



Agenda

1. Call to Order
2. Pledge of Allegiance
3. Invocation
4. Adjustment and approval of February 20, 2024 meeting agenda

RECOGNITIONS

5. Girl Scout Week Proclamation
6. Nicole Zettel, 500 Freestyle State Champion
7. Developmental Disabilities Awareness Proclamation
8. Arbor Day Proclamation
9. Engineers Week Proclamation

REQUESTS AND COMMUNICATIONS

10. 2024 Wake County Real Property Revaluation

CONSENT AGENDA

11. December 19, 2023 and January 16, 2024 Business Meetings Minutes
12. Monthly Budget Amendments
13. Engineering Design & Construction Standards Section 6 Update
14. 12037 Holly Springs New Hill Rd. - Voluntary Annexation A23-09
15. Authorize Town of Holly Springs RAISE Grant Application
16. Development Plan 18-DP-15-A01 Expiration Extension Request for Wegmans
17. Development Plan 19-DP-23 Expiration Extension Request for Avent Ferry Commercial
18. Utility Asset Inventory and Assessment (AIA) Grant Project Ordinances
19. Retirement of K-9 Hondo and Transfer of Ownership to Handler Officer Siobhan Juarez
20. Construction Prequalification Policy
21. Utility Allocation Request for 370 Green Oaks Parkway
22. Holly Springs Road Widening (East) Sewer Forcemain Upsize Change Order

PUBLIC HEARINGS

23. Friendship Road Industrial Development Plan 22-DP-10 - Quasi-Judicial Public Hearing
24. Village Gate Rezoning 23-REZ-08 - Legislative Public Hearing

NEW BUSINESS

25. Resolution Adopting the Water Shortage Response Plan
26. Contract for Professional Services - Design of the Utleigh Creek Water Reclamation Facility expansion to 8 MGD
27. 2024 Local, State, and Federal Legislative Agenda

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: Girl Scout Week Proclamation

Strategic Priority Area: Safe & Friendly

Staff Resource: Mayor Maefskie

Action(s):

Proclaim Girl Scout Week

Explanation:

- March 10 - 16 is Girl Scout Week, celebrating Girl Scouting across the United States.
- There are currently 2.5 million Girl Scouts comprised of 1.7 million girl members and 750,000 adults in the United States.
- Mayor Mayefskie wishes to recognize the contributions Girl Scouts have made to Holly Springs, North Carolina, and the United States.

Background:

- The Girl Scouts of the USA was founded by Juliette Gordon Low in 1912.
- Girl Scout Week starts from Girl Scout Sunday and ends on Girl Scout Saturday to mark the great sisterhood of Girl Scouting and to commemorate the day when the organization was born.
- Shannon Quick, of the Girl Scouts North Carolina Coastal Pines Council, will be present with some Girl Scouts to accept the proclamation.

Funding Source(s):

N/A

Attachment(s):

1. Girl Scout Week

Town of Holly Springs



A Proclamation By The Mayor

Girl Scout Week

WHEREAS, March 12, 2024 marks the 112th anniversary of Girl Scouts of the USA, founded by Juliette Gordon Low in 1912 in Savannah, Georgia; and

WHEREAS, throughout its distinguished history, Girl Scouting has inspired millions of girls and women with the highest ideals of courage, confidence, and character; and

WHEREAS, through the Girl Scout Leadership Experience girls gain knowledge and develop skills that will serve them for a lifetime so that they may contribute to their communities; and

WHEREAS, Girl Scouting takes an active role in increasing girls' awareness of the opportunities available to them today in science, technology, engineering, math, and the arts as well as other fields that can expand their horizons; and in this moment of suffering in our nation, Girls Scouts commits to taking action to support all girls, their families, and their communities; and

WHEREAS, Our community represents every race, ethnicity, income level, sexual orientation, ability, and religion; reflects a spectrum of gender identity; and connects across geographic locations. By focusing our attention on community members who are furthest from racial, economic, and social justice, Girl Scouts can be an instrument of change, promoting equitable outcomes for all. We wholly commit to taking action to grow as an anti-racist and ant-oppressive organization so that, through Girls Scouts, our members are affirmed as they strive to make our community and world better;

NOW THEREFORE, I, Sean Mayefskie, Mayor of the Town of Holly Springs, North Carolina, do hereby applaud the commitment Girl Scouting has made to support the life and leadership development of girls and proudly proclaim the week of March 10 — 16, 2024 as

Girl Scout Week

in the Town of Holly Springs and call upon the people of Holly Springs to support all girls in their growth and development.

Proclaimed this, the 20th day of February, 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 20th day of February, 2024.

Sean Mayefskie, Mayor



Holly Springs Town Council

Town Council Meeting Agenda Cover Sheet

Agenda Item#: 6.

Recognitions

Title: Nicole Zettel, 500 Freestyle State Champion

Strategic Priority Area: Engaged, Healthy, & Active Community
Safe & Friendly

Staff Resource: Mayor Mayefskie

Action(s):

Recognize Ms. Zettel's achievement.

Explanation:

- Nicole Zettel, a junior at Apex Friendship High School took first place in the 500 Freestyle in the State 4A Championships with a time 4 seconds faster than the second place winner.
- Ms. Zettel also finished 4th in the state in the 200 individual medley.
- Ms. Zettel plans to attend University of Tennessee Knoxville in the fall of 2025.

Background:

- Rebekah Betts is the Swim Coach for Apex Friendship High School.

Funding Source(s):

N/A

Attachment(s):

None



Holly Springs Town Council

Town Council Meeting Agenda Cover Sheet

Agenda Item#: 7.

Recognitions

Title: Developmental Disabilities Awareness Proclamation

Strategic Priority Area: Engaged, Healthy, & Active Community
Safe & Friendly

Staff Resource: Mayor Mayefskie

Action(s):

Proclaim March as Developmental Disabilities Awareness Month

Explanation:

- It is estimated that almost 200,000 people in North Carolina live with intellectual and other developmental disabilities.
- It is important to recognize and acknowledge that societal barriers and attitudes - not disabilities - can keep individuals from realizing their full potential at school, work, home, and/or in their communities.
- Holly Springs seeks to be a welcoming place where all people can contribute.

Background:

- In 1987, Congress designated March as National Developmental Disabilities Awareness Month.

Funding Source(s):

N/A

Attachment(s):

1. Developmental Disabilities Awareness Month

Town of Holly Springs



A Proclamation By The Mayor

Developmental Disabilities Awareness Month

WHEREAS, Public Law 99-483, enacted by Congress in 1987, designated March as National Developmental Disabilities Awareness Month; and

WHEREAS, North Carolina is home to almost 200,000 people with intellectual and other developmental disabilities throughout all 100 counties; and

WHEREAS, it is the responsibility of all people to recognize and acknowledge that it is not disabilities, but unjust societal barriers and attitudes that can keep individuals from realizing their full potential at school, work, home, and/or in their communities; and

WHEREAS, Holly Springs seeks to be a welcoming place where all people can contribute, and thus all residents can contribute to improving the lives of people with developmental disabilities by becoming advocates and supporters of their increased independence, capacity, and leadership; and

WHEREAS, expecting and enabling people with developmental disabilities to function independently and productively within our societal and economic structures can strengthen our town in all areas, including public and private sectors;

NOW THEREFORE, I, Sean Mayefskie, Mayor of the Town of Holly Springs, North Carolina, do hereby proclaim March, 2024 as

Developmental Disabilities Awareness Month

in the Town of Holly Springs and call upon the people of Holly Springs to observe this month with appropriate programs, activities, and reflections.

Proclaimed this, the 20th day of February, 20234

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 20th day of February, 2024.

Sean Mayefskie, Mayor



Holly Springs Town Council

Town Council Meeting Agenda Cover Sheet

Agenda Item#: 8.

Recognitions

Title: Arbor Day Proclamation

Strategic Priority Area: Engaged, Healthy, & Active Community
Responsible & Balanced Growth

Staff Resource: Aaron Prichard, Development Services

Action(s):

Proclaim March 22nd as Arbor Day in Holly Springs.

Explanation:

- March 22nd (the first Friday following March 15) is Arbor Day in North Carolina.
- The Tree Advisory Committee will hold an event on Saturday, March 23rd to celebrate Arbor Day, that includes planting a tree and giving away rain gauges.

Background:

- In 1872, J. Sterling Morton proposed to the Nebraska Board of Agriculture that Arbor Day be established for the planting of trees, and it was observed with the planting of more than a million trees in Nebraska.
- Holding an annual Arbor Day event is one of the requirements of Tree City USA designation. The Town of Holly Springs was recently awarded this designation for the fifth year in a row (First Award in 2019).
- The Tree City USA program has been greening up cities and towns across America since 1976 and provides the framework necessary for communities to manage and expand their community tree canopy.
- The Tree Advisory Committee is responsible for assisting with the planning of the annual Arbor Day event.

Funding Source(s):

N/A

Attachment(s):

1. 2024_ArborDay_Proclamation

Town of Holly Springs



A Proclamation By The Mayor

Arbor Day, March 22, 2024

WHEREAS, In 1872, J. Sterling Morton proposed to the Nebraska Board of Agriculture that a special day be set aside for the planting of trees, and

WHEREAS, this holiday, called Arbor Day, was first observed with the planting of more than a million trees in Nebraska, and

WHEREAS, Arbor Day is now observed throughout the nation and the world, and

WHEREAS, trees can reduce the erosion of our precious topsoil by wind and water, cut heating and cooling costs, moderate the temperature, clean the air, produce life-giving oxygen, and provide habitat for wildlife, and

WHEREAS, trees are a renewable resource giving us paper, wood for our homes, fuel for our fires and countless other wood products, and

WHEREAS, trees in our town increase property values, enhance the economic vitality of business areas, and beautify our community, and

WHEREAS, trees, wherever they are planted, are a source of joy and spiritual renewal, and

WHEREAS, The Town of Holly Springs has created a Tree Advisory Committee in support of National Arbor Day and Tree City USA to recognize the Town's efforts to enhance and preserve the Town's urban forest.

NOW, THEREFORE, I, MAYOR SEAN MAYEFSKIE, do hereby proclaim March 22, 2024 as

Arbor Day

in the Town of Holly Springs, and urge all citizens to celebrate Arbor Day and to support efforts to protect our trees and woodlands, and

FURTHER, I urge all citizens to plant trees to gladden the heart and promote the well-being of this and future generations.

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 20th day of February, 2024.





Holly Springs Town Council

Town Council Meeting Agenda Cover Sheet

Agenda Item#: 9.

Recognitions

Title: Engineers Week Proclamation

Strategic Priority Area: Organizational Excellence

Staff Resource: Kendra Parrish, Utilities and Infrastructure, Chris Hills, Development Services

Action(s):

Proclaim the week of February 18-24, 2024 as Engineers Week.

Explanation:

- Engineers Week (EWeek) 2024 runs February 18-24. This year's theme "Welcome to the Future" is about celebrating today's achievements and paving the way for a brighter and more diverse future in engineering.
- Engineering is at the forefront of innovation and is instrumental in designing and creating the solutions that are shaping the world of tomorrow. From the development of the internet and smartphones to space exploration and renewable energy solutions, engineers have been at the forefront of progress, making our lives more efficient, comfortable, and connected.
- Through their creativity, expertise, and dedication, engineering teams are addressing global challenges, driving technological advancements, and making a positive impact on society's future.

Background:

- Engineers Week (EWeek) was founded by the National Society of Professional Engineers (NSPE) in 1951.
- Today, EWeek is a formal coalition of more than 70 engineering, education and cultural societies, more than 50 corporations and government agencies.
- Each year, EWeek reaches thousands of schools, businesses, and community groups across the United States.

Funding Source(s):

N/A

Attachment(s):

1. Engineers Week Proclamation

Town of Holly Springs



A Proclamation By The Mayor

Engineers Week

WHEREAS, our Town is committed to recognizing that our growth and strength depends on the essential role of engineering, both in everyday life and when disasters strike; and,

WHEREAS, Engineers use their scientific and technical knowledge and skills in creative and innovative ways to fulfill society's needs; and,

WHEREAS, Engineers face the major technological challenges of our time—from rebuilding towns devastated by natural disaster, cleaning up the environment, and assuring safe, clean, and efficient sources of energy, to designing information systems that will speed our country into the future; and,

WHEREAS, Engineers are encouraging our young math and science students to realize the practical power of their knowledge; and,

WHEREAS, we will look more than ever to engineers and their knowledge and skills to meet the challenges of the twenty-first century;

NOW, THEREFORE, I, Sean Mayefskie, Mayor of the Town of Holly Springs, North Carolina, do hereby proclaim February 18 through February 24, 2024 as

Engineers Week

in the Town of Holly Springs. Accordingly, I encourage our citizens to join with their community in participation in Engineers Week activities.

Proclaimed this, the 20th day of February, 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 20th day of February, 2024.

Sean Mayefskie, Mayor



Holly Springs Town Council

Town Council Meeting Agenda Cover Sheet

Agenda Item#: 10.

Requests & Communications

Title: 2024 Wake County Real Property Revaluation

Strategic Priority Area: Responsible & Balanced Growth
Economic Prosperity & Diversity

Staff Resource: Tina Stroupe, Finance

Action(s):

Receive update and results from Wake County Tax Administration for the 2024 Real Property Revaluation

Explanation:

- Wake County's 2024 property revaluation process has been conducted and data has been released to the residents of Wake County and Holly Springs by the Wake County Tax Assessor's Office.
- Wake County Tax Administrator, Marcus Kinrade, will provide an update to Mayor and Council and share results of the revaluation.

Background:

- NC General Statutes require real property revaluation by counties at least every eight years and Wake County is currently on a four-year revaluation cycle.
- Wake County revalues real property to reflect fair market value and includes residential and commercial land and structures such as homes, office buildings, stores and farms.
- The goal of a revaluation is tax equity and fairness and ensures property values reflect market values.
- Important Dates:
 - March 1 - Deadline for property owners to file informal assessment review
 - May 15 - Deadlines for property owners to file a formal appeal to the Board of Equalization and Review
- Wake County revaluation customer service options for residents:
 - Revaluation Call Center: (919) 857-3800
 - Revaluation email: revaluation@wake.gov

Funding Source(s):

N/A

Attachment(s):

None



Holly Springs Town Council

Town Council Meeting Agenda Cover Sheet

Agenda Item#: 11.

Consent Agenda

Title: December 19, 2023 and January 16, 2024 Business Meetings Minutes

Strategic Priority Area: Organizational Excellence

Staff Resource: Linda McKinney, Town Clerk

Action(s):

Approve the minutes of the December 19, 2023 and January 16, 2024 meetings.

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. 12.19.23 minutes-DRAFT
2. 1.16.24 minutes-DRAFT



MINUTES

The Holly Springs Town Council met in regular session on Tuesday, December 19, 2023. Mayor Mayefskie presided, calling the meeting to order at 7 p.m. A quorum was established as the Mayor and five Council members were present in the Chamber as the meeting opened.

Council Members Present: Mayor Mayefskie, Mayor Pro Tem Berry, Council members Timothy Forrest, Danielle Hewetson, Annie Drees, and Chris Deshazor.

Council Members Absent: none.

Staff Members Present in Chambers: Randy Harrington, *Town Manager*; Scott Chase, *Assistant Town Manager*; Daniel Weeks, *Assistant Town Manager*; John Schifano, *Town Attorney*; Linda McKinney, *Town Clerk* (recording the minutes); Mathew Mutter, *IT*; Kathy White, *Deputy Clerk*; Corey Petersohn, *Budget and Sustainability*; Cassie Hack, *Director, Communications and Marketing*; Tina Stroupe, *Finance Director*; Chris Hills, *Director of Development Services*; Aaron Prichard, *Development Services*; Jaime Joyner, *Director of Human Resources*; Paul Liquorie, *Police Chief*; Tim Athy, *Utilities and Infrastructure*; LeeAnn Plumer, *Director, Parks & Recreation*.

2. and 3. The Pledge of Allegiance was recited followed by an invocation by Father Chris Koehn of St. Mary Magdalene Catholic Church.

4. Agenda Adjustment: The December 19, 2023, meeting agenda was adopted with changes, if any, as listed: none.

Motion: Berry

Second: Forrest

Vote: Unanimous

RECOGNITIONS

5. Recognition of outgoing Council member Shaun McGrath

Mayor Mayefskie and each Council member spoke about the service to the Town by Council member Shaun McGrath, who rotated off Council, and shared a favorite memory. Staff presented Mr. McGrath with tokens of appreciation, and he said a few words.

6. Holly Springs High School Boys & Girls Cross Country Teams

Mayor Mayefskie recognized the accomplishments of the members of the Holly Springs High School Girls Varsity Cross Country team and their coach Kimberly Henry, and the Boys Varsity Cross Country team and their coach Jason Bochart.

7. Town of Holly Springs Employee Champion Awards Recipients

Jamie Joyner, Director of Human Resources, explained the Holly Springs Champion awards for Core Values Champion; Customer Service Champion; and Strategic Achievement by a Team Champions. Awards were presented to Deon Johnson, Angela Fugaro, and the Customer Care Team, Patti Dressen, George Brown, Angela "AZ" Zollicoffer, and Carlos Villanueva.

REQUESTS AND COMMUNICATIONS

8. Police Department 2023 Annual Report

Paul Liquorie, Chief of Police, said this was an overview of the Police Department's Annual Report. He highlighted outreach programs the department has engaged in over the past year including Shop with a Cop, unused medicine drop box, child seat installations, National Night Out, and Coffee with a Cop.

Chief Liquorie said that although crime fluctuates, with some increases, Holly Springs remains one of the safest towns to live, work, and raise a family in. Calls for service have increased at a slower pace than the Town's population growth. The department has a strong commitment to training, improvement, and professionalism, and enforcement remains statistically consistent. He showed the five-year trends for property and violent crimes and pointed out that for the last two years there has been no arson, and no murder in the last three years.

Chief Liquorie gave the breakdown on arrests by race, and by resident/nonresident status. He said that only 4% of arrests involved the use of force, which includes anything from drawing a weapon but not firing it, to physical resistance to handcuffing. Regarding traffic stops, Chief Liquorie gave the breakdown by race, and said that nearly 65% of them do not result in a citation or arrest, and those that do are mostly driving while impaired. He said that collisions are down over the past three years, and personal injury collisions are statistically steady. There was only one fatal collision in the reporting year, which involved a motorcyclist and a deer.

Chief Liquorie spoke about the work of the Police Community Advisory Group over the past year. He then highlighted certificates and awards received by department members.

Mayor Mayefskie and Council thanked Chief Liquorie and the department.

Randy Harrington thanked Chief Liquorie and his team. He said that the full report will be emailed to Council, posted online, and included in the News Flash.

CONSENT AGENDA

The Council passed a motion to approve all items on the Consent Agenda. The motion carried following a motion by Mayor Pro Tem Berry, a second by Council member Forrest and a unanimous vote. The following actions were affected:

9. Minutes – Council approved the minutes of the November 21, 2023 meeting.

10. Artist Agreement for the Park on Cass Holt Road – The Council authorized the Town Manager to enter into an agreement with Creative Machines as the selected artist team to create interactive art for the park planned on Cass Holt Road for a total amount not to exceed \$225,000.

11. Engineering Design and Construction Standards Supplement #9 – The Council approved Supplement #9 to the Engineering Design and Construction Standards.

PUBLIC HEARINGS

7. 1220 N. Main Street – Voluntary Annexation A23-05

Aaron Prichard, Development Services, said a request had been received for annexation of +/- 3.70 acres at 1220 N. Main Street. The area is part of the Overlook at Main project and this annexation helps to fill in a "donut hole." He said that the Overlook at Main project was a 4-story mixed use building along Main Street with a mix of retail, restaurants, and residential amenities on the first floor, with 174 dwelling units above. The fourth floor would be recessed and include outdoor living space for the residents. The Development Plan and Special Use Permit associated with this application are going to the Board of Adjustment in the coming months.

Mayor Mayefskie opened the public hearing and the following input was received: none.

There being no input, Mayor Mayefskie closed the public hearing.

Action: Motion to adopt Annexation Ordinance A23-05 to approve annexation of the property included in the application.

Motion by: Forrest

Second by: Hewetson

Vote: unanimous

A copy of Annexation Ordinance A23-05 is attached to these minutes.

Public Comment: At this time, an opportunity was provided for members of the audience who had registered to speak to address the Council, and the Clerk was asked for any written comments received prior to the meeting.

The following public comments were received in writing: comments from Roshni Pattath, Saleem Ameer, and anonymous asking Council to pass a ceasefire resolution regarding the conflict between Israel and Gaza.

The following public comments were received in person:

Joseph Cuccurullo, 225 Flatrock Lane, said he wanted to bring to Council's attention that more businesses are placing illegal commercial signs around town. He thanked Beth Trautz, Development Services, for being responsive to him. But he felt the need to address Council because the way the ordinance is written, it is not prohibitive to people doing it. He said this is unfair to those businesses who are following the rules. He asked Council to rewrite the ordinance to give repeat offenders a larger consequence.

Roshni Pattath said she was a southeastern Asian woman who has lived in Holly Springs since 2016. She said Israel's actions in Gaza constitute genocide. She asked Council to not spend tax money on this genocide and to pass a resolution for a cease fire.

Elizabeth Stitt said she had a Facebook post showing a 19-minute backup on Friendship Road, and that this was the normal traffic. She said she was waiting for a response to her petition. She said she still has concerns about traffic in her neighborhood. She asked to meet with each Council member individually.

Beth Bland said she debated whether to say anything tonight, but she was upset with Council's decision to approve the Friendship rezoning several meetings ago. She said the infrastructure wasn't in place. The developers' plans were based on the new interchange on US 1, which has not been approved by NCDOT and is not in the near future. She said her concern is that this project will become a runaway train that destroys everything in its path. She said her wish for 2024 concerning this corridor is that Holly Springs and Apex would work together to do this in a responsible way and preserve the rural character of her neighborhood.

OTHER BUSINESS

None that required action. The Mayor and Council wished the public happy holidays.

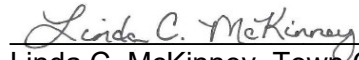
MANAGER'S REPORT

Randy Harrington, Town Manager, said he had nothing but holiday wishes.

CLOSED SESSION: none.

Adjournment: MPT Berry made a motion to adjourn at 8:09 pm. It was seconded by Council member Forrest and passed with a unanimous vote.

Respectfully Submitted on Tuesday, January 16, 2024.

A handwritten signature in cursive script, reading "Linda C. McKinney", is written over a horizontal line.

Linda C. McKinney, Town Clerk

Addenda pages as referenced in these minutes follow and are a part of the official record.



MINUTES

The Holly Springs Town Council met in regular session on Tuesday, January 16, 2024. Mayor Mayefskie presided, calling the meeting to order at 7 p.m. A quorum was established as the Mayor and five Council members were present in the Chamber as the meeting opened.

Council Members Present: Mayor Mayefskie, Mayor Pro Tem Berry, Council members Timothy Forrest, Danielle Hewetson, Annie Drees, and Chris Deshazor.

Council Members Absent: none.

Staff Members Present in Chambers: Randy Harrington, *Town Manager*; Scott Chase, *Assistant Town Manager*; Daniel Weeks, *Assistant Town Manager*; John Schifano, *Town Attorney*; Linda McKinney, *Town Clerk* (recording the minutes); Mathew Mutter, *IT*; Kathy White, *Deputy Clerk*; Corey Petersohn, *Budget and Sustainability*; Cassie Hack, *Director, Communications and Marketing*; Tina Stroupe, *Finance Director*; Chris Hills, *Director of Development Services*; Elizabeth Goodson, Catherine Jacobs, Sean Ryan, and Aaron Prichard, *Development Services*; LeeAnn Plumer, *Director, Parks & Recreation*; Irena Krstanovic, *Economic Development*.

2. and 3. The Pledge of Allegiance was recited followed by an invocation by Jake Nelson of The Church of Jesus Christ of Latter-Day Saints.

4. Agenda Adjustment: The January 16, 2024, meeting agenda was adopted with changes, if any, as listed: none.

Motion: Berry

Second: Forrest

Vote: Unanimous

RECOGNITIONS

5. Black History Month Proclamation

Mayor Mayefskie proclaimed February as Black History Month in Holly Springs and the proclamation was accepted by Mr. Beckwith and his family on behalf of the MLK Jr. Committee.

REQUESTS AND COMMUNICATIONS

6. Parks and Recreation Advisory Committee Annual Report

Susan Smith, Parks and Recreation Advisory Committee, gave Council an update on the activities of the Parks and Recreation Advisory Committee over the past year. Highlights included helping to pass the Parks & Recreation bond, serving as selection committee for artists, working on potential names for the new park. They welcomed a teen member this year to encourage leadership among young people.

7. Waterline Conveyance Interlocal Agreement Update

Kendra Parrish, Executive Director of Utilities and Infrastructure, said that this item was to provide an overview of the Town's current and future water capacity, and why we need an Interlocal Agreement for the Holly Springs - Fuquay Varina conveyance water line. She gave Council an

overview of our current and future water capacity. She said the waterline would convey treated water through 11 miles of shared waterline with separate booster pump stations and ground storage tanks. She said the project was at 60% design plans with construction slated to begin in the last quarter of this year and be completed in three years. The total conveyance cost is projected to be \$142 million, with Holly Springs' share of that \$52.5 million. She said that we have received grants of \$1.6 million from the EPA and \$14.9 million from the General Assembly.

Ms. Parrish gave highlights of the Interlocal Agreement (ILA) pointing out the percentage of ownership that each municipality would have, Holly Springs' percentage of ownership being 37.5%, and the amount of water each would be entitled to. She said the agreement was for 99 years with a provision to renew for an additional 99. The easement would be shared 50/50 and will only be used for shared infrastructure. She explained what connections would be disallowed and said that there would be two separate meters – one for Holly Springs and one for Fuquay Varina – that would determine billing. She said the two municipalities would jointly prepare budgets with Fuquay Varina overseeing all administrative functions. Any expense in excess of the overall budget would have to be jointly approved.

Ms. Parrish gave an overview of the costs and capacity of the Sanford Expansion and the Holly Springs/Fuquay Varina Conveyance Transmission Main. She outlined the expected timeline for each phase of the project, with Holly Springs' design completed in 2024 and construction estimated to end in 2027.

Ms. Parrish said that ILA modifications are being completed and a draft ILA would come before Council in March, with construction to begin this summer.

CONSENT AGENDA

The Council passed a motion to approve all items on the Consent Agenda. The motion carried following a motion by Mayor Pro Tem Berry, a second by Council member Forrest and a unanimous vote. The following actions were affected:

8. Minutes – Council approved the minutes of the December 5, 2023 Business meeting and the December 12, 2023 workshop meeting.

9. Monthly Budget Amendments – The Council received the monthly budget amendment report.

10. Gable Ridge Storm Drain Repair Phase 2 – The Council awarded a sole-source contract to Applied Polymetrics Inc. in the amount of \$102,280.43 plus a contingency of \$10,227 for a total not to exceed approved project budget of \$112,497.43 for Phase 2 Gable Ridge Storm Drain Repair.

11. Purchase of a Leaf Vacuum Machine on State Contract – The Council authorized a purchase contract with Carolina Environmental Systems for a 2024 Freightliner leaf vacuum truck for \$269,989 pursuant to NC Sheriff's Association contract, and authorized the Town Manager and Town Attorney to sign a purchase contract with terms acceptable to the town.

12. Amendment to Municipal Code Article VII, Expansion of Chapter 18B Permits – The Council adopted Ordinance 24-02 amending the Town Code of Ordinances Article VII.

A copy of Ordinance 24-02 is attached to these minutes.

PUBLIC HEARINGS

13. Honeycutt/Wade Nash Road Comprehensive Plan Amendment 23-CPA-02

Mayor Mayefskie explained Council's role in a legislative public hearing. He said that residents' role was to present evidence on the benefits of their proposal to the town as a whole, and any information that will help traffic flow.

Sean Ryan, Development Services, said a request had been received for an amendment to the Comprehensive Plan regarding improvements at Honeycutt, Wade Nash, and Piney Grove Wilbon Roads. He explained where the Comprehensive Transportation Plan (CTP) fits in to other plans, and that it identifies the vision for the future of the transportation network and establishes the policies and projects to achieve that vision through an action plan. He said the CTP is a long-range document with high-level goals. It is not intended to represent a literal roadway alignment or specific roadway design, nor is it intended to show the exact location of improvements. He illustrated the difference between the CTP and a Traffic Study.

Mr. Ryan said that the CTP was overlayed on the Land Use Plan to provide the infrastructure support needed for this development. And he showed the location being discussed. He said that a 2016 Capacity Analysis identified that Avent Ferry and Highway 55 exceed vehicle design capacity. Improvement options include adding lands and/or providing alternate options. The preferred alternative is to provide a reliever road on the Honeycutt / Wade Nash corridor. He showed on a map how this connector would relieve traffic on Avent Ferry and Highway 55. He said that the identified improvement in the 2022 CTP was to realign the roadways to join at a single intersection, but that the exact details of where and how is often determined with development review, or once funding is available. He said the realignment has been a long-term goal since 2001 and showed the various updates.

Mr. Ryan said the goals for that corridor were to create an east/west connector from Avent Ferry Road to NC 55 to relieve traffic on Avent Ferry Road, Cass Holt Road, and Piney Grove Wilbon Road; to reduce or limit impacts to existing structures and property owners; to improve operating conditions on Honeycutt Road and Wade Nash Road; to increase safety; and to support planned development. With all the development occurring in this corridor, several property owners became aware of the CTP and staff have been meeting with them over the past year to 18 months. The applicants have requested a modification of this realignment to lessen impact on their properties. He showed an arial of the location being discussed and pointed out existing structures and an existing cemetery.

Catherine Jacobs, Development Services, showed three scenarios that the applicant's traffic study considered to meet these goals. The purpose was to determine the viability and constructability of three scenarios. She said that Scenario 1, required the largest right-of-way acquisition, was the longest alignment with the largest increase in impervious surface, and had the most constructability concerns. Scenario 2, moving the Honeycutt Road intersection further away from the Wade Nash intersection is the applicant's preferred scenario, but not the Town's because of higher turning volumes, more lane changing maneuvers, assumptions of roadway improvements by others that are not currently planned, and constructability concerns. She said that Scenario 3 is viable, is what is shown on the CTP, and is the Town's preferred scenario. It provides an acceptable level of service; provides less delay to minor streets; reduces the number of turning movements; and fulfills corridor mobility goals. Ms. Jacobs said that this scenario is not engineered, and the ultimate realignment route would consider minimizing impacts to existing structures and the cemetery, and environmental features, and would more closely analyze following Quiet Glen to avoid the three homes there. This scenario provides an acceptable level of service, reduces the lane change maneuvers, and has less delay on minor streets.

Ms. Jacobs said that the studied scenarios have no substantial impacts to other sections of the Comprehensive Plan. Minor impacts include the shifting of the location of the required sidepath; possible utility line relocation; and impacts to wetlands and jurisdictional streams, which are anticipated with each scenario.

Mr. Ryan said that additional concerns are permit choice, and that previously submitted applications may choose to move forward with existing CTP alignment, because NC Statute allows them to move forward with either CTP, should Council approve this amendment.

Ernie Carpico, Planning Board representative, said that Planning Board voted to recommend approval with a vote of 4 to 2. He said there were two absences and one vacancy at that meeting. He said what swayed them the most was a letter from Morningstar Law Group, representing the company that did the TIA. This letter said that dual signalization was the traffic engineer's preferred option. He said that there was a supplemental motion for further study of this

area which was approved with a vote of 6 – 0. He said Planning Board met and discussed this at multiple meetings, and considered input from the public.

Council member Forrest asked about Permit Choice and Mr. Ryan explained that the statute says that if a policy changes between the application and the decision, the applicant has the right to choose which policy they wish to proceed under.

Council member Drees asked if the minor impact of moving utility lines that was mentioned would include moving storm drains. Ms. Jacobs said it likely would.

MPT Berry asked for clarification that the applicants' preferred scenario was different from the development Symphonia's proposal, although they both required dual signalization. Mr. Ryan said Symphonia has proposed dual signalization at the current intersection locations; the applicants are suggesting dual signalization with Honeycutt moved further north.

Mayor Mayefskie opened the public hearing and the following input was received:

Nate Bouquin of McAdams, speaking for the applicants, said he was not a resident but has done numerous TIAs in town and is very familiar with Holly Springs' traffic. He said that a CTP is a town-owned document that looks at streets owned by the town and roads owned by NCDOT. He said that they tried to work with NCDOT but they would not state approval without completed designs. He said that the applicants recommend maintaining the offset T-intersections and planning for signalization at both intersections with a coordinated signal system. He said that they looked at what could be constructed and meet NCDOT standards. He said Symphonia's proposal was not constructible because it would require lower speed limits.

Mr. Bouquin highlighted the methodology used, looking at all the improvements out to 2050, since that was CAMPO's horizon year. He said they used a 3% compounded growth rate, which was very conservative. He said that Piney Grove Wilbon is the heavily traveled route. Honeycutt and Wade Nash Road are not heavily traveled. He said they looked at Future Land Use maps in Holly Springs and Fuquay Varina for this area. The majority of the development in this area is residential with small amounts of neighborhood retail at the crossroads. The Future land Use maps show how the traffic patterns will be in the future. These maps show that traffic patterns will not greatly change.

Mr. Bouquin outlined the conflict points of a four-leg signalized intersection as opposed to two closely spaced T-intersections. Because of that the Federal Highway Administration says that if traffic patterns put the majority of traffic on the main line, the offset T intersections are preferred.

Mr. Bouquin said that Buckhorn Elementary was constructed without dedicating additional land for this realignment. He said that multiple nearby developments, as well as adjacent residents were in support of offset T-intersections. He said that CAMPO 2050 MTP does not appear to include the realignment and Fuquay Varina does not show realignment on their CTP.

Mr. Bouquin said that there are examples of comparable offsets in Wilson and Raleigh. He summarized that the CTP should be amended to eliminate constructability issues; reduce environmental and community impacts; meet the traffic capacity needs; reduce financial impact on taxpayers; eliminate impacts to the school; and to better align with CAMPO 2050 MTP and Fuquay Varina's CTP. He said that any development on the Fuquay Varina side of the line would not contribute to the realignment.

Mr. Bouquin showed examples in Raleigh and Wilson with similar offsets. He said the path forward would be the two offset T-intersections.

Keith Henshaw, applicant, said the CTP would affect seven homeowners. He said property owners became aware in August of 2022 of a Southwest Area Study (SWAS) which was dated June 28, 2019, and contained the plan to realign these roads. This has now been incorporated into Holly Springs CTP. He showed a path for realignment that Symphonia Homes proposed last July, which was denied. He showed another conceptual drawing which he said NCDOT would not approve because of the angle of the intersection with Piney Grove Wilbon. He walked through the history of this proposed alignment, saying that the 2015 Vision Holly Springs version was not constructible due to homes east of Piney Grove Wilbon Road. He said that at the November 7, 2023 Land Use Advisory Committee meeting a 2012 SWAS recommended a path through land that

is now Buckhorn Elementary School, which was not adopted, but would have limited homeowner impact. He showed a map provided to Selva Mohan in 2014 showing that the Town knew about the issue with homes in the alignment route. He said this could have been added to the CTP in 2012 which would have been a viable option.

Mr. Henshaw said that in 2015 he was told that the corner at Honeycutt Road and Piney Grove Wilbon was shown as mixed-use, with no roadway changes other than road widening. He then outlined the five alternatives studied in the SWAS of 2019, giving the pros and cons of each. He discussed the methods of selecting these alternatives. He said that Alternative 5, which would have had less impact to existing residents was made moot by the construction of Honeycutt Farms homes in 2021, and said this showed a bias in favor of the subdivisions of Honeycutt Farms and Symphonia over the interests of existing residents. He said that impacts to homeowners needed to include consideration of the full 112-foot right of way, which he said would take out his septic drainfield and Selva Mohan's house. He said the potential realignment assumes a 35-mph speed limit, but he said the roads in the area are all posted at 45 mph. He showed where his landscaping would be affected, as well as the gas lines in his front yard and his septic drainfield. He said the new roadway would run through Nellie Stephens side and back yards, if constructed according to the SWAS plan. He outlined possible impacts to other neighbors' properties. He said that the Town created the criteria after they chose the alternatives.

Mr. Henshaw outlined the same three scenarios outlined earlier by staff. He said their recommendation was to maintain the offset T-intersections and plan for signalization at both intersections with a coordinated signal system. He showed the same examples from Raleigh that Mr. Bouquin showed. He said that dual signalization would be cheaper and safer. He said that right-of-way acquisitions for realignment would be greater than for dual signalization and would be contested. He said that all 7 homeowners touching the corridor are against the alignment. He said that impacts to wetlands would be less and traffic flow comparable, and that it must be able to be approved by NCDOT. He said dual signalization met the criteria and should be adopted. He handed out a Ramey Kemp study to Council.

Natalie Betts Woodson, applicant, said her property was at 5741 Sand Dune Way. She said that she was a descendant of Middie Betts, who was a recorded landowner dating back to 1914. Her grandparents Georgia and Ernest Betts lived their entire lives here. They are on the cover page of the black history tour. That Black History Tour chronicles and pays tribute to the African American experience in Holly Springs. She has long ties to Holly Springs. She and her brother are dedicated to preserving the family heritage of the land in this area. She said there is a family cemetery on this property. She said they are not alone. The Johnson Smith families also have long ties to the community. In the last decade they welcomed the Henshaw, Mohan, Myers, and Reddi families. They appreciate the development and the advancements that have taken place in Holly Springs and appreciate that as the community grows there is a need for improvements. Holly Springs is known for taking care of their neighbors, and many of you were probably drawn to the area for that reason.

Ms. Woodson said that there are no concrete detailed plans, just lines on maps. But they have clear, adverse implications to us as residents even in this format. She said the realignment might be a great idea, if the existence of the established homes and family cemeteries were not a factor. Please consider the impact it would have on all of us. She said seven families would experience what she feels are avoidable disruptions. The Norris and Mohan families would experience a road between their porches, and Mohan family could lose their house. The Henshaw family would lose their front yard and it would impact his ability for future development on his land. The Myers family would experience a road running through their yard and the Johnson Smith family would have a road go over their private road. She and her brother have plans to build their dream homes on their land, but one of the options goes straight through her property cutting it in half. But most important is to conserve the Betts cemetery. Cutting the road through their property would keep them from experiencing their eternal rest. This needs to be respected, not just preserved. The road going right by would subject the graves to pollution, litter, and possible desecration. She said they understand that growth brings change, but they want to get to a solution that was mutually agreeable. She said they were confident in their proposal. She said they have submitted alternative

options to achieve the Town's objectives. She compared her situation to Native Americans interactions with the pilgrims. She asked Council to imagine what it would be like to sit in a meeting and see a developer offer up your land to fix the traffic problems he is contributing to. She said the SWAS objectives have not been accomplished by this realignment. She said approving developments while their discussions were going on limited the options for them. She said that infrastructure should be improved before development was approved. She said they see several changes in the road realignment, but they all have negative impact on them, and they feel unheard. They feel the impacts to them were being treated as less important than impacts to the developers. She said they had presented an alternative solution backed by credentialed traffic experts, which is a dual signalized offset intersection. She said this was an approvable solution and would allow her to preserve her family's final resting place. She asked Council to approve the CTP amendment. She said Planning Board had approved this, and Council should too.

LeRoy Smith, Fire Chief, said that the proposed amendment would reduce response times. He said he had spoken with the Fuquay Varina Fire Chief and said that they were building a new fire station in the area and would be responding in that area. He said a fire will double in size every 3 minutes. Open floor plans and modern materials allow fires to spread faster, giving the Fire Department less time to get there and get you out. Some comments from the recent fires in Holly Springs reinforce this. Your time to escape is 3-4 minutes. An intersection slows response time by 3 minutes. Traffic circles have 8 points of conflict. From a public safety standpoint, he would like to see one intersection to help decrease emergency response times.

Michael Przybowski said he lives at 205 Gooseberry Drive. He gave his volunteer and career credentials. He said he supports the Town. His son has been impacted by Coach Henshaw, and he is his friend. His community should support Mr. Henshaw and his homeowners in this endeavor. He appreciates the insights of the Fire Department. But he doesn't want Mr. Henshaw to suffer due to this plan. The solution he presents is viable and the Town should consider it. Holly Springs has traffic problems. His commute time has increased exponentially. But we shouldn't impact people. If the plan has been in place since 2001 why hasn't it been built? He said that individual land seems like it is up for grabs. He supports the homeowners' request and supports his friend Brian Keith Henshaw.

There being no further input, Mayor Mayefskie closed the public hearing.

Council member Drees thanked the residents for coming and presenting information. There are times when the Town doesn't have options when it comes to accommodating growth and reducing traffic, but in this case, we do have options. The growth of Holly Springs should not be at the expense of those already here.

Council member Deshazor said he had questions about roundabouts. They were mentioned in the packet but were not said to be viable options. Ms. Jacobs said that that consideration of roundabouts didn't go very far because they are not beneficial when you have major roads coming together. With two four-lane median divided roads coming together, it gets very complicated very quickly. Council member Drees asked if that analysis was two roundabouts or one. Ms. Jacobs said that both scenarios were considered.

MPT Berry said this was only the 2nd time in 20 years that residents have requested a CTP amendment. When he moved here in 2011 the line was on the CTP. It was there well before the resident bought the property and constructed his home. The Town for at least 15 years has been contemplating the building of a connector from 55 to Avent Ferry. The people who will benefit from this change would be the applicants and the two developers. Those who will not benefit are the majority of the residents in the area, and the motoring public in general. Applicants say dual signalization will be sufficient until 2045. He said he is not willing to hope someone else will come along and fix a problem in 20 years that was made worse by an interim solution.

Council member Deshazor said when he first heard about this when he was on Planning Board, he was concerned about the offset being right at 750 feet. And he thought it was being built right away. But he is learning that government moves slowly. There is no funding or design. So, if we approve the amendment, we have no way of getting funding to fix this problem in the long term.

He asked staff if this motion is denied and comes back 4 or 5 years from now, could dual signalization still be in play. Ms. Goodson said if there is no change at this time it does not eliminate further analysis of this intersection, the design, or other options in the future. Council member Deshazor said if we approve this tonight, we're done, and no other options can be considered. He thinks there are a lot of what-ifs, and he doesn't feel comfortable basing this on assumptions.

Council member Hewetson said that leaving this as a preferred option for safety, traffic flow, as things grow in this area, does not eliminate further study. It is not yet a literal pathway. There are no designs – there is a long-term big picture goal to make two roads meet with the least impact to existing property owners. Not approving the amendment gives us more options.

Council member Forrest said he hears them, understands them, and they made a great case tonight. And dual signalization is a possibility. The issue here isn't if dual signalization will go. It's that the CTP amendment as presented would lock us into not considering other options. He said he is for property rights. As we look at a town that will reach 62,000 by 2030, we are impacted horribly by traffic. We can't get away from that. He doesn't want to lock Council into a certain path until they know what the best path will be. When this comes up again in the future, he is more worried about when NCDOT expands Piney Grove Wilbon. There are so many unknowns and potentials we may miss if we lock this in. He applauded the applicants for their work and he promised to protect their property rights.

Council member Drees said that the amendment assures the protections of these homes and forces Holly Springs to creatively solve this problem. Council member Forrest said it's important to realize that we represent the whole town, and we have to make difficult decisions. Council member Deshazor said if this amendment does not pass, we can still protect the rights of the homeowners to ensure that their property and land and cemetery is not disturbed.

Mayor Mayefskie said that at this point there is no funding, and the Town has no intention, and NCDOT has no intention, to construct anything. If we deny this amendment, it gives us the ability to revisit this in the future. He asked the Town Attorney to confirm that this was correct. John Schifano, Town Attorney, said the CTP is a tool for planning purposes to preserve corridors, so it is a question tonight of which corridor you want to preserve.

Action: Motion to deny Comprehensive Plan Amendment 23-CPA-02.

Motion by: Berry

Second by: Hewetson

Council member Deshazor said he appreciates the applicants coming in, but he wants to preserve options. He said that the board will make sure they preserve the rights and the livelihoods of others. Council member Drees said it probably wouldn't be this board if it comes back in 2045. MPT Berry said there are three projects in this area now so it could come back to Council in the very new future.

Vote:

Aye: Berry, Hewetson, Forrest, Deshazor

Nay: Drees

The motion passed.

NEW BUSINESS

14. Municipal Agreement with NCDOT for Bridge Replacement

Elizabeth Goodson, Development Services, said this item was to discuss the municipal agreement with NCDOT for bridge replacement at NC 751 and US 1, which was part of the Amgen project. She said that economic development partners in the recruitment of Project Titan (Amgen) included NCDOT committing up to \$10 million in road improvement funding. NCDOT is unable to give directly to a private project, so the funding is being funneled through the Town. There is no Town investment expected. She said a Traffic Impact Analysis (TIA) was performed for Amgen and the area near the bridge at NC 751 was identified for improvement.

Council member Forrest asked how far out the road widening would be. Ms. Goodson said it would be what is needed to get the bridge in place. The initial priority is to design it in its ultimate width. The full design will be done, but the scope of the construction has not been determined. The interim solution would be the bridge and the turn lane. Council member Forrest asked if NCDOT would need to follow town guidelines. Ms. Goodson said the cross section would be to our requirements. Council member Forrest asked if there would be eminent domain. John Schifano, Town Attorney, said it is outside of our jurisdiction so we would not be responsible for any land acquisition.

Action: Motion to authorize the Town Manager to execute a Memorandum of Understanding regarding NCDOT funding of partial Transportation Improvements related to Amgen.

Motion by: Hewetson

Second by: Deshazor

Vote: unanimous

15. Annual Appointments to Planning Board and Board of Adjustment

Linda McKinney, Town Clerk, said it was time for Council to make their annual appointments to Planning Board and Board of Adjustment. There is one in-town and one ETJ opening on the Board of Adjustment. Five applications were received for the in-town position and two for the ETJ position. There are three three-year terms and one partial term openings on the Planning Board. Twenty-two applications were received for these four openings.

Action 1: Motion to appoint David Williams to a term ending February 28, 2027 as in-town member of the Board of Adjustment.

Motion by: Forrest

Second by: Berry

Vote: unanimous

Action 2: Motion to recommend that Wake County Board of Commissioners appoint Kimberly Day to a term ending February 28, 2027 as Extra-Territorial Jurisdiction member of the Board of Adjustment.

Motion by: Forrest

Second by: Hewetson

Vote: unanimous

Action 3: Motion to appoint Rick Madoni, Joanna Holder, and Sara Kempin to terms ending February 28, 2027 as in-town members of the Planning Board, and Joseph Cuccurullo to a term ending February 28, 2026 as in-town member of the Planning Board.

Motion by: Berry

Second by: Forrest

Vote: unanimous

Council member Drees said there was a bumper crop of applications and she thanked everyone who applied. She said she reached out to each applicant, and recommended that anyone applying in the future reach out to Council to discuss their reasons for applying.

Public Comment: At this time, an opportunity was provided for members of the audience who had registered to speak to address the Council, and the Clerk was asked for any written comments received prior to the meeting.

The following public comments were received in writing: one comment from Ginny Suever calling for the resignation of CM Deshazor; one anonymous comment requesting less development in the downtown area.

The following public comments were received in person:

Philip Yates – was called but had left the meeting.

Elizabeth Stitt, 3113 Friendship Road said she was here with a few of her neighbors. She congratulated Council on the DOT funding for the New Hill Holleman bridge. She said a lot of community members are concerned about the design and what the construction impacts would be. Her neighbors are upset at having the impact of the construction without having any input in how things are done. She encouraged Council to reach out to neighbors as we get closer to construction. She said they are stepping up their activities with CAMPO and will have community representatives going to their meetings. She said they have unique challenges given their location and don't feel heard by any one entity. They will continue that advocacy.

Sam Rinawi – was called but had left the meeting.

OTHER BUSINESS

Council member Deshazor said he wanted to address the situation of his being involved in a DWI in December. He understands that this has raised concerns and disappointment. He apologized and said he was disappointed with himself and has taken full responsibility for his actions. He asked for a little bit of grace and said he would work tirelessly to regain the trust of the residents of Holly Springs.

MPT Berry said tonight there was a heavy case in front of them. It may seem sometimes like we look at these cases and it looks like we rush the decision. But we go out and walk the property. The first email he received about this was in 2022 and he has been involved in it since then. He has communicated with the homeowners who petitioned, and with other neighbors who were not supportive of the amendment. We all drove out there, looked at what we were dealing with, and considered closely. We are asked to remove emotions and look at what is in the best interest of the whole town. Sometimes we get it right, sometimes we have to come back and fix things. But these decisions are not made lightly or quickly. There's a lot that goes on that is not seen at meetings. We're here to do business, but many of us have been into the details for 18 months. We like to see people involved, and appreciate all who came out tonight.

Council member Drees commended the MLK Jr. Committee for a powerful weekend of events. It is her sincere hope that these events continue to grow. She also wanted to highlight Parks & Recreation for their Day of Service on Monday. These days of service are going to happen quarterly, and she invites the public to join in. She said the Tree Advisory Committee is hosting a tree trimming workshop on Feb. 17th. She commended the Holly Springs Fire Department for their quick action at several fires, and their education and outreach.

Council member Deshazor said that William Ball (junior) is a senior at Holly Springs High School, and he will be competing in Texas for the national championship in power lifting. There is a story about him on WRAL and it is a positive thing happening in the community. Also, his neighbor Mark McNally auditioned to be on Shark Tank this weekend, and it's on WRAL. There are Holly Springs residents doing big national things and they should be noted.

MANAGER'S REPORT

Randy Harrington, Town Manager, said he had four items.

First, Yard Waste carts started to be delivered this week. There is information on them that explains the program, and also people with questions can call 311.

2nd new online payment portal goes live on Monday. More information will be going out, but it is to try to make online payments easier for residents.

3rd over the past week a draft of the retreat agenda has been sent out. If Council has questions or wants clarification, he will welcome them. But things are shaping up for their February retreat and transportation is a big topic area.

4th Friday will be the groundbreaking for the Operations Campus and Fire Station 3.

CLOSED SESSION: The Council entered into closed session, pursuant to N.C.G.S. 143-318.11(a)(4) to discuss an economic development project.

Motion by: Berry

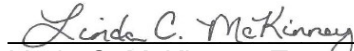
Second by: Hewetson

Vote: Unanimous

Motion to leave closed session was made by Council member Deshazor seconded by MPT Berry and passed with a unanimous vote.

Adjournment: MPT Berry made a motion to adjourn at 10:42 pm. It was seconded by Council member Forrest and passed with a unanimous vote.

Respectfully Submitted on Tuesday, February 20, 2024.



Linda C. McKinney, Town Clerk

Addenda pages as referenced in these minutes follow and are a part of the official record.

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: Parks and Recreation

Date: 2/20/2024

Reason for Budget Amendment:

Parks and Recreation has received increased demand for services, in particular for participation in athletic programming. This amendment appropriates surplus funds from Parks and Recreation revenue and other sources already received in excess of the current approved operating budget in order to fund athletics.

Expense			
Account #	Account Description	Increase	Decrease
10-425-29-12.05	Gen Fund - Parks and Rec - Athletics - Contract Svcs	\$ 70,000	
Total Expense:		\$ 70,000	\$ -

Revenue			
Account #	Account Description	Increase	Decrease
10-325.03	Gen Fund - Parks and Rec - Facility Rental	\$ 4,500	
10-326.03	Gen Fund - Parks and Rec - Park Rental	\$ 500	
10-326.21	Gen Fund - Parks and Rec - Soccer Facility	\$ 200	
10-326.22	Gen Fund - Parks and Rec - Jones Facility Rental	\$ 11,000	
10-326.23	Gen Fund - Parks and Rec - School Facility Rental	\$ 8,400	
10-327.03	Gen Fund - Parks and Rec - Community Center Rental	\$ 3,100	
10-327.12	Gen Fund - Parks and Rec - Festival Sponsor/Fees	\$ 15,700	
10-328.09	Gen Fund - Parks and Rec - Bass Lake Late Fees	\$ 2,500	
10-329.07	Gen Fund - Parks and Rec - Athletics Basketball	\$ 8,300	
10-329.11	Gen Fund - Parks and Rec - Athletics Youth Teams	\$ 3,100	
10-329.17	Gen Fund - Parks and Rec - Athletics Youth Tennis	\$ 2,700	
10-340.11	Gen Fund - Other Revenues - Procurement Card Rev	\$ 10,000	
Total Revenue:		\$ 70,000	\$ -

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.



Ordinance No. 24-01

Date Submitted: February 20, 2024

Date Adopted: February 20, 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 February 20, 2024

Grant and Special Revenue Fund	
Expenditures:	
Code Enforcement	2,526,455
Police	420,850
General Government	2,324,691
Parks and Recreation	61,063
Public Works	12,500
Fire	5,000
Total	5,350,559

SECTION IV: The following revenues are anticipated to be available to complete these projects:

Grant and Special Revenue Fund	
Revenues:	
Transfers from General Fund	2,551,761
State Grants and Intergovernmental Funds	2,107,658
Federal Grants and Intergovernmental Funds	347,385
Miscellaneous Revenues	343,755
Total	5,350,559

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 February 20, 2024 in accordance with the laws of the State of North Carolina.

Adopted this, the 20th day of February 2024.

Town of Holly Springs by

Sean Mayefskie, Mayor

ATTEST:

Linda McKinney, Town Clerk



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:** 2/20/2024

Reason for Budget Amendment:

This is a clean-up amendment for various administrative actions: (1) Appropriate revenues received for cemetery lot sales (2) Appropriate funds for revenues received for Park Bench donations (3) Appropriate funds to correct for a purchase order that was carried forward from prior fiscal year.

Expense			
Account #	Account Description	Increase	Decrease
10-412-14-12.05	Gen Fund - Town Clerk - Contract Services	\$ 20,000	
10-425-28-55.12	Gen Fund - Parks and Rec - Bass Lake Programs	\$ 10,000	
30-460-020-90.02	Utility Fund - Dev Serv - Vehicles (PO Carryforward)	\$ 3,510	
Total Expense:		\$ 33,510	\$ -

Revenue			
Account #	Account Description	Increase	Decrease
10-322.01	Gen Fund - Cemetery Lot Sales	\$ 20,000	
10-328.01	Gen Fund - Parks and Rec - Bass Lake Donations	\$ 10,000	
30-355.11	Utility Fund - Approp from Bal. (For PO carryforward)	\$ 3,510	
Total Revenue:		\$ 33,510	\$ -

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#: 13.

Consent Agenda

Title: Engineering Design & Construction Standards Section 6 Update

Strategic Priority Area: Responsible & Balanced Growth
Safe & Friendly

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

Action(s):

Approve changes to Engineering Design and Construction Standards, Section 6 (Water Distribution) in response to comments received by the North Carolina Department of Environmental Quality (NCDEQ) Public Water Supply Section.

Explanation:

- Town staff submitted the Engineering Design & Construction Standards, Section 6 (Water Distribution) to the North Carolina Department of Environmental Quality (NCDEQ) Public Water Supply Section for review and approval on August 1, 2023.
- The water distribution system (water main) includes a network of pipes, valves, hydrants and related appurtenances.
- Based on comments received from the state in September and December 2023, staff made changes to language contained in Section 6 (Water Distribution).
- The revised version of Section 6 (Water Distribution) was approved by the state on January 18, 2024.
- The Town has periodically submitted standard specifications for water distribution to the state for review and approval. This update replaces the specifications that were approved in 2010.

Background:

- Many municipalities, such as the Town of Holly Springs, have standard specifications for water main extensions.
- These standards can be submitted to the NCDEQ Public Water Supply Section for review and approval.
- If a water system has approved standard specifications, water main extensions submitted to the state for permitting can reference those previously approved specifications. Otherwise, specifications must be submitted with every permit request.
- Changes from the previously approved Supplement #8, Section 6 include
 - References to American Water Works Association (AWWA) Standards and the Rules Governing Public Water Supplies (revised, effective July 1, 2019)
 - Addition of figures showing pipe laying conditions (aka bedding details)
 - Revisions to the clearance between water mains and non-potable water lines

- Updates to hydrostatic testing and chlorination language
- Revision to the bacteriological sampling language and procedure

Funding Source(s):

N/A

Attachment(s):

1. 23-00759 Parrish
2. 6 Water Section Approved by NCDEQ

ROY COOPER

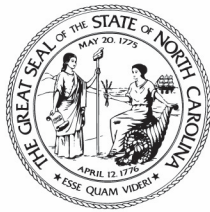
Governor

ELIZABETH S. BISER

Secretary

RICHARD E. ROGERS, JR.

Director



NORTH CAROLINA
Environmental Quality

January 18, 2024

Town of Holly Springs
Attention: Kendra D. Parrish, P.E.
128 South Main Street
Holly Springs, North Carolina, 27540

Re: Water Main Standard Specifications Approval
Town of Holly Springs
Water System No.: NC0392050
Wake County
Serial No.: 23-00759

Dear Applicant:

Enclosed please find one copy of the "Application for Approval..." together with one copy of the referenced water main standard specifications prepared by Kendra D. Parrish, P.E., bearing the Division of Water Resources stamp of approval for the referenced project. These standard specifications are approved under Division of Water Resources Serial Number 23-00759, dated January 18, 2024.

The standard specifications are approved for the construction or an alteration of the water distribution system for the Town of Holly Springs, NC0392050. For the purposes of this approval, the water distribution system (water main) includes a network of pipes, valves, hydrants and related appurtenances. However, this approval does not cover the specifications for water treatment plants, pumps and pumping facilities, storage tanks, treatment devices and processes, wells or any other facilities. Therefore, when a new water main extension project is submitted in the future for the Town of Holly Springs, please check the box for "The project will use the following system's previously approved standard specifications for waterline extensions" on the last page of the Application for Approval and cite the Serial No. 23-00759.

These water main standard specifications in the foregoing application are approved insofar as the protection of public health is concerned as provided in the rules, standards and criteria adopted under the authority of Chapter 130A-317 of the General Statutes. This approval does not constitute a warranty of the design, construction or future operation of the water system.

One copy of the "Application for Approval...", a copy of the approval letter and a copy of the approved standard specifications with a seal of approval from the department are enclosed. A copy of the standard specifications in a digital format (USB flash drive) is being retained in our office and a second copy of the USB flash drive is being sent to the Raleigh Regional Office.



North Carolina Department of Environmental Quality | Division of Water Resources
512 North Salisbury Street | 1634 Mail Service Center | Raleigh, North Carolina 27699-1634
919.707.9100

Town of Holly Springs
Attention: Kendra D. Parrish, P.E.
Page 2 of 2
January 18, 2024

If Public Water Supply Section can be of further service, please call (919) 707-9100.

Sincerely,



Rebecca Sadosky, Ph.D., Chief
Public Water Supply Section
Division of Water Resources, NCDEQ

RS/TP

Enclosures: Approval Documents

cc: Tresha Price, P.E., Raleigh Regional Office
Wake County Health Department

**SECTION 6.00
WATER DISTRIBUTION**

SUB-INDEX

6.01 WATER DISTRIBUTION PIPE

- A. General**
- B. Design**
- C. Material**
- D. Installation**

6.02 FIRE HYDRANTS

- A. Location**
- B. Specifications**
- C. Installation**
- D. Relocation**
- E. Fire Flow Requirements for Buildings**

6.03 VALVES AND APPURTENANCES

- A. Location**
- B. Specifications**
- C. Installation**

6.04 WATER SERVICE TAPS

- A. Materials**
- B. Individual Water Services**

6.05 CLEARANCE BETWEEN WATER MAINS, SANITARY AND STORM SEWERS

6.06 BACKFLOW PREVENTION AND CROSS CONNECTION

- A. General**

6.07 AUTOMATIC FIRE SPRINKLER SYSTEMS

- A. General**
- B. Design**
- C. Post Indicator Valve**

- D. Backflow Prevention
- E. Fire Department Connection
- F. Dedicated Riser Room
- G. Access
- H. Identification
- I. Installation
- J. Fire Alarm Panel Location

6.08 FIRE DEPARTMENT ACCESS

- A. Fire Access and Fire Lanes
- B. Gates
- C. Two Points of Access
- D. Fire Lanes
- E. Fire Safety During Construction

6.09 TESTING AND INSPECTION

- A. Hydrostatic Testing
- B. Chlorination
- C. Bacteriological Sampling

6.10 FIRE PROTECTION DURING CONSTRUCTION

6.11 IRRIGATION SYSTEMS

6.12 REPAIR OF WATER LINES

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 cross-country waterline mains shall be a minimum of 4 feet deep from existing grade.~~ 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

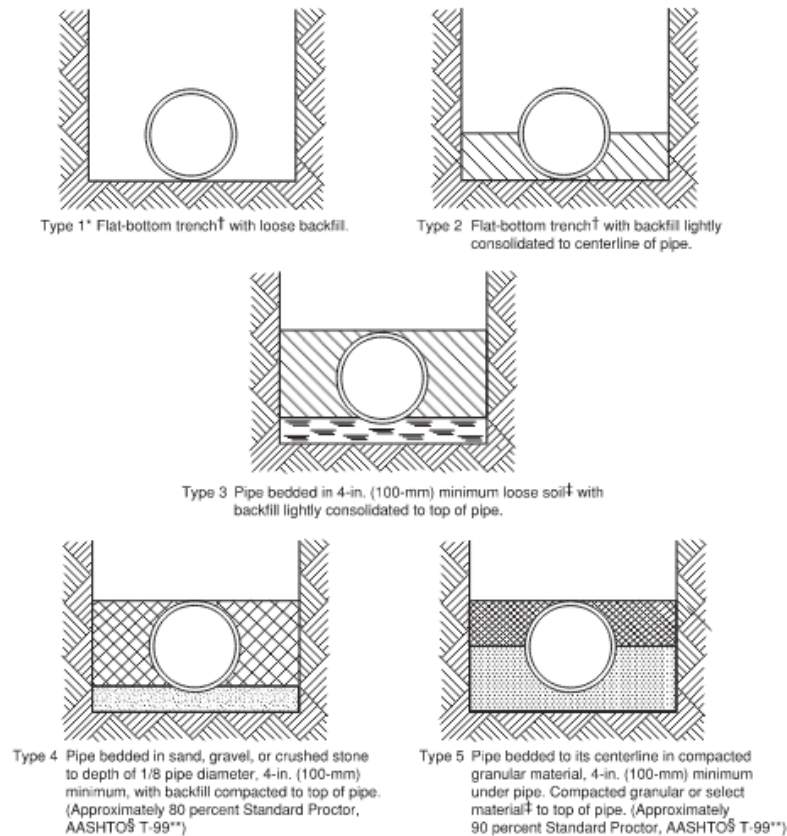


Figure 1: Laying Conditions for Ductile Iron Pipe (AWWA C600)

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.

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
(Appendix C of the 2018 NC Fire Prevention Code)

FIRE-FLOW REQUIREMENTS (gpm)	MINIMUM NUMBER OF HYDRANTS	AVERAGE SPACING BETWEEN HYDRANTS (Feet) ^{a, b, c, f, g}	MAXIMUM DISTANCE FROM ANY POINT ON STREET OR ROAD FRONTAGE TO A HYDRANT ^{d, f, g}
1,750 or less	1	500	250
2,000-2,250	2	450	225
2,500	3	450	225
3,000	3	400	225
3,500-4,000	4	350	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.

^f. A 50-percent spacing increase shall be permitted where the building is equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.1 of the 2018 NC Fire Code

^g. A 25-percent spacing increase shall be permitted where the building is equipped throughout with an approved automatic sprinkler system in accordance with Section 903.3.1.2 or 903.3.1.3 of the 2018 NC Fire Code or Section P2904 of the NC Residential Code.

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. 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 a 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 and sealed 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 drains. 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	
83,701-97,700	47,101-54,900	30,101-35,200	21,801-25,900	13,401-15,600	3,250	3
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	8,000	

- 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)	MINIUM 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

6.03 VALVES AND APPURTENANCES

A. Location

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

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 - ¾" tap
6" main - 1" tap
8" main - 1¼" 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, 36-inches 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 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 through the Town of Holly Springs Fire Department and shall be in place before a Certificate of Occupancy is issued. Forms are available from the Town Fire Department. Average delivery time is 5 to 6 weeks. 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 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 the 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.

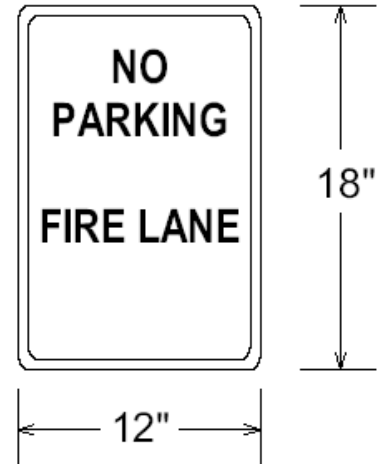
SIGN TYPE "A"



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 not be less than 3 feet per second.
- 4) 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.
- 5) 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.*
- 6) HTH solution shall remain in lines for no less than 24 hours or as directed by the Executive Director of Utilities and Infrastructure Services.
- 7) 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



Holly Springs Town Council

Town Council Meeting Agenda Cover Sheet

Agenda Item#: 14.

Consent Agenda

Title: 12037 Holly Springs New Hill Rd. - Voluntary Annexation A23-09

Strategic Priority Area: Responsible & Balanced Growth

Staff Resource: Aaron Prichard, Development Services

Action(s):

Adopt Resolution 24-02 directing the Town Clerk to investigate the sufficiency of annexation petition A23-09 and setting the public hearing for March 19, 2024.

Explanation:

- The Town has received a petition for voluntary annexation of 1.486 +/- acres located at 12037 Holly Springs New Hill Road.
- The owners of the property are Toll Southeast LP Company Inc.
- The parcel is required to be annexed per the approved Development Agreement with the developer of Regency.
- The parcel will be incorporated into the Regency Subdivision as open space and road widening will occur along the project frontage, along with installation of a sidewalk extension along Holly Springs New Hill Rd..
- The annexation will fill an existing doughnut hole, a geographical area that remains unincorporated within a municipality despite being surrounded by land that has been annexed or incorporated into that municipality.
- Staff requested feedback from all departments and there were no issues with this annexation.
- The requested action is to set the public hearing, and to verify that the petition meets the statutory requirements for 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 annexation."

Funding Source(s):

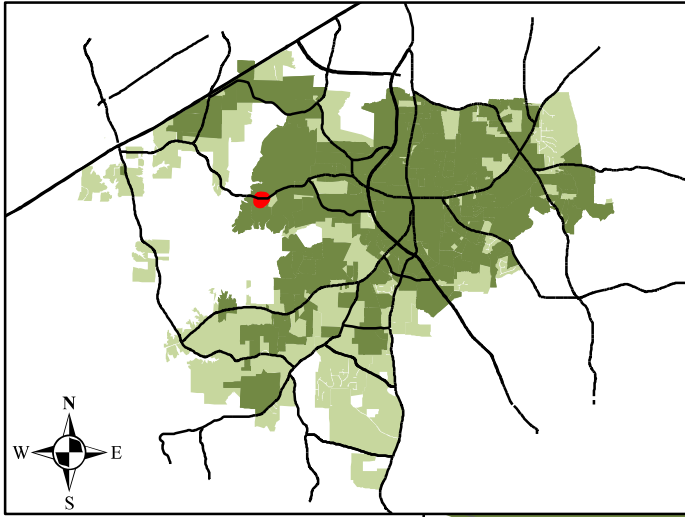
N/A

Attachment(s):

1. A23-09 map
2. A23-09 - 12037 HS New Hill Rd - Resolution of Sufficiency

Town Council Business Meeting
February 20, 2024

A 23-09 | 12037 Holly Springs New Hill Rd. | 1.486 Ac.



Legend

-  Annexation Property Site
-  Town Limits
-  ETJ



Resolution No. 24-02

Date Adopted: February 20, 2024

Annexation No.: A23-09

**RESOLUTION OF THE HOLLY SPRINGS TOWN COUNCIL DIRECTING THE TOWN CLERK
TO INVESTIGATE A PETITION RECEIVED UNDER G.S. 160A-31 AND FIXING THE DATE
OF A PUBLIC HEARING ON THE QUESTION OF ANNEXATION**

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

WHEREAS, G.S. 160A-31 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:

Beginning at a PK nail set in the centerline of said Holly Springs New Hill Road at the Northeasterly corner of said Regency at Holly Springs Phase 1B, NC Grid Coordinate Northing 693,245.4782, Easting 2,034,466.5047, said point being **North 77° 33' 06" West**, a grid distance of **11,741.94 feet** from Town of Holly Springs Monument "Seagraves 5", N 690,714.3870, E 2,045,932.3964;

Thence **South 86° 04' 10" East**, along the centerline of said Holly Springs New Hill Road, a distance of **322.28 feet** to a pk nail set;

Thence **South 45° 03' 45" West**, leaving said centerline and along the westerly line of said "Trinity Creek Phase 1A" subdivision, passing a $\frac{3}{4}$ " iron pipe found at 72.97, a distance of **427.76 feet** to a 1" iron pipe found;

Thence **North 69° 38' 38" West**, continuing with the westerly line of said "Trinity Creek Phase 1A" subdivision, a distance of **86.19 feet** to a 1" iron pipe found in the Easterly line of said Phase 1B;

Thence **North 11° 54' 51" East**, with the easterly line of said Phase 1B, passing a 1" iron pipe set at 245.09 feet, a distance of **300.73 feet** to the **True Point of Beginning**, and containing 1.486 acres of land, more or less, of which 0.384 acres lies within the right-of-way of said Holly Springs New Hill Road.

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, March 19, 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 20th day of February, 2024.

ATTEST:

Sean Mayefskie, Mayor

Linda McKinney, Town Clerk





Holly Springs Town Council

Town Council Meeting Agenda Cover Sheet

Agenda Item#: 15.

Consent Agenda

Title: Authorize Town of Holly Springs RAISE Grant Application

Strategic Priority Area: Responsible & Balanced Growth

Staff Resource: Corey Petersohn, Finance

Action(s):

Authorize the Town Manager to sign and submit an application for a RAISE grant for design of Holly Springs Road Widening (West) which if awarded requires a 20% non-federal match of \$600,000.

Explanation:

- The Town is seeking to apply for funding for design of Holly Springs Road Widening (West) through the US Department of Transportation's "Rebuilding American Infrastructure with Sustainability and Equity" grant also known as RAISE.
- The grant requires, if awarded, a 20% non-federal match.
- The Town's RAISE grant submission is for a \$3M pre-construction design phase that would be \$2.4M grant funded and \$600K Town funded.
- If awarded, the Town Manager anticipates recommending use of current Street Reserves to fund the Town 20% match requirement.
- As part of the application process, the Town must submit a letter acknowledging the availability of the 20% match requirement.
- This action would only authorize the Town Manager to apply for the grant per the Town's grant policy. Final appropriation of all funds, including the Town 20% match, would come in a future council action.

Background:

- Town Council previously endorsed a strategy for widening Holly Springs road from the new I-540 interchange to the Highway 55 By-Pass.
- Currently, the Town has approved construction for the "East" phase from Sunset Lake Road to Flint Point Lane as well as design is underway for the "Central" phase from Flint Point Lane to Main Street.
- The "West" phase design sought by the grant would be from Main Street to the 55 By-Pass.
- Staff have previously applied for RAISE grants for construction on Holly Springs Road but have been unsuccessful in receiving an award.
- The Town's grant writer identified a pre-construction phase grant as having a higher likelihood of success.

Funding Source(s):

Town Council Business Meeting
February 20, 2024

Community Investment Plan - Street Reserves / Federal Grants

Attachment(s):

1. RAISE Grant - Holly Springs West - Application Match Letter
2. HSR West Map

January 30, 2024

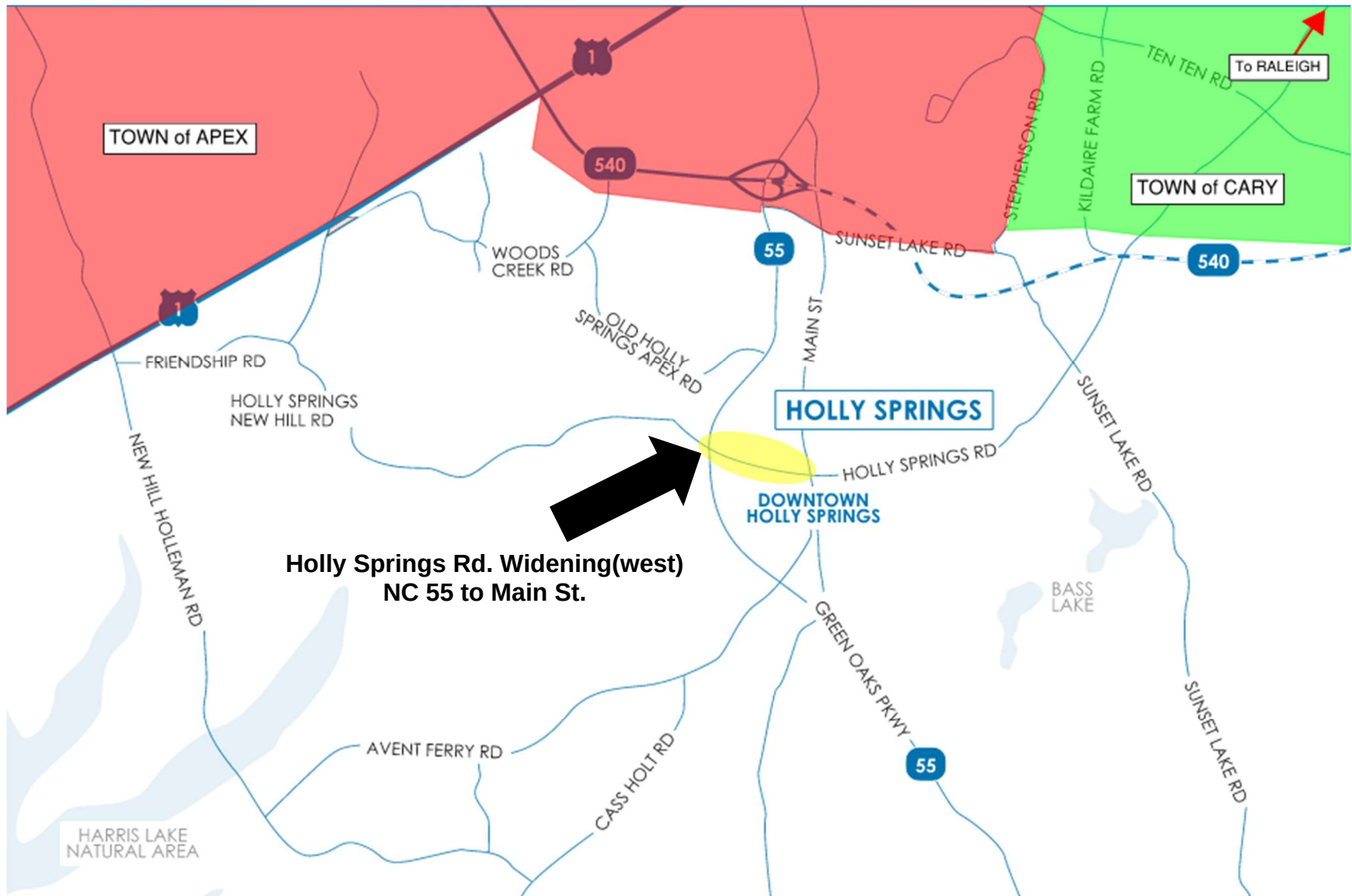
The Honorable Pete Buttigieg
Secretary of Transportation
United States Department of Transportation
1200 New Jersey Avenue, SE
Washington, DC 20590

Dear Secretary Buttigieg:

This letter serves to document the availability of the required non-federal match for the Town of Holly Springs' FY 2024 RAISE grant application. The total project budget is \$3,000,000. The Town of Holly Springs is requesting \$2,400,000 in RAISE grant funding. The required 20% non-federal project match of \$600,000 has been committed from the Town's general fund.

Sincerely,

Randy Harrington
Town Manager





Holly Springs Town Council

Town Council Meeting Agenda Cover Sheet

Agenda Item#: 16.

Consent Agenda

Title: Development Plan 18-DP-15-A01 Expiration Extension Request for Wegmans

Strategic Priority Area: Responsible & Balanced Growth
Economic Prosperity & Diversity

Staff Resource: Sean Ryan, Development Services

Action(s):

Grant the first, of an allowable 4, 6-month extension for 18-DP-15-A01 for Wegmans to extend the expiration date from February 15, 2024, to August 15, 2024, as requested by Arthur Pires.

Explanation:

- Wegmans has requested to extend the approval of their Development Plan. Wegmans is a supermarket serving communities with 110+ stores and over 53,000 employees. The planned supermarket will be located south of Ralph Stephens Road on Wildwood Farm Way.
- According to the letter submitted with the request, Wegmans anticipates construction in mid-to-late 2026.
- Approval of this extension will set the new expiration date at August 15, 2024.
- If approved, three additional 6-month extensions may be granted by the Town Council.

Background:

- Wegmans was approved by Development Plan with Lowe's Home Improvement on April 16, 2019.
- At the time of plan approval, the project was subject to the 2002 Unified Development Ordinance (UDO) standards for plan expiration. In accordance with 2002 UDO Section 9.05, D. Development Plans are valid for 18 months and may receive an extension in time to submit construction drawings in 6 month increments, not to exceed a total of 2 years by the Town Council for good cause shown.
- Lowe's Home Improvement received a Certificate of Occupancy on July 15, 2022, which would normally be the date used to determine the 18 months of plan validity.
- The North Carolina General Assembly extended Development Plan approvals that were valid as of September 2, 2020, to a date 150 days following the rescission of the Governors Executive Order 116 (Declares a state of emergency to coordinate response and protective actions to prevent the spread of COVID-19). Executive Order 116 was rescinded on August 15, 2022, and plans were required to remain valid until January 12, 2023.
- The Wegmans approval has remained valid during the 150-day period past August 15, 2022.
- The 18 months of plan validity from August 15, 2022, permitted by the 2002 UDO

expired on February 15, 2024.

Funding Source(s):

N/A

Attachment(s):

1. Site Plan Approval 1st Extension Request Letter - 1.303.24 w_Signature
2. 18DP15WegmansSitePlan

WEGMANS FOOD MARKETS, INC.
DEVELOPMENT DEPARTMENT
1500 BROOKS AVENUE, BOX 844
ROCHESTER, NEW YORK 14603-0844

ARTHUR P. PIRES
PROJECT MANAGER
WEGMANS DEVELOPMENT GROUP

Phone: (585) 720-5791
Email: art.pires@wegmans.com

Town of Holly Springs
128 S. Main Street
Holly Springs, NC 27540

30 January 2024

ATTN: Mr. Chris Hill
Development Service Director

RE: Wegmans Site Plan Approval **1st 6-Month Extension Request**

Dear Director Hill:

Please accept this letter as Wegmans' **1st 6-Month Extension Request** for Wegmans' town approved Site Plan; the request of which is submitted with consideration of both our company's controlled-growth philosophy and current lease obligations.

Regarding the question of the store's construction start date, we are currently targeting a mid to late 2026 project start.

Trusting that the above information satisfies the submission requirements of the town, we respectfully request that this **Extension Request** be heard by the Town Council at its February 20, 2024, meeting.

Thank you.

Sincerely,



Arthur Pires

PS: Please note that the requisite \$100.00 Extension Request fee will follow shortly under separate cover.

Cc: File

SITE LEGEND		
EXISTING	PROPOSED	DESCRIPTION
		NUMBER OF SPACES PER ROW
		CART CORRAL
		SIGN
		HANDICAP SYMBOL
		HD CONCRETE PAVEMENT
		HEAVY DUTY PAVING
		LIGHT POLES
		CURB & GUTTER
		OUTDOOR SALES AREA
		OUTDOOR STORAGE AREA
		ASPHALT GREENWAY

SEE ROADWAY SITE PLANS FOR DETAILED IMPROVEMENTS OF PUBLIC ROADWAYS

DETECTABLE WARNINGS ON ON-SITE ACCESSIBLE RAMPS ARE OPTIONAL

NOTE: ORANGE SAFETY FENCE TO BE INSTALLED ALONG 30' UNDISTURBED BUFFER(S).

SEE LAYOUT PLANS (SHEETS 13 - 16) FOR BUILDING DIMENSIONS.

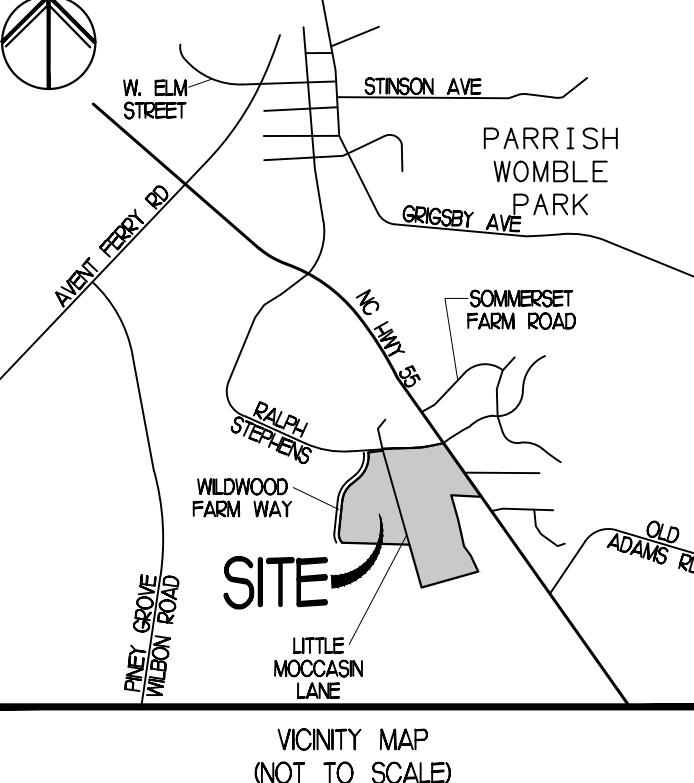
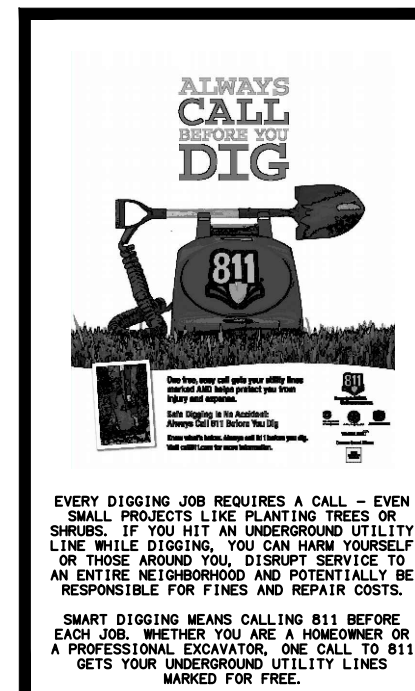
LINE	LENGTH	BEARING
L1	564.50	S. 34.50° 10' E.
L2	173.51	S. 30.50° 30' E.
L3	339.64	N. 87° 08' 23" W.
L4	509.77	S. 11° 11' 34" E.
L5	68.05	S. 144° 19' 19" E.
L6	28.71	S. 13° 01' 30" E.
L7	47.22	S. 18° 29' 41" E.
L8	30.17	S. 10° 01' 45" E.
L9	18.21	S. 17° 35' 33" E.
L10	36.41	S. 10° 01' 45" E.
L11	29.69	S. 13° 24' 32" E.
L12	36.41	S. 10° 01' 45" E.
L13	37.41	S. 09° 25' 17" E.
L14	14.05	S. 03° 31' 16" E.
L15	159.21	S. 11° 51' 11" E.
L16	25.42	S. 21° 57' 09" E.
L17	159.21	S. 11° 51' 11" E.
L18	20.48	S. 42° 01' 44" E.
L19	45.22	S. 40° 08' 14" E.
L20	24.30	S. 48° 27' 26" E.
L21	41.81	S. 34° 02' 49" E.
L22	20.57	S. 44° 15' 48" E.
L23	13.50	S. 24° 12' 22" E.
L24	17.16	S. 24° 21' 30" E.
L25	11.15	S. 06° 48' 14" E.
L26	6.16	S. 12° 30' 15" E.
L27	30.03	S. 04° 13' 18" E.
L28	43.60	S. 30° 31' 32" E.
L29	32.20	S. 17° 49' 08" E.
L30	26.43	S. 43° 30' 14" E.
L31	101.70	S. 74° 16' 24" W.
L32	50.00	N. 16° 49' 52" E.
L33	1030.24	N. 10° 49' 52" E.
L34	24.91	N. 88° 21' 11" E.
L35	122.67	N. 88° 08' 35" E.
L36	89.19	N. 88° 24' 00" E.
L37	104.77	N. 88° 24' 00" E.
L38	119.02	N. 87° 19' 10" E.
L39	108.83	N. 80° 10' 12" E.
L40	130.31	N. 71° 15' 14" E.
L41	795.52	N. 88° 28' 14" E.
L42	15.87	N. 88° 28' 14" E.
L43	51.24	N. 88° 21' 11" E.
L44	118.95	N. 88° 43' 52" E.
L45	4.95	N. 00° 01' 30" E.
L46	25.50	N. 46° 30' 03" E.
L47	4.84	N. 00° 01' 30" E.
L48	28.29	N. 54° 39' 36" E.
L49	51.72	N. 00° 01' 30" E.
L50	31.48	N. 22° 02' 00" E.
L51	26.54	N. 12° 31' 05" E.
L52	26.81	N. 12° 32' 38" E.
L53	26.81	N. 12° 32' 38" E.
L54	26.87	N. 12° 32' 38" E.
L55	18.97	N. 02° 25' 08" E.
L56	103.84	N. 12° 40' 03" E.
L57	74.75	N. 02° 31' 48" E.
L58	58.74	N. 12° 42' 31" E.
L59	40.42	N. 28° 19' 27" E.
L60	23.10	N. 12° 41' 15" E.
L61	41.84	N. 02° 31' 48" E.
L62	27.65	N. 68° 08' 07" E.
L63	50.15	N. 40° 38' 07" E.
L64	55.52	N. 01° 32' 36" E.
L65	50.25	N. 12° 48' 14" E.
L66	65.94	N. 35° 04' 00" E.
L67	79.02	N. 02° 01' 37" E.
L68	65.38	N. 21° 46' 50" E.
L69	73.68	N. 01° 02' 36" E.
L70	384.07	N. 83° 14' 45" E.
L71	4.95	N. 00° 01' 30" E.
L72	51.06	N. 88° 34' 35" E.
L73	890.30	N. 02° 31' 48" E.
L74	400.33	N. 05° 51' 58" W.
L75	184.73	N. 83° 02' 21" E.
L76	85.17	N. 83° 02' 21" E.
L77	85.17	S. 50° 58' 10" W.
L78	364.93	S. 05° 03' 20" E.
L79	179.14	N. 05° 52' 45" E.
L80	20.33	N. 02° 08' 40" E.
L81	4.15	N. 07° 06' 20" E.
L82	89.73	N. 89° 29' 40" E.
L83	26.03	N. 13° 19' 48" E.
L84	11.71	N. 13° 19' 48" E.
L85	447.93	N. 02° 46' 14" E.
L86	447.13	N. 02° 46' 14" E.
L87	20.00	S. 87° 22' 24" E.
L88	386.00	N. 02° 46' 14" E.
L89	41.99	S. 87° 22' 24" E.
L90	162.74	S. 02° 32' 36" E.
L91	26.57	N. 45° 04' 14" E.
L92	112.80	N. 83° 10' 07" E.
L93	1.39	N. 10° 00' 00" E.
L94	79.04	N. 89° 29' 40" E.
L95	60.20	N. 89° 29' 40" E.
L96	60.20	N. 89° 29' 40" E.
L97	41.00	S. 41° 49' 06" E.
L98	21.67	S. 87° 22' 24" E.
L99	290.74	S. 41° 49' 06" E.
L100	4.12	N. 62° 35' 24" E.
L101	38.95	N. 62° 35' 24" E.
L102	121.74	N. 54° 00' 45" E.
L103	479.08	S. 49° 59' 30" E.
L104	92.50	S. 34° 59' 10" E.
L105	115.40	S. 35° 55' 35" E.
L106	51.99	N. 87° 30' 02" E.
L107	34.09	N. 48° 45' 00" E.
L108	124.16	N. 11° 29' 30" E.
L109	62.81	N. 52° 42' 42" E.

CURVE	RADIUS	LENGTH	ANGLE (T)	CHORD	BEARING	DELTA
C1	274.50	278.22	152.43	266.54	N. 21° 54' 20" E.	58° 09' 10"
C2	325.50	294.13	155.11	248.97	S. 28° 05' 20" W.	40° 00' 00"
C3	190.50	116.76	89.28	114.96	S. 11° 29' 23" E.	55° 02' 24"
C4	139.50	119.45	61.96	114.96	S. 18° 00' 01" E.	48° 30' 00"
C5	262.50	206.61	108.99	201.92	N. 28° 26' 20" E.	45° 02' 44"
C6	331.50	134.33	68.06	133.44	S. 39° 54' 30" E.	22° 02' 12"
C7	349.50	199.67	102.64	195.37	N. 11° 48' 24" E.	32° 44' 00"
C8	248.40	113.37	68.65	113.36	N. 06° 53' 31" E.	22° 02' 12"
C9	305.61	59.66	29.65	59.59	N. 79° 21' 18" E.	9° 30' 22"
C10	298.46	59.69	59.65	59.69	N. 89° 20' 15" E.	11° 27' 36"
C11	242.81	61.87	30.84	61.87	N. 64° 14' 43" E.	13° 00' 00"
C12	57.50	70.22	40.30	65.98	S. 8° 12' 32" E.	70° 00' 14"
C13	52.90	19.60	9.96	9.91	N. 51° 31' 39" E.	19° 00' 36"
C14	175.50	70.45	35.71	69.88	N. 70° 47' 53" E.	23° 00' 00"

NOTE: RETAINING WALLS 'A' & 'B' TO HAVE TUBE STEEL FENCING ON TOP. RETAINING WALL 'C' TO HAVE VINYL-COATED CHAIN LINK FENCE ON TOP, SEE DETAILS.

SITE PLAN NOTES

- ALL WORK AND MATERIALS SHALL COMPLY WITH ALL TOWN OF HOLLY SPRINGS, NC REGULATIONS AND CODES AND O.S.H.A. STANDARDS.
- CONTRACTOR SHALL REFER TO THE ARCHITECTURAL PLANS FOR EXACT LOCATIONS AND DIMENSIONS OF VESTIBULES, SLOPE PAVING, SIDEWALKS, EXIT PORCHES, TRUCK DOCKS, PRECISE BUILDING DIMENSIONS AND EXACT BUILDING UTILITY ENTRANCE LOCATIONS.
- ALL DISTURBED AREAS ARE TO RECEIVE FOUR INCHES OF TOPSOIL, SOO AND WATER.
- ALL DIMENSIONS AND RADI ARE TO THE FACE OF CURB UNLESS OTHERWISE NOTED. ALL RADI ARE 4' UNLESS OTHERWISE NOTED.
- EXISTING STRUCTURES WITHIN CONSTRUCTION LIMITS ARE TO BE ABANDONED, REMOVED OR RELOCATED AS NECESSARY. ALL COST SHALL BE INCLUDED IN BASE BD.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ALL RELOCATIONS, INCLUDING BUT NOT LIMITED TO, ALL UTILITIES, STORM DRAINAGE, SIGNS, TRAFFIC SIGNALS & POLES, ETC. AS REQUIRED. ALL WORK SHALL BE IN ACCORDANCE WITH GOVERNING AUTHORITIES SPECIFICATIONS AND SHALL BE APPROVED BY SUCH. ALL COST SHALL BE INCLUDED IN BASE BD.
- SITE BOUNDARY, TOPOGRAPHY, UTILITY AND ROAD INFORMATION TAKEN FROM A SURVEY BY FREELAND & ASSOCIATES.
- ALL WORK SHALL BE DONE IN STRICT ACCORDANCE WITH DIVISION 2 OF LOWE'S STANDARD SITE WORK SPECIFICATIONS.



SITE DATA	
ACREAGE	
GROCERY - TRACT 'A'	12.562 AC
GROCERY - TRACT 'B'	18.644 AC
OPEN SPACE - TRACT 'C'	14.678 AC
R/W DEDICATION	150.873 AC
TOTAL	136.763 AC

BUILDING	
LOWE'S BUILDING AREA	11,234 SF
LOWE'S GARDEN AREA	27,270 SF
LOWE'S BUILDING HEIGHT	13'-4"
GROCERY BUILDING AREA	99,000 SF
(INCLUDES 2500 SF • 185-SEAT CAFE & 85-SEAT RESTAURANT)	
GROCERY OUTDOOR SEATING AREA (40 SEATS)	150 SF
GROCERY BUILDING HEIGHT	59'6"

REQUIRED PARKING	
LOWE'S BUILDING (3.50/1,000)	397
LOWE'S GARDEN CENTER (1.25/1,000)	34
LOWE'S TOTAL REQUIRED SPACES	435
GROCERY BUILDING (5.00/1,000)	483
GROCERY SEATING	103
(INDOOR + OUTDOOR • 1 SPACE / 0.33 SEATS)	
GROCERY TOTAL REQUIRED SPACES	586
AMENITY AREA REQUIRED SPACES	2
PROJECT TOTAL REQUIRED SPACES	1,011
LOWE'S LOADING SPACES	4
LOWE'S BICYCLE SPACES	0
GROCERY LOADING SPACES	3
GROCERY BICYCLE RACK	1

PROVIDED PARKING	
LOWE'S BUILDING (3.50/1,000)	397
LOWE'S GARDEN CENTER (1.25/1,000)	34
LOWE'S TOTAL PROVIDED SPACES	435
GROCERY BUILDING (5.23/1,000)	518
GROCERY SEATING (0.36 PER SEAT)	12
GROCERY TOTAL PROVIDED SPACES	630
AMENITY AREA PROVIDED SPACES	2
PROJECT TOTAL PROVIDED SPACES	1,067
(05.5% OF TOTAL REQ'D SPACES)	
LOWE'S LOADING SPACES	5
LOWE'S BICYCLE SPACES	0
GROCERY LOADING SPACES	4
GROCERY BICYCLE RACK	1

REQUIRED ACCESSIBLE PARKING	
LOWE'S BUILDING	8
LOWE'S GARDEN CENTER	2
LOWE'S CUSTOMER LOADING CANOPY	1
LOWE'S TOTAL REQ'D ACCESSIBLE	11
GROCERY BUILDING	9
GROCERY SEATING	5
GROCERY TOTAL REQ'D ACCESSIBLE	14
AMENITY AREA REQ'D ACCESSIBLE	2
PROJECT TOTAL REQ'D ACCESSIBLE	27

PROVIDED ACCESSIBLE PARKING	
LOWE'S BUILDING	10
LOWE'S GARDEN CENTER	2
LOWE'S CUSTOMER LOADING CANOPY	1
LOWE'S TOTAL PROVIDED ACCESSIBLE	13
GROCERY BUILDING	18
GROCERY SEATING	6
TOTAL GROCERY PROVIDED ACCESSIBLE	24
AMENITY AREA PROVIDED ACCESSIBLE	2
PROJECT TOTAL PROVIDED ACCESSIBLE	32

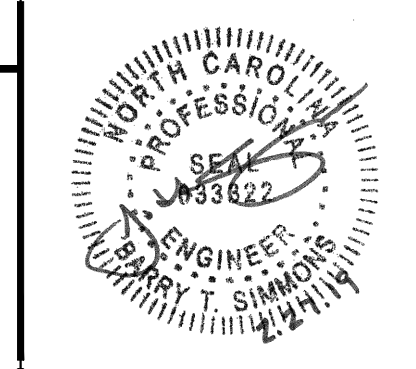
FRONT FIELD PARKING	
LOWE'S TOTAL SPACES PROVIDED	435
GROCERY TOTAL SPACES PROVIDED	630
AMENITY AREA TOTAL SPACES PROVIDED	2
PROJECT TOTAL SPACES PROVIDED	1,067
FRONT FIELD PARKING SPACES	920
FRONT FIELD PARKING SPACE RATIO	86.2%

OUTDOOR AREAS ALLOWED	
LOWE'S SALES	20,000 SF
LOWE'S STORAGE	20,000 SF
LOWE'S SEATING	11,234 SF
GROCERY SALES	19,800 SF
GROCERY STORAGE	19,800 SF
GROCERY SEATING	9,900 SF

OUTDOOR AREAS PROVIDED	
LOWE'S SALES	10,689 SF
LOWE'S STORAGE	5,980 SF
LOWE'S SEATING	0 SF
GROCERY SALES	10,396 SF
GROCERY STORAGE	0 SF
GROCERY SEATING	150 SF

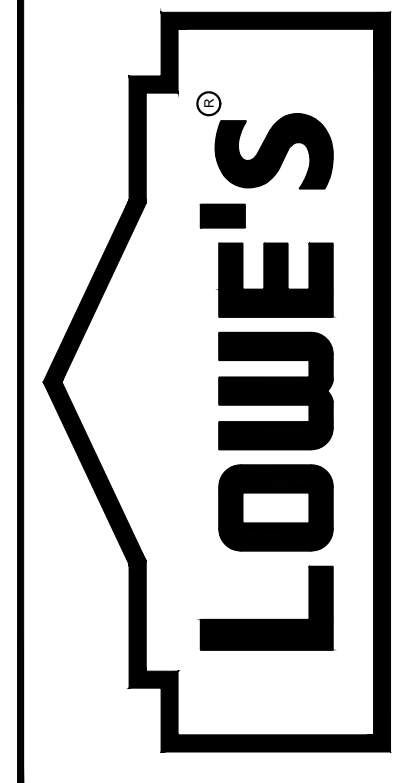
NO SITE SIGNAGE IS DEPICTED ON THIS PLAN SET. A MASTER SIGNAGE PLAN WILL BE SUBMITTED SEPARATELY AND WILL IDENTIFY LOCATIONS AND DETAILS FOR SITE SIGNAGE.

REVISIONS	
DATE	DESCRIPTION



FREELAND and KAUFFMAN, INC.
Engineers • Landscape Architects
 209 West Stone Avenue
 Greenville, South Carolina 29609
 (864) 233-5497
 NC Firm No: C-1532

LOWE'S HOME CENTERS, LLC
 1605 CURTIS BRIDGE RD.
 N. WILKESBORO, NC 28687
 336.658.4000 (V) 336.658.3257 (F)



DEVELOPMENT PLAN
OVERALL SITE PLAN
LOWE'S OF:
HOLLY SPRINGS
TOWN OF HOLLY SPRINGS, NORTH CAROLINA
 DRAWN BY: CRD
 CHECKED BY: B.T.S.
 ORIGINAL ISSUE DATE: 02/27/2019
 PERMIT SET ISSUE DATE:
 CONSTRUCTION SET ISSUE DATE:
 DRAWING NUMBER: 8



Holly Springs Town Council

Town Council Meeting Agenda Cover Sheet

Agenda Item#: 17.

Consent Agenda

Title: Development Plan 19-DP-23 Expiration Extension Request for Avent Ferry Commercial

Strategic Priority Area: Economic Prosperity & Diversity
Responsible & Balanced Growth

Staff Resource: Cheryl Caines, Development Services

Action(s):

Grant a 6-month extension of 19-DP-23 for Avent Ferry Commercial to extend the expiration date from August 15, 2023, to February 15, 2024, as requested by Swadesh Chatterjee.

Explanation:

- A request to extend the approval of the Avent Ferry Commercial Development Plan was received on February 2, 2024. The planned 24,827 SF structure is located on the southeast corner of Ralph Stephens Road and Avent Ferry Road.
- According to the submitted letter, the extension will allow the applicant to submit Civil Construction Documents (CDs) and move forward with construction as there is renewed interest in the property.
- The existing approval expired on August 15, 2023, and the applicant is requesting a retroactive extension that would expire on February 15, 2024, to allow for CDs to be submitted. The applicant has agreed to submit CDs prior to February 15 to satisfy this requirement.
- The Development Plan approval also includes an Alternate Landscape Plan that allows some foundation and perimeter landscaping plants to be placed in other areas of the site due to easements and plant spacing requirements. Approval of the Development Plan extension request also includes the Alternate Landscape Plan, so no separate action is needed.
- Should Council approve the current extension request, no further extensions requests would be permitted.

Background:

- Avent Ferry Commercial Development Plan was approved on August 18, 2020.
- The Development Plan included a Development Agreement allowing a portion of the Avent Ferry road improvements to be delayed. That agreement was never executed; therefore, improvements along the entire property frontage are required.
- At the time of plan approval, the project was subject to the 2002 Unified Development Ordinance (UDO) standards for plan expiration. In accordance with 2002 UDO Section 9.05, D Development Plans, as of that approval date, Development Plans are valid for 12 months and may receive one, 6-month extension by the Town Council in time to submit construction drawings for good cause shown.

- The North Carolina General Assembly extended Development Plan approvals that were valid as of September 2, 2020, to a date 150 days following the rescission of the Governor's Executive Order 116 (Declares a state of emergency to coordinate response and protective actions to prevent the spread of COVID-19). Executive Order 116 was rescinded on August 15, 2022, and plans were required to remain valid until January 12, 2023.
- The Avent Ferry Commercial approval had remained valid during the 150-day period past August 15, 2022.
- The 12 months of plan validity from August 15, 2022, permitted by the 2002 UDO, expired on August 15, 2023.
- The requested 6-month extension would extend plan approval validity to February 15, 2024, the date on which the applicants submitted their Civil Construction Drawings.

Funding Source(s):

N/A

Attachment(s):

1. AventFerryComm_ExtRequestLetter
2. AventFerryComm_SitePlan

1201 Avent Ferry LLC
114 Baybrook Court
Cary, NC 27518
schat@ncrrbiz.com
919-615-1324

December 7, 2023

Town of Holly Springs
128 S Main Street
Holly Springs, NC 27540

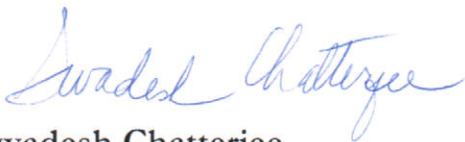
RE: Avent Ferry Commercial Preliminary Plan Approval Extension
Permit # 19-DP-29 & 19-ALT-14

To whom it may concern:

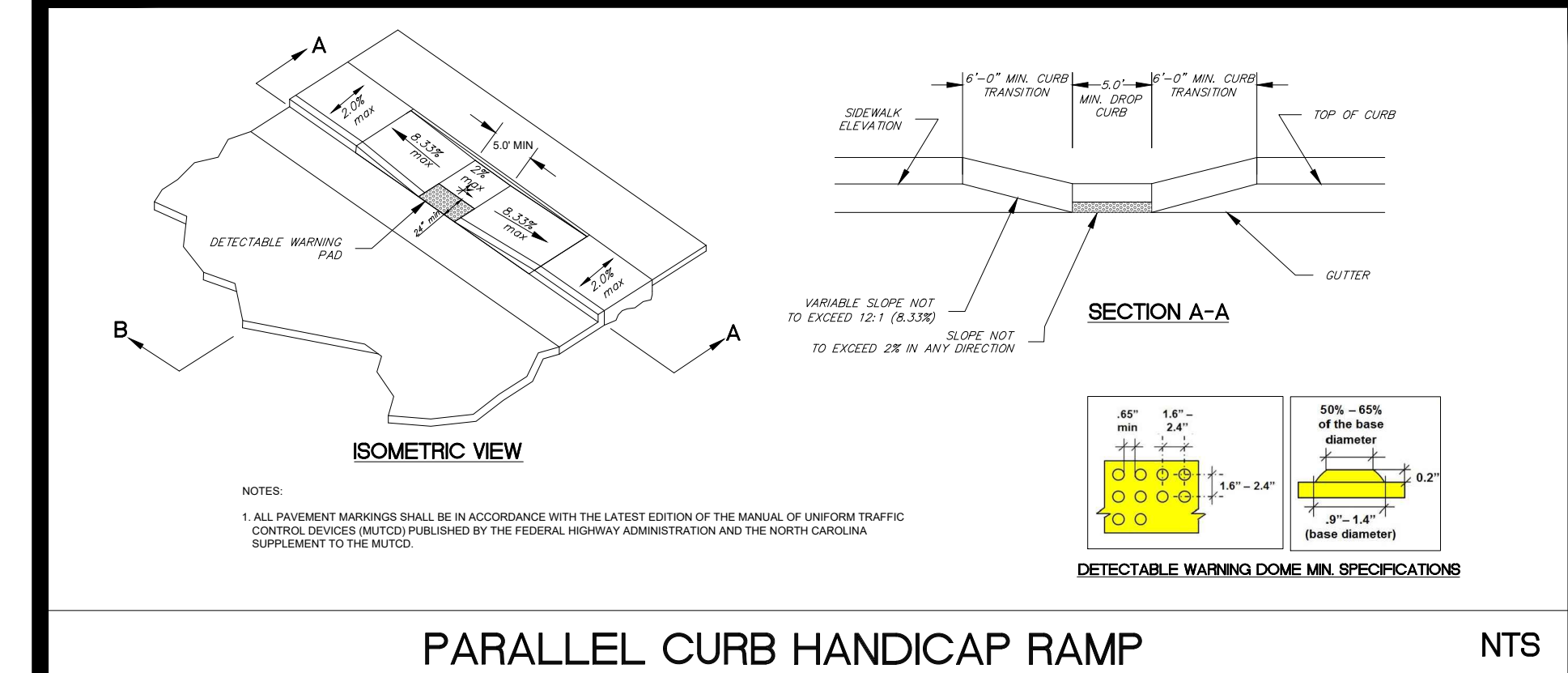
We are hereby requesting an extension of the Avent Ferry Commercial preliminary plan permit 19-DP-29 and associated waiver for alternate landscape compliance 19-ALT-14. The project previously experienced delays in moving forward due to a lack of interest in the proposed category of commercial space. There is renewed interest in moving the project forward and we would like to submit Construction Documents as soon as possible.

Please do not hesitate to reach out with any questions or concerns with this request.

Sincerely,

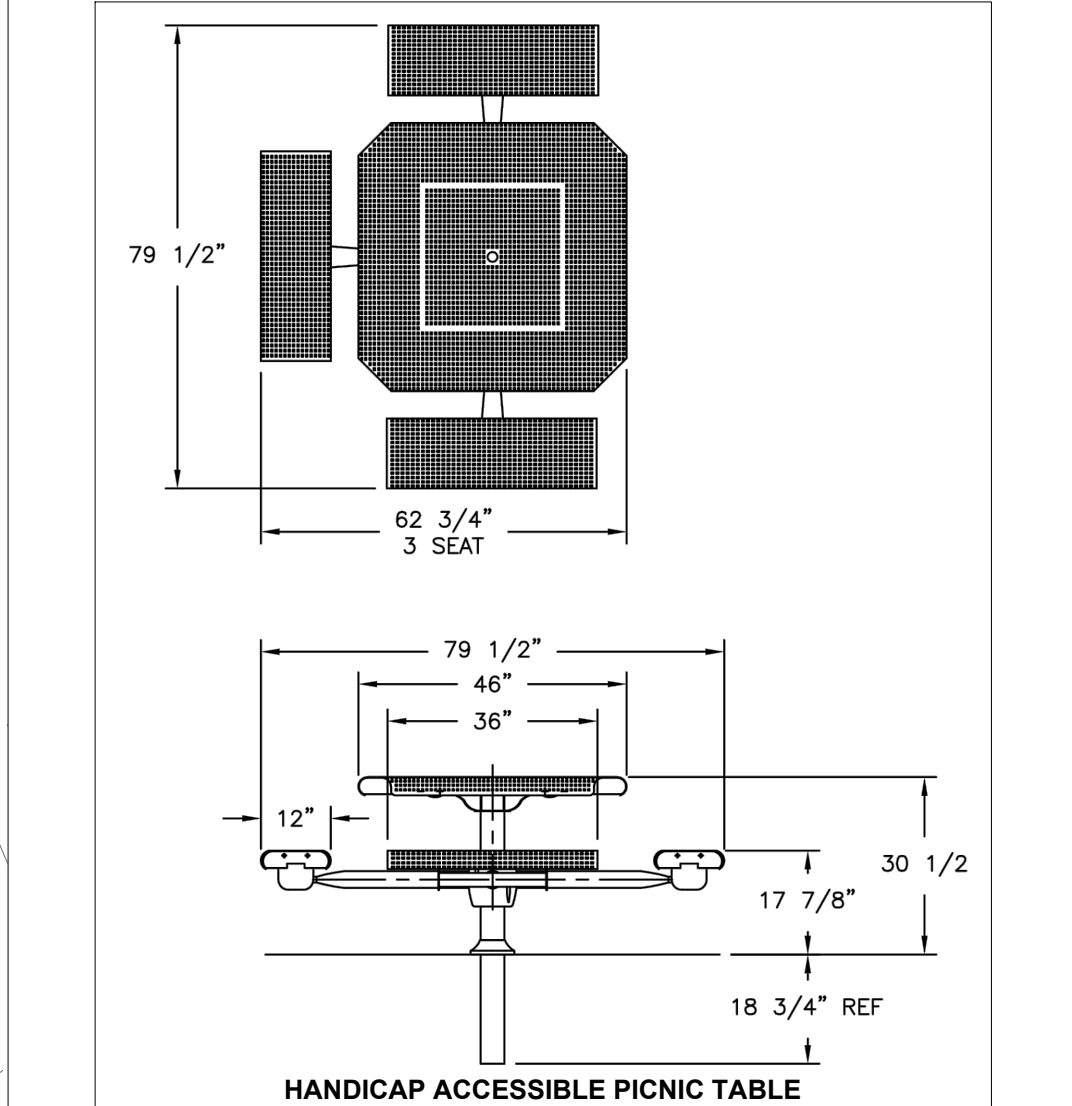
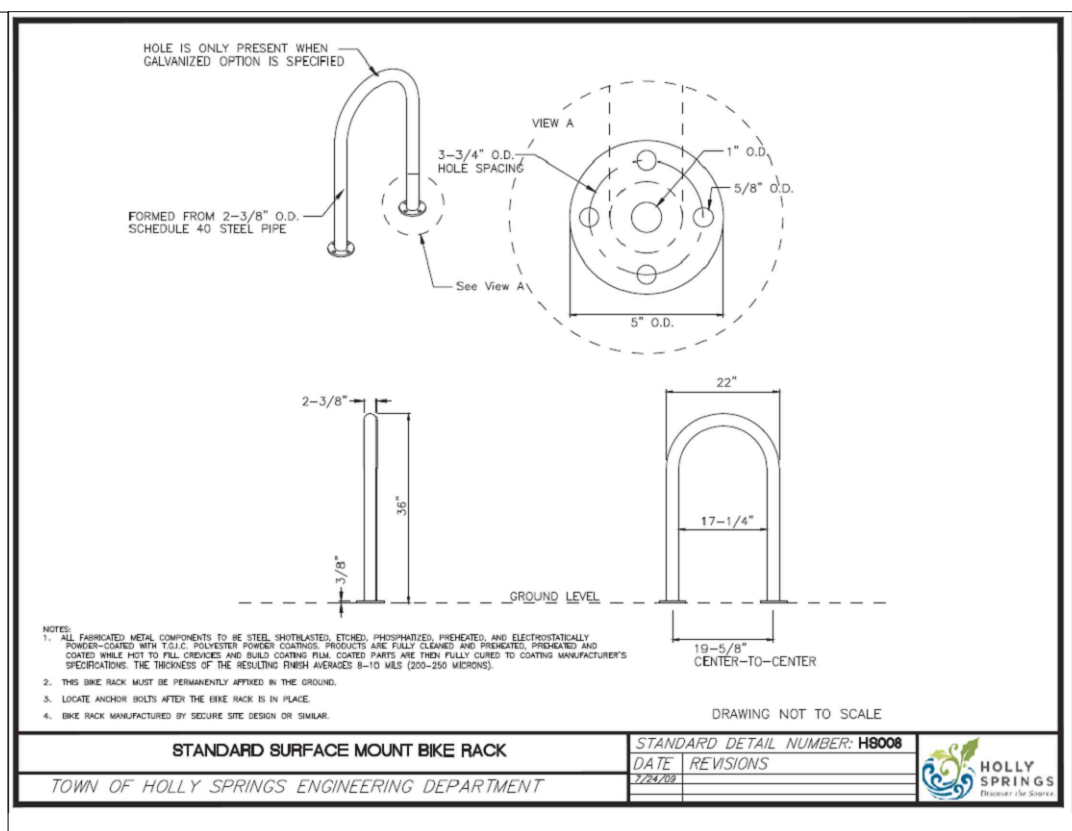
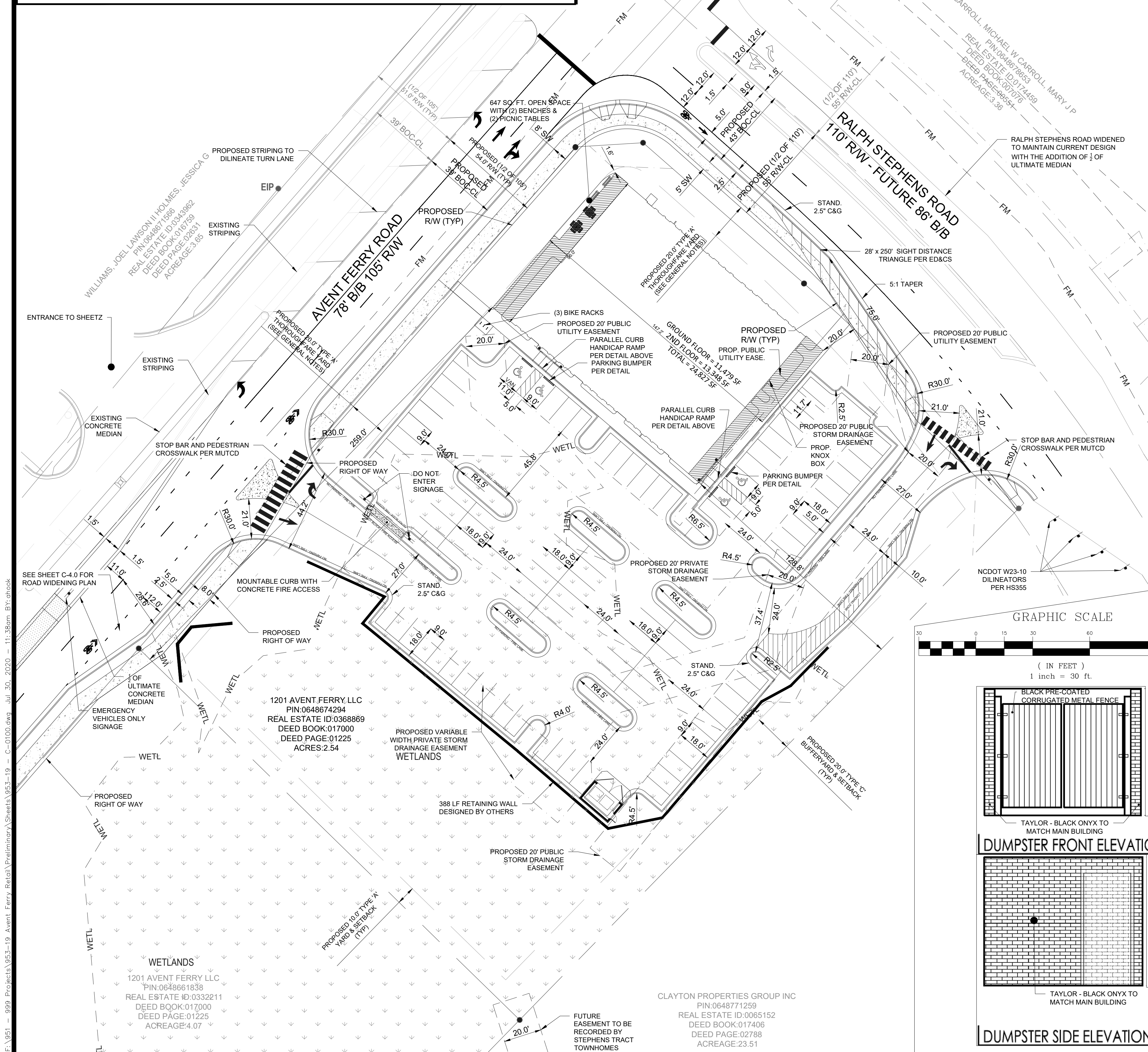
A handwritten signature in blue ink that reads "Swadesh Chatterjee". The signature is fluid and cursive, with the first name "Swadesh" and last name "Chatterjee" clearly legible.

Swadesh Chatterjee
Manager



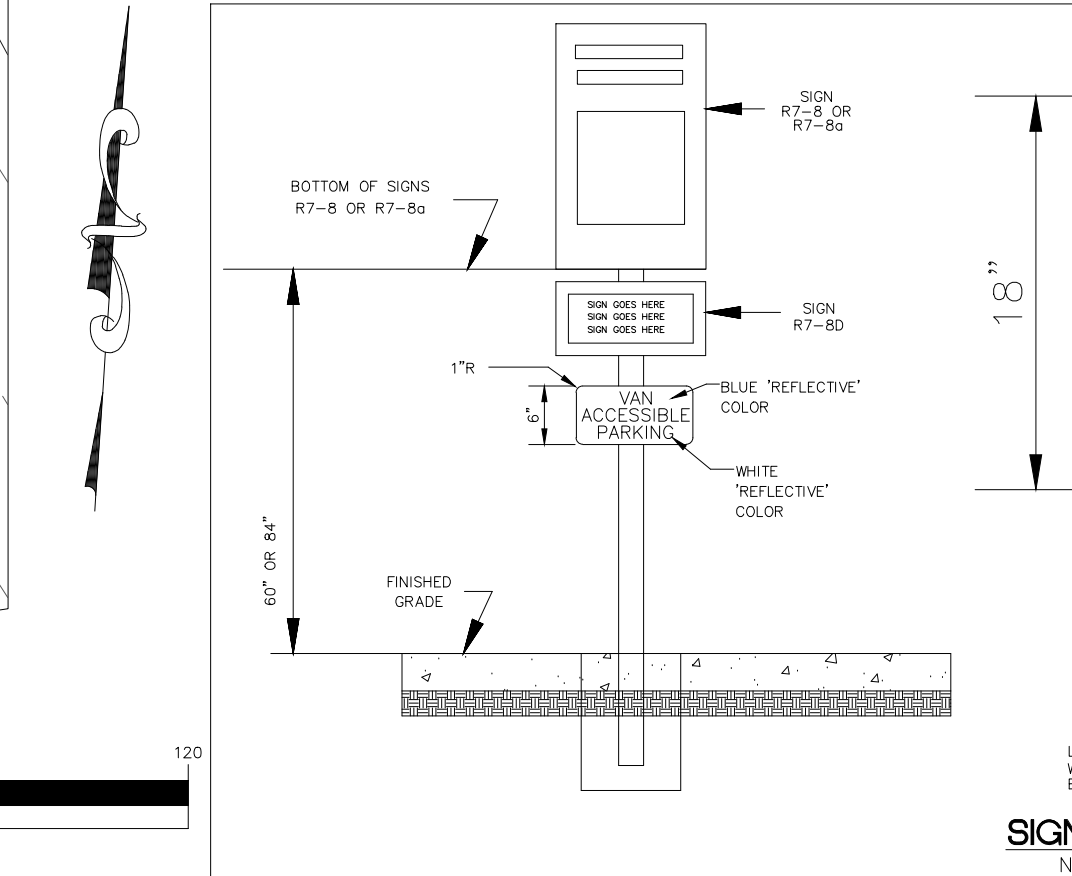
PARALLEL CURB HANDICAP RAMP

NTS

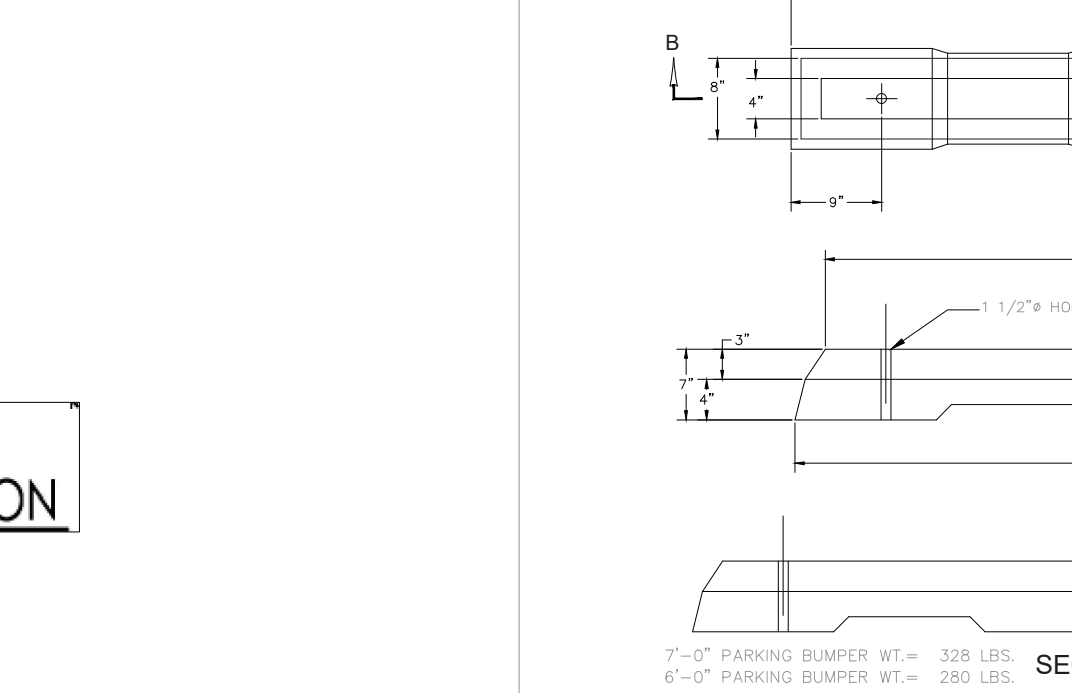


HANDICAP ACCESSIBLE PICNIC TABLE

THIS PROJECT IS IN THE TRIASSIC BASIN. ALL ROADWAYS WILL BE REQUIRED TO MEET ALL SPECIAL DESIGN REQUIREMENTS AS OUTLINED IN THE ENGINEERING DESIGN AND CONSTRUCTION STANDARDS SECTION 3.02.J.M



SIGNAGE DETAIL



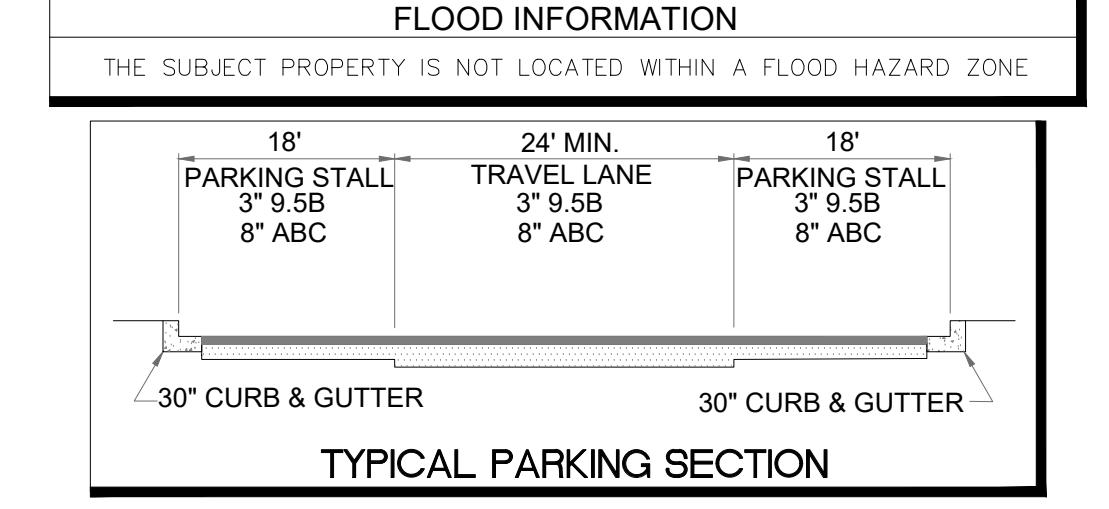
Parking Bumper

Copyright © 2011

THIS DRAWING IS THE PROPERTY OF:
The Spaulding Group, PA
and is not to be reproduced or copied in whole or in part without permission from The Spaulding Group, PA. This drawing is not to be used on any other project and is to be returned to The Spaulding Group, PA, upon request.

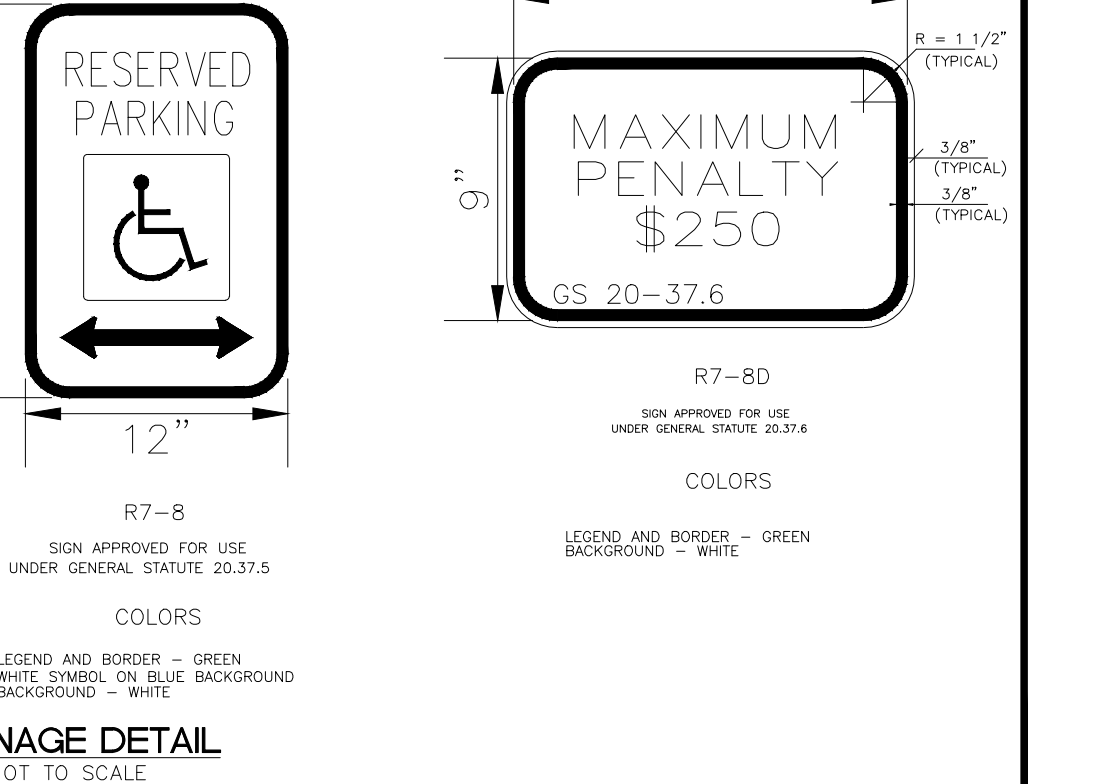
AVENT FERRY COMMERCIAL	
ADDRESS:	1201 AVENT FERRY ROAD
TOTAL ACREAGE:	2.54 ACRES
COUNTY:	WAKE
PIN NUMBER:	0648-67-4294
REAL ID:	0368869
TOWNSHIP:	HOLLY SPRINGS TOWNSHIP
INTEGRATED CENTER:	(LB) LOCAL BUSINESS
ZONING:	50'
MINIMUM LOT FRONTAGE:	45' (PROPOSED BUILDING HEIGHT 35')
MAXIMUM ALLOWED HEIGHT:	
SETBACKS:	
FRONT (AVENT FERRY RD. & RALPH STEPHENS ROAD)	20'
SOUTH	20'
WEST	10'
OPEN SPACE:	
BASIS OF DETERMINATION:	0.5% OF PROJECT AREA REQUIRED
REQUIRED:	2.54 AC. x 43,560 SQ. FT./AC x .005 = 553.21 SQ. FT.
PROVIDED:	647 SQ. FT. COURTYARD WITH 2 PICNIC TABLES & 2 BENCHES
OFF STREET PARKING REQUIREMENTS:	
INTEGRATED CENTER (4 SPACES / 1,000 SF OF FLOOR AREA OF BUILDING)	
BASIS OF DETERMINATION: BLDG. 1: (4 SPACES/1,000 SF OF FLOOR AREA OF BUILDING)	
(4 SPACES/1,000 SF (APPROX. 24,827 SF)) = 99 SPACES	
OFF STREET PARKING PROVIDED:	99 SPACES* (INCLUDES 4 HIC SPACE, 1 VAN ACCESSIBLE)

- GENERAL NOTES
1. THE CONTRACTOR SHALL CONTACT "NORTH CAROLINA ONE CALL" AT 800-632-4949 FOR ASSISTANCE IN LOCATING EXISTING UTILITIES. CALL AT LEAST 48 HOURS PRIOR TO ANY DIGGING.
 2. EXISTING CONDITIONS AND UTILITIES SHOWN ARE BASED ON INFORMATION PROVIDED BY BASS, NIXON & KENNEDY, INC. THE CONTRACTOR SHALL FIELD VERIFY CONDITIONS PRIOR TO STARTING CONSTRUCTION AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES. CONFLICTS INVOLVING PUBLIC WATER, SANITARY SEWER, AND STORM DRAINAGE CONSTRUCTION SHALL BE RESOLVED TO THE SATISFACTION OF THE TOWN OF HOLLY SPRINGS.
 3. ALL CONSTRUCTION AND MATERIALS SHALL CONFORM TO TOWN OF HOLLY SPRINGS ENGINEERING DESIGN AND CONSTRUCTION STANDARDS.
 4. CONSTRUCTION DRAWING APPROVAL IS REQUIRED BEFORE CONSTRUCTION ON THE PROJECT MAY BEGIN. DEVELOPMENT FEES ARE DUE BEFORE CONSTRUCTION DRAWING APPROVAL.
 5. BUILDING FOOTPRINT PROVIDED BY ORA ARCHITECTURE.
 6. HIC RAMP AND PARKING SPACES SHALL BE CONSTRUCTED IN ACCORDANCE WITH ADA STANDARDS.
 7. THE CONTRACTOR IS RESPONSIBLE FOR INVESTIGATING SOIL CONDITIONS ON SITE. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY UNSUITABLE MATERIAL UPON FIRST CONTACT.
 8. HVAC UNITS TO BE FULLY SCREENED.
 9. YARD AND SETBACK ALONG AVENT FERRY RD. AND RALPH STEPHENS RD. HAVE BEEN REDUCED FROM 30' TO 20' PER UDO SECTION 3.02 B. 2. a.

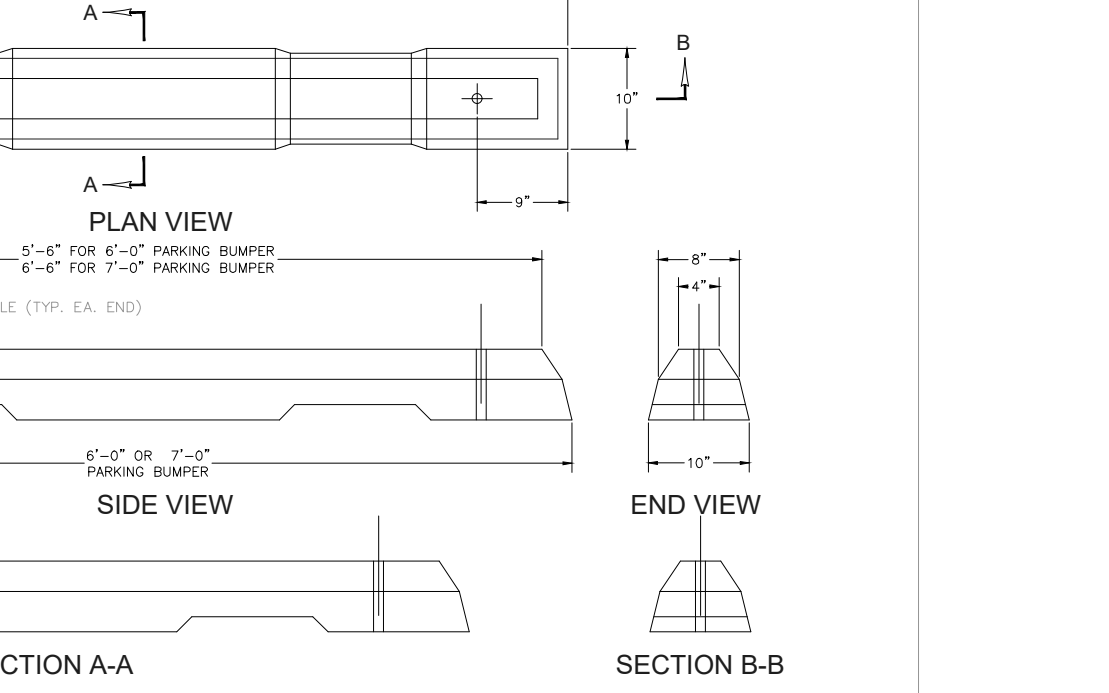


TYPICAL PARKING SECTION

THE SUBJECT PROPERTY IS NOT LOCATED WITHIN A FLOOD HAZARD ZONE



RESERVED PARKING



MAXIMUM PENALTY \$250

LEGEND AND BORDER - GREEN
WHITE STRIPS ON BLUE BACKGROUND
BACKGROUND - WHITE

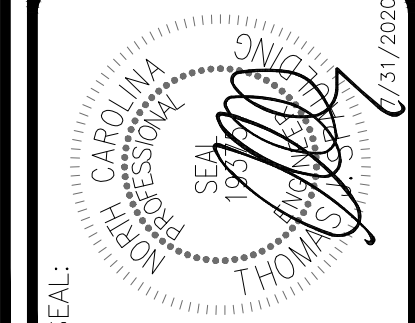
COLORED SIGN APPROVED FOR USE UNDER GENERAL STATUTE 20-37.5

LEGEND AND BORDER - GREEN
WHITE STRIPS ON BLUE BACKGROUND
BACKGROUND - WHITE

COLORED SIGN APPROVED FOR USE UNDER GENERAL STATUTE 20-37.5

LEGEND AND BORDER - GREEN
WHITE STRIPS ON BLUE BACKGROUND
BACKGROUND - WHITE

NO.	REVISION	DATE
1	PER TOHS COMMENTS	12/13/2019
2	PER TOHS COMMENTS	12/13/2019
3	PER TOHS COMMENTS	4/3/2020
4	PER TOHS COMMENTS	5/6/2020
5	PER TOHS COMMENTS	7/31/2020



THE SPAULDING GROUP, PA
Planning • civil engineering
1611 Jones Franklin Road Suite 101 Raleigh, NC 27606
Phone (919) 854-7990 Fax (919) 854-7995

PREPARED FOR: FEELE & ASSOCIATES
1000 CRESCENT GREEN, SUITE 100
CARY, NC 27513
DATE: OCTOBER 10, 2019
TSS FIRM CERTIFICATION # C-1875
PROJECT ENGINEER: ADAM N. HOONER
PROJECT CADD DESIGNER: ADAM N. HOONER
PROJECT SUPERVISOR: BASS, NIXON & KENNEDY

AVENT FERRY COMMERCIAL
HOLLY SPRINGS, NORTH CAROLINA
DEVELOPMENT PLAN
SITE PLAN

DRAWING SHEET
C-1.0
PROJECT NUMBER
953-19



Holly Springs Town Council

Town Council Meeting Agenda Cover Sheet

Agenda Item#: 18.

Consent Agenda

Title: Utility Asset Inventory and Assessment (AIA) Grant Project Ordinances

Strategic Priority Area: Responsible & Balanced Growth

Safe & Friendly

Staff Resource: Sara Emig, Utilities and Infrastructure, Theresa Randall, Utilities and Infrastructure

Action(s):

Adopt Grant Project Ordinances No. 24-03 (water) and No. 24-04 (wastewater) to authorize the Water and Wastewater Asset Inventory Assessment (AIA) grant projects.

Explanation:

- Asset management ensures preventative maintenance can be conducted, and capital assets can be repaired, replaced, or upgraded on time and that adequate funding is identified and planned. Asset management also reduces the total cost of owning and operating assets while delivering desired service levels. A high-performing asset management program includes detailed asset inventories, operation and maintenance tasks, and long-range financial planning.
- Grant funding was previously awarded by the NCDEQ Division of Water Infrastructure (DWI) to assist with completing water and wastewater asset inventories.
- Town Council previously approved Resolution No. 23-28 to accept the funding offers for the Water AIA (\$200,000) and Wastewater AIA (\$200,000).
- While the funding was designated by previous Town Council action, the required Grant Project Ordinances for water and wastewater formally authorize staff to proceed with the grant projects.
- The duration of the projects are anticipated to be 14–16 months.

Background:

- Asset Management is an organization-wide initiative involving assets managed by multiple departments.
- In preparation for the development of an Asset Management Plan, an inventory must be completed to accurately identify the Town's assets.
- In order to ensure consistency and efficiency, Utilities & Infrastructure, Public Works, and Parks & Recreation consolidated efforts into one asset inventory and assessment project with multiple phases being managed by the Business Asset Management division of the Utilities & Infrastructure Department.
- WithersRavenel was selected from the Request for Qualifications (RFQ), which included asset inventories for the following asset types:
 - Water

- Wastewater
- Stormwater
- Facilities
- Parks and Recreation
- Roadway
- Facilities and Parks & Recreation AIAs, which were the first phase of the Asset Inventory project, began in August 2023 and are nearing completion.
- Water and Wastewater Asset Inventories will begin in March 2024, following the adoption of the Grant Project Ordinances.
- Stormwater Asset Inventory will also begin in March 2024.
- Roadway Asset Inventory, including incorporation of the existing Pavement Condition Survey, is planned for a future phase.
- The Strategic Asset Management Plan development is planned to follow completion of the inventories and assessments.

Funding Source(s):

Community Investment Plan - Utility PAYGO / State Grants

Attachment(s):

1. 24-03 Water Project Grant Ordinance
2. 24-04 Sewer Project Grant Ordinance



Ordinance No. 24-03

Date Submitted: February 20, 2024

Date Adopted: February 20, 2024

**PROJECT GRANT ORDINANCE
HOLLY SPRINGS, NORTH CAROLINA**

**WATER ASSET INVENTORY AND ASSESSMENT GRANT
PROJECT # AIA-D-ARP-0064**

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 is the Water System Asset Inventory and Assessment (AIA) project (grant project number AIA-D-ARP-0064) to be financed by the federal American Rescue Plan Act (ARPA) grant funds and awarded to the Town of Holly Springs by the North Carolina Department of Environmental Quality (DEQ) Division of Water Infrastructure (DWI).

SECTION II: The officers of this unit are hereby directed to proceed with the grant project within the terms of the board resolution, grant documents, the rules, and regulations of the Division of Water Infrastructure (DWI,) and the budget contained herein.

SECTION III: The following amounts are appropriated for the project revenues:

Asset Inventory and Assessment ARPA Grant	\$200,000
<u>Local Match</u>	<u>\$0</u>
Total	\$200,000

SECTION IV: The following amounts are appropriated for the project expenses:

<u>Engineering and Administration Services</u>	<u>\$200,000</u>
Total	\$200,000

SECTION V: The finance officer is hereby directed to maintain within the Project Fund sufficient specific detailed accounting records to satisfy the requirements of the grantor agency, the grant agreements, and federal regulations.

SECTION VI: Funds may be advanced from the Enterprise Fund for the purpose of making payments as due. Reimbursement requests should be made to the State grantor agency in an

orderly and timely manner. Compliance with all federal and state procurement regulations is required.

SECTION VII: The finance officer is directed to report, on a quarterly basis, on the financial status of each project element in section 4 and on the total grant revenues received or claimed.

SECTION VIII: The Budget Officer is directed to include a detailed analysis of past and future costs and revenues on this capital project in every budget submission made to this board.

SECTION IX: Copies of this grant project ordinance shall be furnished to the Town Clerk, the Budget Officer, and the Finance Officer for direction in carrying out this project.

The provisions of this ordinance shall become effective February 20, 2024, in accordance with the laws of the State of North Carolina.

Adopted this the 20th day of February 2024.

Town of Holly Springs by

ATTEST:

Sean Mayefskie, Mayor

Linda McKinney, Town Clerk





Ordinance No. 24-04

Date Submitted: February 20, 2024

Date Adopted: February 20, 2024

**GRANT PROJECT ORDINANCE
HOLLY SPRINGS, NORTH CAROLINA**

**SEWER ASSET INVENTORY AND ASSESSMENT GRANT
Project # AIA-W-ARP-0077**

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 Grant Project Ordinance is hereby adopted:

SECTION I: The Project authorized is the Sewer System Asset Inventory and Assessment (AIA) project (grant project number AIA-W-ARP-0077) to be financed by the federal American Rescue Plan Act (ARPA) grant funds and awarded to the Town of Holly Springs by the North Carolina Department of Environmental Quality (DEQ) Division of Water Infrastructure (DWI).

SECTION II: The officers of this unit are hereby directed to proceed with the grant project within the terms of the board resolution, grant documents, the rules, and regulations of the Division of Water Infrastructure (DWI,) and the budget contained herein.

SECTION III: The following amounts are appropriated for the project revenues:

Asset Inventory and Assessment ARPA Grant	\$200,000
<u>Local Match</u>	<u>\$0</u>
Total	\$200,000

SECTION IV: The following amounts are appropriated for the project expenses:

<u>Engineering and Administration Services</u>	<u>\$200,000</u>
Total	\$200,000

SECTION V: The finance officer is hereby directed to maintain within the Project Fund sufficient specific detailed accounting records to satisfy the requirements of the grantor agency, the grant agreements, and federal regulations.

SECTION VI: Funds may be advanced from the Enterprise Fund for the purpose of making payments as due. Reimbursement requests should be made to the State grantor agency in an orderly and timely manner. Compliance with all federal and state procurement regulations is required.

SECTION VII: The finance officer is directed to report, on a quarterly basis, on the financial status of each project element in section 4 and on the total grant revenues received or claimed.

SECTION VIII: The Budget Officer is directed to include a detailed analysis of past and future costs and revenues on this capital project in every budget submission made to this board.

SECTION IX: Copies of this grant project ordinance shall be furnished to the Town Clerk, the Budget Officer, and the Finance Officer for direction in carrying out this project.

The provisions of this ordinance shall become effective February 20, 2024, in accordance with the laws of the State of North Carolina.

Adopted this the 20th day of February 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.

Consent Agenda

Title: Retirement of K-9 Hondo and Transfer of Ownership to Handler Officer Siobhan Juarez

Strategic Priority Area: Organizational Excellence

Staff Resource: Paul Liquorie, Police Chief

Action(s):

Declare Canine asset Hondo surplus and transfer ownership to Officer Siobhan Juarez.

Explanation:

- K-9 officer Hondo has fulfilled his service life and is set for retirement. Staff is requesting he be declared surplus and transfer ownership to Officer Juarez.

Background:

- K-9 officer Hondo joined the Holly Springs Police Department in 2017.
- Hondo has experienced a number of health issues that cumulatively make it difficult for him to continue his duties and the appropriate time for him to retire.

Funding Source(s):

N/A

Attachment(s):

1. Memo for Hondo - Final
2. Hondo Press Release



HOLLY SPRINGS POLICE DEPARTMENT
HOLLY SPRINGS, NC 27540
919.557.9111 (FAX) 919.552.3175

To: Town of Holly Springs Mayor Sean Mayefskie and Town Council

Cc: Town of Holly Springs Finance Director Tina Stroupe

From: Paul Liquorie, Chief of Police

Subject: Memorandum of Understanding – Surplus of Canine Asset *Hondo* to Handler Officer Siobhan Juarez

Date: February 20th 2024

To whom it may concern, Canine *Hondo*, an eight-year-old German Shepherd and asset of the Town of Holly Springs has reached the end of his working life with the police department and as such, is considered surplus property by the Town in accordance with the provisions of Town of Holly Springs town ordinance and North Carolina General Statute 160A-266(c).

Hondo's handler, Officer Siobhan Juarez, will be granted ownership of the dog and will assume all rights and responsibilities pertaining to the feeding, housing, general upkeep, veterinary care, and all other financial liabilities as they concern the animal. Any and all liabilities incurred by the animal from this day forward will be the sole responsibility of Siobhan Juarez and as such, Siobhan Juarez agrees to hold harmless the Town of Holly Springs and any of its subdivided entities for any possible damages to any person or property that may occur as a result of her acceptance of the animal as her own personal property.

Sincerely,

Paul J. Liquorie
Chief of Police

Memorandum



To: Chief of Police Paul Liquorie

From: Captain Jay Bruner

Date: January 25th 2024

Re: Press/Social Media Release – Canine Hondo

Holly Springs Police Department Announces the Retirement of Beloved Canine, Hondo

Holly Springs, NC – The Holly Springs Police Department announces with mixed emotions the retirement of one of its most esteemed and dedicated members, K-9 Hondo, an eight-year-old Belgian Malinois, who has honorably served the department and the community.

Hondo, who joined the department in 2017, has been an invaluable asset to our law enforcement team. Over the years, he has been instrumental in numerous operations, contributing to drug detection, suspect apprehension, and community engagement efforts. His sharp skills, unwavering loyalty, and remarkable intelligence have made him a respected figure both within the department and in the community.

Throughout his service, Hondo has not only exemplified the qualities of an excellent police dog but has also been a beloved member of the Holly Springs Police family. His partnership with his handlers has been a testament to the profound bond and effective teamwork between a K-9 and their officer.

As Hondo transitions into retirement, he will be spending his well-deserved rest at home with his handler where he can enjoy a more relaxed lifestyle filled with leisurely activities, endless cuddles, and his favorite treats. The Holly Springs Police Department extends its deepest gratitude to Hondo for his years of service and dedication. His contributions have been invaluable, and his legacy will continue to inspire future K-9 units and officers.

Media Contact: Cassie Hack, Communications and Marketing Director, Town of Holly Springs 919-524-1065, cassie.hack@hollyspringsnc.gov



Holly Springs Town Council

Town Council Meeting Agenda Cover Sheet

Agenda Item#: 20.

Consent Agenda

Title: Construction Prequalification Policy

Strategic Priority Area: Organizational Excellence
Responsible & Balanced Growth

Staff Resource: Tina Stroupe, Finance

Action(s):

Approve Construction Prequalification Policy

Explanation:

- NCGS §143-135.8 allows for prequalification of bidders for a particular construction or repair work project when all of the following apply:
 - The governmental entity is using one of the construction methods authorized in G.S. 143-128(a1)(1) through G.S. 143-128(3).
 - The board or governing body of the governmental entity adopts an objective prequalification policy applicable to all construction or repair work prior to the advertisement of the contract for which the governmental entity intends to prequalify bidders.
 - The governmental entity has adopted the assessment tool and criteria for that specific project, which must include the prequalification scoring values and minimum required score for prequalification on that project.
- As the Town continues to use Construction Manager at Risk (CMAR) contracts, it is important to have a defined prequalification policy in place and a process that complies with the requirements of NCGS §143-135.8, which allows prequalification of bidders for particular construction or repair projects.
- This policy will be used as a guide to ensure the objective evaluation of a contractor and uniformly determine, based on the criteria and scoring system set forth in the Prequalification Form, that it meets the minimum qualifications to bid on a project subject to prequalification.
- The statute authorizes the Town to prequalify bidders for construction or repair work projects for certain construction methods when the Council adopts a prequalification policy. The policy is applicable to all construction or repair contracts prior to the advertisement of the contract for which the Town intends to prequalify bidders and when the Town has an assessment tool and criteria in place for that project, which must include scoring values and minimum required score for prequalification on that project.

Background:

- The Town has recently begun to utilize the CMAR contract delivery and is expected to continue to use this method for various projects.

- With this delivery method, the town contracts with a construction manager to oversee the project from design to construction close-out and delivery with a Guaranteed Maximum Price (GMP).
- Current CMAR contracts include Fire Station #3, Operations Campus Phase 1 and Eagles Landing Park (formerly referred to as the park on Cass Holt Rd.).
- Future CMAR contracts could include the Operations Campus Phase 2 and any future fire station contracts that are expected to use a CMAR contract delivery method.
- If the CMAR and owner choose to prequalify bidders for construction, the advantages to the client (town) can result in:
 - Quality control ensuring that only experienced and reputable contractors participate in the bidding process
 - Risk mitigation by vetting potential bidders beforehand, where project owners can identify and mitigate risks associated with contractors who may have a history of poor performance
 - Competitive Advantage, whereas only qualified and capable contractors bid on the project that could lead to more competitive bids, potentially resulting in cost savings to the owner
 - Time savings through streamlining the bidding process by eliminating unqualified or unsuitable bidders early on
 - Confidence knowing that all bidders have been thoroughly vetted providing peace of mind to the project owner in selecting capable and competent contractors
 - Compliance Assurance ensuring all potential bidders meet the necessary regulatory requirements such as insurance and safety standards
 - Supplier diversity by establishing criteria that bidders must meet to be considered for the project, such as experience working with diverse suppliers and/or commitment to diversity in their supply chain

Funding Source(s):

N/A

Attachment(s):

1. TOHS Prequalification Policy-FINAL (1)
2. TOHS Prequalification Form-FINAL (1)

 Holly Springs, N.C.	P-0XX Prequalification Policy	
	Prepared By:	Brettany DeVolld
Policy & Procedure Statements of the Holly Springs Town Council	Department:	Finance
	Date Approved by Council:	February XX, 2024
	Effective Date:	February XX, 2024
	Supersedes Old #:	N/A
	Old Effective Date:	N/A

1.0 Purpose

To define a prequalification policy and process that complies with the requirements of NCGS §143-135.8, which allows prequalification of bidders for a particular construction or repair project.

2.0 Definitions

Project Manager – An employee or consultant responsible for the administration of a construction or repair project who is assigned the responsibility for managing the project, representing the department in matters relating to the project, and tasked with the responsibilities of developing evaluation criteria and an evaluation tool consistent with this policy.

Prequalification – A process of evaluating and determining whether potential bidders have the skill, judgment, integrity, sufficient financial resources, and ability necessary to do the faithful performance of a contract for construction or repair work.

Prequalification Committee – A committee established by the Project Manager and/or the Construction Manager at Risk for each project and responsible for determining prequalification eligibility.

Construction Manager at Risk – A person, corporation, or entity that provides construction management at risk services.

First-tier Subcontractor – a subcontractor who contracts directly with the Construction Manager at Risk.

3.0 Policy

The prequalification policy is to guide the objective evaluation of a contractor and uniformly determine, based on the criteria and scoring system set forth in the Prequalification Form, that it meets the minimum qualifications to bid on a project subject to prequalification. Bidders are not required to have been previously

awarded a construction or repair project by the Town and all bidders who meet the prequalification criteria will be allowed to bid on the construction or repair project.

3.1 Application

This policy is to be applied in a uniform, consistent, and transparent manner to all bidders seeking prequalification.

Prequalification is authorized, but not required, for projects using the following construction methods: Single-prime, separate-prime, or dual-bidding methods as defined in NCGS §143-128(a1)(1) through 143-128(a1)(3). The election to prequalify contractors through this process shall be made by the Town prior to publication of any bid.

Prequalification is required for the selection of first tier sub-contractors for Construction Manager at Risk contracts as defined in NCGS §143-128.1.

Prequalification is prohibited for the selection of any qualification-based services, such as architectural, engineering, surveying, design-build services, or the selection of a Construction Manager at Risk, under Article 3D of Chapter 143 of the North Carolina General Statutes.

3.2 Prequalification Form & Criteria

A Prequalification Form developed with criteria specific to the project must be established by the Project Manager and approved by the Prequalification Committee. Scoring values and the determination of a minimum score required for prequalification on that project shall be made by the Prequalification Committee. The prequalification form shall, at a minimum, include the following criteria:

1. **General Information:** The firm shall provide the full legal name, location, and date of organization or incorporation. Describe how the company is organized and provide a list of all owners, officers, partners, or individuals authorized to represent or conduct business for or sign legal documents for the firm. Firms that are a partnership must describe the partnership details and if a Joint Venture (JV), provide a copy of the JV agreement. Firms experiencing changes in ownership, affiliation, organizational structure, or material changes in assets must inform the owner in writing prior to the award of a contract. Disclose whether the firm itself or any of its owners, officers, partners, or individuals authorized to conduct business have been debarred, suspended, or otherwise prohibited from receiving federal, state, or local funds within the past five years.
2. **Licensure:** Provide proof of North Carolina General Contractor's License and any other professional license(s) required to perform on the contract. Disclose if the license(s) has ever been denied or revoked.

3. **Experience:** The firm shall furnish a history documenting experience with projects of similar size, scope, or complexity involving the type(s) of work for which prequalification is requested. Indicate whether the projects were completed on time and/or provide reason for delays and the dollar amount of liquidated damages paid, if any. Contact information for references should also be verified and included.
4. **Financial:** Firms will be required to provide a minimum of one year of complete, preferably audited, financial statements from the most current period available. If financial statements are not available, a copy of the contractor's latest annual license renewal submission to the relevant licensing board may be accepted.
5. **Insurance & Bonding:** Provide evidence that the firm can provide the required insurance coverage. Firms must also include a signed letter, dated within the last 30 days, from a surety company verifying their willingness to issue sufficient payment and performance bonds for this project. Surety company bond rating shall be rated "A" or better under the A.M. Best Rating system or The Federal Treasury List. The bonding capacity must cover 100% of the project budget indicated in the project specific Prequalification Form
6. **Litigation/Claims:** The firm will be required to submit information regarding its litigation and claims history, including litigation with owners and subcontractors.
7. **Safety:** Firms shall demonstrate an acceptable safety history. Firms must provide copies of any complaints, safety violations or reports from the North Carolina Qualifications Board, OSHA, or any other regulating agency associated with any construction project.
8. **Endorsement:** Submitted Prequalification Forms must be signed by an authorized representative in order to be considered for prequalification on the project.

3.3 Prequalification Process

3.3.1 For projects the Town has deemed subject to prequalification:

1. The Project Manager will select members for the Prequalification Committee to approve the prequalification criteria, scoring values, and the Prequalification Form.
2. The Project Manager shall develop, and the Project Committee shall approve, a Prequalification Form with project specific criteria including, but not limited to, the requirements in Section 3.2.
3. An advertisement describing the project requiring prequalified bidders, and including the approved Prequalification Form, will be posted to solicit qualified responses. Such notice shall be posted on the NC Electronic Vendor Portal (eVP), HUB website, and the Town website for a minimum of 14 full days.

4. Responses must be submitted by the deadline established in the advertisement to be considered for prequalification eligibility. Incomplete responses will be rejected or returned for further detail/correction at the sole discretion of the Town.
5. The Project Manager will organize a meeting of the Prequalification Committee and complete the evaluation process detailed in Section 3.4. The Prequalification Committee shall vote on matters by simple majority, except as provided in Section 3.4(2) below.

3.3.2 For projects using a Construction Manager at Risk:

1. Construction Manager at Risk projects shall comply with this policy for the required prequalification of their first-tier subcontractors.
2. The Construction Manager at Risk is required to submit a plan for compliance with the Town's 10% minority business participation goal, on all building construction projects, for approval by the Town prior to soliciting for prequalification responses for the project's first-tier subcontractors.
3. The Construction Manager at Risk and the Project Manager shall jointly develop a Prequalification Form with project specific criteria including, but not limited to, the requirements in Section 3.2.
4. The Construction Manager at Risk shall then be responsible for advertisement/solicitation, receipt, and evaluation of all responses for the prequalification of its first-tier subcontractors, in accordance with this policy and state law.

3.4 Evaluation Process

1. The Prequalification Committee will objectively review each prequalification form received by the deadline to determine prequalification eligibility by scoring the firm's responses to the established criteria.
2. The options for calculating scores are as follows:
 - a) The Prequalification Committee may choose to have each member score the responses individually and then calculate a final score for each firm by averaging the data using the Prequalification Scoring Matrix; or,
 - b) The Prequalification Committee may choose to score each response as a group by voting on each criterion's score. The majority vote should then be entered into the Prequalification Scoring Matrix to calculate totals. The Project Manager holds the deciding vote for any tiebreakers.

3. a) A firm that meets or exceeds the minimum scoring value will be prequalified to bid on the project and promptly notified of such in writing.

b) A firm that fails to meet the minimum scoring value will not be prequalified or eligible to bid on the project. The firm will be promptly notified of the decision, including the reason(s) for denial, in writing prior to the advertisement of bids for the project to provide sufficient time to protest the prequalification denial.

3.5 Protest Process

A firm may protest the denial of prequalification as follows:

1. A written protest must be received by the Project Manager within two business days of notice of denial. The written protest shall clearly identify the project and the Project Manager, clearly articulate the reasons for the protest, and attach any documentation or additional information to support the firm's protestation.
2. The Project Manager, or designee, will contact the firm and set up a date and time to discuss the protest.
3. If upon review, the Project Manager determines that the firm meets the criteria for prequalification, the firm shall be notified that it is prequalified and allowed to bid on the project. If the Project Manager upholds the denial, the firm shall be notified in writing via e-mail and the firm will not be permitted to bid.

The bid opening for the project subject to prequalification cannot occur until the prequalification protest process is completed.

In cases where a previously denied firm becomes prequalified as a result of the protest process, the bid opening must be scheduled to allow sufficient time for said firm to bid on the project.

4.0 Additional Provisions

- 4.1 The prequalification of a contractor for a project shall only apply to the individual project.
- 4.2 A bidder shall be deemed nonresponsive if it submits a bid on a construction project subject to prequalification, for which it has not been deemed prequalified in accordance with this policy.
- 4.3 Notwithstanding the fact that a contractor was prequalified to bid on a specific project, the Town reserves the right to reject a contractor's bid on that same

project if it is determined that the contractor has not submitted the lowest responsible and responsive bid.

See Attachment: Town of Holly Springs Prequalification Form

Town of Holly Springs Prequalification Form

In accordance with NCGS 143-135.8, this form gathers information about the contractors seeking to qualify for the work and provides a general format and scoring system for the prequalification criteria. Evaluation of the submittal shall be performed by the prequalification committee, pursuant to statute and the Town of Holly Springs Prequalification Policy (attached). **Completing this form does not guarantee prequalification. Minimum score to prequalify = 80 out of 100 points**

PREQUALIFICATION DUE DATE/TIME: _____

Submit Completed Forms to:

Contact Name: _____
Mailing Address: _____
E-mail Address: _____

Project Overview:

Project Name: _____
Project Manager: _____
Project Location: _____
Project Designer: _____
Start Date (estimated): _____
Bid Date (estimated): _____
Project Budget: _____

Project Description:

[Add an in-depth narrative of the project]

**Town of Holly Springs
Prequalification Form**

Section 1: General Information

A. Firm Name and Principal Office serving this project: 1 pt.

Legal Name: _____

Address: _____

Contact Name/Title: _____

Phone: _____

Email: _____

Is this firm registered with the State of North Carolina to do business? ____ Yes ____ No

List any other names that your firm has operated under for the past five (5) years:

B. Business Type: 3 pts. (check box) ☐ Corporation ☐ Partnership ☐ LLC ☐ Sole Proprietor ☐ Joint Venture

Date and State of organization or incorporation: _____

Indicate any State certifications:

☐ Statewide Uniform Certification (SWUC)/HUB, if yes, which category: _____

☐ North Carolina Small Business Enterprise Certification (NCSBE)
_____ Other _____ Certifying Agency/State

C. Organizational Structure: 2 pts. Attach a separate page with the following information:

- Company organizational chart
- Describe how the company is organized and include a list of all owners, officers, partners, or individuals authorized to represent or conduct business for or sign legal documents for the firm
 - Partnerships: must describe partnership details
 - Joint Ventures: provide a copy of the joint venture agreement

NOTE: Firms experiencing changes in ownership, affiliation, organizational structure, or material changes in assets must inform the owner in writing prior to the award of a contract.

☐ **Completed (check box) and attached as page:** _____

D. Disclosures: 1 pt. In the past five (5) years, has the firm itself or any of its owners, officers, partners, or individuals authorized to conduct business been debarred, suspended, or otherwise prohibited from receiving federal, state, or local funds?

____ Yes ____ No If yes, please attach separate page with details: ☐ **Completed (check box) and attached as page:** _____

E. Historically Underutilized Business (HUB) Plan and Record: 3 pts.

Does your organization currently have a documented plan for engaging subcontractor participation from Historically Underutilized Businesses? ____ Yes ____ No

If yes, attach plan: ☐ **Completed (check box) and attached as page:** _____

Town of Holly Springs Prequalification Form

What has been your organization's typical percentage level of HUB participation for similar projects in this locale? _____%

Section 2: Licensure

F. Licensing Information: 5 pts. Please provide all North Carolina professional licenses required for you to perform the services per the project information provided.

NC License number& name of licensee	License Limit/Level	State/County/City Privilege License (attach copy)
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

Has any license ever been denied or revoked? ☐ Yes ☐ No If yes, please describe:

Section 3: Experience

G. Type of Work Performed (on a regular basis): 2 pts.

Primary Scope of Work: _____

Secondary Scope of Work: _____

Other Scope of Work: _____

What type of work do you self-perform? _____

H. Capacity: 2 pts.

Provide the annual dollar value of construction work your firm has completed and has under contract for the last three (3) calendar years:

\$ _____ \$ _____ \$ _____
Year 2023 Year 2022 Year 2021

NOTE: If three years of data cannot be provided, please explain on additional attachment.

☐ **Completed (check box) and attached as page (if applicable):** _____

How many projects do you currently have under contract or in progress? _____

Total dollar value? \$ _____

I. Similar Project History: 15 pts. Complete the below information for your firm's most recent projects (within past 5 years) of similar size, scope, or complexity as related to the type(s) of work for which prequalification is requested. A minimum of three (3) examples are required.

Project 1 of 3

Project Name & Location: _____

Owner and Contact information: _____

Designer and Contact information: _____

Town of Holly Springs Prequalification Form

Description of work performed: _____

List key personnel assigned to the project:

Project Manager(s): _____

Superintendent(s): _____

Other: _____

Year Started: _____ Original Contract Length (days): _____ Original Contract Amount: \$ _____
Year Completed: _____ Actual Contract Length (days): _____ Actual Contract Amount: \$ _____

Reasons for delays (if any): _____

Delay or Liquidated Damages Claims made by the Owner (in dollars, if any): _____

Change Orders (provide value of change order(s) and reasoning): _____

Any arbitration, mediation, lawsuits, or other disputes associated with this project?

___ Yes ___ No (If yes, attach details on separate page)

HUB Participation: ___ Yes ___ No If yes, percent of total HUB participation: _____ %

Project 2 of 3

Project Name & Location: _____

Owner and Contact information: _____

Designer and Contact information: _____

Description of work performed: _____

List key personnel assigned to the project:

Project Manager(s): _____

Town of Holly Springs Prequalification Form

Superintendent(s): _____

Other: _____

Year Started: _____ Original Contract Length (days): _____ Original Contract Amount: \$ _____

Year Completed: _____ Actual Contract Length (days): _____ Actual Contract Amount: \$ _____

Reasons for delays (if any): _____

Delay or Liquidated Damages Claims made by the Owner (in dollars, if any): _____

Change Orders (provide value of change order(s) and reasoning): _____

Any arbitration, mediation, lawsuits, or other disputes associated with this project?

___ Yes ___ No (If yes, attach details on separate page)

HUB Participation: ___ Yes ___ No If yes, percent of total HUB participation: _____ %

Project 3 of 3

Project Name & Location: _____

Owner and Contact information: _____

Designer and Contact information: _____

Description of work performed: _____

List key personnel assigned to the project:

Project Manager(s): _____

Superintendent(s): _____

Other: _____

Year Started: _____ Original Contract Length (days): _____ Original Contract Amount: \$ _____

Year Completed: _____ Actual Contract Length (days): _____ Actual Contract Amount: \$ _____

Reasons for delays (if any): _____

Delay or Liquidated Damages Claims made by the Owner (in dollars, if any): _____

Change Orders (provide value of change order(s) and reasoning): _____

Town of Holly Springs Prequalification Form

Any arbitration, mediation, lawsuits, or other disputes associated with this project?
___ Yes ___ No (If yes, attach details on separate page)

HUB Participation: ___ Yes ___ No If yes, percent of total HUB participation: _____ %

- J. Reference Projects: 15 pts.** Provide the following details for the three (3) largest contracts currently under contract or in progress, to be used as references.

Reference Project 1 of 3

Project Name & Location: _____

Owner and Contact information: _____

Designer and Contact information: _____

GC or CM and Contact information: _____

Description of work performed: _____

Contract Dollar Value: _____ HUB Participation %: _____

Percentage Complete: _____ Anticipated Completion Date: _____

Reference Project 2 of 3

Project Name & Location: _____

Owner and Contact information: _____

Designer and Contact information: _____

GC or CM and Contact information: _____

Description of work performed: _____

Contract Dollar Value: _____ HUB Participation %: _____

Percentage Complete: _____ Anticipated Completion Date: _____

**Town of Holly Springs
Prequalification Form
Reference Project 3 of 3**

Project Name & Location: _____

Owner and Contact information: _____

Designer and Contact information: _____

GC or CM and Contact information: _____

Description of work performed: _____

Contract Dollar Value: _____ HUB Participation %: _____

Percentage Complete: _____ Anticipated Completion Date: _____

K. Project Specific Information: 10 pts. Applying the project specifics provided in the Project Overview section of this Prequalification Form, provide the following information.

The project superintendent for this contract would be: _____

Provide above referenced person's experience (in years) on similar types of projects: _____

As a separate attachment, provide their professional resume, which should include, at a minimum, education, training, certifications, licensures, detailed similar project experience and owner/designer contact information to use as references.

☐ **Completed (check box) and attached as page:** _____

The project manager for this contract would be: _____

Provide above referenced person's experience (in years) on similar types of projects: _____

As a separate attachment, provide their professional resume, which should include, at a minimum, education, training, certifications, licensures, detailed similar project experience and owner/designer contact information to use as references.

☐ **Completed (check box) and attached as page:** _____

NOTE: If the project superintendent/manager listed above cannot be guaranteed for this project, please provide the same information for any alternate(s) that may be assigned to this project.

☐ **Completed (check box) and attached as page:** _____

As a separate attachment, list all additional key team members that would be involved in this project. Detail individuals experience in the past 5 years to include: project size, description, position held, roles/responsibilities, time and budget performance, and contributions made to project's success. ☐ **Completed (check box) and attached as page:** _____

Town of Holly Springs Prequalification Form

Section 4: Financial

- L. **Financial Statements: 5 pts.** Attach a copy of your firm's most recent annual financial statements. Audited statements are preferred. If not available, attach a copy of the latest annual license renewal submission to the relevant licensing board.

☐ **Completed (check box) and attached as page:** _____

Section 5: Insurance & Bonding

- M. **Insurance: 3 pts.** Attach a copy of firm's insurance certificate evidencing coverage at the following required minimums:

[insert project specific insurance coverage requirements that meet or exceed minimums required by law, per Article 34 of the State Construction General Conditions]

☐ **Completed (check box) and attached as page:** _____

- N. **Bonding: 3 pts.** Attach a signed letter, dated within the last 30 days, from your surety company verifying their willingness to issue sufficient payment and performance bonds for this project, on behalf of your firm. Surety company bond rating shall be rated "A" or better under the A.M. Best Rating system or The Federal Treasury List. The bonding capacity must cover 100% of the project budget indicated in the Project Overview section of this Prequalification Form.

☐ **Completed (check box) and attached as page:** _____

- O. **Bonding History: 3 pts.** Have funds been expended by a surety company on your company's behalf within the past 10 years? ___Yes ___No

If yes, please explain: _____

Section 6: Litigation/Claims

- P. **Litigation/Claims History: 15 pts.**

1. Has your company had any judgments entered against it or been the target of a suit by an owner in a construction project within the past 10 years, whether resolved or still pending resolution? ___Yes ___No
2. Are there currently any judgments or suits pending or outstanding against your company, its officers, owners, or agents arising from a construction project? ___Yes ___No
3. Has your company ever been terminated from a construction project or otherwise defaulted on or removed from a construction project within the past 10 years? ___Yes ___No

Town of Holly Springs Prequalification Form

4. Has your company, its officers, owners, or agents ever been convicted of conflicts of interest, bribery, bid rigging, fraud, misappropriation, embezzlement, false claims, or other financial crimes within the past 10 years? ___ Yes ___ No
5. Have you or your company ever paid liquidated damages on a state project within the past 10 years? ___ Yes ___ No

If you have answered yes to any of the above questions, attach details. ☐ **Completed (check box) and attached as page: _____**

Section 7: Safety

Q. Safety Record: 12 pts.

1. List your company's Experience Modification Rate (EMR) for the past three years.

_____ Present EMR Rate	_____ Previous Year's EMR Rate	_____ EMR rate of two years ago
---------------------------	-----------------------------------	------------------------------------

NOTE: If these rates reflect corporate performance over several locations, please explain, to the extent possible, the performance experience of the location serving this project:

2. Provide an explanation and copies of any complaints, safety violations, or reports from the North Carolina Qualifications Board, OSHA, or any other regulating agency associated with any construction project in the past three years.

☐ **Completed (check box) and attached as page: _____**

**Town of Holly Springs
Prequalification Form**

Section 8: Endorsement

The undersigned certifies that the information provided herein is true and sufficiently complete so as not to be misleading. Any responses found to be falsified will bar the applicant from being prequalified for this project.

Company Name (as licensed in NC)

Physical Address

Mailing Address

Submission's Representative Name & Phone Number

Submission's Representative E-mail

R. Dated this day of: _____

Authorized by: _____
Signature of Authorized Officer

Print Name & Title of Authorized Officer

S. NOTARY CERTIFICATION

North Carolina

_____ County

I, a Notary Public of the County and State aforesaid, certify that _____,
personally appeared before me this day and acknowledged the execution of the foregoing
instrument. Witness my hand and official seal, this the _____ day of 20____.

(Official Notary Seal or Stamp)

Signature of Notary Public

My commission expires: _____

Town of Holly Springs Prequalification Form

Town of Holly Springs - Prequalification Form Assessment Matrix												
Project Name: _____												
Evaluator: _____												
Date of Evaluation:			1	2	3	4	5	6	7	8	9	10
points	Contractor Name:											
	Section 1: General Information											
1	A	Name/ Office/ Contact										
3	B	HUB or NCSBE										
2	C	Organizational Structure										
1	D	Disclosures										
3	E	HUB Plan & Record										
		Section 1 - Subtotal										
	Section 2: Licensure											
5	F	Licenses and numbers listed										
		Section 2 - Subtotal										
	Section 3: Experience											
2	G	Relevant work scope										
2	H	Capacity										
15	I	Similar Project History										
15	J	Reference Projects										
10	K	Project Specifics										
		Section 3 - Subtotal										
	Section 4: Financial											
5	L	Attached recent/ audited financial statements										
		Section 4 - Subtotal										
	Section 5: Insurance & Bonding											
3	M	Attached copy w/ sufficient coverage										
3	N	Attached Letter w/ sufficient bonding capacity										
3	O	No Bonds										
		Section 5 - Subtotal										
	Section 6: Litigation/ Claims											
3	P 1											
3	P 2											
3	P 3											
3	P 4											
3	P 5											
		Section 6 - Subtotal										
	Section 7: Safety											
	Q	Safety Record										
5		Current EMR over _____										
4		Previous Yr EMR over _____										
3		EMR >2yrs over _____										
		Section 7 - Subtotal										
	Section 8: Endorsement											
0	R	Signed/ Dated										
0	S	Notary Certification										
		Section 8 - Subtotal										
100		TOTAL POINTS										
All scores 80 and above will be prequalified.												



Holly Springs Town Council

Town Council Meeting Agenda Cover Sheet

Agenda Item#: 21.

Consent Agenda

Title: Utility Allocation Request for 370 Green Oaks Parkway

Strategic Priority Area: Responsible & Balanced Growth
Economic Prosperity & Diversity

Staff Resource: Catherine Jacobs, Development Services

Action(s):

Approve Utility Allocation Request for 370 Green Oaks 23-DP-09.

Explanation:

- A Development Plan was submitted and approved by the Development Review Committee (DRC) for 370 Green Oaks.
- The project occupies 3.07 acres at the corner of Green Oaks Pkwy and Premier Dr. in the Holland Industrial Park.
- The proposed uses include Office and Warehousing.
- The project is subject to the Water Resource Management Policy and is considered a Priority Level 1 within the nonresidential allocation assignment.
- **Nonresidential Allocation Requested FY 23/24:** 700 gallons per day
Nonresidential Allocation Remaining FY 23/24: 62,300 gallons per day

Background:

- The development plan was approved by the Development Review Committee on January 23, 2024 pending the approval of the Utility Allocation Request.
- The Water Resource Management Policy requires Town Council approval of Utility Allocation for all projects submitted after July 1, 2023.

Funding Source(s):

N/A

Attachment(s):

1. 23DP09_370GreenOaks_TC_022024
2. 23DP09_370GreenOaks_Application
3. 370GreenOaks_UtilityAllocationRequest
4. 23DP09_370GreenOaks_Plans



Utility Allocation Request Memo

Subject Title: 370 Green Oaks Parkway Utility Allocation Request

Meeting Date: February 20, 2024

Presenter: Catherine Jacobs, Development Services

Attachments: Utility Allocation Request, Development Plan Application, Development Plan

Utility Allocation Request:

The 370 Green Oaks Parkway Development Plan was approved by the Development Review Committee (DRC) on January 23, 2024. This project is subject to the Water Resource Management Policy and all utility allocation requests must be approved by the Town Council.

Utility Allocation Summary

Priority Level: Priority Level 1

Allocation Assignment: Nonresidential

Allocation Requested: 700 gallons per day

Staff Determination: Sufficient allocation remaining in the nonresidential assignment to support this project for the proposed build out year of 2024.

Staff Recommendation: Approve

Previous Case Actions

Underfoot Engineering submitted a request for a Development Plan for approval for a 23,800 sq. ft. office/warehouse building located at 370 Green Oaks Pkwy., a 3.07 acre within the Holland Industrial Park located at the corner of Green Oaks Pkwy. and Premier Dr.

This project qualified for administrative approval in accordance with the adopted standards in the Unified Development Ordinance (UDO). The UDO allows administrative approval for all Development Plans not involving properties in the DMX Downtown Mixed-Use zoning district, buildings over 40,000 sf., or Special Use Permits.

1. The proposed use in the Development Application is for a 23,800-sf building.
2. The Development Application does not include Special Use Permits.
3. The Development Application meets the applicable standards under the Holly Springs UDO.

Development Standards

Total Site Area: 3.07 acres

Proposed Building Height: 23 Ft 8 In

Provided Building Setback:

North: 129 Ft

Green Oaks Pkwy: 81.9 Ft

East: 69.5 Ft

Premier Dr: 130.3 Ft

Minimum Landscape Buffers:

North: 5' Type A

Green Oaks Pkwy: 10' Type B

East: 5' Type A

Premier Dr: 5' Type A

Total Building Footprint Area:

Building Footprint: 23,800 Sf

Parking Requirements

Total Required Parking

Required Parking Spaces: 28 Parking Spaces

Provided Parking Spaces: 41 Parking Spaces

Required Bicycle Parking

Required: 5 Bicycle Spaces

Provided: 5 Bicycle Spaces

Civil Improvements

Transportation

This project proposes three new driveways: one full access drive on Premier Drive and two one-way drives on Green Oaks Parkway. The proposed number of daily and peak hour trips did not warrant a traffic study with this development plan.

Utilities

The proposed building will connect to the existing public water main located within Green Oaks Parkway. A Fire Flow Analysis was completed.

The proposed building will connect to the existing sanitary sewer cleanout already located onsite. A Sewer Study was not required with this development, but it is subject to the Water Resource Management Policy. This project is considered a Priority Level 1 within the nonresidential allocation assignment and is scheduled to go before Town Council in February for Utility Allocation.

DRC Decision:

The DRC voted to approve the 370 Green Oaks Parkway Development Plan with conditions on January 23, 2024.

DEVELOPMENT 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:

☐ **Major Subdivision** (check all that apply)

☐ Residential ☐ Non-residential

☐ New ☐ Major Amendment* ☐ Minor Amendment*

☒ **Development Plan** (check all that apply)

☐ Residential ☒ Non-residential

☒ New ☐ Major Amendment* ☐ Minor Amendment*

☐ **Special Use Permit**

☐ New

* Specify purpose of amendment on Certificate of Plan Revisions

For DS Use only

Project # _____

Fees Paid: \$ _____

Date Received: _____

☐ Initial ☐ Revised ☐ Final

Project Information:

Project Name: 370 Green Oaks Pkwy

If this project is part of a previously approved plan, please specify:

PUD/Master Plan/Subdivision _____ Shopping Center/Lot# _____

Project Location: 370 Green Oaks Pkwy, Holly Springs, NC 27540

Use street address. If none, use the closest intersection

☒ Within Corporate Limits ☐ Within Holly Springs ETJ ☐ Pending Annexation

PIN: 0649-22-3243

Real Estate ID: 0346065

Project Acreage (rounded to nearest tenth): 3.10 Partial Parcel: ☒ No ☐ Yes (additional fee)

Current Zoning: BRT Proposed Use (see UDO Table 3.2.A): _____

Open Space [See UDO Section 7.06(F)(4)]: ☐ Dedication ☐ Fee-in-lieu ☐ Combination ☐ N/A

Waivers Requested: ☐ No ☐ Yes- Specify UDO Section Number(s): _____

If yes, complete and attach appropriate Waiver Petition(s) from Waiver Packet

Sketch Plan Review (Pre-Submittal) Meeting Date: _____

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 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 _____

Name Mike Roselli PE Company Underfoot Engineering Inc.

Mailing Address 1149 Executive Circle, Ste C-1

City Cary State NC Zip 27511

Telephone # (919) 696-0830 E-Mail mroselli@underfootengineering.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

Design Professional if different than Applicant/Contact

Name Mike Roselli PE Company Underfoot Engineering Inc.

Mailing Address 1149 Executive Circle, Ste C

City Cary State NC Zip 27511

Telephone # (919) 696-0830 E-Mail mroselli@underfootengineering.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

Developer

Name _____ Company _____
Mailing Address _____
City _____ State _____ Zip _____
Telephone # () _____ E-Mail _____
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

Architect

Name John McGahey, AIA Company McGahey Design
Mailing Address 123 Raleigh Street
City Fuquay-Varina State NC Zip 27526
Telephone # (919) 321-0123 E-Mail john2@mcgaheydesign.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

Landscape Architect

Name Mike Roselli PE Company Underfoot Engineering Inc.
Mailing Address 1149 Executive Circle, Ste C
City Cary State NC Zip 27511
Telephone # (919) 696-0830 E-Mail mroselli@underfootengineering.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

Other: _____ (any other contact that should receive comments and correspondence for this project)

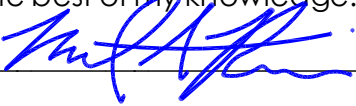
Name _____ Company _____
Mailing Address _____
City _____ State _____ Zip _____
Telephone # () _____ Alternate Telephone # () _____
Fax # () _____ E-Mail _____
How would you like to receive staff review comments? ☐ Fax ☐ E-Mail ☐ US Mail
How would you like to receive Official Action Notices? ☐ Fax ☐ E-Mail ☐ US Mail- Certified

Property Owner - Required

Name Phil D'Andrea Company D'Andrea Realty Group LLC
Mailing Address PO Box 1381
City Fuquay Varina State NC Zip 27526
Telephone # () _____ E-Mail phildbh1@gmail.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

Certificate of Submittal Completion

I, Mike Roselli PE, certify that the information provided on this petition, plans and checklist are complete and accurate to the best of my knowledge.

Signature:  Date: 7/7/2023

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 – 7:00 pm EST
Location: via a Microsoft Teams online meeting

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 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:

The neighborhood meeting was held by Jonathan Williams of Focus Design Builders and Baxter Walker of Avison Young - Raleigh. Both were representing the client. There were no other attendees.

Attach Additional Sheets as needed

Changes made to the Petition by the Petitioner as a result of the meeting:
None.

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)

DocuSigned by:

6E616C38ACC94EA...

Date

6/29/2023

Certificate Of Completion

Envelope Id: 8EB41E8C859145149852D1C6EE5A8EB2

Status: Completed

Subject: Complete with DocuSign: Neighborhood Meeting Report.pdf

Source Envelope:

Document Pages: 1

Signatures: 1

Envelope Originator:

Certificate Pages: 1

Initials: 0

Jonathan Williams

AutoNav: Disabled

PO Box 2068

Envelopeld Stamping: Disabled

Wake Forest, NC 27588

Time Zone: (UTC-05:00) Eastern Time (US & Canada)

jonathan@focusdesignbuilders.com

IP Address: 174.109.142.193

Record Tracking

Status: Original

Holder: Jonathan Williams

Location: DocuSign

6/29/2023 10:50:57 AM

jonathan@focusdesignbuilders.com

Signer Events

Jonathan Williams

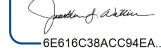
jonathan@focusdesignbuilders.com

VP

Focus Design Builders

Security Level: Email, Account Authentication
(None)**Signature**

DocuSigned by:

Signature Adoption: Uploaded Signature Image
Using IP Address: 174.109.142.193**Timestamp**

Sent: 6/29/2023 10:51:57 AM

Viewed: 6/29/2023 10:52:14 AM

Signed: 6/29/2023 10:52:44 AM

Freeform Signing

Electronic Record and Signature Disclosure:

Not Offered via DocuSign

In Person Signer Events**Signature****Timestamp****Editor Delivery Events****Status****Timestamp****Agent Delivery Events****Status****Timestamp****Intermediary Delivery Events****Status****Timestamp****Certified Delivery Events****Status****Timestamp****Carbon Copy Events****Status****Timestamp****Witness Events****Signature****Timestamp****Notary Events****Signature****Timestamp****Envelope Summary Events****Status****Timestamps**

Envelope Sent

Hashed/Encrypted

6/29/2023 10:51:57 AM

Certified Delivered

Security Checked

6/29/2023 10:52:14 AM

Signing Complete

Security Checked

6/29/2023 10:52:44 AM

Completed

Security Checked

6/29/2023 10:52:44 AM

Payment Events**Status****Timestamps**

OWNER

HSBP PROPERTIES LLC
IDEAL PROPERTIES LLC
IDEAL PROPERTIES LLC
350 GREEN OAKS LLC
HPC PROPERTIES LLC
CLASSIC ROAD #1021 LLC
AM 850 LLC / CURTIS MEDIA GRP
MICRASTEV LLC
D'ANDREA REALTY GROUP LLC
SKIE PROPERTIES THREE LLC
FOX PROPERTY HOLDINGS LLC
FERGUSON ENTERPRISES INC
AM 850 LLC
STOCKBRIDGE EV 161 TRADITION TRL OWNER LP

Town of Holly Springs, Attn: Development Services
Focus Design Builders, LLC

ADDR1

110 TRADITION TRL
131 TADITION TRL
107 ASHWICK CT
PO BOX 821
4312 CLARIDGE CT
300 GREEN OAKS PKWY
3012 HIGHWOODS BLVD STE 201
16160 PANTHEON PASS
PO BOX 1381
211 PREMIER DR
312 MAGNOLIA MEADOW WAY
12500 JEFFERSON AVE
3012 HIGHWOODS BLVD STE 201
3105 GLENWOOD AVE STE 105

PO BOX 821
PO Box 1706

ADDR2

HOLLY SPRINGS NC 27540-7045
HOLLY SPRINGS NC 27540
CARY NC 27513-1608
APEX NC 27502-0821
APEX NC 27539-5798
HOLLY SPRINGS NC 27540-6178
RALEIGH NC 27604-1031
DELRAY BEACH FL 33446-2315
FUQUAY VARINA NC 27526-1381
HOLLY SPRINGS NC 27540-8414
HOLLY SPRINGS NC 27540-5926
NEWPORT NEWS VA 23602-4314
RALEIGH NC 27604-1031
RALEIGH NC 27612-5059

Holly Springs NC 27540
Wake Forest, NC 27588

NEIGHBORHOOD MEETING SIGN-IN SHEET

PROJECT: 370 GREEN OAKS PKWY

DATE: 06/28/2023

TIME: 6:00 - 7:00 PM

ATTENDEE	ADDRESS							
JONATHAN WILLIAMS	881 FALCATE DR. WAKE FOREST, NC 27587							
BAXTER WALKER	5440 WADE PARK BOULEVEARD, SUITE 200 RALEIGH, NC 27607							

SIGNATURE:

JONATHAN WILLIAMS

UTILITY ALLOCATION REQUEST

On July 1, 2023 a new [Water Resources Management Policy \(WRMP\)](#) was adopted by the Town.

Submit this form via CityView with your first Sewer Study Submittal. All Preliminary plan reviews, which includes all Special Studies, must be submitted concurrently to be deemed a complete submittal. Staff will review for completeness and reach out to the applicant if more information is needed.

Refer to the Town's [Engineering Design & Construction Standards](#) as well as State Standards, when providing the following information.

Do not submit Utility Allocation Request until you have had your sewer scoping meeting or have been provided with direction from staff.

CONTACT INFORMATION	
Date: 2023.09.18	Scoping Meeting Date:
Applicant Name: PHIL D'ANDREA	
Company: D'ANDREA REALTY GROUP LLC	
Address: PO BOX 1381, FUQUAY-VARINA, NC 27526	
Phone:	E-Mail: PHILDBH1@GMAIL.COM
Engineering Firm Preparing Report: UNDERFOOT ENGINEERING INC	
Professional Engineer Working on Project: MIKE ROSELLI, PE	
PROJECT INFORMATION	
Project Name: 370 GREEN OAKS	
PIN(s): 0649-22-3243	Address: 370 GREEN OAKS PKWY, HS, NC 27540
Provide a brief project description: COMMERCIAL BUILDING AND PARKING LOT	
Does this project require Annexation: ☐ Yes ☒ No	
Proposed Land Use: OFFICE / WAREHOUSE BUILDING	
Current Zoning: BRT	Proposed Zoning: BRT
Total number of Residential Units: Type: ☐ Townhome ☐ Condo ☐ Apartment N/A	
Type of Non-Residential: OFFICE / WAREHOUSE BUILDING	Area of Non-Residential (SF) ((by type): 11,900 OFFICE + 11,900 WAREHOUSE
Anticipated Build Out Year: 2024	
Is Project expected to be phased: ☐ Yes ☒ No If yes, provide timeline:	
ESTIMATED SEWER FLOW (INCLUDE THE CALCULATIONS AND METHODOLOGY USED BASED ON STATE 15A NCAC 02T .0114 RULE AND ATTACH TO THIS FORM):	
100 Gal/Day/Loading Bay * 7 Bays = 700 GPD - 02T.0114F	
Residential Sewer Flow (GPD):	Non-Residential Sewer Flow (GPD): 700
What is the site's access to existing public utility infrastructure? ☒ Direct access via existing right-of-way or easements ☐ Existing utility infrastructure is within 1000' ☐ Existing utility infrastructure is further than 1000'	
Per the WRMP, what is the project anticipated Priority Level? ☒ 1 ☐ 2 ☐ 3	

UTILITY ALLOCATION REQUEST

Per the WRMP, all projects must meet the criteria for Level 1 before being considered by Town Council.

- Priority Level 2 projects must commit to 2 Allocation Elements and Priority Level 3 projects must commit to 3 Allocation Elements to move up to Level 1 status.

Level 2 and Level 3 projects should complete the following table:

Allocation Elements			
Committed Element (check if provided)	Element Category	Elements Component Provided (check if provided)	Location of Committed Element (Plan Sheet Number, Design Guidelines, Zoning Conditions, etc.)
☐	Public Infrastructure Improvements (Chose Option A, B, or C) <i>Please note that any improvements found to be required by a Sewer Study or Fire Flow Analysis can not also be used as a committed allocation element.</i>		
	Option A (both required)		
	Vegetated wetland in lieu of wet ponds	☐	
	Include stormwater control devices within parking lot islands	☐	
	Option B		
	Provide structured parking so as to minimize impervious surface area	☐	
	Option C (choose 1)		
	Take pump station offline	☐	
	Install oversize utilities	☐	
	Install 1000' of basin wide water/sewer infrastructure	☐	
☐	Sustainable Design (Choose 1)		
	Earn LEED Certification	☐	
	Earn National Green Building Standards Certifications, or equivalent as determined by Director	☐	

UTILITY ALLOCATION REQUEST

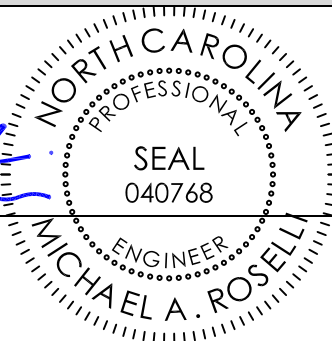
Allocation Elements

Committed Element (check if provided)	Element Category	Elements Component Provided (check if provided)	Location of Committed Element (Plan Sheet Number, Design Guidelines, Zoning Conditions, etc.)
--	------------------	--	---

☐	Work Force Housing (housing at 60-80% Area Median Income) (Choose 1)		
	5% of the units for detached or attached dwellings	☐	
	10% of the units for apartment dwellings	☐	
☐	Open Space/Tree Preservation (Choose 1)		
	Increase of at least 25% Active Recreation Space	☐	
	Increase of at least 100% for Urban Civic Space	☐	
	Increase of at least 25% of required area for Tree Preservation Areas	☐	
	Preservation of at least 10% of Specimen Trees on site.	☐	
	Total Committed Elements		



PE Signature



2023.09.18

Date

PE Seal

X:\CIVIL\PROJECTS\2022\C22001 - 370 GREEN OAKS\DRAWINGS\PLAN SETS\DEVELOPMENT PLAN\C22001.DWG - COVER & DETAILS.DWG PRINTED BY: MICHAEL PETERSON | 03/24 @ 3:37 PM. LAST SAVED BY: MICHAEL PETERSON

CONTACT INFORMATION

OWNER REPRESENTATIVE
FOCUS DESIGN BUILDERS
881 FALCATE DRIVE
WAKE FOREST, NC 27587
CONTACT: JONATHAN S. WILLIAMS
PHONE:

OWNER
D'ANDREA REALTY GROUP LLC
PO BOX 1381
FUGUAY VARINA, NC 27526
CONTACT: PHIL D'ANDREA
EMAIL: PHILDBH1@GMAIL.COM

REFERENCES

SURVEY
CARP - CANTHORNE, MOSS & PANCIERA, P.C.
PROFESSIONAL LAND SURVEYORS
333 S. WHITE STREET
WAKE FOREST, NC
CONTACT: NAME
PHONE: (919) 556-3148

ENVIRONMENTAL ENGINEER
SAGE ECOLOGICAL SERVICES, INC.
3707 SWIFT DRIVE
RALEIGH, NC 27606
CONTACT: SEAN CLARK, PWS
PHONE: (919) 559-1537

REVIEW AGENCIES / UTILITY CONTACTS

MUNICIPALITY
TOWN OF HOLLY SPRINGS
128 S MAIN ST, HOLLY SPRINGS, NC 27540
PHONE: 919.577.3228

ARCHITECT
MCGAHEY DESIGN
123 RALEIGH STREET
FUGUAY-VARINA, NC 27526
CONTACT: JOHN MCGAHEY
PHONE: (919) 321-0123

NC DOT
4029 DISTRICT DR, RALEIGH, NC 27607
PHONE: 919.733.3213

PROJECT NARRATIVE

THIS IS A DEVELOPMENT PLAN LOCATED AT 370 GREEN OAKS PARKWAY PROPOSING TO CONSTRUCT A BUILDING AND PARKING, AS PART OF THIS PLAN. THE FOLLOWING DOCUMENTS ARE ADDITIONALLY SUBMITTED:

- STORMWATER REPORT

PUBLIC REALM STANDARD PROVIDED

THE PUBLIC REALM FEATURE UTILIZED BY THE PROJECT IS "INCREASE PRIMARY FAÇADE MATERIALS TO 75% TYPE 1 MATERIALS" GIVEN THAT BOTH PRIMARY FAÇADES (WEST AND SOUTH) APPEAR TO EITHER MEET OR EXCEED THE REQUIRED 75%.

CONDITIONS OF APPROVAL

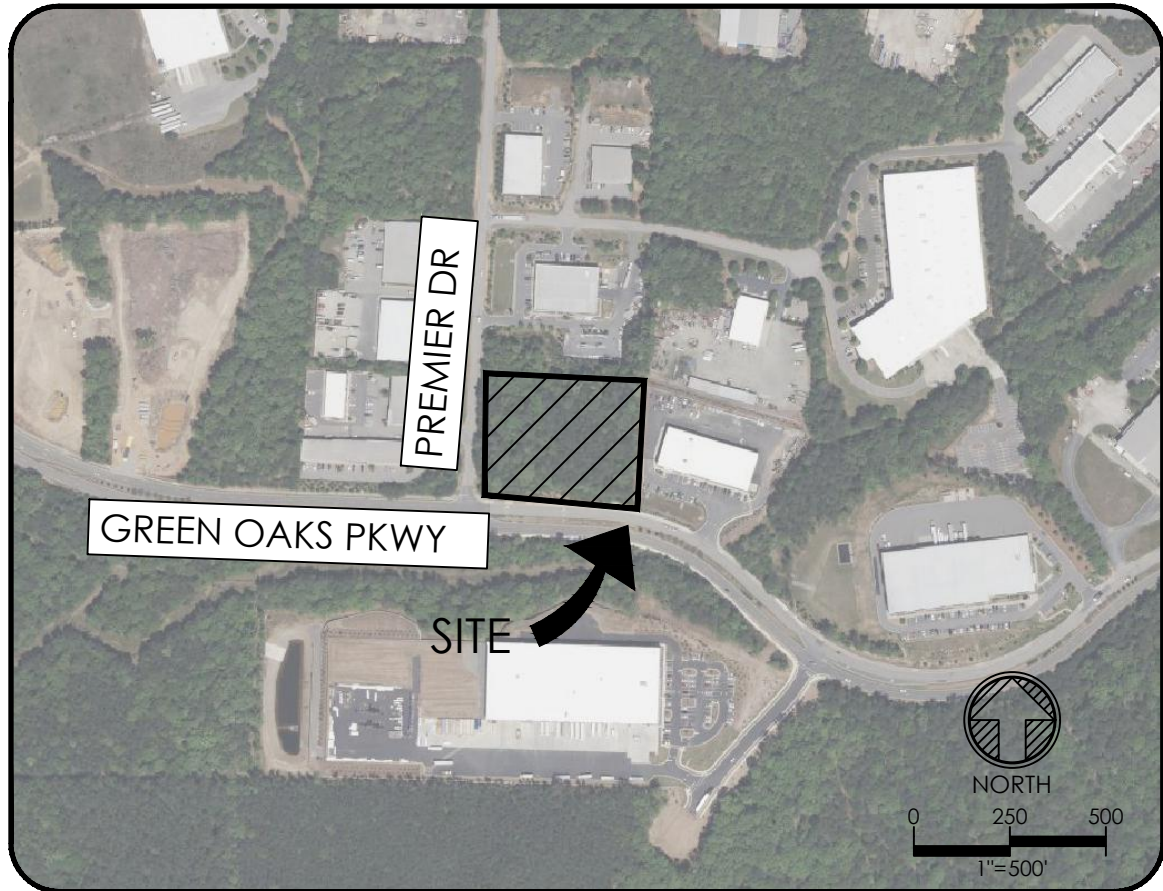
- THOROUGHFARES, COLLECTORS AND BOULEVARDS WILL REQUIRE A CALCULATED PAVEMENT DESIGN WITH 1ST CONSTRUCTION DRAWING SUBMITTAL. THIS MAY RESULT IN A PAVEMENT CROSS SECTION BIGGER THAN THE SPECIFIED MINIMUM.
 - OFF-SITE RIGHT-OF-WAY DEDICATION WILL BE REQUIRED IN THE FORM OF A RECORDED PLAT PRIOR TO RECEIVING CONSTRUCTION DRAWING APPROVAL.
 - ALL SPECIAL STUDIES MUST BE FINALIZED PRIOR TO BEING SCHEDULED FOR PLANNING BOARD.
 - INVOICED FEES FROM SPECIAL STUDY THIRD PARTY REVIEW MUST BE PAID PRIOR TO FIRST CONSTRUCTION DRAWING SUBMITTAL AND NO LATER THAN PRIOR TO CONSTRUCTION DRAWING APPROVAL.
- UTILITY ALLOCATION MUST BE GRANTED AND APPROVED BY TOWN COUNCIL PRIOR TO FIRST CONSTRUCTION DRAWING SUBMITTAL.

CONSTRUCTION DRAWING APPROVAL IS REQUIRED BEFORE CONSTRUCTION ON THIS PROJECT MAY BEGIN. DEVELOPMENT FEES ARE DUE BEFORE CONSTRUCTION DRAWING APPROVAL.

370 GREEN OAKS DEVELOPMENT PLAN

UNDERFOOT PROJECT - C22001 23-DP-09/PLDP202300180

LOCATION:
370 GREEN OAKS PKWY
HOLLY SPRINGS, NC



PREPARED BY:



underfoot
ENGINEERING

1149 EXECUTIVE CIRCLE
CARY, NC 27511
919.576.9733
NCBELS C3847 | NCBOLA C683

CONTACT: MIKE ROSELLI, PE, PLA
MROSELLI@UNDERFOOTENGINEERING.COM

SITE DATA

PARCEL IDENTIFICATION NUMBER	0649-22-3243
EXISTING PARCEL ACREAGE (AC.)	3.07
PARCEL ADDRESS	370 GREEN OAKS PKWY, HOLLY SPRINGS NC 27540
GEODEIC NUMBER	ALFORD 33
EXISTING USE	VACANT
PROPOSED USE	OFFICE / WAREHOUSE BUILDING
ZONING	BUSINESS & RESEARCH TECHNOLOGY (BRT)
WATERSHED	WHITE OAK WATERSHED
RIVER BASIN	BUCKHORN CREEK
SUB-BASIN	CAPE FEAR RIVER
FIRM PANEL	3720064900K, EFFECTIVE 07/19/2022
SETBACKS	
FRONT	30'
SIDE YARD	5'
SIDE CORNER LOT	30'
REAR YARD	5'
MAXIMUM BUILDING HEIGHT	100'
BUFFER REQUIREMENTS	
PERIMETER	5' TYPE A (NORTH AND EAST) 10' TYPE B (SOUTH AND WEST)
OPEN SPACE REQUIREMENTS	
REQUIRED OPEN SPACE	3% MIN. (4,011.87 SF / 0.09 AC.)
PROPOSED OPEN SPACE	5.5% (7,226 SF / 0.17 AC.)
IMPERVIOUS AREA	79,081.91 SF (1.82 AC)
PARKING REQUIREMENTS	
BUILDING (23,800 TOTAL) REQUIRED PARKING	28 SPACES (2/1000SF OFFICE & SERVICE USE - 50% / 1/3000SF AGRICULTURAL, MANUFACTURING & DISTRIBUTION - 50%)
EV REQUIRED PARKING	10% OF SPOTS MUST BE EVSE-READY PER UDO TABLE 6.6-A (10% OF 41 SPACES = 4.1 EV SPACES REQUIRED)
PROPOSED PARKING PROPOSED EV PARKING	41 SPACES (2 HC SPACES REQ'D., 2 PROVIDED) 5 SPACES
BICYCLE PARKING	ONE (1) BICYCLE RACK PROVIDED (ONE (1) RACK REQ'D. PER UDO) (ONE RACK PROVIDES 5 BIKE SPACES)
TOTAL BICYCLE PARKING	FIVE (5) SPACES
SEWER FLOW (IN ACCORDANCE WITH NCDENR 2T RULES)	
AS PROPOSED FOR COMMERCIAL DEVELOPMENT	FLEX SPACE - 100 GAL/BAY X 7 BAYS = 700 GPD OFFICE FLEX SPACE - 25 GAL/PERSON X 29 EMPLOYEES = 725 GPD = 1,425 GPD
TOTAL	
DATUM	HORIZONTAL DATUM: NAD83 VERTICAL DATUM: NAVD88

SHEET INDEX

#	SHEET NAME
C-000	COVER SHEET
C-100	EXISTING CONDITIONS & DEMOLITION PLAN
C-200	OVERALL SITE PLAN
C-201	TRUCK CIRCULATION & ADA ACCESSIBILITY PLAN
C-202	PAVING PLAN
C-300	GRADING & DRAINAGE PLAN
C-400	UTILITY PLAN
C-500	SITE DETAILS (1 OF 2)
C-501	SITE DETAILS (2 OF 2)
L-100	LANDSCAPE PLAN
L-101	LANDSCAPE NOTES & DETAILS
DESIGN DOCUMENTS BY OTHERS	
23-0294A	SITE LIGHTING ARRANGEMENT
A1.01 - AS2.04	ARCHITECTURAL ELEVATIONS AND SCHEDULES

PLAN REVISIONS

#	DATE	REVISION	BY
1	2023.08.25	TOHS COMMENTS	MP
2	2023.10.20	TOHS COMMENTS	MP
3	2023.12.21	TOHS COMMENTS	MP



KNOW WHAT'S BELOW
ALWAYS CALL 811
BEFORE YOU DIG
It's fast. It's free. It's the law.

PROJECT:

370 GREEN
OAKS
DEVELOPMENT
PLAN

370 GREEN OAKS PARKWAY
HOLLY SPRINGS, NC

PROJECT #:
DRAWN BY:
REVIEWED BY:
1ST SUBMITTAL:
SCALE:

C22001
HN
MR
2023.07.07
1"=50'

PRELIMINARY
NOT FOR CONSTRUCTION

PREPARED FOR:

FOCUS DESIGN
BUILDERS, LLC

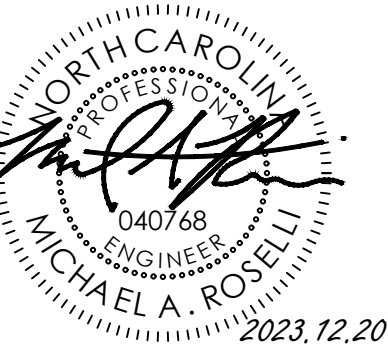
PREPARED BY:



underfoot
ENGINEERING

1149 EXECUTIVE CIRCLE
CARY, NC 27511
919.576.9733
NCBELS C3847 | NCBOLA C683

SEALED:



SHEET:

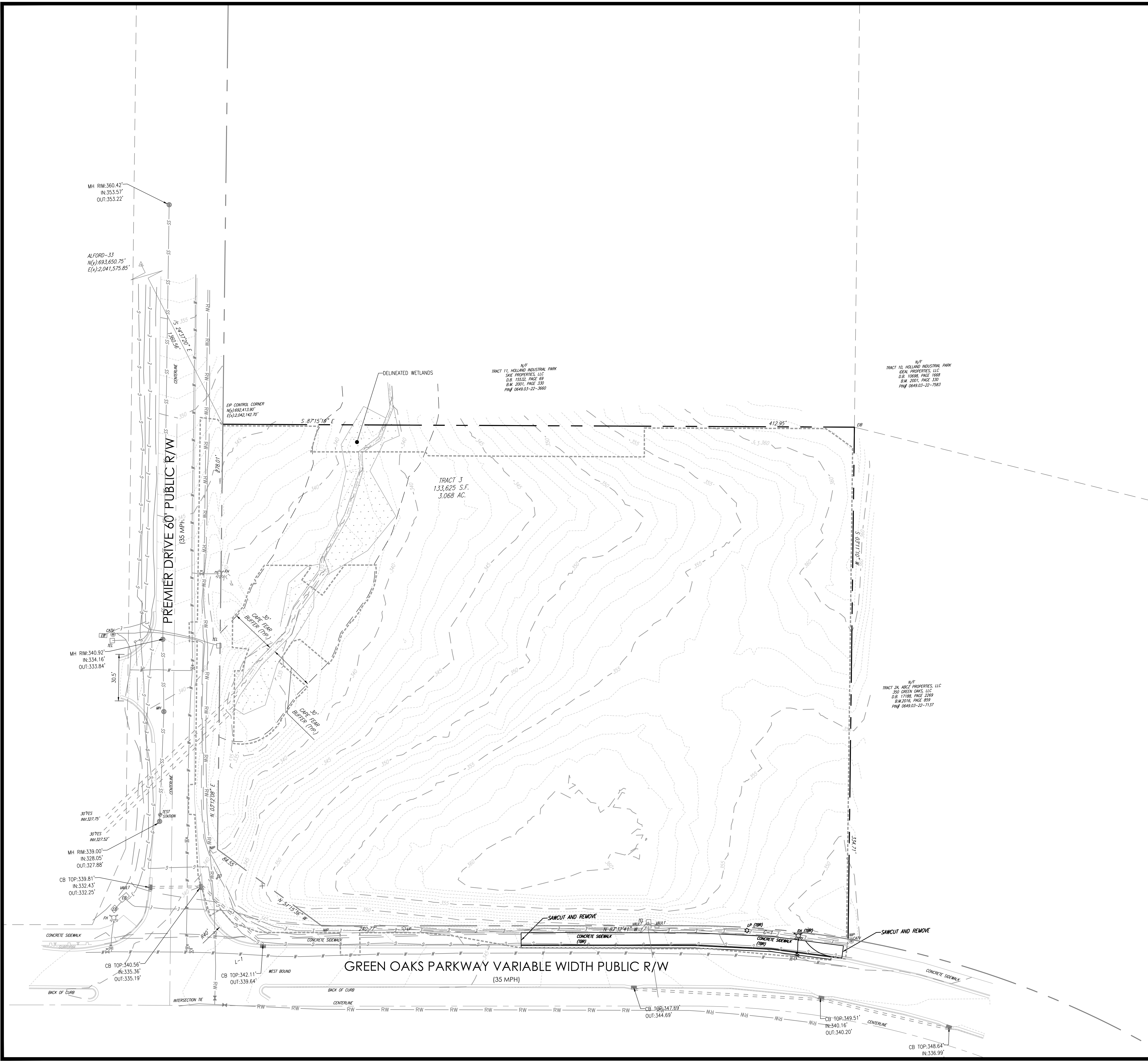
COVER SHEET

C-000

PLAN IS SUBJECT TO REVISIONS DURING CONSTRUCTION DRAWING APPROVAL PROCESS. PLAN IS PROVIDED FOR PLANNING APPROVAL AND IS NOT A CONSTRUCTION DOCUMENT.

ALL CONSTRUCTION MUST BE PERFORMED IN ACCORDANCE WITH CURRENT
TOWN OF HOLLY SPRINGS
STANDARDS, SPECIFICATIONS AND DETAILS IN PLACE AT TIME OF PLAN APPROVAL

X:\CIVIL\PROJECTS\2022\C22001 - 370 GREEN OAKS\DRAWINGS\PLAN SETS\DEVELOPMENT PLAN\C22001.DWG - CIVILDWG PRINTED BY: MICHAEL PETERSON 1.03.24 @ 3:37 PM LAST SAVED BY: HERGENSELKE



GENERAL NOTES

1. ALL MATERIALS AND METHODS OF CONSTRUCTION SHALL BE IN ACCORDANCE WITH TOWN OF HOLLY SPRINGS STANDARDS, SPECIFICATIONS AND DETAILS.
2. EXISTING SURVEY AND TOPOGRAPHIC INFORMATION IS BASED ON FIELD SURVEY PROVIDED BY CANTWORME, MOSS & PANCHERA, P.C. PROFESSIONAL LAND SURVEYORS, AS WELL AS GIS AND INFORMATION OBTAINED FROM A FIELD VISIT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFYING EXISTING CONDITIONS PRIOR TO COMMENCEMENT OF ANY WORK. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER'S REPRESENTATIVE OF ANY DISCREPANCIES OR CONFLICTS. THERE ARE NO FEMA FLOODPLANS CONTAINED ON THIS SITE PER FIRM PANEL 3720064900K, EFFECTIVE DATE JULY 19, 2022.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING, COORDINATING, AND PAYMENT FOR ALL NECESSARY LOCATING SERVICES INCLUDING INDEPENDENT LOCATING SERVICES. THE CONTRACTOR SHALL HAVE ALL EXISTING UTILITIES LOCATED AT LEAST 48 HOURS PRIOR TO BEGINNING DEMOLITION, EXCAVATION, OR ANY OTHER FORM OF CONSTRUCTION. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER'S REPRESENTATIVE OF ANY DISCREPANCIES OR CONFLICTS.
4. ALL SUB-SURFACE UTILITIES IDENTIFIED ON THE CONSTRUCTION DOCUMENTS ARE SHOWN IN THEIR APPROXIMATE LOCATION BASED ON SURVEY INFORMATION GATHERED FROM FIELD INSPECTION AND/OR ANY OTHER APPLICABLE RECORD DRAWINGS WHICH MAY BE AVAILABLE. IT IS SOLELY THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ACTUAL IN-PLACE SUB-SURFACE UTILITY INFORMATION INCLUDING HORIZONTAL AND VERTICAL LOCATION. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER'S REPRESENTATIVE OF ANY DISCREPANCIES OR CONFLICTS.
5. EXISTING IMPROVEMENTS DAMAGED OR DESTROYED BY THE CONTRACTOR DURING CONSTRUCTION SHALL BE RESTORED OR REPLACED TO ORIGINAL CONDITION AND TO THE SATISFACTION OF THE OWNER'S REPRESENTATIVE AT THE CONTRACTOR'S EXPENSE.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING ALL PERMITS, INSPECTIONS, CERTIFICATIONS, AND OTHER REQUIREMENTS WHICH MUST BE MET UNDER THIS CONTRACT OR TOWN OF HOLLY SPRINGS REQUIREMENT ARE OBTAINED.
7. IF DEPARTURES FROM THE PROJECT DRAWINGS OR SPECIFICATIONS ARE DEEMED NECESSARY BY THE CONTRACTOR, DETAILS OF SUCH DEPARTURES AND REASONS THEREFORE SHALL BE SUBMITTED TO THE OWNER'S REPRESENTATIVE FOR REVIEW PRIOR TO CONSTRUCTION. NO DEPARTURES FROM THE CONTRACT DOCUMENTS SHALL BE MADE WITHOUT THE EXPRESS WRITTEN PERMISSION OF THE OWNER'S REPRESENTATIVE.
8. THE CONTRACTOR IS RESPONSIBLE FOR THE RELOCATION OF ANY EXISTING UTILITY INFRASTRUCTURE REQUIRED TO COMPLETE ANY PORTION OF CONSTRUCTION. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR THE COORDINATION AND COSTS OF ASSOCIATED WORK.
9. THE ENGINEER AND/OR OWNER DISCLAIM ANY ROLE IN THE CONSTRUCTION MEANS AND/OR METHODS ASSOCIATED WITH THE PROJECT AS SET FORTH IN THESE PLANS.

DEMOLITION NOTES

1. REFER TO GENERAL NOTES ON THIS SHEET.
2. ANY MATERIALS REMOVED AS PART OF DEMOLITION FOR THIS PROJECT SHALL BE PROPERLY DISPOSED OF OFF-SITE IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL LAWS.
3. ANY MATERIALS REMOVED AS PART OF DEMOLITION FOR THIS PROJECT SHALL BE REMOVED COMPLETELY.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF EXISTING TREES AND OTHER VEGETATION, ONLY AS NECESSARY FOR CONSTRUCTION OF THE PROPOSED IMPROVEMENTS.
5. WITH ANY CONCRETE SHOWN TO BE REMOVED, THE CONTRACTOR SHALL REMOVE THE CONCRETE TO THE NEAREST JOINT OR SAW CUT TO PROVIDE CLEAN EDGE.
6. WITH ANY ASPHALT SHOWN TO BE REMOVED, THE CONTRACTOR SHALL SAW CUT TO PROVIDE A CLEAN EDGE.
7. ALL UTILITIES TO BE REMOVED OR RELOCATED SHALL BE COORDINATED WITH THE APPROPRIATE UTILITY PROVIDER PRIOR TO CONSTRUCTION. IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT ALL NECESSARY MEASURES ARE TAKEN, WHETHER TEMPORARY OR PERMANENT, TO ALLOW FOR PROPER FUNCTIONING OF EXISTING UTILITIES.

DEMOLITION LEGEND

TYPICAL EXISTING NOTE	TYPICAL DEMOLITION / REMOVAL NOTE
---	LIMITS OF DISTURBANCE
- - - - -	EASEMENT LINE
=====	CONCRETE CURB & GUTTER
⊗	UTILITY POLE
⊕	TYPICAL LIGHT
+	TYPICAL SIGN
---	SANITARY SEWER LATERAL
---	UNDERGROUND WATER LINE
---	UNDERGROUND ELECTRIC LINE
---	UNDERGROUND GAS LINE
OH	OVERHEAD WIRE
---	UNDERGROUND TELEPHONE LINE
---	UNDERGROUND CABLE LINE
---	STORM SEWER
SS	SANITARY SEWER MAIN
⊕	HYDRANT
●	SANITARY MANHOLE
●	STORM JUNCTION BOX
⊗	WATER METER
⊗	WATER VALVE
(TBR) / (TBR)	TO BE REMOVED / TO BE RELOCATED



ALL CONSTRUCTION MUST BE PERFORMED IN ACCORDANCE WITH CURRENT TOWN OF HOLLY SPRINGS STANDARDS, SPECIFICATIONS AND DETAILS IN PLACE AT TIME OF PLAN APPROVAL.

PLAN REVISIONS

#	DATE	REVISION	BY
1	2023.08.25	TOHS COMMENTS	MP
2	2023.10.20	TOHS COMMENTS	MP
3	2023.12.21	TOHS COMMENTS	MP



KNOW WHAT'S BELOW
ALWAYS CALL 811
BEFORE YOU DIG
It's fast. It's free. It's the law.

PROJECT:

370 GREEN OAKS DEVELOPMENT PLAN

370 GREEN OAKS PARKWAY
HOLLY SPRINGS, NC

PROJECT #: C22001
DRAWN BY: HN
REVIEWED BY: MR
1ST SUBMITTAL: 2023.07.07
SCALE: 1"=30'

PRELIMINARY
NOT FOR CONSTRUCTION

PREPARED FOR:

FOCUS DESIGN
BUILDERS, LLC

PREPARED BY:



underfoot
ENGINEERING

1149 EXECUTIVE CIRCLE
CARY, NC 27511
919.576.9733

NCBELS C3847 | NCBOLA C683

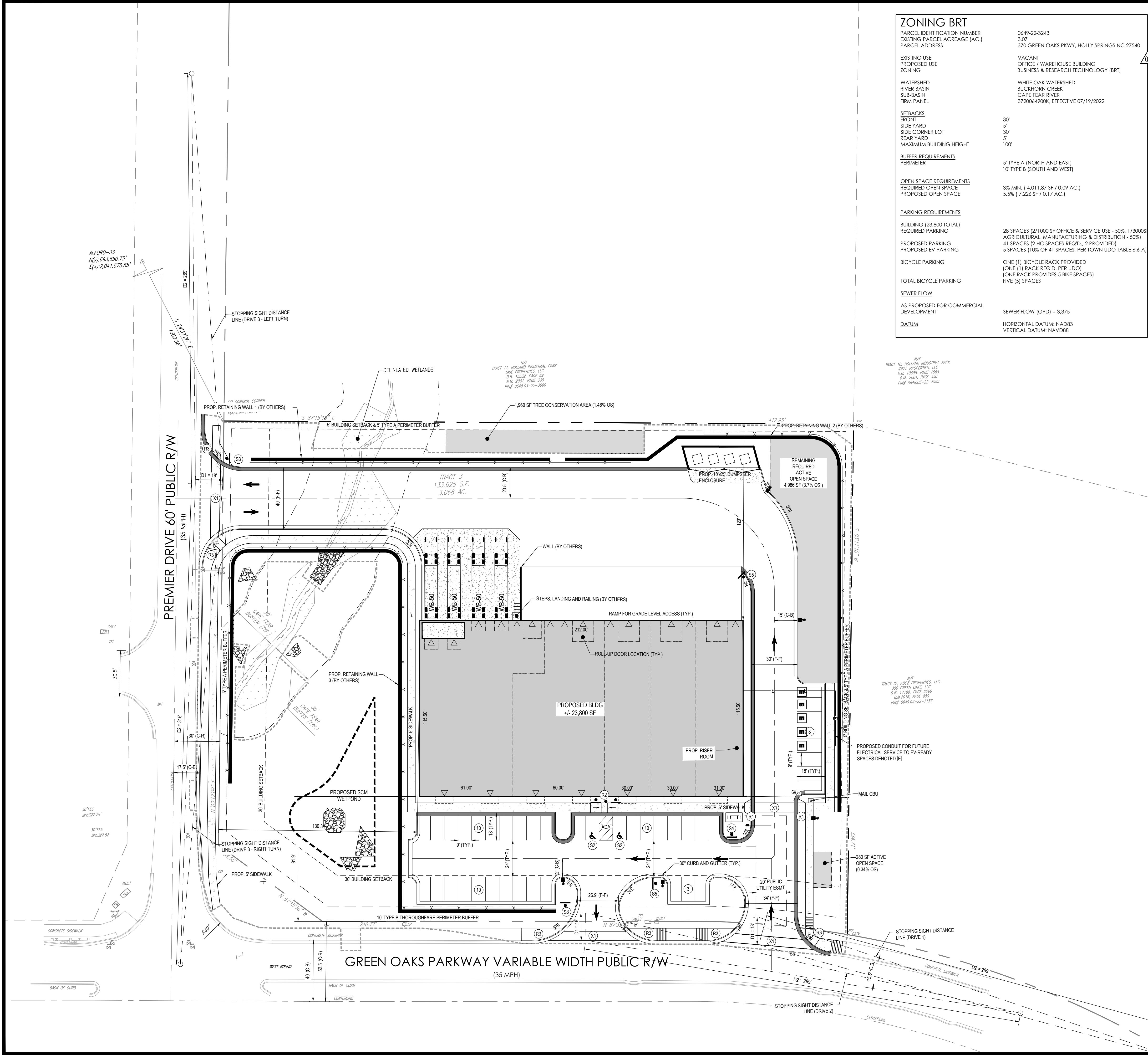
SEALED:



SHEET:

EXISTING
CONDITIONS &
DEMOLITION PLAN

C-100



ZONING BRT

PARCEL IDENTIFICATION NUMBER	0649-22-3243
EXISTING PARCEL ACREAGE (AC.)	3.07
PARCEL ADDRESS	370 GREEN OAKS PKWY, HOLLY SPRINGS NC 27540
EXISTING USE	VACANT
PROPOSED USE	OFFICE / WAREHOUSE BUILDING
ZONING	BUSINESS & RESEARCH TECHNOLOGY (BRT)
WATERSHED	WHITE OAK WATERSHED
RIVER BASIN	BUCKHORN CREEK
SUB-BASIN	CAPE FEAR RIVER
FIRM PANEL	3720064900K, EFFECTIVE 07/19/2022
SETBACKS	
FRONT	30'
SIDE YARD	5'
SIDE CORNER LOT	30'
REAR YARD	5'
MAXIMUM BUILDING HEIGHT	100'
BUFFER REQUIREMENTS	
PERIMETER	5' TYPE A (NORTH AND EAST) 10' TYPE B (SOUTH AND WEST)
OPEN SPACE REQUIREMENTS	
REQUIRED OPEN SPACE	3% MIN. (4,011.87 SF / 0.09 AC.)
PROPOSED OPEN SPACE	5.5% (7,226 SF / 0.17 AC.)
PARKING REQUIREMENTS	
BUILDING (23,800 TOTAL) REQUIRED PARKING	28 SPACES (21/1000 SF OFFICE & SERVICE USE - 50%, 1/30000 SF AGRICULTURAL, MANUFACTURING & DISTRIBUTION - 50%)
PROPOSED PARKING	41 SPACES (2 HIC SPACES REQ'D - 2 PROVIDED)
PROPOSED EV PARKING	5 SPACES (10% OF 41 SPACES, PER TOWN UDO TABLE 6.6-A)
BICYCLE PARKING	ONE (1) BICYCLE RACK PROVIDED (ONE (1) RACK REQ'D, PER UDO) (ONE RACK PROVIDES 5 BIKE SPACES)
TOTAL BICYCLE PARKING	FIVE (5) SPACES
SEWER FLOW	
AS PROPOSED FOR COMMERCIAL DEVELOPMENT	SEWER FLOW (GPD) = 3,375
DATUM	HORIZONTAL DATUM: NAD83 VERTICAL DATUM: NAVD83

SITE PLAN NOTES

- REFER TO GENERAL NOTES ON SHEET C-100.
- SETBACKS ARE SHOWN IN ACCORDANCE WITH THE APPROVED TOWN OF HOLLY SPRINGS STANDARDS.
- ALL PARKING LOTS STRIPPING SHALL BE WHITE.
- ALL PARKING LOTS SHALL BE PRIVATE.
- WHEN THE EVSE-READY SPACES BECOME EVSE SPACE, THE EV STATIONS MUST MEET THE REQUIREMENTS OF UDO SECTION 6.6.2.C FOR LEVEL 2 CHARGING.

BUILDING TABLE

BUILDING	GROSS FLOOR AREA (SF)	PROPOSED USE	BUILDING PLAN	HVAC LOCATION
1	23,800	OFFICE / WAREHOUSE BUILDING	SEE SHEET 1-X (BY OTHERS)	ROOF

STOPPING SIGHT DISTANCE CALCULATIONS

ACCESS DRIVES	DESIGN SPEED (MPH)	STOPPING SIGHT DISTANCE (FT)	ADJUSTMENT (FT)	STOPPING SIGHT DISTANCE WITH ADJUSTMENT (FT)
ACCESS DRIVE 1	40	305	-16	289
ACCESS DRIVE 2	40	305	-16	289
ACCESS DRIVE 3 LEFT TURN	40	305	-36	269
ACCESS DRIVE 3 RIGHT TURN	40	305	+10	315

SIGNAGE AND MARKING LEGEND

SYMBOL	SIGN / MARKING	MUTCD	SIGN DIMENSIONS
ADA	ADA RAMP	--	REFER TO SHEET C-501
X1	PEDESTRIAN CROSSING	--	--
S2	ADA PARKING	DETAIL TDB	REFER TO SHEET C-500
S3	STOP SIGN	--	REFER TO SHEET C-500

SITE LEGEND

(NOT TO SCALE)

EXISTING NOTE	TYPICAL NOTE TEXT	PROPOSED NOTE
	ON-SITE PROPERTY LINE / R.O.W. LINE	
	NEIGHBORING PROPERTY LINE / INTERIOR PARCEL LINE	
	SETBK LINE	
	CONCRETE CURB & GUTTER	CURB AND GUTTER SPILL CURB
	TEST PIT	
	DOOR LOCATION	
	UTILITY POLE	
	TYPICAL LIGHT	
	TYPICAL SIGN	
	ELECTRIC BOX	
	BENCHMARK	

PLAN REVISIONS

#	DATE	REVISION	BY
1	2023.08.25	TOHS COMMENTS	MP
2	2023.10.20	TOHS COMMENTS	MP
3	2023.12.21	TOHS COMMENTS	MP



KNOW WHAT'S BELOW
ALWAYS CALL 811
BEFORE YOU DIG
It's fast. It's free. It's the law.

PROJECT:

370 GREEN OAKS DEVELOPMENT PLAN

370 GREEN OAKS PARKWAY
HOLLY SPRINGS, NC

PROJECT #:
DRAWN BY:
REVIEWED BY:
1ST SUBMITTAL:
SCALE:

C22001
HN
MR
2023.07.07
1"=30'

PRELIMINARY
NOT FOR CONSTRUCTION

PREPARED FOR:

FOCUS DESIGN
BUILDERS, LLC

PREPARED BY:



underfoot
ENGINEERING

1149 EXECUTIVE CIRCLE
CARY, NC 27511
919.576.9733
NCBELS C3847 | NCBOLA C683

SEALED:



SHEET:

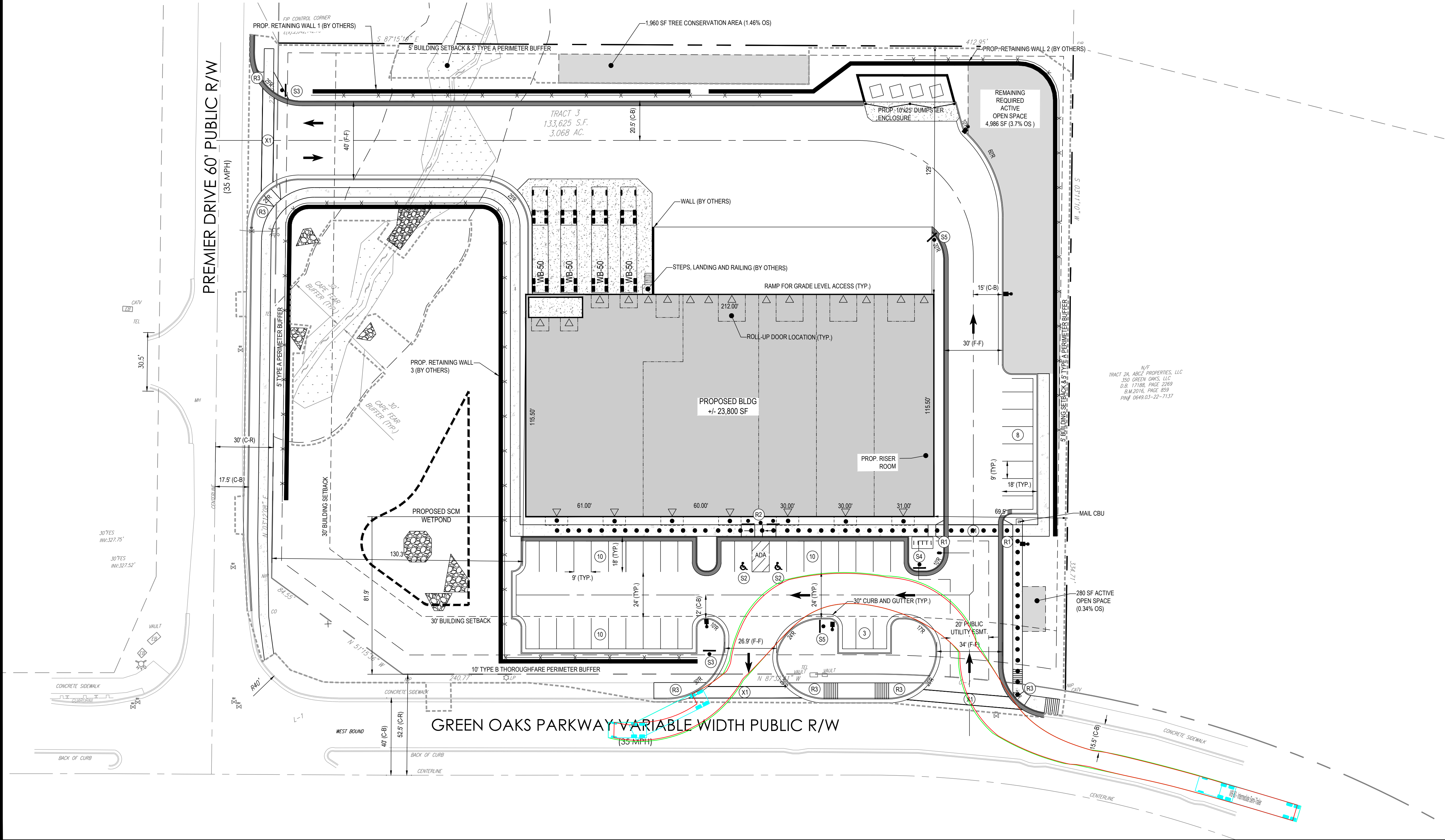
OVERALL SITE PLAN

C-200



ALL CONSTRUCTION MUST BE PERFORMED IN ACCORDANCE WITH CURRENT
TOWN OF HOLLY SPRINGS
STANDARDS, SPECIFICATIONS AND DETAILS IN PLACE AT TIME OF PLAN APPROVAL.

X:\CIVIL\PROJECTS\2022\C22001 - 370 GREEN OAKS DRAWINGS\PLAN SETS\DEVELOPMENT PLAN\C22001.DWG - CIVIL.DWG PRINTED BY: MICHAEL PETERSON 1.03.24 @ 3:37 PM. LAST SAVED BY: HERGENSELKE



FIRE TRUCK CIRCULATION NOTES
1. TRUCK MOVEMENTS SHOWN WERE DRAWN USING A STANDARD WB-50 TRUCK.

ADA ACCESSIBILITY NOTES
1. ADA ROUTES SHOWN SHALL MEET ADA GUIDELINES FOR ACCESS ON-SITE.

LEGEND (NOT TO SCALE)	
TYPICAL NOTE TEXT	PROPOSED NOTE
ADA ACCESSIBILITY PATH	● ●



ALL CONSTRUCTION MUST BE PERFORMED IN ACCORDANCE WITH CURRENT
TOWN OF HOLLY SPRINGS
STANDARDS, SPECIFICATIONS AND DETAILS IN PLACE AT TIME OF PLAN APPROVAL

PLAN REVISIONS			
#	DATE	REVISION	BY
1	2023.08.25	TOHS COMMENTS	MP
2	2023.10.20	TOHS COMMENTS	MP
3	2023.12.21	TOHS COMMENTS	MP



KNOW WHAT'S BELOW
ALWAYS CALL 811
BEFORE YOU DIG
It's fast. It's free. It's the law.

PROJECT:

370 GREEN OAKS DEVELOPMENT PLAN

370 GREEN OAKS PARKWAY
HOLLY SPRINGS, NC

PROJECT #:
DRAWN BY:
REVIEWED BY:
1ST SUBMITTAL:
SCALE:

C22001
HN
MR
2023.07.07
1"=30'

PRELIMINARY
NOT FOR CONSTRUCTION

PREPARED FOR:

FOCUS DESIGN BUILDERS, LLC



underfoot
ENGINEERING

1149 EXECUTIVE CIRCLE
CARY, NC 27511
919.576.9733
NCBELS C3847 | NCBOLA C683

SEALED:

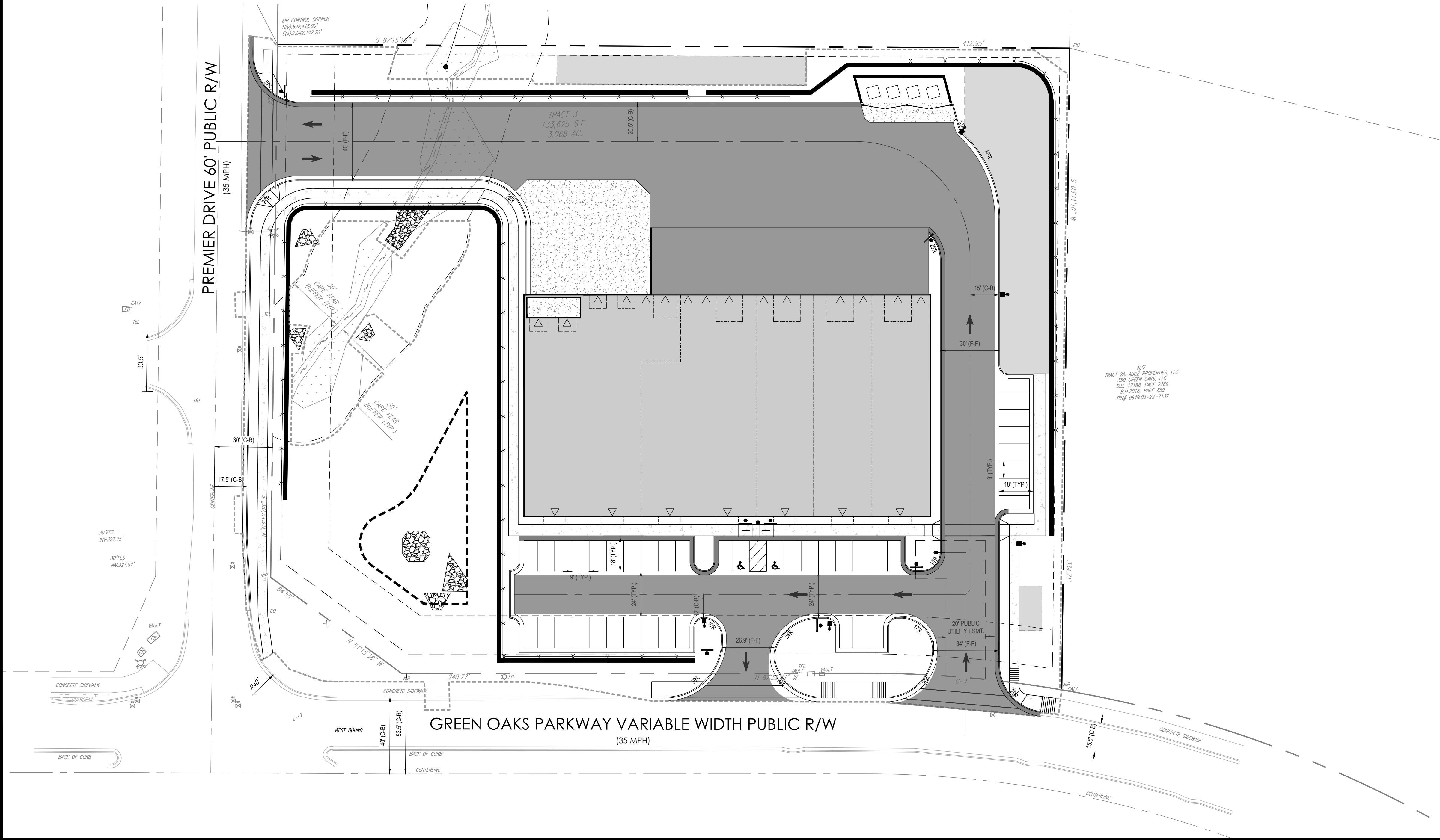


2023.12.20

SHEET:
TRUCK CIRCULATION & ADA ACCESSIBILITY PLAN

C-201

\\C:\CIVIL\PROJECTS\2022\C22001 - 370 GREEN OAKS\DRAWINGS\PLAN SETS\DEVELOPMENT PLAN\C22001 DP - CIVIL.DWG PRINTED BY: MICHAEL PETERSON | 03.24 @ 3:37 PM LAST SAVED BY: HERGENSEIKE



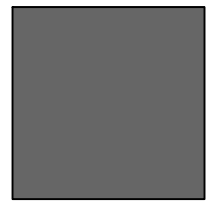
PAVING NOTES

1. REFER TO GENERAL NOTES ON SHEET C-100.
2. REFER TO SITE DETAILS, SHEET C-501 FOR DESIGN SPECIFICATIONS FOR PAVEMENT SECTIONS.
3. ALL TRAVEL LANES SHALL BE PAVED WITH THE HEAVY DUTY PAVEMENT SECTION SPECIFIED ON SHEET C-501 (DETAIL SHEET).
- ALL PARKING AREAS SHALL BE PAVED WITH THE LIGHT DUTY PAVEMENT SECTION SPECIFIED ON SHEET C-501 (DETAIL SHEET).

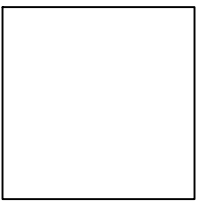
PAVEMENT MARKING & SIGNAGE NOTES

1. ALL PAVEMENT MARKINGS AND STREET SIGNAGE SHALL BE IN ACCORDANCE WITH THE MUTCD, 2009 EDITION.
2. PAVEMENT MARKINGS IN PUBLIC RIGHT OF WAY SHALL BE THERMOPLASTIC AND SHALL COMPLY WITH TOWN OF HOLLIS SPRINGS STANDARDS AND SPECIFICATIONS.
3. SIGNS MUST USE PRISMATIC SHEETING AND MEET THE MINIMUM RETRO-REFLECTIVITY LEVELS SHOWN IN THE LATEST EDITION OF THE MUTCD. SIGNS PROVIDED FOR PEDESTRIAN CROSSINGS SHALL USE THE STRONG YELLOW-GREEN COLORING.
4. ALL SPECIALTY TRAFFIC CONTROL AND STREET NAME SIGNS AND POSTS MUST COMPLY WITH TOWN OF HOLLIS SPRINGS STANDARDS AND SPECIFICATIONS. REQUESTS FOR SPECIALTY SIGNS SHALL BE SUBMITTED TO AND APPROVED BY THE TOWN PRIOR TO INSTALLATION AND ACCEPTANCE OF MAINTENANCE FOR THE CERTIFICATE OF OCCUPANCY.

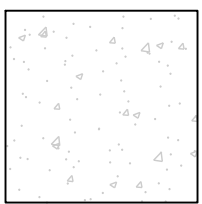
PAVING LEGEND



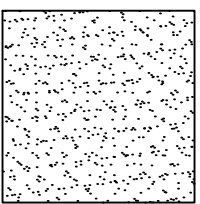
HEAVY-DUTY
ASPHALT
PAVEMENT



LIGHT-DUTY
ASPHALT
PAVEMENT



SIDEWALK
CONCRETE



HEAVY-DUTY
CONCRETE

PLAN REVISIONS

#	DATE	REVISION	BY
1	2023.08.25	TOHS COMMENTS	MP
2	2023.10.20	TOHS COMMENTS	MP
3	2023.12.21	TOHS COMMENTS	MP



KNOW WHAT'S BELOW
ALWAYS CALL 811
BEFORE YOU DIG
It's fast. It's free. It's the law.

PROJECT:

370 GREEN OAKS DEVELOPMENT PLAN

370 GREEN OAKS PARKWAY
HOLLY SPRINGS, NC

PROJECT #: C22001
DRAWN BY: HN
REVIEWED BY: MR
1ST SUBMITTAL: 2023.07.07
SCALE: 1"=30'

PRELIMINARY
NOT FOR CONSTRUCTION

PREPARED FOR:

FOCUS DESIGN
BUILDERS, LLC

PREPARED BY:



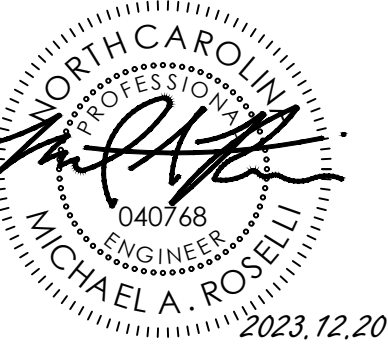
underfoot
ENGINEERING

1149 EXECUTIVE CIRCLE
CARY, NC 27511

919.576.9733

NCBELS C3847 | NCBOLA C683

SEALED:

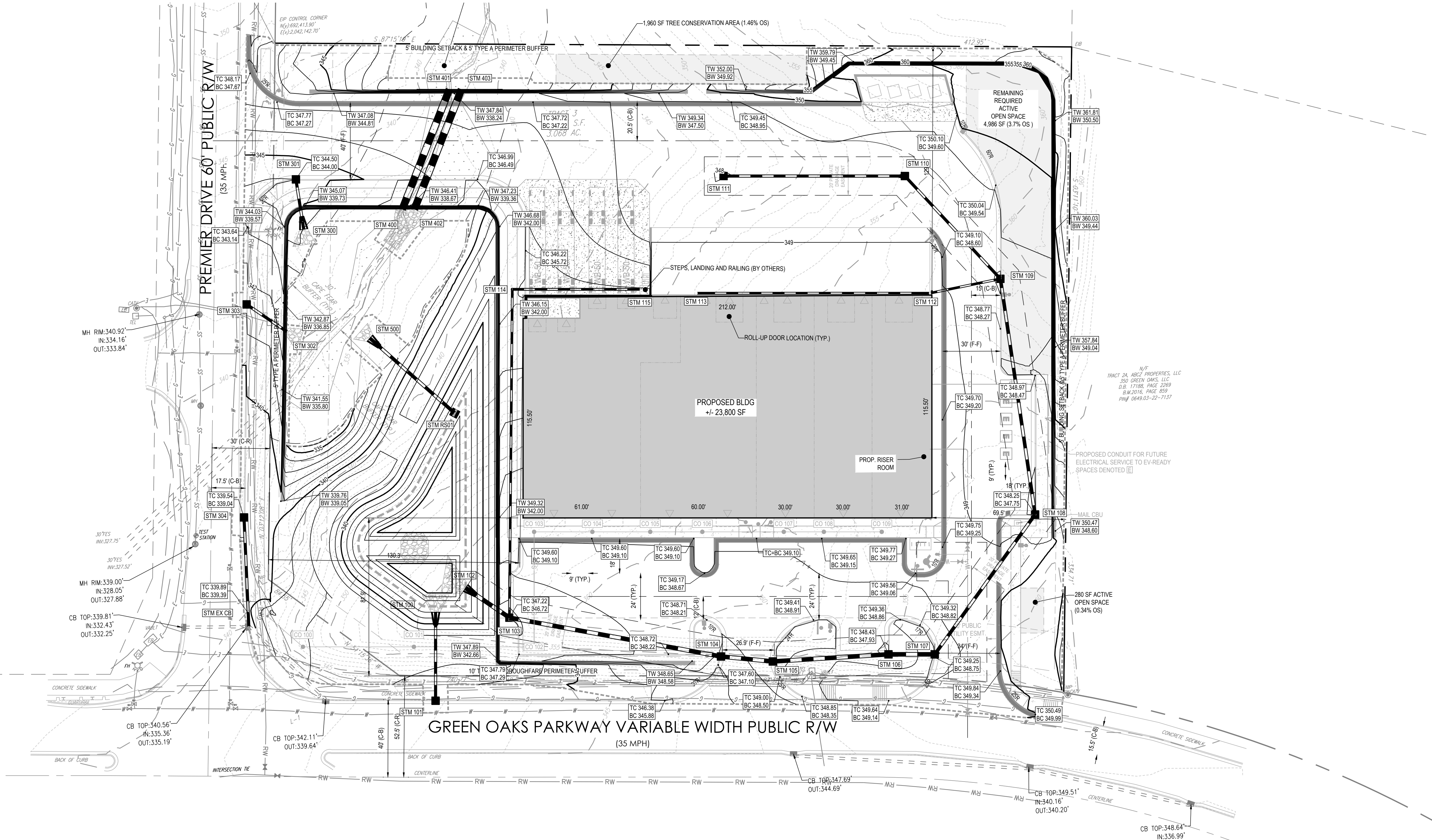


SHEET:

PAVING PLAN

C-202

X:\CIVIL\PROJECTS\2023\C2201 - 370 GREEN OAKS\DRAWINGS\PLAN\SETS\DEVELOPMENT PLAN\C2201.DWG - CIVILDWG PRINTED BY: MICHAEL PETERSON, 1.03.24 @ 3:37 PM, LAST SAVED BY: HERGENSELKE



STORM STRUCTURE SCHEDULE			
NAME	TYPE	RIM ELEV. (FT.)	INVERTS
500	PROP - ES (18') - OUTFALL	338.14'	INV IN = 336.00' (18')
403	PROP - HEADWALL	340.70'	INV OUT = 336.83' (42')
402	PROP - ENDWALL	338.38'	INV IN = 334.50' (42')
401	PROP - HEADWALL	340.18'	INV OUT = 336.30' (42')
400	PROP - ENDWALL	336.79'	INV IN = 334.30' (42')
304	NCDOT 840.03	339.04'	INV OUT = 335.57' (15')
303	NCDOT 840.03	341.18'	INV OUT = 337.50' (15')
302	PROP - ES (15') - OUTFALL	338.44'	INV IN = 337.00' (15')
301	NCDOT 840.03	344.00'	INV OUT = 339.75' (15')
300	PROP - ES (15') - OUTFALL	340.44'	INV IN = 339.00' (15')
115	CLEANOUT	345.94'	INV OUT = 342.32' (12')
114	CLEANOUT	346.12'	INV IN = 341.66' (12') INV OUT = 341.66' (12')
113	CLEANOUT	349.94'	INV OUT = 344.08' (12')
112	CLEANOUT	349.96'	INV IN = 342.87' (12') INV OUT = 342.87' (12')
111	NCDOT 840.15	347.92'	INV OUT = 343.40' (15')
110	NCDOT 840.15	347.95'	INV IN = 342.84' (15') INV OUT = 342.74' (15')
109	NCDOT 840.03	347.88'	INV IN = 342.50' (12') INV IN = 342.30' (15') INV OUT = 342.20' (18')
108	NCDOT 840.03	347.75'	INV IN = 341.46' (18') INV OUT = 341.36' (18')
107	NCDOT 840.03	348.72'	INV IN = 340.82' (18') INV OUT = 340.72' (24')
106	NCDOT 840.03	347.93'	INV IN = 340.58' (24') INV OUT = 340.48' (24')

STORM STRUCTURE SCHEDULE			
NAME	TYPE	RIM ELEV. (FT.)	INVERTS
105	NCDOT 840.03	348.69'	INV IN = 340.00' (24') INV OUT = 339.99' (24')
104	NCDOT 840.03	347.39'	INV IN = 339.63' (24') INV OUT = 339.53' (24')
103	NCDOT 840.03	346.72'	INV IN = 337.83' (24') INV IN = 339.96' (12') INV OUT = 337.73' (24')
102	PROP - ES (24') - OUTFALL	341.27'	INV IN = 337.50' (24')
101	NCDOT 840.03	343.03'	INV OUT = 338.77' (15')
100	PROP - ES (15') - OUTFALL	339.34'	INV IN = 337.91' (15')
RS01	NCDOT 840.03	340.30'	INV OUT = 336.40' (18')
EX CB	NCDOT 840.03	340.03'	INV IN = 335.29' (15')

STORM SEWER PIPE SCHEDULE							
FROM	TO	FROM INV	TO INV	PIPE LENGTH	SLOPE (%)	DIAMETER (IN.)	MATERIAL
403	402	336.83	334.50	66.74	3.49%	42"	RCP
401	400	336.30	334.30	66.74	3.00%	42"	RCP
304	EX CB	335.57	335.29	56.66	0.50%	15"	RCP
303	302	337.50	337.00	25.15	1.99%	15"	RCP
301	300	339.75	339.00	26.17	2.87%	15"	RCP
115	114	342.32	341.66	66.00	1.00%	12"	HDPE
114	103	341.66	339.96	170.22	1.00%	12"	HDPE
113	112	344.08	342.87	121.00	1.00%	12"	HDPE
112	109	342.87	342.50	37.25	1.00%	12"	HDPE
111	110	343.40	342.84	94.02	0.60%	15"	RCP
110	109	342.74	342.30	72.71	0.60%	15"	RCP
109	108	342.20	341.46	123.48	0.60%	18"	RCP
108	107	341.36	340.82	89.22	0.60%	18"	RCP
107	106	340.72	340.58	24.00	0.60%	24"	RCP
106	105	340.48	340.00	60.08	0.80%	24"	RCP
105	104	339.90	339.63	27.00	1.00%	24"	RCP
104	103	339.53	337.83	111.49	1.52%	24"	RCP
103	102	337.73	337.50	27.42	0.84%	24"	RCP
101	100	338.77	337.91	45.86	1.88%	15"	RCP
RS01	500	336.40	336.00	58.67	0.68%	18"	RCP

GRADING AND DRAINAGE NOTES

- REFER TO GENERAL NOTES ON SHEET C-100.
- ALL PROPOSED CONTOURS AND SPOT ELEVATIONS REFLECT FINISHED GRADES.
- ALL FILL SHALL BE COMPACTED IN ACCORDANCE WITH RECOMMENDATIONS OF GEO-TECHNICAL ENGINEER.
- THE PROPOSED CONTOURS SHOWN IN ROADWAYS, DRIVES, AND SIDEWALKS ARE FINISHED ELEVATIONS. PAVEMENT CROSS SECTION DATA ON FINAL CONSTRUCTION DRAWINGS SHALL BE USED TO ESTABLISH CORRECT SUBBASE OR AGGREGATE BASE COURSE ELEVATIONS TO BE CONSTRUCTED.
- ALL STORM DRAINAGE PIPE SHALL BE CLASS III RCP, UNLESS OTHERWISE NOTED.
- THE PROJECT WILL MEET ALL REQUIREMENTS RELATIVE TO BEST MANAGEMENT PRACTICES AND ENGINEERED STORMWATER CONTROL STRUCTURES AS OUTLINED IN THE HOLLY SPRINGS UDO AND TOWN STANDARDS AND SPECIFICATIONS.
- BMPs SHALL BE LOCATED IN STORMWATER ACCESS EASEMENTS WITHIN THE COMMON OPEN SPACE. ALL OPERATIONS AND MAINTENANCE MANUAL AND MAINTENANCE AGREEMENT SHALL BE IN PLACE FOR EACH BMP.
- A PRE-CONSTRUCTION MEETING SHALL BE REQUIRED FOR THIS PROJECT.
- THE TREE PROTECTION FENCE SHALL BE MAINTAINED ON THE SITE UNTIL ALL SITE WORK IS COMPLETED AND THE FINAL SITE INSPECTION IS SCHEDULED PRIOR TO THE ISSUANCE OF A CERTIFICATE OF OCCUPANCY (CO). THE FENCING SHALL BE REMOVED IMMEDIATELY PRIOR TO THE FINAL SITE INSPECTION FOR THE SITE.
- ALL RETAINING WALLS REQUIRE A BUILDING PERMIT. WALLS GREATER THAN 4' IN HEIGHT REQUIRES ENGINEERING DESIGN APPROVAL AT THE CONSTRUCTION DRAWING REVIEW AS WELL AS A BUILDING PERMIT.
- APPROVAL OF A STORMWATER MANAGEMENT PLAN IS REQUIRED TO ISSUANCE OF LAND DISTURBANCE OR CONSTRUCTION DRAWING APPROVAL.
- ALL UNDERGROUND STORAGE PIPES SHALL CONFORM TO TOWN OF HOLLY SPRINGS REQUIREMENTS. CORRUGATED METAL PIPE IS NOT ALLOWED.
- FOR THE EXISTING STREAM ON THE PROPERTY AND THE PROPOSED STREAM CULVERT, THE METES AND BOUNDS OF THE STREAM BUFFER AS SHOWN SHALL BE RECORDED AS A PRIVATE DRAINAGE EASEMENT FOR THE DRAINAGE WAY FOR FUTURE MAINTENANCE.

ADA INSTRUCTIONS TO CONTRACTOR

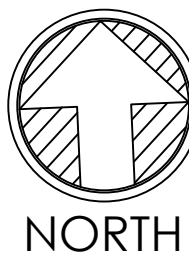
CONTRACTORS MUST EXERCISE APPROPRIATE CARE AND PRECISION IN CONSTRUCTION OF ADA (HANDICAP) ACCESSIBLE COMPONENTS AND ACCESS ROUTES FOR THE SITE. THESE COMPONENTS, AS CONSTRUCTED, MUST COMPLY WITH THE CURRENT ADA STANDARDS AND REGULATIONS' BARRIER FREE ACCESS AND ANY MODIFICATIONS, REVISIONS, OR UPDATES TO SAME, FINISHED SURFACES ALONG THE ACCESSIBLE ROUTE OF TRAVEL FROM PARKING SPACE, PUBLIC TRANSPORTATION, PEDESTRIAN ACCESS, AND/OR INTER-BUILDING ACCESS TO POINTS OF ACCESSIBLE BUILDING ENTRANCE/EXIT MUST COMPLY WITH THESE ADA CODE REQUIREMENTS. THESE INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING:

- PARKING SPACES AND PARKING AISLES - SLOPE SHALL NOT EXCEED 1:50 (1/4" PER FOOT OR NOMINALLY 2.0%) IN ANY DIRECTION.
- CURB RAMPS - SLOPE SHALL NOT EXCEED 1:12 (8.3%).
- LANDINGS - SHALL BE PROVIDED AT EACH END OF RAMPS, MUST PROVIDE POSITIVE DRAINAGE, AND MUST NOT EXCEED 1:50 (1/4" PER FOOT OR NOMINALLY 2.0%) IN ANY DIRECTION.
- PATH OF TRAVEL ALONG ACCESSIBLE ROUTE - MUST PROVIDE A 48-INCH OR GREATER UNOBSTRUCTED WIDTH OF TRAVEL (CAR OVERHANGS AND/OR HANDRAILS CANNOT REDUCE THIS MINIMUM WIDTH). THE SLOPE MUST BE NO GREATER THAN 1:20 (5.0%) IN THE DIRECTION OF TRAVEL, AND MUST NOT EXCEED 1:50 (1/4" PER FOOT OR NOMINALLY 2.0%) IN CROSS SLOPE. WHERE PATH OF TRAVEL WILL BE GREATER THAN 1:20 (5.0%), ADA RAMP REQUIREMENTS MUST BE ADHERED TO. A MAXIMUM SLOPE OF 1:12 (8.3%), FOR A MAXIMUM RISE OF 2.5 FEET, SHALL BE PROVIDED. THE RAMP MUST HAVE ADA HAND RAILS AND 60" W BY 60" LANDINGS ON EACH END THAT ARE CROSS SLOPED NO MORE THAN 1:50 IN ANY DIRECTION (1/4" PER FOOT OR NOMINALLY 2.0%) FOR POSITIVE DRAINAGE.
- DOORWAYS - MUST HAVE A "LEVEL" LANDING AREA ON THE EXTERIOR SIDE OF THE DOOR THAT IS SLOPED AWAY FROM THE DOOR NO MORE THAN 1:50 (1/4" PER FOOT OR NOMINALLY 2.0%) FOR POSITIVE DRAINAGE. THIS LANDING AREA MUST BE NO LESS THAN 60 INCHES (5 FEET) LONG, EXCEPT WHERE OTHERWISE PERMITTED BY ADA STANDARDS FOR ALTERNATIVE DOORWAY OPENING CONDITIONS. (SEE ICC/ANSI A117.1-2003 AND OTHER REFERENCED INCORPORATED BY CODE.)
- WHEN THE PROPOSED CONSTRUCTION INVOLVES RECONSTRUCTION, MODIFICATION, REVISION OR EXTENSION OF OR TO ADA COMPONENTS FROM EXISTING DOORWAYS OR SURFACES, CONTRACTOR MUST VERIFY EXISTING ELEVATIONS SHOWN ON THE PLAN, NOTE THAT TABLE 405.2 OF THE DEPARTMENT OF JUSTICES ADA STANDARDS FOR ACCESSIBLE DESIGN ALLOWS FOR STEEPER RAMP SLOPES, IN RARE CIRCUMSTANCES, THE CONTRACTOR MUST IMMEDIATELY NOTIFY THE DESIGN ENGINEER OF ANY DISCREPANCIES AND/OR FIELD CONDITIONS THAT DIFFER IN ANY WAY OR ANY RESPECT FROM WHAT IS SHOWN ON THE PLANS, IN WRITING, BEFORE COMMENCEMENT OF WORK. CONSTRUCTED IMPROVEMENTS MUST FALL WITHIN THE MAXIMUM AND MINIMUM LIMITATIONS IMPOSED BY THE BARRIER FREE REGULATIONS AND THE ADA REQUIREMENTS.
- THE CONTRACTOR MUST VERIFY THE SLOPES OF CONTRACTOR'S FORMS PRIOR TO POURING CONCRETE. IF ANY NON-COMFORMANCE IS OBSERVED OR EXISTS, CONTRACTOR MUST IMMEDIATELY NOTIFY THE ENGINEER PRIOR TO POURING CONCRETE. CONTRACTOR IS RESPONSIBLE FOR ALL COSTS TO REMOVE, REPAIR AND REPLACE NON-COMFORMING CONCRETE.

IT IS STRONGLY RECOMMENDED THAT THE CONTRACTOR REVIEW THE INTENDED CONSTRUCTION WITH THE LOCAL BUILDING CODE PRIOR TO COMMENCEMENT OF CONSTRUCTION.

GRADING LEGEND

EXISTING NOTE	TYPICAL NOTE TEXT	PROPOSED NOTE
--- 320' --- --- 325' ---	CONTOUR LINE	--- 320' --- --- 325' ---
349.5	SPOT ELEVATIONS	TC 348.00 BC 348.50 TC 348.50 BC 349.00
SANITARY LABEL	SANITARY LABEL	MH XXX
STORM LABEL	STORM LABEL	STM XXX
---	STORM SEWER	---
●	STORM JUNCTION BOX	●
▽	TYPICAL END SECTION	▽
▽	HEADWALL OR ENDWALL	▽
■	CATCH BASIN	■
⊙	MONITORING WELL	N/A
⊕	BORING	N/A
⊕	BENCHMARK	N/A
N/A	TEST PIT	⊕
N/A	PATH OF OVERLAND RELIEF	1 1 1 1 1 1 1 1 1 1
N/A	LIMITS OF DISTURBANCE	-----



ALL CONSTRUCTION MUST BE PERFORMED IN ACCORDANCE WITH CURRENT TOWN OF HOLLY SPRINGS STANDARDS, SPECIFICATIONS AND DETAILS IN PLACE AT TIME OF PLAN APPROVAL

PLAN REVISIONS

#	DATE	REVISION	BY
1	2023.08.25	TOHS COMMENTS	MP
2	2023.10.20	TOHS COMMENTS	MP
3	2023.12.21	TOHS COMMENTS	MP



KNOW WHAT'S BELOW
ALWAYS CALL 811
BEFORE YOU DIG
It's fast. It's free. It's the law.

PROJECT:

370 GREEN OAKS DEVELOPMENT PLAN

370 GREEN OAKS PARKWAY
HOLLY SPRINGS, NC

PROJECT #:
DRAWN BY:
REVIEWED BY:
1ST SUBMITTAL:
SCALE:

C22001

HN

MR

2023.07.07

1"=30'

PRELIMINARY
NOT FOR CONSTRUCTION

PREPARED FOR:

FOCUS DESIGN
BUILDERS, LLC

PREPARED BY:



underfoot
ENGINEERING

1149 EXECUTIVE CIRCLE
CARY, NC 27511
919.576.9733

NCBELS C3847 | NCBOLA C683

SEALED:

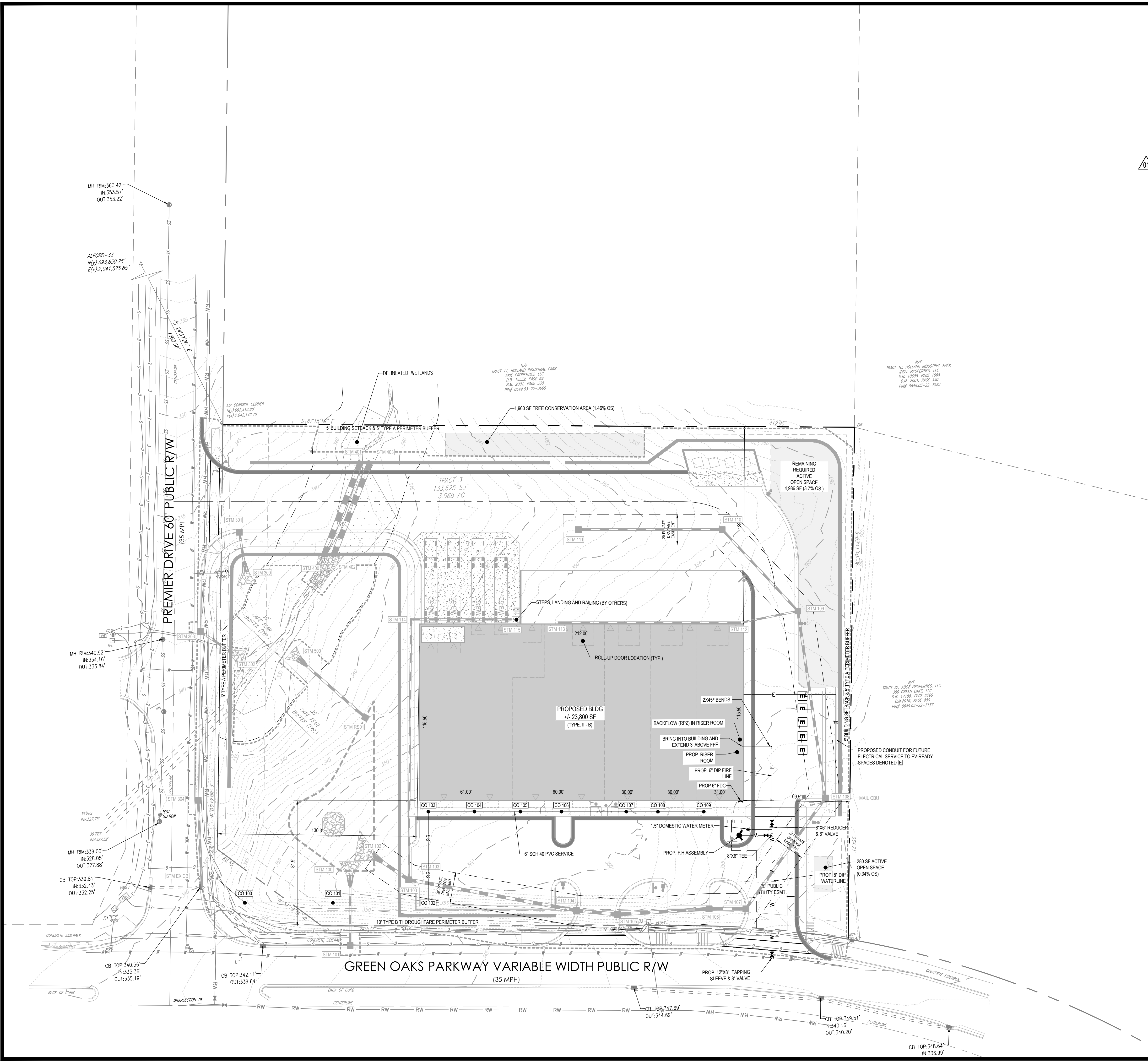


SHEET:

GRADING &
DRAINAGE PLAN

C-300

X:\CIVIL\PROJECTS\2022\C2201 - 370 GREEN OAKS\DRAWINGS\PLAN SETS\DEVELOPMENT PLAN\C2201.DWG - CIVILDWG PRINTED BY: MICHAEL PETERSON, 1.03.24 @ 3:37 PM, LAST SAVED BY: HERGENSELKE



UTILITY NOTES

1. REFER TO GENERAL NOTES SHEET C-100.
2. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE TOWN OF HOLLY SPRINGS STANDARD SPECIFICATIONS AND DETAILS THAT ARE CURRENT AT THE TIME OF PLAN APPROVAL.
3. CONTRACTOR SHALL VERIFY LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION. LOCATION OF EXISTING UTILITIES SHOWN ON PLANS IS BASED ON BEST AVAILABLE INFORMATION BUT CAN BE CONSIDERED ONLY AS APPROXIMATE.
4. MINIMUM SLOPE FOR 6" SANITARY SERVICES SHALL BE 1%. ALL CLEANOUTS SHALL BE INSTALLED PER HOLLY SPRINGS STANDARDS AND SPECIFICATIONS. ANY CLEANOUTS LOCATED OUTSIDE PAVED AREAS HAVE A FLUSH TYPE CAP AND CONCRETE RING AROUND THE CLEANOUT TOP. ANY CLEANOUTS WITHIN PAVED AREAS SHALL BE WEIGHT BEARING MINI-MANHOLES.
5. ALL ELECTRICAL AND TELECOMMUNICATION LINES SHALL BE INSTALLED UNDERGROUND.
6. THIS DESIGN MEETS ALL CURRENT TOWN OF HOLLY SPRINGS AND NCDOT STANDARDS AND SPECIFICATIONS.
7. WATER LOCATIONS ARE SHOWN GRAPHICALLY. IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO CONSTRUCT THE LINES PER TOWN STANDARDS AND SPECIFICATIONS USING BENDS AS SHOWN HEREIN. PIPE DEFLECTION WHEN BENDS ARE NOT SHOWN, AND AS OTHERWISE REQUIRED TO MEET ALL APPLICABLE STANDARDS.
8. ALL FIRE HYDRANTS AND FDC'S SHALL HAVE 5" STORZ CONNECTION.
9. EXISTING FIRE HYDRANT ON PREMIER DRIVE TO BE ADJUSTED TO PROPOSED FINISHED GRADE.
10. KNOX BOX SHALL BE LOCATED AT RISER ROOM DOOR ON LATCH SIDE OF DOOR, 5 FEET ABOVE FINISH GRADE.
11. A MINIMUM OF 4 INCHES ADDRESS AND SUITE NUMBERS.
12. BACKFLOW DEVICE [TYPE RPZ] SHALL BE LOCATED IN RISER ROOM PER SECTION 6.07.D.
13. FOR AUTOMATIC SPRINKLER SYSTEM, RPZ & PIV SHALL BE LOCATED IN RISER ROOM SHOWN PER SECTIONS 6.07.C & 6.07.D.
14. CONTRACTOR SHALL VERIFY POTENTIAL UTILITY CONFLICTS PRIOR TO THE CONSTRUCTION.

UTILITY LEGEND		
EXISTING NOTE	TYPICAL NOTE TEXT	PROPOSED NOTE
SANITARY LABEL	SANITARY LABEL	MH XXX
STORM LABEL	STORM LABEL	STM XXX
	SANITARY SEWER LATERAL	
W	UNDERGROUND WATER LINE	W
E	UNDERGROUND ELECTRIC LINE	E
G	UNDERGROUND GAS LINE	G
OH	OVERHEAD WIRE	OH
T	UNDERGROUND TELEPHONE LINE	T
C	UNDERGROUND CABLE LINE	C
=====	STORM SEWER	=====
SS	SANITARY SEWER MAIN	SS
H	HYDRANT	H
●	SANITARY MANHOLE	●
●	STORM JUNCTION BOX	●
WM	WATER METER	WM
WV	WATER VALVE	WV
V	TYPICAL END SECTION	V
U	HEADWALL OR ENDWALL	U
■	CATCH BASIN	■
•	SANITARY CLEAN OUT	•
⊙	MONITORING WELL	N/A
N/A	TEST PIT	⊙

301503060

GRAPHIC SCALE

NORTH

ALL CONSTRUCTION MUST BE PERFORMED IN ACCORDANCE WITH CURRENT TOWN OF HOLLY SPRINGS STANDARDS, SPECIFICATIONS AND DETAILS IN PLACE AT TIME OF PLAN APPROVAL.

PLAN REVISIONS

#	DATE	REVISION	BY
1	2023.08.25	TOHS COMMENTS	MP
2	2023.10.20	TOHS COMMENTS	MP
3	2023.12.21	TOHS COMMENTS	MP

811

KNOW WHAT'S BELOW
ALWAYS CALL 811
BEFORE YOU DIG
It's fast. It's free. It's the law.

PROJECT:

370 GREEN OAKS
DEVELOPMENT
PLAN

PROJECT #:
DRAWN BY:
REVIEWED BY:
1ST SUBMITTAL:
SCALE:

C2201
HM
MR
2023.07.07
1"=30'

PRELIMINARY
NOT FOR CONSTRUCTION

PREPARED FOR:

FOCUS DESIGN
BUILDERS, LLC

PREPARED BY:

U

underfoot
ENGINEERING

1149 EXECUTIVE CIRCLE
CARY, NC 27511
919.576.9733
NCBELS C3847 | NCBCOLA C683

SEALED:

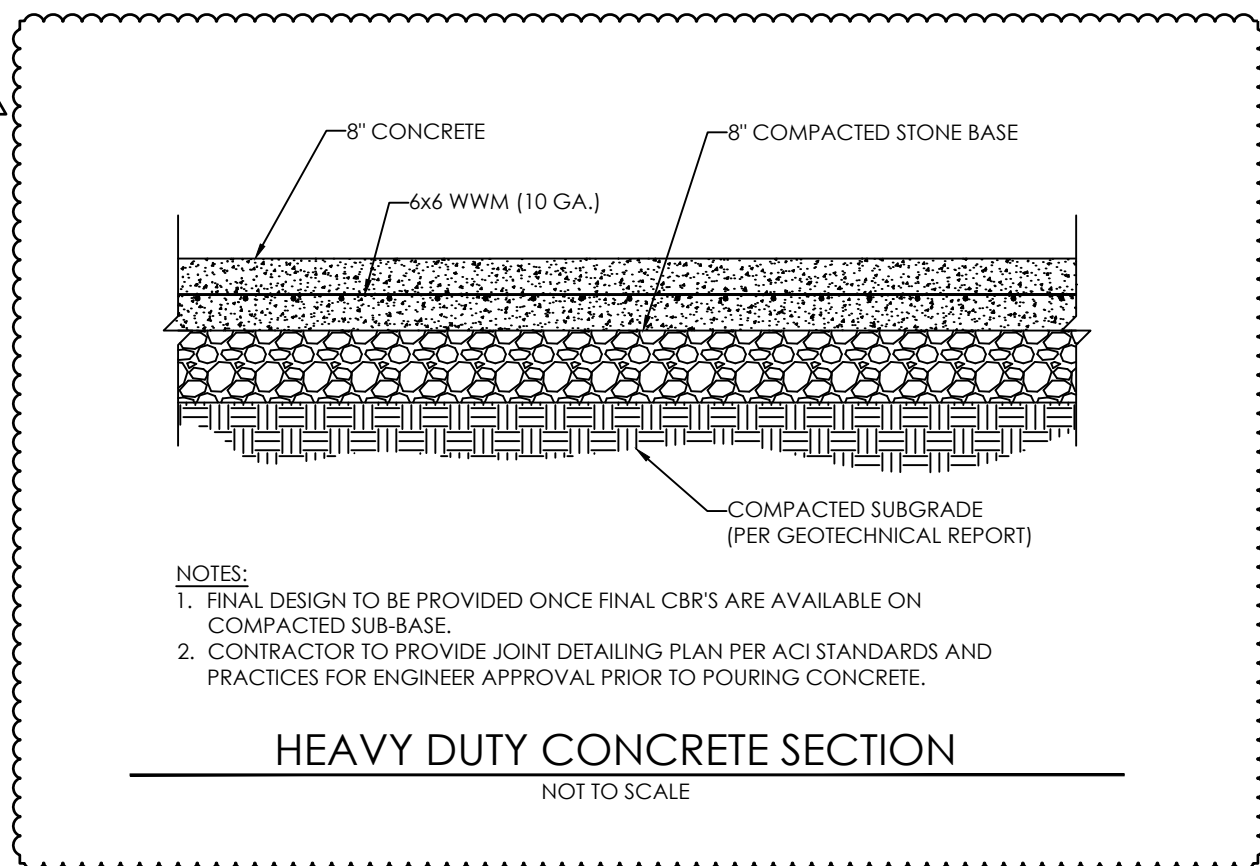
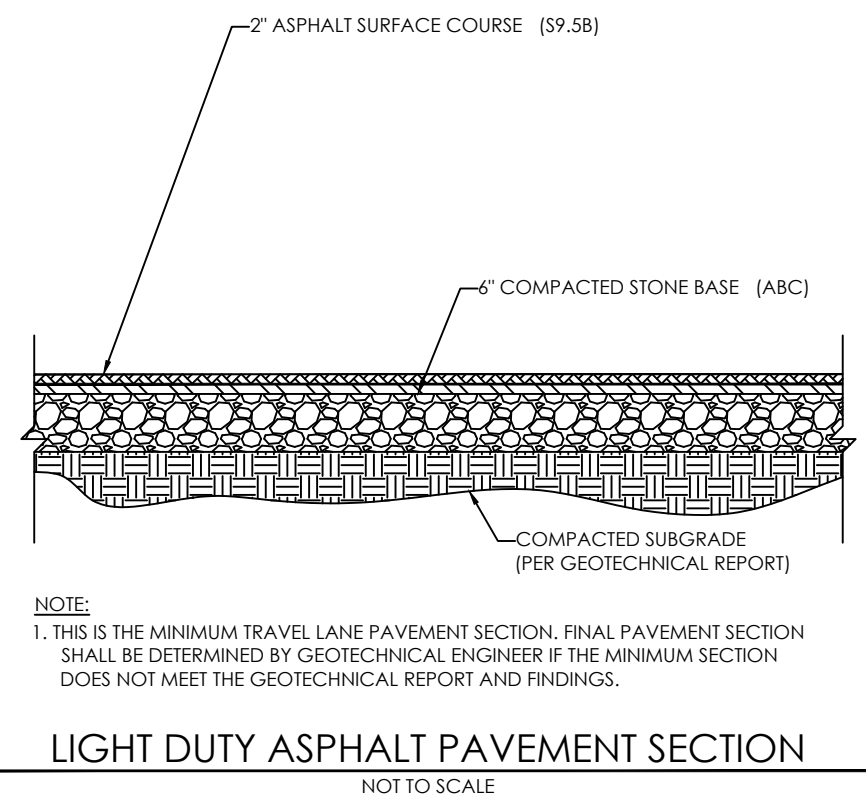
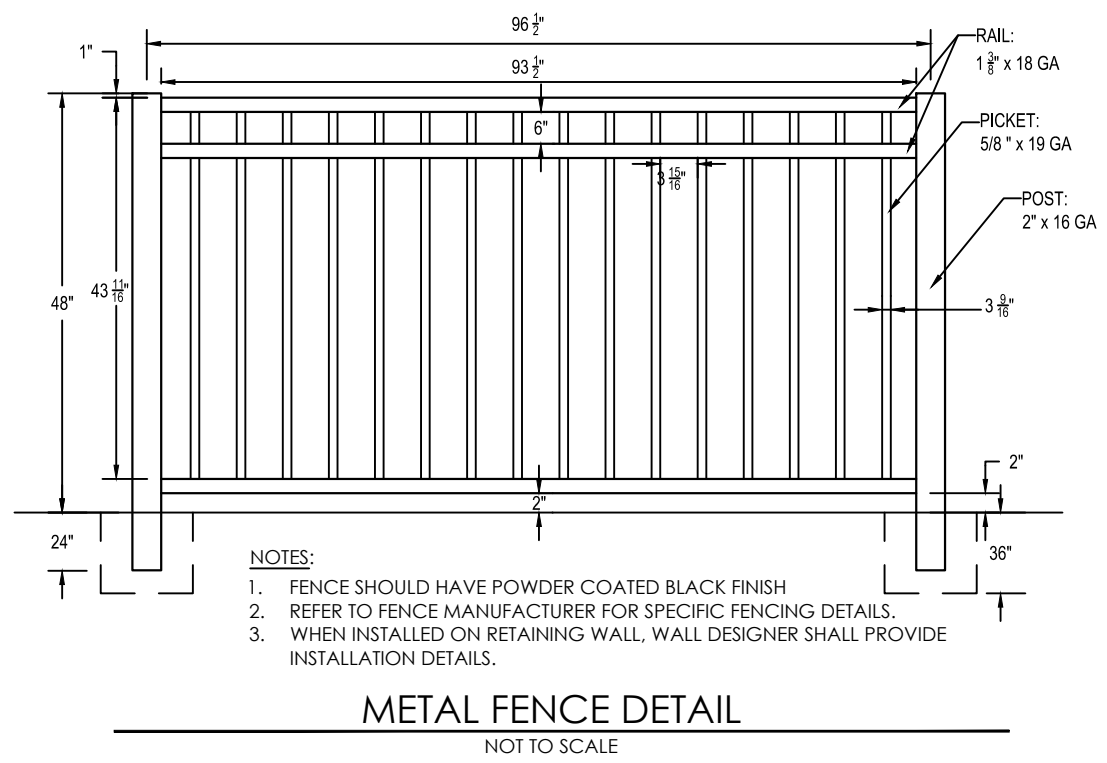
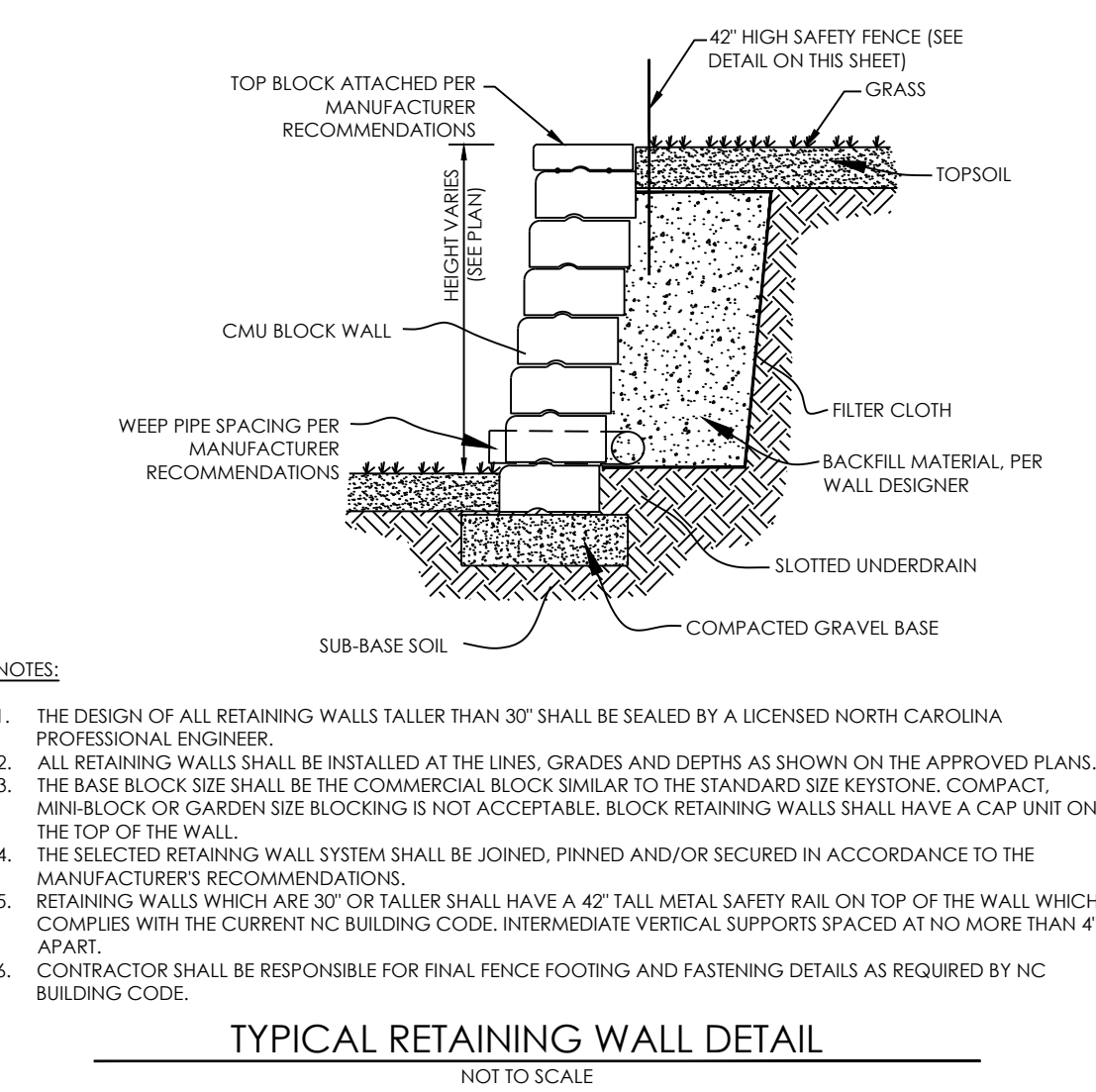
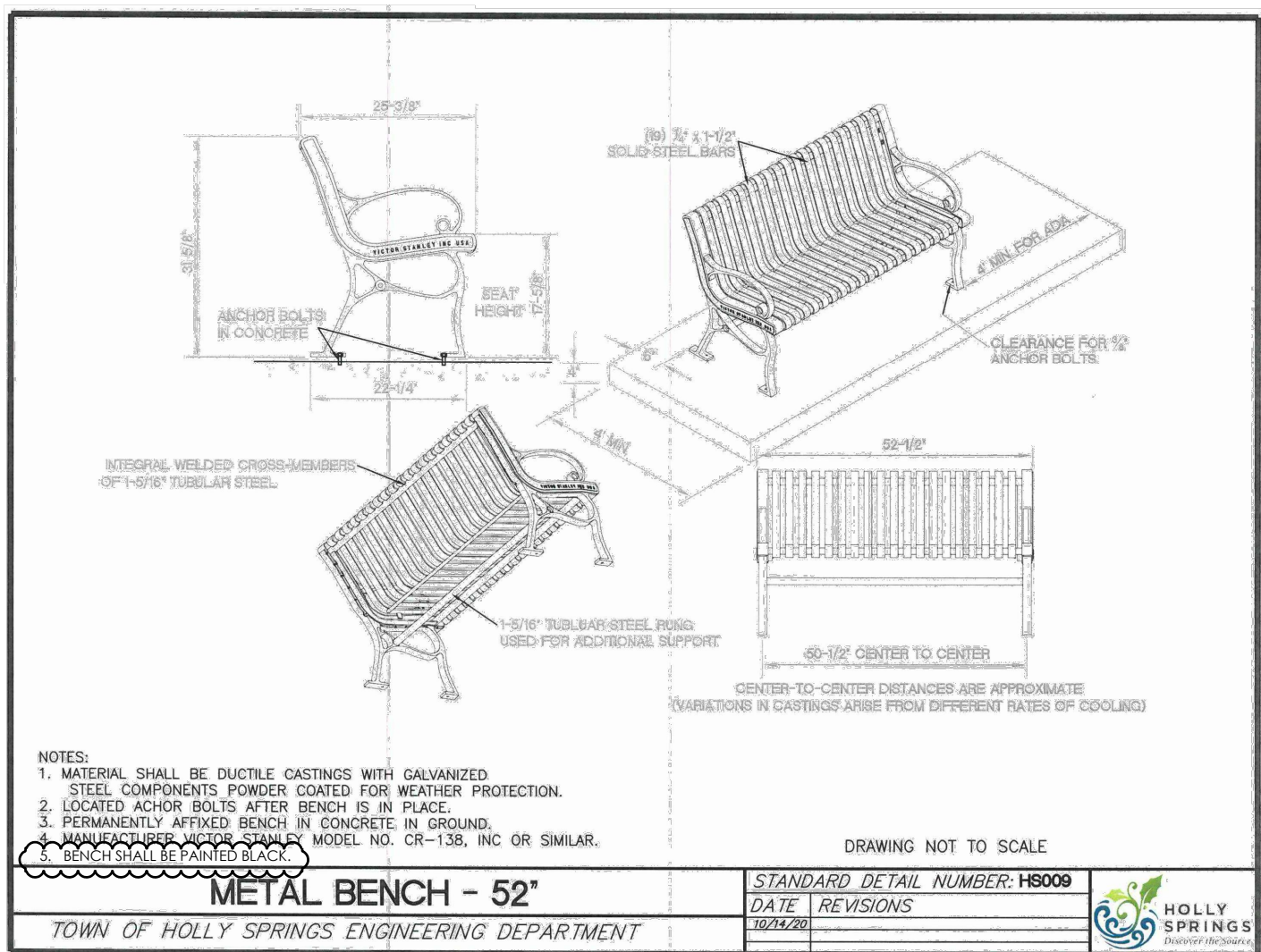
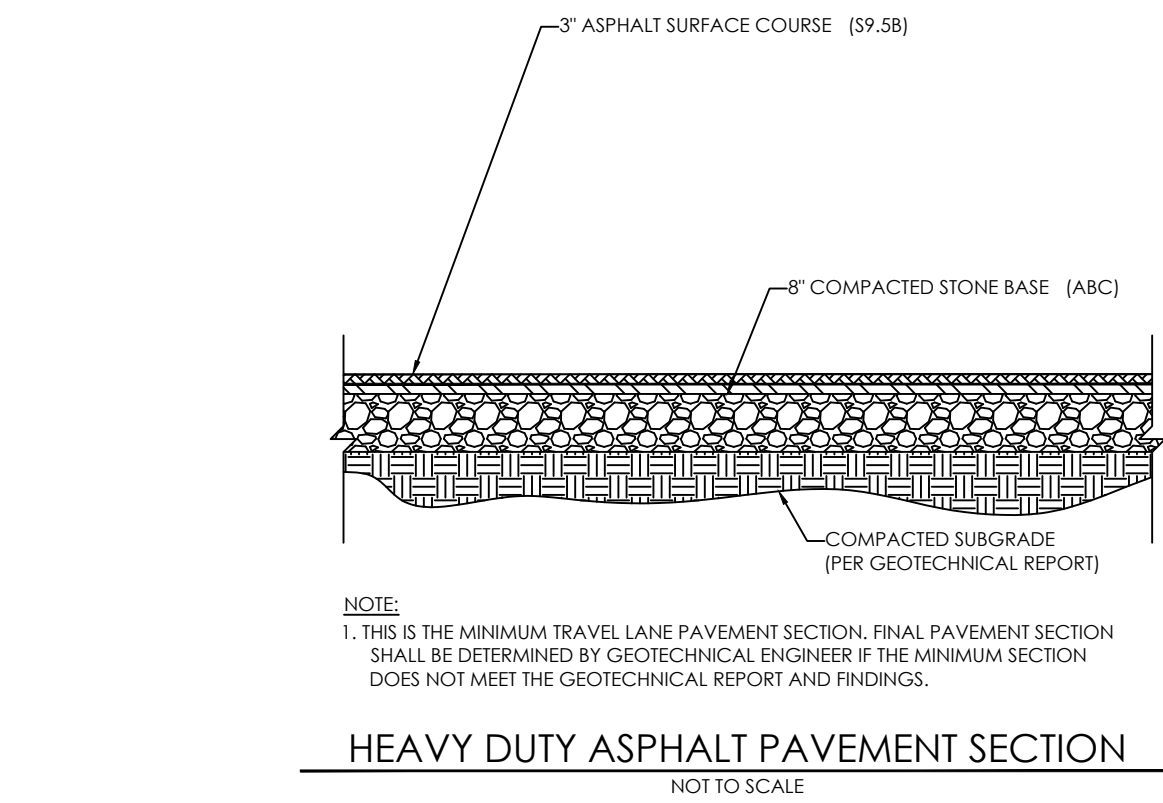
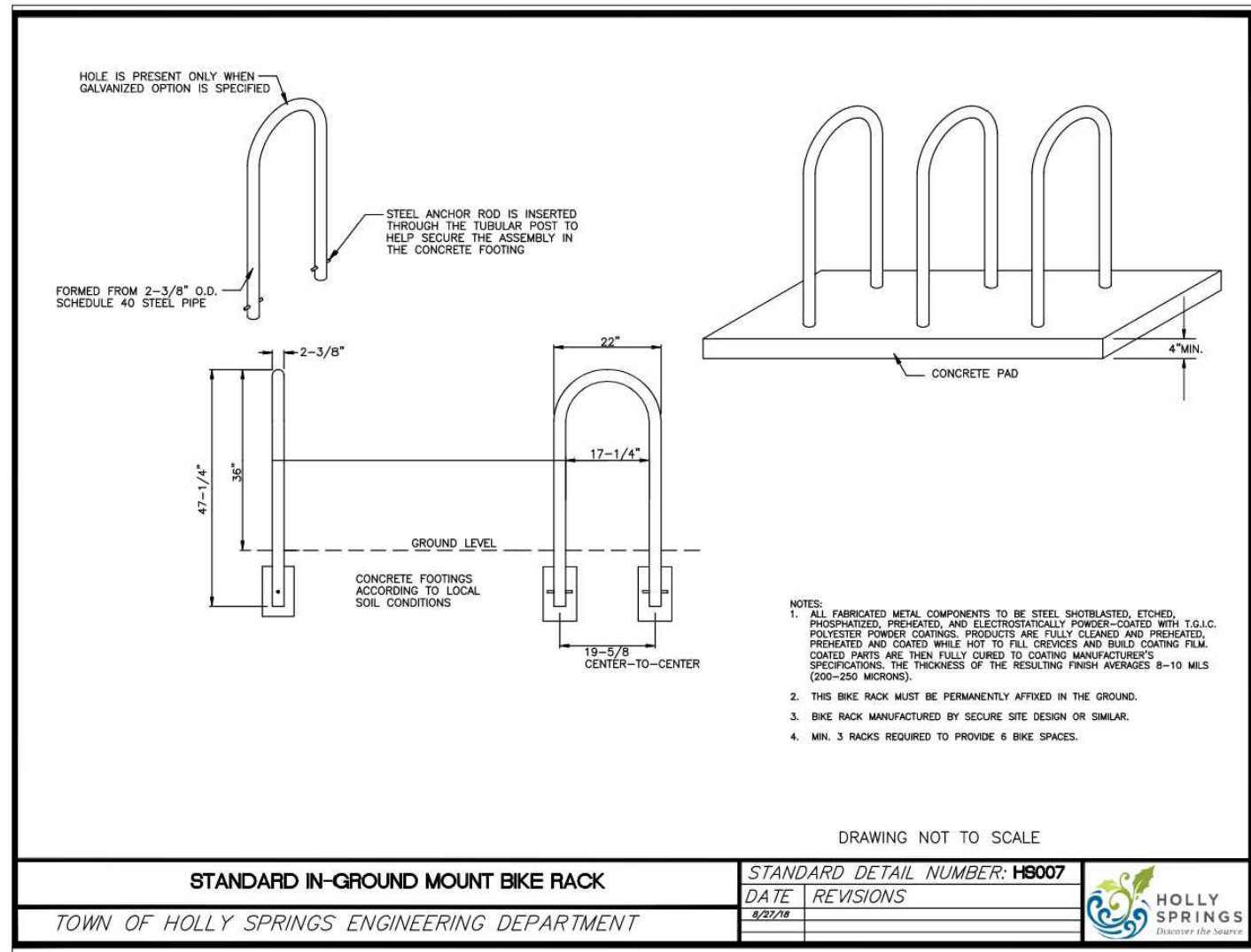
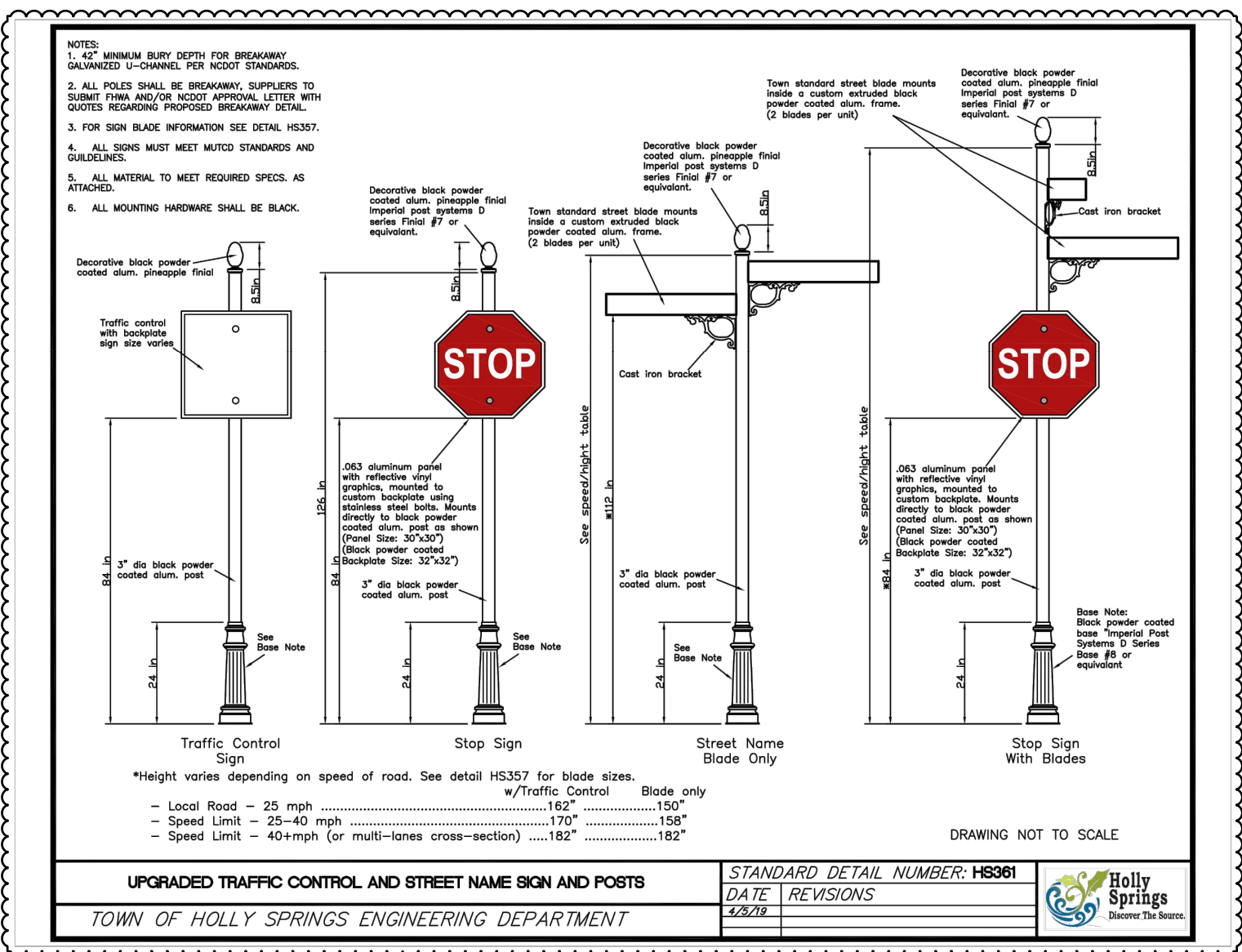
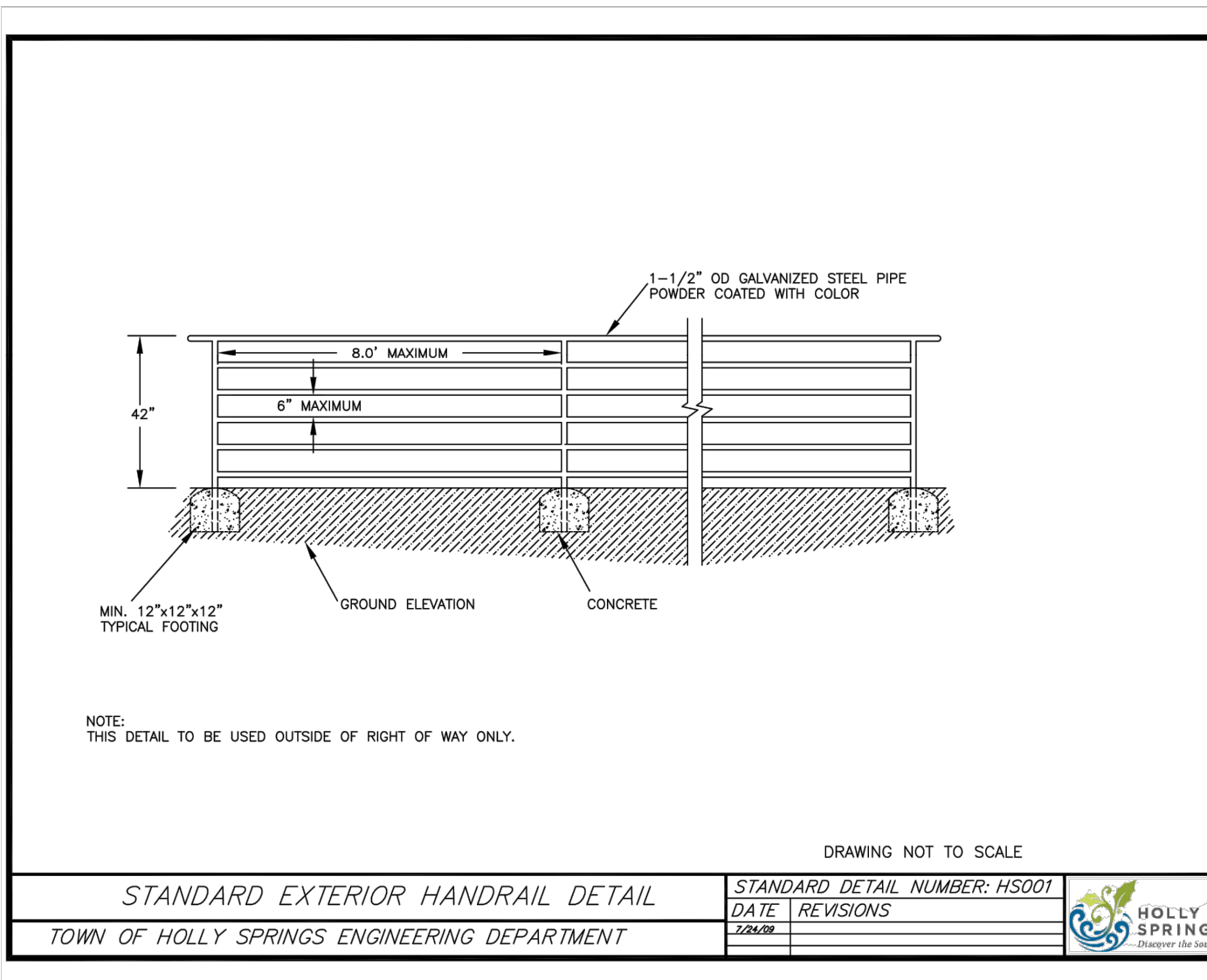
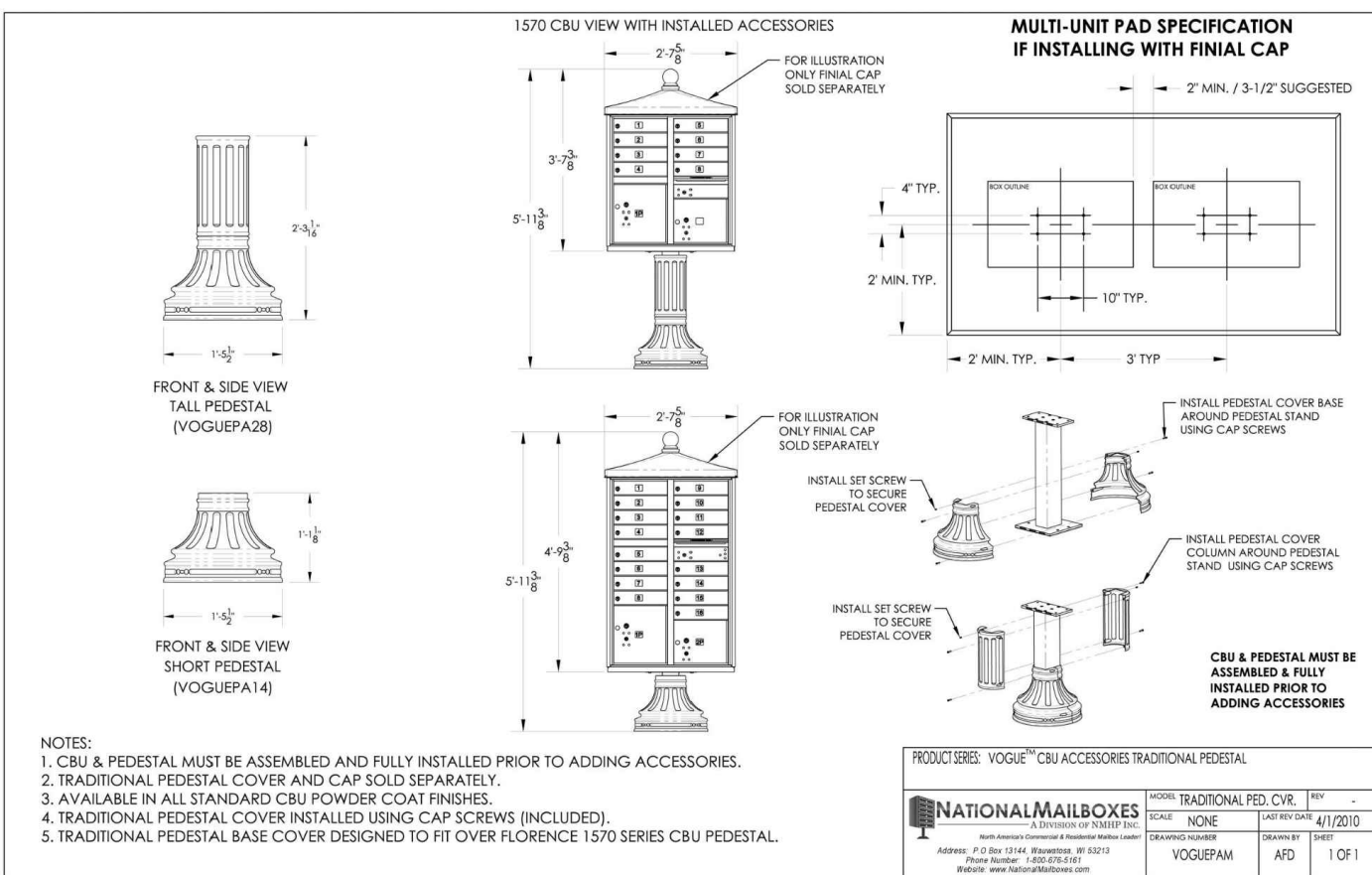
NORTH CAROLINA
PROFESSIONAL
ENGINEER
040768
MICHAEL A. ROSELLI
2023.12.20

SHEET:

UTILITY PLAN

C-400

Page 136 of 498

[illegible]

KNOW WHAT'S BELOW
ALWAYS CALL 811
BEFORE YOU DIG
It's fast. It's free. It's the law.

PROJECT:

370 GREEN OAKS DEVELOPMENT PLAN

370 GREEN OAKS PARKWAY
HOLLY SPRINGS, NC

PROJECT #: C22001
DRAWN BY: HN
REVIEWED BY: MR
1ST SUBMITTAL: 2023.07.07
SCALE: AS NOTED

PRELIMINARY
NOT FOR CONSTRUCTION

PREPARED FOR:

FOCUS DESIGN
BUILDERS, LLC

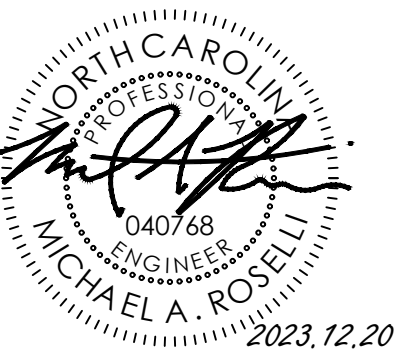
PREPARED BY:



underfoot
ENGINEERING

1149 EXECUTIVE CIRCLE
CARY, NC 27511
919.576.9733
BELS C3847 | NCBOLA C683

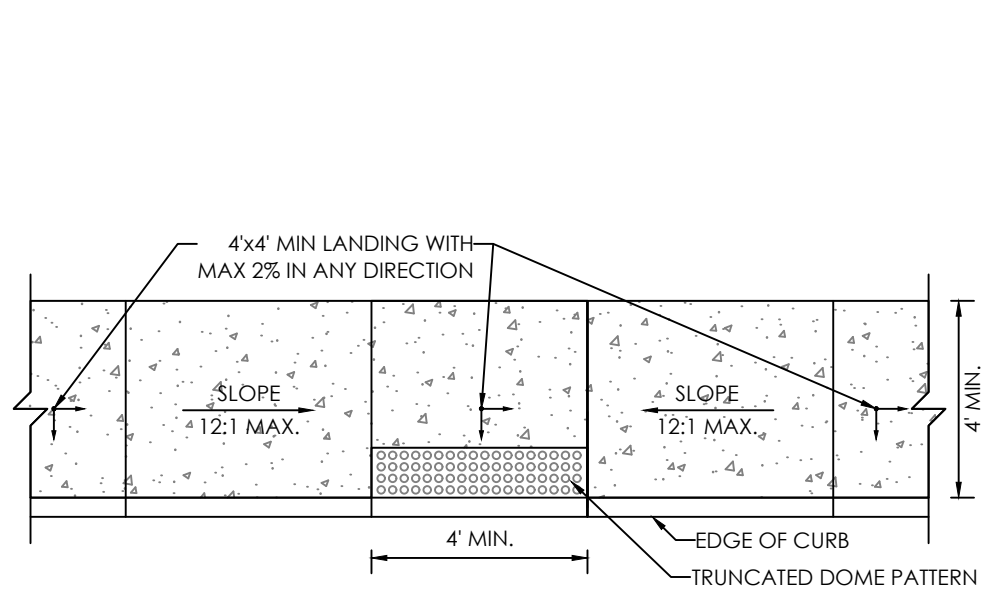
SEALED:



SHEET:

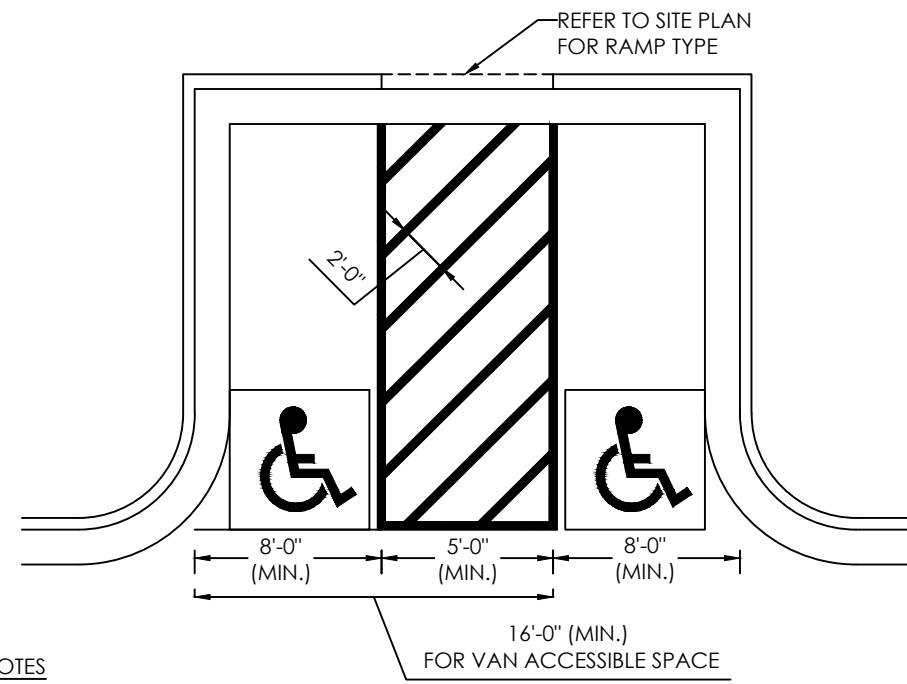
SITE DETAILS (1 OF 2)

C-500



NOTES:
ADA ACCESSIBLE RAMP CONSTRUCTION SHALL CONFORM TO CURRENT ADA ACCESSIBLE GUIDELINES.

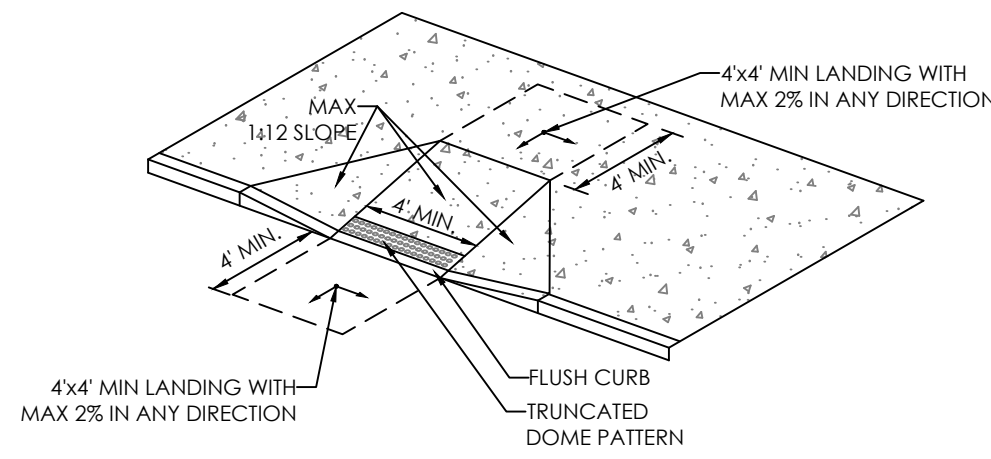
ADA ACCESSIBLE RAMP (TYPE 2)
NOT TO SCALE



NOTES

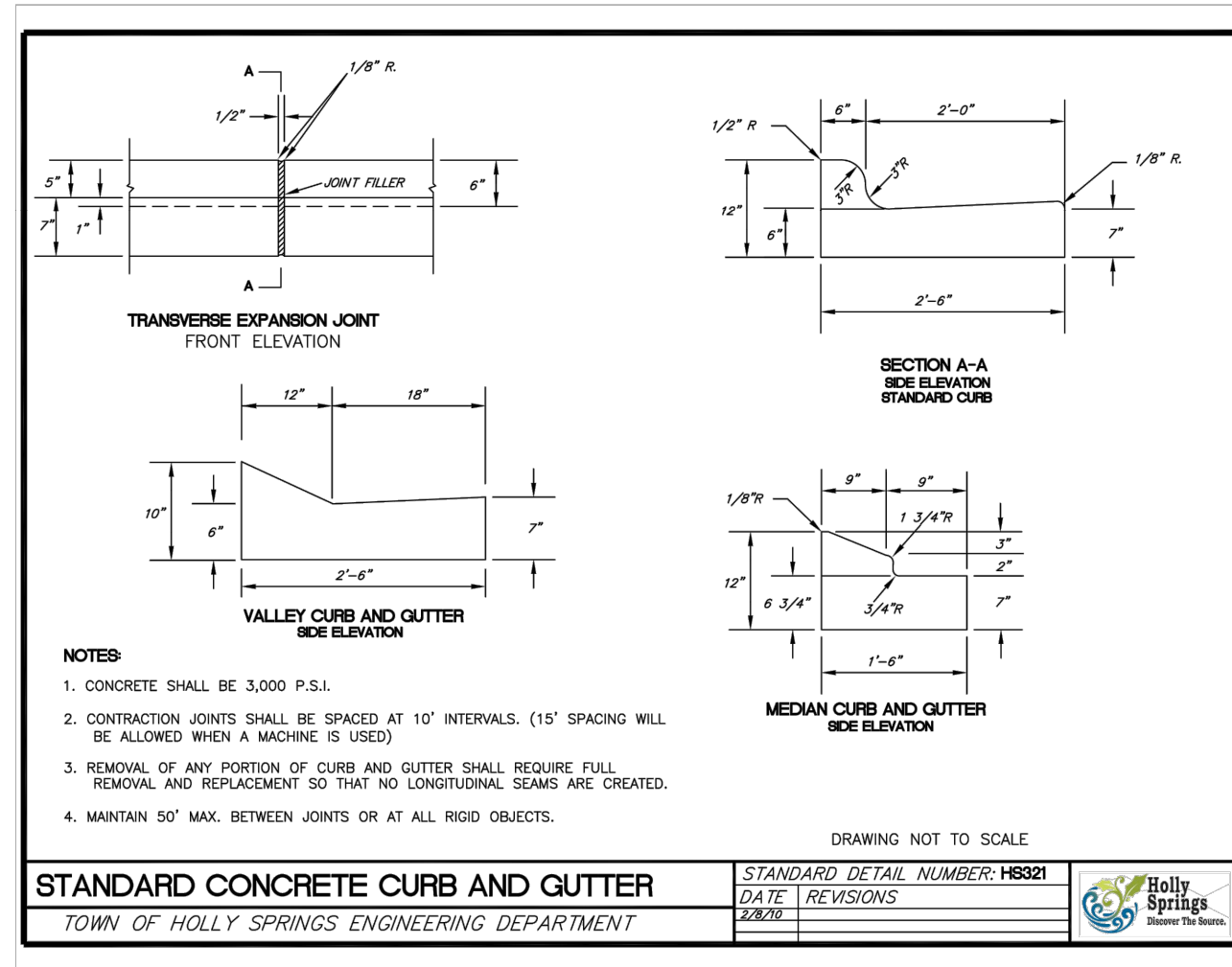
- ALWAYS FOLLOW ALL APPLICABLE GOVERNING AUTHORITY'S STANDARDS.
- ACCESSIBLE PARKING AND ACCESSIBLE ASILES SHALL NOT EXCEED 1:50 IN SLOPE IN ANY DIRECTION. IF ONLY ONE ACCESS ISLE IS INSTALLED, IT IS TO BE A VAN ACCESSIBLE. REFER TO SITE PLAN FOR SPECIFIC SPACE DIMENSIONS.
- PARKING STALL DIMENSIONING SHALL BE IN ACCORDANCE WITH APPLICABLE GOVERNING AUTHORITY'S AND ADA STANDARDS. IF DIFFERENT THAN THIS DETAIL, REFER TO DIMENSIONING SHOWN ON THE SITE LAYOUT PLAN AND NOTIFY THE ENGINEER.
- CONTRACTOR SHALL USE 4" WIDE WHITE REFLECTIVE PAINT FOR STRIPING ON ASPHALT PARKING LOTS, AND 4" WIDE YELLOW REFLECTIVE PAINT FOR STRIPING ON CONCRETE PARKING LOTS. APPLY SHERWIN-WILLIAMS SETFAST PREMIUM ALKYD ZONE MARKING PAINT A300 WHITE OR A303 YELLOW (OR APPROVED EQUAL) USING EITHER AIRLESS OR CONVENTIONAL LINE STRIPING EQUIPMENT. FOLLOW MIXING AND INSTALLATION INSTRUCTIONS PER MANUFACTURER.
- ADA SIGNS IN BOLLARDS AND BOLLARDS SHALL BE INSTALLED WHEN PARKING IS ADJACENT TO FLUSH CURBS, RAMPS, AND SIDEWALKS.

TYPICAL ADA STRIPING DETAIL
NOT TO SCALE



NOTES:
1. ADA ACCESSIBLE RAMP CONSTRUCTION SHALL CONFORM TO CURRENT ADA ACCESSIBLE GUIDELINES.

ADA ACCESSIBLE RAMP (TYPE 1)
NOT TO SCALE



STANDARD CONCRETE CURB AND GUTTER
TOWN OF HOLLY SPRINGS ENGINEERING DEPARTMENT

STANDARD DETAIL NUMBER: HSB21
DATE: 2/20/20
REVISIONS:



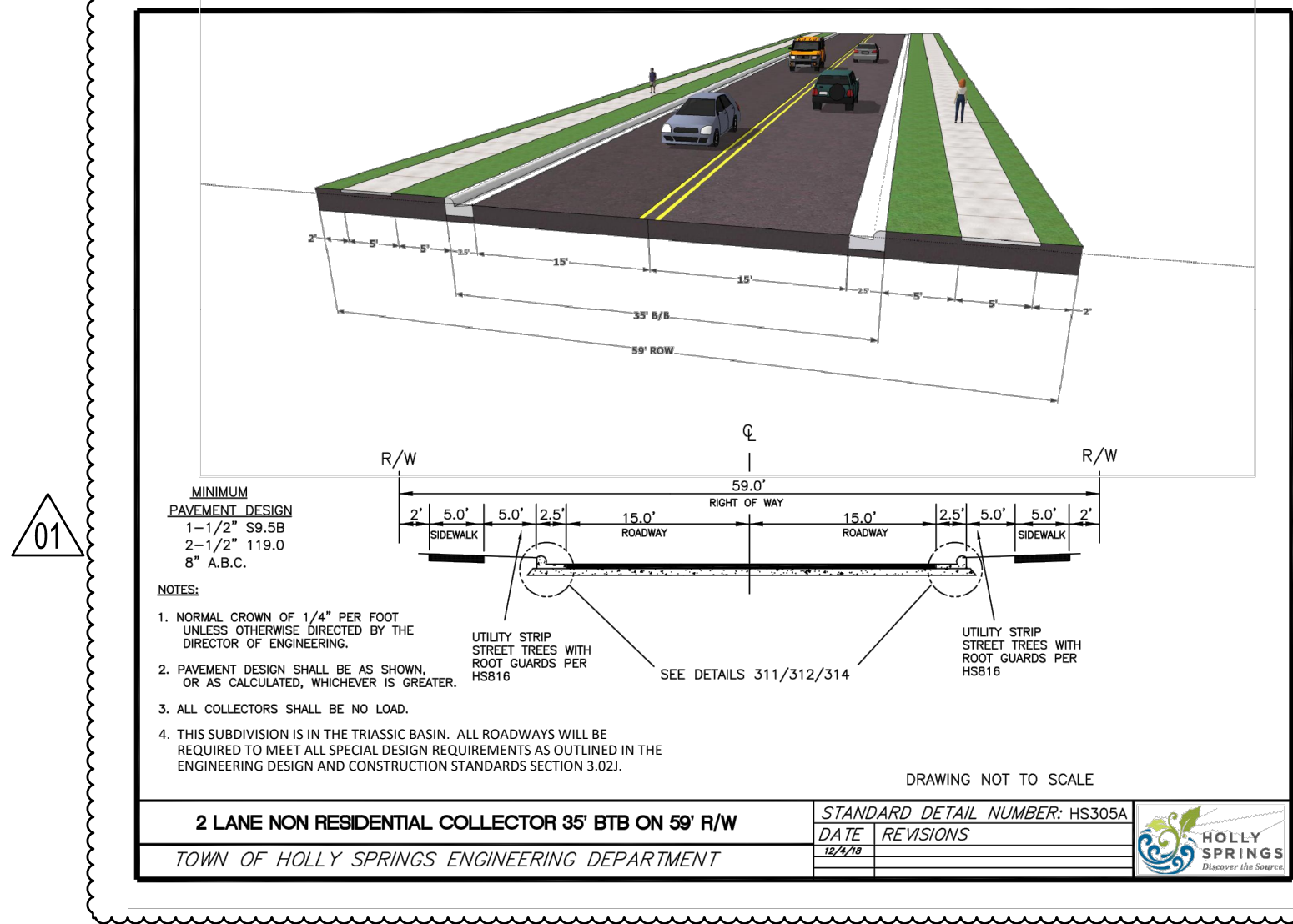
FIGURE 2

PARKING LOT STALL DIMENSIONS									
APPLICATION	STANDARD			STANDARD			STANDARD		
	STALL WIDTH (FEET)	STALL LENGTH (FEET)	STALL DEPTH (FEET)	STALL WIDTH (FEET)	STALL LENGTH (FEET)	STALL DEPTH (FEET)	STALL WIDTH (FEET)	STALL LENGTH (FEET)	STALL DEPTH (FEET)
CUSTOMER	10	18	18	10	18	18	10	18	18
EMPLOYEE	10	18	18	10	18	18	10	18	18
STANDARD	10	18	18	10	18	18	10	18	18
MINIMUM	10	18	18	10	18	18	10	18	18

NOTE: CHS FOR 90 DEGREE PARKING
DHL FOR 90 DEGREE PARKING
LH18 FT (FACE TO CURB)

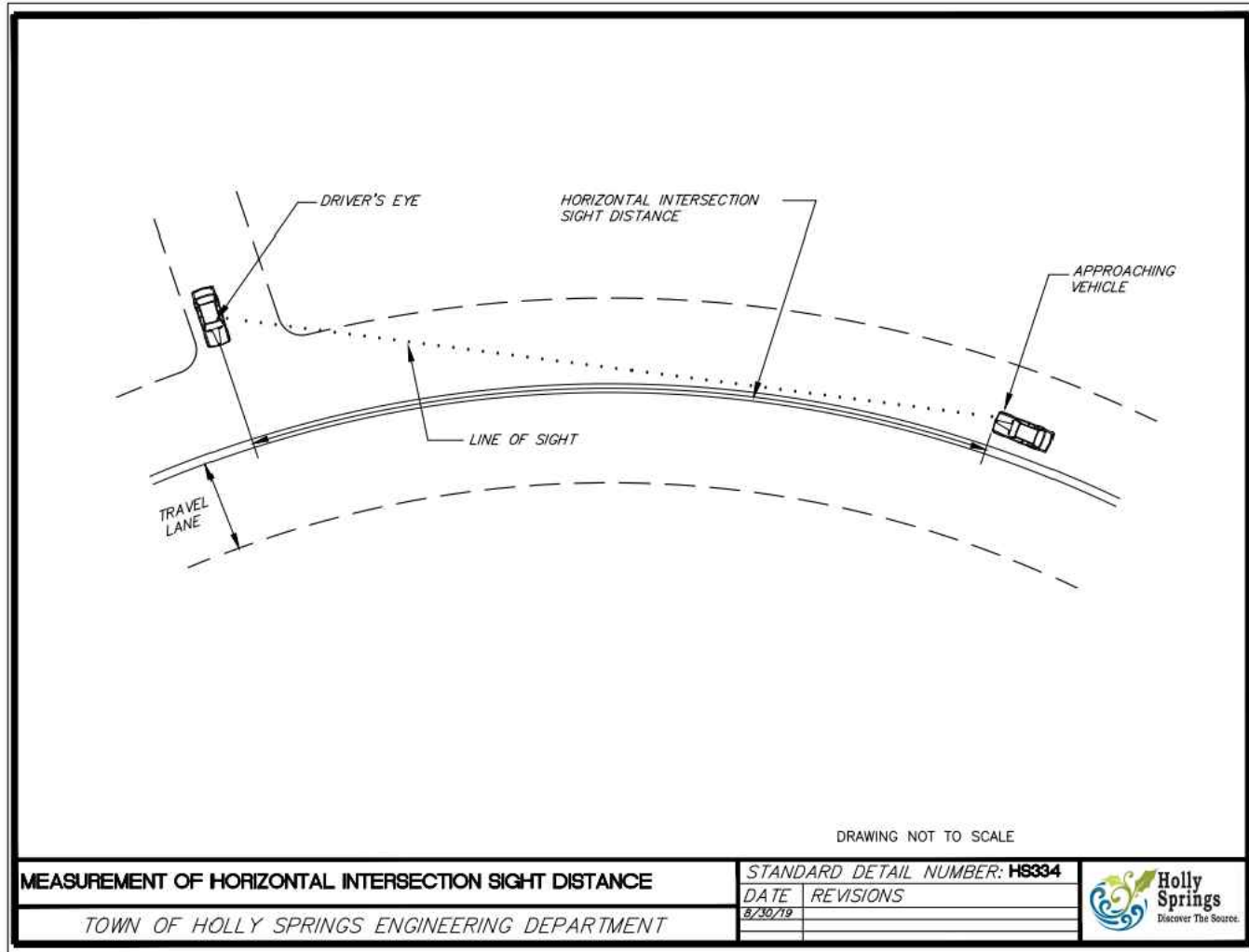
PARKING LOT STALL DIMENSIONS
TOWN OF HOLLY SPRINGS ENGINEERING DEPARTMENT

STANDARD DETAIL NUMBER: HSB300
DATE: 2/20/20
REVISIONS:



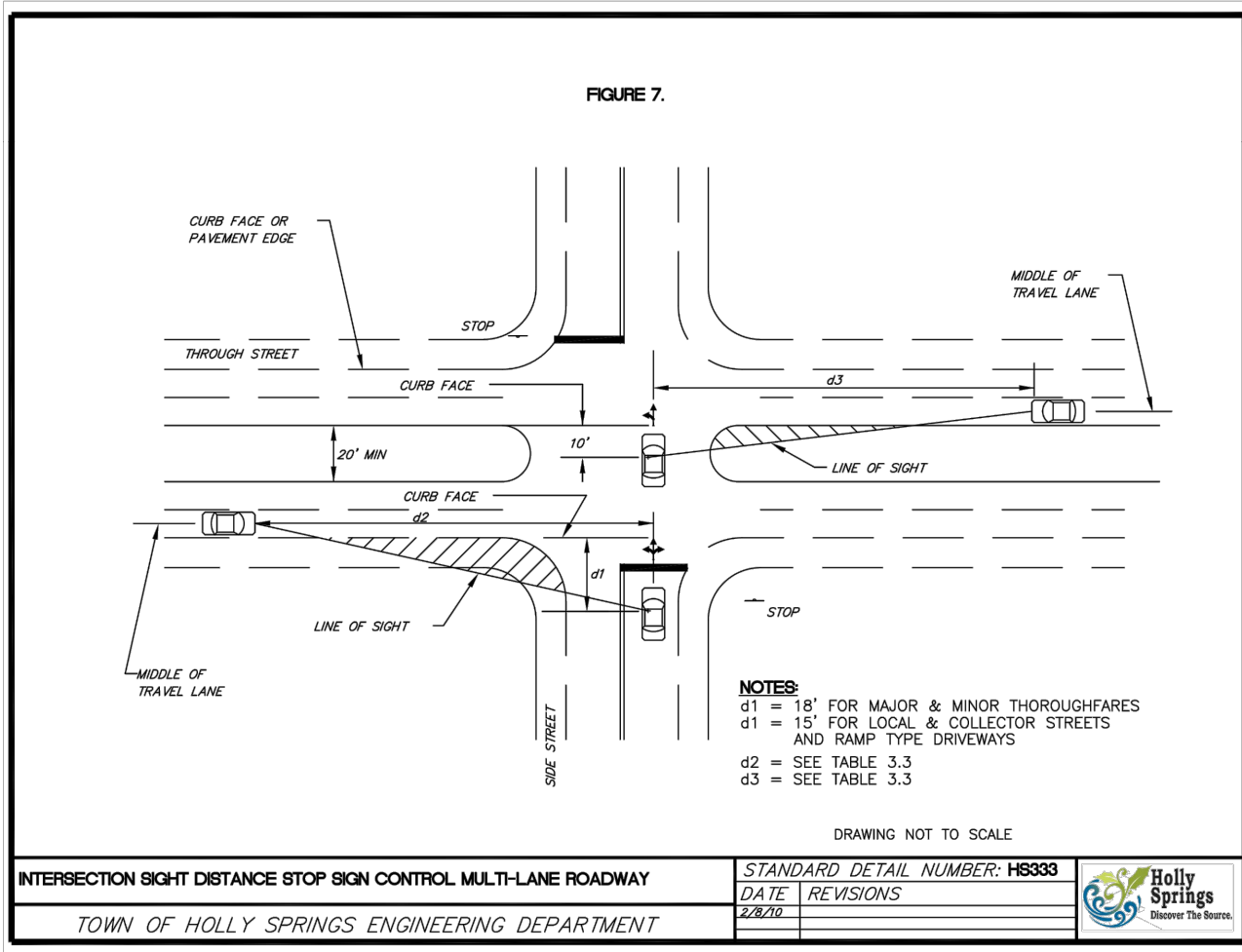
2 LANE NON RESIDENTIAL COLLECTOR 35' BTB ON 59' R/W
TOWN OF HOLLY SPRINGS ENGINEERING DEPARTMENT

STANDARD DETAIL NUMBER: HS305A
DATE: 2/20/20
REVISIONS:



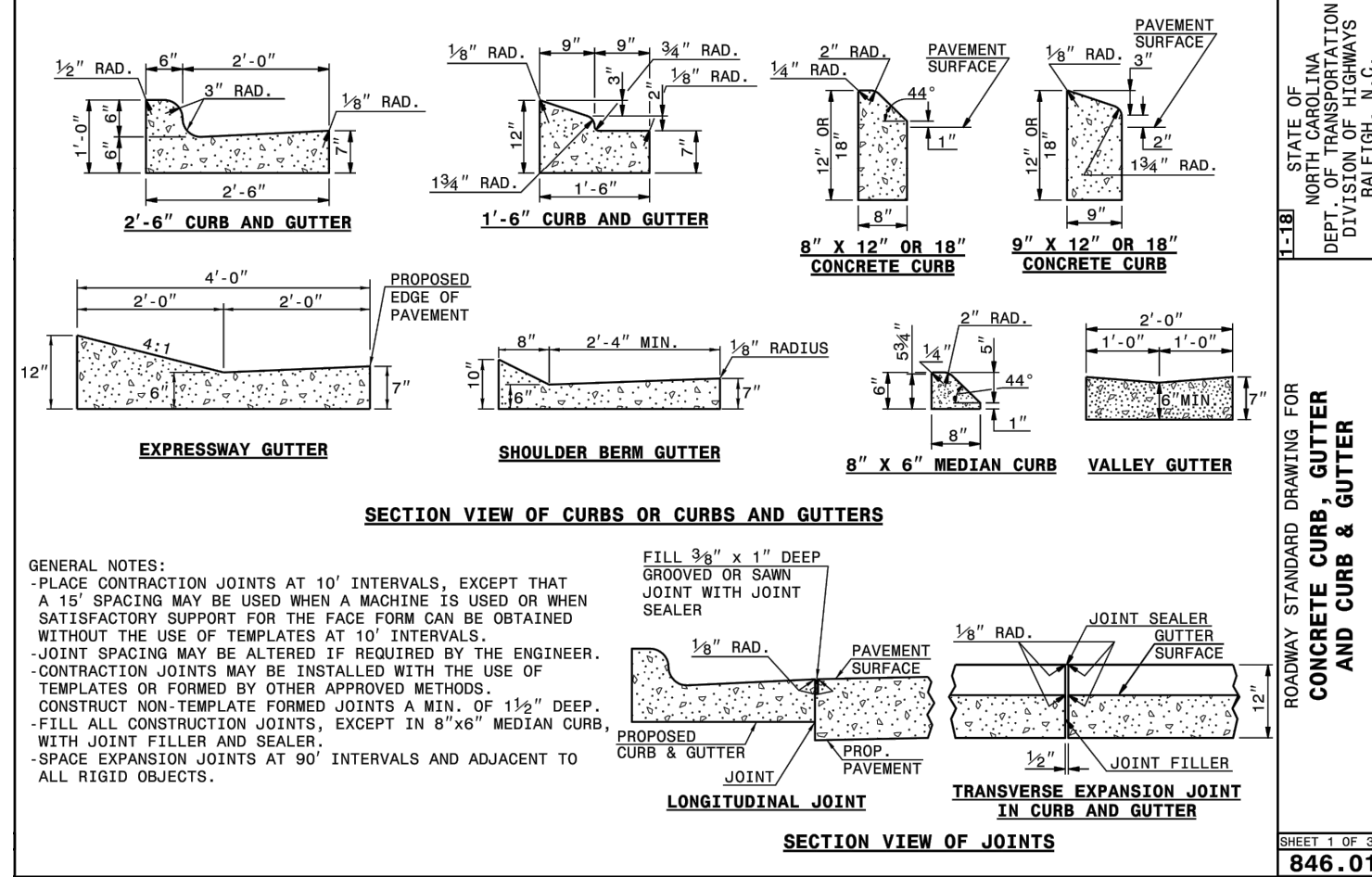
MEASUREMENT OF HORIZONTAL INTERSECTION SIGHT DISTANCE
TOWN OF HOLLY SPRINGS ENGINEERING DEPARTMENT

STANDARD DETAIL NUMBER: HSB334
DATE: 2/20/20
REVISIONS:



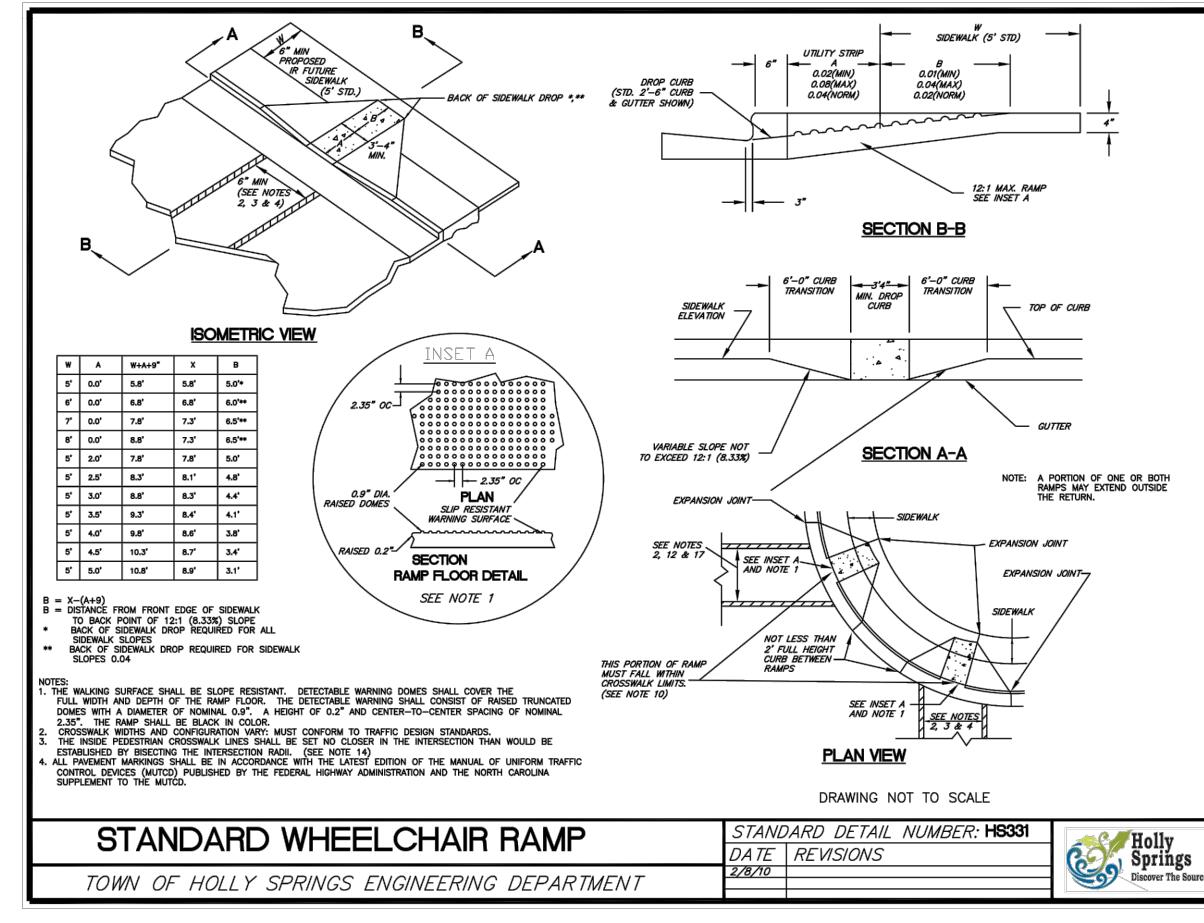
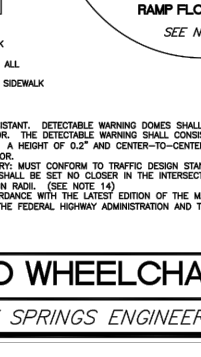
INTERSECTION SIGHT DISTANCE STOP SIGN CONTROL MULTI-LANE ROADWAY
TOWN OF HOLLY SPRINGS ENGINEERING DEPARTMENT

STANDARD DETAIL NUMBER: HSB338
DATE: 2/20/20
REVISIONS:



ROADWAY STANDARD DRAWING FOR CONCRETE CURB AND GUTTER
TOWN OF HOLLY SPRINGS ENGINEERING DEPARTMENT

STANDARD DETAIL NUMBER: HSB339
DATE: 2/20/20
REVISIONS:



STANDARD WHEELCHAIR RAMP
TOWN OF HOLLY SPRINGS ENGINEERING DEPARTMENT

STANDARD DETAIL NUMBER: HSB300
DATE: 2/20/20
REVISIONS:



PLAN REVISIONS			
#	DATE	REVISION	BY
1	2023.08.25	TOHS COMMENTS	MP
2	2023.10.20	TOHS COMMENTS	MP
3	2023.12.21	TOHS COMMENTS	MP

811

KNOW WHAT'S BELOW
ALWAYS CALL 811
BEFORE YOU DIG

It's fast. It's free. It's the law.

PROJECT:

370 GREEN OAKS DEVELOPMENT PLAN

370 GREEN OAKS PARKWAY
HOLLY SPRINGS, NC

PROJECT #:
DRAWN BY:
REVIEWED BY:
1ST SUBMITTAL:
SCALE:

PRELIMINARY
NOT FOR CONSTRUCTION

PREPARED FOR:

FOCUS DESIGN
BUILDERS, LLC

PREPARED BY:

underfoot
ENGINEERING

1149 EXECUTIVE CIRCLE
CARY, NC 27511
919.576.9733
NCBELS C3847 | NCBCOLA C683

SEALED:

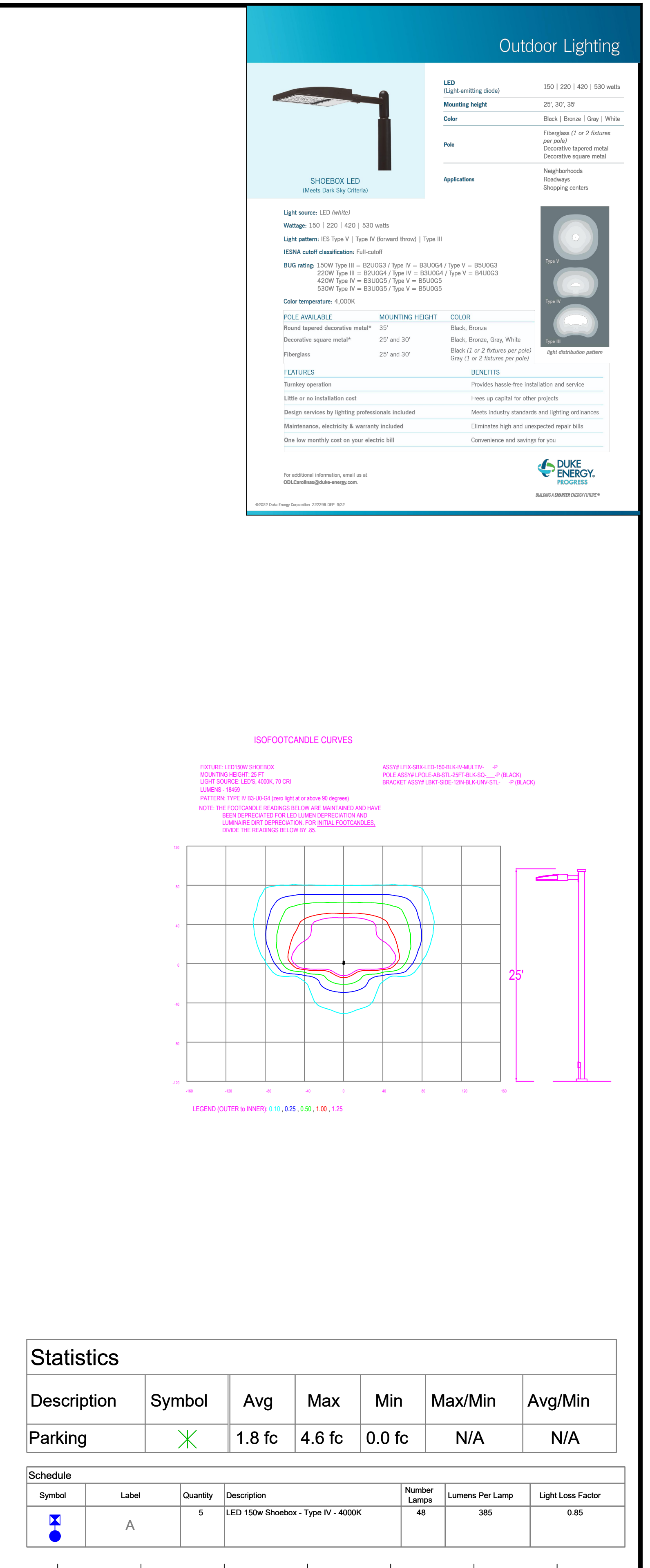


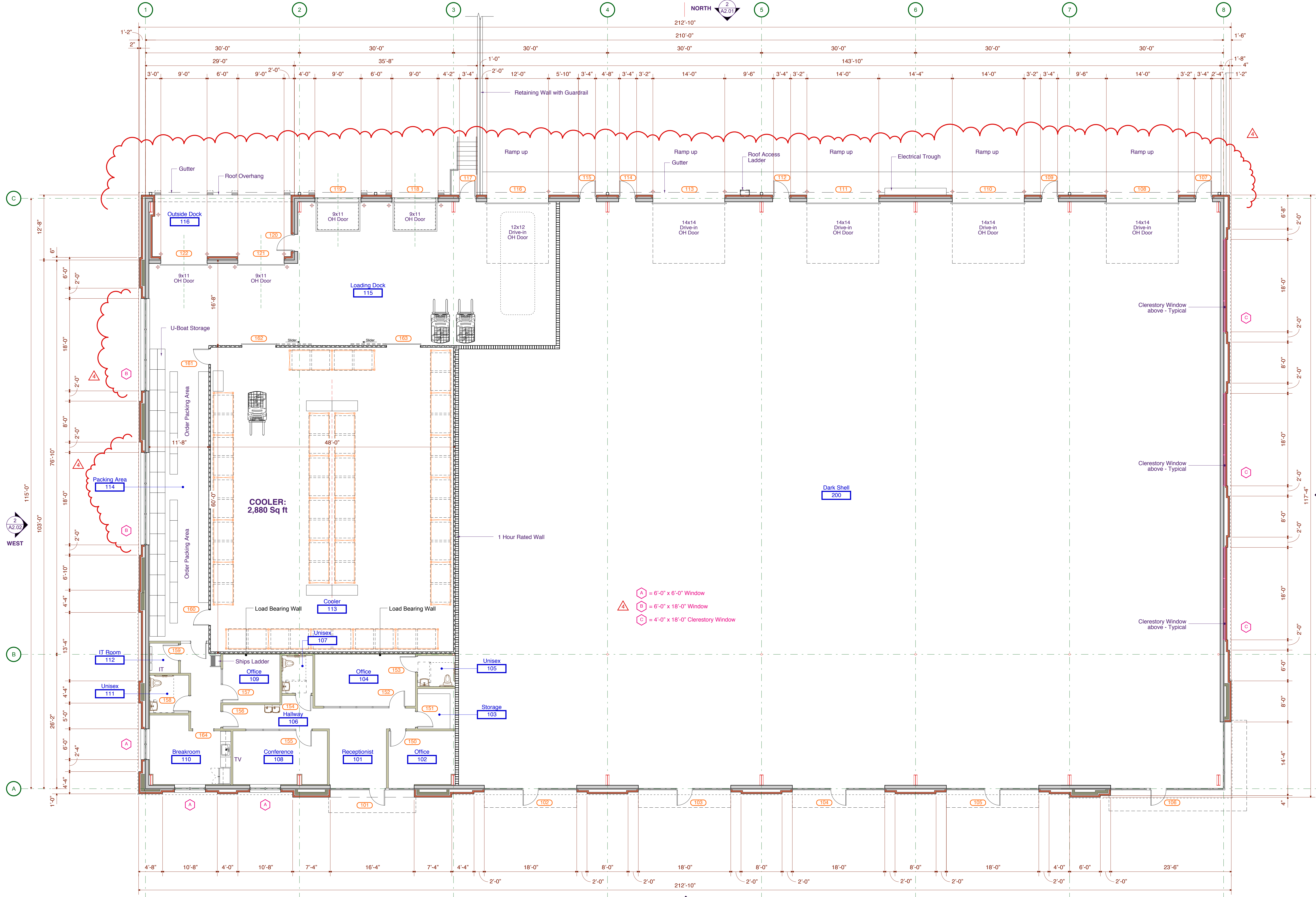
SHEET:

SITE DETAILS (2 OF 2)

C-501

ALL CONSTRUCTION MUST BE PERFORMED IN ACCORDANCE WITH CURRENT
STANDARDS, SPECIFICATIONS AND DETAILS IN PLACE AT TIME OF PLAN APPROVAL

Page 141 of 49

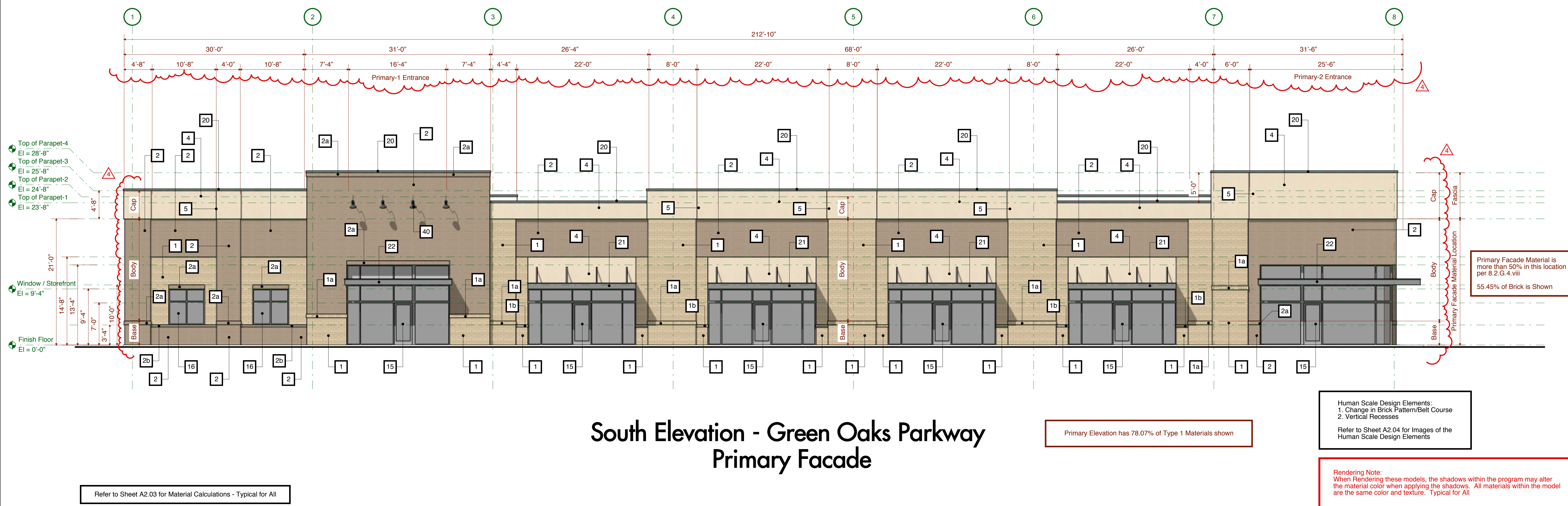


D'Andrea Provisions South Building

PROJECT:	2021-27
DATE ISSUED:	01.04.24
REVISIONS:	DATE
A Site Comments	11.21.32

DRAWN BY: JMM
CHECK BY: JMM
Overall Floor Plan

OVERALL BUILDING:
23,802.00 Sq ft

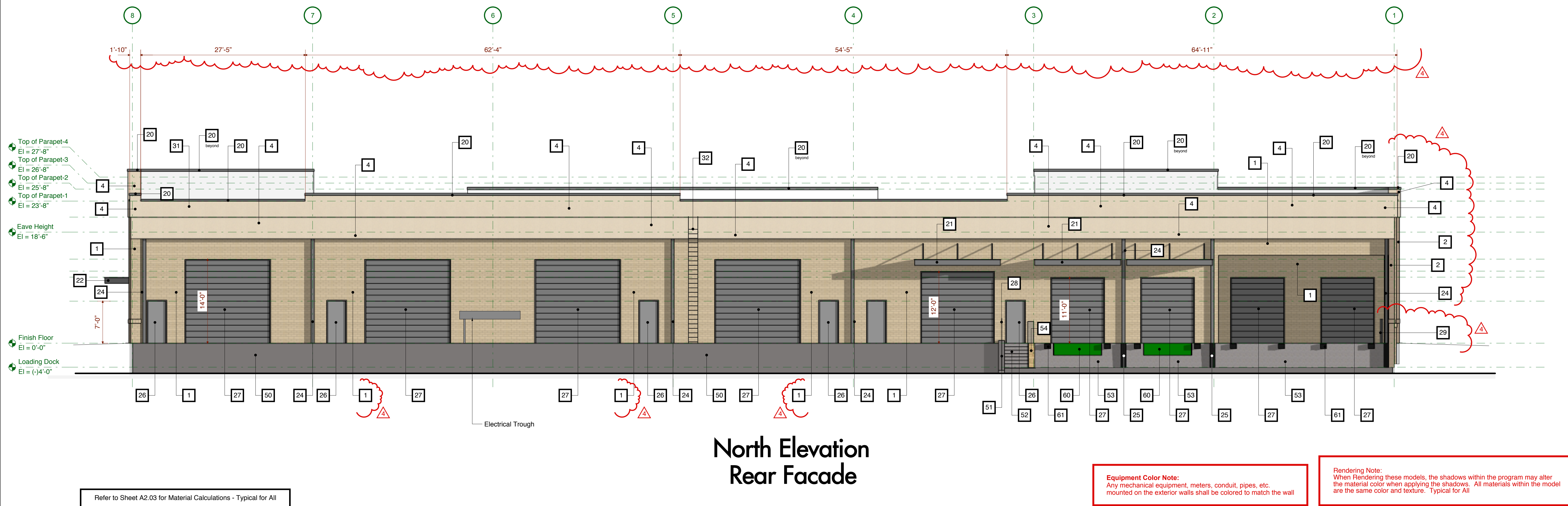


**South Elevation - Green Oaks Parkway
Primary Facade**

1 Overall Elevation

Scale: 1/8" = 1'-0"

10' 0' 2' 4' 6' 8' 10'



**North Elevation
Rear Facade**

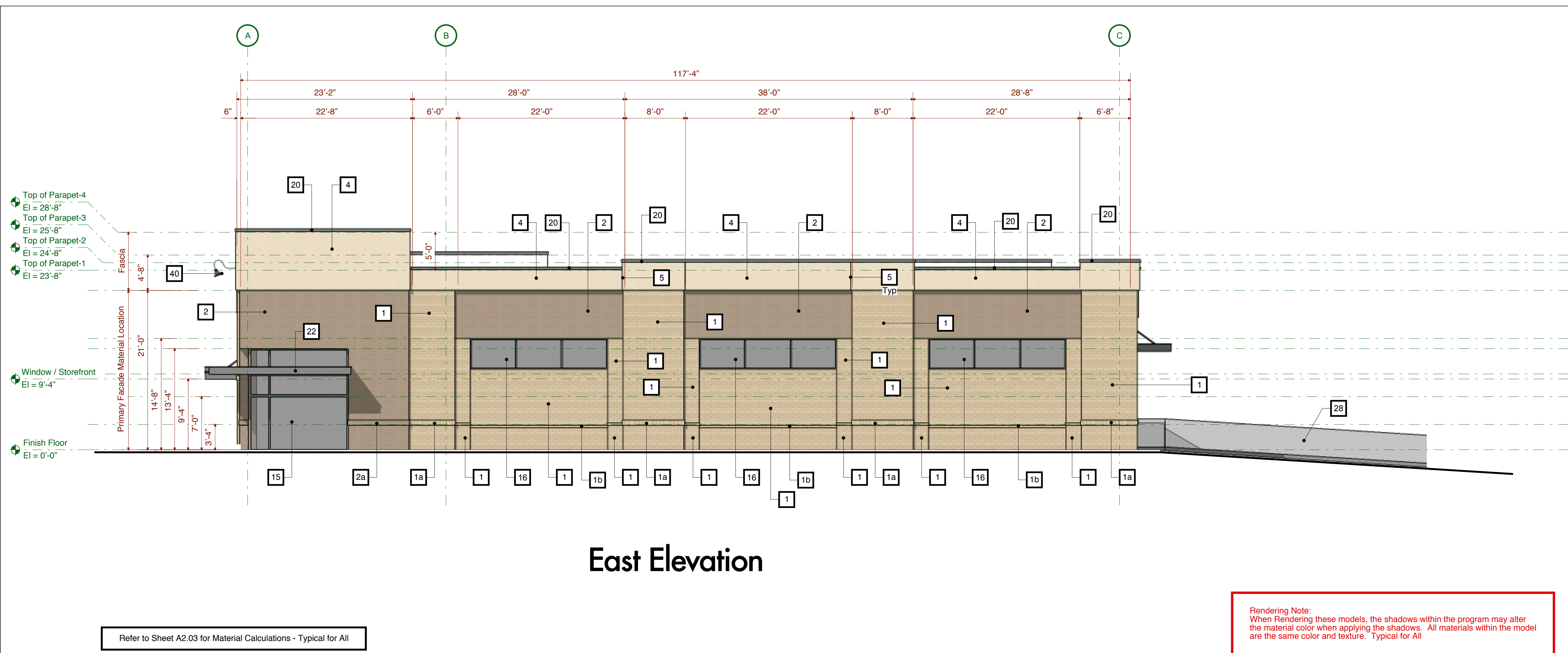
2 Overall Elevation

Scale: 1/8" = 1'-0"

10' 0' 2' 4' 6' 8' 10'

Equipment Color Note:
Any mechanical equipment, meters, conduit, pipes, etc.
mounted on the exterior walls shall be colored to match the wall

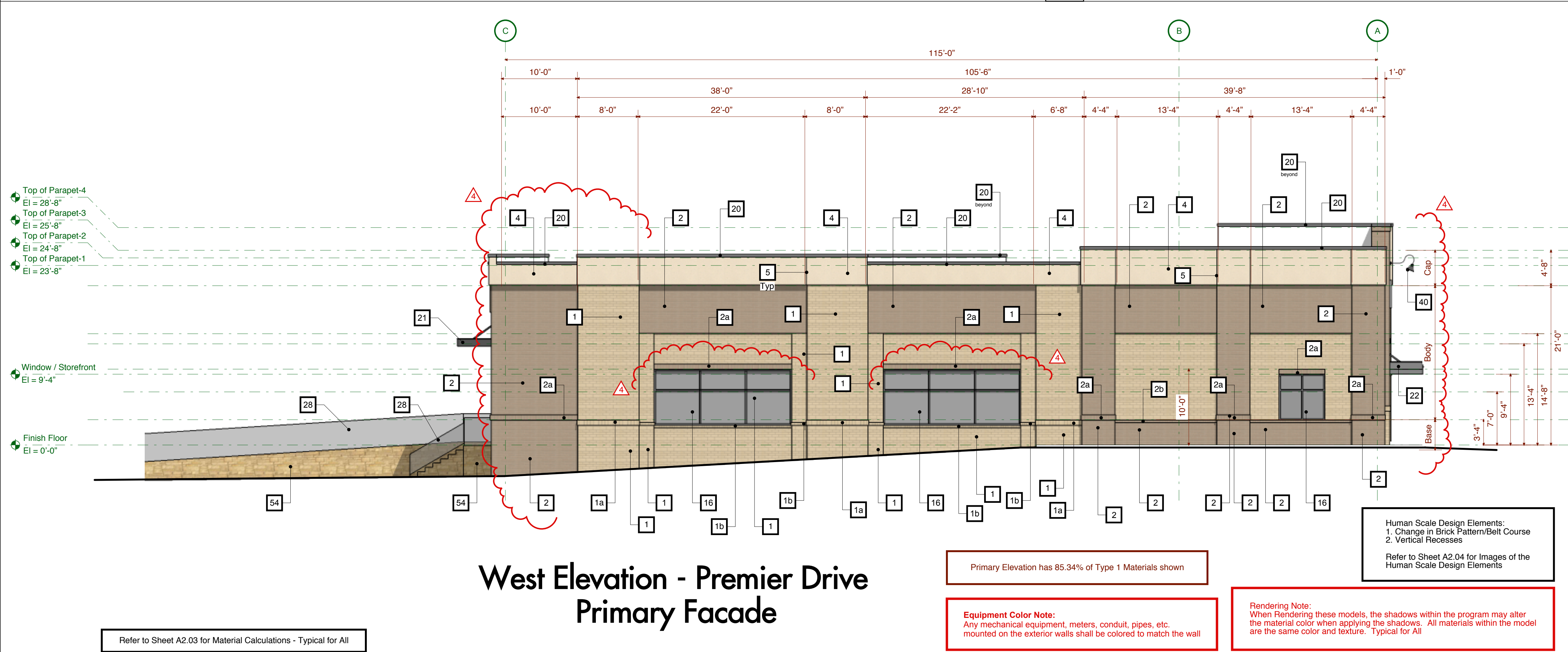
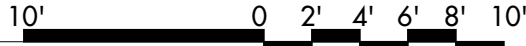
Rendering Note:
When Rendering these models, the shadows within the program may alter
the material color when applying the shadows. All materials within the model
are the same color and texture. Typical for All



East Elevation

1 Overall Elevation

Scale: 1/8" = 1'-0"



West Elevation - Premier Drive Primary Facade

2 Overall Elevation

Scale: 1/8" = 1'-0"



Material Legend

- 1 Brick Veneer: Color-1: Glen-Gery: Dolomite Grey Smooth Brick
- 1a Brick Veneer-Solider: Color-1: Glen-Gery: Dolomite Grey Smooth Brick
- 1b Brick Veneer-Rowlock: Color-1: Glen-Gery: Dolomite Grey Smooth Brick
- 2 Brick Veneer: Color-2: Glen-Gery: Pearl River Smooth
- 2a Brick Veneer-Solider: Color-2: Glen-Gery: Pearl River Smooth
- 2b Brick Veneer-Rowlock: Color-2: Glen-Gery: Pearl River Smooth
- 3 Not Used
- 4 EIFS Veneer: Color: Dryvit: Outsulation System: Color #403 Doeskin
- 5 EIFS Veneer Reveal: 1" Reveal
- 6 Not Used
- 7 PEMB Exterior Column: Gray (at Loading Dock behind wall)
- 8 Not Used
- 15 Aluminum Storefront Door/Entrance: Clear Anodized Aluminum
- 16 Aluminum Storefront (Window): Clear Anodized Aluminum
- 17 Not Used
- 18 Not Used
- 19 Not Used
- 20 Prefinish Aluminum Cap Flashing: Color: Sherwin Williams: SW 7019 Gauntlet Gray
- 21 Prefinish Aluminum Canopy: Color: Sherwin Williams: SW 7019 Gauntlet Gray
- 22 Prefinish Aluminum Trimmed Canopy (Built Cantilevered Canopy): Color: Sherwin Williams: SW 7019 Gauntlet Gray
- 23 Prefinish Aluminum Gutter: Color: Sherwin Williams: SW 7019 Gauntlet Gray
- 24 Prefinish Aluminum Downspout: Color: Sherwin Williams: SW 7019 Gauntlet Gray
- 25 Painted Metal Downspout Boot: Color: Sherwin Williams: SW 7019 Gauntlet Gray
- 26 Painted Man Door and Door Trim: Color: Sherwin Williams: SW 7019 Gauntlet Gray
- 27 Prefinish Aluminum Overhead Door (OHD): Color: Manufacturer's Gray
- 28 Painted Metal Railing and Guardrails: Color: Sherwin Williams: SW 6258 Tricorn Black
- 29 Painted Metal Bollards: Color: Sherwin Williams: SW 7019 Gauntlet Gray
- 30 Not Used
- 31 Not Used
- 32 Roof Top Access Ladder: Color: Sherwin Williams: SW 7019 Gauntlet Gray
- 33 Not Used
- 40 Exterior Signage Light Fixture
- 41 Not Used
- 50 Concrete Ramp
- 51 Concrete Ramp Retaining Wall
- 52 Concrete Steps and Landing
- 53 Concrete Loading Dock Retaining Wall:
- 54 Concrete Ramp Retaining Wall and Concrete Landing facing West will have simulated Stone Pattern cast into concrete
- 60 Dock Leveler: Color: Manufacturer Green - standard
- 61 Dock Bumper: Color: Manufacturer Black - standard

Brick Veneer: Color-1: Glen-Gery: Dolomite Grey Smooth Brick



Brick Veneer: Color-2: Glen-Gery: Pearl River Smooth



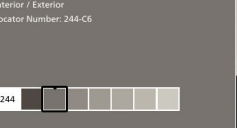
EIFS Veneer: Color: Dryvit: Outsulation System: Color #403 Doeskin



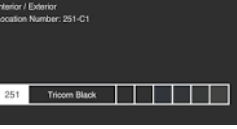
Aluminum Storefront: Clear Anodized Aluminum



Prefinish Aluminum Trim, Cap Flashing, etc.: Color: Sherwin Williams: SW 7019 Gauntlet Gray



Railing and Guardrails: Color: Sherwin Williams: SW 6258 Tricorn Black



D'Andrea Provisions
South Building

PROJECT:	2021-27
DATE ISSUED:	01.04.24
REVISIONS:	DATE
Site Comments	11.21.32
Site Comments	01.04.24

DRAWN BY: JMM
CHECK BY: JMM
Overall Elevations



2021-27 Boar's Head Provisions - Holly Springs UDO											
Section 8.2 Building Design Standards											
Building Type: Industrial and Warehouse Building											
Building Scale: Small Building (any building less than or equal to 25,000 SF)											
	Materials	Type	Front Elevation: South - Green Oaks Parkway		Rear Elevation: North		Side-1 Elevation: East		Side-2 Elevation: West - Premier Drive		
Masonry											
Brick-1	Glen-Gery: Dolomite Grey Smooth Brick	UDO Type-1	1,288.39	23.51%	2,488.00	47.48%	1,335.53	46.00%	1,234.00	40.96%	
Brick-2	Geln-Gery: Pearl River Smooth	UDO Type-1	1,749.71	31.93%			693.31	23.88%	1,037.00	34.42%	
Sub total			3,038.10	55.45%							
EIFS											
EIFS-1	Dryvit: Colot #403 Doeskin	UDO Type-2	1,088.97	19.87%	1,280.00	24.62%	461.06	15.88%	442.00	14.67%	
Sub total											
Storefront											
SF-1	Kanveer: Clear Anodized Aluminum	UDO Type-1	1,240.03	22.63%			399.00	13.74%	300.00	9.96%	
Sub total											
Canopy											
CA-1	Match Sherwin Williams: SW 7019 Gauntlet Gray	UDO Type-1	112.32	2.05%			14.37	0.49%			
Sub total											
Door, OHD	Man Door and Overhead Doors on rear of building				1,450.00	27.90%					
Simulated Stone	Concrete Retaining Wall and Stair to have Simulated Stone Pattern will be cast into the concrete and painted	UDO Type-4							250.31	this SF is not calculated in the façade calculations	
Sub total											
			5,479.42	100.00%	5,198.00	100.00%	2,903.27	100.00%	3,013.00		
Gross Area			5,479.42		5,198.00		2,903.27		3,013.00		
Cap			1,008.42	18.40%	NA		461.06	15.88%	391.24	14.82%	
Body			3,799.02	69.33%	NA		2,054.56	70.77%	1,904.72	72.14%	
Base			671.98	12.26%	NA		387.65	13.35%	344.31	13.04%	
			5,479.42	100.00%			2,903.27	100.00%	2,640.27	100.00%	
Transparency	Finish Floor to vertical elevation of 10'-0"										
Wall Surface			1,209.53	56.84%					876.00	74.49%	
Glass			918.47	43.16%					300.00	25.51%	
Total			2,128.00	100.00%					1,176.00	100.00%	

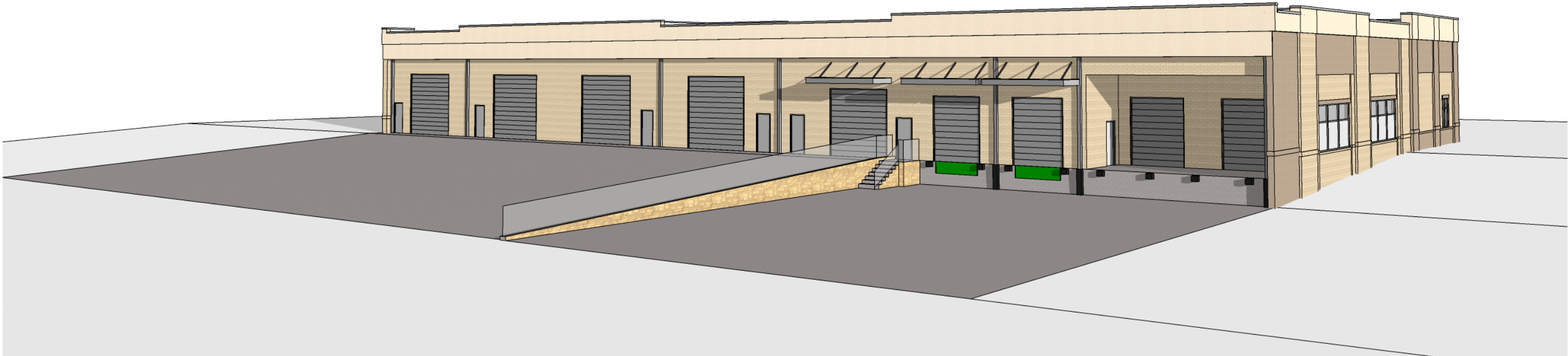


West Elevation - Premier Drive
Primary Facade

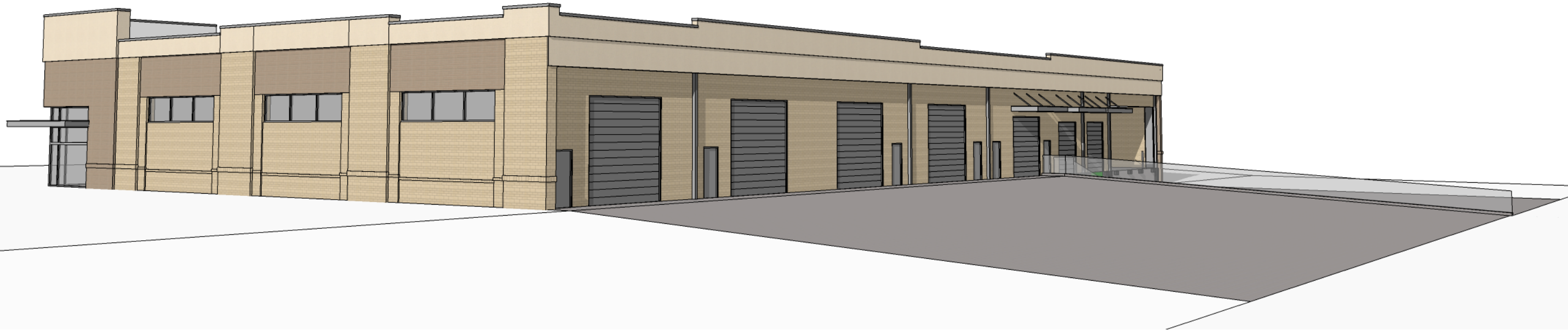
South Elevation - Green Oaks Parkway
Primary Facade



South Elevation - Green Oaks Parkway
Primary Facade



North Elevation
Rear Facade



North Elevation
Rear Facade

McGAHEY DESIGN

123 Raleigh Street, Fuquay-Varina, North Carolina 27526
919.321.0123 + 919.422.0265 info@mcgahaydesign.com

McGAHEY DESIGN, P.A.
REGISTERED ARCHITECT
53338
FOUQUAY-VARINA, NC

JOY MORRIS McGAHEY
REGISTERED ARCHITECT
9903
FOUQUAY-VARINA, NC

1.4.24

FOCUS DESIGN BUILDERS LLC

D’Andrea Provisions
South Building

PROJECT: 2021-27
DATE ISSUED: 01.04.24

REVISIONS: DATE
Site Comments 11.21.32

DRAWN BY: JMM
CHECK BY: JMM

Schedules & Images

A2.03

Page 145 of 498



1 Image
Not to Scale



2 Image
Not to Scale

Human Scale Design Elements:
1. Change in Brick Pattern/Belt Course
2. Vertical Recesses



3 Human Scale Image
Not to Scale

Human Scale Design Elements:
1. Change in Brick Pattern/Belt Course
2. Vertical Recesses



4 Human Scale Image
Not to Scale



5 Image
Not to Scale



6 Image
Not to Scale



Holly Springs Town Council

Town Council Meeting Agenda Cover Sheet

Agenda Item#: 22.

Consent Agenda

Title: Holly Springs Road Widening (East) Sewer Forcemain Upsize Change Order

Strategic Priority Area: Safe & Friendly
Responsible & Balanced Growth

Staff Resource: Tim Athy, Utilities and Infrastructure

Action(s):

- Authorize the Town Manager to execute change order in amount not to exceed \$650,000 for wastewater force main upsizing on Holly Springs Road East-Central
- Adopt Waste Water Capital Project Ordinance (24-05)

Explanation:

- The purpose of this change order request is to remedy a pipe sizing differential nearly 1400' long by upsizing an existing 16" sewer forcemain to a 20" sewer forcemain from where the existing 20" forcemain terminates along the Holly Springs Road East (HSRE) widening project boundary to the Holly Springs Road Central widening boundary.
- Under normal circumstances, this request to upsize this forcemain would be considered as part of a developer driven request, however no immediate private developer plans are proposed at this time.
- This request to upsize the forcemain was a bid alternate to the original bid to widen HSRE. Consideration for upsizing the forcemain has been delayed to gain a better understanding of the impact to utility debt affordability model.
- The change order request will:
 - Take advantage of 2024 pricing and the fact that the current HSRE worksite already has available 20" pipe on site;
 - Alleviate a scenario where the new roadway construction as part of HSRE would need to be torn up in the near term due to a future 20" upsizing project;
 - Reduce risk of a potential forcemain break or loss of structural integrity due to less soil covering the 16" pipe due to the new HSRE roadway being lowered;
 - Remove a pinch point service flow due to differing pipe sizing in the corridor (20" to 16" to 20")
- It is anticipated that this work could start in 1 - 2 weeks with an anticipated construction time of four weeks.
- Waste Water Capital Project Ordinance (24-05) appropriates \$650,000 in utility reserves for this change order.
 - Capital project ordinances appropriate all funds for all projects within this fund.
 - This capital project ordinance additionally appropriates \$29.5M in anticipated revenues bonds for the Utley Creek Water Reclamation Facility (UCWRF) 8 MGD expansion design as well as \$3M in grant funding for construction which is covered

Town Council Business Meeting
February 20, 2024

in more detail on agenda item #29.

Background:

- As part of the 2018 Transportation Bond, the Town of Holly Springs is widening Holly Springs Road from Flint Point Lane to Sunset Lake Road from a two-lane road to a four-lane median divided road.
- This project will increase road capacity, improve safety, and upgrade the bridge over Middle Creek to decrease the chance of roadway flooding during heavy rain events. Expected project completion in Winter 2025.
- As part of the HSRE roadway project, other utility pipe upsizing has already taken place.

Funding Source(s):

Community Investment Plan - Utility Reserves

Attachment(s):

1. sewer forcemain hsre
2. Waste Water Projects Capital Ordinance (24-05)
3. HSR(east)_Amend_#5
4. 20 inch DOT doc





Ordinance No. 24-05

Date Submitted: February 20, 2024

Date Adopted: February 20, 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 February 20, 2024

Waste Water Fund	
Expenditures:	
Waste Water Projects	49,592,330
Total	49,592,330

SECTION IV: The following revenues are anticipated to be available to complete these projects:

Waste Water Fund	
Revenues:	
Revenue Bond	29,500,000
Transfer In	7,132,330
Federal Grants and Reimbursements	8,960,000
State Grants and Reimbursements	4,000,000
Total	49,592,330

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 February 20, 2024 in accordance with the laws of the State of North Carolina.

Adopted this, the 20th day of February 2024.

Town of Holly Springs by

Sean Mayefskie, Mayor

ATTEST:

Linda McKinney, Town Clerk



**AMENDMENT NUMBER 05 TO THE AGREEMENT BETWEEN CLIENT AND KIMLEY-HORN
AND ASSOCIATES, INC.**

This is Amendment number 05 dated February 14, 2024 to the agreement between the Town of Holly Springs ("Client") and Kimley-Horn and Associates, Inc. ("Consultant") dated May 28, 2019 ("the Agreement") concerning Holly Springs Road Widening- Phase II (the "Project").

The Consultant has entered into the Agreement with Client for the furnishing of professional services, and the parties now desire to amend the Agreement.

The Agreement is amended to include services to be performed by Consultant for compensation as set forth below in accordance with the terms of the Agreement, which are incorporated by reference.

Task 25 – Force Main Relocation and Up-size

Project Understanding

The existing 16" sanitary sewer force main along the corridor of the Holly Springs Road Phase 2 project (U-6243) is being relocated and up-sized to 20" for approximately 4,100 LF from Cobblepoint Way to a location approximately 550-feet west of the Holly Springs Road crossing of Middle Creek.

The Town of Holly Springs desires to extend relocation and up-size of this force main by approximately 1,300 LF from Cobblepoint Way toward Bass Lake Rd to connect to their existing 20" force main in the northern shoulder of Holly Springs Road, across from the Holly Springs Police Department. This extension is partly outside the limits of the current Holly Springs Road Phase 2 project.

Scope of Services

Consultant will obtain supplemental survey (SUE Level B) to show the horizontal location of the existing force main from Cobblepoint Way to the tie-in location. Consultant will obtain SUE Level A at up to four (4) locations including crossings of existing gas and water utilities and the proposed force main tie-in location.

Consultant will design relocation and upsize of approximately 1,300 LF of existing 16" force main with 20" from Cobblepoint Way to tie-in to the existing 20" force main. Designs will be shown in plan view at a horizontal scale of 1"=50' and in profile at a vertical scale of 1"=5'.

Consultant will prepare and submit a conceptual horizontal layout of the force main to the Town and to NCDOT for review and comment. Consultant will address up to one (1) round of comments from the Town and NCDOT.

Consultant will prepare and submit for approval to the Town and NCDOT work zone traffic control (WZTC) plans which modify the original WZTC plans to include lane shifts and flagging operations required to install the additional force main. A full detour plan is not included in this scope. WZTC plans will be shown on separate sheets, matching the layout of the additional UC sheets required for this relocation extension.

After addressing comments received from the conceptual horizontal layout submittal, consultant will prepare and submit 90% utility construction (UC) plans and WZTC plans to the Town and

NCDOT for review and approval. UC plans will include plan and profile for the force main relocation extension and applicable detail drawings as necessary.

After addressing comments on the 90% submittal, Consultant will prepare and submit sealed plans which revise and supplement existing UC plans and WZTC plans from the contract documents for the U-6243 – Holly Springs Road Phase 2 project.

Consultant will coordinate with NCDOT to document the additional relocation. A utility encroachment agreement was not required for the U-6243 project. This scope assumes modification of existing agreements may be required, but that an encroachment agreement will not be required.

Consultant will coordinate with NCDEQ-DWR to modify the fast-track sewer permit application to include the additional relocation. The proposed additional relocation (1,300 LF) exceeds the NCDEQ-DWR specified maximum of 10% additional line installation without permit modification. This scope assumes that a permit modification will be acceptable to NCDEQ-DWR and that preparation of a new fast track permit will not be required.

For the services set forth above, Client shall pay Consultant the following compensation:

Kimley-Horn will perform the services in Task 25 for the total lump sum fee below. Individual task amounts are informational only.

Task 25 Force Main Relocation and Up-size	\$19,000
---	----------

CLIENT:

By: _____

Title: _____

Date: _____

CONSULTANT:

KIMLEY-HORN AND ASSOCIATES, INC.

By: 

Title: Vice President

Date: February 14, 2024



**NORTH CAROLINA DEPARTMENT OF TRANSPORTATION SUPPLEMENTAL AGREEMENT or
FORCE ACCOUNT DOCUMENTATION**

SUPPLEMENTAL AGREEMENT NO.: 5 **FORCE ACCOUNT DOCUMENTATION NO.:** _____
PROJECT NO.: U-6243 **FEDERAL AID NO.:** _____
COUNTY: Wake **CONTRACT NO.:** _____
CONTRACTOR: FSC II, LLC DBA Fred Smith Company, Inc.

1. Description, location, and justification for change:

Supplemental Agreement 5 is written to incorporate the installation of construction revision #7. This revision incorporates the extension of the 20" FM sanitary sewer line, valves, and fittings, and associated roadway improvements to U-6243 plans.

Extra work that was not included in the original contract is furnishing and installing the extension of the 20" FM sanitary sewer line, valves, and fittings, and removing and repairing Holly Springs Road footprint to do so. Per NCDOT requirements existing line items are required to be used where applicable.

Supplemental Agreement 5 is written in accordance with Article 104-7 of the 2018 Standard Specifications and attached special provisions which provides compensation to the contractor for furnishing and installing the 20" FM sanitary sewer line, valves, and fittings, and removing and repairing Holly Springs Road. Supplemental Agreement 5 is considered betterment and will not be reimbursable by NCDOT.

All work shall be performed in accordance with the contract, plans, and the 2018 NCDOT Standard Specifications for Roads and Structures, including but not limited to Sections 200, 1500 and/or as otherwise directed.

The prices listed herein shall be full and complete compensation for all work; including mobilization, labor, equipment, materials, administrative costs, profit, traffic control and all other items considered incidental to complete installation of attached items.

Supplemental Agreement 5 is considered betterment and will not be reimbursable by NCDOT. The additional amount of work effort included to install the for the 20" FM sanitary sewer line, valves, and fittings, and removing and repairing Holly Springs Road is shown below. Fred Smith has estimated an additional cost **\$547,087.76** (betterment, non-reimbursable) to mobilize equipment to complete the additional work as shown in construction revision #7. Additionally, an estimated cost of **\$80,000.00** (betterment, non-reimbursable) will also be required from original project line items to complete the construction revision #7 work. The total estimated additional cost is **\$627,087.76** (betterment, non-reimbursable).

2. Extension of contract time (if applicable):

Time extension of 23 days will be granted for this work.



Holly Springs Planning Board

Planning Board Meeting Agenda Cover Sheet

Agenda Item#: 23.

Public Hearings

Title: Friendship Road Industrial Development Plan 22-DP-10 - Quasi-Judicial Public Hearing

Strategic Priority Area: Economic Prosperity & Diversity
Responsible & Balanced Growth

Staff Resource: Cheryl Caines, Development Services, Catherine Jacobs, Development Services

Action(s):

- Conduct Quasi-Judicial Public Hearing.
- Adopt Resolution 24-03 to make and accept the Findings of Fact for consideration of and to approve Development Plan 22-DP-10 for Friendship Industrial.

Explanation:

- A Development Plan has been submitted for a site within the Friendship Industrial Park.
- The 29.3 acre site is located south of the Amgen site.
- The proposed plan includes two industrial flex buildings of 150,000 square feet each and associated parking.

Staff Recommendation: Approve

Planning Board Recommendation: Recommend Approval (6 - 0) [2 absent]

A summary of the Planning Board discussion is in the staff report.

Background:

- The site was rezoned from R-30 Residential to RT Research and Technology on October 19, 2021. The RT zoning was reassigned to BRT Business & Research Technology on March 1, 2022, with the adoption of the 2022 Unified Development Ordinance (UDO).
- The Friendship Innovation Park Master Plan (Major Subdivision) was approved on September 7, 2021, for industrial development. An amendment (21-MAS-04-A02) to add two parcels to the park and implement a concurrent rezoning (22-REZ-17) was approved on November 21, 2023. The amendment and rezoning did not directly apply to the Development Plan (DP) site due to timing of application submittals; therefore, the DP follows the additional requirements of Friendship Innovation Park Master Plan version 21-MAS-04-A01.
- All transportation mitigation improvement requirements set forth by the previously approved Transportation Mitigation Agreement associated with this phase must be shown and designed on the Civil Construction Drawings for review and approval. The plan is consistent with the previously approved Rezoning and Major Subdivision plans for Friendship Innovation.

Planning Board Meeting
February 20, 2024

- The UDO requires Development Plans with buildings over 40,000 square feet to be reviewed by Town Council through a Quasi-judicial (QJ) public hearing. QJ decisions are based on the evidence presented and Findings of Fact to determine if the ordinance standards are met. More information on this process and the criteria used to make findings are found in the staff report (Town Council Consideration & Action section). The proposed Findings of Fact are found in Exhibit A of the resolution.

Funding Source(s):

N/A

Attachment(s):

1. 22DP10_FriendshipIndustrial_0220TC_StaffReport
2. 22DP10_FriendshipIndustrial_ResolutionFOF
3. 22DP10_FriendshipRdIndustrial_Petition
4. 22DP10_FriendshipRdIndustrial_Plans



Project Type: Development Plan

Concurrent Applications:

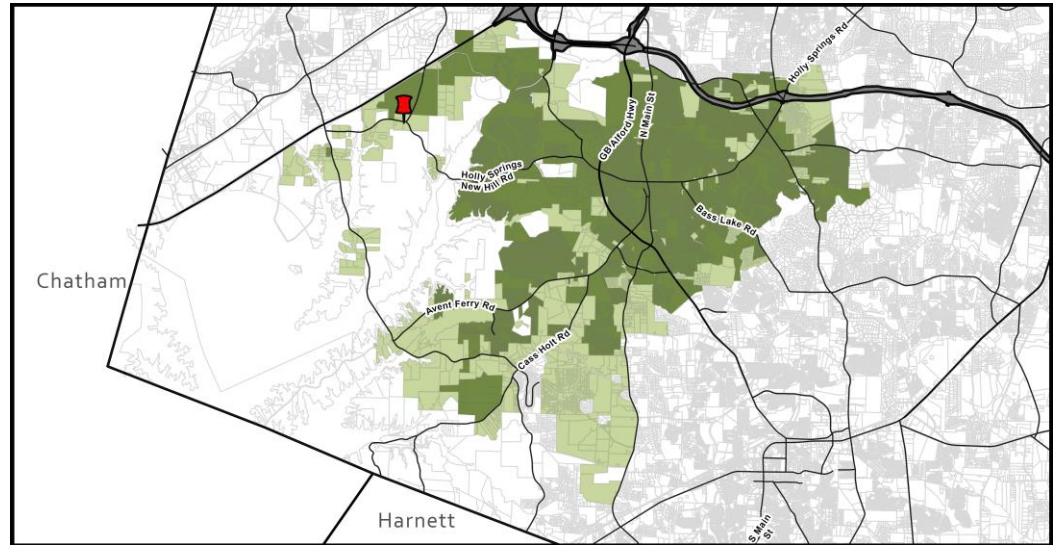
☐ Waiver / SUP/ VAR/ CPA

Applicant / Petitioner:

Taylor Hollingshead
Bolton & Menk, LLC

Property Address: 4112 Friendship Rd.

Property Area: 29.3 ac.



Located in: ☒ Holly Springs Corporate Limits ☐ Holly Springs ETJ ☐ Annexation Pending

Project Summary:

A Development Plan for 2 industrial flex buildings (light manufacturing and warehousing). Each building is 100,000 square feet with 50,000 square feet of mezzanine.

Requested Action:

Advisory Decision: The Planning Board will review the petition and make a recommendation to the Town Council to approve or deny the requested Development Plan petition.

Table of Contents:

Case Summary	Page 2
Current Zoning Information	Page 3
Land Use & Character Information	Page 4
Transportation Information	Page 6
Parks, Recreation & Greenways Information	Page 8
Community Facilities Information	Page 9
Infrastructure & Utility Information	Page 10
Natural Resources Information	Page 12
Development Standards	Page 13
Decision-Making Information	Page 16



Case Summary

Current Zoning:

BRT Business & Research Technology

☐ Conditional Zoning District

Current Master Plan (Major Subdivision Plan):

Friendship Innovation Park



Aerial Photograph

Growth Strategy Map:

Places to Enhance

Small Area Plan Designation:

N/A

Future Land Use Plan Designation:

Business & Industrial

Staff Analysis:

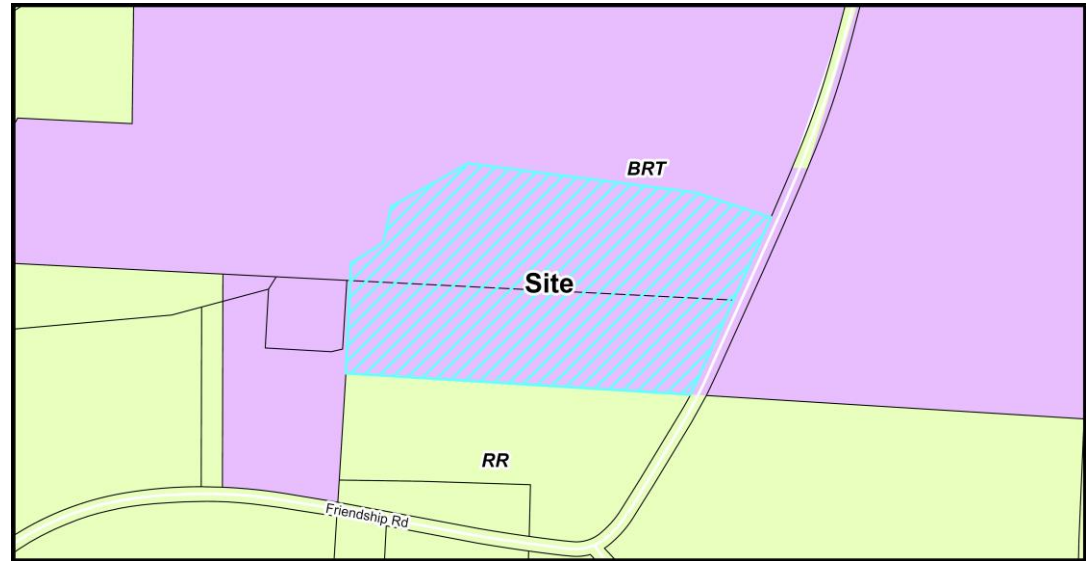
The requested Development Plan is: ☒ Consistent with Adopted Plans /Ordinances ☐ Inconsistent with Adopted Plans/Ordinances

The Development Plan complies with minimum requirements specified in Town adopted land development plans, policies, and ordinances.

Staff Recommendation: ☒ Approve ☐ Deny

**Current Zoning Information**

Parcel #	Zoning	Area
0629797990	BRT Business & Research Technology	15.46
0720904944 (portion of)	BRT Business & Research Technology	13.84
Total Area		29.3



Current Zoning Map

Adjacent Property Current Zoning Information

Subject Property	Zoning	Existing Land Use
	BRT Business & Research Technology	Fire Station #3
North	BRT Business & Research Technology	Amgen
South	RR Rural Residential	Vacant
East	IVMX CD Innovation Village Mixed Use Conditional District	Single Family Residence and Vacant
West	BRT Business & Research Technology	Wastewater Pump Station

Parcel Rezoning History

Rezoning Number: 23-REZ-03

Original Zoning: R-30

Approved Zoning: RT Research & Technology

Approval Date: October 19, 2021

Rezoning Number: 22-REZ-01

Original Zoning: RT Research & Technology

Approved Zoning: BRT Business & Research Technology

Approval Date: March 1, 2022 Zoning Reassignment



Land Use & Character Information

Growth Strategy Map: Places to Enhance

Future Land Use: Business & Industrial

Small Area Plan: N/A



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 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: Business & Industrial

Business & Industrial Centers provide opportunities to concentrate employment clusters throughout the town. They support both large-scale, single tenant office and industrial buildings and smaller, multi-tenant office and industrial buildings that are clustered and may support and serve one another. Business & Industrial Centers are typically buffered from surrounding development by tree preservation areas or landscaped areas, with the type and size of the buffer a function of the activities being performed on the site.

Key Characteristics:

- Large blocks and may not have discernible structure.
- Parking is off-street surface lots or parking decks screened from view from the street.
- Preservation of resources is not prioritized.
- Not typically designed as walkable but may include formal open spaces for the use by employees.
- Building placement and lot size varies depending on scale or use, but buildings should face the street where possible.
- Building types are primarily office and industrial.
- Streets are auto-oriented and with sidewalks providing internal connectivity within development sites and to adjacent uses.

Small Area Plan: N/A

Historic Structures: ☒ None

Future Land Use Staff Analysis:

The requested Development Plan is: ☒ Consistent ☐ Inconsistent

The proposed development is consistent with the Future Land Use plan. It provides opportunity for industrial/employment uses within areas identified as Business & Industrial.



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:

Per the Town's Unified Development Ordinance (UDO) and Comprehensive Transportation Plan (CTP), the development is required to design and construct roadway improvements along the property frontage of Friendship Road to meet ½ of the ultimate cross section. The ultimate cross section for Friendship Road is a 4 lane, median-divided thoroughfare.

New Location Roadways:

None

Hotspot/Safety Study Location:

N/A

Improvement Prioritization:

N/A

**Transportation Information (cont.)****Traffic Study Policy**

- ☒ Traffic Study Required ☐ Tier 1
 ☐ Tier 2
 ☐ Tier 3
 ☒ Transportation Verification Memo

Traffic Study Summary

A Traffic Impact Analysis (TIA) Revision was completed with the Friendship Innovation Rezoning Revision as required by the NCDOT and the Town. A Transportation Verification Memo was required with this development plan, and it was determined that with phasing, a 100,000-sf building could be constructed with only the improvements below. However, any additional square footage would trigger the Phase II improvements associated with the Amgen project. Per the approved Transportation Mitigation Agreement associated with the revised TIA, the following improvements are required with this Development Plan:

- Friendship Road
 - Thoroughfare widening along the property frontage of Friendship Road to meet ½ of the ultimate cross section in accordance with the Comprehensive Transportation Plan.
- Friendship Road/Site Driveway #3 (northern most driveway)
 - Driveway constructed as a right-in/right-out access.
 - Construct an exclusive right-turn lane on southbound Friendship Road with 100' of storage.
- Friendship Road/Site Driveway #4 (southernmost driveway)
 - Driveway constructed as a right-in/right-out/left-in access with 100' of Internal Protected Stem.
 - Construct an exclusive right-turn lane on southbound Friendship Road with 100' of storage.
 - Construct an exclusive left-turn lane on northbound Friendship Road with 75' of storage.

Transportation Staff Analysis:

The requested Development Plan is: ☒ Consistent ☐ Inconsistent

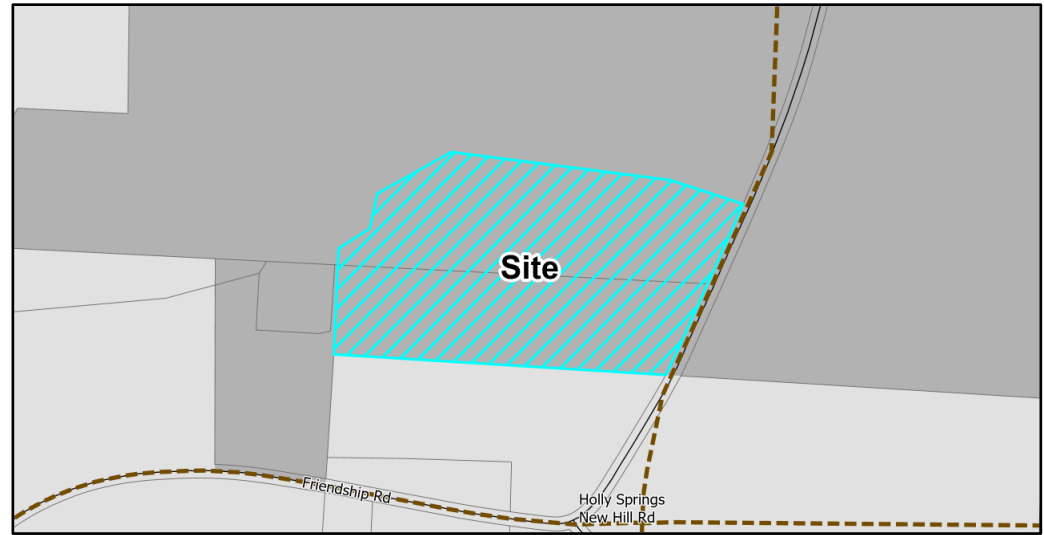
Any and all mitigation improvement requirements set forth by the previously approved Transportation Mitigation Agreement must be shown and designed on the Civil Construction Drawings for review and approval. The plan is consistent with the previously approved Rezoning and Major Subdivision plans for Friendship Innovation.



Parks, Recreation & Greenways Information

Park Search Area

☐ Yes

☒ No


— — Proposed Wide Outside Lane

Active Transportation Map

Required Active Transportation Improvements

☐ Greenway

☐ Sidepath

The Active Transportation Map only shows a Wide Outside Lane requirement to support on-street biking.

Parks, Recreation, & Greenways Summary

There are no Parkland dedication requirements as the property is outside of any Park Search Areas.

Parks, Recreation, & Greenways Staff Analysis:

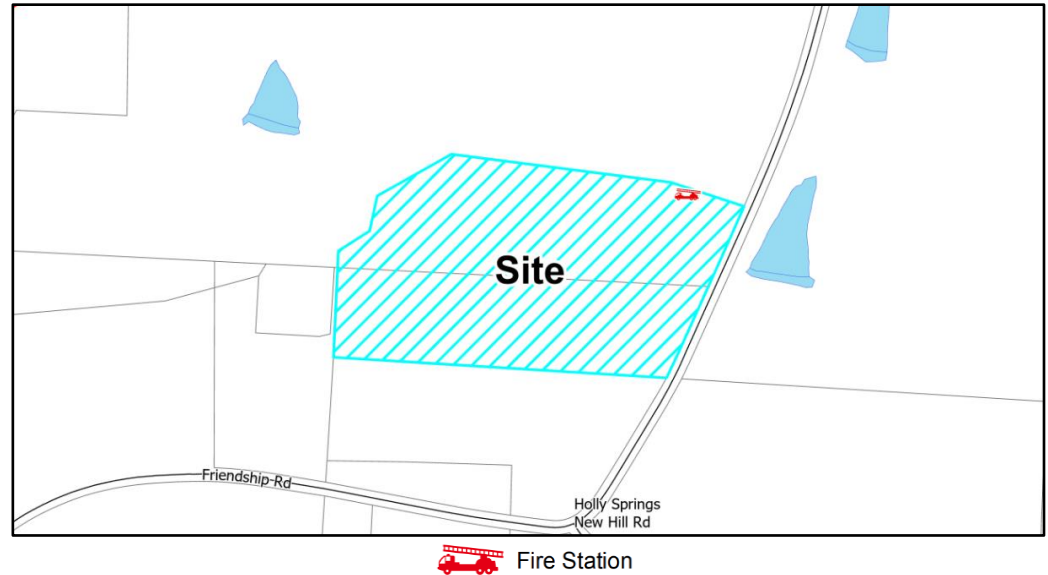
The requested Development Plan is: ☒ Consistent ☐ Inconsistent

The plan is consistent with the previously approved Rezoning and Major Subdivision plans for Friendship Innovation.



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

Community Facilities Staff Analysis:

The requested Development Plan is: ☒ Consistent ☐ Inconsistent

The existing Fire Station #3 is located on the site. A new station is under construction in the area. The buildings for the existing facility will be demolished once the new station is complete.



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:

This development plan is proposing to connect and extend the public potable water main currently being installed as part of the Town's off-site Design-Build Utility Project in two locations. Service connections for each building will be made to the proposed extensions within the site. A Fire Flow Analysis was completed with this development plan to ensure adequate pressure.

Sanitary Sewer:

This development is proposing to tie to the public sanitary sewer network currently being installed as part of the Town's off-site Design-Build Utility Project. This development will discharge to the sanitary sewer pump station (Friendship Pump Station) also a part of the Design-Build project to the west of the development site. A Sewer Verification Memo, was completed with this development plan. The memo concluded that the proposed project is within the limits of the previously approved Sewer Study.

Reclaim:

A connection to the reclaimed water main currently being installed as part of the Town's off-site Design-Build Utility Project is also proposed.



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

The overall project predates July 1, 2023 and is not subject to the Water Resource Management Policy.

Infrastructure & Utility Staff Analysis:

The requested Development Plan is: ☒ Consistent ☐ Inconsistent

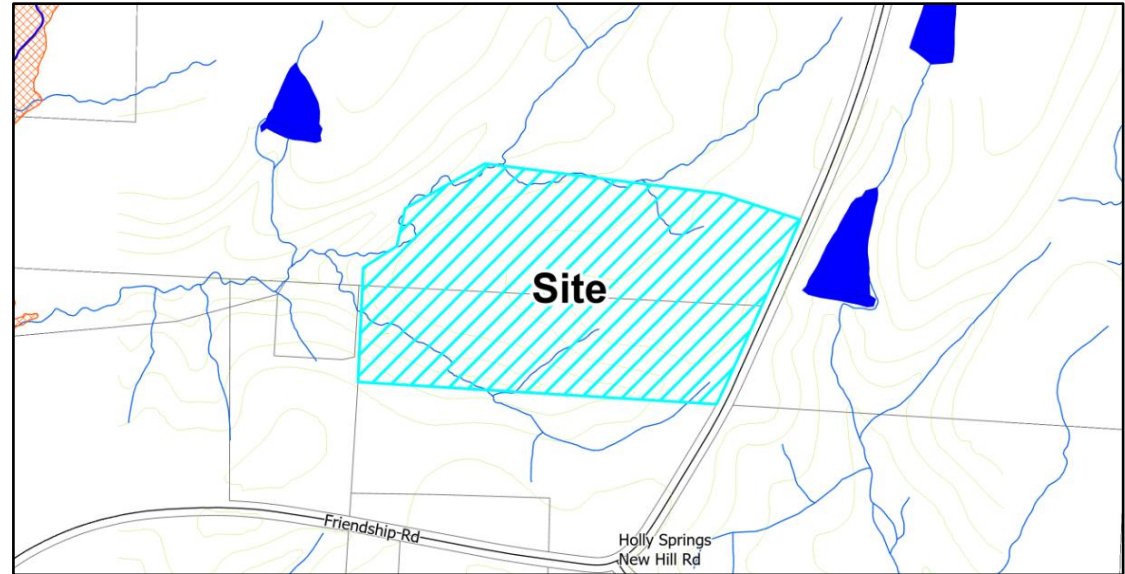
Any and all permits required to construct this development must be provided to NCDEQ prior to Civil Construction Drawing approval. The plan is consistent with the previously approved Rezoning and Major Subdivision plans for Friendship Innovation.



Natural Resources & Open Space Information

On-site Private Open Space 3.8% (49,089 sq ft)

Tree Preservation Area	0%
Active Recreation Area	3.8 % (49,089 sq ft)
Urban Civic Space	0%
Flexible Space	0%



 FEMA Special Flood Hazard Area
  Wake County Lakes
  Streams

Natural Resources Map

Natural Resources & Open Space Summary

Open Space:

The project will include a plaza with outdoor patio/picnic area/decking between the buildings and an area for seating/games/firepit in the NE corner of the site.

Stormwater:

This development is located within the Cape Fear River basin and has jurisdictional environmental features onsite. A wet pond is proposed onsite to mitigate stormwater runoff impact to downstream infrastructure and environmental features.

Natural Resources & Open Space Staff Analysis:

The requested Development Plan is: ☒ Consistent ☐ Inconsistent

Any and all permits required to construct this development must be obtained prior to Civil Construction Drawing approval. The site has been designed in a way to minimize impacts to the existing environmental features and is consistent with the previously approved Rezoning and Major Subdivision plans for Friendship Innovation.



Development Standards

The following is a summary of how the proposed development satisfies the applicable 2022 Holly Springs Unified Development Ordinance (UDO) and Friendship Innovation Park Master Plan (22-MAS-04-A01).

Development Standards Summary

Development Standards (UDO Section 2 & Master Plan):

Building Placement	Standard	Proposed
Thoroughfare Setback (front)	50 ft	~175 ft
Side – Corner Setback	30	N/A
All Other Setbacks (Side and Rear)	5	~211 ft and 282 ft

Building Height	Standard	Proposed
Maximum Building Height	100 ft	40 ft

Landscaping (UDO Section 5 & Friendship Innovation Park Master Plan):

	Standard	Proposed Standard
Perimeter Buffers		
Thoroughfare Buffer (East)	50 ft Type B-75	50 ft Type B-75
North	10 ft Type A	10 ft Type A
South	10 ft Type A	10 ft Type A
West	50 ft Type C-225	50 ft Type C-225
Foundation (per square footage of landscaped area outside the structure, parking area, or loading area)		
Trees	1 overstory tree/5,000 sq. ft. or 1 small tree/ 3,000 sq. ft.	1 small tree/3,000
Shrubs	1.5 medium shrubs or 2 small shrubs/1,000 sq. ft.	2 small shrubs/1,000
Interior Vehicle Parking Area		
	1 landscape island with one tree and 4 shrubs/10 parking spaces	61 trees and 256 shrubs within landscape island and strips for 603 parking spaces
Street Trees		
	Thoroughfare: Trees on private property within 5 ft of the right-of-way	Willow Oak and Sourwood trees per Master Plan within 5 ft of right-of-way

**Parking (UDO Section 6):**

	Standard	Proposed
Vehicle Parking Locations	Unrestricted	Parking to the side and rear of the buildings
Minimum Parking	434 spaces	603 spaces
Maximum Parking	800 spaces	450 spaces
Bike Parking	46 spaces	48 spaces
EV Parking	5% EVSE: 30 15% EVSE Ready: 91	32 Conditioned to provide

Building, Site and Subdivision Design (UDO Section 8):

	Proposed
Building Design	
Building Materials	Proposed materials include pre-cast concrete in various shades of gray, metal panels, weathering steel, and wood. Facades facing areas with vehicle and pedestrian traffic include vertical windows that match other vertical elements of the building. Materials provide a variety of texture and colors.
Horizontal Variation	A discernable base, middle, and top are proposed through the use of materials, colors, and placement/scoring of concrete panels.
Vertical Variation	Distinct building bays are proposed through material changes and façade articulation. Human scale elements include windows, changes in materials, and repeating patterns.
Roof Expression	Variation in roofline is proposed including taller elements to emphasize building bay changes.
Site Design	
Off-street Loading	Off-street loading areas are proposed along the north side of both buildings. These areas are screened from building users and the public street by building placement, screening walls, and landscaping.
Pedestrian Access & Circulation	Sidewalks connect the building to the public street (Friendship Rd.), internal access drives, open spaces, and adjacent properties. The parking areas include perimeter sidewalks and interior pathways for circulation.
Public Realm	The applicant has proposed expressive entrances that identify the main access points for each building as the required public realm element. The entrances satisfy the minimum requirements for Industrial and Warehouse buildings (35 ft wide and minimum two stories).

**Additional Standards – Friendship Innovation Park Master Plan**

Standard	Proposed
At the main pedestrian entry to the primary building of each development within the Park, architectural elements will be added or varied to create a sense of place and visual wayfinding from the visitor or main parking area to direct pedestrian traffic in a visually attractive way.	Distinct entry points are proposed on facades facing the parking area. These entries include glass and a mixture of materials. Entry canopies create second story balconies and outdoor space. A plaza between the two buildings near the entry points provides as an open space for employees and visitors
All buildings will have masonry or similar materials and meeting UDO regulations along frontages that directly face major thoroughfares.	The applicant has proposed masonry, glass, and a mixture of materials meeting UDO regulation on the frontage facing Friendship Road.

Development Standards Evaluation of Plan & Ordinance Consistency

The applicant must demonstrate that the proposed Development Plan complies with minimum requirements specified in Town adopted land development policies and ordinances.

Staff has reviewed the application and has determined the proposed Development Plan is:

☒ Consistent with Adopted Plans ☐ Inconsistent with Adopted Plans

The Development Plan is consistent with the Town's adopted plans for the following reasons:

- The industrial buildings transform the area by introducing employment uses in a mixed-use center.
- The manufacturing and office uses are consistent with the Business & Research Technology zoning and Business & Industrial Future Land Use designation of the site.
- Adequate perimeter buffering and screening is proposed between existing and future uses on adjacent properties and from public streets.
- Multiple open spaces are provided for visitors and employees that allow for both passive and active outdoor use.
- The development has been designed in a way to minimize impacts to the existing environmental features and is consistent with the previously approved Rezoning and Master Plan (Major Subdivision) for Friendship Innovation Park. Public utility connections are proposed to serve the development.
- The proposed buildings include a mix of materials and features to satisfy the UDO building design standards.
- Safe and efficient pedestrian access and circulation is proposed on-site and to adjacent streets and properties.



Decision-Making Information

Development Plan Staff Analysis

The Development Plan complies with minimum requirements specified in Town adopted land development policies and ordinances.

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: 10/17/2022

Summary of Issues: No issues to note.

Planning Board Action

Planning Board Meeting Date: 1/23/2024

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 proposed Comprehensive Plan Amendment is consistent with the goals of the Comprehensive Plan, or any other officially adopted plan that is applicable, and if the amendment is reasonable and in the public interest. 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:

- Noted that the proposed use was in-line with the vision for this area.
- Confirmed that loading areas would be screened or not visible from Friendship Road and Highway 1.
- Asked the applicant how light pollution would be minimized.

Planning Board Recommendation:

Recommend **approval** of Development Plan #22-DP-10 for Friendship Road Industrial as submitted by Bolton & Menk, Inc., dated Revised 12/8/23 with the conditions listed in the staff report.



The Planning Board voted in favor of the motion (6 - 0) [2 absent]

Town Council Consideration & Action

Quasi-Judicial Public Hearing

Prior to the Quasi-Judicial Public Hearing:

- Mailed notice was sent to all property owners within 500 feet of the project.
- Posted notice was made with a public hearing sign on the property.

Town Council Decision Type: Quasi-Judicial Decision

Quasi-Judicial decisions are determined by the presentation of factual evidence as to whether the proposed Development Plan satisfies the applicable development standards. The Town Council must hold a Quasi-Judicial public hearing to collect facts and then make a decision based on the written and oral evidence presented. A Quasi-Judicial decision must be made on facts and evidence and cannot be based on opinions or hearsay. Anyone who presents facts and evidence during the Quasi-Judicial public hearing must be sworn in under oath and may be subject to cross-examination. These criteria shall be used to evaluate whether the proposal will cause significant adverse impacts on adjacent properties:

1. Criterion 1: The land uses and development intensity of the proposed project will not have significant adverse impacts on adjacent properties and are consistent with the character of the Zoning District and the land uses authorized therein.
2. Criterion 2: The proposed project provides for the preservation, improvement, and/or enhancement of open spaces and provides sufficient land dedicated for public park space or an equivalent fee-in-lieu.
3. Criterion 3: The proposed layout of streets, lots, utilities, water metering, and public improvements, and their relation to the topography of the land, reflect a design which can be economically served by the Town with public services and facilitates the use and future development of adjacent properties.
4. Criterion 4: The proposed building or site design enhances the public realm, maximizes natural surveillance and visibility, facilitates pedestrian access and circulation, and reinforces the Town's character.
5. Criterion 5: The design of the project furthers the goals and policies of the Comprehensive Plan.

Potential Development Plan Motion

Adopt Resolution #24-03 to make and accept the Findings of Fact for consideration of and to approve the Development Plan 22-DP-10.



THE TOWN OF

Holly Springs

Resolution No.: 24-03

Date Adopted: 2/20/2024

Effective Date: 2/20/2024

**RESOLUTION OF THE TOWN OF HOLLY SPRINGS TOWN COUNCIL
MAKING FINDINGS OF FACT FOR
AND TO APPROVE WITH CONDITIONS
DEVELOPMENT PLAN (22-DP-10);
FOR FRIENDSHIP ROAD INDUSTRIAL**

WHEREAS, the Town of Holly Springs Town Council adopted *Town of Holly Springs Unified Development Ordinance* ("UDO") in March 2022; and

WHEREAS, pursuant to NCGS §§160D 403 and Chapter 11 of the Town of Holly Springs UDO, the Town Council of Holly Springs ("Town Council") has the authority to grant approval of Development Plans if competent and substantial evidence is presented by the Petitioner which allows the Town Council to find as a fact that conditions either currently exist or may exist after implementation of conditions by the Town Council. Such findings are each of the following:

Development Plan Findings of Fact:

The Town Council shall consider the following review criteria in determining whether to approve, approve with conditions, or deny a Development Plan.

Criterion 1: The land uses and development intensity of the proposed project will not have significant adverse impacts on adjacent properties and are consistent with the character of the Zoning District and the land uses authorized therein.

Criterion 2: The proposed project provides for the preservation, improvement, and/or enhancement of open spaces and provides sufficient land dedicated for public park space or an equivalent fee-in-lieu.

Criterion 3: The proposed layout of streets, lots, utilities, water metering, and public improvements, and their relation to the topography of the land, reflect a design which can be economically served by the Town with public services and facilitates the use and future development of adjacent properties.

Criterion 4: The proposed building or site design enhances the public realm, maximizes natural surveillance and visibility, facilitates pedestrian access and circulation, and reinforces the Town's character.

Criterion 5: The design of the project furthers the goals and policies of the Comprehensive Plan.

Office of the Mayor

P.O. Box 8 • 128 S. Main Street • Holly Springs, NC 27540 • www.hollyspringsnc.us

Email: dick.sears@hollyspringsnc.us

WHEREAS, the Town Council has heard sworn testimony and has accepted and entered the Applicant's written findings of fact into the minutes (Exhibit A), have received site plans, and have considered conditions of approval (Exhibit B) for the following requested Development Plan:

Development Plan (22-DP-10): Construct two (2) industrial buildings at 4112 Friendship Road, Wake County PINs 0629797990, 0629696598, and 0720904944 (portion of) in the BRT Business & Research Technology District and within the Friendship Innovation Park Major Subdivision.

WHEREAS, the Town Council has received competent and substantial evidence and has therefore found the written findings of fact. The Town Council finds that the Applicant's findings of fact to be consistent with the public testimony received on the requested Development Plan, and therefore the Town Council is able to reach conclusions independently (Exhibit C) or be reasonably able to meet the conclusions on the Findings of Fact upon implementation of additional conditions listed on Exhibit D to this Resolution.

THEREFORE, BE IT RESOLVED by the Town Council to make and accept the Findings of Fact and to approve with conditions (Exhibit B) Development Plan (22-DP-10) for Friendship Road Industrial; as submitted by Bolton & Menk, Inc.

Adopted by the Holly Springs Town Council on this, the 20th day of February, 2024.

Town of Holly Springs by

ATTEST:

Sean Mayefskie, Mayor

Linda McKinney, Town Clerk



Office of the Mayor

P.O. Box 8 • 128 S. Main Street • Holly Springs, NC 27540 • www.hollyspringsnc.us

Email: dick.sears@hollyspringsnc.us

RESOLUTION EXHIBIT A

DEVELOPMENT PLAN (22-DP-10) FINDINGS OF FACT SUBMITTED BY APPLICANT

1. The industrial buildings transform the area by introducing employment uses in a mixed-use center.
2. The manufacturing and office uses are consistent with the Business & Research Technology zoning and Business & Industrial Future Land Use designation of the site.
3. Adequate perimeter buffering and screening is proposed between existing and future uses on adjacent properties and from public streets.
4. Multiple open spaces are provided for visitors and employees that allow for both passive and active outdoor use.
5. The development has been designed in a way to minimize impacts to the existing environmental features and is consistent with the previously approved Rezoning and Master Plan (Major Subdivision) for Friendship Innovation Park. Public utility connections are proposed to serve the development.
6. The proposed buildings include a mix of materials and features to satisfy the UDO building design standards.
7. Safe and efficient pedestrian access and circulation is proposed on-site and to adjacent streets and properties.

Office of the Mayor

P.O. Box 8 • 128 S. Main Street • Holly Springs, NC 27540 • www.hollyspringsnc.us

Email: dick.sears@hollyspringsnc.us

RESOLUTION EXHIBIT B

DEVELOPMENT PLAN CONDITIONS OF APPROVAL

1. All previous conditions of approval for Friendship Innovation Park Master Plan apply to this plan except for any condition that describes a fee or a fee-in-lieu to be paid shall now comply with the current amounts due pursuant to the Town's current annual budget or any unexpired development agreement.
2. The following must be submitted with the first Construction Drawing submittal:
 - a. A point-by-point photometric plan for all site lighting (not including public right-of-way street and pedestrian lights) in conformance with lighting levels specified in UDO Section 8.4 E shall be submitted to and approved by Development Services.
3. Prior to Construction Drawing Approval, the following items must be addressed:
 - a. Street Tree locations shall be shown with approved lighting fixture locations shall be positioned as to not interfere with any lighting fixtures or any site distance triangles.
 - b. Raceway to serve EV- Ready parking spaces must be shown.
 - c. Loading area screening walls must be solid masonry. Provide additional information on loading area screening wall to demonstrate that walls will be solid masonry with MT03 mesh metal material overlay.
 - d. Provide evergreen trees in addition to the proposed landscaping along the loading dock screening walls to add visual interest and break up the wall facade.
 - e. Relocate any required perimeter buffer plantings outside of easements.
4. Prior to Certificate of Occupancy, the following items must be addressed:
 - a. Final Plat must be recorded for the subdivision of this property.
5. Prior to the submittal of any structural permit for Sign Installation for permanent signage, a sign permit must be submitted for review and approval.
6. The existing site structures will be demolished and required buffer landscaping installed once vacated by the Holly Springs Fire Department.
7. Invoiced fees from Special Study third party review must be paid prior to first Construction Drawing Submittal, and no later than prior to Construction Drawing Approval.
8. The Build-out analysis in the Traffic Impact Analysis (TIA) associated with this development, included a mix of background improvements and recommended development mitigations. If the assumed background projects do not occur, it should be the developer's sole responsibility to construct all of the background improvements included in the TIA unless additional analysis can be provided to demonstrate the background mitigations are not warranted by the subject development.
9. Per the Transportation Memo submitted and reviewed by the Town, construction of one 100,000sf building can occur before the Phase 2 Improvements associated with the Amgen project are triggered. When the second 100,000sf building is completed, all of the Phase 1 (includes Amgen Phases 1 and 2) and Phase 2 Improvements within the Transportation Mitigation Agreement approved with the Friendship Innovation Rezoning must be completed prior to issuance of Certificate of Occupancy for the second 100,000sf building. If any improvements have yet to be constructed by others, this developer must take on the responsibility.
10. The TIA Revision associated with the Friendship Innovation Master Plan Amendment must be finalized prior to this Development Plan being scheduled for Planning Board.
11. [UDO Section 7.2 - When a Major Subdivision or Development Plan within the Town and its Extraterritorial Jurisdiction abuts the Town's existing fiber optic network, a connection or conduit for future connection shall be provided at the developers or subdividers expense. Any new wastewater pumping station constructed with a Major Subdivision or Development Plan shall be connected to the Town's fiber optic network at the developer's or subdivider's expense. Any new traffic signal installed with a Major Subdivision or Development Plan shall be connected to the Town's fiber optic network at the developer's or subdivider's expense.]
12. Thoroughfares, collectors and boulevards will require a calculated pavement design with 1st construction drawing submittal. This may result in a pavement cross section bigger than the specified minimum.
13. Off-site right-of-way dedication will be required in the form of a recorded plat prior to receiving construction drawing approval.
14. A Deed of Easement is required to be executed for public vehicular & public pedestrian access between the property owners at the time of plat.

Office of the Mayor

P.O. Box 8 • 128 S. Main Street • Holly Springs, NC 27540 • www.hollyspringsnc.us

Email: dick.sears@hollyspringsnc.us

15. All Special Studies must be finalized prior to being scheduled for Planning Board.
16. Off site sanitary sewer facilities are needed to serve this project. If they are not completed and accepted by the Town at the time of the approval of this plan, then these facilities must be completed prior to construction drawing approval. No plats or building permits will be issued by the Town until all necessary on and off-site water infrastructure is completed.
17. Off site water facilities are needed to serve this project. If they are not completed and accepted by the Town at the time of the approval of this plan, then these facilities must be completed prior to construction drawing approval. No plats or building permits will be issued by the Town until all necessary on and off-site water infrastructure is completed.
18. Off site reclaimed water facilities are needed to serve this project. If they are not completed and accepted by the Town at the time of the approval of this plan, then these facilities must be completed prior to construction drawing approval. No plats or building permits will be issued by the Town until all necessary on and off-site water infrastructure is completed.
19. A verification letter that confirms no changes occurred to the gravity sewer network; including final sizing for lines that are stubbed upstream, will be required with first construction drawing submittal. If changes have been made to the gravity sewer network between Town Council Approval and first Construction Drawing Submittal, a Final Gravity Sewer Line Sizing Report will be required with first construction drawing submittal for all lines that are stubbed to adjacent upstream properties. Include calculations to document line sizes, adequacy of proposed sanitary sewer lines to serve all future upstream development.
20. [UDO Section 7.2] Water Metering Network: The developer or subdivider shall be responsible for costs associated with any additional water metering network infrastructure as determined by the Administrator. Please refer to this Section of the UDO for detailed requirements. Typically, this level of detail is reviewed at the same time as Construction Drawing Review
21. Off site sanitary sewer facilities are needed to serve this project. If they are not completed and accepted by the Town at the time of the approval of this plan, then these facilities must be completed prior to construction drawing approval. No plats or building permits will be issued by the Town until all necessary on and off-site water infrastructure is completed.
22. When tenants are known, please coordinate with Town Staff. Specifically, Karen Foster, the Town's Environmental Compliance Manager – 919-557-2941 or karen.foster@hollyspringsnc.us with the Water Resources Department. Please provide your best understanding at this point regarding the future potential tenants. We understand this will be a placeholder at this time.
23. The developer or subdivider shall be responsible for costs associated with any additional water metering network infrastructure as determined by the Administrator. Please refer to this Section of the UDO for detailed requirements. Typically, this level of detail is reviewed at the same time as Construction Drawing Review.
24. Offsite water facilities are needed to serve this project. If they are not completed and accepted by the Town at the time of the approval of this plan, then these facilities must be completed prior to construction drawing approval. No plats or building permits will be issued by the Town until all necessary on and off-site water infrastructure is completed.
25. Off site sanitary sewer facilities are needed to serve this project. If they are not completed and accepted by the Town at the time of the approval of this plan, then these facilities must be completed prior to construction drawing approval. No plats or building permits will be issued by the Town until all necessary on and off-site water infrastructure is completed.
26. Approval of Stormwater Management Plan is required prior to issuance of a land disturbance permit or construction drawing approval.
27. Payment of the Stormwater Fee-in-Lieu will be required prior to construction drawing approval.
28. All items listed on the Stormwater Submittal Checklist, Form #16003, must be included with the first construction drawing submittal.
29. Please note that this project will be required to meet Town's NPDES Phase II Post Construction Stormwater ordinance. A general stormwater requirement may affect this project. Refer to NCDWQ's website for more information.
30. Please note that the Town Staff has been delegated approval authority by NCDWQ for stormwater management plans. Documentation of approval to NCDEQ is the responsibility of the owner.

Office of the Mayor

P.O. Box 8 • 128 S. Main Street • Holly Springs, NC 27540 • www.hollyspringsnc.us

Email: dick.sears@hollyspringsnc.us

31. Stormwater sureties are required on this project. A performance surety in the form of a bond, letter of credit or cash is required in the amount of 125% estimated construction cost of the stormwater BMP prior to the preconstruction meeting and a maintenance surety in the form of a cash escrow account in the amount of 35% the actual construction cost of the SCM is required at the end of the performance monitoring period for the project.
32. All environmental permits must be obtained prior to construction drawing approval and/or issuance of a land disturbance permit for the entire project. This will become a condition of plan approval.

Office of the Mayor

P.O. Box 8 • 128 S. Main Street • Holly Springs, NC 27540 • www.hollyspringsnc.us

Email: dick.sears@hollyspringsnc.us

RESOLUTION EXHIBIT C

TOWN COUNCIL'S FINDINGS OF FACT

The Town Council accepts the findings of fact as presented in Exhibit A unless specified below:

The Town Council made the following additional findings:

X No additional findings

Office of the Mayor

P.O. Box 8 • 128 S. Main Street • Holly Springs, NC 27540 • www.hollyspringsnc.us

Email: dick.sears@hollyspringsnc.us

RESOLUTION EXHIBIT D

ADDITIONAL CONDITIONS OF APPROVAL

The Town Council added the following conditions in order to adequately
make and accept the Findings of Fact:

X No additional conditions of approval

Office of the Mayor

P.O. Box 8 • 128 S. Main Street • Holly Springs, NC 27540 • www.hollyspringsnc.us

Email: dick.sears@hollyspringsnc.us

DEVELOPMENT 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:

- ☐ **Major Subdivision** (check all that apply)
☐ Residential ☐ Non-residential
☐ New ☐ Major Amendment* ☐ Minor Amendment*
- ☒ **Development Plan** (check all that apply)
☐ Residential ☐ Non-residential
☒ New ☐ Major Amendment* ☐ Minor Amendment*
- ☐ **Special Use Permit**
☐ New

* Specify purpose of amendment on Certificate of Plan Revisions

For DS Use only

Project # _____

Fees Paid: \$ _____

Date Received: _____

☐ Initial ☐ Revised ☐ Final

Project Information:

Project Name: Holly Springs Friendship Road Industrial

If this project is part of a previously approved plan, please specify:

PUD/Master Plan/Subdivision _____ Shopping Center/Lot# _____

Project Location: 4112 Friendship Rd, Holly Springs, NC 27539

Use street address. If none, use the closest intersection

☒ Within Corporate Limits ☐ Within Holly Springs ETJ ☐ Pending AnnexationPIN: 0629797990, 0720904923Real Estate ID: 0078620, 0489792Project Acreage (rounded to nearest tenth): 29.3 acres Partial Parcel: ☒ No ☐ Yes (additional fee)Current Zoning: BRT Proposed Use (see UDO Table 3.2.A): Light Manufacturing and WarehousingOpen Space [See UDO Section 7.06(F)(4)]: ☒ Dedication ☐ Fee-in-lieu ☐ Combination ☐ N/AWaivers Requested: ☒ No ☐ Yes- Specify UDO Section Number(s): _____

If yes, complete and attach appropriate Waiver Petition(s) from Waiver Packet

Sketch Plan Review (Pre-Submittal) Meeting Date: 9/15/2022

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 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 _____Name Taylor Hollingshead Company Bolton & Menk, LLC formerly known as ColeJenest & Stone, P.A.Mailing Address 418 S Dawson StCity Raleigh State NC Zip 27601Telephone # (919) 748-9340 E-Mail Taylor.Hollingshead@bolton-menk.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

Design Professional if different than Applicant/Contact

Name _____ Company _____

Mailing Address _____

City _____ State _____ Zip _____

Telephone # () E-Mail _____How 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

Developer

Name TJ Silvey Company Friendship Road LandCo, LLC, a Delaware Limited Liability Company
Mailing Address 400 N. Ashley Drive, Suite 1100
City Tampa State FL Zip 33602
Telephone # (718) 285-1566 E-Mail tj.silvey@raymondjames.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

Architect

Name Iliana Kafel Company ADBI/Design Services LLC
Mailing Address 44 South Broadway, Suite 1003
City White Plains State NY Zip 10601
Telephone # (919) 926-1799 E-Mail ikafel@arcodb.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

Landscape Architect

Name Walter Havener Company Surface 678
Mailing Address 215 Morris Street, Suite 150
City Durham State NC Zip 27701
Telephone # (919) 419-1199 E-Mail whavener@surface678.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

Other: Masterplan Architect (any other contact that should receive comments and correspondence for this project)

Name Alan Gombera Company Gensler
Mailing Address 613 Hillsborough St
City Raleigh State NC Zip 27603
Telephone # (410) 230-6584 Alternate Telephone # ()
Fax # () E-Mail Alan_Gombera@gensler.com
How would you like to receive staff review comments? ☐ Fax ☒ E-Mail ☐ US Mail
How would you like to receive Official Action Notices? ☐ Fax ☒ E-Mail ☐ US Mail- Certified

Property Owner - Required

Name TJ Silvey Company Friendship Road LandCo, LLC, a Delaware Limited Liability Company
Mailing Address 400 N. Ashley Drive, Suite 1100
City Tampa State FL Zip 33602
Telephone # (718) 285-1566 E-Mail tj.silvey@raymondjames.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

Certificate of Submittal Completion

I, Taylor Hollingshead, certify that the information provided on this petition, plans and checklist are complete and accurate to the best of my knowledge.

Signature:  Date: 09.22.2020

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.

☐ Neighborhood Meeting Date: 10-17-2022
Time: 5:30 - 6:30 PM
Location: HOLLY SPRINGS CULTURAL CENTER

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 300 foot radius of the subject property, and any homeowners association or property owners association that represents any parcels within that area as shown on the county tax listings.
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 10 days nor more than 25 days before the date of the Neighborhood Meeting.
4. The applicant shall post a sign on the property with the Time, date, and location of the neighborhood meeting.

☒ Date of Notification Mailing: 10-03-2022

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:

MEETING HELD; PARTICIPANTS WERE LIMITED TO THOSE ON
THE DEVELOPMENT AND DESIGN TEAM. NO ISSUES TO NOTE.

Attach Additional Sheets as needed

Changes made to the Petition by the Petitioner as a result of the meeting:

N/A

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)

[Signature]

Date

10-17-2022

Name	Address 1	Address 2	Address 3
MILLS, STEPHEN V MILLS, NANCY O	535 BUCKROE DR	SANFORD NC 27330-7285	
BELL, RONALD T	3812 COPPERHEAD RD	APEX NC 27539-8776	
DENTON, KEITH DENTON, SANDRA DENISE PATTON	4312 FRIENDSHIP RD	APEX NC 27539-8759	
RR/PLT LLC	2004 BUCKINGHAM WAY	APEX NC 27502-9340	
TARRENCE, JAMES EDWARD JR	3832 COPPERHEAD RD	APEX NC 27539-8776	
DC GOODWIN FARM LTD PTNRP	226 WOODSIDE DR	HARRISBURG NC 28075-8442	
ANDREAS, MICHAEL T ANDREAS, LYNN B	7617 WOODS CREEK RD	APEX NC 27539-8741	
AMGEN INC	1 AMGEN CENTER DR	THOUSAND OAKS CA 91320-1730	
WAKE COUNTY	WAKE COUNTY ATTORNEY'S OFFICE	PO BOX 550	RALEIGH NC 27602-0550
MILLS, STEPHEN V MILLS, NANCY O	3504 SUNNY DR	MOREHEAD CITY NC 28557-3034	
UCW INC	PO BOX 866	APEX NC 27502-0866	
BLAND, THOMAS M. BLAND, BETH BUSHMAN	3724 FRIENDSHIP RD	APEX NC 27502-8721	
GOODWIN, SANDRA GAIL TRUSTEE GOODWIN, ALFRED KENT TRUSTEE	274 MAY FARM RD	PITTSBORO NC 27312-5738	
BEHNKE, DEBRA ANN	417 CULVERT ST	APEX NC 27502-1731	
BEHNKE, DEBRA ANN	4313 FRIENDSHIP RD	APEX NC 27539-8759	
RAYMER, DAVID F RAYMER, SHARON L	4617 FRIENDSHIP RD	APEX NC 27539-8763	
DUKE ENERGY PROGRESS INC	TAX DEPT - DEC41B	550 S TRYON ST	CHARLOTTE NC 28202-4200
FRIENDSHIP ROAD LANDCO LLC	CMP MANAGEMENT LLC	400 N ASHLEY DR STE 1100	TAMPA FL 33602-4324
HELIX VENTURES LLC	3717 NATIONAL DR STE 209	RALEIGH NC 27612-4877	
BAUCOM, CHARLES DANIEL	2440 HIGH RIDGE DR	RALEIGH NC 27606-8605	
PRINCE, BETTY D PRINCE, LUTHER M JR	3800 FRIENDSHIP RD	APEX NC 27539-8700	
GEORGE HEELAN IRREVOCABLE TRUST	10046 BISHOPS GATE BLVD	PINEVILLE NC 28134-6568	
STONE, RICHARD E STONE, JEANNE Z	3817 BOSCO RD	NEW HILL NC 27562-9741	

PROJECT: FRIENDSHIP INNOVATION PARK

MEETING: NEIGHBORHOOD MEETING

DATE: 17-OCT-2022

NAME (PLEASE PRINT)	COMPANY	ADDRESS	TELEPHONE	EMAIL
BRANDON MCLAMB, PE	TIMMONS GROUP	5410 TRINITY RD, SUITE 102 RALEIGH, NC 27607	919-866-4935	BRANDON.MCLAMB@TIMMONS.COM
JAY RAPP			919-337-2663	j-r@helixventures.net
Chris Pilz	Trustwell		919-668-9524	Chris@trustwellgroup.com
Gary Zurembke	ARCO		919-836-6873	gzurembke@arco.com

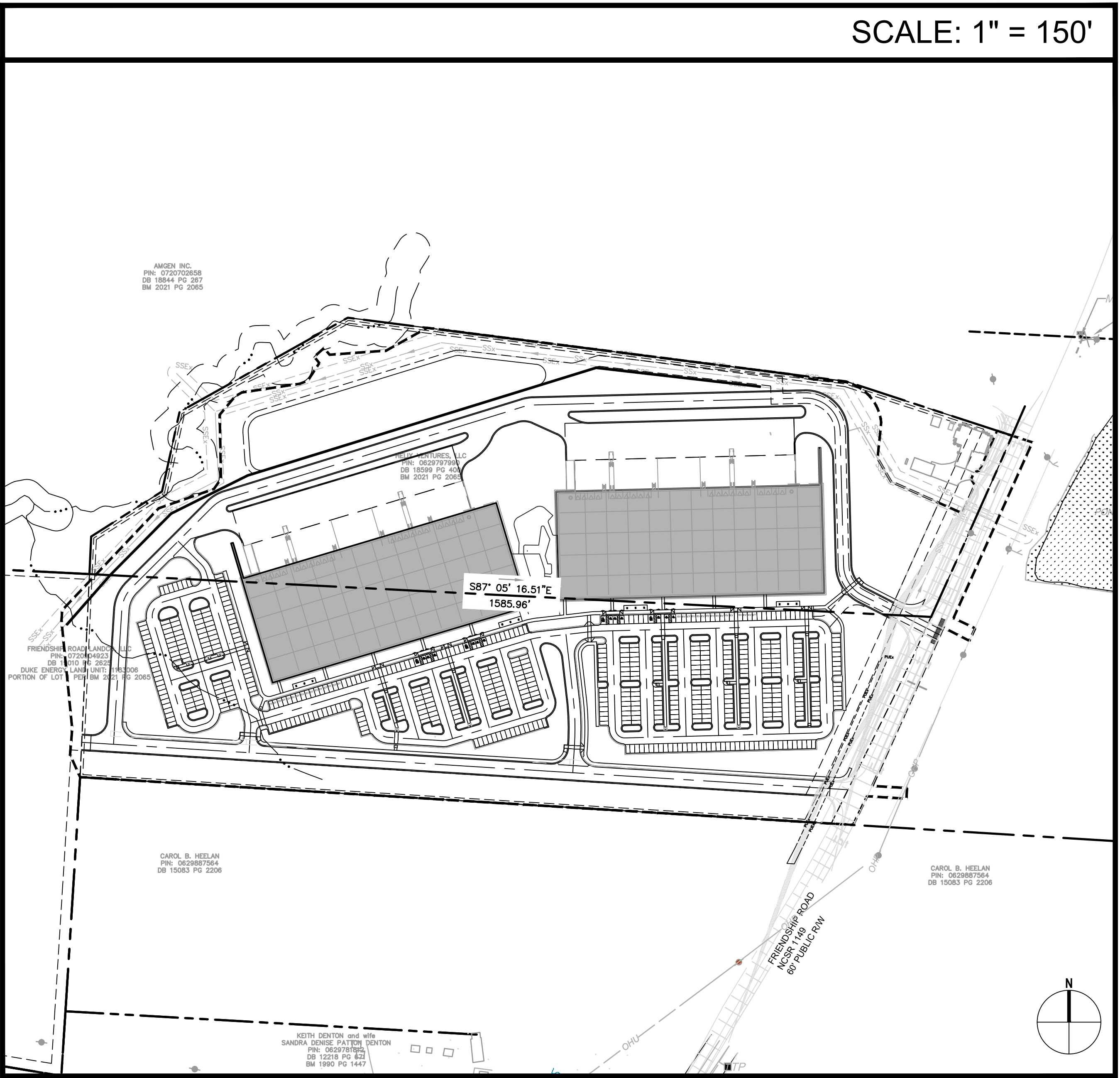
DEVELOPMENT PLAN 22-DP-10/PLDP202200271
(MASTER PLAN 21-MAS-04)
FRIENDSHIP ROAD INDUSTRIAL
(FRIENDSHIP INNOVATION PARK POD E)

HOLLY SPRINGS, NC
OVERALL SITE PLAN

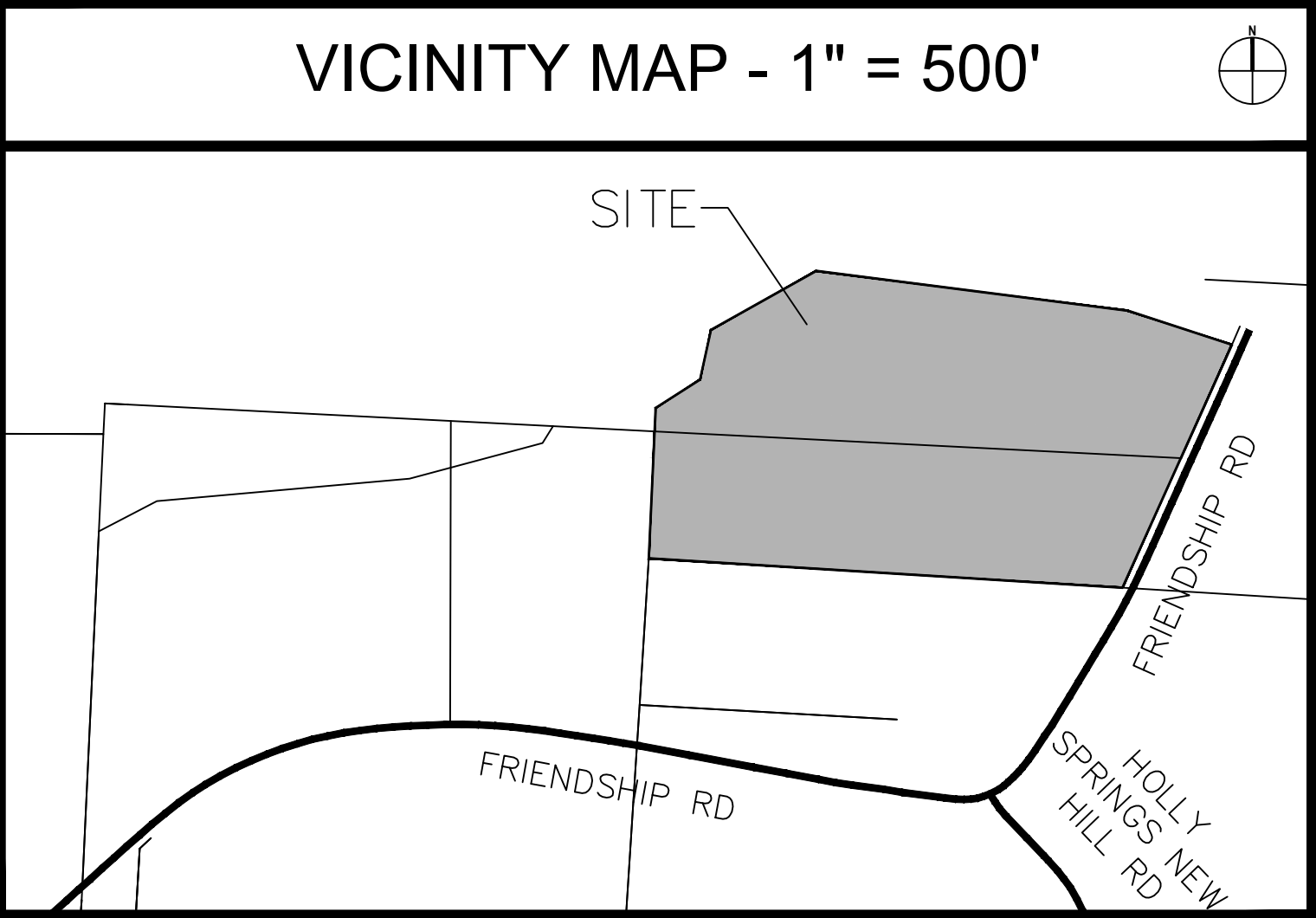
SITE DATA

NAME: FRIENDSHIP ROAD INDUSTRIAL
ADDRESS: 4112 FRIENDSHIP RD, HOLLY SPRINGS, NC 27539
OWNER/DEVELOPER: FRIENDSHIP ROAD LANDCO, LLC, A DELEWARE LIMITED LIABILITY COMPANY
400 N ASHLEY DR, STE 1100
TAMPA, FL 33602
PREPARED BY: BOLTON & MENK SOUTHEAST, LLC
418 S DAWSON ST
RALEIGH, NC 27601
ARCHITECT: ADBI/DESIGN SERVICES LLC
44 S BROADWAY, STE 1003
WHITE PLAINS, NY 10601
LANDSCAPE ARCHITECT: SURFACE 678
215 MORRIS ST, STE 150
DURHAM, NC 27701
MASTERPLAN ARCHITECT: GENSLER
613 HILLSBOROUGH ST
RALEIGH, NC 27603
PARCEL PIN/REAL ESTATE ID#: 0629797990 / 0078620 (15.87 AC);
PORTION OF PARCEL PIN/REAL ESTATE ID#: 0720904923 / 0489792 (226.43 AC)
TOWNSHIP: BUCKHORN
COUNTY: WAKE
STATE: NC
EXISTING ZONING: BUSINESS RESEARCH TECHNOLOGY CONDITIONAL USE (BRT)
EXISTING USE: FIRE STATION AND VACANT
PROPOSED USE: FIRE STATION MANUFACTURING AND OFFICE
PARCEL PIN/REAL ESTATE ID#: 0629797990 / 0078620
VACANT/INDUSTRIAL
PORTION OF PARCEL PIN/REAL ESTATE ID#: 0720904923 / 0489792
VACANT/INDUSTRIAL
TOTAL PARCEL AREA: ±242.3 AC
TOTAL SITE AREA: ±29.3 AC
AREA OF DISTURBANCE: ±28.1 AC
IMPERVIOUS AREA: ±16.13 AC (55.1%)
ESTIMATED DAILY FLOWRATE = 1,866 GPD/ACRE
ACRES=29.30 ACRES
AVERAGE DAILY DEMAND: 29.30 ACRES*(1,866 GPD/ACRE)= 54,674 GPD/
(1440MIN/DAY) = 37.97 GPM
FLEXSHELL I & II GSF = 150,000 SF
MAX BUILDING HEIGHT FLEXSHELL I & II: 75'
PROPOSED BUILDING HEIGHT FLEXSHELL I & II: 40'-0"
PLAN IS SUBJECT TO REVISIONS DURING CONSTRUCTION DRAWING APPROVAL PROCESS.
ALL CONSTRUCTION SHALL CONFORM TO TOWN OF HOLLY SPRINGS ENGINEERING DESIGN AND CONSTRUCTION STANDARDS.
CONSTRUCTION DRAWING APPROVAL IS REQUIRED BEFORE CONSTRUCTION ON THIS PROJECT MAY BEGIN.
DEVELOPMENT FEES ARE DUE BEFORE CONSTRUCTION DRAWING APPROVAL.

SCALE: 1" = 150'



VICINITY MAP - 1" = 500'



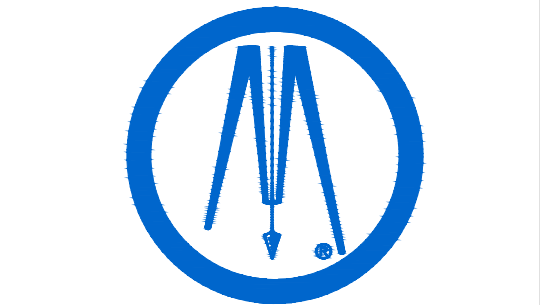
Sheet Index

Sheet Number	Sheet Title
C-000	COVER
C-100	EXISTING CONDITIONS
C-200	SITE PLAN
C-400	GRADING & DRAINAGE PLAN
C-401	STORM TABLE
C-500	UTILITY PLAN
C-700	LANDSCAPE PLAN
C-701	EXISTING VEGETATION
C-702	LANDSCAPE DETAILS, SCHEDULE, & NOTES
C-800	SITE DETAILS I
C-801	SITE DETAILS II
C-814	CIVIL DETAILS - STORM
C-820	SCM DETAIL
C-902	OFFSITE ROADWAY- TYPICAL SECTION
01	BUILDING A ELEVATIONS
02	BUILDING B ELEVATIONS
03	WALL DETAIL
04	MATERIAL SELECTION

REVISIONS

No.	Revision	Date
1	1st ToHS Development Plan Review	11/4/2022
2	2nd ToHS Development Plan Review	12/16/2022
3	3rd ToHS Development Plan Review	01/13/2023
4	4th ToHS Development Plan Review	06/14/2023
5	5th ToHS Development Plan Review	12/08/2023

AMGEN INC.
PIN: 0720702658
DB 18844 PG 267
BM 2021 PG 2065



ColeJenest & Stone
BOLTON & MENK, INC.

418 S DAWSON ST
RALEIGH, NORTH CAROLINA 27601
Phone: (919) 719-1800
Email: info@colejeneststone.com
www.bolton-menk.com

ARCO DESIGN/BUILD

4000 WESTCHASE BLVD
SUITE 450
RALEIGH, NC 27607

FRIENDSHIP ROAD
INDUSTRIAL

4112 FRIENDSHIP RD
HOLLY SPRINGS, NC 27539

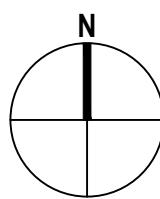
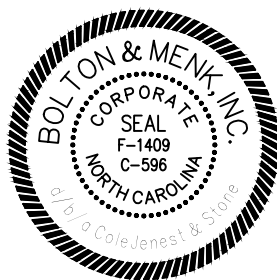
EXISTING
CONDITIONS

PROJECT NO:

50618.00

REVISIONS:

1. 1st ToHS Development Plan Review 11/04/2022
2. 2nd ToHS Development Plan Review 12/16/2022
3. 3rd ToHS Development Plan Review 01/13/2023
4. 4th ToHS Development Plan Review 06/14/2023
5. 5th ToHS Development Plan Review 12/08/2023



SCALE: 1"=60'
0 30' 60' 120'

SCALE: 1"=60'

DATE: 09/23/2022

DESIGNED BY: TH, JR, AH

DRAWN BY: JR, AH, HW

CHECKED BY: TH, BL

C-100

FILE NO.:

© Bolton & Menk, Inc. 2022. All Rights Reserved.
PLANS-FR-15018-CAN-CD-3 - EXISTING CONDITIONS.dwg 12/5/2023 12:35:49 PM

CAROL B. HEELAN
PIN: 0629887564
DB 15083 PG 2206

FRIENDSHIP ROAD LANDCO, LLC
PIN: 0720904923
DB 19010 PG 2625
DUKE ENERGY LAND UNIT: 1183006
PORTION OF LOT 1 PER BM 2021 PG 2065

LOT 1
AREA = 226.43 ACRES
(INCLUDING AREA WITHIN R/W)

HELIX VENTURES, LLC
PIN: 0629797990
DB 18599 PG 400
BM 2021 PG 2065

LOT 3
AREA = 15.87 ACRES

EXISTING PROPERTY LINE
TO BE ABANDONED

EXISTING FIRE DEPARTMENT
BUILDINGS TO REMAIN

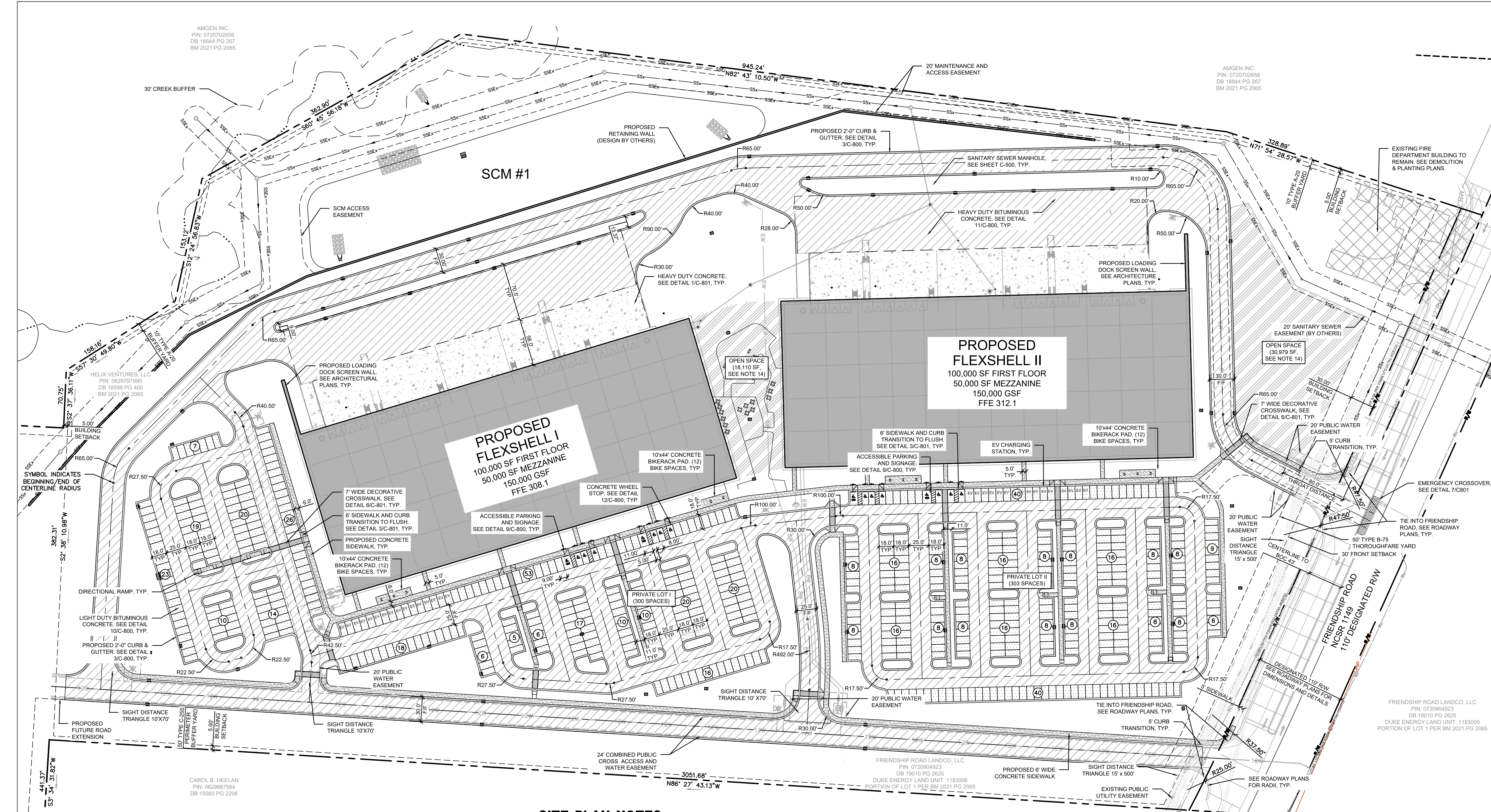
EXISTING SHED TO
BE DEMOLISHED

EXISTING OF&A
PUBLIC UTILITY EASEMENT
OF HOLLY SPRINGS EASEMENT
OF TRAC 185H
DB 14511 PG 854

FRIENDSHIP ROAD
NCSR 1149
60' PUBLIC PRESCRIPTIVE R/W
(NO DEDICATION FOUND
THIS PLAT DOES NOT
DEDICATE ANY R/W)

CAROL B. HEELAN
PIN: 0629887564
DB 15083 PG 2206

PROPER
TO
REMC



LEGEND

SYMBOL	DETAIL	SYMBOL	DETAIL
	PROPERTY LINE		HEAVY DUTY CONCRETE 1/C-801
	SITE LIMITS		HEAVY DUTY BITUMINOUS ASPHALT 11/C-800
	PROPOSED SIDEWALK		LIGHT DUTY BITUMINOUS ASPHALT 10/C-800
	PROPOSED ACCESSIBLE RAMP		OPEN SPACE N/A
	PROPOSED ACCESSIBLE SPACE		PROPOSED 2'-0" CURB & GUTTER 3/C-800
	PROPOSED ACCESSIBLE VAN SPACE		DECORATIVE CROSSWALK 6/C-801
	PROPOSED ACCESSIBLE SIGN		

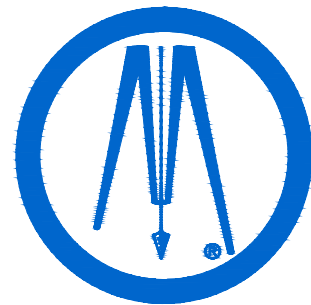
SITE PLAN NOTES

- ALL DIMENSIONS ARE TO FACE OF CURB, FACE OF WALL, OR CENTERLINE UNLESS OTHERWISE NOTED.
- ALL DIMENSIONS ARE AT 90 DEGREES UNLESS OTHERWISE NOTED.
- ALL BACK OF CURB RADII AT PARKING LOT ISLANDS ARE 4.5- FEET UNLESS OTHERWISE NOTED.
- PARKING STALL DIMENSIONS ARE 18.0' (TO FACE OF CURB) X 9.0' WIDE UNLESS OTHERWISE NOTED.
- REFER TO ARCHITECTURAL PLANS FOR ACTUAL BUILDING DIMENSIONS.
- ANY DISCREPANCIES BETWEEN THE CONTRACT DOCUMENTS AND ACTUAL FIELD CONDITIONS SHALL BE CALLED TO THE ATTENTION OF THE OWNER AND ENGINEER PRIOR TO PROCEEDING WITH THE WORK.
- THE CONTRACTOR SHALL CONTACT ALL OWNERS OF UTILITIES, EASEMENTS, AND RIGHTS-OF-WAY, PUBLIC AND PRIVATE, PRIOR TO WORKING IN THESE AREAS.
- ALL ASPHALT PAVING SHALL CONFORM TO THE APPLICABLE PROVISIONS OF THE NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES, LATEST EDITION.
- CONTRACTOR SHALL FURNISH AND INSTALL ALL PAVEMENT MARKINGS AS SHOWN ON THE PLANS.
- ALL SIGNS, PAVEMENT MARKINGS, AND OTHER TRAFFIC CONTROL DEVICES SHALL CONFORM TO THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
- ALL PAVEMENT MARKINGS ARE TO BE AASHTO M 248, ALKYD TRAFFIC MARKING PAINT AND SIZED AS FOLLOWS, UNLESS OTHERWISE NOTED:
11.1. PARKING LINES: 4" WIDE, WHITE
11.2. CROSSWALKS: SEE DETAIL 6/C-801
11.3. STOP BAR: 24" WIDE
- STOP SIGNS SHALL BE R1-1, 30"x30".
- NO DEMOLITION LANDFILLS ALLOWED ON SITE.
- OPEN SPACE FINAL DESIGNS WILL BE PROVIDED WITH FIRST CONSTRUCTION DRAWING SUBMITTAL. OPEN SPACE AMENITY CONSIDERATIONS TO INCLUDE OUTDOOR SEATING, COVERED SEATING (GAZEBO OR LEAN-TO STRUCTURE), LANDSCAPING, FIRE PIT(S), AND SMALL GAMES OR ACTIVE AREAS (SUCH AS CORNHOLE, BOCCIE BALL, ETC.). SEE DETAIL 8/C-801 FOR EXAMPLES.
- PUBLIC REALM REQUIREMENTS (UDO SECTION 8.3.A.3) WILL BE SATISFIED USING "EXPRESSIVE ENTRANCES" FOR THE BUILDINGS. SEE ARCHITECTURAL PLANS.
- TRASH COMPACTOR/ DUMPSTER LOCATIONS, QUANTITIES, & SCREENING TO BE DETERMINED AT TENANT UPFIT. A PLAN AMENDMENT MAY BE REQUIRED.

PARKING SUMMARY	AREA	REQUIRED	PROVIDED
FLEXSHELL I (150,000 SF)			
OFFICE SF (2.25 PER 1000 SF ^(B)):	100,000	225	300
MANUFACTURING SF (4 PER 3000 SF ^(C)):	50,000	67	
LOT I ACCESSIBLE PARKING:		12	12
LOT I ACCESSIBLE VAN PARKING:		4	4
LOT I BICYCLE PARKING ^(A) :		23	24
LOT I EV SPACES: 5.00%		15	16
FLEXSHELL II (150,000 SF)			
OFFICE SF (2.25 PER 1000 SF ^(B)):	100,000	225	303
MANUFACTURING SF (4 PER 3000 SF ^(C)):	50,000	67	
LOT II ACCESSIBLE PARKING:		12	12
LOT II ACCESSIBLE VAN PARKING:		4	4
LOT II BICYCLE PARKING ^(A) :		23	24
LOT II EV SPACES: 5.00%		15	16

^(A)REQUIRED BICYCLE PARKING DOES NOT INCLUDE MANUFACTURING PARKING IN THE CALCULATIONS
^(B)OFFICE PARKING REQUIREMENT IS 2/1000 SF MIN AND 4/1000 MAX. 2.25 IS USED ON THIS PROJECT TO REFLECT OWNER'S REQUIREMENTS.
^(C)MANUFACTURING PARKING REQUIREMENT IS 1/3000 SF MIN AND NO MAX. 4 IS USED ON THIS PROJECT TO REFLECT OWNER'S REQUIREMENTS.

LOT SUMMARY	
AVERAGE LOT SIZE:	N/A
MIN LOT WIDTH:	N/A
MIN LOT FRONTAGE:	100 FT
MIN LOT DEPTH:	N/A
MAX BUILDING HEIGHT:	100 FT
GROSS DENSITY:	N/A
OPEN SPACE REQUIRED:	3%
0.03 X 1,277,972 SF =	38,339 SF
PROVIDED:	49,089 SF
MIN BUILDING SETBACKS	
FRONT:	30 FT
THOROUGHFARE:	50 FT
SIDE:	5 FT
REAR:	5 FT
PERIMETER BUFFER YARDS	
TYPE C-255	50 FT
TYPE B-75 THOROUGHFARE	50 FT
TYPE A-20	10 FT



ColeJenest & Stone
BOLTON & MENK, INC.

418 S DAWSON ST
RALEIGH, NORTH CAROLINA 27601
Phone: (919) 719-1800
Email: info@colejeneststone.com
www.bolton-menk.com

ARCO DESIGN/BUILD

4000 WESTCHASE BLVD
SUITE 450
RALEIGH, NC 27607

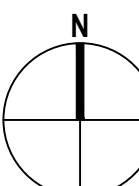
FRIENDSHIP ROAD
INDUSTRIAL

4112 FRIENDSHIP RD
HOLLY SPRINGS, NC 27539

SITE PLAN

PROJECT NO:
50618.00

- REVISIONS:
- 1st ToHS Development Plan Review 11/04/2022
 - 2nd ToHS Development Plan Review 12/16/2022
 - 3rd ToHS Development Plan Review 01/13/2023
 - 4th ToHS Development Plan Review 06/14/2023
 - 5th ToHS Development Plan Review 12/08/2023

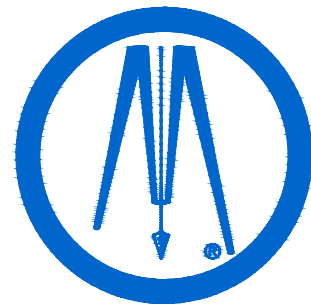


SCALE: 1"=60'
0 30' 60' 120'

SCALE:	1"=60'
DATE:	09/23/2022
DESIGNED BY:	TH, JR, AH
DRAWN BY:	JR, AH, HW
CHECKED BY:	TH, BL

C-200

FILE NO.:



ColeJenest & Stone
BOLTON & MENK, INC.

418 S DAWSON ST
RALEIGH, NORTH CAROLINA 27601
Phone: (919) 719-1800
Email: info@colejeneststone.com
www.bolton-menk.com

ARCO DESIGN/BUILD

4000 WESTCHASE BLVD
SUITE 450
RALEIGH, NC 27607

FRIENDSHIP ROAD
INDUSTRIAL

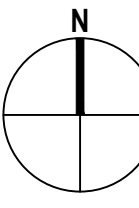
4112 FRIENDSHIP RD
HOLLY SPRINGS, NC 27539

GRADING &
DRAINAGE PLAN

PROJECT NO:
50618.00

REVISIONS:

1. 1st ToHS Development Plan Review 11/04/2022
2. 2nd ToHS Development Plan Review 12/16/2022
3. 3rd ToHS Development Plan Review 01/13/2023
4. 4th ToHS Development Plan Review 06/14/2023
5. 5th ToHS Development Plan Review 12/08/2023

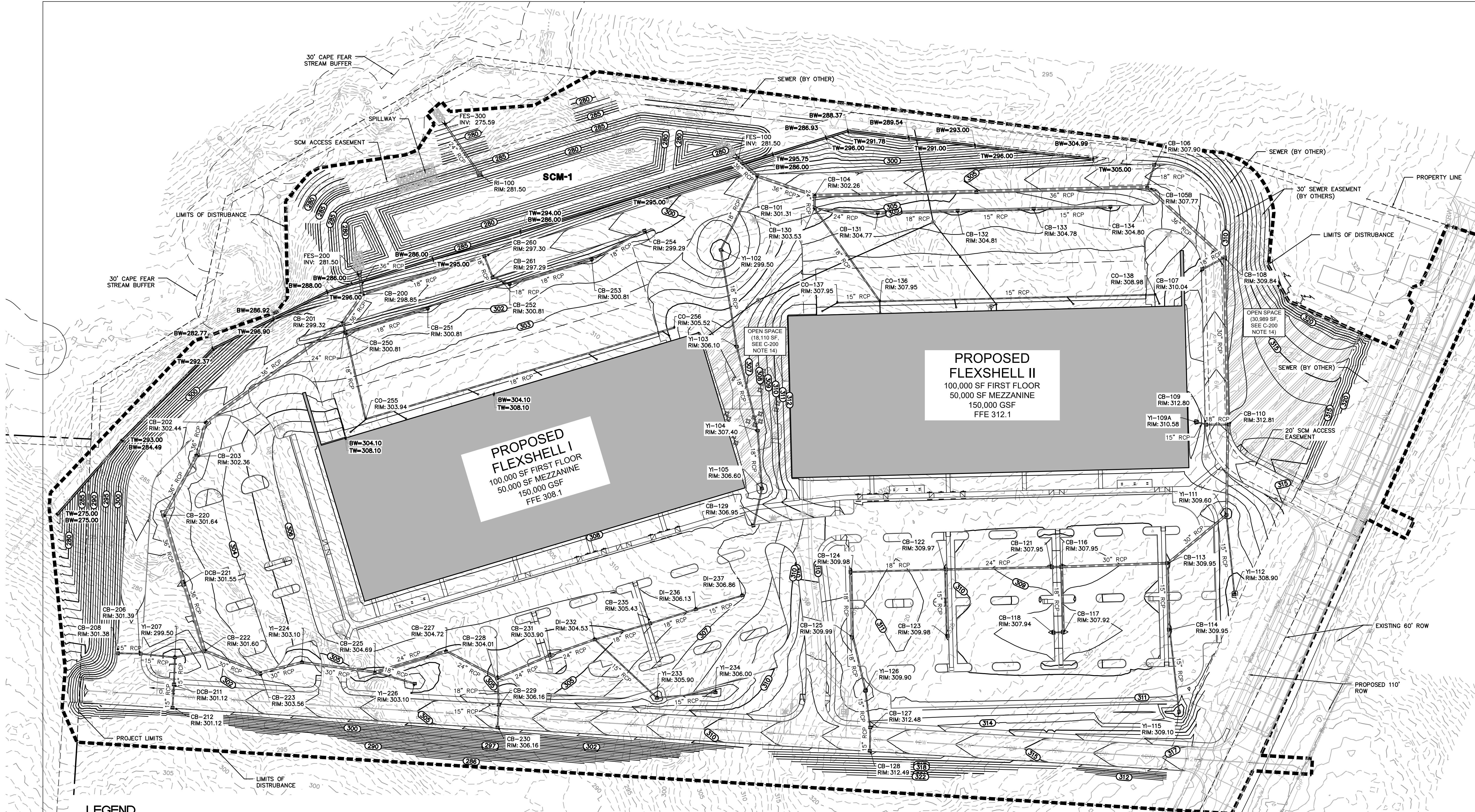


SCALE: 1"=60'
0 30' 60' 120'

SCALE:	1"=60'
DATE:	09/23/2022
DESIGNED BY:	TH, JR, AH
DRAWN BY:	JR, AH, HW
CHECKED BY:	TH, BL

C-400

FILE NO.:



LEGEND

SYMBOL	DETAIL	SYMBOL	DETAIL
	LIMITS OF DISTURBANCE		PROPOSED AREA DRAIN
	PROPOSED CONTOUR		PROPOSED MANHOLE
	PROPOSED INDEX CONTOUR		
	PROPOSED STORM DRAINAGE		
	PROPOSED ROOF DRAIN WITH CLEANOUT		
	PROPOSED CURB INLET		
	PROPOSED DROP INLET		

GRADING AND EARTHWORK NOTES

1. CONTRACTOR SHALL CONTACT INSPECTOR 48 HOURS BEFORE CONSTRUCTION.
2. REFER TO EROSION CONTROL PLAN FOR CONSTRUCTION SEQUENCE REQUIREMENTS.
3. ON-SITE BURIAL PITS REQUIRE A PERMIT.
4. ANY GRADING BEYOND THE DENOVED LIMITS INDICATED ON THE CONSTRUCTION DOCUMENTS IS A VIOLATION OF EROSION CONTROL ORDINANCES AND IS SUBJECT TO A FINE.
5. GRADING MORE THAN ONE ACRE WITHOUT AN APPROVED EROSION CONTROL PLAN IS A VIOLATION OF EROSION CONTROL ORDINANCES AND IS SUBJECT TO A FINE.
6. APPROVAL OF THIS PLAN IS NOT AN AUTHORIZATION TO GRADE ON ADJACENT PROPERTIES. WHEN FIELD CONDITIONS WARRANT OFF-SITE GRADING, PERMISSION MUST BE OBTAINED FROM THE AFFECTED PROPERTY OWNER(S).
7. THE CONTRACTOR SHALL IMMEDIATELY REPORT TO OWNER ANY DISCREPANCIES FOUND BETWEEN ACTUAL FIELD CONDITIONS AND CONSTRUCTION DOCUMENTS AND SHALL WAIT FOR INSTRUCTION PRIOR TO PROCEEDING.
8. CONTRACTOR SHALL VERIFY LOCATION OF ALL EXISTING UTILITIES IN THE FIELD PRIOR TO BEGINNING CONSTRUCTION.
9. LIMITS OF CLEARING SHOWN ON GRADING PLAN ARE BASED UPON THE APPROXIMATE CUT AND FILL SLOPE LIMITS, OR OTHER GRADING REQUIREMENTS.
10. ALL ELEVATIONS ARE IN REFERENCE TO THE SITE BENCHMARK. CONTRACTOR SHALL VERIFY THE BENCHMARK PRIOR TO GROUND BREAKING.
11. THE PROPOSED CONTOURS AND SPOT ELEVATIONS SHOWN WITHIN ROADWAYS, PARKING LOTS, AND SIDEWALK AREAS REFLECT FINISHED ELEVATIONS INCLUDING PAVEMENT. REFER TO PAVEMENT CROSS SECTION DATA TO ESTABLISH CORRECT SUBBASE OR AGGREGATE BASE COURSE ELEVATIONS TO BE COMPLETED UNDER THIS CONTRACT.
12. GRADES SHALL BE ESTABLISHED TO PROVIDE A SMOOTH SURFACE, FREE FROM IRREGULAR

SURFACE CHANGES. GRADING SHALL COMPLY WITH COMPACTION REQUIREMENTS AND GRADE CROSS SECTIONS, LINES, AND ELEVATIONS INDICATED. WHERE NO SPOT GRADES ARE INDICATED, THE GRADE SHALL BE ESTABLISHED BASED ON INTERPOLATION OF THE ELEVATIONS BETWEEN ADJACENT SPOT GRADES WHILE MAINTAINING APPROPRIATE TRANSITION AT STRUCTURES AND PAVING, AND UNINTERRUPTED DRAINAGE FLOW INTO INLETS.

13. CONTRACTOR SHALL ENSURE POSITIVE DRAINAGE SUCH THAT RUNOFF WILL DRAIN BY GRAVITY FLOW ACROSS NEW GRADED AREAS TO NEW OR EXISTING DRAINAGE INLETS, OR SHEET OVERLAND.

14. ALL SIDEWALKS, STOOPS, TERRACES AND OTHER PAVED AREAS SHALL SLOPE AWAY FROM BUILDING(S) AT 2.0% MAXIMUM.

15. COLEJENEST & STONE, P.A., HAS NOT PERFORMED ANY GEOTECHNICAL EVALUATIONS OF THE SUBJECT PROPERTY AND HAS NOT MADE ANY DETERMINATIONS AS TO THE SUITABILITY OF SITE SOILS FOR USE AS FILL BENEATH PROPOSED BUILDINGS, DRIVEWAYS, PARKING AREAS, OR FOR OTHER USES. ALL EARTHWORK SHALL BE COMPLETED IN ACCORDANCE WITH THE RECOMMENDATIONS OF A QUALIFIED GEOTECHNICAL ENGINEER WHO SHALL BE RETAINED BY THE OWNER.

16. ALL FILL SHALL BE PLACED IN MAXIMUM 8-INCH LIFTS AND COMPACTED. ALL FILL WITHIN LIMITS OF BUILDING AND PAVEMENT AREAS SHALL BE COMPACTED TO 100% OF MAXIMUM STANDARD PROCTOR DENSITY WITHIN THE TOP 12 INCHES AND A MINIMUM 95% OF MAXIMUM STANDARD PROCTOR DENSITY BELOW 12-INCH DEPTH. FILL WITHIN LANDSCAPED AREAS SHALL BE COMPACTED TO MINIMUM 90% OF MAXIMUM STANDARD PROCTOR DENSITY. MAXIMUM STANDARD PROCTOR DENSITIES SHALL BE DETERMINED IN ACCORDANCE WITH ASTM D 698. REFER TO GEOTECHNICAL ENGINEER'S REPORT FOR ADDITIONAL EARTHWORK SPECIFICATIONS AND REQUIREMENTS.

17. FOR SLOPE CONSTRUCTION 3:1 AND STEEPER AND EXCEEDING 8 FEET IN VERTICAL HEIGHT, THE CONTRACTOR SHALL COORDINATE WITH A GEOTECHNICAL ENGINEER ON THE SUITABILITY OF SOILS PLANNED FOR THESE SLOPES AND FOLLOW RECOMMENDATIONS SET FORTH BY THE GEOTECHNICAL ENGINEER FOR SLOPE CONSTRUCTION. ALL SUCH SLOPES SHALL BE BRACKETED TOP TO BOTTOM AND STABILIZED WITH A REINFORCED EROSION CONTROL BLANKET CONSISTING OF POLYPROPYLENE NETTING AND A STRAW/COCONUT FIBER MATRIX, STAKED TO MANUFACTURER'S RECOMMENDATIONS. TOP SOIL PLACEMENT ON SLOPES SHALL BE INSTALLED IN A BENCHED PATTERN.

18. ALL PROJECT SUBGRADE SHALL BE INSPECTED BY THE GEOTECHNICAL ENGINEER. IF THE GEOTECHNICAL ENGINEER DETERMINES THAT UNSATISFACTORY SOIL IS PRESENT, THE UNSATISFACTORY MATERIAL SHALL BE REMOVED AND REPLACED WITH COMPACTED BACKFILL. SUCH ADDITIONAL AUTHORIZED EXCAVATION SHALL BE PAID FOR ACCORDING TO THE CONTRACT PROVISIONS FOR UNIT PRICES.
19. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL FILL AND BACKFILL MATERIAL WITHIN 3 PERCENT OF THE OPTIMUM MOISTURE CONTENT AS DETERMINED BY ASTM D 698. SOIL MATERIAL THAT EXCEEDS THE OPTIMUM MOISTURE CONTENT BY 3 PERCENT OR MORE, AND IS TOO WET TO COMPACT TO THE SPECIFIED DRY UNIT WEIGHT, SHALL BE SCARIFIED AND AIR DRIED, LIME STABILIZED, OR REMOVED AND REPLACED.
20. CONTRACTOR SHALL PROVIDE ALL DEWATERING MEASURES NECESSARY, INCLUDING WELL POINTS, SLUMP PUMPS, TEMPORARY SHORING, ETC., TO ENSURE COMPLETION OF STABLE EXCAVATION AND BACKFILL OPERATIONS. GROUNDWATER SHALL BE MAINTAINED A MINIMUM OF 2 FT. BELOW THE BOTTOM OF ALL EXCAVATIONS.
21. CONTRACTOR SHALL CONSULT WITH THE GEOTECHNICAL ENGINEER AND PROVIDE ANY AND ALL SHORING DETERMINED TO BE NECESSARY TO PROTECT EXISTING BUILDING FOUNDATIONS OR OTHER ADJACENT IMPROVEMENTS.
22. OWNER SHALL ENGAGE A QUALIFIED INDEPENDENT GEOTECHNICAL ENGINEERING TESTING AGENCY TO PERFORM FIELD QUALITY CONTROL TESTING. TESTING AGENCY SHALL TEST COMPACTION OF SOILS IN PLACE ACCORDING TO ASTM D2922 AND ASTM D2937, AS APPLICABLE. TEST SHALL BE PERFORMED AT EACH COMPACTED BACKFILL LAYER AT A RATE OF NOT LESS THAN ONE TEST FOR EACH 2500 SF OF FILL AREA OR ONE TEST PER EACH 100 LF OF WALL OR TRENCH LENGTH.
23. ALL GRADED OR DISTURBED AREAS BEYOND THE LIMITS OF PAVING, SIDEWALKS, BUILDINGS, ETC., THAT ARE NOT OTHERWISE LANDSCAPED PER THE LANDSCAPING PLAN, SHALL BE STABILIZED WITH A NEW LAWN SEEDING IN ACCORDANCE WITH THE SEEDING SPECIFICATION. CONTRACTOR SHALL MAINTAIN SEEDING AREAS UNTIL A HEALTHY STAND OF GRASS IS ESTABLISHED.

STORM DRAINAGE SCHEDULE								
FROM	TO	SIZE (IN)	MATERIAL	LENGTH (FT)	SLOPE (FT/FT)	INV OUT (FT)	INV IN (FT)	PIPE
YI-207	CB-222	18 inch	Reinforced Concrete Pipe	38	0.0100	294.75	294.37	P-111
YI-109A	CB-109	15 inch	Reinforced Concrete Pipe	14	0.0800	306.00	304.88	P-110
CB-254	CB-253	18 inch	Reinforced Concrete Pipe	76	0.0060	295.51	295.05	P-107
YI-233	DI-232	15 inch	Reinforced Concrete Pipe	108	0.0060	301.06	300.41	P-106
YI-234	YI-233	15 inch	Reinforced Concrete Pipe	74	0.0060	301.70	301.26	P-105
CB-114	YI-115	15 inch	Reinforced Concrete Pipe	104	0.0150	304.70	303.14	P-104
CB-134	CB-133	15 inch	Reinforced Concrete Pipe	97	0.0100	300.86	299.89	P-103
CB-129	YI-105	18 inch	Reinforced Concrete Pipe	49	0.0100	302.50	302.01	P-102
CB-118	CB-117	15 inch	Reinforced Concrete Pipe	14	0.0400	304.50	303.94	P-101
YI-112	YI-111	15 inch	Reinforced Concrete Pipe	101	0.0294	304.46	301.50	P-100
CB-124	CB-122	18 inch	Reinforced Concrete Pipe	118	0.0050	304.72	304.13	P-99
CB-253	CB-252	18 inch	Reinforced Concrete Pipe	108	0.0061	294.85	294.19	P-98
CB-252	CB-261	18 inch	Reinforced Concrete Pipe	24	0.0163	293.89	293.50	P-97
YI-104	YI-103	18 inch	Reinforced Concrete Pipe	109	0.0130	300.87	299.45	P-96 (1)
YI-105	YI-104	18 inch	Reinforced Concrete Pipe	73	0.0128	301.81	300.87	P-96
YI-103	YI-102	18 inch	Reinforced Concrete Pipe	124	0.0391	299.26	294.43	P-95
YI-226	CB-225	18 inch	Reinforced Concrete Pipe	53	0.0289	298.72	297.20	P-94
RI-100	FES-300	24 inch	Reinforced Concrete Pipe	76	0.0100	276.35	275.59	P-93
CB-229	CB-228	18 inch	Reinforced Concrete Pipe	35	0.0200	299.60	298.90	P-92
CB-230	CB-229	15 inch	Reinforced Concrete Pipe	26	0.0200	300.32	299.80	P-91
YI-102	CB-101	18 inch	Reinforced Concrete Pipe	103	0.0700	294.24	287.00	P-90
CB-261	CB-260	18 inch	Reinforced Concrete Pipe	27	0.0196	293.30	292.78	P-89
CB-260	CB-200	18 inch	Reinforced Concrete Pipe	161	0.0268	292.58	288.26	P-88
CB-250	CB-201	24 inch	Reinforced Concrete Pipe	15	0.0600	290.80	289.92	P-87
CB-206	YI-207	15 inch	Reinforced Concrete Pipe	45	0.0100	295.70	295.25	P-86
CO-136	CB-130	18 inch	Reinforced Concrete Pipe	143	0.0329	302.00	297.30	P-85
CO-137	CO-136	15 inch	Reinforced Concrete Pipe	54	0.0270	303.71	302.26	P-84
CO-138	CO-136	15 inch	Reinforced Concrete Pipe	347	0.0077	304.86	302.20	P-83
CO-255	CB-250	18 inch	Reinforced Concrete Pipe	111	0.0386	295.50	291.23	P-82
CO-256	CO-255	18 inch	Reinforced Concrete Pipe	405	0.0106	300.00	295.71	P-81
CB-223	CB-222	30 inch	Reinforced Concrete Pipe	75	0.0099	295.00	294.26	P-80 (1)
DCB-211	YI-207	15 inch	Reinforced Concrete Pipe	35	0.0300	296.51	295.46	P-80
CB-212	DCB-211	15 inch	Reinforced Concrete Pipe	27	0.0050	296.65	296.51	P-78
YI-126	CB-125	18 inch	Reinforced Concrete Pipe	69	0.0050	305.89	305.54	P-75 (1)
CB-127	YI-126	15 inch	Reinforced Concrete Pipe	48	0.0151	306.81	306.09	P-75
YI-224	CB-223	30 inch	Reinforced Concrete Pipe	54	0.0100	295.74	295.20	P-71 (1)
CB-225	YI-224	30 inch	Reinforced Concrete Pipe	92	0.0080	296.79	296.05	P-71
CB-222	DCB-221	36 inch	Reinforced Concrete Pipe	89	0.0050	293.86	293.41	P-69
CB-251	CB-250	18 inch	Reinforced Concrete Pipe	108	0.0150	293.22	291.60	P-65
CB-130	CB-104	24 inch	Reinforced Concrete Pipe	17	0.1000	295.30	293.62	P-62
CB-131	CB-130	24 inch	Reinforced Concrete Pipe	80	0.0100	297.32	296.53	P-61

STORM DRAINAGE SCHEDULE								
FROM	TO	SIZE (IN)	MATERIAL	LENGTH (FT)	SLOPE (FT/FT)	INV OUT (FT)	INV IN (FT)	PIPE
CB-132	CB-131	18 inch	Reinforced Concrete Pipe	101	0.0100	298.53	297.52	P-60
CB-133	CB-132	15 inch	Reinforced Concrete Pipe	96	0.0100	299.69	298.74	P-59
CB-101	FES-100	36 inch	Reinforced Concrete Pipe	32	0.0155	282.00	281.50	P-53
YI-111	CB-110	30 inch	Reinforced Concrete Pipe	114	0.0080	300.17	299.26	P-52 (1) (1)
CB-113	YI-111	30 inch	Reinforced Concrete Pipe	95	0.0059	300.94	300.37	P-52 (1)
CB-116	CB-113	30 inch	Reinforced Concrete Pipe	134	0.0050	301.80	301.14	P-52
CB-114	CB-113	15 inch	Reinforced Concrete Pipe	84	0.0215	302.94	301.14	P-51
CB-109	CB-110	18 inch	Reinforced Concrete Pipe	26	0.1000	308.71	306.11	P-49
CB-110	CB-108	30 inch	Reinforced Concrete Pipe	210	0.0080	299.06	297.38	P-48
CB-200	FES-200	36 inch	Reinforced Concrete Pipe	23	0.0218	282.00	281.50	P-46
CB-117	CB-116	18 inch	Reinforced Concrete Pipe	82	0.0100	303.74	302.92	P-45
CB-121	CB-116	24 inch	Reinforced Concrete Pipe	14	0.0279	302.42	302.03	P-43 (3) (1)
CB-122	CB-121	24 inch	Reinforced Concrete Pipe	134	0.0083	303.93	302.82	P-43 (3)
CB-125	CB-124	18 inch	Reinforced Concrete Pipe	82	0.0050	305.34	304.93	P-41
CB-123	CB-122	15 inch	Reinforced Concrete Pipe	84	0.0224	306.00	304.13	P-40
CB-104	CB-101	36 inch	Reinforced Concrete Pipe	76	0.0500	289.26	285.46	P-37
CB-105A	CB-104	36 inch	Reinforced Concrete Pipe	204	0.0100	291.70	289.67	P-36 (1)
CB-105B	CB-105A	36 inch	Reinforced Concrete Pipe	215	0.0100	293.86	291.70	P-36
CB-106	CB-105B	18 inch	Reinforced Concrete Pipe	28	0.0879	297.43	295.00	P-35
CB-108	CB-105B	36 inch	Reinforced Concrete Pipe	132	0.0222	296.98	294.06	P-34
CB-107	CB-108	18 inch	Reinforced Concrete Pipe	30	0.0104	304.51	304.20	P-33
CB-208	CB-206	15 inch	Reinforced Concrete Pipe	26	0.0100	296.15	295.89	P-31
CB-201	CB-200	36 inch	Reinforced Concrete Pipe	42	0.0424	288.80	287.00	P-26
CB-202	CB-201	36 inch	Reinforced Concrete Pipe	214	0.0100	291.30	289.16	P-25
CB-203	CB-202	36 inch	Reinforced Concrete Pipe	44	0.0100	291.94	291.50	P-23
CB-220	CB-203	36 inch	Reinforced Concrete Pipe	85	0.0050	292.57	292.14	P-21
DCB-221	CB-220	36 inch	Reinforced Concrete Pipe	89	0.0050	293.21	292.77	P-20
CB-227	CB-225	24 inch	Reinforced Concrete Pipe	94	0.0080	297.95	297.20	P-18 (1)
CB-228	CB-227	24 inch	Reinforced Concrete Pipe	74	0.0080	298.74	298.15	P-18
CB-231	CB-228	24 inch	Reinforced Concrete Pipe	73	0.0080	299.54	298.96	P-17
DI-232	CB-231	24 inch	Reinforced Concrete Pipe	59	0.0080	300.21	299.74	P-16 (1)
CB-235	DI-232	18 inch	Reinforced Concrete Pipe	74	0.0080	301.00	300.41	P-16
DI-236	CB-235	18 inch	Reinforced Concrete Pipe	59	0.0080	301.67	301.20	P-15
DI-237	DI-236	15 inch	Reinforced Concrete Pipe	61	0.0080	302.36	301.87	P-14 (1)
CB-128	CB-127	15 inch	Reinforced Concrete Pipe	27	0.0180	307.50	307.01	P-13



418 S DAWSON ST
RALEIGH, NORTH CAROLINA 27601
Phone: (919) 719-1800
Email: info@colejeneststone.com
www.bolton-menk.com

ARCO DESIGN/BUILD

4000 WESTCHASE BLVD
SUITE 450
RALEIGH, NC 27607

FRIENDSHIP ROAD INDUSTRIAL

4112 FRIENDSHIP RD
HOLLY SPRINGS, NC 27539

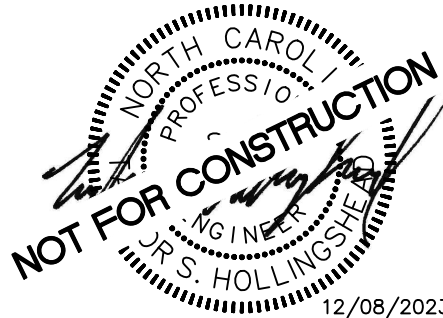
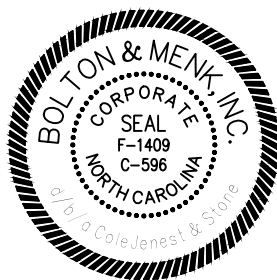
GRADING & DRAINAGE PLAN STORM TABLE

PROJECT NO:

50618.00

REVISIONS:

1. 1st ToHS Development Plan Review 11/04/2022
2. 2nd ToHS Development Plan Review 12/16/2022
3. 3rd ToHS Development Plan Review 01/13/2023
4. 4th ToHS Development Plan Review 06/14/2023
5. 5th ToHS Development Plan Review 12/08/2023



12/08/2023

SCALE:

DATE: 09/23/2022

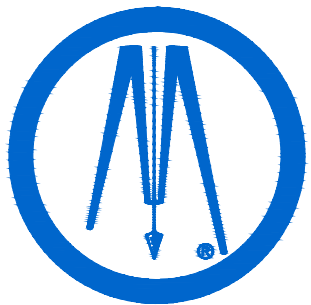
DESIGNED BY: TH, JR, AH

DRAWN BY: JR, AH, HW

CHECKED BY: TH, BL

C-401

FILE NO.:



ColeJenest & Stone
BOLTON & MENK, INC.

418 S DAWSON ST
RALEIGH, NORTH CAROLINA 27601
Phone: (919) 719-1800
Email: info@colejeneststone.com
www.bolton-menk.com

ARCO DESIGN/BUILD

4000 WESTCHASE BLVD
SUITE 450
RALEIGH, NC 27607

FRIENDSHIP ROAD
INDUSTRIAL

4112 FRIENDSHIP RD
HOLLY SPRINGS, NC 27539

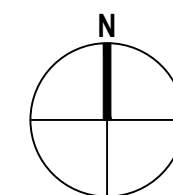
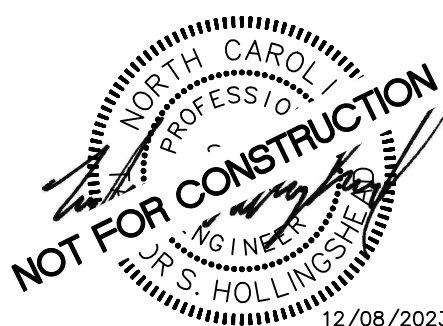
UTILITY PLAN

PROJECT NO:

50618.00

REVISIONS:

- 1st ToHS Development Plan Review 11/04/2022
- 2nd ToHS Development Plan Review 12/16/2022
- 3rd ToHS Development Plan Review 01/13/2023
- 4th ToHS Development Plan Review 06/14/2023
- 5th ToHS Development Plan Review 12/08/2023

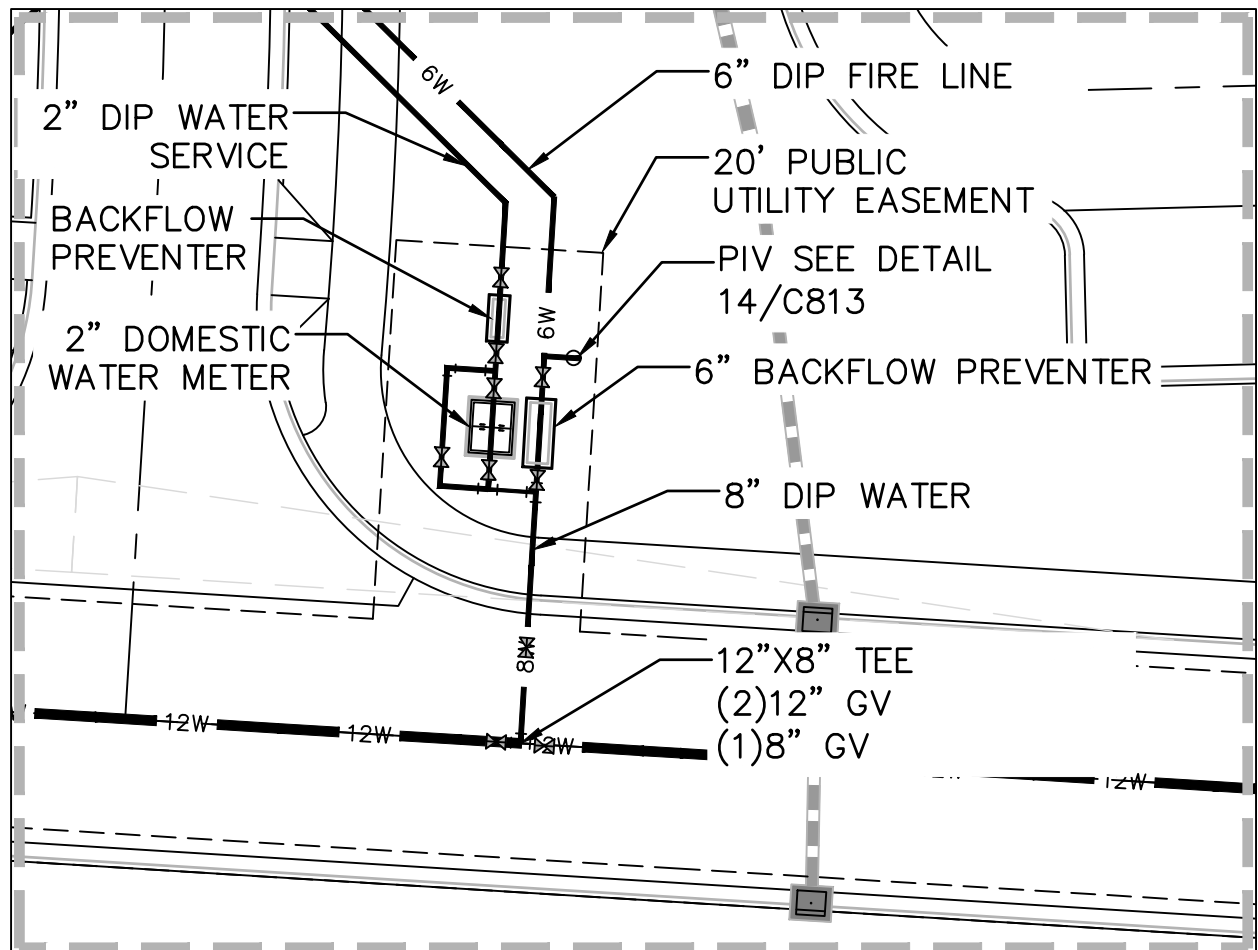
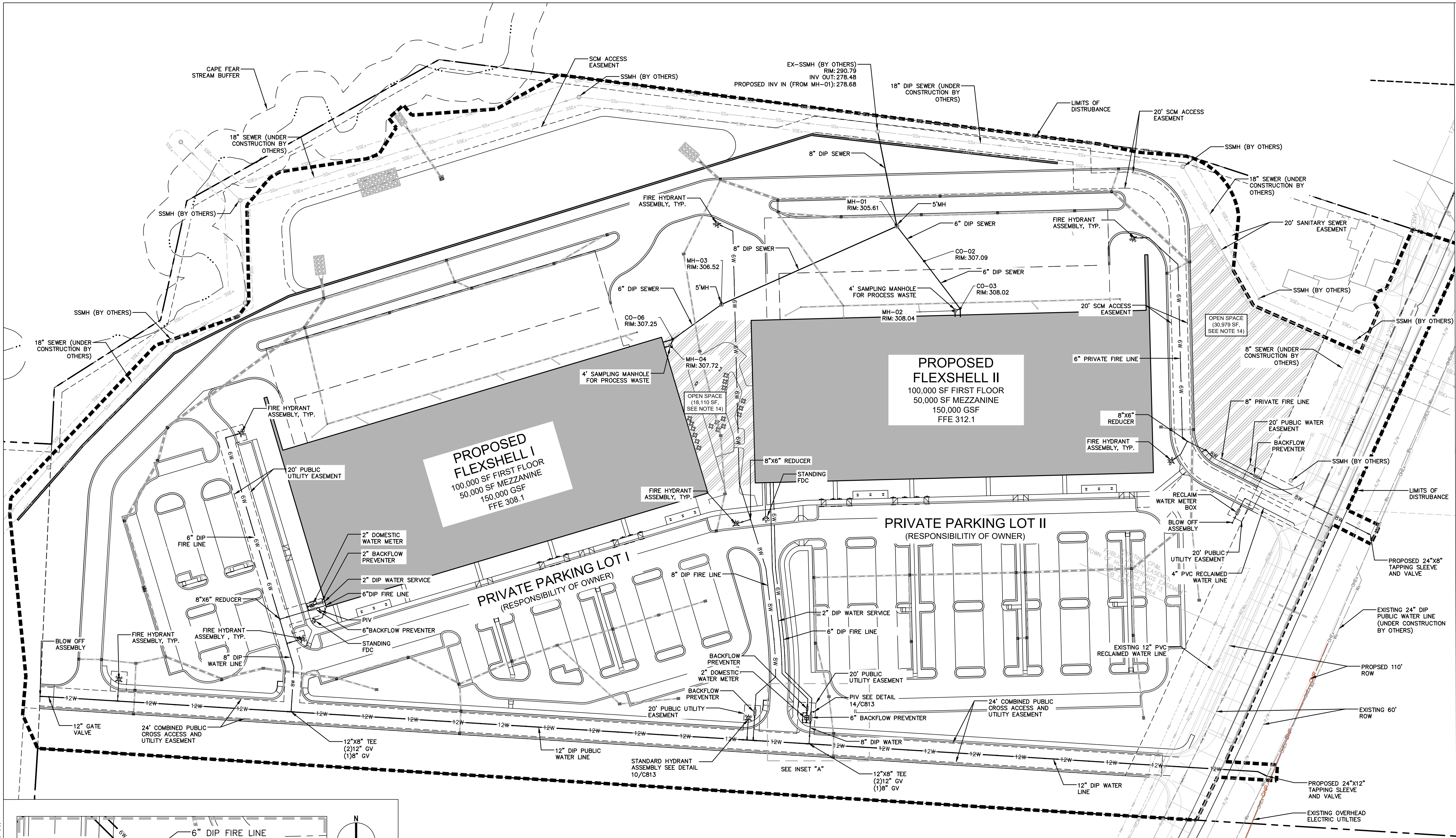


SCALE: 1"=60'
0 30' 60' 120'

SCALE: 1"=60'
DATE: 09/23/2022
DESIGNED BY: TH, JR, AH
DRAWN BY: JR, AH, HW
CHECKED BY: TH, BL

C-500

FILE NO.:



INSET A

SCALE: 1"=20'
0 10' 20' 40'

UTILITY LEGEND

SYMBOL	DETAIL	SYMBOL	DETAIL
	EXISTING WATER MAIN		PROPOSED FIRE HYDRANT
	EXISTING SAN. SWR. LINE AND MANHOLE		EXISTING FIRE HYDRANT
	PROPOSED WATER LINE		
	PROPOSED METER AND BACKFLOW PREVENTION DEVICES		
	PROPOSED SANITARY SEWER LINE/LATERAL		
	PROPOSED SANITARY SEWER MANHOLE		
	PROPOSED CLEANOUT		

© Bolton & Menk, Inc. 2023. All Rights Reserved. 12/15/2023 12:37:22 PM

SEE SHEET C-702 FOR PLANTING NOTES AND SCHEDULE.

FUTURE OWNER SHALL BE RESPONSIBLE FOR:

THE MAINTENANCE OF ALL REQUIRED LANDSCAPING BY KEEPING LAWNS MOWED, ALL PLANTS MAINTAINED AS DISEASE FREE, ALL PLANTING BEDS GROOMED AND KEPT WEED FREE (EXCEPT IN AREAS OF PRESERVED EXISTING NATURAL VEGETATION (I.E. THICKETS), AND KEPT FREE FROM TRASH, DEBRIS AND OTHER OBJECTIONABLE MATERIALS;

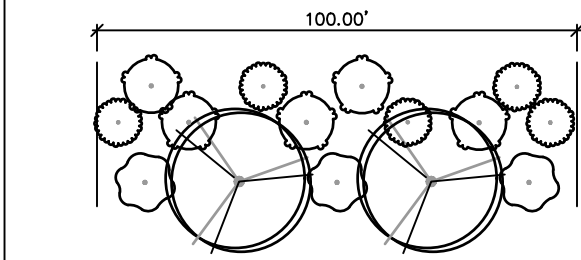
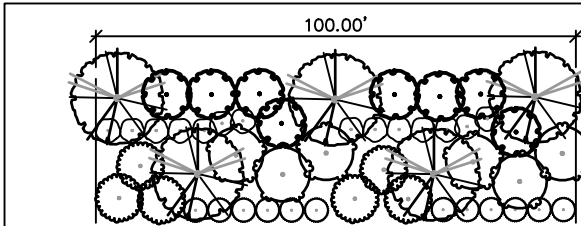
THE REPLACEMENT OF ANY REQUIRED PLANTING, WHICH IS REMOVED OR DIES AFTER THE DATE OF PLANTING. SUCH REPLACEMENT SHALL OCCUR DURING THE NEXT PLANTING SEASON; AND, THE REPLACEMENT OF ANY TREE IN A TREE SAVE AREA, WHICH IS REMOVED OR DIES AFTER THE DATE OF APPROVAL OF A PRESERVATION LANDSCAPE PLAN, SUCH REPLACEMENT SHALL OCCUR DURING THE NEXT PLANTING SEASON.

PLANTING CODE COMPLIANCE TABLE

TYPE	REQUIREMENT	CALCULATION	PROVIDED	CODE SECTION
PARKING LOT SCREENING	CONTINUOUS SHRUB ROW PLANTED AT 36" O.C.	FRONTAGE: 1,685 LF 1,715/3=572	SHRUBS: 604	HOLLY SPRINGS UDO CHAPTER 5.3.2
BUFFER - TYPE A (5' WIDTH)	DECIDUOUS TREES: 2/100 LF % EVERGREEN: 0% SHRUBS: 5/100 LF	FRONTAGE: 1,288 LF TREES: 1,288/50=26 SHRUBS: 1,288/20=64	TREES: 20 SHRUBS: 49	HOLLY SPRINGS UDO CHAPTER 5.3.1, TABLE 5.3-2
BUFFER TYPE B-75 FRIENDSHIP RD. THOROUGHFARE YARD	REFER TO PERIMETER BUFFER PLANTINGS PUV TABLE (BASED ON PREVIOUS MASTER PLAN)			
BUFFER TYPE C-225 SOUTH PROPERTY LINE BUFFER YARD	REFER TO PERIMETER BUFFER PLANTINGS PUV TABLE (BASED ON PREVIOUS MASTER PLAN)			
INTERIOR VEHICLE PARKING AREA	EVERY LANDSCAPE ISLAND SHALL CONTAIN 1 TREE, 4 SHRUBS. EVERY LANDSCAPE STRIP SHALL HAVE TREES 40' O.C., 5 SHRUBS BETWEEN TREES.	LANDSCAPE ISLANDS: 45 45 TREES 180 SHRUBS LANDSCAPE STRIPS TOTAL LF: 420' 420/40 = 10.5 TREES 10 x 5 = 50 SHRUBS	TREES: 45 SHRUBS: 184 TREES: 16 SHRUBS: 72	HOLLY SPRINGS UDO CHAPTER 5.3.3
FOUNDATION LANDSCAPING	DECIDUOUS TREES: 2/100 LF % EVERGREEN: 0% SHRUBS: 5/100 LF	WEST BUILDING 17,200 SF LSCP AREA 17,200 / 3,000 = 6 SMALL TREES (17,200/1,000)X2= 34 SHRUBS EAST BUILDING 20,000 SF LSCP AREA 20,000/3,000= 7 SMALL TREES 20,000/1,000)X2= 40 SHRUBS	SMALL TREES: 10 SHRUBS: 139 SMALL TREES: 17 SHRUBS: 134	HOLLY SPRINGS UDO CHAPTER 5.3.4

PERIMETER BUFFER PLANTINGS PUV TABLE

TYPE	LANDSCAPE MATERIAL PER 100 LF	PUV OF MATERIAL	TOTAL PUV PROVIDED	% OF PUV	PUV REQUIRED
TYPE B-75 FRIENDSHIP RD. THOROUGHFARE YARD	2 LARGE DECIDUOUS TREES @ 2.5" CAL, 8 POINTS 3 SMALL DECIDUOUS TREES @ 1.5" CAL, 5 POINTS 10 LARGE EVERGREEN TREES @ 12", 8 POINTS	16 15 80	111	14% 13% 73%	TYPE B-75
TYPE C-225 SOUTH PROPERTY LINE BUFFER YARD	5 LARGE DECIDUOUS TREES, @ 2.5" CAL, 8 POINTS 20 LARGE EVERGREEN TREES @ 12", 8 POINTS 26 LARGE SHRUBS @ 36", 1 POINT	40 160 26	226	18% 70% 12%	TYPE C-225
10' TYPE A BUFFER	2 LARGE DECIDUOUS TREES @ 2.5" CAL, 8 POINTS 5 MEDIUM SHRUBS @ 36" HT, 1 POINT	16 5	21	76% 24%	



TYPE B-75 FRIENDSHIP RD. THOROUGHFARE YARD

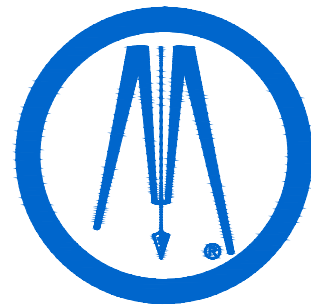
INCREMENT	PUV REQUIRED
B1	TYPE B-75 THOROUGHFARE YARD (FUTURE DEVELOPMENT)
B2	45' (FUTURE DEVELOPMENT) PUV PRO-RATED OVER 30' (EASEMENT) 25' TYPE B-75
B3	TYPE B-75 THOROUGHFARE YARD
B4	TYPE B-75 PUV PRO-RATED OVER REMAINING 55'
B5-B7	TYPE B-75 THOROUGHFARE YARD
B8	TYPE B-75 PUV PRO-RATED OVER REMAINING 25'

TYPE C-225 SOUTH PROPERTY LINE BUFFER YARD

INCREMENT	PUV REQUIRED
A1-A13	TYPE C-225 BUFFER YARD
A14	TYPE C-225 PUV PRO-RATED OVER REMAINING 83'

TYPE A BUFFER NORTH PROPERTY LINE

INCREMENT	PUV REQUIRED
C1-C3	BUFFER SATISFIED BY EXISTING VEGETATION
C4-C10	TYPE A BUFFER
C11	PRO-RATED OVER REMAINING 65'
C12-C17	BUFFER SATISFIED BY EXISTING VEGETATION
C18	TYPE A BUFFER PRO-RATED OVER REMAINING 20'
C19	TYPE A BUFFER
C20	TYPE A BUFFER PRO-RATED 50' FOR UTILITY EASEMENT
C21-C22	TYPE A BUFFER
C23	TYPE A BUFFER PRO-RATED 30' FOR ROAD WAY



ColeJenest & Stone
BOLTON & MENK, INC.

418 S DAWSON ST
RALEIGH, NORTH CAROLINA 27601
Phone: (919) 719-1800
Email: info@colejenneststone.com
www.bolton-menk.com

ARCO DESIGN/BUILD

4000 WESTCHASE BLVD
SUITE 450
RALEIGH, NC 27607

FRIENDSHIP ROAD
INDUSTRIAL

4112 FRIENDSHIP RD
HOLLY SPRINGS, NC 27539

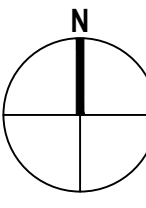
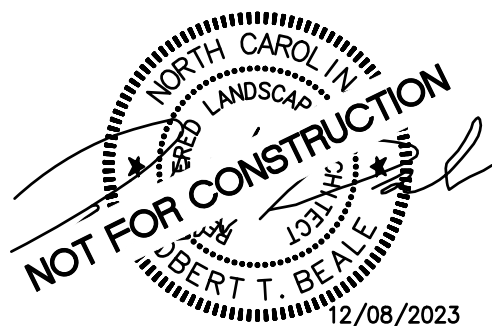
LANDSCAPE PLAN

PROJECT NO:

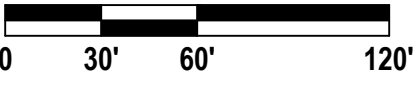
50618.00

REVISIONS:

- 1st ToHS Development Plan Review 11/04/2022
- 2nd ToHS Development Plan Review 12/16/2022
- 3rd ToHS Development Plan Review 01/13/2023
- 4th ToHS Development Plan Review 06/14/2023
- 5th ToHS Development Plan Review 12/08/2023



SCALE: 1"=60'



SCALE: 1" = 60'

DATE: 09/23/2022

DESIGNED BY: TH, JR, AH

DRAWN BY: JR, AH, HW

CHECKED BY: TH, BL

C-700

FILE NO.:



418 S DAWSON ST
RALEIGH, NORTH CAROLINA 27601
Phone: (919) 719-1800
Email: info@colejeneststone.com
www.bolton-menk.com

ARCO DESIGN/BUILD

4000 WESTCHASE BLVD
SUITE 450
RALEIGH, NC 27607

FRIENDSHIP ROAD
INDUSTRIAL

4112 FRIENDSHIP RD
HOLLY SPRINGS, NC 27539

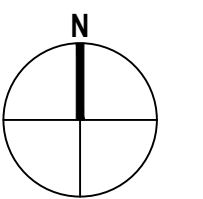
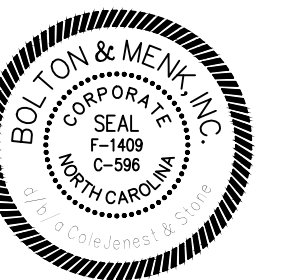
EXISTING VEGETATION

PROJECT NO:

50618.00

REVISIONS:

1. 1st ToHS Development Plan Review 11/04/2022
2. 2nd ToHS Development Plan Review 12/16/2022
3. 3rd ToHS Development Plan Review 01/13/2023
4. 4th ToHS Development Plan Review 06/14/2023
5. 5th ToHS Development Plan Review 12/08/2023



SCALE: 1"=60'



A horizontal graphic scale bar with alternating black and white segments. It is marked with 0, 30', 60', and 120'.

SCALE: 1" = 60'

DATE: 09/23/2022

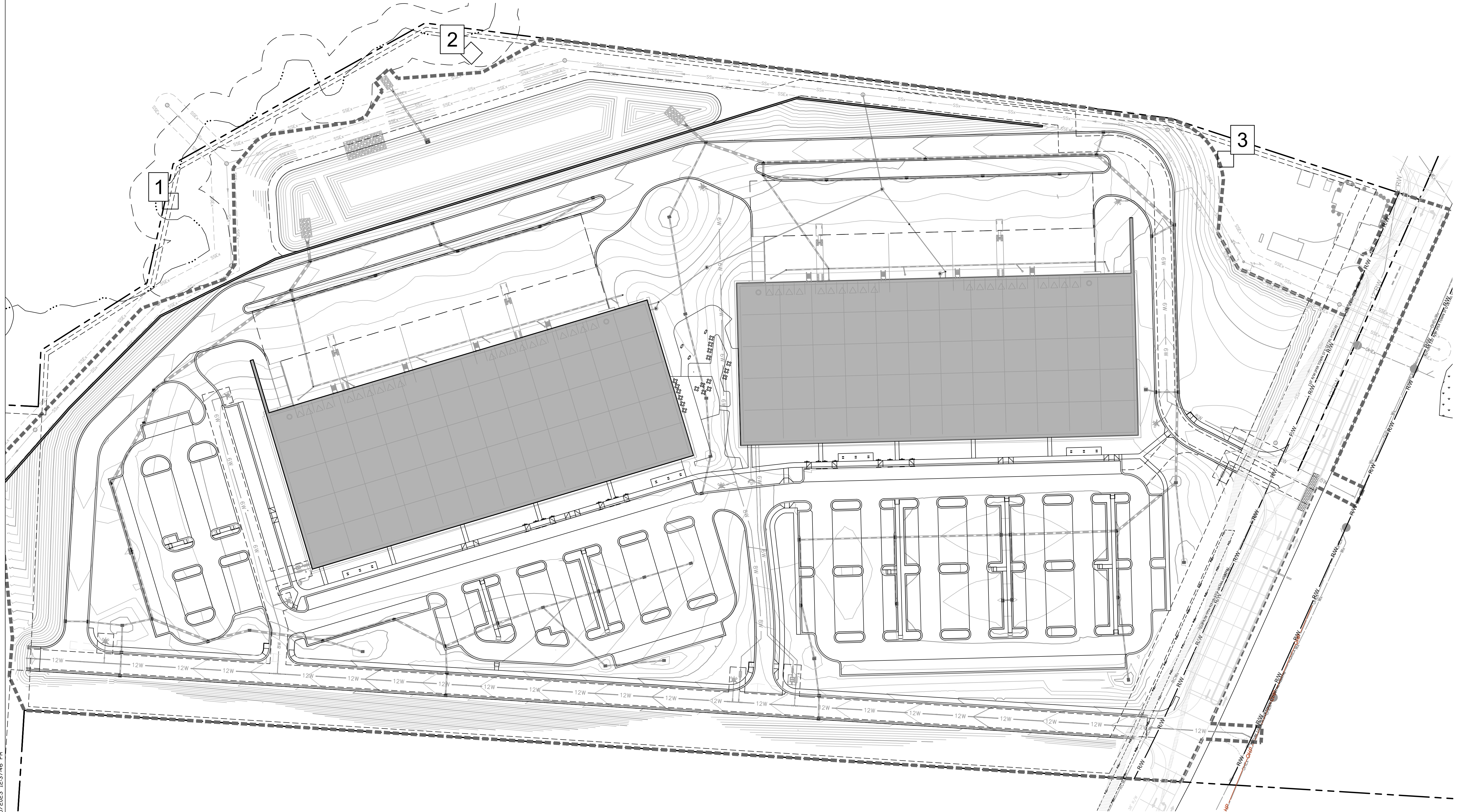
DESIGNED BY: TH, JR, AH

DRAWN BY: JR, AH, HW

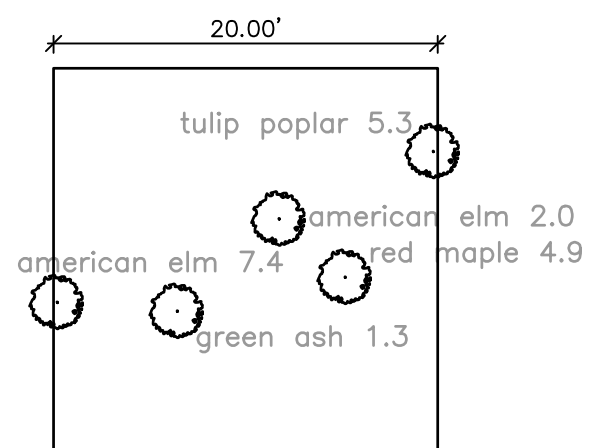
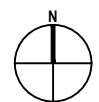
CHECKED BY: TH, BL

C-701

FILE NO.:

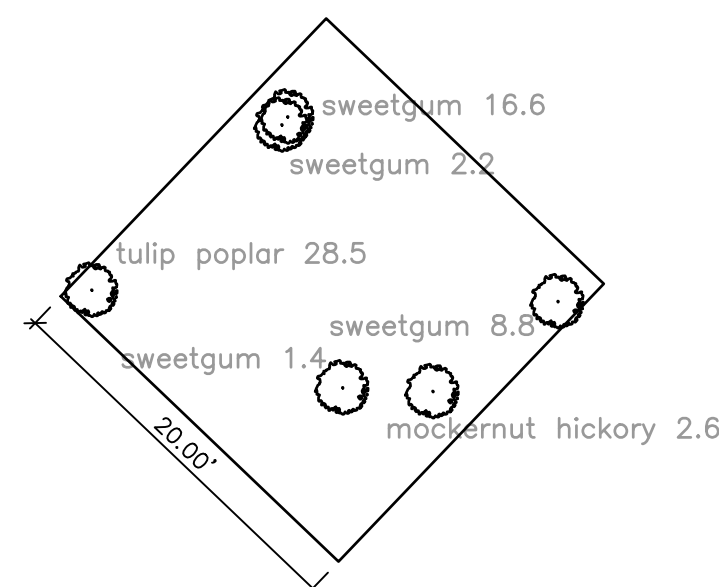
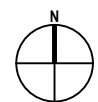


TREE SAMPLE AREA #1
SCALE: 1"=10'



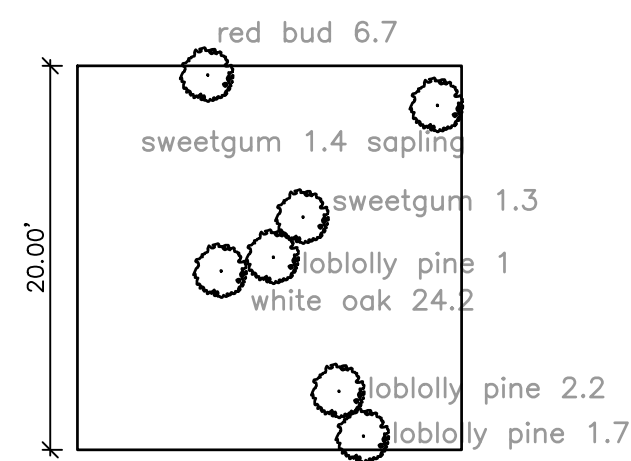
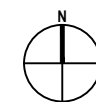
Tree Sample Area 1		Total PUV: 52	
Material Categories	Point Value	Number of Trees	PUV of Material
Small Deciduous			
1"-3"	4	1	4
3"-5"	8		0
>5"	12		0
Large Deciduous			
2"-4"	6	1	6
4"-6"	12	2	24
>6"	18	1	18

TREE SAMPLE AREA #2
SCALE: 1"=10'



Tree Sample Area 2		Total PUV: 70	
Material Categories	Point Value	Number of Trees	PUV of Material
Small Deciduous			
1"-3"	4	1	4
3"-5"	8		0
>5"	12		0
Large Deciduous			
2"-4"	6	2	12
4"-6"	12		0
>6"	18	3	54

TREE SAMPLE AREA #3
SCALE: 1"=10'

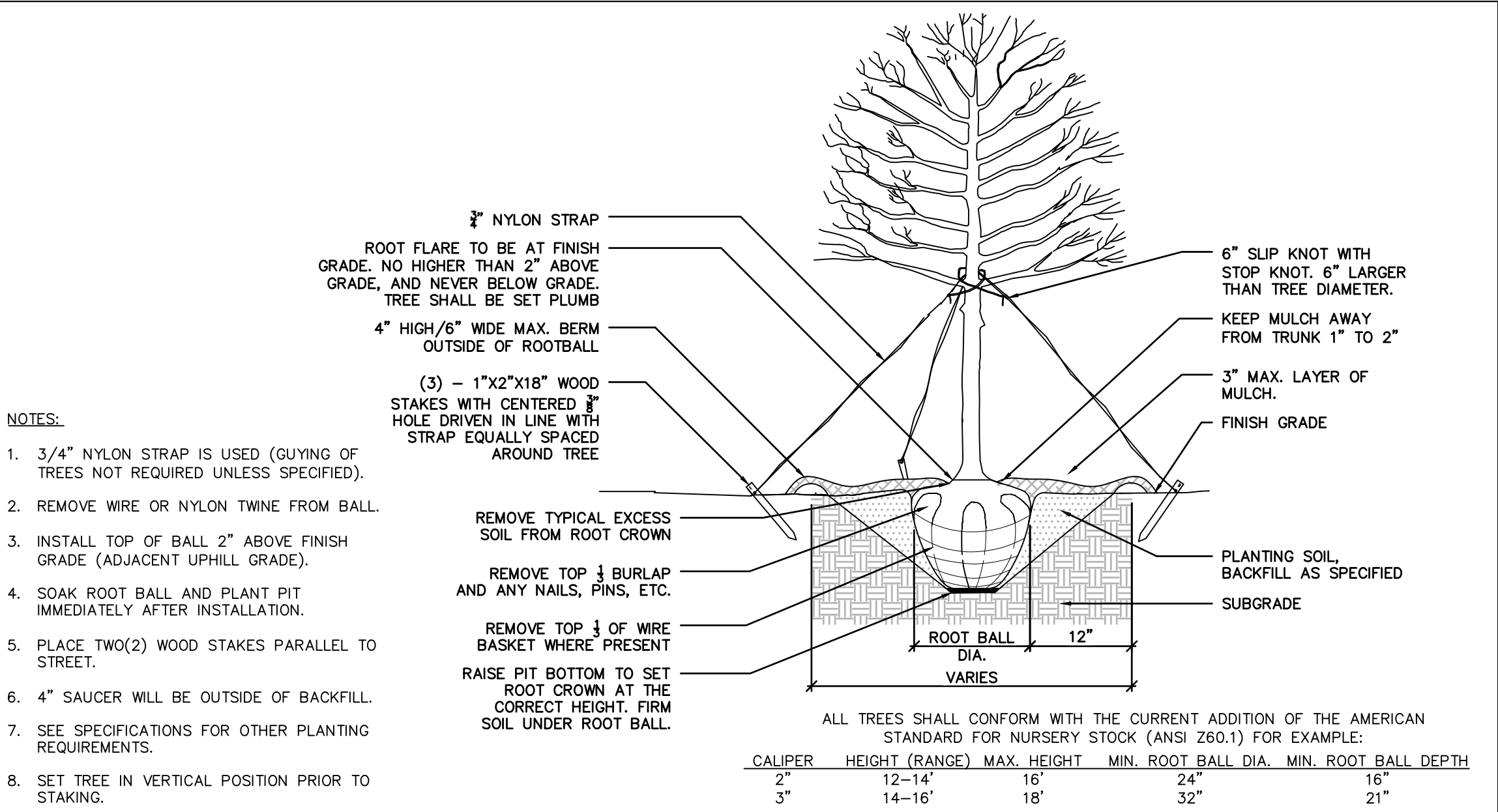


Tree Sample Area 3		Total PUV: 52	
Material Categories	Point Value	Number of Trees	PUV of Material
Small Deciduous			
1"-3"	4	4	16
3"-5"	8	0	0
>5"	12	1	12
Large Deciduous			
2"-4"	6	1	6
4"-6"	12	0	0
>6"	18	1	18

NOTES

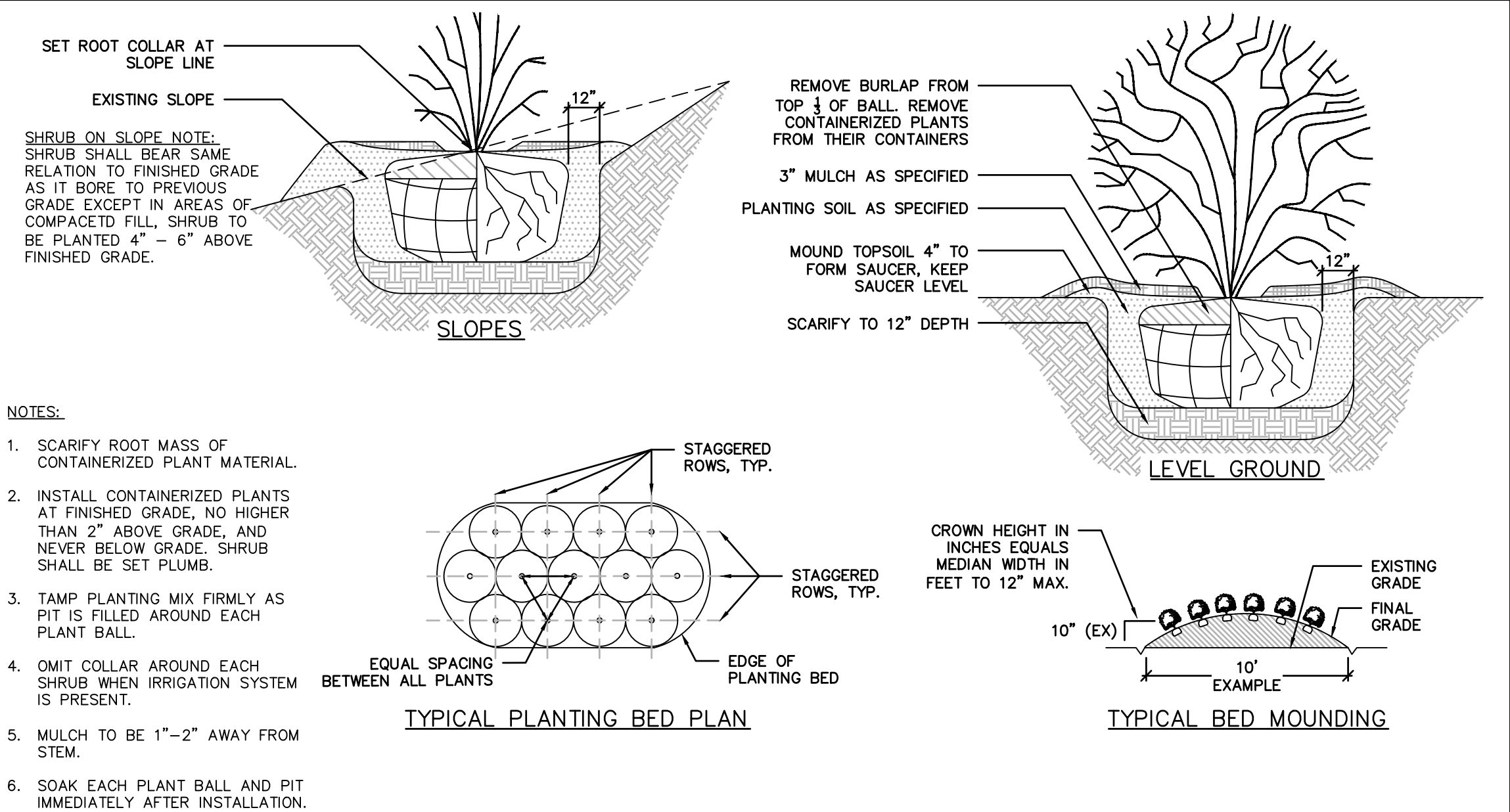
1. SAMPLE AREAS REPRESENT THE GENERAL DENSITY OF TREES WITHIN PRESERVED VEGETATION AREAS.
2. PUV CALCULATIONS BASED ON 2002 HOLLY SPRINGS UDO.
3. TREE SAMPLE AREAS SHOW GENERAL DENSITY OF EXISTING LANDSCAPING WITHIN THE TYPE A LANDSCAPE BUFFER.

© Bolton & Menk, Inc. 2023. All Rights Reserved. PLANS-PR-15018-LANDSCAPE PLANTING 12/15/2023 12:38:05 PM



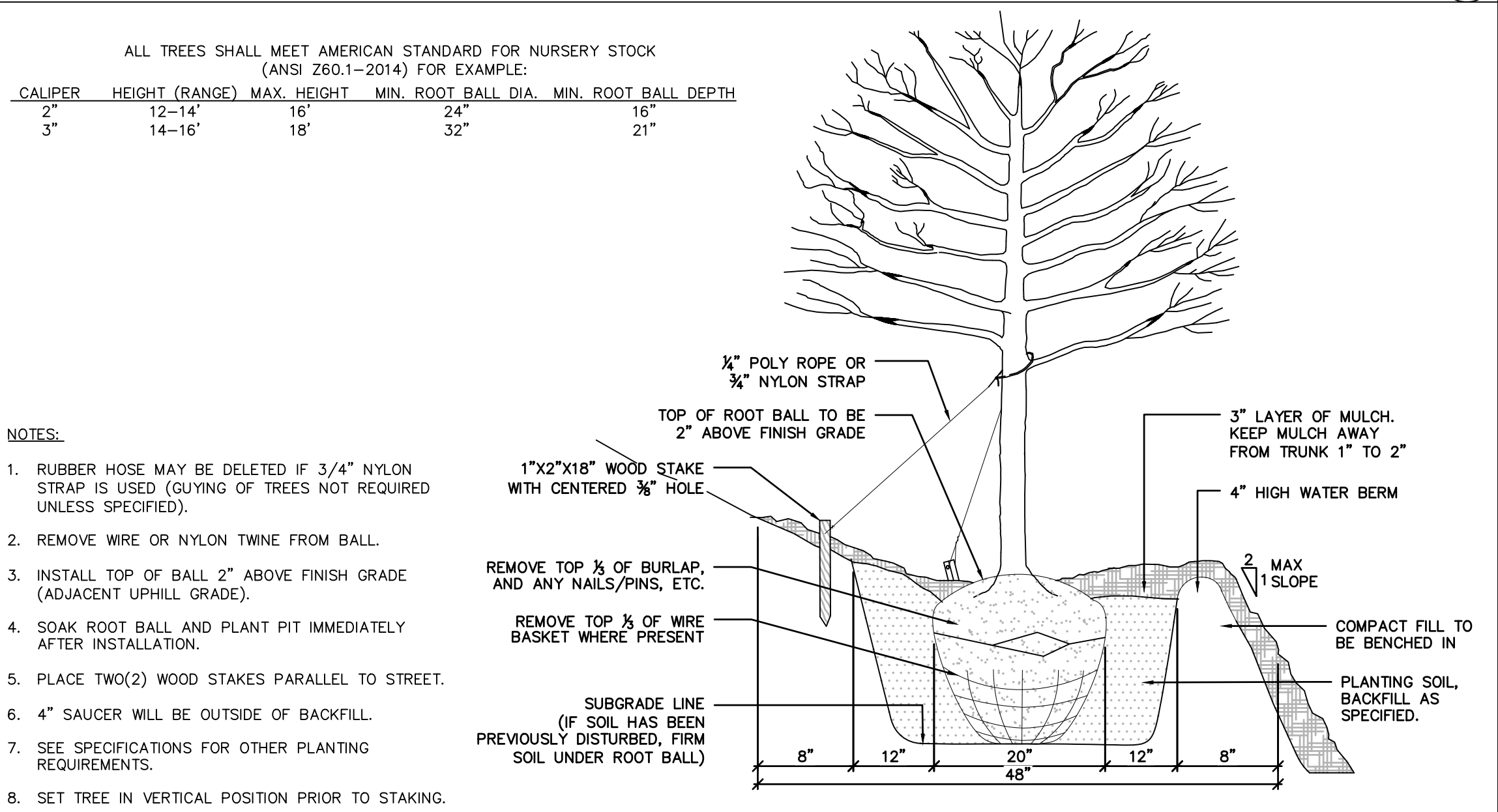
TREE PLANTING

N.T.S. 1



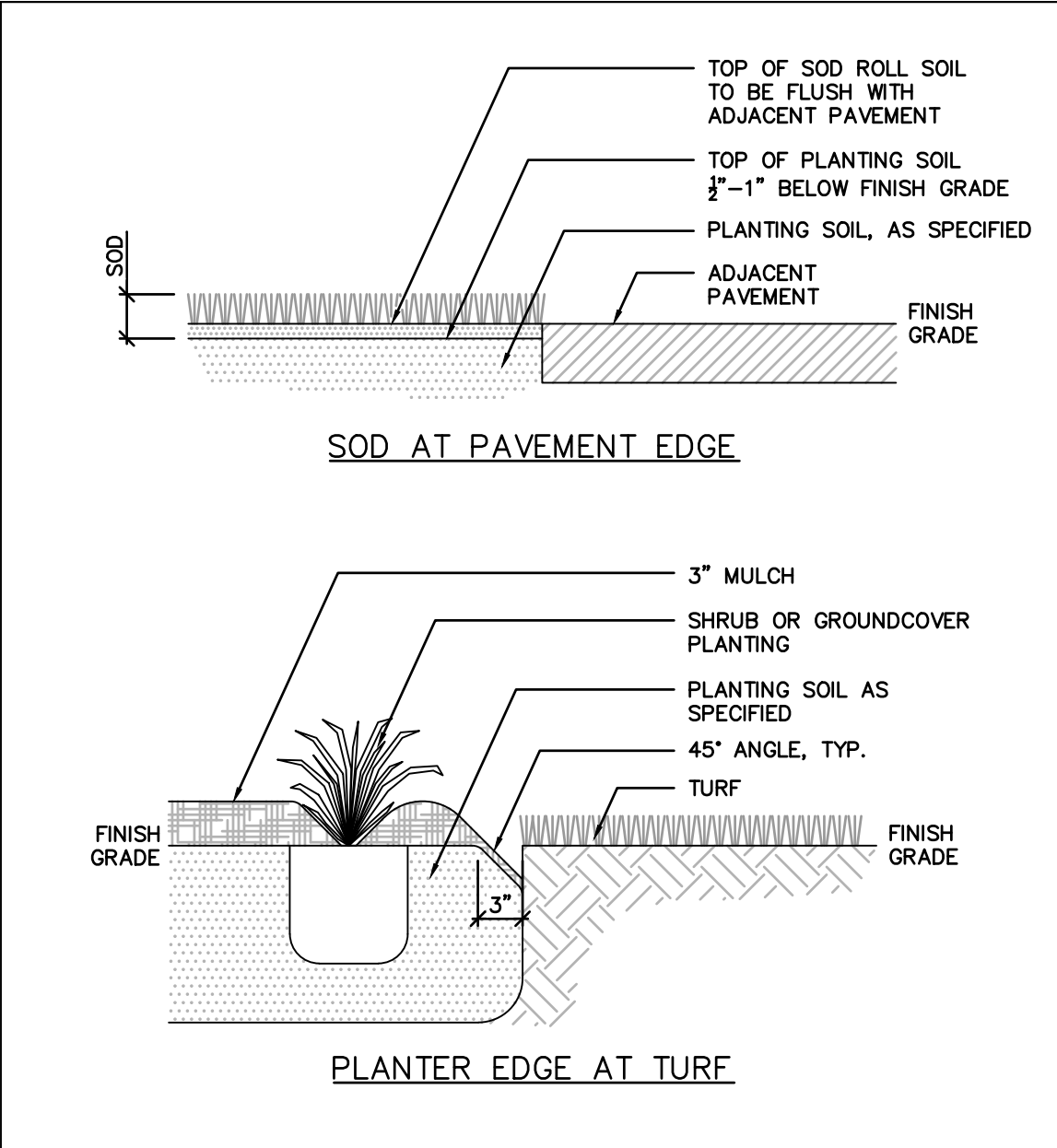
SHRUB PLANTING

N.T.S. 3



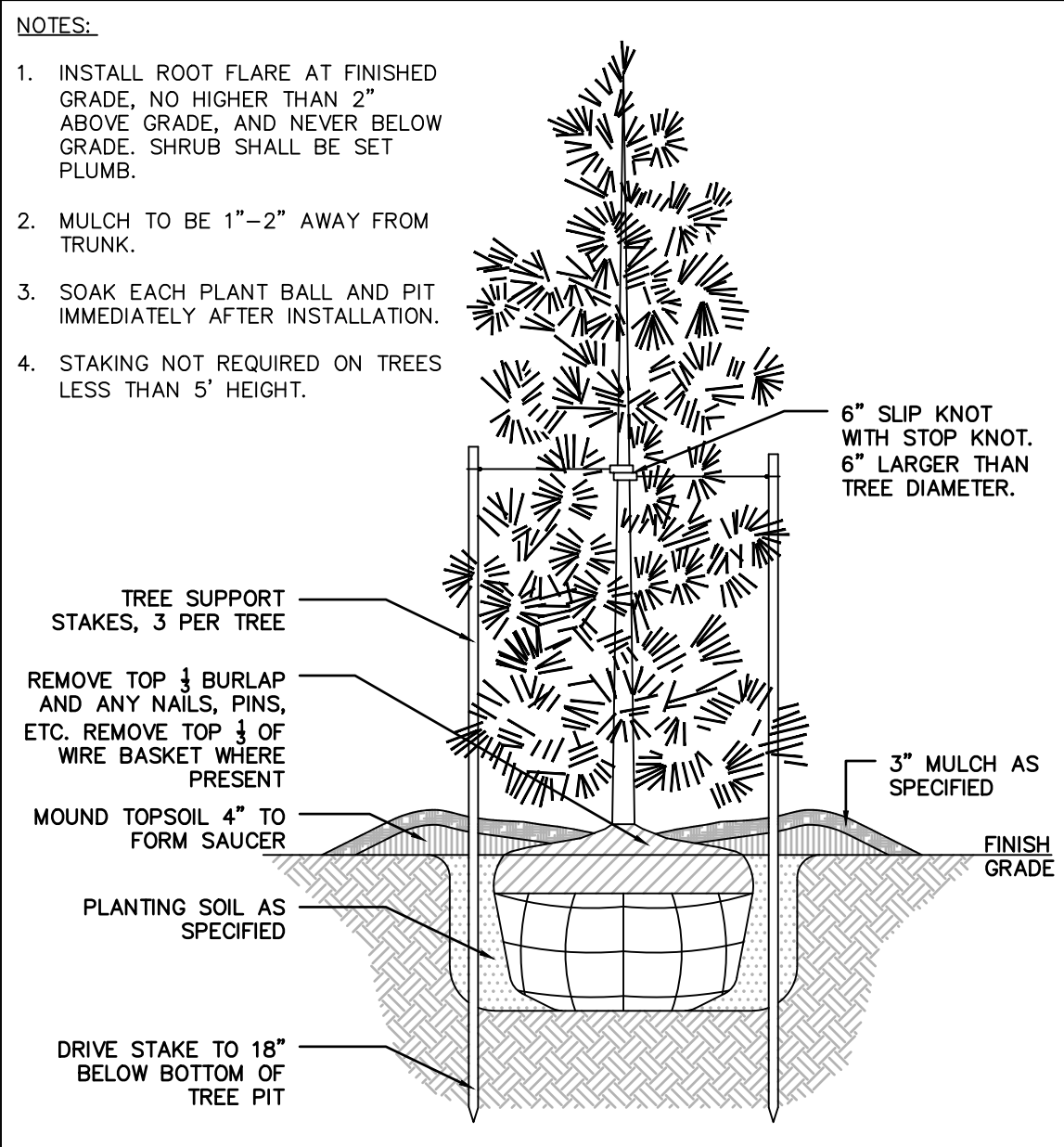
TREE ON SLOPE PLANTING

N.T.S. 5



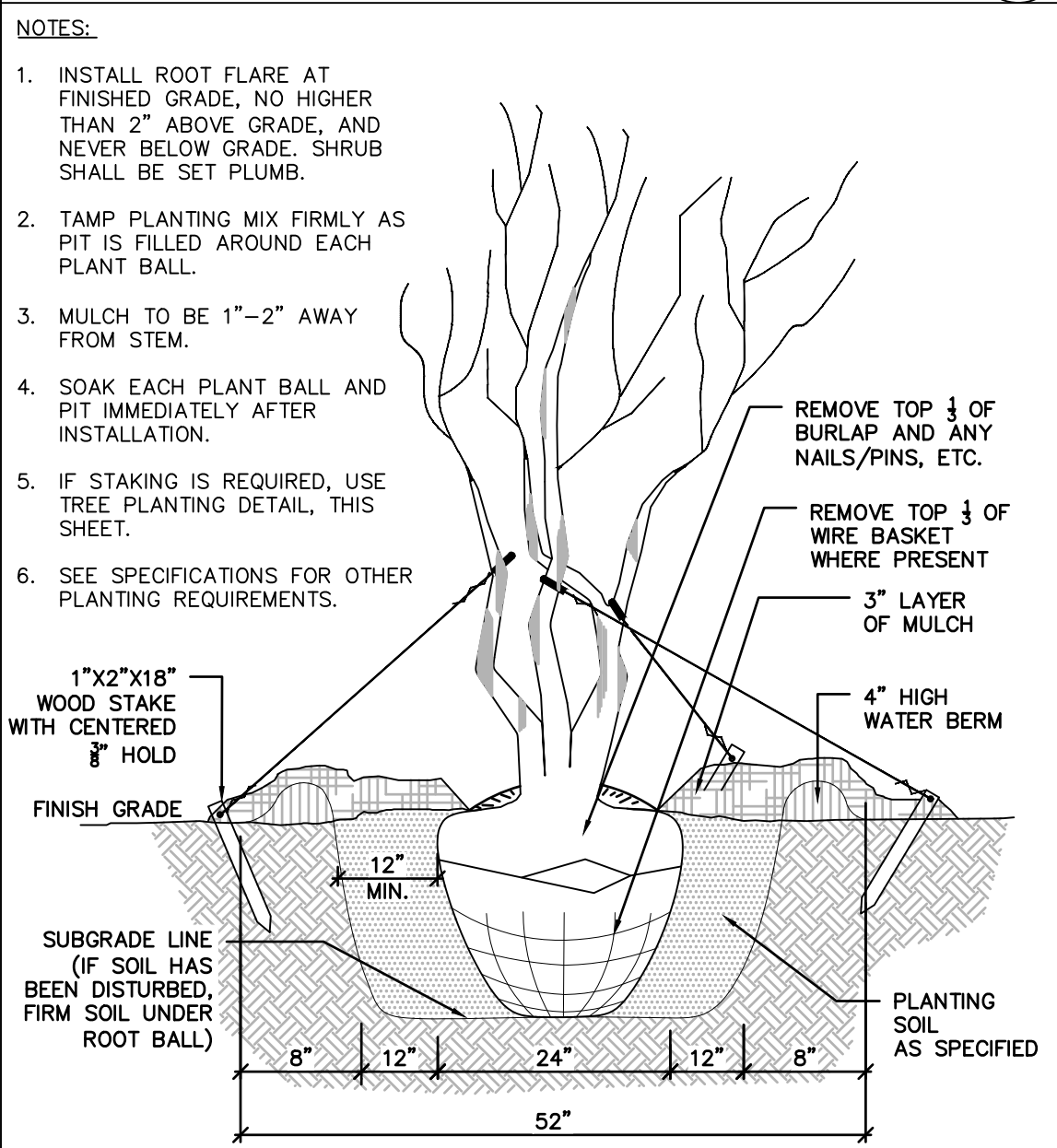
LANDSCAPE EDGES

N.T.S. 2



EVERGREEN TREE PLANTING

N.T.S. 4



MULTI-STEM TREE PLANTING

N.T.S. 6



PLANT SCHEDULE OVERALL								
TREES	CODE	QTY	BOTANICAL NAME	COMMON NAME	CONT	SIZE	SPAC	TREE %
	ACBA	16	ACER BUERGERIANUM 'ABMTF'	AERYN®TRIDENT MAPLE	B&B	2.5" CAL, 10'-12' HT	A.I.	2.20%
	BENB	27	BETULA NIGRA 'BNMTF'	DURA HEAT®RIVER BIRCH	B&B	2.5" CAL, 10'-12' HT	A.I.	3.60%
	CACA	69	CARPINUS CAROLINIANA	AMERICAN HORNBEEAM	B&B	2.5" CAL, 10'-12' HT	A.I.	9.30%
	GBAG	40	GINKGO BILOBA 'AUTUMN GOLD'	AUTUMN GOLD MAIDENHAIR TREE	B&B	2.5" CAL, 10'-12' HT	A.I.	5.40%
	LITU	20	LIRIODENDRON TULIPIFERA	TULIP POPLAR	B&B	2.5" CAL, 12'-14" HT.	A.I.	2.70%
	OXAR	14	OXYDENDRUM ARBOREUM	SOURWOOD TREE	B&B	1.5" - 2" CAL, 8' - 10' HT.		1.90%
	QUCO	32	QUERCUS COCCINEA	SCARLET OAK	B&B	2.5" CAL, 12'-14' HT	A.I.	4.30%
	QUNU	81	QUERCUS NUTTALLII	NUTTALL OAK	B&B	2.5" CAL, 12'-14' HT	A.I.	10.90%
	QUPH	86	QUERCUS PHELLOS	WILLOW OAK	B&B	2.5" CAL, 12'-14' HT	A.I.	11.60%
DECIDUOUS TREES	CODE	QTY	BOTANICAL NAME	COMMON NAME	CONT	SIZE	SPAC	
	LIFN	27	LAGERSTROEMIA INDICA X FAURIEI 'NATCHEZ'	NATCHEZ CRAPE MYRTLE	B&B	10' HT.	A.I.	3.60%
EVERGREEN TREES	CODE	QTY	BOTANICAL NAME	COMMON NAME	CONT	SIZE	SPAC	
	CEDE	106	CEDRUS DEODARA	DEODAR CEDAR	B&B	8' HT.	A.I.	14.30%
	CRJR	6	CRYPTOMERIA JAPONICA 'RADICANS'	RADICANS JAPANESE CEDAR	B&B	8' HT.	A.I.	0.80%
	ILOP	107	ILEX OPACA	AMERICAN HOLLY	B&B	8' HT.	A.I.	14.40%
	PITA	111	PINUS TAEDA	LOBLOLLY PINE	B&B	8' HT.	A.I.	15.00%
SHRUBS	CODE	QTY	BOTANICAL NAME	COMMON NAME	CONT	SIZE	SPAC	SHRUB %
	ABGR	93	ABELIA X GRANDIFLORA 'RADIANCE'	RADIANCE GLOSSY ABELIA	CONT.	15"-18" SPR.	4' O.C.	5.70%
	CAAM	24	CALICARPA AMERICANA	AMERICAN BEAUTYBERRY	CONT.	24"-30" HT.	5' O.C.	1.50%
	CSSG	98	CAMELLIA SASANQUA 'SHISHI GASHIRA'	SHISHI GASHIRA CAMELLIA	CONT.	24"-30" HT.	3' O.C.	6.00%
	DIBC	132	DISTYLUM X 'PIDIST-II'	BLUE CASCADE®DISTYLUM	CONT.	24"-30" HT./SP.	3' O.C.	8.10%
	DIVJ	388	DISTYLUM X 'VINTAGE JADE'	VINTAGE JADE DISTYLUM	CONT.	24" HT.	4' O.C.	23.70%
	HYQA	47	HYDRANGEA QUERCIFOLIA 'ALICE'	ALICE OAKLEAF HYDRANGEA	CONT.	18"-24" HT.	5' O.C.	2.90%
	ICBN	162	ILEX CORNUTA 'BURFORDII NANA'	DWARF BURFORD HOLLY	CONT.	18"-21" HT. OR 24"-36" HT.	5' O.C. OR 3' O.C.	9.90%
	IGCL	134	ILEX CRENATA 'GREEN LUSTRE'	GREEN LUSTER JAPANESE HOLLY	CONT.	18"-24" HT.	5' O.C.	8.20%
	IVRS	46	ILEX VERTICILLATA 'RED SPRITE'	RED SPRITE WINTERBERRY	CONT.	18"-24" HT.	3' O.C.	2.80%
	LCRS	152	LOROPETALUM CHINENSE RUBRUM 'SHANG-HI'	PURPLE DIAMOND®FRINGE FLOWER	CONT.	24-36" HT	4' O.C.	9.30%
	PLOL	195	PRUNUS LAUROCERASUS 'OTTO LUYKEN'	OTTO LUYKEN ENGLISH LAUREL	CONT.	18"-24" HT.	4' O.C.	11.90%
	VTSP	165	VIBURNUM TINUS 'SPRING BOUQUET'	SPRING BOUQUET LAURUSTINUS	CONT.	24" HT.	3' O.C.	10.10%

PLANTING NOTES

- SIZE AND GRADING STANDARDS OF PLANT MATERIAL SHALL CONFORM TO THE LATEST EDITION OF "AMERICAN STANDARD FOR NURSERY STOCK", BY THE AMERICAN HORTICULTURE INDUSTRY ASSOCIATION, INC. (ANSI Z60.1).
- HEIGHT AND WIDTH SPECIFICATIONS INDICATED ON PLANT SCHEDULE SHALL TAKE PRECEDENCE OVER CONTAINER SIZE.
- ALL ANNUAL/PERENNIAL BEDS SHALL BE AMENDED BY THE CONTRACTOR PER THE SPECIFICATIONS AND RAISED 8" ABOVE EXISTING OR PROPOSED GRADE. CONTRACTOR SHALL PROVIDE TOPSOIL AS REQUIRED TO RAISE GRADES.
- CONTRACTOR SHALL MOUND ALL PARKING LOT ISLANDS TO 8" ABOVE BACK OF CURB AT THE CENTER OF ISLAND. CONTRACTOR SHALL SUPPLY AND PLACE ADDITIONAL TOPSOIL IF NECESSARY FOR MOUNDING AS INDICATED ON CONSTRUCTION DOCUMENTS.
- CONTRACTOR SHALL MULCH ALL SHRUB BEDS WITH 3" AGED TRIPLE SHREDDED HARDWOOD BARK. MAINTAIN 2" CLEAR OF BASE OF TRUNK OR STEM. CONTRACTOR SHALL MULCH ALL ANNUAL BEDS WITH 3" PINE BARK FINES.
- ALL DISTURBED AREAS NOT INDICATED TO RECEIVE SOD OR MULCH SHALL BE SEEDED BY THE CONTRACTOR.
- CONTRACTOR SHALL REMOVE ALL HARD LUMPS OF CLAY, STONES OVER 1" IN DIAMETER, AND ALL CONSTRUCTION DEBRIS INCLUDING GRAVEL, ROOTS, LIMBS AND OTHER DELETERIOUS MATTER WHICH WOULD BE HARMFUL, OR PREVENT PROPER ESTABLISHMENT AND/OR MAINTENANCE OF LAWN AND PLANTING AREAS.
- IN AREAS WHERE CONSTRUCTION GRAVEL IS EMBEDDED IN THE SOIL, CONTRACTOR SHALL REMOVE CONTAMINATED SOIL TO A DEPTH OF 8" AND FILL WITH CLEAN TOPSOIL. CONTRACTOR SHALL IMPORT TOPSOIL AT NO CHARGE TO OWNER IF REQUIRED TO FILL THESE EXCAVATIONS.
- CONTRACTOR SHALL RESEED/RESOD LAWN AREAS DAMAGED DUE TO PLANT MATERIAL INSTALLATION.
- SEE SPECIFICATIONS FOR SOIL AMENDMENT, PREPARATION AND FERTILIZER REQUIREMENTS. FERTILIZER RATES TO BE PER SOIL TEST REPORTS.
- CONTRACTOR SHALL COORDINATE ALL PLANTING IN THE RIGHT-OF-WAY WITH THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION OR LOCAL TRANSPORTATION DEPARTMENT.
- Basin slopes and swales to be seeded and stabilized. See erosion control and grading plans and notes.
- ADJUSTMENTS TO THE LOCATION OF PLANT MATERIAL MAY BE REQUIRED. NOTIFY COLEJENEST & STONE, P.A. IF DISCREPANCIES OCCUR.
- ALL STRAPPING AND TOP 1/3 OF WIRE BASKET SHALL BE CUT AWAY AND REMOVED BY THE CONTRACTOR FROM ROOT BALL PRIOR TO BACKFILLING PLANTING PIT. CONTRACTOR SHALL REMOVE TOP 1/3 OF THE BURLAP FROM ROOT BALL.
- FOR NEW TREE PLANTING AREAS WHERE THERE WAS EXISTING PAVEMENT, CONTRACTOR SHALL REMOVE ALL PAVEMENT, GRAVEL SUB-BASE AND CONSTRUCTION DEBRIS; REMOVE COMPACTED SOIL AND ADD 24" NEW PLANTING SOIL, OR AMEND THE TOP 24" OF EXISTING SOIL, TO MEET SPECIFIED PLANTING SOIL STANDARDS FOR TREES.
- LARGE MATURING TREES SHALL BE A MINIMUM 25 TO 30 FEET FROM OVERHEAD DISTRIBUTION OR TRANSMISSION LINES. IF TREES CONFLICT WITH POWER LINES OR SIGNS, CONTRACTOR SHALL CONTACT LANDSCAPE ARCHITECT TO RESOLVE BEFORE PLANTING.
- INSTALLER SHALL BE RESPONSIBLE TO REPAIR OR REPLACE PLANTINGS THAT FAIL IN MATERIALS, WORKMANSHIP, OR GROWTH WITHIN SPECIFIED WARRANTY PERIOD (ONE YEAR FROM DATE OF FINAL ACCEPTANCE BY OWNER).
- FOR SEEDED AREAS, AN ACCEPTABLE LAWN AT THE END OF THE MAINTENANCE PERIOD SHALL CONSIST OF A HEALTHY, UNIFORM, CLOSE STAND OF GRASS, FREE OF WEEDS AND SURFACE IRREGULARITIES, WITH TOTAL GRASS COVERAGE EXCEEDING 90 PERCENT OVER ANY 10 SQ. FT. AND BARE SPOTS NOT EXCEEDING 5 BY 5 INCHES, WITH AT LEAST 85% OF THE TOTAL GRASS COVERAGE CONSISTING OF THE SPECIFIED GRASS SPECIES.

418 S DAWSON ST
RALEIGH, NORTH CAROLINA 27601
Phone: (919) 719-1800
Email: info@colejeneststone.com
www.bolton-menk.com

ARCO DESIGN/BUILD

4000 WESTCHASE BLVD
SUITE 450
RALEIGH, NC 27607

FRIENDSHIP ROAD INDUSTRIAL

4112 FRIENDSHIP RD
HOLLY SPRINGS, NC 27539

LANDSCAPE DETAILS, SCHEDULE, & NOTES

PROJECT NO:
50618.00

REVISIONS:

- 1st ToHS Development Plan Review 11/04/2022
- 2nd ToHS Development Plan Review 12/16/2022
- 3rd ToHS Development Plan Review 01/13/2023
- 4th ToHS Development Plan Review 06/14/2023
- 5th ToHS Development Plan Review 12/08/2023

NOT FOR CONSTRUCTION
12/08/2023

SCALE:

DATE: 09/23/2022

DESIGNED BY: TH, JR, AH

DRAWN BY: JR, AH, HW

CHECKED BY: TH, BL

FILE NO.:

C-702



ColeJenest & Stone
BOLTON & MENK, INC.

418 S DAWSON ST
RALEIGH, NORTH CAROLINA 27601
Phone: (919) 719-1800
Email: info@colejeneststone.com
www.bolton-menk.com

ARCO DESIGN/BUILD

4000 WESTCHASE BLVD
SUITE 450
RALEIGH, NC 27607

FRIENDSHIP ROAD
INDUSTRIAL

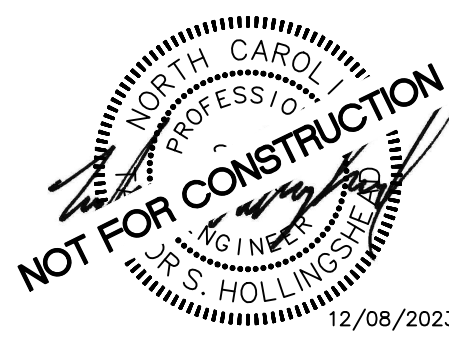
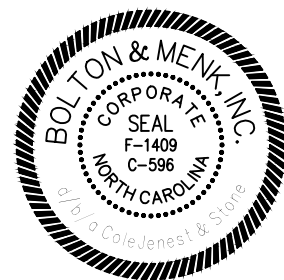
4112 FRIENDSHIP RD
HOLLY SPRINGS, NC 27539

SITE DETAILS I

PROJECT NO:
50618.00

REVISIONS:

- 1st ToHS Development Plan Review 11/04/2022
- 2nd ToHS Development Plan Review 12/16/2022
- 3rd ToHS Development Plan Review 01/13/2023
- 4th ToHS Development Plan Review 06/14/2023
- 5th ToHS Development Plan Review 12/08/2023

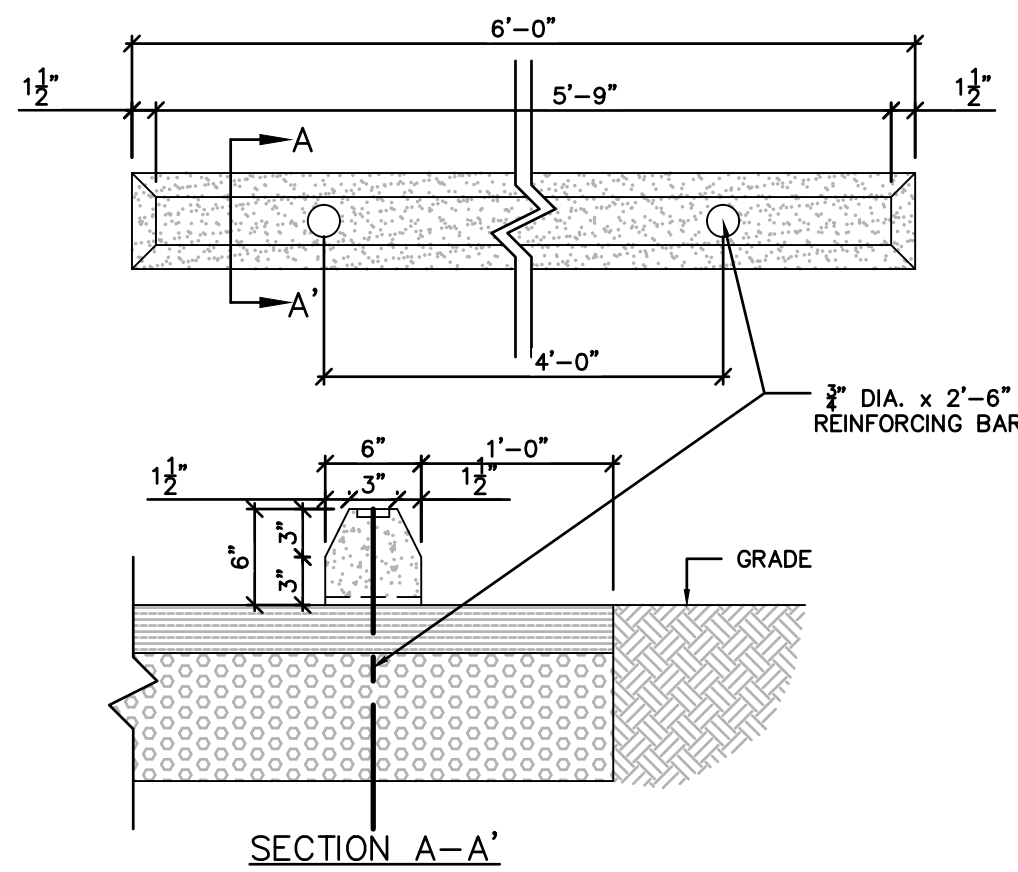


12/08/2023

SCALE:
DATE: 09/23/2022
DESIGNED BY: TH, JR, AH
DRAWN BY: JR, AH, HW
CHECKED BY: TH, BL

C-800

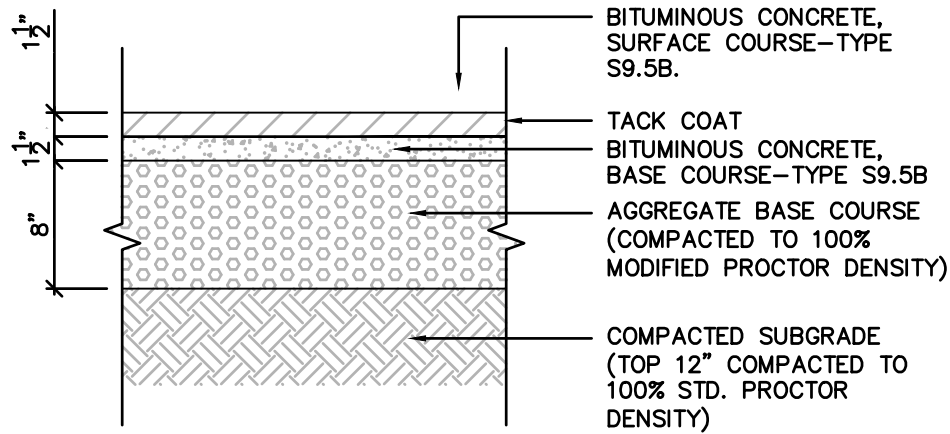
FILE NO.:



CONCRETE WHEEL STOP

SCALE: 1"=1'

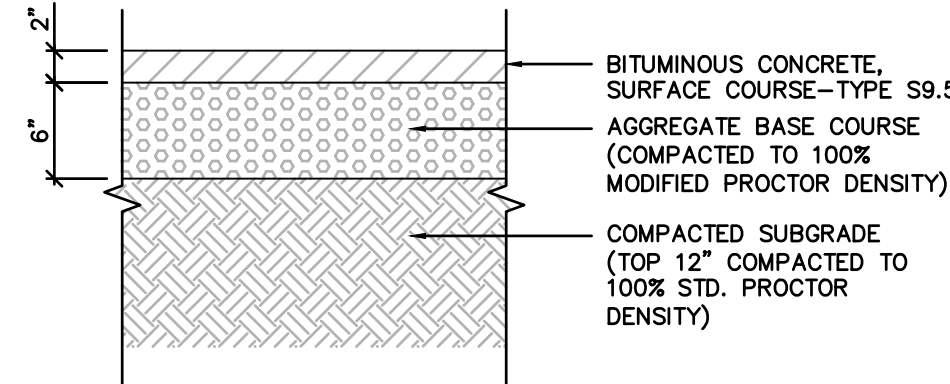
12



HEAVY DUTY BITUMINOUS CONCRETE

SCALE: 1"=1'

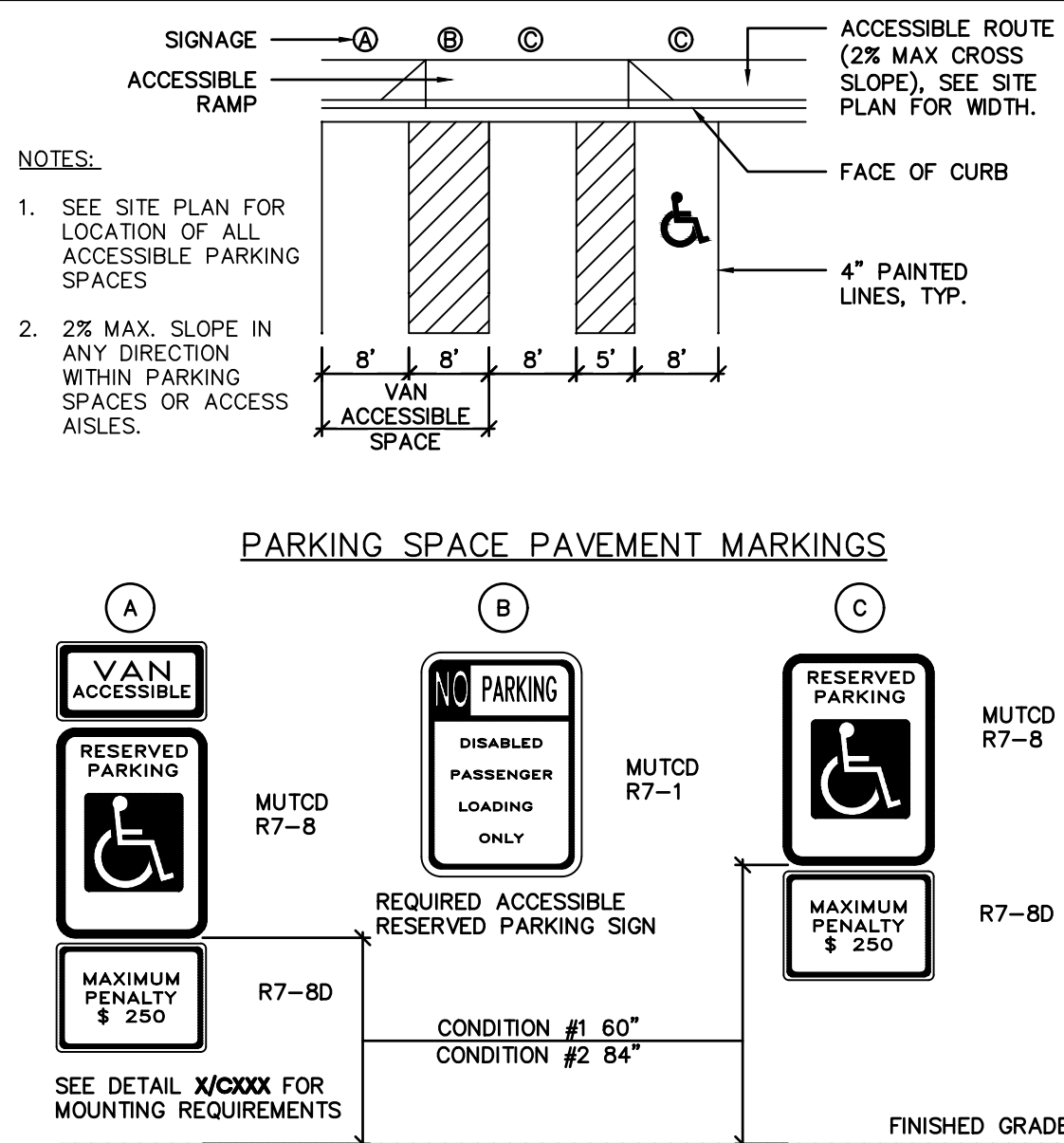
11



LIGHT DUTY BITUMINOUS CONCRETE

SCALE: 1"=1'

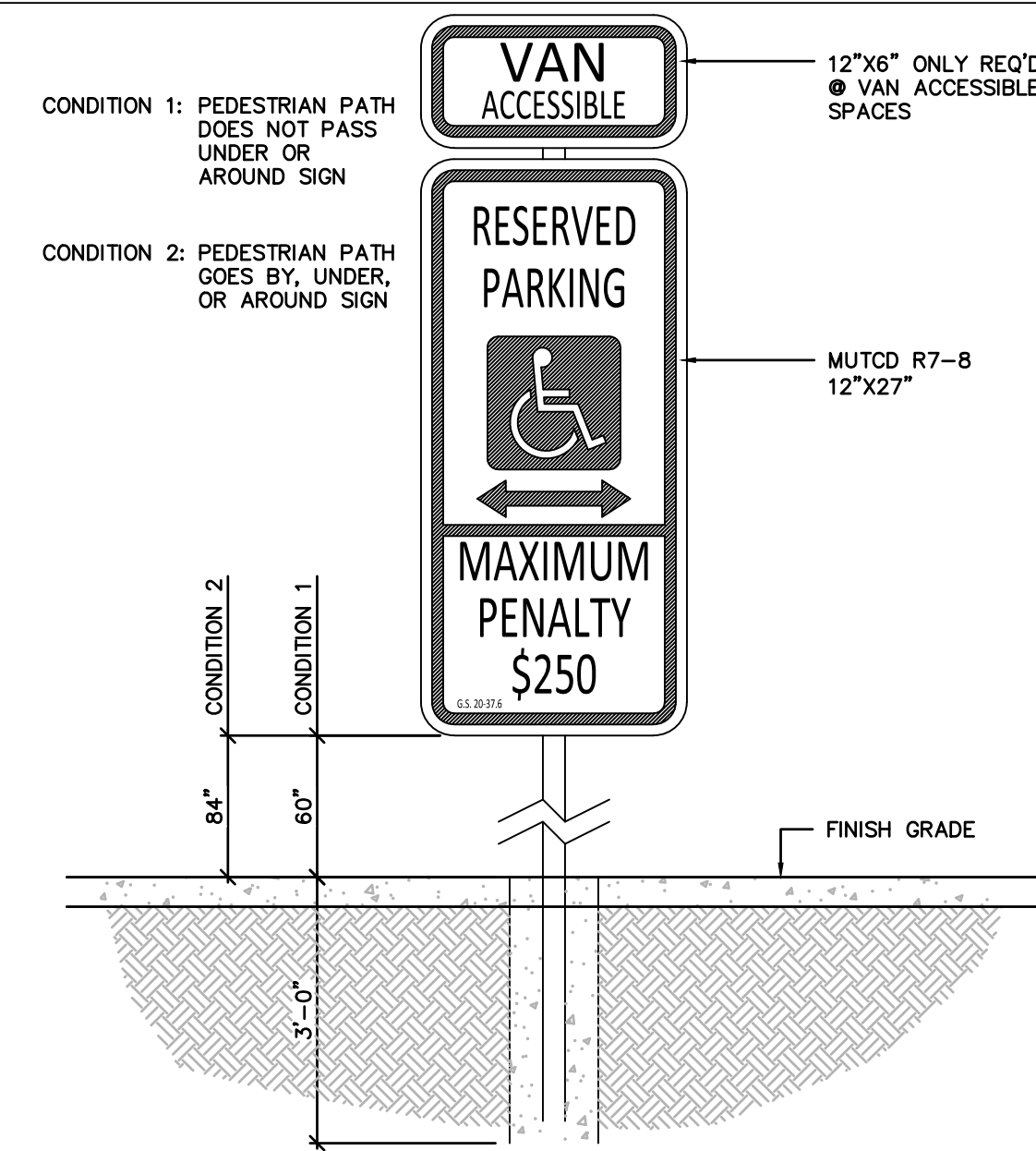
10



ADA PARKING SPACE DETAIL

N.T.S.

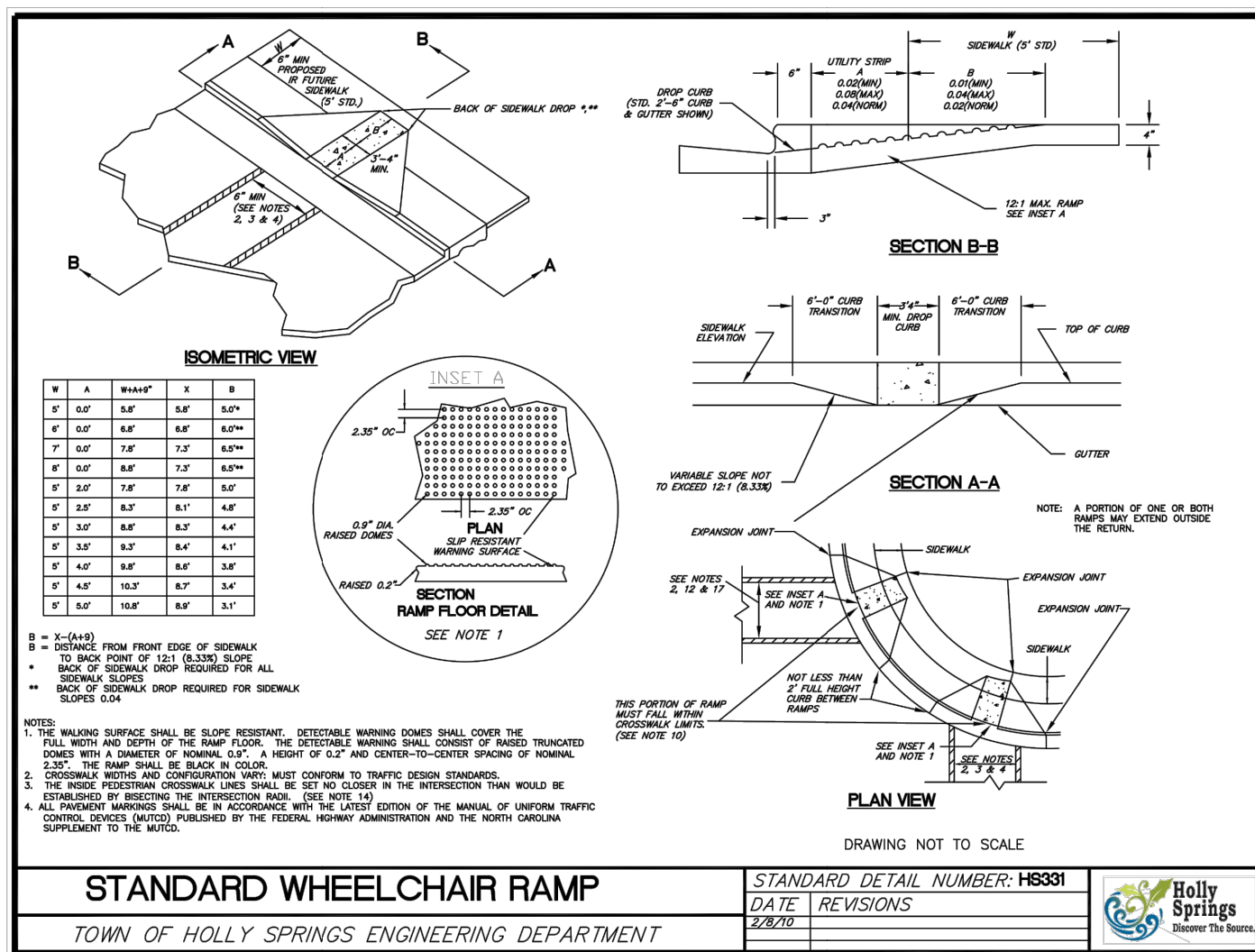
9



ACCESSIBLE SIGN

N.T.S.

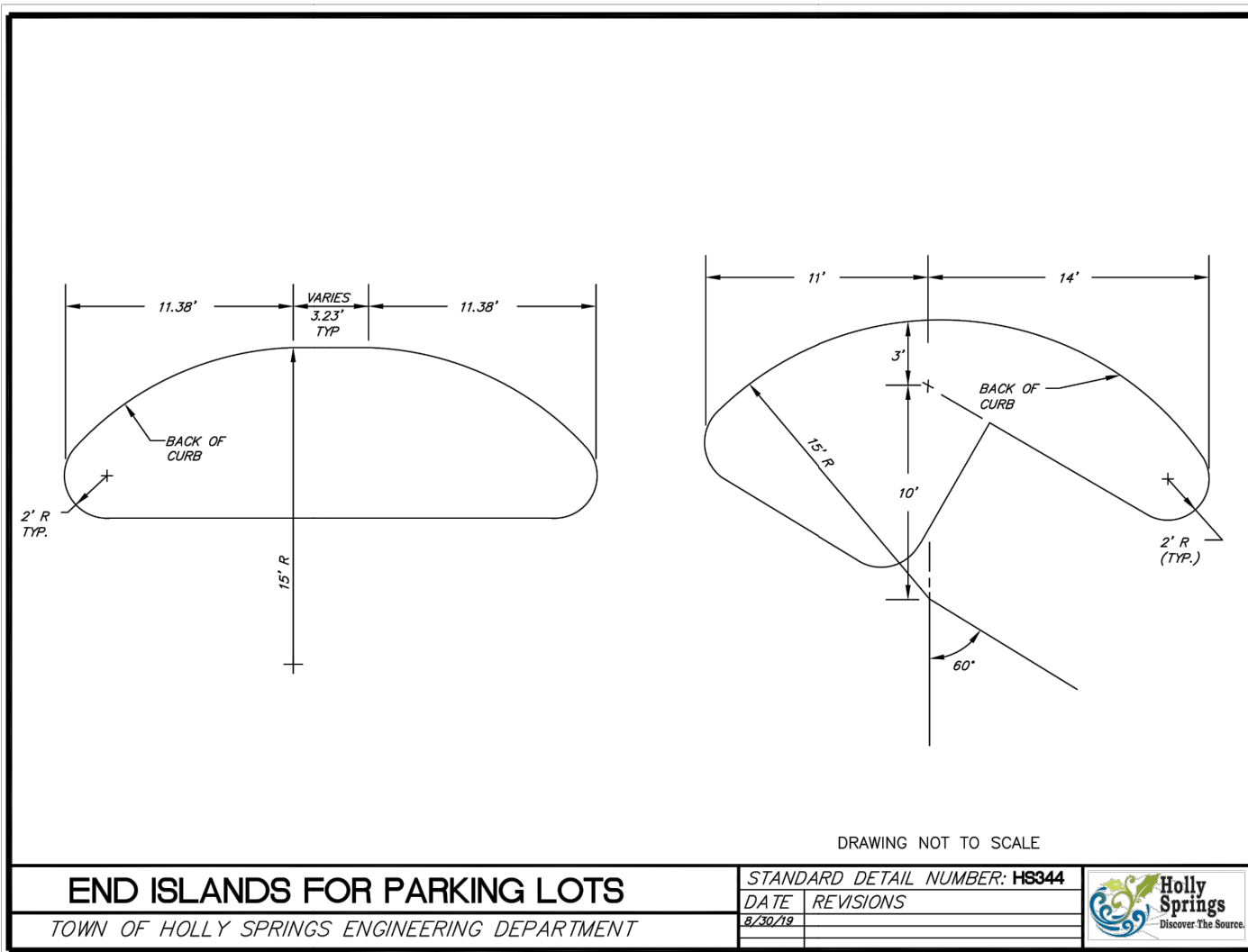
8



STANDARD WHEELCHAIR RAMP

N.T.S.

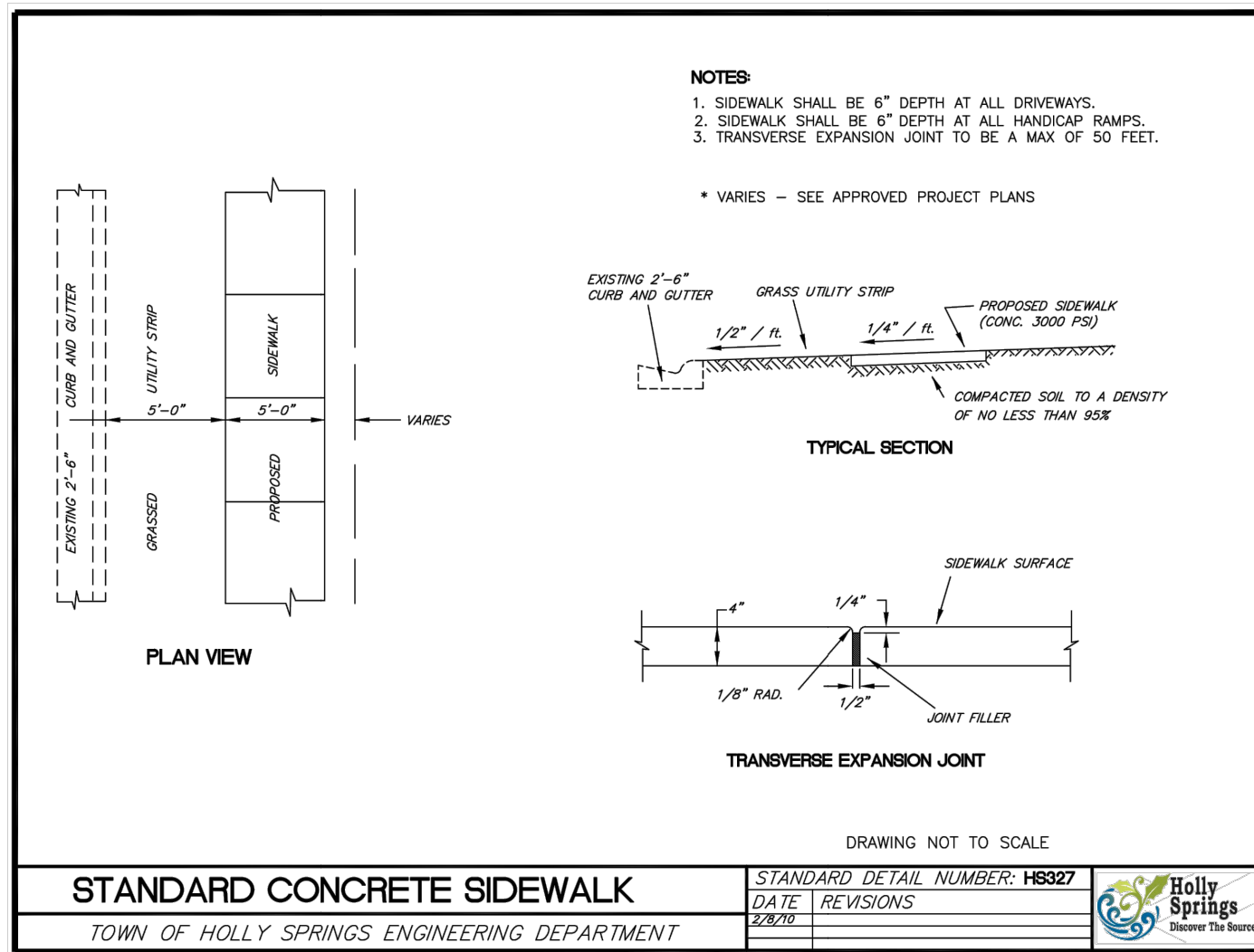
7



END ISLANDS FOR PARKING LOTS

N.T.S.

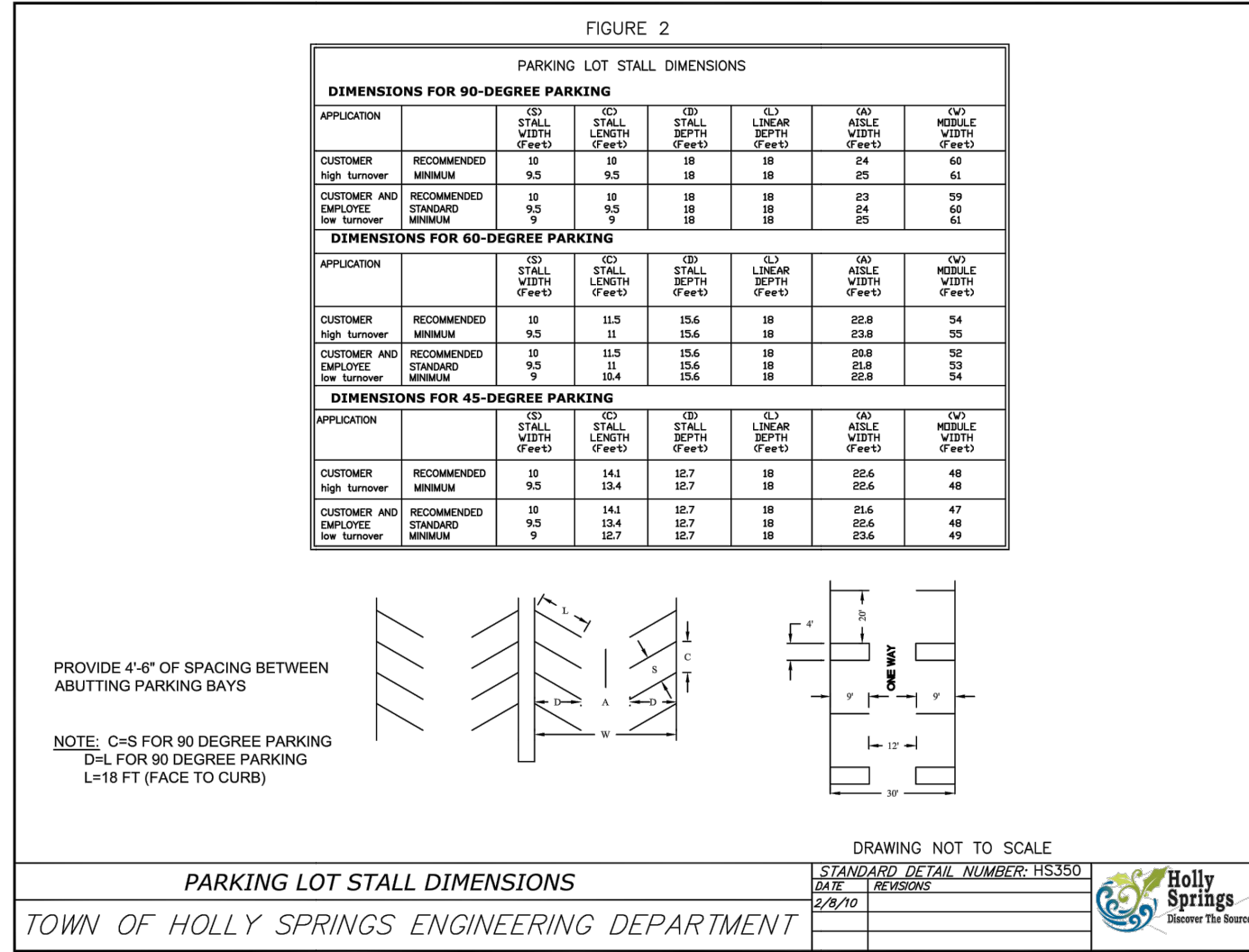
6



STANDARD CONCRETE SIDEWALK

N.T.S.

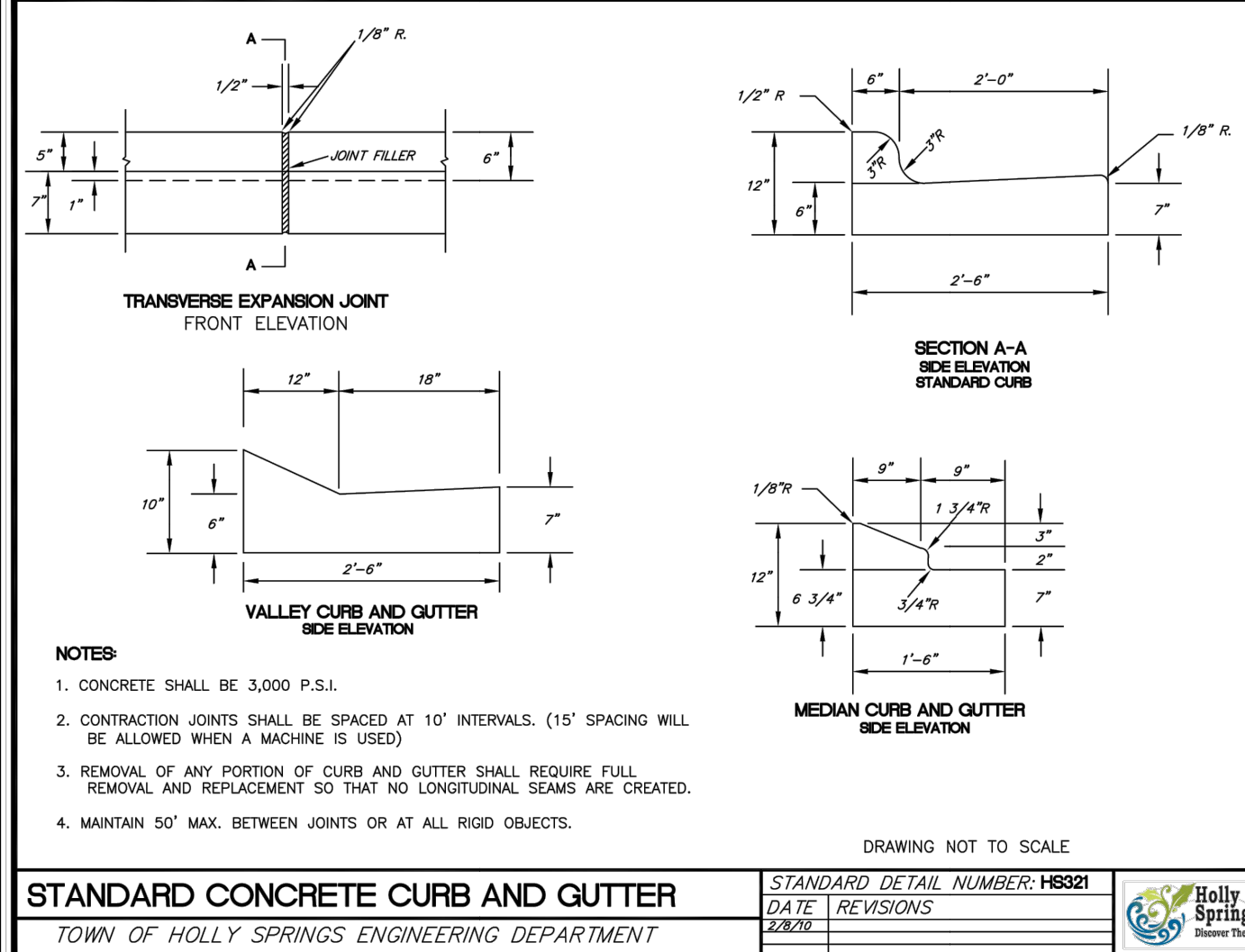
5



PARKING LOT STALL DIMENSIONS

N.T.S.

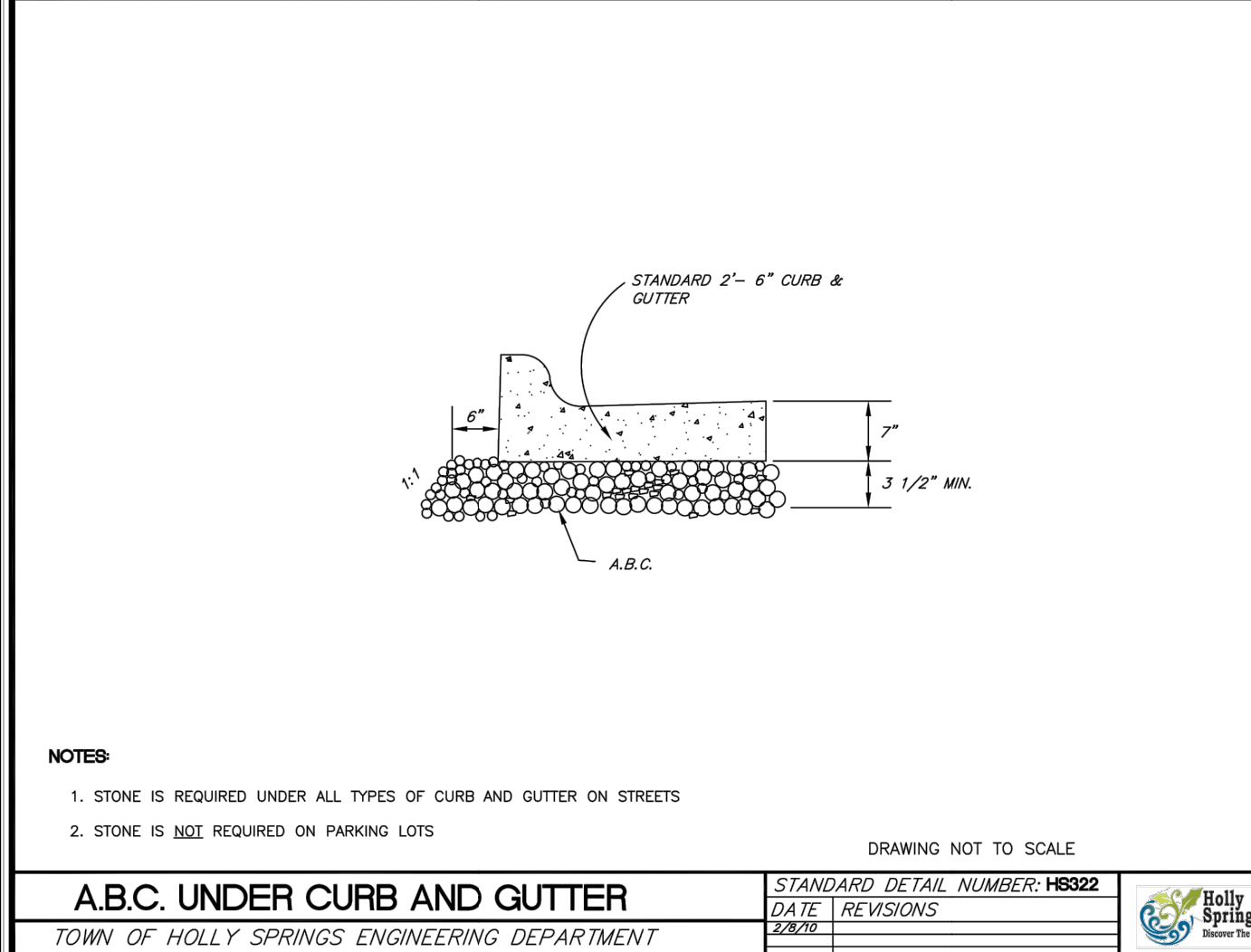
4



STANDARD CONCRETE CURB AND GUTTER

N.T.S.

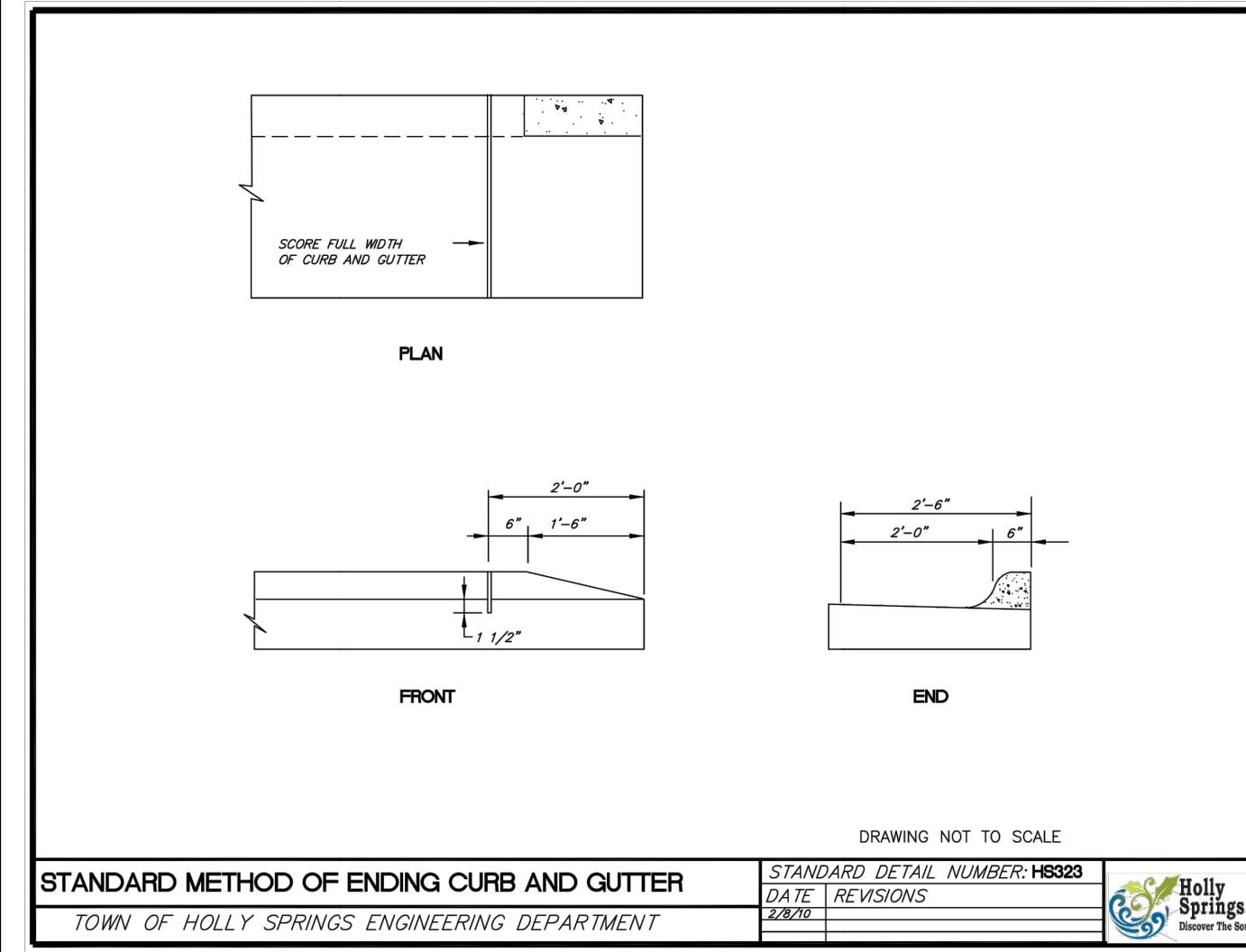
3



ABC UNDER CURB AND GUTTER

N.T.S.

2



METHOD OF ENDING CURB AND GUTTER

N.T.S.

1



ARCO DESIGN/BUILD

FRIENDSHIP ROAD
INDUSTRIAL

SITE DETAILS II

1st ToHS Development Plan Review 11/04/2022
2nd ToHS Development Plan Review 12/16/2022
3rd ToHS Development Plan Review 01/13/2023
4th ToHS Development Plan Review 06/14/2023
5th ToHS Development Plan Review 12/08/2023



SCALE:	
DATE:	09/23/2022
DESIGNED BY:	TH, JR, AH
DRAWN BY:	JR, AH, HW
CHECKED BY:	TH, BL

FILE NO.:



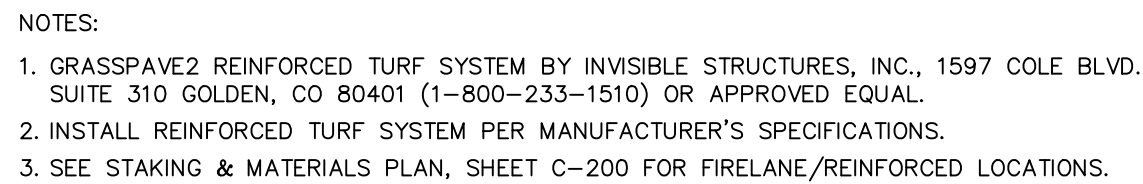
N.T.S.

(5) DECORATIVE CROSSWALKS (APPROVED MASTER PLAN)



TRANSITION TO FLUSH CURB

N.T.S. (3

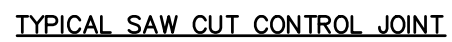


FIRE ACCESS - REINFORCED TURF



SLAB THICKNESS (IN)	DOWEL DIMENSIONS (IN)		DOWEL CENTER-TO-CENTER SPACING (IN)	
	ROUND	DIAMOND	ROUND	DIAMOND
5 - 6	$\frac{3}{4} \times 14$	$\frac{3}{4} \times 4\frac{1}{2} \times 4\frac{1}{2}$	12	18
7 - 8	1 X 16	$\frac{3}{8} \times 4\frac{1}{2} \times 4\frac{1}{2}$	12	18
9 - 12	$1\frac{1}{2} \times 18$	$\frac{3}{4} \times 4\frac{1}{2} \times 4\frac{1}{2}$	12	20

TYPICAL CONSTRUCTION JOINT



TYPICAL ISOLATION JOINT

NOTES:

1. THICKNESS OF SEALANT TO BE $\frac{1}{2}$ OF JOINT WIDTH.
2. IF JOINTS ARE FORMED OR TOOLED; THE EDGES SHALL BE FINISHED WITH NO MORE THAN A $\frac{1}{8}$ " RADIUS.
3. JOINT FILLER STRIPS TO BE ASTM 1751 ASPHALT-SATURATED CELLULOSIC FIBER.
4. CONCRETE TO BE CURED 28 DAYS, DRY, AND JOINT BLOWN CLEAN OF ALL DEBRIS WITH HIGH-PRESSURE AIR BEFORE INSTALLATION OF JOINT SEALANT MATERIAL.
5. PROVIDE ISOLATION JOINTS AT INTERSECTION OF PAVEMENT AND ALL STRUCTURES AND RIGID OBJECTS.
6. SAW CUT CONTROL JOINTS SHALL BE SPACED AT MAXIMUM 30 TIMES THE PAVEMENT THICKNESS, D. TYPICAL, NOT TO EXCEED A 16" X 16" GRID. THE GRID PATTERN SHALL BE UNIFORM THROUGHOUT THE PROPOSED PAVEMENT AREA, REFER TO SITE PLAN FOR PROPOSED JOINT PATTERN.

SCALE: 1"=1'

(2)

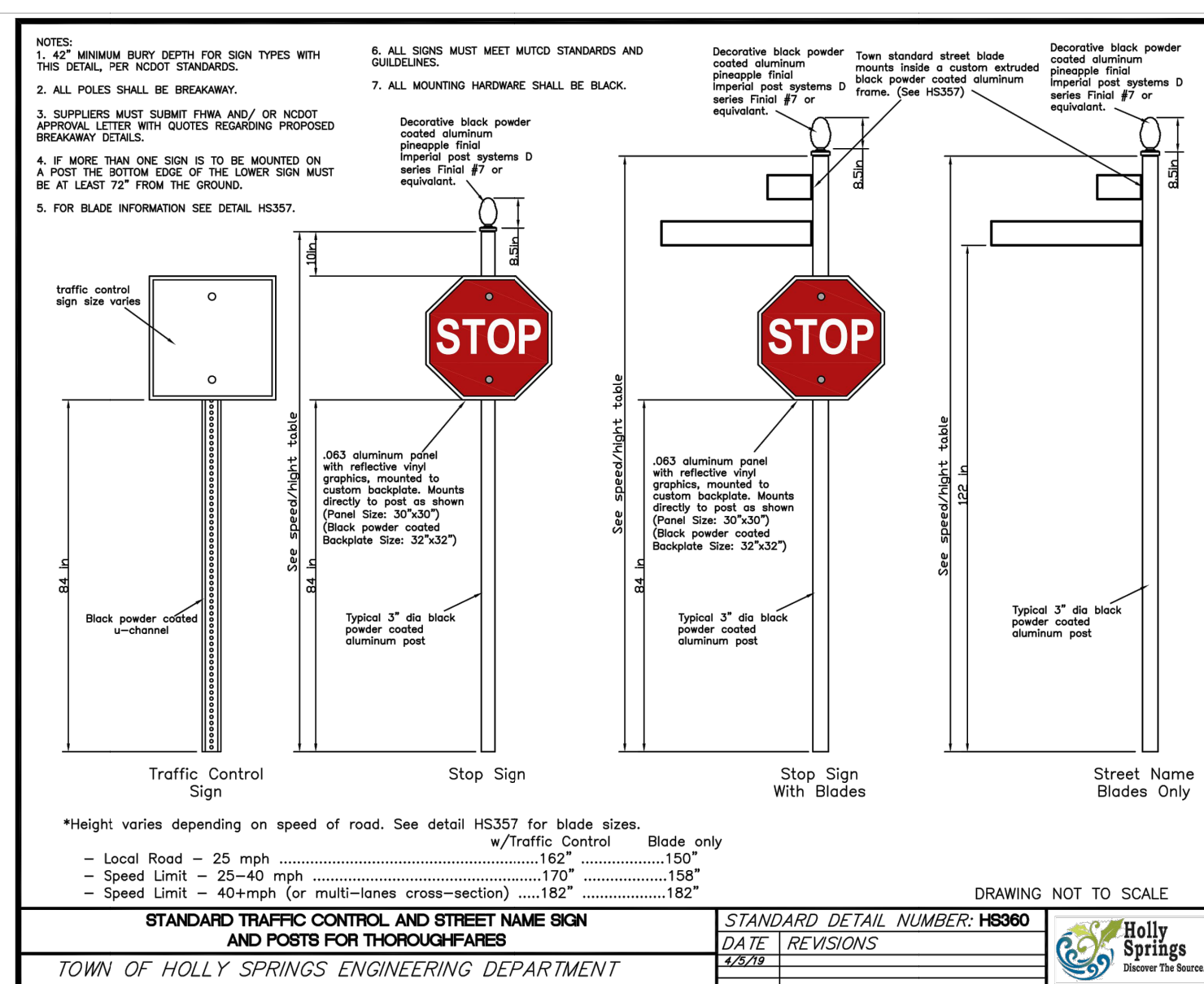


Design Case Study - Phase 1A



AMENITY AREAS SCHEMATIC DESIGN + PRECEDENTS

N.T.S. (



STANDARD STOP SIGN AND STREET NAME SIGN

N.T.S. (



1. ALL CONCRETE TO 4000 PSI, AIR ENTRAINED (6% ±1.5% FOR 3" MAX. AGGREGATE).
2. SYNTHETIC MACRO-FIBERS ENGINEERED AND DESIGNED FOR USE IN CONCRETE, COMPLYING WITH ASTM F1161/C1116M, TYPE III, 1 - 1 1/2" x 1/4" LONG, UNIFORMLY DISPERSED IN CONCRETE MIXTURE AT MANUFACTURER'S RECOMMENDED RATE, BUT NOT LESS THAN A RATE OF 3.0 LB/CY.
3. REFER TO DETAIL **20C-801** FOR TYPICAL JOINT CONSTRUCTION.
4. THICKEN ALL FREE SLAB EDGES BY 50% (3" MIN.) WITH A 4" MIN. TAPER, TYPICAL.
5. EXTEND AGGREGATE BASE 12" BEYOND EDGE OF PAVEMENT OR 12" BEYOND BACK OF CURB WHERE CURB & GUTTER IS INCLUDED.

HEAVY DUTY CONCRETE PAVING SCALE: 1"=1'

XX	NTS 12	WET DETENTION BASIN	NTS 8	STANDARD YARD INLET	NTS 4	TYPICAL WET DETENTION BASIN	NTS 1
XX	NTS 13	ROOT GUARD	NTS 9	PRECAST CONCRETE CATCH BASINS	NTS 5	PRECAST CONCRETE MANHOLE JUNCTION BOX	NTS 2
XX	NTS 14	ROOT GUARD INSTALLATION	NTS 10	FRAME LABEL	NTS 6	STANDARD YARD INLET	NTS 3
XX	NTS 15	XX	NTS 11	STORM DRAIN MARKER	NTS 7		



418 S DAWSON ST
RALEIGH, NORTH CAROLINA 27601
Phone: (919) 719-1800
Email: info@colejeneststone.com
www.bolton-menk.com

ARCO DESIGN/BUILD

4000 WESTCHASE BLVD
SUITE 450
RALEIGH, NC 27607

FRIENDSHIP ROAD
INDUSTRIAL

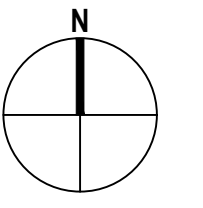
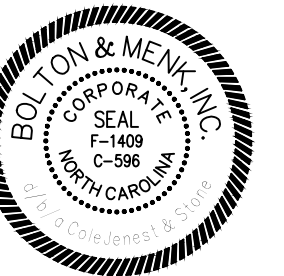
4112 FRIENDSHIP RD
HOLLY SPRINGS, NC 27539

SCM DETAILS

PROJECT NO:
50618.00

REVISIONS:

1. 1st ToHS Development Plan Review 11/04/2022
2. 2nd ToHS Development Plan Review 12/16/2022
3. 3rd ToHS Development Plan Review 01/13/2023
4. 4th ToHS Development Plan Review 06/14/2023
5. 5th ToHS Development Plan Review 12/08/2023



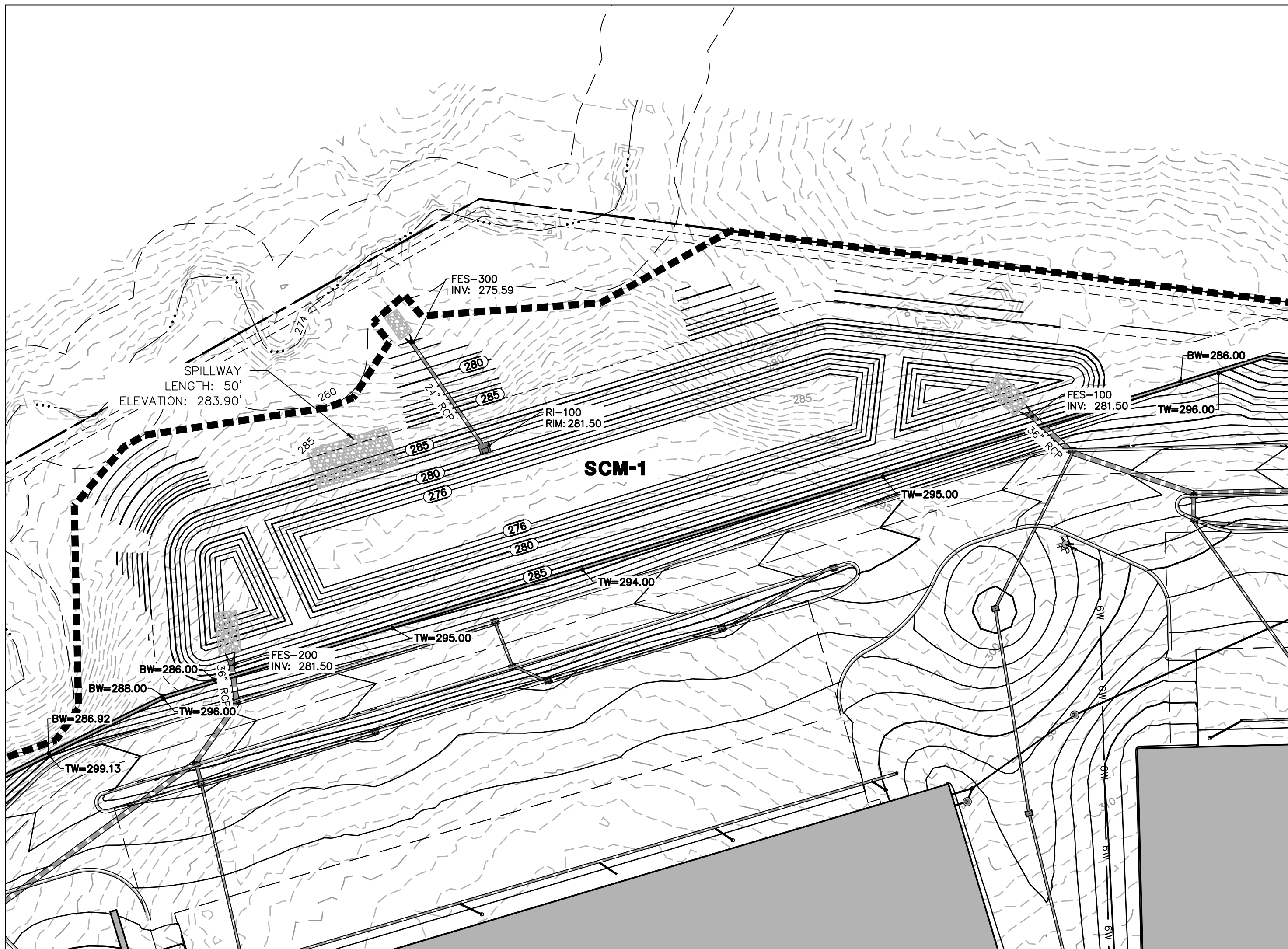
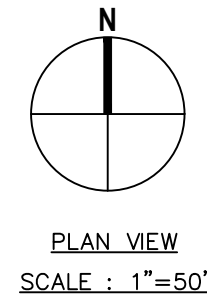
SCALE: 1"=50'

A horizontal scale bar with alternating black and white segments. The segments are labeled 0, 25', 50', and 100' from left to right. The bar is divided into four equal segments, each representing 25 feet.

SCALE:	1" = 50'
DATE:	09/23/2022
DESIGNED BY:	TH, JR, AH
DRAWN BY:	JR, AH, HW
CHECKED BY:	TH, BL

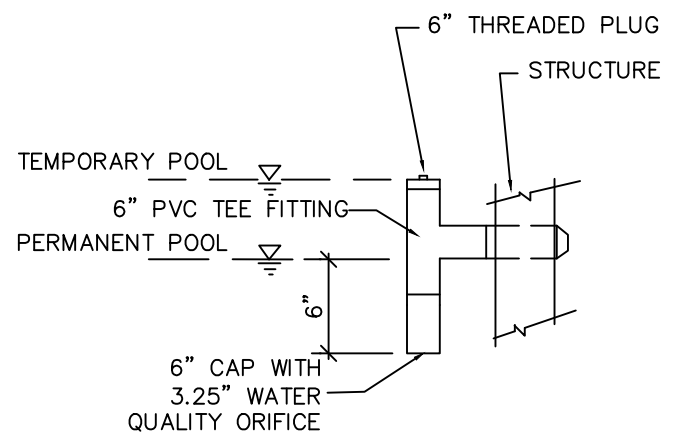
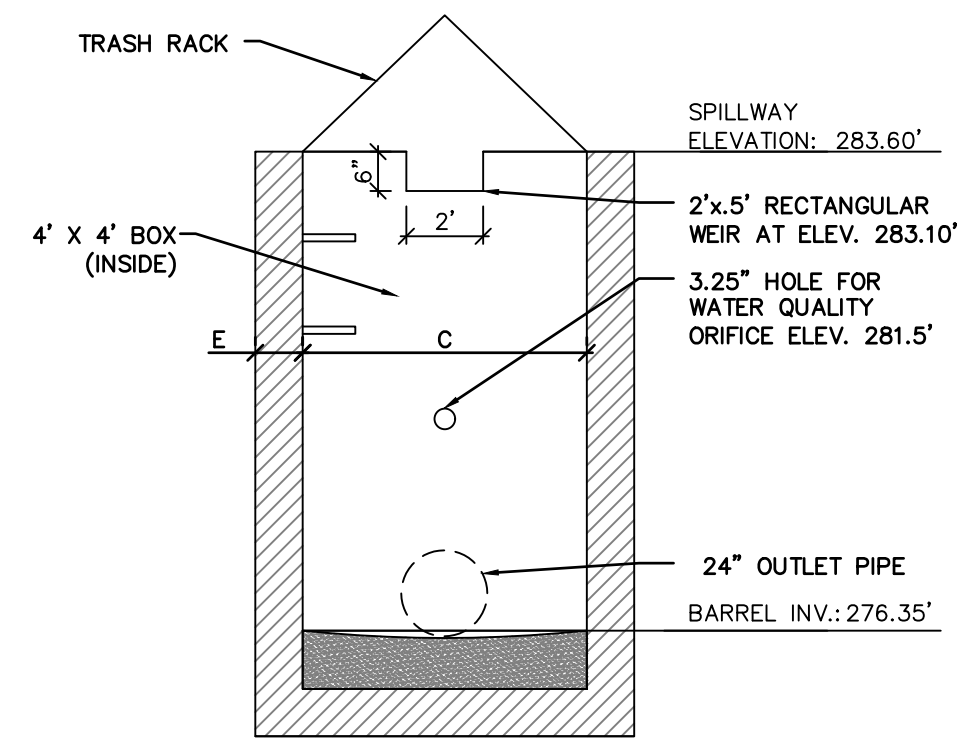
C-820

FILE NO.:

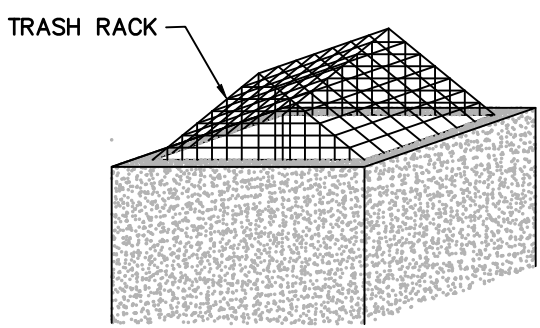


DIMENSION CHART

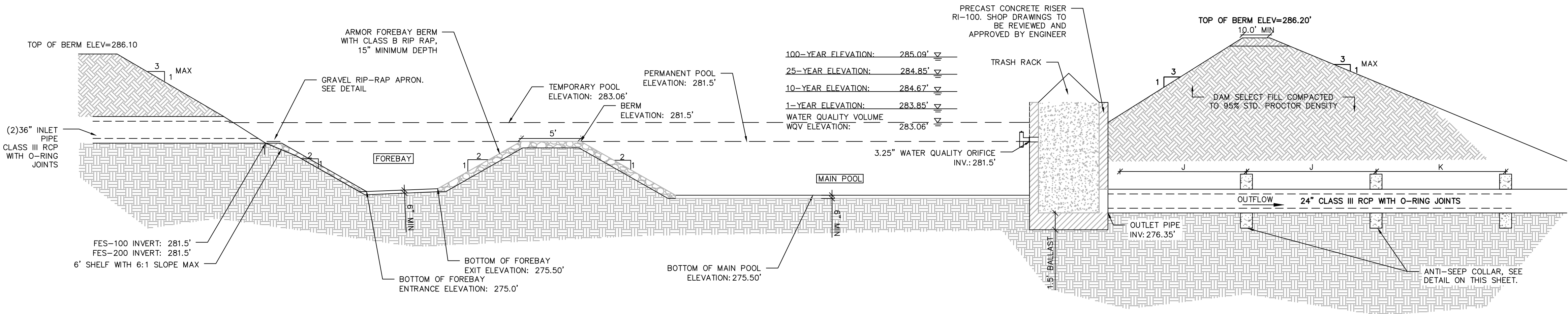
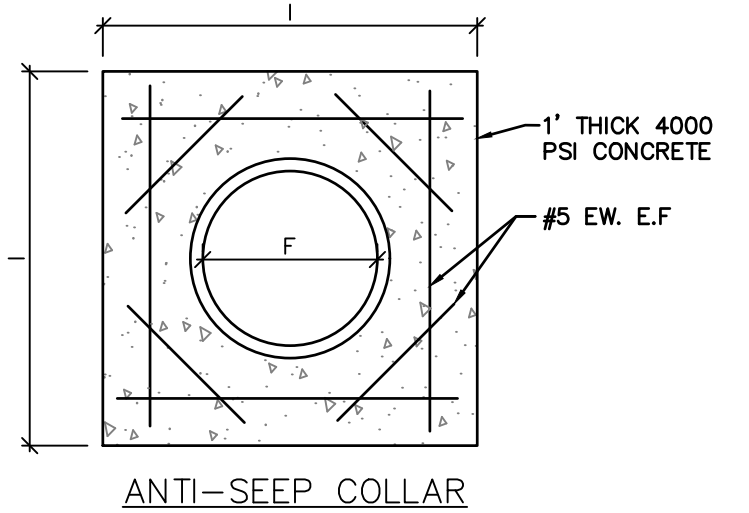
ITEM	DESCRIPTION	DIMENSION
C	Inside Dimension of Outlet Structure (ft) (Square Box)	4.00
D	Concrete Ballast Depth (in)	18
E	Width of Outlet Structure Walls (in)	5.00
F	Outlet Pipe Diameter (in)	24.00
G	SEPARATION BETWEEN SPILLWAY ELEVATION AND BOTTOM OF REINFORCED CONCRETE COVER (FT)	N/A
H	Emergency Weir Width (ft)	50
I	Anti-seep Collar Length and Width (ft)	7
J	Clearance between Outlet Structure and Anti-seep Collar (ft)	X
K	Additional Anti-seep Collar Space Downstream (O.C.) (ft)	X



WATER QUALITY ORIFICE DETAIL



ISOMETRIC DETAIL
NTS



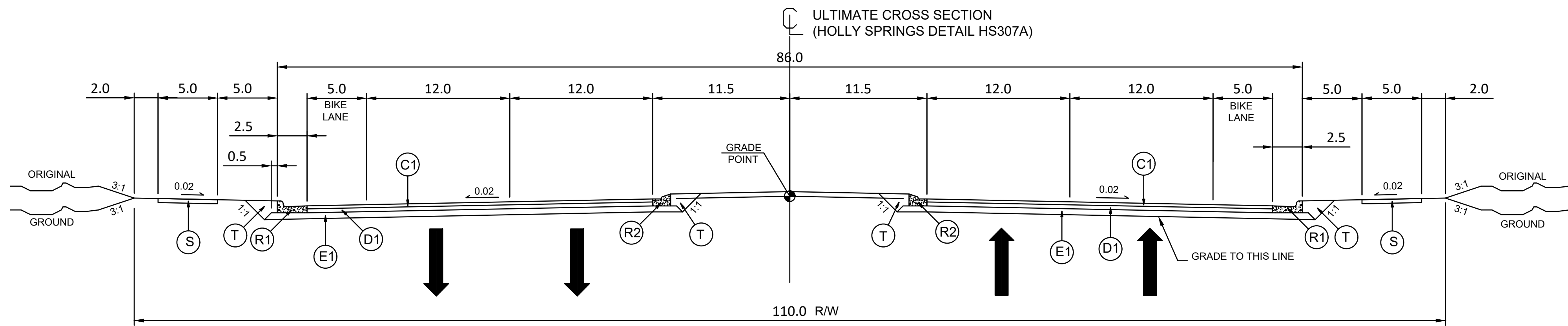
WET POND PROFILE
N.T.S

© Bolton & Menk, Inc. 2022, All Rights Reserved
+H\CJS_PR\50618\CAD\C3D\3_Sheets\C820 - SCM DETAIL.dwg 12/5/2023 12:40:18 PM

© Bolton & Menk, Inc. 2022, All Rights Reserved
H:\CJS_PR\50618\CAD\C3D\3_Sheets\C820 - SCM D

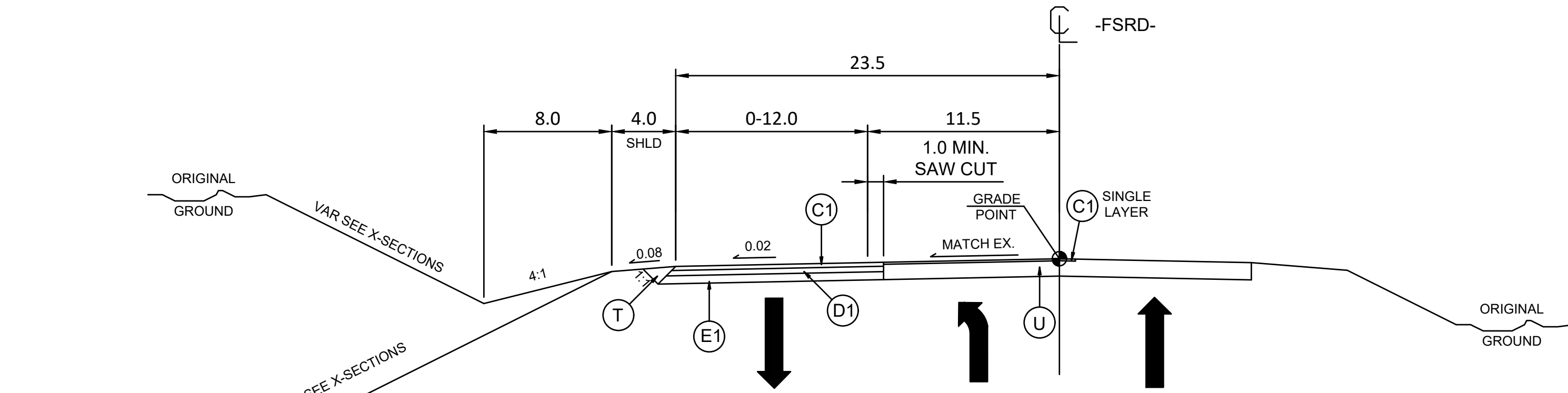
105, 199,506-109; CA7C-103, Sheets/CB20, 50M CETAAL, avg. Layer 21, 12.5% G23 12.6017 PM, 1995a Helvéc, 1.1

© Bolton & Menk, Inc. 2022. All Rights Reserved. H:\J_S-PR\10618\CAD\3D\3_Sheets\Offsite_Roadway\C-902 TYPICAL SECTIONS.dwg 12/16/2022 4:04:52 PM



TYPICAL SECTION NO. 1
FOR REFERENCE ONLY

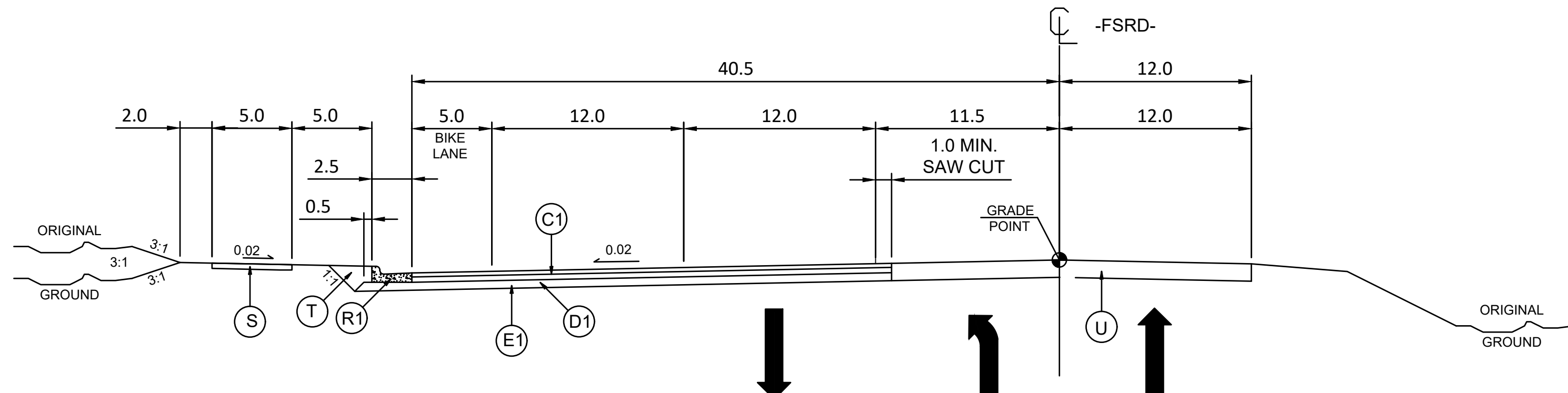
SEE PLAN FOR SUPERELEVATION RATE AND LOCATION



TYPICAL SECTION NO. 2

USE TYPICAL SECTION NO. 2
-FSRD- STA. 10+37.82 TO 17+47.53

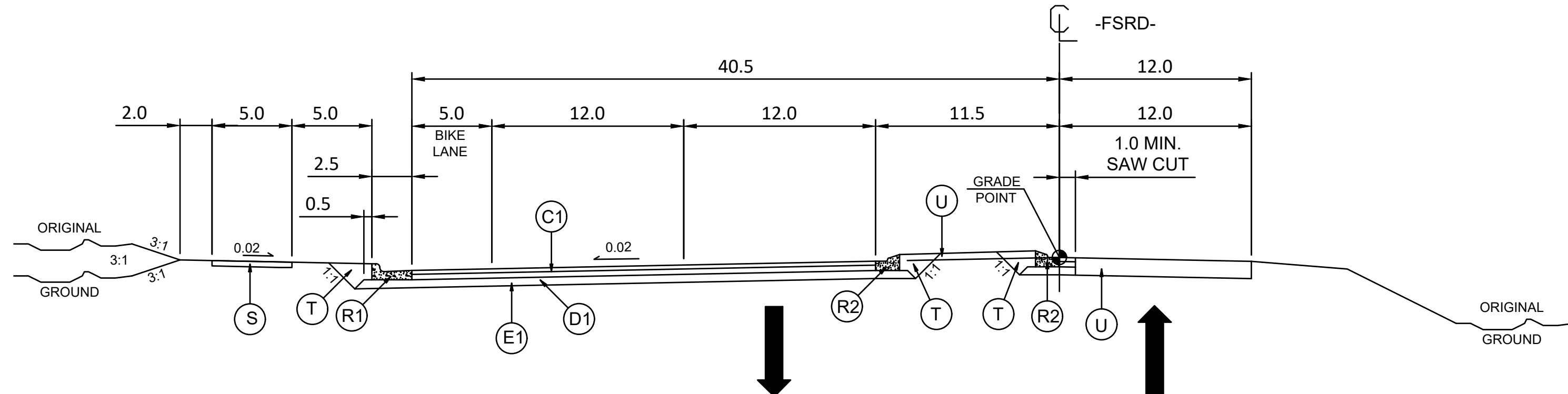
SEE PLAN FOR SUPERELEVATION RATE AND LOCATION



TYPICAL SECTION NO. 3

USE TYPICAL SECTION NO. 3
-FSRD- STA. 17+47.53 TO 18+74.67
-FSRD- STA. 23+20.68 TO 25+97.10

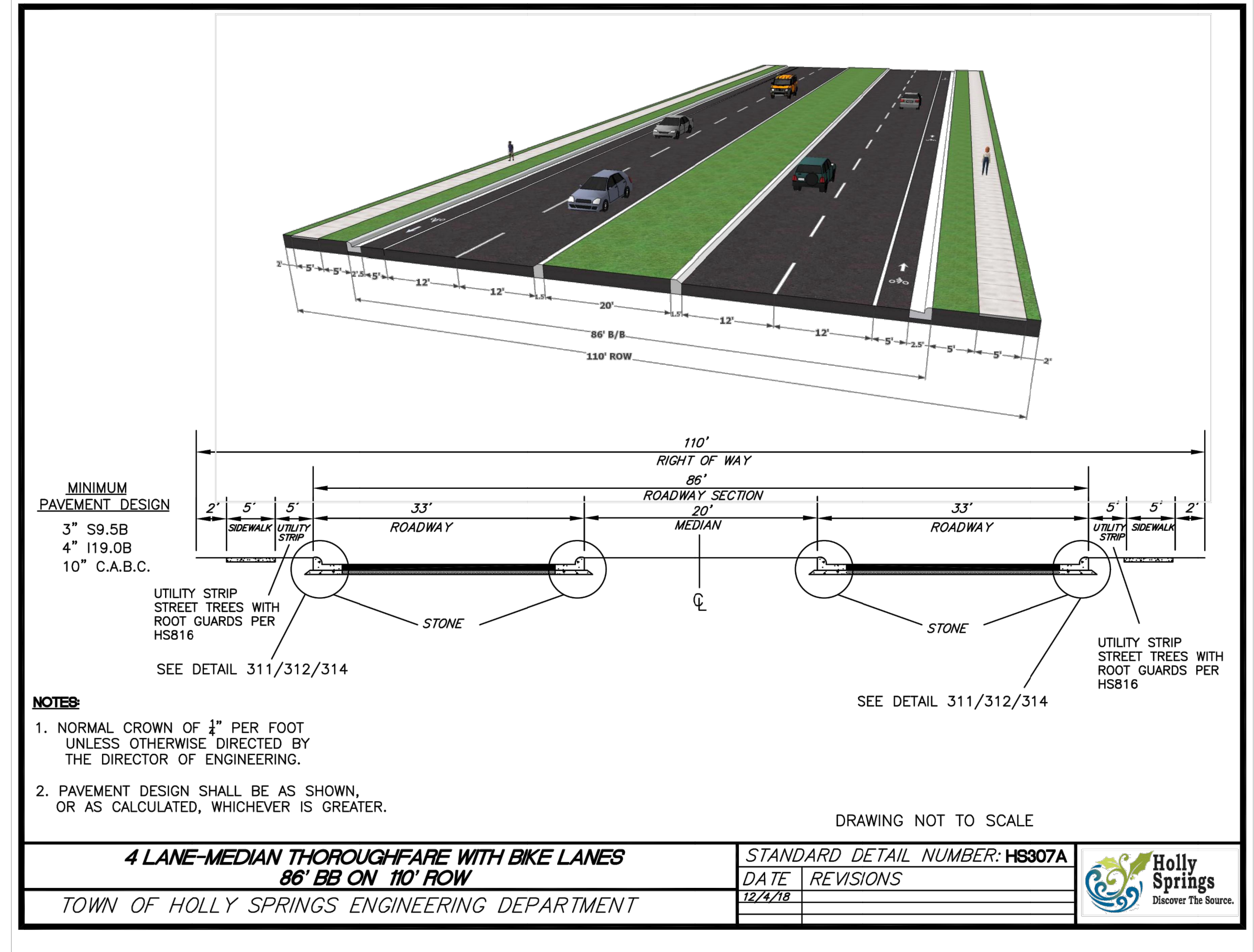
SEE PLAN FOR SUPERELEVATION RATE AND LOCATION



TYPICAL SECTION NO. 4

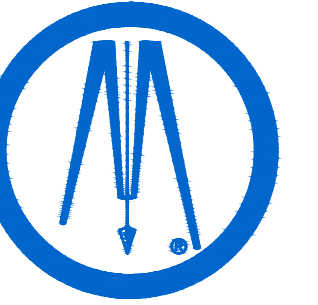
USE TYPICAL SECTION NO. 4
-FSRD- STA. 18+80.42 TO 23+20.68

SEE PLAN FOR SUPERELEVATION RATE AND LOCATION



PAVEMENT SCHEDULE (PRELIMINARY PAVEMENT DESIGN)	
C1	PROP. APPROX. 3" ASPHALT CONC. SURFACE COURSE, TYPE S9.5B AT AN AVERAGE RATE OF 168 LBS/SQ. YD. IN EACH OF TWO LAYERS
D1	PROP. APPROX. 4" ASPHALT CONC. INTERMEDIATE COURSE, TYPE I19.0B AT AN AVERAGE RATE OF 456 LBS/SQ. YD.
E1	PROP. APPROX. 6" ASPHALT CONC. BASE COURSE, TYPE B25.0C AT AN AVERAGE RATE OF 342 LBS/SQ. YD. IN EACH OF TWO LAYERS
R1	2'-6" CONCRETE CURB AND GUTTER
R2	1'-6" CONCRETE CURB AND GUTTER
T	EARTH MATERIAL.
S	4" CONC. SIDEWALK
U	EXISTING PAVEMENT.

NOTE: PAVEMENT EDGE SLOPES ARE 1:1 UNLESS SHOWN OTHERWISE.
NOTE: THIS SUBDIVISION IS IN THE TRIASSIC BASIN. ALL ROADWAYS WILL BE REQUIRED TO MEET ALL SPECIAL DESIGN REQUIREMENTS AS OUTLINED IN THE ENGINEERING DESIGN AND CONSTRUCTION STANDARDS SECTION 3.02J.



ColeJenest&Stone
BOLTON & MENK, INC.

418 S DAWSON ST
RALEIGH, NORTH CAROLINA 27601
Phone: (919) 719-1800
Email: info@colejeneststone.com
www.bolton-menk.com

ARCO DESIGN/BUILD

4000 WESTCHASE BLVD
SUITE 450
RALEIGH, NC 27607

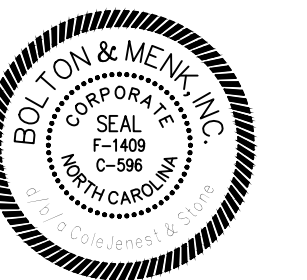
FRIENDSHIP ROAD
INDUSTRIAL

4112 FRIENDSHIP RD
HOLLY SPRINGS, NC 27539

OFFSITE ROADWAY -
TYPICAL SECTIONS

PROJECT NO:
50618.00

REVISIONS:

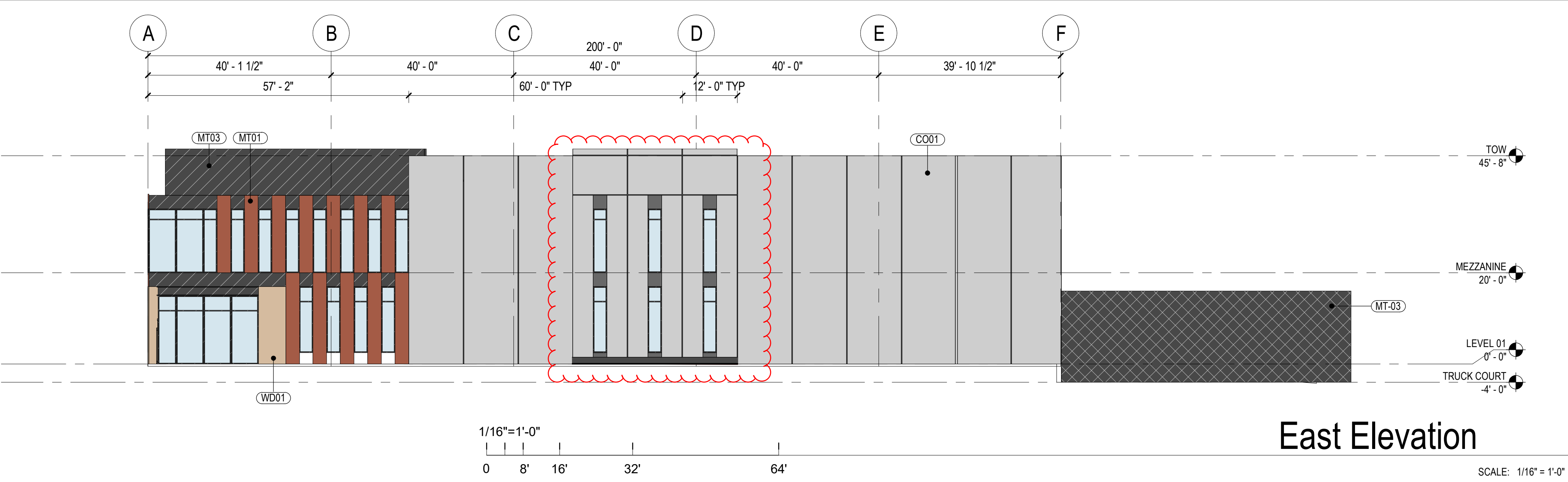
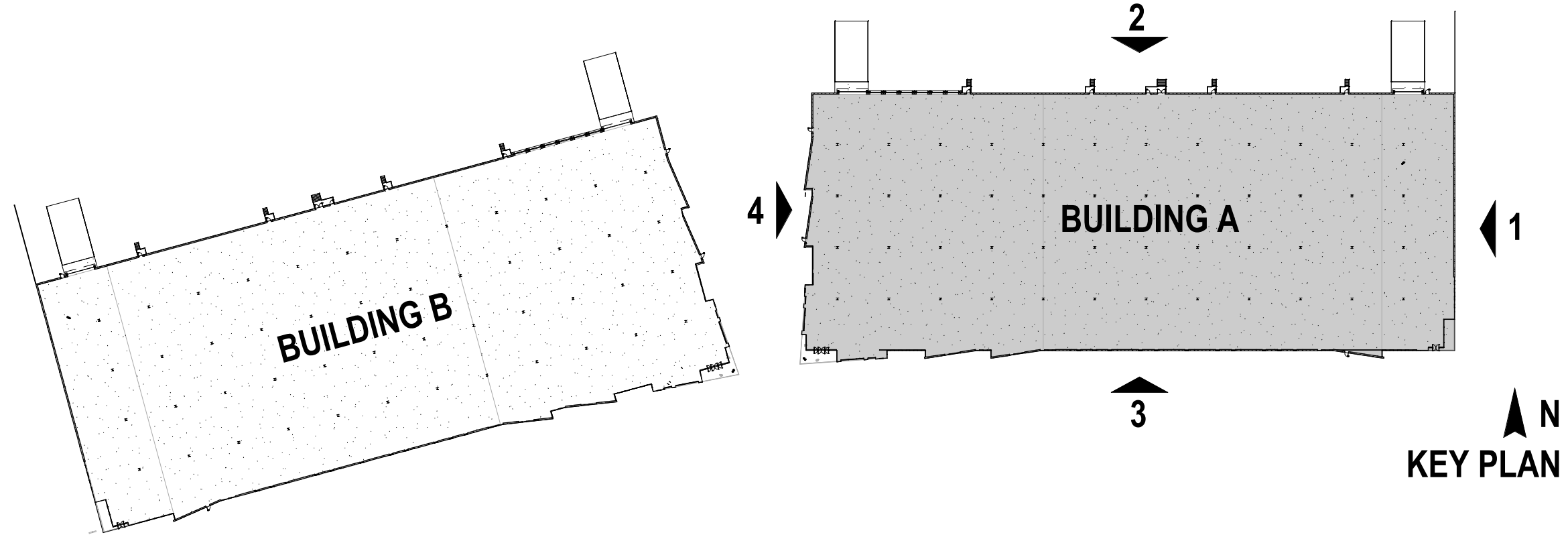


SCALE:
DATE: 11/04/2022
DESIGNED BY: MEV
DRAWN BY: MEV
CHECKED BY: TWL

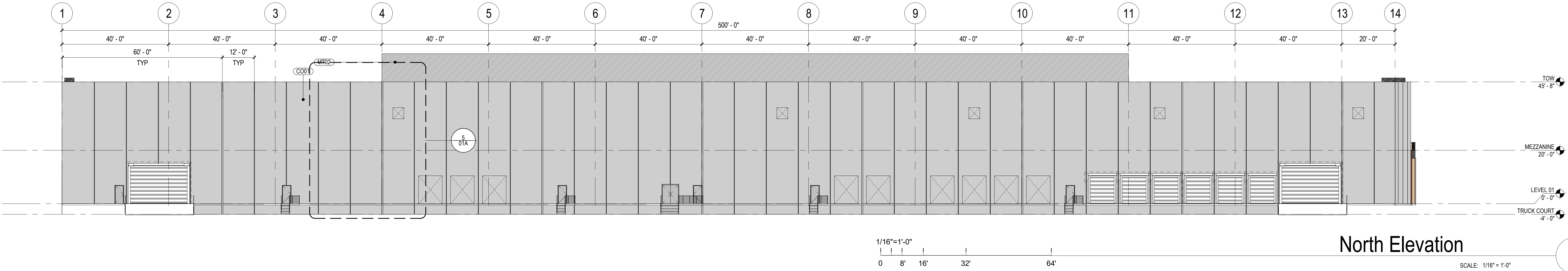
C-902

FILE NO.:

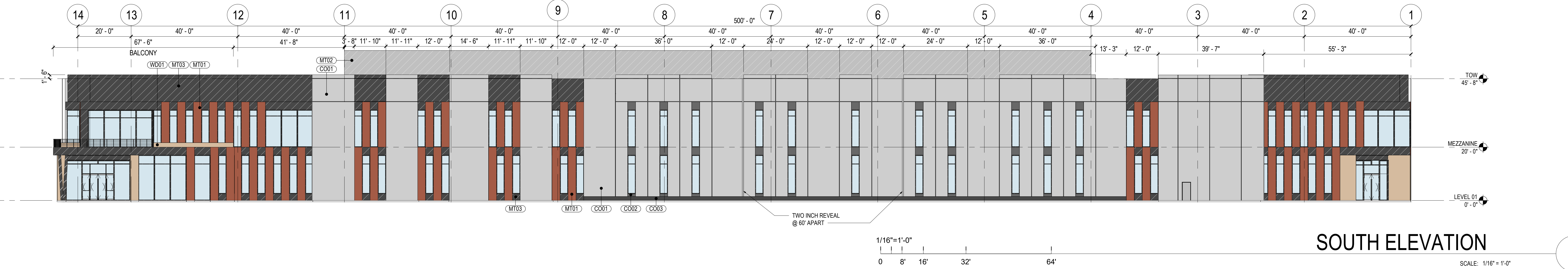
NOTE:
ALL MECHANICAL EQUIPMENT, METERS,
CONDUIT, PIPES, ETC THAT ARE MOUNTED TO
THE EXTERIOR OF THE WALLS, NEED TO BE
COLORED TO MATCH EXTERIOR OF BUILDING



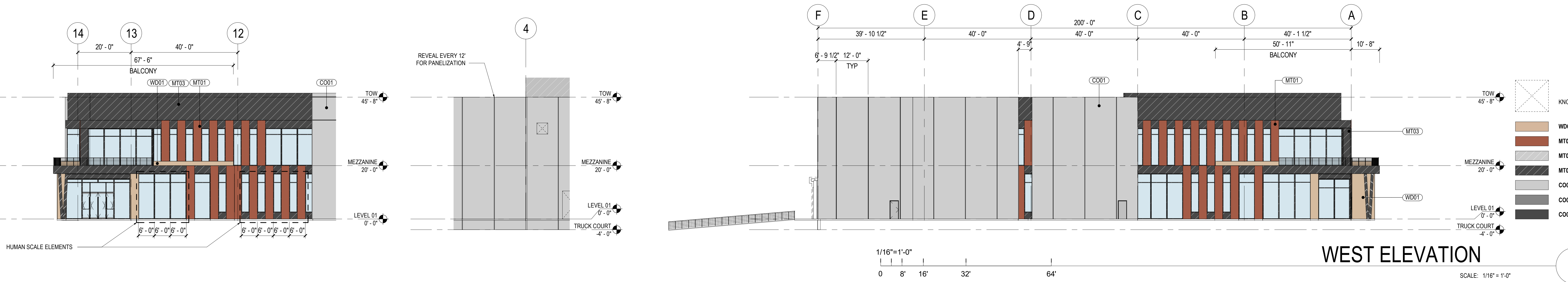
EAST ELEVATION MATERIAL CALCS:	
TOTAL BUILDING FACE:	9,185 SF
TOTAL WINDOWS:	1,230 SF (13.4%)
TOTAL BUILDING FACE MINUS WINDOWS:	7,955 SF
PRIMARY MATERIAL (60% REQUIRED)	
6,551 SF CONCRETE	(79.9%)
SECONDARY MATERIAL	
832 SF METAL	(10.2%)
136 SF WOOD	(1.7%)
676 SF STEEL	(8.2%)



NORTH ELEVATION MATERIAL CALCS:	
TOTAL BUILDING FACE:	24,730 SF
TOTAL WINDOWS:	0 SF (0%)
TOTAL BUILDING FACE MINUS WINDOWS:	24,730 SF
PRIMARY MATERIAL (60% REQUIRED)	
23,070 SF CONCRETE	(93.3%)
SECONDARY MATERIAL	
1,660 SF METAL	(6.7%)



SOUTH ELEVATION MATERIAL CALCS:	
TOTAL BUILDING FACE:	23,630 SF
TOTAL WINDOWS:	3,460 SF (14.6%)
TOTAL BUILDING FACE MINUS WINDOWS:	20,170 SF
PRIMARY MATERIAL (60% REQUIRED)	
13,030 SF CONCRETE	(64.6%)
SECONDARY MATERIAL	
3,170 SF METAL	(15.7%)
420 SF WOOD	(2.1%)
3,550 SF STEEL	(17.6%)



WEST ELEVATION MATERIAL CALCS:	
TOTAL BUILDING FACE:	9,410 SF
TOTAL WINDOWS:	1,710 SF (18.2%)
TOTAL BUILDING FACE MINUS WINDOWS:	7,700 SF
PRIMARY MATERIAL (60% REQUIRED)	
5,205 SF CONCRETE	(67.6%)
SECONDARY MATERIAL	
1,370 SF METAL	(17.8%)
235 SF WOOD	(3.1%)
890 SF STEEL	(11.5%)

KNOCK-OUT PANEL

- WD01 - WOOD FINISH
- MT01 - WEATHERING STEEL
- MT02 - LIGHT GRAY METAL PANEL
- MT03 - DARK GRAY METAL PANEL
- CO01 - PRECAST CONCRETE (LIGHT)
- CO02 - PRECAST CONCRETE (MEDIUM)
- CO03 - PRECAST CONCRETE (DARK)

SCALE 1/16" = 1'-0"

ADB / **DESIGN SERVICES**

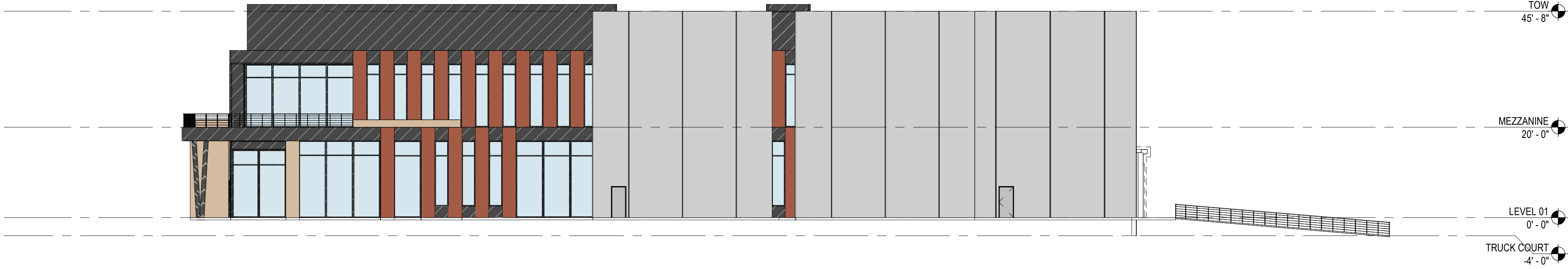
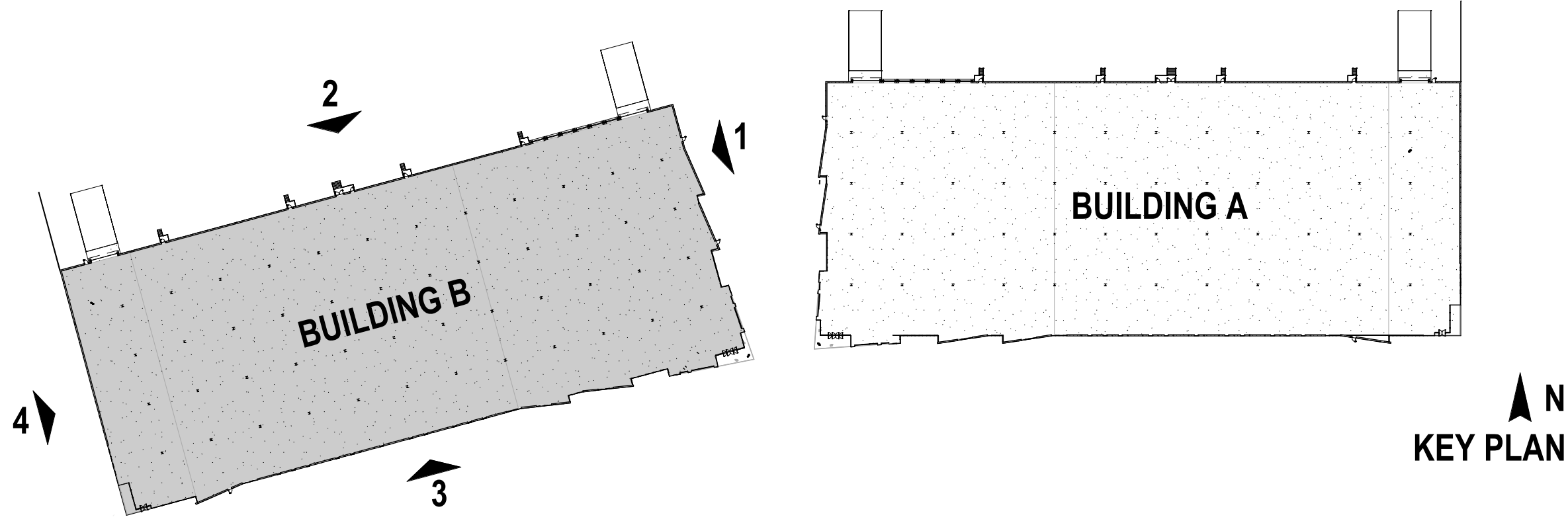
CMP

CONCEPTUAL ELEVATIONS BUILDING A

FRIENDSHIP ROAD FLEXSHELL
HOLLY SPRINGS, NC 27450
AS458-22 | NC106 | 12/06/2023

ARCO
DESIGN/BUILD

NOTE:
ALL MECHANICAL EQUIPMENT, METERS,
CONDUIT, PIPES, ETC THAT ARE MOUNTED TO
THE EXTERIOR OF THE WALLS, NEED TO BE
COLORED TO MATCH EXTERIOR OF BUILDING

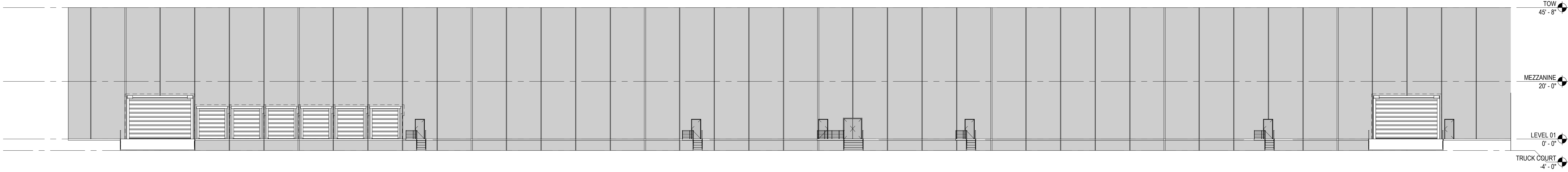


EAST ELEVATION MATERIAL CALCS:	
TOTAL BUILDING FACE: 9,410 SF	
TOTAL WINDOWS: 1,710 SF (18.2%)	
TOTAL BUILDING FACE MINUS WINDOWS: 7,700 SF	
PRIMARY MATERIAL (60% REQUIRED)	
5,205 SF CONCRETE (57.6%)	
SECONDARY MATERIAL	
1,370 SF METAL (17.8%)	
235 SF WOOD (3.1%)	
890 SF STEEL (11.5%)	

BUILDING B EAST ELEVATION

1

SCALE: 1/16" = 1'-0"



NORTH ELEVATION MATERIAL CALCS:	
TOTAL BUILDING FACE: 24,730 SF	
TOTAL WINDOWS: 0 SF (0%)	
TOTAL BUILDING FACE MINUS WINDOWS: 24,730 SF	
PRIMARY MATERIAL (60% REQUIRED)	
23,070 SF CONCRETE (93.3%)	
SECONDARY MATERIAL	
1,660 SF METAL (6.7%)	

BUILDING B NORTH ELEVATION

2

SCALE: 1/16" = 1'-0"

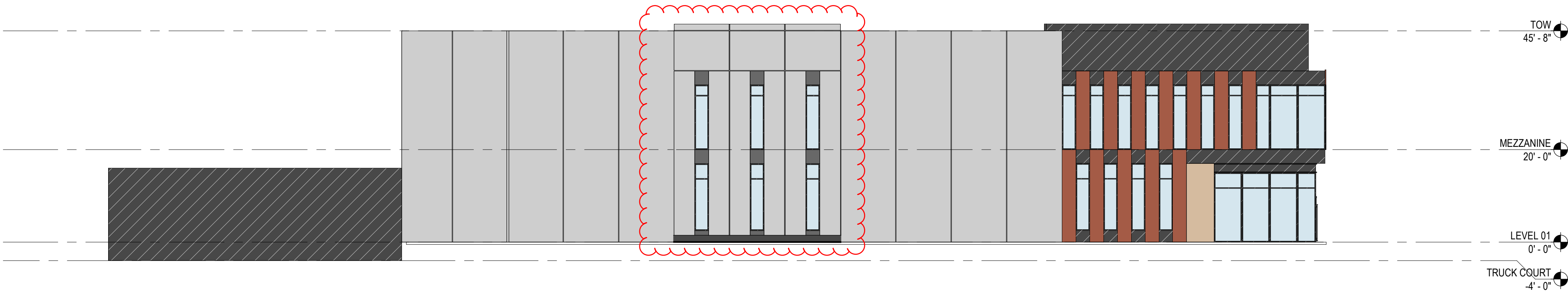


SOUTH ELEVATION MATERIAL CALCS:	
TOTAL BUILDING FACE: 23,630 SF	
TOTAL WINDOWS: 3,460 SF (14.6%)	
TOTAL BUILDING FACE MINUS WINDOWS: 20,170 SF	
PRIMARY MATERIAL (60% REQUIRED)	
13,030 SF CONCRETE (64.6%)	
SECONDARY MATERIAL	
3,170 SF METAL (15.7%)	
420 SF WOOD (2.1%)	
3,550 SF STEEL (17.6%)	

BUILDING B SOUTH ELEVATION

3

SCALE: 1/16" = 1'-0"



WEST ELEVATION MATERIAL CALCS:	
TOTAL BUILDING FACE: 9,185 SF	
TOTAL WINDOWS: 1,230 SF (13.4%)	
TOTAL BUILDING FACE MINUS WINDOWS: 7,955 SF	
PRIMARY MATERIAL (60% REQUIRED)	
6,551 SF CONCRETE (79.9%)	
SECONDARY MATERIAL	
832 SF METAL (10.2%)	
136 SF WOOD (1.7%)	
670 SF STEEL (8.2%)	

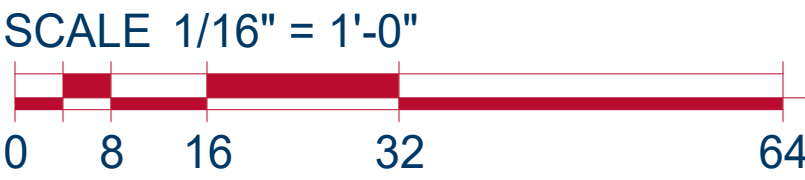
BUILDING B WEST ELEVATION

4

SCALE: 1/16" = 1'-0"

NOTE: ALL MATERIALITY AND DIMENSIONS TO MATCH
BUILDING A; REFER TO BUILDING A ELEVATIONS FOR
ADDITIONAL INFORMATION

This conceptual design is based upon a preliminary review of entitlement requirements
and on unverified and possibly incomplete site and/or building information, and is
intended merely to assist in exploring how the project might be developed.



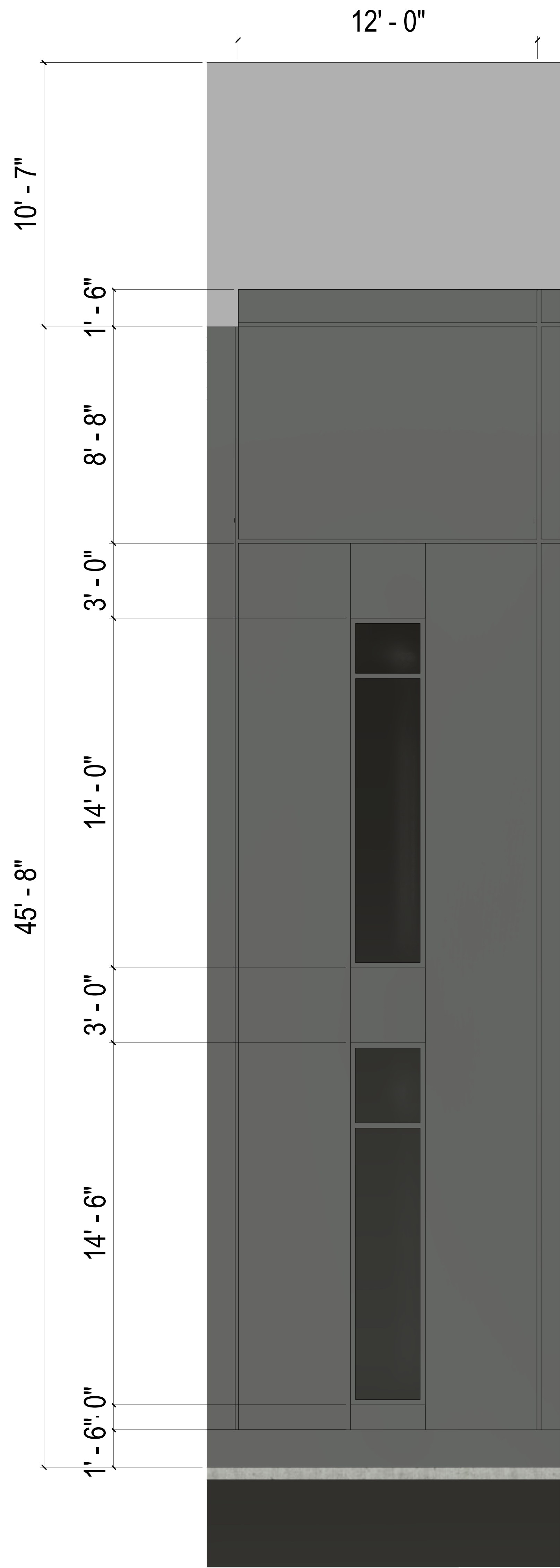
ADB / **DESIGN SERVICES**

CMP

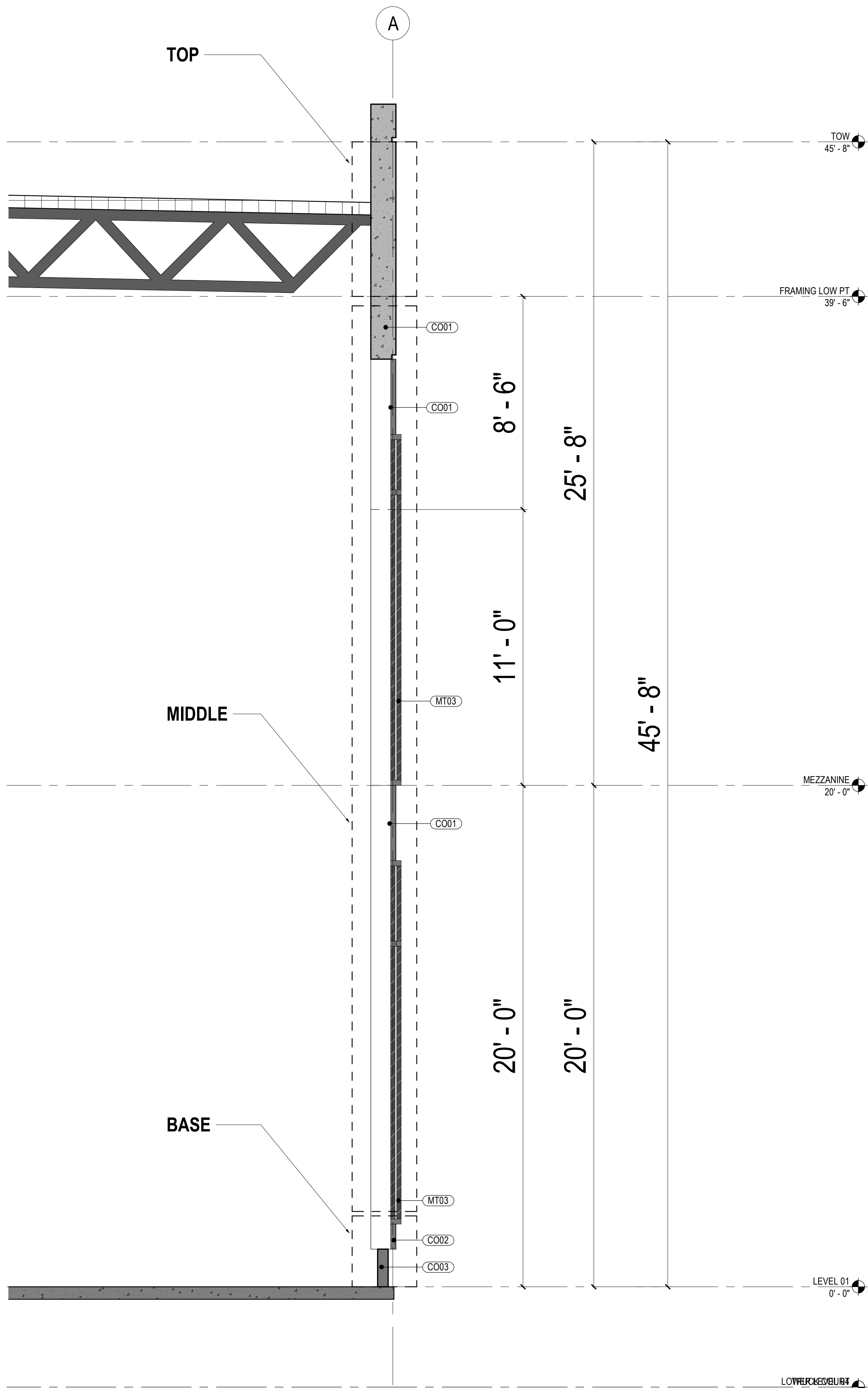
CONCEPTUAL ELEVATIONS BUILDING B

MORRISVILLE FLEXSHELL
HOLLY SPRINGS, NC 27450
AS458-22 | NC106 | 12/06/2023

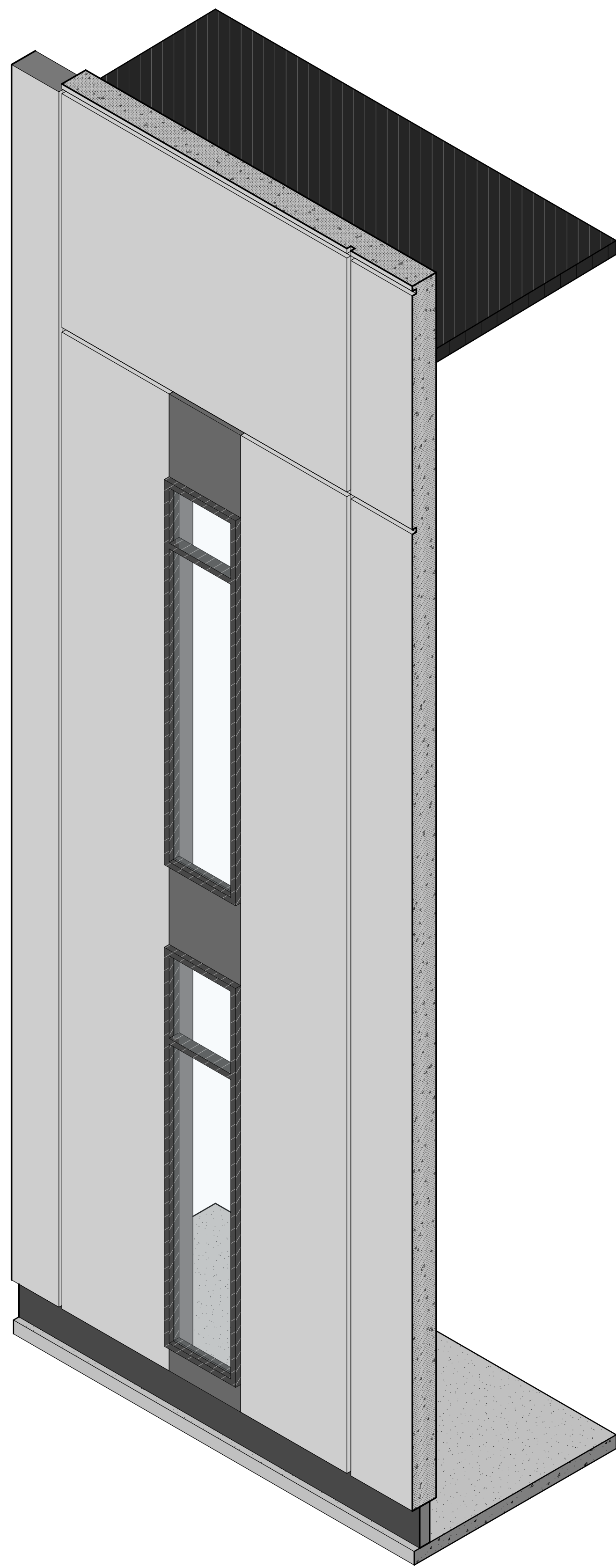
ARCO
DESIGN/BUILD



3 Typical bay elevation
SCALE: 3/8" = 1'-0"

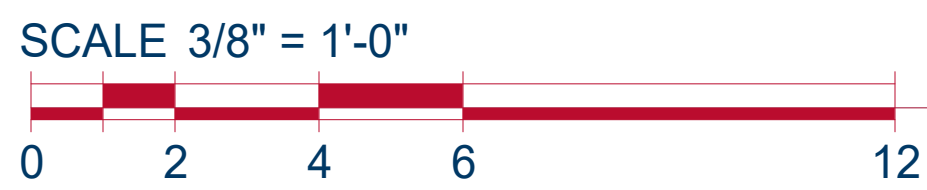


2 Wall section
SCALE: 3/8" = 1'-0"



1 Axon
SCALE:

This conceptual design is based upon a preliminary review of entitlement requirements and on unverified and possibly incomplete site and/or building information, and is intended merely to assist in exploring how the project might be developed.



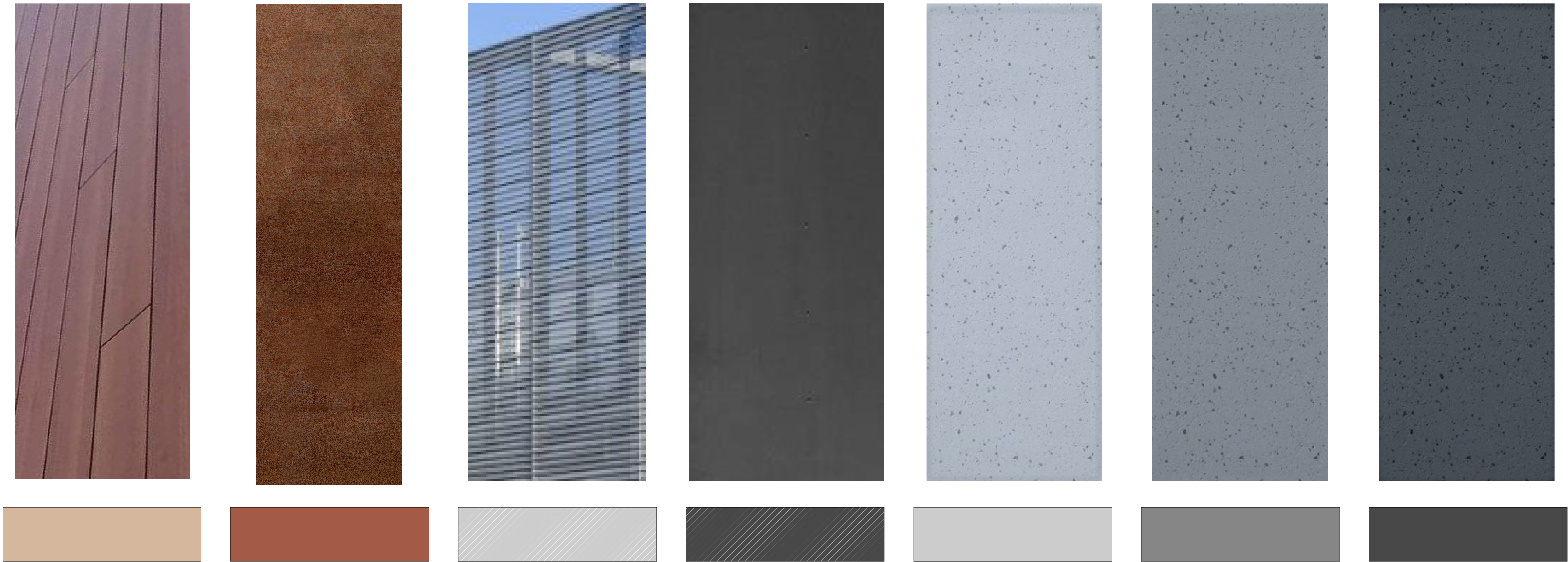
ADB / **DESIGN SERVICES**

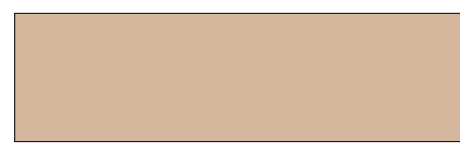
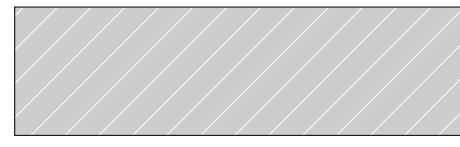
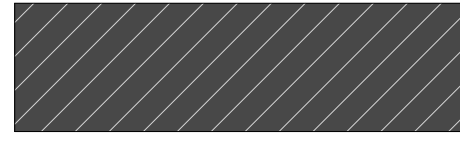
CMP

WALL SECTION

FRIENDSHIP ROAD FLEXSHELL
HOLLY SPRINGS, NC 27450
AS458-22 | NC106 | 12/06/2023

ARCO
DESIGN/BUILD



-  **WD01 - WOOD FINISH**
-  **MT01 - WEATHERNG STEEL**
-  **MT02 - LIGHT GRAY METAL PANEL**
-  **MT03 - DARK GRAY METAL PANEL**
-  **CO01 - PRECAST CONCRETE (LIGHT)**
-  **CO02 - PRECAST CONCRETE (MEDIUM)**
-  **CO03 - PRECAST CONCRETE (DARK)**

This conceptual design is based upon a preliminary review of entitlement requirements and on unverified and possibly incomplete site and/or building information, and is intended merely to assist in exploring how the project might be developed.



Holly Springs Town Council

Town Council Meeting Agenda Cover Sheet

Agenda Item#: 24.

Public Hearings

Title: Village Gate Rezoning 23-REZ-08 - Legislative Public Hearing

Strategic Priority Area: Economic Prosperity & Diversity

Engaged, Healthy, & Active Community

Responsible & Balanced Growth

Staff Resource: Conor Ryan, Development Services, Catherine Jacobs, Development Services

Action(s):

- Conduct Legislative public hearing.
- Consider adoption of Rezoning Ordinance RZ24-01 to adopt the statement of compatibility and approve rezoning and associated Development Agreement revision.

Explanation:

- The Town has received a request to rezone 19.83 acres located near the intersection of S. Main Street and Ralph Stephens Road from CB-CU Community Business Conditional Use to CB-CD Community Business Conditional Zoning District.
- The properties are located in the previously approved Village Gate Master Plan area.
- The proposal will revise the zoning conditions #3 and #4D: condition #3 will be revised to reduce the minimum number of workforce housing units constructed with Tract 3 from 50 to 25, and condition #4D, which requires site access 2 off South Main Street, will be removed entirely.
- A revision to the Development Agreement will also be made to incorporate changes to the zoning conditions.
- No other changes to the zoning conditions or Development Agreement are proposed.

Staff Recommendation: Approve

Planning Board Recommendation: Recommended Approval (5-1) [2 absent, 1 vacancy]

A summary of the Planning Board discussion is in the staff report.

Background:

- The Village Gate Rezoning was approved on June 16, 2020.
- The Village Gate Master Plan was approved on November 17, 2020.
- Development Plans for Tract 1 (20-DP-14), Tract 2 (20-DP-12), and Tract 3 (20-DP-13) were approved on November 17, 2020.
- A Development Agreement was approved with the original zoning action and included an alternate method of billing for utilities in support of the 50 workforce rental units proposed.

Town Council Business Meeting
February 20, 2024

- The revisions proposed with this zoning action also modify the corresponding development agreement and with the change to 25 for sale workforce units, the applicant will also have to switch to individual unit water meters if they are sold and no modification to fee schedule will be applied.
- A Development Plan for Tract 1B (23-DP-14) is currently under review.
- A new Unified Development Ordinance (2022 UDO) was effective March 1, 2022. Over the next 12-24 months, there will be a crossover period where some projects are able to utilize the old UDO (2002 UDO) due to state statutes. This section of the cover sheet will be utilized to specify the UDO version (2002 or 2022) and the approval type that the Council is considering for each respective case.
 - Applicable Ordinance: 2022 UDO
 - Process: Legislative, Rezoning

Funding Source(s):

N/A

Attachment(s):

1. 23REZ08_VillageGate_StaffReport
2. 23REZ08_VillageGate_Ordinance
3. 23REZ08_VillageGate_Application
4. Amendment to Village Gate DA



Project Type: Zoning Map Amendment (Rezoning)

Concurrent Applications:

☐ Waiver / SUP/ VAR/ CPA

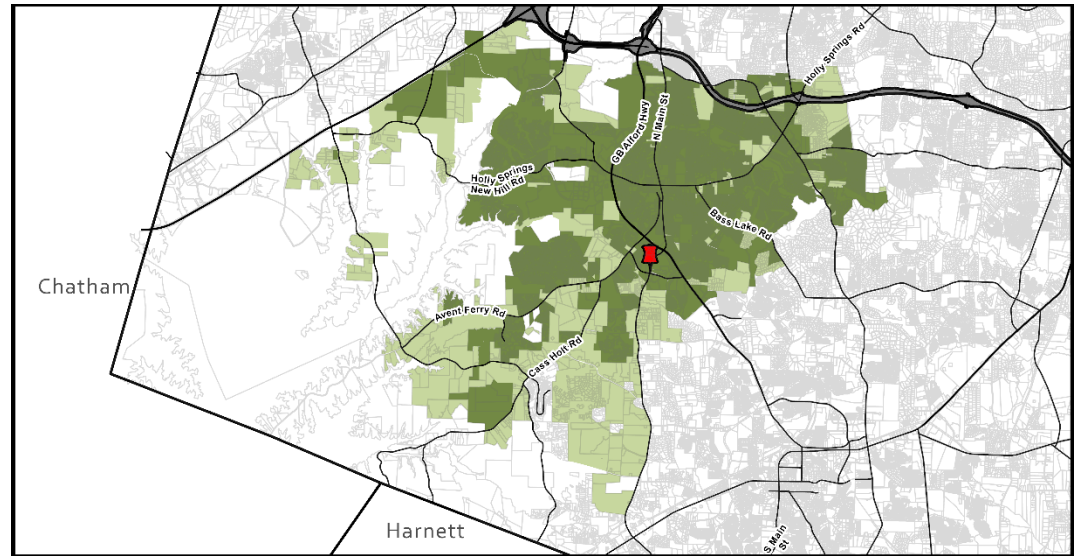
Applicant / Petitioner:

Chris Rurkowski, et al.
(see petition)

Property Address:

Intersection of S. Main Street and Ralph Stephens Road.

Property Area: 19.83 ac.



Located in: ☒ Holly Springs Corporate Limits ☐ Holly Springs ETJ ☐ Annexation Pending

Project Summary:

A rezoning of 19.83 acres along S. Main Street from CB-CU to CB-CD to modify the original zoning conditions for Village Gate (19-REZ-03) to reduce the number of committed workforce housing units and modify transportation improvements.

Requested Action:

Advisory Decision: The Planning Board will review the petition and make a recommendation to the Town Council to approve or deny the requested Zoning Map Amendment petition.

Table of Contents:

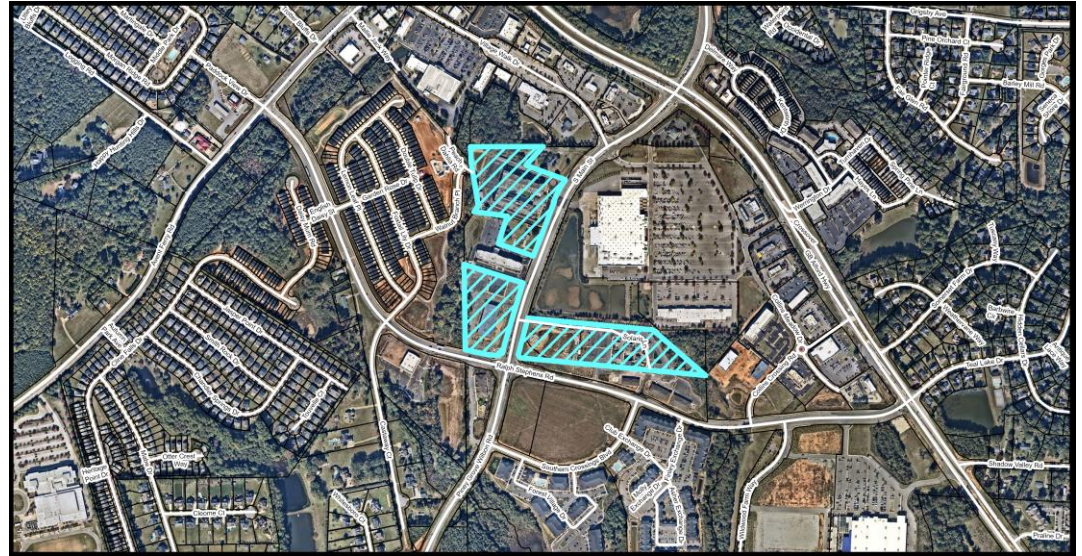
Case Summary	Page 2
Current Zoning Information	Page 3
Land Use & Character Information	Page 4
Transportation Information	Page 6
Parks, Recreation, & Open Space Information	Page 8
Community Facilities Information	Page 9
Utility & Infrastructure Information	Page 10
Natural Resources Information	Page 11
Conditional Zoning District Information	Page 12
Decision-Making Information	Page 14

**Case Summary****Current Zoning:**

CB: Community Business
☒ Conditional Use Zoning District

Proposed Zoning:

CB: Community Business
☒ 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

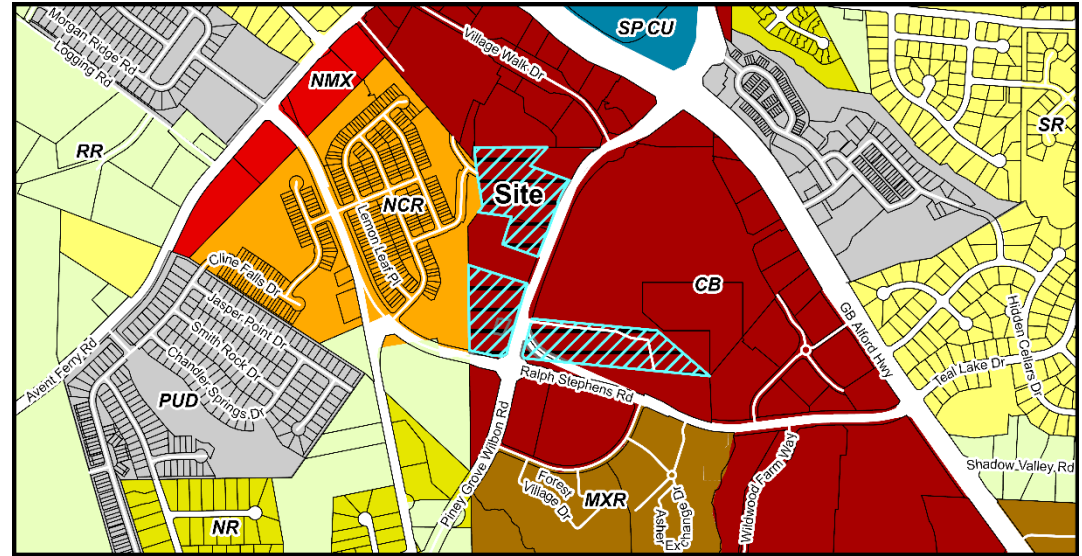
The proposed rezoning only modifies the previously approved conditions to reduce the number of committed workforce housing units and modify transportation improvements. It does not incorporate any change in uses, density, or building design requirements, and the proposed changes to the zoning conditions do not create any new inconsistencies between the proposal and the Comprehensive Plan, UDO, or other Town documents. The proposed CB-CD district maintains the compatibility with the Town's adopted plans provided with the previously-approved rezoning case.

Staff Recommendation: ☒ Approve ☐ Deny



Current Zoning Information

Parcel #	Zoning	Area
0648873030	CB-CU	6.47
0648864611	CB-CU	1.33
0648861048	CB-CU	4.69
0648854727	CB-CU	.37
0648950812	CB-CU	7.28
Total Area		20.14



Current Zoning Map

Adjacent Property Current Zoning Information

Subject Property	Zoning	Existing Land Use
	CB-CU	Commercial/Apartment/Single-Family Detached/Vacant
North	CB	Vacant, Commercial
South	CB	Commercial, Day Care
East	CB	Commercial
West	NCR	Single-Family Attached

Parcel Rezoning History

Rezoning Number: 19-REZ-03
 Original Zoning: R-20 and CB
 Approved Zoning: CB-CU
 Approval Date: June 16, 2020



Land Use & Character Information

Growth Strategy Map: Places to Transform

Future Land Use: Mixed-Use Center

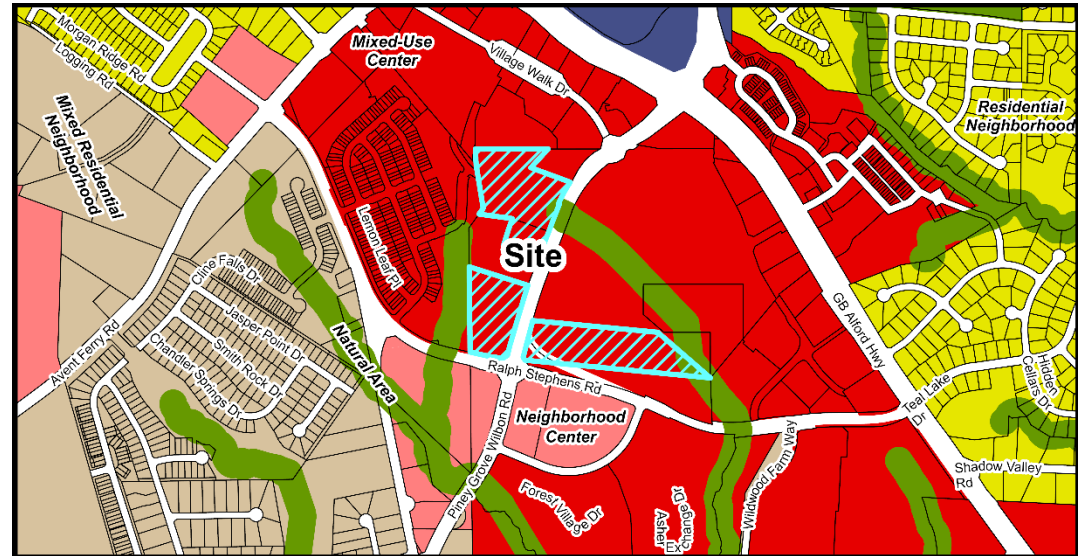
Small Area Plan: N/A

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.

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. Mixed-Use Centers shall 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.

Small Area Plan: N/A

Historic Structures: ☒ None

Future Land Use Staff Analysis:

The requested Zoning Map Amendment is: ☒ Consistent ☐ Inconsistent

The variety of uses, incorporation of greenways and other pedestrian amenities, and commitment to workforce housing proposed as part of this rezoning support the compact, walkable, mixed-use environment envisioned by the Mixed-Use Center designation in the Land Use and Character Plan.



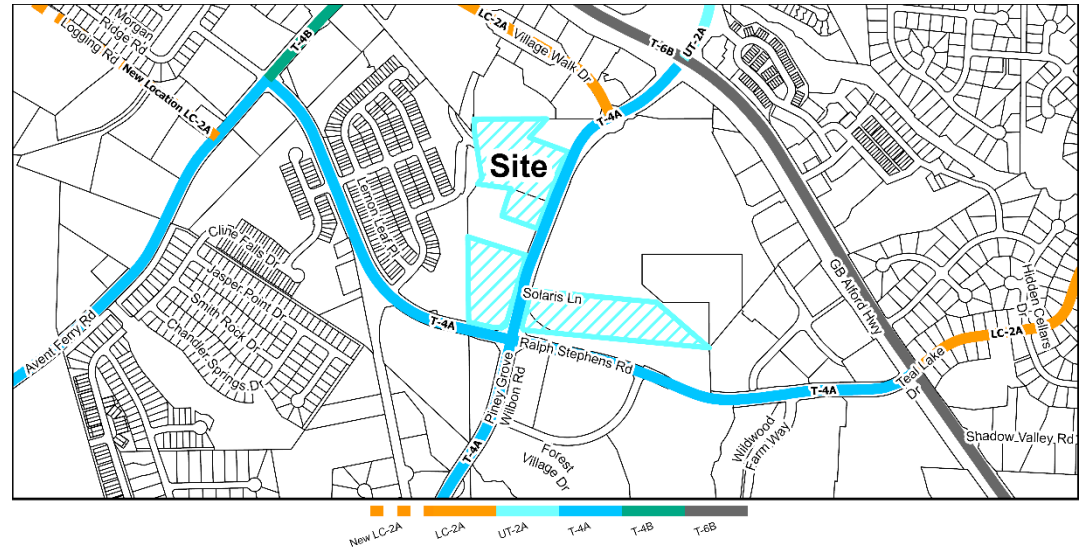
Transportation Information

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:

The required road widening along the property frontages associated with this rezoning have already been completed and no changes have been proposed.



Transportation Information (cont.)

Traffic Study Policy

- ☒ Traffic Study Required ☐ Tier 1
 ☐ Tier 2
 ☐ Tier 3
 ☒ Transportation Verification Memo

Traffic Study Summary

This revision proposes removing a previously approved driveway access along S Main Street at Lot 2B. Because of this, the associated right turn lane at that driveway is also proposed to be removed. A Transportation Verification Memo was required with this amendment to confirm compliance with the originally approved Traffic Impact Analysis. It was confirmed that even with the removal of the driveway, the overall number of daily traffic trips and peak hour trips for the project were decreasing and no additional improvements were necessary.

Transportation Staff Analysis:

The requested Zoning Map Amendment is: ☒ Consistent ☐ Inconsistent

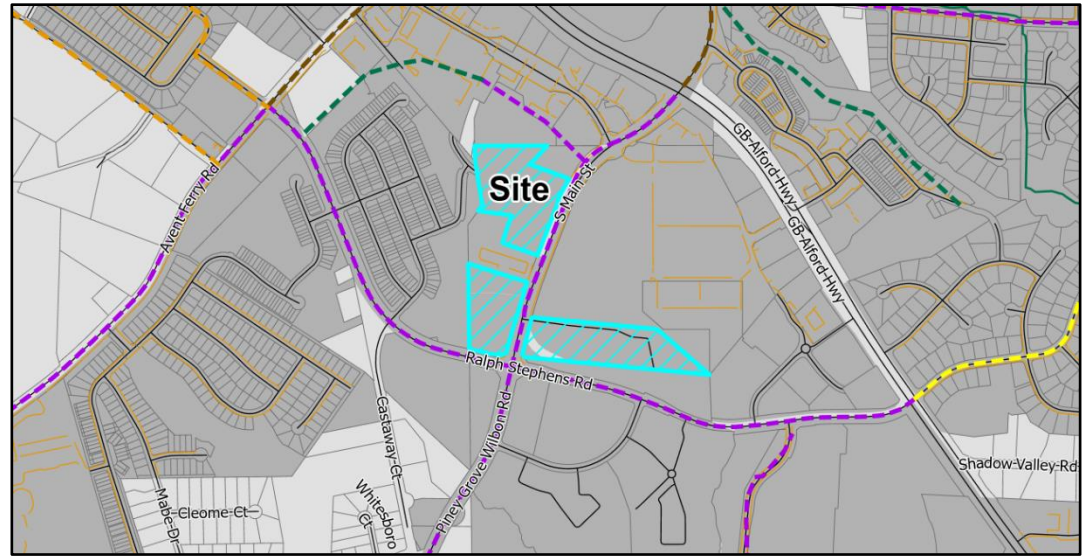
The overall number of daily traffic trips and peak hour trips for the project were decreasing and no additional improvements were necessary. The removal of the driveway is also consistent because there are cross access connections on either side of the parcel in question for easy access to S Main Street.



Parks, Recreation, & Greenways Information

Park Search Area

☐ Yes

☒ No


Active Transportation Map

Required Active Transportation Improvements

☒ Greenway

☐ Sidepath

A 10' wide asphalt public greenway terminating at the intersection of Ralph Stephens Road and S. Main Street, extending south approximately 2,500 LF to the Garrison subdivision, as captured by a previously approved Developer's Agreement. The Town's Active Transportation Map does show a required 10' Sidepath on S Main/Piney Grove Wilbon Rd as well as Ralph Stephens Rd, however there is a previously approved Master Plan which predates the adoption of the Active Transportation Map.

Parks, Recreation, & Greenways Summary

No parkland is being dedicated as part of this development as the proposed rezoning does not include land within a Park Search Area. A fee-in-lieu of Parkland Dedication will be collected in accordance with the Town of Holly Springs UDO and the previously approved Developer's Agreement.

Parks, Recreation, & Greenways Staff Analysis:

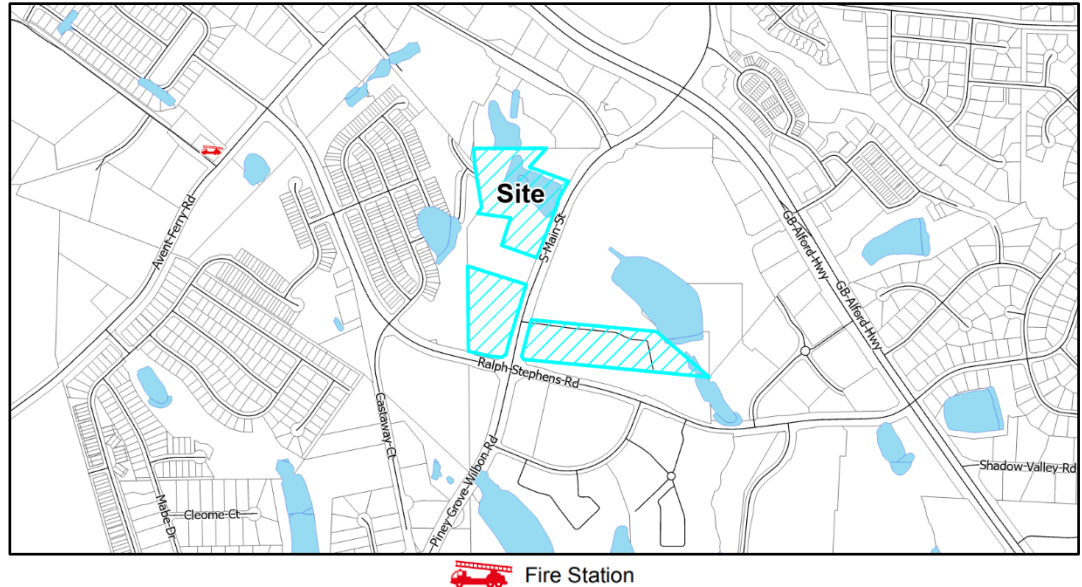
The requested Zoning Map Amendment is: ☒ Consistent ☐ Inconsistent

The required improvements associated with this rezoning have already been completed and no changes have been proposed.



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

Community Facilities Staff Analysis:

The requested Zoning Map Amendment is: ☒ Consistent ☐ Inconsistent

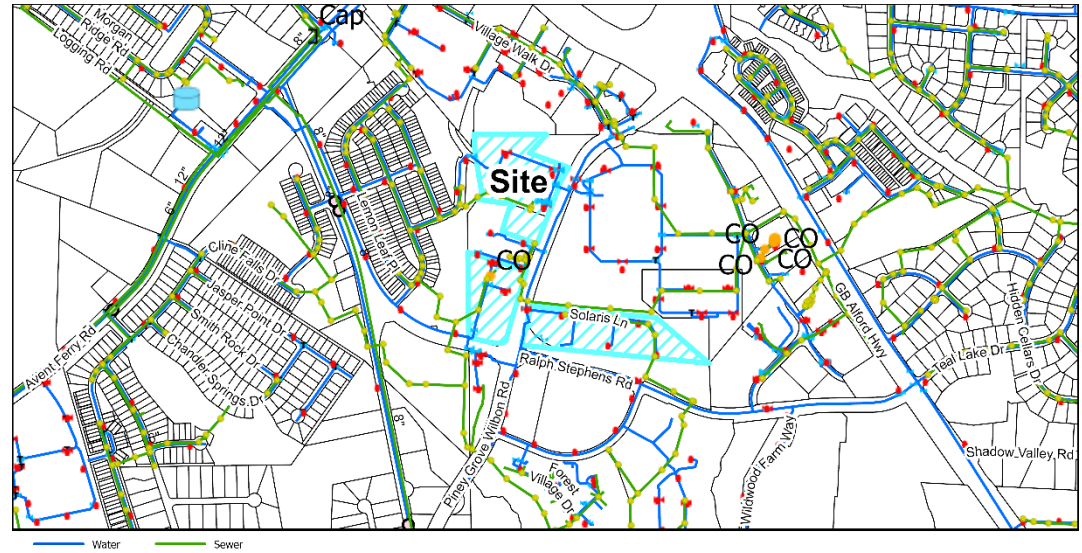
The project location is within existing service areas for the Town's public safety departments, and does not exist within one of the search areas for a new public safety station shown on the Community Facilities Map.



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:

No changes were proposed to the Town's Public Water Infrastructure.

Sanitary Sewer:

No changes were proposed to the Town's Public Sanitary Sewer Infrastructure. A Sewer Verification Memo was required with this amendment to confirm compliance with the originally approved Sewer Study. It was confirmed that the overall average daily flow for the project was decreasing, and no additional improvements were necessary.

Reclaim:

This project is not 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 revision decreases the overall average daily flow for the project. Therefore, it is not subject to the Water Resource Management Policy.

Infrastructure & Utility Staff Analysis:

The requested Zoning Map Amendment is: ☒ Consistent ☐ Inconsistent

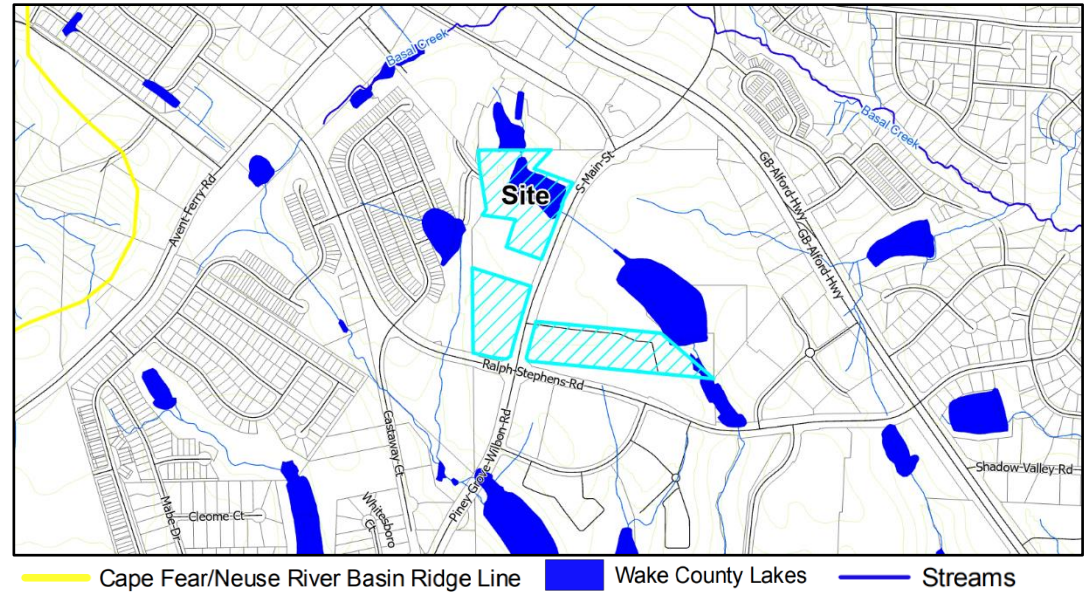
No additional increase in utility needs were proposed and all previous impacts have been mitigated.



Natural Resources & Open Space Information

Total Required Open Space ac.

Tree Preservation Area	10% or 1.98 ac.
Active Recreation Area	2% or .397 ac.
Urban Civic Space	.69% or .138 ac. (per voluntary condition)
Flexible Space	2.5% or .496 ac.



Natural Resources Map

Natural Resources & Open Space Summary

Open Space:

No changes were proposed to the previously approved open space.

Stormwater:

No changes were proposed to the previously approved stormwater plan.

Natural Resources & Open Space Staff Analysis:

The requested Zoning Map Amendment is: ☒ Consistent ☐ Inconsistent

The removal of the driveway on S Main Street and the associated right turn lane reduces the total imperviousness overall. Therefore, no additional stormwater mitigation is necessary.



Conditional Zoning District 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.

Conditional Zoning District Summary

Zoning Condition	Previously-Approved	Proposed
#3	The developer acknowledges the need to provide workforce housing within the Town of Holly Springs and is committed to doing so. A minimum of fifty (50) dwelling units shall be workforce housing units and shall be located on TRACT 3 as shown on 'EXHIBIT 1'.	The developer acknowledges the need to provide workforce housing within the Town of Holly Springs and is committed to doing so. A minimum of <u>twenty-five (25)</u> dwelling units shall be workforce housing units and shall be located on TRACT 3 as shown on 'EXHIBIT 1'.
#4D	Site Access #2 (as shown on 'Exhibit 3'), construct one inbound lane and one outbound lane (right in/right out only) with appropriate median channelization.	Condition Removed

Conditional Zoning District Evaluation of Plan Consistency

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

Comprehensive Plan Consistency:

Due to the relatively minimal changes in zoning conditions from the previously-approved Conditional Use Zoning District, the proposed rezoning maintains the same compatibility with the Comprehensive Plan as previously determined by the Planning Board and Town Council. The applicant has offered justification for the requested changes pertaining to the number of committed workforce housing units, describing how changing economic conditions have compelled them to request the zoning modification in order to keep the project financially feasible.



Decision-Making Information

Zoning Map Amendment (Rezoning) Staff Analysis

The proposed rezoning only modifies the previously approved conditions to reduce the number of committed workforce housing units and modify transportation improvements. It does not incorporate any change in uses, density, or building design requirements, and the proposed changes to the zoning conditions do not create any new inconsistencies between the proposal and the Comprehensive Plan, UDO, or other Town documents. The proposed CB-CD district maintains the compatibility with the Town's adopted plans provided with the previously-approved rezoning case.

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: 8/23/2023

Summary of Issues: None.

Planning Board Action

Planning Board Meeting Date: 1/23/2024

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 proposed Comprehensive Plan Amendment is consistent with the goals of the Comprehensive Plan, or any other officially adopted plan that is applicable, and if the amendment is reasonable and in the public interest. 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:

- Concerned about the change in the originally-approved number of workforce housing units provided by the project, which the applicant noted was due to rising construction and borrowing costs and a total reduction in housing units for the Solaris project.



- Discussed the removal of a site access point, which staff and the applicant noted was no longer necessary due to cross-access availability within the project area.

Planning Board Recommendation:

Recommend **approval** of Zoning Map Amendment #23-REZ-08 to change the zoning of 19.83 acres of Wake County PINs 0648873030, 0648864611, 0648861048, 0648854727, and 0648950812 from CB-CU: Community Business Conditional Use to CB-CD: Community Business Conditional Zoning District as submitted by Chris Rurkowski.

The Planning Board voted in favor of the motion (5 - 1) [2 absent, 1 vacancy]

Those voting against the motion:

- Mr. Bess voted against the motion due to the applicant's justification for the reduction in workforce housing units, noting that the area needs affordable housing and increase in construction costs was insufficient reasoning to reduce what was originally approved.

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 #24-01 to adopt the statement of compatibility and approve rezoning.



Ordinance No. RZ24-01

Date Submitted: February 20, 2024

Date Adopted: February 20, 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 19.83 acres of Wake County PINs 0648873030, 0648864611, 0648861048, 0648854727, and 0648950812 from CB-CU Community Business Conditional Use to CB-CD Community Business 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

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 January 23, 2024 and recommended approval by a vote of 5-1; and

WHEREAS, in accordance with NCGS § 160D-601, the Town of Holly Springs held a legislative hearing on February 20, 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 since the proposed Zoning Map Amendment from CB-CU Community Business Conditional Use to CB-CD Community Business Conditional Zoning District is consistent with the Future Land Use Plan Map designation of this property as Mixed-Use Center and the proposed Community Business Conditional Zoning District (CD) would create a mix of commercial and residential uses incorporating a variety of shared public open spaces with multi-modal transportation opportunities, 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 as it increases commercial opportunities and housing choice in Holly Springs; and

NOW 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-08 to change the zoning of PINs #0648873030, 0648864611, 0648861048, 0648854727, and 0648950812 from CB-CU Community Business Conditional Use to CB-CD Community Business Conditional Zoning District.

The properties are subject to all the conditions listed in Attachment A dated October 24, 2023 consented to by the property owner.

Part 2: **REPEAL OF CONFLICTING ORDINANCES**

All ordinances or parts of the Town Code of Ordinances of the Town of Holly Springs conflicting or inconsistent with the provisions of this Ordinance are hereby repealed.

Part 3: **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 4: **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 Town Code of Ordinances 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 February 20, 2024 in accordance with the laws of the State of North Carolina.

Adopted this, the 20th day of February 2024.

Town of Holly Springs by

Sean Mayefskie, Mayor

ATTEST:

Linda McKinney, Town Clerk



Attachment A: Conditional Zoning District Conditions

VILLAGE GATE ZONING MAP CHANGE – Revised Zoning Conditions – DATED 10/24/2023

- 1) All properties within the rezoning request shall be developed in accordance with the mixed use development option in the Community Business zoning district as outlined in Section 3.05 C. of Holly Springs United Development Ordinance. The property owner reserves the ability to request any variances, waivers, or alternate compliance as permitted by the ordinance.
- 2) *All multifamily dwellings on TRACT 1 as shown on 'EXHIBIT 1', shall be limited to age-restricted with associated amenities. A Declaration of Covenants, Conditions, and Restrictions ("Declaration") providing that at least eighty percent (80%) of all occupied units shall have as a resident at least one person age 55 or older ("age restriction") shall be recorded with the applicable Register of Deeds Office. Covenants shall be at all times in full force and effect so long as the apartment complex remains as a multifamily use. Any recession or modification of the covenants regarding age restriction shall have approval of the town.*

Prior to applying for any building permits, an opinion letter from an attorney licensed to practice in North Carolina shall be provided to the Town stating that the age restriction was drafted in a form that the attorney, in the exercise of customary professional diligence, would reasonably recognize as compliant with the Fair Housing Act 42 U.S.C Sec. 3601, et. seq., and the North Carolina State Fair Housing Act, N.C. Gen. Stat. 41A-1, et seq.

- 3) *The developer acknowledges the need to provide workforce housing within the Town of Holly Springs and is committed to doing so. A minimum of twenty-five (25) dwelling units shall be workforce housing units and shall be located on TRACT 3 as shown on 'EXHIBIT 1'.*
- 4) *The Town requires, pursuant to N.C.G.S. § 160A-372, the dedication and construction of streets and rights of way, as shown in the approved Comprehensive Transportation Plan and the approved Transportation 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 the Developer can enter into agreements to accelerate the time for completion of these needed improvements.*
 - A. *Establish a funding partnership with the Town of Holly Springs and NCDOT to provide a fee in lieu in the amount of \$105,000.00 for the construction of the widening of southbound NC 55 Bypass to provide a third travel lane between Avent Ferry Road and South Main Street.*
 - B. *Widen the northbound Piney-Grove Wilbon Road approach to provide a new through/right turn lane with a minimum of 250 feet of storage length and provide signal modifications to accommodate the geometrics changes. Actual construction of the improvements may utilize the contributing fund from other background developments at this intersection.*
 - C. *Site Access #1 (as shown on 'Exhibit 3') construct one inbound lane and two outbound lanes with an exclusive right turn lane and exclusive left turn lane with a minimum of 100 feet of storage length. Widen the southbound South Main Street approach to provide an exclusive right turn lane with a minimum of 100 feet of storage length.*

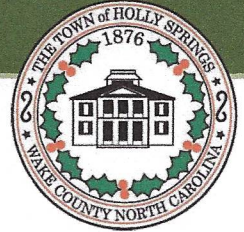
- D. *Site Access #3 (as shown on 'Exhibit 3'), construct one inbound lane and one outbound lane (right in/right out only) with appropriate median channelization. Widen the southbound South Main Street approach to provide an exclusive right turn lane with a minimum of 100 feet of storage length.*
 - E. *Site Access #4 (as shown on 'Exhibit 3'), construct one outbound lane (right out only) with appropriate median channelization. Widen the westbound Ralph Stephens Road approach to provide an exclusive right turn lane with a minimum of 100feet of storage length (subject to right of way constraints).*
 - F. *Site Access #5 (as shown on 'Exhibit 3'), construct one inbound lane and one outbound lane (right in/right out only). Convert the existing median to provide left in access on southbound South Main Street approach with a minimum of 150 feet of storage length; correspondingly, shorten the left turn land storage length at Ralph Stephens Road to 250 feet. Widen northbound South Main Street approach to provide an exclusive right turn lane with a minimum of 100 feet of storage length.*
 - G. *Widen the southbound Southern Crossing Boulevard approach to provide an exclusive left turn lane with a minimum of 100 feet of storage length.*
- 5) *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 rezoning 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 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.*
 - 6) *Proposed uses on Tract 2 as identified on 'Exhibit 1' shall be limited to professional office only.*
 - 7) *To the greatest extent possible, parking shall be located at or behind the front façade of all buildings on tracts 1 and 3 as identified on 'Exhibit 1.'*
 - 8) *Tract 3 as identified on 'Exhibit 1' shall be limited to mixed-use development containing two or more of the following uses: commercial, multifamily dwellings, professional office, and child care center.*
 - 9) *For proposed building facades located within fifty (50) feet of the intersection of South Main Street and Ralph Stephens Road and fronting such intersection, shown on Tract 3 as identified on 'Exhibit 1', shall contain first floor commercial uses. Sides and rear facades of such buildings may contain ground floor residential uses.*
 - 10) *The maximum building height of the proposed development shall be 75 feet.*
 - 11) *The developer understands that walkability is crucial to this mixed use concept. Therefore, the developer will construct a ten foot wide asphalt public greenway, in accordance with Town of Holly Springs Design and Construction Standards, terminating at the intersection of Ralph Stephens Road and South Main Street with a maximum linear footage of 2,000 feet in a direction*

and alignment to be determined with town staff at the time of first development plan, within current available public right-of-way.

- 12) *The developer shall provide an "urban art park" within Tract 3 with a minimum size of 6,000 square feet and shall consist of;*
- A. *A hard surface patio/stage with a minimum size of 300 square feet for performances and concerts;*
 - B. *An area for the display of public art with a minimum size of 1,500 square feet;*
 - C. *A kiosk structure for retail sales with a minimum building size of 144 square feet and 200 square feet of hard surface outdoor dining area patio;*
 - D. *The Art Park shall be owned and maintained by the developer or current owner of the mixed-use building.*

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: Village GateProject Location: Intersection of S. Main Street and Ralph Stephens Rd*Use street address. If none, use the closest intersection*

- ☒ Within Corporate Limits ☐ Within Holly Springs ETJ ☐ Pending Annexation

PIN: 0648861048, 0648864611, 0648950812, 0648854727, 0648873030Real Estate ID: 0150627, 0203248, 0067342, 0476096, 0206586Project Acreage: (Rounded to nearest tenth) 19.83 Partial Parcel: ☒ No ☐ YesSketch Plan Review (Pre-Submittal) Meeting Date: 7/26/2023

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.

☐ Initial ☐ Revised ☐ Final

Petition Request

Current Zoning: CB-CUProposed Zoning: CB-CDCurrent Future Land Use Designation: Mixed-Use CenterProposed Future Land Use Designation: No proposed changeArea 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 Chris RukowskiCompany TMTLA AssociatesMailing Address 5011 Southpark Dr, Suite 200City DurhamState NCZip 27703Telephone # (919) 484-8880E-Mail chris@tmtla.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 Eli ZabladCompany Dunn Investments LLC VIP Holly Springs LLCMailing Address 1609 Montvale Grant WayCity CaryState NCZip 27519Telephone # ()E-Mail ez@nc.rr.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

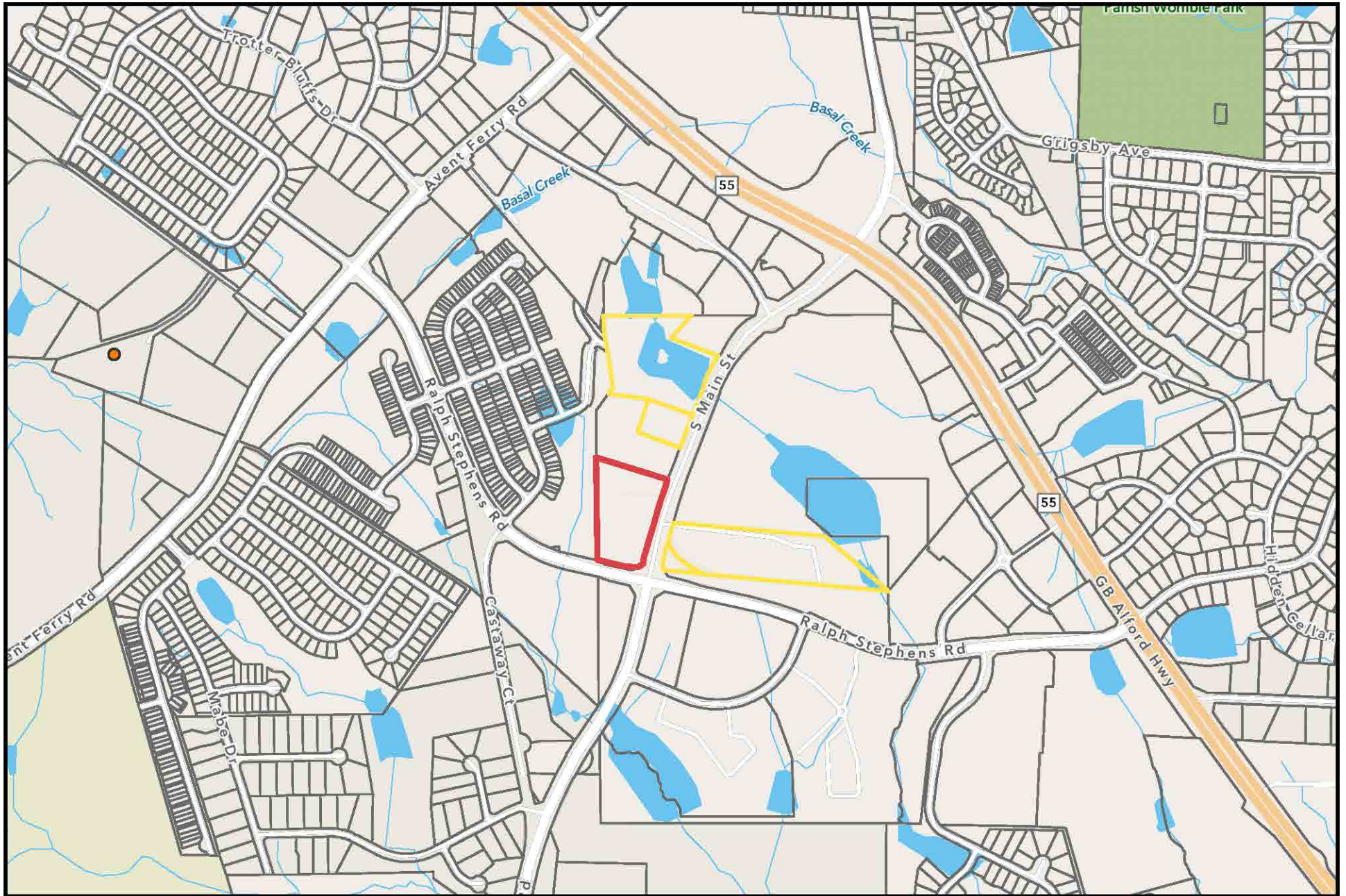
Owner's Authorization

Owner's Signature(s)

PIN/REID

Date

Eli Zablad10-18-2023



Village Gate Vicinity Map



0 400 800 1600 ft
1 inch equals 800 feet

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.

VILLAGE GATE ZONING MAP CHANGE – Revised Zoning Conditions – DATED 10/24/2023

- 1) All properties within the rezoning request shall be developed in accordance with the mixed use development option in the Community Business zoning district as outlined in Section 3.05 C. of Holly Springs United Development Ordinance. The property owner reserves the ability to request any variances, waivers, or alternate compliance as permitted by the ordinance.
- 2) *All multifamily dwellings on TRACT 1 as shown on 'EXHIBIT 1', shall be limited to age-restricted with associated amenities. A Declaration of Covenants, Conditions, and Restrictions ("Declaration") providing that at least eighty percent (80%) of all occupied units shall have as a resident at least one person age 55 or older ("age restriction") shall be recorded with the applicable Register of Deeds Office. Covenants shall be at all times in full force and effect so long as the apartment complex remains as a multifamily use. Any recession or modification of the covenants regarding age restriction shall have approval of the town.*

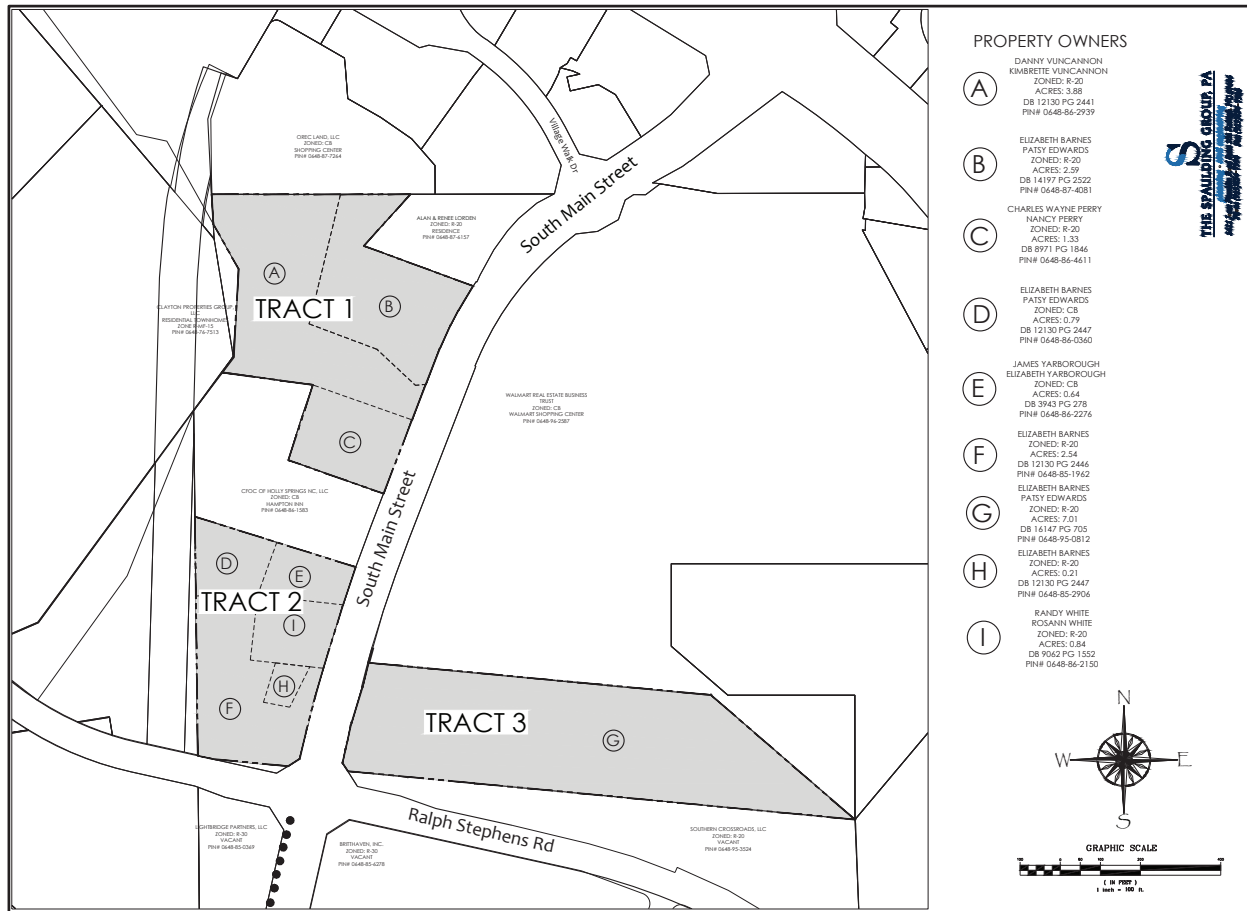
Prior to applying for any building permits, an opinion letter from an attorney licensed to practice in North Carolina shall be provided to the Town stating that the age restriction was drafted in a form that the attorney, in the exercise of customary professional diligence, would reasonably recognize as compliant with the Fair Housing Act 42 U.S.C Sec. 3601, et. seq., and the North Carolina State Fair Housing Act, N.C. Gen. Stat. 41A-1, et seq.
- 3) *The developer acknowledges the need to provide workforce housing within the Town of Holly Springs and is committed to doing so. A minimum of twenty-five (25) dwelling units shall be workforce housing units and shall be located on TRACT 3 as shown on 'EXHIBIT 1'.*
- 4) *The Town requires, pursuant to N.C.G.S. § 160A-372, the dedication and construction of streets and rights of way, as shown in the approved Comprehensive Transportation Plan and the approved Transportation 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 the Developer can enter into agreements to accelerate the time for completion of these needed improvements.*
 - A. *Establish a funding partnership with the Town of Holly Springs and NCDOT to provide a fee in lieu in the amount of \$105,000.00 for the construction of the widening of southbound NC 55 Bypass to provide a third travel lane between Avent Ferry Road and South Main Street.*
 - B. *Widen the northbound Piney-Grove Wilbon Road approach to provide a new through/right turn lane with a minimum of 250 feet of storage length and provide signal modifications to accommodate the geometrics changes. Actual construction of the improvements may utilize the contributing fund from other background developments at this intersection.*
 - C. *Site Access #1 (as shown on 'Exhibit 3') construct one inbound lane and two outbound lanes with an exclusive right turn lane and exclusive left turn lane with a minimum of 100 feet of storage length. Widen the southbound South Main Street approach to provide an exclusive right turn lane with a minimum of 100 feet of storage length.*

- D. *Site Access #3 (as shown on 'Exhibit 3'), construct one inbound lane and one outbound lane (right in/right out only) with appropriate median channelization. Widen the southbound South Main Street approach to provide an exclusive right turn lane with a minimum of 100 feet of storage length.*
 - E. *Site Access #4 (as shown on 'Exhibit 3'), construct one outbound lane (right out only) with appropriate median channelization. Widen the westbound Ralph Stephens Road approach to provide an exclusive right turn lane with a minimum of 100feet of storage length (subject to right of way constraints).*
 - F. *Site Access #5 (as shown on 'Exhibit 3'), construct one inbound lane and one outbound lane (right in/right out only). Convert the existing median to provide left in access on southbound South Main Street approach with a minimum of 150 feet of storage length; correspondingly, shorten the left turn land storage length at Ralph Stephens Road to 250 feet. Widen northbound South Main Street approach to provide an exclusive right turn lane with a minimum of 100 feet of storage length.*
 - G. *Widen the southbound Southern Crossing Boulevard approach to provide an exclusive left turn lane with a minimum of 100 feet of storage length.*
- 5) *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 rezoning 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 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.*
 - 6) *Proposed uses on Tract 2 as identified on 'Exhibit 1' shall be limited to professional office only.*
 - 7) *To the greatest extent possible, parking shall be located at or behind the front façade of all buildings on tracts 1 and 3 as identified on 'Exhibit 1.'*
 - 8) *Tract 3 as identified on 'Exhibit 1' shall be limited to mixed-use development containing two or more of the following uses: commercial, multifamily dwellings, professional office, and child care center.*
 - 9) *For proposed building facades located within fifty (50) feet of the intersection of South Main Street and Ralph Stephens Road and fronting such intersection, shown on Tract 3 as identified on 'Exhibit 1', shall contain first floor commercial uses. Sides and rear facades of such buildings may contain ground floor residential uses.*
 - 10) *The maximum building height of the proposed development shall be 75 feet.*
 - 11) *The developer understands that walkability is crucial to this mixed use concept. Therefore, the developer will construct a ten foot wide asphalt public greenway, in accordance with Town of Holly Springs Design and Construction Standards, terminating at the intersection of Ralph Stephens Road and South Main Street with a maximum linear footage of 2,000 feet in a direction*

and alignment to be determined with town staff at the time of first development plan, within current available public right-of-way.

12) *The developer shall provide an “urban art park” within Tract 3 with a minimum size of 6,000 square feet and shall consist of;*

- A. A hard surface patio/stage with a minimum size of 300 square feet for performances and concerts;*
- B. An area for the display of public art with a minimum size of 1,500 square feet;*
- C. A kiosk structure for retail sales with a minimum building size of 144 square feet and 200 square feet of hard surface outdoor dining area patio;*
- D. The Art Park shall be owned and maintained by the developer or current owner of the mixed-use building.*



THE SPALLING GROUP PA
ARCHITECTS

TONY M. WATKINS ARCHITECTURE, PA
10101 WATKINS DRIVE, SUITE 100
ROSELAND, NC 28068
TEL: 704.644.8800 FAX: 704.644.8801
WWW.TONYM.WATKINS.COM

REVISIONS:
11/01/19 Site Access Points

REZONING EXHIBIT 1
VILLAGE GATE MIXED-USE
ROSELAND, NC

SCALE:
1" = 100'
DRAWN BY:
TMT
PROJECT #:
19002
DATE:
JULY 19, 2019

SHEET
E-1
OF 1



THE SPALLING GROUP, PA
 1000 E. Main Street, Suite 100
 York, PA 17403
 Tel: 717.333.8800 Fax: 717.333.8801
 www.spallinggroup.com

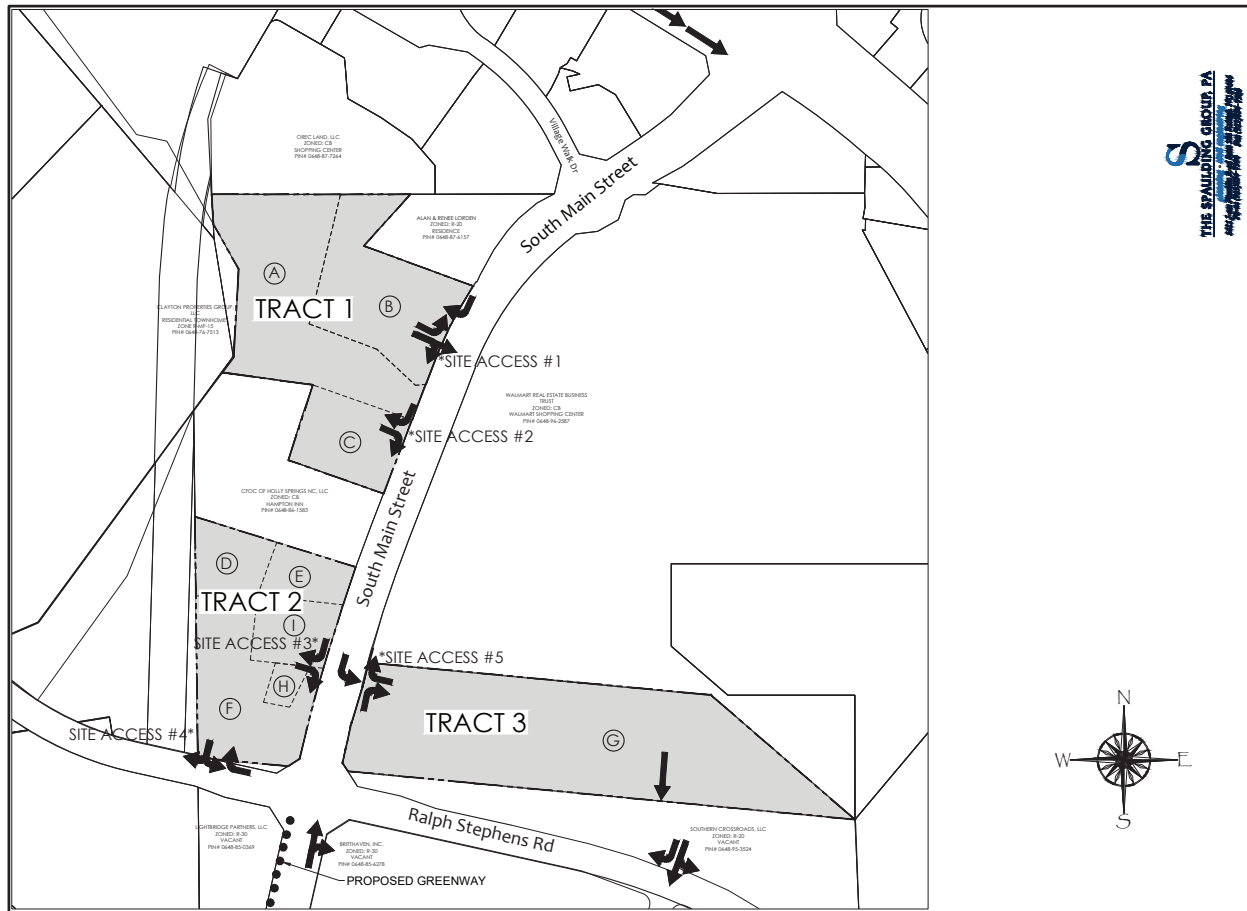


REVISIONS:

REZONING EXHIBIT 2
 VILLAGE GATE MIXED-USE
 1000 E. Main Street, Suite 100
 York, PA 17403

SCALE:
 NTS:
 DRAWN BY:
 TMT
 PROJECT #
 19002
 DATE
 JULY 19, 2019

SHEET
E-2
 OF 1



THE SPALLING GROUP, PA

TONY M. WATE LANDSCAPE ARCHITECTURE, PA

1101 S. MAIN STREET, SUITE 100, HOLLAND, PA 16033

TEL: 724-864-8800, FAX: 724-864-8801, WWW.TONYM.WATE.COM

REVISIONS:

NO.	DATE	DESCRIPTION
1	11/01/19	Site Access Points

REVISIONING EXHIBIT 3

VILLAGE GATE MIXED-USE

HOLLY SPRINGS, NC

SCALE: 1"=100'

DRAWN BY: TMT

PROJECT #: 19002

DATE: JULY 19, 2019

SHEET

E-3

OF 3

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: Village Gate

Proposed Zoning District: CB-CU

Proposed Land Use/Density: Mixed Use/ Density TBD

Future Land Use Plan Map Designation: Regional Use

Future Land Use Plan Designation Land Use/Density: Regional Use/ Density TBD

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.

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

Chris Rurkowski

10/24/2023

Petitioner's Response for Village Gate Rezoning Amendment:

Summary of changes and justification.

#1: Reduction in workforce housing

The following is the explanation for Holly Springs Town Staff for the cost increase vs income increase in the past 2 years:

Rise in construction cost: 92%

Rise in Interest Rate: 120%

Rent Income Increase: 26%

Taking those into consideration, the following is an example of rise in cost for every 10 million dollars we have to borrow:

For every \$10,000,000 we had to borrow 2 years ago for construction, because of rising construction costs, we have to borrow today \$19,200,000.

Also, for the \$10,000,000 we had to borrow 2 years ago, we had to pay 2.9% interest which over 30 years our expense was going to be \$499,476 per year.

Due to the fact that for today, for the same amount of work, we have to borrow \$19,200,000 at 7.5% over 30 years our expense has risen to be \$1,610,988 per year.

This is a total increase in expense of approximately 320% or \$1,200,000 per year per every 10 million we have to borrow.

The increase in rent was only 26%. Overall, our total increase in expense is 294% for the money we have to borrow.

By reducing the workforce apartments to 25 apartments vs 50 apartments the following is how it is going to help:

25 apartments is equal to 20% of all apartments.

Reducing to 25 apartments will increase income by 4% which in total will help us with reducing the increase in expense from 294% to 290%.

#2: Removal of Tract 1B Driveway and Turn Lane

This site access has proven to be difficult to provide and provides little benefit that the two existing driveways directly to the south and north don't provide. This driveway requires a dedicated right turn lane on South Main Street, and there are a large number of utilities within the right of way that are not conducive to adding a turn lane. There is sufficient access for the proposed Medical Office building by use of cross access from adjacent Hampton Inn Driveway and the Aspens Holly Springs Driveway.

Petitioner's Response

Executive Summary

Holly Springs has experienced rapid growth in recent years. Historically, this growth was predominately residential, however in the last three to five years, the town has seen commercial corridors established, especially along the Highway 55 bypass. This growth has led the town's long-term vision document, the Vision Holly Springs' Comprehensive Plan, to be tasked with finding an adequate balance which will allow the town to both maintain its small-town character whilst working to diversify the tax base. This proposed rezoning request, contributes to achieving this balance – by creating a mixed-use development that will feature small town characteristics and will provide the town with an appropriately scaled commercial development that will serve the surrounding community.

The Executive Summary, found in the Comprehensive Plan, lays out specific objectives for the town as it guides new development. Many of these statements are applicable to our rezoning request and are very much consistent with this rezoning request. Specifically:

- 1) *"To enable all residents with the ability to live within walking distance of a neighborhood commercial center and central civic space."*

The proposed rezoning request consists of nine (9) separate parcels located at or near of the intersection of South Main Street and Ralph Stephens Road. These parcels will be within walking distance of both the existing neighborhood of Wildwood as well as the recently approved Stephen townhome project. These nearby residents, as well as residents within the subject development will be able to walk to nearby commercial uses to shop, work, eat and play.

- 2) *"To strategically encourage business park, light industrial and **commercial development** in appropriate locations and balance overall tax base."*

Let us examine commercial development in appropriate locations – Commercial development belongs at prominent intersections where bike, vehicular and pedestrian traffic can access the site safely and efficiently. The intersection of Ralph Stephens Road and South Main Street is such an intersection. This intersection is already signalized and at full build-out both South Main Street and Ralph Stephens Road will feature sidewalks and bike lanes. In fact, this project will be doing its part by installing these improvements prior to even the first certificate of occupancy being issued. This development will ultimately feature commercial development consisting of both retail, as well as professional office, which will allow the town's non-residential tax base to continue to grow.

Section 1: Future Land Use & Community Character

The Future Land Use and Community Character sections of the town's Comprehensive Plan seeks to define the characteristics of what Holly Springs should be striving for, this idea of maintaining a village atmosphere.

A. Future Land Use

The following are specific Future Land Use objectives which this rezoning request will satisfy:

- 1) *"Balance land use decisions with their potential impact on the regional transportation network."*

It has already been discussed that commercial developments should be located where they are appropriate, and in this case appropriate means located at a major intersection as well as adjacent to regional road networks that have been long since planned for heightened community and regional traffic. The town has done a wonderful job in recent years of pushing the potential traffic impacts associated with a potential project into the planning conversation as early as possible. Developers are now required to meet with engineering and NCDOT staff months before a rezoning request is even submitted as necessary to determine an appropriate TIA scope. This ensures the developer will have ample time to study each intersection that both the town and state will require as well as the associated recommended improvements. So how does this project work to achieve a land use balance? In addition to doing its part to continue to improve roads, it is no secret this project will be sandwiched between heavily vehicular-oriented commercial areas, with the Wal-mart, Harris Teeter and Lowes Home Improvement and Wegmann's developments all located within half a mile of this development. This project will do something all those projects did not do. It will create a self-sustaining development with a mix of uses. Residents will be able to work, live, play, without even having to get in their car and impact a transportation network. This is why a mixed-use development at this location is so critical. This pedestrian network will not only ripple within the confines of the subject project but surrounding residents of Wildwood, Stephens Towns, The Exchange Apartments also will be able to walk to these commercial uses that will be situated close to the road, with emphasis on the pedestrians rather than buildings with a sea of parking in front.

- 2) *"Accommodate a variety of housing types that includes single-family, executive housing, townhouses, condominiums, and apartments."*

This is one of the most exciting components of this proposed rezoning and one we have worked diligently on through our zoning conditions to ensure the integrity of the housing diversity is maintained in perpetuity. Holly Springs desperately needs diverse housing options for all residents and recently Town Council has acknowledged this and pledged to make this a goal of the upcoming Comprehensive Plan update. Senior apartment communities across the triangle are in high demand. These residents will not need on-site medical treatment and are individuals above the age of fifty-five who most likely want to be near their children and grandchildren who have recently moved to Holly Springs. The project proposes both apartments that will be specifically for active senior adults as well as workforce apartments. Workforce housing is also a new concept for Holly Springs. This residential project element will allow workers such as teachers, Fire, Police, EMS, and other professionals which work within Holly Springs to actually be able to live where they work which previously may not have been possible, due to such a limited number of affordable housing options. Zoning conditions have been specifically been created that are tied to specific properties so that both staff as well as Planning Board and Town Council can be assured that not only design commitments will be held to these apartments but also that properties along the intersection of Ralph Stephens and South Main Street will be reserved for commercial uses.

- 3) *“Prevent sprawl and ensure that community services and infrastructure are used strategically and conservatively.”*

The parcels that make up this rezoning request are few of the remaining vacant or under-developed properties in this development corridor. This results in an infill development to take shape with nearby developments such as The Shoppes of Holly Springs (anchored by Wal-mart), Southpark Village, Collins Park, as well as Southern Crossroads, Wildwood, and Lowes and Wegmann’s already in place. Sprawl is often characterized by low-density, single-use zoning and increased reliance of vehicular transportation, all components the subject rezoning request works to mitigate. By contrast, our Community Business rezoning request, which has been conditioned to be developed as a mixed-use development, represents compact development. Mixed-use development patterns help lower community infrastructure costs by pulling land uses closer together. Additionally, compact development such as ours is a promising strategy for reducing greenhouse gas emissions in the transportation sector.

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 our rezoning request achieves:

- 1) *“Encourage a “village atmosphere” by creating a sense of community and identity for the residents and businesses of Holly Springs”.*

The term “village atmosphere” is one that the town of Holly Springs uses often. Is a synonym of small-town charm, where buildings are designed with the residents in mind, rather than corporate expectations. By this rezoning, dictating that it will be developed as a mixed-use development, the village atmosphere is achievable. The Community Business zoning district mixed use development option specifically requires buildings to be situated close to the road, with the majority of parking behind. This is reminiscent of a walkable community where emphasis is put on foot traffic, rather than the auto. Additionally, as a mixed-use development, there must be a minimum of a mix of uses: office, retail, and residential. This also ensures a community can take shape because you have all of the uses to create one. Also, mixed use developments must also provide open space areas in the form of plazas, courtyards, and pocket parks and projects are encouraged by the ordinance to put these open space areas at intersections. This will create a sense of place and identity for Holly Springs. Can you imagine – as cars and pedestrians alike come to the intersection of Ralph Stephens and South Main Street they are greeted with these areas at the corners? This will create an opportunity of a sense of arrival that the town currently does not have in the southern area.

- 2) *Enhance the public streetscape with trees, landscaping and street furniture as appropriate along thoroughfares and in the cores o the community growth areas, using both public and private initiatives to develop the character of pedestrian places.”*

As mentioned above, open space requirements in the mixed-use development are very specific and are intended to be used as energizers to shape and define social interaction for

the public. Additionally, this project will be subject to street tree requirements, which will be required in conjunction with the approved thoroughfare planting plan and will be installed along South Main Street and Ralph Stephens Road. Building orientation is also critical and works to establish a public streetscape, especially in mixed use developments. Under UDO requirements (Section 3.05 C.), whenever possible, commercial areas should include street front retail that promotes an active pedestrian area to draw the attention of the passing public. When commercial is facing the street, it allows these public streetscapes to occur. Restaurants and cafes set up their outdoor seating areas along the sidewalk, retail set up their outdoor displays and their main entrances along the streetscape because of all the energy that has been created and when the energy is there the character of the space has been established.

3) *“Encourage the development of connected pedestrian-oriented developments.”*

This is an objective that the mixed-use development option contained in the UDO checks all the boxes of. In fact, the intent of the mixed-use development option, in Section 3.05 C., specifically states the following “to promote and guide integrated diverse but compatible uses into a development that is defined by unique and innovative design and pedestrian-friendly features.” Much has already been said above what these pedestrian-friendly features are but to state it plainly they are: building placement (whenever possible, buildings will be as close to the right-of-way as possible, building orientation – ground floor businesses shall be oriented to the public street and thus the emphasis is on the pedestrian rather than the automobile, parking location – the majority of parking must be located to the rear of the building rather than between the building and right-of-way, open space design: open space in mixed use projects must be in the form of plazas, courtyards and other public spaces designed to be located where the public can access them, and finally streetscape design: the project will be required to install sidewalks along South Main Street and Ralph Stephens Road as well as street trees. Together these components create a pedestrian-oriented development the whole town can enjoy.

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 what the town’s vision is.

Regional Center

The subject parcels contained in the rezoning request are designated as ‘Regional Center’. This designation provides for the location of power centers, including high volume, high intensity commercial uses that may include certain amounts of outdoor activity or sales of merchandise. Developments with this designation should be coordinated to facilitate vehicular and pedestrian access from nearby residential districts and should be located in close proximity to major transportation routes. If a regional center is located in an area within a high volume of traffic it should be designed to serve the neighborhood’s residential base plus commuter traffic.

As stated previously, these parcels are adjacent to existing and planned regional centers – such as Southpark Village, The Shoppes at Holly Springs, Collins Park, and Lowes/Wegmann’s. These

centers truly meet the definition of a high volume, high intensity commercial use. With all of that existing and planned intensity there needs to be some balance. Our rezoning is such a balance. It will still include amounts of outdoor activity and the mixed-use development option ensures it will be coordinated to facilitate both pedestrian and vehicular access and do so without compromising patron safety. Additionally, this project will continue to improve the adjacent major thoroughfares of South Main Street and Ralph Stephens Roads, but improving those in conjunction with the approved transportation and Traffic Impact Analysis recommendations.

Section 2: Transportation / Comprehensive Transportation Plan

As the town grows, traffic becomes more and more critical. As a new development, it is only fair that this potential project contributes to mitigate its potential traffic impacts. This is done through working with both the town's engineering department as well as NCDOT. The developer must improve all adjacent roadways as per the approved Comprehensive Transportation Plan (CTP) and may also be responsible for any other nearby intersections that may or may not be recommended by the Traffic Impact Analysis findings.

Transportation

The Comprehensive Plan strives to strike a balance between land use and effective transportation throughout town and has several objectives that suggest how that can be achieved. The proposed rezoning request can meet several of these, specifically:

- 1) *"Support mixed-use development to encourage biking and walking, in turn improving the Holly Springs area's environment and the health of its citizens."*

It has already been discussed how our project will be required to meet the requirements of the mixed-use development option within the Community Business district. It is also known that climate change is one of the most important challenges ever faced by communities around the world. Mixed use development works to mitigate that challenge by reducing gas emissions in the transportation sector, by providing a mix of uses you increase the likelihood folks will walk and bike rather than get in a car to reach services that are now are close by. This project certainly does the part of beginning to move the needle in the right direction of reducing the urban carbon footprint – and that is a positive for everyone.

- 2) *"Promote a pedestrian -friendly environment by filling gaps and improving connectivity throughout the sidewalk system and to key destination or activity nodes."*

This project is critical to complete the southern commercial corridor of South Main Street and Ralph Stephens Road. With the development of these parcels in a friendly walkable manner, the sidewalk is nearly complete along South Main Street from the Highway 55 Bypass to Ralph Stephens Road, likewise, the sidewalk system is nearly complete along Ralph Stephens Road from the bypass to South Main Street. These contributions greatly improve the pedestrian climate along these major thoroughfares and make it a lot more feasible for the town to fill in the now manageable gaps.

Comprehensive Transportation Plan

The CTP outlines the same goals or objectives as the transportation section of the Comprehensive Plan. The plan also proposes a multimodal transportation network that fosters growth in a positive way to the surrounding environment. This is done through three distinct elements: roadway, bicycle and pedestrian, and transit. This project is meeting the

roadway element by building the recommended roadway improvements of Ralph Stephens and South Main Street, along the subject property frontage. Both thoroughfares will be widened to a 110' right-of-way with a median. These improvements will work to improve both the existing traffic as well as take into account our project traffic. The bicycle and pedestrian elements will be met through providing bike lanes within both major roads of Ralph Stephens and South Main as well as constructing sidewalk and crosswalks along our project frontage. The transit element is dependent on what comes to fruition with future transit options for the town. Currently there is no public transit offered in Holly Springs. For many years, the town has planned for the possibility of bus service to be added along the commercial corridor of Highway 55 Bypass and has provided shelters for this purpose. As part of the site plan, the engineering department will evaluate the need for an additional shelter within our 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: A Parks & 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:

- 1) *"To enable all residents to live within walking distance of a neighborhood commercial center and central civic space."*

This project is in an area that is rapidly changing. Wildwood, an existing single-family subdivision, is within walking distance of our proposed project. Across the street, the Exchange at Holly Springs apartment community is actively under construction. To the north, Stephens townhomes was recently approved and will soon follow. Our proposed project will also feature a residential component. All of these residents will have an opportunity to walk to retail, office, restaurants, as well as other commercial uses. This will greatly improve the quality of life for the town.

- 2) *"To physically unite the Town by connecting existing trails, sidewalks, and open spaces."*

To the greatest extent possible, this project will connect sidewalk systems by constructing public sidewalks along its property frontage. Unique circumstances have allowed other adjacent properties to not be required to building sidewalk along their frontage which will result in some sidewalk gaps. However, our project starts to "close the gap" between these sidewalk connections and will allow a more manageable capital project for the town to take on in the future to complete the sidewalk system.

Additionally, it has already been discussed that the mixed use development option requires open space to be in the form of developed plazas and courtyard areas that must be located at corners and connect to public sidewalk which will result in these open spaces to be really be used by pedestrians near and far.

Section 4: Community Facilities

Community facilities addresses the need to be mindful of the increased demand for public services as the town grows and develops. Community facilities can include fire, police, EMS, as well as public school facilities. The Comprehensive Plan contains several community facilities objectives, specifically our project achieves the following:

- 1) *“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.”*

Although as a mixed-use development, there is less demand for community facilities when compared to a traditional subdivision because there are commercial uses in addition to residential, community facilities may be used in a limited capacity. The senior apartments obviously will not have any school capacity issues, additionally it is not expected that the workforce housing and market rate apartment units will yield a sizable school population. Wake County public schools require all proposed residential development to submit a residential notification form that outlines the number of units and the year breakdown that they will be completed in. At the time of site plan submittal, the project will submit this form and clearly indicate the units that will be used for seniors so that they do not count towards possible future school capacity needs.

Developers also plan for community facilities such as police, fire and EMS when designing a development. Drive isles are required to be designed to accommodate the largest emergency response vehicle. The turning template is then submitted and reviewed by staff to ensure that the vehicle can safely maneuver through all access points and parking areas. Due to the infill location of this project, existing emergency response facilities are located within close proximity 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, with respect to new development can adequately handle new growth. Holly Springs has planned smartly for the rapid growth that it has been experiencing over the last several years. A water agreement is in place with Harnett county where the town is served by abundant water from the Cape Fear River. With regards to sewer, the town has invested in its own wastewater treatment plant. The Town-owned and operated WRF facility presently has a total treatment capacity of 6.0 MGD, and in 2018 treated approximately 2.8 MGD. The Town has a permit to expand the treatment up to 8.0 MGD. With that said, there are currently no water or sewer capacity issues to serve our proposed rezoning request.

For many years the town has had established stormwater requirements. Our project will be required to meet all NPDES Phase II requirements which will be reviewed during the site plan process.

Given our subject project area's close proximity to existing development, there is already electricity in place along both South Main Street and Ralph Stephens Road. Additionally, there are several telecommunication services also installed to allow for a healthy market of choices for future residents and businesses.

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 that each project, ours included, meet all state, federal and local requirements when it comes to protecting stream and wetland features. As part of the site plan process, an environmental scientist is retained by the developer to perform delineations of streams and wetlands on-site. These delineations are then confirmed by the appropriate state and federal agencies through a on-site visit. Once this visit is preformed, the agency will then issue an official determination letter that is valid for a period of five years. This letter must be submitted to town staff to verify that all environmental features on-site have been accounted for and protected accordingly. Currently, we have retained an environmental scientist and are in the process of performing official on-site inspections with the appropriate state and federal agencies to properly account for some environmental features on-site.

Last fall, the town adopted a tree protection ordinance. As part of that ordinance, our project will be required to protect a minimum of ten percent of the total project area. As part of our site plan process, our team will put together a tree preservation plan that clearly delineates where the protected tree areas will be. Since our project is located on lands previously farmed or used for residential uses, there are not large areas of forest remaining so some areas of re-forestation may be required as necessary to meet this requirement.

Comprehensive Plan Update Draft Response (Draft Dated July 1, 2019)

The town is currently undergoing a Comprehensive Plan update to its Future Land Use and Community Character sections of the Vision Holly Springs Comprehensive Plan. Because of this, this justification request has been extended to include the new designation contained in said draft.

The Comprehensive Plan draft designates these subject parcels as 'Mixed-Use Center'. The draft states that:

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.

The above described designation closely mirrors the mixed-use development option contained within the Community Business zoning district that our rezoning request has voluntarily conditioned to develop these parcels as. Like the description listed above, the mixed-use development option set forth in Section 3.05 C. of the Holly Springs UDO, dictates that the development must consist of a mix of uses, with commercial, office and residential being available as options counting towards the required mix. As previously stated, there will be public spaces built adjacent to the streetscape that will activate these public spaces to be ones of social interaction.

In addition, the UDO also dictates that (Section 3.05 C. 3. f. (1) (b)) parking should be oriented behind or to the side of the building, thus, our project meets the parking intent as specified by the designation description above.

“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” The proposed development will allow a walkable environment to take place. To the greatest extent possible, this project will connect sidewalk systems by constructing public sidewalks along its property frontage, on South Main Street, as well as Ralph Stephens Road. The project will be required to construct road improvements along their property frontage, that include bike lanes along their project frontage, in turn, the project will also have bike racks conveniently positioned throughout the development to encourage bicycle traffic. The transit element is dependent on what comes to fruition with future transit options for the town. Currently there is no public transit offered in Holly Springs. For many years, the town has planned for the possibility of bus service to be added along the commercial corridor of Highway 55 Bypass and has provided shelters for this purpose. As part of the site plan, the engineering department will evaluate the need for an additional shelter within our project. If it is determined one is necessary, it will be constructed at the cost of the developer.

The Village Gate rezoning request meets both the current and proposed Vision Comprehensive Plan. When developed, this project will offer a walkable, modern village concept that will be a welcomed part of the southern gateway of Holly Springs.

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: 8/23/2023
Time: 5-6 PM
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: 8/7/2023

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:

None. One attendee called in and was just curious about the development and to see if the timeline had changed. No questions regarding this amendment.

Attach Additional Sheets as needed

Changes made to the Petition by the Petitioner as a result of the meeting:

None.

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)

Chris Rurkowski

Date

10/24/2023

TMTLA ASSOCIATES

LANDSCAPE ARCHITECTURE & LAND PLANNING

To: Resident(s) and Property Owner(s)

From: TMTLA Associates

Date: August 1st, 2023

Re: Notice of meeting to discuss the amendment of two zoning conditions for the approved Village Gate Development, located at 1060, 1036, 1024, 0 S Main Street and 160 Solaris Ln. (PINs #: 0648-86-1048, 0648-85-4727, 0648-95-0812, 0648-86-4611, 0648-87-3030)

TMTLA Associates, on behalf of Dunn Investments, LLC, is preparing to submit a zoning map amendment application for the above referenced property. The purpose of this meeting is to notify neighbors and provide an opportunity to discuss the rezoning request of the above-mentioned property. The property is highlighted on the context map included with this mailing.

The property is currently CB-CU (Community Business Conditional Use). We are proposing an amendment to the approved CB-CU district with an updated zoning condition. The intent of this amendment is to reduce the number of workforce housing units from 50 to 25 as required by zoning condition #3. We are also removing a required access point for Tract 1B referred to as Site Access #2.

3. The developer acknowledges the need to provide workforce housing within the Town of Holly Springs and is committed to doing so. A minimum of ~~fifty (50)~~ twenty-five (25) dwelling units shall be workforce housing units and shall be located on TRACT 3 as shown on 'EXHIBIT 1'.

~~*4D. Site Access #2 (as shown on 'Exhibit 3'), construct one inbound lane and one outbound lane (right in/right out only) with appropriate median channelization.*~~

We will hold a virtual neighborhood meeting on Wednesday, August 23, from 5:00 PM to 6:00 PM, Via Zoom. The purpose of this neighborhood meeting is to ensure that nearby property owners are made aware of the proposed project. We also want a better understanding of how this project could impact you, and look forward to hearing your questions, comments, and concerns.

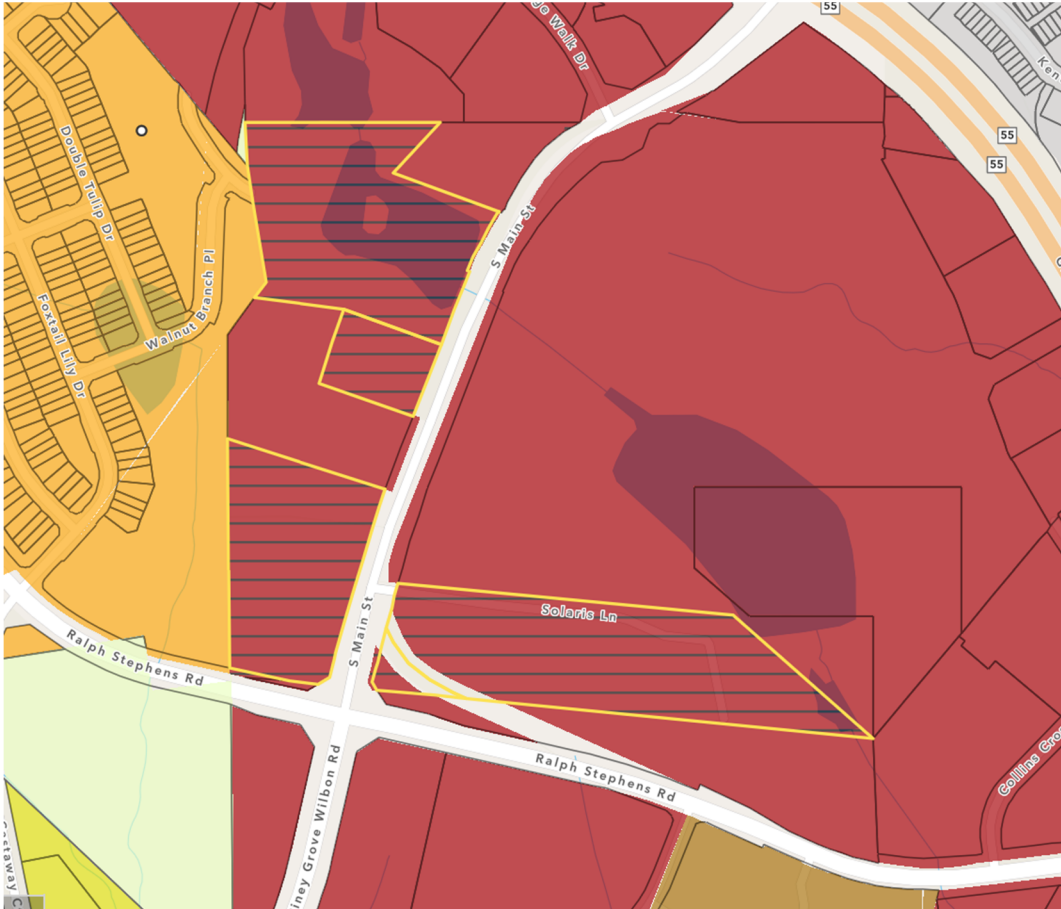
Instructions for registering for and joining the meeting are enclosed. Please note this meeting will be recorded.

Should you have questions please contact TMTLA Associates, Chris Rurkowski, by phone at 919-484-8880.

TMTLA ASSOCIATES

LANDSCAPE ARCHITECTURE & LAND PLANNING

Context Maps- Sites Highlighted





August 1, 2023

RE: Virtual Neighborhood Meeting – Instructions

Resident(s) and/or Property Owner(s),

We will be hosting a virtual neighborhood meeting via Zoom. The meeting will be held on Wednesday, August 23rd from 5:00 PM to 6:00 PM. **Please note this meeting will be recorded.**

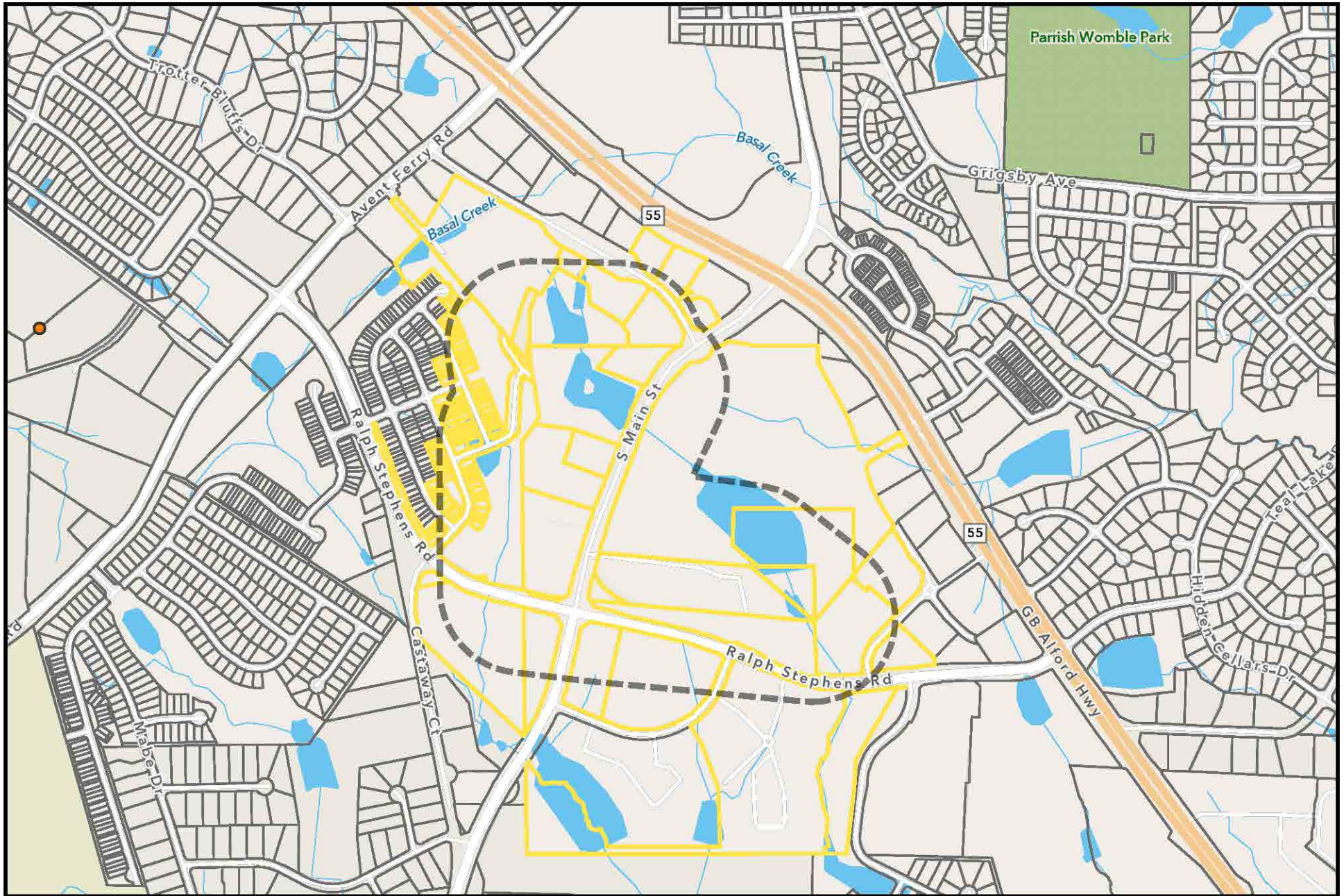
> To attend the meeting via computer, mobile device, or iPad, please follow the following directions.

NOTE: This meeting will require registration prior to attending if participating by video.

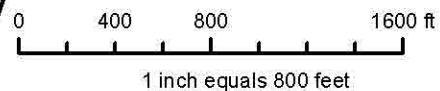
- Go to the following website to attend the meeting: <https://zoom.us/>
- Click on the “Join” a meeting link at the top of the website.
- Enter the following information where prompted:
 - Meeting ID: **838 9539 4623**
- Once you enter the Meeting ID and click “Join” you will be prompted to register for the meeting. Please fill out the required information. After you register for the meeting you will receive an email with a link to join the meeting.

> To attend the meeting via phone, you may dial in by:

- Dial the following number: **(929) 205-6099**
- Enter the following information when prompted:
 - Meeting ID: **838 9539 4623**
 - After you enter the Meeting ID please press # to enter the meeting. There is no passcode for this meeting.
- If you are participating by phone please note all graphics to be discussed during the meeting are included with this letter.



Village Gate Zoning Amendment Notification Boundary



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.

PIN_NUM	OWNER	ADDR1	ADDR2	ADDR3
648876157	AVANI PROPERTIES LLC	280 OAK HAVEN LN	APEX NC 27523-5803	
648854727	BARNES, ELIZABETH Y EDWARDS, PATSY Y	400 OLD SPRING HILL LN	FUQUAY VARINA NC 27526-2446	
648853393	BRITTHAVEN INC	1435 HWY 258 N	KINSTON NC 28504-7208	
648872767	BRYAN FAMILY PROPERTY GROUP LLC	201 ECHO CREEK PL	APEX NC 27539-4183	
648861583	CFOC HOLLY SPRINGS NC LLC	CFIC OLIVER HOTELS LLC	5713 GRAND AVE STE B	DULUTH MN 55807-2564
648971641	CHICK-FIL-A INC	5200 BUFFINGTON RD	ATLANTA GA 30349-2945	
648877460	COASTAL FEDERAL CREDIT UNION	1000 SAINT ALBANS DR	RALEIGH NC 27609-7347	
658052442	CP-HS 2B HOLDINGS LLC	441 SHALE CREEK DR	DURHAM NC 27703-6562	
648950812	DUNN INVESTMENTS LLC	220 TALS ROCK WAY STE 3	CARY NC 27519-1906	
648861048	DUNN INVESTMENTS LLC VIP HOLLY SPRINGS LLC	1609 MONTVALE GRANT WAY	CARY NC 27519-1018	
648875519	FLAGSHIP VILLAGE HOLLY SPRINGS, LLC	2701 COLTSGATE RD STE 300	CHARLOTTE NC 28211-3594	
648877843	GREENHOUSE CARY LLC	5255 N FEDERAL HWY STE 301	BOCA RATON FL 33487-4913	
648757837	HOLLY SPRINGS TOWN OF	TOWN ATTORNEY	PO BOX 8	HOLLY SPRINGS NC 27540-0008
658051981	HOLLY SPRINGS VENTURES LLC	3722 SHIPYARD BLVD STE C	WILMINGTON NC 28403-6165	
648959537	HSDG LLC	441 SHALE CREEK DR	DURHAM NC 27703-6562	
648850369	LIGHTBRIDGE PARTNERS LLC	5210 DRIFTWOOD LN	MOREHEAD CITY NC 28557-2576	
648949728	LOWE'S HOME CENTERS LLC	LEGAL DEPT (LGL)	1000 LOWES BLVD	MOORESVILLE NC 28117-8520
648953524	MEDICAL OFFICE INVESTMENTS LLC	5210 DRIFTWOOD LN	MOREHEAD CITY NC 28557-2576	
648864611	MOORE, SUZANNE T ZABLUD, ELI	907 CRABTREE CROSSING PKWY	MORRISVILLE NC 27560-7574	
648942619	MYERS EXCHANGE HOLLY SPRINGS LP LIMITED PARTNERSHI	MYERS APARTMENT GROUP LLC	915 S DIXIE HWY	WEST PALM BEACH FL 33401-6401
648966048	NC-HOLLY SHOPPES-MDP LLC	8816 SIX FORKS RD STE 201	RALEIGH NC 27615-2983	
648754827	OASIS CHURCH INC	1828 RALPH STEPHENS RD	HOLLY SPRINGS NC 27540-8576	
648777875	OPTIMUS SPRINGS LLC	2949 HUNTINGTON WAY	AURORA OH 44202-8766	
648872464	OREC LAND LLC	2949 HUNTINGTON WAY	AURORA OH 44202-8766	
648775414	Q STEPHENS FARM HOLDINGS LLC	3348 PEACHTREE RD NE STE 1460	ATLANTA GA 30326-1497	
648851745	SOUTHERN CROSSROADS, INC	5210 DRIFTWOOD LN	MOREHEAD CITY NC 28557-2576	
648873030	THE ASPENS AT HOLLY SPRINGS LLC	505 PECAN ST STE 202	FORT WORTH TX 76102-4001	
648879712	TRUIST BANK	101 N CHERRY ST STE 710	WINSTON SALEM NC 27101-4080	
648970436	TRUSTEE FOR THE DIANE FLETCHER-HOPPE 2007 TRUST	950 OXFORD AVE	MARINA DEL REY CA 90292-5408	
648870109	UNKNOWN	PO BOX 550	RALEIGH NC 27602-0550	
648962587	WALMART REAL ESTATE BUSINESS TRUST	PROPERTY TAX DEPT STORE #4458-00	PO BOX 8050	BENTONVILLE AR 72712-8055

Village Gate Rezoning Neighborhood Meeting - Registration and Attendance (08.28.2023 @ 5pm via ZOOM)							
First Name	Last Name	Email	Address	City	Zip/Postal Code	State/Province	Phone
Neighbors:							
Scott	Sears		1050 S Main Street	Holly Springs	27540	NC	919-625-6505
Development Team:							
Chris	Rurkowski	chris@tmtla.com	5011 Southpark Drive, Ste. 200	Durham	27713	NC	9194848880

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

Chris Rurkowski of TMTLA Associates

(Name of Representative) (Name of Company)

to submit a Petition for Zoning Map Change for my (our) property from

CB-CU to CB-CU

(Current Zoning District) (Proposed Zoning District)

For DS Use only

Project # _____

Date Received: _____

and to offer additional use and/or standard restrictions as a part of the request for a Conditional Zoning District.

Signature of Owner(s):

Chris Rurkowski

Wake County PIN/REID:

0150627, 0203248, 0476096

0206586

State of NC

County of wake

Sworn to and subscribed before me the 22nd day of August, 2023.

Notary Public in and for the State of North Carolina. My Commission expires: _____

William P. Farrell, William P Farrell
Notary Public Printed



STATE OF NORTH CAROLINA
COUNTY OF WAKE

) AMENDMENT TO VILLAGE GATE
) INFRASTRUCTURE REMBURSEMENT/
) DEVELOPER AGREEMENT

This Amendment effective as of the last date subscribed below, by and between DUNN INVESTMENTS, LLC ("Developer") and the Town of Holly Springs (the "Town"), hereby amends the following agreements for the reasons contained herein, leaving all other rights and obligations of the prior agreements intact: 1) A Development Agreement dated July 8, 2020 and recorded at Book 18002, Page 1628, Wake County Registry. The purpose of this Amendment is to reduce the number of workforce housing units and change a drive known as "Site Access #2, described below, into the definition of Residential Project, and to allow for a fee in lieu of roadway work, as described below.

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 as follows:

1. Article II, Section 3(a) references Workforce Units in the amount of 50 residential units. The Parties hereby agree to reduce this number to 25.
2. Article II, Section 3(d) shall be amended as follows:

"WORKFORCE HOUSING: Developer desires to voluntarily designate ~~50~~ 25 units of its Tract 3 development (i.e, the "Solaris" building) as workforce housing units. These units shall be made available to ~~rent~~ purchase to those individuals working in the corporate limits of Holly Springs or actively seeking employment therein, who earn 50% to 80% of the Area Median Family Income for Wake County, as determined by the most recent US Census data and without regard to race, sex, religion, or national origin ("Qualified Owners"). No individual purchaser may purchase more than one (1) unit, Qualified Owners must be natural persons and not legal entities such as a corporation or LLC, and Developer shall establish restrictive covenants that requires the following:

- (1) The Qualified Owner must occupy the unit for a period of at least 5 years; or
- (2) If within 5 years of purchase, the Qualified Owner seeks to relocate out of the Holly Springs area, the original Qualified Owner must sell

to a subsequent Qualified Owner for a purchase amount not greater than an amount equal to a three percent (3%) annual increase plus cost of sales commission.

In the event that the Developer does not sell the Workforce Housing units and maintains them under its ownership for rental, then for a period of twenty (20) years commencing upon the issuance of a certificate of occupancy on the Solaris Building, the Developer agrees to establish a rental rate for these 50 units that is at least 25% less than the average fair market rental rate for the Town of Holly Springs, as established each year by the U.S. Department of Housing and Urban Development. The Developer shall submit proof of compliance annually to the Town as provided in Article VI, Section 1 of this Agreement.”

3. Article V, Section 2(a) shall be amended as follows:

“If the Developer elects to maintain the Workforce Housing units as residential rental units, then in consideration of the Developers Workforce Housing, the Developer shall be allowed to install a master water meter for ~~50~~ 25 of the Workforce Housing units. Ordinarily, the Town requires one meter per Equivalent Residential Unit (“ERU”), and collects a System Development Fee for each ERU. The Developer shall be allowed to install one meter in a size appropriate to serve ~~50~~ 25 residential units, and establish a sub-metering system to allocate costs and expenses among the ~~50~~ 25 units without influence from the Town. In doing so, the Developer may install such water saving measures and efficient devices in these residential units as appropriate to the Developer, and the Town shall only have one metered connection instead of ~~50~~ 25 which results in an administrative savings to the Town. The Town shall charge the Developer ~~50~~ 25 separate monthly availability charges, however the Developer shall realize an avoidance of approximately \$375,000 in System Development Fees.”

4. Site Access #2, as shown on the attached Exhibit A shall be eliminated.
5. By way of clarity and not limitation, the above changes are incorporated on Exhibit B, Revised Zoning Conditions, attached hereto which the Developer voluntarily submits and agrees to.

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

DUNN INVESTMENTS, LLC

By: _____

(Print Name)

BY: _____

Date signed: _____

Exhibit A – Description of Site Access A#2

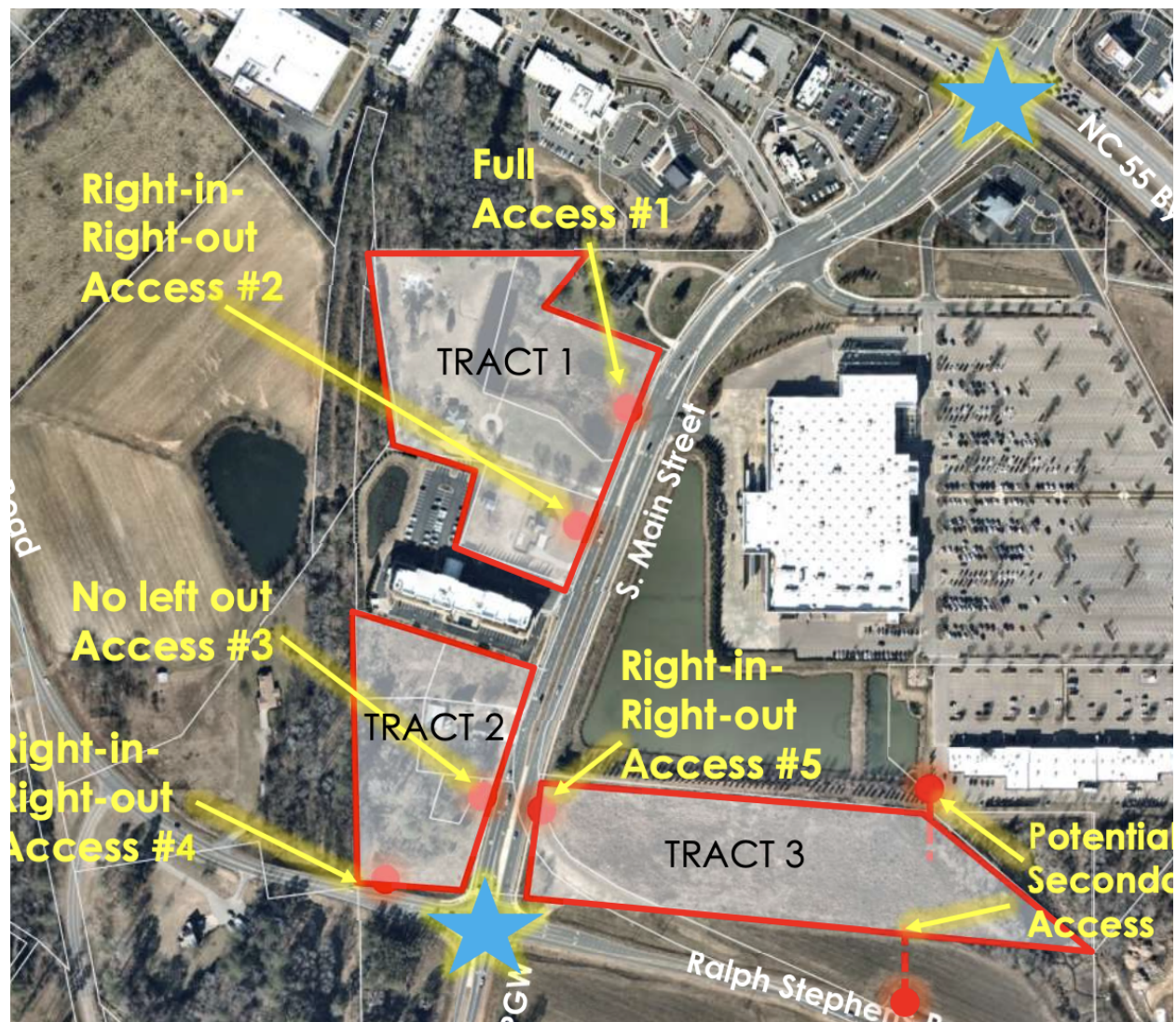


EXHIBIT B

VILLAGE GATE ZONING MAP CHANGE – Revised Zoning Conditions – DATED 8/1/2023

The terms and conditions contained in this instrument shall run with the land, be binding on the Owner of the above-described real estate, subsequent owners, heirs, devisees, grantees, lessees, and licensees of the above-described real estate and other persons acquiring an interest therein. The terms of this conditional use permit may be modified or terminated by a decision of the Town of Holly Springs Town Council made at a public hearing after proper notice has been given and in connection with a petition for zoning map change. The terms and conditions contained in this instrument shall be effective upon the approval of the conditional use district on the subject real estate and the approval of this Conditional Use Permit by the Town Council pursuant to the Town of Holly Springs Unified Development Ordinance, and shall continue in effect until modified or terminated by the Town of Holly Springs Town Council. The terms and conditions of this instrument may be enforced by the Town of Holly Springs Town Council. This Conditional Use Permit shall be retained in the office of the Department of Planning & Zoning of the Town of Holly Springs, North Carolina and shall constitute additional restrictions on the use and development of the subject real estate.

- 1) All properties within the rezoning request shall be developed in accordance with the mixed use development option in the Community Business zoning district as outlined in Section 3.05 C. of Holly Springs United Development Ordinance. The property owner reserves the ability to request any variances, waivers, or alternate compliance as permitted by the ordinance.
- 2) *All multifamily dwellings on TRACT 1 as shown on 'EXHIBIT 1', shall be limited to age-restricted with associated amenities. A Declaration of Covenants, Conditions, and Restrictions ("Declaration") providing that at least eighty percent (80%) of all occupied units shall have as a resident at least one person age 55 or older ("age restriction") shall be recorded with the applicable Register of Deeds Office. Covenants shall be at all times in full force and effect so long as the apartment complex remains as a multifamily use. Any recession or modification of the covenants regarding age restriction shall have approval of the town.*

Prior to applying for any building permits, an opinion letter from an attorney licensed to practice in North Carolina shall be provided to the Town stating that the age restriction was drafted in a form that the attorney, in the exercise of customary professional diligence, would reasonably recognize as compliant with the Fair Housing Act 42 U.S.C Sec. 3601, et. seq., and the North Carolina State Fair Housing Act, N.C. Gen. Stat. 41A-1, et seq.

- 3) *The developer acknowledges the need to provide workforce housing within the Town of Holly Springs and is committed to doing so. A minimum of ~~fifty (50)~~ twenty-five (25) dwelling units shall be workforce housing units and shall be located on TRACT 3 as shown on 'EXHIBIT 1'.*
- 4) *The Town requires, pursuant to N.C.G.S. § 160A-372, the dedication and construction of streets and rights of way, as shown in the approved Comprehensive Transportation Plan and the approved Transportation 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 the Developer can enter into agreements to accelerate the time for completion of these needed improvements.*

- A. *Establish a funding partnership with the Town of Holly Springs and NCDOT to provide a fee in lieu in the amount of \$105,000.00 for the construction of the widening of southbound NC 55 Bypass to provide a third travel lane between Avent Ferry Road and South Main Street.*
 - B. *Widen the northbound Piney-Grove Wilbon Road approach to provide a new through/right turn lane with a minimum of 250 feet of storage length and provide signal modifications to accommodate the geometrics changes. Actual construction of the improvements may utilize the contributing fund from other background developments at this intersection.*
 - C. *Site Access #1 (as shown on 'Exhibit 3') construct one inbound lane and two outbound lanes with an exclusive right turn lane and exclusive left turn lane with a minimum of 100 feet of storage length. Widen the southbound South Main Street approach to provide an exclusive right turn lane with a minimum of 100 feet of storage length.*
 - ~~D. *Site Access #2 (as shown on 'Exhibit 3'), construct one inbound lane and one outbound lane (right in/right out only) with appropriate median channelization.*~~
 - E. *Site Access #3 (as shown on 'Exhibit 3'), construct one inbound lane and one outbound lane (right in/right out only) with appropriate median channelization. Widen the southbound South Main Street approach to provide an exclusive right turn lane with a minimum of 100 feet of storage length.*
 - F. *Site Access #4 (as shown on 'Exhibit 3'), construct one outbound lane (right out only) with appropriate median channelization. Widen the westbound Ralph Stephens Road approach to provide an exclusive right turn lane with a minimum of 100feet of storage length (subject to right of way constraints).*
 - G. *Site Access #5 (as shown on 'Exhibit 3'), construct one inbound lane and one outbound lane (right in/right out only). Convert the existing median to provide left in access on southbound South Main Street approach with a minimum of 150 feet of storage length; correspondingly, shorten the left turn land storage length at Ralph Stephens Road to 250 feet. Widen northbound South Main Street approach to provide an exclusive right turn lane with a minimum of 100 feet of storage length.*
 - H. *Widen the southbound Southern Crossing Boulevard approach to provide an exclusive left turn lane with a minimum of 100 feet of storage length.*
- 5) *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 rezoning 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 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.*

- 6) *Proposed uses on Tract 2 as identified on 'Exhibit 1' shall be limited to professional office only.*
- 7) *To the greatest extent possible, parking shall be located at or behind the front façade of all buildings on tracts 1 and 3 as identified on 'Exhibit 1.'*
- 8) *Tract 3 as identified on 'Exhibit 1' shall be limited to mixed-use development containing two or more of the following uses: commercial, multifamily dwellings, professional office, and child care center.*
- 9) *For proposed building facades located within fifty (50) feet of the intersection of South Main Street and Ralph Stephens Road and fronting such intersection, shown on Tract 3 as identified on 'Exhibit 1', shall contain first floor commercial uses. Sides and rear facades of such buildings may contain ground floor residential uses.*
- 10) *The maximum building height of the proposed development shall be 75 feet.*
- 11) *The developer understands that walkability is crucial to this mixed use concept. Therefore, the developer will construct a ten foot wide asphalt public greenway, in accordance with Town of Holly Springs Design and Construction Standards, terminating at the intersection of Ralph Stephens Road and South Main Street with a maximum linear footage of 2,000 feet in a direction and alignment to be determined with town staff at the time of first development plan, within current available public right-of-way.*
- 12) *The developer shall provide an "urban art park" within Tract 3 with a minimum size of 6,000 square feet and shall consist of;*
 - A. *A hard surface patio/stage with a minimum size of 300 square feet for performances and concerts;*
 - B. *An area for the display of public art with a minimum size of 1,500 square feet;*
 - C. *A kiosk structure for retail sales with a minimum building size of 144 square feet and 200 square feet of hard surface outdoor dining area patio;*
 - D. *The Art Park shall be owned and maintained by the developer or current owner of the mixed-use building.*



Holly Springs Town Council

Town Council Meeting Agenda Cover Sheet

Agenda Item#: 25.

New Business

Title: Resolution Adopting the Water Shortage Response Plan

Strategic Priority Area: Responsible & Balanced Growth
Safe & Friendly

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

Action(s):

Adopt Resolution 24-04, approving the Water Shortage Response Plan.

Explanation:

- The Town's updated Water Shortage Response Plan (WSRP) was prepared per the language set forth in North Carolina Administrative Code (NCAC) - 15A NCAC 02E .0607(a) and (b).
- The North Carolina General Statute 145-355(l) requires all units of local government that provide or plan to provide water service prepare a Local Water Supply Plan (LWSP) and a WSRP.
- The purpose of the WSRP is to implement permanent seasonal water conservation measures, to provide for the declaration of increasingly serious water stages or water shortages, and to define mandatory water conservation measures to be implemented during these various stages.
- The WSRP is required to be updated every five (5) years.
- The NC Division of Environmental Quality (NCDEQ) Division of Water Resources requires a public comment period for at least thirty (30) days prior to the Town Council's adoption of the WSRP. The draft plan was published on the town's website on January 17, 2024.
- Council action is being requested to adopt resolution 24-04 approving the updated WSRP.

Background:

- The Water Shortage Response Plan (WSRP) was developed in accordance with guidelines provided by the NCAC and the NCDEQ Division of Water Resources. The plan references and expands upon the Town's Code of Ordinances, Chapter 16 (Public Enterprises), Article II (Water Service), Division 2. (Shortages and Conservation).
- The Town's WSRP outlines the following:
 - Staff positions responsible for enacting a water shortage provision
 - Stages of water shortage response
 - Activities allowed during the implementation of a water shortage provision
 - Methods of communication
 - Exceptions to water restrictions
 - Enforcement of the WSRP

Town Council Business Meeting
February 20, 2024

- Effective date, revisions, and public comment

Funding Source(s):

N/A

Attachment(s):

1. TOHS WSRP 12-23
2. WSRP Approval Letter from State_011624
3. 24-04 Adopting the Water Shortage Response Plan



Town of Holly Springs Water Shortage Response Plan

System Owner: Town of Holly Springs
Wake County, North Carolina
PWS I.D. No. 03-92-050

Prepared by: Town of Holly Springs Utilities & Infrastructure Department
January 2024
Contact: Kendra D. Parrish, PE, CRM, Kendra.parrish@hollyspringsnc.gov, (919) 557-2933

Table of Contents

Purpose	3
Abbreviations and Definitions	3
Authorization	4
Water Shortage Response Stages	5
Stage 0: Annual Water Conservation Measures	5
Stage 1: Water Shortage Alert	6
Stage 2: Water Shortage Warning	7
Stage 3: Water Shortage Emergency	8
Stage 4: Water Shortage Crisis.....	9
Notification	9
Public Comment.....	10
Variance Protocols	10
Enforcement	10
Effectiveness	11
Effective Date and Revision	11

North Carolina General Statute General Statute § 143-355(I) requires all units of local government that provide or plan to provide public water service to prepare a Local Water Supply Plan (LWSP). A Water Shortage Response Plan (WSRP) is a requirement for all systems that submit a LWSP. A WSRP establishes authority for declaration of a water shortage, defines different phases of water shortage severity, and outlines appropriate responses for each phase. This WSRP was developed in accordance with the Water Shortage Response Plan Guidelines provided by the Division of Water Resources (DWR).

The Town of Holly Springs has previously determined that it is in the best public interest of the citizens of Holly Springs to have such water conservation plan in place as set forth herein.

Purpose

The purpose of the Water Shortage Response Plan (WSRP) is to implement permanent seasonal water conservation measures, to provide for the declaration of increasingly serious water stages of water shortages, and to define mandatory water conservation measures to be implemented during these various stages.

Abbreviations and Definitions

The following words, terms abbreviations, and phrases, when used in this WSRP, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:

Contamination means the addition to any watershed area, reservoir, storage tank, or distribution system of any material that appears in an above-normal concentration or has high nuisance or harmful effect on the consumer or the system.

Director means the Executive Director of Utilities & Infrastructure

Emergency means, when referring to water shortage, that conditions exist such that treated water supplies cannot meet customer demands and that serious treated water shortages exist.

Essential use means:

- (1) Use of water to sustain normal life and the lives of domestic pets, and to maintain minimum standards of hygiene and sanitation.
- (2) Use of water for patient care and rehabilitation.
- (3) Firefighting, including certain testing and drills by the fire department if conducted in the interest of public safety and if approved by the Director.
- (4) Health and public protection purposes, if specifically approved by health officials and the Director, including flushing of water lines and hydrants.
- (5) Industrial sites producing essential products for the protection on public health and bioterrorism and homeland defense, including vaccines and pharmaceuticals.

Hand watering means the use of a hand-held watering device. The device can be attached to the end of a garden hose, but must be attended (and held in the hand of a person at all times that watering is taking place).

LWSP means Local Water Supply Plan

Mandatory conservation means that conservation measures are not voluntary, and that if users fail to comply, they are subject to the penalties outlined in this division.

Potable water means the water in the town water distribution system.

Rationing means procedures established by the town to provide for the equitable distribution of critically limited treated water supplies, in order to balance demand and limited availability, and to ensure that sufficient treated water is available to preserve public health and safety.

User means any person using water for any purpose from the town water distribution system (either directly or indirectly) and for which either a regular charge is made or, in the case of bulk sales, a cash charge is made at the site of delivery.

Water shortage means that conditions exist when the demands and requirements of water customers served by the town cannot be satisfied without depleting the available supply of potable water or the available water supply to or below a critical level, i.e. the level at which the continued availability of water for human consumption, sanitation, and fire protection is jeopardized. Conditions contributing to a water shortage may include but are not limited to the following:

- (1) Water supplies are below the level necessary to meet needs.
- (2) Water quality has been threatened due to a contamination situation.
- (3) Power outages or equipment malfunction.
- (4) Peak customer demands on the water system.
- (5) Inability to maintain adequate pressure and/or water supply throughout every portion of the town water distribution system.
- (6) Natural disasters.

WSRP means Water Shortage Response Plan

Authorization

The Director shall enact the following water shortage response provisions whenever the trigger conditions outlined in the following language are met. In his/her absence, the Town Manager will assume this role. In the absence of both parties, the Deputy Director of Utilities will assume this responsibility.

Kendra Parrish, PE, CFM
Executive Director of Utilities & Infrastructure
Phone: (919) 557-2933
E-mail: Kendra.parrish@hollyspringsnc.gov

Randy Harrington
Town Manager
Phone: (919) 557-3924
E-mail: randy.harrington@hollyspringsnc.gov

Seann Byrd
Deputy Director of Utilities
Phone: (919) 577-3151
E-mail: Seann.byrd@hollyspringsnc.gov

Water Shortage Response Stages

Details of the water shortage and conservation measures are found in the following subsections. A summary is shown in the table below:

Table 1: Water Shortage Response Stages

Activities	Water Shortage Response Stages				
	Stage 0: Annual Water Conservation	Stage 1: Water Shortage Alert	Stage 2: Water Shortage Warning	Stage 3: Water Shortage Emergency	Stage 4: Water Shortage Crisis
Hand-watering with containers or hoses, the use of soaker hoses and the use of alternative sources of water	Allowed	Allowed	Allowed	Allowed	Not allowed
Irrigation systems (unattended hose-end sprinklers and automated irrigation systems)	Three days/week May 1 st – September 30 th	Three (3) days/week, 6–10 AM and 6 – 10 PM	Two (2) days/week, 6–10 AM and 6 – 10 PM	Not allowed	Not allowed
Public property (i.e. schools and park athletic fields), golf courses and businesses with plants for sale	Allowed, Keep non-essential water to a minimum	Allowed, Keep non-essential water to a minimum	Allowed, Keep non-essential water to a minimum	Not allowed	Not allowed
Other uses of water (pressure washing, car washing, filling ponds or swimming pools, hydrant meters for non-firefighting purposes)	Allowed	Allowed	Not allowed	Not allowed	Not allowed

Stage 0: Annual Water Conservation Measures

(a) *Year-round permanent water conservation.*

- (1) It shall be unlawful at any time of the year for any person to intentionally or unintentionally waste water, particularly by overwatering landscape by having irrigation nozzles directed so that water sprays onto impervious surfaces (streets, driveways, sidewalks or other hardscaped areas) to the extent that water runs into storm drains and by overwatering grass or landscape to the extent that the soil can no longer absorb water, which then flows off the landscape into the street or down parking lots.
- (2) Customers violating this section may be imposed a civil fine of up to \$100.00 per violation, at the discretion of the Director or his designee. In the event of multiple (two or more) uncorrected violations, the Director may direct suspension of water service at the location of the violations.

- (b) *Stage 0, permanent voluntary seasonal water conservation measures.* The town shall observe a water conservation season annually from May 1 through September 30, when every town customer will be encouraged to comply on a voluntary basis with the following schedule for the irrigation systems. ("Irrigation systems" are defined as both unattended hose-end sprinklers and automated irrigation systems, however does not include attended hand-watering, of outdoor landscaping such as grass, shrubbery, trees, flowers and vegetable gardens.) The Director is empowered to pronounce the same guidelines to be observed during any other time of the year to be consistent with regulations being observed in and declared by the County of Harnett. Customers are encouraged to practice conservation and best landscape management practices, which includes avoiding the overwatering of outdoor landscaping. To this end, the following voluntary practice is strongly encouraged:
- (1) For customers whose address numbers end in an even digit, such watering shall be encouraged to take place on Mondays, Wednesdays and Saturdays.
 - (2) For customers whose address numbers end in an odd digit, such watering shall be encouraged to take place on Tuesdays, Thursdays and Sundays.
 - (3) Public property (i.e. schools and park athletic fields), golf courses and businesses with plants for sale are not subject to these irrigation schedules, unless otherwise specified by the Director; however, such users should keep nonessential watering to the minimum required to maintain safe playing surfaces or to maintain plant inventory.
- (c) Hand-watering with containers or hoses, the use of soaker hoses and the use of alternative sources of water to the town's public water supply are not restricted.
- (d) During the annual water conservation season, no other uses of water are restricted, except as provided in subsections (a) and (b) above.
- (e) The town will use its best efforts to provide an educational campaign encouraging customers to limit to the extent possible and practical all uses of water.

Stage 1: Water Shortage Alert

- (a) When a stage 1 water shortage alert is declared by Harnett County, the Director is empowered to declare that the following stage 1 mandatory conservation measures by users of the town's public water supply shall be in effect:
- (1) For customers whose address numbers end in an even digit, such watering shall be restricted to between 6:00 a.m. and 10:00 a.m. and between 6:00 p.m. and 10:00 p.m. Mondays, Wednesdays and Saturdays.
 - (2) For customers whose address numbers end in an odd digit, such watering shall be restricted to between 6:00 a.m. and 10:00 a.m. and between 6:00 p.m. and 10:00 p.m. Tuesdays, Thursdays and Sundays.
 - (3) No irrigation from the town's public water supply shall take place on Friday.
 - (4) Public and private property of social or economic impact in the community (i.e. public and private schools, day care centers, public and private golf courses, public parks and athletic fields) and businesses with plants for sale are not subject to these irrigation schedules, unless otherwise specified by the Director; however, such users must keep nonessential watering to the minimum required to maintain safe playing surfaces or to maintain plant inventory.
 - (5) Hand-watering with containers or hoses, the use of soaker hoses and the use of alternative sources of water to the town's public water supply are not restricted.

- (6) Exceptions to these restrictions on a temporary 30-day basis may be granted with a landscape watering permit from the department of utilities and infrastructure services for the purpose of establishing new plantings, including sod, seed (re-seeding and over-seeding are included) landscape beds, and trees.
- (7) A fee shall be charged for landscape watering permits, except that a waiver of this fee may be provided for those who show evidence of having planted only warm-season hardy grasses, such as Zoyzia, Bermuda, Centipede or St. Augustine or drought-resistant landscaping. The permit fee is issued upon approval of the application. Fee waivers will not be granted for the planting of any cool-season grasses such as Rye or Fescue.
- (b) During a stage 1 water shortage alert, no other uses of water are restricted, except as provided in subsection (a) above.
- (c) The town will provide an educational campaign encouraging customers to limit to the extent possible and practical all uses of water.
- (d) The introduction of water into any new pond, ornamental fountain, pool, or other structure should be postponed until the stage 1 water shortage alert is lifted, except that existing pools and ponds can be filled to remain operational, support aquatic life and provide sanitary conditions for swimmers. The Director or his designee may grant exceptions on a case-by-case basis.

Stage 2: Water Shortage Warning

- (a) When a stage 2 water shortage warning is declared by Harnett County, the Director is empowered to declare that the following stage 2 mandatory conservation measures by users of the town's public water supply shall be in effect:
 - (1) For customers whose address numbers end in an even digit, such watering shall be restricted to Wednesdays and Saturdays.
 - (2) For customers whose address numbers end in an odd digit, such watering shall be restricted to Thursdays and Sundays.
 - (3) No irrigation shall take place on Mondays, Tuesdays or Fridays.
 - (4) Public and private property of social or economic impact in the community (i.e. public and private schools, day care centers, public and private golf courses, public parks and athletic fields) and businesses with plants for sale are not subject to these irrigation schedules, unless otherwise specified by the Director; however, such users must keep nonessential watering to the minimum required to maintain safe playing surfaces or to maintain plant inventory.
- (b) Hand-watering with containers or hoses, the use of soaker hoses and the use of alternative sources of water to the town's public water supply are not restricted.
- (c) Exceptions to these restrictions on a temporary 30-day basis may be granted with a new landscape establishment permit from the department of utilities and infrastructure services for the purpose of establishing only new plantings, which are defined as the installation of new sod to the entire yard, whole yard first seeding, or large commercial plantings. The permit will be applicable during the installation and for 30 days from substantial completion of the installation. Irrigation will be permitted only during the hours 6:00 a.m. to 10:00 a.m. and from 6:00 p.m. to 10:00 p.m. on any day. During a stage 2 water shortage warning, permits are not issued for over-seeding unless the town environmental office deems such over-seeding necessary to correct soil erosion control violations.

- (d) A fee shall be charged for new landscape establishment permits, except that a waiver of this fee may be provided for those who show evidence of having planted only warm-season hardy grasses, such as Zoyzia, Bermuda, Centipede or St. Augustine or drought-resistant landscaping. Fee waivers will not be granted for the planting of any cool-season grasses such as Rye or Fescue.
- (e) The owner or occupant of any land or building which receives water from the town and that also utilizes water from a well or supply other than that of the town shall post and maintain in a prominent place thereon a sign, placard, or sticker giving public notice of the use of a well or other source of water.
- (f) During a stage 2 water shortage warning, other uses of water are restricted, including as provided in subsection (a) above and as follows:
 - (1) It shall be unlawful to wash automobiles, trucks, trailers, boats, airplanes, or any other type of mobile equipment except at commercial car wash facilities; except that any person regularly engaged in a commercial operation or public service that requires equipment be washed shall be permitted to use water for such purposes as long as the amount of water being used is minimized.
 - (2) It shall be unlawful to wash down outside areas such as streets, driveways, service station aprons, parking lots, office buildings, exteriors of existing or newly constructed homes or apartments, sidewalks, or patios, or to use water for other similar purposes; provided, however, that any person regularly engaged in the business of washing such areas shall be permitted to use water for such purposes.
 - (3) It shall be unlawful to introduce water into any pond, ornamental fountain, or other structure making similar use of water, except that existing pools and ponds can be filled to remain operational, support aquatic life and provide sanitary conditions for swimmers. Electrical and plumbing permits for new swimming pool construction will not be issued until the stage 2 water shortage warning is lifted.
 - (4) It shall be unlawful to use water from public fire hydrants, including hydrant meters, for any purpose other than fire suppression or other public emergency or water department need. The Director or the town manager or his designee may grant exceptions on a case-by-case basis.
 - (5) It shall be unlawful to use water for dust control or compaction without demonstrating a lack of alternative sources and obtaining written permission from the Director.
 - (6) It shall be unlawful to fill newly constructed swimming or wading pools or refill swimming or wading pools that have been drained, except that the Director may grant exceptions on a case-by-case basis.
 - (7) All industrial, manufacturing, and commercial enterprises, other than those listed as "essential use" in subsection 16-72(5), shall reduce consumption to any degree feasible with a goal of reduction of at least 20 percent.
- (g) The town shall make its best efforts to provide an educational campaign encouraging customers to limit to the extent possible and practical all uses of water.

Stage 3: Water Shortage Emergency

- (a) When a stage 3 water shortage emergency is declared by Harnett County, the Director is empowered to declare that the following mandatory conservation measures by users of the town's public water supply shall be in effect, in addition to the restrictions heretofore imposed:

- (1) It shall be unlawful to water or sprinkle any lawn, grass, shrubbery, trees, or flowers with treated water using an automated irrigation or sprinkler system. Watering is permitted only by hand-held hose with a spring-loaded nozzle, by container, or by installed drip type irrigation. Provided, however, that any person regularly engaged in the sale of plants shall be permitted to use automated irrigation or sprinkler systems but only in amounts necessary to prevent the loss of nursery stock.
- (2) It shall be unlawful to re-fill or supplement swimming and/or wading pools from the town water supply.
- (3) Restaurants and other food serving establishments shall use single-serving utensils, plates, and cups and shall serve water only at the patron's request.
- (b) Except as provided in subparagraph (a) above, it shall be unlawful to use treated water outdoors for any reason other than fire suppression, emergencies relating to health and safety issues, or as needed by the town to maintain the water system.
- (c) All industrial, manufacturing, and commercial enterprises, other than those listed as "essential use" in subsection 16-72(5), shall reduce consumption to any degree feasible with a goal of reduction of at least 40 percent.

Stage 4: Water Shortage Crisis

- (a) When a stage 4 water shortage crisis is declared by Harnett County, the Director is empowered to declare that the following mandatory conservation measures by users of the town's public water supply shall be in effect, in addition to the restrictions heretofore imposed:
 - (1) Residential users shall reduce water consumption to a level necessary to sustain human life and the lives of domestic pets and to maintain minimum standards of hygiene and sanitation.
 - (2) Fire protection must be maintained, but where possible, tank trucks shall use untreated water.
 - (3) It shall be unlawful to wash automobiles, trucks, trailer, boats, airplanes, or any other type of mobile equipment.
 - (4) It shall be unlawful to make any nonessential use of treated water for commercial or public use.
 - (5) All industrial, manufacturing, and commercial enterprises, other than those listed as "essential use" in subsection 16-72(5), shall reduce consumption to any degree feasible with a goal of reduction of at least 50 percent.
- (b) The Director may declare additional measures of mandatory conservation controls such as larger percentage reductions in consumption, termination of service to specific areas in the water system on a rotating basis, prohibition of all industrial users of treated water, etc. or whatever is necessary to protect the health and safety of the customers of the water system. The town shall make every effort to minimize restrictions to those industrial customers producing essential products for the protection of public health, bioterrorism or homeland defense defined as "essential use".

Notification

The following notification methods will be used to inform the Town of Holly Springs' customers of a water shortage declaration: notice posted on the Town's website at www.hollyspringsnc.gov; print notices

posted at municipal buildings; and inclusion in the Town’s print and e-newsletters. Required water shortage response measures will also be communicated on Town social media channels such as Instagram, Facebook, and Twitter.

Public Comment

Customers will have multiple opportunities to comment on the provisions of the WSRP. A draft plan will be published on the Town’s website at www.hollyspringsnc.gov. At least thirty (30) days prior to the Town Council adoption vote, a digital copy of the WSRP will be uploaded to the website with a link to an email address for receiving public comment, a print copy of the WSRP will be available at Town Hall for viewing, and digital and print copies will be available upon request from interested parties through the Utilities & Infrastructure Department. After the public comments have been taken into consideration, the Town Council may adopt the WSRP.

Variance Protocols

Exceptions to these restrictions are available on a case-by-case basis by obtaining a landscape permit from the Town of Holly Springs Utility & Infrastructure Department. All requests must be submitted to via email to Utilities-Infrastructure@hollyspringsnc.gov for review by the Director or his/her designee. A decision to approve or deny individual variance requests will be determined within two weeks of submittal after careful consideration of the following criteria: impact on water demand, expected duration, alternative source options, social and economic importance, purpose (i.e. necessary use of drinking water) and assessment of risk to vegetation, aquatic life, sanitation, structures, or other.

Enforcement

- (a) Any person who violates the provisions of this division, who fails to carry out the duties and responsibilities imposed by this division, or who impedes or interferes with any action undertaken or ordered pursuant to this division shall be subject to enforcement actions.
- (b) Enforcement actions may include, but are not limited to the following:
 - (1) Notice of violation (NOV). Whenever the town finds that any user has violated or is violating this division or any prohibition, limitation, or requirement contained in this division, the Director, or his duly authorized agent, shall serve upon such a person a written notice stating the nature of the violation. The written notice of the violation shall be:
 - a. Mailed, certified with return receipt requested, to the customer of record and to any other person known to the town who is responsible for the violation or its correction; or
 - b. Hand delivered to the customer of record or to the person in charge of the premises where the violation occurred.The notice of violation shall inform the user of the violation and his responsibility to halt the activity within a specified period of time.
 - (2) Suspensions of service. In the event any treated water use restriction implemented by the town is violated, the Director shall terminate or restrict the service of the person where such violation occurs and may in addition thereto or in the alternative take such other appropriate legal action as provided by law.

- (c) At such time as the Director is satisfied that the person is no longer in violation of any treated water use restrictions, the Director shall reinstate the person's water service pursuant to the following:
 - (1) After payment of a suspension/reconnection charge of \$75.00 for first time offenders.
 - (2) After payment of a suspension/reconnection charge of \$300.00 for second time offenders.
 - (3) After payment of a suspension/reconnection charge of \$500.00 for each additional violation.
 - (4) Civil penalties.
- (d) The town shall assess a civil penalty of up to \$1,000.00 per violation to any offender who shall continue any violation beyond the time limit provided for in the aforementioned notice of violation. Each day in which a violation of any provision of this division shall occur or continue shall constitute a separate and distinct offense.
- (e) In determining the amount of the civil penalty, the town shall consider the following:
 - (1) The degree and extent of the harm to the natural resources, to the public health, or to public or private property resulting from the violation;
 - (2) The duration and gravity of the violation;
 - (3) Whether the violation was committed willfully or intentionally;
 - (4) The prior record of the violator in complying or failing to comply with the water shortage response ordinance;
 - (5) The costs of enforcement to the town.

Effectiveness

The effectiveness of the Holly Springs WSRP will be determined by comparing the stated water conservation goals with observed water use reduction data. Other factors to be considered include frequency of plan activation, any problem periods without activation, total number of violation citations, desired reductions attained and evaluation of demand reductions compared to the previous year's seasonal data.

Effective Date and Revision

This Ordinance shall take effect immediately upon adoption or passage by the Town of Holly Springs' governing body.

The WSRP will be reviewed and revised as needed to adapt to new circumstances affecting water supply and/or demand and at **a minimum of every five years** as required by the provisions of General Statute 143-355(l). Further, a water shortage response planning work group will review procedures following implementation of a water shortage declaration to recommend any necessary revisions of the plan to the Town Council. An opportunity for public comment will be provided for any update of the WSRP that specifically relates to the requirements imposed on the public before presentation to the Town Council for approval. The Town of Holly Springs Utilities & Infrastructure is responsible for initiating all WSRP revisions.

DIVISION 2. SHORTAGES AND CONSERVATION

Sec. 16-71. Water shortage and conservation measures.

- (a) The purpose of this water shortage and conservation ordinance is:
 - (1) To implement permanent seasonal water conservation measures;
 - (2) To provide for the declaration of increasingly serious stages of water shortages; and
 - (3) To define mandatory water conservation measures to be implemented during these various stages.

The water shortage and conservation provisions of this division are intended to preserve the water resources of the town under specific conditions so that the water demands for human consumption, sanitation, and fire protection of its customers can be met as cost-efficiently as possible throughout the service area of the town.

- (b) This division shall apply to all users connected directly or indirectly to the town public potable water supply, regardless of whether user is located within the city limits or outside of the city limits.
- (c) The specific objectives of the water shortage and conservation provisions of this division are as follows:
 - (1) To establish permanent seasonal water conservation measure for all customers in the interest of conserving the town's water supply;
 - (2) To establish the authority of the director to declare water shortage conditions and to implement and enforce the procedures established in this division;
 - (3) To establish mandatory water conservation measures;
 - (4) To establish enforcement protocol for violations of mandatory water conservation measures outlined in this division.

(Code 1982, § 5-1024; Ord. No. 08-05, § 1, 4-1-2008; Ord. No. 22-07, § 2, 4-19-22)

Sec. 16-72. Definitions.

The following words, terms and phrases, when used in this division, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:

Contamination means the addition to any watershed area, reservoir, storage tank, or distribution system of any material that appears in an above-normal concentration or has high nuisance or harmful effect on the consumer or the system.

Emergency means, when referring to water shortage, that conditions exist such that treated water supplies cannot meet customer demands and that serious treated water shortages exist.

Essential use means:

- (1) Use of water to sustain normal life and the lives of domestic pets, and to maintain minimum standards of hygiene and sanitation.
- (2) Use of water for patient care and rehabilitation.

-
- (3) Firefighting, including certain testing and drills by the fire department if conducted in the interest of public safety and if approved by the director.
 - (4) Health and public protection purposes, if specifically approved by health officials and the director, including flushing of water lines and hydrants.
 - (5) Industrial sites producing essential products for the protection on public health and bioterrorism and homeland defense, including vaccines and pharmaceuticals.

Hand watering means the use of a hand-held watering device. The device can be attached to the end of a garden hose, but must be attended (and held in the hand of a person at all times that watering is taking place).

Mandatory conservation means that conservation measures are not voluntary, and that if users fail to comply, they are subject to the penalties outlined in this division.

Potable water means the water in the town water distribution system.

Rationing means procedures established by the town to provide for the equitable distribution of critically limited treated water supplies, in order to balance demand and limited availability, and to ensure that sufficient treated water is available to preserve public health and safety.

User means any person using water for any purpose from the town water distribution system (either directly or indirectly) and for which either a regular charge is made or, in the case of bulk sales, a cash charge is made at the site of delivery.

Water shortage means that conditions exist when the demands and requirements of water customers served by the town cannot be satisfied without depleting the available supply of potable water or the available water supply to or below a critical level, i.e. the level at which the continued availability of water for human consumption, sanitation, and fire protection is jeopardized. Conditions contributing to a water shortage may include but are not limited to the following:

- (1) Water supplies are below the level necessary to meet needs.
- (2) Water quality has been threatened due to a contamination situation.
- (3) Power outages or equipment malfunction.
- (4) Peak customer demands on the water system.
- (5) Inability to maintain adequate pressure and/or water supply throughout every portion of the town water distribution system.
- (6) Natural disasters.

(Code 1982, § 5-1024.1; Ord. No. 10-01, pt. 1, 3-16-2010; Ord. No. 22-07 , § 2, 4-19-22)

Cross reference(s)—Definitions generally, § 1-2.

Sec. 16-73. Stage 0 permanent year-round and seasonal water conservation.

(a) *Year-round permanent water conservation.*

- (1) It shall be unlawful at any time of the year for any person to intentionally or unintentionally waste water, particularly by overwatering landscape by having irrigation nozzles directed so that water sprays onto impervious surfaces (streets, driveways, sidewalks or other hardscaped areas) to the extent that water runs into storm drains and by overwatering grass or landscape to the extent that the soil can no longer absorb water, which then flows off the landscape into the street or down parking lots.

-
- (2) Customers violating this section may be imposed a civil fine of up to \$100.00 per violation, at the discretion of the director or his designee. In the event of multiple (two or more) uncorrected violations, the director may direct suspension of water service at the location of the violations.
- (b) *Stage 0, permanent voluntary seasonal water conservation measures.* The town shall observe a water conservation season annually from May 1 through September 30, when every town customer will be encouraged to comply on a voluntary basis with the following schedule for the irrigation systems. ("Irrigation systems" are defined as both unattended hose-end sprinklers and automated irrigation systems, however does not include attended hand-watering, of outdoor landscaping such as grass, shrubbery, trees, flowers and vegetable gardens.) The director is empowered to pronounce the same guidelines to be observed during any other time of the year to be consistent with regulations being observed in and declared by the County of Harnett. Customers are encouraged to practice conservation and best landscape management practices, which includes avoiding the overwatering of outdoor landscaping. To this end, the following voluntary practice is strongly encouraged:
- (1) For customers whose address numbers end in an even digit, such watering shall be encouraged to take place on Mondays, Wednesdays and Saturdays.
 - (2) For customers whose address numbers end in an odd digit, such watering shall be encouraged to take place on Tuesdays, Thursdays and Sundays.
 - (3) Public property (i.e. schools and park athletic fields), golf courses and businesses with plants for sale are not subject to these irrigation schedules, unless otherwise specified by the director; however, such users should keep nonessential watering to the minimum required to maintain safe playing surfaces or to maintain plant inventory.
- (c) Hand-watering with containers or hoses, the use of soaker hoses and the use of alternative sources of water to the town's public water supply are not restricted.
- (d) During the annual water conservation season, no other uses of water are restricted, except as provided in subsections (a) and (b) above.
- (e) The town will use its best efforts to provide an educational campaign encouraging customers to limit to the extent possible and practical all uses of water.
- (Ord. No. 00-05, § 1(5-1024.2), 5-2-2000; Ord. No. 02-11, § 2, 8-6-2002; Ord. No. 08-05, § 2, 4-1-2008; Ord. No. 22-07, § 2, 4-19-22)

Sec. 16-74. Stage 1 water shortage alert.

- (a) When a stage 1 water shortage alert is declared by Harnett County, the director is empowered to declare that the following stage 1 mandatory conservation measures by users of the town's public water supply shall be in effect:
- (1) For customers whose address numbers end in an even digit, such watering shall be restricted to between 6:00 a.m. and 10:00 a.m. and between 6:00 p.m. and 10:00 p.m. Mondays, Wednesdays and Saturdays.
 - (2) For customers whose address numbers end in an odd digit, such watering shall be restricted to between 6:00 a.m. and 10:00 a.m. and between 6:00 p.m. and 10:00 p.m. Tuesdays, Thursdays and Sundays.
 - (3) No irrigation from the town's public water supply shall take place on Friday.
 - (4) Public and private property of social or economic impact in the community (i.e. public and private schools, day care centers, public and private golf courses, public parks and athletic fields) and

businesses with plants for sale are not subject to these irrigation schedules, unless otherwise specified by the director; however, such users must keep nonessential watering to the minimum required to maintain safe playing surfaces or to maintain plant inventory.

- (5) Hand-watering with containers or hoses, the use of soaker hoses and the use of alternative sources of water to the town's public water supply are not restricted.
 - (6) Exceptions to these restrictions on a temporary 30-day basis may be granted with a landscape watering permit from the department of utilities and infrastructure services for the purpose of establishing new plantings, including sod, seed (re-seeding and over-seeding are included) landscape beds, and trees.
 - (7) A fee shall be charged for landscape watering permits, except that a waiver of this fee may be provided for those who show evidence of having planted only warm-season hardy grasses, such as Zoyzia, Bermuda, Centipede or St. Augustine or drought-resistant landscaping. Fee waivers will not be granted for the planting of any cool-season grasses such as Rye or Fescue.
- (b) During a stage 1 water shortage alert, no other uses of water are restricted, except as provided in subsection (a) above.
 - (c) The town will provide an educational campaign encouraging customers to limit to the extent possible and practical all uses of water.
 - (d) The introduction of water into any new pond, ornamental fountain, pool, or other structure should be postponed until the stage 1 water shortage alert is lifted, except that existing pools and ponds can be filled to remain operational, support aquatic life and provide sanitary conditions for swimmers. The director or his designee may grant exceptions on a case-by-case basis.

(Code 1982, § 5-1024.3; Ord. No. 08-05, § 3, 4-1-2008; Ord. No. 22-07, § 2, 4-19-22)

Sec. 16-75. Stage 2 water shortage warning.

- (a) When a stage 2 water shortage warning is declared by Harnett County, the director is empowered to declare that the following stage 2 mandatory conservation measures by users of the town's public water supply shall be in effect:
 - (1) For customers whose address numbers end in an even digit, such watering shall be restricted to Wednesdays and Saturdays.
 - (2) For customers whose address numbers end in an odd digit, such watering shall be restricted to Thursdays and Sundays.
 - (3) No irrigation shall take place on Mondays, Tuesdays or Fridays.
 - (4) Public and private property of social or economic impact in the community (i.e. public and private schools, day care centers, public and private golf courses, public parks and athletic fields) and businesses with plants for sale are not subject to these irrigation schedules, unless otherwise specified by the director; however, such users must keep nonessential watering to the minimum required to maintain safe playing surfaces or to maintain plant inventory.
- (b) Hand-watering with containers or hoses, the use of soaker hoses and the use of alternative sources of water to the town's public water supply are not restricted.
- (c) Exceptions to these restrictions on a temporary 30-day basis may be granted with a new landscape establishment permit from the department of utilities and infrastructure services for the purpose of establishing only new plantings, which are defined as the installation of new sod to the entire yard, whole yard first seeding, or large commercial plantings. The permit will be applicable during the installation and for 30 days from substantial completion of the installation. Irrigation will be permitted only during the hours

Created: 2023-06-30 13:55:16 [EST]

(Supp. No. 15)

6:00 a.m. to 10:00 a.m. and from 6:00 p.m. to 10:00 p.m. on any day. During a stage 2 water shortage warning, permits are not issued for over-seeding unless the town environmental office deems such over-seeding necessary to correct soil erosion control violations.

- (d) A fee shall be charged for new landscape establishment permits, except that a waiver of this fee may be provided for those who show evidence of having planted only warm-season hardy grasses, such as Zoyzia, Bermuda, Centipede or St. Augustine or drought-resistant landscaping. Fee waivers will not be granted for the planting of any cool-season grasses such as Rye or Fescue.
- (e) The owner or occupant of any land or building which receives water from the town and that also utilizes water from a well or supply other than that of the town shall post and maintain in a prominent place thereon a sign, placard, or sticker giving public notice of the use of a well or other source of water.
- (f) During a stage 2 water shortage warning, other uses of water are restricted, including as provided in subsection (a) above and as follows:
 - (1) It shall be unlawful to wash automobiles, trucks, trailers, boats, airplanes, or any other type of mobile equipment except at commercial car wash facilities; except that any person regularly engaged in a commercial operation or public service that requires equipment be washed shall be permitted to use water for such purposes as long as the amount of water being used is minimized.
 - (2) It shall be unlawful to wash down outside areas such as streets, driveways, service station aprons, parking lots, office buildings, exteriors of existing or newly constructed homes or apartments, sidewalks, or patios, or to use water for other similar purposes; provided, however, that any person regularly engaged in the business of washing such areas shall be permitted to use water for such purposes.
 - (3) It shall be unlawful to introduce water into any pond, ornamental fountain, or other structure making similar use of water, except that existing pools and ponds can be filled to remain operational, support aquatic life and provide sanitary conditions for swimmers. Electrical and plumbing permits for new swimming pool construction will not be issued until the stage 2 water shortage warning is lifted.
 - (4) It shall be unlawful to use water from public fire hydrants, including hydrant meters, for any purpose other than fire suppression or other public emergency or water department need. The director or the town manager or his designee may grant exceptions on a case-by-case basis.
 - (5) It shall be unlawful to use water for dust control or compaction without demonstrating a lack of alternative sources and obtaining written permission from the director.
 - (6) It shall be unlawful to fill newly constructed swimming or wading pools or refill swimming or wading pools that have been drained, except that the director may grant exceptions on a case-by-case basis.
 - (7) All industrial, manufacturing, and commercial enterprises, other than those listed as "essential use" in subsection 16-72(5), shall reduce consumption to any degree feasible with a goal of reduction of at least 20 percent.
- (g) The town shall make its best efforts to provide an educational campaign encouraging customers to limit to the extent possible and practical all uses of water.

(Code 1982, § 5-1024.4; Ord. No. 08-05, § 4, 4-1-2008; Ord. No. 10-01, pt. 2, 3-16-2010; Ord. No. 22-07, § 2, 4-19-22)

Sec. 16-76. Stage 3 water shortage emergency.

- (a) When a stage 3 water shortage emergency is declared by Harnett County, the director is empowered to declare that the following mandatory conservation measures by users of the town's public water supply shall be in effect, in addition to the restrictions heretofore imposed:
 - (1) It shall be unlawful to water or sprinkle any lawn, grass, shrubbery, trees, or flowers with treated water using an automated irrigation or sprinkler system. Watering is permitted only by hand-held hose with a spring-loaded nozzle, by container, or by installed drip type irrigation. Provided, however, that any person regularly engaged in the sale of plants shall be permitted to use automated irrigation or sprinkler systems but only in amounts necessary to prevent the loss of nursery stock.
 - (2) It shall be unlawful to re-fill or supplement swimming and/or wading pools from the town water supply.
 - (3) Restaurants and other food serving establishments shall use single-serving utensils, plates, and cups and shall serve water only at the patron's request.
- (b) Except as provided in subparagraph (a) above, it shall be unlawful to use treated water outdoors for any reason other than fire suppression, emergencies relating to health and safety issues, or as needed by the town to maintain the water system.
- (c) All industrial, manufacturing, and commercial enterprises, other than those listed as "essential use" in subsection 16-72(5), shall reduce consumption to any degree feasible with a goal of reduction of at least 40 percent.

(Code 1982, § 5-1024.6; Ord. No. 08-05, § 5, 4-1-2008; Ord. No. 10-01, pt. 3, 3-16-2010; Ord. No. 22-07, § 2, 4-19-22)

Sec. 16-76.1. Stage 4 water shortage crisis.

- (a) When a stage 4 water shortage crisis is declared by Harnett County, the director is empowered to declare that the following mandatory conservation measures by users of the town's public water supply shall be in effect, in addition to the restrictions heretofore imposed:
 - (1) Residential users shall reduce water consumption to a level necessary to sustain human life and the lives of domestic pets and to maintain minimum standards of hygiene and sanitation.
 - (2) Fire protection must be maintained, but where possible, tank trucks shall use untreated water.
 - (3) It shall be unlawful to wash automobiles, trucks, trailer, boats, airplanes, or any other type of mobile equipment.
 - (4) It shall be unlawful to make any nonessential use of treated water for commercial or public use.
 - (5) All industrial, manufacturing, and commercial enterprises, other than those listed as "essential use" in subsection 16-72(5), shall reduce consumption to any degree feasible with a goal of reduction of at least 50 percent.
- (b) The director may declare additional measures of mandatory conservation controls such as larger percentage reductions in consumption, termination of service to specific areas in the water system on a rotating basis, prohibition of all industrial users of treated water, etc. or whatever is necessary to protect the health and safety of the customers of the water system. The town shall make every effort to minimize restrictions to those industrial customers producing essential products for the protection of public health, bioterrorism or homeland defense defined as "essential use" in section 16-72.

(Ord. No. 08-05, § 6(16-77), 4-1-2008; Ord. No. 10-01, pts. 4, 5, 3-16-2010; Ord. No. 22-07 , § 2, 4-19-22)

Editor's note(s)—Ord. No. 08-05, § 6, adopted April 1, 2008, set out provisions intended for use as 16-77, however said section 16-77 already exists. For purposes of classification, and at the editor's discretion, these provisions have been included as § 16-76.1. The original designation of this section has been incorporated in the history notes.

Sec. 16-76.2. Director empowered to implement modified stages.

Whenever conditions warrant water conservation measures or whenever modified stages of response are declared by Harnett County, the director is empowered to declare whatever conservation measures by users of the town's public water supply shall be in effect. Directions for compliance will be issued by the communications department, as necessary.

(Ord. No. 08-05, § 7(16-78), 4-1-2008; Ord. No. 22-07 , § 2, 4-19-22)

Editor's note(s)—Ord. No. 22-07 , § 2, adopted April 19, 2022, amended the title of § 16-76.2 by changing "town manager" to "director."

Editor's note(s)—Ord. No. 08-05, § 7, adopted April 1, 2008, set out provisions intended for use as 16-78, however said section 16-78 already exists. For purposes of classification, and at the editor's discretion, these provisions have been included as § 16-76.2. The original designation of this section has been incorporated in the history notes.

Sec. 16-77. Regulations.

- (a) During the effective period of any water shortage, warning, emergency, or crisis, the town is empowered to promulgate such regulations or policies as may be necessary to carry out the provisions of this division. The director, or his duly authorized agent charged with implementation and enforcement of this division, shall be and is hereby granted the authority to implement and enforce any of the treated water use restrictions.
- (b) The director shall have authority to implement, maintain and rescind any one or more of the above restrictions and to make them applicable during various times of the day as he deems appropriate to protect the public health, safety and welfare until he determines that the conditions requiring their imposition no longer exist.

(Code 1982, § 5-1024.7; Ord. No. 22-07 , § 2, 4-19-22)

Sec. 16-78. Enforcement.

- (a) Any person who violates the provisions of this division, who fails to carry out the duties and responsibilities imposed by this division, or who impedes or interferes with any action undertaken or ordered pursuant to this division shall be subject to enforcement actions.
- (b) Enforcement actions may include, but are not limited to the following:
 - (1) *Notice of violation (NOV)*. Whenever the town finds that any user has violated or is violating this division or any prohibition, limitation, or requirement contained in this division, the director, or his duly authorized agent, shall serve upon such a person a written notice stating the nature of the violation. The written notice of the violation shall be:
 - a. Mailed, certified with return receipt requested, to the customer of record and to any other person known to the town who is responsible for the violation or its correction; or

Created: 2023-06-30 13:55:16 [EST]

(Supp. No. 15)

-
- b. Hand delivered to the customer of record or to the person in charge of the premises where the violation occurred.

The notice of violation shall inform the user of the violation and his responsibility to halt the activity within a specified period of time.

- (2) *Suspensions of service.* In the event any treated water use restriction implemented by the town is violated, the director shall terminate or restrict the service of the person where such violation occurs and may in addition thereto or in the alternative take such other appropriate legal action as provided by law.
- (c) At such time as the director is satisfied that the person is no longer in violation of any treated water use restrictions, the director shall reinstate the person's water service pursuant to the following:
 - (1) After payment of a suspension/reconnection charge of \$75.00 for first time offenders.
 - (2) After payment of a suspension/reconnection charge of \$300.00 for second time offenders.
 - (3) After payment of a suspension/reconnection charge of \$500.00 for each additional violation.
 - (4) Civil penalties.
- (d) The town shall assess a civil penalty of up to \$1,000.00 per violation to any offender who shall continue any violation beyond the time limit provided for in the aforementioned notice of violation. Each day in which a violation of any provision of this division shall occur or continue shall constitute a separate and distinct offense.
- (e) In determining the amount of the civil penalty, the town shall consider the following:
 - (1) The degree and extent of the harm to the natural resources, to the public health, or to public or private property resulting from the violation;
 - (2) The duration and gravity of the violation;
 - (3) Whether the violation was committed willfully or intentionally;
 - (4) The prior record of the violator in complying or failing to comply with the water shortage response ordinance;
 - (5) The costs of enforcement to the town.

(Code 1982, § 5-1024; Ord. No. 22-07 , § 2, 4-19-22)

Secs. 16-79—16-95. Reserved.

ROY COOPER

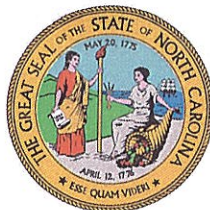
Governor

ELIZABETH S. BISER

Secretary

RICHARD E. ROGERS, JR.

Director



NORTH CAROLINA
Environmental Quality

January 16, 2024

Rachel Jones, EI
Utility Engineer
Town of Holly Springs
P.O. Box 8
Holly Springs, NC 27540

Subject: WSRP Meets Minimum Criteria

Holly Springs Water System

PWSID#: 03-92-050

Wake County

Dear Ms. Jones,

This letter is to notify you that our staff has reviewed the information contained in the Water Shortage Response Plan (WSRP) update submitted by your office. Since all the required information is complete, the WSRP for the Holly Springs water system hereby meets the minimum criteria established in North Carolina General Statute 143-355.2 (a) and 15A NCAC 02E. 0607.

The Water Shortage Response Plan must next be adopted by your water system's governing board; a model WSRP resolution is available online on the right side of the Local Water Supply Plan page at: <https://www.ncwater.org/WUDC/app/LWSP/learn.php>. Once adopted, a copy of the signed resolution must be submitted to Linwood Peele, Water Supply Planning Branch Supervisor, at the address printed at the bottom of this letter or by e-mail to the review engineer shown below. Please note, the WSRP cannot be considered compliant with the requirements of NCGS 143-355(l) until an adopted resolution is received by the Division.

Please be advised that the review process for Water Shortage Response Plans is separate from the review process for your Local Water Supply Plan (LWSP). If you have submitted your LWSP but haven't already been contacted by the Division, you will receive notification as soon as the review of your LWSP is complete.

Thank you very much for your efforts to provide your customers with a safe and reliable supply of drinking water. We look forward to continuing to work with you in these efforts. Please contact your review engineer, Louis Murray, at louis.murray@deq.nc.gov or 919-707-9017, or Linwood Peele at linwood.peele@deq.nc.gov or (919) 707-9024, if we can be of further assistance.

Sincerely,

Karen Higgins, Planning Section Chief
Division of Water Resources, NCDEQ



North Carolina Department of Environmental Quality | Division of Water Resources
512 North Salisbury Street | 1611 Mail Service Center | Raleigh, North Carolina 27699-1611
919.707.9000



Resolution No. 24-04

Date Adopted: February 20, 2024

Effective Date: February 20, 2024

RESOLUTION FOR APPROVING WATER SHORTAGE RESPONSE PLAN

WHEREAS, North Carolina General Statute 143 355 (I) requires that each system that provides public water services or plans to provide such services shall, either individually or together with other systems, prepare and submit a Water Shortage Response Plan; and

WHEREAS, as required by the statute and in the interests of sound local planning, a Water Shortage Response Plan for Town of Holly Springs, has been developed and submitted to the Town Council for approval; and

WHEREAS, the Town Council finds that the Water Shortage Response Plan is in accordance with the provisions of North Carolina General Statute 143 355 (I) and that it will provide appropriate guidance for the future management of water supplies for Town of Holly Springs, as well as useful information to the Department of Environment and Natural Resources for the development of a state water supply plan as required by statute;

NOW, THEREFORE, BE IT RESOLVED BY THE TOWN COUNCIL OF THE TOWN OF HOLLY SPRINGS, NORTH CAROLINA: that the Water Shortage Response Plan entitled, Town of Holly Springs Water Shortage Response Plan dated January 2024, is hereby approved and shall be submitted to the Department of Environment and Natural Resources, Division of Water Resources; and

BE IT FURTHER RESOLVED that the Town Council for the Town of Holly Springs intends that this plan shall be revised to reflect changes in relevant data and projections at least once every five years or as otherwise requested by the Department, in accordance with the statute and sound planning practice.

Adopted by the Holly Springs Town Council on this, the 20th day of February, 2024.

Town of Holly Springs by

ATTEST:

Sean Mayefskie, Mayor

Linda McKinney, Town Clerk





Holly Springs Town Council

Town Council Meeting Agenda Cover Sheet

Agenda Item#: 26.

New Business

Title: Contract for Professional Services - Design of the Utley Creek Water Reclamation Facility expansion to 8 MGD

Strategic Priority Area: Economic Prosperity & Diversity
Responsible & Balanced Growth
Safe & Friendly

Staff Resource: Seann Byrd, Utilities and Infrastructure, Kendra Parrish, Utilities and Infrastructure, Rachel Ingham, Utilities and Infrastructure

Action(s):

Approve the contract for professional services with Hazen and Sawyer for the design of the Utley Creek Water Reclamation Facility Expansion to 8 MGD in the amount of \$12,414,016.00 and adopt Reimbursement Resolution 24-05.

Explanation:

- In August 2023, Utilities & Infrastructure staff advertised a Request for Qualifications (RFQ) seeking a professional engineering firm to design the Utley Creek Water Reclamation Facility Expansion (UCWRF) to 8 Million Gallons per Day (MGD).
- Two Statements of Qualifications (SOQ) were received in response to the RFQ. Based on the criteria outlined in the RFQ, the SOQs, and follow-up interviews with each of the firms, the Town's selection committee ranked the respondents. Hazen and Sawyer (Hazen) achieved the highest score.
- Hazen prepared the attached contract outlining the scope of work anticipated for the Utley Creek Water Reclamation Facility Expansion to 8 MGD. A summary of tasks can be found in the Contract for Professional Services Exhibit A, while a more detailed description of anticipated expansion elements is provided in the attached Professional Engineering Report (PER), which was available to all respondents.
- This contract covers the design and bid phase engineering services of the Utley Creek Upgrades project. A separate contract will be needed for construction administration services in late 2025.
- Next steps:
 - UCWRF upgrades design contract (February 2024)
 - UCWRF upgrades construction administration contract (Q4 2025)
 - UCWRF upgrades construction contract (Q4 2025)
 - Project delivery is estimated for Q4 2027
- Waste Water Capital Project Ordinance (24-05), which was included in agenda item #26, appropriates \$29,500,000 in anticipated revenue bonds for the design and pre-construction phases of the project as well as an additional \$3,000,000 in federal grant funds for construction.
 - Capital Project Ordinances appropriate all funds for all projects contained within this fund. Ordinance 24-05 increases the total fund by \$32.5M for the two items

Town Council Business Meeting
February 20, 2024

previously mentioned.

- This project and current cost estimates have been included in the utility rate model calculation.

Background:

- The Town owns and operates the Utley Creek Water Reclamation Facility (UCWRF), a wastewater treatment plant designed for a maximum flow of 6 MGD. Additionally, the UCWRF is permitted to discharge up to 8 MGD into Utley Creek; however, current processes and infrastructure at the facility cannot treat that additional flow.
- UCWRF is approaching capacity due to population and economic growth.
- The 6 to 8 MGD expansion project will increase the capacity of the plant by adding Membrane Bioreactors (MBR) to the existing biological nutrient removal process, producing effluent that continues to meet stringent total nitrogen, total phosphorus, and orthophosphorus limits.
- MBR will also improve the quality of reclaimed water for uses such as irrigation or industrial processes, minimize the potable water demand of the community; significantly reduce the energy required to treat, process, and distribute water; and enable users to implement critical sustainability initiatives.
- 2024: Hazen performed an Alternatives Analysis to evaluate options for expansion beyond 8 MGD (a) at the UCWRF site, and other long term solutions like (b) partnerships with other municipalities, or (c) expansion at a different location. Based on the estimated costs and environmental impacts, the Town is continuing conversations with the State and Duke Energy to further explore expansion beyond 8 MGD on the UCWRF site.
- 2023: Due to rapid residential growth and the potential for additional industries that may drive the need to expand beyond 8 MGD in the next decade, Hazen completed the Utley Creek Water Reclamation Facility Preliminary Engineering Report (PER) focusing on the 8 MGD expansion but considering expansion to an ultimate flow of 15 MGD.
- 2021: Hazen completed the Utley Creek Wastewater Master Plan to 8 MGD which outlined design plans for the 6 to 8 MGD upgrade at the UCWRF site. Hazen and Town staff evaluated options based on flow projections, wastewater characteristics, hydraulic capacities, load analysis, available and emerging technology, asset lifespan, permit limits, and cost.

Funding Source(s):

Community Investment Plan - Waste Water Projects - Revenue Bond / Federal Grants

Attachment(s):

1. RFQ - UCWRF Design - federal funding _final r.1
2. SOQ - Hazen - Design of the Utley Creek WRF 6-8 mgd Upgrade - Town Project 22-010 - Town of Holly Springs
3. PER - DRAFT - Utley Creek Water Reclamation Facility - 8.15.2023
4. CONTRACT - DRAFT - Hazen - UCWRF 8 MGD Design - February 2024 - draft
5. EPA Grant Agreement - CG - 03D01724 - 0 - Town of Holly Springs
6. 24-05 Utley Creek Reclamation Facility Upgrade Reimbursement Resolution



Town of Holly Springs
Design of the Utley Creek Water Reclamation Facility
6-8 MGD Upgrade
Town Project #22-010
REQUEST FOR QUALIFICATIONS

ISSUE DATE:
August 3, 2023

DATE DUE:
September 8, 2023 @ 4:00 PM

Prepared by
Holly Springs Utilities & Infrastructure Services Department
July 2023
Holly Springs, North Carolina

I. PURPOSE

The **Town of Holly Springs (Town)** is seeking Statement of Qualifications from licensed Engineering firms for professional services in the planning and design of treatment train components necessary to upgrade the Utle Creek Water Reclamation Facility from 6 to 8 MGD.

RFQ responses must satisfy the minimum criteria outlined in the scope of work in this document to be responsive to this solicitation. Any modifications or enhancements proposed beyond the identified scope of work outlined in this document must be clearly identified. The successful consultant must demonstrate previous similar project expertise, working knowledge of the Town, technical capabilities of proposed staff, and a solid understanding of the proposed scope of work and issues. The consultant must also possess sufficient technical and staff availability to complete project within the expected timeline.

Responses to this RFQ must be received by the Town by **4:00 pm EST on September 8, 2023**.

II. BACKGROUND

The Town of Holly Springs (Town) is a midsize community of approximately 47,000 people, located just 19 miles southwest of Raleigh in Wake County. The Town's population has averaged 6% increase annually over the past five years and is projected to exceed 50,000 by 2024.

The Town owns and operates the Utle Creek Water Reclamation Facility (UCWRF), a wastewater facility designed to treat a maximum flow of 6 million gallons per day (MGD). The UCWRF has been permitted to discharge up to 8 MGD into Utle Creek, an effluent dominated receiving waterbody. UCWRF produces reclaimed water, a valuable resource that minimizes wastewater discharge, conserves potable water supply, and protects potable water quality for the Town and citizens of Holly Springs.

III. SCOPE OF WORK

In compliance with federal funding guidelines, the Town of Holly Springs intends to hire a NC Licensed Professional Engineer to provide 100% design, and Construction Administration services for the upgrade project.

The resulting contract will be for 4 years. The Town of Holly Springs (Town) may amend or extend this contract beyond the initial 4 years to accommodate the terms and conditions of the FY24 Community Grant or future EPA grants awarded to the Town within this 4-year period provided a market survey conducted by the Town indicates that the prices the contractor proposes are reasonable.

IV. PROPOSAL STRUCTURE

The proposal must address all elements of the scope of work as outlined in the section above. Any modifications or enhancements proposed beyond the identified scope of work outlined in this document must be clearly identified.

Proposal Format

The proposal cannot exceed 15 pages in length. The proposal title page is NOT counted within the 15-page limit. Please use 11 or larger point font size for readability. Appendices are not allowed and will not be reviewed, with the exception of attached resumes. Proposals should demonstrate that the responder fully understands the intent of the project, the character of the required deliverables, and the plan development process. In addition, the level of technical qualifications to supply the required services must be clearly demonstrated. In order to assist in the evaluation process, please include the following requirements in the proposal document:

- **Cover Letter** [no more than one (1) page and counts within 15-page limit]

The letter must be signed by an individual with authority to legally represent the entity submitting the proposal.

- **Project Approach/Work Plan/Demonstrated Project Experience**

This section should include a detailed description of the proposer's understanding of the intent, objectives, and overall approach to the project. The proposer should identify the level of assistance required from the Town and/or project partners to complete each task.

- **Schedule (showing all milestones, critical stakeholder/public meetings, and deliverables to maintain project progress by the project end date)**

- **Introduction to the Proposer(s)**

Firms shall provide the following information (the same information must be provided for each sub-consultant or each member of a joint venture):

- Firm name and business address, including telephone number and email contact
- Location for the majority of the planning work

- **Qualifications and Experience of the Consultant Firm(s)**

Please describe prime consultant's recent experience relevant to this project. Provide four similar projects completed by the proposed project team within the past two years. Include brief project profiles with a project reference contact information for each profile. Place emphasis on projects managed by the key personnel proposed for this project. Consulting firms must provide evidence of professional liability insurance greater than or equal to \$2 million. Familiarity with federal funding and record keeping requirements is required. Any firm that is currently on a disbarment list with either the state of North Carolina or the federal government will not be considered.

- **Qualifications and Experience of Key Staff**

Identify key individuals (task leaders) to be assigned to this project, and include the qualifications and/or responsibility of each of the identified individuals. Provide experience summaries of key individuals, placing emphasis on previous experience with similar projects in similar roles. Resumes of key individuals may be included, if desired.

- **Two (2) References to Previous Work (similar to this proposed work) Along with Key Contacts**

If any of the above requirements are not met, the responder's proposal may not be considered.

The project budget and the final project scope of work may be modified prior to final project award and/or contract negotiations. Responders are encouraged to propose additional or alternative tasks or work within the proposal document if it enhances final project products and outcomes.

Submittal Instructions:

The response submitted shall contain all information as requested herein and should be limited to a maximum of 15 pages, including any additional information necessary to summarize the overall benefit of the proposal to the Town. Proposals exceeding 15 pages may be removed from consideration. Proposing firms should submit one (1) pdf file digital copy of the proposal no later than **4:00 p.m. (EST), September 8, 2023**.

The digital copy should be emailed to the contact below:

Ben Turnmire, Assistant Finance Director
Holly Springs Finance Department
128 S Main Street
P.O. Box 8
Holly Springs, NC 27540
Phone: (919) 577-3139
ben.turnmire@hollyspringsnc.gov

This solicitation does not commit the Town of Holly Springs to award a contract, to pay any cost incurred with the preparation of a submittal, or to procure or contract for services or supplies. The Town of Holly Springs reserves the right to accept or reject any or all proposals received in response to this request, to negotiate with any qualified source, or cancel in whole or part this proposal process, if it is in the best interest of the Town to do so. Subsequent to contract negotiations, prospective consultants may be required to submit revisions to their proposals. All proposers should note that any contract pursuant to this solicitation is dependent upon the recommendation of the Town staff and the approval of the Holly Springs Town Council.

V. CONSULTANT SELECTION PROCESS

The Town's evaluation process will involve review of each proposal, received within the submittal timeframe, by the project selection committee. A list of responders will be developed in order of preference, based on the criteria outlined below. If desired by the selection committee, an interview of the top three (3) or more firms may be requested. The proposal evaluation criteria, with corresponding weight factors, consist of the following:

- **30 percent**
Demonstrated **relative experience** in creating similar planning and design work for a wastewater treatment facility, working with a diverse group of stakeholders and the ability to prepare user-friendly and complete engineering design products.
- **30 percent**
Qualifications of the firm and personnel assigned to this project, demonstrating the consultant's capacity to complete requested services, experience completing similar projects, and experience with data collection and analysis related to the scope of work elements.
- **30 percent**
Demonstration of **overall project understanding** and direct work experience/familiarity with the Town.
- **5 percent**
Completeness of submitted proposal with all elements required by the RFQ.
- **5 percent**
References to previous similar work.

VI. PROJECT SCHEDULE

Post Selection Meeting

Proposals will be reviewed by a selection committee.

The top team(s) will be called in for interviews to be held September 2023 (tentative).

It is anticipated that the submitted qualifications may not clearly establish all related tasks and respective responsible parties. The preferred consultant selected by the RFQ responses will attend a meeting where Town staff will revise or amend as necessary the final scope of work and more precisely define work tasks, responsibilities of parties, deliverables, and project schedule requirements. The selected consultant should be ready to provide the Town with a cost proposal in an amount not to exceed basis within five (5) days after the initial meeting.

It is anticipated that a recommendation will be forwarded to the Town Council for consideration in October 2023 with an anticipated start date of November 2023.

The Town reserves the right to negotiate with the firm of its choice and to require substitution of sub-consultants and/or staff persons as part of the negotiation.

RFP Questions Contact Information

For additional questions, contact:

Rachel Ingham, Utility Engineering Manager
Email: Rachel.ingham@hollyspringsnc.gov
Phone: (919) 501-0741

Questions must be received by 5 PM on August 14, 2023. Questions received after that date may not be answered prior to the submittal deadline.

VII. Disclosures

Confidentiality

Responses to the RFQ/RFP will become public records and, therefore, will be subject to public disclosure. However, North Carolina General Statutes Section 132-1.2 provides a method for protecting some documents from public disclosure. If the Consulting firm follows the procedures prescribed by those statutes and designates a document confidential or trade secret, the Town will withhold the document from public disclosure to the extent that is entitled or required to do so by applicable law, and will return the document after selection.

Equal Employment Opportunity

The Town of Holly Springs does not discriminate in administering any of its programs and activities. The consultant awarded the contract for work will be required to ensure that no person shall be denied employment, fair treatment or be discriminated against on the basis of race, sex, religion, age, national origin, or handicap. It is further the policy of the Town to conduct its contracting and procurement programs so as to prevent such discrimination and to resolve all claims of such discrimination.

Minority/Women Business Enterprise (M/WBE) Program Participation:

It shall be the practice of the Town of Holly Springs to provide minority-owned, women owned, and small business enterprises (collectively "M/W/SBE") as well as other responsible vendors with fair and reasonable opportunity to participate in the Town's business opportunities including but not limited to employment, construction development projects, and material/services consistent with the laws of the State of North Carolina.

Contracting

Any contract developed for work shall be construed and enforced in accordance with the laws of the State of North Carolina, cost will be negotiated in compliance with all federal funding requirements. Any controversy or claim arising as a result of contracting shall be settled by an action initiated in the appropriate division of the General Court of Justice in Wake County, North Carolina.

33 U.S.C. 1382(b)(14): A contract to be carried out using funds directly made available by a capitalization grant under this subchapter for program management, construction management, feasibility studies, preliminary engineering, design, engineering, surveying, mapping, or architectural related services shall be negotiated in the same manner as a contract for architectural and engineering services is negotiated under chapter 11 of title 40 or an equivalent State qualifications-based requirement (as determined by the Governor of the State).

Conditions and Limitations

The Town expects to select a consulting firm from the proposals submitted, but reserves the right to reject any or all responses to the RFP, to advertise for new responses, or to accept any response deemed to be in the best interest of the Town. A response to this RFQ/RFP should not be construed as a contract nor an indication of a commitment of any kind on the part of the Town nor does it commit either to pay for costs incurred in the submission of a response to this request or for any cost incurred prior to the execution of a final contract. The Town will reserve the right to dismiss any part or all of the contracted team when, in the Town's opinion, the project is not moving as scheduled or is hindered in any way by the actions or personalities of team members.



Design of the Utle Creek Water Reclamation Facility

Statement of Qualifications

Town Project #22-010 | September 8, 2023



Hazen and Sawyer
4011 WestChase Boulevard, Suite 500
Raleigh, NC 27607 • 919.833.7152

September 8, 2023

Town of Holly Springs
Ben Turnmire
ben.turnmire@hollysprings.gov

Re: Statement of Qualifications for Utle Creek Water Reclamation Facility 6-8 MGD Upgrade

Dear Mr. Turnmire,

Hazen is pleased to submit our Statement of Qualifications for the Utle Creek Water Reclamation Facility 6-8 MGD Upgrade. Our team brings the following benefits to the Town:

Experienced Leadership Committed to Delivering Projects. Our leadership team is committed to delivering a timely project that meets the expectations of Town staff. Patricia Drummey Stiegel and David Wankmuller recently worked with the Town on the Utle Creek Water Reclamation Facility Preliminary Engineering Report and are currently working on the Alternatives Analysis; their leadership and institutional knowledge will facilitate development of the Town's vision for wastewater management solutions, future growth, and economic opportunity.

A Thorough Understanding. Our proposed team worked with the Town on the Utle Creek Water Reclamation Facility Preliminary Engineering Report and understands the complexities of upgrading the existing site to 8 mgd while planning for expansions over 15 mgd; we are currently working with the Town through the uncertainty and complications associated with future permitting/expansion.

Superior Wastewater Technical Experience. We have assembled a team of experienced staff and industry leaders to assist you with this project. Our team brings exceptional wastewater planning and design experience to ensure a successful project. This proposal highlights four similar projects in this region directly applicable to your project.

We are excited for the opportunity to submit our qualifications and proposed approach for this important project. Please let us know if you have any questions or need additional information.

Sincerely,

Patricia Drummey Stiegel, PE
Vice President

David Wankmuller, PE
Senior Associate

Project Approach and Understanding

Hazen’s comprehensive understanding of this project, our familiarity with the Town’s infrastructure and goals, and our proven approach to permitting, design, and construction of wastewater facilities ensure a successful project for the Town.

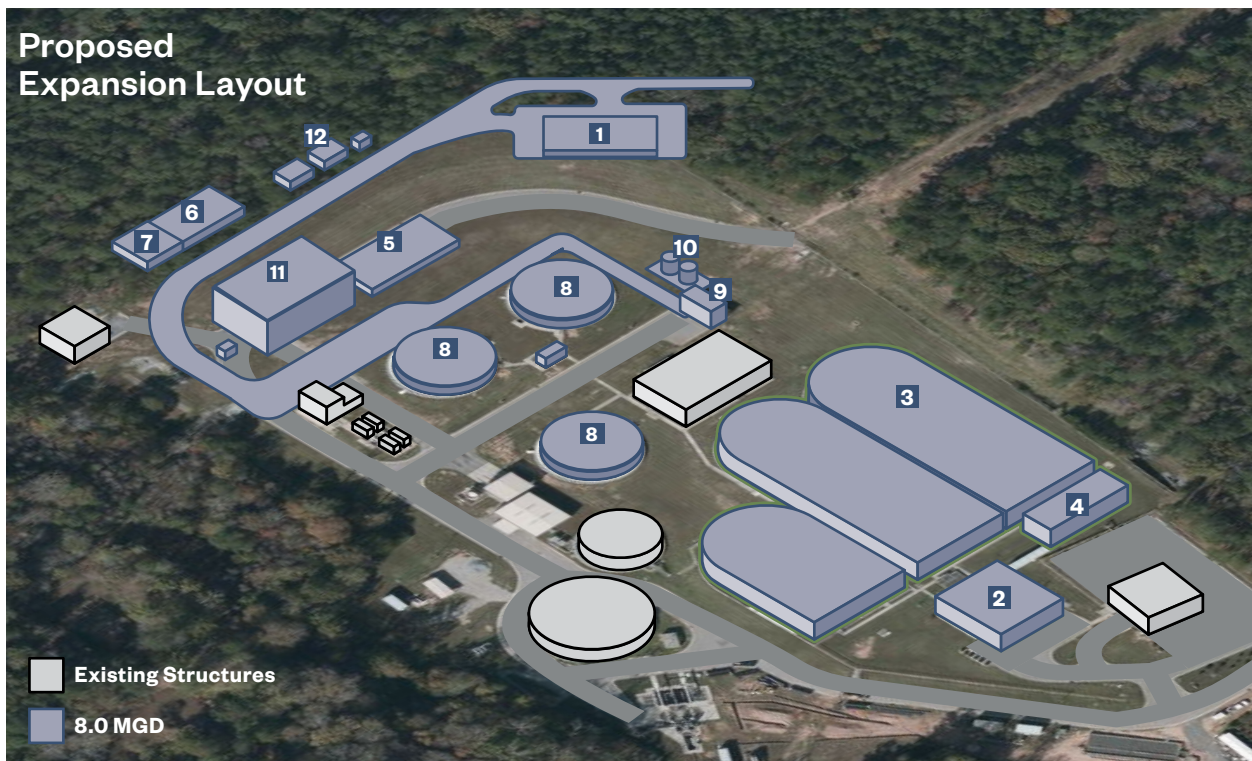
Understanding

Holly Springs is experiencing growth pressures because of the Town’s great live-and-work metrics. The Town is selecting an engineering firm to design, permit, and oversee construction for expansion and upgrade of the 6 mgd Utle WRF to 8 mgd. Hazen has helped many municipalities in the Cape Fear River Basin successfully phase, finance, and permit treatment facilities to meet their budget and needs. We will do the same for the Town of Holly Springs.

Hazen Benefit

Unparalleled Understanding

Our approach to the expansion and upgrade project is streamlined by our in-depth work on the PER and on-going Alternatives Analysis for future expansions of UCWRF.



8.0 mgd MBR Layout

- | | | |
|--|--|--|
| 1 WRF Operations and Lab Building | 5 Membrane Facility | 9 Retrofit Existing Chemical Facility |
| 2 Fine Screen Facility | 6 UV Facility | 10 Chemical Storage Tanks |
| 3 Convert Existing Biological Basins to Plug Flow | 7 Clearwell / NPW Pump Station | 11 Dewatering Facility |
| 4 Blower Facility | 8 Convert Existing Final Clarifiers to Equalization | 12 Electrical Equipment |

Technical Approach

The Hazen team brings unparalleled technical expertise and knowledge of your facility and timeline that will be required for the Utle Creek WRF expansion. Our Team will utilize an integrated project approach proven on successful projects for similar utilities in the Mid-Atlantic Region. This approach includes active Owner participation, quality detailed design, and effective management. Our approach is summarized in the figure below and will ensure the Town receives excellent facilities in a timely manner.

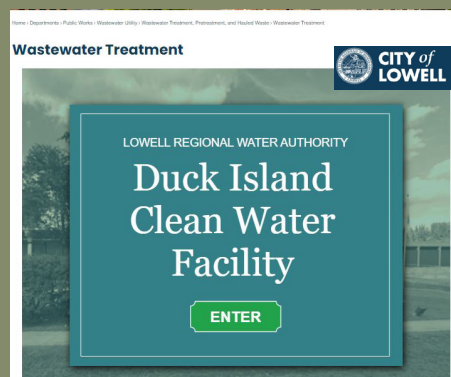


Stakeholder Communication

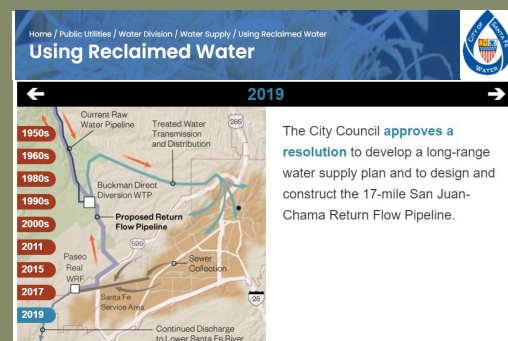
We understand this is a major investment for the Town and effective communication with your customers and other stakeholders is critical. Hazen and Sawyer has a proven track record of successfully working with diverse groups of stakeholders and facilitating communication between all teams. Our team will ensure the individuals and entities impacted understand the need for the project, the scope of the project, and efforts to minimize impacts. We will work with you to identify an initial list of stakeholders and define appropriate programs for outreach and engagement. We have seen your website and appreciate the materials developed for the new operations center; we can do something similar for the WRF expansion if the Town desires.

Proof

Hazen helps our clients communicate with their stakeholders on a range of topics. Deliverables include: interactive website explainers, entire websites, educational videos and printed materials, presentation materials, and more.



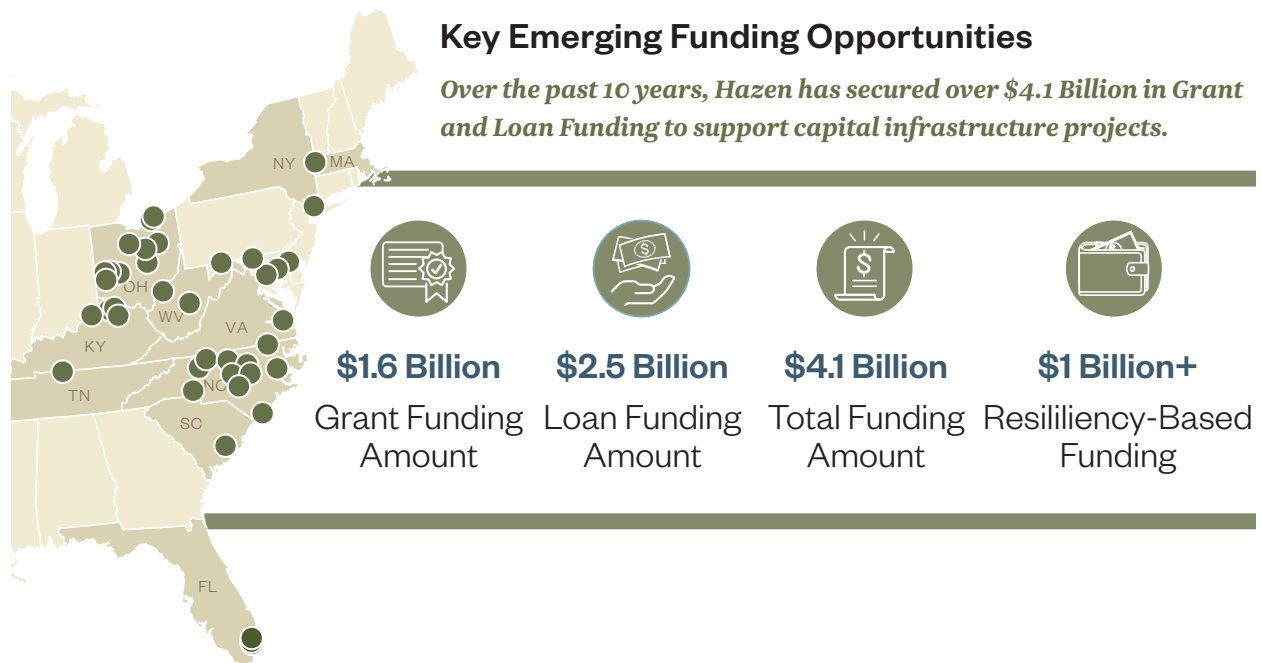
City of Lowell, MA
Interactive Treatment Process Explainer



City of Santa Fe, NM
Interactive Reclaimed Water Explainer and Infographics

Funding and Financing

Hazen has a team of infrastructure funding experts with billions of dollars of water and wastewater funding experience to help the Town optimize project financing. Through programs such as the American Rescue Plan Act (ARPA) and the Bipartisan Infrastructure Law (BIL) a historically unprecedented amount of federal funding is available to support water and wastewater infrastructure projects. All funding programs come with additional contract requirements, which can increase project costs. Using non-proprietary custom-built dynamic financial modeling tools, Hazen's financial experts quantify the true costs and benefits of project funding plans and provide valuable cost forecasts to inform the Town's budgeting and rate setting processes.



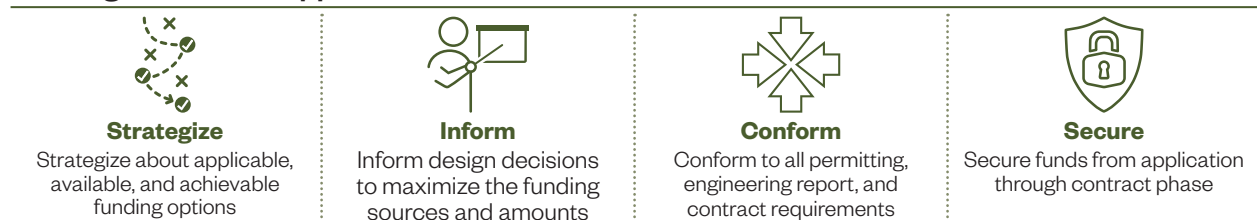
Hazen Benefit

Holly Springs Funding Successes:

- Hazen helped the Town obtain \$400,000 in American Rescue Plan Act grant funding to support development of water and wastewater asset management programs.
- Hazen helped the Town obtain \$6M of grant funding in support of the Town's participation in the expansion of the Sanford Water Filtration Facilities

Utilizing a proactive four-step approach to funding opportunities, Hazen's infrastructure funding team will work with the Town to identify funding opportunities that provide the greatest financial benefit.

Funding Assistance Approach





Detailed Design

Once the scope of required improvements is finalized, a kickoff meeting will introduce all the stakeholders and establish the plan forward.

As the project proceeds through Detailed Design, the Town will benefit from the full-service design capabilities in our Raleigh office less than 20 miles away that houses over 200 water and wastewater professionals. The Raleigh Office serves as Hazen's Mid-Atlantic design center including all disciplines such as electrical, structural, and site civil. Integrating all design disciplines under one roof provides the most efficient product and minimizes potential coordinating issues that can occur when projects are executed across offices or firms. Design Development Workshops at key project milestones, such as 30%, 60%, and 90%, will assist in incorporating the Town's feedback and in staff buy-in for facilities they will operate.

Liquid Treatment Design & Expansion

Expansion of the Utley Creek WRF on the existing site beyond 8 mgd was evaluated in detail in the recently completed PER. The PER evaluated alternatives such as conventional biological nutrient removal (BNR), densification, and conventional BNR followed by MBRs. Based on site constraints, ease of future expansion, synergy with future water re-use, and preferences expressed by the Town, the MBR alternative is the preferred path forward. The MBR solution will allow the plant to expand up to 15 mgd on the existing site and position the facility for additional water reuse or advanced treatment processes in the future.

Solids Treatment Design & Expansion

Hazen evaluated the existing solids handling facilities as part of the PER and, based on the condition of the existing facility and limited redundancy with the existing solids handling process, it was recommended that the Town construct a new solids handling facility. Multiple alternative biosolids treatment technologies and dewatering technologies were evaluated in the PER.

The new solids handling facility will include a new dewatering building with dewatering centrifuges, cake conveyance for direct truck loading, and provisions for lab and operator space. The design of the upgraded solids handling facilities will provide seamless integration of future expansions and regulations such as PFAS destruction limits.

Construction Phasing

Hazen has communicated with multiple contractors to better understand the bidding climate of projects similar in size to the Utley Creek WRF expansion. To ensure the Town has multiple bidders and can construct the project on time and within budget, it may be beneficial to break down the project into multiple packages. Multiple bid packages will also allow for the construction of critical path items to occur as early as possible.



Hazen worked closely with the Town to select the most appropriate dewatering equipment, including site visits to nearby facilities employing similarly sized equipment. Dewatering centrifuges were selected as the desired dewatering technology.

Maintenance of Plant Operations

Throughout the design process Hazen will involve Town staff and construction administration staff to maximize constructability and maintain excellent nutrient removal performance. Throughout the design, Hazen will evaluate maintenance of plant operations to ensure modifications of the existing facility and construction of new facilities are coordinated.



Construction Services

By the time the Contractor mobilizes on the jobsite, our Construction Management staff will already be exceptionally familiar with the project. We obtain constructability and biddability feedback from our construction administrators and field project representatives throughout the design process to ensure any potential change orders or cost-adding items are already addressed in the design. After finalizing the Bid Documents, we provide our clients full bid-period services from Advertisement through Notice of Award.

Hazen provides a full suite of construction management services for our clients. The mission of Hazen's construction management staff is to execute our scope of services while constantly exceeding our clients' goals. We achieve this through:

- **Cost Management.** Maintaining budget (construction and CM)
- **Schedule Management.** Maintaining and managing schedule
- **Quality.** Ensuring compliance with contract documents and acceptable construction practices
- **Operability.** Ensuring that all equipment and systems operate as intended

Hazen's Construction Services Include:

- Pre-Bid Coordination
- Bid/Award Services
- RFI and Submittal Reviews
- On-Site Inspection



Startup/Commissioning/Training

As we manage construction at the WRF, we work with the Town to plan and execute the startup of the BNR process. We stay with the staff, starting up equipment and training in operations and maintenance, until they are ready to run the facility on their own; we continue to remain involved on an as-needed basis.

Hazen and Sawyer will work closely with the Town to gradually build and train operations staff for the new facility, leveraging our recent MBR start-up and commissioning experience in Fort Mill, SC. We can also develop an operational model for the BNR process that will allow plant staff to train on the model and experiment with operational changes prior to making actual changes to the plant.

Hazen's Post-Construction Services Include:

- Operation Optimization
- Project Closeout
- As-Builts
- Training



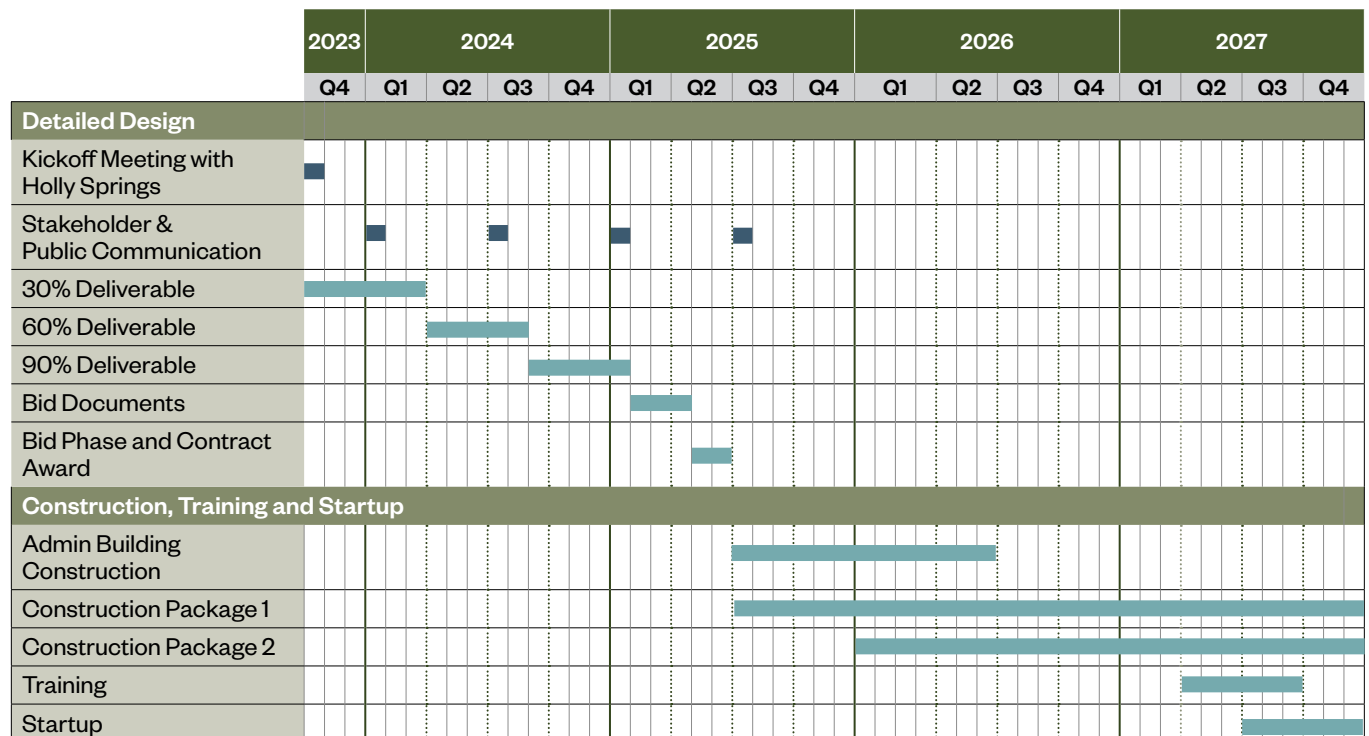
Hazen Benefit

Our proposed start-up and training expert for this project, Barry Bickerstaff, is Hazen's Mid-Atlantic Operations Assistance Group Practice Leader and is a Grade 4 wastewater operator. He will ensure your staff are trained on all equipment and processes and are comfortable operating the plant.

Schedule

Our strong local presence will enable us to efficiently complete the project for the Town. The Hazen Team has the available resources to confidently meet the Town's schedule expectations.

Hazen has a proven record of successfully completing projects on time and within budget. Our proposed schedule (figure below) illustrates a path forward from design, through construction, to startup.



Introduction to the Firm

Hazen's unparalleled understanding of your needs and superior wastewater expertise ensure an optimal design for the Utley Creek WRF.

Firm Profile

Hazen and Sawyer is a nationally recognized consulting firm focused on providing safe drinking water and water pollution control services. Water is all we do. The firm has completed several thousand water, wastewater, and stormwater assignments in the United States and abroad for government agencies, utilities, and industrial organizations. These have ranged in scope from simple analyses for small communities to multi-municipal, multi-million-dollar projects.

Hazen has grown steadily over the years, from the original six-person office established in 1951 by Richard Hazen and Alfred W. Sawyer to our present staff of over 1,600 employees. Hazen and Sawyer is a design professional corporation owned entirely by our employees.

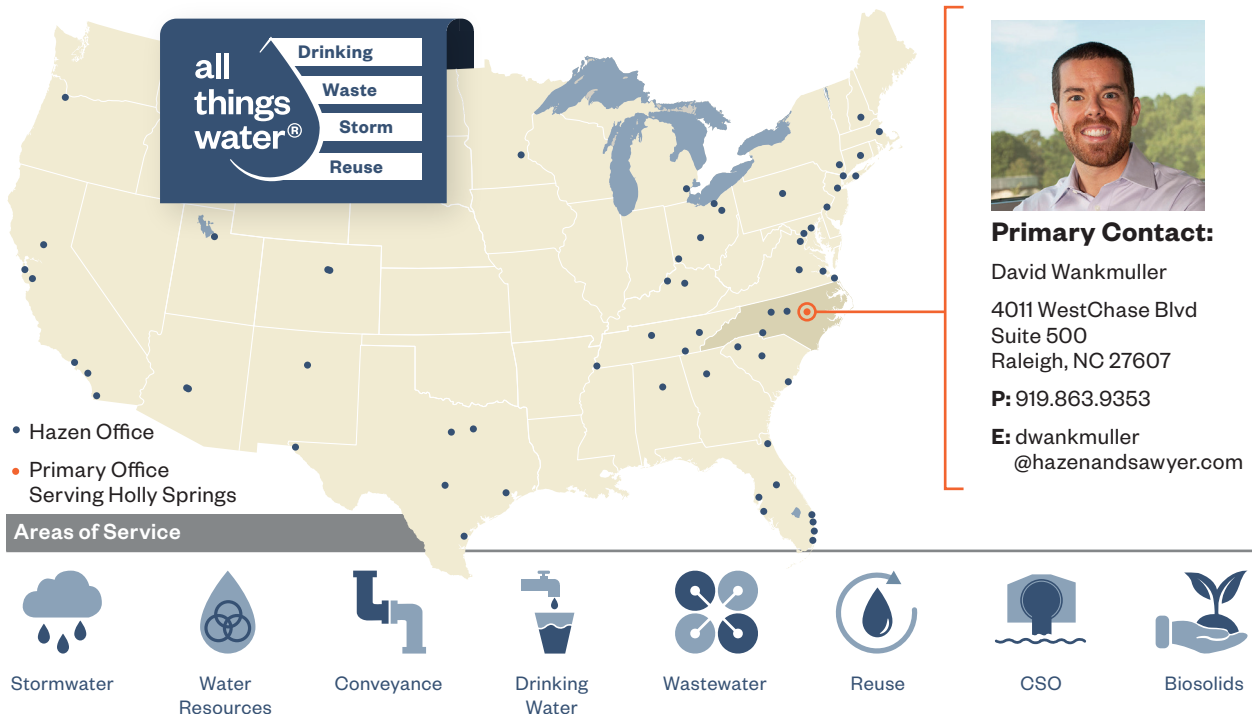
Hazen and Sawyer is committed to working with our clients to provide cost-effective, optimal solutions to their engineering needs. We are dedicated to excellent communication and exceptional service for each client.

Our success is confirmed by our high rate of client satisfaction:

over 80%

of our work is repeat business

Since 1951 Hazen and Sawyer has focused on two things: providing safe drinking water and controlling water pollution.

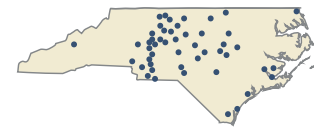


Relevant Experience and References

Hazen's wastewater treatment experience in the Carolinas is unmatched by our competitors.

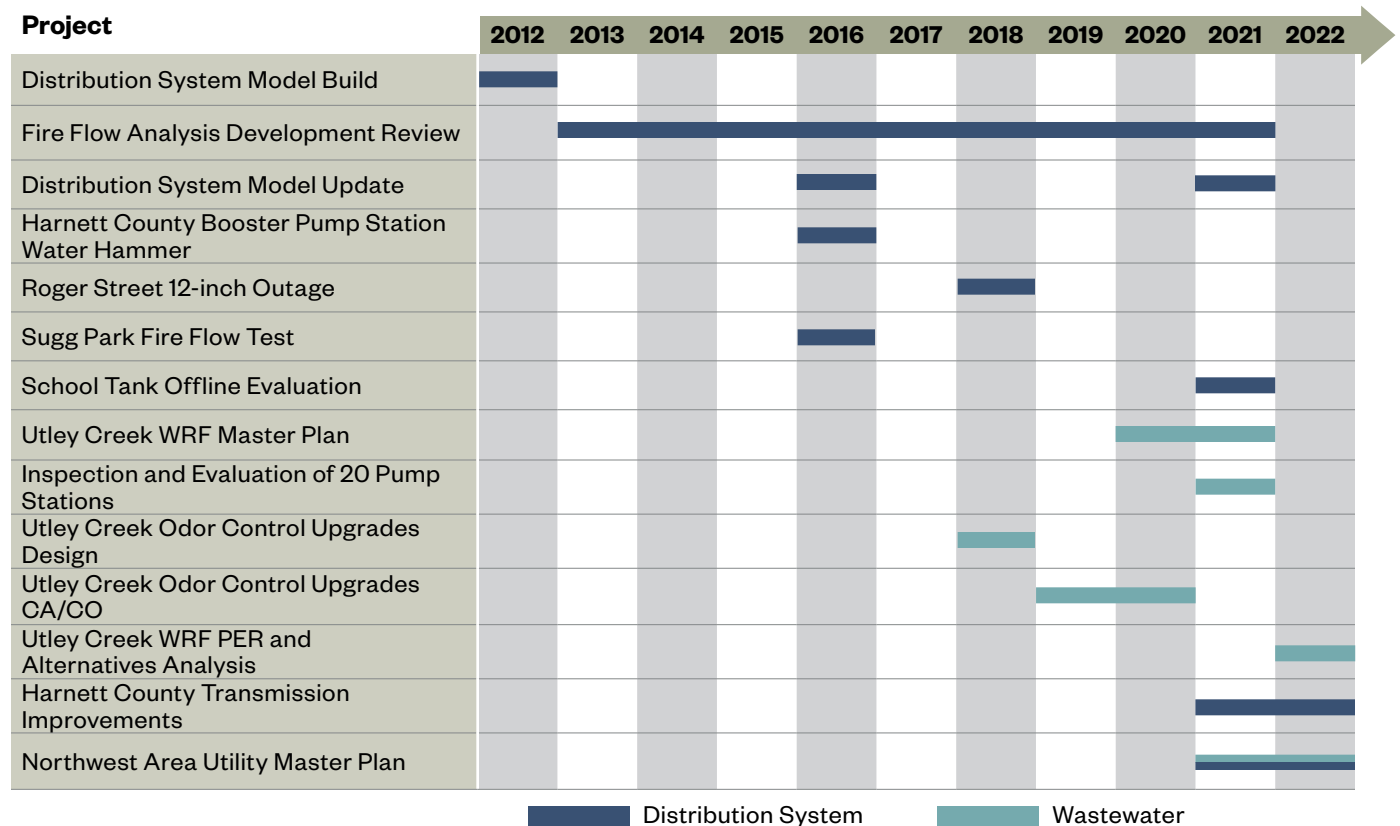
Hazen designed the first major biological nutrient removal (BNR) five-stage process in the Carolinas for the City of Durham's North and South Durham WRFs in the early 1990s. Since then, we have continued to lead the region and country in designing the most innovative, well-performing, and cost-effective BNR facilities that continue to outperform conventional technology. Our services range from process and hydraulic modeling, studies, and preliminary engineering reports to detailed design and construction administration of plant upgrades and expansions. Highlights of recent relevant projects are presented on the following pages. Certificates of Insurance follow the project descriptions.

Hazen's wastewater treatment experience in North Carolina



Our past work at the Utley Creek WRF, including the recent PER for the facility, gives us unique insights to design upgrades for the plant. In addition, our significant work in your water distribution and wastewater collection systems benefits our holistic understanding of your infrastructure, policies, and preferences.

Work Timeline with Holly Springs



North Cary WRF Aeration Improvements Project Cary, North Carolina

In preparation for future expansion, Hazen and Sawyer worked with the Town of Cary to increase capacity and improve efficiency of the existing Biotenpho oxidation ditches at the North Cary WRF.

Hazen designed upgrades at the WRF to increase capacity of the ditches from 12 to 15 mgd. Brush-aeration oxidation ditches were retrofitted with fine bubble diffusers with multi-stage blowers. Hazen utilized the existing infrastructure and optimized treatment efficiencies to meet the Town's strict effluent limits.

Anticipated benefits include: increased oxidation ditch capacity from 12 to 15 mgd; reduced energy demand and maintenance; improved reliability; resolved hydraulic issues at high flows; improved use of influent carbon (replaced timer-based aeration controls with nutrient based control); improved automation reduced operator workload.



Reference

Town of Cary, NC
Jamie Bissonnette, PE, Project Manager-Utilities Eng.
Utilities Department
(919) 380-2760 / jamie.bissonnette@townofcary.org

T.Z. Osborne Expansion to 56 MGD and BNR Upgrade Greensboro, North Carolina

Project included plant expansion from 40 to 56 mgd and Biological Nutrient Removal (BNR) upgrades

To meet the impending Jordan Lake rules which include stringent load-based effluent nutrient limits, the City considered a myriad of options for wastewater treatment. Since the early 1980s, the City operated two separate facilities: the 16-mgd North Buffalo Creek WRF and the 40-mgd T.Z. Osborne WRF. Hazen evaluated traditional 5-Stage BNR and IFAS for each plant. The City decided to turn the 16-mgd North Buffalo Creek WRF into a pump station with equalization and expand T.Z. Osborne to 56 mgd.

Working with the City, Hazen and Sawyer also broke out components of the BNR upgrade project and packaged them with electrical and NPW upgrades to allow the City to pursue more minority and women's business enterprise (MWBE) participation during construction. This project was bid as a CMAR, and Harper Construction was able to gain participation over 12% and 44% for MBEs and WBEs, respectively, of the guaranteed maximum price (GMP).



Reference

City of Greensboro, NC
Elijah Williams, PE, Water Reclamation Manager
Department of Water Resources
(336) 373-4632 | elijah.williams@greensboro-nc.gov

Graham Wastewater Treatment Plant Expansion

Graham, North Carolina

A plant expansion to 5 mgd that includes biological nutrient removal and provisions for easy expansion to 6.2 mgd.

Based on recommendations from a detailed PER performed by Hazen, the City of Graham decided to upgrade the City of Graham WWTP from 3 to 5 mgd. The project included:

- New BNR basins and conversion to 5-stage BNR to enhance nutrient compliance reliability
- New fine bubble diffusers and blowers to increase efficiency
- New tertiary filtration system, chlorine contact tank, and aerobic sludge storage tanks

Hazen provided evaluation, design, and is providing construction administration and inspection services for the project. Construction is estimated to be completed by the end of 2025.



Reference

City of Graham, NC
Tonya Mann, Utilities Director
(336) 570-6721 | tmann@cityofgraham.com

Fort Mill WPCP Expansion (Phase 2)

Fort Mill, South Carolina

An expansion using submerged MBR technology will produce reuse quality effluent in a small footprint and allow long-term treatment flexibility.

Hazen prepared an Engineering Report and designed a phased expansion and upgrade of the 3-mgd Fort Mill WPCP to 4.5 and 6.0 mgd in response to planned growth, an expected TMDL for the Lower Catawba River Basin, and aging infrastructure.

Phase 1 was an interim improvements project at 3-mgd rated capacity. Improvements included new fine bubble diffusers and aeration blowers in existing aeration tanks, new chopper mix pumps at the existing anoxic tanks, new RAS pumps, and a new belt filter press dewatering facility.

Phase 2 included expansion from 3 to 4.5 mgd. MBR technology was selected for the expansion due to the smaller footprint, reuse quality effluent, and process flexibility. The new MBR facility is designed for expansion to 6.0 mgd. Construction is modular to enable easy expansion.

The expansion project also included a new influent pump station; new preliminary treatment facility; influent equalization; new BNR tanks with chemical feed facilities; new UV facilities; and associated electrical distribution equipment and generator facilities.



Reference

Town of Fort Mill, SC
Greg Rushing, PE, Director of Utilities
(803) 396-9729 | grushing@fortmillsc.gov



CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

8/14/2023

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Ames & Gough 8300 Greensboro Drive Suite 980 McLean, VA 22102	CONTACT NAME:	
	PHONE (A/C, No, Ext): (703) 827-2277	FAX (A/C, No): (703) 827-2279
	E-MAIL ADDRESS: admin@amesgough.com	
	INSURER(S) AFFORDING COVERAGE	
	INSURER A: American Casualty Co of Reading, PA A(XV) 20427	
	INSURER B: Continental Insurance Company A(XV) 35289	
INSURED Hazen and Sawyer 498 Seventh Avenue New York, NY 10018	INSURER C: Continental Casualty Company (CNA) A, XV 20443	
	INSURER D:	
	INSURER E:	
	INSURER F:	

COVERAGES

CERTIFICATE NUMBER:

REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	☒ COMMERCIAL GENERAL LIABILITY ☐ CLAIMS-MADE ☒ OCCUR ☒ Contractual Liab. GEN'L AGGREGATE LIMIT APPLIES PER: ☐ POLICY ☒ PRO-JECT ☐ LOC OTHER:			7036845683	3/29/2023	3/29/2024	EACH OCCURRENCE \$ 1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 1,000,000 MED EXP (Any one person) \$ 15,000 PERSONAL & ADV INJURY \$ 1,000,000 GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COMP/OP AGG \$ 2,000,000 \$
B	☒ AUTOMOBILE LIABILITY ☒ ANY AUTO ☐ OWNED AUTOS ONLY ☐ SCHEDULED AUTOS ☐ HIRED AUTOS ONLY ☐ NON-OWNED AUTOS ONLY			7036845635	3/29/2023	3/29/2024	COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ Comp./Coll. Ded \$ 1,000
	☐ UMBRELLA LIAB ☐ OCCUR ☐ EXCESS LIAB ☐ CLAIMS-MADE DED ☐ RETENTION \$						EACH OCCURRENCE \$ AGGREGATE \$ \$
A	☒ WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) ☒ Y / N If yes, describe under DESCRIPTION OF OPERATIONS below		N / A	7036845652	3/29/2023	3/29/2024	☒ PER STATUTE ☐ OTH-ER E.L. EACH ACCIDENT \$ 1,000,000 E.L. DISEASE - EA EMPLOYEE \$ 1,000,000 E.L. DISEASE - POLICY LIMIT \$ 1,000,000
C	☒ Professional Liab.			AEH008231489	3/29/2023	3/29/2024	Per Claim/Aggregate 1,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)
RE: RFQ: PROJECT #22-010, UTLEY CREEK WATER RECLAMATION FACILITY (UCWRF) TOWN

Town of Holly Springs, NC is included as additional insured with respect to General Liability and Automobile Liability when required by written contract. General Liability and Automobile Liability are primary and non-contributory over any existing insurance and limited to liability arising out of the operations of the named insured and when required by written contract. General Liability, Automobile Liability and Workers Compensation policies include a waiver of subrogation in favor of the additional insureds where permissible by state law and when required by written contract. 30-day Notice of Cancellation will be issued for the General Liability, Automobile Liability, Workers Compensation and Professional Liability policies in accordance with policy terms and SEE ATTACHED ACORD 101

CERTIFICATE HOLDER

CANCELLATION

Town of Holly Springs, NC PO Box 8 128 S Main Street Holly Springs, NC 27540	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.
	AUTHORIZED REPRESENTATIVE

Qualifications of Firm and Personnel

Hazen brings a proven and familiar management team; unparalleled institutional knowledge; and superior wastewater, permitting, and funding expertise to ensure an efficient and practical design for the Utley Creek WRF.

Our team is led by **Patricia Drummey Stiegel, PE**, and **David Wankmuller, PE**, the Project Director and Process Lead for the recent Utley Creek WRF PER; they bring unique knowledge and insight of the WRF to benefit this project. They are supported by team members with expertise in every area of service necessary to deliver a cost-effective, maintenance-friendly, expansion of the Utley Creek WRF to 8 mgd. Many of them worked with the Town on the PER. Our proposed organizational chart is presented in the figure below. Brief bios for key team members follow. Full resumes of all team members are provided in the Appendix.

Project Director		Project Manager		Technical Advisors	
Patricia Drummey Stiegel, PE		David Wankmuller, PE		Mark Messere, PE Brenan Buckley, PE, BOEE	
Regulatory		Design		Construction	
Permitting Mary Sadler, PE		Hydraulics / Pumping Elisa Arevalo, PE		Construction Administration Ian Yancey, PE Adam Miller, PE	
Funding and Financial Tim Devine, PE	Mechanical / Process Colin Beck, PE Josh Powell, PE Melanie Mann, PE		Start-up / Training Barry Bickerstaff, PE		Solids Handling Amy Hanna, PE Jacqueline Yeh, PE
Discipline Engineering					
Architectural Bill Russell, AIA	Electrical Dennis Phelps	Structural Johnny Waycaster, PE		Civil David Skeggs, PE	I&C Nathan Derry, PE
Subconsultants					
Geotechnical GeoTechnologies			Water Quality TetraTech		

David Wankmuller, PE Project Manager

Education: MS EnvE, BS EnvE | Certification/Licenses: Professional Engineer: NC, VA



Years of Experience: 14

Mr. Wankmuller managed the recent PER for the Utley WRF; he is an experienced manager who is exceptionally familiar with the facility, knows your staff, and understands your policies and preferences. He also analyzed the wastewater characteristics and developed a process model of the Utley Creek WRF for the facility Master Plan. He specializes in the modeling, design, and optimization of wastewater treatment facilities and worked on all four of the projects highlighted in this proposal.

- Utley Creek WRF PER, Town of Holly Springs, NC
- North Cary WRF Rerating and Aeration Improvements, Town of Cary, NC
- Graham WWTP PER and Expansion, City of Graham, NC
- Fort Mill WPCP PER and Expansion, Town of Fort Mill, SC

 Years of Experience: 20	Patricia Drummey Stiegel Project Director Education: MS EnvE, BSCE Certification/Licenses: Professional Engineer: NC, VA, NY Ms. Stiegel is an owner and officer in the firm with full authority to allocate resources to your project. • Utle Creek WRF PER, Town of Holly Springs, NC • T.Z. Osborne Expansion to 56 MGD and BNR Upgrade, City of Greensboro, NC • Graham WWTP Expansion, City of Graham, NC
 Years of Experience: 34	Mark Messere, PE Technical Advisor Education: BSCE Certification/Licenses: Professional Engineer: NC, MD Mr. Messere is an expert in the analysis, design, and construction administration of wastewater treatment facilities. • Utle Creek WRF Preliminary Engineering Report, Town of Holly Springs, NC • North Cary WRF Aeration Improvements, Town of Cary, NC • Graham WWTP Expansion, City of Graham, NC
 Years of Experience: 28	Brenan Buckley, PE, BOEE Technical Advisor Education: MOE, BSCE Certification/Licenses: Professional Engineer: NC, BOEE Mr. Buckley is an expert in the planning, funding, design, and construction of treatment facilities. • Smith Creek RRF 3MGD expansion/upgrade Facility Plan, Raleigh, NC • GUC WWTP Clarifier 6 and 7 Design, Greenville, NC • SGWASA WWTP Nutrient Improvements, South Granville WASA, NC
 Years of Experience: 24	Mary Sadler, PE Permitting Education: MS EnvE, BSCE Certification/Licenses: Professional Engineer: NC, GA, MD, VA Ms. Sadler has managed over 50 environmental permitting projects. • Utle Creek WRF PER, Town of Holly Springs, NC • Assistance with Speculative Limits Request, City of Graham, NC • Fort Mill WPCP PER and Expansion, Town of Fort Mill, SC
 Years of Experience: 18	Timothy Devine, PE Funding and Financial Education: MEM, MBA, BS EnvE Certification/Licenses: Professional Engineer: NC Mr. Devine has assisted the Town with funding applications in the past • Utle Creek WRF PER, Town of Holly Springs, NC • Graham WWTP Expansion, City of Graham, NC • Fort Mill WPCP Expansion, Town of Fort Mill, SC
 Years of Experience: 12	Elisa Arevalo-Perez, PE Hydraulics / Pumping Education: MS EnvE, BS EnvE Certification/Licenses: Professional Engineer: NC Ms. Arevalo Perez specializes in hydraulic analysis and wastewater treatment technology evaluations. • Utle Creek WRF PER, Town of Holly Springs, NC • T.Z. Osborne Expansion to 56 MGD and BNR Upgrade, City of Greensboro, NC • Fort Mill WPCP Expansion, Town of Fort Mill, SC
 Years of Experience: 16	Colin Beck, PE Mechanical / Process Education: BS EnvE Certification/Licenses: Professional Engineer: NC Mr. Beck has led design or managed numerous wastewater treatment plant retrofits, expansions, and upgrades. • Utle Creek WRF PER, Town of Holly Springs, NC • North Cary WRF Aeration Improvements, Town of Cary, NC • Graham WWTP Expansion, City of Graham, NC

 Years of Experience: 11	Joshua Powell, PE Mechanical / Process Education: MScEnvE, BSCE Certification/Licenses: Professional Engineer: NC Mr. Powell specializes in the modeling, evaluation, and design of BNR systems for municipal wastewater treatment facilities. • Utle Creek WRF PER, Town of Holly Springs, NC • Northeast Brunswick Regional WWTF, Brunswick County, NC • Hendersonville WWTP Master Plan, City of Hendersonville, NC
 Years of Experience: 35	Melanie Mann, PE Mechanical / Process Education: MOE, BSCE Certification/Licenses: Professional Engineer: NC, VA Ms. Mann is Hazen's Disinfection Group Leader and is an expert in application of UV technologies for wastewater and reuse disinfection. • T.Z. Osborne Expansion to 56 MGD and BNR Upgrade, City of Greensboro, NC • Graham WWTP Expansion, City of Graham, NC • Fort Mill WPCP Expansion, Town of Fort Mill, SC
 Years of Experience: 16	Amy Hanna, PE Solids Handling Education: MSCE, BSCE Certification/Licenses: Professional Engineer: NC, OH Ms. Hanna is Hazen's Mid-Atlantic Region Biosolids Lead and is experienced in the evaluation, design, and construction of biosolids handling and treatment facilities. • Rockfish Creek WRF Expansion PER, PWC, Fayetteville, NC • Neuse River RRF Bioenergy Recovery Project, Raleigh Water, NC • Washington Suburban Sanitary Commission Bio-Energy Project, Accokeek, MD
 Years of Experience: 7	Jacqueline Yeh, PE Solids Handling Education: MScEnvE, BScEnvE Certification/Licenses: Professional Engineer: NC Ms. Yeh specializes in biosolids handling facility evaluation and design. • North Cary WRF Aeration Improvements, Town of Cary, NC • T.Z. Osborne Expansion to 56 MGD and BNR Upgrade, City of Greensboro, NC • Graham WWTP Expansion, City of Graham, NC
 Years of Experience: 9	Ian Yancey, PE Construction Administration Education: BSCE Certification/Licenses: Professional Engineer: NC Mr. Yancey specializes in the structural analysis, design, and construction of water and wastewater treatment and pumping facilities. • Utle Creek WRF Odor Control Upgrades, Town of Holly Springs, NC • Southside WWTP Rehabilitation, CFPWA, Wilmington, NC • Terrible Creek WWTP Expansion, Town of Fuquay-Varina, NC
 Years of Experience: 16	Adam Miller, PE Construction Administration Education: BSCE Certification/Licenses: Professional Engineer: NC Mr. Miller has proven his ability to provide construction oversight and coordination during the construction of a broad range of water and wastewater facilities. • North Cary WRF Aeration Improvements, Town of Cary, NC • Neuse River RRF BioEnergy Recovery Project (BERF), Raleigh Water, NC • Terrible Creek WWTP Expansion, Town of Fuquay-Varina, NC
 Years of Experience: 36	Barry Bickerstaff, PE Start-up / Training Education: BSCE Certification/Licenses: Professional Engineer: NC Mr. Bickerstaff is an expert in the assessment, construction, and operation of wastewater treatment plants. • Fort Mill WPCP Expansion Phase 2, Town of Fort Mill, SC • T.Z. Osborne WWTP Solids Handling Improvements, City of Greensboro, NC • Western Wake WRF, Western Wake Partners, Wake County, NC



Appendix



Patricia Drummey Stiegel, PE

Vice President

Ms. Stiegel is an expert in the planning, analysis, design, and construction of wastewater treatment facilities.

Education

MSEnE, University of North Carolina, Chapel Hill, NC

BSCE, University of Notre Dame, IN

Certification/License

Professional Engineer: NC, VA, NY

Areas of Expertise

- Master planning
- Ultraviolet disinfection
- Hydraulic analysis
- Wastewater reuse

Experience

- 20 total years
- 16 years with Hazen

Professional Activities

American Water Works Association

Water Environment Federation

International UV Association

NC Water for People

NC AWWA-WEA Water Reuse (2012-2013 Committee Chair)

Utle Creek WRF Preliminary Engineering Report, Holly Springs, NC

Project Director. Project to evaluate expansion of the WRF from 6 to 8 mgd with plans for future expansion to 15 mgd. The project included evaluating the capacity of all processes on site, coordinating with DWR for perspective limits for expansion from 8 to 15 mgd, and providing 20-year NPW cost evaluations for each proposed secondary process alternatives. A calibrated BioWin model was developed and used to evaluate conventional, densification, and membrane bioreactor technologies for secondary process expansion.

Utle Creek WRF Master Plan, Holly Springs, NC

Project Director. Provided oversight and direction for master plan to increase capacity from 6.0 to 8.0 mgd. Scope included population and flow projections, hydraulic and process analysis. Utilizing the process model, four alternatives were evaluated for expansion of the facility to 8.0 mgd including: oxidation ditch conversion to fine bubble diffusers, 5-stage BNR plug flow conversion, membrane bioreactors, and Aqua-Nereda.

Utle Creek Water Reclamation Facility Odor Control Upgrades Town of Holly Springs, NC

Project Director. Project included odor study, design, and construction of a new two-stage 3,500 CFM modular biofilter and dual-bed activated carbon adsorber. Hazen also replaced existing climber screens with multi-rake bar screens. The grit/screenings conveyor was also replaced as part of this design with a new shaftless screw conveyor system. Bar screen and conveyor replacements required extensive coordination to maintain the Intermediate Pump Station in service through the construction.

Graham WWTP Expansion to 5.0 mgd Design, City of Graham, NC

Technical Advisor. Patricia served as an advisor for the design of a sodium hypochlorite disinfection facility. The project included conversion of existing extended aeration basins to 5-stage BNR and a new positive displacement blower facility. The design also included effluent disk filters, chlorine contact disinfection, new mixing systems in their sludge storage tanks, and new aerobic digesters.



David Wankmuller, PE

Senior Associate

Mr. Wankmuller specializes in the modeling, design, and optimization of wastewater treatment facilities.

Education

MS EnvE, Manhattan College, 2011
BSEnvE, Syracuse University, 2009

Certification/License

Professional Engineer: NC

Areas of Expertise

- Wastewater process modeling
- Wastewater process design
- Nutrient removal & sidestream treatment
- Biological nutrient removal

Experience

- 14 total years
- 12 years with Hazen

Professional Activities

North Carolina American Water Works Association-Water Environment Association
Water Environment Federation

Utle Creek WRF Preliminary Engineering Report, Holly Springs, NC

Project Manager and Lead Process Engineer. Project to evaluate expansion of the WRF from 6 to 8 mgd with plans for future expansion to 15 mgd. The project included evaluating the capacity of all processes on site, coordinating with DWR for perspective limits for expansion from 8 to 15 mgd, and providing 20-year NPW cost evaluations for each proposed secondary process alternatives. A calibrated BioWin model was developed and used to evaluate conventional, densification, and membrane bioreactor technologies for secondary process expansion.

Utle Creek WRF Master Plan, Holly Springs, NC

Lead Process Engineer. David analyzed the wastewater characteristics and developed a process model of the facility to evaluate the capacity of the Utle Creek WRF. Utilizing the process model, four alternatives were evaluated for expansion of the facility to 8.0 mgd including: oxidation ditch conversion to fine bubble diffusers, 5-stage BNR plug flow conversion, membrane bioreactors, and AquaNereda.

Graham WWTP PER and Expansion, City of Graham, NC

Lead Process Engineer. Developed a calibrated a process model of the 3.5-mgd plant and used the model to evaluate low cost process optimization opportunities including ammonia based aeration control, installation of VFDs on RAS pumps, and installation of an anoxic selector zone. Utilizing the calibrated process model, Mr. Wankmuller performed an alternatives analysis for expanding the WWTP from 3.5 to 5.0 mgd. Mr. Wankmuller worked on the detailed design to convert the aeration basins to 5-stage BNR and design a new positive displacement blower facility.

North Cary WRF Rerating and Aeration Improvements

Town of Cary, NC

Lead Process Engineer. Project to increase capacity and improve efficiency of the existing Bardenpho oxidation ditches at the 12-mgd WRF. Developed a calibrated a process model; used the model to evaluate future expansion alternatives to 13.5 and 15 mgd; determined a conversion of the ditches to fine bubble diffusers could expand process capacity from 12 to 15.0 mgd without additional volume; outlined upgrades to increase reliability; performed detailed design of the conversion to fine bubble diffusers with a new multi-stage blower facility.



Mark Messere, PE

Associate Vice President

Mr. Messere is an expert in the analysis, design, and construction administration of municipal wastewater treatment and pumping facilities.

Education

BSCE, North Carolina State University, 1988

Certification/License

Professional Engineer: NC, MD

Areas of Expertise

- Design of water and wastewater facilities
- Construction administration of water and wastewater facilities
- Computer modeling of water distribution and storage systems

Experience

- 34 total years
- 30 years with Hazen

Utleigh Creek WRF Preliminary Engineering Report, Holly Springs, NC

Project Engineer. Project to evaluate expansion of the WRF from 6 to 8 mgd with plans for future expansion to 15 mgd. The project included evaluating the capacity of all processes on site, coordinating with DWR for perspective limits for expansion from 8 to 15 mgd, and providing 20-year NPW cost evaluations for each proposed secondary process alternatives. A calibrated BioWin model was developed and used to evaluate conventional, densification, and membrane bioreactor technologies for secondary process expansion.

Neuse River Resource RRF Bioenergy Recovery Project Raleigh Water, NC

Project Manager. Provided management of the design for the new bioenergy recovery facilities. These facilities included the conversion of the solids handling facilities to a thermal hydrolysis-based system and anaerobic digestion facilities. The project included thickening building rehabilitation, new screenings and sludge blending building, preconditioning building using centrifuges, final dewatering building rehabilitation and overall facility layout and coordination. Management responsibilities included coordination with several sub consultants.

Neuse River Resource Recovery Facility 75 MGD Expansion Program, Raleigh Water, NC

Design Manager. 75 mgd expansion program for the City of Raleigh. This program included all liquid treatment train facilities at the plant and spanned a 10-year design and construction period. The project was broken into 4 phases with a total construction cost of 68M.

Cross Creek WRF Improvements, PWC, Fayetteville, NC

Project Manager. Several improvement projects at the 25-mgd WRF. The projects included new influent and intermediate screw pumps, new primary sludge pumps, replacement of all the centrifugal blowers, a complete refit of a secondary clarifier with a new Tow-Bro mechanism and RAS pump and piping improvements. Both stations were equipped with all new pumping equipment as well as a new grout bed for the pump returning the firm capacity of the stations to 48 mgd each. A new sodium hypochlorite and sodium bisulfite, chlorination and dechlorination system, was also installed in the existing gas chlorination and dechlorination facilities.



Brenan Buckley, PE

Associate Vice President

Mr. Buckley is an expert in the planning, funding, design, and construction of wastewater treatment facilities.

Education

MCE-Water Resources, North Carolina State University, 1998

BSCE-Water Resources, North Carolina State University, 1994

Certification/License

Professional Engineer: NC

Board Certified Environmental Engineer

Areas of Expertise

- Water and wastewater treatment
- Water and wastewater conveyance infrastructure
- Water resources
- Dams and spillways
- Stormwater
- Asset management and condition assessment
- Utility performance

Experience

- 28 total years
- <1 year with Hazen

Smith Creek RRF Upgrade Facility Plan, City of Raleigh, NC*

Project Manager. Led team evaluating expansion and upgrade options to a 3 mgd resource recovery facility (RRF) to improve nitrogen removal and optimize wet weather capacity of both the RRF and the West Neuse Interceptor (WNI) to help reduce potential for downstream SSOs. The Facility Plan evaluated a range of process improvements including MBRs, 5-stage Bardenpho and an A2O swing zone process configuration to increase process throughput during winter months. The recommended improvements included new influent pumping and parallel force main; new diversion structure to split flows between the process train, a bypass to the WNI, and wet weather equalization; A2O and 5-stage Bardenpho process conversion; new secondary clarifier complex with hydrocyclones; RAS pumping modifications; and filter backwash improvements to reduce return flows.

GUC WWTP Secondary Clarifier 6 and 7 Expansion, Greenville Utilities Commission, NC*

Project Manager. Managed design and permitting of two new 125-foot diameter secondary clarifiers to replace one that failed due to uplift when drained for inspection at another location on the plant site. Key project elements included stress testing of the existing clarifiers, CFD modeling to optimize clarifier performance, hydraulic evaluations, and design of splitter boxes, clarifiers, RAS pump station, scum pump stations, and effluent boxes. A key feature included modifications to two existing aeration basins to reduce construction risk of deep new process piping and tie-ins.

SGWASA WWTP Improvements, South Granville WASA, NC*

Officer-in-Charge. Responsible for design of recommended improvements to address operational deficiencies and comply with stringent nutrient reduction targets to comply with Stage 1 of the Falls Lake Nutrient Management Strategy. The \$27 million in improvements included new headworks, equalization storage, influent pump station, conversion of the biological treatment process from VIP to a 5-stage Bardenpho process and new denitrification filters, plus miscellaneous hydraulic, process, and structural upgrades. Duties included project oversight, quality review of deliverables, and support for engineering team through bidding.

* Previous employment



Mary Sadler, PE

Associate Vice President

Ms. Sadler has as managed over 30 environmental permitting projects.

Education

MSEnvE, Virginia Polytechnic Institute & State University, 1998

BSCE, Virginia Polytechnic Institute & State University, 1997

Certification/License

Professional Engineer: NC, GA, MD, VA

Areas of Expertise

- Municipal wastewater treatment processes and modeling
- Master planning
- Environmental permitting
- Membranes

Experience

- 24 total years
- 14 years with Hazen

Professional Activities

Water Environment Federation – Program Committee, Chair, Watershed Resources Management and Sustainability

Utle Creek WRF Preliminary Engineering Report, Holly Springs, NC

Permitting. Project to evaluate expansion of the WRF from 6 to 8 mgd with plans for future expansion to 15 mgd. The project included evaluating the capacity of all processes on site, coordinating with DWR for perspective limits for expansion from 8 to 15 mgd, and providing 20-year NPW cost evaluations for each proposed secondary process alternatives. A calibrated BioWin model was developed and used to evaluate conventional, densification, and membrane bioreactor technologies for secondary process expansion.

Assistance with Speculative Limits Request, City of Graham, NC

Technical Expert. Prepared and submitted a speculative limits request letter on behalf of the City of Graham for a WWTP expansion from an existing capacity of 3.5 mgd to an ultimate capacity of 6.2 mgd. An interim tiered flow of 5 mgd was also requested. Drafted the regulatory section of the Preliminary Engineering Report to include the speculative limits and future regulatory issues, such as numeric nutrient criteria, PFAS, ammonia, and other emerging contaminants.

T.Z. Osborne WWTP Expansion, City of Greensboro, NC

Project Manager. The WWTP discharges into South Buffalo Creek in the nutrient sensitive Cape Fear watershed and is subject to the Jordan Lake Rules. South Buffalo Creek was listed as impaired for ammonia, copper, zinc, and biological integrity of the 2010 303(d) list. The technical analysis showed that the ambient water quality data for ammonia in South Buffalo Creek did not justify an ammonia impairment status in this receiving stream. A strategy was developed to document the delisting request for ammonia in South Buffalo Creek. Ms. Sadler assisted the City with a major modification of the NPDES permit.

Fort Mill WPCP PER and Expansion, Town of Fort Mill, SC

Technical Expert. PER responsibilities included development of a calibrated BioWin model and an alternatives evaluation to recommend upgrades and expansion of the facility. The evaluation detailed improvements to reliably treat 3 mgd and evaluated expansion to 4.5 mgd using conventional treatment, BioMag treatment, or membrane bioreactors (MBR). Design included two new BNR basins, a new positive displacement blower facility, and new membrane bioreactor facility. The design also included a new preliminary treatment facility, chemical facilities, UV disinfection facility, and flexible influent/effluent EQ tank.



Timothy Devine, PE

Senior Associate

Mr. Devine is an experienced financial and economic analyst who has helped multiple municipal water and wastewater utilities optimize investments under multiple constraints.

Education

BSEnE, United States Military Academy at West Point, 2004

MBA, University of North Carolina at Chapel Hill, 2012

MEM (Master of Environmental Management), Duke University, 2012, Water and Air Resources Concentration

Certification/License

Professional Engineer: NC

Areas of Expertise

- Environmental permitting and analysis
- Financial analysis
- Municipal water and wastewater process and design
- Master planning

Experience

- 18 total years
- 10 years with Hazen

Professional Activities

Water Environment Federation

North Carolina Water Environment Association

Funding Assistance, Town of Holly Springs, NC

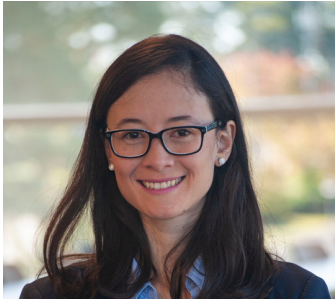
Project Manager. Led a team of engineers and financial analysts in assisting the Town of Holly Springs prepare four funding applications for the Spring 2022 NC Division of Water Infrastructure funding round. The applications included requests for funding assistance for the Town's participation in the City of Sanford WTP expansion project, the construction of a new water distribution pipeline to connect the Town to the City of Sanford WTP, and develop asset management plans for both the Town's water and wastewater systems. The total application request was for \$40 million in low interest loan funding and \$400k in planning grant funding.

Utle Creek WRF Master Plan, Holly Springs, NC

Regulatory Compliance Analysis. Evaluated the anticipated impacts to NPDES permit requirements for the expansion of the Utle Creek WRF at different proposed plant expansion capacities. This analysis included an evaluation of existing NPDES permit requirements, surface water quality permitting requirements, and recent trends in surface discharge NPDES permit expansions to determine a planning level cost and schedule projection for WRF expansion permitting requirements, as well as potential impacts to wastewater processes to meet more stringent effluent standards.

Fort Mill WPCP Preliminary Engineering Report, Town of Fort Mill, SC

Project Engineer. Completed a regulatory compliance analysis that included a surface water quality analysis and NPDES permit compliance evaluation as part of the discharge alternatives evaluation to recommend upgrades and expansion of the facility. The evaluation detailed necessary near-term improvements to reliably treat the permitted flow of 3.0 mgd and evaluated future expansion for 4.5 mgd using conventional treatment, BioMag treatment, or membrane bioreactors (MBR).



Elisa Arevalo-Perez, PE

Senior Principal Engineer

Ms. Arevalo-Perez specializes in hydraulic analysis, wastewater treatment technology evaluations, chemical systems, pump station design, and construction administration.

Education

MS EnvE, North Carolina State University, 2014

BS EnvE, Universidad de los Andes, Bogotá, Colombia, 2012

Certification/License

Professional Engineer: NC

Areas of Expertise

- Wastewater treatment processes
- Water treatment processes
- Hydraulic analyses

Experience

- 12 total years
- 9 years with Hazen

Professional Activities

American Water Works Association (AWWA)

North Carolina American Water Works Association – Water Environment Association

Lower Dorchester WWTP Expansion, Dorchester County, SC

Design Engineer and Task Lead. Expansion of the WWTP from 8 to 16 mgd. Served as the Lead Engineer working on updating the hydraulic profile for the entire plant. Worked as a design engineer of new NRCY and WAS pumping systems.

210 Wastewater Treatment Facility, Johnston County, NC

Design Engineer. Led the hydraulic profile development of a 4-mgd expansion of the Johnston County Central Regional WWTF from 9.5 to 13.5 mgd on a greenfield WWTP. Worked on the design of the RAS pumping and UV disinfection systems.

Mason Farm WWTP Master Plan, OWASA, Carrboro, NC

Lead Design Engineer. Currently leading the hydraulic capacity analyses task of the master plan. The primary objective of this Master Plan is to identify near and long-term improvement projects that will help OWASA provide reliable and efficient wastewater treatment.

Rockfish Creek WRF Expansion Phase 3, Fayetteville, NC

Lead Process Engineer. Expansion of the facility from 21-mgd to 28-mgd. Detailed design of a new disk filter facility and lead the updates to the plant hydraulic profile.

T.Z. Osborne WRF Expansion Package 4, City of Greensboro, NC

Assistant Project Engineer. Assisted in the design of the odor control system for the 56-mgd plant. The odor control design included three carbon scrubbers and ductwork to treat the foul air from the aeration basins. The airflows ranged between 5,900 and 8,200 scfm.

T.Z. Osborne WRF Expansion Package 2, City of Greensboro, NC

Assistant Project Engineer. Assisted in the review of contractor prequalification packages, as well as bid period and construction administration related services of the expansion project for the WRF from 40 to 56 mgd.



Colin Beck, PE

Senior Associate

Mr. Beck has led design or managed numerous wastewater treatment plant retrofits, expansions, and upgrades.

Education

BSEnvE, Johns Hopkins University, 2009

Certification/License

Professional Engineer: NC

Areas of Expertise

- Wastewater treatment design
- Conveyance/hydraulic design and analysis
- Wastewater process site sampling & testing
- Project management

Experience

- 16 total years
- 14 years with Hazen

Professional Activities

Water Environment Federation
North Carolina Water Environment Association

Graham WWTP Expansion, City of Graham, NC

Project Manager. Expansion from 3.5 to 5.0 mgd. The \$75M expansion project is highlighted by the conversion of current aeration to a 5-stage biological nutrient removal process, designed with flexible operational control including nitrate recycle return (NRCY), return activated sludge (RAS), provisions for the future implementation of ammonia-based aeration control (ABAC), and nitrate monitoring to control supplemental carbon feed to meet Total Nitrogen and Total Phosphorus limits of 3.7 and 0.5 mg/L, respectively. The design also includes flow splitting structures, disk filters, chlorine contact tanks, aerobic digesters, sludge storage, a vac-truck unloading station, and administration and maintenance facilities.

Terrible Creek WWTP 3.0 mgd Expansion, Town of Fuquay-Varina, NC

Project Manager for Construction/Lead Project Engineer for Design. Alternative Delivery: Design-Build (Crowder) Lead Project Engineer for design for the WWTP expansion from 1 to 3 mgd. The design included a Preliminary Treatment Facility, Influent Pump Station, Flow Equalization Tanks, 5-Stage Biological Nutrient Removal Tanks, Secondary Clarifiers, a RAS-WAS Pump Station, Disk Filters, UV Disinfection, Dewatering Facilities, Sludge Storage, Chemical Storage and Feed Facilities, and Administration and Maintenance Facilities.

North Cary WRF Sludge Holding Tank Fine Bubble Diffuser Replacement, Town of Cary, NC

Project Manager. Design and Construction Management for replacement of the fine bubble diffused aeration system in two existing sludge holding tanks.

GUC WWTP Rehabilitation of Air Distribution System, Greenville Utilities Commission, NC

Project Manager for Construction/ Lead Project Engineer for Design. The main component of the project was to replace leaking ductile iron air pipe both above grade and below grade with steel pipe at the 17.5-mgd WWTP.



Joshua Powell, PE

Associate

Mr. Powell specializes in the evaluation and design of biological nutrient removal systems for municipal wastewater treatment facilities.

Education

MSEnvE, The University of North Carolina at Chapel Hill, 2013

BSCE, The University of North Carolina at Charlotte, 2011

Certification/License

Professional Engineer: NC

Areas of Expertise

- Wastewater Treatment Plant Design
- Wastewater Process Modeling
- Biological Nutrient Removal
- Solids Dewatering

Experience

- 11 total years
- 1 > year with Hazen

Professional Activities

Water Environment Federation

Utley Creek WRF Preliminary Engineering Report, Holly Springs, NC

Process Modeling. Project to evaluate expansion of the WRF from 6 to 8 MGD with plans for future expansion to 15 MGD. The project included evaluating the capacity of all processes on site, coordinating with DWR for perspective limits for expansion from 8 to 15 MGD, and providing 20-year NPW cost evaluations for each proposed secondary process alternatives. A calibrated BioWin model was developed and used to evaluate conventional, densification, and membrane bioreactor technologies for secondary process expansion.

Northeast Brunswick Regional WWTF, Brunswick County, NC

Process Design. 2.5 MGD expansion, doubling the facility's capacity to 5.0 MGD. Improvements included a replacement headworks with screening, grit removal and odor control; influent pump station; EQ storage; two 1.25-MGD Biotenpho oxidation ditches (Kruger/Veolia); two secondary clarifiers; tertiary disc filtration; UV disinfection; cascade aeration; effluent PS; NPW PS; WAS thickening facility with rotary drum thickeners; ATAD digesters with odor control; Class A biosolids storage with truck loading. Served as the process engineer of record for design phase services, performed construction administration services and provided permitting including updating the facility's NPDES permit and obtaining an ATC permit through NCDEQ.

Hendersonville WWTP Master Plan, City of Hendersonville, NC

Process Engineer. Evaluated capacity of the existing activated sludge/clarifier system for the 4.8 MGD WWTP for expansion to 6 mgd. The facility utilizes extended aeration activated sludge technology. The process evaluation included consideration of three alternatives including rerating the existing extended aeration system, expanding and converting the system to utilize MLE technology, and expanding and converting the facility to a ballasted activated sludge process utilizing BioMag. BioWin modeling was used to evaluate each technology and the capacity of the existing secondary clarifiers utilizing state-point analysis. It was ultimately recommended that the facility be expanded utilizing MLE technology with the addition of a third MLE train and a third secondary clarifier.



Melanie Mann, PE

Associate Vice President

Ms. Mann is Hazen's Disinfection Group Leader and is an expert in application of UV technologies for wastewater and reuse disinfection.

Education

MOE, North Carolina State University, 1996

BSCE, North Carolina State University, 1988

Certification/License

Professional Engineer: NC, VA

Areas of Expertise

- UV disinfection
- Chemical disinfection
- Water reuse
- Filtration
- Residuals handling facilities
- Chemical storage and feed systems
- Sedimentation
- Hydraulic analysis and design
- Pump station design
- Process control

Experience

- 35 total years
- 35 years with Hazen

Professional Activities

Water Environment Federation, Disinfection and Public Health Committee member

International Ultraviolet Association

WaterReuse Association

International Ozone Association

American Water Works Association

Eastside WWTP UV Replacement, High Point, North Carolina.

Technical advisor for UV disinfection at this 78-mgd peak flow facility, expandable to 105 mgd. New UV system was selected by competitive pre-selection bid prior to final design. Trojan UVSigma reactors using more efficient LPHO lamps will replace existing Trojan UV4000 reactors.

Plum Island WPCP Phase 4 Capital Improvements, Charleston Water System, SC

Technical Advisor, Disinfection. Design of new Disinfection Facility for this 36-mgd plant discharging peak flow 90 mgd to Charleston Harbor. Includes a storage and feed facility for sodium hypochlorite which will replace the existing outdoor storage facility. Includes (2) 16,000-gallon FRP storage tanks with space to add a third tank for expansion at build-out capacity 42 mgd and peak flow 135 mgd. The new disinfection facility also includes a sodium bisulfite storage and feed room, providing dechlorination to meet the plant's effluent TRC limit of 0.5 mg/L.

210 Wastewater Treatment Plant, Johnston County, NC

Technical Advisor. Detailed design of disinfection chemical facility for this greenfield plant, initial capacity 4 mgd with 10-mgd peak. Facilities designed for immediate expansion to 8 mgd with 20-mgd peak. Design includes indoor HDPE bulk storage tanks for sodium hypochlorite, use of the plant effluent force main for contact time for disinfection, and a remote indoor sodium bisulfite storage and feed facility for dechlorination near the plant outfall discharge to a cascade aerator.

Broad Run WRF Master Plan, Loudoun Water, VA

Process Engineer. Conducted a process evaluation of the existing closed vessel, medium pressure UV system (48-inch Calgon Sentinel reactors) at this 11-mgd WRF. This UV system provides high level disinfection supporting off-site reuse customers. This work was part of a comprehensive master plan to expand the facility. Master planning services included capacity analysis of existing unit processes, process model development, opportunities for optimization, screening and ranking alternative treatment technologies, quadruple bottom line analysis, site utilization planning, planning for asset management and renewal, financial model development, and baseline energy profile.



Amy Hanna, PE

Senior Associate

Ms. Hanna is Hazen's Mid-Atlantic Region Biosolids Lead and is experienced in the evaluation, design, and construction of biosolids handling and treatment facilities.

Education

MSCE, Case Western Reserve University, 2007

BSCE, Case Western Reserve University, 2006

Certification/License

Professional Engineer: NC, OH

Areas of Expertise

- SRF funding
- Water and wastewater treatment design
- Construction administration
- Collection systems modeling

Experience

- 16 total years
- 11 years with Hazen

Professional Activities

Water Environment Federation

American Society of Civil Engineers

Rockfish Creek WRF Phase 3 Expansion Preliminary Engineering Report, PWC, Fayetteville, NC

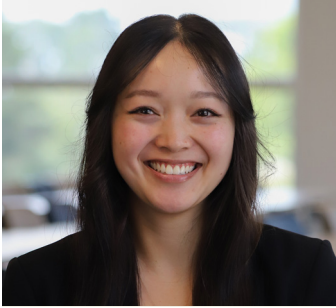
Project Engineer. This PER evaluated alternatives for liquid and biosolids treatment capacity expansion at the Rockfish Creek WRF, and regional biosolids alternatives for both Rockfish Creek WRF and PWC's Cross Creek WRF.

Neuse River RRF Bioenergy Recovery Project, Raleigh Water, NC

Project Engineer. Detailed design of facilities to convert biosolids handling at this 75-mgd plant to anaerobic digestion with thermal hydrolysis pre-treatment, to generate a Class A biosolids product. Responsibilities included detailed design of sludge screening and centrifuge pre-dewatering processes to condition sludge prior to thermal hydrolysis pretreatment, as well as overall project coordination. The sludge screening building included mixed sludge blending and storage tanks, sludge feed pumping and inline sludge screened with a compressed air system. The pre-dewatering process included centrifuge dewatering equipment with dewatered cake conveyance to sludge storage bins and an emulsion polymer conditioning system.

Washington Suburban Sanitary Commission Bio-Energy Project, Accokeek, MD

Design Manager. Progressive Design Build of \$250M regional biosolids facility for the five WSSC WWRFs. This innovative facility will produce a Class A biosolids material for WSSC while providing significant benefits to all stakeholders including green energy production, greenhouse gas emission reduction and long-term sustainable biosolids processing. Project includes new thermal hydrolysis pretreatment and new anaerobic digestion facilities as the heart of the biosolids processing process. Responsibilities included leading the process mechanical design of sludge screening and pre- and post-dewatering facility utilizing belt filter press technology. Also led the detailed design of the anaerobic digestion process, which includes two 1.5 MG pre-stressed concrete tanks with fixed concrete covers and pumped mixing.



Jacqueline Yeh, PE

Principal Engineer

Ms. Yeh specializes in biosolids handling facility evaluation and design.

Education

MScEnvE, North Carolina State University, 2018

BSEnvE, North Carolina State University, 2016

Certification/License

Professional Engineer: NC

Areas of Expertise

- Aerobic granular sludge
- Biosolids

Experience

- 7 total years
- 5 years with Hazen

Professional Activities

American Water Works Association (2017-2018 NCSU Student Chapter President)

Water Environment Federation

Utley Creek WRF PER, Town of Holly Springs, NC

Project Engineer. Project to evaluate expansion of the WRF from 6 to 8 mgd with plans for future expansion to 15 mgd. The biosolids considerations for the project included evaluation of existing WAS holding tanks, upgrades to an existing transfer pump station, and a new dewatering facility. Dewatering technologies evaluated included volute presses, belt filter presses, and dewatering centrifuges. Preliminary building design was based on centrifuges sized for a target 40-hr/wk operating schedule.

City of Graham WWTP Expansion, City of Graham, NC

Project Engineer. Expansion from 3.5 to 5.0 mgd. Biosolids design requirements included addition of two new aerobic digesters and sludge transfer to existing sludge storage tanks prior to decanting and liquid sludge loadout for off-site land application.

T. Z. Osborne WWTP, City of Greensboro, NC

Assistant Project Engineer. Assisted with determining sludge production numbers, evaluating relevant upgrades to solids operation, and fluidized bed incinerator operation.

Plum Island Water Pollution Control Plant, Charleston Water System, Charleston, NC

Assistant Project Engineer. Assisted with determining sludge production numbers, evaluating dewatering and thickening technology options, developing building layouts, and writing technical memos for Charleston Water System.

Lower Dorchester WWTP Expansion, Dorchester County Water & Sewer, Dorchester, SC

Project Engineer. Detailed process mechanical design of biosolids upgrades for the Lower Dorchester WWTP expansion from 8 to 16 mgd. The project included addition of new aerated sludge storage tanks and a new thickening building with rotary drum thickeners.



Ian Yancey, PE

Senior Principal Engineer

Mr. Yancey specializes in the structural analysis, design, and construction of water and wastewater treatment and pumping facilities.

Education

BSCE, North Carolina State University, 2014

Certification/License

Professional Engineer: NC

Confined Space Entrant and Supervisor Trained

Areas of Expertise

- Structural analysis and design of concrete, steel, masonry, aluminum, and FRP for environmental and industrial applications
- Structural condition assessment of concrete and steel structures
- Construction administration, field engineering, and specialty inspections during construction
- Wastewater treatment

Experience

- 9 total years
- 9 years with Hazen

Utleigh Creek WRF Preliminary Engineering Report, Town of Holly Springs, NC

Constructability. Project to evaluate expansion of the WRF from 6 to 8 mgd with plans for future expansion to 15 mgd. The project included evaluating the capacity of all processes on site, coordinating with DWR for perspective limits for expansion from 8 to 15 mgd, and providing 20-year NPW cost evaluations for each proposed secondary process alternatives. A calibrated BioWin model was developed and used to evaluate conventional, densification, and membrane bioreactor technologies for secondary process expansion.

Utleigh Creek WRF Odor Control Upgrades, Town of Holly Springs, NC

Construction Administration. Design of a new two-stage 3,500 CFM modular biofilter and dual-bed activated carbon adsorber. Developed a hydraulic profile from the influent side of the plant up through the Intermediate Pump Station and new Mechanically Cleaned Barscreens were installed. The grit/screenings conveyor was also replaced as part of this design with a new shaftless screw conveyor system. Barscreen and conveyor replacements required extensive coordination to maintain the Intermediate Pump Station in service through the construction.

Southside WWTP Rehabilitation, CFPWA, Wilmington, NC

Construction Administration. A design-build project with Crowder Construction funded by a Clean Water State Revolving Fund (CWSRF) loan. The project involved planning, design, and construction of mechanical, electrical, and structural upgrades for the 12-mgd WWTP. The work included replacement of the dewatering building and belt filter presses; rehabilitation of the filtrate and underdrain pump stations; rehabilitation of the aeration basins and replacement of the coarse bubble diffusers with fine bubble; clarifier rehabilitation; generator replacement; and all appurtenant piping, HVAC, and electrical work.

Terrible Creek WWTP Expansion, Town of Fuquay-Varina, NC

Assistant Engineer. This expansion project resulted in a new 3.0 mgd biological nutrient removal wastewater treatment facility for the Town including influent pump station, flow equalization, preliminary treatment facility, BNR tanks and blowers, final clarifiers, filters and UVV disinfection. A new administration building was also provided for this new \$27M facility.



Adam Miller, PE

Senior Associate

Mr. Miller has proven his ability to provide construction oversight and coordination during the construction of a broad range of water and wastewater facilities.

Education

BSCE, North Carolina State University, 2009

Certification/License

Professional Engineer: NC

Areas of Expertise

- Construction administration
- Construction inspection
- Constructability review
- Mechanical equipment review
- Operations, start-up and performance testing

Experience

- 16 total years
- 16 years with Hazen

Professional Activities

American Water Works Association

Water Environment Federation

American Society of Civil Engineers

North Cary WRF Aeration Improvements, Town of Cary, NC

Project Manager, Construction Administrator, and Resident Project Representative. Construction of an EQ Pump Station, Blower building with associated electrical equipment, 2 MW generator, and air piping from the blower building to 3 existing Oxidation Ditches. Installed new Aquarius fine bubble membranes in the ditches and converted the process from surface rotors for aeration to fine bubble. Extensive controls and process modifications, including 4 new PLCs to control the blower building and each of the oxidation ditches.

Neuse River RRF BioEnergy Recovery Project (BERF), Raleigh Water, NC

Construction Administration. This project was designed to help lower the City's greenhouse gas footprint and move towards energy neutrality. Ultimately, the methane gas produced at this 75 mgd RRF will be injected into a gas pipeline and utilized to power City buses. Multiple innovative processes are included as a part of this project including thermal hydrolysis (THP) and a deammonification side stream treatment of centrate which will assist the treatment facility in producing more methane gas at lower treatment cost. Design of the bioenergy facilities and coordination with the Construction Manager at Risk (CMAR) was included as a part of the project.

Mason Farm WWTP Secondary Clarifier 2 and 3 Rehabilitation, OWASA, NC

Resident Project Representative. Part-time inspection for the removal of existing clarifier mechanisms and installation of new Evoqua Tow-Bro mechanisms with bridges in two clarifiers.

Terrible Creek WWTP Expansion, Town of Fuquay-Varina, NC

Construction Administrator and Resident Project Representative. Construction of a new 3.0MGD water reclamation facility including influent pump station, Preliminary Treatment Facility, Aeration Tanks, Secondary Clarifiers and RAS Pump Station, disk filters, UV disinfection facilities, chemical feed systems, sludge holding tank, blowers, Administration Building and solids handling facilities. Also includes conversion of the existing plant process basins into equalization tanks.



Barry Bickerstaff, PE

Associate Vice President

Mr. Bickerstaff is an expert in the construction, testing, and start-up of wastewater treatment and conveyance facilities.

Education

BSCE, North Carolina State University, 1985

Certification/License

Professional Engineer: NC

Areas of Expertise

- Design and field construction engineering of water supply and wastewater treatment facilities
- Dam and reservoir projects
- Pump stations and pipelines

Experience

- 36 total years
- 36 years with Hazen

Professional Activities

National Society of Professional Engineers

Professional Engineers of North Carolina

American Society of Civil Engineers

American Water Works Association

Water Environment Federation

Utle Creek WRF Preliminary Engineering Report, Town of Holly Springs, NC

Constructability. Project to evaluate expansion of the WRF from 6 to 8 mgd with plans for future expansion to 15 mgd. The project included evaluating the capacity of all processes on site, coordinating with DWR for perspective limits for expansion from 8 to 15 mgd, and providing 20-year NPW cost evaluations for each proposed secondary process alternatives. A calibrated BioWin model was developed and used to evaluate conventional, densification, and membrane bioreactor technologies for secondary process expansion.

Fort Mill WPCP Expansion, Town of Fort Mill, SC

Start-up and Testing. Two-phased expansion of the WPCP from 3 to 4.5 mgd. Phase 2 included a new 4.5-mgd MBR facility designed for expansion to 6.0 mgd, a new influent pump station with coarse screens; new preliminary treatment facility with HeadCell grit removal, influent equalization, and flow distribution; new BNR tanks; new UV facilities; and associated electrical distribution equipment and generator facilities. Mr. Bickerstaff provided start-up and testing services for the BNR and MBR facilities.

T.Z. Osborne WWTP Solids Handling Improvements City of Greensboro, NC

Construction Management. Managed resident engineering and startup services for multiple projects at this facility. Projects include upgrade and expansion to 40 mgd, upgrade and expansion to 56 mgd, construction of a new fluidized bed incinerator (FBI-2), rehabilitation and addition of a new wet scrubbing system for an existing fluid bed incinerator (FBI-1). laboratory expansion project, solids handling improvements project and standby power improvements project.

Eastside WWTP Improvements, City of High Point, NC

Construction Management. Managed resident engineering, schedule analysis, and start-up services for multiple projects at this 22-mgd facility. Projects included construction of new odor control facilities and a solids facility improvements project. The solids facility project included installation of new dewatering centrifuges, dewatered sludge cake pumps, refurbishment of an existing fluid bed incinerator, and installation of new incinerator emissions control equipment.



William Russell, AIA, LEED AP

Associate Vice President

Mr. Russell is Hazen's Building Design Manager for the Mid-Atlantic Region.

Education

BArch, Clemson University, 1984

Certification/License

Licensed Architect: NC, VA, IL, MD, CT, NY, OH, NH, TX

Areas of Expertise

- Programming and design of water, wastewater facilities,
- Laboratories and industrial facilities
- Sustainable design of water and wastewater facilities
- Utilization of computer applications in the design of water, wastewater and industrial facilities

Experience

- 39 total years
- 28 years with Hazen

Professional Activities

American Institute of Architects
Society for Protective Coatings
International Code Council
National Fire Protection Association

TZ Osborne WRF, City of Greensboro, NC

Architect. Provided architectural design services for several projects that included modifications over the years to process and administration buildings at the TZ Osborne facility. Modifications have included removing existing belt filter process equipment and replacing with centrifuges, odor control facilities, and other appurtenant systems and building changes as needed. Modifications were also made to the incinerator portion of the dewatering building.

Fort Mill WPCP Expansion, Town of Fort Mill, SC

Architect - Building Design. Two-phased expansion of the WPCP from 3 to 4.5 mgd. Phase 1 was an interim project to improve the treatment process at the 3-mgd rated capacity. Improvements included new fine bubble diffusers and blowers in the aeration tanks, new chopper mix pumps at the anoxic tanks, new RAS pumps and a new dewatering facility with new sludge feed pumps and belt filter press. Phase 2 included a new 4.5-mgd MBR facility designed for expansion to 6.0 mgd, a new influent pump station with coarse screens; new preliminary treatment facility with HeadCell grit removal, influent equalization, and flow distribution; new BNR tanks; new UV facilities; and associated electrical distribution equipment and generator facilities.

Twelve Mile Creek WWTP Expansion, Union County, NC

Architect. Architectural design for the WWTP set a new design aesthetic for the facility. As development has approached the facility improvements to the exterior appearance was desired. The new buildings included grit facility, electrical building, blower building, and dewatering building. Each of these buildings were positioned at the perimeter of the site and a visible from the neighborhoods and nearby roads. The new aesthetic uses a brick veneer utilizing two colors and translucent wall panels to break up scale and provide natural light. Sloped metal roofs with monitors were used to harmonize with the nearby residential neighborhoods.

Thomas P. Smith WRF Improvements, City of Tallahassee, FL

QA/QC. The project included a solids processing facility, including primary sludge thickening/fermentation, WAS storage and gravity belt thickening, two phase anaerobic digestion, sludge dewatering (centrifuges), thermal sludge drying facility and a septage/FOG receiving and separation facility. It also includes new chemical storage/feed facilities for sodium hypochlorite, methanol, polymer, and alum as well as an upgrade and expansion of effluent pump station.



Dennis Phelps

Senior Associate

Mr. Phelps has been involved in the design, maintenance, and construction of electrical systems for nearly 40 years.

Areas of Expertise

- Low and medium voltage power distribution
- Electrical controls
- Fire alarm systems
- Electrical codes and regulations
- Variable frequency-drive systems and lighting
- Standby power generation systems including diesel-fuel generators, generator paralleling and synchronizing

Experience

- 45 total years
- 19 years with Hazen

Lower Dorchester WWTP PER and Design, Dorchester County, SC
Primary Electrical Designer. Preliminary Engineering to 30% for an expansion of the Lower Dorchester WWTP from 8 to 16 mgd and an Electrical Master Plan. The project included a retrofit of existing oxidation ditches with mechanical aeration to plug flow and fine bubble aeration, two new 4-mgd aeration basins, a new blower building, a new preliminary treatment facility, a new UV disinfection facility, two new disk filters, two new secondary clarifiers, new solids distribution, and a new thickening building with rotary drum thickeners. The project also included replacing the existing electrical system with new electrical equipment and generators.

Lower Dorchester WWTP Improvements, Dorchester County, SC
Lead Electrical Designer. Infrastructure improvements at the 8-mgd WWTP to include a new secondary clarifier and return activated sludge pump, a tertiary cloth disk filter, a new centrifuge and appurtenances, and aeration system improvements to existing sludge decant basins. The aeration system improvements include fine bubble diffusers and positive displacement blowers to replace existing mechanical surface mixers and aerators.

Proctors Creek WWTP Centrifuge Dewatering Facility, Chesterfield County, VA

Primary Electrical Designer. County's first centrifuge dewatering facility. The project entailed preliminary engineering and detailed design of a new high solids dewatering centrifuge facility located adjacent to the existing Dry Sludge Storage Facility (DSSF). Conveyors will deposit dewatered cake directly into the DSSF thus saving the County on Contracted sludge hauling across the plant site. A complex cast-in-place foundation was coupled with a pre-engineered metal frame building to provide the most cost-effective system. The project included close coordination with Dominion Energy for re-routing extension of the 34.5 kV utility feeders to supply the new facility. This project was completed on-time (January 2018) and within budget.



Johnny Waycaster, PE

Senior Associate

Mr. Waycaster is an expert in the structural design and analysis of wastewater and water treatment and conveyance facilities.

Education

MS, North Carolina State University, 1992

BSCE, University of North Carolina at Charlotte, 1989

Certification/License

Professional Engineer: NC, VA
Confined Space Entry

Areas of Expertise

- Structural design of sanitary structures
- Civil/sitework design

Experience

- 34 total years
- 31 years with Hazen

Professional Activities

American Concrete Institute
American Institute of Steel Construction

Terrible Creek WWTP Expansion, Town of Fuquay-Varina, NC

Lead Structural Engineer. Expansion from 1 to 3 mgd. Design included a Preliminary Treatment Facility, Influent Pump Station, Flow Equalization Tanks, BNR Tanks, Secondary Clarifiers, RAS-WAS Pump Station, Disk Filters, UV Disinfection, Dewatering Facilities, and Chemical Storage and Feed Facilities.

Neuse River Resource Recovery Facility BioEnergy Recovery Project (BERF), Raleigh Water, NC

Structural Engineer. This project was designed to help lower the City's greenhouse gas footprint and move towards energy neutrality. Ultimately, the methane gas produced at this 75 mgd RRF will be injected into a gas pipeline and utilized to power City buses. Multiple innovative processes are included as a part of this project including thermal hydrolysis (THP) and a deammonification side stream treatment of centrate which will assist the treatment facility in producing more methane gas at lower treatment cost. Design of the bioenergy facilities and coordination with the Construction Manager at Risk (CMAR) was included as a part of the project.

Rockfish Creek WRF Phase 2 Expansion, PWC, Fayetteville, NC

Lead Structural Engineer. Expansion of the WRF from 16 to 21 mgd. The expansion included a new screw lift pumping influent pumping station with a firm capacity of 45 mgd, designed to be expanded to a firm capacity of 60 mgd, preliminary treatment facilities, plant hydraulic improvements, chlorine contact tank and aerobic digesters. This project also included a new RAS distribution system installation previously designed during the Phase 1 expansion.

Cross Creek WRF Improvements, PWC, Fayetteville, NC

Lead Structural Engineer. Several improvement projects at the 25-mgd WRF. The projects included new influent and intermediate screw pumps, new primary sludge pumps, replacement of all of the centrifugal blowers, a complete refit of a secondary clarifier with a new Tow-Bro mechanism and RAS pump and piping improvements. Both of these stations were equipped with all new pumping equipment as well as a new grout bed for the pump returning the firm capacity of the stations to 48 mgd each. A new sodium hypochlorite and sodium bisulfite, chlorination and dechlorination system, was also installed in the existing gas chlorination and dechlorination facilities.



David Skeggs, PE

Senior Associate

Mr. Skeggs is experienced in civil/site design and permitting for water and wastewater treatment projects and dam rehabilitation projects.

Education

BSCE, Case Western Reserve University, 2006

Certification/License

Professional Engineer: NC, OH, TN

Areas of Expertise

- Site/civil design
- Stormwater management
- Erosion and sediment control
- Dams and surface impoundments
- Geosynthetics and solid waste management

Experience

- 17 total years
- 1< year with Hazen

Professional Activities

American Society of Civil Engineers

Terrible Creek WWTP Expansion, Town of Fuquay-Varina, NC

Site/Civil Design. Design/Build project with Crowder Construction. WWTP expansion from 3 to 6 mgd. Design includes new BNR Tanks, Secondary Clarifiers and Disk Filters, as well as upgrades and improvements to existing facilities. *Site/Civil Design.* Design/Build project with Crowder Construction.

Lake Benson and Lake Wheeler Dam Rehabilitation, City of Raleigh, NC

Project Engineer. Responsible for development of engineering design drawings and technical specifications for improvements to two connected dams. Design components include downstream armoring of the dam embankment and installation of new Obermeyer gates.

Gallatin Fossil Plant CCR Landfill Siting Study, Permitting, and Design, Tennessee Valley Authority, Sumner County, TN

Project Engineer and Project Manager. Siting study evaluating both off-site and on-site options for the development of a new coal combustion residual (CCR) landfill. The study evaluated off-site properties within a 20-mile radius of the Gallatin Fossil Plant with a goal of identifying a suitable site that was technically and economically viable while minimizing impact to the surrounding community and environment. The off-site property evaluation included developing a GIS database of the study area, performing a screening level assessment using publicly available information on the ecology, geology, proximity to existing land uses, as well as the required size of property needed for a new landfill, compliance with regulatory setbacks, and transportation considerations such as proximity to rail and highways.

CCR Surface Impoundment Projects, Tennessee Valley Authority, Gallatin, TN

Civil Project Lead and Project Manager. Responsible for design of spillway upgrades, stability improvements, CCR Removal Plan development, and Federal USEPA CCR Rule compliance. Includes serving as engineer of record for CCR Rule compliance.



Nathan Derry, PE

Senior Associate

Mr. Derry specializes in the design and integration of electrical and controls systems for water and wastewater facilities.

Education

BSEE, University of Toledo, 2005

AAS, Mechanical Eng. Tech.,
Monroe County Community
College, 2002

Certification/License

Professional Engineer: NC

Areas of Expertise

- Instrumentation and control design
- Electrical design
- SCADA design
- PLC and OIT programming
- Construction phase services
- Design/build services

Experience

- 20 total years
- 4 years with Hazen

Professional Activities

ISA (International Society of
Automation)

IEEE (Institute of Electrical and
Electronics Engineers)

Mauldin Road WRRF RAS Pump Station Improvements, ReWa, Greenville, SC

I&C Engineer. Provided instrumentation and control design services for the construction upgrades of the plant's upgraded RAS pumping system. The upgrades required integration of VFDs into an existing Plant SCADA System. Design responsibilities included electrical drawings and Division 40 specifications. Design documents were assembled and issued for bid and construction services provided.

Snow Hill Road Pump Station, Durham County, NC

I&C Engineer. Provided instrumentation and control design services for the construction of a new pump station facility with ancillary ventilation, chemical, and odor control systems. The facility required a new control system locally with integration of plant's status via a cellular connection into an existing centralized SCADA System. Design responsibilities included P&IDs and Division 40 specifications. Design documents were assembled, issued, and construction/start-up services provided.

Big Buffalo WRF Flood Rehabilitation, City of Sanford, NC

I&C Engineer. Provided instrumentation and control design services for the rehabilitation of the plants screening, grit collection, grit handling, and influent pumping systems after the facility experienced a flooding event. An engineering report was developed describing the condition of the equipment and recommendations to be made for the rehabilitation of the facility and submitted to FEMA. Design responsibilities included developing the electrical drawings and Division 40 specifications. Design documents were assembled and issued for bid and construction services provided.

Pelham WRRF Primary Sludge Pump Improvements, ReWa, Greenville, SC

I&C Engineer. Provided instrumentation and control design services for the construction upgrades of the plant's new scum pump and primary sludge pump systems. The upgrades required integration of vendor provided control panels into an existing Plant SCADA System. Design responsibilities included P&IDs and Division 40 specifications. Design documents were assembled and issued for bid and construction services provided.



Hazen

www.hazenandsawyer.com



Utle Creek Water Reclamation Facility Preliminary Engineering Report

DRAFT

August 15, 2023

Table of Contents

Executive Summary	1
ES.1 Introduction and Background	1
ES.2 Liquid Treatment Train	1
ES.3 Solids Treatment Train	3
ES.4 Cost Summary	4
1. Project Summary	1-1
1.1 Existing Facility Background	1-1
1.2 Current NPDES Permit Requirements	1-2
1.3 Design Conditions	1-4
1.4 Design Flow	1-5
1.5 Design Loads	1-5
2. Liquid Treatment Train	2-1
2.1 Preliminary Treatment Facility	2-1
2.1.1 Conventional and Densification Secondary Process Alternative	2-1
2.1.2 MBR Alternative – Fine Screenings Facility	2-1
2.1.2.1 Center-Flow Band Screens	2-2
2.1.2.2 In-Channel Rotary Drum Screens	2-4
2.1.2.3 Rotary Drum Screens	2-6
2.1.2.4 Screenings Compaction and Conveyance	2-8
2.2 Influent Pump Station	2-8
2.2.1 Conventional and Densification Secondary Process Alternative	2-9
2.2.2 MBR Secondary Process Alternative	2-9
2.3 Oxidation Ditch Distribution Box	2-10
2.4 Biological Process Model Development	2-11
2.4.1 Special Sampling	2-11
2.4.2 Biological Process Model Validation	2-12
2.5 Secondary Process – Oxidation Ditch	2-12
2.5.1 Common Design Elements - Plug Flow Configuration	2-13
2.5.1.1 Aeration Basins	2-14

2.5.1.2	Mixing	2-15
2.5.1.3	NRCY Pumping	2-16
2.5.1.4	Process Aeration Requirements	2-17
2.5.1.5	Aeration System	2-18
2.5.1.6	Blower Building	2-19
2.5.1.7	Secondary Process Control	2-20
2.5.2	Alternative 1 – Plug Flow Conventional Five-Stage BNR with Final Clarification	2-20
2.5.2.1	Final Clarifiers	2-21
2.5.2.2	Expected Performance	2-23
2.5.2.3	Site Layout	2-24
2.5.3	Alternative 2 – Plug Flow Densification Five-Stage BNR with Final Clarifiers	2-26
2.5.3.1	Densified BNR	2-26
2.5.3.1.1	Metabolic Selection	2-26
2.5.3.1.2	Physical Selection	2-27
2.5.3.2	Final Clarifiers	2-30
2.5.3.3	Expected Performance	2-31
2.5.4	Alternative 3 – Plug Flow Five-Stage BNR with MBR	2-32
2.5.4.1	Equalization	2-32
2.5.4.2	MBR System	2-33
2.5.4.2.1	Membrane Technology	2-34
2.5.4.2.2	Permeate Pumps	2-37
2.5.4.2.3	Membrane Blowers	2-38
2.5.4.2.4	RAS Pumps	2-38
2.5.4.2.5	Clean-In-Place System	2-38
2.5.4.2.6	Deoxygenation Zone	2-38
2.5.4.2.7	Expected Performance	2-39
2.5.4.3	Site Layout	2-39
2.6	Filtration	2-41
2.7	Disinfection	2-42
2.8	Cascade Aeration and Effluent Flow Measurement	2-47
2.9	Chemical Facilities	2-48
2.9.1	Existing Facilities	2-48

2.9.2	Supplemental Carbon	2-49
2.9.3	Metal Salt	2-50
2.10	Hydraulics	2-51
2.10.1	Hydraulic and Capacity Evaluation	2-52
2.10.2	Bottlenecks - Conventional and Densification Secondary Process Alternatives	2-53
2.10.3	Bottlenecks – MBR Alternative	2-53
3.	Solids Treatment Facilities	3-54
3.1	Existing Dewatering Technology	3-54
3.1.1	Technology Selection	3-54
3.2	Solids Production Rates	3-55
3.3	Proposed Process	3-56
3.4	WAS Holding	3-56
3.4.1	Existing Tanks	3-56
3.4.2	Sludge Transfer	3-57
3.4.3	Dewatering Feed Tank	3-58
3.5	Dewatering Facility	3-58
3.5.1	Dewatering Centrifuges	3-59
3.5.1.1	Future Advanced Solids Handling Process Considerations	3-60
3.5.2	Dewatering Feed Pumps	3-61
3.5.3	Polymer System	3-61
3.5.4	Centrate Equalization	3-62
3.5.5	Slops Management	3-62
3.5.6	Dewatered Cake Conveyance	3-63
4.	Ancillary Facilities	4-64
4.1	Plant Reclaimed Water System	4-64
4.2	Operations Building	4-66
5.	Electrical Equipment and Distribution	5-68
6.	I&C and SCADA	6-71
6.1	Introduction	6-71
6.2	Background / Existing Facilities	6-71
6.3	System Requirements / Design Criteria	6-72

6.4	Proposed System.....	6-73
6.5	Programmable Logic Controllers	6-73
6.6	Operator Workstations	6-74
6.7	Data Historian	6-75
6.8	Alarm Notification Software	6-75
6.9	Remote Monitoring.....	6-75
6.10	Local Area Network.....	6-75
6.11	Communication Media	6-76
6.12	Security/Safety.....	6-76
6.13	Electrical Requirements	6-77
6.14	Instrumentation	6-77
6.15	Plant Control Room.....	6-78
7.	Capital Cost	7-78

List of Tables

Table ES-1: Major Liquid Train Improvements Necessary for 8.0 mgd expansion	2
Table ES-2: Major Solids Process Upgrades Necessary for 8.0 mgd Expansion	3
Table ES-3: Major Direct and indirect Cost Adders	4
Table ES-4: Total Capital Cost	4
Table 1-1: Current Permitted Effluent Limits	1-4
Table 1-2: Basis of Design Influent Flow	1-5
Table 1-3: 8.0 mgd Design AA and MM Influent Loads	1-5
Table 2-1: Existing Headworks Capacity	2-1
Table 2-2: Advantages and Disadvantages of Center-Flow Band Screens	2-4
Table 2-3: Center-Flow Band Screen Design Requirements	2-4
Table 2-4: Advantages and Disadvantages of In-Channel Rotary Drum Screens	2-6
Table 2-5: In-Channel Rotary Drum Screen Design Requirements	2-6
Table 2-6: Advantages and Disadvantages of Rotary Drum Screens	2-7
Table 2-7: Rotary Drum Screen Design Requirements	2-8
Table 2-8: Existing Influent Pumps Capacity	2-8
Table 2-9: Effluent TN and TP Modeling Target Concentrations	2-13
Table 2-10: Aeration Basin Key Design Criteria – Conventional Five-Stage BNR	2-15
Table 2-11: BNR Basin Volumes and HRT at 8.0 mgd	2-15
Table 2-12: BNR Basins Mixer Design Criteria	2-16
Table 2-13: BNR Basins Nitrified Recycle Pump Design Criteria	2-16
Table 2-14: Estimated Aeration Requirements per Basin	2-17
Table 2-15: Estimated Total Aeration Requirements	2-18
Table 2-16: Blower Pressure Requirements	2-18
Table 2-17: Preliminary Diffuser Design	2-19
Table 2-18: Blower Design Criteria – Process Aeration	2-20
Table 2-19: Process Control Instrumentation	2-20
Table 2-20: FC Key Design Criteria – Conventional Five-Stage BNR	2-21
Table 2-21: Expected Conventional Five-Stage BNR Performance	2-23
Table 2-22: WAS Flow and Load	2-28
Table 2-23: Hydrocyclone Sizing	2-28
Table 2-24: Final Clarifier Key Design Criteria – DAS Five-Stage BNR	2-30
Table 2-25: Expected Densification Five-Stage BNR Performance	2-31
Table 2-26: Historically Significant Wet Weather Events	2-33
Table 2-27: Comparison of Membrane Cleaning Requirements	2-35
Table 2-28: MBR Design Flux Rates (gfd)	2-35
Table 2-29: MBR Design Summary	2-36
Table 2-30: Expected Five-Stage BNR MBR System Performance	2-39
Table 2-31: Tertiary Filter Design Criteria	2-42
Table 2-32: Existing 6.0 mgd UV System Design	2-44
Table 2-33: 8.0 mgd UV System Design Requirements	2-46
Table 2-34: 8.0 mgd UV System Preliminary Proposal Summaries	2-47
Table 2-35: Supplemental Carbon Dosing Rate and Storage Size	2-50
Table 2-36: Metal Salt Dosing Rate and Storage Size	2-51

Table 2-37: Hydraulic Control Points.....	2-52
Table 2-38: Hydraulic Capacity Evaluation – Flow Conditions	2-53
Table 3-1: Dewatering Technology Comparison.....	3-55
Table 3-2: Sludge Production Rates, Pounds of Total Solids Per Million Gallons	3-55
Table 3-3: Secondary Process Alternatives Impact on WAS Concentrations	3-56
Table 3-4: Existing WAS Holding Tank.....	3-57
Table 3-5: Days of WAS Storage at 8.0 mgd	3-57
Table 3-6: Sludge Transfer Pump Station Design Criteria	3-58
Table 3-7: Dewatering Feed Tank Design Criteria.....	3-58
Table 3-8: Dewatering Centrifuge Design Criteria	3-60
Table 3-9: Estimated Centrifuge Operating Hours, hrs/day.....	3-60
Table 3-10: Estimated Centrifuge Operating Hours for Future Advanced Processes at 70% Turndown, hrs/day	3-61
Table 3-11: Dewatering Feed Pump Design Criteria	3-61
Table 3-12: Polymer System Design Criteria	3-62
Table 3-13: Individual Inclined Conveyance Design Criteria	3-63
Table 3-14: Common Conveyance Design Criteria	3-64
Table 5-1: General Service Monthly Rate Schedules	5-69
Table 5-2: Billing Example Assumptions.....	5-69
Table 5-3: Billing Example – SGS-TOU Summer	5-69
Table 5-4: Billing Example – LGS-TOU Summer	5-70
Table 5-5: Billing Example – SGS-TOU Winter.....	5-70
Table 5-6: Billing Example – LGS-TOU Winter.....	5-70
Table 7-1: Major Direct and indirect Cost Adders.....	7-79
Table 7-2: Total Capital Cost.....	7-79

List of Figures

Figure 1-1: Utley Creek WRF Process Flow Diagram	1-2
Figure 2-1: Proposed Location for Fine Screenings Facility	2-2
Figure 2-2: Center-Flow Band Screens.....	2-3
Figure 2-3: Top View of Center-Flow Band Screen Channel Geometry.....	2-4
Figure 2-4: In-Channel Rotary Drum Screen.....	2-5
Figure 2-5: Rotary Drum Screen.....	2-7
Figure 2-6: Influent Pump and System Curve for Future Fine Screening Facility	2-9
Figure 2-7: Oxidation Ditch Distribution Box – DMP Utley Creek Water Reclamation Facility Upgrade and Expansion – Drawing M75 – November 2007	2-10
Figure 2-8: Special Sampling Locations	2-11
Figure 2-9: BioWin™ Process Schematic.....	2-12
Figure 2-10: Proposed Five-Stage BNR Configuration	2-14
Figure 2-11: SPA at 8.0 mgd Design MM and Peak Hour Conditions.....	2-22
Figure 2-12: SPA at 8.0 mgd Design MM and Peak Hour Conditions – 100 mL/g	2-23
Figure 2-13: Conventional Alternative Layout.....	2-25
Figure 2-14: inDENSE™ Hydrocyclone Components and Function (left) and Hydrocyclone Skid (right) (Courtesy of World Water Works)	2-27

Figure 2-15: DAS Alternative Layout	2-29
Figure 2-16: SPA at 8.0 mgd Design MM and Peak Hour Conditions - Densification	2-31
Figure 2-17: MBR Alternative Layout.....	2-40
Figure 2-18: Existing Tertiary Filters - Operation and Maintenance Manual – January 2011 – Drawing 300-I.....	2-41
Figure 2-19: Existing UV Facility – Operation and Maintenance Manual – January 2011 – Drawing 350..2-43	
Figure 2-20: Existing Cascade Aeration Facility - Utley Creek WRF Phase I Upgrades (March 2016) - Issue for Bid – Sheet M-1	2-48
Figure 2-21: Existing Chemical Dosing Schematic	2-49
Figure 3-1: Proposed Solids Process Flow Diagram	3-56
Figure 4-1: Existing UV Channel Effluent Box – Utley Creek WRF Phase I Upgrades (March 2016) - Issue for Bid – Sheet M-5.....	4-65
Figure 4-2: Existing RCW Pump Station Tie-In - Utley Creek WRF Phase I Upgrades (March 2016) - Issue for Bid – Sheet M-5.....	4-65
Figure 4-3: Operations Building Preliminary Layout.....	4-67

List of Appendices

Appendix A: Special Sampling Results
 Appendix B: Biological Process Model Development

List of Acronyms

Abbreviation	Definition
AA or AVG365	Annual average
BB	Biological basin
BOD₅	Five-day biochemical oxygen demand
BNR	Biological nutrient removal
CAS	Conventional activated sludge
cBOD₅	Carbonaceous five-day biochemical oxygen demand
CIP	Clean in place
COD	Chemical oxygen demand
DAS	Densified activated sludge
DO	Dissolved oxygen
DVR	Digital video recorder
EQ	Equalization
FC	Final clarifier
gpm	Gallons per minute
Hazen	Hazen and Sawyer
HMI	Human machine interface
HP	Horsepower
I/I	Inflow and infiltration
ISS	Inert suspended solids
kWh	Kilowatt-hour
LAN	Local area network
LGS-TOU	Large general service time of use
MAX07	Maximum 7-day moving average
MAX14	Maximum 14-day moving average
MAX30	Maximum 30-day moving average
MBR	Membrane biological reactor
MCC	Motor control center
MD	Maximum day
mgd	Million gallons per day
ML	Mixed liquor
MLSS	Mixed liquor suspended solids
MLVSS	Mixed liquor volatile suspended solids
MM	Maximum month
nbDON	Non-biodegradable dissolved organic nitrogen
NH₃-N	Ammonia-nitrogen
NO_x	Nitrate-Nitrite-Nitrogen
NPDES	National pollutant discharge elimination system

Abbreviation	Definition
NRCY	Nitrified Recycle
OHO	Ordinary heterotrophic organism
Ortho-P	Ortho phosphorus
PER	Preliminary engineering report
PFAS	Per-and polyfluoroalkyl substances
PLC	Programmable logic controller
PMU	Polymer makeup unit
POE	Ethernet communication cable
psig	Psi-gauge pressure
PSS	Point source summation
RAS	Return activated sludge
RCW	Reclaimed water
RIO	Remote input / output
SCADA	Supervisory control and data acquisition
scfm	Standard cubic feet per minute
SGS-TOU	Large general service time of use
SLR	Solids loading rate
SND	Simultaneous nitrification and denitrification
SOR	Solids overflow rate
SOTE	Standard oxygen transfer efficiency
SPA	State Point Analysis
SRT	Solids retention time
SVI	Solids volume index
TDH	Total dynamic head
TM	Technical memoranda
Town	Town of Holly Springs
TKN	Total Kjeldahl nitrogen
TN	Total nitrogen
TP	Total phosphorus
TS	Total solids (express in %)
TSS	Total suspended solids
VFD	Variable frequency drive
VSS	Volatile suspended solids
UCWRF	Utley Creek Water Reclamation Facility
UV	Ultraviolet
UVT	Ultraviolet transmittance
WAS	Waste activated sludge
WRF	Water reclamation facility

Executive Summary

ES.1 Introduction and Background

The Town of Holly Springs (Town) owns and operates the Utle Creek Water Reclamation Facility (UCWRF), a water reclamation facility (WRF) designed for a maximum month flow of 6 million gallons per day (mgd). The facility discharges treated effluent into Utle Creek in subbasin 03-06-07 of the Cape Fear River Basin via National Pollutant Discharge Elimination System (NPDES) permit NC0063096. The existing permit includes effluent limits for both the current maximum month process flow capacity of 6.0 mgd as well as for future WRF expanded capacity of 8.0 mgd. It is anticipated that the next UCWRF NPDES permit will also include effluent limits for both 6.0 and 8.0 mgd and the 8.0 mgd limits would be regulated upon the completion of a WRF expansion project.

Hazen and Sawyer (Hazen) and the Town completed a UCWRF Master Plan that outlined design plans for the 6.0 to 8.0 mgd upgrade at the UCWRF site. Due to rapid residential growth and the potential for additional industries that may drive the need to expand beyond 8.0 mgd in the next decade, this Preliminary Engineering Report (PER) will focus on the 8.0 mgd expansion but will consider expansion to an ultimate flow of 15.0 mgd. The 8.0 mgd expansion alternatives for the UCWRF are described in detail, including assumptions on major equipment types and preliminary sizing, while a forthcoming “Alternatives Analysis” task will evaluate expanding the facility from 8.0 mgd to 15.0 mgd. The 15.0 mgd expansion is not discussed in detail in this memorandum, but consideration for future expansion for each recommended liquid and solids process has been taken into consideration in regard to location of facilities, hydraulic profile, and conveyance through the treatment units.

ES.2 Liquid Treatment Train

The hydraulic and process capacity of the existing system was evaluated to determine the upgrades necessary to expand the facility from 6.0 to 8.0 mgd. Three secondary processes were evaluated to determine the optimal process for 8.0 mgd that would also allow for easy expansion from 8.0 to 15.0 mgd.

1. Plug-flow conventional five-stage biological nutrient removal (BNR) with final clarifiers (FC)
2. Plug-flow densification five-stage BNR with final clarifiers
3. Plug-flow five-stage BNR with membrane biological reactors (MBR)

Based on site constraints, ease of expansion to 15 mgd, synergy with future water re-use, and preferences expressed by the Town, the MBR alternative is the preferred path forward. Major liquid train improvements necessary to expand the facility from 6.0 to 8.0 mgd are presented in **Table ES-1**.

Table ES-1: Major Liquid Train Improvements Necessary for 8.0 mgd expansion

Liquid Process	Conventional	Densification	MBR
Preliminary Treatment Facility	The coarse screens and grit facility are sufficiently sized for the 8.0 mgd upgrade. No modifications are necessary.		
Influent Pump Station	No modifications necessary	No modifications necessary	The existing pumps will be used to send a portion of the influent flow to the equalization tanks during high flow events.
Fine Screen Facility	Fine screens not necessary	Fine screens not necessary	Install new 2-mm fine screen facility with new oxidation ditch distribution box.
Oxidation Ditches	The oxidation ditches have sufficient process volume to treat 8.0 mgd, but it is recommended that they be converted from a ditch configuration to plug flow configuration to improve settleability and nutrient removal.		
Surface Aerators	The surface aerators are under-sized and it is recommended that the aeration system be converted to fine bubble diffusers with blowers to increase oxygen transfer efficiency and improve nitrification performance.		
Final Clarification	One additional 85-ft clarifier is necessary	No new final clarifiers necessary	Final clarifiers are converted to flow equalization for the MBR alternative to reduce peak flow to 2Q.
MBR	No modifications necessary	No modifications necessary	New MBR facility will be constructed downstream of the oxidation ditches.
Effluent Filters	One additional effluent filter	One additional effluent filter	Effluent filters not necessary
Ultraviolet Disinfection	A new dual-channel UV facility sized for Type I Reclaimed Water (RCW) use is recommended for redundancy and reliability.		
Cascade Aeration	The cascade aeration system is sufficiently sized for the 8.0 mgd upgrade. No modifications are necessary.		
Chemical Facilities	New bulk storage tanks and containment for supplemental carbon and metal salt are recommended adjacent to the existing chemical building. The existing chemical dosing pumps have sufficient capacity for the 8.0 mgd upgrade.		
RCW	The existing RCW system may require additional storage to help meet peak RCW demands during low flow periods. RCW storage and conveyance will be evaluated in more detail during the Reclaimed Water Master Plan.		

ES.3 Solids Treatment Train

Anticipated capacity needs for a new dewatering process and facility were evaluated to determine upgrades and equipment to increase the UCWRF's capacity to 8.0 mgd. Three dewatering technologies were evaluated:

1. Volute Press
2. Belt Filter Press
3. Dewatering Centrifuge

After discussion with the Town and site visits to nearby facilities employing similarly sized equipment, dewatering centrifuges were selected. Major solids process improvements needed to expand to 8.0 mgd plant capacity are presented in Table ES-2.

Table ES-2: Major Solids Process Upgrades Necessary for 8.0 mgd Expansion

Solids Process	Capacity Discussion
WAS Holding Tanks	The existing Digester No. 1 and No. 2 proposed to be converted to WAS Holding Tanks have capacity is adequate to meet WAS storage needs at the desired dewatering operating schedule.
WAS Transfer	Improvements to the WAS Pump Station next to Digester No. 2 (Interchange Tank) will be needed to increase capacity of the transfer pumps to match the feed capacity of one or two centrifuges. These pumps will also allow for liquid loadout of WAS, if needed.
Dewatering Feed Tank	One tank is proposed with limited hydraulic retention time, to provide consistent volume from which the dewatering feed pumps may pull from and buffer any differences in pumping rates between sludge transfer and dewatering feed.
Dewatering Facility	A new dewatering facility will contain new dewatering centrifuges, rotary lobe centrifuge feed pumps, bulk polymer storage, polymer makeup units, and a dewatered cake conveyance system. Electrical and control rooms are also provided for this new facility.
Conveyance	A series of screw conveyors is proposed for dewatered cake loadout from the centrifuges to trailers to be hauled by a third party for offsite disposal, likely at the McGill Merry Oaks Composting Facility.

ES.4 Cost Summary

A capital cost evaluation was conducted to determine a planning level cost for all three alternatives. Major direct and indirect cost adders are presented in Table ES-3.

Table ES-3: Major Direct and indirect Cost Adders

Description	Total
General Conditions	20%
Labor Escalation at 3.5% annually	13.8%
Material/Equipment Escalation at 5% annually	20.1%
Subcontractor Overhead, Profit, and Fee	25%
Prime Contractor Overhead and Profit	25%
Bond and Insurance	2.0%
Design Contingency	40%

Table ES-4 displays the loaded capital cost broken down into each major process at the facility. Costs were developed using experience from projects of similar size in the Holly Springs, NC region and include upgrades discussed in Section 2. Cost numbers were escalated to a construction start date of January 1st, 2025.

Table ES-4: Total Capital Cost

Facility	Conventional	Densification	MBR
Fine Screen Facility	\$0	\$0	\$20,000,000
Distribution Box Modifications	\$0	\$0	\$1,020,000
Conversion of Oxidation Ditch to Five-Stage BNR	\$25,700,000	\$30,470,000	\$25,700,000
Blower Facility	\$11,810,000	\$11,810,000	\$11,810,000
Secondary Clarifier + RAS	\$12,000,000	\$0	\$0
Hydrocyclone Facility	\$0	\$3,000,000	\$0
Membrane Facility	\$0	\$0	\$29,230,000
Convert FCs to Equalization Tank	\$0	\$0	\$980,000
Ultraviolet Disinfection Facility	\$9,350,000	\$9,350,000	\$9,350,000
Chemical Storage	\$860,000	\$860,000	\$860,000
Dewatering Facility	\$22,000,000	\$22,000,000	\$22,000,000
Operations Building	\$8,650,000	\$8,650,000	\$8,650,000
Sitework	\$13,360,000	\$12,735,000	\$19,160,000
Power Center, Generator, and Transformer	\$13,680,000	\$13,680,000	\$13,680,000
Total	\$117,410,000	\$112,555,000	\$162,440,000

1. Project Summary

The Town of Holly Springs (Town) owns and operates the Utley Creek Water Reclamation Facility (UCWRF), a water reclamation facility (WRF) designed for a maximum month flow of 6 million gallons per day (mgd). The UCWRF is permitted to discharge up to 8 mgd to Utley Creek, an effluent dominated receiving waterbody. This document lays out expansion alternatives for the UCWRF in detail, including assumptions on major equipment types and preliminary sizing.

1.1 Existing Facility Background

Raw influent enters the UCWRF through Junction Box No. 1 and No. 2 and influent flow is measured through a 24-inch Parshall flume upstream of the headworks facility. The Parshall flume is calibrated to read flows from 0.4 to 21.3 mgd.

The headworks facility includes multiple rake bar screens, vortex grit collectors, and influent pumps. The headworks facility includes two (2) multiple rake bar screens with a peak capacity of 10 mgd per screen. Each screen has a traveling rake assembly to remove debris accumulated on the screen, which is discharged through a chute onto the screw conveyor and transferred to a roll off container. Flow then passes through two (2) vortex grit collectors, each with a peak flow capacity of 10 mgd. The headworks facility has a third channel that can be used as a bypass channel for the screens and grit if the plant experiences high flow or a multiple rake bar screen or grit collector is out of service.

Return activated sludge (RAS) is returned to the influent pump station via a 30-inch gravity line and combines with influent flow. The influent pump station includes six (6) submersible non-clog pumps with a capacity of 4,167 gpm each. The pumps are designed so that five (5) pumps in service can pump a future design peak flow (influent + RAS) of 30 mgd. Flow is pumped via a 36-inch force main to the Oxidation Ditch Distribution Box.

The Oxidation Ditch Distribution Box distributes flow to the three oxidation ditches. There are two large oxidation ditches that consist of three anaerobic zones, two pre-anoxic zones, and an aerobic zone; and one small oxidation ditch with two anaerobic zones, one pre-anoxic zone and an aerobic zone. There is a common post-anoxic zone and re-aeration zone downstream of the oxidation ditches. Aeration for the re-aeration zone is provided by positive displacement blowers and fine bubble diffusers.

Flow from the oxidation ditches is split via fixed weirs to three (3) existing 90-foot diameter FCs that each have a depth of 16-feet. RAS flows by gravity to the influent pump station and RAS rates are controlled by a telescoping valve dedicated to each FC. The hydraulic peak RAS capacity in the O&M is listed as 3.75 mgd for each FC. Final clarifier effluent (FCE) flow is conveyed via gravity to four (4) Kruger/Hydrotech polyester Discfilters (3 duty/1 standby), each with a capacity of 5 mgd.

Filtered effluent is sent to the Wedeco ultraviolet (UV) disinfection system, which includes one (1) channel with two banks (1 duty/ 1 standby) with a design peak flow of 15.0 mgd. Finally, flow is sent to the cascade aerator, which increases DO above 7.0 mg/L prior to discharge to Utley Creek.

Waste activated sludge (WAS) is pumped from the gravity RAS line to the aerated WAS holding tank for minimal holding prior to dewatering. Sludge is dewatered in a volute dewatering press and loaded into trailers for offsite composting. Figure 1-1 presents a process flow diagram of the UCWRF.

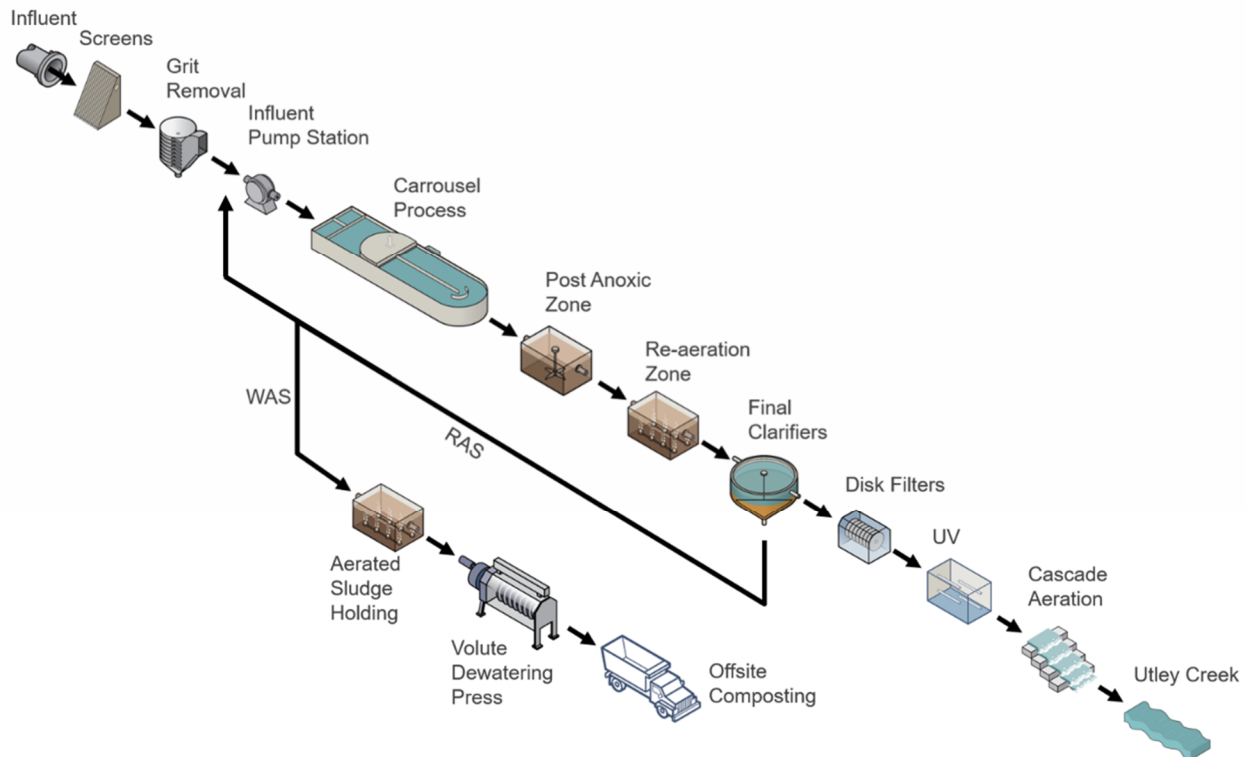


Figure 1-1: Utley Creek WRF Process Flow Diagram

1.2 Current NPDES Permit Requirements

The UCWRF is currently permitted to discharge a maximum monthly average flow of 6.0 mgd of treated effluent into Utley Creek in subbasin 03-06-07 of the Cape Fear River Basin via National Pollutant Discharge Elimination System (NPDES) permit NC0063096. At the effluent discharge location, Utley Creek is classified as a category C surface water with the designated uses of protection of aquatic life and secondary recreation. Utley Creek is a low-flow stream with a 7Q10 of 0.11 cubic feet per second (0.07 mgd) at the effluent discharge location. The current annual average flow to the facility is approximately 2.9 mgd and the stream is effluent dominant during critical low flow conditions.

The existing permit includes effluent limits for both the current maximum month process flow capacity of 6.0 mgd as well as for future WRF expanded capacity of 8.0 mgd. It is anticipated that the next UCWRF NPDES permit will also include effluent limits for these capacities and the 8.0 mgd limits would become activated upon the completion of a WRF expansion project.

Table 1-1 presents a summary of the UCWRF effluent permit limits for the current permitted maximum month flows of 6.0 mgd and 8.0 mgd. Effluent concentration limits are held constant for both the 6.0 mgd

and 8.0 mgd design capacities. The NPDES permit contains summer and winter effluent permit limits for five-day biochemical oxygen demand (BOD₅) and ammonia. The NPDES permit also includes monthly and weekly limits for total suspended solids (TSS) and fecal coliform bacteria. Dissolved oxygen (DO), pH, and total residual chlorine (if chlorine is being used in the treatment processes) have daily limits and Total Nitrogen (TN), Total Phosphorus (TP), and orthophosphate limits are based on monthly average concentrations. The WRF also has one metal limit with a monthly average allowable concentration for lead as well as a daily maximum allowable lead concentration. Lead is not a parameter that is evaluated in the process model, so it was assumed the plant could continue to achieve their effluent total lead limit. Industrial loads and non-domestic septage sources should be evaluated before the facility accepts them to ensure there is not a significant lead contribution.

Table 1-1: Current Permitted Effluent Limits

Parameter	Units	6.0 mgd (Current)		8.0 mgd (Effective Upon Plant Expansion)	
		Monthly Average	Weekly Average	Monthly Average	Weekly Average
Flow ¹	mgd	6.0	----	8.0	----
BOD ₅ , summer (April 1 – October 31)	mg/L	5.0	7.5	5.0	7.5
BOD ₅ , winter (November 1 – March 31)	mg/L	10.0	15.0	10.0	15.0
Ammonia, summer (April 1 – October 31)	mg/L	1.0	3.0	1.0	3.0
Ammonia, winter (November 1 – March 31)	mg/L	2.0	6.0	2.0	6.0
Total suspended solids (TSS)	mg/L	30.0	45.0	30.0	45.0
Total residual chlorine ¹	µg/L	----	17 (daily max)	----	17 (daily max)
Dissolved oxygen	mg/L	Greater than 7.0		Greater than 7.0	
pH	s.u.	6.0 – 9.0		6.0 – 9.0	
Fecal coliform	MPN / 100 mL	200	400	200	400
Total Kjeldahl nitrogen	mg/L	Monitor and report		Monitor and report	
Nitrate and nitrite	mg/L	Monitor and report		Monitor and report	
Total nitrogen	mg/L	5.0		5.0	
Total phosphorus	mg/L	0.5		0.5	
Orthophosphorus	mg/L PO ₄ -P	0.27		0.27	
Total hardness (effluent and stream)	mg/L as CaCO ₃	Monitor and report		Monitor and report	
Total Lead	µg/L	11.1	285 (daily max)	11.1	285 (daily max)
Whole effluent toxicity, chronic ²	----	10%		10%	

¹ Total residual chlorine limit only applies if chlorine is used for disinfection.

² Pass / fail limit with testing in February, May, August, and November.

1.3 Design Conditions

Design flow and load conditions were developed in the 2021 Utley Creek Wastewater Master Plan using historical data from 2015 through 2019 and subsequently updated using 2020 through 2022 historical data. Design flows and loads presented in this section were confirmed with the Town of Holly Springs during a meeting on November 14th, 2022.

1.4 Design Flow

Table 1-2 presents the design influent flow under different design conditions.

Table 1-2: Basis of Design Influent Flow

Parameter	Current Permit	8.0 mgd Expansion
Annual Average, mgd	5.0	6.7
Maximum Month, mgd	6.0	8.0
Maximum Day, mgd	9.0	12.0
Peak Hour, mgd	16.0	21.3

1.5 Design Loads

Table 1-3 presents the design 8.0 mgd influent annual average (AA) and maximum month (MM) concentrations and loads. AA load is calculated by multiplying the AA concentration by the design flow of 8.0 mgd for conservatism. MM load is calculated by multiplying the AA load by the design MM peaking factor.

Table 1-3: 8.0 mgd Design AA and MM Influent Loads

Parameter	AA Concentration	AA Load	MM Load Peaking Factor	MM Concentration	MM Load
	mg/L	lb/day		mg/L	lb/day
BOD ₅	350	23,400	1.25	439	29,300
TSS	350	23,400	1.25	439	29,300
NH ₃ -N	40	2,700	1.25	50.6	3,380
TKN	60.6	4,100	1.25	76.9	5,130
TP	9.0	700	1.25	13.2	880

The design minimum week and AA influent temperatures based on historical data are 14°C and 22°C, respectively.

2. Liquid Treatment Train

2.1 Preliminary Treatment Facility

The preliminary treatment at the UCWRF consists of an influent Parshall flume, two mechanical bar screens, and two grit collectors. Table 2-1 summarizes the capacity of this equipment.

Table 2-1: Existing Headworks Capacity

Unit Process	Parameter	Unit	Value
Influent Parshall Flume	Number of Units	--	1
	Size	--	24 in
	Capacity	mgd	0.4 – 21.3
Mechanical Bar Screens	Number of Units	--	2
	Channel Size	--	4'-0"
	Capacity (each)	mgd	8 (average daily flow) 10 (peak design flow)
Grit Collector	Number of Units	--	2
	Channel Size	--	4'-0"
	Capacity (each)	mgd	4 (average daily flow) 10 (peak design flow)

2.1.1 Conventional and Densification Secondary Process Alternative

The existing screenings and grit removal of the headworks facility is adequate for the conventional and densification secondary process alternatives. The total combined flow capacity of the headworks facility is 20 mgd. During peak flow events above 20 mgd, operations may have to allow for the bypassing of additional influent around the bar screens and grit facilities through the manual, center bypass channel. Due to the location in the 100-year floodplain, optional operation of the manual bypass around the screening and grit facilities, and sufficient treatment of normal plant influent flows, no additional improvements are recommended at the headworks facility for the conventional and densification secondary process alternative.

2.1.2 MBR Alternative – Fine Screenings Facility

The membrane biological reactor (MBR) equipment must be protected from any debris in the wastewater that is larger than 2mm especially fibrous material. Screens with a nominal 2-mm perforation are recommended to provide the debris and fibrous material removal. The existing bar screens are ¼" vertical bar openings which are not sufficient for removing all the undesirable solids and screenings to prevent clogging of the MBR. The existing Bar Screens are recommended to remain in-service to continue

removing coarse screenings to protect the proposed fine screens. Due to the location in the floodplain and extensive modifications to the existing screenings structure for the proposed fine screening technology, retrofitting the existing headworks is not recommended. The proposed fine screen facility location is out of the flood plain and will allow for easy future capacity expansion. The proposed location for the new fine screening facility can be seen in Figure 2-1 below.

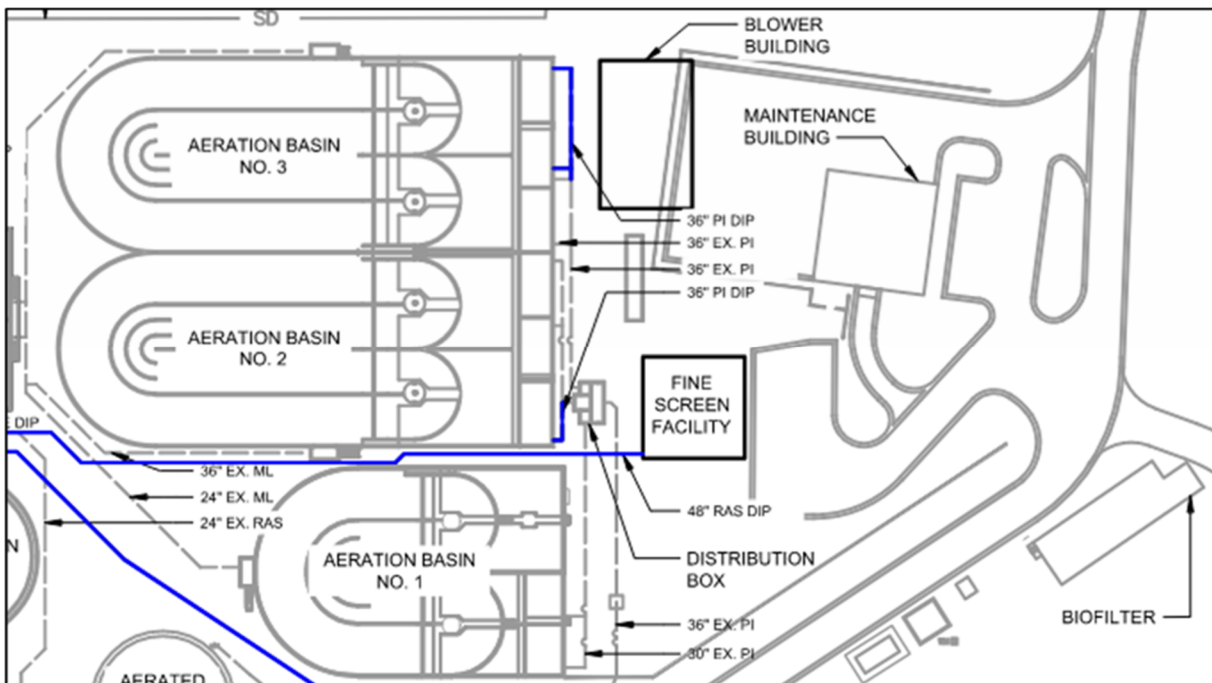


Figure 2-1: Proposed Location for Fine Screenings Facility

The fine screening facility will be located upstream of the aeration basins and the structural layout will depend on the screening technology selected. The new screening facility will have a new distribution structure to provide equal flow distribution to the basins. The fine screening facility will be sized for a peak of 16 mgd with expansion to a future peak of 30 mgd, as discussed in Section 2.5.4. Three types of fine screening technologies will be evaluated in this report for the proposed screening facility:

- Center-Flow band screens
- In-Channel rotary drum screens
- Rotary drum screens

2.1.2.1 Center-Flow Band Screens

Center-flow band screens consist of a continuous belt of perforated panels. Wastewater flows into the center of the screen and through the screen elements located on the sides of the channel. This configuration allows screenings to fall back into the center, upstream of the screen panels, preventing screenings carryover that is encountered with straight-through screen designs. When the upstream water surface reaches a certain elevation or when a preset time has elapsed, the screen operates allowing spray

nozzles to wash the screenings into a sluice channel that conveys the screenings to a washer compactor and ultimately to the dumpster. Multiple manufacturers of center-flow band screens exist including Ovivo and Hydro-Dyne. Figure 2-2 shows an example of a center-flow band screen.



Figure 2-2: Center-Flow Band Screens

Screen panels can be constructed of polyurethane mesh or stainless steel. Sealing is provided between the moving band and the screen frame with a heavy-duty rubber seal and plastic sealing fin. A flexible rubber seal is provided between each mesh panel on the screen band. Inlet plates seal the channel in front of the screen. The band screens are housed within a freestanding stainless-steel frame. The screening band is carried on main chains that are supported by sprockets located above the operating deck.

A spray wash system washes debris into a screenings sluice channel to transport screenings to compactors. The washwater/sluice flow rate required is approximately 40 to 75 gpm at 40 psi per screen. Mechanical brushes are not used to clean the screens. Center-flow band screens achieve capture rates as high as 80 to 90%. Screen capture rate is the measurement of the quantity of screenings removed by the screen relative to the total amount of debris in the raw influent.

As discussed above, center-flow band screens are required to be installed in channels with an increased area on the sides to allow for flow to exit the sides of the screen. An example of channel geometry can be seen below in Figure 2-3.



Figure 2-3: Top View of Center-Flow Band Screen Channel Geometry

This geometry adds additional structural considerations during design and civil costs during construction of the screening facility to allow for proper operation of the center-flow band screens. Table 2-2 discusses the advantages and disadvantages of center-flow band screens.

Table 2-2: Advantages and Disadvantages of Center-Flow Band Screens

Advantages	Disadvantages
• Better capture efficiency compared to flow-through screens • Minimal chance for carryover of screenings • Highest capacity for screening equipment evaluated, reduces required number of units	• Highest equipment costs, \$400,000 to \$500,000 per unit • High building cost due to more complicated screenings channels • High washwater requirements, 45 to 75 gpm per unit • Requires most maintenance for technology considered

Table 2-3 presents the design requirements for the center-flow band screens.

Table 2-3: Center-Flow Band Screen Design Requirements

Unit Process	Parameter	Unit	Value
Center-Flow Band Screens	Number of Units	--	2
	Capacity	mgd	16
	Firm Capacity	mgd	16
	Peak Capacity	mgd	32
	Screening Opening	mm	2
	Manufacturers	--	Ovivo, Hydro-Dyne

2.1.2.2 In-Channel Rotary Drum Screens

In-channel rotary drum screens consist of a cylindrical drum of perforated panels mounted inside a channel. Wastewater flows into the center of the screen and through the screen drum in the channel. This configuration allows screenings to fall back into the center, contained within the screen drum, preventing screenings carryover that is encountered with straight-through screen designs. In-channel rotary drum

screens achieve capture rates as high as 80%. When the upstream water surface reaches a certain elevation or at set time intervals, the screen rotates allowing spray nozzles to wash the screenings from the drum into the internal conveyor and compactor. The wash water/sluice flow rate required is approximately 60 to 80 gpm at 40 psi per screen. Mechanical brushes are not needed to clean the screens, reducing the need for a high wear item. The internal screw conveys the screenings while washing and compacting the screenings before being disposed into a dumpster. The in-channel screen must be installed in a channel to allow for operation, which increases the civil costs during construction of the screening facility. Multiple manufacturers of in-channel rotary drum screens exist including Saveco and Huber. Figure 2-4 below displays an example of an in-channel rotary drum screen.

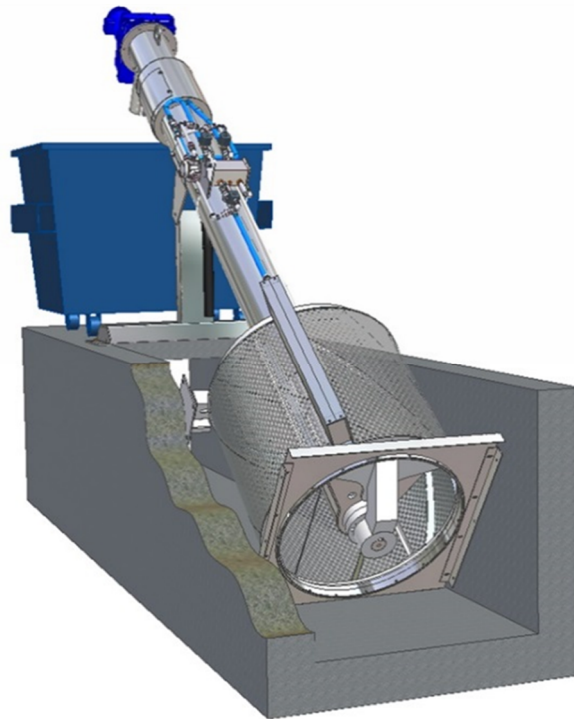


Figure 2-4: In-Channel Rotary Drum Screen

Screen drums can be constructed of polyurethane mesh panels or stainless steel. Inlet plates seal the channel in front of the screen to prevent debris from bypassing the screen. The in-channel rotary drum screens can be housed within an open, freestanding stainless-steel frame, or in a closed cover to reduce odors and foul air. The screening drum is driven by one motor with a bearing, reducing the amount of wear parts. The internal compactor is operated by a separate motor for reliability. **Table 2-4** discusses the advantages and disadvantages of in-channel rotary drum screens.

Table 2-4: Advantages and Disadvantages of In-Channel Rotary Drum Screens

Advantages	Disadvantages
• Good capture efficiency compared to flow-through screens • Minimal chance for carryover of screenings • Has internal conveyor/compactor	• High equipment costs, \$200,000 to \$330,000 per unit • High building cost due to more screenings channels • High washwater requirements, 60 to 80 gpm per unit • Two motors; one for internal compactor and one for rotary drum • Requires routine maintenance

Table 2-5 presents the design requirements for the in-channel rotary drum screens.

Table 2-5: In-Channel Rotary Drum Screen Design Requirements

Unit Process	Parameter	Unit	Value
In-Channel Drum Screens	Number of Units	--	3
	Capacity	mgd	8
	Firm Capacity	mgd	16
	Peak Capacity	mgd	24
	Screening Opening	mm	2
	Manufacturers	--	Saveco, Huber

2.1.2.3 Rotary Drum Screens

Rotary drum screens consist of an internal cylindrical drum of perforated panels fully enclosed in a stainless-steel exterior. Wastewater flows into an internal junction box with a baffle wall in the center of the screen. The wastewater then overflows a weir and falls through the screen drum and discharges down the bottom of the enclosure. This configuration allows screenings to get caught as the water flows through. The screen rotates with internal veins to direct the screenings to discharge at the end of the enclosure into a conveyor or compactor. As the screen rotates, the screenings fall back into the center and are contained within the screen drum. The screen rotates continuously and allows spray nozzles to wash the screenings from the drum to prevent blinding. The washwater/sludge flow rate required is approximately 60 to 120 gpm at 40 psi per screen. Mechanical brushes are not used to clean the screens, which eliminate a high wear item. Figure 2-5 below presents an example of a rotary drum screen.



Figure 2-5: Rotary Drum Screen

Screen drums can be constructed of polyurethane mesh panels or stainless steel. The screening drum is driven by one motor with a bearing and is installed on casters, reducing the amount of wear parts. As the equipment is not installed in a channel, access for maintenance is simpler. Table 2-6 discusses the advantages and disadvantages of rotary drum screens.

Table 2-6: Advantages and Disadvantages of Rotary Drum Screens

Advantages	Disadvantages
• Good capture efficiency compared to flow-through screens • Minimal chance for carryover of screenings • Lowest building costs due to optional on-slab construction	• High equipment costs, \$190,000 to \$250,000 per unit • Highest washwater requirements, 60 to 120 gpm • Lowest capacity for equipment, increases total number of units • Requires least maintenance for the technologies proposed

The design requirements for the rotary drum screens can be seen in Table 2-7.

Table 2-7: Rotary Drum Screen Design Requirements

Unit Process	Parameter	Unit	Value
Rotary Drum Screens	Number of Units	--	4
	Capacity	mgd	5.33
	Firm Capacity	mgd	16
	Peak Capacity	mgd	21.33
	Screening Opening	mm	2
	Manufacturers	--	Saveco, Parkson, Vulcan

Selection of the screening equipment will be completed during detailed design to determine the layout and structural requirements for the new fine screenings facility.

2.1.2.4 Screenings Compaction and Conveyance

Screw washer and compactors are commonly used throughout the municipal wastewater industry for providing a clean final product of compacted screenings for disposal to a landfill. Screw compactors are generally reliable when designed conservatively to provide adequate capacity for the maximum anticipated screenings volume capture. If necessary, screw type conveyors are often used to limit the discharge pipe lengths of screw compaction equipment that could potentially lead to clogging. Due to the increased amount of screenings wash water used for the rotary drum and center-flow band screening technologies, the compactors for this application are larger. The in-channel rotary drum screen has an internal conveyor and compactor which will be further evaluated for compacting and washing capability during detailed design. Required screw washer and compactor sizing will be determined during detailed design, pending the final selection of fine screening equipment.

2.2 Influent Pump Station

The Influent pump station consists of six submersible, non-clog pumps, each rated for 4,167 gpm at 47 ft of total head (TDH). Table 2-8 summarizes the capacity of this equipment.

Table 2-8: Existing Influent Pumps Capacity

Unit Process	Parameter	Unit	Value
Influent Pumps	Number of Units	--	6
	Type	--	Submersible, non-clog
	Capacity	gpm	4,167
	Firm Capacity	mgd	30
	Peak Capacity	mgd	36

The existing pumps at the influent pump station were evaluated for the all three secondary process alternatives.

2.2.1 Conventional and Densification Secondary Process Alternative

As noted in Section 2.1.1, the peak flow condition for the conventional and densification secondary process alternative is 21.3 mgd of influent and 10.7 mgd of RAS. RAS is currently sent back to the influent pump station by gravity, and then pumped to the Oxidation Ditch Distribution Box by the influent pump station. With the existing pumps, the firm capacity is 30 mgd and the associated maximum RAS capacity is 8.7 mgd with 21.3 mgd of influent. Reducing the RAS peak flow during peak influent flow events is required due to the capacity of the existing pumps at the influent pump station. If the conventional or densification alternative is selected, the RAS hydraulics will be further evaluated during detailed design to determine if the existing influent pumps need to be upsized.

2.2.2 MBR Secondary Process Alternative

With the MBR alternative, a new fine screening facility is required upstream of the MBR, which requires additional head to maintain gravity flow through the fine screens and to the downstream processes. Additional influent flow capacity can be achieved from the existing pumps as RAS would not be sent back to the influent pump station. This allows the pumps to convey the 21.3 mgd of influent to the new fine screening facility. The pumps were evaluated using Hazen PumpCalc, an Excel-based hydraulic model developed by Hazen specifically for pump performance analysis. Information on the existing pumps and piping from record drawings from past construction projects and equipment operation and maintenance manuals was utilized for the evaluation. Figure 2-6 presents the system and pump curves.

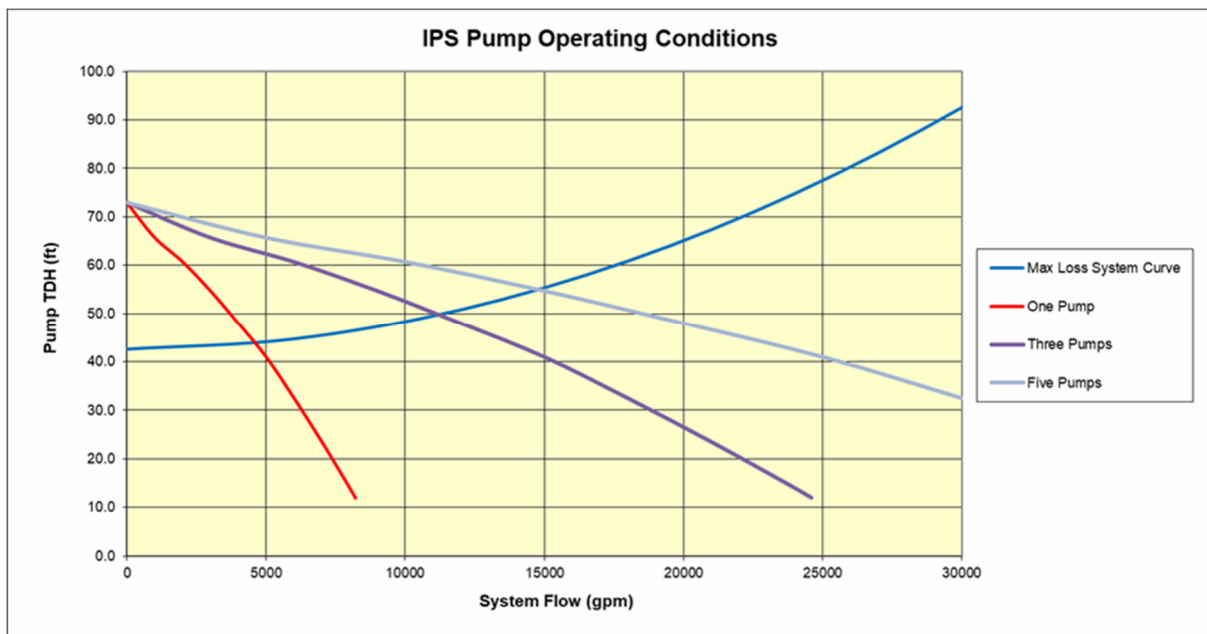


Figure 2-6: Influent Pump and System Curve for Future Fine Screening Facility

The existing pumps can convey 21.3 mgd (14,790 gpm) at 55' of total head (TDH). This allows an additional 8-feet of TDH for the new fine screening facility. The location, screening technology, and layout of the new fine screening facility will be further evaluated during detailed design, which will

determine if the existing pumps need to be replaced. Based on the proposed location and technologies in this report, it is anticipated that the capacity of the existing pump station is adequate, and no improvements will be needed.

2.3 Oxidation Ditch Distribution Box

RAS and preliminary effluent are pumped from the Preliminary Treatment Facility to the Oxidation Ditch Distribution Box. Figure 2-7 shows the configuration of the box, which controls and evenly splits the flow via weirs and isolation gates into the three existing oxidation ditches.

Flow to Oxidation Ditch 1 is conveyed via a 30-inch pipe, while flow to Oxidation Ditch 2 and Oxidation Ditch 3 is conveyed via 36-inch pipes. Depending on the secondary process selected, the distribution box may remain in service for the expansion to 8.0 mgd (conventional and densification alternatives) or may be replaced with a new distribution structure (MBR alternative).

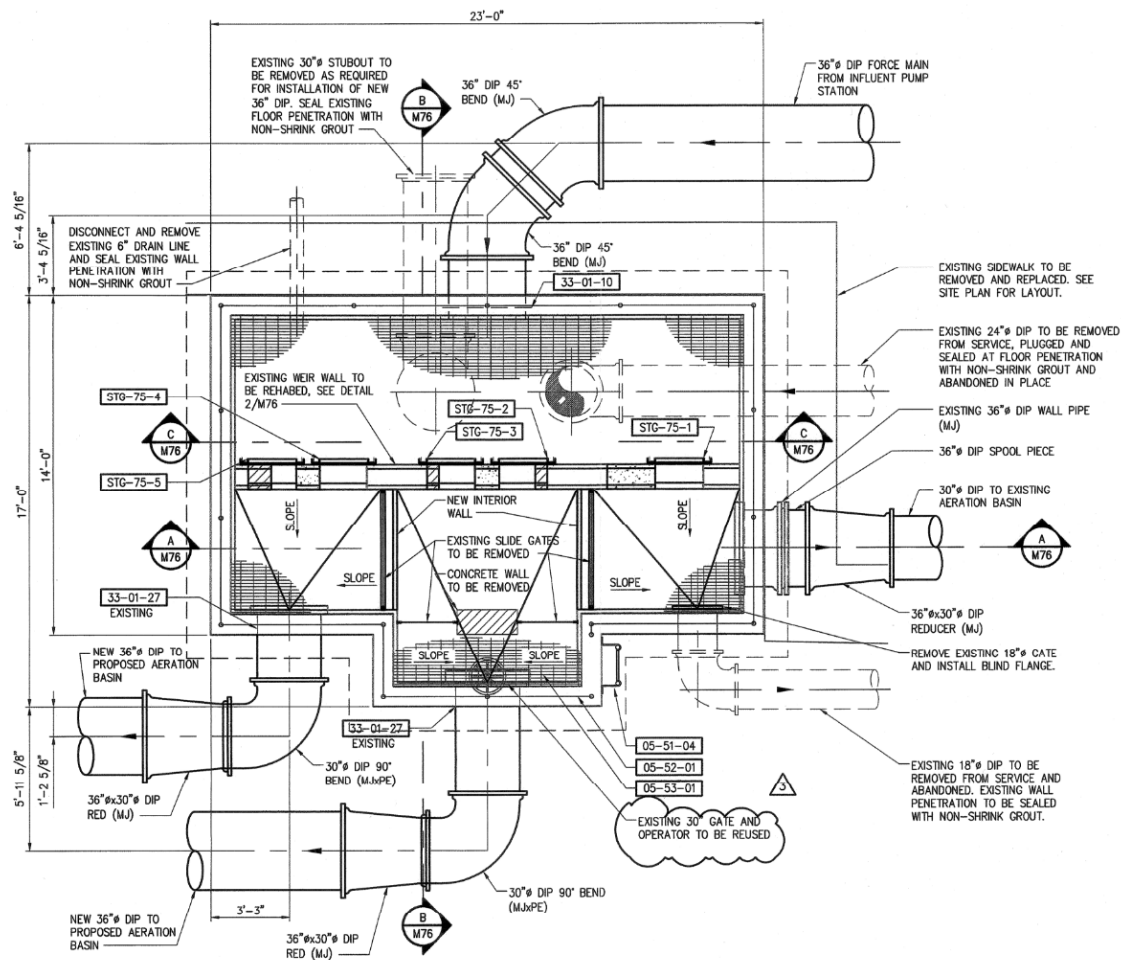


Figure 2-7: Oxidation Ditch Distribution Box – DMP Utley Creek Water Reclamation Facility Upgrade and Expansion – Drawing M75 – November 2007

2.4 Biological Process Model Development

As part of the preliminary engineering evaluation, Hazen was tasked with developing a validated biological process model utilizing BioWin™ version 6.2 for use in the secondary process evaluation. The validation exercise included:

1. Development and execution of a special sampling plan at the UCWRF.
2. Development and calibration of a BioWin™ based biological process model.

2.4.1 Special Sampling

A special sampling plan was developed for the UCWRF and sampling locations are outlined in Figure 2-8.



Figure 2-8: Special Sampling Locations

Special sampling activities included the following:

1. **Composite Sampling:** Influent and effluent composite samples were collected by the Town on December 12 – 15, 2022, to represent loading conditions for both weekday and weekend periods.
2. **Profile Grab Sampling:** Process grab samples were collected by Hazen at the locations outlined in Figure 2-8 on December 13, 2022.
3. **Grab sampling of Recycles:** Grab samples were collected for filter backwash and thickening filtrate as part of the morning round of profile grab samples completed by Hazen on December 13, 2022.

Appendix A summarizes the special sampling results. Special sampling results were utilized to develop a validated BioWin™ based biological process model as outlined in the following section.

2.4.2 Biological Process Model Validation

A preliminary biological process model for the UCWRF was developed as part of the previous master planning phase of this evaluation. Figure 2-9 presents the BioWin™ process schematic. The model was developed based on current basin configurations/volumes and recent operating conditions, which include one large ditch and one small ditch in service.

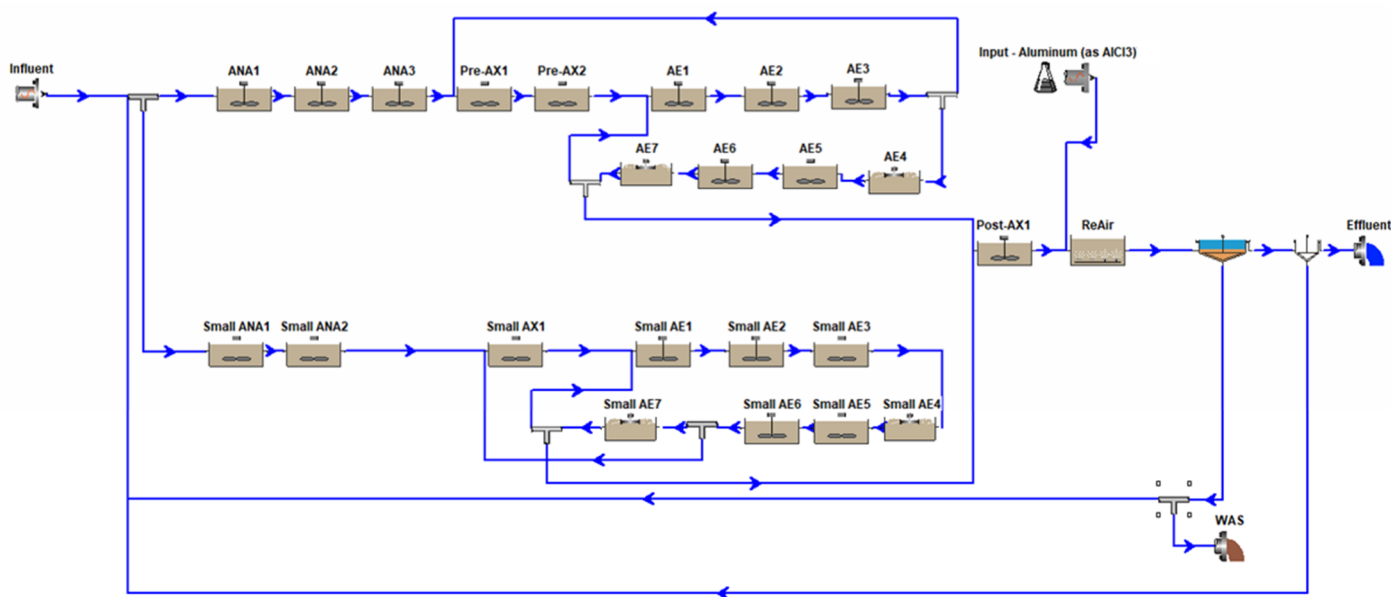


Figure 2-9: BioWin™ Process Schematic

Appendix B includes a detailed description of the process model validation. The model validation results are acceptable for a well calibrated model for BNR systems needing to meet limits of technology levels of TN removal while also providing a reasonable degree of safety factor within the process design. The process model was utilized to evaluate the three secondary process alternatives.

2.5 Secondary Process – Oxidation Ditch

Process simulations using the validated model evaluated the capacity of the existing process volume with three different secondary process alternatives:

1. Plug-flow conventional five-stage biological nutrient removal (BNR) with final clarifiers (FC)
2. Plug-flow densification five-stage BNR with FCs
3. Plug-flow five-stage BNR with MBR

Final process alternatives were evaluated under MM loads for the 8.0 mgd design flow. Simulations were performed at 14°C. The process simulations were based on maintaining effluent TN and TP to the modeling target concentrations shown in Table 2-9. These concentrations were selected to provide sufficient margin to reliably meet the effluent nutrient limits. Chemicals (metal salt and supplemental carbon) were fed where necessary to meet these targets.

Table 2-9: Effluent TN and TP Modeling Target Concentrations

Parameter	8.0 mgd	
	Monthly Avg. Permit Limit	Modeling Target
Summer ¹ Ammonia (mg/L)	1.0	< 0.5
Winter ² Ammonia (mg/L)	2.0	< 0.5
Total Nitrogen (mg/L)	5.0	< 4.0
Total Phosphorus (mg/L)	0.5	< 0.3
Ortho-Phosphate (mg/L)	0.27	< 0.10

1. Summer: April 1 – October 31

2. Winter: November 1 – March 31

2.5.1 Common Design Elements - Plug Flow Configuration

For all three secondary process alternatives, conversion of the existing oxidation ditches to a plug flow five-stage BNR configuration with fine bubble diffusers is recommended. The conventional five-stage BNR process includes the following zones:

- The anaerobic zone provides biological phosphorus release to promote biological phosphorus removal.
- The pre-anoxic zone provides denitrification of the nitrate returned by the nitrified recycle (NRCY) that was nitrified in the aerobic zone.
- The post-anoxic zone provides further denitrification of nitrate via supplemental carbon addition and endogenous decay.
- The re-aeration zone provides polishing of any residual ammonia and soluble BOD₅ prior to the FCs. With the MBR alternative, the MBR tanks act as the re-aeration zone, so the current re-aeration zone can be utilized for additional post-anoxic volume.

To modify the existing oxidation ditches to a plug flow five-stage BNR configuration the following modifications are recommended:

1. Extend existing 36" BNR influent line should to change the flow path through the anaerobic and anoxic zones (large basins only).
2. Addition of baffle walls
 - a. New baffle wall near the effluent weir to promote plug flow path.
 - b. One new baffle wall in each pre-anoxic zone for additional flexibility for phosphorus and nitrogen removal.
3. New mixers in the pre-anoxic zone to provide mixing of the mixed liquor suspended solids (MLSS).
4. New fine bubble diffusers in the aerobic zones – Three DO control zones will be included.

5. New NRCY pump to return nitrate rich MLSS to the head of the anoxic zones for denitrification.

The proposed five-stage BNR configuration is presented in Figure 2-10.

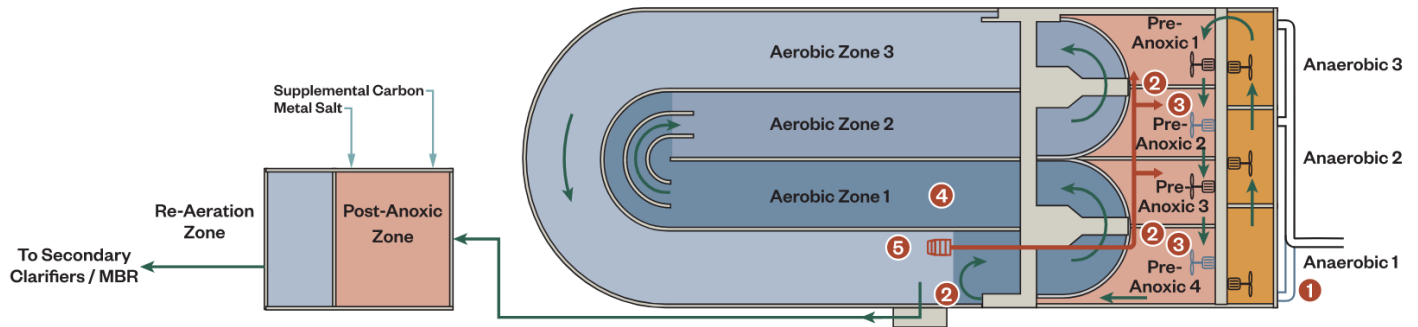


Figure 2-10: Proposed Five-Stage BNR Configuration

2.5.1.1 Aeration Basins

The plug-flow configuration within the existing oxidation ditch includes three anaerobic zones, four pre-anoxic zones, and one plug flow aerobic zone that flows to a common post-anoxic and re-aeration zone that is shared by all three oxidation ditches. RAS and preliminary treatment effluent are discharged to the head of the anaerobic zone. NRCY pumps are located at the end of the aerobic zone to return nitrate to the Pre-Anoxic Zone 1, 2, or 3. The ability to dose supplemental carbon to the post-anoxic zone and metal salt upstream of the FCs will remain. The size of each treatment zone in the small and large basins is presented in Table 2-10.

Table 2-10: Aeration Basin Key Design Criteria – Conventional Five-Stage BNR

Parameter	8.0 mgd	
	Large	Small
Type of Basin	Large	Small
Number of Basins	2	1
Basin Depth, ft	15.5	12.5
Total Volume per Basin, MG	2.99	1.51
Total Volume, MG	5.98	1.51
Volume, MG		
Anaerobic Volume, MG	0.40	0.10
Pre-Anoxic Volume, MG	0.86	0.21
Aerobic Volume, MG	4.72	1.20
Post-Anoxic Volume, MG	0.42	
Reaeration Volume, MG	0.21	
Nitrified Recycle Pumping (% of AA Flow)	400	400

Table 2-11 summarizes volumes and hydraulic retention times (HRTs) at the AA and MM design flow assuming all basins in service. Post-anoxic zone HRT at 8.0 mgd is low, so it may be beneficial to provide a post-anoxic swing zone at the end of each oxidation ditch to extend the post-anoxic volume as necessary.

Table 2-11: BNR Basin Volumes and HRT at 8.0 mgd

Operational Mode	Volume, MG	HRT at 6.7 mgd (AA), hours	HRT at 8.0 mgd (MM), hours
Anaerobic	0.50	2.0	1.5
Pre-Anoxic	1.07	4.3	3.2
Aerobic	5.92	23.7	17.8
Post-Anoxic	0.42	1.7	1.3
Reaeration	0.21	0.9	0.6
Total	8.12	32.5	24.4

2.5.1.2 Mixing

Submersible mixers are operated in the anaerobic, pre-anoxic zone, and post-anoxic zone to keep mixed liquor (ML) in suspension. To optimize nitrogen removal performance and improve settleability, the pre-anoxic zone in the large basins will be divided into four pre-anoxic zones, requiring two additional submersible mixers in each large basin. The pre-anoxic zone in the small basin will be divided into two pre-anoxic zones, requiring one additional submersible mixer. Table 2-12 presents the preliminary mixer selections for the pre-anoxic zones. Due to the age and condition of the existing mixers, the Town has indicated that replacement of the existing mixers is desirable as part of the 8.0 mgd expansion.

Table 2-12: BNR Basins Mixer Design Criteria

BNR	Zone	Additional Mixers	Motor Rated Power per Mixer, HP	Power Input, HP/1,000 ft ³
BNR 1	Pre-Anoxic	2	2.0	0.14
BNR 2	Pre-Anoxic	2	2.0	0.14
BNR 3	Pre-Anoxic	1	2.0	0.14

Additional technologies that could be considered for mixing include vertical turbine mixers and big bubble mixing. Vertical turbine mixing would require the addition of walkways to support the mixers while big bubble mixing would require a compressed air system (separate from the new blower facility) to provide process air to the mixing system.

2.5.1.3 NRCY Pumping

NRCY pumps will be located at the end of the aerobic zone to pump nitrified ML back to Anoxic Zone 1, 2 or 3 for denitrification. Submersible propeller pumps with variable speed control are proposed for this application. One NRCY pump will be installed in each basin and will be capable of providing nitrified recycle flow between 200% (2Q) and 400% (4Q) of the AA flow. A shelf spare can be provided for redundancy. NRCY flow will be conveyed via a ductile iron pipe within the basin with plug valves to discharge NCRY the pre-anoxic selector zone. The discharge piping for the NRCY pumps will provide flexibility to allow operations to discharge to multiple locations within the selector zone to optimize BNR performance. Each NRCY pump will be capable of turn down for operation at minimum flows at reduced speeds. **Table 2-13** summarizes the NRCY pump design criteria.

Table 2-13: BNR Basins Nitrified Recycle Pump Design Criteria

Design Parameter	BNR 1				BNR 2 and 3			
Number of Pumps/Basin	1				1			
Number of Total Pumps	1				1			
Type	Submersible Propeller							
Manufacturer	Flygt, Sulzer/ABS							
	BNR 1				BNR 2 and 3			
Flow Condition	Current AA		Design AA		Current AA		Design AA	
Design AA Flow, mgd	4.0		6.7		4.0		6.7	
Flow to Each Basin, mgd	0.8		1.3		1.6		2.7	
NRCY Rate, %	200	400	200	400	200	400	200	400
Flow per Pump, mgd	1.6	3.2	2.7	5.3	3.2	6.4	5.3	10.7
Rated Motor Output, HP	15				30			

Additional technologies that could be considered for NRCY pumping include submersible non-clog and canned propeller pumps. Submersible propeller (window) pumps were assumed for the PER since they

are well suited for low head recycle pumping in biological nutrient removal basins and are energy efficient and lightweight for ease of removal for maintenance.

2.5.1.4 Process Aeration Requirements

Table 2-14 and Table 2-15 present process air requirements developed for secondary process loads for the 8.0 mgd design condition. Secondary influent BOD₅ and TKN loads under minimum, average, and maximum day (MD) conditions were determined through historical data analysis. Aeration requirements for the various load conditions were estimated based on the following assumptions:

- Three BNR basins in service
- BOD₅ oxygen requirements of 1.2 lbs O₂/lb BOD₅
- TKN oxygen requirement of 4.57 lbs O₂/lb N
- Denitrification credit of 2.86 lbs O₂/lb N
- Average diffuser submergence in BNR 1 and BNR 2&3 of 11.5 and 14.5 ft, respectively
- Average aeration alpha (including fouling) of 0.64
- Minimum mixing requirement of 0.12 standard cubic feet per minute (scfm)/ square foot (ft²) average through the aerobic zones
- Minimum flow of 0.5 scfm/diffuser
- Standard oxygen transfer efficiency (SOTE) based on Sanitaire Silver Series II diffuser test submittals from previous projects

Table 2-14: Estimated Aeration Requirements per Basin

Design Parameter	BNR 1			BNR 2 and 3 (total)		
	8.0 mgd AA	8.0 mgd MM	8.0 mgd MD	8.0 mgd AA	8.0 mgd MM	8.0 mgd MD
Secondary Influent BOD ₅ Load, lbs/d	4,670	5,840	9,340	18,680	23,350	37,360
Secondary Influent TKN Load, lbs/d	820	1,030	1,620	3,280	4,100	6,450
Actual O ₂ Requirement, lbs/d	6,820	8,540	13,820	27,280	34,140	55,300
DO Concentration, mg/L	2.0	2.0	1.0	2.0	2.0	1.0
Actual: Standard O ₂ Requirement	0.47	0.47	0.54	0.48	0.47	0.54
Standard O ₂ Requirement, lbs O ₂ /day	14,390	18,340	25,590	57,170	72,780	102,000
SOTE, %	24.5	23.7	22.8	30.8	29.9	28.7
Diffuser Airflow, scfm/diffuser	1.6	2.0	3.0	1.6	2.1	3.0
Process Airflow, scfm	2,350	3,080	4,490	7,390	9,700	14,200
Minimum Mixing Airflow @ 0.12 scfm/ft ² (each basin), scfm	1,607			2,450		
Airflow at 0.5 scfm/diffuser (each basin)	750			1,175		

Table 2-15: Estimated Total Aeration Requirements

Design Parameter	Process Airflow, scfm
Annual Average	9,740
Maximum Month	12,780
Maximum Day	18,690

Table 2-16 estimates the maximum blower pressure requirements based on a peak diffuser submergence of approximately 15 feet during peak hydraulic flow. Maximum diffuser losses are based on operation of nine-inch membrane discs at 3 scfm per diffuser. A maximum piping loss of 0.5 psi-gauge (psig) is assumed. Final blower pressure requirements will need to be confirmed during final design based on actual diffuser and air piping configurations.

Since BNR 1 is shallower than BNR 2 and 3, an orifice plate or modulating BFV will be provided to generate the additional headloss necessary to balance airflow across the different depth basins. Alternatively, two headers could be provided from the blower building, one serving the small basins and one serving the large basins. The optimal way to configure and operate the new blower facility will be evaluated during detailed design.

Table 2-16: Blower Pressure Requirements

Design Parameter	Value
Static Pressure, psig	6.5
Maximum diffuser/orifice losses, psig	1.1
Maximum discharge piping losses, psig	0.5
Total discharge pressure, psig	8.1

2.5.1.5 Aeration System

New nine-inch ethylene propylene diene methylene (EPDM) fine bubble membrane disc diffusers will be installed in the three aerobic zones. The diffused air system will be tapered to optimize air distribution throughout the aerobic zone.

Table 2-17 summarizes the diffuser distribution for the BNR Basins assuming all three basins in service for the 8.0 mgd design conditions. Diffuser blanks will be provided for expansion to 15 mgd assuming three aeration basins in service with MBR. To maintain ~3.0 SCFM/diffuser at maximum day, 6,200 diffusers in the aerobic zones will be necessary.

Table 2-17: Preliminary Diffuser Design

Design Parameter	Value	
Type	9-inch Fine Bubble Membrane Diffusers	
Named Manufacturers	Sanitaire, Aquarius	
Zone	Number of Diffusers	
	BNR 1	BNR 2 and 3 (each)
Aerobic 1	600	940
Aerobic 2	525	820
Aerobic 3	375	590
Total Diffusers/Basins	1,500	2,350

Three DO control zones will be provided in each BNR Basin. Each DO control zone will include:

- An air flow meter to measure the airflow per zone
- An aeration control valve downstream of each flow meter to control airflow to each control zone to maintain target DO concentrations while maintaining minimum airflow for mixing
- A DO probe and transmitter
- Manual valves at each diffuser drop leg

2.5.1.6 Blower Building

The proposed Blower Building will provide the required blower capacity for the 8.0 mgd design condition with space for additional blowers in the future. Blower sizing is based on providing capacity to meet the MD aeration requirement with the largest blower out of service based on input from the Town. Two small blower and two large blower configuration is proposed to ensure the blowers can also provide minimum day aeration capacity.

Table 2-18 summarizes the design criteria for the new aeration blowers. Based on the proposed blower capacities, footprint available, and the proximity to nearby neighborhoods, the base design assumes turbo blowers (airfoil or magnetic bearing) due to their efficiency, small footprint, and quiet operation. Additional technologies that could be considered include variable frequency drive (VFD) controlled multistage blowers, positive displacement blowers, and single-stage integrally geared blowers.

Table 2-18: Blower Design Criteria – Process Aeration

Design Parameter	Value
Blower Type	High-Speed direct-drive turbo
Manufacturers	Sulzer/ABS, APG Neuros, Aerzen, Kaeser, Gardner Denver
Number of Blowers	2 Small and 2 Large
Design flow per large blower, scfm ¹	8,400
Design flow per small blower, scfm ¹	5,000
Total Capacity, scfm ¹	26,800
Firm Capacity, scfm ¹	18,400
Minimum Flow per small blower, scfm ²	2,500
Minimum Flow per large blower, scfm ²	4,200
Discharge Pressure, psig	8.1
Rated Motor Output small, HP	250
Rated Motor Output large, HP	450
Input Voltage, V	460

¹Based on inlet conditions of 95°F, 40% RH, and 14.4 psia

²Based on inlet conditions of 20°F, 20% RH, and 14.4 psia

2.5.1.7 Secondary Process Control

In addition to DO probes, nitrate probes and ammonia analyzers will be installed to optimize nitrogen removal in the BNR basins. Table 2-19 describes the instrument's location, purpose, and control strategy to optimize nitrogen removal.

Table 2-19: Process Control Instrumentation

Instrumentation	Location	Purpose	Control Strategy
Nitrate Probe 1	End of the Pre-Anoxic Zone	Optimize influent carbon utilization	Control NRCY flow based on nitrate concentration target leaving pre-anoxic zone
Nitrate Probe 2	End Aerobic Zone 1	Optimize supplemental carbon dose	Dose supplemental carbon necessary to remove mass of nitrate read by nitrate probe 2. Adjust carbon to nitrate removal ratio with feedback from nitrate probe 3.
Nitrate Probe 3	End of Post-Anoxic Zone		
Ammonia Analyzer	End of Aerobic Zone 3	Ammonia based aeration control	Control DO concentration based on the ammonia concentration

2.5.2 Alternative 1 – Plug Flow Conventional Five-Stage BNR with Final Clarification

The conventional five-stage BNR process includes all of the common design elements presented in Section 2.5.1 and assumes ML will be separated with FCs. Key design assumptions include:

- Aeration basin volume is based upon a minimum aerobic SRT of 8.0 days at 14°C and a max 30-day MLSS concentration of 4,000 mg/L or less.
- Supplemental carbon feed to the post-anoxic zone if necessary to meet effluent TN limits.
- Metal salt feed in the FC distribution box if necessary to meet effluent TP limits.
- FC area is based on limiting Surface Overflow Rate (SOR) and Solids Loading Rate (SLR) to:
 - SOR – 400 to 1,000 gpd/ft² (AA to Peak Hour)
 - SLR – 15 to 45 lb/d/ft² (AA to Peak Hour)
- Peak RAS capacity of 3.75 mgd per clarifier.

2.5.2.1 Final Clarifiers

Table 2-20 summarizes the key FC design criteria at the 8.0 mgd design flow assuming one additional 90-foot FC is installed. Solids loading rates are based on a MLSS concentration of 4,000 mg/L and MM and peak hour RAS flows of 8.0 and 12.0 mgd, respectively.

Table 2-20: FC Key Design Criteria – Conventional Five-Stage BNR

Parameter	MM	Peak Hour
	8.0 mgd	21.3 mgd
Number of Clarifiers	3 Existing + 1 New	
Clarifier Diameter, ft	90	
Total Clarifier Area, sf	25,400	
Firm Clarifier Area, sf	19,100	
RAS Flow, mgd	8.0	12.0
Surface Overflow Rate (SOR), gpd/sf		
All Clarifiers in Service	314	841
One Clarifier out of Service	419	1,121
Solids Loading Rates (SLR), ppd/sf		
All Clarifiers in Service	21.0	43.8
One Clarifier out of Service	28.0	58.4

Since SOR and SLR calculations do not incorporate site specific settling characteristics, a state point analysis (SPA) was performed. SPA incorporates MLSS concentration, settling characteristics, FC surface area, and influent and RAS flow rates. The state point is the intersection of the clarifier overflow rate and the underflow rates. The position of the state point and the location of the underflow line relative to the descending limb of the flux curve determine whether the clarifier is underloaded, critically loaded, or overloaded. The clarifier is underloaded (solids will not accumulate) when the intersection of the

overflow rate and underflow rate under the solids flux curve and have the underflow line under the descending limb of the flux curve.

A state point analysis was performed at the MM and peak hour flow to determine the maximum MLSS concentration that can be reliably settled by the FCs. Evaluation of FST capacity for MM and peak hour is based on 95th and 80th percentile solids volume index (SVI₃₀), respectively from 2015 to present. The historical 95th and 80th percentile SVI is 171 and 157 mL/g, respectively.

SPA was performed assuming the three existing 90-foot diameter FCs and one new 90-foot diameter FC are in service. Figure 2-11 shows the resulting SPA plots for MM and peak hour conditions at a MLSS concentration of 4,000 mg/L. Under the peak flow condition, the state point is above the solids flux curve, and the peak underflow line crosses the descending limb of the flux curve. This indicates that the clarifier blanket will increase during a maximum day storm but does not necessarily indicate the clarifier will discharge solids. Since the SPA tool is a steady state model, the figure indicates what would happen under continual operation at peak flow.

A MLSS of 4,000 mg/L is acceptable at peak hour flow if SVI₃₀ are reduced to below 100 mL/g (Figure 2-12). The elevated historical SVI₃₀ may impacted by incomplete chemical oxygen demand (COD) consumption in the selector zones, operating at a low DO concentration with surface aeration, and operating at a high SRT. It is expected that the SVI would improve with the proposed modifications to the oxidation ditches and that only one new FC will be necessary for the conventional alternative.

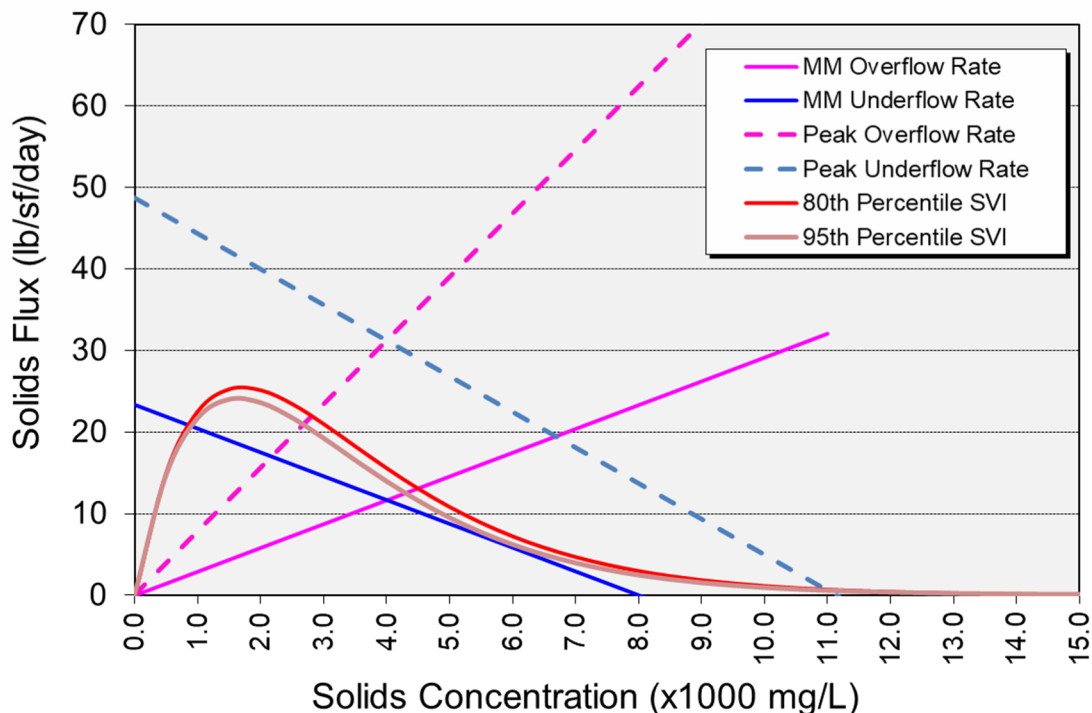


Figure 2-11: SPA at 8.0 mgd Design MM and Peak Hour Conditions

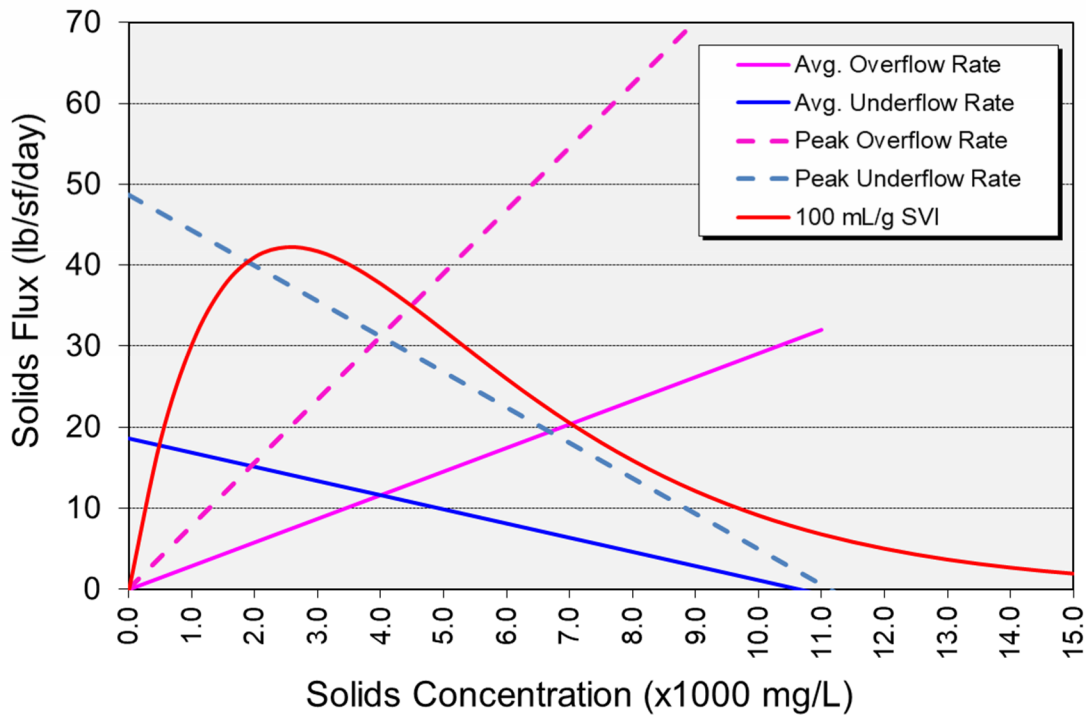


Figure 2-12: SPA at 8.0 mgd Design MM and Peak Hour Conditions – 100 mL/g

2.5.2.2 Expected Performance

Table 2-21 summarizes the expected performance of the conventional five-stage BNR alternative at the 8 mgd design flow. The process model predicts effluent TN and TP removal below the required effluent targets without the need for metal salt addition. Sensitivity analysis will be performed prior to detailed design of the selected alternative to confirm potential ranges of chemical requirements and chemical facility sizing.

Table 2-21: Expected Conventional Five-Stage BNR Performance

Parameter	8.0 mgd MM	8.0 mgd AA
Temperature	14°C	21°C
Basins in Service	1 Small + 2 Large	1 Small + 1 Large
Aerobic SRT, days	8.0	6.0
MLSS, mg/L	3,800	4,400
Effluent NH ₃ -N, mg/L	< 0.2	< 0.2
Effluent TN, mg/L	4.0	4.0
Effluent TP, mg/L	< 0.3	< 0.3
Supplemental Carbon, gpd	265	20
Metal Salt, gpd	0	0

2.5.2.3 *Site Layout*

Figure 2-13 shows a preliminary layout of the conventional activated sludge alternative. Blue lines represent new air and wastewater conveyance piping.

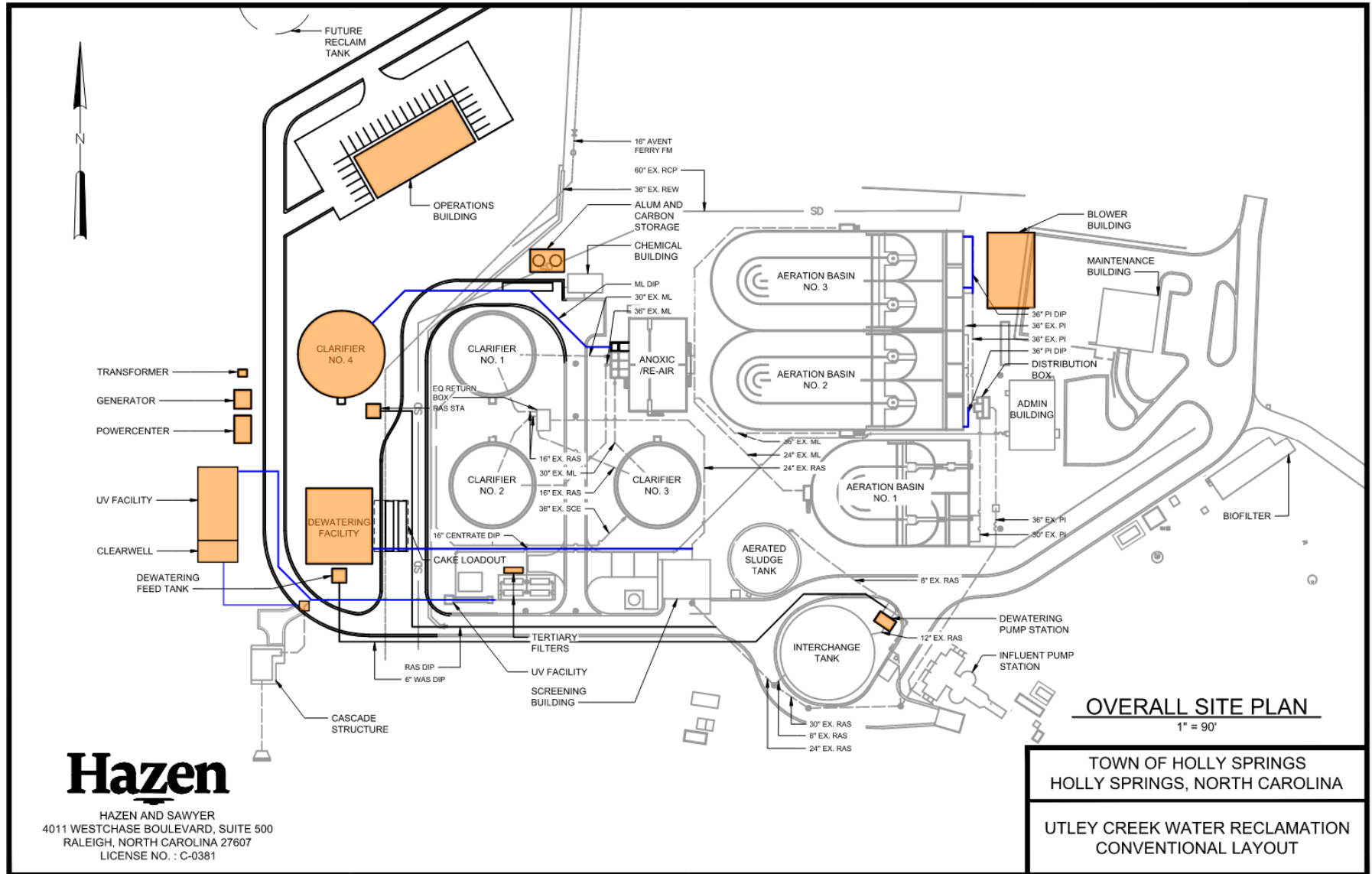


Figure 2-13: Conventional Alternative Layout

2.5.3 Alternative 2 – Plug Flow Densification Five-Stage BNR with Final Clarifiers

The conventional five-stage BNR process includes all the common design elements presented in Section 2.5.1 and assumes ML will be separated with FCs. Key design assumptions include:

- Aeration basin volume is based upon a minimum aerobic SRT of 8.0 days at 14°C and a max 30-day MLSS concentration of 4,000 mg/L or less.
- Supplemental carbon feed to the post-anoxic zone if necessary to meet effluent TN limits.
- Metal salt feed in the FC distribution box if necessary to meet effluent TP limits.
- FC area is based on limiting SOR and SLR to:
 - SOR – 600 to 1,200 gpd/ft² (AA to Peak Hour)
 - SLR – 25 to 70 lb/d/ft² (AA to Peak Hour)
- Peak RAS capacity of 3.75 mgd per clarifier.

2.5.3.1 Densified BNR

Densification, or densified activated sludge (DAS), is a non-proprietary enhancement of conventional BNR treatment to achieve high quality effluent. The goal of densification is to utilize a combination of biological (metabolic and kinetic) and physical selection to improve the settleability of the sludge (i.e., decrease SVI). A better settling sludge increases a facility's ability to treat elevated wet weather peak flows and can allow the facility to operate at a higher MLSS concentration (4,500 to 5,500 mg/L) to reduce infrastructure requirements. In general, densified settling characteristics are represented by a median SVI₃₀ of 85 mL/g or less.

The unique settling properties associated with DAS will allow the UCWRF to eliminate construction of additional FCs for the 8.0 mgd expansion and improve wet weather performance. For this evaluation, DAS is defined as having settling characteristics whereby:

- 50th percentile SVI₃₀ is less than 85 mL/g.
- 98th percentile SVI₃₀ is less than 100 mL/g.
- 98th/50th percentile SVI₃₀ ratio is less than or equal to 1.5.

One of the main ingredients for DAS is metabolic and kinetic selection, which includes promoting strong feast and famine zones. The F:M ratio at the head of the BNR basins is important to selecting the appropriate biomass and metabolic pathway for carbon uptake and nutrient removal.

2.5.3.1.1 Metabolic Selection

To promote strong feast and famine zones, it is recommended to divide each pre-anoxic zone into two zones. The large basins would have a total of four pre-anoxic zones and the small basins would have a

total of two pre-anoxic zones. As presented in Section 2.5.1.3, NRCY can be returned to Pre-Anoxic Zones 1, 2, or 3. Returning NRCY to Cell 2 or 3 extends the feast zone prior to re-introduction of a nitrate rich recycle stream, which could promote improved settling.

2.5.3.1.2 Physical Selection

In addition to metabolic selection, physical selection utilizing surface wasting or hydrocyclones may be implemented to improve settleability. A surface wasting box could be added near the BNR effluent weir to collect less dense sludge and/or foam from the surface to be wasted to the WAS holding tanks.

Hydrocyclones provide gravimetric selection for retaining the denser biomass while wasting the light fraction of MLSS. Increasing the density of the MLSS improves the settling characteristics and reduces biomass loss and treatment disruption, especially in wet weather scenarios. Hydrocyclones force denser solids to the cyclone walls and down through the underflow to be recycled to the main process while lighter solids migrate towards the center of the cyclone and are pushed upwards through the overflow to be wasted. **Figure 2-14** illustrates the components and function of a hydrocyclone. World Water Works (WWW) licenses the application of hydrocyclones for activated sludge selection and markets the technology as inDENSE™.

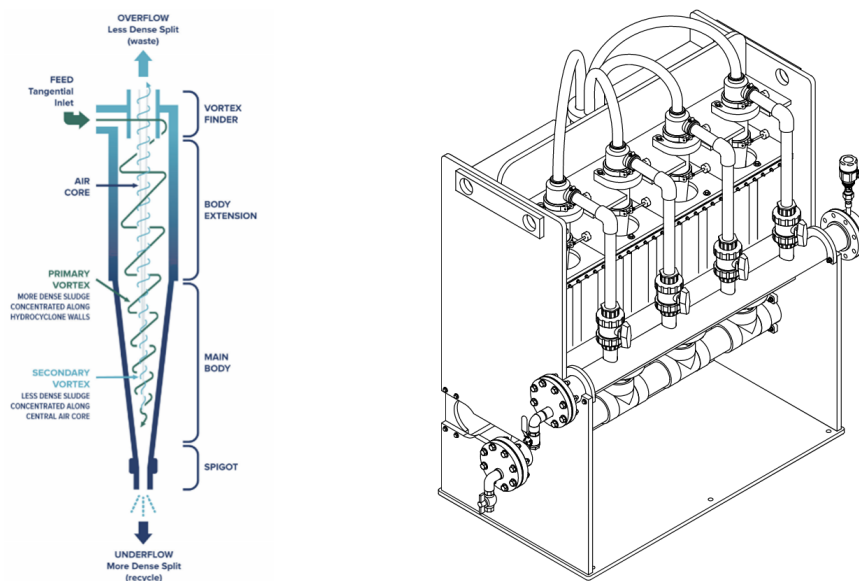


Figure 2-14: inDENSE™ Hydrocyclone Components and Function (left) and Hydrocyclone Skid (right)
(Courtesy of World Water Works)

World Water Works currently offers one model rated for a feed flow of 10 m³/hr (44 gpm). The flow and mass splits of hydrocyclone overflow/underflow determine the quantity of units required to process a sludge stream. The typical mass split for design is 65% overflow (wasted sludge) and 35% underflow (retained biomass). **Table 2-22** presents the WAS flows and loads for the 8.0 mgd condition were developed using historical data and process modeling results assuming a MLSS concentration of 4,000 mg/L.

Table 2-22: WAS Flow and Load

WAS	Annual Average	Maximum Month
Target WAS Flow (mgd)	0.20	0.26
WAS TSS Conc. (mg/L)	10,000	10,000
WAS TSS Load (lb/d)	16,800	22,000

Eight hydrocyclones operating 20 hours per day are necessary to treat the design MM WAS load. A hydrocyclone feed rate of 0.41 mgd (282 gpm) is required to produce an overflow WAS load of 22,000 lb/day as presented in **Table 2-23**.

Table 2-23: Hydrocyclone Sizing

Hydrocyclone	Flow (gpm)	Load (lb/d)	Conc. (mg/L)
Influent (to cyclones)	282	33,850	10,000
Overflow (to WAS)	226	22,000	8,125
Underflow (returned to BNR)	56	11,850	17,500

Figure 2-15 shows a potential yard piping layout for implementing densification with hydrocyclones. Blue lines represent new air and wastewater conveyance piping. It is recommended that a new building be constructed to house the hydrocyclones to the south of the existing administration/lab building and adjacent to the existing parking lot. WAS booster pumps would be installed in the existing screenings building to transfer WAS from the RAS drain line to the hydrocyclone facility and to provide the necessary operating pressure for the hydrocyclones. Underflow from the hydrocyclones would be conveyed to drain by gravity to the aeration basin splitter box, and overflow would drain by gravity to the sludge holding tanks prior to dewatering.

Town of Holly Springs
Utle Creek Water Reclamation Facility PER
DRAFT

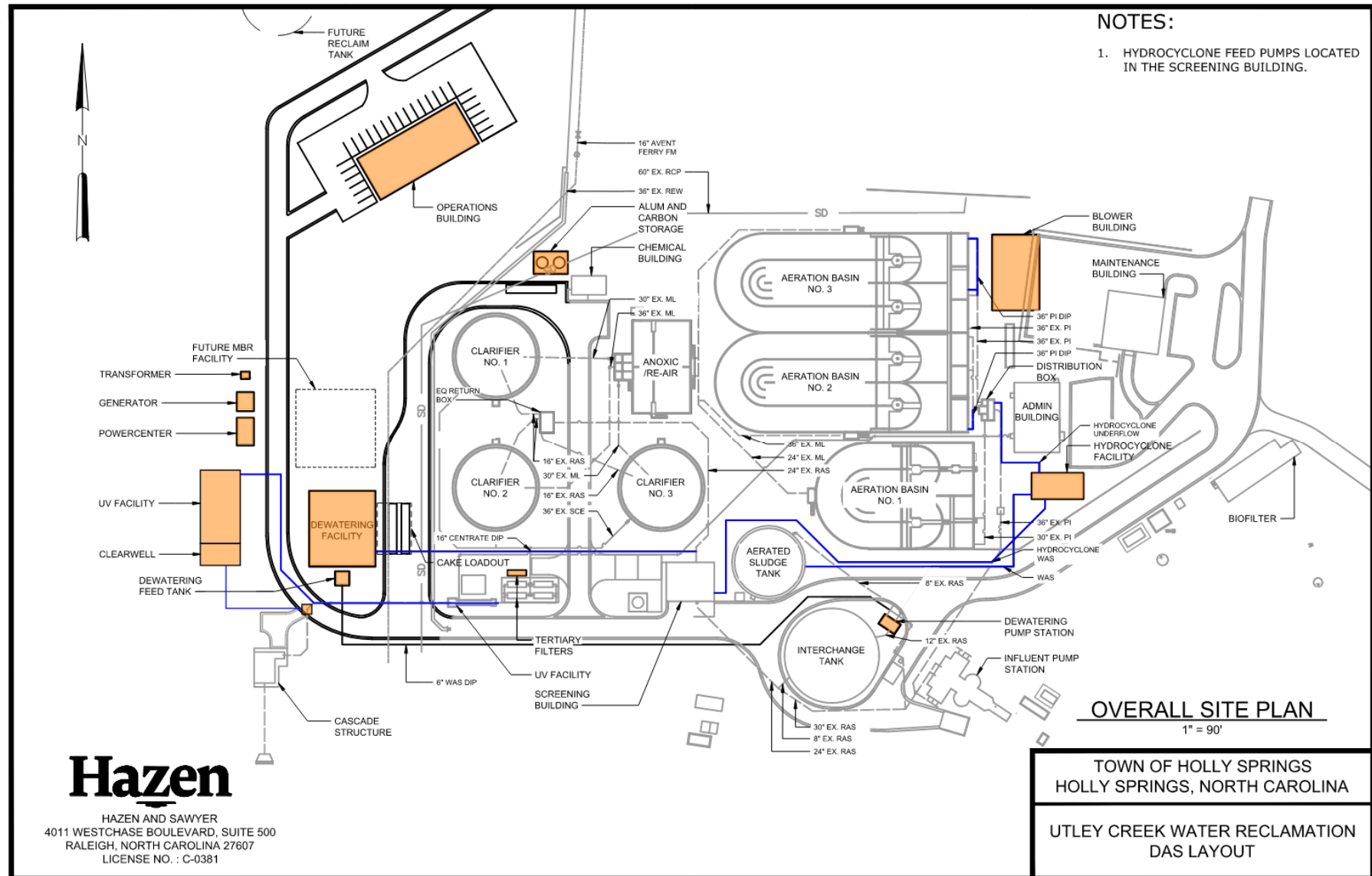


Figure 2-15: DAS Alternative Layout

2.5.3.2 Final Clarifiers

Table 2-24 summarizes the key FC design criteria at the 8.0 mgd design flow assuming the three existing 90-foot FCs. Solids loading rates are based on a MLSS concentration of 4,000 mg/L and RAS flows of 100% of the design flow. Solids loading rates and surface overflow rates with one clarifier out of service are above recommended values. Routine maintenance should be performed during low flow periods when loading conditions will allow taking a clarifier out of service. If a wet weather event is anticipated and a clarifier is offline it is recommended to have polymer available to aid in settleability.

Table 2-24: Final Clarifier Key Design Criteria – DAS Five-Stage BNR

Parameter	MM	Peak Hour
	8.0 mgd	21.3 mgd
Number of Clarifiers	3	
Clarifier Diameter, ft	90	
Total Clarifier Area, sf	19,100	
Firm Clarifier Area, sf	12,700	
Surface Overflow Rate (SOR), gpd/sf		
All Clarifiers in Service	419	1,116
One Clarifier out of Service	629	1,674
Solids Loading Rates (SLR), ppd/sf		
All Clarifiers in Service	28.0	54.7
One Clarifier out of Service	42.0	82.1

SPA was performed assuming the three existing 90-foot diameter FCs in service. Figure 2-16 shows the resulting SPA plots for MM and peak hour conditions at a MLSS concentration of 4,000 mg/L. With the implementation of densification, it is expected that the 95th percentile SVI₃₀ is less than 100 mL/g and 80th percentile SVI₃₀ is less than 85 mL/g. An SVI of 85 mL/g is necessary to pass peak flow events at a MLSS concentration of 4,000 mg/L.

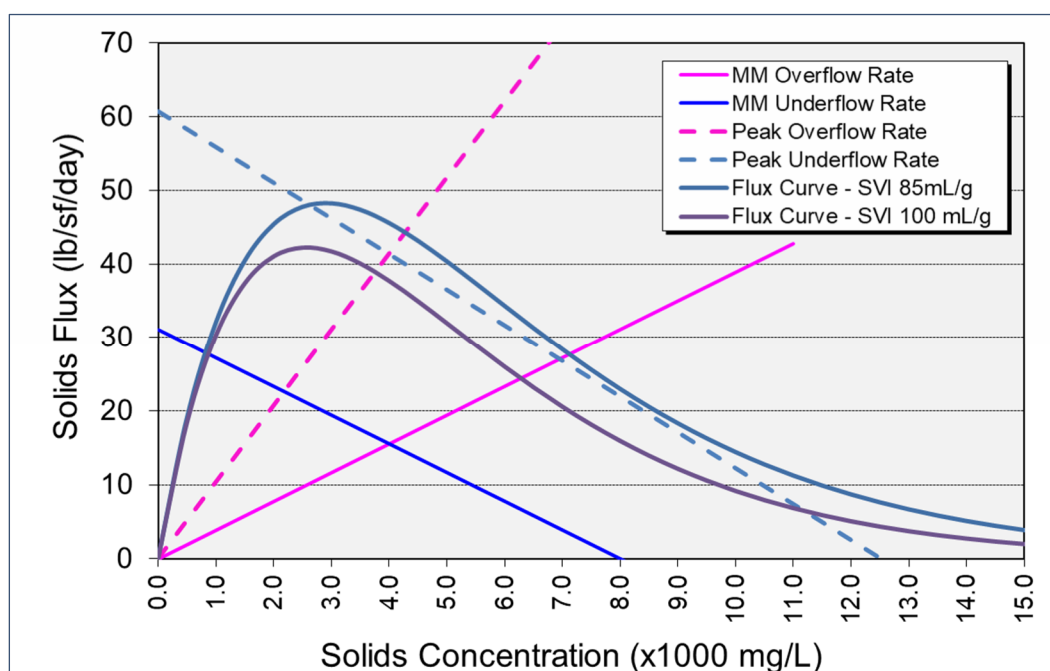


Figure 2-16: SPA at 8.0 mgd Design MM and Peak Hour Conditions - Densification

2.5.3.3 Expected Performance

Table 2-21 summarizes the expected performance of the conventional five-stage BNR alternative at the 8 mgd design flow. The process model predicts effluent TN and TP removal below the required effluent targets without the need for metal salt addition. Sensitivity analysis will be performed prior to detailed design of the selected alternative to confirm potential ranges of chemical requirements and chemical facility sizing.

Table 2-25: Expected Densification Five-Stage BNR Performance

Parameter	8.0 mgd MM	8.0 mgd AA
Temperature	14°C	21°C
Basins in Service	1 Small + 2 Large	1 Small + 1 Large
Aerobic SRT, days	8.0	6.0
MLSS, mg/L	3,800	4,400
Effluent NH ₃ -N, mg/L	< 0.2	< 0.2
Effluent TN, mg/L	< 4.0	< 4.0
Effluent TP, mg/L	< 0.3	< 0.3
Supplemental Carbon, gpd	265	20
Metal Salt, gpd	0	0

2.5.4 Alternative 3 – Plug Flow Five-Stage BNR with MBR

The five-stage MBR BNR process includes all of the common design elements presented in Section 2.5.1 and assumes ML will be separated with microfiltration (MF) or ultrafiltration (UF) membranes. Key design assumptions include:

- Ultra-fine screening (≤ 2 mm) with a screenings capture ratio greater than 92% and a high retention of fibrous materials and hair will be performed upstream of MBR system with material greater than 2-mm in size removed to non-detectable levels.
- Flow to the MBR system will not exceed 16.0 mgd with excess flow equalized within the existing FCs after conversion to EQ storage.
- Aeration basin volume will be based upon a minimum aerobic SRT of 8.0 days at 14°C and a max 30-day MLSS concentration of 8,000 mg/L or less.
- MBR MLSS concentrations of 10,000 mg/L or less under all flow conditions except max day which will be 12,000 mg/L or less.
- Supplemental carbon feed to the post-anoxic zone will be included to meet effluent TN limits if necessary.
- Metal salt feed in the FC distribution box will be included to meet effluent TP limits if necessary.
- Peak MBR RAS flow will be 32 mgd for the 8.0 mgd expansion with VFD controls to allow turndown for operational flexibility.
- A deoxygenation zone will be included on the recycle stream to limit DO recycling from the MBR tank to the anaerobic selector zone which can impact nutrient removal efficiency.

2.5.4.1 Equalization

The existing UCWRF does not include influent flow equalization. MD and peak hour flow factors outlined in Section 1.4 were selected for the basis of design of the 8.0 mgd expansion and represent a treatment facility observing a low to moderate amount of inflow and infiltration (I/I). This is likely the result of the existing collection system having a large amount of new conveyance infrastructure.

It is recommended to provide influent EQ for the MBR alternative to reduce the flow peaking factor to the MBR process to 2.0 or less. Peak flows will be equalized to not exceed 16.0 mgd to the secondary process to limit the total membrane area required. It is feasible to accommodate higher peaking factors with additional membrane modules, but it will result in a increase in capital and O&M costs over the operating life of the facility.

Since the FCs will not be used for the MBR alternative, the existing tanks will be modified and repurposed to EQ storage. Each 90-foot diameter FC provides 0.76 MG of EQ volume, for a total of 2.28 MG of EQ volume with all three FCs in service. The influent pump station would be modified to pump preliminary treatment facility effluent to the existing FCs for equalization. Historical flow data was reviewed with the most significant events summarized below in Table 2-26.

Table 2-26: Historically Significant Wet Weather Events

Date	Peak Day Flow (mgd)	Peak Hour Flow (MGD)	Annual Average Flow (mgd)	Peak Day Peaking Factor	Peak Hour Peaking Factor	Estimated 8.0 mgd EQ Volume (MG)
November 12 th , 2020	4.75	8.19	2.32	2.05	3.53	2.14
February 7 th , 2020	4.72	9.86	2.32	2.03	4.25	3.60
April 25 th , 2017	4.67	8.74	2.22	2.10	3.94	2.01
October 8 th , 2016 (Hurricane Matthew)	6.52	12.11	2.23	2.92	5.43	7.34
Average	5.17	9.73	2.27	2.28	4.29	3.60

The preliminary results indicate that the available 2.28 MG of volume provided within the existing FCs would be sufficient for accommodating all the identified storm events except for the estimates associated with Hurricane Matthew and the wet weather event observed on February 7th, 2020. A more detailed evaluation will be required to refine wet weather design criteria and to estimate EQ needs for more extreme storm events, like the February 2020 event. Table 2-26 shows that the February 2020 storm could require additional EQ beyond what would be provided by the existing FC structures. Additional evaluation will need to be completed as part of detailed design to refine EQ volume estimates, evaluate increased membrane capacity or to provide additional EQ storage as part of the 8.0 mgd expansion. The preliminary engineering phase assumes no additional EQ beyond the volume provided by the existing structures.

The modifications necessary to implement flow equalization in the existing FCs include:

- Modify the influent pump station header to pump preliminary treated effluent flow to the existing FC splitter box.
- Flow will be split to the FCs by gravity flow from the splitter box.
- The existing RAS box would be demolished and replaced with a deeper EQ drain structure to allow for the clarifier structures to be fully drained. This will require the MBR system to be fully operational to take the existing clarifiers out of service.
- The new deeper EQ drain structure may need pumps to provide sufficient head to completely empty the FCs. A hydraulic evaluation will be performed during detailed design to evaluate sending flow back to the influent pump station wetwell.

2.5.4.2 MBR System

The MBR alternative will utilize UF or MF membranes to perform solids separation in lieu of gravity separation utilizing FCs. The benefits include excellent effluent quality and a smaller secondary process footprint as there are no clarifiers and membranes allow operation to an MLSS of 8,000 mg/L in the BNR basins (10,000 - 12,000 mg/L in the MBR tank). Low effluent TSS concentrations may reduce advanced treatment requirements for high quality reuse applications.

In general, the MBR system consists of seven main mechanical components, including the membrane cassettes, permeate pumps, air scour blowers, MBR recycle pumps, MBR drain pumps (if required) and membrane cleaning system.

A typical MBR system will include multiple trains of membrane cassettes/units to provide redundancy when a single train is taken out of service for periodic cleaning and maintenance. All membrane cassettes are connected to a permeate header which utilizes positive displacement permeate pumps to pull clean permeate through the outside of the membrane. Solids are left behind at the surface of the membranes forming a foulant layer. Each membrane cassette is fitted with air scour diffusers at the bottom of the cassette which is fed by a system of membrane blowers. The air scour creates a zone of shearing turbulence at the membrane surface to remove the accumulated solids. Solids that accumulate in the membrane tank will be recycled back to the BNR process with a system of RAS pumps.

Over time, a portion of the observed membrane fouling will not be removed by the air scour alone. This fouling will result in an increase in trans-membrane pressure (TMP). This fouling will require periodic chemical cleaning to be performed to restore membrane performance. Over the lifecycle of the membranes, a degree of fouling which cannot be removed utilizing chemical cleaning methods will develop. This fouling can continue to accumulate requiring eventual replacement of the membranes. However, many municipal MBR facilities have continued to perform reliably for periods greater than 10 years on the original membranes.

2.5.4.2.1 Membrane Technology

Current commercial membrane technologies include hollow fiber, flat sheet, hybrid, and ceramic membranes. Hollow fiber and flat sheet are the most common membranes in municipal wastewater applications. Hybrid membranes are a newer technology with a more limited track record. Ceramic membranes have a much higher capital cost and are typically utilized in more severe industrial applications. Two membrane options were considered for the UCWRF expansion, including hollow fiber membranes (Veolia's ZeeWeed Membrane) and flat sheet membranes (Kubota's SP series membrane). Both options follow a flow through configuration where biomass is fed to the outside of the membranes and clean permeate is pulled by vacuum through the membranes.

Both hollow fiber and flat sheet membrane configurations have been utilized widely within municipal immersed MBR applications to achieve high quality effluent. In general, flat sheet membrane configurations have a larger MBR footprint but require less frequent cleaning. Hollow fiber membranes have the most compact footprint and are more energy efficient since they require less air for air scouring of membranes.

The most operationally significant difference between hollow fiber and flat sheet membranes is in terms of the cleaning requirements.

Table 2-27: Comparison of Membrane Cleaning Requirements

	Hollow Fiber	Flat Sheet
Backpulsing	• PLC initiated backpulse cycle reversing flow direction through the membrane	• Backpulsing not required due to high air scour rate
Maintenance cleaning	• More frequent cleanings • Less intense • Does not require taking a train out of service	• Less frequent cleanings • More intense • Requires taking a train offline for a couple hours
Recovery cleaning	• Typically performed twice per year • Requires taking a train out of service for up to 24 hours • Requires draining the train and immersing membranes in cleaning solution	• Not typically recommended by manufacturer

Proposals were received from both MBR technology suppliers as part of preliminary engineering along with preliminary facility layout drawings. The footprint of the flat sheet MBR alternative is significantly larger than the footprint required for the hollow fiber MBR alternative at 8.0 mgd (6,200 sf vs 2,100 sf). Both membrane systems are designed for an n+1 configuration to allow taking one membrane train out of service at max month flows. All trains will need to be in service at max day and peak hour design flow conditions.

The design flux rates for the evaluated MBR systems are summarized in Table 2-28.

Table 2-28: MBR Design Flux Rates (gfd)

Parameter	Hollow Fiber MBR	Flat Sheet MBR	Typical Maximum Flux Rate (gpd/sf)
ADF – all trains in service	10.5	9.9	≤ 10.5
AAF – 1 train OOS	14.0	12.4	≤ 14
MMF – all trains in service	12.6	11.8	≤ 13
MMF – 1 train OOS	16.8	14.7	≤ 17
MDF – all trains in service	18.9	17.7	≤ 19
PHF – all trains in service	25.2	23.6	≤ 25

Table 2-29 provides the technical preliminary engineering design criteria for all the membrane system components to include permeate pumps, air scour blowers, RAS pumps, clean-in-place pumping and chemical storage, and backpulse storage, if applicable. Design requirements will be confirmed as part of detailed design and final system layouts. Each of the membrane appurtenances are discussed in the following sections.

Table 2-29: MBR Design Summary

Design Criteria	Units	Hollow Fiber	Flat Sheet
Membrane Design Parameters			
Minimum Temperature	°C	14	
MM BNR MLSS	mg/L	6,200	
MM MBR MLSS	mg/L	10,000	12,000
MBR Train Reliability	---	n+1	
Nominal Pore Size	µm	0.04	0.2
Membrane Manufacturer	---	Veolia	Kubota
MBR Tank Design at 8.0 mgd			
Net Membrane Capacity, Minimum	mgd	1.0	
Net Membrane Capacity, ADF	mgd	6.7	
Net Membrane Capacity, MMF	mgd	8.0	
Net Membrane Capacity, PHF	mgd	16.0	
Number of MBR Trains	---	4	5
Number of Units/Cassettes per MBR Train	---	5	14
Total Number of Units/Cassettes	---	20	70
Area Per Unit/Cassette	sf	31,800	9,688
Total Membrane Area	sf	636,000	678,125
Membrane Spare Space	%	20	N/A
Backpulse Storage			
Tank Volume	gal	8,800	N/A
Permeate Pumps			
Total Number of Pumps	---	4+1	5+1
Pump Type	---	Rotary Lobe	
Pump Manufacturer	---	Borger, Volgelsang	
Capacity, Minimum	gpm	727	517
Capacity, PHF	gpm	3,472	2,469
Discharge Pressure	psi	15	12
Motor Size	HP	60	40
Motor Type	---	VFD-rated	VFD-rated
Return Activated Sludge Pumps			
Total Number of Pumps	---	4+1	5+1
Recycle Rate at MMF	% MMADF (mgd)	400% (32)	400% (32)
Recycle Rate at PHF	% PHF (mgd)	250% (40)	250% (40)
Capacity, Minimum	gpm	2,326	1,861
Capacity, PHF, Firm	gpm	6,944	5,556
Pump Type	---	Horizontal non-clog	
Pump Manufacturer	---	Fairbanks Morse, Goulds	
Motor Size	HP	100	75
Motor Type	---	VFD-rated	

Design Criteria	Units	Hollow Fiber	Flat Sheet
Motor Control	--	VFD	
Air Scour Blowers			
Total Number of Blowers	---	4+1	5+1
Blower Type	---	Positive Displacement	
Blower Manufacturer	---	Aerzen, Kaeser	
Capacity	SCFM	1,055	1,544
Discharge Pressure	psig	5.9	9.7
Motor Size	HP	60	125
Motor Type	---	VFD-rated	
Blower Capacity Control	--	VFD	
Clean-In-Place (CIP) Pumps			
Total Number of Pumps	---	4	N/A
Number of Pumps, sodium hypochlorite	---	1+1	N/A
Number of Pumps, Citric Acid	---	1+1	N/A
Maintenance Cleaning			
Schedule	---	2 times per week with hypo	4-6 times per year
Maintenance Cleaning Schedule	hours	1-2	4-6
Maintenance Clean Flux and Volume	---	5-10 backpulses every 5 to 20 minutes	N/A
Sodium Hypochlorite Volume Used Per Year	gal	6,000	2,000-4,000
Chemical Storage Volume, Sodium Hypochlorite	gal	990	990
Citric Acid Volume Use Per Year	gal	750	4,000
Recovery Cleaning			
Schedule	per year	2	N/A
Recovery Clean Flux, per Basin	gfd	12-20	N/A
Recovery Clean Time	hours	10-24	N/A
Deoxygenation Zone			
Volume	gal	250,000	
MMF HRT	min	11.3	
Mixer Size	HP	15	

2.5.4.2.2 Permeate Pumps

Each MBR train will be equipped with one duty permeate pump and there will be one common spare shared among the trains. The pumps will operate on VFDs using a permeate flow meter for flow pacing and level control in the MBR basins. For the hollow fiber system, a pump with a reversing motor is used for backpulsing and chemical maintenance and recovery cleanings. Permeate will be pumped to the UV disinfection system.

A backpulse storage tank must be provided for the hollow fiber membrane systems to be used for maintenance and recovery cleanings. Membrane permeate is pumped from the backpulse storage tank to

the membrane trains and permeate is pushed through the membrane fibers for a physical removal of solids build-up on the fibers.

2.5.4.2.3 Membrane Blowers

The membrane blowers will provide air flow to scour the membranes and mixing of the activated sludge. One blower will be dedicated to each MBR train with one common spare. Membrane manufacturers typically provide positive displacement blowers due to their compact footprint and ease of operation.

2.5.4.2.4 RAS Pumps

Solids from the MBR tanks are returned to the head of the BNR process with RAS pumps. The RAS pumps are typically sized to provide up to 4Q of the MM flow. The RAS rate will be reduced at peak hour flows to approximately 2.5Q. VFDs will be provided to allow adjustment of RAS flow. The pumps could either be the submersible non-clog type or in a dry pit/wet pit arrangement using the horizontal centrifugal non-clog type.

2.5.4.2.5 Clean-In-Place System

Maintenance and recovery cleaning events are required at various intervals to extend the life of the membranes. Maintenance cleaning is a preventive maintenance activity to periodically restore membrane permeability. The recovery cleaning process is used less frequently to restore membrane permeability that is not restored using the maintenance cleaning process.

Maintenance and recovery cleanings are performed once the TMP reaches the manufacturer's recommended setpoint. Maintenance and recovery cleaning frequencies vary based on the sludge characteristics, effective preliminary treatment, and membrane manufacturer recommendations. Hollow fiber systems require a recovery cleaning once or twice a year. This process requires a membrane train to be out of service for the day. Flat sheet membrane manufacturer's do not typically recommend a recovery cleaning be performed, but rather more intensive maintenance cleaning where a train is out of service for a few hours. Sodium hypochlorite is primarily used for cleaning organic fouling. Occasionally citric or oxalic acid is used for inorganic fouling. Muriatic acid is sometimes added to reduce the pH prior to the addition of citric or oxalic acid for cleaning.

The clean-in-place (CIP) system includes the chemical skid for each chemical and chemical storage. For the hollow fiber membrane systems, the permeate pumps are designed to allow reversing the motor's direction to pump permeate from a backpulse tank back through the membrane fibers. The chemical solution is injected in the discharge of the permeate pumps via chemical feed pumps. For the flat sheet systems, an eductor and non-potable water pressure is used to feed chemicals into the interior cavity of the membranes.

2.5.4.2.6 Deoxygenation Zone

MBR systems can have elevated DO concentrations in the MBR tanks due to the high rate of air scouring. High DO, coupled with a high RAS rate, results in DO returning to the head of the BNR process which can adversely affect nutrient removal in the anaerobic and pre-anoxic zones. A deoxygenation zone is a

zone that holds RAS for an extended period of time before returning to the head of the BNR process. Adding a deoxygenation zone will allow for endogenous decay and oxygen utilization prior to returning to the BNR, reducing the amount of oxygen being recycled.

Preliminary sizing of the deoxygenation zone was performed utilizing the validated process model. A deoxygenation zone of 250,000 gallons would provide 11 minutes of HRT at the design MM RAS rate of 32 mgd. The ideal size for the deoxygenation zone will be further evaluated during detailed design. It is anticipated that the deoxygenation zone will be two cells and located adjacent to the MBR structure and will include a bypass line to allow taking the deoxygenation zone out of service for periodic cleaning activities. The tank will include a mixer to allow for mixing of the tank.

2.5.4.2.7 Expected Performance

Table 2-30 summarizes the expected performance of the five-stage BNR MBR system alternative at the 8 mgd design flow. The process model predicts effluent TN and TP removal below the required effluent targets without the need for metal salt addition. Sensitivity analysis will be performed prior to detailed design of the selected alternative to confirm potential ranges of chemical requirements and chemical facility sizing.

Table 2-30: Expected Five-Stage BNR MBR System Performance

Parameter	8.0 mgd MM	8 mgd AA
Temperature	14°C	21°C
Basins in Service	1 Small + 1 Large	1 Large
Aerobic SRT, days	8.0	6.0
BNR MLSS, mg/L	6,200	5,350
MBR MLSS, mg/L	8,350	8,150
Effluent TSS, mg/L	< 1.0	< 1.0
Effluent NH ₃ -N, mg/L	< 0.2	< 0.2
Effluent TN, mg/L	< 4.0	< 4.0
Effluent TP, mg/L	< 0.3	< 0.3
Supplemental Carbon, gpd	150	0
Metal Salt, gpd	0	0

2.5.4.3 Site Layout

Figure 2-17 shows a preliminary layout of the MBR alternative. Blue lines represent new air and wastewater conveyance piping.

Town of Holly Springs
Utley Creek Water Reclamation Facility PER
DRAFT

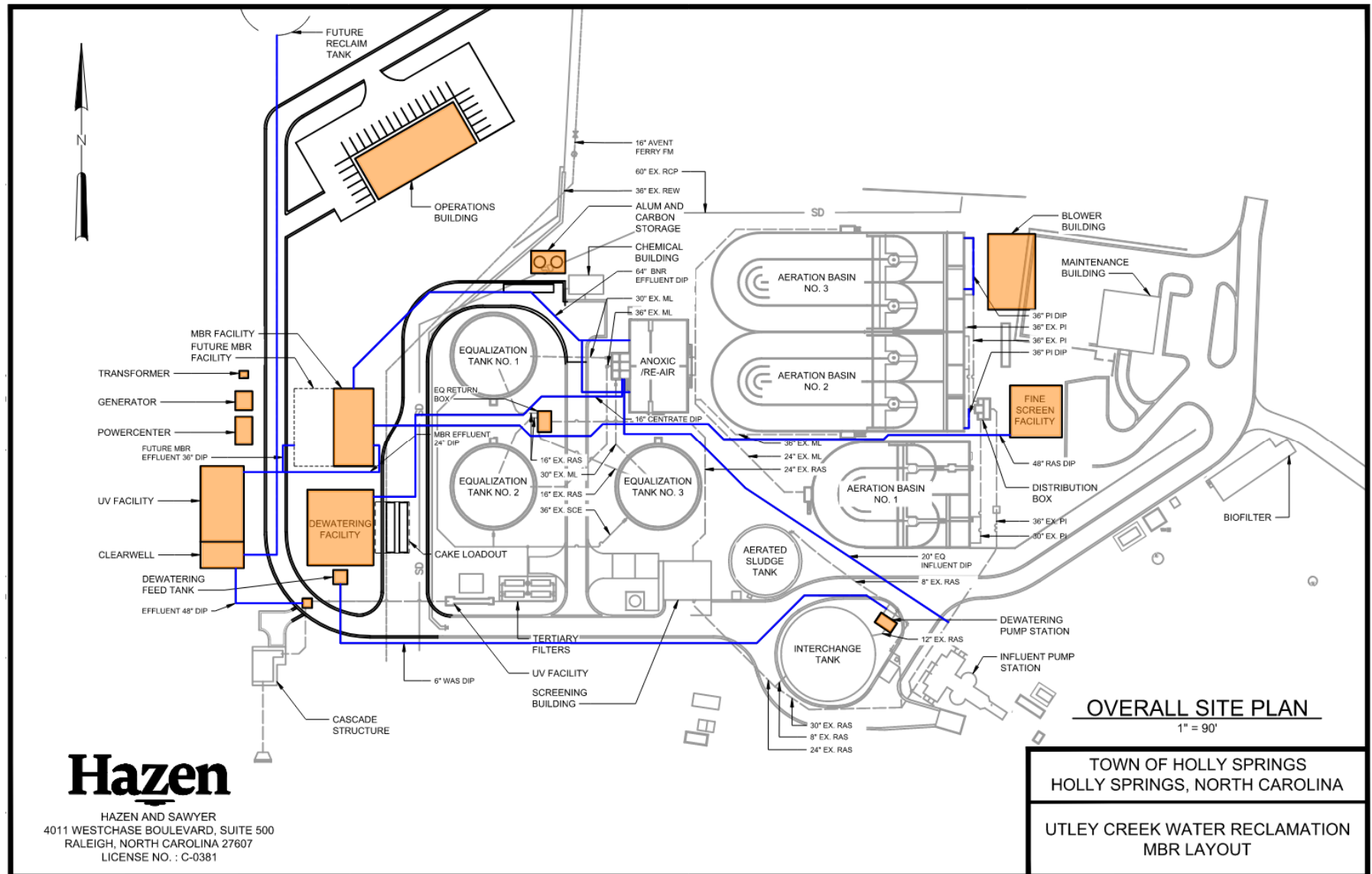


Figure 2-17: MBR Alternative Layout

2.6 Filtration

The UCWRF has four existing Hydrotech™ Discfilter units, each originally designed for 5.0 mgd for a total of 15.0 mgd peak flow capacity with one unit out of service as shown below in Figure 2-18. The existing filters provide reliable filtration of particulate materials which has historically ensured reliable TP removal for the stringent effluent TP and ortho-P limits.

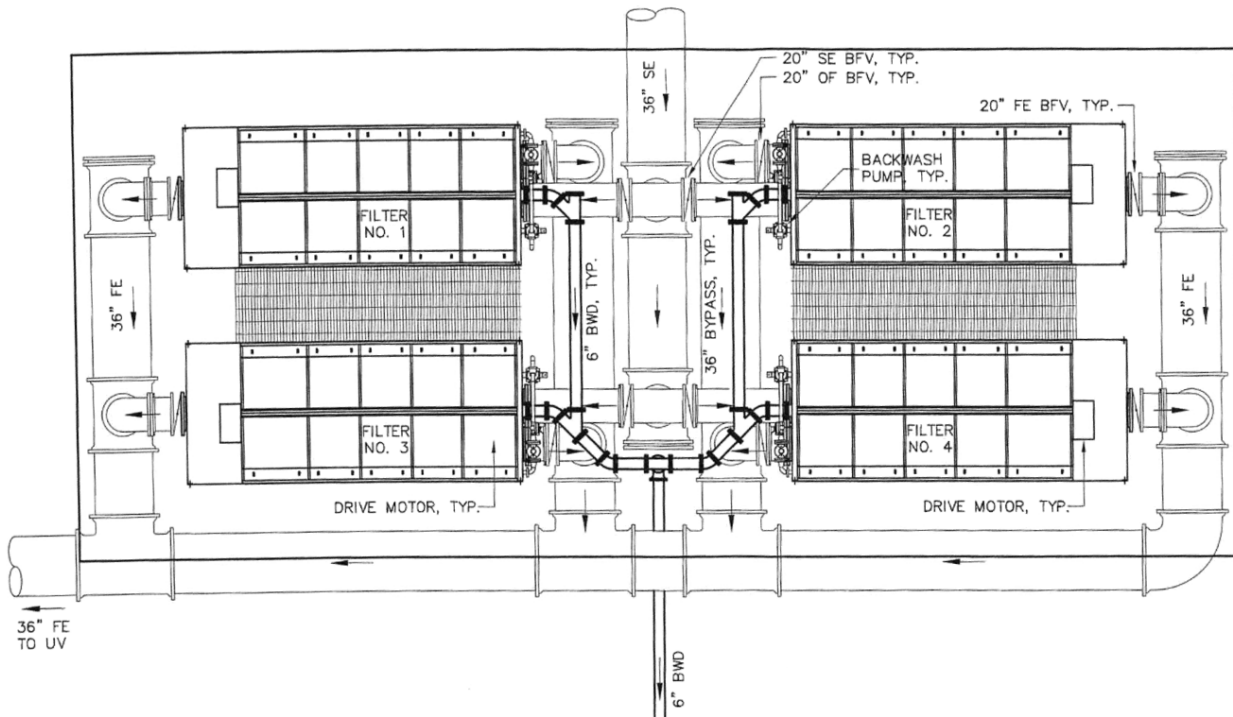


Figure 2-18: Existing Tertiary Filters - Operation and Maintenance Manual – January 2011 – Drawing 300-I

For the 8.0 mgd expansion, it is recommended that one additional Hydrotech™ Discfilter be installed. The new tertiary filter will be located to the north of the existing filter facility with a new dedicated equipment pad. The existing 36-inch secondary effluent line entering the existing filter facility will be modified utilizing a tapping sleeve to allow diversion of flow to the new filter unit. The filter discharge will be tied into the existing 36-inch final effluent line to convey flow to the UV facility.

The new filter will be provided with a dedicated manufacturer supplied control panel programmed to integrate the new filter with the existing filter facilities. The design conditions of the existing filters and the design recommendations for the 8.0 mgd expansion are presented in Table 2-31.

The MBR secondary treatment alternative will not require tertiary filtration, the existing tertiary disc filters will be decommissioned and demolished.

Table 2-31: Tertiary Filter Design Criteria

Design Criteria	Units	Current	Design
Design Requirements			
MM ADF	mgd	6.0	8.0
PDF	mgd	9.0	12.0
PHF	mgd	15.0	21.3
Duty Filters	units	3	4
Redundant Filters	units	1	1
Average Flow Rate	mgd/unit	2.0	2.0
Peak Day Flow Rate	mgd/unit	3.0	3.0
Peak Hour Flow Rate	mgd/unit	5.0	5.33
Maximum Influent TSS	mg/L	≤25	
Average Influent TSS	mg/L	≤15	
Average Effluent TSS	mg/L	≤5	
Tertiary Filter			
Manufacturer		Kruger	
Type		Hydrotech™ Discfilter	
Filter Pore Size	μm	10	
Number of Filter Discs	each unit	16	
Filter Disc Diameter	m	2.2	
Submerged Filter Surface Area	sf each unit	627	
Total Duty Surface Area	sf	1,881	2,508
MM Average Day Loading Rate	gpm/sf	2.22	2.22
Peak Day Loading Rate	gpm/sf	3.32	3.32
Peak Hour Loading Rate	gpm/sf	5.54	5.90
Backwash Pump (per filter)			
Make		Grundfos	
Pump Rate	gpm	95	
Drive Motor		10-HP, 460/3/60	
Total Backwash Flow	gpm	285	380

2.7 Disinfection

The existing UV disinfection system at the UCWRF is a WEDECO TAK55L horizontal bank system installed as part of the 2008 expansion in a single cast-in-place channel with structural canopy. The existing channel provides space for a future third bank. Lamp ballasts and UV system controls are located in the adjacent electrical building. The original design was based on treating the peak hour flow for surface water discharge requirements with one bank out of service and to produce Type I reclaimed water (RCW) with both banks in service to feed to the 1.5 mgd NPW system. The addition of a third bank of lamps was intended to allow for the UV system to meet Type I RCW standards at the design peak flow of 15.0 mgd to accommodate future increased RCW demands. The layout of the existing UV system is

shown in Figure 2-19. A summary of the design conditions of the existing UV system is outlined in Table 2-32.

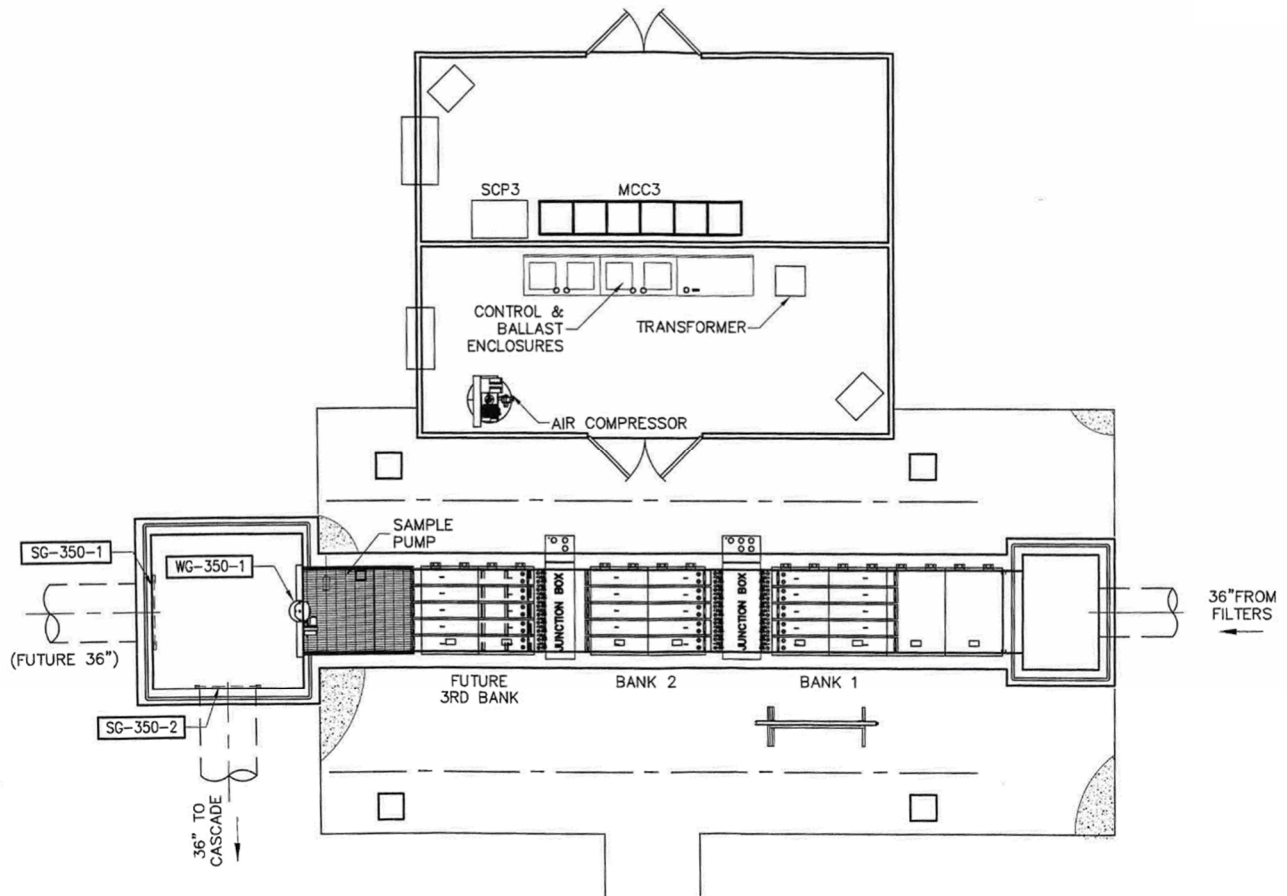


Figure 2-19: Existing UV Facility – Operation and Maintenance Manual – January 2011 – Drawing 350

Table 2-32: Existing 6.0 mgd UV System Design

Design Criteria	Units	Surface Water Discharge	RCW Generation
Design Requirements			
Minimum Flow Rate	mgd	0.5	0.5
MM ADF	mgd	6.0	6.0
PHF	mgd	15.0	15.0
Duty Channel		1	1
Redundant Channels		0	0
Banks Per Channel		2	3
Duty Banks		1	3
Redundant Banks		1	0
Total Number of Banks		2	3
UV transmittance (minimum)		65%	
Design Minimum Dose (PSS)	mJ/cm ²	30.0	70.0
Influent TSS	mg/L	<30	<5
Influent Fecal Coliform	CFU/100 mL	<20,000	
Surface Water Discharge Fecal Coliform	CFU/100 mL (30-day geometric mean)	<200	N/A
	CFU/100 mL (7-day geometric mean)	<400	N/A
Type I RCW Fecal Coliform	CFU/100 mL (30-day geometric mean)	N/A	<14
	CFU/100 mL (daily maximum)	N/A	<25
UV System			
Manufacturer		ITT - WEDECO	
Model		TAK55L 9-5/ 143X 2i1W	
Number of Modules per Bank		5	
Number of Columns in each Module		2	
Number of Lamps per Column		9	
Number of Lamps per Module		18	
Number of Lamps per Bank		90	
Total Number of Lamps		180	270
Power (100% power level)	kw	57.6	86.4
Type of UV Lamp		High intensity, low pressure	
Cleaning System		Automatic Wiper	
Level Control		Motorized Weir Gate	
Lamp Lifetime	hrs	12,000	

The Wedeco TAK55L system was intended for low dose applications like surface water discharge and is not ideal for RCW generation. The L series equipment is designed with increased spacing between the lamps, resulting in a lower UVT dose.

The design doses of the existing equipment were developed utilizing Point Source Summation (PSS), which was the industry practice in the 1990s/early 2000s. Modern design is typically based on bioassay methods introduced in the early 2000s. The bioassay approach is a third-party equipment validation method which confirms full scale equipment performance at a range of UV system doses, UVTs, flows and disinfection requirements enabling a direct comparison of system performance across manufacturers. The bioassay approach outlined in Ultraviolet Disinfection Guidelines for Drinking Water and Water Reuse, third edition (NWRI, 2012) utilizing the MS2 coliphage is typically utilized for designs for RCW generation applications.

Due to the age and condition of the existing equipment, the historically observed performance, and the lack of redundancy within the existing UV structure, it is recommended that the existing UV structure be replaced with a new dual channel UV structure sized to accommodate more efficient vertical and inclined bank UV systems with provisions made to accommodate the future 15 mgd expansion.

UV transmittance (UVT) is a measure of the effectiveness for UV light to penetrate the treated effluent and is typically one of the most critical water-quality parameters of UV system design. The existing WEDECO UV system does not include an online UVT monitoring system, so site specific UVT data is currently being collected and analyzed at the UVWRF to help determine the UVT for detailed design.

Additional sampling that will be beneficial for design of the UV system includes:

- Fecal coliform loading to the UV system after tertiary filtration. Higher fecal counts will require an increased UV dose to achieve sufficient log reduction in fecal coliform count necessary to meet the permit effluent and RCW requirements. It is recommended that additional fecal coliform samples be taken for a two-week period upstream of the existing UV system each day that operations samples for effluent fecal coliform.
- Analysis for iron and manganese concentrations since these parameters can impact UV transmittance through the quartz sleeves. It was noted in the proposals from Wedeco that a maximum manganese content of 0.05 mg/L would be required by the proposed design.
- Collimated beam testing is recommended to develop site specific dose-response relationships with UV system manufacturers. This test will be coordinated with both Trojan and Wedeco.

During the July 18, 2023, PER Review meeting it was discussed that that the UV system should be designed to meet Type I RCW standards with both channels online and that it does not need to be sized to meet more stringent Type II RCW requirements. Conservative design dose requirements for meeting surface water discharge and Type I RCW treatment requirements are presented in Table 2-33.

Table 2-33: 8.0 mgd UV System Design Requirements

Design Requirements			
Treatment Goals	Units	Surface Water Discharge	Type I RCW Generation
Minimum Flow Rate	mgd	0.5	0.5
MM ADF	mgd	8.0	8.0
PHF	mgd	21.3	21.3
Duty Channel		1	2
Redundant Channels		1	0
Total Channels		2	2
UV transmittance (minimum)		65%	
Design Minimum Dose (MS2 RED) ¹	mJ/cm ²	30.0	50.0
Influent TSS	mg/L	<30	
Influent Fecal Coliform	CFU/100 mL	<20,000	
Surface Water Discharge Fecal Coliform	CFU/100 mL (30-day geometric mean)	<200	N/A
	CFU/100 mL (7-day geometric mean)	<400	N/A
Type I RCW Fecal Coliform	CFU/100 mL (30-day geometric mean)	N/A	<14
	CFU/100 mL (daily maximum)	N/A	<25

1. Dose shall be determined based on NWRI 2012 Method with a Confidence Ratio (CR) applied.

The proposed UV systems will have a significant increase in power requirements compared to the existing UV system. This is primarily driven by the difference in the UV design dose and the method for estimating the dose. As noted above, the existing system was designed based on a 30 mJ/cm² dose calculated utilizing the PSS method while the proposed UV systems outlined in this evaluation are designed for a higher UV dose of 50 mJ/cm² for RCW generation as determined with the bioassay approach.

The preliminary engineering phase has evaluated vertical and inclined bank UV systems. UV equipment manufacturer and model is recommended to be pre-selected prior to 30% design. The recommended manufacturers and models are:

- Suez Aquaray 3X
- Trojan UVSigna
- Wedeco Duron-8
- Wedeco Duron-6

Preliminary proposals provided during the preliminary engineering phase are summarized in Table 2-34 below. Additional proposals can be received as part of initial design services.

Table 2-34: 8.0 mgd UV System Preliminary Proposal Summaries

Design	Manufacturer	
	Trojan UVSigna	Wedeco Duron-8
No. of Channels	1 duty + 1 standby	1 duty + 1 standby
Modules, Banks/Channel	3	4
Lamps/Module, Banks	22	22
Total Lamps	132	176
Connected Load ¹	152	166
Lamp Orientation	Inclined	Inclined
Ballasts	Panels	Panels
Lifting	Integral Hydraulics	Integral Electric
Water Depth	67.5"	53.5"
Cleaning	Hydraulic Chemical /Mechanical Wipers	Electric Mechanical Wipers
Required Channel Length x Width x Depth	36' x 5.1' x 7.7'	32.8' x 4.34' x 8.85'

¹Connected load is estimated as 115% of total (duty and standby) lamp power in kW or the reported total connected load by the manufacturer, whichever is greater.

2.8 Cascade Aeration and Effluent Flow Measurement

From the UV facility, treated effluent flows to the existing Cascade Aerator via a 36-inch pipe as shown in Figure 2-20. The Cascade Aerator structure was installed in 2016 and consists of a 24-inch Parshall flume, effluent weir, and several concrete steps for air entrainment.

The permitted effluent DO concentration is a daily average of no less than 7.0 mg/L. From 2020 through 2023 the average DO at the top of the cascade aeration structure was 9.7 mg/L and the average daily minimum DO was 8.1 mg/L. Based on the historical information the effluent DO concentration is being met prior to entering the cascade aeration structure likely due to hydraulic drops after the FCs, disk filters, and UV structure. Based on the historical data and the future hydraulic profile, the existing cascade aerator has adequate capacity to meet the future peak flows for the Conventional and DAS alternatives.

For the MBR alternative, the hydraulic drops after the FCs and filter structure will be eliminated, which may reduce the DO concentration entering the cascade aerator. At the 100-year flood elevation, a DO concentration of 4.5 mg/L must be maintained upstream of the cascade aerator to achieve a DO of 7.5 mg/L at the bottom of the cascade aerator. The average DO concentration in the MBR permeate is expected to be 2 to 4 mg/L so the UV structure will be designed with sufficient drop to increase the DO concentration to at least 4.5 mg/L prior to the cascade aerator.

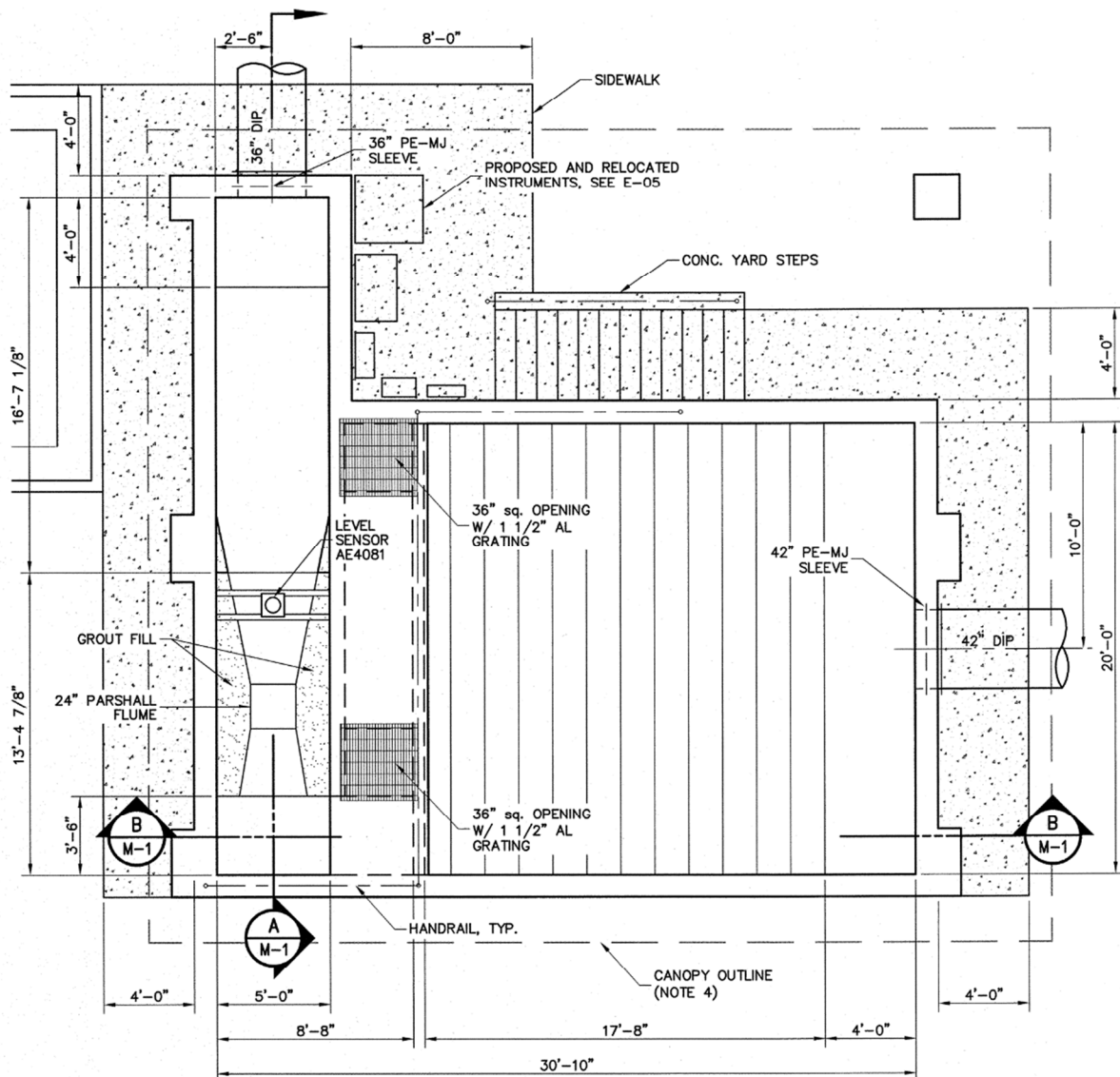


Figure 2-20: Existing Cascade Aeration Facility - Utley Creek WRF Phase I Upgrades (March 2016) - Issue for Bid - Sheet M-1

The existing 24-inch Parshall flume is calibrated to read flows from 0.4 to 21.3 mgd and has sufficient capacity for the 8.0 mgd design flow conditions.

2.9 Chemical Facilities

2.9.1 Existing Facilities

The existing chemical building includes space for storing totes, two (2) 400 gallon day tanks, and two chemical dosing skids. There is also a 6,000 gallon metal salt bulk storage tank located near the existing dewatering facility. There is currently no bulk storage tank for supplemental carbon, and the facility does not add supplemental carbon for TN reduction.

Figure 2-21 presents the chemical dosing schematic for supplemental carbon (MicroC 2000®) and metal salt (coagulant). Supplemental carbon can be dosed to the effluent of each BNR basin or to the post-anoxic basins. Metal salt can be dosed to the re-aeration distribution box.

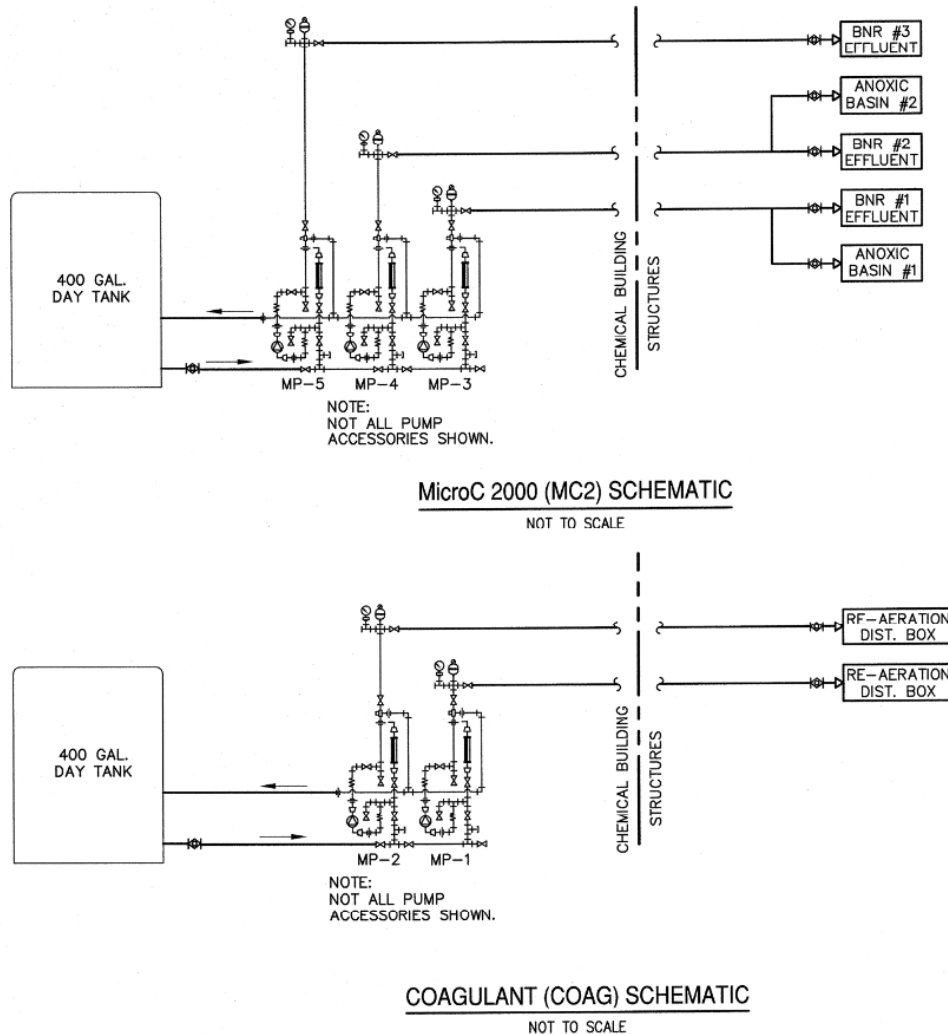


Figure 2-21: Existing Chemical Dosing Schematic

2.9.2 Supplemental Carbon

While the facility does not currently dose supplemental carbon for nitrogen removal, as influent flows and loads increase it is expected that supplemental carbon will be necessary to meet the effluent TN limits. Supplemental carbon is added to BNR systems to promote biological denitrification when the influent carbon is insufficient and/or the facility has very low effluent TN limits. Supplemental carbon is typically added to the second anoxic zone of BNR tanks, where the availability of carbon is limited, and nitrate is present. Typical supplemental carbon sources include methanol, ethanol, glycerin, acetic acid, and sugar water and are available from many different suppliers.

The existing supplemental carbon dosing system is designed with a 400-gallon day storage tank for MicroC 2000® (a glycerin based supplemental carbon) with dosing points to the BNR effluent and post-anoxic zone. The existing dosing pumps have a capacity of 0.0019 to 19 gph and are sufficiently sized for the 8.0 mgd expansion regardless of the secondary process selected. No additional dosing pumps or dosing points will be necessary.

Process modeling was performed to determine the supplemental carbon necessary to achieve the effluent TN limit for the three process alternatives. A summary of the daily supplemental carbon dose for each alternative and the 30-day storage volume necessary under maximum month conditions is presented in Table 2-35.

Table 2-35: Supplemental Carbon Dosing Rate and Storage Size

Parameter	Conventional Five-Stage BNR	Densification Five-Stage BNR	MBR
Annual Average Dose (gpd)	20	20	0
Maximum Moth Dose (gpd)	265	265	150
30-Day Storage Volume (gal)	7,950	7,950	4,500

Bulk storage will be provided in storage tanks located outside and adjacent to the chemical building. The outdoor setting will require the tanks and associated outdoor piping to be heat traced and insulated. Separate secondary containment structures will be provided for the bulk tanks of each chemical system with storage volume large enough to hold the volume of the largest bulk tank and an allowance for a 24-hour/25-year rain event. Final tank material selections will be made after consultation with the Town, but it is anticipated that the supplemental carbon storage tank will be polyethylene.

2.9.3 Metal Salt

The facility currently doses sodium aluminate upstream of the FCs for orthophosphate removal. The existing sodium aluminate dosing system is designed with a 400-gallon day storage tank with a dosing point to the reaeration distribution box. If the conventional or DAS alternative is selected it may be beneficial to add an additional dosing point upstream of the tertiary filters and if the MBR alternative is selected, it may be beneficial to add a rapid mix chamber upstream of the MBR facility to ensure ideal mixing and reduce the potential of damaging the membranes.

The AA and MM dosing rate for 2020 through 2022 was approximately 100 and 187 gpd, respectively. Over the same time the average effluent orthophosphate was 0.06 mg/L. Based on an aluminum to phosphate molar ratio removal of 3.5:1, the facility is removing approximately 0.7 mg/L of orthophosphate via chemical addition. Scaling the historical dosing rate to the 8.0 mgd design condition, approximately 280 and 530 gpd may be necessary under AA and MM conditions for similar orthophosphate removal rates.

For 30 days of storage under MM conditions, a tank with a usable storage volume of 15,900 gallons is recommended. While the process model did not estimate a sodium aluminum dose rate as high as 530 gpd, it is still recommended to include sufficient storage if biological phosphorus removal is upset, and the facility needs to chemically remove a large portion of their influent phosphorus.

The existing dosing pumps have a capacity of 0.0019 to 19 gph and have a capacity slightly below the recommended maximum month dosing rate. Since the facility will not immediately see the design load conditions, replacement of the metal salt dosing pumps could occur when the existing pumps meet the end of their useful life.

Table 2-36: Metal Salt Dosing Rate and Storage Size

Parameter	Average Dose	Maximum Month Dose
Alum Daily Dose (gpd)	280	530
30-day Storage Volume (gal)	8,400	15,900

2.10 Hydraulics

Hydraulic profile calculations were performed using HazenPro, an Excel-based hydraulic model developed by Hazen specifically for treatment plant hydraulic profile analysis. Information on existing facilities was acquired from record drawings from past construction projects and equipment operation and maintenance manuals.

Hydraulic profiles through a treatment plant are calculated beginning at the downstream end of the plant and working upstream, with the starting point being the water surface elevation in Utley Creek during a 100-year flood event. Hydraulic profile calculations consist of a series of calculations of headloss in each hydraulic element (piping, channels, gates, weirs, etc.), with the head loss in each element impacting the element immediately upstream. HazenPro consists of Excel spreadsheet modules for each type of hydraulic element which are linked together to form a continuous hydraulic profile.

The theoretical bases for the HazenPro hydraulic profile calculations are as follows:

Piping: Head loss in piping consists of friction losses and minor losses. Friction losses are calculated using the Hazen-Williams equation. Hazen and Williams C-values are based on those typically found in pipes that have been in service for many years. Minor losses in pipes are due to bends, valves, entrance and exit losses, etc. Minor loss k-values used are typical published values.

Channels: Head loss in channels consists of friction losses and minor losses. Friction losses are calculated using the Manning equation. Friction losses depend on the roughness of the channel, as measured by the Manning “n” value. The calculation for friction loss in a channel is an iterative solution because the depth and velocity of flow varies along the length of the channel. Minor losses in a channel are calculated similar to those in a pipe.

Gates/Ports: Gates and ports can be submerged (typical for sluice gates) or have free surface flow (typical for a slide gate). Losses through gates and ports are calculated using the orifice equation, with orifice coefficients determined based on the geometry of the port.

Weirs: Weirs are often used to maintain a constant level in a process unit and can have different forms (sharp-crested, v-notch, etc). Weir equations vary based on the type of weir provided.

The equations used in the hydraulic calculations are widely accepted and have been in use for many years. However, the accuracy of the equations is impacted by the selection of values for the coefficients used in the model. Some of these coefficients, such as the Hazen and Williams C-value, change over time. A 20-yr old pipe will not have the same C as a new pipe due to deterioration or biological growth on the pipe walls. Hazen and Sawyer uses conservative values for coefficients that are intended to predict performance of older pipes.

2.10.1 Hydraulic and Capacity Evaluation

The goal of the hydraulic evaluation is to identify hydraulic constraints or “bottlenecks” in the existing plant that may impact plant performance by submerging critical hydraulic control points. Critical hydraulic control points are defined as those hydraulic elements where the water level is somehow fixed or those points that, if submerged, could lead to significant process upsets. For the Utley Creek WRF, the critical hydraulic control points and their locations are shown below in Table 2-37.

Table 2-37: Hydraulic Control Points

Hydraulic Control Point	Elevation
Influent Parshall Flume Crest ¹	313.50
Aeration Basin Distribution Box Weirs	339.75
Aeration Basin Effluent Weirs	336.79
Clarifier Distribution Weirs	334.00
Clarifier Effluent V-Notch Weirs	332.42
Filter Effluent Weirs	327.22
Parshall Flume Crest	316.50
Utley Creek 100 Year Flood Elevation	312.10

¹The Influent Parshall Flume is located upstream of the influent pumps

The segment of the hydraulic profile between each set of hydraulic control points was analyzed to predict performance under the design flow conditions listed in Table 2-38, and to identify “bottlenecks” in the existing unit processes and yard piping. It was assumed that during storm events all units would be in service.

Table 2-38: Hydraulic Capacity Evaluation – Flow Conditions

Flow Condition	Conventional Treatment Alternative		MBR Alternative	
	Design Flow (mgd)	RAS Flow (mgd)	Design Flow (mgd)	RAS Flow (mgd)
Annual Average (AA)	6.7	6.7	6.7	20.1
Maximum Month (MM)	8.0	6.7	8.0	32.0
Maximum Day (MD)	20.0	6.7	12.0*	32.0
Peak Hour (PH)	21.3	10.7	16.0*	32.0

* Flow post-EQ

2.10.2 Bottlenecks - Conventional and Densification Secondary Process Alternatives

The only significant bottleneck that was identified as part of the hydraulic capacity analysis was through the FCs. Construction of a fourth FC will avoid submergence of the clarifier effluent weir and the clarifier distribution box weirs at peak flows. If the densification alternative is selected, secondary clarifier effluent lines may need to be paralleled to avoid submergence of the clarifier effluent weir.

The hydraulic capacity of the rest of the treatment processes is adequate and no hydraulic improvements are recommended.

2.10.3 Bottlenecks – MBR Alternative

The following hydraulic bottlenecks will need to be alleviated to be able to pass the MBR flows listed in Table 2-38:

- BNR distribution box: A new distribution box will be constructed for the MBR alternative downstream of the new fine screening facility (see Section 2.6.4). The new distribution weir will need to be at a higher elevation than the existing distribution weir (EL. 339.75) and/or the oxidation ditch influent pipes upsized to avoid submerging the distribution weir at any design flows.
- BNR Tanks: If no hydraulic improvements are made, there would only be approximately 7.0 inches of freeboard between the BNR basin water surface elevations and the top of the walls at MD flow and 4.4 inches at PH flow. To meet regulations, at least 12 inches of freeboard should be maintained at all flow conditions. Therefore, it is recommended to lower the BNR Tanks effluent weir gate from EL 337.70 to EL 337.00. This will increase the top of wall freeboard to 15 inches at MD flows and 12 inches at PH flow. Lowering the BNR Tanks effluent weir gate elevation does not cause any hydraulic or process related issues.

3. Solids Treatment Facilities

As part of this expansion project, the existing dewatering equipment will be decommissioned and replaced with a new Dewatering Facility with equipment sized for the 8.0 mgd plant expansion with accommodations for a potential future expansion to accommodate 15 mgd flows.

3.1 Existing Dewatering Technology

The UCWRF currently has volute screw press by PW Tech to dewater WAS to an unclassified cake product for offsite composting by a 3rd party. The volute press is located in the Screening Building adjacent to the Aerobic Sludge Holding Tank. The existing press, model ES 302, has an operating capacity of 70 gpm or 700 lb(dry)/hr. To accommodate the current solids production, this press is run close to 24 hours per day, 7 days per week. The existing volute press is pushed higher than the recommended hydraulic capacity, resulting in lower cake solids, around 12%TS. Dewatered cake is conveyed to dumpsters, owned by McGill, which are hauled offsite to the Merry Oaks Composting Facility where they are treated to a Class A EQ product.

Due to increased capacity needs for dewatering, the Town is replacing the existing volute press model ES 302 with an ES 352. The ES 352 unit will be able to process 130 gpm or 1,400 lb(dry)/hr, allowing the UCWRF to improve throughput and dewatered cake quality until the new dewatering facility is completed.

3.1.1 Technology Selection

For the new dewatering process, three dewatering technology alternatives were evaluated:

- Volute Press
- Belt Filter Press
- Dewatering Centrifuge

Volute presses were included due to the Town's familiarity with the technology. Belt filter presses and dewatering centrifuges are common municipal sludge dewatering technologies. Advantages and disadvantages of each technology, shown below in Table 3-1, were presented to the Town along with preliminary impacts to building footprint and potential operating hours.

Table 3-1: Dewatering Technology Comparison

Technology	Manufacturers	Advantages	Disadvantages
Volute Press	PW Tech	- Automated operation - Lower energy consumption - Lower rotational speed (less wear) - Lower washwater requirements - Familiarity of equipment	- Sole source equipment - Lower throughput - Site specific performance
Belt Filter Press	Alfa Laval Andritz BDP Komline	- Lower energy requirement - Simpler operation - Improved visibility due to open process - Operational flexibility (3-belt) - Ability to handle variable feedstocks (3-belt)	- Not enclosed – more odor potential - Lower cake solids concentration - Higher washwater demand
Dewatering Centrifuge	Alfa Laval Andritz Centrisys Flottweg GEA	- Higher +1-2% TS cake solids - Compact footprint - Automated operation - Higher solids capture rate - Fully enclosed - Lower washwater requirements	- Specialized maintenance requirements and longer downtime - Higher energy consumption - Higher polymer dose - High rotational speed and vibration considerations - Higher noise level

Belt filter presses were removed from consideration after initial technology comparison discussion at a progress workshop. Site visits to local dewatering centrifuge operations at the Neuse River Resource Recovery Facility and the South Cary Water Reclamation Facility and discussions with vendors at the 2023 Residuals and Biosolids Conference in Charlotte, NC were organized to aid in dewatering technology selection. In June 2023, centrifuges were selected as the technology for the new dewatering facility. Preliminary sizing and footprints for the new dewatering facility assume the selection of dewatering centrifuge equipment.

3.2 Solids Production Rates

Historical data and BioWin™ process modeling software were used to determine solids production rates from the liquid treatment process. Solids production rates are summarized in Table 3-2. Mass loading peaking factors were utilized to determine maximum month (MAX30), maximum two week (MAX14), and maximum week (MAX07) loading conditions.

Table 3-2: Sludge Production Rates, Pounds of Total Solids Per Million Gallons

Parameter	AVG365	MAX30	MAX14	MAX07
Mass Peaking Factor	1.0	1.3	1.5	1.6
Waste Activated Sludge Production Rate, lb TS/MG AVG365	2,100	2,750	3,150	3,360
Waste Activated Sludge Production at 8.0 mgd, lb/day	16,800	22,000	25,200	26,880

Each examined secondary liquid treatment processes discussed in Section 2.4.2 produces a different WAS concentration. This impacts the volume of sludge that needs to be managed through the solids process and the operating hours of selected dewatering equipment, as the selected dewatering technology (centrifuges)

is hydraulic loading limited below approximately 2.0%TS. The WAS concentrations for each alternative are shown in Table 3-3.

Table 3-3: Secondary Process Alternatives Impact on WAS Concentrations

Parameter	WAS Concentration, %TS
Alternative 1 – Conventional Five-Stage BNR with Final Clarification	1.0% TS
Alternative 2 – Densification Five-Stage BNR with Final Clarification	0.625% TS
Alternative 3 – Five-Stage BNR with MBR	1.2% TS

Based on discussions with the Town, the MBR alternative was selected and is used as the basis of design for the solids process.

3.3 Proposed Process

Proposed upgrades to the solids handling process at the UCWRF includes a new dewatering facility, which would include dewatering feed pumps, polymer makeup units, bulk polymer storage, and conveyance to dewatered cake loadout. Due to the distance between the existing aerated sludge storage tanks and the proposed location of the new dewatering facility, it is recommended to transfer WAS to a dewatering feed tank adjacent to the new dewatering building. A proposed solids handling process flow diagram is shown in Figure 3-1.

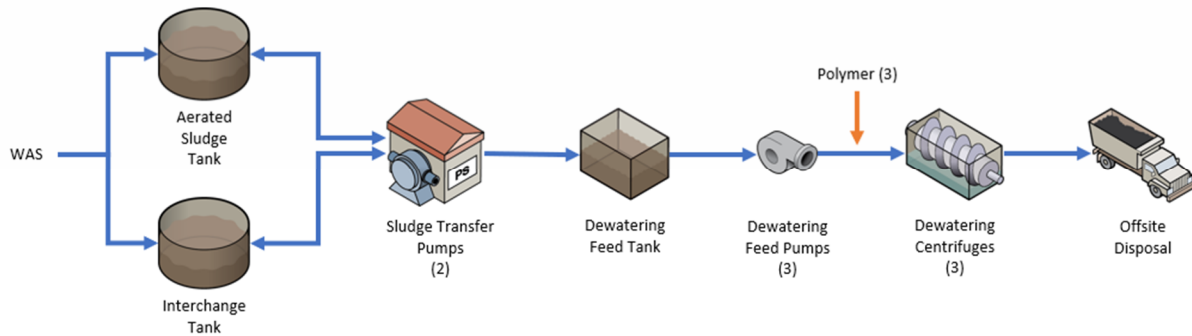


Figure 3-1: Proposed Solids Process Flow Diagram

3.4 WAS Holding

3.4.1 Existing Tanks

The UCWRF currently has two tanks that may hold WAS prior to dewatering, Digester No. 1 (Aerated Sludge Tank) and Digester No. 2 (Interchange Tank). Each tank dimensions are shown in Table 3-4. The existing WAS holding tanks will remain in service for the plant expansion to 8.0 mgd.

Table 3-4: Existing WAS Holding Tank

Parameter	Digester No. 1 (Aerated Sludge Tank)	Digester No. 2 (Interchange Tank)
Tank Inside Diameter	70 ft	100 ft
Side Water Depth	15'-6"	15'-6"
Bottom Slab Elevation	EL 314.17	EL 315.00
Top of Wall Elevation	EL 331.50	EL 332.50
Working Volume	446,190 gal	910,590 gal
Total Volume	1,356,780 gal	
Blower Type	Positive Displacement	Centrifugal
Diffuser Type	Fine Bubble	Coarse Bubble

Days of storage at the assumed WAS concentration of 1.2% TS is shown in Table 3-5.

Table 3-5: Days of WAS Storage at 8.0 mgd

HRT (days)	AVG365	MAX30	MAX14	MAX07
AST only	3.0	2.3	2.0	1.9
IT only	6.0	4.5	4.0	3.7
Total Tank Storage Time, days	8.9	6.8	6.0	5.6

3.4.2 Sludge Transfer

Adjacent to the interchange tank, there is a small sludge pumping station that houses two (2) self-priming centrifugal pumps by Gorman Rupp to transfer sludge between Digester No. 1 (Aerated Sludge Tank) and the Digester No. 2 (Interchange Tank) or to a liquid sludge Truck Loading Station. The Truck Loading Station is only utilized to fill tanker trucks with liquid sludge for land application when the dewatering process is not in operation.

To accommodate sludge pumping needs from the existing Digester No. 1 (Aerated Sludge Tank) and Digester No. 2 (Interchange Tank) up to the new dewatering facility, the existing sludge pumping station will be demolished and replaced with a recessed transfer pump station. The new pump station will be recessed to improve hydraulics and allow for complete draining of the tanks with the pumps. The new pumps will maintain the ability to transfer sludge between the two tanks or to the sludge loading station. Screw centrifugal pumps are recommended for the sludge transfer pumps.

Preliminary pump design criteria are shown in Table 3-6.

Table 3-6: Sludge Transfer Pump Station Design Criteria

Parameter	Value
Number of Pumps	2
Type	Screw Centrifugal
Manufacturers	Hayward Gordon, Wemco
Flow Range	170 – 450 gpm per pump
Solids Concentration	0.5-1.5% TS
Drive Type	VFD

The operational strategy for the transfer pumps is to match the total dewatering feed rate. One pump would be able to feed one or two centrifuges (typical operating scenario), and both pumps would operate in parallel to meet the dewatering feed rate if three centrifuges were operating.

3.4.3 Dewatering Feed Tank

An intermediate dewatering feed tank adjacent to the new dewatering facility is proposed to provide suction to the centrifuge feed pumps. The sludge transfer pumps would discharge WAS from either the Digester No. 1 (Aerated Sludge Tank) or Digester No. 2 (Interchange Tank) into the new dewatering feed tank at the dewatering feed rate, maintaining a constant level in the feed tank. These sludge transfer pumps will be VFD driven to allow for flexibility in operation. The tank is sized to provide a limited hydraulic retention time, just to provide suction to the dewatering feed pumps and buffer any differences in pumping rates between sludge transfer and dewatering feed. Further discussion on the dewatering equipment may be found in Section 3.5.1.

Proposed tank geometry and storage capacity is shown in Table 3-7.

Table 3-7: Dewatering Feed Tank Design Criteria

Parameter	Value
Number of Tanks	1
Working Dimensions per Tank	15 ft x 15 ft x 15 ft
Volume per Tank	25,200 gal
HRT at Typical Conditions	20 min

The dewatering feed tank is proposed to be cast-in-place concrete construction. With anticipated short HRT and relatively thin sludge, mixing is not required but may be included if there are concerns with maintaining a homogenous consistency to dewatering.

3.5 Dewatering Facility

The new dewatering facility will include three high-solids centrifuges, three centrifuge feed pumps, three direct-feed polymer makeup units and neat polymer storage, three inclined screw conveyors, two horizontal common conveyors, and two multi-point discharge conveyors for truck loadout. WAS will be

pumped from the dewatering feed tank by rotary lobe pumps to the centrifuges for dewatering. The dewatered solids cake will be conveyed via screw conveyors to dual truck loadout lanes.

3.5.1 Dewatering Centrifuges

A dewatering centrifuge operates by using centrifugal force to drive heavier solids towards the outside of the centrifuge bowl while the lighter water remains in the center of the bowl. A concentric scroll inside the bowl is used to move the solids towards the discharge end of the bowl while the separated water is discharged from the opposite end. The scroll and the bowl are generally rotated at similar speeds with the scroll powered by a “back drive” that allows the scroll to move at a slightly different speed than the bowl, resulting in the conveyance of solids from the dewatering unit. At lower differential speeds, the discharge solids concentration will increase due to the longer residence time in the centrifuge, and at higher differential speeds, the discharge solids concentration will decrease. Changes in differential speed can also impact the quality of the centrate depending on the depth of liquid within the centrifuge. Polymer is used to enhance centrate quality and increase the overall solids capture of the process.

Following selection of centrifuge technology for the new dewatering facility, target operating hours were reviewed to select a centrifuge operating capacity. Since the desired offsite biosolids disposal is to the McGill Merry Oaks Composting Facility, it is beneficial to the Town for the dewatering operation to fall within the hours the McGill facility is accepting solids. The Town desires the new dewatering facility to be able to operate in a near continuous mode to most beneficially feed a future solids treatment process, if required for PFAS destruction in the future. The McGill facility accepts hauling trucks onsite during typical business hours (8:00am to 5:00pm) from Monday to Friday. They can also accept trucks for limited hours on Saturdays at special request. Given the current and projected sludge production at 8.0 mgd plant capacity, preliminary centrifuge capacity was based on equipment with a hydraulic loading rate (HLR) of up to 225 gpm or solids loading rate (SLR) capacity of up to 2,250 lb(dry)/hr.

At the assumed WAS concentration of 1.2% TS based on the MBR alternative, the centrifuges would be hydraulic loading rate limited and operated at a maximum of 225 gpm. Design criteria for the centrifuges is shown in Table 3-8.

Table 3-8. Dewatering Centrifuge Design Criteria

Parameter	Value
Number of Units	3
Manufacturers	Alfa Laval, Andritz, Centrisys, Flottweg, GEA
Hydraulic Loading Rate	225 gpm
Solids Loading Rate	2,250 lb(dry)/hr
Feed Solids Concentration	0.5 – 1.5% TS
Minimum Cake Solids Concentration	17% TS
Polymer Dose	40 lbs (active polymer solids) per dry ton
Maximum Total Connected Load	120 hp
Drive Type	VFD

At current sludge production rates and up to the projected solids production at 8.0 mgd plant capacity the selected 225 gpm capacity centrifuges will be able to meet the schedule demands associated with hauling to the McGill Merry Oaks Facility. Targeting an 8 hr/day, 5 day/wk schedule, two centrifuges in operation could accommodate the anticipated dewatering capacity need at annual average conditions through the 8.0 mgd plant capacity. The estimated operating hours for this size equipment are shown in Table 3-9.

Table 3-9: Estimated Centrifuge Operating Hours, hrs/day

Operating Schedule	Number of Centrifuges in Service	4.0 mgd				8.0 mgd			
		AVG365	MAX30	MAX14	MAX07	AVG365	MAX30	MAX14	MAX07
5 day/wk	3	2.9	3.8	4.4	4.6	5.8	7.6	8.7	9.3
5 day/wk	2	4.4	5.7	6.5	7.0	8.7	1.4	13.1	13.9
5 day/wk	1	8.7	11.4	13.1	13.9	17.4	22.8	26.1	27.9
7 day/wk	3	2.1	2.7	3.1	3.3	4.1	5.4	6.2	6.6
7 day/wk	2	3.1	4.1	4.7	5.0	6.2	8.1	9.3	9.9
7 day/wk	1	6.2	8.1	9.3	9.9	12.4	16.3	18.7	19.9

Note: highlighted cells indicate that the indicated operating schedule and number of centrifuges in service does not offer enough processing capacity to meet anticipated sludge production.

3.5.1.1 Future Advanced Solids Handling Process Considerations

Another capacity consideration made for centrifuge sizing was the impacts of future incorporation of advanced processes for PFAS destruction. Processes that destroy PFAS in biosolids include gasification/pyrolysis and super critical water oxidation. Both processes would be an additional step after dewatering and require a more continuous feed schedule. To maintain the flexibility for the Town to add an advanced process in the future, the selected centrifuge capacity of 225 gpm was also examined at a 70% turndown rate for anticipated solids production at future 8.0 mgd and potential 15.0 mgd plant

capacities. The anticipated operating hours for several operating schedules and number of units in service is shown below in Table 3-10.

Table 3-10: Estimated Centrifuge Operating Hours for Future Advanced Processes at 70% Turndown, hrs/day

Operating Schedule	Number of Centrifuges in Service	8.0 mgd				15.0 mgd			
		AVG365	MAX30	MAX14	MAX07	AVG365	MAX30	MAX14	MAX07
5 day/wk	3	8.3	10.9	12.4	13.3	15.5	20.4	23.3	24.9
5 day/wk	2	12.4	16.3	18.7	19.9	23.3	30.5	35.0	37.3
5 day/wk	1	24.9	32.6	37.3	39.8	46.6	61.1	69.9	74.6
7 day/wk	3	5.9	7.8	8.9	9.5	11.1	14.5	16.7	17.8
7 day/wk	2	8.9	11.6	13.3	14.2	16.7	21.8	25.0	26.6
7 day/wk	1	17.8	23.3	26.6	28.4	33.3	43.6	50.0	53.3

Note: highlighted cells indicate that the indicated operating schedule and number of centrifuges in service does not offer enough processing capacity to meet anticipated sludge production.

3.5.2 Dewatering Feed Pumps

Three (3) sludge feed pumps will be installed in the new Dewatering Facility to provide sludge feed to the new dewatering centrifuges from the new dewatering feed tank. A variable speed drive is recommended to allow full loading of the centrifuges with fluctuating feed solids. Positive displacement pumps are preferred for feeding dewatering equipment as the pump curve is relatively flat across a range of discharge pressures. Rotary lobe pumps are recommended for feeding the new centrifuges due to ease of maintenance and more compact footprint. Table 3-11 details the preliminary sludge feed pump design criteria.

Table 3-11: Dewatering Feed Pump Design Criteria

Parameter	Value
Number of Pumps	3
Type	Rotary Lobe
Manufacturers	Boerger, LobePro, Netzsch, Vogelsang
Flow Range	100 – 250 gpm
Solids Concentration	0.5 – 1.5% TS

Piping, valving, and equipment sizing will be arranged during detailed design to provide process redundancy.

3.5.3 Polymer System

Polymer solution will be fed to the dewatering feed stream to improve capture and dewatered cake solids. Therefore, three (3) neat liquid polymer preparation and feed systems with direct feed from the polymer make-up units (PMU) to the dewatering centrifuges are recommended.

Each polymer preparation and feed system will be designed to deliver up to 15.0 gallons of neat polymer per hour, or a dose of up to 44 lbs of active polymer solution per dry ton of solids. A dilution ratio capacity of at least 200:1 is recommended. Polymer dilution water requirements will be at least 50 gallons per minute per polymer make-up unit. The polymer preparation systems provided will be piped and valved to provide process redundancy between PMUs and centrifuges.

Preliminary polymer system design criteria are shown in Table 3-12.

Table 3-12: Polymer System Design Criteria

Parameter	Value
Number of PMUs	3
Neat Polymer Dose	15 gph
Dilution Ratio	200:1
Manufacturers	Cleanwater1 (UGSI), ProMinent, Velodyne

It is also recommended that a bulk emulsion polymer storage tank be located inside the new dewatering facility. The minimum recommended tank volume is 6,000 gallons, to allow delivery of a full chemical truck with a nominal volume remaining in the tank. A larger bulk tank may be considered during detailed design if headspace allows.

3.5.4 Centrate Equalization

Centrate from the centrifuges will be discharged below the centrifuges and flow by gravity through a new centrate drain pipe to an existing FC, repurposed as an equalization tank. Additionally, slops generated on centrifuge start-up will be directed to drain with the inclined screw conveyor under each cake chute operating in reverse, and flow to plant drain. Spray water will be programmed to run in the centrate chute during operation and the cake chute during startup / slops management.

Based on the design criteria for sludge feed rate, polymer dose, and typical chute spray water, a maximum centrate flow of 325 gpm per centrifuge is expected. This results in a total centrate flow of 650 gpm with two centrifuges operating and a maximum flow of 975 gpm with three centrifuges operating. The centrate header is sized to handle the maximum condition.

The washwater flows associated with the clean in place cycle of the centrifuge, which does not operate concurrently with dewatering, results in lower flows than the estimated centrate flow when the machine is operating. Therefore, dewatering operations yield the maximum centrate drain flow.

3.5.5 Slops Management

Dewatered cake will be conveyed via screw conveyors to truck loadout. One dedicated inclined, reversing shaftless screw conveyor will be provided per centrifuge for slops management. As the solids are dewatered, cake will continually drop out of each centrifuge through an opening at the bottom of the centrifuge. Each opening will be aligned over the top of an inclined screw conveyor which will convey

the solids to common conveyors leading to truck loadout. Table 3-13 includes the design criteria for the inclined screw conveyors.

Table 3-13: Individual Inclined Conveyance Design Criteria

Parameter	Value
Number of Conveyors	3
Wet Cake Mass Loading	15,000 lb(wet)/hr
Wet Cake Bulk Density	40 - 50 lb/cu ft
Volumetric Capacity	350 cu ft/hr
Incline	5° to 20°
Design Bed Loading	<30%
Maximum Speed, rpm	25
Conveyor Diameter	12 in
Drive Type	Constant Speed, Reversing

During startup and shutdown of a centrifuge, a slops product will be produced because the bowl is not rotating at target speed. While the centrifuges are not operating at target speed, the associated inclined screw conveyor will operate in reverse to move slops to the plant drain. Once the centrifuge torque setpoint is reached and cake is being formed, the screw conveyor will change to forward operation to move cake up the conveyor to the common conveyor that will convey outside the facility to the loadout conveyors. When the centrifuge is shutting down and running the clean in place cycle, the inclined screw conveyor will run in reverse to send all washwater to the centrate drain.

Inclined screw conveyor sizing will be confirmed in detailed design.

3.5.6 Dewatered Cake Conveyance

For redundancy in the conveyance system, each inclined screw conveyor will have the potential to discharge into two different trains. Each conveyance train will consist of a horizontal common conveyor and a multi-point discharge conveyor for truck loading. This will allow the UCWRF to avoid single points of failure within the conveyance system. Two separate truck loading bays will allow McGill or a third party hauler to switch trucks without pausing the dewatering operation.

With the assumed feedstock and operating capacity shown in Table 3-8, the centrifuges will run in hydraulic loading rate limited mode. Under these feed conditions, a 225 gpm capacity unit processes 1,350 lb(dry)/hr. For WAS-only sludge, 15% TS is a reasonable assumption for dry cake solids. Assuming a 40,000 wet pound capacity on each trailer, it would take approximately 4.5 hours to fill a trailer with one centrifuge in service. If two centrifuges were in service, it would take approximately 2.25 hours to fill a trailer.

Design criteria for the common conveyance trains are shown in Table 3-14.

Table 3-14: Common Conveyance Design Criteria

Parameter	Value	
Conveyor	Common	Truck Loadout
Number of Conveyors	2	2
Wet Cake Mass Loading	45,000 lb/hr/conveyor	45,000 lb/hr/conveyor
Wet Cake Bulk Density	40 - 50 lb/cu ft	40 - 50 lb/cu ft
Volumetric Capacity	1,000 cu ft/hr/conveyor	1,000 cu ft/hr/conveyor
Incline	0°	0°
Direction	Mono	Mono
Design Bed Depth	<30%	<30%
Conveyor Diameter	18 in	18 in
Maximum Rotating Speed	25 rpm	25 rpm
Drive Type	Constant Speed	Constant Speed
No. of Inlets per Conveyor	3	2
No. of Outlets per Conveyor	2	3

4. Ancillary Facilities

4.1 Plant Reclaimed Water System

The UCWRF currently supplies Type I RCW to a dedicated RCW distribution system under RCW production permit WQ0032289. RCW uses primarily consist of residential and golf course irrigation and industrial cooling water makeup.

Disinfected effluent is currently diverted from the UV channel to the existing RCW pump station via a dedicated 36-inch gravity discharge line (Figure 4-1) which transitions to a 12-inch gravity line at the location of the previous cascade aerator structure (Figure 4-2). The 12-inch section is fitted with a 12-inch motor operated ball valve for flow control to the RCW pump station. Flow not directed to the RCW pump station is diverted by gravity from the UV structure through a separate 36" effluent line to the cascade aerator to discharge to Utley Creek. The water level within the cascade aerator is backed up from the Parshall flume into the UV structure to maintain a water surface elevation to flood the RCW pump suction line (Figure 2-20). Each 36-inch line is fitted with a stop gate within the discharge box of the existing UV structure to control flow diversion.

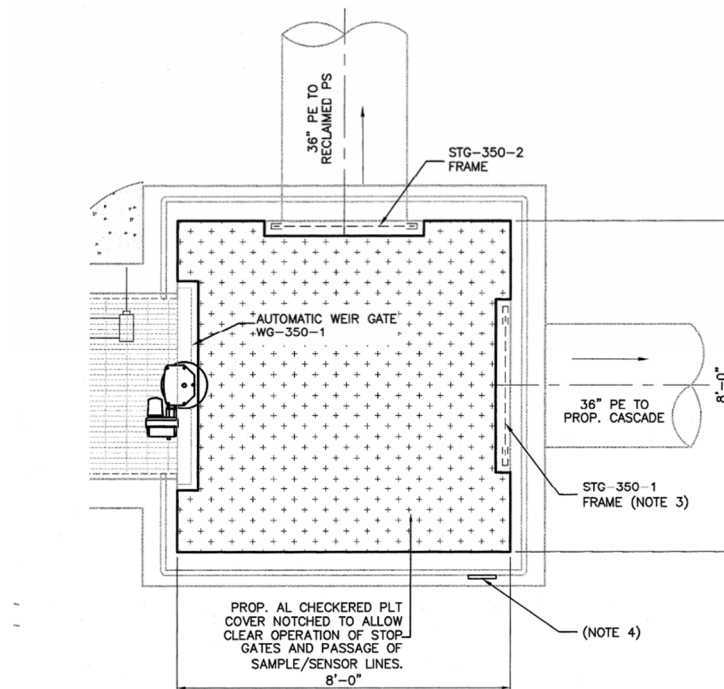


Figure 4-1: Existing UV Channel Effluent Box – Utley Creek WRF Phase I Upgrades (March 2016) - Issue for Bid – Sheet M-5

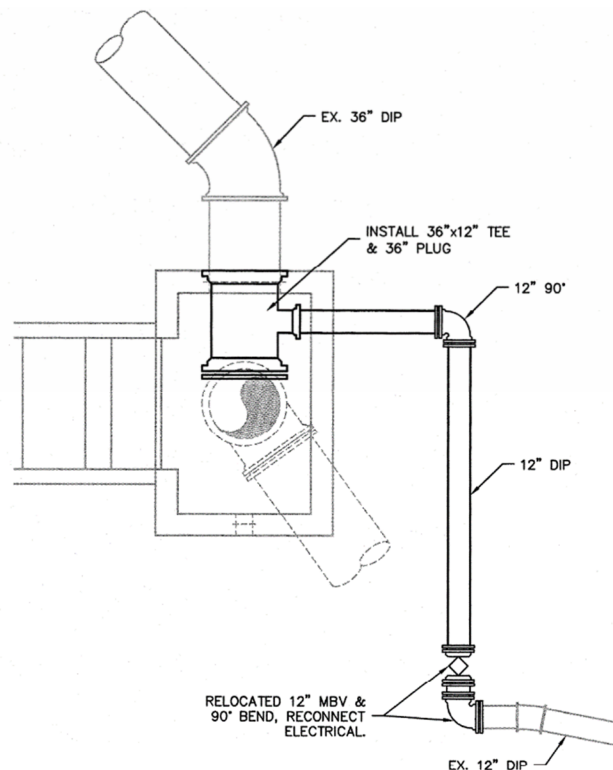


Figure 4-2: Existing RCW Pump Station Tie-In - Utley Creek WRF Phase I Upgrades (March 2016) - Issue for Bid – Sheet M-5

The existing RCW pump station includes two (2) 1,050 gpm vertical turbine pumps for a firm capacity of 1.5 mgd. The existing pump station was constructed as a temporary facility for the initial RCW system demands prior to the 2011 expansion to 6.0 mgd. The existing RCW pumps are designed to pump RCW to a 500,000-gallon elevated storage tank located along Irving Parkway at New Hill Road.

The existing RCW system maintains a free chlorine residual by dosing sodium hypochlorite to the RCW pump station wetwell using two (2) 33.7 gph chemical feed pumps with chlorine storage provided by two (2) 330-gallon storage totes. A chlorine residual is typically utilized to protect against regrowth and biofilm formation within the distribution system. Currently, operations samples fecal coliform at the top of the hill by pulling a sample off the RCW force main prior to flow leaving the plant site. It was confirmed after discussions with the Town during the July 18, 2023, PER review meeting that the UV system should provide sufficient capacity to meet Type I RCW requirements without needing to achieve additional disinfection utilizing free chlorine. Therefore, it is not anticipated that a chlorine contact time will be required at the WRF site prior to pumping to the elevated storage tank. A chlorine residual will continue to be fed as part of the 8.0 mgd improvements to limit regrowth occurring within the distribution system.

Historically, the Town has experienced difficulties with conveying sufficient volumes of RCW to the elevated storage tank during overnight hours when plant effluent flows are low, and irrigation demands for RCW can be high. During extreme low flow periods, it is understood that all plant effluent is diverted to the RCW pumps with minimal effluent discharging to Utley Creek. To provide additional storage volume for RCW system it is recommended that an additional on-site effluent storage tank be provided adjacent to the new UV structure or adjacent to the new operations building (depending on the recommended volume). The Town is currently working on a RCW masterplan which will help inform the ideal size for on-site RCW storage.

New vertical turbine pumps can be installed as part of the new UV structure to send RCW to the new on-site effluent storage tank and provide plant reuse water. RCW that is sent to the on-site effluent storage tank will need to be pumped offsite to fill the existing elevated storage tank.

4.2 Operations Building

The existing administration building will be replaced with a new operations building located on top of the hill in the northwest corner of the site. Hazen had meetings with the Town to discuss the layout and configuration of the building, which is presented in Figure 4-3. The main components include:

- Five office spaces with a separate space with workstations
- Conference room
- Break Room
- Men's and Woman's locker rooms and restrooms
- Scada/Control Room
- Laboratory with supervisor offices, lab staff offices, chemical and glassware storage rooms, walk-in refrigerator, and Quality Control room.

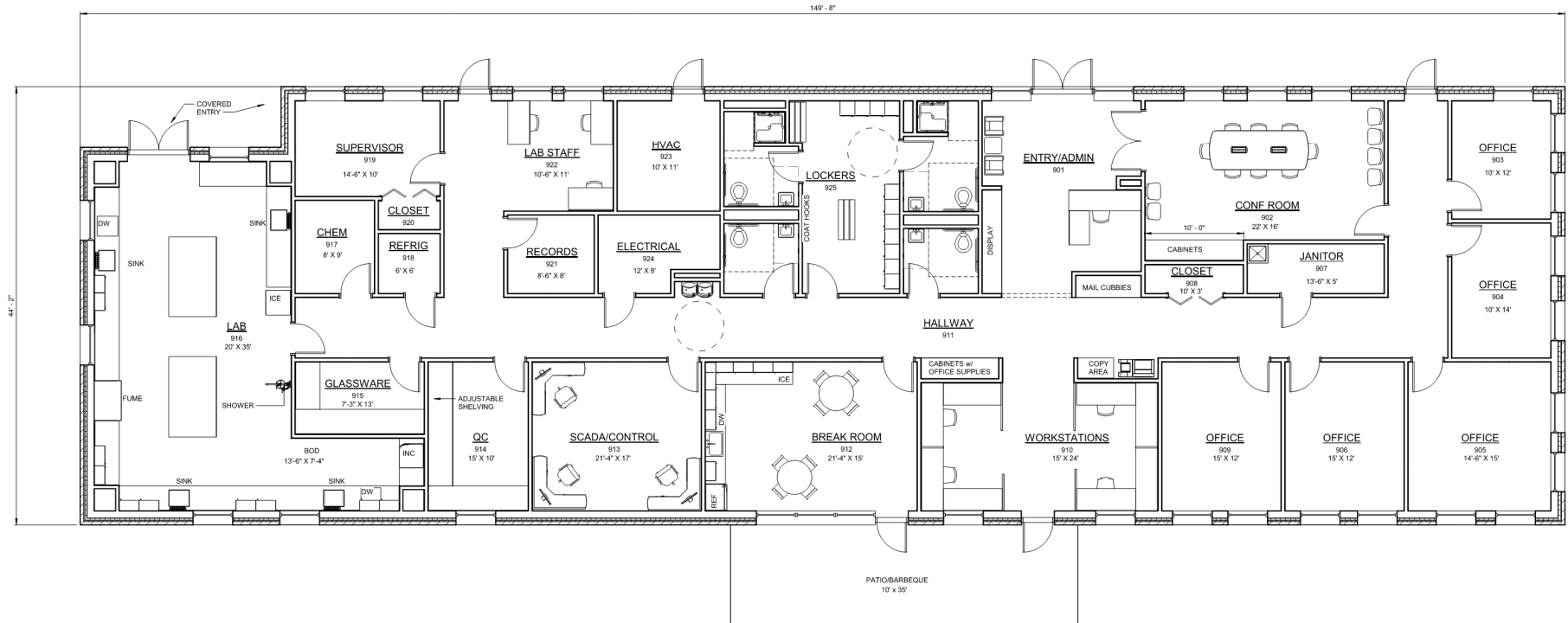


Figure 4-3: Operations Building Preliminary Layout

5. Electrical Equipment and Distribution

The existing facility electrical distribution system is powered from overhead transmission lines installed along Treatment Plant Rd. that connect to a 1500kVA, 22860/13200-480/277V Duke Energy (utility) pad mount transformer. The utility transformer 480/277V secondary powers a single-ended 3200A, 480/277V, 3-phase, 4-wire, 85kAIC Service-Entrance Main Switchgear located in a Cutler-Hammer Electro/Center (Powercenter). The Main Switchgear is connected to an emergency standby 1250kW, 480/277V, 0.8 pf diesel generator that powers the existing facility loads upon loss of utility power. The Main Switchgear provides power to (2) power panelboards (located in the Admin. Building and Maintenance Building) and (6) Motor Control Centers (MCCs) via a network of electrical ductbanks and manholes. In addition to the 1250kW generator connected to the Main Switchgear, MCC1 is connected to a 515kW, 480/277V, 0.8 pf standby diesel generator. The (6) existing MCCs are located near the process areas listed below:

1. MCC1 (Headworks)
2. MCC2 (Aeration)
3. MCC3 (Effluent / UV)
4. MCC4 (Sludge Transfer Building)
5. MCC5 (Dewatering)
6. MCC6 (Reuse Pump Station)

Based on 12-month kilowatt-demand (kW-d) data obtained from Duke Energy, the Town recorded its highest kW-d (747 kW-d) at the Utley Creek WRF on May 27, 2022. The maximum demand 747 kW-d value was compared to nameplate ratings on major electrical equipment listed below to determine the percent loading of the equipment:

- 1500kVA Duke Energy Transformer (63% loaded)
- 3200A Main Switchgear (28% loaded)
- 1250kW Standby Generator (50% loaded)

Utley Creek WRF is currently in Duke Energy Progress' Small General Service Time-of-Use (SGS-TOU) rate schedule. Table 5-1 presents the general service monthly rate schedule for the facility.

When this report was written, the SGS-TOU included nonresidential customers with an initial Contract Demand of 30 kW or greater but less than 1,000 kW. Nonresidential customers with 1,000 kW-d or greater are classified as Large General Service Time-of-Use (LGS-TOU). LGS-TOU includes a higher Basic Customer Charge and higher kW-d charge per kW, with slightly lower energy charges per kWh compared to SGS-TOU. The tables below include a summary of the SGS-TOU and LGS-TOU charges as well as billing examples comparing SGS-TOU to LGS-TOU. Table 5-2 presents the assumptions for calculating billing examples for SGS-TOU and LGS-TOU in Table 5-3 through Table 5-6.

Table 5-1: General Service Monthly Rate Schedules

Monthly Rate	Small General Service Time-of-Use (SGS-TOU)	Large General Service Time-of-Use (LGS-TOU)*
Basic Customer Charge	\$35.50	\$200.00
kWh Energy Charge		
<i>per on-peak kWh</i>	6.470¢	5.149¢
<i>per off-peak kWh</i>	5.135¢	4.640¢
June - September kW-d Charge		
<i>per kW on-peak hours</i>	\$13.67	\$23.25
<i>per kW off-peak excess hours</i>	\$1.40	\$1.05
October - May kW-d Charge		
<i>per kW on-peak hours</i>	\$11.52	\$19.71
<i>per kW off-peak excess hours</i>	\$1.40	\$1.05

*Includes up to 5,000 kW-d

Table 5-2: Billing Example Assumptions

Monthly Rate	Unit	SGS-TOU		LGS-TOU	
		Summer	Winter	Summer	Winter
Registered on-peak	kW-d	999	999	1,000	1,000
Total Billed Energy Use	kWh	500,000	500,000	500,000	500,000
kWh split on-peak	%	40	35	40	35
kWh split off-peak	%	60	65	60	65

Table 5-3: Billing Example – SGS-TOU Summer

Parameter	Cost per unit	Usage	Cost
Basic Customer Charge	\$35.50	1	\$35.50
kWh Energy Charge			
<i>per on-peak kWh</i>	6.470¢	200,000	\$12,940.00
<i>per off-peak kWh</i>	5.135¢	300,000	\$15,405.00
June - September kW-d Charge			
<i>per kW on-peak hours</i>	\$13.67	999	\$13,656.33
		Total Cost:	\$42,036.83

Table 5-4: Billing Example – LGS-TOU Summer

Parameter	Cost per unit	Usage	Cost
Basic Customer Charge	\$200.00	1	\$200.00
kWh Energy Charge			
<i>per on-peak kWh</i>	5.149¢	200,000	\$10,298.00
<i>per off-peak kWh</i>	4.640¢	300,000	\$13,920.00
June - September kW-d Charge			
<i>per kW on-peak hours</i>	\$23.25	1000	\$23,250.00
		Total Cost:	\$47,668.00

Table 5-5: Billing Example – SGS-TOU Winter

Parameter	Cost per unit	Usage	Cost
Basic Customer Charge	\$35.50	1	\$35.50
kWh Energy Charge			
<i>per on-peak kWh</i>	6.470¢	175,000	\$11,322.50
<i>per off-peak kWh</i>	5.135¢	325,000	\$16,688.75
October - May kW-d Charge			
<i>per kW on-peak hours</i>	\$11.52	999	\$11,508.48
		Total Cost:	\$39,555.23

Table 5-6: Billing Example – LGS-TOU Winter

Parameter	Cost per unit	Usage	Cost
Basic Customer Charge	\$200.00	1	\$200.00
kWh Energy Charge			
<i>per on-peak kWh</i>	5.149¢	175,000	\$9,010.75
<i>per off-peak kWh</i>	4.640¢	325,000	\$15,080.00
October - May kW-d Charge			
<i>per kW on-peak hours</i>	\$19.71	1000	\$19,710.00
		Total Cost:	\$44,000.75

During a preliminary site visit to the facility in June 2023, it was observed that the existing electrical manholes and ductbanks appeared to be nearly full of existing feeder wire. There did not appear to be many spare conduits or space available for new circuits in the existing ductbank network.

It is recommended that a second electrical service be installed to power the new and potentially some of the existing loads for the facility. This recommendation comes as a result of the existing major equipment loading percentages compared to proposed loads, observed ductbank capacity, and a desire to keep the facility in Duke Energy's SGS-TOU rate schedule. Based on recent map data and the location of the new major equipment, the new service would be installed from Green Oaks Parkway through the existing clearing north of the facility to a new Duke Energy pad mount transformer located north of the proposed UV system. The utility transformer would power a new Main-Tie-Main Service-Entrance Main

Switchgear located in a small electrical building or Power Center. Like the existing switchgear, the new Main Service-Entrance switchgear would be connected to an emergency standby generator sized to power the full operating load connected to the gear. New downstream distribution equipment (MCCs, panelboards, etc.) would be installed in new facility electrical rooms or in Power Centers located near the process areas that they feed to match the existing facility. This would provide a similar approach for the operation and maintenance staff already familiar with the existing plant layout.

6. I&C and SCADA

6.1 Introduction

The purpose of this technical memorandum is to present the preliminary engineering information and design concepts for the UCRWF Instrumentation, Control, and Information Management System upgrades. The instrumentation and control system will be required to provide real-time monitoring of plant processes and equipment; remote manual and automatic control of these processes and equipment; and data gathering, storage, retrieval, and reporting functions. The instrumentation and control system at the facility will be referred to hereafter as the Supervisory Control and Data Acquisition (SCADA) System.

6.2 Background / Existing Facilities

The existing control system at the facility is comprised of a Micro-Comm control system. Mirco-Comm is a company located in Olathe, Kansas that provides proprietary hardware and software control system for water and wastewater clients. The UCWRF SCADA System consists of a centralized server rack, (8) eight PLC control panels distributed throughout the facility, and Human-Machine Interface (HMI) workstations in the Administration Building.

Each of the eight PLC cabinets consists of a Micro-Comm M555 PLC control system. Many of the Control panels have a local Operator Interface Touchscreen (OIT). The OITs are not functional currently. The following are the PLCs located throughout the facility:

- Master PLC – Located in the Administration Building. Master PLC is used to pull the data from the remote sites and pass the information to the Plant HMI for status and alarming for the Operators.
- PLC 0 – Located in the MCC2 Power Center outside of the Administration Building. PLC 0 controls the Generator and Bioreactor.
- PLC 1 – Located in the MSG Power Center beside the Odor Control System. PLC 1 controls the Influent Pump Station, Grit Collection, and the Influent Generator.
- PLC 2 – Located in the MCC1 Power Center beside the Influent Pump Station. PLC 2 controls Aerators and Mixers.
- PLC 3 – Located in the UV Building. PLC 3 controls the Post-Anoxic and Reaeration equipment, Clarifiers, and the UV System.

- PLC 4 – Located in the Sludge Transfer Building. PLC 4 controls Digester 2 and the Sludge Loading System.
- PLC 5 – Located in the Dewatering Building. PLC 5 controls Digester 1, Sludge Panel, Dewatering, and Chemicals. PLC 5 also interacts with a vendor control PLC, CP-3000. CP-3000 is an Allen-Bradley CompactLogix PLC used to control the Dewatering Equipment.
- PLC 6 – Located in the Reuse Pump Station. PLC 6 controls the Reuse Pump Station.
- PLC 8 – Located in the Chemical Building. PLC 8 controls the Chemical Systems.

Each of the PLCs located at the Plant communicates through fiber connections throughout the facility.

The Collection System also has Micro-Comm controllers at each remote facility. The Collection System controllers communicate back to the Master PLC through a radio connection. Custom Controls Unlimited is currently tasked with replacing the existing remote facility PLCs with Allen-Bradley Micro800 Controllers and installing a new VTSCADA HMI platform at the Plant. The new HMI will operate in parallel to the existing Micro-Comm HMI and will allow the operators to monitor the status of the facilities.

6.3 System Requirements / Design Criteria

The design criteria for the SCADA system depend largely upon the unit processes and equipment selected for the facility as described in other TM sections. The SCADA system must accomplish two main tasks.

- The first is to support the minimum requirements of each unit process and piece of process equipment. For example, dewatering controls must be regulated between chemical feeds and equipment speeds to produce the proper cake consistency.
- The second task of the SCADA system is to perform the functions required by the plant operations and maintenance staff with respect to equipment monitoring, remote and automatic control functions, and data display and reporting. This also includes regulatory requirements for monitoring and reporting plant data. These additional capabilities beyond the minimum for the installed equipment allow operations and maintenance personnel to better manage the treatment process, to handle the large amount of data being gathered, and to react quickly to problems and emergency situations, all without the excess staffing a more manually operated facility would require.

The environment at a wastewater treatment facility is not ideal for sensitive electronic equipment. The plant control system and its associated field instruments must therefore be robust, reliable, and fault tolerant. This will include protection from liquid chemical corrosion, power quality problems and lightning damage, extremes of heat and cold, and the damaging effects of sunlight. Just as the treatment processes must have built-in redundancy and fault tolerance, so must the control system. This can be accomplished in several ways, including:

- Distributing hardware throughout the plant to reduce the impact of the loss of a single controller.
- Providing redundant hardware where appropriate.

- Using fiber optic network communication cables arranged in a fault-tolerant, redundant configuration.
- Providing manual backup controls for all equipment.

Further details regarding the use of these techniques for the UCWRF SCADA system will be discussed below.

The plant SCADA system must also be economical to purchase, use, and maintain. This tends to steer the design toward non-proprietary, commercially available industrial controls. The use of industry-wide standards can also help accomplish these goals. Control system software has traditionally been the most customized part of the system, often requiring expensive hardware and a large amount of labor to accomplish project goals. Fortunately, modern control system software has improved dramatically, following the trend of all computer hardware and software for home, office, and industrial use. As such, it is reasonably priced, easy to operate and maintain, and available from a variety of software configuration suppliers, freeing the owner from the proprietary systems of the past.

6.4 Proposed System

Although many specifics of the control system design for the UCWRF must wait for detailed design to be confirmed, the overall aspects of the system can be defined at this time. The Micro-Comm PLCs are well-proven but are proprietary technology and will be replaced with typical control system hardware/software. Considering the scope of the renovations to the existing processes, the SCADA system will be largely new.

To maximize treatment capability with minimum required labor, the UCWRF will be provided with a control system capable of fully automating the plant, although the degree of operator interaction with the process will be user configurable. No redundant automatic controls will be provided as a backup to the primary plant control system. The reliability of modern control system hardware and software products is such that this practice is generally no longer necessary. However, local manual controls will be provided for all equipment to allow operation of the plant in an emergency if the automatic controls are not available for any reason. Wherever possible, operation of the plant processes and equipment will be fail-safe to ensure both personnel safety and process continuity in the event of equipment failure.

Hazen and Custom Controls will need to coordinate during the Remote Facilities upgrade. This coordination will attempt to minimize any duplicate or rework requirements that could occur during the Plant Expansion and utilizing the Remote Facilities hardware/software.

6.5 Programmable Logic Controllers

The PLCs will perform all real-time monitoring and control functions. They will be located throughout the plant where associated equipment is concentrated. The most common and economical location is in electrical rooms, which reduces wiring runs and takes advantage of the generally climate-controlled environment in those areas. PLC-equipped control panels provided by equipment manufacturers should be provided only where sole-source responsibility for equipment control and safety is desired. Where possible, PLCs whether “equipment” PLCs provided by the manufacturer or “process” PLCs provided by

the project's instrumentation and control system subcontractor, should have the same manufacturer, and should be programmed using the same software. Depending upon the specific case, the OEM PLCs should also be connected to the plant control system communication network for easy access to data at minimal cost.

PLCs will be Allen-Bradley Logix Series units, which are the most advanced offered by Allen-Bradley, this platform will align with the installed base and the standards chosen by the Town for the remote facilities upgrade. In addition, most equipment manufacturers choose Allen-Bradley as their OEM PLC supplier. Consequently, incorporating them into the SCADA system is a simplified task. The individual models will be chosen as appropriate to the application. The largest and most capable units are ControlLogix and recommended for use as the process PLCs throughout the facility. The medium sized units are CompactLogix and recommend for use as OEM PLCs and remote Telemetry Units. Both PLC platforms are programmed with RSLogix 5000, which conforms to IEEE 1131-6 standards for control software. Remote I/O (RIO) cabinets will be used to acquire I/O signals that are located remotely from the PLC itself. Further investigation and discussion of the specific models will be undertaken during detailed design.

All existing Micro-Comm PLCs will be replaced as part of the Plant Expansion.

6.6 Operator Workstations

Operator workstations will be non-proprietary, server based using thick and/or thin clients for the graphical interface. The software in the servers gathers data from plant PLCs while the client displays read the data from the servers and then display it in a graphical format for operators to monitor and control the plant processes and equipment. Equipment status, alarm conditions, and the interface for automatic controls will be made available through this software. It will also provide trends of plant data and will transfer that data to historical software (described below) for storage and further manipulation. Clients can be provided as desktop units or panel mounted units.

The servers, generally called SCADA servers, perform the bulk of the data gathering functions and supply (serve) this data to the client workstations for display and manipulation by the operator. Although the servers can be used for operator access to the control system, it is generally preferred to have them as separate units in a controlled location. This arrangement is like that used for most office servers. Remote client nodes may be either thick clients or thin clients. Thick clients have the base software application loaded on them and require a local hard drive, local copies of graphic displays, and more computing power than thin clients. Thin clients use a Web browser to get their data and graphics from the servers in a manner similar to the Internet. Thin clients require less computing power in the client hardware but have some peculiarities in their configuration that must be addressed. The optimum mixture of thick and thin clients will be determined during detailed design.

It is recommended that at least two dual monitor client workstations be located in the plant's main control room. It is common to see operators using two different graphic displays when monitoring and operating the plant. Additional units are recommended in the offices of key plant staff and in other locations where ready access to the control system would be useful. It is recommended that additional client workstations be strategically placed around the plant site to allow operators convenient access to the control system without having to walk or drive back to the main control room. In addition, the network infrastructure to

support additional remote workstations can be easily and cost-effectively included in each structure for units that may be added later.

PC hardware purchases may be either directly by the contractor, perhaps as an allowance in the construction cost, or directly by the Town, perhaps through the IT department. The control system subcontractor will need the hardware to be delivered to the factory at a specific time to perform the factory acceptance test. Consequently, if the purchase is made directly by the Town, it will be necessary for the Town to meet the contractor's construction schedule.

Much of the required SCADA server infrastructure is anticipated to be provided during the remote facilities upgrades. The Plant Expansion will utilize this infrastructure to upgrade the Plant SCADA System. The two systems will continue to run in parallel as the Plant Expansion project progresses and the PLCs are replaced. Eventually all the PLCs will be replaced and the existing Micro-Comm HMI can be removed from service.

6.7 Data Historian

It is recommended that a separate historical data server be used for off-line storage of plant operating data. This frees the SCADA servers from the historical workload and takes advantage of the latest offerings of the HMI software manufacturer for this function.

6.8 Alarm Notification Software

Alarm notification software will be provided as part of the UCWRF SCADA System to give operators and managers the ability for real-time remote notifications. The software will provide the ability for alarms to be monitored via mobile app, text, voice, and email notification. The software will be Win-911 or another similar package.

6.9 Remote Monitoring

Remote monitoring capability of the SCADA HMI will be provided allowing the operators and plant manager the ability to remotely monitor and control the UCWRF. The staff will have the ability to securely access the SCADA HMI from remote computers or tablet devices. Everyone that logs in remotely will have certain capabilities (privileges) granted to them through the security protocols.

6.10 Local Area Network

For communication among the various PLCs and client workstations within the plant, the non-proprietary Ethernet local area network (LAN) is recommended. Ethernet is the network of choice for current commercial and industrial applications and is the basis for the Internet. It is commonly found in both office buildings and water/wastewater treatment plants alike. As such, the hardware, cabling, and accessories required to implement this network are easily available "off-the-shelf" and low cost. Ethernet's maximum data transmission speeds of 100 million bits per second (Mbps) or greater make it more than adequate for wastewater treatment operations. All major PLC manufacturers, including Allen-Bradley, offer Ethernet as a preferred communication option.

Two Ethernet LANs are recommended: one for communication among the PLCs and main SCADA servers and one for communication among the servers and the various client nodes. This arrangement separates the “plant data LAN” from the “administration LAN” for added data security and performance. Only the two SCADA servers would be connected to the plant data LAN with the PLCs. These servers would have a second Ethernet communication card to connect them to the administration LAN, allowing them to serve the client nodes in the plant control system.

6.11 Communication Media

Fiber optic cable is recommended as the primary communication medium for the plant data LAN and all cable runs between buildings. The standard fiber for this application is multi-mode, graded index fiber at 62.5 microns in diameter. However, 9-micron single mode fiber, which has traditionally been used only for long distance fiber runs, has become more economical in recent years and is now the recommended option for in-plant communication infrastructure. It’s much higher data transmission rate (bandwidth) provides greater “future proofing” of the plant communication system.

The cable should be considered as long-term infrastructure and numerous spare fibers will be provided. The cable will be protected from damage by a concrete-encased duct bank that is reinforced at all road crossings. Fiber optic cable is completely immune to electrical interference and transients of all kinds, including lightning strikes. It is generally convenient to route fiber along with major electrical duct banks to take advantage of the common construction and routing, and as noted above it is totally unaffected by the electromagnetic interference generated by the power cables.

For added reliability and data security, it is recommended that the data highway LAN be configured as a self-healing ring. This arrangement allows the cable to be cut at any location and heal itself by re-routing data within the fiber optic network devices on either side of the break. This functionality is provided by using industrial Ethernet switches, such as those manufactured by Hirschmann, at each network node. Within a building, the less expensive and commonly used 100BaseT format is recommended for the administration LAN. Using unshielded, twisted pair copper (Category 6) communication cable and telephone-style jacks for connectors, 100BaseT is inexpensive and widely used in office environments.

6.12 Security/Safety

Security on the UCWRF premises shall be accomplished through gate controls, security cameras, door card readers, and staff sensors. Each of the systems will communicate and be set up as part of the business network throughout the facility.

- Gate controls will provide the staff with the ability to monitor and permit all access to the site through the front gate. The gate will be automated and able to be controlled from the control room.
- Security cameras will be placed throughout the facility in coordination with the Town’s needs. The cameras will be IP POE cameras. These are Ethernet-based (Internet Protocol or IP) and are powered over the Ethernet communication cable (POE). The data from the cameras will be saved locally to a Digital Video Recorder (DVR) in the business network server rack. A security workstation will be provided in the control room to access the system.

- Door card readers will be provided at each entrance of all buildings. These will prevent unauthorized personnel from entering areas which are off limits.

6.13 Electrical Requirements

Electrical requirements for the plant control system are generally simple. Each PLC and client will require clean 120 VAC power. Each of the units will be provided with an uninterruptible power supply (UPS) to allow backup during power failure and provide a clean source of power. True on-line (double conversion) UPSs are recommended. Experience has shown that these units work better in the electrically noisy environment of a wastewater treatment facility.

Individual field instruments may be powered from the PLC (loop powered devices) or from a separate 120 VAC supply (four-wire devices). The choice largely depends upon the type of instrument and its location. Special care should be taken to conform to the specific power supply and grounding requirements of the manufacturer. This is especially true for magnetic flow meters.

Discrete inputs and outputs used for status and alarm monitoring and for equipment control may be based on 24 VDC or 120 VAC signals. Other voltages may be used but these are the most common. The use of 24 VDC signals is recommended because it allows for only low voltage signals between PLC cabinets and field devices (motor controls and instruments). All sensing voltage for discrete inputs will be 24 VDC supplied from the PLC or its cabinet power supply. The voltage supplied to motor controls will be 24 VDC to remote interposing (pilot) relays in 120 VAC motor control circuits. If the power to the PLC cabinet is disconnected, no external sources of 120 VAC power (such as from the motor control circuit) will be present. Likewise, if the power to a motor control circuit (such as an MCC compartment) is disconnected, only 24 VDC circuits will be live within that compartment. This practice reduces electrical shock hazards. However, not all 120 VAC circuits can practically be eliminated, and all such circuits will be clearly labeled and colored yellow for ease of identification.

Surge protection is recommended on all copper-based electrical power, communication, and signal cables that leave a protected structure to reduce the risk of damage to electrical and control equipment. Even damage that does not result in a catastrophic failure can degrade accuracy and functionality or cause a failure long after a thunderstorm. Surge protection devices that are robust and self-recovering are the most effective and will be specified for all control system components that leave or are located outside of a protected structure; inputs and outputs, all power supplies and signal wiring to instruments, control cabinets, and for all copper-based communication lines extending outside of a building.

6.14 Instrumentation

The required field instruments for the WWTP are generally discussed within other technical memoranda. However, certain general recommendations are as follows:

- Magnetic flow meters are recommended over strap-on ultrasonic devices. The performance of the latter devices has generally been problematic. Accurate flow measurement is critical to the control algorithms necessary for chemical flow pacing.

- Non-contact level devices should be used wherever possible. Submersible pressure-based level probes are recommended for locations where obstructions make non-contact level devices difficult or impossible to use.
- Pressure instruments on corrosive or solids-bearing fluids should be protected by diaphragm seals.
- Any field instruments being considered for use at the WRF that are not well known to the Town should be installed in the existing plants in an experimental fashion.

Positive feedback instrumentation shall be provided where possible (e.g., flow switches or check valve limit switches to confirm a pump is running).

6.15 Plant Control Room

The Control Room will be completely refurbished with a new console. The new console will accommodate at a minimum two workstations to monitor and control the WRF as well as RTUs. All the treatment facilities will be viewable from any of the workstations. The new console will also accommodate a video system workstation to access the DVR.

A temperature controlled and lockable server closet will be provided to accommodate the following major equipment:

- Server computers
- Ethernet switches
- Wireless LAN access
- Fiber optic patch panels
- Ethernet ring switches
- Video system
- Business network servers and Ethernet switches

7. Capital Cost

A capital cost evaluation was conducted to determine a planning level cost for all three alternatives. Major direct and indirect cost adders are presented in Table 7-1.

Table 7-1: Major Direct and indirect Cost Adders

Description	Total
General Conditions	20%
Labor Escalation at 3.5% annually	13.8%
Material/Equipment Escalation at 5% annually	20.1%
Subcontractor Overhead, Profit, and Fee	25%
Prime Contractor Overhead and Profit	25%
Bond and Insurance	2.0%
Design Contingency	40%

Table 7-2 displays the loaded capital cost broken down into each major process at the facility. Costs were developed using experience from projects of similar size in the Holly Springs, NC region and include upgrades discussed in Section 2. Cost numbers were escalated to a construction start date of January 1st, 2025.

Table 7-2: Total Capital Cost

Facility	Conventional	Densification	MBR
Fine Screen Facility	\$0	\$0	\$20,000,000
Distribution Box Modifications	\$0	\$0	\$1,020,000
Conversion of Oxidation Ditch to Five-Stage BNR	\$25,700,000	\$30,470,000	\$25,700,000
Blower Facility	\$11,810,000	\$11,810,000	\$11,810,000
Secondary Clarifier + RAS	\$12,000,000	\$0	\$0
Hydrocyclone Facility	\$0	\$3,000,000	\$0
Membrane Facility	\$0	\$0	\$29,230,000
Convert FCs to Equalization Tank	\$0	\$0	\$980,000
Ultraviolet Disinfection Facility	\$9,350,000	\$9,350,000	\$9,350,000
Chemical Storage	\$860,000	\$860,000	\$860,000
Dewatering Facility	\$22,000,000	\$22,000,000	\$22,000,000
Operations Building	\$8,650,000	\$8,650,000	\$8,650,000
Sitework	\$13,360,000	\$12,735,000	\$19,160,000
Power Center, Generator, and Transformer	\$13,680,000	\$13,680,000	\$13,680,000
Total	\$117,410,000	\$112,555,000	\$162,440,000

Appendix A: Special Sampling Results

Table 1: Influent Composite Sample Results

Analysis	Filter	12/12/2022	12/13/2022	12/15/2022
TSS	XX	257	294	211
VSS	XG	233	282	209
cBOD ₅	XG	305	189	283
BOD ₅	XX	326	240	301
	XG	131	102	96.3
	XM	32.0	63.0	49.6
COD	XX	623	640	753
	XG	270	261	235
	XM	133	189	161
	XF	116	205	202
TKN	XX	56.3	75.0	73.2
	XG	43.7	54.0	59.4
Ammonia	XG	40.2	43.0	42.5
Nitrate	XG	<0.10	3.7	4.7
TP	XX	7.1	9.0	8.5
	XG	3.8	4.3	4.2
PO ₄ -P	XG	3.3	3.6	3.0
pH	XX	7.4	7.4	7.6
Alk	XX	290	299	330
Ca	XG	45.5	45.2	55.5
Mg	XG	5.2	5.6	5.0

XX = not filtered unless specified in Standard Methods

XG = filtered with glass fiber filter (1.5 µm)

XM = filtered with 0.45 µm membrane filter

¹XF = flocculated and filtered with 0.45 µm membrane filter

Table 2: Effluent Composite Sample Results

Analysis	Filter	12/12/2022	12/13/2022	12/15/2022
TSS	XX	<2.6	<2.9	3.0
VSS	XG	<2.6	<2.9	<2.6
BOD ₅	XX	<2.0	<2.0	<2.0
COD	XX	18.0	16.0	<15
	XG	35.0	20.0	16.0
	XM	16.0	25.0	<15
	XF	94.0	100	27.0
TKN	XX	1.39	1.24	1.27
	XG	1.20	1.17	1.18
	XM	1.35	1.23	1.24
Ammonia	XG	<0.1	<0.1	<0.1
Nitrate	XG	2.09	1.63	1.71
TP	XX	0.064	<0.020	<0.020
	XG	0.048	<0.020	<0.020
PO ₄ -P	XG	<0.020	<0.020	<0.020
pH	XX	7.90	7.70	7.90
Alk	XX	177	253	180

Table 3: Grab Sampling Profile – December 13, 2022 - Morning

Location	TSS	VSS	Alkalinity	COD _{XX}	COD _{XG}	COD _{XM}	COD _{XF}	BOD _{XX}	BOD _{XG}	TKN _{XX}	TKN _{XG}	Ammonia	Nitrate	Nitrite	TP _{XX}	TP _{XG}	PO ₄ -P
Raw Influent with Recycles	574	542	348	665	245	171	272	198	62.4	85.4	67.0	48.2	10.40	1.56	8.3	5.2	3.97
MLSS Distribution Box	2,860	2,350										26.1	5.97	1.09			4.56
Head of Anaerobic Zone - Large Basin												26.7	5.63	1.36			7.73
End of Anaerobic Zone - Large Basin												25.1	5.63	0.024			12.5
Head of Anoxic Zone - Large Basin												5.73	0.343	0.007			2.76
End of Anoxic Zone - Large Basin												3.03	1.780	0.060			1.15
Head of Aerobic Zone - Large Basin												0.024	2.91	0.015			0.104
End of Aerobic Zone - Large Basin												0.020	2.88	0.001			0.128
Head of Anaerobic Zone - Small Basin												27.7	3.69	1.14			8.23
End of Anaerobic Zone - Small Basin												26.6	0.382	0.101			11.3
Head of Anoxic Zone - Small Basin												7.46	0.288	0.021			1.86
End of Anoxic Zone - Small Basin												8.11	0.242	0.012			1.73
Head of Aerobic Zone - Small Basin												3.51	1.29	0.033			0.046
End of Post-Anoxic Zone - Common												1.34	0.321	0.007			0.072
End of Re-Aeration Zone - Common												0.028	1.54	0.006			0.024
Secondary Clarifier Effluent	3.0	3.0	180	26.2	11.1	14.5		<2		1.28	1.24	0.014	2.14	0.005			0.015
Filtered Effluent	3	<2.8	187	22								0.014	2.16	0.011			0.022
Combined RAS	8,040	6,480			31.2							0.038	0.864	0.010			0.757
Filter Backwash			194		65								2.45	0.003			0.045
Thickening Filtrate					75.7							0.036	55	0.004			0.272

Table 4: Grab Sampling Profile – December 13, 2022 - Afternoon

Location	TSS	VSS	Alkalinity	COD _{XX}	COD _{XG}	COD _{XM}	COD _{XF}	BOD _{XX}	BOD _{XG}	TKN _{XX}	TKN _{XG}	Ammonia	Nitrate	Nitrite	TP _{XX}	TP _{XG}	PO ₄ -P
Raw Influent with Recycles	230	214	352	610	266	201	303	102	71.6	80.3	52.8	57.8	4.58	1.08	8.2	4.1	4.48
MLSS Distribution Box	3,050	2,470										35.4	3.92	1.31			5.17
Head of Anaerobic Zone - Large Basin												33	1.32	0.861			3.02
End of Anaerobic Zone - Large Basin												31.3	0.26	0.02			5.6
Head of Anoxic Zone - Large Basin												11.6	1.370	0.137			1.36
End of Anoxic Zone - Large Basin												6.18	0.682	0.225			0.48
Head of Aerobic Zone - Large Basin												0.04	3.52	0.006			0.072
End of Aerobic Zone - Large Basin												0.029	3.53	0.014			0.042
End of Post-Anoxic Zone - Common												0.98	0.349	0.001			0.136
End of Re-Aeration Zone - Common												0.025	1.46	ND			0.018
Secondary Clarifier Effluent	4.0	3.0	271	16.7	17.1	17.1		<2		1.40	1.29	0.024	1.51	ND			0.019
Combined RAS	7,590	6,160										0.099	0.524	0.012			1.03

Appendix B: Biological Process Model Development

Biological Process Model Validation

A preliminary biological process model for the UCWRF was developed as part of the previous master planning phase of this evaluation. Figure 1-1 presents the BioWin™ process schematic. The model was developed based on current basin configurations/volumes and recent operating conditions, which include one large ditch and one small ditch in service.

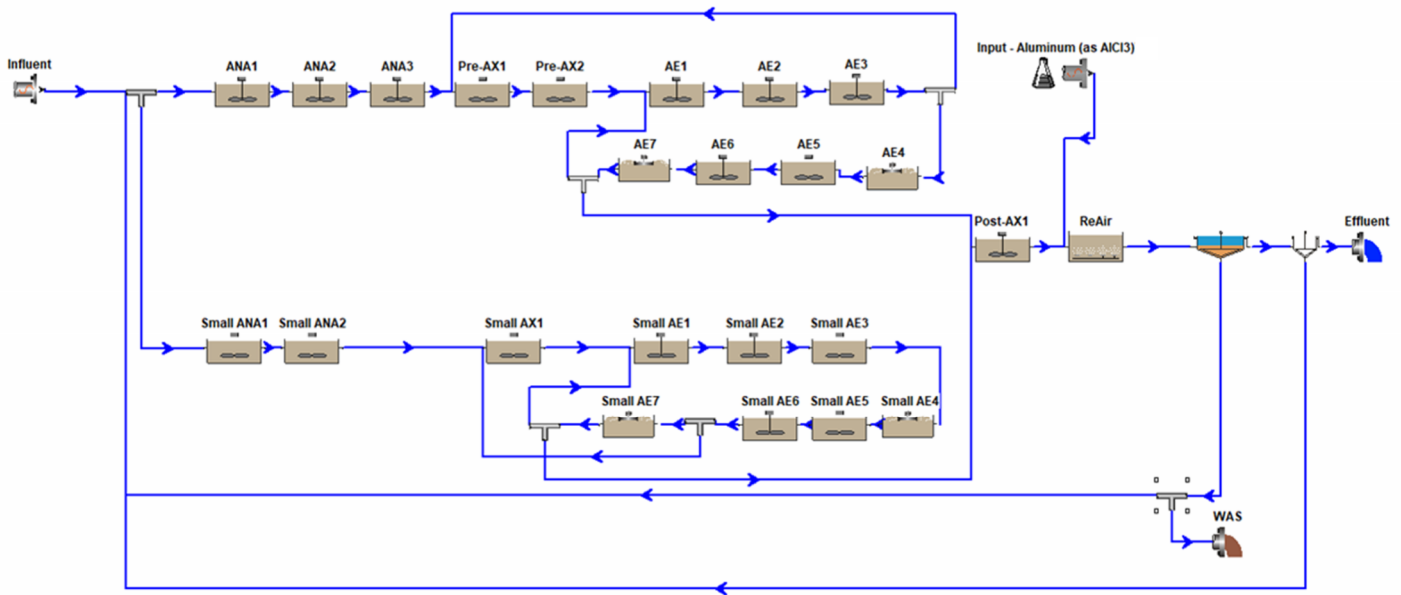


Figure 1-1: BioWin™ Process Schematic

Special sampling results were utilized along with historical data and typically observed ranges of municipal wastewater characteristic ratios to fractionate the influent wastewater. F_{nus} was reduced from 0.02 to 0.00 to accurately match the historical organic nitrogen concentration. F_{PO4-P} was reduced from 0.5 to 0.4 due to industrial sources with high total phosphorus discharging to the facility. Table 1-1 presents a summary of the wastewater fractions utilized in the process model. The wastewater fractions were input to the process model to perform the model validation.

Table 1-1: Wastewater Fractions

Modeled Fraction	Default	Modeled Fractions
Fbs - Readily biodegradable (including Acetate) [gCOD/g of total COD]	0.16	0.20
Fac - Acetate [gCOD/g of readily biodegradable COD]	0.15	0.20
Fxsp - Non-colloidal slowly biodegradable [gCOD/g of slowly degradable COD]	0.75	0.75
Fus - Unbiodegradable soluble [gCOD/g of total COD]	0.05	0.02
Fup - Unbiodegradable particulate [gCOD/g of total COD]	0.13	0.13
Fna - Ammonia [gNH ₃ -N/gTKN]	0.66	0.66
Fnox - Particulate organic nitrogen [gN/g Organic N]	0.50	0.50
Fnus - Soluble unbiodegradable TKN [gN/gTKN]	0.02	0.00
FupN - N:COD ratio for unbiodegradable part. COD [gN/gCOD]	0.07	0.07
Fpo4 - Phosphate [gPO ₄ -P/gTP]	0.50	0.40
FupP - P:COD ratio for unbiodegradable part. COD [gP/gCOD]	0.02	0.02
FZbh - OHO COD fraction [gCOD/g of total COD]	0.02	0.02
CODp:VSS	1.60	1.81

The process model was validated by dynamically simulating model performance against historical treatment performance for a period from January 2021 through December 2021. The following steps were taken to validate the model:

1. Fit model to influent loading conditions within 10% – BOD₅, TSS, TKN, ammonia, TP
2. Fit model to solids inventories within 15% – MLSS/MLVSS, RAS, WAS, SRT
3. Fit model to effluent quality – BOD₅, TSS, TKN, ammonia, NO_x, TP, orthophosphate

Dissolved oxygen (DO) concentration is measured in each oxidation ditch downstream of the surface aerators. The oxidation ditch was divided into several different biological reactors in the process model and the historical dissolved oxygen concentration was directly input into the model for the volume downstream of the surface aerator.

In addition to developing influent fractions, some biological kinetic parameters were adjusted within the process model to match the nutrient removal performance of an oxidation ditch. Table 1-2 summarizes the updated biological kinetic parameters.

Table 1-2: 2021 Model Validation Biological Kinetic Parameters

Description	Fractions	BioWin Default	2021 Model Validation	Rationale
Ordinary Heterotrophic Organism Dissolved Oxygen Half Saturation Coefficient	OHO DO Half-Sat (mg O ₂ /L)	0.15	0.25	Adjusted to match effluent nitrate once NRCY and DO were configured.
Ammonia Oxidizing Bacteria Dissolved Oxygen Half Saturation Coefficient	AOB DO Half-Sat (mg O ₂ /L)	0.25	0.50	Increased to match latest literature values showing that AOBs are more sensitive to low DO than NOBs.
Nitrite Oxidizing Bacteria Dissolved Oxygen Half Saturation Coefficient	NOB DO Half-Sat (mg O ₂ /L)	0.50	0.25	Decreased to match latest literature values showing that NOBs are less sensitive to low DO than AOBs.
Ammonia Oxidizing Bacteria Growth Rate	AOB Growth Rate (d ⁻¹)	0.9	0.8	Based on site specific testing at other facilities

Figure 1-2 through Figure 1-5 present dynamic influent loading itineraries. It should be noted that the historical influent BOD₅ concentrations are slightly below the simulated concentrations as the UCWRF has historically performed cBOD₅ testing, which includes the addition of a nitrification inhibitor to the samples. Based on special sampling results, the simulated data was corrected with a correction factor of 90% to account for the inhibition of ordinary heterotrophic organisms (OHOs) during testing. In general, the influent loading conditions simulated by BioWin™ fit the historical loading data well. It should be noted that influent TP is sampled weekly.

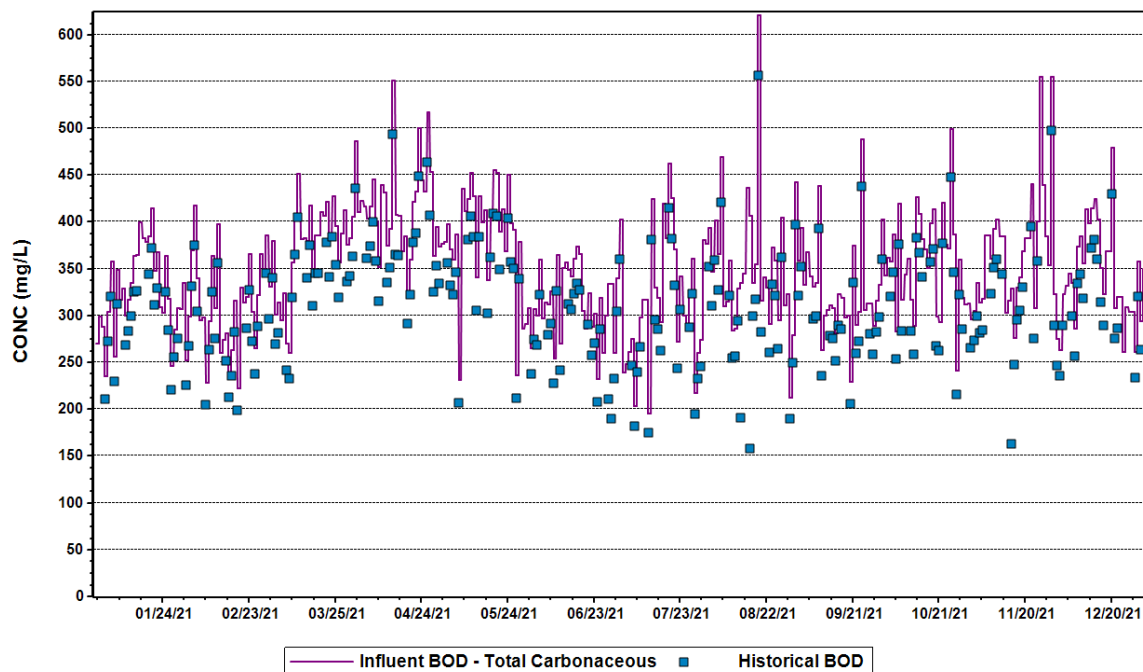


Figure 1-2: Historical vs. Modeled Influent BOD

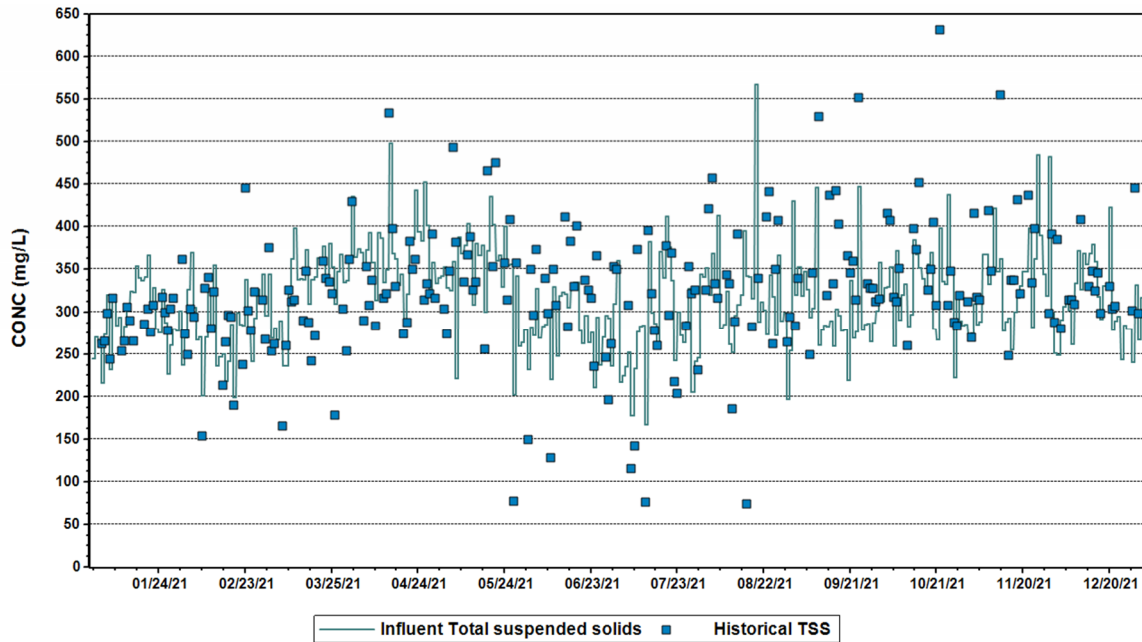


Figure 1-3: Historical vs. Modeled Influent TSS

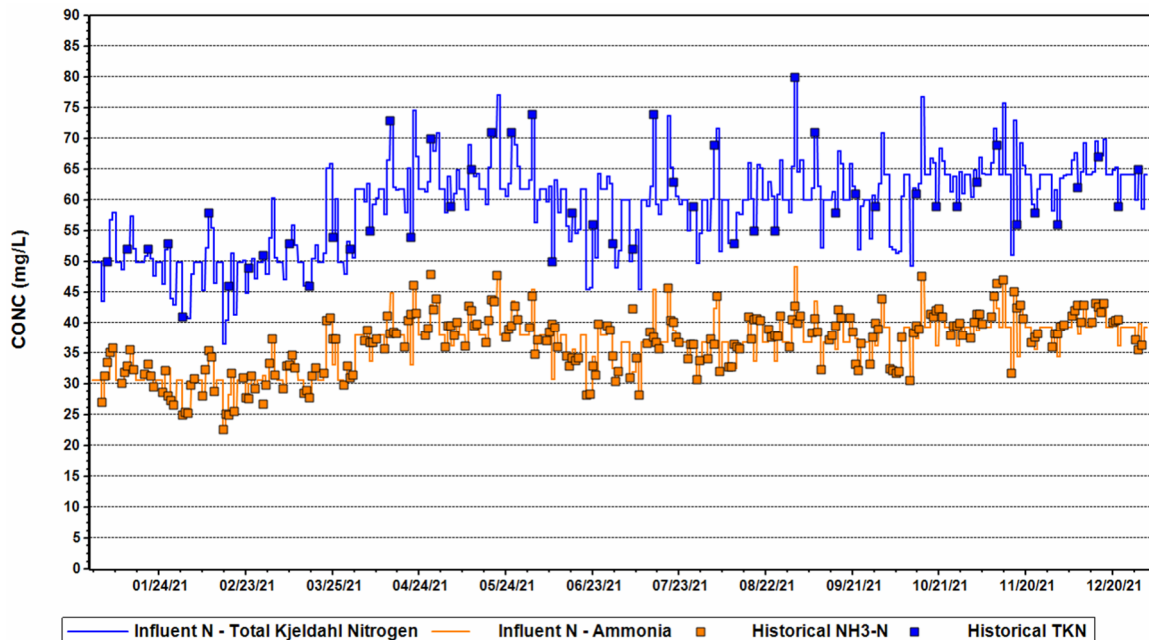


Figure 1-4: Historical vs. Modeled Influent NH₃-N and TKN

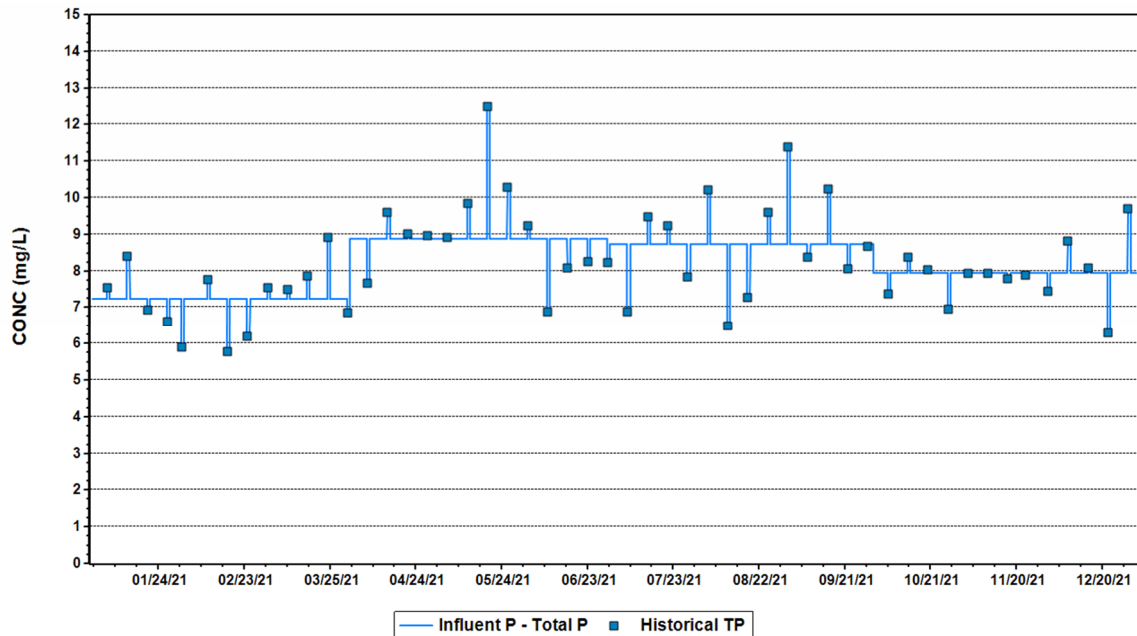


Figure 1-5: Historical vs. Modeled Influent TP

RAS and WAS flows were input directly into the model based on the historical flow data with slight adjustments made to improve fitting the historical data. RAS flows had to be increased from the historical value of 1.4 mgd to 1.7 mgd to match RAS solids concentration. This may be in part due to the way RAS flow has been historically measured at the RAS control box with flow rates estimated based on water level above the overflow weirs. The WAS solids production rates and MLSS/MLVSS concentrations observed in the BNR basins fit well to reported data after these adjustments. Figure 1-6 through Figure 1-8 shows modeled solids concentrations, waste activated sludge (WAS) load, and solids retention time (SRT) fit the historical data well.

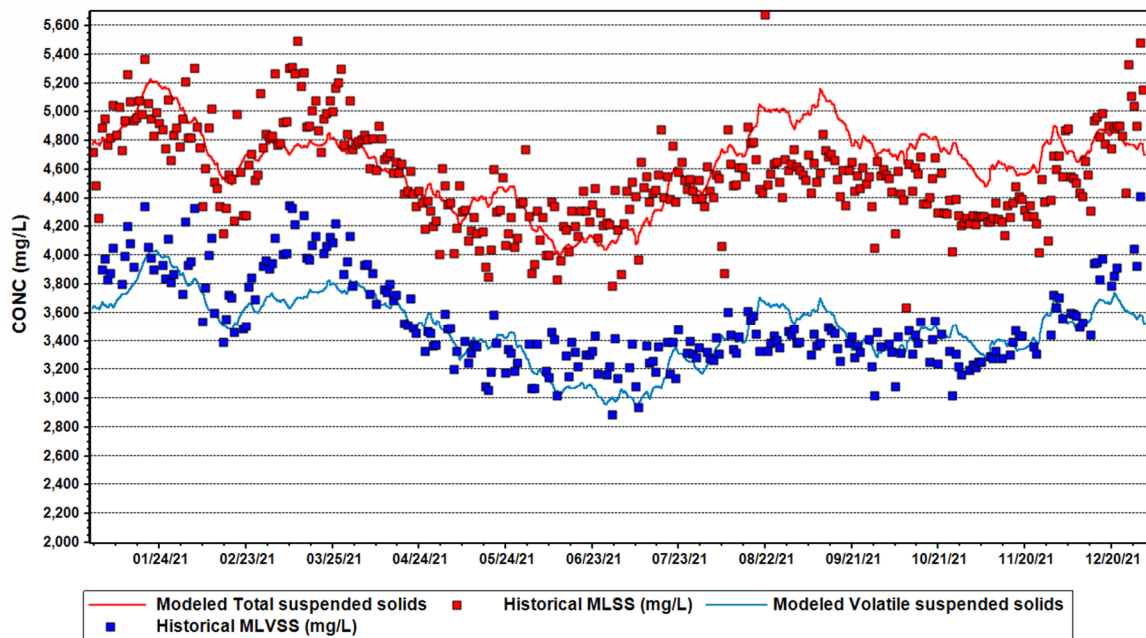


Figure 1-6: Historical vs. Modeled: MLSS/MLVSS

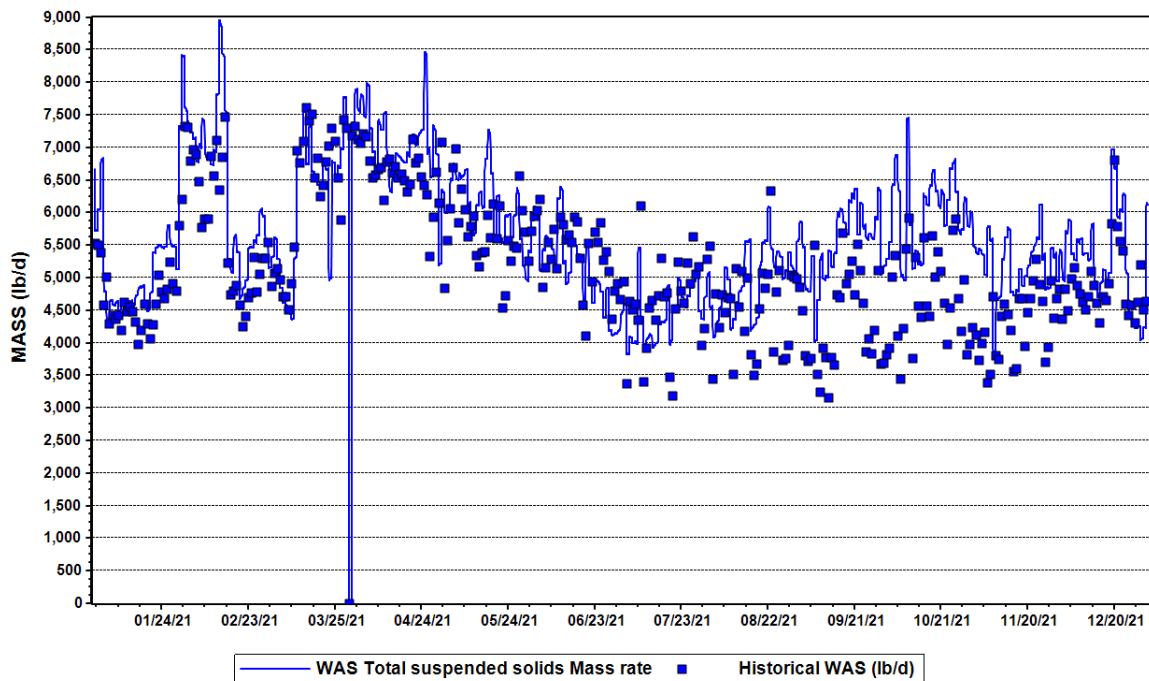


Figure 1-7: Historical vs. Modeled: WAS Production Simulation

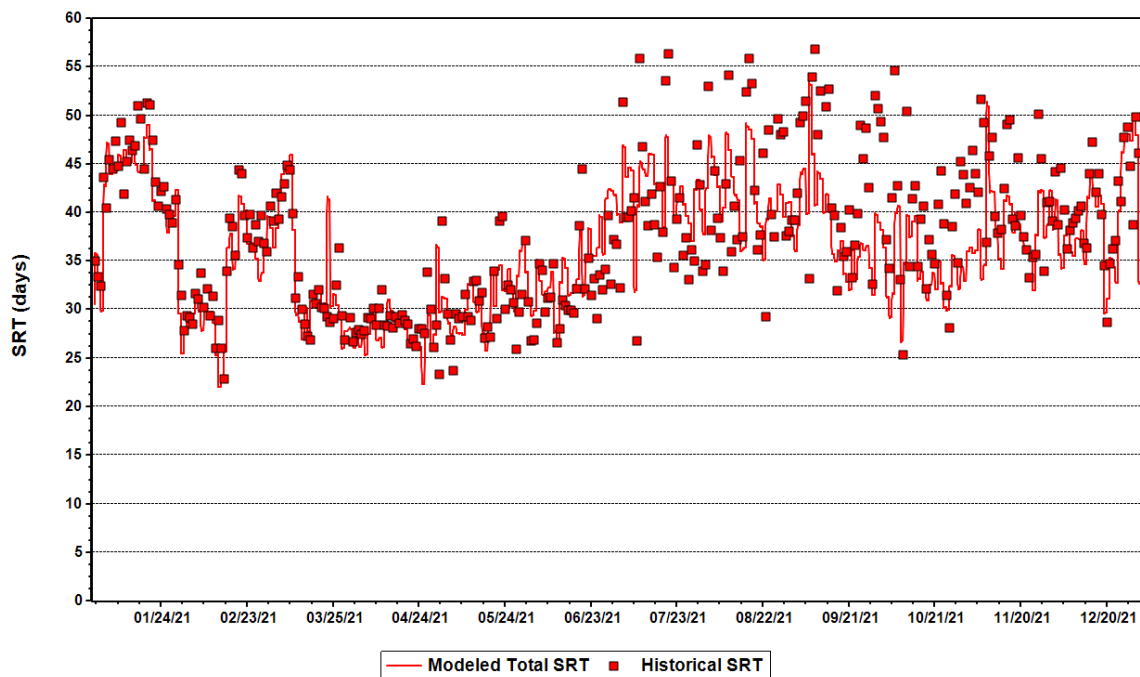


Figure 1-8: Historical vs. Modeled: SRT

Figure 1-9 through Figure 1-11 show that the modeled effluent data fits historical data well. In general, the model slightly overpredicted effluent TN and TP but captured the trends in the data well. Slightly over predicting effluent TN and TP will provide an additional degree of conservatism in the recommendations for secondary process improvements as part of the preliminary engineering phase of work.

The validated model slightly over predicts effluent ammonia concentration compared to historical values with the largest discrepancies during periods of colder temperatures. Some possible contributing factors for this include:

- Effluent temperature was utilized for the model. BNR basin temperature is typically higher than effluent temperature, which could result in improved model nitrification performance.
- Historical DO concentration is measured at the surface of the ditch downstream of the surface aerator. Actual DO concentration throughout the ditch changes dynamically by depth and location in the tank.
- An AOB growth rate of 0.8 d^{-1} , was utilized in the model.

Model performance slightly underpredicts the degree of denitrification that has been historically observed within the system. Oxidation ditches utilizing surface rotors for aeration allow for anoxic zones to develop within the basin volume, resulting in a higher rate of simultaneous nitrification/denitrification (SND) compared to true plug flow systems. The increased rate of SND within the system is normally considered within the model by adjusting the OHO DO half-saturation coefficient. This was considered as part of the validation exercise by using the OHO DO half-saturation coefficient value of $0.25 \text{ mg O}_2/\text{L}$.

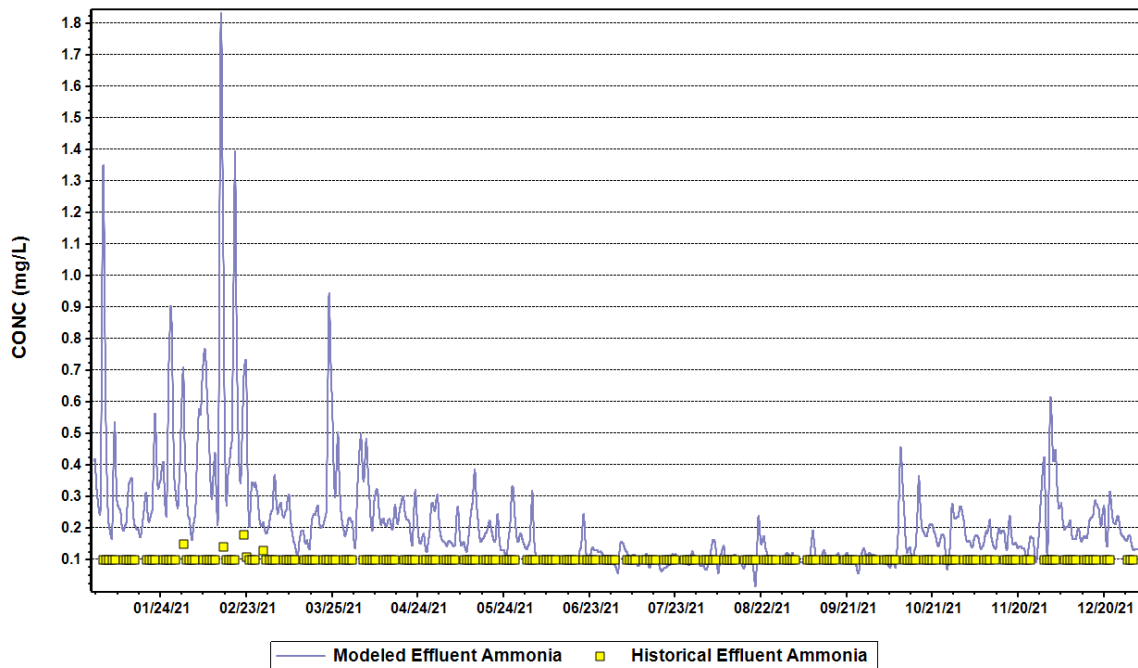


Figure 1-9: Historical vs. Modeled: Effluent NH₃-N

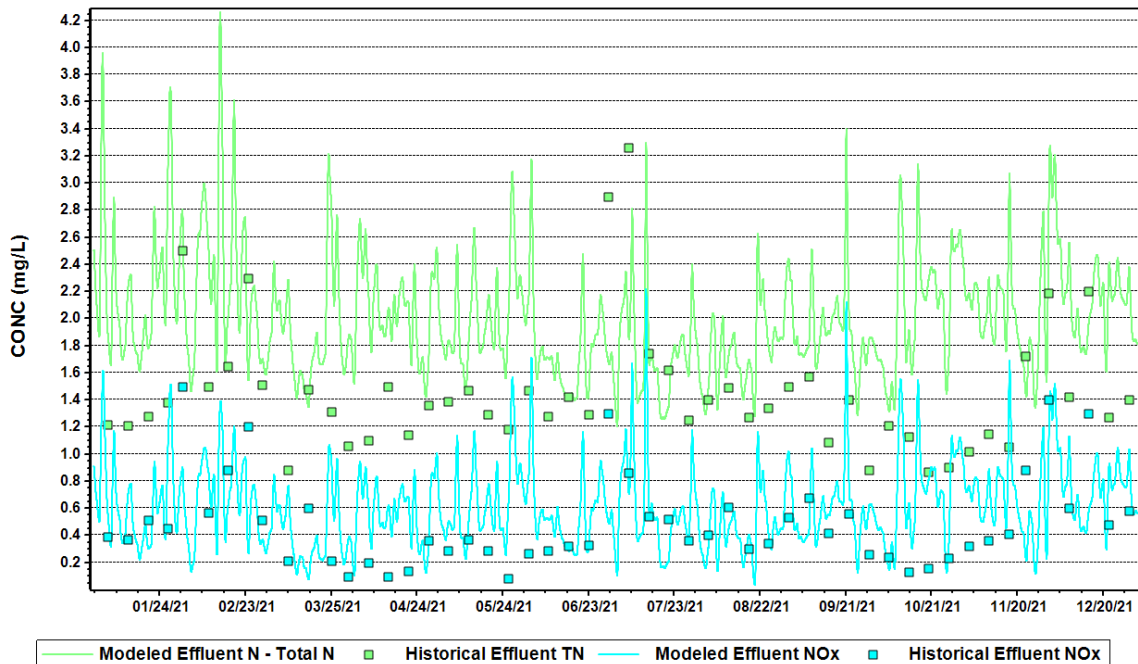


Figure 1-10: Historical vs. Modeled: Effluent TN and NOx

Historically UCWRF effluent TP and orthophosphate (ortho-P) concentrations have been exceptionally low (<0.1 mg/L). The model represented effluent TP and ortho-P concentrations reasonably well (within approximately 0.1 mg/L on average) with estimates consistent with the historical trends. The primary differences observed in the effluent TP may be the result of the limited

influent and effluent TP and ortho-P data that is only available once per week. The performance of the model is well within the limits of a well validated biological process model.

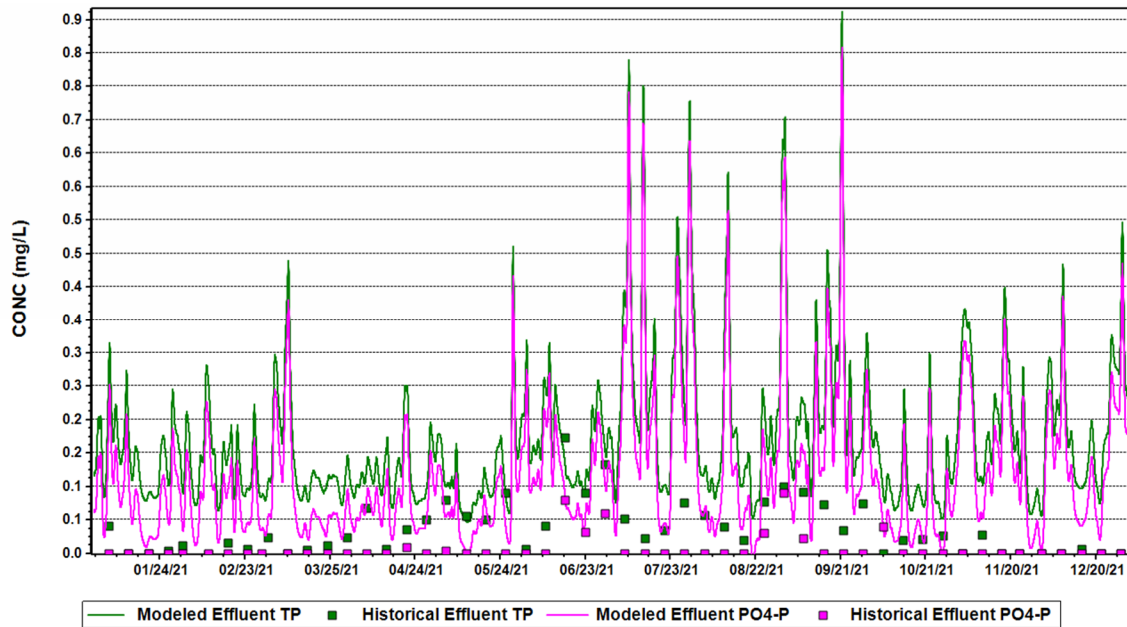


Figure 1-11: Historical vs. Modeled: Effluent TP and Ortho-P

Table 1-3 includes a summary of the modeled historical data compared to the average of the dynamic modeling results. The modeled results are acceptable for a well validated model for BNR systems needing to meet limits of technology levels of TN removal while also providing a reasonable degree of safety factor within the process design.

Table 1-3: Model Validation Results Summary

Parameter	Unit	Historical	Steady State	Avg. of Dynamic	Dynamic % Difference
Inf. BOD ₅ (cBOD ₅)	mg/L	345 (310) ¹	348	349	+ 1%
Inf. TSS	mg/L	339	314	316	- 6%
Inf. TKN	mg/L	59.0	58.5	58.9	0%
Inf. NH ₃ -N	mg/L	36.1	35.9	36.1	0%
Inf. NO _x -N	mg/L	1.53	1.53	1.53	0%
Inf. TP	mg/L	8.20	8.20	8.20	0%
MLSS	mg/L	4,570	4,465	4,650	+ 2%
MLVSS	mg/L	3,540	3,290	3,480	- 2%
MLVSS	%	77.6	73.7	74.8	- 5%
RAS Flow Rate	mgd	1.37	1.68	1.68	+ 22%
RAS Conc.	mg/L	11,400	12,400	13,100	+ 14%
WAS Flow Rate	mgd	0.054	0.050	0.50	- 7%
WAS Load	lb/d	5,140	5,296	5,600	+ 9%
Effluent NH ₃ -N	mg/L	0.10	0.13	0.20	+0.1 mg/L
Effluent TKN	mg/L	0.97	1.21	1.39	+ 0.4 mg/L
Effluent NO _x -N	mg/L	0.49	0.44	0.61	+ 0.2 mg/L
Effluent TN	mg/L	1.45	1.68	2.00	+0.5 mg/L
Effluent TP	mg/L	0.09	0.22	0.22	+0.1 mg/L
Effluent Ortho-P	mg/L	0.06	0.14	0.17	+0.1 mg/L



CONTRACT FOR PROFESSIONAL SERVICES

THIS AGREEMENT dated _____, between the Town of Holly Springs, North Carolina, for itself and its Successors & Assigns (hereinafter called the "Town") and Hazen and Sawyer (herein after called the "Contractor").

Town hereby desires to enter into a contract for services with the Contractor and the Contractor agrees to enter into this contract and perform the Services as set forth below, in the manner and time hereinafter described, and both parties do hereby agree as follows:

SERVICES OF CONTRACTOR

The services of the Contractor shall be performed in the manner as described in **Exhibit A** (the "Proposal") as attached hereto and incorporated by reference. Contractor agrees to employ such personnel as may be needed to deliver services in the manner and time prescribed herein. Such personnel shall be employees of the Contractor, said Contractor being an independent contractor of the Town.

TOWN'S RESPONSIBILITIES

The Town shall make available the facilities to the Contractor and shall not impede the work of the Contractor except as necessary. Any additional Town responsibilities shall be listed in **Exhibit A**.

BIDDING COMPLIANCE:

The Town shall comply with the bidding laws of the State of North Carolina. Failure to do so shall make this Contract void. The Town's Contract Administrator for this Contract is:

Rachel Ingham, Utilities & Infrastructure Services
Rachel.ingham@hollyspringsnc.gov
919-567-3985

The Contract Administrator certifies that the Contractor was selected using Qualification Based Selection. A Request for Qualifications was drafted and circulated on or about August 3, 2023. The Contractor was selected because: The selection committee ranked Hazen and Sawyer as

the top candidate based on criteria outlined in the RFO; the Statement of Qualifications received on September 11, 2023; and the interview held on October 5, 2023.

OR

_____ An exemption was allowed by the Town Manager, and an Exemption Memorandum is attached.

Contract Manager

Printed Name: Rachel Ingham, PE

Department Head/Supervisor

Printed Name: Kendra Parish, PE

PAYMENT

The Town shall pay the Contractor the contract sum in the following manner:

☐ A Lump Sum of \$_____ payable upon completion of the services listed in **Exhibit A**

☒ Payment on basis of Time and/or Materials as described in **Exhibit A**

☐ Description of Alternative Payment Terms:

TIME FOR RENDERING SERVICES

The times for rendering the services are set forth in **Exhibit A**, or as otherwise set forth below:

GENERAL CONSIDERATIONS

1. Standards of Performance.

1.1 The standard of care for all services performed or furnished by Contractor under this Agreement will be the care and skill ordinarily used by members of the Contractor's profession practicing under similar circumstances at the same time and in the same locality.

- 1.2** Contractor represents that, prior to submitting the Bid and executing this Contract, Contractor became and remains thoroughly acquainted with all matters relating to the performance of this Contract, all applicable laws and all of the terms and conditions of this Contract. All Services under this Contract shall be coordinated under and performed to the satisfaction of the Town Contact. Town is authorized to withhold payment of any funds under this Contract until periodic performance of the Services has been inspected, accepted, and approved by the Town Contact.
- 1.3** Contractor shall be responsible for the technical accuracy of its services and documents resulting therefrom, and Town shall not be responsible for discovering deficiencies therein. Contractor shall correct such deficiencies without additional compensation except to the extent such action is directly attributable to deficiencies in Town furnished information.
- 1.4** Contractor and Town shall comply with applicable Laws or Regulations and Town mandated standards. This Agreement is based on these requirements as of its Effective Date. Changes to these requirements after the Effective Date of this Agreement may be the basis for modifications to Town's responsibilities or to Contractor's scope of services, times of performance, or compensation.
- 1.5** Contractor is an independent contractor of the Town. The Town and the Contractor mutually agree to indemnify and hold harmless each party from any claims of negligence brought forth. Contractor is familiar with the property and its condition.

2. Term and Termination.

- 2.1** The term for this contract is as long as necessary to complete the scope of work agreed to, but in no event shall it exceed two (2) years.
- 2.2** The mutual obligations of the Parties contained in this Agreement may be terminated:
- 2.2.1** For cause by either party upon 30 days written notice in the event of a failure by the other party to perform in accordance with the terms hereof.
 - 2.2.2** For failure to consistently satisfy the Standards of Performance in the opinion of the Town Contract.
 - 2.2.3** Upon mutual agreement.

3. Controlling Law.

- 3.1** This agreement is to be governed by the law of the State in which the project is located.
- 3.2** Venue and jurisdiction are proper in the 10th Judicial District of North Carolina (Wake County).

4. Notices.

4.1 Any notice required under this Agreement 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 the receipt.

4.1.1 For the Town:

Rachel Ingham, PE, Engineering Manager	(Name, Title)
Utilities & Infrastructure	(Department)
P.O. Box 8	(Address)
(919) 567-3985	(Phone)
Rachel.ingham@hollyspringsnc.gov	(e-mail)

4.1.2 For the Contractor/Vendor:

Patricia Drummey Stiegel, Vice President	(Name, Title)
Hazen and Sawyer	(Company)
4011 West Chase Boulevard, Suite 500	(Address)
(919) 951-9351	(Phone)
pdrummey@hazenand sawyer.com	(e-mail)

5. Severability.

5.1 Any provision or part of the Agreement 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 Contractor, who agree that the Agreement 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.

6. Waiver.

6.1 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 Agreement.

7. Attorney's Fees.

7.1 In the event of a breach of this Agreement, the substantially prevailing party shall be entitled to an award of reasonable attorney's fees and costs relating to compelling performance under this Agreement.

8. Insurance & Indemnification Requirement.

8.1 Contractor shall provide general liability insurance for a minimum of \$1,000,000 per occurrence, \$2,000,000 aggregate, and an umbrella policy of at least \$5,000,000 for the complete term of the contract. Additionally, the Contractor shall supply workman's compensation insurance coverage to all employees within the statutory limits. Contractor shall supply proof of coverage to the Town within 10 days of execution of this contract and shall list "Town of Holly Springs" as additional insured

to all general liability policies for the duration of the contract term. A certificate of insurance shall be attached hereto as **Exhibit B**.

8.2 The Contractor agrees to waive any and all claims against the Town from itself or its employees arising from work performed by the Contractor pursuant to this Contract, except for claims related to non-payment of amounts. The Contractor shall protect, defend, indemnify and hold the Town and its officers, employees and agents free and harmless from and against any and all losses, penalties, damages, settlements, costs, charges, professional fees, or other expenses or liabilities of every kind and character arising out of or relating to any and all claims, liens, demands, obligations, actions, proceedings, or causes of actions of every kind and character in connection with or arising out of this Agreement and/or the performance hereof, that are proximately caused by the negligence, willful or wanton conduct, or breach of contract relating to the Contractor's work in under this Agreement or any addendums or modifications thereto, except to the extent that the same are by the negligence or willful misconduct of the Town. For such claims, the Contractor/Licensee further agrees to investigate, handle, provide defense for and respond to, any such claims at its sole expense and agrees to bear all other costs and expenses related thereto, even if such claims are groundless, false, or fraudulent.

9. E-Verify.

9.1 Contractor hereby agrees to comply with N.C.G.S. § 64-25, et. seq. regardless of Contractor's status as an independent contractor and not an employee with the Town. The E-Verify Affidavit shall be attached hereto as Exhibit C.

10. Independent Contractor.

10.1 Contractor's status shall be that of an independent contractor and not an agent, servant, employee, or representative of Town in the performance of the Services. Contractor shall exercise independent judgment in performing duties under this Contract and is solely responsible for setting working hours, scheduling or prioritizing the workflow and determining how the work is to be performed. No term or provision of this Contract or act of Contractor in the performance of this Contract shall be construed as making Contractor the agent, servant or employee of Town, or making Contractor or any of its employees eligible for the fringe benefits, such as retirement, insurance and worker's compensation, which Town provides its employees.

10.2 Contractor's Control Over Services Provided. Contractor shall retain the unqualified right of control over the means, manner and methods by which the Services are performed, and the right to perform such Services at the locations and times that Service Provider independently determines, as approved by the Town. Contractor shall be responsible for providing all equipment, materials and supplies that Contractor determines are needed to timely provide the Services.

10.3 Contractor shall be responsible for the technical accuracy of its services and documents resulting therefrom, and Town shall not be responsible for discovering deficiencies therein. Contractor shall correct such deficiencies without additional compensation except to the extent such action is directly attributable to deficiencies in Town furnished information.

11. Non-Discrimination.

11.1 As a condition of this Contract, Contractor covenants that Contractor will take all necessary actions to insure that, in connection with any operations under this Contract, Contractor, its officers, employees and subcontractors, will not discriminate in the treatment or employment of any individual or groups of individuals on the grounds of race, color, religion, national origin, age, sex, sexual orientation, or handicap unrelated to job performance, either directly, indirectly or through contractual or other arrangements. Contractor shall also comply with all applicable requirements of the Americans with Disabilities Act, 42 U.S.C.A. §§12101-12213, as amended. In this regard, Contractor shall keep, retain and safeguard all records relating to this Contract or work performed hereunder for a minimum period of three (3) years from final Contract completion, with full access allowed to authorized representatives of Town, upon request, for purposes of evaluating compliance with this and other provisions of the Contract.

12. Contractor's Employees.

12.1 Contractor agrees and consents that the Town is allowing access to the Contractor to both publicly used and private sensitive Town facilities. Contractor, and any employee, agent, subagent, volunteer, or any person authorized to act on behalf of the Contractor shall maintain a professional demeanor at all times during the interaction with the Town's patrons and visitors to Town facilities. Contractor shall refrain from other commercial or political activity while performing this contract on Town Facilities. ~~Contractor shall undergo criminal background checks on all employees and subcontractors working at the direction of the Contractor in this contract, and shall exclude any employees from working in any Town facility any employees that:~~

- ~~1) had a conviction of a any felony within the past 10 years;~~
- ~~2) has a conviction in the past 10 years of any violent crime or crime involving theft or dishonesty; or~~
- ~~3) is currently a registered sex offender.~~

13. Assignment.

13.1 Contractor shall not sell, assign, transfer or convey this Contract, in whole or in part, without the prior written consent of the Town. As an express condition of consent to any assignment, Contractor shall remain liable for completion of the Contract work in the event of default by the successor contractor or assignee.

14. Right of Review and Audit.

14.1 Town may review any and all of the services performed by Contractor under this Contract. Town is granted the right to audit, at Town's election, all of Contractor's records and billings relating to the performance of this Contract. Contractor agrees to retain such records for a minimum of three (3) years following completion of this Contract. Any payment, settlement, satisfaction, or release made or provided during the course of performance of this Contract shall be subject to Town's rights as may be disclosed by an audit under this section.

15. Non-Appropriations.

15.1 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 creating a delegation of governmental powers nor as a donation by or a lending of the credit of the town within the meaning of the constitution of the state. This agreement shall not directly or indirectly or contingently obligate the town to make any payments beyond those appropriated in the sole discretion of the town for any fiscal year in which this agreement is in effect; provided, however, that any failure or refusal by the town to appropriate funds which results in the failure by the town to make any payment coming due hereunder will in no way obviate the occurrence of the event of default resulting from such nonpayment. No deficiency judgment may be rendered against the town in any action for breach of a contractual obligation under this agreement and the taxing power of the town is not and may not be pledged directly or indirectly or contingently to secure any moneys due under this agreement.

16. Full Agreement. This Contract is the full agreement of the parties, and neither has, or is relying on any information not contained in this Contract or its Exhibits. The terms of this Contract supersede any conflicting terms which may be contained in any Exhibit attached hereto and incorporated by reference.

17. Modification. The Contract may not be modified except by either a Change Order or an Amendment. Any Change Order or Amendment must be made in writing, utilizing the appropriate Town form, approved by the Town (and Town Council, if necessary) and executed with the same formalities as this original contract.

18. Exhibit List. The following documents shall be attached hereto and incorporated by reference.

Exhibit A – Proposal and Scope of Work

Exhibit B – Certificate of Insurance

Exhibit C – E-Verify Affidavit

[Signature Page Follows]

TOWN OF HOLLY SPRINGS:

CONTRACTOR:

BY: _____
Randy J. Harrington, Town Manager

Signature: _____

Name: _____

Title: _____

WITNESS:

WITNESS:

Linda McKinney, Town Clerk

Title: _____

Contract Manager: _____

P.O. Number (if applicable) _____

Approved by: Brettany DeVold _____ (initials)

Approved as to form:

John Schifano, Town Attorney

This instrument has been pre-audited in the manner
Prescribed by the Local Government Budget and Fiscal
Control Act

Tina Stroupe, Director of Finance

EXHIBIT A

The scope of work to be provided by **ENGINEER** includes professional services for the elements listed below.

The Town of Holly Springs (Town) owns and operates the Utley Creek Water Reclamation Facility (UCWRF), a wastewater treatment plant designed for a maximum month flow of 6 million gallons per day (mgd). Additionally, the UCWRF has been permitted to discharge up to 8 mgd to Utley Creek, an effluent dominated receiving waterbody. The Town completed an UCWRF Preliminary Engineering Report (PER) that outlined design plans for the 6 to 8 mgd upgrade at the UCWRF site and is currently finalizing an Alternatives Analysis that explores options to expand to up to 15 mgd of wastewater treatment capacity. The scope of this contract will initially include design, permitting and bidding of the 8 mgd expansion as described in the PER, with provisions to expand many of the facilities to 15 mgd in the future. A second phase of engineering services is anticipated to include construction administration and management and construction observation services and may be added by amendment.

100. Facility Plan for Future Flows

- a. Planning – To design the expansion to 8 mgd, preliminary planning and design for future flows will be advanced. Projected flows and loads as well as estimated timeline for 10 and 15 mgd expansions will be provided and flows from each interceptor entering the plant will be estimated to determine plant pipe sizing and potential consolidation on site. This will allow the site to be expanded past 8 mgd in a cost-efficient manner.
- b. Sizing and Design – This task will include facility sizing, footprints, and location; yard piping; and electrical needs. Deliverable will include site plans, mechanical drawings, and an electrical single line for 10 and 15 mgd, as well as major equipment specifications. The Town may elect to install certain infrastructure during the initial 8 mgd upgrade that will be needed for future upgrades (i.e, increasing a pipe size or placing a casing pipe under a road to avoid re-paving in future).
- c. Layout Comparison – Alternative site layouts, particularly around the fine screen facilities and future preliminary treatment and influent pump station, will be evaluated to determine if there are feasible options to reduce costs and improve continuity of plant operations.
- d. Future Treatment – Hazen will evaluate the footprint required for the following potential future regulatory drivers, and determine with the Town if space can be allocated on the current site plan:

- i. Indirect Potable Reuse Train of ozone/BAF/GAC for both the rated annual average plant capacity and the full discharge (2 x maximum month for MBR).
 - ii. Biosolids PFAS destruction on site with Super Critical Water Oxidation (SCWO) or thermal drying with gasification/pyrolysis.
- e. Cost – Hazen will develop Class 4 capital cost estimates (AACE, -30%, +50%) for a phased approach for a 10 mgd and 15 mgd plant. Costs for the 8 mgd expansion will be under Task 200.

200. Preliminary Design of 8 mgd Expansion and Basis of Design Report

This scope assumes design of the Membrane Bioreactor (MBR) liquid train and solids process described in the 2023 PER. A 30% design package for the 8 mgd expansion that includes the following will be reviewed with the Town:

- a. Site – Site plans and civil drawings showing 8 mgd with future space for 10 and 15 mgd upgrades.
- b. Drawings – Mechanical drawings showing facility layouts, plans and sections as well as isometrics for each unit process. Coordination with structural and architectural, electrical single line drawing, and control system architecture.
- c. BOD Report – Brief technical memoranda documenting basis of design for each unit process.
- d. Sequencing – Construction Sequencing, Contract Packaging, and Maintenance of Plant Operations. It is anticipated that the first design package will be for the Operations Building; the existing Administration Building is anticipated to be demolished to accommodate the fine screens required for the new treatment process. It is anticipated that the remainder of the plant will be packaged into two construction packages, including a Liquid Train package and a Solids Train package. Hazen will work with the Town to determine if an additional early package is required for supplemental air to the oxidation ditches due to increased industrial loads.
- e. Specifications – Major process mechanical equipment specifications, anticipated to include the following:
 - Engine Generators
 - Fine Screens
 - Screening Washer/Compactor
 - Odor Control Equipment
 - Diffusers
 - Submersible Mixers
 - Propeller (Window) Pumps
 - High Speed Turbo Blowers
 - Membrane Bioreactors
 - Chemical Storage Tanks
 - UV Disinfection

- Vertical Turbine Pumps
 - Dewatering Centrifuge
 - Dewatered Cake Conveyance
 - Liquid Polymer Preparation System
- f. Cost – Hazen will develop Class 3 capital cost estimates (AACE, -20%, +30%), for each construction package in the 8 mgd expansion.

201. **Geotechnical Evaluation**

Hazen will plan and conduct a phased subsurface investigation to obtain parameters suitable for design and confirm that proposed locations of facilities are viable. Hazen will use a subconsultant to perform this investigation and report. An allowance of \$150,000 has been included in the project budget.

202. **Survey and Subsurface Utility Engineering (SUE)**

Hazen will develop a surveying plan to confirm the elevations and locations of existing property lines, grade, structures, hydraulic elements, and hydraulic grade lines to support verification of data in the hydraulic model and as-build drawings that will be relied upon for design of the expansion. Up to fifty (50) SUE Level A vacuum borings are anticipated to determine the physical location of critical underground utilities for design. Hazen will use a subconsultant to perform this work.

300. **Detailed Design of 8 mgd Expansion**

- a. Preliminary treatment/Conveyance – The influent Parshall flume, mechanical bar screens, and grit system is adequately sized for 8 mgd and will not require any additional modifications or upgrades. Hazen will include design, MOPO considerations and review the hydraulics for cure-in-place or replacement influent pipe between MH4 and JB 2, and will consider conveyance needs on site for future expansion, which may include consolidating pipes, increasing pipe size for future flow, or planning for parallel pipes.
- b. Influent pump station – The influent pump station currently conveys screened/degritted influent and RAS to the BNR distribution box. In the expansion to 8 mgd, the existing pumps are anticipated to be adequate to pump influent only to a new fine screening facility upstream of the secondary process. Additional conveyance and yard piping improvements will be required to send peak flows to the converted equalization tanks (current final clarifiers).
- c. Fine Screens and BNR distribution – A new 2-mm fine screen facility is required upstream of MBR. Hazen will assist the Town in determining the preferred equipment (centerflow band screens, in-channel rotary drum screens, or enclosed rotary drum screens). The screening facility will incorporate downstream flow distribution of screened influent and RAS to each of the existing oxidation ditches that will be converted to plug flow BNR. The screens will be located outdoors, and the channel and equipment air will be removed

and scrubbed. The facility will be designed to accommodate a future design capacity of 15 mgd.

- d. Odor Control – A biofilter with carbon polisher, similar to the existing odor control at the headworks, is anticipated for the new fine screen facility. Odor control is not anticipated for the equalization tanks, but provisions can be considered to add covers and odor control in the future.
- e. Oxidation Ditches – The UCWRF currently utilizes oxidation ditches with surface aerators for biological nutrient removal. The aeration equipment will be replaced by fine bubble diffusers, and the configuration will be modified to plug flow. Conversion to plug flow will include structural modifications to the basins including new walls and walkways for access to air valves and flow meters. New mixing equipment and NRCY pumps/piping will also be necessary. The facility will be designed to accommodate a future design capacity of 15 mgd.
- f. Process Blowers – A new blower building is anticipated to house high speed turbo blowers and the electrical equipment for the process aeration blowers. The facility will be designed for the current loads at 8 mgd and space for additional blowers to accommodate a future flow of 15 mgd. Hazen will work with the Town to determine if airfoil or magnetic bearing style turbo blowers will both be considered in a pre-selection of blowers.
- g. MBR – A new membrane bioreactor facility will be constructed downstream of the oxidation ditches. Hazen will assist the town in determining the types and manufacturers to include in a pre-selection of the membranes, which have different design, footprint, and operational requirements. In addition to the membrane bioreactors, a membrane process equipment building will include backpulse storage, permeate pumps, return activated sludge pumps, air scour blowers, and a clean-in-place system with chemical storage.
- h. Chemical Facilities
 - 1. Metal Salt – The UCWRF currently doses sodium aluminate upstream of the final clarifiers for phosphorus removal. Future alum requirements will exceed the existing 400 gallon storage, and a new storage tank of approximately 16,000 gallons will be designed. The existing pumps are anticipated to be maintained, with replacement to a larger size in the future when flows are closer to design flows.
 - 2. Supplemental Carbon – Supplemental carbon will be needed at maximum month conditions to meet effluent total nitrogen limits. One new 8,000 gallon bulk storage tank with a containment structure is anticipated with heat tracing and insulation, but the existing pumps are anticipated to be maintained. Hazen will work with the Town to determine if this improvement will be part of the initial construction packages or if it can be deferred.
- i. Final Clarifier Conversion to Equalization – The facility currently has three 90-foot final clarifiers. Final clarifiers and filters are not necessary with MBR, so all three clarifiers will be converted to equalization. A common low lift pump station will be required to fully empty the final clarifiers to the influent pump

station. Additional analysis of peak flows is required to determine when supplemental equalization will be needed to maintain a peaking factor of 2 or less. Design of supplemental equalization can be added by amendment or as an additional service.

- j. Disinfection / UV – The existing facility has a single UV channel with two lamp banks and space for a future bank. A new facility with a minimum of two channels is anticipated for disinfection. The facility will include a metal canopy over channels with a separate building for ballast cabinets and controls. Hazen will also evaluate use of a separate, closed vessel reclaimed water UV system for the permeate. UV equipment will be pre-selected. The effluent UV facility will be designed to accommodate a future design capacity of 15 mgd with the addition of new UV banks, or a capacity agreed upon by the Town.
- k. Effluent discharge – The existing cascade aerator and Parshall flume are adequately sized for 8 mgd and no new upgrades or replacements are anticipated.
- l. Reuse equalization – Plant reuse water will be pumped from downstream of the UV system, and storage/equalization will be provided as part of the UV structure. Under the Additional Services Task and upon authorization, Hazen will discuss the goals for effluent equalization, consider the findings of the on-going Reclaimed Water Master Plan, and, utilizing hourly diurnal flow data, determine the appropriate size, configuration, and location for effluent equalization and pumping to existing off-site elevated storage. No work is anticipated on the off-site RCW system infrastructure.
- m. WAS Holding and Transfer – Existing Aerated Sludge Tank and Interchange Tank (formerly Digesters 1 and 2) have adequate WAS holding capacity. Improvements to the WAS Pump Station next to Digester 2 (Interchange Tank) will be required to increase capacity of the transfer pumps. Liquid loadout capability from these pumps will also be provided. A dewatering feed tank with limited hydraulic retention time will provide a buffer between the sludge transfer and dewatering feed. No odor control is anticipated for sludge holding as the WAS is processed quickly.
- n. Dewatering Facility – A new dewatering facility will contain new dewatering centrifuges, rotary lobe centrifuge feed pumps, bulk polymer storage, polymer makeup units, and a dewatered cake conveyance system. Electrical and control rooms are also provided for this new facility. A series of screw conveyors is proposed for dewatered cake loadout from the centrifuges to trailers to be hauled by a third party for offsite disposal. Odor dispersion modeling will be conducted to inform a decision by the Town to scrub the building air, discharge to atmosphere, or disperse with an upblast fan. Centrate equalization will also be evaluated, and will be designed or will have provisions to include in the future to buffer flows to the BNR process. The facility will be designed to accommodate a future design capacity of 15 mgd.
- o. Operations Building – A new Operations Building is anticipated on the northwest corner of the site. The facility is anticipated to be approximately 7,000 sf. This building is planned to be an early construction package, and help with MOPO to

maintain SCADA and control function, as well as continuous lab space, offices, locker rooms, and restrooms will be included. Reclaimed water is expected to be utilized for toilet flushing, with a potable backup.

- p. Major Electrical – A second electrical service from Duke Energy is recommended to power new and potentially a portion of existing loads for the facility. Hazen will assist in coordination of the new service and utility transformer. New switchgear will be designed in a building or power center, and a new emergency standby generator will be sized to power the full operating load connected to the gear. A load list for future expansion to 15 mgd will be developed to ensure the electrical equipment is easily expandable for future conditions.
- q. Instrumentation and Control – Hazen will work with the Town to incorporate the ongoing SCADA upgrades at UCWRF being completed by Custom Controls Unlimited. A new SCADA room will be included in the Operations Building, and it is anticipated that Hazen will work with the Town to select an integration services provider for continuity and standardization across the plant.
- r. Stormwater – Hazen will design required stormwater infrastructure.
- s. Cost Estimate – Hazen will develop a capital cost estimate based on the appropriate AACE class at each milestone delivery. The cost estimate will include all of the necessary upgrades to the liquid / solids treatment trains at the UCWRF for 8 mgd. Operations and maintenance estimates are not included for each alternative in this scope.

301. Bid Phase Services

- a. Bid Document Administration – Hazen shall assist the Town with preparing an advertisement for bid and coordinate distribution of electronic contract documents for bidding to all bidders.
- b. Pre-Bid Conference – Hazen shall make a formal presentation of the project at the pre-bid conference and be available to answer contractor questions/comments regarding the work.
- c. Prepare Addenda – Hazen shall receive contractor questions regarding the work, investigate and prepare appropriate answers in addendums to the contract documents. Engineer shall evaluate any alternates to the named manufacturers as specified in the bid form and reject or approve the submitted alternates. Responses shall include modifications to the documents, supplemental specifications and/or drawings as required to clearly communicate the intent of the work.
- d. Evaluate Bids – Hazen shall assist the Town in the review and evaluation of the bids. Hazen shall prepare a letter of recommendation and attend the Town Council meeting to support the recommendation, if required.
- e. Conformed Documents – Hazen shall conform contract documents incorporating all changes by addenda at the end of the Bid Period and issue conformed documents as described in Deliverables.
- f. The scope of services for this work is based upon bidding and constructing the project as three construction projects (Operations Building, Liquid Train

Expansion and Improvement, and Solid Train Expansion and Improvement) and on a maximum eight week bid period for each project. A maximum of two rounds of bids for each bid package are included in this scope. Packaging of the project into additional bid packages/contracts may be included under Additional Services.

400. Permitting and Environmental Review

1. Hazen will work with the Town to provide assistance in obtaining permits required for design and bidding of the project. Assistance shall include preparation of permit submittal forms to accompany design documents, meetings with permitting agencies and Town staff, and responding to permitting agency comments. The Town shall reimburse Hazen and Sawyer for all permit submittal fees levied by the permitting review agencies out of the additional services allowance.
2. Projected permits include:
 - 1) NC DEQ Authorization To Construct (ATC) for up to two construction projects (not needed for Operations Building)
 - 2) NCDENR Erosion and Sedimentation Control (3 projects)
 - 3) DOT Encroachment Agreements
 - 4) Army Corps of Engineer Permitting as required for construction activities and final facilities (401/404 permitting)
 - 5) Town of Holly Springs Site Plan Process (3 projects)
 - 6) FEMA Conditional Letter of Map Revision (CLOMR) Planning and Modeling
 - 7) Other permitting/regulatory needs that may arise.

500. Project Management and Meetings

a. Meetings and Workshops

Meetings are generally expected to be held in-person at Town or Hazen facilities, and are expected to include the following meetings and workshops:

- i. Design Kick-Off Meeting
- ii. Operations Building Review
- iii. Liquid Treatment Basis of Design
- iv. Solids Treatment Basis of Design
- v. Initial Construction Sequencing and Site Planning Meeting
- vi. Operations and Maintenance Focused Workshops (Liquid and Solid)
- vii. Equipment pre-selection workshops
- viii. Milestone Workshops (For each package at 30, 60, and 90% design)
- ix. Functional Control Descriptions Review
- x. Maintenance of Plant Operations
- xi. Final Review Meeting

- b. Integration Services Selection – Hazen shall assist the Town in procuring a Systems Integrator for the Utley Creek WRF Expansion to 8 MGD. The procurements shall be qualifications based and shall include a cost component such as hourly rates. Engineer shall negotiate integrator scope and price for each bid package during final design.
- c. Equipment Pre-Selection – Hazen will assist the Town in competitive pre-selection of specialty, long-lead time equipment that requires a tailored design approach. This is anticipated to include the following equipment:
 - i. Membrane Bioreactors
 - ii. High Speed Turbo Blowers
 - iii. UV Disinfection Equipment
 - iv. Solids Dewatering Equipment
 - v. Generators (if needed for schedule)
 - vi. Fine Screens (depending on technology)
- d. Decision and Cost Log – Provide a decision-making log for all decisions that must be made while completing the work, identifying the decision to be made, decision-making responsibility, date the decision need is first identified, date the decision is made, and cost impact. Provide an update to this log at the beginning of each management meeting and identify critical path issues. Assist the Town in developing a plan for issue resolutions to maintain the project schedule.
- e. Project Management- Provide monthly invoices and schedule updates. Coordinate additional meetings and calls required to manage the project and communicate with the Town. This task will also include financing and funding assistance for this project.

600. QA/QC

Hazen will conduct and demonstrate an effective QA/QC program throughout the course of the project in accordance with our established policy. Reviews include each discipline, operability, constructability, safety, cross-discipline checks, and general reviews.

900. Project Expenses

Expenses including copies/reproduction, mileage, and other direct costs will be billed as established in Schedule B.

901. Additional Services

Upon written request from the Town, Hazen will perform the following tasks:

- a. Value engineering and schedule enhancement services (i.e. additional packages, temporary air systems, or other design services)
- b. Industrial load evaluations

- c. Additional CLOMR permitting and Floodplain Development Permit if required for 8 mgd expansion
- d. Permitting and sampling for expansion beyond 8 mgd
- e. Additional design of odor control or covers for equalization tanks
- f. Evaluation and design of Reclaimed Water Storage
- g. Sustainability Evaluations including LEED for the Operations Building and Envision for the project
- h. Public outreach, stakeholder communication and website, brochures, and or videos
- i. Other requests or design not included above

PROJECT DELIVERABLES

Hazen agrees to deliver to the Town in a timely and proper manner the items set forth below, which shall become the property of Town and may be used by the Town without restriction or limitation:

- a. Geotechnical and Survey Data
- b. Equipment Pre-selection Request for Qualifications, including detailed equipment specifications
- c. Contract documents including drawings and specifications, and cost estimates at the following submittal milestones:
 - 1) BODR/30%
 - 2) 60%
 - 3) 90%
 - 4) Bid Ready Submittals

Three half size copies, two full size copies, and electronic copies in PDF shall be provided for each milestone. Specifications shall be provided in searchable PDF format.
- d. Conformed contract documents incorporating all changes by addenda at the end of the Bid Period. Three half size sets, two full size sets, and electronic copies in PDF shall be provided.

TIME OF COMPLETION

All work shall be completed within 570 days from the Notice to Proceed. Proposed schedule is as follows. Schedule allows for 2 weeks for comments from the Town on each deliverable:

Milestone Description	Days from NTP (Tentative Date)
Engineer Notice-To-Proceed	April 3, 2024*
Draft BODR	120 days (Aug 1, 2024)
30% Design and Final BODR	180 days (Sept 30, 2024)
Submit 60% Ops Building Design	210 days (Oct 30, 2024)
Submit 100% Ops Building Design	300 days (Jan 28, 2025)
Bid Date for Ops Building	Est. March/April 2025
Final Completion for Ops Building	Est. April/May 2026
Submit 60% Design	330 days (Feb 27, 2025)
Submit 90% Design	480 days (July 7, 2025)
Submit 100% Design	570 days (Oct 27, 2025)

*assumes approval at March 2024 Town Council

COMPENSATION

Town of Holly Springs

Utley Creek WRF 8 MGD Design

OWNER shall pay **ENGINEER** as full compensation for the services identified under Schedule A the amount(s) listed below. Task amounts are not limits and may be exceeded provided that the total amount is not exceeded. Compensation shall be on a not-to-exceed basis as follows:

1. Each hour of service rendered as a direct charge to this contract shall be billed according to employee classification as follows:

Hourly Rates

Vice President	\$351
Senior Associate	\$292
Associate	\$257
Senior Principal Engineer	\$222
Principal Engineer	\$199
Assistant Engineer	\$158
Principal Designer	\$198
Designer	\$158

2. Mileage costs directly chargeable to this project shall be billed at the ENGINEERS' standard employee reimbursement rate, as established by the United States Internal Revenue Service. Other travel costs shall be billed at direct cost.
3. Work done by others on a subcontract basis shall be billed at actual cost to the ENGINEERS, plus ten percent (10%), recognizing the increase in liability insurance premiums and administrative costs.
4. Any funds not utilized in one task or phase may be utilized in subsequent phases.

TASK NAME	AMOUNT
100 Facility Plan	\$606,679
200 Preliminary Design	\$1,373,474
300 Detailed Design	\$6,986,711
400 Permitting and Environmental	\$492,835
500 Project Management and Meetings	\$842,435
600 QA/QC	\$311,372
901 Additional Services	\$914,237
Subconsultants	\$825,000
Direct Costs	\$61,274
TOTAL	\$12,414,016

EXHIBIT B

_____ **Insurance requirement waived**

Approved by: _____

Printed Name: John Schifano

 X **Certificate of Insurance attached**



CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

2/2/2024

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER Ames & Gough 8300 Greensboro Drive Suite 980 McLean, VA 22102	CONTACT NAME:		
	PHONE (A/C, No, Ext): (703) 827-2277	FAX (A/C, No): (703) 827-2279	
	E-MAIL ADDRESS: admin@amesgough.com		
	INSURER(S) AFFORDING COVERAGE		NAIC #
	INSURER A : American Casualty Co of Reading, PA A(XV)		20427
INSURED Hazen and Sawyer 498 Seventh Avenue New York, NY 10018	INSURER B : Continental Insurance Company A(XV)		35289
	INSURER C : Continental Casualty Company (CNA) A, XV		20443
	INSURER D :		
	INSURER E :		
	INSURER F :		

COVERAGES

CERTIFICATE NUMBER:

REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	☒ COMMERCIAL GENERAL LIABILITY ☐ CLAIMS-MADE ☒ OCCUR ☒ Contractual Liab. GEN'L AGGREGATE LIMIT APPLIES PER: ☐ POLICY ☒ PRO-JECT ☐ LOC OTHER:			7036845683	3/29/2023	3/29/2024	EACH OCCURRENCE \$ 1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 1,000,000 MED EXP (Any one person) \$ 15,000 PERSONAL & ADV INJURY \$ 1,000,000 GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COMP/OP AGG \$ 2,000,000 \$
B	☒ AUTOMOBILE LIABILITY ☒ ANY AUTO OWNED AUTOS ONLY ☐ SCHEDULED AUTOS ☐ HIRED AUTOS ONLY ☐ NON-OWNED AUTOS ONLY			7036845635	3/29/2023	3/29/2024	COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ Comp./Coll. Ded \$ 1,000
B	☒ UMBRELLA LIAB ☒ OCCUR ☐ EXCESS LIAB ☐ CLAIMS-MADE DED ☒ RETENTION \$ 10,000			7036845649	3/29/2023	3/29/2024	EACH OCCURRENCE \$ 5,000,000 AGGREGATE \$ 5,000,000 \$
A	☒ WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) ☒ Y / N If yes, describe under DESCRIPTION OF OPERATIONS below		N / A	7036845652	3/29/2023	3/29/2024	☒ PER STATUTE ☐ OTH-ER E.L. EACH ACCIDENT \$ 1,000,000 E.L. DISEASE - EA EMPLOYEE \$ 1,000,000 E.L. DISEASE - POLICY LIMIT \$ 1,000,000
C	☒ Professional Liab.			AEH008231489	3/29/2023	3/29/2024	Per Claim/Aggregate 2,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)
RE: ALL PROJECTS/OPERATIONS

Town of Holly Springs, NC is included as additional insured with respect to General Liability, Automobile Liability and Umbrella Liability when required by written contract. General Liability, Automobile Liability and Umbrella Liability are primary and non-contributory over any existing insurance and limited to liability arising out of the operations of the named insured and when required by written contract. General Liability, Automobile Liability, Umbrella Liability and Workers Compensation policies include a waiver of subrogation in favor of the additional insureds where permissible by state law and when required by written contract. Umbrella Liability coverage sits excess over General Liability, Automobile Liability and Employers Liability coverage. 30-day Notice of SEE ATTACHED ACORD 101

CERTIFICATE HOLDER

CANCELLATION

Town of Holly Springs, NC 128 S Main Street Post Office Box 8 Holly Springs, NC 27540	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.
	AUTHORIZED REPRESENTATIVE



ADDITIONAL REMARKS SCHEDULE

Page 1 of 1

AGENCY Ames & Gough		NAMED INSURED Hazen and Sawyer 498 Seventh Avenue New York, NY 10018
POLICY NUMBER SEE PAGE 1		
CARRIER SEE PAGE 1	NAIC CODE SEE P 1	EFFECTIVE DATE: SEE PAGE 1

ADDITIONAL REMARKS

THIS ADDITIONAL REMARKS FORM IS A SCHEDULE TO ACORD FORM,
FORM NUMBER: ACORD 25 FORM TITLE: Certificate of Liability Insurance

Description of Operations/Locations/Vehicles:

Cancellation will be issued for the General Liability, Automobile Liability, Umbrella Liability, Workers Compensation and Professional Liability policies in accordance with policy terms and conditions.

Pollution Liability coverage is provided and included within the Professional Liability policy noted above. It shares the limits of the Professional Liability policy.

STATE OF NORTH CAROLINA)
) AFFIDAVIT OF CONTRACTOR'S
COUNTY OF WAKE) COMPLIANCE WITH E-VERIFY

Page 469 of 498

	U.S. ENVIRONMENTAL PROTECTION AGENCY Grant Agreement	GRANT NUMBER (FAIN): 03D01724 MODIFICATION NUMBER: 0 PROGRAM CODE: CG		DATE OF AWARD 01/27/2024
		TYPE OF ACTION New		MAILING DATE 01/31/2024
		PAYMENT METHOD: Reimbursement		ACH# 40704
		RECIPIENT TYPE: Municipal		
RECIPIENT: Town of Holly Springs 128 South Main Street Town of Holly Springs, NC 27540 EIN: 56-1143973		PAYEE: Towns of Holly Springs 128 S. Main St. Holly Springs, NC 27540		
PROJECT MANAGER Rachel Ingham 128 S. Main St. Holly Springs, NC 27540 Email: rachel.ingham@hollyspringsnc.gov Phone: 919-567-3985		EPA PROJECT OFFICER Adnan Aydin 61 Forsyth Street SW Atlanta, GA 30303-8960 Email: aydin.adnan@epa.gov Phone: 404-562-8416		EPA GRANT SPECIALIST Jasmine Williams Grants Management Section 61 Forsyth St Atlanta, GA 30303-8960 Email: williams.jasmine@epa.gov Phone: 404-562-9334
PROJECT TITLE AND DESCRIPTION Town of Holly Springs for a Water Reclamation Project See Attachment 1 for project description.				
BUDGET PERIOD 08/01/2023 - 07/31/2026	PROJECT PERIOD 08/01/2023 - 07/31/2026	TOTAL BUDGET PERIOD COST \$ 3,750,000.00	TOTAL PROJECT PERIOD COST \$ 3,750,000.00	
NOTICE OF AWARD Based on your Application dated 08/07/2023 including all modifications and amendments, the United States acting by and through the US Environmental Protection Agency (EPA) hereby awards \$ 3,000,000.00. EPA agrees to cost-share <u>80.00%</u> of all approved budget period costs incurred, up to and not exceeding total federal funding of \$ 3,000,000.00. Recipient's signature is not required on this agreement. The recipient demonstrates its commitment to carry out this award by either: 1) drawing down funds within 21 days after the EPA award or amendment mailing date; or 2) not filing a notice of disagreement with the award terms and conditions within 21 days after the EPA award or amendment mailing date. If the recipient disagrees with the terms and conditions specified in this award, the authorized representative of the recipient must furnish a notice of disagreement to the EPA Award Official within 21 days after the EPA award or amendment mailing date. In case of disagreement, and until the disagreement is resolved, the recipient should not draw down on the funds provided by this award/amendment, and any costs incurred by the recipient are at its own risk. This agreement is subject to applicable EPA regulatory and statutory provisions, all terms and conditions of this agreement and any attachments.				
ISSUING OFFICE (GRANTS MANAGEMENT OFFICE)		AWARD APPROVAL OFFICE		
ORGANIZATION / ADDRESS U.S. EPA, Region 4 61 Forsyth Street Atlanta, GA 30303-8960		ORGANIZATION / ADDRESS U.S. EPA, Region 4, Water Division R4 - Region 4 61 Forsyth Street SW Atlanta, GA 30303-8960		
THE UNITED STATES OF AMERICA BY THE U.S. ENVIRONMENTAL PROTECTION AGENCY				
Digital signature applied by EPA Award Official Shantel Shelmon - Grants Management Officer				DATE 01/27/2024

EPA Funding Information

FUNDS	FORMER AWARD	THIS ACTION	AMENDED TOTAL
EPA Amount This Action	\$ 0	\$ 3,000,000	\$ 3,000,000
EPA In-Kind Amount	\$ 0	\$ 0	\$ 0
Unexpended Prior Year Balance	\$ 0	\$ 0	\$ 0
Other Federal Funds	\$ 0	\$ 0	\$ 0
Recipient Contribution	\$ 0	\$ 750,000	\$ 750,000
State Contribution	\$ 0	\$ 0	\$ 0
Local Contribution	\$ 0	\$ 0	\$ 0
Other Contribution	\$ 0	\$ 0	\$ 0
Allowable Project Cost	\$ 0	\$ 3,750,000	\$ 3,750,000

Assistance Program (CFDA)	Statutory Authority	Regulatory Authority
66.202 - Congressionally Mandated Projects	2023 Consolidated Appropriations Act (PL 117-328)	2 CFR 200, 2 CFR 1500 and 40 CFR 33

Fiscal									
Site Name	Req No	FY	Approp. Code	Budget Organization	PRC	Object Class	Site/Project	Cost Organization	Obligation / Deobligation
-	2404VX4020	23	E5	0423CTQ	000B80	4192	-	-	\$ 3,000,000
									\$ 3,000,000

Budget Summary Page

Table A - Object Class Category (Non-Construction)	Total Approved Allowable Budget Period Cost
1. Personnel	\$ 0
2. Fringe Benefits	\$ 0
3. Travel	\$ 0
4. Equipment	\$ 0
5. Supplies	\$ 0
6. Contractual	\$ 3,750,000
7. Construction	\$ 0
8. Other	\$ 0
9. Total Direct Charges	\$ 3,750,000
10. Indirect Costs: 0.00 % Base	\$ 0
11. Total (Share: Recipient <u>20.00</u> % Federal <u>80.00</u> %)	\$ 3,750,000
12. Total Approved Assistance Amount	\$ 3,000,000
13. Program Income	\$ 0
14. Total EPA Amount Awarded This Action	\$ 3,000,000
15. Total EPA Amount Awarded To Date	\$ 3,000,000

Attachment 1 - Project Description

This action approves an award in the amount of \$3,000,000.00 to the Town of Holly Springs, North Carolina to implement its project to engage a licensed Engineering firm to provide professional design and planning services to upgrade the Utley Creek Water Reclamation Facility from 6 to 8 Million Gallons per Day (MGD) as directed in the 2023 Consolidated Appropriations Act or as identified in an approved Technical Correction if one has been approved for this project. The activities to be performed are a North Carolina Licensed Professional Engineer will provide a 100% design for the Utley Creek Water Reclamation Facility which is currently designed to treat a maximum flow of 6 MGD to be upgraded to 8 MGD. The anticipated deliverables are the planning and design documents inclusive of all components necessary to upgrade the maximum flow of the discharge from the Utley Creek Water Reclamation Facility from 6 to 8 MGD. This is expected to lead to the town being able to move forward with construction, which, when complete, will provide increased access to an inexpensive, environmentally sustainable, alternative non-potable water source for uses such as irrigation and process water. Expanded reclaimed water use will decrease potable water demand in the rapidly expanding town and reduce the energy required to treat, process, and distribute water. The facility expansion will increase reclaimed water storage by 50% to ensure consistent and reliable flow for future residential and industrial needs for the citizens Town of Holly Springs, North Carolina. No subawards are included in this assistance agreement.

Administrative Conditions

General Terms and Conditions

The recipient agrees to comply with the current EPA general terms and conditions available at: <https://www.epa.gov/grants/epa-general-terms-and-conditions-effective-october-1-2023-or-later>.

These terms and conditions are in addition to the assurances and certifications made as a part of the award and the terms, conditions, or restrictions cited throughout the award.

The EPA repository for the general terms and conditions by year can be found at: <https://www.epa.gov/grants/grant-terms-and-conditions#general>.

A. Correspondence Condition

The terms and conditions of this agreement require the submittal of reports, specific requests for approval, or notifications to EPA. Unless otherwise noted, all such correspondence should be sent to the following email addresses:

- Federal Financial Reports (SF-425): rtpfc-grants@epa.gov.
- MBE/WBE reports (EPA Form 5700-52A): Jasmine Williams, williams.jasmine@epa.gov, or 404-562-9334.
- All other forms/certifications/assurances, Indirect Cost Rate Agreements, Requests for Extensions of the Budget and Project Period, Amendment Requests, Requests for other Prior Approvals, updates to recipient information (including email addresses, changes in contact information or changes in authorized representatives) and other notifications: Adnan Aydin, aydin.adnan@epa.gov or 404-562-8416 and Jasmine Williams, williams.jasmine@epa.gov, or 404-562-9334.
- Payment requests (if applicable): Adnan Aydin, aydin.adnan@epa.gov or 404-562-8416 and Jasmine Williams, williams.jasmine@epa.gov, or 404-562-9334.
- Quality Assurance documents, workplan revisions, equipment lists, programmatic reports and deliverables: Adnan Aydin, aydin.adnan@epa.gov or 404-562-8416.

B. Prior Approval of Payments for EPA Community Grants (Updated 6/13/23)

Payment Requests are to be completed on Standard Form 270, "Request for Advance or Reimbursement" and submitted to the EPA Grants Office with a copy to the EPA Project Officer. This form and instructions for completing it can be found at <https://www.epa.gov/grants/epa-grantee-forms>. The requests will report cumulative expenditures both (federal and non-federal) incurred under the grant. EPA will approve payments for allowable expenditures at the ratio shown in the latest Agreement.

Under this payment mechanism, the recipient submits for EPA approval the Standard Form 270 along with supporting cost documentation via email to r04-community-grants@epa.gov, the EPA Project Officer and the EPA Grants Management Specialist listed on this award document. Attachments must be submitted in pdf or other acceptable software format (e.g., DocuSign) and the Standard Form 270 must be electronically or digitally signed by your organization's authorized representative or their designee in accordance with EPA's Recipient/Applicant Information Notice (RAIN), [Establishment of Standards for Submission of Administrative and Financial Assistance Agreement Forms/Documents with Electronic or Digital Signatures by Email](#). Documentation to support costs claimed for reimbursement include copies of bills (vouchers, invoices, etc.), along with a description of services rendered, time spent, and charges. The table below provides examples of acceptable documentation. Also, as a reminder, please refer to the Grant-Specific Programmatic Terms and

Conditions of this award for additional information regarding procurement documentation submission requirements.

After review and written notification of EPA's approval, the recipient will request funds via the U.S. Treasury's Automated Standard Application for Payment (ASAP) system for 100% of the total allowable expenditures shown on the Standard Form 270 (i.e., the Federal share) for the period covered by the request. EPA may pay 100% of the allowable expenditures reported for the period of the request for grants for which the cost share requirement has been waived by EPA. Payment for costs approved by EPA and authorized for drawdown by the recipient via the ASAP System will be credited to the recipient's designated financial institution (See Financial Information in the [EPA General Terms and Conditions](#) applicable to this award). Any questioned or disallowed costs will be detailed in writing by EPA's Grants Management Officer.

SUPPORTING DOCUMENTATION BY BUDGET CATEGORY	
BUDGET CATEGORY	ACCEPTABLE DOCUMENTATION
1. PERSONNEL (for both EPA-funded and non-EPA funded employees whose services will count towards the recipient's cost share) Records must: • meet the requirements in 2 CFR 200.430(i) for producing accurate information regarding actual hours an employee worked performing the EPA agreement. • reflect 100% of actual hours worked daily and the projects, programs or activities worked, not estimated amounts or percentages. They must also reflect non-working hours used during the pay period. • be certified by an appropriate recipient manager indicating that the hours shown as worked in support of the EPA assistance agreement were actually spent on activities approved and eligible under the agreement for which the costs are claimed. • contain names of employees charging time to the agreement, with explicit indication of number of hours charged, the hourly rate, and the total amount thereof charged.	
1a. Working Hours	• Copies of time sheets or equivalent records
1b. Non-Working Hours (e.g., sick leave, annual leave, holiday pay, etc.) being charged to the agreement if not covered by a leave rate or included in fringe benefits.	• A schedule or report showing the non-working hour cost calculations and amounts claimed, including the applicable accruals and distribution methodologies for the periods used in the calculations.
2. FRINGE BENEFITS – if applicable, approved fringe rate or actual costs per employee.	• A schedule or report showing the fringe benefit cost calculations per employee, per pay period being claimed for payment and charged to the assistance agreement. Individual items included in approved fringe benefit rates must be identified.
3. INDIRECT COSTS – either an approved indirect cost rate agreement covering the period for the indirect costs being claimed, or otherwise approved to use the 10% de minimis rate. See the General Terms and Conditions for additional information.	• A schedule or report showing the indirect costs calculations and amounts claimed and charged to the assistance agreement, including the applicable rates and cost basis for the periods used in the calculations.
4. TRAVEL Note: First class/business class travel costs are not allowable.	• listing of trips taken, trip dates, location, purpose, and actual costs incurred. • copy of signed and dated authorization documents for each trip. • written certification by employee's supervisor or other authorized official that the trip took place. • copy of signed and dated travel vouchers showing actual expenditures
5. EQUIPMENT – records must show equipment items, quantity, unit cost, and total amount consistent with the PO and RFP.	• copy of procurement requests • copy of vendor invoices • quotes or bid announcements as required
6. SUPPLIES	• invoices showing supply items, quantity, unit cost,

	and total amount consistent with the Purchase Order. • copy of procurement requests • copy of vendor invoices • quotes or bid announcements as required
7. CONTRACTUAL The contract agreement must include all applicable clauses stipulated at 2 CFR Part 200.327 and Appendix II . NOTE: per the grant-specific programmatic Terms and Conditions of the award, all contracts should have already been reviewed and approved by the project officer. Contracts for Architectural and Engineering services are included in this category. The costs for consultant compensation that are charged to the EPA assistance agreement (including cost shares) must not exceed the consultant cap (Level IV of the Executive Schedule) as described at 2 CFR 1500.10	• documents showing quotes or bid announcements as required. • evidence of the selection decision and a cost and price analysis • copy of contractor invoices
8. CONSTRUCTION This category includes contracts for general construction and other contractor costs for activities described in EPA's Small and Disadvantaged Business (DBE) rule at 40 CFR 33.103 .	• documents showing quotes or bid announcements as applicable. • evidence of the selection decision and a cost and price analysis • copy of contractor and vendor invoices
9. OTHER If subaward costs are being claimed, a copy of the executed subaward agreement must be provided. The subaward agreement must comply with the requirements of the subaward term and condition of the EPA award and 2 CFR 200.331 and 200.332 .	• invoices showing items, quantity, unit cost, and total amount. As applicable ensure there are: • copies of procurement requests • copy of vendor invoices • quotes or bid announcements as required • documentation of participant support cost payments approved in the budget • cost Calculations/Allocations of shared costs like rent, utilities, etc.

Programmatic Conditions

GRANT-SPECIFIC PROGRAMMATIC TERMS AND CONDITIONS FOR EPA COMMUNITY GRANTS

A. Performance Reporting ([2 CFR 200.329](#))

The recipient agrees to submit performance reports to the EPA Project Officer on a semi-annual basis, no later than April 30 and October 30 of each year. The final performance report must be submitted no later than 120 calendar days after the period of performance end date.

Performance reports must relate financial data and accomplishments to performance goals and objectives; include brief information on each of the following areas: 1) a comparison of actual accomplishments to the outputs/outcomes established in the assistance agreement workplan for the period; 2) the reasons for slippage if established outputs/outcomes were not met; and 3) additional pertinent information, including, when appropriate, analysis and formation of cost overruns or high unit costs.

The recipient agrees to inform EPA as soon as problems, delays, or adverse conditions become known which will materially impair the ability to meet the outputs/outcomes specified in the assistance agreement workplan.

B. Project changes

The recipient must obtain written EPA approval before implementing changes which alter the project performance standards; change the scope or objectives of the project or substantially alter the design of the project; transfer funds between construction and non-construction budget categories; significantly delay or accelerate the project schedule; substantially alter the facilities plan, design drawings and specifications, or the location, size, capacity, or quality of any major part of the project.

C. Right of Access ([2 CFR 200.337](#))

EPA will have access to all records including fiscal, procurement, and engineering data and files which are pertinent to the assistance agreement, and EPA may conduct site visits and inspections related to progress of the assistance agreement workplan activities.

• Procurement Document Submission

A copy of all proposed contracts for services and supplies over \$250,000 shall be submitted to the EPA Project Officer for review. The submittal of the proposed contracts shall include procurement records. A copy of all proposed contracts for construction shall be submitted to the EPA Project Officer for review. The submittal of the proposed contracts shall include procurement records.

(a) Recipient agrees to submit plans and specifications, requests for proposals, invitations for bid, scopes of work and/or plans and specifications to the EPA Project Officer for review prior to advertising for bids. Recipient will also submit any addenda to these documents to the EPA Project Officer for review prior to the opening of bids.

(b) Recipient agrees to submit to the EPA Project Officer, within ten calendar days after a bid opening, the bid package of the lowest responsive, responsible bidder for review prior to the

award of a contract. The bid package will include a bid tabulation, a copy of the proof of advertising, the bid bond of the low bidder, the signed EPA Form 5700-49 (Certification Regarding Debarment, Suspension, and Other Responsibility Matters), the MBE/WBE proposed utilization by the low bidder with a statement from Recipient that the efforts taken by the low bidder meet the regulatory requirements, and the recommendation to award a contract to the low bidder.

(c) Recipient agrees to submit to the EPA Project Officer for review any proposed contract for services, such as engineering or grant management, prior to signing each contract as well as any change orders executed after the award of the contract. A description of the process used to procure those services will also be submitted. Such contracts must comply with provisions in the regulations at [2 CFR Part 200](#) and/or [40 U.S.C. 1101 et seq.](#), or an equivalent State requirement as applicable to be accepted as allowable project costs.

D. Procurement

(a) The recipient agrees to procure all services (professional or otherwise), supplies, and construction awarded under this grant in accordance with [2 CFR 200.317 through 2 CFR 200.327](#) and [40 CFR Part 33](#).

(b) Recipient agrees to comply with the procurement processes for architectural and engineering (A/E) services as identified in [40 U.S.C. 1101 et seq.](#), or an equivalent State requirement.

Where equivalent State requirements are complied with, the source of the requirement (e.g., existing State legislation or regulation, etc.) must be stated, and a certification from the Governor of the State that the State's A/E procurement requirements are equivalent to [40 U.S.C. 1101 et seq.](#) must accompany the grant application. In lieu of a certification from the Governor, the Attorney General's certification submitted with each grant application may include this certification. The requirements of [40 U.S.C. 1101 et seq.](#) are:

- Public announcement of the solicitation (e.g., a Request for Qualifications);
- Evaluation and ranking of the submitted qualifications statements based on established, publicly available criteria (e.g., identified in the solicitation);
 - Evaluation criteria should be based on demonstrated competence and qualification for the type of professional services required (e.g., past performance, specialized experience, and technical competence in the type of work required);
- Discussion with at least three firms to consider anticipated concepts and compare alternative methods for furnishing services;
- Selection of at least three firms considered to be the most highly qualified to provide the services required; and
- Contract negotiation with the most highly qualified firm to determine compensation that is fair and reasonable based on a clear understanding of the project scope, complexity, professional nature, and the estimated value of the services to be rendered;

In the event that a contract cannot be negotiated with the most highly qualified firm, negotiation continues in order of qualification.

In the event that the State has no existing equivalent qualifications-based requirement for procurement, the federal requirements in [40 U.S.C. 1101 et seq.](#) apply.

E. Cybersecurity Condition

(a) The recipient agrees that when collecting and managing environmental data under this assistance agreement, it will protect the data by following all applicable State or Tribal law cybersecurity requirements.

(b) (1) EPA must ensure that any connections between the recipient's network or information system and EPA networks used by the recipient to transfer data under this agreement, are secure. For purposes of this Section, a connection is defined as a dedicated persistent interface between an Agency IT system and an external IT system for the purpose of transferring information. Transitory, user-controlled connections such as website browsing are excluded from this definition.

If the recipient's connections as defined above do not go through the Environmental Information Exchange Network or EPA's Central Data Exchange, the recipient agrees to contact the EPA Project Officer no later than 90 days after the date of this award and work with the designated Regional/Headquarters Information Security Officer to ensure that the connections meet EPA security requirements, including entering into Interconnection Service Agreements as appropriate. This condition does not apply to manual entry of data by the recipient into systems operated and used by EPA's regulatory programs for the submission of reporting and/or compliance data.

(2) The recipient agrees that any subawards it makes under this agreement will require the subrecipient to comply with the requirements in (b)(1) if the subrecipient's network or information system is connected to EPA networks to transfer data to the Agency using systems other than the Environmental Information Exchange Network or EPA's Central Data Exchange. The recipient will be in compliance with this condition: by including this requirement in subaward agreements; and during subrecipient monitoring deemed necessary by the recipient under [2 CFR 200.332\(d\)](#), by inquiring whether the subrecipient has contacted the EPA Project Officer. Nothing in this condition requires the recipient to contact the EPA Project Officer on behalf of a subrecipient or to be involved in the negotiation of an Interconnection Service Agreement between the subrecipient and EPA.

F. Signage

The recipient is required to place a physical sign displaying the EPA logo at the construction site for this project in an easily visible location that can be directly linked to the work taking place. -The sign must be maintained in good condition throughout the construction period. In cases where the construction site covers a large area (e.g., lead service line replacement or septic tank repair/replacement projects), a sign should be placed in an easily visible location near where the work is being performed (e.g., entrance to the neighborhood, along a main road through town, etc.). Signage costs are considered an allowable grant expense, provided the costs associated with the signage are reasonable. Additionally, to increase public awareness of projects serving communities where English is not the predominant language, assistance recipients are encouraged to translate the language on signs (excluding the EPA logo or seal) into the appropriate non-English language(s). The costs of such translation are allowable grant expenses, provided the costs are reasonable.

Procuring Signs: Consistent with section 6002 of RCRA, 42 U.S.C. 6962, and 2 CFR 200.323, recipients are encouraged to use recycled or recovered materials when procuring signs.

EPA Logo: The recipient will ensure that signage displays the EPA logo. The EPA logo must not be displayed in a manner that implies that EPA itself is conducting the project. Instead, the EPA logo must be accompanied with a statement indicating that the recipient received financial assistance from EPA for the project.

The recipient will ensure compliance with the sign specifications provided by the EPA Office of Public Affairs (OPA) available at: <https://www.epa.gov/grants/epa-logo-seal-specifications-signage-produced-epa-assistance-agreement-recipients>. As provided in the sign specifications from OPA, the EPA logo is the preferred identifier for assistance agreement projects and use of the EPA seal requires prior approval from the EPA. To obtain the appropriate EPA logo or seal graphic file, the recipient should send a request directly to [Londa Scott-Forte \(202-564-1504\)](#) and [Jini Ryan \(202-564-1075\)](#). Please explain in the message that the EPA logo is to be used on signage at a construction site funded with EPA assistance and copy the EPA Project Officer on the message.

G. Public or Media Events

The Recipient agrees to notify the EPA Project Officer listed in this award document of public or media events publicizing the accomplishment of significant events related to construction projects as a result of this agreement and provide the opportunity for attendance and participation by federal representatives with at least ten (10) working days' notice.

H. Federal Cross-cutting Requirements/Other Applicable Federal Laws

Recipient must comply with federal cross-cutting requirements as well as other applicable federal laws as provided in EPA's [Community Grants Program Final Implementation Guidance](#), October 2022.

I. American Iron and Steel (AIS)

AIS requirements apply to State Revolving Fund assistance agreements signed on or after January 17, 2014, including all treatment works projects funded by a CWSRF assistance agreement and all public water system projects funded by a DWSRF assistance agreement signed on or after January 17, 2014. Based on the FY 2023 Consolidated Appropriations Act directive Congressional language ("Applicable Federal requirements that would apply to a Clean Water State Revolving Fund or Drinking Water State Revolving Fund project grant recipient shall apply to a grantee receiving a CPF grant under this section"), AIS requirements apply to this award agreement.

(a) *Definitions.* As used in this award term and condition—

(1) "iron and steel products" mean the following products made primarily of iron or steel: lined or unlined pipes and fittings, manhole covers and other municipal castings, hydrants, tanks, flanges, pipe clamps and restraints, valves, structural steel, reinforced precast concrete, and construction materials.

(2) "steel" means an alloy that includes at least 50 percent iron, between .02 and 2 percent carbon, and may include other elements.

(b) *Domestic preference.*

(1) This award term and condition requires that all iron and steel products used for a project for the construction, alteration, maintenance or repair of a public water system or treatment work are produced in the United States except as provided in paragraph (b)(2) of this section and condition.

(2) This requirement shall not apply in any case or category of cases in which the Administrator of the Environmental Protection Agency finds that—

(i) applying the requirement would be inconsistent with the public interest;

(ii) iron and steel products are not produced in the United States in sufficient and reasonably available quantities and of a satisfactory quality; or

(iii) inclusion of iron and steel products produced in the United States will increase the cost of the overall project by more than 25 percent.

(3) The Build America, Buy America (BABA) Act requirements do not supersede the AIS requirements, and both provisions still apply and work in conjunction. Compliance with AIS requirements meets the BABA requirements for iron and steel.

(c) *Request for a Waiver under (b)(2) of this section*

(1) Any recipient request to use foreign iron or steel products in accordance with paragraph

(b)(2) of this section shall include adequate information for federal Government evaluation of the request, including—

(i) A description of the foreign and domestic iron, steel, and/or manufactured goods;

(ii) Unit of measure;

(iii) Quantity;

(iv) Cost;

(v) Time of delivery or availability;

(vi) Location of the project;

(vii) Name and address of the proposed supplier; and

(viii) A detailed justification of the reason for use of foreign iron or steel products cited in accordance with paragraph (b)(2) of this section.

(2) If the Administrator receives a request for a waiver under this section, the waiver request shall be made available to the public for at least 15 days prior to making a finding based on the request.

(3) Unless the Administrator issues a waiver of this term, use of foreign iron and steel products is noncompliant with P.L. 117-103 and the Explanatory Statement for Division G of P.L. 117-103.

(d) This term and condition shall be applied in a manner consistent with United States obligations under international agreements.

J. Build America, Buy America Act

This term and condition supplements the “Build America, Buy America” term and condition included in EPA's [General Terms and Conditions](#).

(a) Definitions.

As used in this award term and condition —

(1) “Construction materials” includes an article, material, or supply—other than an item of primarily iron or steel; a manufactured product; cement and cementitious materials; aggregates such as stone, sand, or gravel; or aggregate binding agents or additives—that is or consists primarily of:

- non-ferrous metals;
- plastic and polymer-based products (including polyvinylchloride, composite building materials, and polymers used in fiber optic cables);
- glass (including optic glass);
- lumber; or
- drywall.

(2) “Domestic content procurement preference” means all iron and steel used in the project are produced in the United States; the manufactured products used in the project are produced in the United States; or the construction materials used in the project are produced in the United States.

(3) “Infrastructure” includes, at a minimum, the structures, facilities, and equipment for, in the United States, roads, highways, and bridges; public transportation; dams, ports, harbors, and other maritime facilities; intercity passenger and freight railroads; freight and intermodal facilities; airports; water systems, including drinking water and wastewater systems; electrical transmission facilities and systems; utilities; broadband infrastructure; and buildings and real property. Infrastructure includes facilities that generate, transport, and distribute energy.

(4) “Project” means the construction, alteration, maintenance, or repair of infrastructure in the United States.

(b) Domestic Preference.

This term and condition implements the Infrastructure Investment and Jobs Act, Pub. L. No. 117-58, including Build America, Buy America Act, Pub. L. No. 117-58, §§70901-52. None of the funds provided under this award may be used for a project for infrastructure unless:

- (1) all iron and steel used in the project are produced in the United States--this means all manufacturing processes, from the initial melting stage through the application of coatings, occurred in the United States;
- (2) all manufactured products used in the project are produced in the United States—this means the manufactured product was manufactured in the United States; and the cost of the components of the manufactured product that are mined, produced, or manufactured in the United States is greater than 55 percent of the total cost of all components of the manufactured product, unless another standard for determining the minimum amount of domestic content of the manufactured product has been established under applicable law or regulation; and
- (3) all construction materials (excluding cement and cementitious materials, aggregates such as stone, sand, or gravel, or aggregate binding agents or additives) are manufactured in the United States. All manufacturing processes for the construction material occurred in the United States.
- (4) The Buy America preference only applies to articles, materials, and supplies that are consumed in, incorporated into, or affixed to an infrastructure project. As such, it does not apply to tools, equipment, and supplies, such as temporary scaffolding, brought to the construction site and removed at or before the completion of the infrastructure project. Nor does a Buy America preference apply to equipment and furnishings, such as movable chairs, desks, and portable computer equipment, that are used at or within the finished infrastructure project but are not an integral part of the structure or permanently affixed to the infrastructure project.

(c) Waiver Request.

- (1) When necessary, recipients may apply for a waiver from these requirements.
- (2) A request to waive the application of the domestic content procurement preference must be in writing and submitted following the waiver instructions at <https://www.epa.gov/cwsrf/build-america-buy-america-baba>.
- (3) Waiver requests are subject to public comment for at least 15 days prior to making a finding based on the request.
- (4) Waiver requests are subject to review by the Office of Management and Budget's Made in America Office.
- (5) There may be instances where an award qualifies, in whole or in part, for an existing waiver described at <https://www.epa.gov/cwsrf/build-america-buy-america-baba-approved-waivers>.
- (6) The U.S. Environmental Protection Agency may grant a waiver based upon one of the exceptions as established in Section 70914(b) of the Infrastructure Investment and Jobs Act and further described in the Office of Management and Budget Memorandum M-22-11.
- (7) Any recipient waiver request to use foreign iron, steel, manufactured products, and/or construction materials in an infrastructure project shall include adequate information for the Federal Government evaluation of the request, including—

- i. The Federal Award Identification Number (FAIN);

- ii. Location and description of the project;
 - iii. Total cost of infrastructure expenditures, including federal and non-federal funds;
 - iv. List of iron or steel item(s), manufactured products, and construction material(s) proposed to be excepted from Buy America requirements, including name, cost, country (ies) of origin (if known), relevant Product Services Code (PSC) and North American Industry Classification System (NAICS) code for each, unit of measure, quantity, time of delivery or availability, and name and address of the proposed supplier;
 - v. A detailed justification of the reason for use of foreign iron, steel, manufactured products, and/or construction materials;
 - vi. Anticipated impact if no waiver is issued; and
 - vii. A certification that the federal official or assistance recipient made a good faith effort to solicit bids for domestic products supported by terms included in requests for proposals, contracts, and nonproprietary communications with the prime contractor.
- (8) Unless a waiver applies, use of foreign iron, steel, manufactured products, and/or construction materials that are consumed in, incorporated into, or affixed to an infrastructure project is noncompliant with this term and condition pursuant to the Infrastructure Investment and Jobs Act, Pub. L. No. 117-58, including Build America, Buy America Act, Pub. L. No. 117-58 §§70901-52.

(d) Waiver Evidence Submission.

(1) **Maintain** documentation of any use of materials which are considered de minimis and are covered by an [existing waiver](#) (e.g. miscellaneous, generally low-cost products that are essential for construction and are incorporated into the physical structure of the project) with grant project files for a period of three years from the date of submission of the final expenditure report, in accordance with [2 CFR 200.334](#).

(2) If recipient seeks coverage under an existing [BABA waiver](#), recipient agrees to submit available evidence to the EPA project officer to support such a determination as identified in the BABA waiver. Recipient shall maintain this evidence with grant project files for a period of three years from the date of submission of the final expenditure report, in accordance with [2 CFR 200.334](#).

K. Environmental Review

This project consists of activities listed in paragraphs 40 C.F.R 6.204(a)(2)(i) through 40 C.F.R 6.204 (a)(2)(x) and no further NEPA documentation is necessary; EPA has met its NEPA compliance requirement. No separate NEPA documentation needs to be developed for use of a NEPA CATEX determination under 40 C.F.R 6.204(a)(2). If the scope of the project changes, Recipient understands that additional environmental review may be necessary.

L. Davis-Bacon

(a) Applicability of the Davis-Bacon (DB) Prevailing Wage Requirements.

The recipient agrees to include in all procurement contracts and subawards to provide assistance for the construction, alteration, and repair of treatment works carried out in whole or in part with funds made available by the FY 2023 Consolidated Appropriations Act a term and condition requiring compliance with section 513 of the Federal Water Pollution Control Act, also known as the Clean Water Act (CWA), and section 1450(e) of the Safe Drinking Water Act (SDWA) (42 U.S.C. 300j-9(e)) and require that procurement contractors and sub-grantees include such a term and condition in subcontracts and other lower tiered transactions. All contracts and subcontracts in excess of \$2,000 for the construction of treatment works carried out in whole or in part with assistance made available as stated herein shall include in full in the contract clauses as attached hereto entitled "Wage Rate Requirements Under the Clean Water Act, Section 513 and the Safe Drinking Water Act, Section 1450(e)." This term and condition applies to all subagreements to provide assistance under the authorities referenced herein, whether in the form of a subgrant, or any other vehicle to provide financing for a project.

If the recipient encounters a unique situation at a site that presents uncertainties regarding DB applicability, the recipient must discuss the situation with EPA before authorizing work on that site.

(b) Obtaining Wage Determinations.

(1) Unless otherwise instructed by EPA on a project specific basis, the recipients shall use DOL General Wage Classifications for the locality in which the construction activity subject to DB will take place. Recipients must obtain proposed wage determinations for specific localities at [SAM.gov](https://sam.gov). If the recipient is a non-governmental entity, after the recipient obtains its proposed wage determination, it must submit the wage determination to EPA_Grants_Info@epa.gov, for approval prior to inserting the wage determination into a solicitation, contract or before issuing task orders, work assignments, or similar instruments to existing contractors (ordering instruments) unless subsequently directed otherwise by EPA's Award Official.

Note: Recipients must discuss unique situations that may not be covered by the DOL General Wage Classifications with EPA. If, based on discussions with a recipient, EPA determines that DB applies to a unique situation (e.g., unusually extensive excavation) the Agency will advise the recipient which General Wage Classification to use based on the nature of the construction activity at the site.

(2) Recipients shall obtain the wage determination for the locality in which a Community Grants activity subject to DB will take place *prior* to issuing requests for bids, proposals, quotes, or other methods for soliciting contracts (solicitation) for activities subject to DB. These wage determinations shall be incorporated into solicitations and any subsequent contracts. Prime contracts must contain a provision requiring that subcontractors follow the wage determination incorporated into the prime contract.

(i) While the solicitation remains open, the recipient shall monitor [SAM.gov](https://sam.gov) on a weekly basis to ensure that the wage determination contained in the solicitation remains current. The recipient shall amend the solicitation if DOL issues a modification more than 10 days prior to the closing date (i.e., bid opening) for the solicitation. If DOL modifies or supersedes the applicable wage determination less than 10 days prior to the closing date, the recipient may request a finding from EPA that there is not a reasonable time to notify interested contractors of the modification of the wage determination. EPA will provide a report of the Agency's finding to the recipient.

(ii) If the recipient does not award the contract within 90 days of the closure of the

solicitation, any modifications DOL makes to the wage determination contained in the solicitation shall be effective unless EPA, at the request of the recipient, obtains an extension of the 90-day period from DOL pursuant to 29 CFR 1.6(c)(3)(iv). The recipient shall monitor [SAM.gov](https://www.sam.gov) on a weekly basis if it does not award the contract within 90 days of closure of the solicitation to ensure that wage determinations contained in the solicitation remain current.

(iii) If the recipient carries out a Community Grants activity subject to DB by issuing a task order, work assignment or similar instrument to an existing contractor (ordering instrument) rather than by publishing a solicitation, the recipient shall insert the appropriate DOL wage determination from [SAM.gov](https://www.sam.gov) into the ordering instrument.

(3) Recipients shall review all subcontracts subject to DB entered into by prime contractors to verify that the prime contractor has required its subcontractors to include the applicable wage determinations.

(4) As provided in 29 CFR 1.6(f), DOL may issue a revised wage determination applicable to a recipient's contract after the award of a contract or the issuance of an ordering instrument if DOL determines that the recipient has failed to incorporate a wage determination or has used a wage determination that clearly does not apply to the contract or ordering instrument. If this occurs, the recipient shall either terminate the contract or ordering instrument and issue a revised solicitation or ordering instrument or incorporate DOL's wage determination retroactive to the beginning of the contract or ordering instrument by change order. The recipient's contractor must be compensated for any increases in wages resulting from the use of DOL's revised wage determination.

(c) Contract and Subcontract Provisions

(1) The recipient shall insert in full in any contract in excess of \$2,000 which is entered into for the actual construction, alteration and/or repair, including painting and decorating, of treatment works, and construction projects that would be [eligible under the Drinking Water State Revolving Fund Program](#), and which is subject to the labor standards provisions of any of the acts listed in § 5.1 or Title VI of the CWA or Section 1452(a)(5) of the SDWA, the following labor standards provisions.

(i) Minimum wages.

(I) All laborers and mechanics employed or working upon the site of the work will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR Part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the applicable wage determination of the Secretary of Labor which the recipient obtained under the procedures specified in Item(b) Obtaining Wage Requirements, above, and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1 (b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (1)(i)(IV) of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are

deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided that the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph (1)(i)(II) of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers. Recipients shall require that the contractor and subcontractors include the name of the recipient employee or official responsible for monitoring compliance with DB on the poster. Recipients may obtain wage determinations from <https://sam.gov/content/wage-determinations>.

(II)(A) The recipient, on behalf of EPA, shall require that contracts and subcontracts entered into under this agreement provide that any class of laborers or mechanics, including helpers, which is not listed in the wage determination, and which is to be employed under the contract shall be classified in conformance with the wage determination. The EPA Award Official shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

- (1) The work to be performed by the classification requested is not performed by a classification in the wage determination; and
- (2) The classification is utilized in the area by the construction industry; and
- (3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(II)(B) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the recipient agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the recipient to the EPA Award Official. The Award Official will transmit the report, to the Administrator of the Wage and Hour Division (WHD) at whd-cbaconformance_incoming@dol.gov. The WHD Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the Award Official or will notify the Award Official within the 30-day period that additional time is necessary.

(II)(C) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the recipient do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the award official shall refer the questions, including the views of all interested parties and the recommendation of the Award Official, to the WHD Administrator for determination. The WHD Administrator, or an authorized representative, at whd-cbaconformance_incoming@dol.gov will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the Award Official within the 30-day period that additional time is necessary.

(II)(D) The wage rate (including fringe benefits where appropriate) determined pursuant to

paragraphs (1)(i)(II)(B) or (C) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(III) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(IV) If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, provided that the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account, assets for the meeting of obligations under the plan or program.

(ii) Withholding. The recipient, upon written request of the Award Official or an authorized representative of the Department of Labor, shall withhold or cause to withhold from the contractor under this contract or any other federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the work, all or part of the wages required by the contract, EPA may, after written notice to the contractor, or recipient take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

(iii) Payrolls and basic records.

(I) Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made, and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable

programs.

(II)(A) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the recipient who will maintain the records on behalf of EPA. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead, the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division website at <https://www.dol.gov/whd/forms/wh347.pdf> or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker and shall provide them upon request to the recipient for transmission to the EPA, if requested by EPA, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the recipient.

(II)(B) Each payroll submitted to the recipient shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(1) That the payroll for the payroll period contains the information required to be provided under § 5.5 (a)(3)(ii) of Regulations, 29 CFR Part 5, the appropriate information is being maintained under § 5.5 (a)(3)(i) of Regulations, 29 CFR Part 5, and that such information is correct and complete;

(2) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR Part 3;

(3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(II)(C) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph (1)(iii)(II)(B) of this section.

(II)(D) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.

(III) The contractor or subcontractor shall make the records required under paragraph (1)(iii)(I) of this section available for inspection, copying, or transcription by authorized representatives of the

EPA or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, EPA may, after written notice to the contractor, recipient, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

(iv) Apprentices and Trainees.

(I) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the WHD Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(II) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a

percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(III) Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR Part 30.

(v) Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR Part 3, which are incorporated by reference in this contract.

(vi) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses contained in 29 CFR 5.5(a)(1) through (10) and such other clauses as the EPA may by appropriate instructions require, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in this term and condition.

(vii) Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

(viii) Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR Parts 1, 3, and 5 are herein incorporated by reference in this contract.

(ix) Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR Parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors), the recipient, borrower or subrecipient and EPA, the U.S. Department of Labor, or the employees or their representatives.

(x) Certification of eligibility.

(I) By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be

awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(II) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(III) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001.

(d) Contract Provisions for Contracts in Excess of \$100,000.

(1) Contract Work Hours and Safety Standards Act. The recipient shall insert the following clauses set forth in paragraphs (1)(i), (ii), (iii), and (iv) of this section in full in any contract in an amount in excess of \$100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by Item (c) Contract and Subcontract Provisions, above, or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.

(i) Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.

(ii) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph (1)(i) of this section the contractor and any subcontractor responsible therefore shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (1)(i) of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (1)(i) of this section.

(iii) Withholding for unpaid wages and liquidated damages. The recipient, upon written request of the Award Official or an authorized representative of the Department of Labor, shall withhold or cause to be withheld from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (1)(ii) of this section.

(iv) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (1)(i) through (iv) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in

paragraphs (1)(i) through (iv) of this section.

(2) In addition to the clauses contained in Item (c) Contract and Subcontract Provisions, above, in any contract subject only to the Contract Work Hours and Safety Standards Act and not to any of the other statutes cited in [29 CFR 5.1](#), the recipient shall insert a clause requiring that the contractor or subcontractor shall maintain payrolls and basic payroll records during the course of the work and shall preserve them for a period of three years from the completion of the contract for all laborers and mechanics, including guards and watchmen, working on the contract. Such records shall contain the name and address of each such employee, social security number, correct classifications, hourly rates of wages paid, daily and weekly number of hours worked, deductions made, and actual wages paid. Further, the recipient shall insert in any such contract a clause providing that the records to be maintained under this paragraph shall be made available by the contractor or subcontractor for inspection, copying, or transcription by authorized representatives of EPA and the Department of Labor, and the contractor or subcontractor will permit such representatives to interview employees during working hours on the job.

(e) Compliance Verification.

(1) The recipient shall periodically interview a sufficient number of employees entitled to DB prevailing wages (covered employees) to verify that contractors or subcontractors are paying the appropriate wage rates. As provided in 29 CFR 5.6(a)(6), all interviews must be conducted in confidence. The recipient must use [Standard Form \(SF\) 1445](#) or equivalent documentation to memorialize the interviews. Copies of the SF 1445 are available from EPA on request.

(2) The recipient shall establish and follow an interview schedule based on its assessment of the risks of noncompliance with DB posed by contractors or subcontractors and the duration of the contract or subcontract. At a minimum, the recipient must conduct interviews with a representative group of covered employees within two weeks of each contractor or subcontractor's submission of its initial weekly payroll data and two weeks prior to the estimated completion date for the contract or subcontract. Recipients must conduct more frequent interviews if the initial interviews or other information indicates that there is a risk that the contractor or subcontractor is not complying with DB. Recipients shall immediately conduct necessary interviews in response to an alleged violation of the prevailing wage requirements. All interviews shall be conducted in confidence.

(3) The recipient shall periodically conduct spot checks of a representative sample of weekly payroll data to verify that contractors or subcontractors are paying the appropriate wage rates. The recipient shall establish and follow a spot check schedule based on its assessment of the risks of noncompliance with DB posed by contractors or subcontractors and the duration of the contract or subcontract. At a minimum, the recipient must spot check payroll data within two weeks of each contractor or subcontractor's submission of its initial payroll data and two weeks prior to the completion date the contract or subcontract. recipients must conduct more frequent spot checks if the initial spot check or other information indicates that there is a risk that the contractor or subcontractor is not complying with DB. In addition, during the examinations, the recipient shall verify evidence of fringe benefit plans and payments thereunder by contractors and subcontractors who claim credit for fringe benefit contributions.

(4) The recipient shall periodically review contractor and subcontractor use of apprentices and trainees to verify registration and certification with respect to apprenticeship and training programs approved by either the U.S Department of Labor or a state, as appropriate, and that contractors and subcontractors are not using disproportionate numbers of, laborers, trainees and apprentices. These reviews shall be

conducted in accordance with the schedules for spot checks and interviews described in Item 5(b) and (c) above.

(5) Recipients must immediately report potential violations of the DB prevailing wage requirements to the EPA DB contact listed above and to the appropriate DOL Wage and Hour District Office listed at <https://www.dol.gov/whd/america2.htm>.

M. Operation and Maintenance

The recipient agrees to certify that it will properly operate and maintain all facilities partially funded by this grant for the useful life of the facilities as indicated below. These certifications will be submitted to EPA prior to final payment.

Useful Life Timeframes

- Land - Permanent
- Wastewater/Water Conveyance Structures: collection systems, pipes, interceptors, force mains, tunnels, distribution lines, etc. - 40 years
- Other Structures: plant buildings, concrete tankage, basins, lift stations and pump station structures, inlet structures, etc. - 30 years
- Wastewater and Drinking Water Process Equipment - 15 years
- Auxiliary Equipment - 10 years

N. Geospatial Data Standards

All geospatial data created must be consistent with Federal Geographic Data Committee (FGDC) endorsed standards. Information on these standards may be found at www.fgdc.gov.



Resolution No. 24-05

Date Adopted: February 20, 2024

Effective Date: February 20, 2024

**REIMBURSEMENT RESOLUTION
Utley Creek Water Reclamation Facility Expansion**

BE IT RESOLVED by the Town Council of the Town of Holly Springs, North Carolina, as follows:

Section 1. The Town intends to undertake a project, advance its own funds to pay project costs, and then reimburse itself from financing proceeds for these early expenditures. The Finance Officer has advised the Council that it is desirable for the Council to adopt this resolution to document the Town's plans, in order to comply with certain federal tax rules relating to this type of reimbursement.

Section 2. The project is to expand the Utley Creek Water Reclamation Facility, including design, land acquisition, construction, and construction management of the facility expansion and other civil engineering work necessary for the site, together with the payment of related financing costs and other necessary or incidental costs.

Section 3. The Town intends to finance the project. The expected type of financing (which is subject to change) is revenue bonds. The expected maximum amount of bonds or other obligations to be issued or contracted for the project is \$29,500,000.

Section 4. The Town intends that funds that have been advanced, or may be advanced, from the Utility Fund, or any other Town fund, for project costs will be reimbursed from the financing proceeds.

Adopted by the Holly Springs Town Council on this, the 20th day of February, 2024.

ATTEST:

Sean Mayefskie, Mayor

Linda McKinney, Town Clerk





Holly Springs Town Council

Town Council Meeting Agenda Cover Sheet

Agenda Item#: 27.

New Business

Title: 2024 Local, State, and Federal Legislative Agenda

Strategic Priority Area: Economic Prosperity & Diversity

Responsible & Balanced Growth

Safe & Friendly

Engaged, Healthy, & Active Community

Staff Resource: Randy Harrington, Town Manager, John Schifano, Town Attorney, Annie Drees, Dan Berry

Action(s):

Approve the Town Council's 2024 legislative agenda.

Explanation:

- The purpose of a "legislative agenda" is to guide the governing body's intergovernmental priorities for engagement and advocacy on policy or legislative issues that are important to the Town, residents, and businesses of Holly Springs.
- The proposed legislative agenda includes priorities at the school system, county, state, and federal levels of government.

Background:

- At the Council organizational meeting in December 2023, Council designated Mayor Pro Tem Dan Berry and Council member Annie Drees to Council's Legislative Action Committee.
- The Legislative Action Committee developed a proposed legislative agenda with the assistance of the Town Manager and Town Attorney.
- A draft legislative agenda was presented to Council at the February 8-10, 2024 Mayor & Council retreat. Legislative agenda topic areas are focused around school siting and school safety, workforce housing opportunities, regional greenway system connections, water and wastewater investments, transportation investments, preserving local authority, economic growth, and supporting U.S. Post Office facility investments.

Funding Source(s):

N/A

Attachment(s):

1. Legislative Agenda - 2024 - FINAL Proposed



2024 LOCAL, STATE, AND FEDERAL LEGISLATIVE AGENDA

WAKE COUNTY PUBLIC SCHOOL SYSTEM

- Support “**neighborhood schools**” siting and **accessibility/walkability** to schools
- Continued support for **School Resource Officer partnerships** and school safety

WAKE COUNTY

- Explore partnership opportunities for **expansion of workforce housing** in Holly Springs
- Explore partnership opportunities to advance **regional greenway system connections**

STATE

- **Wastewater/Reuse Infrastructure Funding Partnerships**
 - Seek wastewater/reuse grants to **expand Utley Creek Water Reclamation Facility** to address recent, unprecedented economic success for the State and the region (along with associated high population growth) to ensure that Holly Springs remains a leading global industry and job attraction location for the State
 - Secure Dept. of Environmental Quality (DEQ) **support for wastewater capacity growth beyond 8 million gallons per day (MGD)**
- **Preserve Local Authority**
 - Ability to execute **long-range community planning and annexation** for the efficient delivery of municipal services and congruent growth of the town
 - **Tree preservation**
 - **Stormwater management and stream protection**
- **Support NCDOT investments (e.g., infrastructure, personnel, organizational, and policies) to increase response capacity to acute urban/suburban growth pressures**
 - Seek increased **staffing investments at NCDOT** to support recruitment and retention of staff and accelerate review times for urban projects undertaken by municipal partners
 - Increase NCDOT **investments to support State and local economic growth**
 - Seek relief for municipal tax-payers holding the burden to fund **roadway capacity and safety infrastructure investment needs associated with new public and private schools** in high growth areas of the state

FEDERAL

- **Water/Wastewater/Reuse Infrastructure Funding Partnerships** – Seek Federal Congressional funding and agency grants to
 - Advance regional **Sanford Water Plant expansion, conveyance of Sanford water to Holly Springs** (and Fuquay-Varina)

- **Expand Utley Creek Water Reclamation Facility**
- **U.S. Post Office Facility Investments** – Advocate for **facility investments** including but not limited to customer lobby area expansion and implementation of a self-service kiosk at existing Post Office or the acquisition of a second retail location on west side of town.