive Plan (i.e., Community Character & Place-Making—Emphasis on the Public Realm policies). The cross-sections shall depict rights-of-way widths, pavement/ sidewalk widths/locations, curb type, landscaping material/placement, and street furniture, as applicable.~~
- ~~e. Open Space, Recreation, and Preservation Standards. The manual shall establish the development, maintenance, and land use standards for each open space/preservation area. The standards shall coincide with the Open Space and Preservation Plan in the Master Plan (Plan Set).~~
- ~~f. Plan Set. The manual shall incorporate the required plan CD Master Plan (Plan Set). For brevity, this may be attached as an appendix to the manual.~~

- 4. Design Manual. When not otherwise required by this UDO, the Conditional Zoning District (CD) shall include Building and site design standards in a design manual. The manual shall illustrate Building and site design standards, architectural styles, and color and material specification for design compatibility and consistency within the Conditional Zoning District (CD). The design standards shall coincide with or exceed the Town’s design standards pursuant to Chapter 8 of this UDO unless otherwise modified to align with the Town’s Land Use and Character goals and provide for exceptional design equal or greater to the Base District requirements.
- 5. Additional special limitations and/or conditions may also be proposed by the applicant in writing and incorporated into the application. Site-specific commitments shall be limited to those that address the conformance of the Project and use of the site, per the Comprehensive Plan, Ordinance regulations, and/or the impacts reasonably expected to be generated by the Project or use of the site.

C. Modifications to Approved Conditional Zoning Districts (CD)

- 1. Conditional Zoning Districts (CD) shall adhere to approved Development Plans or Subdivision Plans (Preliminary Plats), or Master Plans, special limitations and/or conditions. Modifications to Development Plans or Subdivision Plans (Preliminary Plat), or Master Plans, special limitations and/or conditions will require a new application for a Zoning Map Amendment unless an approved Minor Modification, Administrative Adjustment, or Variance is approved to

allow the change.

2. **Minor Modifications.** Minor Modifications to approved Development Plans or Subdivision Plans (Preliminary Plat), or Master Plans, tied to a Conditional Zoning District (CD) are limited to those Minor Modifications established in Section 11.16 of this UDO, except that any changes that increase the density of the Project, change allowed Uses, or conflict with special limitations and/or conditions cannot be considered through a Minor Modification and shall require a new application for a Zoning Map Amendment.
3. **If multiple parcels of land are subject to a Conditional Zoning District (CD), the owners of individual parcels may apply for modification so long as the modification would not result in other properties failing to meet the terms of the Conditional Zoning District (CD). Any modifications approved apply only to those properties whose owners petition for the modification.**

Part 3: Amending Section 11.16.D. Administration and Decision-Making Bodies; Modification to Approved plans and Applications; Modification Type Determination:

Add text as indicated in **bold** and remove text as indicated in ~~striketrough~~ to modify the minor modification allowances:

D. Modification Type Determination.

1. Minor Modification.

a. A minor modification may be allowed for situations/site elements that include the following:

- i. Expansion **or reduction** of Building floor area up to 25%;
- ii. Increase in Building Height by up to 15%;
- iii. Expansion or reduction in the amount of vehicle parking areas by up to 10%;
- iv. Increase in the total number of lots/unit by up to 10%, or 10 lots/units, whichever is less.
- v. Reduction of open space by up to 10%;
- vi. Increase in Project acreage by up to 10% or 5 acres whichever is less;
- vii. The designation of additional uses that only involve those listed as permitted ("P") on Table 3.2-A – Table of Uses in Chapter 3 of this UDO;
- viii. Reduce, relocate, or alter the composition up to 10% of any

tree preservation area or removal of a Specimen Tree; ~~OR~~

ix. A minor change in Building design, Building material selection, or percentage of various Building materials utilized; ~~that does not deviate from the original approval.~~

x. A minor change in street or utility layout; or

xi. A minor change in Lot arrangement, Lot lines, or Lot Area.

xii. Other minor modifications may be authorized by the Administrator if, in their determination, the minor modifications do not adversely impact the purpose or intent of the approved plans and applications.

b. A Minor Modification may not be allowed for situations that are in conflict with any condition that was imposed as part of the original approval.

2. Major Modification. A major modification may be allowed for other situations and site elements that do not constitute a "Minor Modification."

Part 4: **REPEAL OF CONFLICTING ORDINANCES**

All ordinances or parts of the UDO of the Town of Holly Springs conflicting or inconsistent with the provisions of this Ordinance are hereby repealed.

Part 5: **SEVERABILITY**

If any section, part of a section, paragraph, sentence, clause, phrase, or word of this Ordinance is for any reason held or declared to be unconstitutional, inoperative or void, such holdings shall not affect the remaining portion of this Ordinance and it shall be construed to have been the legislative intent to pass the Ordinance without such unconstitutional, invalid or inoperative part therein, and the remainder of this Ordinance after the exclusion of such part or parts shall be deemed to be held valid as if such part or parts had not been included therein, or if this Ordinance or any of the provisions thereof shall be held inapplicable to any person, group of persons, property, kind of property, circumstances, or set of circumstances, such holdings shall not affect the applicability thereof to any other person, property or circumstances.

Part 6: **INCLUSION IN CODE**

It is the intention of the Town Council entered as hereby ordained, that the provisions of this Ordinance shall become and be made part of the Unified Development Ordinance of the Town of Holly Springs, North Carolina; that the Section(s) of this Ordinance may be renumbered or relettered to accomplish such intention, and that the word "Ordinance" may be changed to "Section, or "Article" or other word.

Part 7: **EFFECTIVE DATE**

The provisions of this ordinance shall become effective July 1, 2024 in accordance with the laws of the State of North Carolina.

Adopted this, the 18th day of June 2024.



Town of Holly Springs by

Sean Mayefskie, Mayor

ATTEST:

Linda McKinney, Town Clerk



Holly Springs Town Council

Town Council Meeting Agenda Cover Sheet

Agenda Item#: 19.

Public Hearings

Title: Economic Development Agreement (EDA) with Fujifilm Diosynth Biotechnologies

Strategic Priority Area: Growth Management & Economic Vitality

Staff Resource: Daniel Weeks, Asst. Town Manager

Action(s):

- Hold Public Hearing on an Economic Development Agreement (EDA) with Fujifilm Diosynth Biotechnologies for Phase II (Project Aura)
- Approve/Deny/Defer EDA with Fujifilm Diosynth Biotechnologies for Phase II (Project Aura)
- Authorize the Town Manager to execute necessary transactions consistent with prior Council approvals and terms of the EDA
- Approve Indemnity Agreement for the SAR construction

Explanation:

- On April 11, 2024, North Carolina Governor Roy Cooper announced the expansion of Fujifilm Diosynth Biotechnologies (FDB) in Holly Springs, known as Project Aura.
- Project Aura has an anticipated company investment of \$1.2 billion and 680 new jobs, bringing the total anticipated investment and job creation for FDB Phase 1 and Phase 2 to \$3.2 billion and 1,400 new jobs by 2031.
- This agenda item is for Town Council to consider an Economic Development Agreement (EDA) between the Town of Holly Springs and FDB, which formally establishes the obligations of each party.
- In consideration of an EDA, the Town recognizes that a project will bring direct and indirect benefits to the Town, including but not limited to, job creation, increase in *ad valorem* tax base, economic diversification, and economic stimulus to the local economy. With such, the Town offers economic development incentives to induce a company to locate their project at a site.
- Furthermore, the company fully intends to establish an important presence in the Town by employing a large number of employees and making a substantial investment in the project and in training and development of those employees.

Key benefits to the community include:

- Job growth in our community with an emphasis on hiring local
- Additional property tax revenues including \$10 million dedicated future property taxes to be used to fund critical transportation investments
- Planned new "southern access road" to be built to ease congestion on Green Oaks

Parkway

- New opportunities for small businesses to grow and increase revenue
- More transportation enhancements planned within a mile of the facility

Key terms of the EDA include:

MINIMUM ACCUMULATIVE PAYMENT AND BUSINESS INVESTMENT GRANT

- Prior to any Business Investment Grant (BIG) by the Town, a minimum of \$20 million in *ad valorem* property taxes to the Town must be generated by Project Aura
- Once a cumulative amount of \$20 million is reached, the following BIG terms will commence in the following fiscal year: 50% tax grant for 6 consecutive years will be provided to FDB, so long as FDB's tax valuation exceeds \$500 million each year

EMPLOYMENT, WAGE, AND INVESTMENT TARGETS

- FDB commits to an employment target of 680 new jobs, although in parallel with State incentives, the company reaching 90% of this target will satisfy the requirement (612 new jobs)
- FDB commits to a wage target of \$109,923, although in parallel with State incentives, the company reaching 90% of this target will satisfy the requirement (\$98,931)
- FDB projects to make a minimum investment of \$1.2 billion in Phase II. FDB's corresponding tax valuation from the Wake County Tax Assessor's Office will determine the amount of any potential BIG. The maximum cap of the BIG is \$20,236,800.

INDUSTRIAL UTILITY RATE AND UTILITIES

- The company shall qualify for the town's industrial utility rate
- The Town shall take all commercially reasonable necessary measures to ensure 24/7 availability of potable water in the amount of 420,000 gallons per day
- The Town shall make available an estimated 360,000 gallons per day of sewer capacity to handle the facility's expansion
- The Town agrees, with respect to wastewater loading for sewer discharge, to increase the company's Industrial User Permit (IUP) limits of two key constituents BOD (Biological Oxygen Demand) & TN (Total Nitrogen) by an amount equal to 10% of the Town's forthcoming wastewater plant expansion's actual new capacity of BOD & TN realized by the plant expansion, up to a ceiling of two times company's existing IUP limits of BOD & TN.

FEES

- The Town agrees to waive all fees provided that (1) FDB pays all mandatory fees (water and sewer system development fees) and (2) such waiver shall commence after FDB has paid a utility study grant in an amount of \$500,000. The grant of \$500,000 shall be obligated by the Town to fund a utility demand study from an outside consultant of the Town's choosing. The purpose of the study is to aid in the Town's utility modeling capabilities and forecast future utility needs and upgrades.

EXPEDITED STAFF LEVEL REVIEW

- The Town agrees to facilitate and expedite all Town-administered permits, plan approvals, zoning approvals, inspections and other required approvals, certificates and/or licensing necessary or appropriate in connection with the Site, the construction of the Facility, or the Project in a manner prescribed by a customized review schedule. This will be completed through an administrative process at the Town staff level (as opposed to Council-level approval).
- The Town agrees to provide an additional full-time building inspector in addition to the inspector assigned to Phase I of FDB. The Town further commits that at such time as the Phase I assigned inspector finishes work on Phase I or is otherwise available to commit inspection resources to Phase II, the Town shall direct that inspector to do so, until such time as it is commercially unnecessary to have two full-time inspectors working at the FDB site.

TRANSPORTATION

- Company will complete transportation improvements within one mile of the site
- Regarding the Southern Access Road (SAR), the Town was successful in obtaining an additional \$3 million from the NC General Assembly to be applied towards its completion. This is in addition to the \$10 million allocated by NCDOT in connection with Phase I.
- The Town and NCDOT are crafting a municipal agreement establishing the details for how the SAR will be constructed and funded. NCDOT's policy is to enter into an agreement with a municipality only for road projects such as the SAR.
- The Town and FDB are crafting a separate indemnity agreement establishing obligations between the two partners if the cost of the SAR exceeds \$13 million, which places a requirement on FDB to cover any potential costs above \$13 million. The indemnity agreement protects the Town from paying any funds for construction, except for right of way expenses.

TOWN PROPERTY CONVEYANCE

- As proposed during negotiations during Project Galaxy (FDB Phase I), an approximately 5 acre landlocked piece of property owned by the Town will be conveyed to FDB for their operations.

CLAWBACKS FOR UNDER/NON-PERFORMANCE

- Clawback language is included in the event the company does not fulfill its obligations within the EDA. A pro-rata return of the following items could occur if FDB fails to meet requirements: waived fees, actual construction costs of the Business Park Pump Station made by the Town as a direct result of Project Aura, Town SAR expenses; and expenses of a dedicated building inspector

Incentives from other partners include the Wake County Board of Commissioners who approved a BIG in an amount of \$39 million over 10 years (equals amount at current Wake County

property tax rate) and the State of NC approved a Jobs Development Incentive Grant (JDIG) of \$14.9 million.

Background:

- On March 18, 2021 FDB originally announced its selection of Holly Springs as the location for its new large-scale cell culture production site in the United States.
- Phase 1 consisted of a company investment of \$2 billion and the creation of 725 high paying jobs
- Project Aura is Phase 2 of the FDB facility

Funding Source(s):

Attachment(s):

1. Indemnity for SAR_Execution Copy
2. IUP_Fuji
3. FUJI EDA PHASE 2_EXECUTION

STATE OF NORTH CAROLINA	)	INDEMNITY AGREEMENT
COUNTY OF WAKE	)	FOR ROAD CONSTRUCTION

This Agreement (this “Agreement”) is entered into, effective as of the last date of the signatures below (“Effective Date,”) by and between FUJIFILM Diosynth Biotechnologies North Carolina, Inc. (the “Company,”) and the Town of Holly Springs, a North Carolina municipality (the “Town.”) Together the Town and Company are referred to as the “Parties.” Capitalized terms used herein have the meanings ascribed to them below.

WHEREAS, the Parties have entered into one or more agreements such as Economic Development agreement(s) and/or Development Agreement(s) regarding the development of an approximate 150 acre industrial site in Holly Springs, which includes a capital investment by the Company of a projected value greater than \$2 Billion; and,

WHEREAS, as one condition of the recruitment of the Company, a new access road was requested by the Company known informally as the “Southern Access Road” (hereinafter the “Road”) which is currently being designed and permitted by the North Carolina Department of Transportation (“NCDOT”), who has committed \$10 Million of state funding to construction of the Road; and,

WHEREAS, current cost estimates for construction of the Road may or are likely to exceed \$10 Million. The Town has secured an additional \$3 Million in funding from the North Carolina General Assembly; and,

WHEREAS, the Town has to-date expended significant funds in land acquisition costs from affected landowners, including itself, to necessitate the construction of the Road and has no other available funds for construction of the Road; and,

WHEREAS, NCDOT typically requires the Town to sign a contract (the “Municipal Agreement”) obligating the Town to provide any excess costs for the design and construction of the Road,

WHEREAS, the Company has determined that it is in the best interests of the Company to hold the Town harmless for the Town’s obligations to the NCDOT under the Municipal Agreement for the design and construction of the Road.

NOW THEREFORE, for good and valuable consideration as recited above and for other consideration, the adequacy of which the Parties do not dispute, the Parties do hereby agree as follows:

1. The Town shall endeavor to enter into a revised Municipal Agreement which shall obligate the NCDOT to take the following measures: 1) allow the Town and the Company to review and approve construction bid responses from the lowest responsible responsive bidders; 2) participate in any value engineering propositions; and 3) approve any change orders that would result in a project budget in excess of \$13 Million.

2. The Parties understand the NCDOT is not obligated to modify its standard Municipal Agreement, however the Town agrees to advocate to NCDOT to make certain changes to incorporate the provisions discussed herein.

3. The Company agrees to protect, defend, indemnify and hold the Town of Holly Springs and its officers, employees and agents free and harmless from and against any and all costs, charges, professional fees, or other expenses or liabilities arising out of or relating to the design, construction, and/or installation of the public infrastructure of the Road as required under the Municipal Agreement including, but not limited to, the road and related appurtenances such as curb, gutter, sidewalk, and easements for such period of time as governed by the Municipal Agreement. The Company agrees that it is responsible for the financial obligations incurred for the design and construction of the Road pursuant to the Municipal Agreement that exceed actual NCDOT state construction funding (currently committed at \$10 Million) and actual funding from the North Carolina General Assembly (currently committed at \$3 Million). The Company further agrees to investigate, handle, provide defense for and respond to, any such claims or demands by the NCDOT relating to the costs for the design or construction of the Road pursuant to the Municipal Agreement that are in excess of \$13 Million at its sole expense and agrees to bear, even if such claims are groundless, false, or fraudulent.

4. The Company's indemnification obligations under this Agreement shall survive the completion of construction of the Road and shall remain in effect for a period of one (1) year or satisfaction of the final invoice associated with the Road, whichever is earlier, unless otherwise terminated pursuant to the agreement of the Parties.

5. No waiver of Immunity. Nothing herein shall serve as a waiver of sovereign or governmental immunity. This contract is not a contract for insurance. It creates an obligation for the Company to pay those amounts required to be paid by the Town by the

NCDOT under the Municipal Agreement. To the extent the Town can claim any governmental immunity under this or the Municipal Agreement, this Agreement shall not constitute the purchase of insurance.

6. Controlling Law. This Contract is to be governed by the law of the State of North Carolina. Venue and jurisdiction are proper in the 10th Judicial District of North Carolina (Wake County).

7. Notices. Any notice required under this Contract will be in writing, addressed to the appropriate party at its address below, or given personally, or by regular, registered or certified mail postage prepaid, or by a commercial courier service. All notices shall be effective upon the date of receipt.

Town Contact:	
John Schifano, Town Attorney	(Name, Title)
Administration	(Department)
P.O. Box 8	
Holly Springs, NC 27540	
919-557-2917	(Phone)
John.schifano@hollyspringsnc.gov	(e-Mail)

For the Company:
Jordan Ulrich, Interim Site Head/V.P. of Project Delivery
FUJIFILM Diosynth Biotechnologies North Carolina, Inc.,
100 Biotechnology Avenue,
and via email to Jordan.Ulrich@Fujifilm.com

With copies to:
FUJIFILM Holdings America Corporation,
Legal Department,
200 Summit Lake Drive,
Valhalla, New York 10595,
and via email to legaldepartment@fujifilm.com

8. Severability. Any provision or part of the Contract held to be void or unenforceable under any Laws or Regulations shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon Town and Company, who agree that the Contract shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

9. Waiver. Non-enforcement of any provision by either party shall not constitute a waiver of that provision, nor shall it affect the enforceability of that provision or of the remainder of this Contract.

IN WITNESS WHEREOF, the parties hereto have caused this Indemnity Agreement to be executed as of the date and year first above written.

ATTEST:

TOWN OF HOLLY SPRINGS, NORTH CAROLINA

Name: Linda McKinney
Title: Town Clerk

By: _____
Name: Randy J. Harrington
Title: Town Manager

FUJIFILM Diosynth Biotechnologies North
Carolina, Inc.

By: _____
Name: Jordan Ulrich
Title: Interim Site Head/V.P. Project
Delivery

Certified as to Legal Sufficiency:

ATTEST:

Name: John P. Schifano
Title: Town Attorney

This instrument has been pre-audited
in the manner required by the Local
Government Budget and Fiscal
Control Act.

Tina Stroupe
Finance Director, Town of Holly
Springs

PERMIT**Industrial User Pretreatment Permit (IUP)
To Discharge Wastewater Under the
Industrial Pretreatment Program**

004

IUP Number

40 CFR 439 A & D

40 CFR Category(if Applicable)

In compliance with the provisions of North Carolina General Statute 143-215.1, any applicable federal categorical pretreatment regulations, all other lawful standards and regulations promulgated and adopted by the North Carolina Environmental Management Commission, and the Control Authority and/or Municipality Sewer Use Ordinance. The following Industry, hereafter referred to by name or as the permittee:

Industry name, permittee:	Fujifilm Diosynth Biotechnologies
Facility Located at Street Address	11751 Holly Springs New Hill Rd
City	Holly Springs
State, Zip	NC, 27540

is hereby authorized to discharge wastewater from the facility located at the above listed address into the sanitary sewer collection system and the wastewater treatment facility of the Control Authority and/or Municipality listed below:

IUP Control Authority and/or Municipality WWTP name:	Town of Holly Springs, Utley Creek WRF
NPDES Number:	NC 0063096
WWTP Address:	150 Treatment Plant Road
City, State, Zip	Holly Springs, NC 27540

in accordance with effluent limitations, monitoring requirements, and all other conditions set forth in Parts I, II, and III of this Industrial User Pretreatment Permit (IUP).

Effective date, this permit and the authorization to discharge shall become effective at midnight on this date: DRAFT
Expiration date, this permit and the authorization to discharge shall expire at midnight on this date:

Date signed

Title

PART I
Specific Conditions

Specific Conditions	
1	1.1
2	2.1
3	3.1
4	4.1
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32	32.1
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100	100.1

Industrial User Pretreatment Permit (IUP)

PART I

Specific Conditions

C.) Authorization Statement:

- 1.) The Permittee is hereby authorized to discharge wastewater in accordance with the effluent limitations, monitoring requirements, and all other conditions set forth in this Industrial User Pretreatment Permit (IUP) into the sewer collection system and wastewater treatment facility of the Control Authority and/or Municipality.
- 2.) The Permittee is hereby authorized to continue operation of and discharge wastewater from the following treatment or pretreatment facilities. These facilities must correspond to the treatment units listed on both the application and inspection forms.

IU Treatment Units	
List all Treatment Units:	Descriptions:
Flow equalization:	0.253 mgd of process water
Neutralization:	pH adjustment
Biological inactivation:	Thermal inactivation of biological waste products and contact wastewater

- 3.) The Permittee is hereby authorized to, if required by the Control Authority and/or Municipality and after receiving Authorization to Construct (A to C) from the Control Authority and/or Municipality, construct and operate additional pretreatment units as needed to meet final effluent limitations.

D.) Description of IUP Discharge(s):

1. Describe the discharge(s) from all regulated pipes.

Pipe # 001 , Description of Discharge:
Process water- Sanitary w/ pretreatment
Washdown water- Sanitary w/o pretreatment

E.) Schematic and Monitoring Locations:

The facility schematic and description of monitoring location(s) given below must show enough detail such that someone unfamiliar with the facility could readily find and identify the monitoring location(s) and connection to the sewer. Include and identify all regulated pipes.

Attachment in back of permit.

IUP, Part 1 Section F:

Effluent Limits and Monitoring Requirements

The Permittee may discharge from this specific Pipe number according to these specific dates, effluent limits, and monitoring requirements

Receiving POTW name =>
Receiving POTW NPDES # =>
Effective date for these Limits =>
Expiration date for these Limits =>

Utley Creek WRF IU name =>
IUP # =>
DRAFT Pipe # =>
40 CFR # =>

Fujifilm Diosynth
004
001
439 Sub Parts A and D
if not applicable put N/A

THE LIMITS ON THIS PAGE ARE, (Check one below):

LIMITS for ENTIRE permit period => DRAFT
INTERIM Limits for period # 1 =>
INTERIM Limits for period # 2 =>
FINAL Limits Page =>

*This permit limit page is for the first year of the permit. Monitoring will go to quarterly for some parameters (2nd limits page) if the POTW decides the data is adequate in demonstrating what will be discharged.

Concentration Limits			Monitoring Frequencies		Sample Collection Method (C or G)	Required Laboratory Detection Level (mg/l)***
Daily Max	Monthly Average	Units	By Industry	By POTW		
1 Flow	0.300	MGD	Daily	1/6 Months	C	2
2 BOD	653	mg/l	Monthly	1/6 Months	C	2.5
3 TSS	166	mg/l	Monthly	1/6 Months	G	0-150
4 Temperature			Every Sample	Every Sample	G	0.1
5 PH	6-10		Every Sample	Every Sample	G	
OTHER PARAMETERS						
6 Ammonia (as N)	Monitor	mg/l	Monthly	1/6 Months	C	0.5
7 Nitrogen, T	190	mg/l	Monthly	1/6 Months	C	0.1
8 Phosphorus, T	77	mg/l	Monthly	1/6 Months	C	0.1
9 Ortho Phosphorus	Monitor	mg/l	Monthly	1/6 Months	C	0.05
10 Chloride	1200	lbs	Monthly	1/6 Months	C	2.0
11 Arsenic	Monitor	mg/l	Monthly	1/6 Months	C	0.002
12 Cadmium	Monitor	mg/l	Monthly	1/6 Months	C	0.0005
13 Chromium	Monitor	mg/l	Monthly	1/6 Months	C	0.002
14 Copper	Monitor	mg/l	Monthly	1/6 Months	C	0.002
15 Cyanide	33.5	mg/l	Monthly	1/6 Months	C	0.005
16 Lead	Monitor	mg/l	Monthly	1/6 Months	G	0.002
17 Mercury (1631)	Monitor	ng/l	Monthly	1/6 Months	C	0.000001
18 Molybdenum	Monitor	mg/l	Monthly	1/6 Months	C	0.002
19 Nickel	Monitor	mg/l	Monthly	1/6 Months	C	0.010
20 Selenium	Monitor	mg/l	Monthly	1/6 Months	C	0.001
21 Silver	Monitor	mg/l	Monthly	1/6 Months	C	0.001
22 Zinc	Monitor	mg/l	Monthly	1/6 Months	C	0.010

Fujifilm
Diosynth

[illegible]

23	Acetone	20.7	8.2	mg/l	Monthly	1/6 Months	G
24	4-methyl-2-pentanone	20.7	8.2	mg/l	Monthly	1/6 Months	G
25	Isobutyraldehyde	20.7	8.2	mg/l	Monthly	1/6 Months	G
26	n-Amyl acetate	20.7	8.2	mg/l	Monthly	1/6 Months	G
27	n-Butyl acetate	20.7	8.2	mg/l	Monthly	1/6 Months	G
28	Ethyl acetate	20.7	8.2	mg/l	Monthly	1/6 Months	G
29	Isopropyl acetate	20.7	8.2	mg/l	Monthly	1/6 Months	G
30	Methyl formate	20.7	8.2	mg/l	Monthly	1/6 Months	G
31	Isopropyl ether	20.7	8.2	mg/l	Monthly	1/6 Months	G
32	Tetrahydrofuran	9.2	3.4	mg/l	Monthly	1/6 Months	G
33	Benzene	3.0	0.7	mg/l	Monthly	1/6 Months	G
34	Toluene	0.3	0.2	mg/l	Monthly	1/6 Months	G
35	Xylene	3.0	0.7	mg/l	Monthly	1/6 Months	G
36	n-Heptane	3.0	0.7	mg/l	Monthly	1/6 Months	G
37	n-Hexane	3.0	0.7	mg/l	Monthly	1/6 Months	G
38	Methylene chloride	3.0	0.7	mg/l	Monthly	1/6 Months	G
39	Chloroform	0.1	0.03	mg/l	Monthly	1/6 Months	G
40	1,2 dichloroethane	20.7	8.2	mg/l	Monthly	1/6 Months	G
41	Chlorobenzene	3.0	0.7	mg/l	Monthly	1/6 Months	G
42	o-Dichlorobenzene	20.7	8.2	mg/l	Monthly	1/6 Months	G
43	Diethyl amine	255.0	100.0	mg/l	Monthly	1/6 Months	G
44	Triethyl amine	255.0	100.0	mg/l	Monthly	1/6 Months	G
45	Priority Pollutants*				Annually		
46	PFAS/PFOA **				1/6 Months		

**** See Part III Special Conditions 6**

5

IUP, Part 1 Section F:

Effluent Limits and Monitoring Requirements

The Permittee may discharge from this specific Pipe number according to these specific dates, effluent limits, and monitoring requirements

Receiving POTW name => Utley Creek WRF
 Receiving POTW NPDES # => IUP # => 004
 Effective date for these Limits => Pipe # => 001
 Expiration date for these Limits => 40 CFR # => 439 Sub Parts A and D
 if not applicable put N/A

THE LIMITS ON THIS PAGE ARE, (Check one below):

LIMITS for ENTIRE permit period => DRAFT
 INTERIM Limits for period # 1 =>
 INTERIM Limits for period # 2 =>
 FINAL Limits Page =>

		Concentration Limits		Monitoring Frequencies		Sample Collection Method (C or G)	Required Laboratory Detection Level (mg/l)***
		Daily Max	Monthly Average	Units	By Industry	By POTW	
1	Flow	0.300		MGD	Daily	1/6 Months	
2	BOD	980	653	mg/l	Monthly	1/6 Months	2
3	TSS	250	166	mg/l	Monthly	1/6 Months	2.5
4	Temperature	Monitor			Every Sample	Every Sample	0-150
5	PH	6-10			Every Sample	Every Sample	0.1
OTHER PARAMETERS							
6	Ammonia (as N)	Monitor		mg/l	Monthly	1/6 Months	0.5
7	Nitrogen, T	190	126	mg/l	Monthly	1/6 Months	0.1
8	Phosphorus, T	77	51	mg/l	Monthly	1/6 Months	0.1
9	Ortho Phosphorus	Monitor		mg/l	Monthly	1/6 Months	0.05
10	Chloride	1200	800	lbs	Quarterly	1/6 Months	2.0
11	Arsenic	Monitor		mg/l	Quarterly	1/6 Months	0.002
12	Cadmium	Monitor		mg/l	Quarterly	1/6 Months	0.0005
13	Chromium	Monitor		mg/l	Quarterly	1/6 Months	0.002
14	Copper	Monitor		mg/l	Quarterly	1/6 Months	0.002
15	Cyanide	33.5	9.4	mg/l	Quarterly	1/6 Months	0.005
16	Lead	Monitor		mg/l	Quarterly	1/6 Months	0.002
17	Mercury (1631)	Monitor		ng/l	Quarterly	1/6 Months	0.000001
18	Molybdenum	Monitor		mg/l	Quarterly	1/6 Months	0.002
19	Nickel	Monitor		mg/l	Quarterly	1/6 Months	0.010
20	Selenium	Monitor		mg/l	Quarterly	1/6 Months	0.001
21	Silver	Monitor		mg/l	Quarterly	1/6 Months	0.001
22	Zinc	Monitor		mg/l	Quarterly	1/6 Months	0.010

IUP, Part I Section F:

Receiving POTW name » Utley Creek Fujifilm
 WRF IU name » Diosynth

CATEGORICAL PARAMETERS: 40 CFR PART 439

23	Acetone	20.7	8.2	mg/l	Quarterly	Once/Year	G
24	4-methyl-2-pentanone	20.7	8.2	mg/l	Quarterly	Once/Year	G
25	Isobutyraldehyde	20.7	8.2	mg/l	Quarterly	Once/Year	G
26	n-Amyl acetate	20.7	8.2	mg/l	Quarterly	Once/Year	G
27	n-Butyl acetate	20.7	8.2	mg/l	Quarterly	Once/Year	G
28	Ethyl acetate	20.7	8.2	mg/l	Quarterly	Once/Year	G
29	Isopropyl acetate	20.7	8.2	mg/l	Quarterly	Once/Year	G
30	Methyl formate	20.7	8.2	mg/l	Quarterly	Once/Year	G
31	Isopropyl ether	20.7	8.2	mg/l	Quarterly	Once/Year	G
32	Tetrahydrofuran	9.2	3.4	mg/l	Quarterly	Once/Year	G
33	Benzene	3.0	0.7	mg/l	Quarterly	Once/Year	G
34	Toluene	0.3	0.2	mg/l	Quarterly	Once/Year	G
35	Xylene	3.0	0.7	mg/l	Quarterly	Once/Year	G
36	n-Heptane	3.0	0.7	mg/l	Quarterly	Once/Year	G
37	n-Hexane	3.0	0.7	mg/l	Quarterly	Once/Year	G
38	Methylene chloride	3.0	0.7	mg/l	Quarterly	Once/Year	G
39	Chloroform	0.1	0.03	mg/l	Quarterly	Once/Year	G
40	1,2 dichloroethane	20.7	8.2	mg/l	Quarterly	Once/Year	G
41	Chlorobenzene	3.0	0.7	mg/l	Quarterly	Once/Year	G
42	o-Dichlorobenzene	20.7	8.2	mg/l	Quarterly	Once/Year	G
43	Diethyl amine	255.0	100.0	mg/l	Quarterly	Once/Year	G
44	Triethyl amine	255.0	100.0	mg/l	Quarterly	Once/Year	G
45	Priority Pollutants*				Annually		
46	PFAS/PFOA**				1/6 Months		

* See Part III Special Conditions 5

** See Part III Special Conditions 6

***Required detection limits should be used when possible. If detection limit (or PQL) must be raised due for analysis the contract lab must qualify data on the lab report.

Industrial User Pretreatment Permit (IUP)

PART I

Specific Conditions

G.) Definitions and Limit Page(s) notes:

In addition to the definitions in the Town of Holly Springs Sewer Use Ordinance the following definitions and requirements apply:

1. Composite Sample:

Unless defined differently below, a composite sample for the monitoring requirements of this IUP, is defined as the automatic or manual collection of one grab sample of constant volume, not less than 100 ml, collected every hour during the entire discharge period on the sampling day. Sampling day shall be a typical production, and discharge day.

2. Daily Monitoring Frequency

Daily Monitoring Frequency as specified in this IUP shall mean each day of discharge.

3. Grab Sample

Grab sample for the monitoring requirements of this IUP, is defined as a single "dip and take" sample collected at a representative point in the discharge stream.

4. Instantaneous measurement

An Instantaneous measurement for the monitoring requirements of this IUP is defined as a single reading, observation, or measurement.

Industrial User Pretreatment Permit (IUP)

PART II

General Conditions

Outline of PART II,

- | | |
|---------------------------------------|---|
| 1. Representative Sampling | 16. Federal and/or State Laws |
| 2. Reporting | 17. Penalties |
| 3. Test Procedures | 18. Need to Halt or Reduce |
| 4. Additional Monitoring by Permittee | 19. Transferability |
| 5. Duty to comply | 20. Property Rights |
| 6. Duty to Mitigate | 21. Severability |
| 7. Facilities Operation, Bypass | 22. Modification, Revocation, Termination |
| 8. Removed substances | 23. Reapplication |
| 9. Upset Conditions | 24. Dilution Prohibition |
| 10. Right of Entry | 25. Reports of Changed Conditions |
| 11. Availability of Records | 26. Construction of pretreatment facilities |
| 12. Duty to provide information | 27. Reopener |
| 13. Signatory Requirements | 28. Categorical Reopener |
| 14. Toxic Pollutants | 29. General Prohibitive Standards |
| 15. Civil and Criminal Liability | 30. Reports of Potential Problems |

1. Representative Sampling

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge. All samples shall be taken at the monitoring points specified in this permit and, unless otherwise specified, **before the effluent joins or is diluted by any other wastestream, body of water, or substance.** Monitoring points shall not be changed without notification to, and approval by, the permit issuing authority.

2. Reporting

- a.) Monitoring results obtained by the permittee shall be reported on forms specified by the Town of Holly Springs, postmarked no later than the twentieth day of the month following the month in which the samples were taken. If no discharge occurs during a reporting period (herein defined as each calendar month) in which a sampling event was to have occurred, a form with the phrase "no discharge" shall be submitted. Copies of these and all other reports required herein shall be submitted to the Control Authority and/or Municipality and shall be sent to the following address:

Karen Foster
Utilities Manager-Environmental Compliance
Town of Holly Springs
PO BOX 8
Holly Springs, NC, 27540
Karen.foster@hollyspringsnc.gov

- b.) **If the sampling performed by the permittee indicates a violation, the permittee shall notify the Control Authority and/or Municipality within 24 hours of becoming aware of the violation.** The permittee shall also repeat the sampling and analysis and submit the results of

Industrial User Pretreatment Permit (IUP)

PART II

General Conditions

the repeat analysis to the Control Authority and/or Municipality within 30 days after becoming aware of the violation.

3. Test Procedures

Test procedures for the analysis of pollutants shall be performed in accordance with the techniques prescribed in 40 CFR part 136 and amendments thereto unless specified otherwise in the monitoring conditions of this permit.

4. Additional Monitoring by Permittee

If the permittee monitors any pollutant at the location(s) designated herein more frequently than required by this permit, using approved analytical methods as specified above, the results of such monitoring shall be submitted to the Control Authority and/or Municipality. The Control Authority and/or Municipality may require more frequent monitoring or the monitoring of other pollutants not required in this permit by written notification.

5. Duty to Comply

The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Control Authority and/or Municipality Sewer Use Ordinance and is grounds for possible enforcement action.

6. Duty to Mitigate - Prevention of Adverse Impact

The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health, the POTW, the waters receiving the POTW's discharge, or the environment.

7. Facilities Operation, Bypass

The permittee shall at all times maintain in good working order and operate as efficiently as possible, all control facilities or systems installed or used by the permittee to achieve compliance with the terms and conditions of this permit. Bypass of treatment facilities is prohibited except when approved in advance by the Control Authority and/or Municipality. Bypass approval shall be given only when such bypass is in compliance with 40 CFR 403.17.

8. Removed Substances

Solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of wastewaters shall be disposed of in a manner such as to prevent any pollutants from such materials from entering the sewer system. The permittee is responsible for assuring its compliance with any requirements regarding the generation, treatment, storage, and/or disposal of "Hazardous waste" as defined under the Federal Resource Conservation and Recovery Act.

9. Upset Conditions

An "upset" means an exceptional incident in which there is an unintentional and temporary noncompliance with categorical Pretreatment Standards because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed or inadequate treatment facilities, lack of preventative maintenance, or careless or improper operations.

An upset may constitute an affirmative defense for action brought for the noncompliance. The permittee has the burden of proof to provide evidence and demonstrate that none of the factors specifically listed above were responsible for the noncompliance.

Industrial User Pretreatment Permit (IUP)

PART II

General Conditions

10. Right of Entry

The permittee shall allow the staff of the State of North Carolina Department of Environmental Quality, Division of Water Resources, the Regional Administrator of the Environmental Protection Agency, the Control Authority and/or Municipality (Town of Holly Springs), and/or their authorized representatives, upon the presentation of credentials:

1. To enter upon the permittee's premises where a real or potential discharge is located or in which records are required to be kept under the terms and conditions of this permit; and
2. At reasonable times to have access to and copy records required to be kept under the terms and conditions of this permit; to inspect any monitoring equipment or monitoring method required in this permit; and to sample any discharge of pollutants.

11. Availability of Records and Reports

The permittee shall retain records of all monitoring information, including all calibration and maintenance records as well as copies of reports and information used to complete the application for this permit for at least three years. All records that pertain to matters that are subject to any type of enforcement action shall be retained and preserved by the permittee until all enforcement activities have concluded and all periods of limitation with respect to any and all appeals have expired.

Except for data determined to be confidential under the Sewer Use Ordinance, all reports prepared in accordance with terms of this permit shall be available for public inspection at the Control Authority and/or Municipality. As required by the Sewer Use Ordinance, effluent data shall not be considered confidential.

12. Duty to Provide Information

The permittee shall furnish to the Director of Public Works or his/her designees, within a reasonable time, any information which the Director, his/her designee, or the Division of Water Resources may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The permittee shall also furnish, upon request, copies of records required to be kept by this permit.

13. Signatory Requirements

All reports or information submitted pursuant to the requirements of this permit must be signed and certified by the Authorized Representative as defined under the Sewer Use Ordinance. If the designation of an Authorized Representative is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, or overall responsibility for environmental matters for the company, a new authorization satisfying the requirements of this section must be submitted to the Town of Holly Springs prior to or together with any reports to be signed by an authorized representative.

14. Toxic Pollutants

If a toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is established under Section 307(a) of the Federal Clean Water Act for a toxic pollutant which is present in the discharge and such standard or prohibition is more stringent than any limitation for such pollutant in this permit, this permit may be revised or modified in accordance with the toxic effluent standard or prohibition and the permittee so notified.

Industrial User Pretreatment Permit (IUP)

PART II

General Conditions

15. Civil and Criminal Liability

Nothing in this permit shall be construed to relieve the permittee from civil or criminal penalties for noncompliance.

16. Federal and/or State Laws

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable Federal and/or State law or regulation.

17. Penalties

The Sewer Use Ordinance of the Control Authority and/or Municipality provides that any person who violates a permit condition is subject to a civil penalty not to exceed \$25,000 dollars per day of such violation.

Under state law, (NCGS 143-215.6B), under certain circumstances it is a crime to violate terms, conditions, or requirements of pretreatment permits. It is a crime to knowingly make any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance. These crimes are enforced at the prosecutorial discretion of the local District Attorney.

18. Need to Halt or Reduce not a Defense

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity to maintain compliance with the conditions of the permit.

19. Transferability

This permit shall not be reassigned or transferred or sold to a new owner, new user, different premises, or a new or changed operation without approval of the Town.

20. Property Rights

This permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations.

21. Severability

The provisions of this permit are severable and, if any provision of this permit or the application of any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this permit shall not be affected thereby.

22. Permit Modification, Revocation, Termination

This permit may be modified, revoked and reissued or terminated with cause in accordance to the requirements of the Control Authority and/or Municipality Sewer Use Ordinance and North Carolina General Statute or implementing regulations.

23. Re-Application for Permit Renewal

The permittee is responsible for filing an application for reissuance of this permit at least 180 days prior to its expiration date.

Industrial User Pretreatment Permit (IUP)

PART II

General Conditions

24. Dilution Prohibition

The permittee shall not increase the use of potable or process water or in any other way attempt to dilute the discharge as a partial or complete substitute for adequate treatment to achieve compliance with the limitations contained in this permit.

25. Reports of Changed Conditions

The permittee shall give notice to the Control Authority and/or Municipality of any planned significant changes to the permittee's operations or system which might alter the nature, quality, or volume of its wastewater at least 180 days before the change. **The permittee shall not begin the changes until receiving written approval from the Control Authority and/or Municipality. Also see Part II, 30 below for additional reporting requirements for spill/slug issues.**

Significant changes may include but are not limited to

- (a) increases or decreases to production;
- (b) increases in discharge of previously reported pollutants;
- (c) discharge of pollutants not previously reported to the Control Authority and/or Municipality;
- (d) new or changed product lines;
- (e) new or changed manufacturing processes and/or chemicals; or
- (f) new or changed customers.

26. Construction

No construction of pretreatment facilities or additions thereto shall be begun until Final Plans and Specifications have been submitted to the Control Authority and/or Municipality and written approval and an Authorization to Construct (A to C) have been issued.

27. Reopener

The permit shall be modified or, alternatively, revoked and reissued to comply with any applicable effluent standard or limitation for the control of any pollutant shown to contribute to toxicity of the WWTP effluent or any pollutant that is otherwise limited by the POTW discharge permit. The permit as modified or reissued under this paragraph may also contain any other requirements of State or Federal pretreatment regulations then applicable.

28. Categorical Reopener

This permit shall be modified, or alternatively, revoked and reissued, to comply with any applicable effluent standard or limitation issued or approved under Sections 302(b)(2)(C) and (D), 304(b)(2), and 307(a)(2) of the Clean Water Act, if the effluent standard or limitation so issued or approved:

- 1.) contains different conditions or is otherwise more stringent than any effluent limitation in this permit; or
- 2.) controls any pollutant not limited in this permit.

The permit as modified or reissued under this paragraph shall also contain any other requirements of the Act then applicable.

29. General Prohibitive Standards

The permittee shall comply with the general prohibitive discharge standards in 40 CFR 403.5 (a) and (b) of the Federal pretreatment regulations.

Industrial User Pretreatment Permit (IUP)

PART II

General Conditions

30. Potential Problems

The permittee shall provide protection from accidental and slug discharges of prohibited materials and other substances regulated by this permit. The permittee shall also notify the POTW immediately of any changes at its facility affecting the potential for spills and other accidental discharge, discharge of a non-routine, episodic nature, a non-customary batch discharge, or a slug load as defined in the Sewer Use Ordinance.

Additionally, the permittee shall notify by telephone the Control Authority and/or Municipality immediately of all discharges that could cause problems to the POTW including any slug loadings as defined in the Sewer Use Ordinance. If the permittee experiences such a discharge, they shall inform the Control Authority and/or Municipality immediately upon the first awareness of the commencement of the discharge. Notification shall include location of the discharge, type of waste, concentration and volume if known and corrective actions taken by the permittee. A written follow-up report thereof shall be filed by the permittee within five (5) days, unless waived by the Control Authority and/or Municipality.

Industrial User Pretreatment Permit (IUP)

PART III

Special Conditions

1. Slug/Spill Control Measures- TBD

In addition to the requirements in Part II, 30, the Permittee shall complete installation and/or commence implementation, operation, and/or maintenance of the following specific protection Measures, Activities, Plans, Etc. (Items without specific completion dates, or marked as "Continuous," must be performed for the entire duration of the permit):

Description of Measure, Activity, Plan, etc.	Required Completion/ Implementation Date

The permittee shall provide updates to the Control Authority as required by Part II, 30, of this IUP. Modifications to the measures shall be approved by the Control Authority prior to installation/implementation. If a measure fails, the Control Authority shall be notified within 24 hours.

2. Sludge Management Plan

Ninety days prior to the initial disposal of sludge generated by any pretreatment facility, the permittee shall submit a sludge management plan to the Control Authority.

3. Flow Measurement Requirements (For SIUs with discharge flow meters)

The permittee shall maintain appropriate discharge flow measurement devices and methods consistent with approved scientific practices to ensure the accuracy and reliability of measurements of the volume of monitored discharges. Devices installed shall be a continuous recording flow meter capable of measuring flows with a maximum deviation of less than 10% from true discharge rates throughout the range of expected discharge volumes. **Flow meter shall be a totalizer and non-resettable.** The devices shall be installed, calibrated, and maintained to ensure accuracy. **The meter shall be calibrated at least once each semi-annual period (Jan-Jun and Jul-Dec).** Modifications to the flow metering equipment shall be approved by the Control Authority prior to installation. If a required flow measurement device fails, the Control Authority shall be notified within 24 hours.

Industrial User Pretreatment Permit (IUP)

PART III

Special Conditions

4. **Certified Laboratory Analysis**

Pollutant analysis shall be performed by a North Carolina Division of Water Resources Certified Laboratory that is certified in the analysis of the pollutant in wastewater.

5. **Priority Pollutants**

Priority pollutants shall be monitored as outlined in Part I F of this IUP at a minimum of once per year. Parameters can be found in 40 CFR Appendix A to Part 423

Any Parameter analyzed in the Priority Pollutants test that has been detected at levels that exceed domestic sewage will be required to be monitor as specified in Part I F by the User until either (a) the parameter is determined to be absent because it does not show up for 2 consecutive quarters or (b) the permit is modified to include a monitoring requirement and/or limit for the parameter.

6. **PFAS/PFOA Monitoring**

Method 1633 for PFAS/PFOA wastewater analysis is expected to be an approved method in 2023. Once the method is approved the permittee will be required to sample and analyze for a pre-determined list of PFAS/PFOA on a semi-annual basis. At the time of method approval, the control authority will submit a complete list to the permittee.

IUP Synopsis

A. IUP Basic Information

Receiving POTW name: Town of Holly Springs, Utley Creek WRF	POTW NPDES#: NC 0063096
IUP name: Fujifilm Diosynth Biotechnologies	IUP Number: 004
IUP Effective date: DRAFT	Pipe Numbers, list all regulated pipes: 001
IUP expiration date:	IUP 40 CFR#, if applicable: 439

B. IUP Survey & Application form

Attach a completed copy of the Industrial User Wastewater Survey & Application Form (see appendix 6-A)

C. IU Inspection form

Attach a copy of an Industrial User Inspection Form (see chapter 7) completed by the Control Authority within the past 12 months.

D. RATIONALE FOR LIMITATIONS:

As listed on the IUP Limits Page(s), PART I, Section F of the IUP.

RATIONALE #1:

Review of IU Monitoring Data, with no Over Allocation situation:

The following pollutants were assigned numerical limits in this IUP based on a review of monitoring data for the permittee to determine what ranges of concentrations are currently being discharged. To account for sample variability a factor was applied to the monitoring data to determine the permit limit. Permit limits assigned by the Local IUP Control Authority can not results in an Over Allocation situation for any pollutants.

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IUP Synopsis

RATIONALE #2a:

Categorical Industrial Limits, with no Over Allocation situation:

The following pollutants were assigned numerical limits in this IUP based on the categorical regulations. These limits do not result in over allocations.

Acetone, 4-methyl-2-pentanone, Isobutyraldehyde, n-Amyl acetate, n-Butyl acetate, Ethyl acetate, Isopropyl acetate, Methyl formate, Isopropyl ether, Tetrahydrofuran, Benzene, Toluene, Xylene, n-Heptane, n-Hexane, Methylene chloride, Chloroform, 1,2 dichloroethane, Chlorobenzene, o-Dichlorobenzene, Diethyl amine, Triethyl amine

RATIONALE #3a:

Over Allocation Prevention, with IU pollutant reduction:

The following pollutants were assigned numerical limits in this IUP based on allocating the Maximum Allowable Industrial Loading (MAIL) determined with the Headworks Analysis (HWA) among all Industrial Users. The total loading of each pollutant from all permitted discharges does not exceed the MAIL. These limits do not result in over allocations.

Flow, BOD, TSS, Total Phosphorus, Total Nitrogen and Chloride,

RATIONALE #3b:

Interim Limits for IU pollutant reduction:

The following pollutants were assigned interim numerical limits in this IUP to allow time for the industry to come compliance with final limits that will not in over allocations.

IUP Synopsis

RATIONALE #4:

4.) Other Rationale for Limitations:

The following rationale was used for developing IUP Limits.

Parameter	Rationale

RATIONALE #5a:

Non-Categorical Parameters where No Limit needed or assigned in an IUP:

The following pollutants were not assigned numerical limits in this IUP because the loadings for these pollutants from this IU were less than 5% of the MAHL. The loading of these pollutants from this IU is considered insignificant at this time.

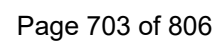
Pollutant	Avg SIU mg/l	Avg SIU lbs/day	5% MAHL, lbs/day

RATIONALE #5b:

Categorical Parameters with Waived Monitoring:

Monitoring is waived for the following categorical parameters (attach documentation of waiver justification).

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STATE OF NORTH CAROLINA

COUNTY OF WAKE

ECONOMIC DEVELOPMENT AGREEMENT

BY AND BETWEEN

FUJIFILM DIOSYNTH BIOTECHNOLOGIES NORTH CAROLINA, INC.,

AND

THE TOWN OF HOLLY SPRINGS, NC

FOR PHASE 2- PROJECT AURA

DATED as of June 18, 2024

("Execution Date")

ECONOMIC DEVELOPMENT AGREEMENT

This Agreement (this “Agreement”) is entered into, effective as of the date listed above (the “Effective Date”), by and between FUJIFILM Diosynth Biotechnologies North Carolina, Inc. (the “Company”), and the Town of Holly Springs, a North Carolina municipality (the “Town”). Together the Town and Company are referred to as the “Parties.” Capitalized terms used herein have the meanings ascribed to them below.

RECITALS

WHEREAS, the Parties previously entered into an Economic Development Agreement on April 8, 2022 (“EDA1”) setting forth their understanding with respect to the subject of that agreement; and

WHEREAS, the Parties now aim to establish new and additional commitments concerning inducements by the Town and investments by the Company, particularly regarding further capital improvements referenced in EDA1 as “Phase 2;” and,

WHEREAS, the term “Project” will henceforth include both “Phase 1” and “Phase 2” of the improvements described in EDA1, plus all modifications outlined herein; and

WHEREAS, the Town continues to be deeply interested in the economic welfare of its citizens and the creation and maintenance of sustainable jobs for its citizens in strategically important industries and therefore wishes to provide the necessary conditions to stimulate investment in the local economy and promote business, resulting in an increase in the Town’s ad valorem tax base, the creation of a substantial number of jobs at competitive wages, and to encourage economic growth and development opportunities which the Town has determined will be made possible by the Project; and

WHEREAS, the Company desires to improve upon its large-scale monoclonal antibody drug substance and drug product manufacturing facility as described in EDA1 (the “Facility”), incorporating improvements broadly outlined as follows:

- (i) An increased capital investment at the Site (as defined in EDA1) from sources available to the Company, including the Company’s resources and all grant and other source financing, to expand the Facility with additional buildings and equipment with a taxable value of \$1.2 Billion; and,
- (ii) The creation of an additional 680 jobs with an annual average wage of \$109,932, exceeding the median average annual wage of Wake County; and,
- (iii) Facility modifications as depicted in Exhibit A, maintaining the Site’s general footprint described in EDA1, constructed, using modern practices, in compliance with the Town’s Uniform Development Ordinance and other regulations; and

WHEREAS, the Town acknowledges that the Project will bring it direct and indirect benefits, including job creation, an increase in the ad valorem tax base, and economic diversification and stimulus, and as such has offered economic development incentives (the “Local Incentives”) to entice and/or induce the Company to select the Site for the Project; and

WHEREAS, such Local Incentives do in fact induce the Company to select the Site for the Project and locate it therein; and

WHEREAS, any Local Incentives described herein are not an appropriation or expenditure by the Town mandated to be a part of the Town’s annual budget under N.C.G.S. §159-12; and,

WHEREAS, the Company fully intends to establish, through the Project, an important presence in the Town by employing a large number of local employees and making substantial investments in the Project and in the training and development of such employees; and

WHEREAS, the Town acknowledges that the terms of this Agreement, specifically including the Local Incentives and other assistance described in this Agreement, constitute a dispositive and definitive inducement to the Company to select the Site for the Project; and

WHEREAS, the Company acknowledges that its decision to choose the Site followed a competitive selection process among multiple states, influenced by the Town's offer of Local Incentives and other assistance described in this Agreement and by related agreements and documents; and

WHEREAS, the Town is authorized pursuant to N.C.G.S. §158-7.1 to acquire and assemble land for industrial development purposes, make appropriations and expenditures for economic development purposes, to convey interests in real property by private negotiation, and to provide additional financial and other incentives; and

WHEREAS, any action by the Town subject to N.C.G.S. §158-7.1 would follow a public hearing by the Town Council and a subsequent decision by that Council as to such matters before it; and

WHEREAS, the Council will assure that the Town receives full consideration for the Site in the way of prospective tax and other revenues from the Site improvements, increase of jobs, and other economic stimuli of the local economy as a result of the Project.

NOW, THEREFORE, in consideration of the mutual promises and covenants contained herein and for other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Parties intending to be legally bound do hereby agree as follows:

ARTICLE I

COMPANY REQUIREMENTS

Each of the terms and conditions applicable to the Company's Requirements contained in EDA1 that are not inconsistent with any of the foregoing, such as full compliance with the TIA and/or removal and/or release of the Company's requirement/obligation to perform off-site improvements that are in excess of one mile from the Site, shall remain in full force and effect.

Incentive payments in the form of the Town's Business Investment Grant ("BIG") as described in Article II Section E are payable by the Town prior to the Company's full performance of its obligations hereunder; provided, however, such awards are expressly conditioned upon the requirements set forth in the sections below relating to: (i) the Company achieving certain performance targets as of the dates set forth below; (ii) the Company achieving the Minimum Tax payments; and (iii) during the relevant period the Company continues to operate each of its Facility components such that it meets the Employment Requirement, remains an industrial utility customer of the Town, and timely pays all of the Company's ad valorem taxes to the Town.

A. Minimum Investment Criteria

In consideration for the Town's incentives that induced the Company to select the Site for expansion of the Facility, including the Phase 2 improvements, the Company agrees to invest in taxable real property improvements, machinery, and equipment in the Phase 2 area of the Site (as shown on Exhibit A) such that the new Phase 2 improvements generate Incremental Taxes based on a goal of at least \$1.2 Billion in Increased Tax Value for Phase 2, but a minimum of at least 1.08 Billion in Increased Tax Value for Phase 2. The Company agrees to construct by December 31, 2028, improvements to the Phase 2 area such that the Minimum Increased Tax Value is achieved. In the event the Company fails to achieve the Minimum Increased Tax Value by the Deadline Date, but exceeds a floor of \$500 Million, the Town shall pay the BIG according to Article II, Section E. A BIG shall not be available if the Increased Tax Value of Phase 2 falls below \$500 Million at any time during the BIG payment period. Recognizing that Increased Tax Values will be achieved between commencement of construction and operation of the Facility, the Company commits to making investments that produce Incremental Taxes based on a Minimum Increased Tax Value as follows:

Table 1

Deadline Date	Target Increased Tax Value	Minimum Increased Tax Value
December 31, 2028 and thereafter	\$1,200,000,000	\$1,080,000,000

On or before March 1 of each year starting in 2025 the Company shall transmit to the Town (i) all real and personal property tax liability statements from the Wake County Tax Assessor relative to the Site; and (ii) proof of tax payment. Each of the foregoing shall include separate statements for those improvements associated with Phase 1 and Phase 2. In the event that the Company fails to make and maintain investments sufficient to produce the Incremental Taxes based on the Increased Tax Values set forth Phase 1 in EDA1, the terms and conditions of EDA1 shall control. In the event that the Company fails to make and maintain investments sufficient to satisfy the Increased Tax Value on or before the Deadline Date set forth above, the Clawback Provision of Article III shall apply.

“Increased Tax Value” is defined herein as that amount of ad valorem tax value, as calculated by the Wake County Tax Assessor, less the tax value of the Site on January 1, 2024.

“Incremental Taxes” is defined herein as the amount of ad valorem taxes actually received by the Town for any Phase 2 improvement as a result of the Increased Tax Value.

“Fiscal Year” shall refer to the Town’s Fiscal Year, running from July 1 to June 30.

B. Minimum Accumulative Payment Prior to Business Investment Grant

Prior and as a condition precedent to the Town’s disbursement of the Business Investment Grant (“BIG”), the Company must pay a minimum of \$20 Million in ad valorem taxes. Beginning with the first regular ad valorem tax payment made after the Execution Date of this Agreement, the Company shall transmit to the Town written notification of its tax payment with an indication of the Incremental Taxes (for Phase 2) that represents the Town-portion of the ad valorem taxes each year on March 1. The Parties will keep a record of the cumulative amount of Incremental Taxes paid, and once the cumulative amount reaches \$20 Million, the Company shall be eligible to receive the BIG commencing the first tax year after satisfaction of this condition precedent. This \$20 Million payment shall hereafter be known as the Minimum Accumulative Payment (“MAP”).

C. Job Commitment

Company will be deemed to satisfy its job commitment under this Agreement in any year in which the Company satisfies the Employment Target Thresholds set forth in the table below. Should the Company fail to meet the Employment Target Thresholds in any year in which it seeks a BIG payment under this Agreement, the Town’s BIG payment that year shall be reduced pro-rata by the Company’s job shortfall relative to the Employment Target Thresholds for that year. The Company shall endeavor to create a minimum of 680 jobs by December 31, 2031, (the “Employment Target”) with a targeted overall aggregate average wage of at least \$109,923 (the “Wage Target”). In the event that

the Company does not meet the Wage Target, but the overall aggregate average wage is at least \$98,931 (the “Wage Threshold”) when averaged over all the jobs created by Phase 2 improvements that are being counted for purposes of this Agreement over the relevant grant year in which a BIG is paid by the Town, the Company will not be in default under this Agreement for failing to meet the Wage Target. Additionally, if the number of jobs created equals or exceeds those described under the Employment Target Threshold for the relevant years set forth in Table 2 below, the Company shall not be in default under this Agreement for failing to hit the Employment Target. For clarification purposes, the Company will satisfy its job creation requirements in any year it meets or exceeds the Employment Target Threshold, and as such shall be entitled to receive payment of the BIG from the Town so long as the Company has satisfied all other conditions stated herein.

Table 2

	2027	2028	2029	2030	2031	Total
Full Time Jobs Created by Phase 2 Improvements (“Employment Target”)	78	260	381	540	680	680
Employment Target Threshold	70	234	343	486	612	612
Wage Target	\$109,923	\$109,923	\$109,923	\$109,923	\$109,923	
Wage Threshold	\$98,931	\$98,931	\$98,931	\$98,931	\$98,931	

- 1) **Failure to Meet Wage Threshold.** Notwithstanding anything to the contrary in this Agreement, if the Company’s average annual salary for all employees with an employment situs at the Site does not meet or exceed the Wage Threshold listed above, the following provisions apply:
 - a. In any reporting year, if the actual average wage of all jobs created in Phase 2 is less than the average median wage of Wake County for that year, the Company shall not be eligible for a BIG payment for that year.
 - b. Notwithstanding the previous Section, if the Company’s actual average wage of all jobs created in Phase 2 is less than the average median wage of Wake County for three (3) consecutive reporting years, then the BIG payments shall not be available for future grant years until such time as the Company satisfies the Wage Target.
- 2) **Failure to Meet Employment Target Threshold**
 - a. The Company shall employ and retain employed workers pursuant to separate agreements with the State of North Carolina (“JDIG”) in the amounts described in Table 2, above. Failure to meet the Employment Target Threshold by employing less than the Employment Target

Threshold for any year shown in Table 2 shall trigger the Clawback provision of Article III, Section A(2).

For any year in which the Company requests a BIG payment, the Company shall provide the Town, on or before March 1, with a certification as to the number of jobs, aggregate average wage, positions held, and that they are employed as of the end of the prior calendar year.

The Company shall designate in writing and the Town shall treat such information as confidential to the fullest extent provided by law. The Parties understand that most records made or received by the Town are public records unless an exemption exists in the North Carolina Public Records Act, N.C.G.S. § 132-1, et. seq.

D. Tax Commitment

The Company shall not, during the period in which it is eligible to receive BIG payments, be in arrears in the payment of its annual property taxes, utility fees, or other obligations to the Town, including but not limited to any owed Tax Shortfall Payments owed under EDA1 (collectively, the “Tax Commitment”). In the event that the Company fails to pay the Tax Commitment, the Town’s sole and exclusive remedy under this Agreement, so long as the Company is in compliance with regular tax and utility payments, and any other normal obligation owed to the Town, would be to withhold payments under the BIG until company cures its breach of the Tax Commitment, at which time all previously withheld payments will be made by the Town.

E. Operation Commitment

Except in the case of (1) a Force Majeure, or (2) nonperformance by the Town of its agreements and covenants under this Agreement or any related agreements or documents, the Company shall continue life sciences manufacturing or ancillary or related operations at the Facility from the date on which the Facility is qualified for such operations by appropriate governmental authorities until the conclusion of the period in which it is eligible to receive BIG payments. For purposes of this Agreement, “Force Majeure” shall mean any cause preventing or hindering the performance of this Agreement arising from or attributable to acts, events or circumstances beyond the reasonable control of the Parties including epidemic of disease, an act of God, shortage of materials, war (declared or undeclared), labor disputes, accidents, acts of terrorism, fire, casualty, flood, failure of public utilities, breakdown of machinery, injunction or any act, exercise or civic unrest, assertion or requirement of any governmental authority, epidemic or pandemic, government requisition or impoundment or other acts of any governmental agency (including such authority acting in a contractual or regulatory capacity), riot or civil commotion, and/or destruction of production facilities. Notwithstanding anything to the contrary in this Agreement, a temporary shutdown of operations for less than 6 months for any reason shall not be considered a breach of the Operation Commitment by the Company. Except in the event of a Force Majeure event, the Town’s sole and exclusive remedy for the Company’s violation of the Operation Commitment shall be (i) a loss of grant payments

for the BIG in any given year that company has not met the Operation Commitment; and (ii) clawbacks pursuant to Article III.

ARTICLE II

LOCAL ECONOMIC DEVELOPMENT INCENTIVES RELATED TO LOCATION OF FACILITY; LAND, DEVELOPMENT AND INFRASTRUCTURE

A. Utility Infrastructure Availability

1. The Town shall provide and reserve sufficient capacity for water, sewer and discharge, as set forth below based on 365 day-a-year operations:

Water:

Phase 2: The Town shall take all commercially reasonable measures necessary to ensure 24/7 availability of potable water in the amounts of 420,000 gallons per day, delivered to a mutually agreed termination point at the Site. The Town shall ensure the availability of potable water in the amounts of 420,000 gallons per day for Phase 2 operations of the Company. The Town shall ensure uninterrupted access to this water supply, with no interruptions or reductions in capacity, to support the Company's manufacturing operations. The foregoing allocation of potable water is in addition to the amount allocated for Phase 1 of the Project.

Capacity:

Phase 2: An amount of sewer capacity commensurate with the scope of such future expansion, which the Parties anticipate at this point to be 360,000 gallons per day. The term "sewer capacity" shall mean the maximum allowable volume of wastewater or sewage that the designated sewer system or treatment facility can accommodate, as determined by its design specifications and operational capabilities. The Town shall allocate and reserve sewer capacity of 360,000 gallons per day exclusively for the Company's Phase 2 expansion so long as (i) the Company remains in operation at the Facility; (ii) is not in material breach of this Agreement; and (iii) is not otherwise in significant noncompliance of its Industrial User Permit ("IUP"). This allocation shall not be shared or diverted for any other purposes and shall be available for the Company's use within twelve (12) months of written request or January 1, 2027, whichever is earlier. The Company has provided a "ramp-up" schedule of its operations at the Facility (both Phase 1 and Phase 2) attached as Exhibit F. The Parties understand that as of the Execution Date, the Pump Station cannot accommodate a flow greater than that which is anticipated in Quarter 13 (2027 Q1 Phase 2 CUB online) shown on Exhibit F. As stated herein, the Town has set a

target delivery date of January 1, 2027, for the upgrades to the Pump Station. In the event the Company learns of a significant change to their schedule of operations necessitating the earlier need for sewer capacity between the Execution Date and the January 1, 2027 Business Park Pump Station Upgrades delivery date, the Company agrees to provide the Town with prompt notice thereof. To the extent the Company needs the Phase 2 sewer capacity earlier than agreed to herein, the Parties agree to work collaboratively to accommodate the Company's actual needs. The Town shall use all reasonable efforts within the capabilities of the existing pump station to accommodate the Company's sewer capacity needs in a timely basis. The Town reiterates that the Company shall have immediate access to 300,000 additional gallons per day beyond EDA1. The Parties acknowledge that any sewer capacity needs beyond 300,000 gallons per day necessitates an upgrade to the Business Park Pump Station discussed herein or some other accommodation and requires at least 12 months prior notice to accelerate the January 1, 2027, scheduled delivery deadline agreed to by the Parties. The foregoing allocation of sewer capacity of 360,000 is in addition to the amount allocated for Phase 1 of the Project.

Flow:

Phase 2: The Town shall provide the Company adequate conveyance of its Phase II wastewater from the site to the Holly Springs Business Park Pump Station ("Pump Station") and then the force main to the wastewater treatment plant. The term "conveyance" as used herein shall refer to the size of the pipe used to transport the wastewater. The conveyance system shall be upgraded to a design capacity to accommodate the anticipated volume of wastewater from the Company's operations, with sufficient capacity and size to prevent any risks of overflow or backup. Said conveyance shall be available within twelve (12) months of written request or January 1, 2027, whichever is earlier. To the extent the Company needs the Phase 2 conveyance earlier than agreed to herein, the Parties agree to work collaboratively to accommodate the Company's actual needs. The Town shall use all reasonable efforts within the capabilities of the existing Pump Station to accommodate the Company's conveyance needs in a timely basis.

Infrastructure Upgrades:

Phase 2: The Town commits to completing the required infrastructure upgrades to the sewer outfall and sanitary sewer pump station serving the Company's site, referred to as the 'Business Park Pump Station Upgrades,' within twelve (12) months of written request or January 1, 2027, whichever is earlier. These upgrades shall be completed in accordance with the agreed-upon scope and specifications to ensure the reliable and efficient operation of the sewer system. To the extent the

Company needs the Phase 2 upgrades earlier than agreed to herein, the Parties agree to work collaboratively to accommodate the Company's actual needs. The Town shall use all reasonable efforts to accommodate the Company's needs on a timely basis.

With respect to the Company's requirement for constituent loading for sewer discharge with respect to the above, the Town shall allow to continue the existing IUP that the Company has in place, which exceeds the amounts listed in EDA1. For purpose of clarity, the existing IUP is attached hereto as Exhibit G. In the event of any conflict in interpretation or effect, the terms of the IUP shall control. Nothing herein shall serve to expand or limit the Company's requirements and obligations contained in the IUP. The Town is currently engaged in designing a plant expansion and upgrade which is anticipated to increase the plant's ability to treat biological oxygen demand ("BOD"), Total Nitrogen ("TN") and Total Phosphorus ("TP"). The Town understands that the Company's future discharge needs require additional treatment capacity beyond that which is allowed in the current IUP for these constituents. At the present time, the Town has no remaining capacity for treatment of the Company's BOD, TN, & TP beyond what is in their current IUP. The Town is willing, subject to the following terms, to increase the company's current IUP limits of BOD, TN, & TP by an amount equal to at least 10 % of the plant expansion's actual new capacity of BOD, TN, & TP realized by the plant expansion, up to a ceiling of two times company's existing IUP limits of BOD, TN, & TP. This increased treatment capacity of BOD, TN, & TP will be made available to the Company so long as: 1) the Town's current discharge permit is not changed by the State of NC in a negative manner; 2) there is no increase in cost to the Town beyond what the Town is currently planning; and 3) there is no decrease in the planned plant treatment capacity of 8 MGD. The Town is unable to accept the Company's additional Phase II chloride compounds, and as such, the Company shall remove any such compounds prior to discharge.

B. Utility Industrial Rate

1. The Company shall immediately qualify for the Town's Industrial Utility Rate as determined by the Town's annual budget. Additionally, so long as the Company has satisfied the Company Requirements of Article II for a period of 10 years, the Company shall be entitled to the Town's Industrial Rate for the entire duration of its continued operation.

In the event of a Town Force Majeure Event, the deadlines set forth in this paragraph shall be extended for the period of time during which the Town Force Majeure Event existed. For purposes of this Paragraph, "Town Force Majeure Event" shall have

the same meaning as Article I, Section D. For the avoidance of doubt, mere non-performance of a third-party does not constitute a Town Force Majeure Event.

C. Waiver of Fees, Certain Development Requirements relating to the Site & Expedited Permitting Process

1) The Town represents that attached hereto as Exhibit B is a true and complete list of all of the licenses, permits, and approvals required for the development of the Site and for Phase 2 to be lawfully located, constructed and operated at the Site, together with a true and complete list of the fees or costs charged by the Town and required to be paid in respect of such licenses, permits and approvals, including all development, building construction and tap fees. The Town represents and warrants to the Company that there are no other license, permit, approval fees and/or costs charged by the Town that the Company will be required to pay in connection with the acquisition of the Site and the location, construction and operation of the Project. The Town hereby waives (and agrees to waive in the future) all such fees or costs, a good faith estimate of which for the Project is set forth on Exhibit B; provided, however, that (i) such waiver shall not include those fees shown as “Mandatory” on Exhibit B; and (ii) such waiver shall commence after the Company has paid a utility study grant in the amount of \$500,000. The grant of \$500,000 shall be obligated by the Town to fund a utility demand study from an outside consultant of the Town’s choosing. The sum of the fees due by the Company under the ordinary course of development for Phase 2 improvements, less \$500,000, shall be known as the “Waived Fees.”

2) During the development of the Site, certain off-site road improvements were identified in a Transportation Impact Analysis (“TIA”), as required under normal development regulations of the Town’s Unified Development Ordinance (“UDO”). The TIA identified off-site transportation improvements to roads located in excess of one (1) mile from the Site. In consideration of the Company’s meeting the Company Requirements, the Town hereby agrees to waive any requirement to perform offsite improvements and improve Town and NCDOT roads in excess of one (1) mile from the Site. For purposes of clarification, the foregoing waiver of off-site improvements in excess of one mile (1) mile from the Site, shall not waive Company’s obligation to perform improvements to the Site set forth in the TIA or address any other property or site hereafter acquired.

3) **Expedited Staff Level Review.** The Town agrees, to the greatest extent possible under applicable law, (a) to facilitate and expedite all Town-administered permits, plan approvals, zoning approvals, inspections and other required approvals, certificates and/or licensing necessary or appropriate in connection with the Site, the construction of the Facility, or the Project in a manner prescribed by a customized review schedule (Attached as Exhibit C) but in no event shall said review and response thereto take longer than ninety (90) days, and, (b) where appropriate and lawful, to waive any Town regulation related to any such permits, fees, zoning approvals, inspections or other required approvals or licensing and, (c) that Company may apply for more than one type of local permit, approval certificate, or plan at a time, and applications for such permits, approvals, certificates, plans shall be reviewed concurrently by the Town to the extent

possible and, (d) to exercise reasonable diligence in cooperating with the Company to facilitate the issuance of any State of North Carolina and/or federal permits and approvals which may be required for construction of the Facility, (e) that so long as (i) the buildings' footprint for Phase 2 does not increase from the footprint shown for Phase 2 in the development plan submitted in Phase 1 (ii) the buildings meet the development criteria of the Town; and (iii) the Company is not in default of any agreement or in violation of any other development criteria, then the Company's buildings, infrastructure, and site plans shall be administratively approved by Town's staff (as opposed to Council-level approval); and, (f) to provide, at the Town's expense, an additional full-time building inspector ("Resident Code Inspector"), (i.e, in addition to the inspector described in EDA1) holding the appropriate licenses required for the construction of Phase 2, for the period of time necessary for permitting approval by that Resident Code Inspector provided, however, that full discretion is retained by Town staff, the Resident Code Inspector, and the Town Council to act independently upon such approvals and licensing taking into account relevant information and considerations as allowed by statute, code, and the Town's ordinances. The Resident Code Inspector shall be available to the Company on its Site during normal business hours from 8 AM to 5 PM, Monday through Friday, excluding Town holidays. The Company shall provide a suitable workstation for the Resident Code Inspector. The Town further commits that at such time as the Resident Code Inspector described in EDA1 finishes such work on Phase 1 or is otherwise available to commit inspection resources to Phase 2, the Town shall direct that Resident Code Inspector to do so, until such time as it is commercially unnecessary to have two Resident Code Inspectors working on-site at the Site. As a part of Phase 2, Development Services Staff will coordinate with Fujifilm Project Management Team to assign additional floating staff when needed as work levels fluctuate during the project construction. Town shall provide a next-day turn around for building inspections such that the Town will dispatch an inspector no later than the next business day of the request.

E. Business Investment Grant

1) Business Investment Grant ("BIG"): In consideration of the Company's Requirements, the Town shall provide to the Company a Business Investment Grant based on Incremental Taxes for taxable real property valuation for improvements to the Phase 2 area as follows: the year following successful completion of the MAP requirement in Article I(B), the Town shall pay a BIG payment equal to 50% of the Town's portion of the Company's ad valorem tax payment for real property improvements relating to the Phase 2 improvements for a period of six (6) consecutive years following the first year the Company meets the MAP requirement, subject to a maximum BIG amount of twenty million two hundred and thirty-six thousand eight hundred dollars (\$20,236,800.)

2) The actual BIG grant amount will be determined using the millage tax rate in effect at the time of the tax payment and not the millage in effect at the time of the BIG payment.

3) The Company shall be entitled to an unreduced BIG payment so long as it obtains at least 90% of each of the target Company Requirements. If the Company has

not reached or cannot maintain at least 90% compliance in each of the target Company Requirements (other than the Increased Tax Value requirement), a Percent Reduction shall be applied to the BIG payment for each year applicable, using the same default formula set forth in Article III(A)(2), except that a BIG payment shall not be paid in the event Company does not maintain an Increased Tax Value of \$500 Million or more during any such payment period. If the Company maintains an Increased Tax Value of \$500 Million or more, then it shall receive an unreduced BIG payment.

4) The following definitions shall apply:

- a. “Increased Tax Value” is that amount of ad valorem tax value for real property improvements related to Phase 2, as calculated by the Wake County tax assessor as of January 1 of the year in which the Town will pay a BIG to the Company, less the tax value of the Phase 2 real property improvements on January 1, 2024. For purposes of this Agreement, the tax value of the Site on January 1, 2024, is \$435,487,804, however the tax value of the Phase 2 real property improvements on January 1, 2024 is \$0.
- b. “Incremental Taxes” is the amount of taxes actually received by the Town as a result of the Increased Tax Value.
- c. “Fiscal Year” shall mean the Town’s Fiscal Year, July 1 to June 30.

BIG payments will be made on or before May 1 of the relevant Fiscal Year in which the taxes are paid based on Town tax payments due and paid by the Company the prior year (ordinarily December), assuming the Company is otherwise current on its tax payments to the Town.

5) Other Tax and Fiscal Incentives. The Town will cooperate with and provide reasonable assistance to the Company in procuring all incentives and benefits legally available to it for economic development, job creation or otherwise, including (without limitation) the NC Biotech Center and the Job Development Investment Grant.

6) No Targeted Taxes. If any taxes or government charges of any kind are directly or indirectly levied by the Town against the Company or any of its property, including the Site, that are not generally applicable to all Town-resident business enterprises (the “Targeted Taxes”), or if any such Targeted Taxes shall be imposed or enabled by the Town with regard to the Company or its property, the Company shall be entitled to a reimbursement from the Town (in the form of cash, set off against any other payment due from the Company to the Town or such other means as may be available to effect such reimbursement) for the amount of any Targeted Taxes that are paid to or otherwise accrue to the benefit of the Town. For purposes of this paragraph, any Shortfall Payment shall not be considered to be Targeted Taxes.

F. Southern Access Road Cooperation.

EDA1 described the construction of a new road entitled the “Southern Access Road” or “SAR” to be completed by NCDOT through an economic development grant by that agency in the amount of \$10 Million. The Town, through its efforts, has secured an additional \$3 Million to be used for the design and construction of this road. Additionally, the Town has acquired or will acquire the necessary rights of way and easements required for the construction of this road from adjacent landowners at no expense to the NCDOT or the Company. The Parties understand that in order for NCDOT to commence construction, a “municipal agreement” must be entered into between the Town and the NCDOT whereby the Town agrees to cost participate in any amount in excess of the available funds of \$13 Million. The Town agrees to enter into such an agreement only upon the Company’s express guaranty that the Town will be held harmless for any funds required of the Town by the NCDOT for the design or construction of the SAR. The Company hereby agrees that in such event where the NCDOT attempts to collect any debt from the Town under the municipal agreement for the Southern Access Road, the Company shall pay such funds to NCDOT or otherwise satisfy the Town’s requirements under the municipal agreement. Any unreimbursed Town participation in the Southern Access Road or any Town expense directly relating to the design or construction of the Southern Access Road shall be called the “Town SAR Expense.”

The Company further agrees to take no action in either its development plan or any permit application with any governmental agency which obviates or lessens the need or requirement for the Southern Access Road. In the event that the Company shall take such action after the Execution Date, the Town shall be relieved of any requirement for payment of any SAR related expense or action, and the Town shall be reimbursed any Town SAR Expense by the Company within 30 days of such action.

G. Conveyance of Town Parcel. In consideration of the Company Requirements, the Town shall convey to the Company by Special Warranty Deed without further consideration an approximate 5 acre tract (“Triangle Tract” as shown on Exhibit D. Within no more than five (5) business days following written request by the Company the Town shall convey the Triangle Tract to the Company by Special Warranty Deed (in form and substance consistent with Exhibit E), duly authorized, executed and acknowledged by the Town, subject only to (i) the Permitted Exceptions currently on record at the Wake County Registry (ii) such general utility, sewer, access and drainage easements that are in existence at the time of conveyance; and (iii) a covenant of continued cooperation for additional underground Town utility lines that may be necessary in the future for the Company or adjacent properties. To the extent the documents referenced are inaccurate or incomplete, the Parties shall work cooperatively and prepare all necessary documents to convey the Triangle Tract in a commercially reasonable manner.

ARTICLE III

REMEDIES & CLAWBACK PROVISION

A. Available Remedies

1) For purposes of this Agreement, a “Town Default” shall mean the Town’s failure to timely perform or otherwise adhere to its obligations under this Agreement, subject to a 7-day written notice and cure period to be afforded to the Town. Upon the occurrence of a Town Default, the Company: (i) without thereby waiving such Town Default, shall have the right to take all reasonable and necessary acts to perform any such obligation on behalf of the Town, at the Town’s expense, (“Self Help”), and (ii) shall have all rights and remedies available in law or equity including, without limitation, the right to specifically enforce the terms of this Agreement at the Town’s expense. All reasonable costs and expenses (including attorneys’ fees) incurred by the Company in exercising Self Help or otherwise enforcing the terms of this Agreement (collectively, “Enforcement Costs”) shall be payable by the Town to the Company, on demand, and shall accrue interest from the time of such demand until payment at the applicable statutory rate. Furthermore, to the extent permitted by law, the Company shall have the right (but not the obligation) to offset any Enforcement Costs against any amounts otherwise due to the Town under this Agreement or otherwise. No right or remedy herein conferred upon or reserved to the Company is intended to be exclusive of any other right or remedy, and every right and remedy shall be cumulative and in addition to any other legal or equitable right or remedy given hereunder, or now or hereafter existing. No waiver by the Company of any provision of this Agreement shall be deemed to have been made unless expressly so made in writing by the Company expressly waiving such provision.

2) For purposes of this Agreement, a “Company Default” shall mean the Company’s failure to timely perform or otherwise adhere to its obligations under this Agreement or other legally permissible development or permit criteria of the Town, subject to a 7-day written notice and cure period to be afforded to the Company. No waiver by the Town of any provision of this Agreement shall be deemed to have been made unless expressly so made in writing by the Town Manager expressly waiving such provision. Upon the occurrence of a Company Default, the Town shall have the right to and may: (i) without thereby waiving such Company Default, withhold any BIG or other payments to the Company (but only to the extent set forth in Article I of this Agreement); (ii) collect any arrears and, if necessary, terminate the utility provision in the event of non-payment of utilities; (iii) enforce any regulatory action of the Town if necessary and would otherwise be allowed absent any agreement with the Company; and (iv) otherwise take any action reasonably necessary to enforce any law or ordinance the Town is required to do in the event of any action or omission by the Company in the ordinary course of enforcing laws and ordinances of the Town, state, or federal government as it would absent any agreement with the Company. Certain Company Default(s) shall entitle the Town to a “Clawback” of funds from the Company upon written notice thereof where the Town either expended actual Town funds or avoided actual income. For purposes of this Clawback provision, the Company will have met the Company Requirements for Increased Tax Value if the increased tax value is \$500 Million or above. Those Defaults requiring Clawback are expressly as follows:

- a) The Company’s failure to complete or maintain the Company Requirements for a period of six (6) years (for each year of the Company’s BIG request) shall result in a pro rata return of each of the following (i) the Waived Fees; (ii) the actual construction costs of the Business Park Pump Station Upgrades made by the Town as a direct result of this Agreement; (iii) Town SAR Expense; and (iv) the actual expense of a dedicated building inspector (the sum total of which are the “Clawback Funds”).
- b) The pro rata amount shall be calculated by taking the quotient of the funds eligible for Clawback that is the average of the following three numbers: (i) the ratio of the Minimum Investment Criteria to the actual investment; (ii) the ratio of the Wage Target to the actual average wages; and (iii) the ratio of the Employment Target to the actual number of employees in Phase 2.

The Clawback Funds shall be spread over a payback period of six years, such that for any one year requiring a Clawback, the Company shall not be required to pay more than 1/6 of the Clawback Funds in any one year of Default.

By way of example, if there is a Default requiring Clawback in 2029 where the Company had:

- a Phase 2 Increased Tax Value of \$435 Million (i.e. 87% of \$500,000)

- Employed 300 people and not the target threshold of 343 (i.e., 87%)
- Had an average wage of \$80,000 per year (i.e. 81% of \$98,931)

The average of the percent compliance numbers in the example above (i.e, 87%, 87%, and 81%) shall be averaged (85%), and inverse taken (i.e, 15%) which shall be multiplied by 1/6 of the total amount of Clawback Funds. If the Town's total Clawback Funds equal \$250,000 (for illustrative purposes in this example), the Company shall return 15% of \$41,667 (i.e., \$6,250) in the year the Company fails to meet the targets. Conditioned upon the Town's presentment of written demand, the Company shall pay said Clawback Funds to the Town by April 15 of the year succeeding the year in which the Company did not meet the targets. If in subsequent years the Company obtains or remains in compliance with the Company Requirements, the Clawback Funds are not owed for those years.

B. Concerning Remedies

Unless otherwise set forth in this Agreement, the remedies provided herein are exclusive. The exercise of a particular remedy does not preclude the exercise of any or all other available remedies herein except as provided herein. No delay in the exercise of a remedy shall constitute a waiver of that remedy. Nothing in this Agreement is intended to relieve a party from its common law duty to mitigate damages. Except for any and all claims, demands or other actions by a party seeking declaratory, injunctive, specific performance or other equitable relief in respect of the performance, breach, or interpretation of any provision of this Agreement ("Litigable Matters"), all claims for damages or other remedies under this Agreement shall be resolved by binding Arbitration administered by the American Arbitration Association in accordance with its Commercial Arbitration Rules and Mediation Procedures in effect on the Effective Date of this Agreement. A demand for arbitration shall be made in writing, delivered to the other Party to this Agreement, and filed with the person or entity administering the arbitration. The Party filing a notice of demand for arbitration must assert in the demand all claims then known to that Party on which arbitration is permitted to be demanded. The Arbitration shall be conducted in the place where the Project is located unless another location is mutually agreed upon. The award rendered by the arbitrator shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof. Each Party shall bear its own fees and costs of the arbitration. The Parties shall share the American Arbitration Association and arbitrator(s) fees and costs equally. Litigable Matters shall be subject to the exclusive jurisdiction of the Superior Court for the Tenth Judicial District of North Carolina or the United States District Court for the Eastern District of North Carolina, or of both as applicable in the circumstance. The parties irrevocably submit to such exclusive jurisdiction.

C. Disputes

The parties shall attempt in good faith to resolve any dispute, controversy or claim arising out of this Agreement between them by negotiations between those persons of the

Town and Company who have authority to act and who will promptly meet for negotiations to attempt to settle the dispute. If the matter has not been resolved within ten (10) days from the referral of the dispute to such authorized persons, any party may refer the matter to Mediation (as provided below).

D. Mediation

If the Town and the Company are unable to reach agreement with respect to any matter requiring their agreement under this Agreement, either Party may submit the matter to mediation under the Mediation Procedures of the American Arbitration Association (“Mediation”). Once commenced, no such Mediation shall be permitted to proceed for more than fifteen (15) days. Each Party shall bear its own costs and expenses related to any Mediation; provided that the costs and expenses of the mediator and any administrative expenses of the Mediation shall be borne equally by the Town and the Company. Failure of the Town and the Company to reach agreement pursuant to any Mediation procedure shall be deemed to be a dispute arising under this Agreement.

E. Arbitration

Except for Litigable Matters, all disputes and claims for damages between the Town and the Company arising out of this Agreement shall be resolved not by litigation but rather by binding arbitration (“Arbitration”) in the State of North Carolina before a panel of three (3) independent arbitrators under the auspices and pursuant to the rules of the American Arbitration Association. A demand for arbitration shall be made in writing, delivered to the other Party to this Agreement, and filed with the person or entity administering the arbitration. The Party filing a notice of demand for arbitration must assert in the demand all claims then known to that Party on which arbitration is permitted to be demanded. The Arbitration shall be conducted in the place where the Project is located unless another location is mutually agreed upon. The award rendered by the arbitrator shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof. Each Party shall bear its own fees and costs of the arbitration. The Parties shall share the American Arbitration Association and arbitrator(s) fees and costs equally. Any such dispute regarding real estate development or construction matters shall be governed by the Construction Industry Arbitration Rules then in effect, and any dispute regarding other matters shall be governed by the Commercial Arbitration Rules then in effect. The Arbitration hearing will be scheduled so that it is concluded within six (6) months from the date of the filing of the Arbitration and the panel shall render its decision within one (1) month after the closing of the hearing. Arbitrators will be chosen under the usual procedures and from the usual panels of the American Arbitration Association except that none of the arbitrators shall have performed, directly or indirectly, a material amount of work for the Town or the Company within the 5-year period immediately preceding the date of their selection or intend or desire to perform work for the Town or the Company within one (1) year following the date of such arbitrator’s selection. Issues determined by Arbitration pursuant to this provision shall be given preclusive or collateral estoppel effect. Each Party shall bear its own fees and costs of the arbitration. The Parties shall share the American Arbitration Association and arbitrator(s) fees and costs equally.

ARTICLE IV
OTHER PROVISIONS

A. Notices

All communications and notice expressly provided for herein shall be sent, by registered first class mail, postage prepaid, by a nationally recognized overnight courier for delivery on the following business day or by facsimile (with such facsimile to be confirmed promptly in writing sent by mail or overnight courier as aforesaid) as follows unless the relevant party provides replacement contact information after the date hereof:

If to the Town: Town of Holly Springs
 P.O. Box 8
 Holly Springs, NC 27540-0008
 Attn: Randy J. Harrington, Town Manager
 Phone: (919) 557-3924
 Facsimile: (919) 567-2569

with a copy (which shall not constitute notice) to:

Town of Holly Springs
P.O. Box 8
Holly Springs, NC 27540-0008
Attn: John P. Schifano, Town Attorney
Phone: (919) 557-2917
Facsimile: (919) 567-2569

If to the Company: FUJIFILM Diosynth Biotechnologies U.S.A., Inc.

 100 Biotechnology Way
 Holly Springs, NC 27540
 Attn: Site Head

with a copy to:

FUJIFILM Holdings America Corporation
200 Summit Lake Drive
Valhalla, NY 10595-1356
Fax: 914-789-8514
E-mail: legaldepartment@fujifilm.com
Attention: Legal Department

B. Adverse Change

The Parties acknowledge that the Project is mutually beneficial to all Parties to a degree that supports the substantial investment in the Project by each Party as outlined herein. The Project and the Local Incentives are based on current laws, policies, regulations and commitments. If during the term of the Project, the benefits to the Parties as contemplated herein are materially affected as a result of executive or legislative action, or administrative or judicial decision or interpretation of laws, policies or regulations, the Parties agree to negotiate in good faith in an effort, if practicable, to amend, to the fullest extent permitted by law, the Project and the Local Incentives so that each Party receives at least the same benefits that were contemplated herein prior to any such action, decision or interpretation.

C. Change in Law

In the event any law, policy or regulation applicable to the Company adversely affects or impacts the effective operation of the Project, the Town shall promptly take all necessary action to amend such law, policy or regulation to facilitate effective operation of the Project, so long as such amendment is not materially adverse to the interests of the Town or its citizens.

D. Entire Agreement; Amendment; Construction

This Agreement, together with the Schedules and Exhibits attached hereto and all other agreements referred to herein or relating to the subject matter hereof, contains the entire agreement between the Parties as to the subject matter referenced herein, and supersedes all prior agreements, understandings or undertakings (whether oral, written, electronic or otherwise) between the parties with respect to the subject matter hereof. No amendment may be made to this Agreement except with the prior written consent of all Parties hereto. The section titles and headings herein are for convenience of reference only and do not define, modify or limit any of the terms and provisions hereof. Article, Section and Exhibit references herein are to Articles, Sections and Exhibits of this Agreement unless otherwise noted. The use of words “include” or “including” in this Agreement shall be by way of example rather than by limitation. The use of the words “or,” “either” or “any” shall not be exclusive.

E. Representations and Warranties of the Parties

Each of the Parties, and each person executing this Agreement on behalf thereof, represent and warrant, as applicable, that (1) such Party or person has the full power and authority to enter into this Agreement and the agreements or instruments referred to herein, to execute them on behalf of the Party indicated on the signature page thereof, and to perform the obligations hereunder and thereunder, (2) such Party is acting on its own behalf and on behalf of its successors and assigns, (3) this Agreement and the other agreements referenced herein are the valid and binding obligations of such Party, enforceable against it in accordance with their terms, (4) entering into this Agreement and the other agreements referenced herein does not conflict with any other agreements entered into by any Party, and (5) the execution, delivery and performance of this Agreement has been duly and validly authorized by all necessary corporate or governmental action on its part.

Furthermore, no provision of this Agreement shall be construed or interpreted as creating a pledge of the faith and credit of the Town within the meaning of any constitutional debt limitation. No provision of this Agreement shall be construed or interpreted as delegating governmental powers nor as a donation or a lending of the credit of the Town within the meaning of the constitution of the state of North Carolina. This Agreement shall not directly or indirectly or contingently obligate the Town to make any payments beyond those appropriated by the Town for any fiscal year in which this Agreement shall be in effect. No provision of this Agreement shall be construed to pledge or to create a lien on any class or source of the Town's monies, nor shall any provision of the Agreement operate beyond its intended scope so as to restrict, to any extent prohibited by law, any future action or right of action on the part of the Town Council. To the extent of any conflict between this section and any other provision of this Agreement, this section shall take priority. The Town has had this Agreement, and the incentives contemplated hereunder, pre-audited to ensure compliance with the budgetary accounting requirements (if any) that apply. This Agreement is conditioned upon, and shall not become operative until, any required pre-audited certification is supplied, signed by the Town's Finance Director.

F. Release and Indemnification

1) The Company agrees to defend, indemnify and hold harmless the Town, and its respective members, officers, directors, employees, agents and attorneys (hereinafter collectively referred to as "Town Indemnified Parties"), from any claims of third parties to the extent arising out of or any wrongful or negligent act or omission of the Company in connection with the performance of this Agreement. Without limiting the generality of the foregoing, the Company hereby releases the Town Indemnified Parties from, and agrees that such Town Indemnified Parties are not liable for, and agrees to indemnify and hold harmless the Town Indemnified Parties against, any and all liability or loss, cost or expense, including reasonable attorneys' fees, fines, penalties and civil judgments, resulting from or arising out of or in connection with or pertaining to, any loss or damage to property or any injury to or death of any person occurring in connection with or on or about the Facility, or resulting from any defect in the fixtures, machinery, equipment, or other property used in connection with the Project or arising out of, pertaining to, or having any connection with, the Project or the financing thereof (other than financing incurred by or provided in connection with another government body (e.g., Wake County, North Carolina or the State of North Carolina)) to the extent arising out of the negligent acts or omissions of the Company or any of its agents, contractors, servants, employees, licensees, lessees, or assignees. The Company acknowledges and agrees that each Town Indemnified Party is an express, third-party beneficiary of the Company's obligations under this paragraph. The obligation of the Company to indemnify the Town Indemnified Parties pursuant to this Section shall terminate upon the termination of this Agreement.

2) To the extent permitted by law, the Town agrees to defend, indemnify and hold harmless the Company, and its respective shareholders, officers, directors, employees, agents and attorneys (hereinafter collectively referred to as "Company Indemnified Parties"), from any claims of third parties to the extent arising out of or any wrongful or negligent act or omission of, or breach of this Agreement by, the

Town in connection with the performance of this Agreement. Without limiting the generality of the foregoing, the Town hereby releases the Company Indemnified Parties from, and agrees that such Company Indemnified Parties are not liable for, and agrees to indemnify and hold harmless the Town Indemnified Parties against, any and all liability or loss, cost or expense, including reasonable attorneys' fees, fines, penalties and civil judgments, resulting from or arising out of or in connection with or pertaining to, any loss or damage to property or any injury to or death of any person to the extent arising out of the negligent acts or omissions of, or breach of this Agreement by, the Town or any of its agents, contractors, servants, employees, licensees, lessees, or assignees. The Town acknowledges and agrees that each Company Indemnified Party is an express, third-party beneficiary of the Town's obligations under this paragraph. The obligation of the Town to indemnify the Company Indemnified Parties pursuant to this Section shall terminate upon the termination of this Agreement.

G. Benefits of Agreement

This Agreement shall be binding upon and inure to the benefit of the Parties and their respective heirs, successors and assigns, and future Town Councils and staff.

H. Governing Law; Jurisdiction

This Agreement shall be governed by and construed in accordance with the laws of the State of North Carolina, without regard to any construction arising from the application of conflicts or choice of law principles, and without regard to any construction arising by virtue of the negotiation or the persons who drafted this Agreement. Subject to Article III. D and E., the Parties consent to exclusive jurisdiction of the Superior Court for the Tenth Judicial District of North Carolina or the United States District Court for the Eastern District of North Carolina, or of both as applicable in the circumstances, for any Litigable Matters arising with respect to this Agreement.

I. Severability; Incentives

If any court of competent jurisdiction holds any provision of this Agreement invalid or unenforceable, then (1) such holding shall not invalidate or render unenforceable any other provision of this Agreement, unless such provision is contingent on the invalidated provision; and (2) the remaining terms hereof shall, in such event, constitute the parties' entire Agreement. In the event any such provision is held to be invalid, illegal or unenforceable, the Parties hereto shall make their best efforts to agree on a provision in substitution for such invalid, illegal or unenforceable provision that is as near in economic benefit as possible to the provision found to be invalid, illegal or unenforceable. In the event that the validity, legality or enforceability of any Local Incentive and other assistance described or referred to herein as being offered or made available to the Company is challenged in any manner, the Town shall (a) vigorously defend such Local Incentive and other assistance from such challenge, (b) seek legislative remedies to retain or restore such Local Incentive and other assistance, and (c) pursue the offering of other Local Incentives and other assistance or benefits to the Company (including to the extent other discretionary funds or benefit programs are or may become available to the Town) in order that the Company may realize the economic and non-economic benefits of the Local Incentives and other assistance offered herein or made available hereby.

J. Assignment Except as otherwise provided for in this Section, no party shall have the right to assign this Agreement or any portion hereof, or any of its respective rights or obligations hereunder, without the prior written consent of the other party.

K. Audit Right

The Town reserves the right to require that the Company provide to it a certified audit (at the Town's expense), or to perform (upon mutual agreement of the Parties, upon reasonable notice to the Company, and during normal business hours) an audit through the use of the Town's staff, in order to confirm the Company's compliance with the Job Commitment contemplated in this Agreement and any reimbursement of costs associated with Self-Help. Any such audit will be limited in scope to the least amount of information necessary to confirm such compliance and be conducted at the Town's expense. To the fullest extent allowed by law, all of the Company's records provided to the Town shall (1) not be considered or deemed a public record, (2) be kept confidential (and the Town agrees to cause its employees, agents, auditors and other representatives, including any internal or external auditors, to keep such evidence confidential), (3) be "trade secrets" under N.C.G.S. §132-1.2 and will be marked as trade secrets by the Company, (4) to the fullest extent allowed by law be held as confidential information under N.C.G.S. §132-1.2 and other law. To the extent allowed by law, all such records shall remain the property of the Company to be returned after the Town's review, and may be used by the Town only for audit purposes.

L. Annual Report

If at any time either the Company's, or the Company's publicly traded parent's audited annual report is not publicly available online for review, at the written request of the Town, the Company shall provide a copy thereof to the Town as soon as it becomes available to the Company, but in no event later than six (6) months following the Company's fiscal year end.

M. Agreement to Cooperate

In the event of any legal action instituted by a third party or other governmental entity or official challenging the validity of any provision of this Agreement, the applicable Parties hereby agree to cooperate in defending such action; provided, however, each of the Parties shall retain the right to pursue its own independent legal defense.

N. Good Faith and Fair Dealing

Each Party assumes a duty of good faith and fair dealing in the performance of its obligations and the enforcement of its rights under this Agreement. Unless specifically otherwise provided: (1) whenever a consent or approval is required from a Party under this Agreement, the consent or approval shall not be unreasonably withheld, conditioned or delayed; and (2) whenever a Party is required to make a determination under this Agreement, the determination shall be made reasonably, in good faith and without unreasonable delay.

O. Specific Performance

Each of the Town and the Company acknowledge and agree that the other Party may be irreparably damaged if any of the agreements or covenants related to the conveyance of any of the real property that is subject hereof are not performed in accordance with their terms, and that any default under or failure to perform or comply with any such agreement or covenant by such Party may not be adequately compensated in all cases by monetary damages alone. Accordingly, each of the Town and the Company may be entitled to specific performance of any such agreements or covenants and to temporary, preliminary and permanent injunctive relief to prevent any breach of any of such agreements or covenants, without posting any bond or other undertaking. The Parties agree that any obligations regarding job creation or investment are not subject to a requirement of specific performance as other penalties for default in those areas are detailed elsewhere in this agreement.

P. CFIUS

Upon execution of this Agreement, Company certifies that it is currently in compliance with, and shall at all times remain compliant with, any requirements of the Committee on Foreign Investment in the United States (CFIUS). In the event that the Town is required to assist the Company in any lawful manner with such certification or any foregoing

requirement, the Town agrees to do so and any reasonable expense incurred by the Town shall be reimbursed by the Company, if such reimbursement is otherwise lawfully allowed.

Q. Termination

This Agreement may be terminated by mutual written agreement by the Company and the Town.

R. Future Grants

If at any time the Company anticipates a substantial expansion of its operations in the Town beyond the scope currently planned for the Project, the Town will review any such expansion plans with the intent to provide additional economic development incentives to the Company, but shall not have an obligation to provide any particular incentives to the Company in respect of such expansion.

S. Counterparts

This Agreement may be executed in any number of counterparts, each of which when so executed and delivered shall be deemed an original, but all such counterparts together shall constitute but one agreement. Delivery of an executed counterpart of a signature page of this Agreement by facsimile or other electronic transmission shall be effective as delivery of a manually executed original counterpart of this Agreement.

[Remainder of Page Intentionally Blank]

[Signature Page Follows]

IN WITNESS WHEREOF, the parties hereto have caused this Economic Development Agreement to be executed as of the date and year first above written.

ATTEST:

TOWN OF HOLLY SPRINGS, NORTH CAROLINA

Name: Linda McKinney
Title: Town Clerk

By: _____
Name: Randy J. Harrington
Title: Town Manager

FUJIFILM Diosynth Biotechnologies North Carolina,
Inc.

By: _____
Name: _____
Title: _____

Certified as to Legal Sufficiency:

ATTEST:

Name: John P. Schifano
Title: Town Attorney

This instrument has been pre-audited
in the manner required by the Local
Government Budget and Fiscal
Control Act.

Tina Stroupe
Finance Director, Town of Holly
Springs

EXHIBIT A

(Site Map delineating Phase 1 and Phase 2 Improvements)

Phase 1 Improvements



Site with the addition of Phase 2 Improvements



EXHIBIT B TOWN FEES

WAIVED FEES:

Those fees that would ordinarily be charged for a facility similar to the Facility contemplated in this Agreement under the ordinary course of development, contained in the Town's fee schedule located at <https://www.hollyspringsnc.gov/DocumentCenter/View/49145/FY25-Recommended-Budget-Book>. For illustration and not limitation, such fees are as follows:

- Construction Trailer permit
- Utility Inspection Fees
- Fee in lieu of Assessment

- Other Inspection Fees
- Street Fee
- Tap Fees
- Irrigation Meters
- Miscellaneous Fees:
 - Water Meter Fee
 - Water Meter Deposit
 - Water Meter Service Charge

- Building Permit Processing, Review, and Inspection Fees
- Sed/Erosion Control Plan Review
- Environmental Development Permit (NPDES stormwater review and special studies)
- Stormwater control device escrow deposit
- Construction Drawing Review
- Water Permit Process Fee
- Sewer Permit Process Fee
- Preliminary Plan Review
- Sign Permit

MANDATORY FEES:

Capacity Replacement Fees: The fees shown on page 2 of this exhibit are from the 2021 FY and shall apply to Phase 1 of the Project. The parties acknowledge that the fee is dependent on the type and number of meters used, construction drawing approval is required prior to application for water service, and that payment of the fees are required prior to final construction drawing approval.

* Note that this summary of anticipated development fees developed by the Town of Holly Springs based on an understanding of scope of the project as contemplated in the Economic Development Agreement

EXHIBIT B, Page 2
(Mandatory Fees)

Development Services Fees (continued)		
Description	Approved Fee FY2023-24	Rec. Fee FY2024-25
Non-Residential Water And Sewer Services		
Non-Residential System Development Fees – Based on Meter Size (due at issuance of building permit). Fee for Multi-Unit Dwellings will be applied as the ¾" residential meter rate per equivalent residential unit. All other fees will follow the Non-Residential fee schedule.		

Water & Sewer (charged separately)	System Development Fee
Irrigation	\$3,200
Irrigation (Reclaimed)	\$1,650
¾" meter Sewer	\$5,538
¾" meter Water	\$6,162
1" meter Sewer	\$11,076
1" meter Water	\$12,324
1 ½" meter Sewer	\$27,690
1 ½" meter Water	\$30,810
2" meter Sewer	\$44,304
2" meter Water	\$49,296
3" meter Sewer	\$184,600
3" meter Water	\$205,400
4" meter Sewer	\$369,200
4" meter Water	\$410,800
6" meter Sewer	\$590,720
6" meter Water	\$657,280
8" meter Sewer	\$1,033,760
8" meter Water	\$1,150,240
10" meter Sewer	\$2,030,600
10" meter Water	\$2,259,400
12" meter Sewer	\$2,030,600
12" meter Water	\$2,259,400

EXHIBIT C

STAFF REVIEW SCHEDULE

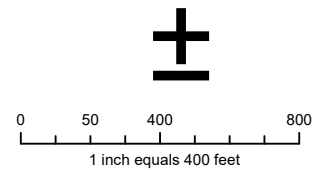
Activity	2024												2025											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Galaxy Construction Completion	▲ TF	▲ CUB			▲ WH	▲ LA	▲ HB	▲ DSM1		▲ DPFG		▲ SITE	▲ DSM2											
Aura Site				Dev Plan Approval																				
Aura Site						Civil CD Approval																		
DSM3							BLDG Permit		Waste Pits/Soil Improv.				Foundations + Steel + Slabs/Siding/Roof											
DSM4													BLDG Permit	Soil Improv.		Foundations + Steel + Slabs/Siding/Roof								
CUB																BLDG Permit	Soil Improv.		Foundations + Steel + Slabs/Siding/Roof					

APR2024 – MAY2025
 BLDG Permitting Review and Approval Support
AUG2024 – FEB2025
 1 Additional Dedicated Onsite Inspector for Galaxy and Aura
AUG2024 – MAY2027
 Trade Permitting Review and Approval Support
MAR2025 – MAY2027
 1 Dedicated Onsite Aura Inspector

EXHIBIT D
TRIANGLE TRACT (PIN 0639837172)
BEING ALL OF THAT 5 ACRE TRACT DESCRIBED AS TRACT 6 IN BOOK OF MAPS
2006, PAGE 1543



Triangle Tract



Disclaimer
iMaps makes every effort to produce and publish
the most current and accurate information possible.
However, the maps are produced for information purposes,
and are **NOT** surveys. No warranties, expressed or implied
, are provided for the data therein, its use, or its interpretation.

EXHIBIT E
SPECIAL WARRANTY DEED FOR TRIANGLE TRACT

NORTH CAROLINA SPECIAL WARRANTY DEED

Excise Tax \$ 0.00

Parcel Identifier No.	<u>0639837172</u>	Tax Lot No.	<u>0348208</u>
Verified by	_____	County on the	_____ day of _____

Mail after recording to: GRANTEE,
This instrument was prepared by John P. Schifano, Attorney at Law, Without Title Examination

Brief description for the Index. 5 acre Tract BM 2006/1543

THIS DEED made this _____ day of _____, 2024 by and between

GRANTOR

TOWN OF HOLLY SPRINGS,
A North Carolina Municipal Corporation
PO Box 8
Holly Springs, NC 27540

GRANTEE

FUJIFILM Diosynth Biotechnologies U.S.A., Inc.
100 Biotechnology Way
Holly Springs, NC 27540
Attn: Site Head

Enter in appropriate block for each party: name, address, and if appropriate, character of entity, e.g. corporation or partnership

The designation Grantor and Grantee as used herein shall include said parties, their heirs, successors, and assigns and shall include singular, plural, masculine, feminine or neuter as required by context.

WITNESSETH, that the Grantor, for a valuable consideration paid by the Grantee, the receipt of which is hereby acknowledged, has and by these presents does grant, bargain, sell and convey unto the Grantee in fee simple, all that certain lot or parcel of land situated in the City of Holly Springs, Holly Springs Township, Wake County, North Carolina and more particularly described as follows:

BEING ALL OF THAT 5 Acre parcel described in Book of Maps 2006, Page 1543

The property hereinabove described was acquired by Grantor by instrument recorded in Book 12076 , Page 2143.

A map showing the above described property is recorded in Plat Book 2006, page 1543 .

TO HAVE AND TO HOLD the aforesaid lot or parcel of land and all privileges and appurtenances thereto belonging to the Grantee in fee simple.

And the Grantor covenants with the Grantee, that Grantor has done nothing to impair such title as Grantor received, and Grantor will warrant and defend the title against the lawful claims of all persons claiming by, under or through Grantor, except for the exceptions hereinafter stated

Title to the property hereinabove described is subject to the following exceptions:

1) Easements and restrictive covenants of record

IN WITNESS WHEREOF, the Grantor has hereunto set his hand and seal, or if corporate, has caused this instrument to be signed in its corporate name by its duly authorized officers and its seal to be hereunto affixed by authority of its Board of Directors, the day and year first above written.

THE TOWN OF HOLLY SPRINGS

By: _____
Title: Town Manager

Attested By: _____ (Town Seal)
Title: Town Clerk / Deputy Town Clerk

STATE OF NORTH CAROLINA
COUNTY OF WAKE

I, a Notary Public for the said County and State, certify that _____ personally came before me this day and acknowledged that he/she is Town Clerk/Deputy Town Clerk of the Town of Holly Springs, a North Carolina municipal corporation, and that by authority duly given and as the act of the corporation the foregoing instrument was signed in its name by Carl G. Dean, Town Manager, sealed with its corporate seal, and attested by himself/herself as its Town Clerk/Deputy Town Clerk.

Witness my hand and official seal, this the _____ day of _____, 20____.
(Official Seal)

Notary Public

SEAL-STAMP

My Commission Expires: _____

EXHIBIT F
SCHEDULE OF OPERATIONS FOR SEWER CAPACITY

Quarters	Plant total per quarter	Total volume (GPD)	EDA phase 1	EDA Phase 2
1	2024 Q1 Phase 1 CUB online	42,073	400,000	760,000
2	2024 Q2	42,073	400,000	760,000
3	2024 Q3	42,073	400,000	760,000
4	2024 Q4 Const. Complete	75,000	400,000	760,000
5	2025 Q1	75,000	400,000	760,000
6	2025 Q2 Phase 1 Ramp up	84,146	400,000	760,000
7	2025 Q3	168,292	400,000	760,000
8	2025 Q4	210,365	400,000	760,000
9	2026 Q1	225,000	400,000	760,000
10	2026 Q2	240,000	400,000	760,000
11	2026 Q3 Phase 1 Ramp Complete	252,438	400,000	760,000
12	2026 Q4	252,438	400,000	760,000
13	2027 Q1 Phase 2 CUB online	294,511	400,000	760,000
14	2027 Q2 Phase 2 Const. Complete	327,438	400,000	760,000
15	2027 Q3	327,438	400,000	760,000
16	2027 Q4	327,438	400,000	760,000
17	2028 Q1	327,438	400,000	760,000
18	2028 Q2 Phase 2 Ramp up	336,584	400,000	760,000
19	2028 Q3	420,730	400,000	760,000
20	2028 Q4	462,803	400,000	760,000
21	2029 Q1	477,438	400,000	760,000
22	2029 Q2	492,438	400,000	760,000
23	2029 Q3	492,438	400,000	760,000
24	2029 Q4 Phase 2 Complete	504,876	400,000	760,000
25	Phase 3 & 4 Complete Date TBD	1,009,752	400,000	760,000

EXHIBIT G
COMPANY INDUSTRIAL USER PERMIT (IUP)



Holly Springs Town Council

Town Council Meeting Agenda Cover Sheet

Agenda Item#: 20.

New Business

Title: Adoption of Fiscal Year 2024 - 2025 Operating Budget and Community Investment Plan and Tax Collection Order

Strategic Priority Area: Organizational Excellence

Growth Management & Economic Vitality

Vibrant Community

Community Safety

Staff Resource: Corey Petersohn, Finance, Randy Harrington, Town Manager

Action(s):

- Adopt the Fiscal Year 2024-2025 Operating Budget and Community Investment Plan to include the associated capital project, reserve ordinances, and policy updates included in the packet.
- Adopt Council Order 24-01 directing Wake County to levy and collect property taxes for the Town of Holly Springs.

Explanation:

- The fiscal year (FY) 2024-2025 operating budget totals \$104,216,102 and includes:
 - Investing in police and fire staffing levels and retention to maintain Holly Springs' reputation as one of the safest communities in the state
 - Funding for voter-approved 2023 Park Bond projects
 - Adding financial capacity for new transportation infrastructure and a future Fire Station #4 in the northeast area
 - Enhancing Parks and Recreation programming quality and ability to meet increased participant demand
 - Beginning execution of the Downtown Area Plan vision
 - Adjusting the property tax rate following the recent Wake County property revaluation to 34.35 cents per \$100 property valuation
 - Reducing the solid waste user fees by \$2.09/month
 - Continuing implementation of the water and waste water user rate adjustments to secure the Town's future water supply and safe treatment capacity with the typical home water/sewer user bill increasing of \$11.25 per month.
- The budget being considered for adoption is the Town Manager's Recommended Budget (which can be found on the [Town website here](#)) with the following changes per the Town Council Budget Workshop conducted on June 11:
 - Maintain the Manager's Recommended Tax Rate of 34.35 cents per \$100 valuation while also reallocating 0.25 cents of the property tax rate from the General Fund operating budget to be dedicated for future transportation improvements.
 - This reallocation is in addition to the Manager's Recommended 0.50 cents of

Town Council Business Meeting
June 18, 2024

- property tax dedicated to transportation improvements and Fire Station 4.
- Appropriate an additional \$209,218 in general fund operating revenue per the increased allocation from Wake County for fire services provided to unincorporated areas of the county.
 - The Town Council has identified the following additional reductions to rebalance the General Fund operating budget:
 - \$100,000 - Eliminate Yard Waste Operational Contingency
 - \$5,000 - Reduce the recommended Street Tree Program Increase from \$10,000 to \$5,000
 - \$1,638 - Eliminate the pay adjustment for the Mayor and Town Council
- Below is a table illustrating the Town Council directed changes to the Manager's recommended property tax rate (cents per \$100 valuation):

Property Tax Rate Element	Town Manager's Recommendation	Town Council Adjustments	Revised FY2024-25 Property Tax Rate
Revenue Neutral Rate	29.50	none	29.50
Voter-approved Park Bond	3.00	none	3.00
General Fund Operating Investments	1.35	-0.25	1.10
Transportation and new Fire Station #4 Investments	0.50	+0.25	0.75
Total Property Tax Rate	34.35	none	34.35

- For purposes of authorizing property tax collections in Fiscal Year 2024-25, Wake County requires the attached Order directing the County Tax Assessor to levy and collect property taxes for the Town of Holly Springs (TOHS).
- This is an annual request from Wake County and must be approved prior to July 1 each year.

Background:

- The Town Manager presented the Recommended Budget to the Mayor and Council on May 14, 2024.
- A Budget Public Hearing was conducted on May 21, 2024.
- The Town Council Budget Workshop was conducted on May 28, 2024.
- North Carolina General Statute requires that Town Council adopt a new, annual fiscal year budget by July 1.
- Under North Carolina law, the Town's budget must be in balance (i.e. revenues equal expenditures)

Funding Source(s):

Operating Budget and Community Investment Plan

Attachment(s):

1. FY2024-25 Budget Ordinance (24-17)
2. Order 24-01 2024 Tax Collection Order
3. FN-11.2 Fiscal policy
4. Recommended Changes to Personnel Policy
5. Summary or Ordinance Changes for June 18
6. PAYGO Project Ordinance (24-18)
7. Utility PAYGO Project Ordinance (24-19)
8. Grants and Special Revenue Ordinance (24-20)
9. Parks and Rec Project Ordinance (24-21)
10. Water Projects Capital Ordinance (24-22)
11. Waste Water Projects Capital Ordinance (24-23)
12. System Development Fee Capital Reserve (24-24)
13. Stormwater Reserves (24-25)



Ordinance No. 24-17

Date Submitted: June 18, 2024

Date Adopted: June 18, 2024

**FISCAL YEAR 2024-25 BUDGET ORDINANCE
HOLLY SPRINGS, NORTH CAROLINA**

BE IT ORDAINED by the Town Council of Holly Springs, North Carolina:

Budget Adoption: There is hereby adopted the following Operating Budget for the Town of Holly Springs for the Fiscal Year beginning July 1, 2024 and ending June 30, 2025; the same being adopted by fund and activity within each fund as listed.

SECTION 1:

General Fund	
Revenues:	
Ad Valorem Taxes	27,459,547
Sales Tax	14,712,051
Environmental Revenues	4,258,912
Other Taxes and Licenses	3,957,485
Permits & Fees	2,724,500
Parks & Recreation Revenues	2,361,700
Transfers In / Other Financing Sources	1,912,923
Public Safety Revenue	1,738,588
Miscellaneous Revenues	871,000
Intergovernmental / Grants	23,000
Total	60,019,706
Expenditures:	
Public Safety	23,327,174
Public Works	9,769,969
General Government	8,326,302
Parks & Recreation	7,119,892
Development	6,555,913
Non-Departmental / Transfers Out	4,920,456
Total	60,019,706

Utility Fund	
Revenues:	
Water Sales	13,330,304
Waste Water Charges	11,557,461
Other Operating Revenues	2,416,500
Miscellaneous Revenues	201,000
Development Fees	50,000
Other Financing Sources	585,000
Total	28,140,265
Expenditures:	
Development	14,778,421
Non-Departmental	6,566,025
Central Services	3,866,387
Finance	1,718,156
Information Technology	754,576
Administration	309,100
Public Works	147,600
Total	28,140,265

Stormwater Management Program Fund	
Revenues	1,793,862
Expenditures	1,793,862

Powell Bill Fund	
Revenues	1,370,784
Expenditures	1,370,784

Emergency Telephone System Fund	
Revenues	246,216
Expenditures	246,216

General Fund – Debt Service Fund	
Revenues	8,645,735
Expenditures	8,645,735

Utility Fund – Debt Service Fund	
Revenues	3,999,534
Expenditures	3,999,534

SECTION 2.

Levy of Taxes: There is hereby levied, for Fiscal Year 2024-2025, an Ad Valorem tax rate of 34.35 cents per \$100 valuation of taxable property as listed for taxes as of January 1, 2024. This rate shall be levied with 21.69 cents to the General Fund and 12.66 cents to General Fund Debt Service per one \$100 valuation of taxable property.

The tax rate is based on an estimated total valuation of property for the purposes of taxation of \$12,759,940,216 and an estimated collection rate of 99%.

SECTION 3.

Fees and Charges: There is hereby established, for Fiscal Year 2024-2025 various fees and charges as contained in the Town Manager's Recommended Fiscal Year 2024-2025 Budget.

SECTION 4.

There is hereby confirmed, for Fiscal Year 2024-2025 a \$25 Municipal Vehicle Tax to be included in vehicle registration and property tax bills collected by the North Carolina Department of Revenue.

SECTION 5.

Sanitation, recycling, and yard waste fees shall be levied at a rate of \$21.29 per household per month. This includes one trash bin, one recycling bin and one yard waste bin.

SECTION 6.

Salaries & Salary Grades: The following shall govern salary and wage compensation for Fiscal Year 2024-2025:

- A. Employee Salary Adjustments. Salary adjustments shall range between 0%-6% based on performance. Position classifications are to be continuously reviewed and adjustments instituted by the Town Manager to make the plan fair for all classes of employees.
- B. Salary Grade Adjustments. An adjustment to the general salary grade schedule in the amount of 3.1% as detailed in the Town Manager's Recommended Budget. Sworn public safety positions reflect the implementation of a new pay and classification system. In the event any job title labeling errors or technical salary calculation errors are identified, the Town Manager is authorized to make corrections consistent with the purpose, intent, and methodology of the pay study.
- C. The Town Manager or designee is authorized to reclassify a current employee position's salary grade for any position with a defined salary grade range, as listed in the Town Manager's Recommended Fiscal Year 2024-25 Budget, if the incumbent has satisfied the Department's requirements to include any required training, professional certification, or other positional requirements.

SECTION 7.

The Town Manager is hereby authorized to transfer appropriations within a fund as contained herein under the following conditions as specified in North Carolina General Statute §159.

- A. Authorize budget transfers within a department without prior approval of the Town Council.
- B. Approve budget transfers between departments within the same fund up to \$50,000 without prior approval of the Town Council and will be reported to Town Council by the following month or next available business meeting.
- C. All inter-departmental budgetary transfers or appropriations above \$50,000, between funds, or that increase or decrease the total budget of any fund must be approved in advance by Town Council.

SECTION 8.

The Town Manager is hereby authorized to enter into contracts up to \$50,000 without prior Town Council approval. The Town Manager is hereby also authorized to execute contractual documents under the following conditions:

- A. Town Manager may execute contracts for (1) purchases of apparatus, supplies and materials or equipment which are within budgeted departmental appropriations; (2) leases of personal property for a period of one year or less and within budgeted departmental appropriations; and (3) services which are within budgeted departmental appropriations. Any of the above may be in the formal bidding range for contracts.
- B. Town Manager may execute grant agreements to or from public and non-profit organizations which are within budgeted appropriations unless a grantor organization requires execution by the Town Council.
- C. Town Manager may execute contracts, as the lessor or lessee of real property, which are of one-year duration or less if funds therefore are within budgeted appropriations.

SECTION 9.

Restricted Revenues: The Finance Officer is hereby directed to fund appropriations that have specified revenues prior to funding with General Fund monies. This is to include but not limited to ABC profits, sales tax, and state and federal grants.

SECTION 10.

Encumbrances: Operating funds encumbered on the financial records as of June 30, 2024, are hereby re-appropriated to this budget. All project ordinance appropriations are continued.

SECTION 11.

Budget Control: The Town Council in approving the budget has utilized to the fullest extent possible its revenue sources. Over collections of revenue or unanticipated revenue, sources cannot be expected to materialize during the year. It is therefore, of utmost importance, and the Town Manager is hereby directed to initiate steps to insure compliance with the budget, as fixed herein. The Town Manager is further directed where it appears that costs may possibly exceed budget appropriations, to first take steps to contain costs by any necessary methods including reductions in services prior to requesting budget amendment action by the Town Council.

SECTION 12.

The Town Council hereby authorizes the Wake County Tax Administrator to bill and collect taxes for the Town.

SECTION 13.

Multi-year projects on the financial records as of June 30, 2024 are hereby re-appropriated to fiscal year 2024-2025.

SECTION 14.

That in addition to the projects covered by Section 13, any remaining encumbered appropriations from the prior fiscal year for contracts and purchase orders that carry over into the current fiscal year are re-appropriated for expenditure in the current fiscal year. Additionally

any unexpended appropriations for previously authorized multi-year capital projects or grant projects are re-appropriated for expenditure in the current fiscal year; local grant-matching obligations that were previously authorized as part of multiyear grant projects are also re-appropriated for expenditure in the current fiscal year.

SECTION 15.

The Town Manager or designee is hereby authorized to move appropriations within a fund, to include the authority to move appropriations within funds for reorganization.

SECTION 16.

Sections of this ordinance estimate income (grants, debt, and other permanent funding sources). Until actual receipt, the Finance Officer or their designee is hereby authorized to advance funding from the appropriate fund's fund balance to cover the budgeted expense. Upon receipt of the income or debt proceeds, funds advanced shall revert back to the source fund's fund balance. If the permanent funding is not realized, the advance may be designated as the permanent source of funding. Upon receipt of the permanent funding, the sources and levels of funding for the project specified may be adjusted to reflect permanent financing. Total project appropriation levels shall not exceed the amounts specified unless amended by a subsequent ordinance.

SECTION 17.

The Finance Officer or designee is hereby authorized to transfer interest earnings from various cooperating and capital funds to the appropriate debt service funds according to Town Council policy, except where specific exceptions have been authorized.

SECTION 18.

The Finance Officer or designee is authorized to appropriate amounts needed to fund the following:

- A. Current fiscal year debt issues that have been approved by Town Council.
- B. Amounts needed to satisfy federal government regulations related to interest earnings on debt issues.
- C. Banking fees.
- D. Sales and use taxes, when required by law.
- E. Insurance premiums, risk management claims (that are entirely covered under a policy of insurance and have approval of the Town Manager), legal fees, utility bills, solid waste collection fees, escrow payments, annual hardware/software maintenance for town equipment, refunds (expressly excluding property tax bills or town license fees), adjustments to utility bills pursuant to Town Council policy.

SECTION 19.

The Finance Officer or designee is authorized to close projects, remove any excess appropriations and return associated balances to the appropriate Fund's original source.

SECTION 20.

The Finance Officer or designee is authorized to create and maintain a capital reserve fund in order to account for all system development fee proceeds as required by Article 8 of NCGS 162A, which shall remain so long as the town collects system development fees.

SECTION 21.

The Town Manager is hereby authorized to adjust appropriations in accordance with any Town Council amendments to this budget ordinance made by motion of the Town Council at a duly called meeting.

SECTION 22: All ordinances in conflict with this ordinance are hereby repealed or amended to reflect the controlling nature of this Ordinance. In the event that any ordinance or policy establishes a fee or charge less than that which is described in the document described in Section 3 of this Ordinance, this Ordinance shall control.

The provisions of this ordinance shall become effective July 1, 2024 in accordance with the laws of the State of North Carolina.

Adopted this, the 18th day of June 2024.

Town of Holly Springs by

ATTEST:

Sean Mayefskie, Mayor

Linda McKinney, Town Clerk





Council Order: 24-01

Date Submitted: June 18, 2024

Date Adopted: June 18, 2024

**STATE OF NORTH CAROLINA
TOWN OF HOLLY SPRINGS**

**BE IT ORDERED AND RESOLVED by the Town Council of the Town of Holly Springs,
North Carolina, as follows:**

The Wake County Revenue Administrator is hereby authorized, empowered, and commanded to collect taxes set forth in the tax records filed in the Office of the Wake County Revenue Administrator in the amounts and from the taxpayers likewise therein set forth. Such taxes are hereby declared to be a first lien upon all real property of the respective taxpayers in the Town of Holly Springs, and this order shall be full and sufficient authority to direct, require and enable you to levy on, sell any real or personal property such taxpayers, for and on account thereof, in accordance with the law.

Witness my hand and official seal, this 18th day of June, 2024.

Town of Holly Springs by

ATTEST:

Sean Mayefskie, Mayor

Linda McKinney, Town Clerk



 Holly Springs, N.C.	FN-11.2	
	Fiscal Policy Guidelines	
Administrative Rules	Prepared By:	Tina Stroupe
	Dept./Title:	Finance
	Date Approved:	June 18, 2024
	Effective Date:	June 18, 2024
	Supersedes Old #:	FN-11.1
	Old Effective Date:	September 15, 2020

FISCAL POLICY GUIDELINES - OBJECTIVES

This fiscal policy is a statement of the guidelines and goals that will influence and guide the financial management practice of the Town of Holly Springs, North Carolina. A fiscal policy that is adopted, adhered to, and regularly reviewed is recognized as the cornerstone of sound financial management. Effective fiscal policy:

- Contributes significantly to the Town's ability to insulate itself from fiscal crisis;
- Enhances short term and long term financial credit ability by helping to achieve the highest credit and bond ratings possible;
- Promotes long-term financial stability by establishing clear and consistent guidelines;
- Promotes the view of linking long-run financial planning with day to day operations; and
- Provides the Town Council, citizens, and the Town's professional management a framework for measuring the fiscal impact of government services against established fiscal parameters and guidelines.

To these ends, the following fiscal policy statements are presented.

CAPITAL IMPROVEMENT BUDGET POLICIES

1. The Town will prioritize all capital improvements in accordance with a capital improvement program.
2. The Town will develop a five-year plan for capital improvements and review and update the plan annually.
3. The Town will coordinate development of the capital improvement program with development of the operating budget.
4. The Town will use intergovernmental assistance to finance only those capital improvements that are consistent with the capital improvement plan and Town priorities.
5. The Town will maintain all its assets at a level adequate to protect the Town's capital investment and to minimize future maintenance and replacement costs.
6. The Town will identify the estimated costs and potential funding sources for each capital project proposal before it is submitted for approval.
7. The Town will attempt to determine the least costly and most flexible financing method for all new projects.

DEBT POLICIES

General

1. The Town will confine long-term borrowing to capital improvement or projects that cannot be financed from current revenues except where approved justification is provided.
2. The Town will utilize a balanced approach to capital funding utilizing debt financing, draws on capital reserves and/or fund balances in excess of policy targets, and current-year (pay-as-you-go) appropriations.
3. When the Town finances capital improvements or other projects by issuing bonds or entering into capital leases, it will repay the debt within a period not to exceed the expected useful life of the project. Target debt ratios will be annually calculated and included in the review of financial trends.
4. Where feasible, the Town will explore the usage of special assessment, revenue, or other self-supporting bonds instead of general obligation bonds.
5. The Town will retire tax anticipation debt, if any, annually and will retire bond anticipation debt within six months after completion of the project.

Tax Supported Debt

6. Net debt as a percentage of total assessed value of taxable property should not exceed 2.5%. Net debt is defined as any and all debt that is tax-supported.
7. The ratio of debt service expenditures as a percent of total governmental fund expenditures should not exceed 15% with an aggregate ten-year principal payout ratio target of 55% or better.

RESERVE POLICIES

1. Unassigned Fund Balances will mean funds that remain available for appropriation by the Town Council after all commitments for future expenditures, required reserves defined by State statutes, and previous Council designations have been calculated **to include transfers and debt service**. The Town will define these remaining amounts as “available fund balances.”
2. Available fund balances at the close of each fiscal year should be targeted range between 20-25% of General Fund expenditures with a minimum of 20%. Reserves beyond 20% of the Total Annual Operating Budget of the Town may be used for one-time use.
3. The Town Council may, from time-to-time, appropriate available fund balances below the 20% policy for the purposes of a declared fiscal emergency or other such global purpose as to protect the long-term fiscal security of the Town of Holly Springs. In such circumstances, the Council will adopt a plan to restore the available fund balances to the policy level within 36 months from the date of the appropriation. If restoration cannot be accomplished within such time period without severe hardship to the Town, then the Council will establish a different but appropriate time period.

BUDGET DEVELOPMENT POLICIES

1. The Town will develop the Annual Budget in conjunction with a stated program of performance objectives and measures with which to gauge progress toward meeting those objectives.
2. Water and sewer rates will be established at the appropriate level to enable the related funds to be self-supporting. In addition water and sewer rates will be established to maintain compliance with Revenue Bond Covenants.

3. One-time or other special revenues will not be used to finance continuing Town operations but instead will be used for funding special projects.
4. The Town will pursue an aggressive policy seeking the collection of delinquent utility, license, permit and other fees due to the Town.
5. The Town Council will receive a financial report at the end of each quarter showing year-to-date revenues and expenditures and comparing each amount to the budget as amended.
6. Budget amendments will be brought to the Town Council for consideration as needed. A monthly budget amendment report will be brought to the Town Council for all prior month budget amendments **required to be reported**.
7. The Budget Officer may transfer amounts of expenditures between departments or between funds in the budget. The Budget Officer may transfer amounts up to fifty thousand dollars (\$50,000) between departments of the same fund without prior Council Action. ~~The Budget Officer may transfer up to fifty thousand dollars (\$50,000) between funds without prior Council Action.~~

CASH MANAGEMENT AND INVESTMENT POLICIES

1. It is the intent of the Town that public funds will be invested to the extent possible to reduce the need for property tax revenues. Funds will be invested with the chief objectives of safety of principal, liquidity, and yield, in that order. All deposits and investments of Town funds will be in accordance with N.C.G.S. 159.
2. The Town will use a Central Depository to maximize the availability and mobility of cash for all funds that can be legally and practically combined.
3. The Town may deposit Town Funds into: Any Board approved Official Depository, if such funds are secured in accordance with NCGS-159 (31). The Town may invest Town Funds in: the North Carolina Capital Management Trust, US Treasury Securities, US Agency Securities specifically authorized in GS-159 and rated no lower than “AAA”, and Commercial Paper meeting the requirements of NCGS-159 plus having a national bond rating.
4. Investment of the Town will be diversified to eliminate the risk of loss as a result of over concentration of securities in a specific issuer, class of securities, or maturity sector.
5. Investment income will be allocated to each participating fund or account based on a fair and equitable formula determined by the Finance Director.

End of Administrative Rule No. FN-11.2

Approved by the Holly Springs Town Council, this, the 18th day of June, 2024.

Linda McKinney, Town Clerk



(Town Seal)

Proposed Amendments to the Town's Personnel Policy Effective 7-1-2024

- **Article III., Section 12. Overtime Pay Provisions**

FLSA overtime will be awarded as compensatory time at the rate of one-and one-half hours for each overtime hour worked. Once a non-exempt employee has accumulated 40 hours of comp time, they will receive monetary payment for every overtime hour in excess of the 40-hour comp threshold.

Effective January 1, 2025, non-exempt staff will be able to elect to receive monetary pay for overtime. The election will be for the calendar year. Employees will have the option to change their election annually.

- **Article III., Section 13. Call-back and On-Call Pay**

Emergency call-back is when an employee has left the work site and is required either to return to work or respond to work. It is irregular or occasional overtime work performed by an employee on a day when no work is scheduled, or at a time which requires the employee to return to the place of employment from an off-duty status.

- **Article III, Section 14. Holiday Pay**

Holidays will be equivalent to an employee's shift workday. Examples are as follows:

- ❖ *General: 40-hour work week (2080 annual hours) 8.0 hours*
- ❖ *Police: 42-hour work week (2184 annual hours) 12.0 hours*
- ❖ *Fire: 41.25-hour work week (2145 annual hours) 16.5 hours*

- **Article III., Section 17. Longevity Pay**

Longevity Pay will be paid out beginning when an employee has three (3) continuous years of service versus five (5).

- **Article. VII., Section 6. Vacation/Personal Leave: Accrual Rate**

Full-time employees shall accrue vacation leave prorated per pay period based on the number of hours the employee is scheduled to work each week. Accrual leave charts have been added for the different classes of employees.

- **Article. VII., Section 12. Sick Leave: Accrual Rate and Accumulation**

Full-time employees shall accrue sick leave prorated per pay period based on the number of hours the employee is scheduled to work each week. An accrual leave chart has been added to reflect the accrual rate for each class of employees.

- **Article. VII., Section 15. Leave Prorated**

Title updated to reflect calculation of prorated leave accruals (vacation and sick).

- **Article. VII., Section 16. Lactation Accommodations**

Adding a new section to Article VI to meet U.S. Department of Labor requirement that requires employers covered under the Fair Labor Standards Act (FLSA) to provide a private space for lactation that is not a bathroom. We have a lactation space and need a policy to inform employees of their right to this benefit.

- **Article VII., Section 21. Military Leave**

Added paid military training leave benefit at the rate of 96 hours per calendar year.

- **Article VII., Section 29. Paid Parental Leave**

Added language to clarify that if both parents are employed by the Town and have one qualifying event, each parent is eligible for six (6) weeks of paid parental leave either consecutively or intermittently.

- **Article VII., Section 30. Paid Eldercare Leave**

Paid eldercare leave can be used for an elderly spouse, grandparent, or legal guardian, in addition to an elderly parent. The age of the family member must be 65 years or older. The leave can be used consecutively or intermittently.

- **Article VII., Section 31. Paid Caregiver Leave**

Paid Caregiver leave is being added. A qualifying event includes the care of a parent, spouse, grandparent, child, sibling, and in-law with a serious health condition as defined by the Family Medical Leave Act (FMLA).

The amount of paid caregiver leave for any one person shall not exceed three (3) weeks in a rolling 12-month period. The leave can be used consecutively or intermittently.

NOTE: *Employees are not allowed to use paid caregiver leave and paid eldercare leave for the same family member*

Current personnel policy proposed amendments and additions in **red** below:

Article III., Section 12. Overtime Pay Provisions (Revised Effective 7-1-24)

Employees of the Town can be requested and may be required to work **overtime** ~~in excess of their regularly scheduled hours~~ as necessitated by the needs of the Town and determined by the Department Director. **All** overtime work must be approved in advance by the Department Director or Town Manager. Employees are not to perform work during any time that they are not scheduled to work unless they receive approval from their Department Director. **Working unapproved overtime may result in disciplinary action, up to and including termination.**

To the extent that local government jurisdictions are so required, the Town will comply with the Fair Labor Standards Act (FLSA). The Human Resources Director shall determine which jobs are "non-exempt" and are therefore subject to the Act in areas such as hours of work and work periods, rates of overtime compensation, and other provisions.

Definitions

Exempt Employee – An administrative, professional, supervisory, or executive employee, as defined by FLSA, who is not subject to FLSA overtime pay requirements.

FLSA Comp – Compensatory leave hours given in lieu of payment for any hours physically worked beyond forty (40) hours in a workweek, or beyond the established FLSA work period hours for sworn police personnel and uniformed firefighting personnel, at the rate of one and one-half (1.5) times the actual time worked.

Non-Exempt Employee – A clerical, maintenance, service, or working supervisor employee, as defined by FLSA, who is subject to overtime payment at one and one-half (1.5) times his/her regular base pay rate.

Non-exempt employees will be paid at a straight time rate for hours up to the FLSA established limit for their position (usually 40 hours in a 7-day period; 171 hours for police and 212 hours for fire personnel in a 28-day cycle).

It is the policy of the Town that employees receive compensatory time-off at a rate of one-and-one-half (1 ½) hours for each hour of overtime worked beyond the FLSA established limit. An employee must physically work over 40 hours, 171 hours, or 212 hours, as may be applicable, to earn compensatory time. In no event will vacation, sick leave, or holidays be included in the computation of hours worked for FLSA purposes.

A. Non-Exempt Employees

May not accrue a comp time balance of more than 40 hours. Department Directors and supervisors will be responsible for administering their department staff compensatory time balances by having employees take accrued comp time in a timely manner so that it will not accrue to excessive levels over 40 hours.

B. Comp Time Threshold

Once a non-exempt employee has accumulated ~~When~~ the 40-hour comp time threshold is reached, the non-exempt employee will receive a monetary payment of one-and-one-half (1 ½) times the employee's regular rate of pay for each hour in excess of the limit. ~~There will be no monetary payment until after the non-exempt employee has first accumulated 40 hours of comp time. No FLSA comp time is earned if the employee has not physically worked 40 hours in the workweek or the appropriate number of hours in the designated work period.~~

In the case of special events or circumstances, departments may allow designated employees to accumulate a comp time balance over 40 hours (but no more than 80) with prior written approval from the Town Manager. In these cases, the Department Directors must ensure that the comp time balance is brought back down to under 40 hours within ~~six (6)~~ months.

Employees wishing to use accrued comp time must make a written request to their immediate supervisor. Use of such time will be allowed within a reasonable period following the request as long as the use does not unduly disrupt the operations of the Department/Town.

~~Notwithstanding the procedures described in this section,~~ Employees must use compensatory leave time in advance of using ~~during an absence from work, employees will use any accrued comp time prior to the use of~~ vacation leave to count for time off. ~~Non-exempt employees will be compensated for any remaining balance of compensatory time upon separation from the organization. Requests to "cash in" earned compensatory time while employed are not allowed.~~

C. Overtime Pay

[Effective January 1, 2025] Non-exempt employees who prefer earning overtime pay instead of the default, FLSA compensatory time, must elect to do so in writing prior to the performance of the work. Employees may only change their election once a year. The earning of such overtime pay will be calculated at time and one-half (1.5) of the regular base rate of pay, in accordance with FLSA regulations. The agreement shall remain in effect for one year. Employees have the option to change their election annually.

D. Exempt Employees

Exempt employees in positions determined to be "exempt" from the FLSA are not eligible for overtime pay. Exempt employees may earn "comp time" up to 24 hours to use at the discretion of their Department Director but not to exceed straight time (hour-for-hour) rate. Comp time should be approved by the Town Manager or Department Director and ends without compensation upon termination of employment.

Article III., Section 13. Call-back and On-Call Pay (Revised Effective 7-1-24)

The Town of Holly Springs must provide a variety of critical emergency services 24 hours a day, seven days a week. The need for these services may occur when employees with the necessary skills are not on duty. As a result, the Town must be assured that skilled employees are always

readily available by placing some employees on standby status. At other times it is necessary for certain employees to respond to any reasonable request for duty at any hour of the day or night. Employees in such positions will share in the responsibility for continuous service, in accordance with the nature of each position. If an employee fails to respond to reasonable calls for emergency service, either special or routine, the employee shall be subject to disciplinary action up to and including dismissal.

Emergency Call-Back Pay. Emergency call-back is when an employee has left the work site and is required either to return to work or respond to work. It is irregular or occasional overtime work performed by an employee on a day when no work is scheduled, or at a time which requires the employee to return to the place of employment from an off-duty status. Non-exempt employees will be paid at one and a half times their hourly rate of pay for hours worked outside their normal schedule if they are actually required to respond or return to work. When a non-exempt employee is called back to work or a worksite because of a special ~~needs or an~~ emergency event, the non-exempt employees will be paid for a minimum of two hours of work, even if their actual work time was shorter. "Call-back" provisions do not apply to previously scheduled overtime work (scheduled one or more days in advance). If more than one callback occurs within a given shift, total callback time cannot exceed two hours unless the work time exceeds two hours.

On-Call Pay. Each applicable department has an established rotation where different employees share responsibility for being ready to respond or return to work for a specified period of time when called. On-call status ~~means~~ is defined as that time when an employee must remain near an established telephone and be being fit and able to report to work within an acceptably short period of time, as designated by the department.

When designated on-call employees are not performing work duties, the Town will provide compensation in recognition of the employee's commitment and impact on to personal time that being on-call can have. Compensation will be paid to non-exempt employees at a rate of \$20 per day.

On-call status – a non-exempt employee must be available for contact and be able to respond, and/or report back to work if needed.

Emergency Call-back status – is when a non-exempt employee has (1) left the worksite and (2) is requested to respond on short notice to an emergency work situation to:

- avoid significant service disruption
- avoid placing employees or the public in unsafe situations, or
- protect and/or provide emergency services to property or equipment

Callback may involve either: going back to work or responding via telephone/computer.

Article III, Section 14. Holiday Pay (Revised Effective 7-1-24)

Holidays are equivalent to an employee's shift workday ~~8 hours straight time pay~~ for all regular full-time employees regardless of their typical workweek schedule and are excluded from hours

worked in calculating overtime. Benefits-eligible employees required to work on a regularly scheduled, Town-recognized holiday will be paid at their hourly rate for the hours actually worked plus ~~8~~ **the number of hours equivalent to their normal workday** of straight time for the holiday.

Holidays: Compensations When Work is Required

Employees required to perform work on regularly scheduled holidays shall be paid at their hourly rate for hours actually worked in addition to any holiday pay to which they are entitled. If a holiday falls on a regularly scheduled off-duty day for shift personnel, the employee shall receive pay for the holiday hours. Examples are as follows:

- General: 40-hour work week (2080 annual hours) 8.0 hours
- Police: 42-hour work week (2184 annual hours) 12.0 hours
- Fire: 41.25-hour work week (2145 annual hours) 16.5 hours (based on the Fire Department's sleep time agreement)

Regular, full-time employees required to physically work on New Year's Day, Independence Day, Veteran's Day, or Christmas, if they fall on a weekend, will receive holiday premium pay equivalent to 1.5 times hourly rate for hours worked in addition to ~~their~~ **8** hours for the holiday.

Holidays

The policy of the Town is to follow the holiday schedule provided by the State of North Carolina for its employees subject to modification by the Town Manager. In order to receive a paid holiday, an employee must have worked the day before and the day after the holiday(s) or have been given approved leave.

Suspension without pay is not considered approved leave.

Article III., Section 17. Longevity Pay (Revised Effective 7-1-24)

Full-time and part-time regular employees are compensated for years of service to the Town by payment of a longevity supplement. Longevity pay is based on ~~the~~ **the** total number of years of continuous service. ~~Beginning with the 2008-2009 fiscal year,~~ **Employees shall receive longevity pay on the payday for the pay period in which his/her eligibility date occurs and annually in succeeding years. Employees shall receive longevity pay based on the following table:**

<u>Years of Service</u>	<u>Longevity Amount</u>
3 - 9 5 - 9	\$300.00
10 - 14	\$500.00
15 - 19	\$700.00
20 plus	\$1,000.00

If an employee goes on leave without pay, longevity shall not be paid until the employee returns to work and completes six months of service.

Article VII., Section 6. Vacation/Personal Leave: Accrual Rate (Revised Effective 7-1-24)

Each full and ~~part~~-time employee of the Town shall accrue vacation at the following schedule, prorated by the average number of hours in the workweek (Section 15):

General Vacation Leave Accrual Rates (Earned per 26 bi-weekly pay period)

Years of Service	Yearly Accrual (Days)	Hours Accrued (Per Year)	Accrual Rate
0 but less than 2	10	80	3.077
2 but less than 5	12	96	3.692
5 but less than 10	15	120	4.615
10 but less than 15	18	144	5.538
15 but less than 20	20	160	6.154
20 or more	24	192	7.385

Fire Shift Vacation Leave Accrual Rates (Earned per 26 bi-weekly pay period)

Years of Service	Yearly Accrual (Days)	Hours Accrued (Per Year)	Accrual Rate
0 but less than 2	10	80	3.169
2 but less than 5	12	96	3.803
5 but less than 10	15	120	4.754
10 but less than 15	18	144	5.705
15 but less than 20	20	160	6.338
20 or more	24	192	7.606

Police Shift Vacation Leave Accrual Rates (Earned per 26 bi-weekly pay period)

Years of Service	Yearly Accrual (Days)	Hours Accrued (Per Year)	Accrual Rate
0 but less than 2	10	80	3.231
2 but less than 5	12	96	3.877
5 but less than 10	15	120	4.845
10 but less than 15	18	144	5.815
15 but less than 20	20	160	6.461
20 or more	24	192	7.754

In an effort to attract and retain employees with subject matter expertise in local government, newly hired and current employees will accrue vacation leave based on years of service in the

Local Government Employees Retirement System (LGERS) not solely years of service for the Town.

Article VII., Section 12. Sick Leave: Accrual Rate and Accumulation (Revised Effective 7-1-24)

Sick leave shall accrue at a rate of one day per month of service or twelve days per year. Sick leave for full-time ~~and part-time employees,~~ **prorated and accumulated per pay period based on the number of hours an employee is scheduled to work per week:** ~~working other than the basic work schedule shall be pro-rated as described in this Article.~~

Sick Leave Accrual Rates (Earned per 26 bi-weekly pay period)

General	Fire	Police
3.692	3.803	3.877

All sick leave accumulated by an employee ~~shall be forfeited and terminate~~ without compensation when the employee resigns or is separated from the Town, except as stated for employees retiring or terminated due to reduction in force. Sick leave will **accrue** ~~be cumulative~~ for an indefinite period of time and may be converted upon retirement for service credit consistent with the provisions of the North Carolina Local Government Employees' Retirement System.

Section 15. Calculation for Leave Pro-rated Leave

~~Holiday,~~ **Vacation,** and sick leave earned by full-time ~~and part-time~~ employees with fewer or greater hours than the basic work week shall be prorated and determined by the following formula:

- 1) The number of hours worked by such employees shall be divided by the number of hours in the basic workweek (usually 40 hours).
- 2) The proportion obtained in step 1 shall be multiplied by the number of hours of leave earned annually by employees working the basic workweek.
- 3) The number of hours in step 2 divided by 12 shall be the number of hours of leave earned monthly by the employees concerned **or** divided by 26 shall be the number of hours of leave earned bi-weekly.

Article. VII., Section 16. Lactation Accommodations (Added Effective 7-1-24)

Town of Holly Springs will provide a reasonable amount of break time to accommodate employees desiring to express breast milk for their infant child, in accordance with and to the extent required by applicable law. The break time, if possible, must run concurrently with rest and meal periods already provided. If the break time cannot run concurrently with rest and meal periods already provided, the break time will be unpaid, subject to applicable law.

The Town will make reasonable efforts to provide employees with the use of a room or location other than a toilet stall to express milk in private. This location may be the employee's private office, if applicable. The Town may not be able to provide additional break time if doing so would seriously disrupt the Town's operations, subject to applicable law. Please consult the Human Resources Department with questions regarding this policy.

Employees should advise management if they need break time and an area for this purpose. Employees will not be discriminated against or retaliated against for exercising their rights under this policy.

Article VII., Section 21. Military Leave (Revised Effective 7-1-2024)

In accordance with federal and state laws, the Town provides military leave to employees who are members of a United States Armed Forces Reserve organization or National Guard for absences to perform military duty, whether voluntary or involuntary. Absences to perform any military duty (including active duty, active-duty training, inactive duty training such as scheduled drills and summer camp, full-time National Guard federal duty, fitness-for-duty examination, and funeral honors duty) are covered by this policy, unless the employee reaches the five-year maximum of military leave as established by the Uniformed Services Employment and Reemployment Rights Act (USERRA). This policy provides military leave to regular Town employees unless their employment is for a brief, non-recurrent period and there is no reasonable expectation that such employment will continue indefinitely or for a significant period.

Employees should submit a request for military leave to the supervisor or Department Director as soon in advance of the military duty as possible. The request should be in writing and should be accompanied by a copy of the military orders. Employees must report back to work as soon after military duty as possible, consistent with federal and state laws. If the reason for the employee's delay is not related to military duties, the employee is subject to the personnel policies and practices normally applied to employees with unexcused absences.

Employees may choose whether to use earned compensatory time, accrued vacation leave (leave with pay), leave without pay, or some combination thereof for these absences, and the provisions of that leave shall apply.

A. Differential Pay

Regular employees choosing to use military leave may claim up to ten (10) days of differential pay per calendar year provided the days are recorded as military leave and the military basic pay is less than the employee's regular Town pay. To claim differential pay, the employee must submit a copy of his/her military orders, pay vouchers, Leave and Earnings Statement and/or other appropriate documentation evidencing performance and compensation pertinent to the military duty.

B. Military Training Leave

A benefit eligible employee in a regular status may be eligible for paid military training leave.

- **Amount of Military Training Leave**

Regular employees shall earn military training leave at the rate of 96 hours per calendar year. Benefit-eligible employees with a different set of annual hours will receive military training leave in direct proportion to their annual scheduled work hours.

The military leave balance of an employee who changes annual work hours mid- year (because of a position change, schedule change, etc.) will be adjusted to reflect the proportional amount of military leave remaining, based on the employee's new schedule. The adjustment will ensure the employee receives the correct number of military leave days for the year.

- **Process to Receive Military Training Leave**

To receive military training leave, the employee must provide documentation that the employee is an active member of the National Guard or Armed Forces reserve and has been ordered to report for military training. Upon receipt of the documentation, the Town will provide the paid military training hours in an amount to cover the absence, not to exceed 96 hours (or prorated equivalent) in a calendar year. The Town will not prorate the amount of military training leave based on when documentation is provided in the year.

Documentation should be submitted to the Human Resources Department.

- **Process to Use Military Training Leave**

To use military training leave, the employee must notify his/her supervisor and Human Resources. The employee must follow departmental call out procedures and provide advanced notice, when possible.

The employee must continue to notify his/her supervisor and Human Resources leave when the employee must miss a scheduled workday or work period, even after paid military training leave is exhausted.

The employee must provide proof of being ordered to report for military training either in advance or thereafter, so long as the documents are provided within a reasonable period of time.

During the period of military leave, regular employees may continue health and dental insurance coverage up to eighteen months under COBRA coverage, provided they continue to pay their share of the premiums. As with any other unpaid leave, employees do not accrue vacation leave or sick leave during the period of leave without pay. However, the balance of such accruals on the date of commencement of the military leave will remain intact for the employee's return to work.

Article VII., Section 29. Paid Parental Leave (Revised Effective 7-1-2024)

A regular full-time employee who has been employed with the Town of Holly Springs for at least 12 months and who is eligible for Family Medical Leave (FMLA) may request up to **six (6)** weeks of paid parental leave. Paid parental leave must be used within 12 months of the date of the qualifying event. Qualifying events include:

- Birth of a child of the employee
- The legal placement of a child with the employee for adoption, foster care, or guardianship; or placement of a child for whom the employee permanently assumes and discharges parental responsibilities (in loco parentis)

The amount of paid parental leave for any one person shall not exceed six (6) weeks in a rolling 12-month period. **If both parents are employed by the Town and have one qualifying event, each parent is eligible for the six (6) weeks of paid parental leave, either consecutively or intermittently.** Paid parental leave shall run concurrently with FMLA. After paid parental leave has been exhausted, employees shall use other appropriate forms of accrued leave before requesting leave without pay.

An employee who fails to remain in an active status for a minimum of 6 months after returning from paid parental leave will be required to reimburse the Town or any paid parental leave received. The value of the paid parental care leave received will be deducted from the employee's final paycheck, including any annual leave to be paid out.

Article VII., Section 30. **Paid Eldercare Leave (Revised Effective 7-1-2024)**

~~Regular, full-time employees are eligible for three weeks (120 hours) of paid eldercare leave to provide care for an elderly parent with a serious health condition as defined by the Family Medical Leave Act. The paid leave will run concurrent with Family Medical Leave. Eligible employees must have completed twelve consecutive months of employment immediately preceding the qualifying event and qualify for Family Medical Leave. Employees separating from Town employment within 6 months of receiving paid eldercare leave will forfeit the ability to receive vacation leave payout upon separation. The value of the paid eldercare leave will be deducted from the employee's final paycheck, including any compensatory time paid out.~~

A regular full-time employee who has been employed with the Town of Holly Springs for at least 12 months and who is eligible for Family Medical Leave (FMLA) may request paid eldercare leave. Paid elder care leave must be used within twelve (12) months of the date of the qualifying event.

A qualifying event includes the care of a parent, spouse, grandparent, or legal guardian who is age 65 or older with a serious health condition as defined by the Family Medical Leave Act.

The amount of paid elder care leave for any one person shall not exceed three (3) weeks in a rolling 12-month period. If the qualifying event requirements are met the employee is eligible for the three (3) weeks of paid elder care leave, either consecutively or intermittently. Paid eldercare leave shall run concurrently with FMLA. After paid elder care leave has been exhausted,

employees shall use other appropriate forms of accrued leave before requesting leave without pay.

A non-exempt employee who fails to remain in an active status for a minimum of six (6) months after returning from paid elder care leave will be required to reimburse the Town for any paid elder care leave received. The value of the paid elder care leave received will be deducted from the employee's final paycheck, including any annual leave to be paid out.

NOTE: Employees are not allowed to use paid eldercare leave and paid caregiver leave for the same family member.

Article VII., Section 31. Paid Caregiver Leave (Added Effective 7-1-2024)

A regular full-time employee who has been employed with the Town of Holly Springs for at least 12 months and who is eligible for Family Medical Leave (FMLA) may request paid caregiver leave. Paid caregiver leave is for employees who need to care for a seriously ill family member in accordance with the FMLA. The leave must be used within twelve (12) months of the date of the qualifying event.

A qualifying event includes the care of a parent, spouse grandparent, child, sibling, and in-law with a serious health condition as defined by the Family Medical Leave Act.

The amount of paid caregiver leave for any one person shall not exceed three (3) weeks in a rolling 12-month period. If the qualifying event requirements are met the employee is eligible for the three (3) weeks of paid caregiver leave, either consecutively or intermittently. Paid caregiver leave shall run concurrently with FMLA. After paid caregiver leave has been exhausted, employees shall use other appropriate forms of accrued leave before requesting leave without pay.

A non-exempt employee who fails to remain in an active status for a minimum of six (6) months after returning from paid caregiver leave will be required to reimburse the Town for any paid caregiver leave received. The value of the paid caregiver leave received will be deducted from the employee's final paycheck, including any annual leave to be paid out.

NOTE: Employees are not allowed to use paid caregiver leave and paid eldercare leave for the same family member

Summary of Ordinance Changes for June 18, 2024, Town Council

The following is a list of capital project and reserve ordinances detailing the implementation of the FY2024-2025 Community Investment Plan. Capital project ordinances appropriate funds for all projects contained within the project fund. Capital reserve ordinances appropriate revenues and transfers out.

PAYGO Capital Project Ordinance

Current Ordinance Appropriation	\$8,240,411
Downtown Investment Grant (DIG)	\$25,000
Sidewalk and Pedestrian Improvements	\$225,000
Neighborhoods and Traffic Calming	\$30,000
ADA Act Improvements	\$200,000
Public Facility Maintenance and Repairs	\$100,000
Playground Rehabilitation and Park Amenities	\$75,000
Law Enforcement Center 2 nd Floor Workspace Renovations	\$120,000
End of Year Amend. (Agenda item #9) – Project Management	\$100,000
End of Year Amend. (Agenda item #9) – Innovation/Pilot Projects	\$10,000
End of Year Amend. (Agenda item #9) – Correction for GASB Rule	\$161,826
End of Year Amend. (Agenda item #9) – Comp. Plan Update	\$100,000
PAYGO Capital Project Ordinance (24-18)	\$9,387,824

Utility PAYGO Capital Project Ordinance

Current Ordinance Appropriation	\$2,990,200
ESRI GIS Utility Network	\$106,500
Long Range Water Resources Plan	\$150,000
Risk and Resiliency Plan Implementation	\$200,000
Utility System Maintenance and Repairs	\$510,000
Waste Water Treatment Plant and Pump Station SCADA	\$600,000
End of Year Amend. (Agenda item #9) – Cityworks Implement.	\$100,000
Utility PAYGO Capital Project Ordinance (24-19)	\$4,656,700

Grants and Special Revenue Project Ordinance

Current Ordinance Appropriation	\$5,748,196
Micro-Transit Study – Town Match Portion	\$25,000
Grants and Special Revenue Project Ordinance (24-20)	\$5,773,196

Parks and Recreation Capital Project Ordinance

Current Ordinance Appropriation	\$36,369,153
Cultural Center Theater Seats	\$250,000
Womble Baseball Dugout Improvements	\$175,000
Eagles Landing Park	\$81,000,000

Summary of Ordinance Changes for June 18, 2024, Town Council

Eagles Landing Park (Grant)	\$2,300,000
Parks and Recreation Capital Project Ordinance (24-21)	\$120,094,153

Water Capital Project Ordinance

Current Ordinance Appropriation	\$113,835,281
Elevated Water Tank on New Hill Rd	\$1,500,000
Holly Springs – Fuquay-Varina Water Line	\$32,600,000
Sanford Water Treatment Capacity	\$11,100,000
GB Alford Bypass Water Connection	\$1,100,000
Northwest Area Water Line Connection	\$7,000,000
Harnett County Water Transmission Booster Station	\$12,000,000
Water Capital Project Ordinance (24-22)	\$179,135,281

Waste Water Capital Project Ordinance

Current Ordinance Appropriation	\$49,592,330
Utle Creek Waste Water Reclamation Facility 8 MGD Upgrade	\$162,200,000
Oakview Development Agreement (See agenda item #21)	\$247,309
Oakview Development Expense (See agenda item #21)	\$6,000
Waste Water Capital Project Ordinance (24-23)	\$212,045,639

System Development Fee Capital Reserve Ordinance

Current Ordinance Appropriation	\$26,003,711
Recognizing collected system development fee revenue	\$15,175,720
System Development Fee Capital Reserve Ordinance (24-24)	\$41,179,431

Stormwater Capital Reserve Ordinance

Current Ordinance Appropriation	\$1,408,597
Recognizing collected revenue	\$165,000
Stormwater Capital Reserve Ordinance (24-25)	\$1,573,597



Ordinance No. 24-18

Date Submitted: June 18, 2024

Date Adopted: June 18, 2024

**PAYGO Capital Project Ordinance
HOLLY SPRINGS, NORTH CAROLINA**

BE IT ORDAINED by the Town Council of Holly Springs, North Carolina, that, pursuant to Section 13.2 of Chapter 159 of the General Statutes of North Carolina, the following capital project ordinance is hereby adopted:

SECTION I: The project authorized by this ordinance consists of general government “pay-as-you-go” (PAYGO) capital projects related to downtown development, public facilities, Town projects, sidewalk and streets, Americans with Disabilities Act (ADA) improvements, vehicle replacements, park and playground amenities, public works projects, and one-time general government capital projects, infrastructure, and equipment.

SECTION II: The officers of this unit are hereby directed to proceed with the capital project within the terms of the budget contained herein.

SECTION III: PAYGO Fees shall be deposited directly into the fund effective June 18, 2024

PAYGO Fund	
Expenditures:	
Town Projects	3,107,989
Transfers Out (Excess Fund Balance Policy)	2,000,000
Sidewalks and Street Projects	1,235,000
Public Facility Projects	1,079,893
Park and Recreation Projects	658,248
Vehicle & Equipment	381,000
ADA Projects	455,000
Public Works Projects	125,000
Downtown Development Projects	135,694
Administration Projects	210,000
Total	9,387,824

SECTION IV: The following revenues are anticipated to be available to complete these projects:

PAYGO Fund	
Revenues:	
General Government Revenues	9,035,410
Federal Grants	190,588
Other Financing Sources - Leases	161,826
Total	9,387,824

SECTION V: The Finance Officer hereby directed to maintain within the project funds detailed accounting records.

SECTION VI: The Budget Officer is directed to include a detailed analysis of the past and future costs and revenues on this capital project in every budget submission made to the Town Council.

SECTION VII: The Town Manager or designee is authorized to amend expenditures within the fund for expenditures that are authorized per section I of this ordinance that do not change the total appropriation within the fund.

SECTION VIII: Copies of this capital project ordinance shall be furnished to the Clerk to the Town Council, and to the Budget Officer and the Finance Officer for direction in carrying out this project.

SECTION IX: All ordinances in conflict with this ordinance are hereby repealed or amended to reflect the controlling nature of this Ordinance.

The provisions of this ordinance shall become effective June 18, 2024 in accordance with the laws of the State of North Carolina.

Adopted this, the 18th day of June 2024.

Town of Holly Springs by

Sean Mayefskie, Mayor

ATTEST:

Linda McKinney, Town Clerk





Ordinance No. 24-19

Date Submitted: June 18, 2024

Date Adopted: June 18, 2024

**Utility PAYGO Capital Project Ordinance
HOLLY SPRINGS, NORTH CAROLINA**

BE IT ORDAINED by the Town Council of Holly Springs, North Carolina, that, pursuant to Section 13.2 of Chapter 159 of the General Statutes of North Carolina, the following capital project ordinance is hereby adopted:

SECTION I: The project authorized by this ordinance consists of water and sewer enterprise fund “pay-as-you-go” (PAYGO) capital projects related to water and sewer system infrastructure, planning, studies, and capital assets.

SECTION II: The officers of this unit are hereby directed to proceed with the capital project within the terms of the budget contained herein.

SECTION III: The Utility PAYGO Fees shall be deposited directly into this fund effective June 18, 2024:

Utility PAYGO Fund	
Expenditures:	
Water and Sewer Projects	4,656,700
Total	4,656,700

SECTION IV: The following revenues are anticipated to be available to complete these projects:

Utility PAYGO Fund	
Revenues:	
Transfers In	4,656,700
Total	4,656,700

SECTION V: The Finance Officer hereby directed to maintain within the project funds detailed accounting records.

SECTION VI: The Budget Officer is directed to include a detailed analysis of the past and future costs and revenues on this capital project in every budget submission made to the Town Council.

SECTION VII: The Town Manager is authorized to amend expenditures within the fund for

expenditures that are authorized per section I of this ordinance that do not change the total appropriation within the fund.

SECTION VIII: Copies of this capital project ordinance shall be furnished to the Clerk to the Town Council, and to the Budget Officer and the Finance Officer for direction in carrying out this project.

SECTION IX: All ordinances in conflict with this ordinance are hereby repealed or amended to reflect the controlling nature of this Ordinance.

The provisions of this ordinance shall become effective June 18, 2024 in accordance with the laws of the State of North Carolina.

Adopted this, the 18th day of June 2024.

Town of Holly Springs by

Sean Mayefskie, Mayor

ATTEST:

Linda McKinney, Town Clerk





Ordinance No. 24-20

Date Submitted: June 18, 2024

Date Adopted: June 18, 2024

**Grants and Special Revenue Fund Project Ordinance
HOLLY SPRINGS, NORTH CAROLINA**

BE IT ORDAINED by the Town Council of Holly Springs, North Carolina, that, pursuant to Section 13.2 of Chapter 159 of the General Statutes of North Carolina, the following capital project ordinance is hereby adopted:

SECTION I: The project authorized by this ordinance consists of general government projects funded by donations, grants, and local, state, and federal restricted funds.

SECTION II: The officers of this unit are hereby directed to proceed with the capital project within the terms of the budget contained herein.

SECTION III: The following amounts are appropriated for the project funds effective June 18, 2024

Grant and Special Revenue Fund	
Expenditures:	
Code Enforcement	2,816,041
Police	452,581
General Government	2,401,011
Parks and Recreation	61,063
Development Services	25,000
Public Works	12,500
Fire	5,000
Total	5,773,196

SECTION IV: The following revenues are anticipated to be available to complete these projects:

Grant and Special Revenue Fund	
Revenues:	
Transfers from General Fund	2,934,347
State Grants and Intergovernmental Funds	2,136,889
Federal Grants and Intergovernmental Funds	345,705
Miscellaneous Revenues	356,255
Total	5,773,196

SECTION V: The Finance Officer hereby directed to maintain within the project funds detailed accounting records.

SECTION VI: The Budget Officer is directed to include a detailed analysis of the past and future costs and revenues on this capital project in every budget submission made to the Town

Council.

SECTION VII: The Town Manager or designee is authorized to amend expenditures within the fund for expenditures that are authorized per section I of this ordinance that do not change the total appropriation within the fund.

SECTION VIII: Copies of this capital project ordinance shall be furnished to the Clerk to the Town Council, and to the Budget Officer and the Finance Officer for direction in carrying out this project.

SECTION IX: All ordinances in conflict with this ordinance are hereby repealed or amended to reflect the controlling nature of this Ordinance.

The provisions of this ordinance shall become effective June 18, 2024 in accordance with the laws of the State of North Carolina.

Adopted this, the 18th day of June 2024.

Town of Holly Springs by

Sean Mayefskie, Mayor

ATTEST:

Linda McKinney, Town Clerk





Ordinance No. 24-21

Date Submitted: June 18, 2024

Date Adopted: June 18, 2024

**Parks and Recreation Capital Project Ordinance
HOLLY SPRINGS, NORTH CAROLINA**

BE IT ORDAINED by the Town Council of Holly Springs, North Carolina, that, pursuant to Section 13.2 of Chapter 159 of the General Statutes of North Carolina, the following capital project ordinance is hereby adopted:

SECTION I: The project authorized by this ordinance consists of parks and recreation capital projects.

SECTION II: The officers of this unit are hereby directed to proceed with the capital project within the terms of the budget contained herein.

SECTION III: Parks and Recreation Fees shall be deposited directly in the fund and the following amounts are appropriated for the project funds effective June 18, 2024:

Parks and Recreation Capital Project Fund	
Expenditures:	
Parks and Recreation Capital Project Fund	120,094,153
Total	120,094,153

SECTION IV: The following revenues are anticipated to be available to complete these projects:

Park and Recreation Capital Project Fund	
Revenues:	
Bond Proceeds	99,602,668
Transfer In	13,294,945
State Grants	3,734,340
Other Grants	2,300,000
Federal Grants	1,133,000
Miscellaneous Revenues	29,200
Total	120,094,153

SECTION V: The Finance Officer hereby directed to maintain within the project funds detailed accounting records.

SECTION VI: The Budget Officer is directed to include a detailed analysis of the past and future costs and revenues on this capital project in every budget submission made to the Town Council.

SECTION VII: The Town Manager is authorized to amend expenditures within the fund for expenditures that are authorized per section I of this ordinance that do not change the total appropriation within the fund.

SECTION VIII: Copies of this capital project ordinance shall be furnished to the Clerk to the Town Council, and to the Budget Officer and the Finance Officer for direction in carrying out this project.

SECTION IX: All ordinances in conflict with this ordinance are hereby repealed or amended to reflect the controlling nature of this Ordinance.

The provisions of this ordinance shall become effective June 18, 2024 in accordance with the laws of the State of North Carolina.

Adopted this, the 18th day of June 2024.

Town of Holly Springs by

Sean Mayefskie, Mayor

ATTEST:

Linda McKinney, Town Clerk





Ordinance No. 24-22

Date Submitted: June 18, 2024

Date Adopted: June 18, 2024

**Water Capital Project Ordinance
HOLLY SPRINGS, NORTH CAROLINA**

BE IT ORDAINED by the Town Council of Holly Springs, North Carolina, that, pursuant to Section 13.2 of Chapter 159 of the General Statutes of North Carolina, the following capital project ordinance is hereby adopted:

SECTION I: The project authorized by this ordinance consists of Water system projects.

SECTION II: The officers of this unit are hereby directed to proceed with the capital project within the terms of the budget contained herein.

SECTION III: The following amounts are appropriated for the project funds effective June 18, 2024

Water Project Fund	
Expenditures:	
Water Projects	179,135,281
Total	179,135,281

SECTION IV: The following revenues are anticipated to be available to complete these projects:

Water Project Fund	
Revenues:	
Revenue Bonds	109,600,000
Transfers In	24,502,720
State Grants	29,605,531
Private Contributions	9,927,030
Federal Grants	5,500,000
Total	179,135,281

SECTION V: The Finance Officer hereby directed to maintain within the project funds detailed accounting records.

SECTION VI: The Budget Officer is directed to include a detailed analysis of the past and future costs and revenues on this capital project in every budget submission made to the Town Council.

SECTION VII: The Town Manager or designee is authorized to amend expenditures within the fund for expenditures that are authorized per section I of this ordinance that do not change the total appropriation within the fund.

SECTION VIII: Copies of this capital project ordinance shall be furnished to the Clerk to the Town Council, and to the Budget Officer and the Finance Officer for direction in carrying out this project.

SECTION IX: All ordinances in conflict with this ordinance are hereby repealed or amended to reflect the controlling nature of this Ordinance.

The provisions of this ordinance shall become effective June 18, 2024 in accordance with the laws of the State of North Carolina.

Adopted this, the 18th day of June 2024.

Town of Holly Springs by

Sean Mayefskie, Mayor

ATTEST:

Linda McKinney, Town Clerk





Ordinance No. 24-23

Date Submitted: June 18, 2024

Date Adopted: June 18, 2024

**Waste Water Capital Project Ordinance
HOLLY SPRINGS, NORTH CAROLINA**

BE IT ORDAINED by the Town Council of Holly Springs, North Carolina, that, pursuant to Section 13.2 of Chapter 159 of the General Statutes of North Carolina, the following capital project ordinance is hereby adopted:

SECTION I: The project authorized by this ordinance consists of Waste Water system projects.

SECTION II: The officers of this unit are hereby directed to proceed with the capital projects within the terms of the budget contained herein.

SECTION III: The following amounts are appropriated for the project funds effective June 18, 2024

Waste Water Fund	
Expenditures:	
Waste Water Projects	212,045,639
Total	212,045,639

SECTION IV: The following revenues are anticipated to be available to complete these projects:

Waste Water Fund	
Revenues:	
Revenue Bond	191,700,000
Transfer In	7,385,639
Federal Grants and Reimbursements	8,960,000
State Grants and Reimbursements	4,000,000
Total	212,045,639

SECTION V: The Finance Officer hereby directed to maintain within the project funds detailed accounting records.

SECTION VI: The Budget Officer is directed to include a detailed analysis of the past and future costs and revenues on this capital project in every budget submission made to the Town Council.

SECTION VII: The Town Manager or designee is authorized to amend expenditures within the fund for expenditures that are authorized per section I of this ordinance that do not change the total appropriation within the fund.

SECTION VIII: Copies of this capital project ordinance shall be furnished to the Clerk to the Town Council, and to the Budget Officer and the Finance Officer for direction in carrying out this project.

SECTION IX: All ordinances in conflict with this ordinance are hereby repealed or amended to reflect the controlling nature of this Ordinance.

The provisions of this ordinance shall become effective June 18, 2024 in accordance with the laws of the State of North Carolina.

Adopted this, the 18th day of June 2024.

Town of Holly Springs by

Sean Mayefskie, Mayor

ATTEST:

Linda McKinney, Town Clerk





Ordinance No. 24-24

Date Submitted: June 18, 2024

Date Adopted: June 18, 2024

**System Development Fee Capital Reserve Fund
HOLLY SPRINGS, NORTH CAROLINA**

BE IT ORDAINED by the Town Council of Holly Springs, North Carolina, that, pursuant to Section 18 of Chapter 159 of the General Statutes of North Carolina, the following capital reserve fund ordinance is hereby adopted:

SECTION I: The Town Council hereby creates a capital reserve fund for the purpose of acquiring land, making capital improvements to land and facilities, purchasing and constructing capital equipment or facilities for water, reclaimed water, and waste water system purposes.

SECTION II: This fund will remain operational until closed by resolution or ordinance of the governing body.

SECTION III: Water, Reclaimed Water, and Sewer System Development Fees shall be deposited directly into this fund effective June 18, 2024.

SECTION IV: The following amounts are appropriated for the capital reserve fund:

System Development Fee Capital Reserve Fund	
Expenditures:	
Transfers Out	41,179,431
Total	41,179,431

SECTION V: The following revenues are anticipated to be available to complete these projects:

System Development Fee Capital Reserve Fund	
Revenues:	
System Development Fee Revenues	41,179,431
Total	41,179,431

SECTION VI: Copies of this ordinance shall be furnished to the Clerk to the Town Council, and to the Budget Officer and the Finance Officer for direction in carrying out this project.

SECTION VII: All ordinances in conflict with this ordinance are hereby repealed or amended to reflect the controlling nature of this Ordinance.

The provisions of this ordinance shall become effective June 18, 2024 in accordance with the laws of the State of North Carolina.

Adopted this, the 18th day of June 2024.

Town of Holly Springs by

ATTEST:

Sean Mayefskie, Mayor

Linda McKinney, Town Clerk





Ordinance No. 24-25

Date Submitted: June 18, 2024

Date Adopted: June 18, 2024

**Stormwater Capital Reserve Fund
HOLLY SPRINGS, NORTH CAROLINA**

BE IT ORDAINED by the Town Council of Holly Springs, North Carolina, that, pursuant to Section 18 of Chapter 159 of the General Statutes of North Carolina, the following capital reserve fund ordinance is hereby adopted:

SECTION I: The Town Council hereby creates a capital reserve fund for the purpose of acquiring land, making capital improvements to land and facilities, and purchasing, constructing, or maintaining capital equipment or facilities for Stormwater projects purposes.

SECTION II: This fund will remain operational until closed by resolution or ordinance of the governing body.

SECTION III: Stormwater fund revenues as identified will be transferred into this fund effective June 18, 2024.

SECTION IV: The following amounts are appropriated for the capital reserve fund:

Stormwater Capital Reserve Fund	
Expenditures:	
Transfers Out	1,573,597
Total	1,573,597

SECTION V: The following revenues are anticipated to be available to complete these projects:

Stormwater Capital Reserve Fund	
Revenues:	
Stormwater Revenues	1,573,597
Total	1,573,597

SECTION VI: Copies of this ordinance shall be furnished to the Clerk to the Town Council, and to the Budget Officer and the Finance Officer for direction in carrying out this project.

SECTION VII: All ordinances in conflict with this ordinance are hereby repealed or amended to reflect the controlling nature of this Ordinance.

The provisions of this ordinance shall become effective June 18, 2024 in accordance with the laws of the State of North Carolina.

Adopted this, the 18th day of June 2024.

Town of Holly Springs by

Sean Mayefskie, Mayor

ATTEST:

Linda McKinney, Town Clerk





Holly Springs Town Council

Town Council Meeting Agenda Cover Sheet

Agenda Item#: 21.

New Business

Title: Oakview Development Agreement Amendment

Strategic Priority Area: Growth Management & Economic Vitality

Staff Resource: Elizabeth Goodson, Development Services

Action(s):

- Approve an update to the Development Agreement with Helix Ventures, LLC for Oakview Innovation Park

Explanation:

- As a part of the economic development incentive package with Fujifilm Diosynth Biotechnologies, the Town was required to provide utilities for the parcel.
- The developer for Oakview Innovation Park, Helix Ventures, LLC, extended the sewer in the area to serve Fujifilm Diosynth Biotechnologies.
- The original development agreement with Oakview Innovation Park approved in February 2020 anticipated the Town's portion to be \$500,000.
- The actual cost to construct the required line size to provide sewer for Fujifilm Diosynth Biotechnologies was greater.
- As a result, the developer has requested additional reimbursement of \$247,308.91
- Appropriations for this agenda item will be included with the project ordinances as part of agenda item #20 for adoption of the budget and community investment plan.
- Waste Water Capital Project Ordinance (24-23) includes appropriations of \$247,309 from utility reserves for this agenda item as well as an additional \$6,000 in expenses related to the Oakview Development project previously incurred.

Background:

- The Development Agreement for infrastructure construction and fee reimbursement associated with Oakview Innovation Park was approved by Town Council and executed on February 27, 2020.
- The reimbursement for sewer infrastructure was outlined as two installments with the first to be paid after construction drawing approval and the remainder to be paid upon acceptance of the infrastructure.
- The developer has successfully completed the sewer outfall, and it has been accepted by the Town.

Funding Source(s):

Community Investment Plan - Utility Reserves

Attachment(s):

1. Oakview Development Agreement Amendment

STATE OF NORTH CAROLINA)
COUNTY OF WAKE)
)
) AMENDMENT TO
) INFRASTRUCTURE CONSTRUCTION
) AND FEE REMBURSEMENT
) DEVELOPMENT AGREEMENT

This Amendment is effective as of the last date of signature subscribed below, by and between HELIX VENTURES, LLC, a North Carolina Limited Liability Company (the “Developer”) and the Town of Holly Springs (the “Town”), collectively known as the “Parties.” The Parties hereby amend the following agreement, entitled the “DEVELOPMENT AGREEMENT REGARDING INFRASTRUCTURE CONSTRUCTION AND FEE REIMBURSEMENT (N.C. GEN. STAT. § 160A-420.20 et seq.), dated February 27, 2020 (the “Prior Development Agreement”), for the reasons contained herein, leaving all other rights and obligations of the Prior Development Agreement. The purpose of this Amendment is to address additional costs incurred by the Developer, with the consent of the Town, for an upsized portion of sewer to accommodate increased flow.

WHEREAS, the Developer, with the consent of the Town, incurred additional costs to install an upsized portion of sewer line that was required to accommodate increased flow from another development project by FUJIFILM DIOSYNTH BIOTECHNOLGIES U.S.A., INC, a North Carolina Limited Liability Company (“Fujifilm”); and

WHEREAS, the Developer submitted to the Town an invoice (the “Invoice”) on December 28, 2023 for, among other things, an “Approved Change: Realignment and Redesign of the sewer line for FDBU on behalf of Town” totaling Two Hundred Forty-Seven Thousand Three Hundred Eight Dollars and Ninety-One Cents (\$247,308.91). The Invoice is attached hereto and incorporated herein as Exhibit A.

WHEREAS, all the rights and obligations of the Developer in the Prior Development Agreement described above, together with all the rights and obligations of the Developer contained in any Town approval with respect to the Project (as that term is defined in the Development Agreement) shall remain and are in full force with no changes other than what is listed herein;

NOW THEREFORE, in consideration of the foregoing which are covenants to be incorporated herein, the Parties do agree that the Town shall reimburse the Developer Two Hundred Forty-Seven Thousand Three Hundred Eight Dollars and Ninety-One Cents (\$247,308.91).

IN WITNESS WHEREOF, the parties have executed this Agreement effective the last date of the signatory below.

TOWN OF HOLLY SPRINGS

(Town Seal)

BY: _____
Randy Harrington, Town Manager

Date Signed: _____

ATTEST:

Linda C. McKinney, Town Clerk

HELIX VENTURES, LLC

By: _____
(Print Name)

BY: _____

TITLE: _____

Date Signed: _____

Exhibit A – Helix Ventures, LLC Invoice Dated December 28, 2023

EXHIBIT A

HELIX VENTURES LLC INVOICE

December 28th, 2023



INVOICE #2018-06-02 – OAKVIEW DEVELOPMENT AGMT PAYMENT #2

Bill To		Pay To	
Customer	Town of Holly Springs Attn: Elizabeth Goodson Tina Stroupe	Recipient	Helix Ventures LLC
Address	128 S. Main Street Holly Springs, NC 27540	Address	3717 National Drive, Ste. 209 Raleigh, NC 27612
Due Date	January 27th, 2024		

Date	Description	Amount Due
2/25/22	1 st Payment: Completion of Permit Approval on all Construction Documents	\$ 100,000.00
12/28/23	2nd Payment: Substantial completion of sewer outfall	\$ 400,000.00
12/28/23	Approved Change: Realignment and Redesign of sewer line for FDBU on behalf of Town	\$ 247,308.91
Less:	Previous Payments – 1 st Payment: Completion of Permit Approval	(\$ 100,000.00)
TOTAL DUE AND PAYABLE		\$ 647,308.91

Thank you for your business!

Please confirm Wiring information prior to sending by calling Cara Hylton (703) 300-4686.

Helix Ventures LLC INVOICE

3717 National Drive, Ste. 209
Raleigh, NC 27612

p. 919.371.6208



Holly Springs Town Council

Town Council Meeting Agenda Cover Sheet

Agenda Item#: 22.

New Business

Title: Amendment to Ordinance Sec. 12-65(c)(8) - Cruelty to Animals - Tethering of Animals

Strategic Priority Area: Organizational Excellence

Community Safety

Staff Resource: John Schifano, Town Attorney

Action(s):

Adopt Ordinance 24-30, amending the Animal Cruelty section.

Explanation:

- Ordinance amendment to prohibit tethering of animals on a leash to a stationary object, outside of the presence of the owner.

Background:

- Currently, the existing ordinance gives discretion to the animal control officer when an animal is tethered to a chain or rope to determine if such action is harmful or potentially harmful
- This ordinance amendment takes away officer discretion and makes tethering when the owner is not present illegal.
- The current ordinance has an exception for an overhead pulley system so long as it is humane and allows appropriate freedom of movement and adequate supervision such that the animal does not get tangled, obstructed, or cannot reach food, water, or shelter.

Funding Source(s):

N/A

Attachment(s):

1. Ordinance - Proposed Amendment - Animal Safety - tethering for 6-18-24 mtg



Ordinance No. 24-30

Date Submitted: June 18, 2024

Date Adopted: June 18, 2024

AN ORDINANCE TO AMEND THE TOWN CODE OF THE TOWN OF HOLLY SPRINGS, N.C. TO AMEND CHAPTER 12, PUBLIC SAFETY, ARTICLE III, ANIMALS, DIVISION 1, GENERALLY, SECTION 12-65 – CRUELTY TO ANIMALS

BE IT ORDAINED by the Holly Springs Town Council of the Town of Holly Springs, North Carolina, as follows:

Part 1: Amending Section 12-65(c)(8) to read as follows, with additions indicated with underline, and deletions indicated with ~~strikethrough~~:

Tethering an animal outside of the presence of the owner is prohibited. Further,
aAllowing a collar, rope or chain to become embedded in or cause injury to an animal's neck, or allowing a choke or pinch collar to be used as a primary collar on an unsupervised animal ~~or chaining or tethering an animal to a stationary object for a period of time or under conditions that an animal control officer deems harmful or potentially harmful to the animal~~ is prohibited. ~~Examples of harmful or potentially harmful chaining or tethering include, but are not limited to the following:~~ a. Ariel pulley and trolley systems where an animal is confined by a suspended line and a humane restraint system ~~using a length or weight of a chain or tether that is not appropriate for the size, weight and age of the animal. A chain or tether should not be less than ten feet long. Using a chain or tether that exceeds ten percent of the animal's body weight shall be deemed not appropriate and potentially harmful.~~ b. Allowing an animal to be chained or tethered such that the animal is not confined to the owner's property or such that the chain or tether can become entangled and prevent the animal from moving above freely, lying down comfortably or having access to adequate food, water and shelter. c. Tethering an animal on an appendage such that the animal has appropriate freedom of movement such that it may move more than 20 feet are allowed so long as there is adequate supervision of the animal to ensure it does not get tangled, obstructed, or cannot reach food, water, or shelter.

Adopted this, the _____ day of June 2024.

Town of Holly Springs by

Sean Mayefskie, Mayor

ATTEST:

Linda McKinney, Town Clerk





Holly Springs Town Council

Town Council Meeting Agenda Cover Sheet

Agenda Item#: 23.

New Business

Title: 2024 Limited Obligation Bonds Initial Resolution

Strategic Priority Area: Growth Management & Economic Vitality
Organizational Excellence

Staff Resource: Tina Stroupe, Finance

Action(s):

Adopt Initial Resolution authorizing the Negotiation of an Amendment to an Installment Financing Contract, Directing the Publication of Notice and declaring the Intent of the Town to Reimburse Itself for Capital Expenditures From Proceeds

Explanation:

- Staff recommends the financing of the construction of new Operations Campus (Phase 1B) through issuance of Limited Obligation Bonds (LOBs) with approval from the Local Government Commission (LGC). Staff also recommends the refinancing of the Town's 2014 refunded project which includes a portion of the North Main Athletics Complex, now known as Ting Park, the Law Enforcement Center and other transportation improvements.
- A Limited Obligation Bond is an approved form of municipal financing in North Carolina whereby the debt is sold to investors and the debt is secured (or collateralized) using the acquired asset or another asset of the municipality.
- Phase 1B of the Operations Campus will consist of design and construction of the new campus. Once completed, the new Operations Campus will consist of two buildings: the Administration Building, which will house the Utilities and Infrastructure and Developments Services departments, and the Operations building, which will house the Public Works department.
- The financing of the projects will not exceed the amount of \$53 million. \$44.5 million is estimated for the Operations Camps and the remaining \$8.5 million is estimated for the refunding of the 2014 refunded projects.
- The Town's Financial Advisors are monitoring rates as the Town moves closer to the August 14th pricing date for the bond sale. Staff will determine projected savings for the Town and if including the refinancing in the bond issuance would generate a sufficient amount in savings to move forward with the refinance component of the issuance. Staff recommends including the refinancing in the initial resolution to ensure bond issuance deadlines are met with the understanding the refinancing component can be removed if rates do not drop enough to produce sufficient savings.
- Current interest rates would produce a 1% savings in the amount of \$29,000. Generally, the Local Government Commission utilizes a 3% rate for a standalone refunding but since our refinancing would be an add-on to a larger issuance, it is typically left to the Town's discretion.

Background:

- The proposed Operation Campus will be situated on a 30-acre plot of land, adjacent to the Town's WWTP (Wastewater Treatment Plant). In the initial phase, Phase 1A, there will be several developments, including the extension of Bumgardner Road leading to the property, the construction of a new gravel access drive, and the establishment of a 2.3-acre laydown area. Phase 1A is scheduled to commence in July 2023 and is expected to reach completion by December 2023. Subsequently, Phase 1B will involve the construction of a new Administration Building, Operations Building, Citizens Convenience Center, as well as dedicated areas for vehicle and equipment storage. Phase 1B is planned to commence in the summer of 2024 and is anticipated to be finalized by late 2025.
- The Town previously issued limited obligation bonds, dated September 1, 2023 the proceeds of which were used to finance the capital costs of the construction and equipping of a fire station known as Fire Station 3 ,the acquisition of a fire truck, and sitework for a new operations campus.
- The Town has also previously issued limited obligation bonds, dated as of September 1, 2014 and the proceeds to finance the capital costs of the new law enforcement center for the Town, a portion of the Town's North Main Athletic Complex (Ting Park), and certain transportation improvements.

Funding Source(s):

Community Investment Plan - Limited Obligation Bonds

Attachment(s):

1. Initial Resolution - Holly Springs 2024 LOBs - v.3

RESOLUTION OF THE TOWN COUNCIL OF THE TOWN OF HOLLY SPRINGS, NORTH CAROLINA, AUTHORIZING THE NEGOTIATION OF AN AMENDMENT TO AN INSTALLMENT FINANCING CONTRACT, DIRECTING THE PUBLICATION OF NOTICE WITH RESPECT THERETO, DECLARING THE INTENT OF THE TOWN TO REIMBURSE ITSELF FOR CAPITAL EXPENDITURES FROM PROCEEDS THEREOF, AND PROVIDING FOR CERTAIN OTHER RELATED MATTERS THERETO

WHEREAS, the Town of Holly Springs, North Carolina (the “*Town*”) is a validly existing municipal corporation of the State of North Carolina (the “*State*”), existing as such under and by virtue of the Constitution, statutes and laws of the State;

WHEREAS, the Town has the power, pursuant to the General Statutes of North Carolina to (1) enter into installment contracts in order to purchase, or finance or refinance the purchase of, real or personal property and to finance or refinance the construction or repair of fixtures or improvements on real property and (2) create a security interest in some or all of the property financed or refinanced to secure repayment of the purchase price;

WHEREAS, the Town has previously entered into an Installment Financing Contract, dated as of September 1, 2023 (the “*2023 Contract*”), with Holly Springs Public Facilities Corporation (the “*Corporation*”), the proceeds of which were used to finance the capital costs of (a) the construction and equipping of a fire station known as Fire Station 3 (the “*Fire Station*”), (b) the acquisition of a fire truck, and (c) sitework for a new operations campus (the “*Operations Campus*”);

WHEREAS, to secure its obligations under the 2023 Contract, the Town executed and delivered a Deed of Trust, Security Agreement and Fixture Filing dated as of September 1, 2023 (the “*2023 Deed of Trust*”) granting a security interest in the site of the Fire Station and the real estate improvements thereon and appurtenances thereto;

WHEREAS, the Town has also previously entered into an Installment Financing Contract, dated as of September 1, 2014, with the Holly Springs Facility Company, the proceeds of which were used to finance the capital costs of (a) a new law enforcement center for the Town, (b) a portion of the Town’s North Main Athletic Complex, and (c) certain transportation improvements (collectively, the “*Refunded 2014 Projects*”);

WHEREAS, the Town Council of the Town (the “*Town Council*”) hereby determines that it is in the best interest of the Town to (1) enter into execute and deliver an amendment to the 2023 Contract (the “*First Amendment*”) to (a) finance the construction, equipping, and furnishing of the Operations Campus (the “*2024 Project*”), (b) refinance the Refunded 2014 Projects, and (c) pay the costs of executing and delivering the First Amendment, and (2) pursuant to a notice of extension (the “*First Extension*”), to extend the lien created by the 2023 Deed of Trust to the site of the Operations Campus;

WHEREAS, the Town hereby determines that financing the 2024 Project and refinancing the Refunded 2014 Projects are essential to the Town’s proper, efficient and economic operation and to the general health and welfare of its inhabitants; that financing the 2024 Project and refinancing the Refunded 2014 Projects will provide an essential use and will permit the Town to carry out public functions that it is authorized by law to perform; and that entering into the First Amendment and the First Extension is necessary and expedient for the Town by virtue of the findings presented herein;

WHEREAS, the Town hereby determines that the First Amendment allows the Town to finance the 2024 Project and take title thereto and refinance the Refunded 2014 Projects at a favorable interest rate currently available in the financial marketplace and on terms advantageous to the Town;

WHEREAS, the Town hereby determines that the estimated cost of financing the 2024 Project and refinancing the Refunded 2014 Projects is an amount not to exceed \$53,000,000, and that such cost exceeds the amount that can be prudently raised from currently available appropriations, unappropriated fund balances and non-voted bonds that the Town could issue in the current fiscal year pursuant to Article V, Section 4 of the Constitution of the State;

WHEREAS, although the cost of financing the 2024 Project and refinancing the Refunded 2014 Projects pursuant to the First Amendment is expected to exceed the cost of financing the 2024 Project and refinancing the Refunded 2014 Projects pursuant to a bond financing for the same undertaking, the Town hereby determines that the cost of financing the 2024 Project and refinancing the Refunded 2014 Projects pursuant to the First Amendment and the First Extension and the obligations of the Town thereunder are preferable to a general obligation bond financing or revenue bond financing for several reasons, including but not limited to the following: (1) the cost of a special election necessary to approve a general obligation bond financing, as required by the laws of the State, would result in the expenditure of significant funds; (2) the time required for a general obligation bond election would cause an unnecessary delay which would thereby decrease the benefits of the 2024 Project and the Refunded 2014 Projects; and (3) no revenues are produced by the 2024 Project or the Refunded 2014 Projects so as to permit a revenue bond financing;

WHEREAS, the Town hereby determines that the estimated cost of financing the 2024 Project and refinancing the Refunded 2014 Projects pursuant to the First Amendment reasonably compares with an estimate of similar costs under a bond financing for the same undertaking as a result of the findings delineated in the above preambles;

WHEREAS, the Town anticipates that any property tax increase, if necessary, to pay installment payments falling due under the First Amendment will not be excessive;

WHEREAS, the sums to fall due under the First Amendment will be adequate but not excessive for its proposed purpose;

WHEREAS, Parker Poe Adams & Bernstein LLP, as bond counsel ("*Bond Counsel*"), will render an opinion to the effect that entering into the First Amendment and the First Extension and the transactions contemplated thereby are authorized by law;

WHEREAS, no deficiency judgment may be rendered against the Town in any action for its breach of the First Amendment, and the taxing power of the Town is not and may not be pledged in any way directly or indirectly or contingently to secure any money due under the First Amendment;

WHEREAS, the Town is not in default under any of its debt service obligations;

WHEREAS, the Town's budget process and annual budget ordinance are in compliance with the Local Government Budget and Fiscal Control Act and external auditors have determined that the Town has conformed with generally accepted accounting principles as applied to governmental units in preparing its annual budget ordinance;

WHEREAS, past audit reports of the Town indicate that its debt management and contract obligation payment policies have been carried out in strict compliance with the law, and the Town has not been censured by the North Carolina Local Government Commission (the "*LGC*"), external auditors or any other regulatory agencies in connection with such debt management and contract obligation payment policies;

WHEREAS, a public hearing on the First Amendment after publication of a notice with respect to such public hearing must be held and approval of the LGC with respect to entering into the First Amendment must be received; and

WHEREAS, the Town will incur and pay certain expenditures (the “*Original Expenditures*”) in connection with the 2024 Project prior to the date of execution and delivery of the First Amendment, such Original Expenditures to be paid for originally from a source other than the proceeds of the First Amendment, and the Town intends, and reasonably expects, to be reimbursed for such Original Expenditures from a portion of the proceeds of the First Amendment; and

WHEREAS, the Town hereby determines that all findings, conclusions and determinations of the Town in this Resolution are subject to modification or affirmation after all interested parties have been afforded the opportunity to present their comments at a public hearing regarding the execution and delivery of the First Amendment and the First Extension and the 2024 Project and Refunded 2014 Projects to be financed and refinanced thereby.

NOW, THEREFORE, BE IT RESOLVED BY THE TOWN COUNCIL OF THE TOWN OF HOLLY SPRINGS, NORTH CAROLINA, AS FOLLOWS:

*Section 1. **Authorization to Negotiate the First Amendment and the First Extension.*** The Mayor, the Town Manager, and the Finance Director, including anyone serving as such in an interim capacity, and their respective designees, individually and collectively (the “*Authorized Officers*”), with advice from the Town Attorney and Bond Counsel, are authorized and directed to proceed and negotiate on behalf of the Town the First Amendment to (a) finance the 2024 Project, (b) refinance the Refunded 2014 Projects, and (c) pay the costs of executing and delivering the First Amendment for a principal amount not to exceed \$53,000,000, to be entered into in accordance with the provisions of Section 160A-20 of the General Statutes of North Carolina and to provide, as additional security for the Town’s obligations under the 2023 Contract, as amended, the First Extension, extending the lien created by the 2023 Deed of Trust to the site of the Operations Campus, including the improvements thereon.

*Section 2. **Application to LGC.*** The Finance Director, or her designee, is hereby directed to file with the LGC an application for its approval of the First Amendment and all relevant transactions contemplated thereby on a form prescribed by the LGC and to state in such application such facts and to attach thereto such exhibits regarding the Town and its financial condition as may be required by the LGC.

*Section 3. **Direction to Retain Professionals.*** The Town Manager and the Finance Director, with advice from the Town Attorney, are hereby authorized and directed to retain the assistance of Parker Poe Adams & Bernstein LLP, as bond counsel; DEC Associates Inc., as financial advisor; U.S. Bank Trust Company, National Association, as trustee; and PNC Capital Markets LLC, as underwriter. The Town Manager and the Finance Director are authorized to retain such other professionals as they deem necessary in their judgment to carry out the transaction contemplated in this Resolution.

*Section 4. **Public Hearing.*** A public hearing (the “*Public Hearing*”) shall be conducted by the Town Council on July 16, 2024 at 7:00 p.m. in the Holly Springs Town Hall, Council Chambers, 128 S. Main Street, Second Floor, Holly Springs, North Carolina 27540, concerning the First Amendment and the First Extension, the proposed financing of the 2024 Project and refinancing of the Refunded 2014 Projects, and any other transactions contemplated therein and associated therewith.

*Section 5. **Notice of Public Hearing.*** The Town Clerk is hereby directed to cause a notice of the Public Hearing, in the form attached hereto as Exhibit A, to be published once in a qualified newspaper of general circulation within the Town no fewer than 10 days prior to the Public Hearing.

*Section 6. **Reimbursement.*** The Town presently intends, and reasonably expects, to reimburse itself for Original Expenditures in an amount not to exceed \$53,000,000 on or after the date occurring 60 days prior to the date of adoption of this Resolution from a portion of the proceeds of the First Amendment. The Town adopts this Resolution as a declaration of official intent under Section 1.150-2 of the Treasury Regulations promulgated under Section 103 of the Internal Revenue Code of 1986, as amended, to evidence the Town's intent to reimburse itself for the Original Expenditures from proceeds of the First Amendment. The Finance Director, with advice from Bond Counsel, is hereby authorized, directed and designated to act on behalf of the Town in determining and itemizing all of the Original Expenditures incurred and paid by the Town in connection with the 2024 Project during the period commencing on the date occurring 60 days prior to the date of adoption of this Resolution and ending on the date of the execution and delivery of the First Amendment.

*Section 7. **Actions by the Town.*** All actions of the Authorized Officers on behalf of the Town with respect to the First Amendment and the First Extension, whether previously or hereinafter taken, are hereby approved, ratified and authorized.

*Section 8. **Repealer.*** All motions, orders, resolutions and parts thereof in conflict herewith are hereby repealed.

*Section 9. **Effective Date.*** This Resolution is effective on the date of its adoption.

EXHIBIT A
NOTICE OF PUBLIC HEARING

At its June 18, 2024 meeting, the Town Council (the “*Town Council*”) of the Town of Holly Springs, North Carolina (the “*Town*”) adopted a resolution which authorized the Town to:

(1) Execute and deliver an amendment (the “*Contract Amendment*”) to an installment financing contract (the “*Existing Contract*” and together with the Contract Amendment, the “*Contract*”), in a principal amount not to exceed \$53,000,000, under which the Town will make certain installment payments, to (a) finance the construction, equipping, and furnishing of a new operations campus (the “*Operations Campus*” and such project is referred to herein as the “*2024 Project*”), (b) refinance its installment payment obligations related to an existing installment financing contract, the proceeds of which were used to finance certain projects specified therein (collectively, the “*Refunded Projects*”), and (c) pay the costs of executing and delivering the Contract Amendment; and

(2) Provide, in connection with the Contract Amendment, as grantor, a notice of extension of deed of trust (the “*Extension*”) extending the lien created by an existing deed of trust, security agreement and fixture filing (the “*Existing Deed of Trust*” and together with the Extension, the “*Deed of Trust*”) to the site of the Operations Campus and the improvements thereon. The Town will mortgage the Operations Campus, along with real property already subject to the lien under the Existing Deed of Trust (collectively, the “*Mortgaged Property*”), to create a lien thereon for the benefit of the Holly Springs Public Facilities Corporation, or its assigns, as counterparty under the Contract. The Operations Campus will be located at the intersection of Bumgardner Road and the future Southern Access Road (to be named) in the Town.

The Contract and the Deed of Trust permit the Town to enter into amendments to finance additional projects and refinance projects using the Mortgaged Property as collateral and the Town may or may not grant additional collateral in connection with such amendments. On the Town’s payment of all installment payments due under the Contract, including any future amendments to finance additional projects or refinance projects, the lien created in the Mortgaged Property will terminate and any security interest granted under the Deed of Trust will be released.

NOTICE IS HEREBY GIVEN, pursuant to Sections 160A-20 of the General Statutes of North Carolina, that on July 16, 2024 at 7:00 p.m. in the Holly Springs Town Hall, Council Chambers, 128 S. Main Street, Second Floor, Holly Springs, North Carolina 27540, a public hearing will be conducted concerning the approval of the execution and delivery of the Contract Amendment and the Extension, and the Town’s financing of the 2024 Project and refinancing of the Refunded Projects. All interested parties are invited to present comments at the public hearing regarding the execution and delivery of the Contract Amendment, the Extension, and the financing of the 2024 Project and refinancing of the Refunded Projects.

/s/ LINDA MCKINNEY

Town Clerk

Town of Holly Springs, North Carolina

Published: June __, 2024

STATE OF NORTH CAROLINA)
) SS:
COUNTY OF WAKE)

I, *Linda McKinney*, Town Clerk of the Town of Holly Springs, North Carolina, ***DO HEREBY CERTIFY*** that the foregoing is a true and exact copy of a resolution entitled “**RESOLUTION OF THE TOWN COUNCIL OF THE TOWN OF HOLLY SPRINGS, NORTH CAROLINA, AUTHORIZING THE NEGOTIATION OF AN AMENDMENT TO AN INSTALLMENT FINANCING CONTRACT, DIRECTING THE PUBLICATION OF A NOTICE WITH RESPECT THERETO, DECLARING THE INTENT OF THE TOWN TO REIMBURSE ITSELF FOR CAPITAL EXPENDITURES FROM THE PROCEEDS THEREOF, AND PROVIDING FOR CERTAIN OTHER RELATED MATTERS THERETO**” duly adopted by the Town Council of the Town of Holly Springs, North Carolina at a meeting held on the 18th day of June, 2024.

WITNESS my hand and the corporate seal of the Town of Holly Springs, North Carolina, this the ____ day of June, 2024.

(SEAL)

Linda McKinney
Town Clerk
Town of Holly Springs, North Carolina



Holly Springs Town Council

Town Council Meeting Agenda Cover Sheet

Agenda Item#: 24.

Unfinished Business

Title: Water Sewer Revenue Bonds, Series 2024 Bond Order

Strategic Priority Area: Organizational Excellence
Growth Management & Economic Vitality

Staff Resource: Tina Stroupe, Finance

Action(s):

Adopt the Bond Order for the 2024 Enterprise Fund Revenue Bonds

Explanation:

- Resolution enables the financing of the Town's portion of the design and upgrading the City of Sanford's Water Filtration Facility to 30 million gallons per day (MGD) through the issuance of Revenue Bonds with approval from the Local Government Commission (LGC). The Town has also received grant funding for the project in the amount of \$9.9 million.
- A Revenue Bond is an approved form of municipal financing in North Carolina whereby the debt is sold to investors to support an infrastructure project and the debt is secured (or collateralized) using the revenue generated from the project over time.
- The financing of the project will not exceed the amount of \$75,000,000.

Background:

- The Town of Holly Springs and the Town of Fuquay-Varina have engaged in a joint agreement with The City of Sanford to purchase and fund 4 MGD and 6 MGD of drinking water capacity, respectively.
- The City of Sanford owns and operates the Sanford Water Filtration Facility (WFF), which was originally constructed in 1970 and is currently rated for 12 MGD. Water demand has consistently increased in the past couple of years and Sanford recognizes the need for an additional 18 MGD capacity to meet the projected water demand in their service area.
- The City of Sanford was approached by neighboring municipalities, including the Town of Holly Springs and the Town of Fuquay-Varina, interested in participating in this WFF expansion project to gain the advantages associated with a regional water treatment solution.
- As a result, the Sanford WFF is planning to expand to a total permitted capacity of 30 MGD with 8 MGD of the expansion being funded by Sanford, 6 MGD being funded by Fuquay-Varina, and 4 MGD being funded by Holly Springs.
- The project will end at a location where partners will connect.

Funding Source(s):

Attachment(s):

1. Bond Order - Holly Springs 2024 Rev. Bonds - v.2

**BOND ORDER AUTHORIZING THE ISSUANCE OF ENTERPRISE SYSTEMS REVENUE
BONDS OF THE TOWN OF HOLLY SPRINGS, NORTH CAROLINA.**

WHEREAS, the Town of Holly Springs, North Carolina (the “*Town*”) is authorized by The State and Local Government Revenue Bond Act, General Statutes of North Carolina, Section 159-80 et seq. (the “*Act*”), to issue, subject to the approval of the Local Government Commission of North Carolina (the “*Commission*”), at one time or from time to time revenue bonds of the Town for the purposes as specified in the Act; and

WHEREAS, the Town Council (the “*Town Council*”) of the Town of Holly Springs, North Carolina (the “*Town*”) has previously determined that it is in the best interest of the Town to engage in a joint undertaking with the City of Sanford, the Town of Fuquay-Varina, and the Town of Pittsboro (collectively and together with the Town, the “*Participants*”) to design and construct an eighteen (18) MGD expansion of the City of Sanford’s Water Filtration Facility (the “*Expanded WFF*”) from its present capacity of 12 MGD to 30 MGD, and share ownership and costs associated with the operation of the Expanded WFF at 30 MGD capacity; and

WHEREAS, pursuant to an interlocal agreement, dated as of August 1, 2023, among the Participants, upon completion of the Expanded WFF, the Town will own its proportionate share of the Expanded WFF, including the rights to four MGD of capacity in the Expanded WFF, which will become part of the Town’s water system; and

WHEREAS, the Town Council of the Town (the “*Town Council*”) previously adopted a resolution at a meeting held on June 4, 2024 making certain findings of fact, which findings are incorporated herein by reference, and directing the application to the Commission for approval of Town of Holly Springs Enterprise Systems Revenue Bonds, Series 2024 (the “*2024 Bonds*”) and hereby further determines to issue the 2024 Bonds in an amount not to exceed \$75,000,000 to (1) finance its portion of the design and construction of the Expanded WFF (the “*2024 Project*”), (2) pay capitalized interest on the 2024 Bonds, and (3) pay the costs of issuing the 2024 Bonds; and

WHEREAS, the Town will issue the 2024 Bonds under the General Trust Indenture to be dated as of July 1, 2024 (the “*General Indenture*”), and Series Indenture, Number 1 to be dated as of July 1, 2024 (the “*Series Indenture*”), each between the Town and U.S. Bank Trust Company, National Association, as trustee (the “*Trustee*”); and

WHEREAS, the Town and the Local Government Commission of North Carolina (the “*Commission*”) have arranged for the sale of the 2024 Bonds to PNC Capital Markets LLC, as underwriter for the 2024 Bonds (the “*Underwriter*”) under the terms of a Bond Purchase Agreement to be dated on or about July 15, 2024 (the “*Purchase Agreement*”);

WHEREAS, an application has been filed with the Secretary of the Commission requesting Commission approval of the 2024 Bonds as required by the Act and, included in such application, the Finance Director of the Town has requested that the Commission approve the negotiation of the sale of the 2024 Bonds to the Underwriter; and

WHEREAS, copies of the forms of the following documents relating to the transaction described above have been filed with the Town (collectively, the “*Transaction Documents*”):

1. General Indenture;
2. Series Indenture;

3. the Purchase Agreement; and
4. a Preliminary Official Statement to be dated on or about July 9, 2024 (the “*Preliminary Official Statement*”) with respect to the 2024 Bonds.

NOW THEREFORE, BE IT ORDERED BY THE TOWN COUNCIL OF THE TOWN OF HOLLY SPRINGS, NORTH CAROLINA:

Section 1. To raise the money required to finance the 2024 Project, pay capitalized interest on the 2024 Bonds, and pay the costs of issuing the 2024 Bonds, the 2024 Bonds are hereby authorized and shall be issued pursuant to the Act.

Section 2. The aggregate principal amount of the 2024 Bonds authorized by this Bond Order shall not exceed \$75,000,000. The 2024 Bonds hereby authorized will be special obligations of the Town, secured by and paid solely from the proceeds thereof or from revenues, income, receipts and other money received or accrued by or on behalf of the Town from or in connection with the operation of the Town’s Enterprise Systems (as defined in the General Indenture).

Section 3. The Town’s issuance of the 2024 Bonds, in substantially the form to be set forth in the Series Indenture, is hereby in all respects approved and confirmed, and the provisions of the General Indenture and the Series Indenture with respect to the 2024 Bonds (including without limitation the maturity dates and rates of interest) are hereby approved and confirmed and are incorporated herein by reference. The proceeds from the sale of the 2024 Bonds will be deposited in accordance with the Series Indenture.

The principal of, premium, if any, and interest on the 2024 Bonds will not be payable from the general funds of the Town, nor will the 2024 Bonds constitute a legal or equitable pledge, charge, lien or encumbrance on any of the Town’s property or on any of its income, receipts or revenues except the funds which are pledged under the General Indenture. Neither the credit nor the taxing power of the State of North Carolina or the Town is pledged for the payment of the principal of, premium, if any, or interest on the 2024 Bonds, and no holder of the 2024 Bonds has the right to compel the exercise of the taxing power by the State of North Carolina or the Town or the forfeiture of any of its property in connection with any default thereon.

Section 4. The Town Council requests that the Commission sell the 2024 Bonds to the Underwriter pursuant to the terms of the Purchase Agreement.

Section 5. The form and content of the Transaction Documents and the exhibits thereto are hereby in all respects approved and confirmed, and the Mayor, the Town Manager, the Town Attorney, the Finance Director, and the Town Clerk (collectively, the “*Authorized Officers*”), or their respective designees, as applicable, are hereby authorized, empowered and directed, individually and collectively, to execute and deliver, as applicable, the Transaction Documents for and on behalf of the Town, including necessary counterparts, in substantially the forms and content presented to the Town, but with such changes, modifications, additions or deletions therein as they may deem necessary, desirable or appropriate, their execution thereof to constitute conclusive evidence of their approval of any and all such changes, modifications, additions or deletions therein. From and after the execution and delivery of the Transaction Documents, as applicable, the Authorized Officers are hereby authorized, empowered and directed, individually and collectively, to do all such acts and things and to execute all such documents as may be necessary to carry out and comply with the provisions of the Transaction Documents, as executed. The Trustee is hereby appointed as Registrar and Paying Agent under the Series Indenture.

Section 6. The form and content of the Preliminary Official Statement are in all respects authorized, approved and confirmed, and the use of the Preliminary Official Statement and the Official Statement to be dated on or about July 15, 2024 (the “*Official Statement*”) by the Underwriter in connection with the sale of the 2024 Bonds is hereby in all respects authorized, approved and confirmed. The Town authorizes the preparation of the Official Statement, in substantially the form of the Preliminary Official Statement, together with such changes as are necessary to reflect the final terms of the 2024 Bonds. The Authorized Officers are hereby authorized to deliver the Official Statement.

Section 7. The Town Manager or Finance Director of the Town are hereby authorized to execute a no-arbitrage certificate to comply with Section 148 of the Internal Revenue Code of 1986, as amended, and the applicable regulations promulgated thereunder.

Section 8. If any one or more of the covenants, agreements or provisions contained in this Bond Order is held contrary to any express provision of law or contrary to the policy of express law, though not expressly prohibited, or against public policy, or is for any reason whatsoever held invalid, then such covenants, agreements or provisions will be null and void and will be deemed separable from the remaining agreements and provisions and will in no way affect the validity of any of the other agreements and provisions of this Bond Order or of the 2024 Bonds authorized hereunder.

Section 9. No stipulation, obligation or agreement contained in this Bond Order or contained in the 2024 Bonds, the Transaction Documents or any other instrument related to the issuance of the 2024 Bonds is a stipulation, obligation or agreement of any officer, agent or employee of the Town in his or her individual capacity, and no such officer, agent or employee is personally liable on the 2024 Bonds or subject to personal liability or accountability by reason of the issuance thereof.

Section 10. The Authorized Officers are hereby authorized, empowered and directed, individually and collectively, to do any and all other acts and to execute any and all other documents which they, in their discretion, deem necessary and appropriate to consummate the transactions contemplated by this Bond Order and the Transaction Documents, except that none of the above is hereby authorized or empowered to do anything or execute any document which is in contravention, in any way, of (a) the specific provisions of this Bond Order, (b) the specific provisions of the General Indenture or the Series Indenture, (c) any agreement to which the Town is bound, (d) any rule or regulation of the Town or (e) any applicable law, statute, ordinance, rule or regulation of the United States of America or the State of North Carolina.

Section 11. The Authorized Officers are hereby authorized and directed, individually and collectively, to prepare and furnish, when the 2024 Bonds are issued, certified copies of all the proceedings and records of the Town Council relating to the 2024 Bonds, and such other affidavits, certificates and documents as may be required to show the facts relating to the legality and marketability of the 2024 Bonds as such facts appear on the books and records in such party’s custody and control or as otherwise known to them; and all such certified copies, certificates, affidavits and documents, including any heretofore furnished, constitute representations of the Town as to the truth of all statements contained therein.

Section 12. All acts and doings of the Authorized Officers that are in conformity with the purposes and intents of this Bond Order and in the furtherance of the issuance of the 2024 Bonds and the execution, where appropriate, delivery and performance of the General Indenture and the Transaction Documents are hereby in all respects approved and confirmed.

Section 13. If any one or more of the agreements or provisions herein contained are held contrary to any express provision of law or contrary to the policy of express law, though not expressly prohibited, or against public policy, or for any reason whatsoever are held invalid, then such agreements or

provisions are null and void and are to be deemed separable from the remaining agreements and provisions and shall in no way affect the validity of any of the other agreements and provisions hereof or of the 2024 Bonds authorized hereunder.

Section 14. All resolutions or parts thereof of the Town Council in conflict with the provisions herein contained are, to the extent of such conflict, hereby superseded and repealed.

Section 15. This Bond Order shall take effect immediately on its adoption and pursuant to §159-88 of the General Statutes of North Carolina, as amended, need not be published or subjected to any procedural requirements governing the adoption of ordinances or resolutions by the Town Council other than the procedures set out in the Act.

ADOPTED THIS, the 18th day of June, 2024.

STATE OF NORTH CAROLINA)
) ss:
COUNTY OF WAKE)

I, *Linda McKinney*, Town Clerk of the Town of Holly Springs, North Carolina, ***DO HEREBY CERTIFY*** that the foregoing is a true and exact copy of a bond order entitled “**BOND ORDER AUTHORIZING THE ISSUANCE OF ENTERPRISE SYSTEMS REVENUE BONDS OF THE TOWN OF HOLLY SPRINGS, NORTH CAROLINA**” adopted by the Town Council of the Town of Holly Springs, North Carolina, at a meeting held on the 18th day of June, 2024.

WITNESS my hand and the corporate seal of the Town of Holly Springs, North Carolina, this the _____ day of June, 2024.

(SEAL)

Linda McKinney
Town Clerk
Town of Holly Springs, North Carolina